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Free-Jet Feasibility Study of a Thermal Acoustic Shield Concept for AST/VCE Application--Dual Stream Nozzles

Comprehensive Data Report

Volume I

Test Nozzles and Acoustic Data

by

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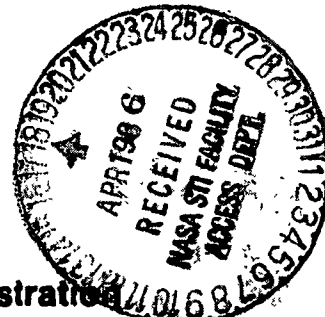
(NASA-CR-174817) FREE JET FEASIBILITY STUDY
OF A THERMAL ACOUSTIC SHIELD CONCEPT FOR
AST/VCE APPLICATION-DUAL FLOW.
COMPREHENSIVE DATA REPORT. VOLUME I: TEST
NOZZLES AND ACOUSTIC DATA (General Electric G3/71 08853)

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16. Abstract <p>Acoustic and diagnostic data that were obtained to determine the influence of selected geometric and aerodynamic flow variables of coannular nozzles with thermal acoustic shields are summarized in this comprehensive data report. A total of 136 static and simulated flight acoustic test points were conducted with 9 scale-model nozzles. The tested nozzles included baseline (unshielded), 180° shielded, and 360° shielded dual flow coannular plug configurations. The baseline configurations include a high radius ratio unsuppressed coannular plug nozzle and a coannular plug nozzle and a coannular plug nozzle with a 20-chute outer stream suppressor. The tests were conducted at nozzle temperatures and pressures typical of operating conditions of variable cycle engine. Aerodynamic laser velocimeter measurements were made for four selected plumes. In addition, static pressure data in the chute base region of the suppressor configurations were obtained to assess the influence of the shield stream on the suppressor base drag.</p>			
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TABLE OF CONTENTS

<u>SECTION</u>		<u>PAGE</u>
<u>VOLUME I - TEST NOZZLES AND ACOUSTIC DATA</u>		
1.0	INTRODUCTION	1
2.0	SCALE MODEL CONFIGURATIONS	3
2.1	Baseline Acoustic Models	16
2.1.1	Unsuppressed Coannular Plug Nozzle; TAS-10	16
2.1.2	Coannular Plug Nozzles with 20-Chute Outer-Stream Mechanical Suppressor; TAS-15	17
2.2	Thermal Acoustic Shield Nozzle Configurations	20
2.2.1	Unsuppressed Coannular Plug Nozzle with Thermal Acoustic Shields; TAS-11, -2, and -14	20
2.2.2	Coannular Plug Nozzle with 20-Chute Outer Stream Mechanical Suppressor with Thermal Acoustic Shields; TAS-16,-17,-18 and -19	21
2.3	Thermal Acoustic Shield Flow Conditioning Choke Plate System	22
2.4	Treatment Panel Application	28
2.5	Annulus Centering Mechanisms	28
2.6	Aerodynamic Instrumentation	28
3.0	AERODYNAMIC CONDITIONS OF ACOUSTIC TEST POINTS	37
3.1	Definition of Variables	37
3.2	Test Matrices of Unsuppressed Coannular Plug Nozzles	43
3.2.1	Test Matrix for Unsuppressed Baseline Coannular Plug Nozzle (TAS-10)	43
3.2.2	Test Matrices for Unsuppressed Coannular Plug Nozzle with 180° Thermal Acoustic Shield (TAS-11 and -12)	48
3.2.3	Test Matrix for Unsuppressed Coannular Plug Nozzle with 360° Thermal Acoustic Shield (TAS-14)	53
3.3	Test Matrices of Suppressed Coannular Plug Nozzles	56
3.3.1	Test Matrix for Suppressed Baseline Coannular Plug Nozzle (TAS-15)	56
3.3.2	Test Matrix for Suppressed Coannular Plug Nozzle with 180° Thermal Acoustic Shield (TAS-16,-17 and -18)	56
3.3.3	Test Matrix for Suppressed Coannular Plug Nozzle with 360° Thermal Acoustic Shield (TAS-19)	67

TABLE OF CONTENTS (CONT'D)

<u>SECTION</u>		<u>PAGE</u>
4.0	ACOUSTIC TEST DATA	71
4.1	Description of Acoustic Data Tables	71
4.2	Acoustic Data of Unsuppressed Baseline Coannular Plug Nozzles	76
4.2.1	Acoustic Data of Unsuppressed Baseline Coannular Plug Nozzle (TAS-10)	78
4.2.2	Acoustic Data of Unsuppressed Coannular Plug Nozzle with 180° Thermal Acoustic Shield (TAS-11, and TAS-12)	142
4.2.3	Acoustic Data of Unsuppressed Coannular Plug Nozzle with 360° Thermal Acoustic Shield (TAS-14)	244
4.3	Acoustic Data of Suppressed Coannular Plug Nozzles	284
4.3.1	Acoustic Data of Suppressed Baseline Coannular Plug Nozzle (TAS-15)	286
4.3.2	Acoustic Data of Suppressed Coannular Plug Nozzle with 180° Thermal Acoustic Shield (TAS-16, -17 and -18)	323
4.3.3	Acoustic Data of Suppressed Coannular Plug Nozzle with 360° Thermal Acoustic Shield (TAS-19)	462

VOLUME II - LASER VELOCIMETER AND SUPPRESSOR BASE PRESSURE DATA

5.0	LASER VELOCIMETER TESTS	499
5.1	Summary of LV Tests and Aerodynamic Conditions of Test Points	499
5.2	Scope of LV Measurements on the Selected Plumes	499
5.3	Laser Velocimeter Calibration Data	506
5.4	Laser Velocimeter Test Data	509
5.4.1	LV Data of Unsuppressed Coannular Plug Nozzle with 180° Thermal Acoustic Shield (TAS-11)	515
5.4.2	LV Data of Suppressed Coannular Plug Nozzle with 180° Thermal Acoustic Shield (TAS-16)	621

TABLE OF CONTENTS (CONCLUDED)

<u>SECTION</u>		<u>PAGE</u>
6.0	SUPPRESSOR BASE PRESSURE DATA WITH AND WITHOUT THERMAL ACOUSTIC SHIELD	707
6.1	Thrust Loss Calculation Procedure	707
6.2	Base Pressure Data and Thrust Loss Coefficients	713
7.0	NOMENCLATURE	725

1.0 INTRODUCTION

This and the companion volume constitute the Comprehensive Data Report that summarize the data obtained with dual-flow coannular nozzles as a part of the investigation performed under NASA Contract NAS3-22137 titled, "Free Jet Feasibility Study of a Thermal Acoustic Shield Concept for AST/VCE Application". Data obtained earlier with single-flow annular nozzles are presented in a separate data report.* The objective of both of the single and dual-flow studies of this contract is to develop a technology base for a thermal acoustic shield (TAS) concept for AST/VCE application. The needed data base has been obtained by experimental evaluation of a family of unsuppressed and mechanically suppressed configurations with and without thermal acoustic shields under both static and simulated flight conditions.

Detailed schematics of the model coannular configurations, tabulations of aerodynamic test conditions and computer listings of the measured acoustic data are presented in Volume I. Aerodynamic conditions of the Laser Velocimeter (LV) tests along with the LV plume data are summarized in Volume II. The base pressure data measured on the mechanically suppressed coannular configurations, with and without the thermal acoustic shields, are presented also in Volume II.

The major results of the single and dual flow studies of this contract are discussed under separate cover in two final technical reports, NASA CR-3758 and NASA CR- , respectively.

*"Free Jet Feasibility Study of a Thermal Acoustic Shield Concept for AST/VCE Application", Comprehensive Data Report, Volumes I and II by Majjigi, R.K., Brausch, J.F., Janardan, B.A., Hoerst, D.J., Price, A.O., and Knott, P.R., R82AEB493, July 1982 (NASA CR-168302).

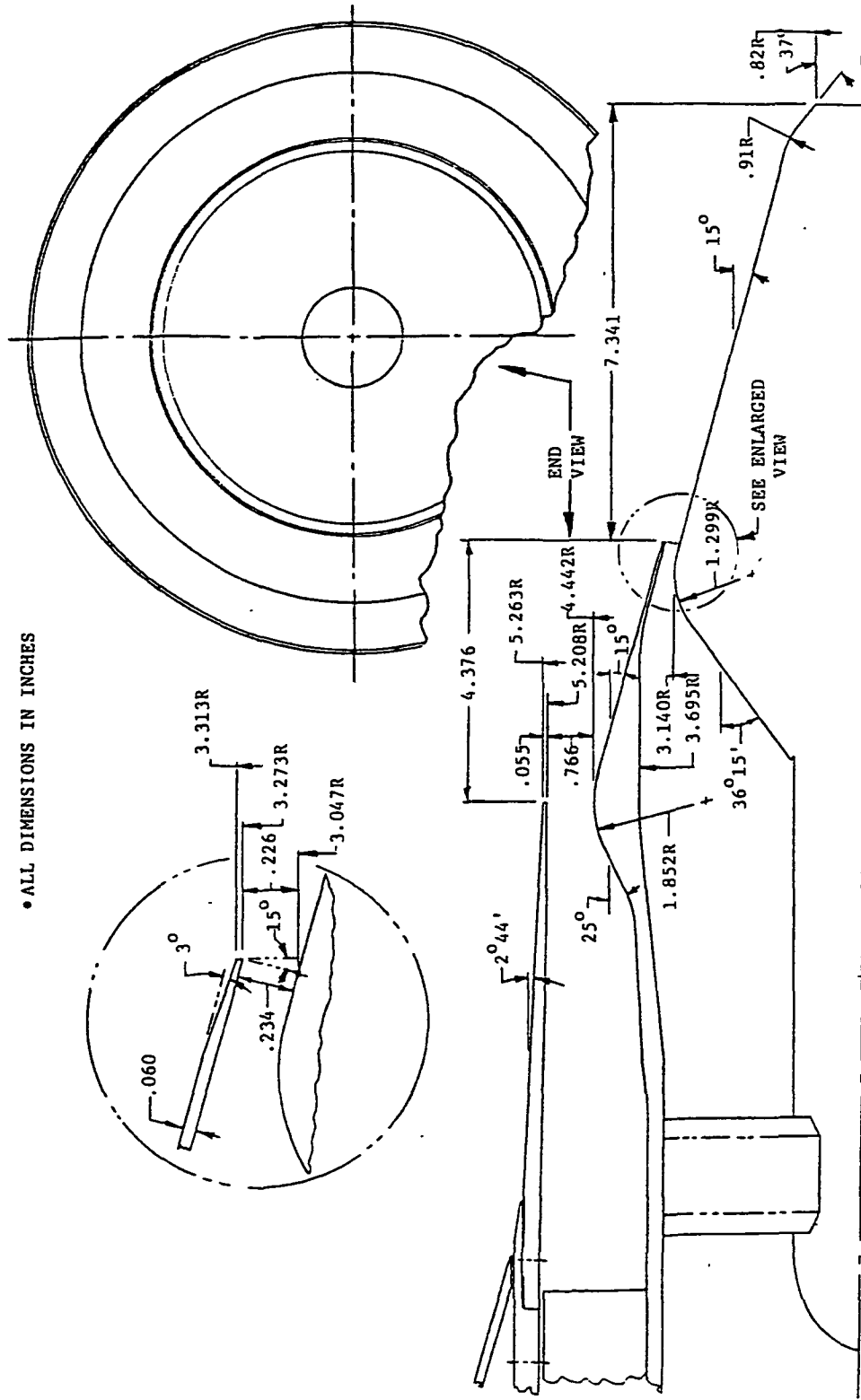
2.0 SCALE MODEL CONFIGURATIONS

Nine configurations were designed and fabricated to meet the objectives of this dual-flow thermal acoustic shield phase of this program. Four of these configurations are with an unsuppressed coannular plug nozzle and five are with a coannular nozzle having a 20-chute outer-stream mechanical suppressor.

As the three-flow nozzle system (inner, outer and TAS flows) was supplied from a two-flow facility, the outer flow stream was split and flow-conditioned through choke plates to provide proper TAS flow parameters. Due to the unique flow conditioning design, as well as transitioning a full 360° annular flow to a 180° arc flow for the TAS, an aerodynamic instrumentation package was designed to aid in diagnosis of the TAS flow development.

The nine (9) nozzle configurations selected are as follows; shown in schematic Figures 2-1 through 2-6 and in Photo Figures 2.7 through 2.9:

<u>CONFIGURATION</u>	<u>DESCRIPTION</u>
TAS-10	Baseline Unsuppressed Coannular Plug Nozzle, Figure 2.1.
TAS-11	Unsuppressed Coannular Plug Nozzle with 180° Shield, $V_r^{S,0} = .64$, Figures 2.2, 2.7, 2.8 and 2.9.
TAS-12	Unsuppressed Coannular Plug Nozzle with 180° Shield, $V_r^{S,0} = .83$, Figures 2.2, 2.7 and 2.8.
TAS-14	Unsuppressed Coannular Plug Nozzle with 360° Shield, $V_r^{S,0} = .83$, Figure 2.3.
TAS-15	Unshielded Coannular Plug Nozzle with 20-Chute Outer-Stream Mechanical Suppressor, Figures 2.4 and 2.9.



• ALL DIMENSIONS IN INCHES

FIGURE 2.1 SCHEMATIC OF BASELINE UNSUPPRESSED COANNULAR PLUG NOZZLE, CONFIGURATION TAS-10.

- ALL DIMENSIONS IN INCHES
- OTHERWISE SAME AS FIGURE 1

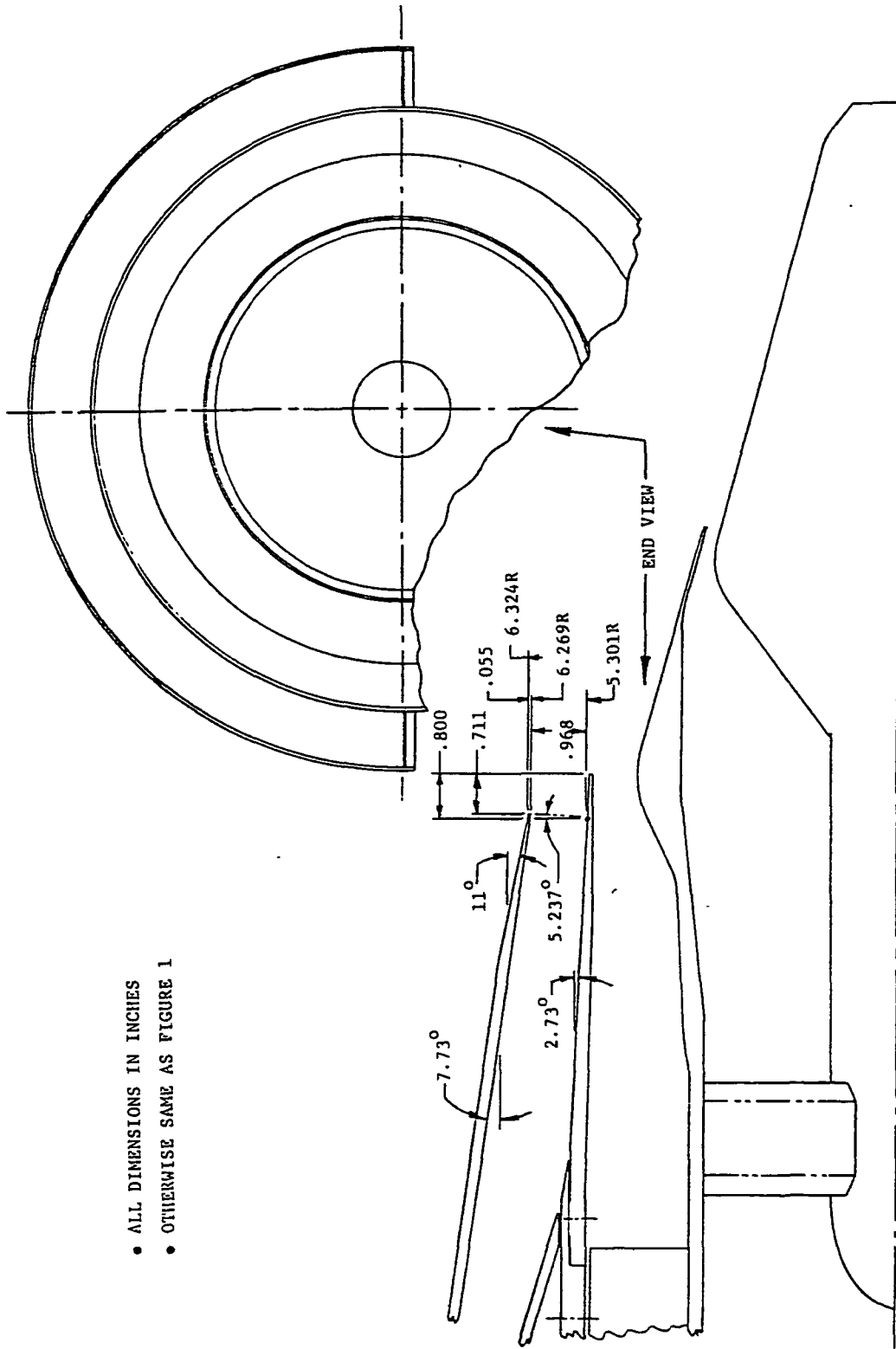
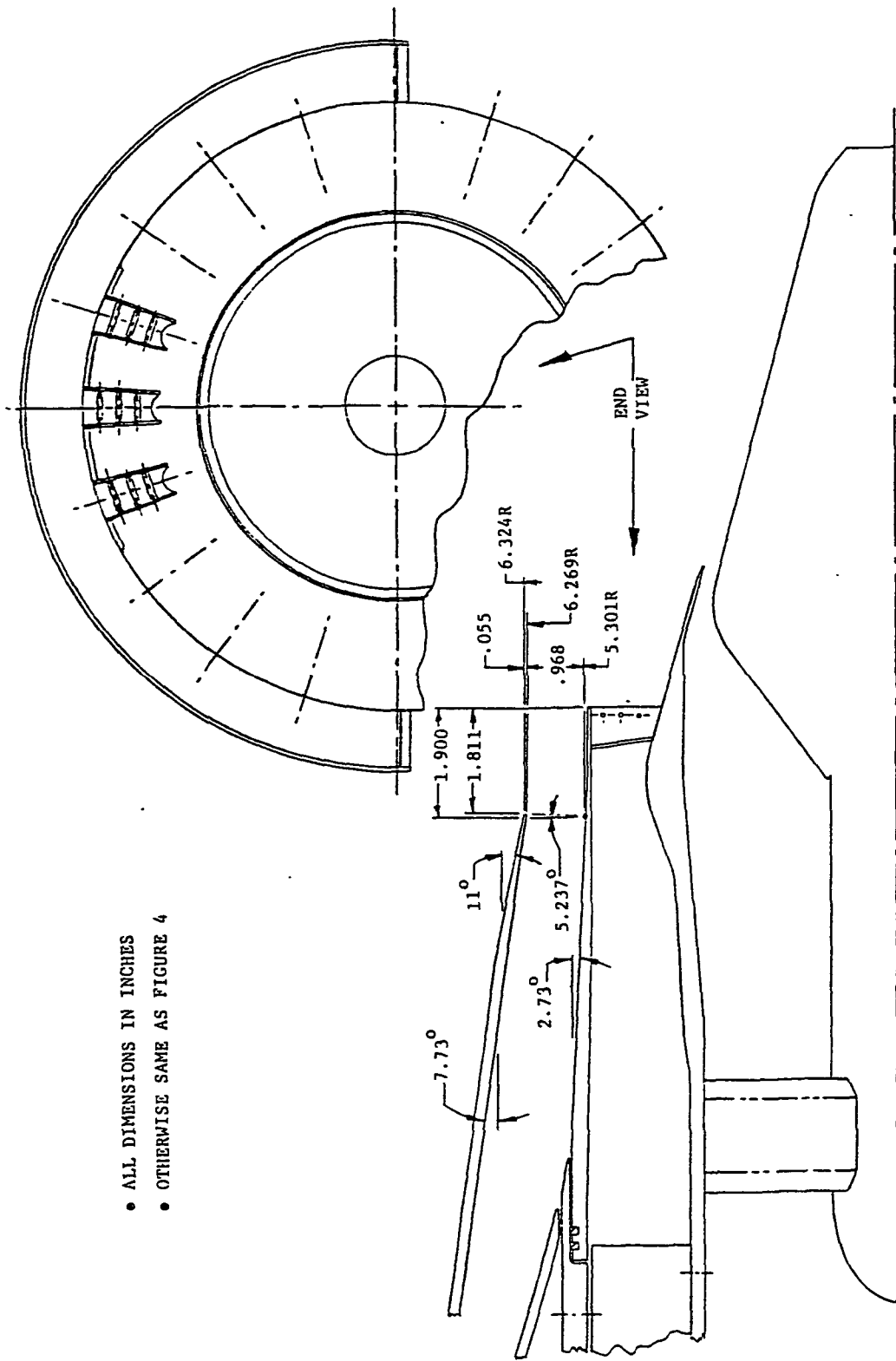


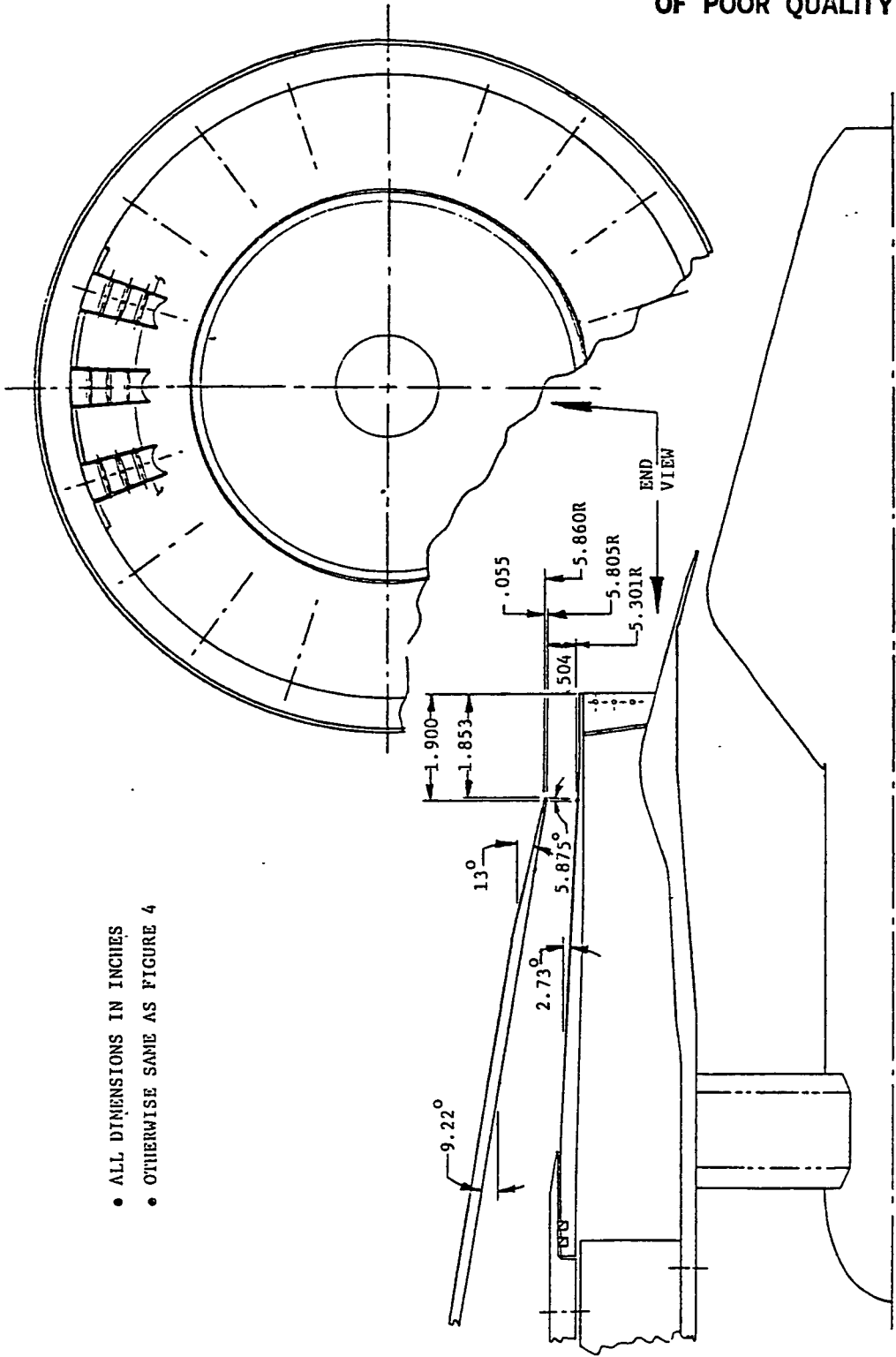
FIGURE 2.3 SCHEMATIC OF UNSUPPRESSED COANNULAR PLUG NOZZLE WITH 360° SHIELD, CONFIGURATION TAS-14.



- ALL DIMENSIONS IN INCHES
- OTHERWISE SAME AS FIGURE 4

FIGURE 2.5 SCHEMATIC OF COANNULAR PLUG NOZZLE WITH 20-CHUTE OUTER-STREAM MECHANICAL SUPPRESSOR WITH 180° SHIELD, CONFIGURATIONS TAS-16, TAS-17 AND TAS-18.

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- ALL DIMENSIONS IN INCHES
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FIGURE 2.6 SCHEMATIC OF COANNULAR PLUG NOZZLE WITH 20-CHUTE OUTER-STREAM MECHANICAL SUPPRESSOR WITH 360° SHIELD, CONFIGURATION TAS-19.

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Figure 2.7. Photo of Unsuppressed Coannular Plug Nozzle With 180° Shield in Anechoic Test Facility, Configurations TAS-11 and TAS-12.

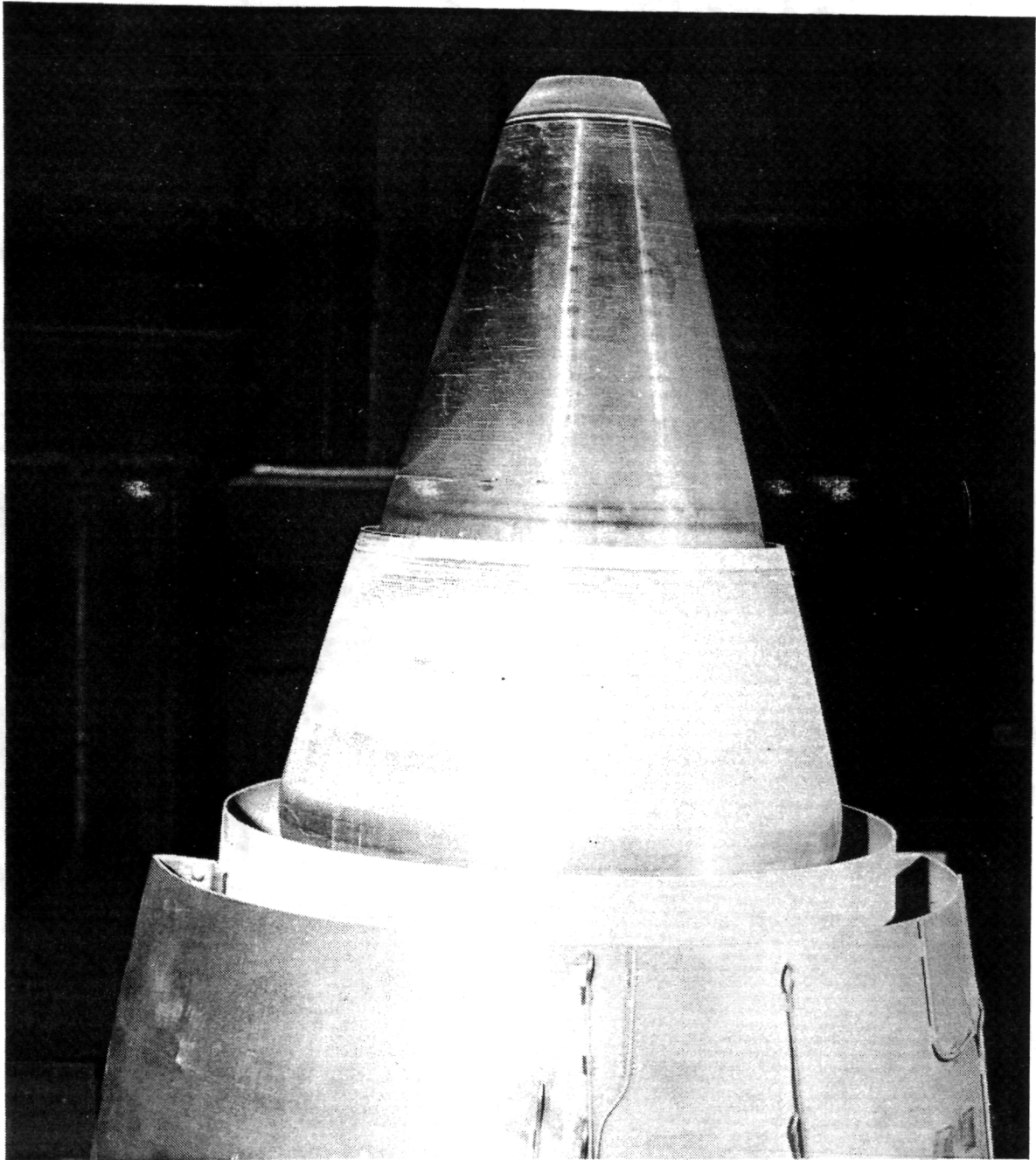


Figure 2.8. Photo of Unsuppressed Coannular Plug Nozzle With 180° Shield in Anechoic Test Facility, Configurations TAS-11 and TAS-12.

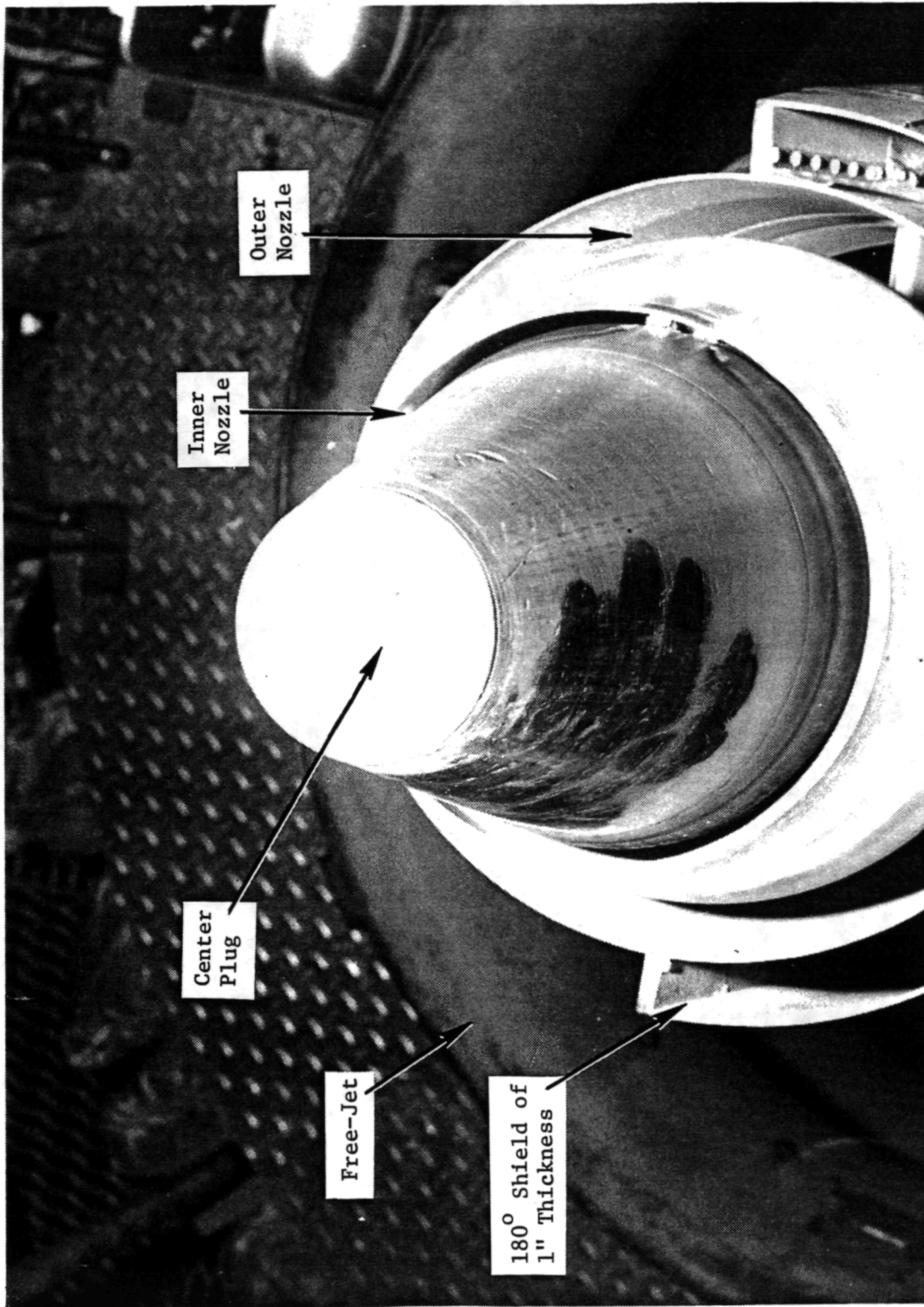


Figure 2.9. Photograph of Coannular Plug Nozzle With 180° TAS (TAS 11 and TAS 12) Assembled in Anechoic Jet Noise Facility.

<u>CONFIGURATION</u>	<u>DESCRIPTION</u>
TAS-16	Coannular Plug Nozzle with 20-Chute Outer-Stream Mechanical Suppressor with 180° Shield, $V_r^{S,0} = .64$, Figure 2.5.
TAS-17	Coannular Plug Nozzle with 20-Chute Outer-Stream Mechanical Suppressor with 180° Shield, $V_r^{S,0} = .83$, Figure 2.5.
TAS-18	Coannular Plug Nozzle with 20-Chute Outer-Stream Mechanical Suppressor with 180° Shield, $V_r^{S,0} = .48$, Figure 2.5.
TAS-19	Coannular Plug Nozzle with 20-Chute Outer-Stream Mechanical Suppressor with 360° Shield, $V_r^{S,0} = .83$, Figure 2.6.

Tables 2-I and 2-II present detailed listings of the configurations' salient geometries parameters; Table 2-I defining the coannular nozzle properties and Table 2-II doing likewise for the applied TAS nozzles. Details of the individual hardware pieces of the assemblies are provided in the design report*.

The nine (9) configurations are grouped as baseline nozzles (i.e., Configurations TAS-10 and -15) and thermal acoustic shield nozzles (i.e., Configurations TAS-11, -12, -14, -16, -17, -18 and -19). The test configuration design details are discussed in Sections 2.1 and 2.2 for the two groups, respectively. Further details of the model system design and methods of TAS flow conditioning through choke plates are discussed in Section 2.3. A description of the diagnostic aerodynamic instrumentation package, which has been designed to measure the impact on flow characteristics of unique features of the flow conditioning system and thermal shield nozzles, is given in Section 2.4.

*"Model Hardware Design Report for a Thermal Acoustic Shield Concept for AST/VCE Application - Dual Stream Nozzle Designs" by J.F. Brausch, R84AEB389, November, 1984.2

TABLE 2-I - COANNULAR NOZZLE GEOMETRIC PARAMETERS

	CONFIGURATION	
	TAS-10, -11, -12 & -14	TAS-15, -16, -17, -18 & -19
<u>OUTER STREAM</u>		
o Unsuppressed/20-Chute	Unsuppr.	20-Chute
o Throat Height, h^o , in.	.766	1.230
o Physical Throat Area, A^o , in. ²	23.222	19.90
o Deg. Based on A^o , in.	5.438	5.03
o Hub Radius at Throat, R_h^o , in.	4.442	3.978
o Tip Radius at Throat, R_t^o , in.	5.208	5.208
o Throat Radius Ratio, R_r^o	.853	.764
o Termination Shape	Convrg.	Convrg.
o Exit Plane Discharge Angle Re Vert., θ_{th} , deg.	0	0
o Number of Suppressor Elements	-	20
o Supr. Elemental Planform Shape	-	Radial
o Suppressor Area Ratio, AR	-	1.75
o Angle Subtended by Each Chute, θ_{chute} , deg.	-	7.714
o Angle Subtended by Each Flow Element, θ_{flow} , deg.	-	10.286
o Chute Depth-to-Width Ratio	-	1.0
o Chute Entrance Design Mach Number	-	0.7
<u>INNER STREAM</u>		
o Throat Height, h^i , in.	.234	.200
o Phys. Throat Area, A^i , in. ²	4.644	3.99
o Deg Based on A^i , in.	2.432	2.254
o Hub Radius at Throat, R_h^i , in.	3.047	3.082
o Tip Radius at Throat, R_t^i , in.	3.273	3.275
o Throat Radius Ratio, R_r^i	.931	.941
o Termination Shape	Convrg.	Convrg.
o Exit Plane Discharge Angle Re Vert., θ_{th}^i , deg.	15	15

TABLE 2-II - THERMAL ACOUSTIC SHIELD GEOMETRIC PARAMETERS

	CONFIGURATION			
	TAS-11 & -12	TAS-14	TAS-16, -17 & -18	TAS-19
o Shield Arc, deg.	180	360	180	360
o Shield Height, h^S , in.	.968	.504	.968	.504
o Hub Radius @ Throat, R_h^S , in.	5.301	5.301	5.301	5.301
o Tip Radius @ Throat, R_t^S , in.	6.269	5.805	6.269	5.805
o Radius Ratio @ Throat, R_r^S	.846	.913	.846	.913
o Physical Throat Area, A^S , in. ²	17.664	17.664	17.664	17.664
o D_{eq}^S Based on A^S , in.	4.742	4.742	4.742	4.742
o Shield Hub Flowpath Angle @ Throat, Θ_h^S , deg.	2.73	2.73	2.73	2.73
o Shield Tip Flowpath Angle @ Throat, Θ_t^S , deg.	7.73	9.22	7.73	9.22
o Axial Distance, Shield to Primary Nozzle Exit Plane, X, in.	.711	.753	1.811	1.853
o Exit Plane Discharge Angle Re Vent, Θ_{th}^S , deg.	5.237	5.875	5.237	5.875

2.1 BASELINE ACOUSTIC NOZZLES

Configurations TAS-10 and -15 are nozzles without a thermal acoustic shield and are used as baseline cases to be compared with the nozzles with a thermal acoustic shield, to evaluate the shield's effectiveness and the influence of geometric and aero/acoustic variables for different conditions. The nozzle's outer flow surfaces are aerodynamically clean such that, when tested in the open throat free-jet system, the impact of simulated flight relative to static can also be evaluated.

2.1.1 Unsuppressed Coannular Plug Nozzle; TAS-10

The unshielded unsuppressed coannular plug nozzle (Configuration TAS-10, Figure 2.1 and Table 2-I) has geometric flow areas of $A^0 = 23.222 \text{ in}^2$, $A^i = 4.644 \text{ in}^2$, and $A^T = 27.866 \text{ in}^2$ for a total area equivalent diameter, D_{eq}^T , of 5.957", and a system area ratio, $A_r^{i,0}$, of 0.20. The nozzle has convergent flowpath terminations and is the baseline to which shielded unsuppressed nozzles are compared. The final aerodynamic flowlines are a close replication of the baseline coannular nozzle system tested in engine size on the YJ101*, including plug angles, relative spacing of outer-to-inner exit planes and plug-tip-truncation. As a starting point for sizing the new hardware system and to assure commonality of TAS hardware, the outer nozzles outer-flowpath physical dimensions were set to those of the existing 20-chute suppressor nozzles (Configuration TAS-15); as it was available hardware. Therefore, (1) 180° TAS and (1) 360° TAS were required to be fabricated, interchangeable to unsuppressed and mechanically suppressed coannular systems.

*"Aerodynamic/Acoustic Performance of YJ101/Double Bypass VCE with Coannular Plug Nozzle", NASA CR-159869, January, 1981.

2.1.2 Coannular Plug Nozzles with 20-Chute Outer-Stream Mechanical Suppressor; TAS-15

The 20-chute coannular suppressor (Configuration TAS-15, Figures 2.4 and 2.10, Table 2.1) was built and tested under Contract NAS3-21608, then subsequently tested as a single flow turbojet suppressor within Contract NAS3-22514 and as a dual flow system within Contract NAS3-23166. Within the last two contracts, it served as baseline for single and dual flow shock noise studies. The nozzle is a scaled model of a test-bed engine suppressor that was built for the YJ101 Engine.

The nozzle utilizes 20-chutes of radial exit-plane-planform and a suppressor area ratio, $A_{\text{Annulus}}/A_{\text{Flow}}$, of 1.75. Physical flow areas of $A^0 = 19.90 \text{ in}^2$ and $A^i = 3.99 \text{ in}^2$ result in total flow area of 23.89 in^2 , a total area equivalent diameter of 5.52", and a system area ratio of 0.20.

2.2 Thermal Acoustic Shield Nozzle Configurations

Two shield nozzles, a 180° shield and a 360° shield, were designed and fabricated into physical hardware. Each was designed to be interchangeable with the baseline unsuppressed (TAS-10) and the mechanically suppressed (TAS-15) coannular nozzles, to implement shield Configurations TAS-11, -12, -14, -16, -17, -18 and -19. As both shield and outer streams are supplied from the same facility flow source, variations in shield-to-outer stream velocity ratio, $V_r^{s,0}$, were accomplished through physical changes in choke plate flow conditioning hardware.

As a base point for shield design, the following "takeoff" aero cycle was selected for the unsuppressed coannular nozzle system:

$P_r^0 = 3.426$	$P_r^i = 2.362$	$V_r^{i,0} = 0.6$
$T_T^0 = 1730^\circ\text{R}$	$T_T^i = 860^\circ\text{R}$	$A_r^{i,0} = 0.20$
$V^0 = 2500 \text{ ft/s}$	$V^i = 1500 \text{ ft/s}$	
$A^0 = 23.222 \text{ in}^2$	$A^i = 4.644 \text{ in}^2$	
$C_D^0 = .98$		
$A_e^0 = 22.758 \text{ in}^2$		
$W_0 = 14.29 \text{ pps}$		

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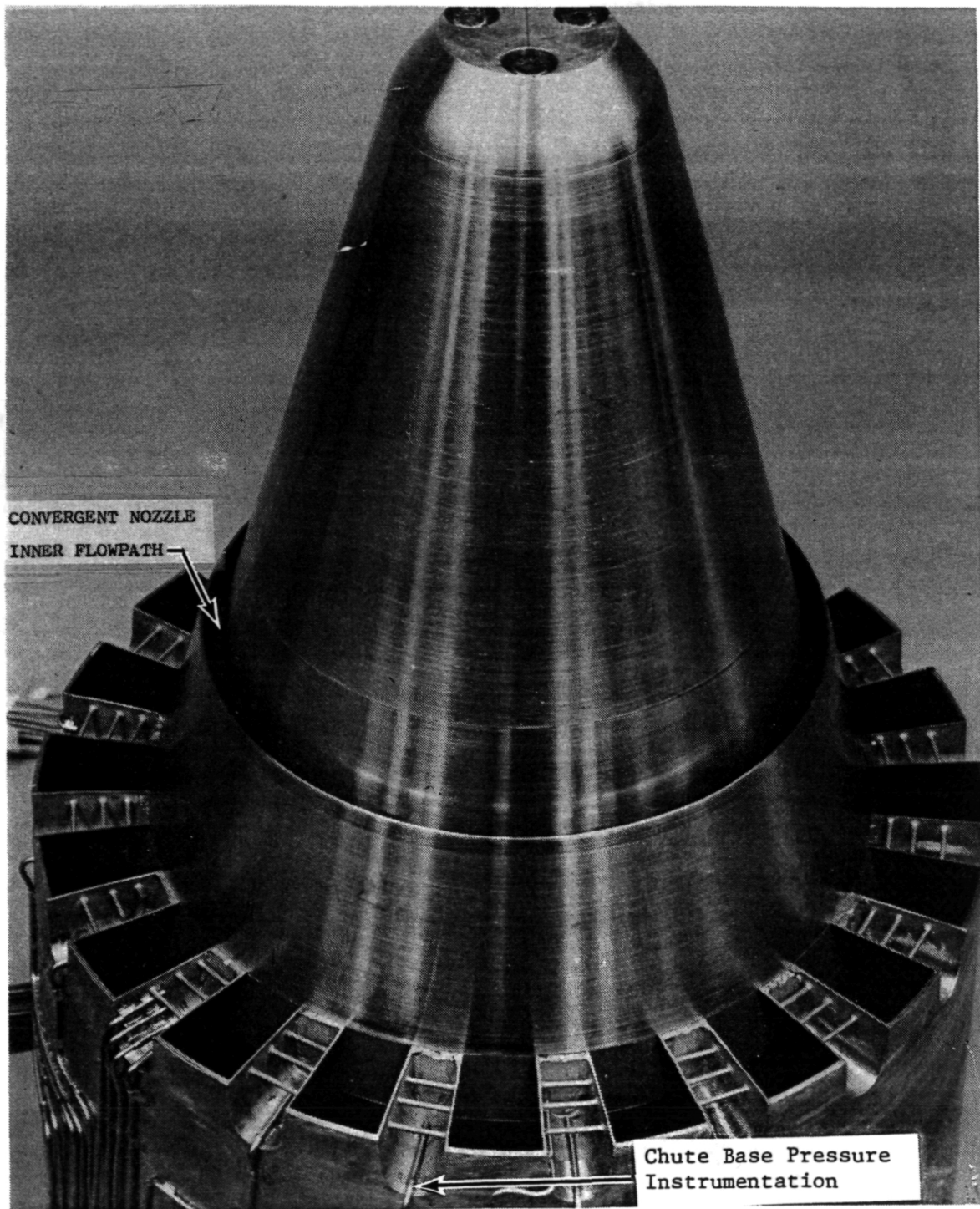


Figure 2.10. Photo of Coannular Plug Nozzle With 20-Chute Outer-Stream Mechanical Suppressor, Configuration TAS-15.

The desired shield exit plane aero conditions were selected as:

- o $V_{r^S,0} = 0.6$, therefore, $V^S = 1500\text{ft/s}$
- o $T_T^S = 1760^\circ\text{R}$; supplied from the same source as the outer stream
- o $P_r^S = 1.489$
- o $W^{S,0} = .15$, therefore, $W^S = 2.14\text{ pps}$

- o The above parameters, therefore, set $A_e^S = 16.251\text{ in}^2$, and, using a predicted discharge coefficient of $C_D^S = .92$, $A^S = 17.664\text{ in}^2$ design.

The 180° and 360° shields are designed for the same exit area, therefore, resulting in shield exit plane thicknesses of .968" and .554", respectively. These are in concert with shield thicknesses of .48" and .97", tested within the earlier single-flow phase of this contract. For identical aero conditions, the two shield designs will carry approximately the same weight flow through the shield jets.

Photos of the 180° TAS as applied to the unsuppressed coannular nozzle are per Figures 2.7 and 2.9.

For set-back of the 180° and 360° TAS exit planes relative to the outer stream of the baseline coannular nozzle, similar distances to those of the Single Flow TAS designs were maintained, i.e., .71 and .75" for the dual flow compared to .75 and .77" for the previous single flow designs.

For 180° and 360° TAS application to the 20-chute, 1.81 and 1.85" set-backs were used, substantially less than the 3.2" of TAS application to the 32 chute single flow nozzle. The 20-chute is much shallower in cross section depth at the tip than the 32 chute; .72" relative to 2.0, respectively. The design parameter maintained constant, however, was the distance from the TAS throat plane to the leading edge of the chute cross section at the tip; approximately 1.2" in both designs.

2.2.1 Unsuppressed Coannular Plug Nozzle with Thermal Acoustic Shields; TAS-11, -12 and -14

Application of the 180° and 360° shields to the baseline unsuppressed coannular nozzle results in two physical nozzle systems. However, as the flow to the outer nozzle and to the TAS system is supplied from a common source, through flow-conditioning choke plates in the TAS stream (see Section 2.3), each test configuration has a "design-point" shield-to-outer stream velocity ratio, $V_r^{S,0}$, to which the upstream flow conditioning hardware is initially configured. In designing the flow conditioning hardware, sufficient mechanical flexibility was allowed to tune-in the physical hardware during calibration testing, to effect the desired design point $V_r^{S,0}$. Off-design-point operation was accomplished by setting desired inner and outer stream flow conditions, while maintaining the same physical TAS stream choke plate geometry, and validating the resultant shield exit cycle through instrumentation measurements.

Subsequent to the initial "takeoff" design point selection, used for sizing the shield nozzles, the Single Flow TAS test results indicated greater noise suppression could be obtained with the shield operating on a somewhat lower outer stream velocity. A "derated-takeoff" cycle was, therefore, selected as the prime point around which shield influence would be investigated. Excursions to higher and lower cycle points were still planned. The selected derated-takeoff cycle is as follows:

P_r^0	= 3.025	P_r^i	= 2.056	$V_r^{i,0}$	= 0.60
$T_T^{0,OR}$	= 1630	$T_T^{i,OR}$	= 870		
V^0 ,ft/s	= 2325	V^i ,ft/s	= 1395		
W^0 ,pps	= 13.4	W^i ,pps	= 2.5		

The following TAS configurations, applied to the baseline coannular plug nozzles, were then selected:

o TAS-11, Unsuppressed Coannular Plug Nozzle with 180° shield, $V_r^{S,0} = .64$ (Figure 2.2).

P_r^S	= 1.50	W^S, pps	= 4.8
T_T^S, OR	= 1630	$V_r^{S,0}$	.64
$V^S, ft/s$	= 1465	$W_r^{S,0}$	.35

o TAS-12, Unsuppressed Coannular Plug Nozzle with 180° Shield, $V_r^{S,0} = .83$ (Figure 2.2).

P_r^S	= 2.04	W^S, pps	= 6.7
T_T^S, OR	= 1630	$V_r^{S,0}$	.83
$V^S, ft/s$	= 1910	$W_r^{S,0}$	.50

o TAS-14, Unsuppressed Coannular Plug Nozzle with 360° Shield, $V_r^{S,0} = .83$ (Figure 2.3).

- Cycle conditions same as for TAS-12.

2.2.2 Coannular Plug Nozzle with 20-Chute Outer Stream Mechanical Suppressor with Thermal Acoustic Shields, TAS-16, -17, -18 and -19

Application of the same two 180° and 360° shields to the basic coannular plug nozzle with 20-chute outer-stream mechanical suppressor, and selection of cycle points, resulted in the following test configurations:

o TAS-16, Coannular Plug Nozzle With 20-Chute Outer-Stream Mechanical Suppressor With 180° Shield, $V_r^{S,0} = .64$ (Figure 2.5):

P_r^S	= 1.50	W^S, pps	= 4.8
T_T^S, OR	= 1630	$V_r^{S,0}$	.64
$V^S, ft/s$	= 1465	$W_r^{S,0}$	.35

- o TAS-17, Coannular Plug Nozzle With 20-Chute Outer-Stream Mechanical Suppressor With 180° Shield, $V_r^{S,0} = .83$ (Figure 2.5):

P_r^S	= 2.04	W^S , pps	= 6.7
T_T^S , °R	= 1630	$V_r^{S,0}$	.83
V^S , ft/s	= 1910	$W_r^{S,0}$	.50

- o TAS-18, Coannular Plug Nozzle With 20-Chute Outer Stream Mechanical Suppressor With 180° Shield, $V_r^{S,0} = .48$ (Figure 2.5):

P_r^S	= 1.235	W^S , pps	= 3.3
T_T^S , °R	= 1630	$V_r^{S,0}$	.48
V^S , ft/s	= 1070	$W_r^{S,0}$	.25

- o TAS-19, Coannular Plug Nozzle With 20-Chute Outer Stream Mechanical Suppressor With 360° Shield, $V_r^{S,0} = .83$ (Figure 2.6):

- Cycle conditions same as for TAS-17.

2.3 Thermal Acoustic Shield Flow Conditioning Choke Plate System

As heated flow to both the outer stream of the coannular nozzle and to the TAS nozzle is supplied from a common facility source, the facility supply conditions are controllable only to effect the desired outer stream exit conditions. The TAS stream exit conditions are met through proper choke plate flow conditioning. The design of the flow conditioning system, therefore, is somewhat unique in that, unlike most choke plate systems, no flow adjustment is available through independent stream controls. Rather, the flow conditioning system is designed to balance mass flow rates and pressure drops across the system, such that desired TAS exit plane flow conditions are obtained to effect design point velocity ratios, $V_r^{S,0}$, of approximately 0.48, 0.64 and 0.83. The flow conditioning system's design was verified and fine-tuned by a series of calibration tests.

As shown schematically in Figure 2.11, a two stage choke plate system was designed into the hardware structure to condition the TAS flow stream. Selective application of choke plate covers having varying numbers of passage holes over the (20) thru-flow windows, allows for flow area variation through this first stage choke plate. Specifics of the available choke plate elements for this first stage choke plate are as follows:

<u>ITEM NO.</u>	<u>HOLE DIA. d, in.</u>	<u>NO. OF HOLES PER PLATE</u>	<u>NO. OF PLATES</u>	<u>PLATE THK. L, in.</u>	<u>HOLE L/d</u>
16	.257	15	20	.30	1.17
17	.257	12	10	.30	1.17
18	-	-	10	.30	-
26	.257	10	10	.30	1.17
27	.257	8	10	.30	1.17

The second choke plate was set at an axial location approximately ten hole diameters past choke plate 1, i.e., at approximately 2.7" aft. This choke plate is a full annular ring. To provide the range of flow area variation calculated as necessary within the preliminary design evaluation, (2) stage 2 choke plate rings were fabricated having the following specifications:

<u>ITEM NO.</u>	<u>HOLE DIA. d, in.</u>	<u>NO. OF HOLES PER PLATE</u>	<u>PLATE THK. L, in.</u>	<u>HOLE L/d</u>
19	.295	400	.447	1.52
20	.257	300	.447	1.74

For adjustment of flow area through these plates, cover plates are used to blank off four of the thru-flow holes at a time. For finer adjustment of flow area within choke plate 1 or 2, individual holes are covered on both upstream and downstream sides by tack welding thin "buttons" of nichrome over the holes. Symmetry of flow patterns within both choke plates is maintained

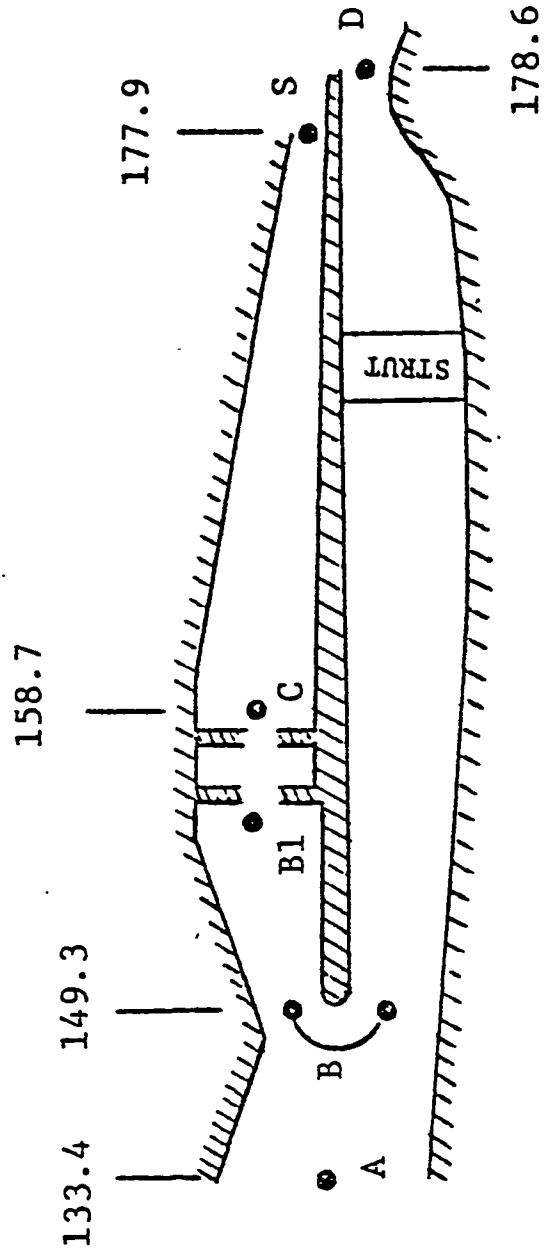


FIGURE 2.11 SCHEMATIC OF CHOKE PLATES SYSTEM.

as best possible within the annulus to create uniform flow profiles. Design of the flow conditioning choke plate system was primarily influenced by General Electric in-house experience and by SAE Manual* for discharge coefficient and pressure drop estimations. Within the preliminary design evaluation phase, exit flow coefficients for the TAS nozzles were computed from the Streamtube Curvature (STC) inviscid flow field output of the Stratford and Beavers boundary layer (SABBL) program. Because STC can handle only axisymmetric or two-dimensional geometries, the 180° TAS nozzle was treated as an axisymmetrical nozzle. The flow coefficient was then adjusted for the boundary layer thickness on the sidewalls. The calculations resulted in the predicted exit flow coefficients for the 360° and 180° TAS nozzles, as shown in Figure 2.12, and indicate that the 180° nozzle flow coefficient is about 0.2 percent lower than that of the 360° nozzle. The flow coefficients were then used to estimate TAS exit plane aerodynamic flow areas, required for initial designs of choke plate flow areas.

Total pressure losses within the TAS nozzles, outer stream nozzles and upstream supply ducting were also estimated within the preliminary design phase as shown in Figure 2.13. Accurate knowledge of the total pressure losses throughout the system was required in order to design the choke plates for a particular set of shield-to-outer nozzle exit conditions, or to compute exit conditions for a given set of choke plates. The DUCTLOSS computer program was used to calculate the skin friction losses in the upstream portion of the duct ahead of the splitter (see Figure 2.11, Sta. 133.4 to 149.3), in the outer nozzle duct (Sta. 149.3 to 178.6), and in the 360° shield nozzle (Sta. 158.7 to 177.9). The loss from the start of the splitter to the first choke plate is assumed small (.1 percent); however, flow separation or spillage would tend to increase this number.

The 180° shield nozzle loss is made up of a skin friction loss term, and a loss due to the diversion of the flow from a 360° annulus to the 180°

*"SAE Aerospace Applied Thermodynamics Manual, SAE Committee AC-9 , Aircraft Environmental Systems, SAE Inc., New York.

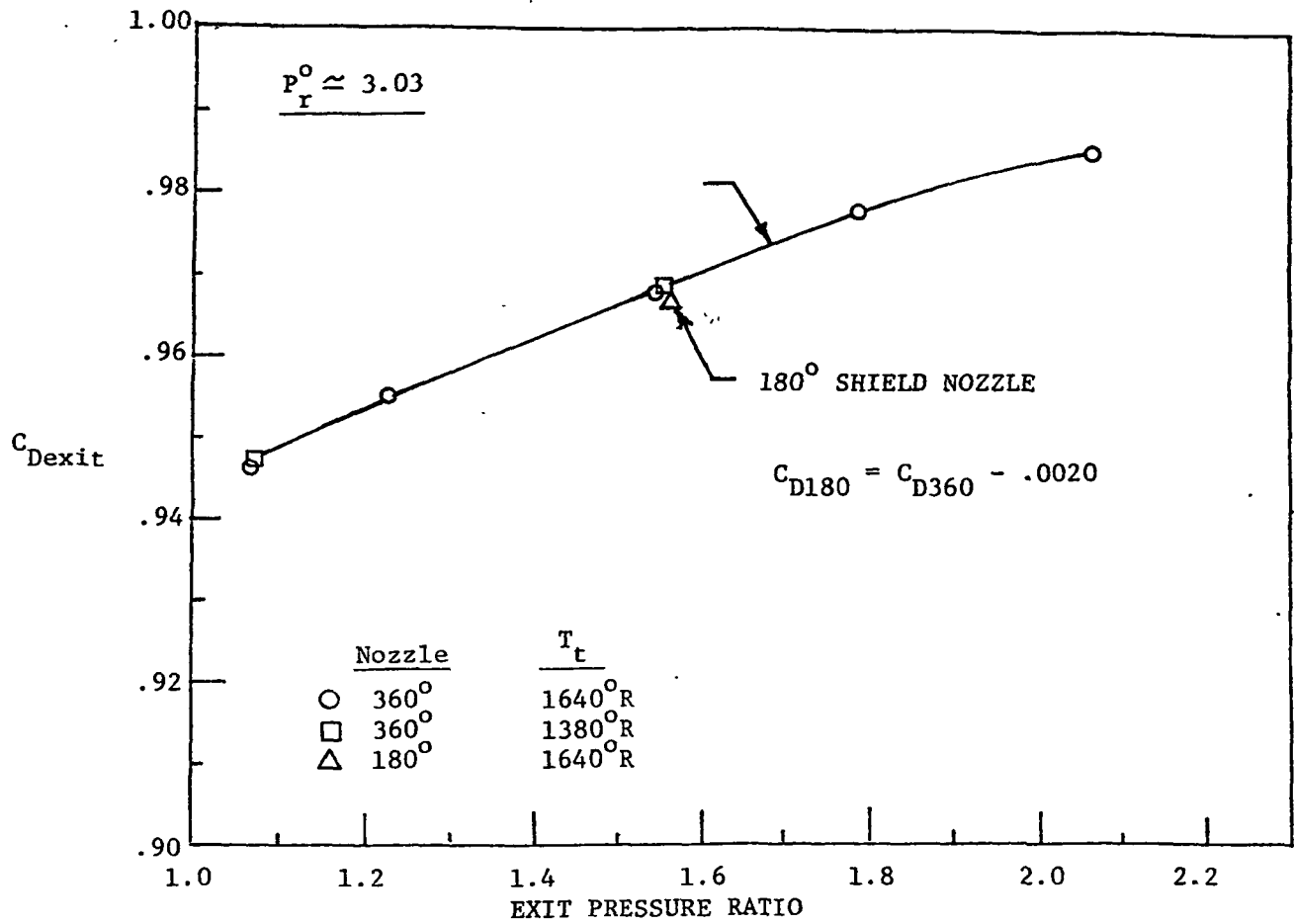


FIGURE 2.12 PREDICTED 180° AND 360° THERMAL ACOUSTIC SHIELD EXIT FLOW COEFFICIENTS.

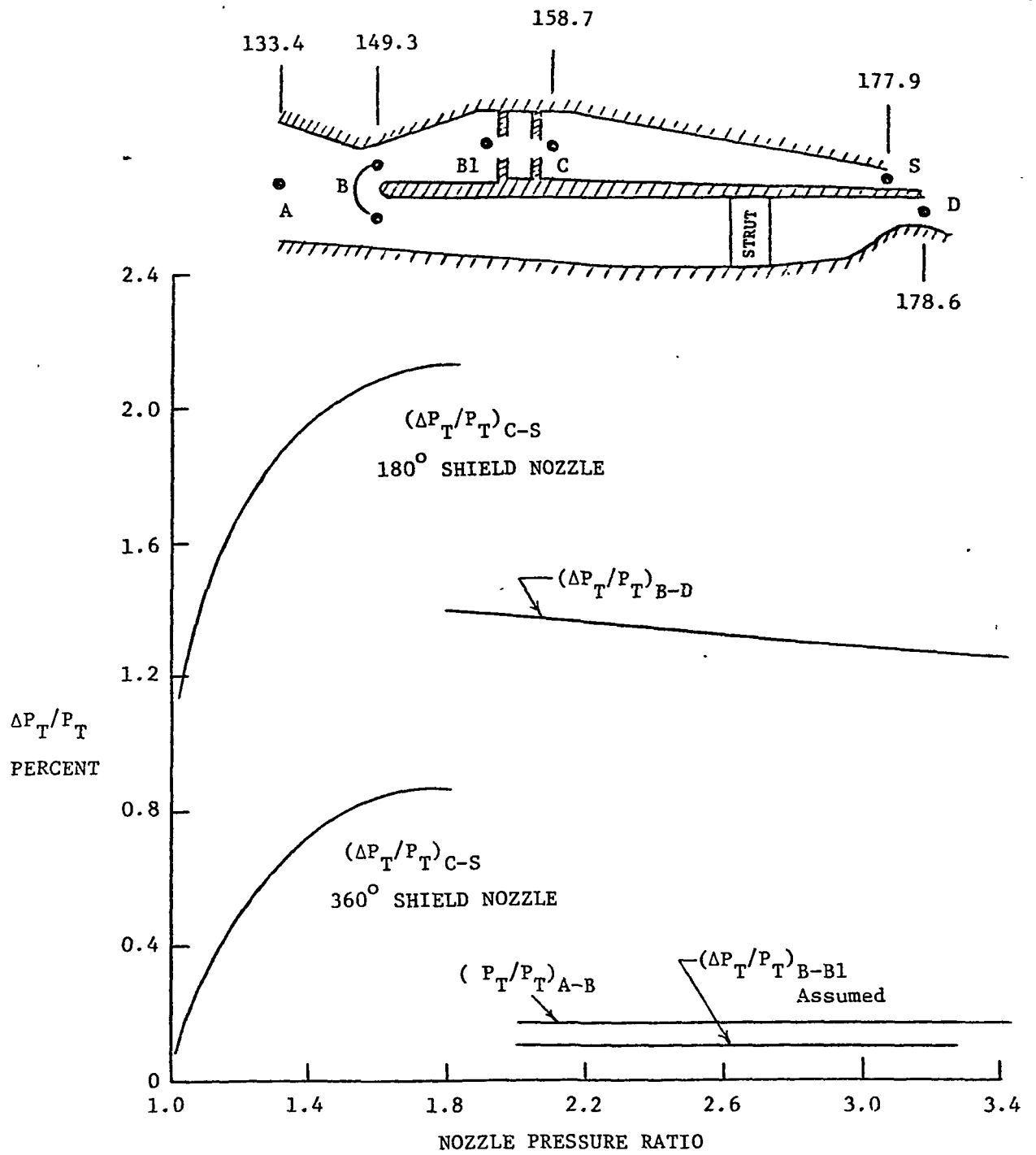


FIGURE 2.13 PREDICTED DFTAS TOTAL PRESSURE LOSSES IN TAS AND OUTER NOZZLE DUCTS.

nozzle. The total wetted area of the 180° nozzle is about 15 percent less than the 360° nozzle, but the Mach number through much of the duct is up because of the flow constriction. The net result is estimated to be a 20 percent increase in skin friction loss relative to the 360° nozzle.

The additional loss due to the diversion of the flow into the 180° section of the nozzle was estimated by treating the diverter or closure plate as a gate valve. The loss, using this aerodynamic analogy, is about 1.1 percent. Alternate models for this loss were considered and resulted in losses ranging from 0.6 to 2.0 percent.

2.4 Treatment Panel Application

Preliminary estimates of noise levels anticipated from the choke plate system indicated potential influence on the basic nozzle system's high frequency far field noise. To circumvent this potential problem, acoustic panels were fabricated and applied to Support Structure. The panel cavities were packed with ASTROQUARTZ MAT STYLE #550 bulk absorber material. Cavity depth was approximately 0.4" and packing material was compressed to a density of 2.0 lb. per cu. ft.

2.5 Annulus Centering Mechanisms

To assure annular concentricity at the throat planes, inner and outer stream struts were utilized to span the flows, at positions sufficiently forward of the throat planes to preclude wake influence in the flow (see Figure 10). The inner stream struts are integral part of the support structure, and, with close toleranced manufacturing, set near perfect annular-concentricity at the exit plane. The outer stream utilized centering screws over struts to center the outer annulus exit plane. Both sets of struts are designed for minimum vortex shedding; the design proven by earlier experience.

2.6 Aerodynamic Instrumentation

An aerodynamic instrumentation package has been defined and applied to the test configurations. Application is schematically illustrated in Figure 2.14. Level of instrumentation and purpose of application are discussed as follows:

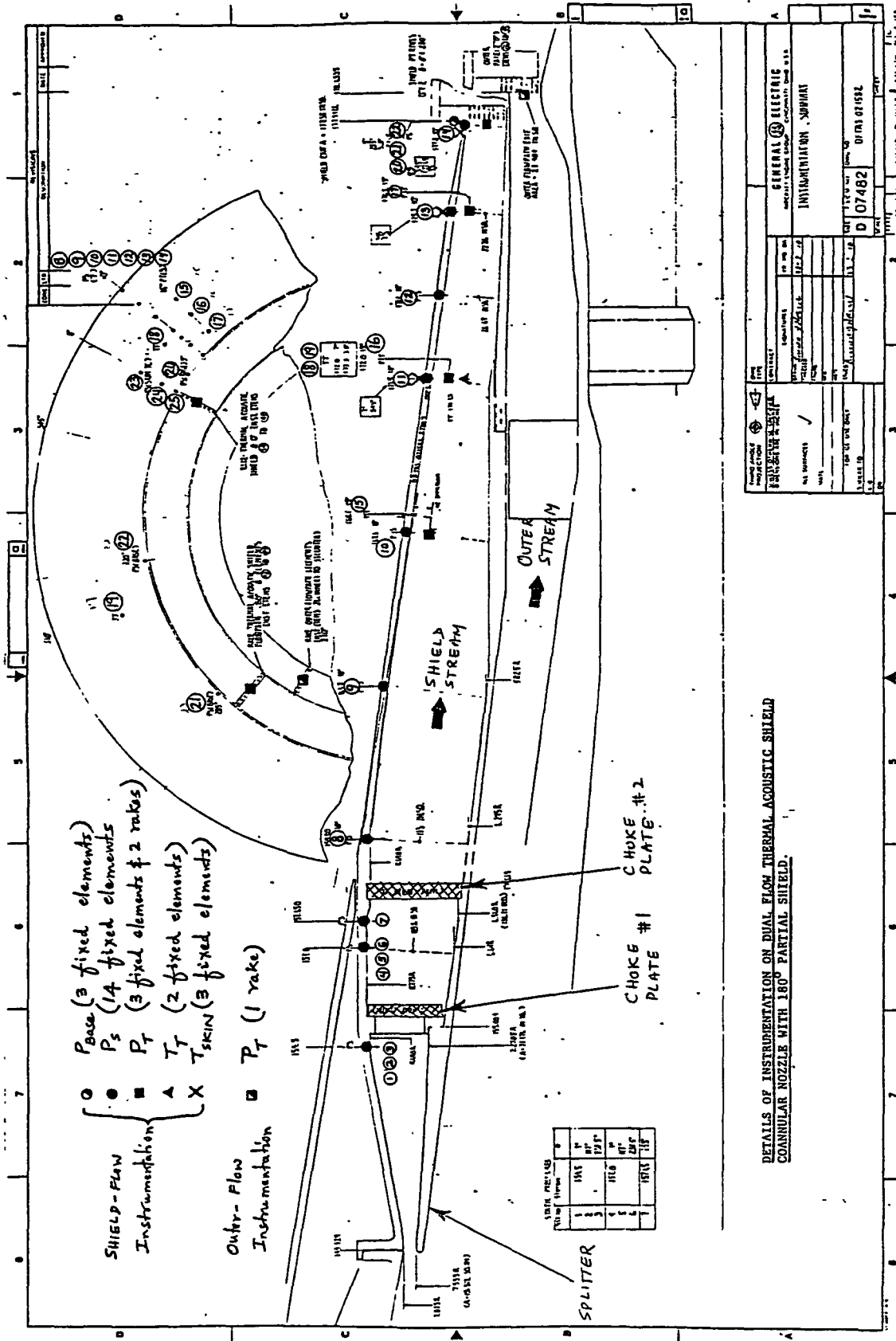


FIGURE 2.14.

o For Choke Plates:

- (3) Ps taps prior to choke plate 1, instrumentation items 1 through 3, for indication of supply pressure within the plenum supplying choke plate.
- (4) Ps taps interstage to choke plates 1 and 2, instrumentation items 4 through 7, for indication of pressure drop across choke plate 1 and of supply pressure within the plenum supplying choke plate 2.

o For the 180° TAS nozzle and the 360° TAS nozzle:

- (7) Ps taps along the internal flowpath, instrumentation Items 8 through 14, for monitoring TAS stream static pressure.
- (3) Single element P_T probes, instrumentation Items 15, 16 and 17, for monitoring P_T losses at three axial stations within the TAS flow.
- (2) Single element T_T probes, instrumentation Items 18 and 19, for monitoring TAS stream total temperature.
- (3) Static pressure base taps, instrumentation Items 20, 21 and 22, for monitoring local static pressure near the exit plane lip of the TAS nozzles, to which the TAS flow expands.
- (3) Single element static temperature thermocouples, instrumentation Items 23, 24 and 25, imbedded within the metal wall of the TAS nozzles, with measuring elements near the skin surface, to measure metal temperature for an indication of nozzle growth rate for exit plane flow area calculation.

o For outer stream exit plane measurements:

- (1) 8-element P_T rake, instrumentation Items 26 (hub) through 33 (tip), applied to measure P_T distribution across the outer stream annulus during calibration testing, as a gauge of P_T loss

through the core flow system so that, when removed, facility instrumentation could be used to set test conditions. For rake application, see Photo Figures 2.15, 2.16 and 2.17. Note that of the eight P_T elements on the rake, the first six are within the core stream annulus; the remaining two are not monitored.

o For 180° TAS stream exit plane measurements:

- (2) 8-element P_T rakes applied to measure P_T distribution across the TAS flow annulus, to gauge exit plane conditions as effected by choke plate geometry and to calibrate the exit plane conditions so that acoustic testing could be performed with the rakes removed. Rakes were positioned at $\theta = 0^\circ$ (aft-looking-fwd), instrumentation items 34 (hub) to 41 (tip), and at 280° , instrumentation items 42 (hub) to 49 (tip); $\theta = 0^\circ$ being center-line of the 180° TAS flow, located east (toward microphones) in the facility. See Photo Figures 2.15 and 2.16 for application.

o For 360° TAS stream exit plane measurements:

- (3) 8-element P_T rakes applied for measurements similar to those for the 180° TAS nozzle. Rakes were positioned at $\theta = 90^\circ$, instrumentation items 26 (hub) to 33 (tip); at 210° , instrumentation items 34 (hub) to 41 (tip); and at 330° , instrumentation items 42 (hub) to 49 (tip); $\theta = 0^\circ$ being due north in the facility. Note that on each of these three rakes, only the first four P_T elements penetrated the TAS flow and were monitored for TAS exit plane P_T .

o For 20-chute base pressure measurements:

- (8) static pressure taps, instrumentation items 50 through 57, located in the chute base region, used to assess the influence of the shield stream on the suppressor base pressure and hence the nozzle thrust coefficient. Details of base pressure instrumentation are provided in Section 6.0.

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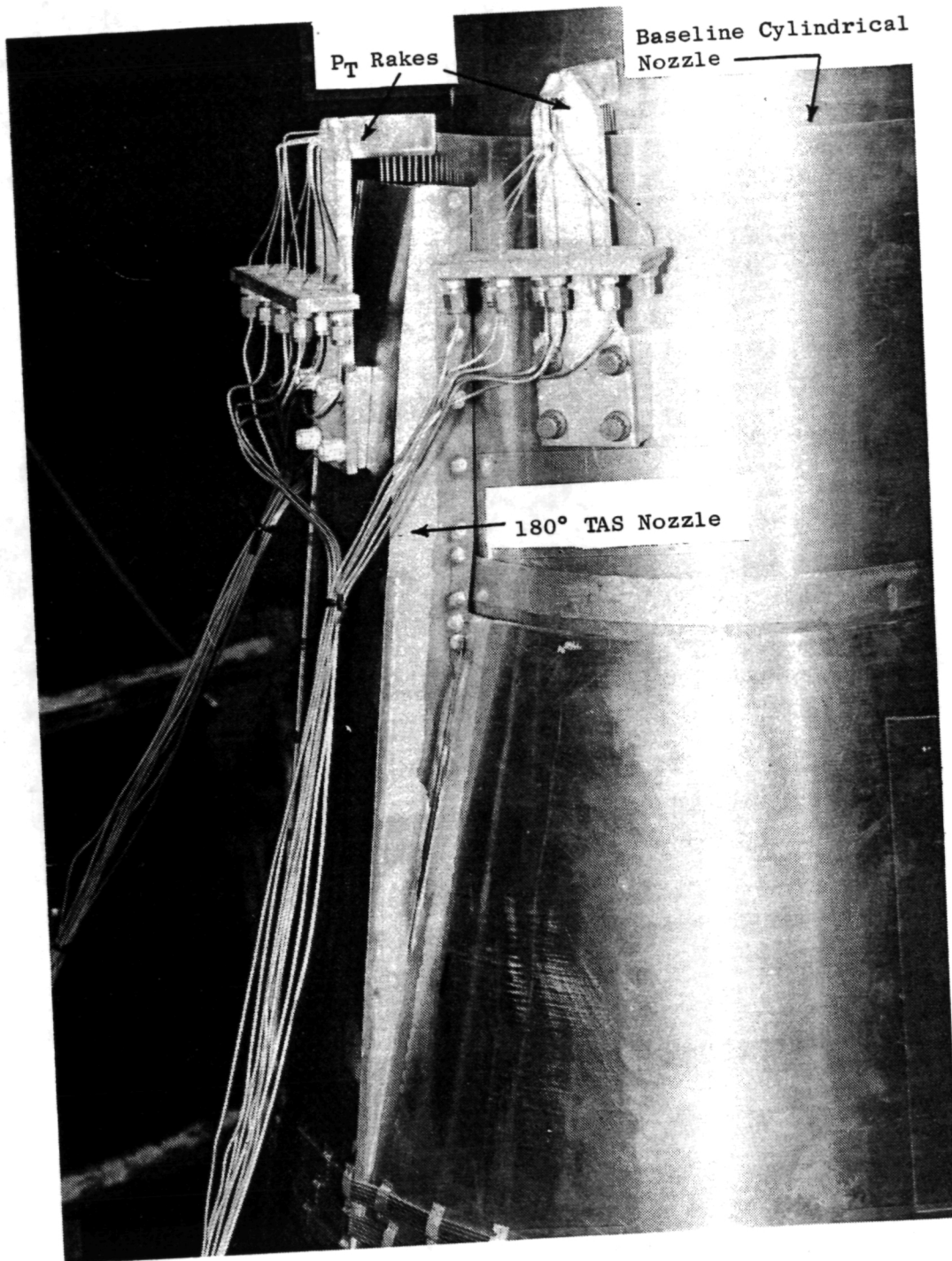


Figure 2.15. P_T Rakes Applied to Outer Stream of Unsuppressed Coannular Nozzle and to 180° TAS Nozzle.

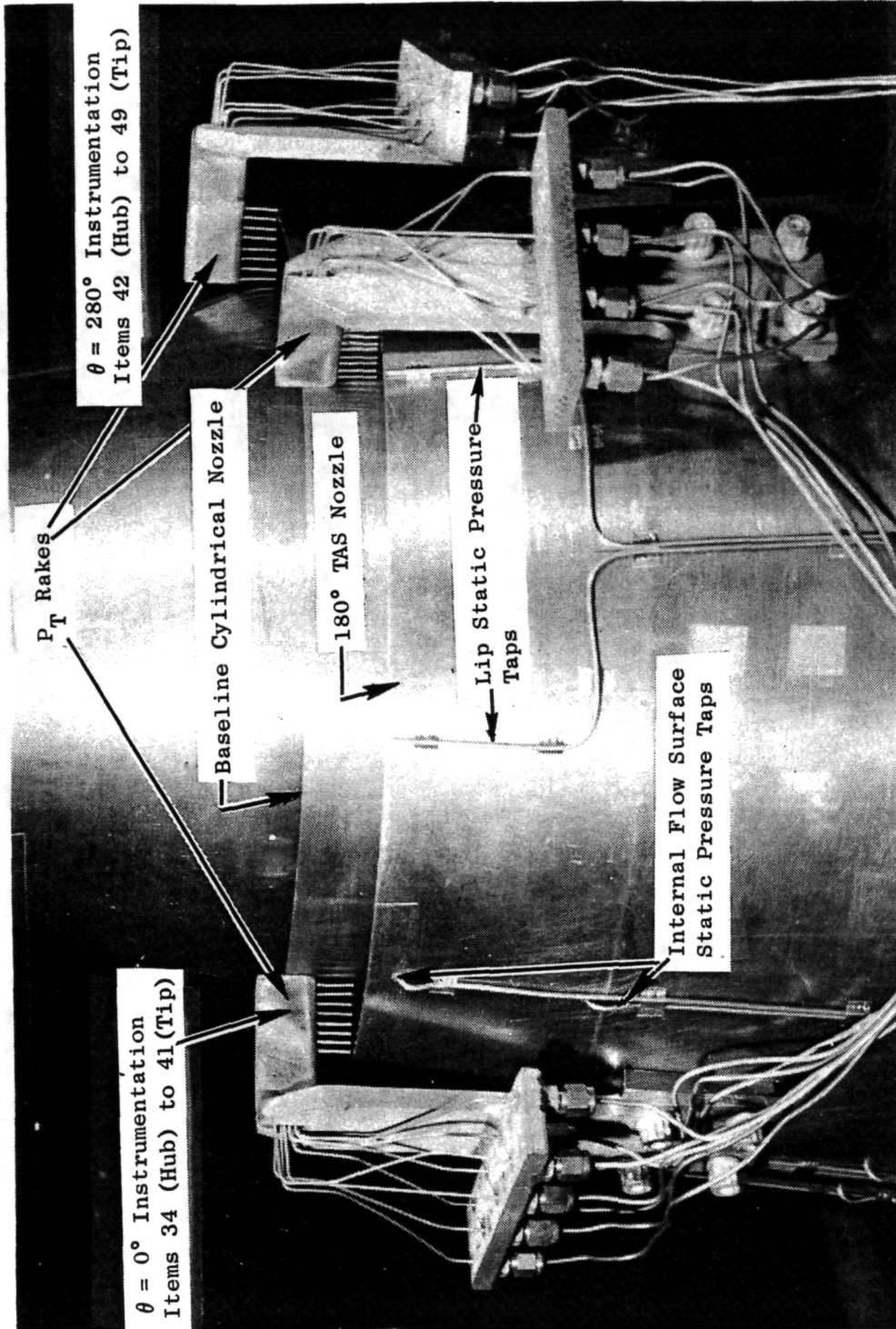


Figure 2.16. P_T Rakes Applied to Outer Stream of Unsuppressed Coannular Nozzle and to 180° TAS Nozzle.

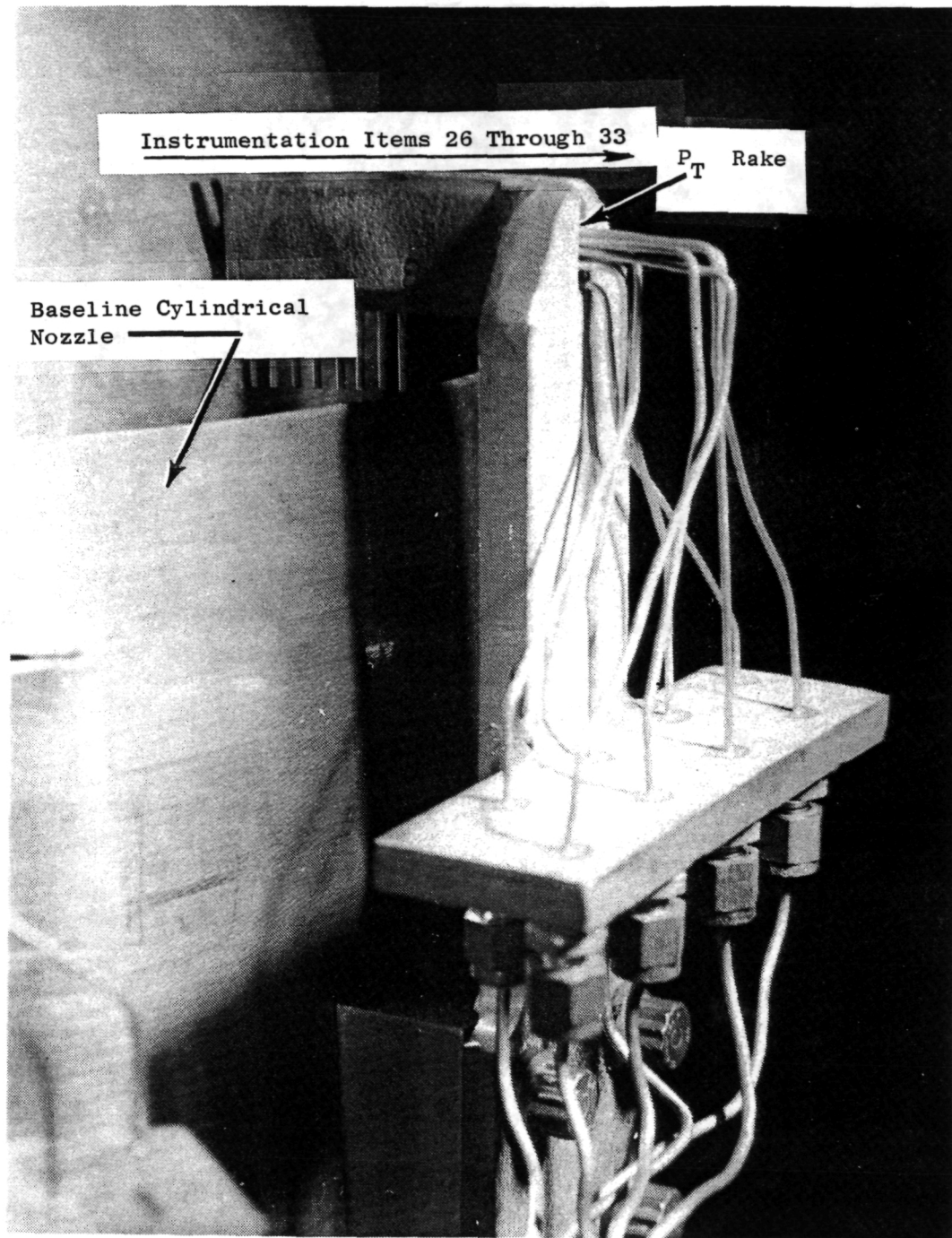


Figure 2.17. P_T Rake Application to Outer Stream of Unsuppressed Coannular Plug Nozzle.

As indicated earlier, required outer and shield streams of the dual flow thermal acoustic shield nozzles were obtained from a single facility flow. Prior to the acoustic tests, a series of calibration tests were conducted using the above described instrumentation to determine the exact flow conditions of the individual outer and shield streams from a measured facility flow with different sets of choke plates.

3.0 AERODYNAMIC CONDITIONS OF ACOUSTIC TEST POINTS

A total of 136 acoustic test points were conducted with the coannular configurations described in Section 2.0. The distribution of the test points over unsuppressed and mechanically suppressed coannular test configurations is summarized in Table 3-I. Majority of the test points simulate an operating line of AST/VCE engines subject to taking into consideration the facility total temperature limits (a maximum of 1730°R).

The aerodynamic flow conditions corresponding to the acoustic test points taken on each of the test configurations are tabulated in this section. The data are tabulated in both International System of Units and in English Units.

3.1 Definition of Variables

The presented variables are defined in Table 3-II. Sample sheets specifying the variables listed in the tables that summarize the aerodynamic flow conditions are presented in Table 3-III. In addition to the inner, outer and shield jet parameters, the tabulated data contain the mixed conditions that are calculated on a mass-averaged basis for velocity and total temperature. The mass-averaged velocity (V^{mix}) and the mass-averaged total temperature are calculated using the following expressions:

$$V^{mix} = \frac{W^O V^O + W^i V^i + W^S V^S}{W^O + W^i + W^S}$$

and

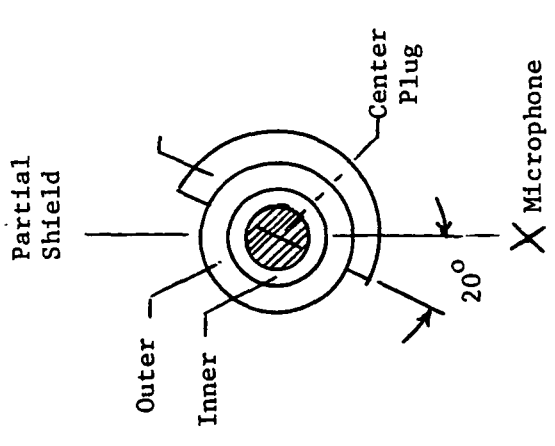
$$T_T^{mix} = \frac{W^O T_T^O + W^i T_T^i + W^S T_T^S}{W^O + W^i + W^S}$$

One may note that V^{mix} also can be referred to as specific thrust since it is defined as (total thrust/total weight flow) and T_T^{mix} also can be referred to as stagnation specific enthalpy since it is defined as (total stagnation enthalpy/total weight flow). From the known V^{mix} and T_T^{mix} other mixed flow parameters have been calculated by using standard isentropic relations.

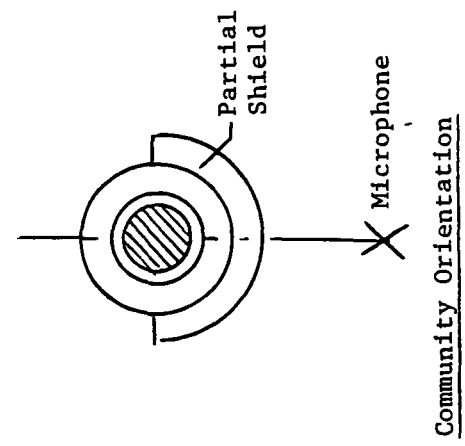
Table 3-I. Summary of Acoustic Tests.

BASELINE NOZZLE	SHIELD		TEST POINTS		V ^S /V ^O	CONFIG. NAME	
	TYPE	ORIENT.	STATIC	FLIGHT			
Unsuppressed Coannular Plug Nozzle	No Shield	--	14	7	0.0	TAS-10	
	180° Partial Shield	Sideline	5	5	0.64	TAS-11	
		Community	5	5			
	360° Full Shield	Sideline	Sideline	6	7	0.83	TAS-12
		Axi-Symmetric	Axi-Symmetric	7	6	0.83	TAS-14
			No Shield	--	6	6	0.0	TAS-15
Mechanically Suppressed Coannular Plug Nozzle with 20-Shallow-Chute Suppressor in Outer Stream	180° Partial Shield	Sideline	5	5	0.64	TAS-16	
		Community	7	5			
	360° Full Shield	Community	Community	7	6	0.83	TAS-17
		Community	Community	5	5	0.48	TAS-18
		Axi-Symmetric	Axi-Symmetric	6	6	0.83	TAS-19
	Total			73	63		

136



Sideline Orientation



Community Orientation

Note: The Shield to Outer Stream Velocity Ratios of This Table Correspond to a Typical Takeoff Condition of P_T^O ~ 3.025, T_T^O ~ 1640°R and P_T^I ~ 2.28, T_T^I ~ 880°R

Table 3-II. Definition of Symbols Used in Aerodynamic Data Tables.

F	Ideal Thrust
F _{ref}	Reference Thrust, 22,820N (5130 lb)
LBM	Defined as $10 \log [\sqrt{M^2-1}]$
LVM	Defined as $10 \log [v^{mix}/a_{amb}]$
NF	PNL Normalization Factor
PNL	Perceived Noise Level
P _{amb}	Ambient Pressure
P _r	Pressure Ratio
RH	Relative Humidity
T _{amb}	Dry Bulb Ambient Temperature
T _T	Total (Stagnation) Temperature
V	Nozzle Exhaust Ideal Velocity
V _{ac}	Freejet Velocity
W	Calculated Ideal Weight Flow Rate

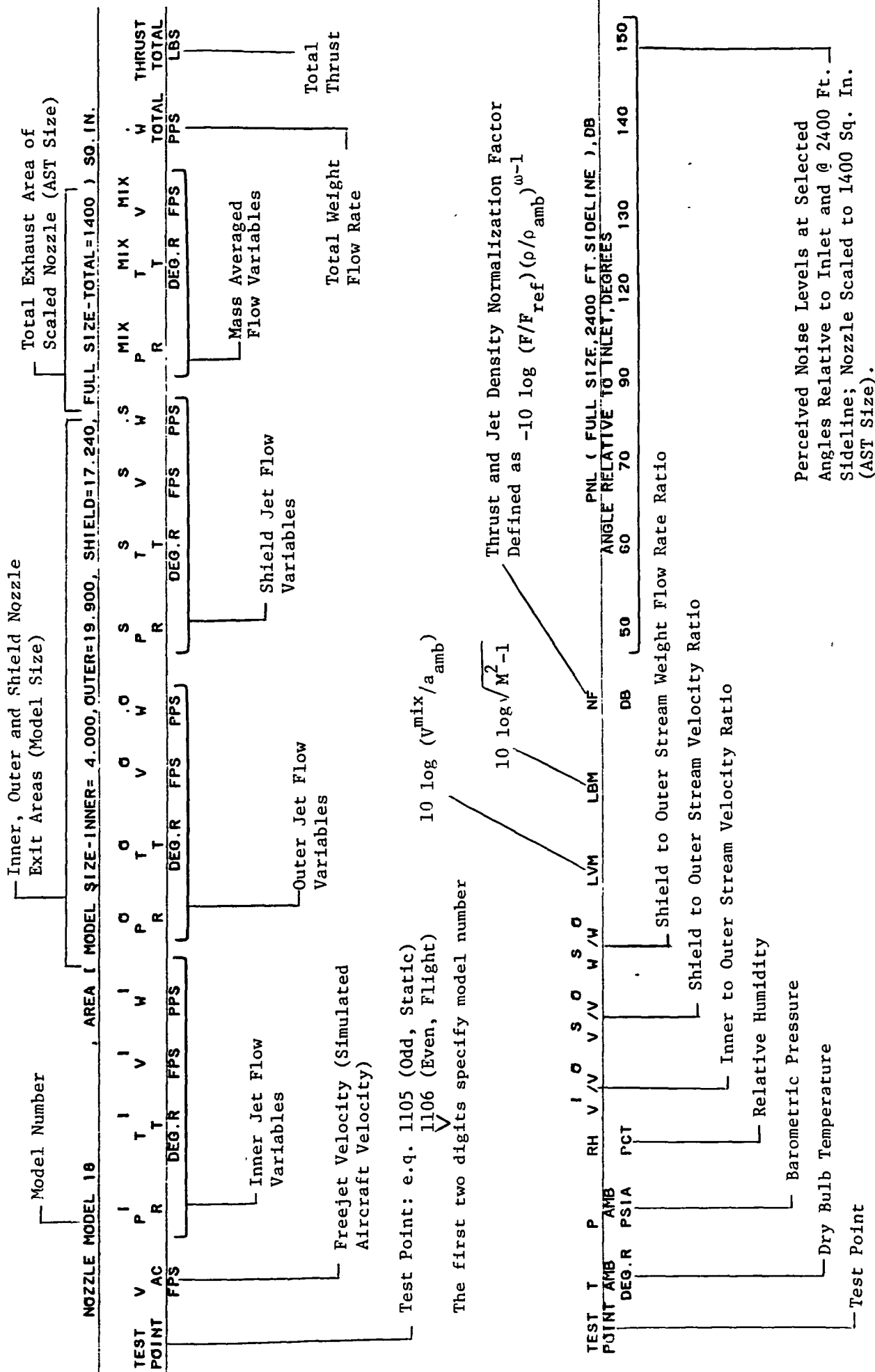
Superscripts

i	Inner Jet Condition
o	Outer Jet Condition
mix	Mass Averaged Condition
s	Thermal Acoustic Shield Jet Condition

Subscripts

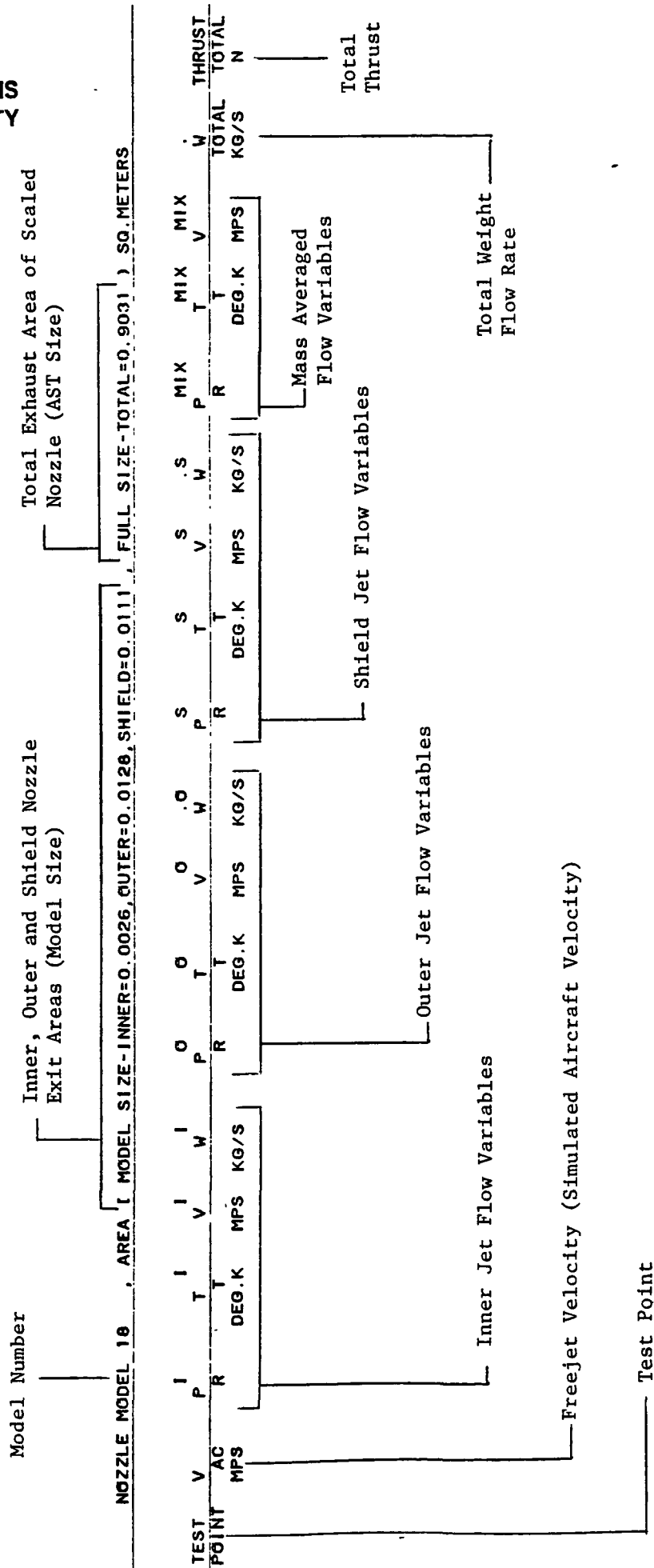
r	Ratio
ref	Reference
T	Total (Stagnation)

Table 3-III. Description of Aerodynamic Data Sheet (English Units).



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Table 3-III. Description of Aerodynamic Data Sheet (Concluded).
(International Units)



The ambient pressure and temperature, along with the relative humidity in the GE Anechoic Facility at the time of the test, and acoustic data extrapolated to a 731.5m (2400-ft) sideline and scaled to an AST product size of 0.902m² (1400 in.²) also are presented in the tables. The selected acoustic data correspond to microphone locations of $\theta_j = 50^\circ, 60^\circ, 70^\circ, 90^\circ, 120^\circ, 130^\circ$ and 140° .

The normalization factor (NF) found in these tables is employed to normalize the measured perceived noise level (PNL) to a reference thrust and jet density as follows:

$$\text{PNLN} = \text{Normalized PNL} = \text{PNL} + \text{NF}$$

Where

$$\text{NF} = -10 \log (F/F_{\text{ref}})(\rho^{\text{mix}}/\rho_{\text{amb}})^{\omega-1}$$

The aerodynamic flow conditions and selected PNL acoustic data of the test points are presented in Table 3-IV through 3-XII in Subsections 3.2 and 3.3.

3.2 Test Matrices of Unsuppressed Coannular Plug Nozzles

A total of 67 acoustic test points was completed on the unsuppressed coannular plug nozzle with and without thermal acoustic shields. The test configurations consisted of:

- a. the baseline coannular nozzle (TAS-10)
- b. the baseline TAS-10 with the 1" thick 180° shield and the choke plates selected to give V^S/V^O of 0.64 and 0.83 (TAS-11 and TAS-12) at a typical takeoff condition
- c. the baseline TAS-10 with the 1/2" thick 360° shield (TAS-14) with the choke plates identical to those of TAS-12 to give $V^S/V^O \approx 0.83$.

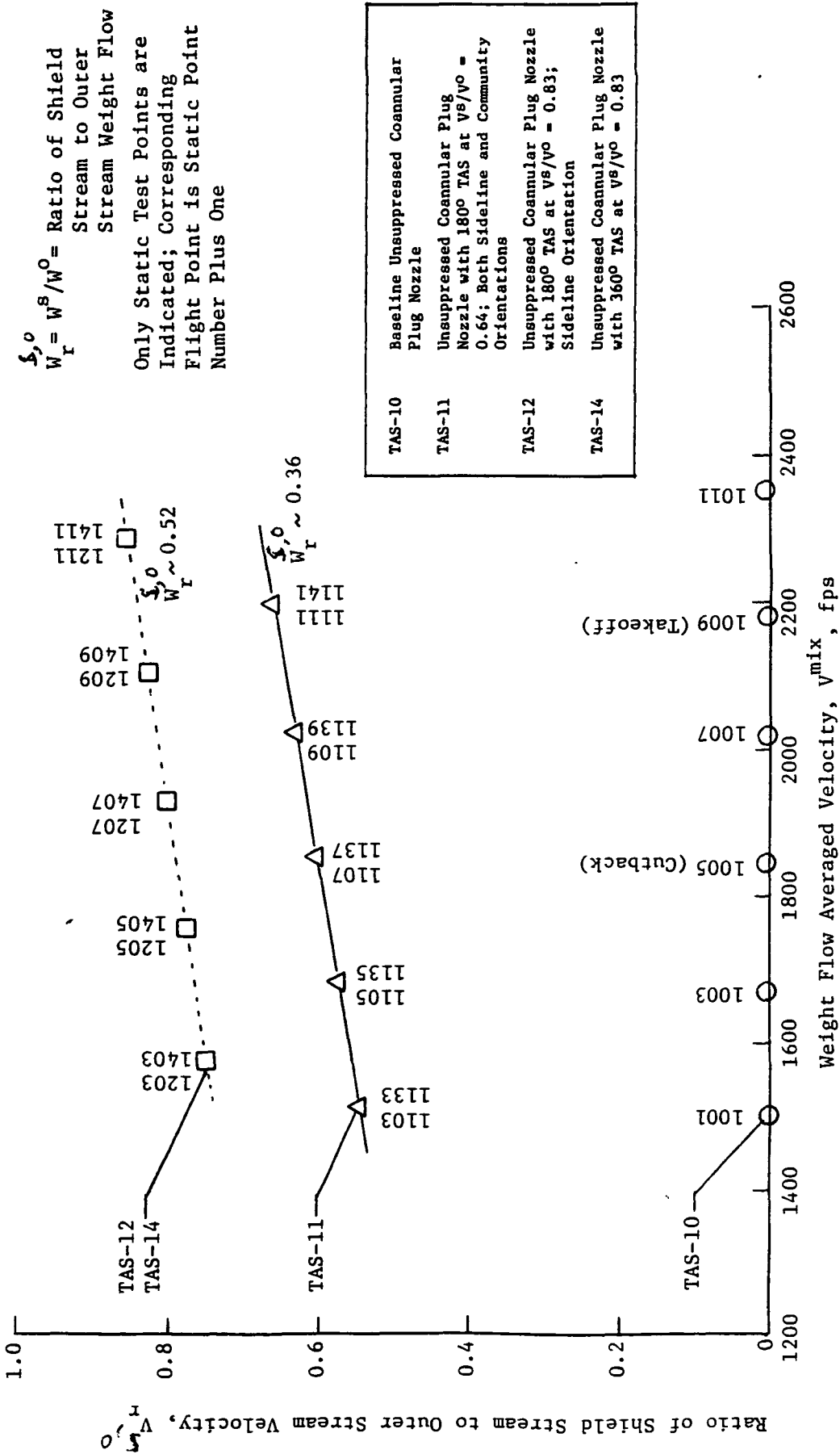
Figures 3.1 and 3.2 describe the scope of acoustic tests on an engine operating line in terms of shield to outer stream velocity ratios as a function of mass averaged velocity, V^{mix} , and outer stream pressure ratio, P_r^O .

3.2.1 Test Matrix for Unsuppressed Baseline Coannular Plug Nozzle (TAS-10)

Table 3-IV summarizes the test matrix for the baseline coannular plug nozzle. The distribution of the test points is as follows:

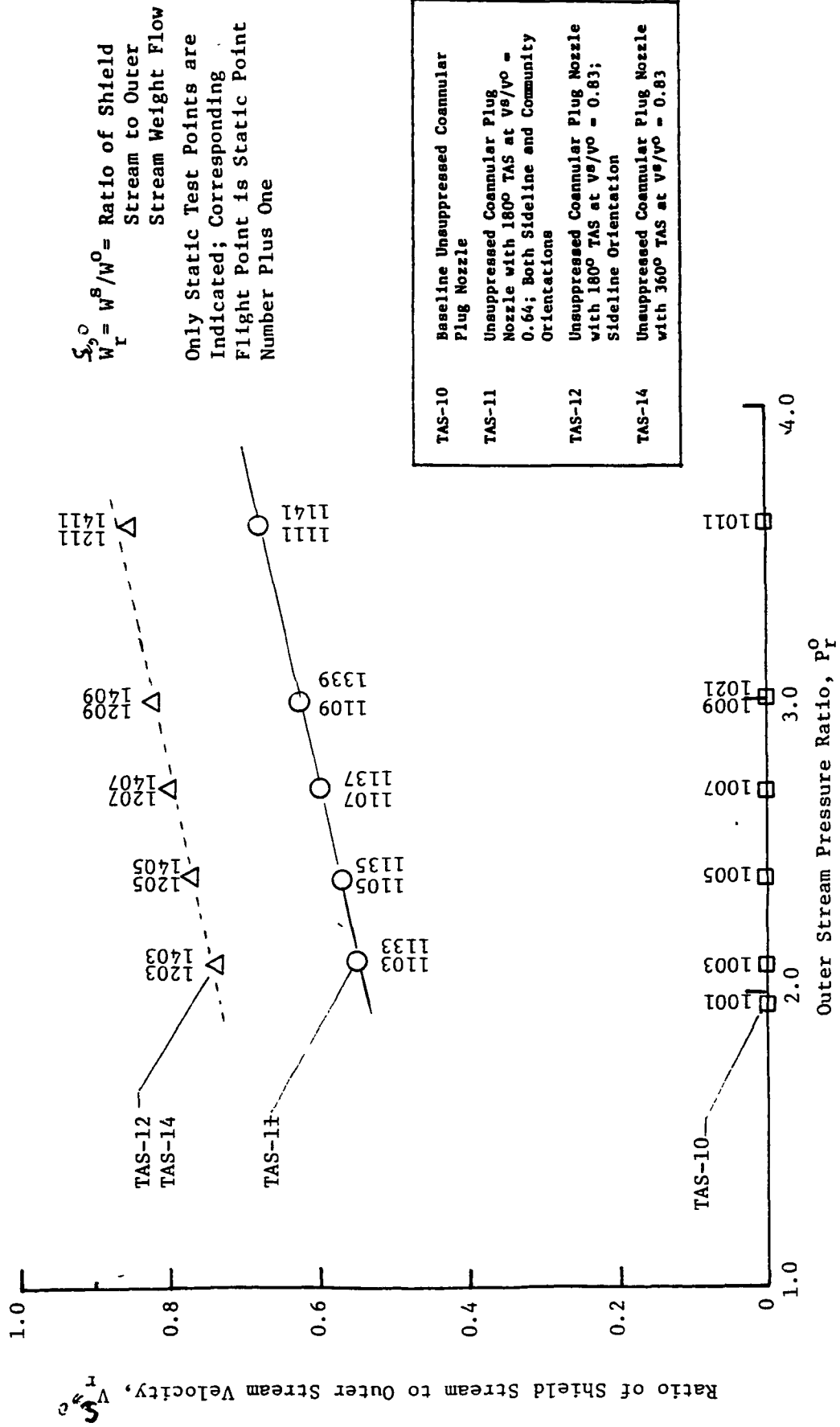
a. Test Points 1001, 1003, 1005, 1007, 1009, 1011, 1021 and 1002, 1004, 1006, 1008, 1010, 1012 and 1022 simulate typical engine operating conditions under static and simulated flight, respectively. The aero conditions of these test points have been selected to yield an inner to outer stream velocity ratio that is in the neighborhood of 0.6.

b. Test Points 1015, 1019, 1009, 1021, 1023, 1025 and 1027 yield variation in P_r^i (1.75, 1.90, 2.04, 2.28, 2.61, 2.82 and 3.01 respectively) for a fixed P_r^O of 3.02. The objective of these tests is to determine whether front quadrant noise can be reduced for a given supersonic outer stream by tuning the inner stream such that expansion waves of one stream cancel the compression waves of the other.



TAS-10	Baseline Unsuppressed Coannular Plug Nozzle
TAS-11	Unsuppressed Coannular Plug Nozzle with 180° TAS at $v^S/v^0 = 0.64$; Both Sideline and Community Orientations
TAS-12	Unsuppressed Coannular Plug Nozzle with 180° TAS at $v^S/v^0 = 0.83$; Sideline Orientation
TAS-14	Unsuppressed Coannular Plug Nozzle with 360° TAS at $v^S/v^0 = 0.83$

Figure 3.1 Description of Acoustic Tests as a Function of Weight Flow Averaged Velocity: Unsuppressed Coannular Plug Nozzles.



TAS-10	Baseline Unsuppressed Coannular Plug Nozzle
TAS-11	Unsuppressed Coannular Plug Nozzle with 180° TAS at $V_s/V_0 = 0.64$; Both Sideline and Community Orientations
TAS-12	Unsuppressed Coannular Plug Nozzle with 180° TAS at $V_s/V_0 = 0.83$; Sideline Orientation
TAS-14	Unsuppressed Coannular Plug Nozzle with 360° TAS at $V_s/V_0 = 0.83$

Figure 3.2 Description of Acoustic Tests as a Function of Outer Stream Pressure Ratio; Unsuppressed Coannular Plug Nozzles.

Table 3-IV. Test Matrix for Baseline Coannular Plug Nozzle;
TAS-10 (English Units)

NOZZLE MODEL 10		AREA (MODEL SIZE=INNER= 4.640, OUTER=23.400, SHIELD= 0.000, FULL SIZE-TOTAL=1099) SQ. IN.																								
TEST POINT	V AC FPS	P R	I T DEG.R	I V FPS	I W FPS	I P R	O T DEG.R	O V FPS	O W FPS	O P R	S T DEG.R	S V FPS	S W FPS	S P R	MIX T DEG.R	MIX V FPS	MIX W FPS	MIX P R	MIX T DEG.R	MIX V FPS	MIX W FPS	MIX P R	TOTAL FPS	TOTAL LBS		
																									1001	1002
1001	0	1.876	814	1092	97.5	1.940	1236	1604	489.3	1.000	519	0	0	0	1.873	1166	1519	0	1.873	1166	1519	0	586.8	27703		
1002	400	1.874	874	1130	83.9	1.948	1256	1622	483.4	1.000	519	0	0	0	1.880	1194	1642	0	1.880	1194	1642	0	577.4	27684		
1003	0	1.869	817	1089	96.8	2.060	1380	1765	488.4	1.000	519	0	0	0	1.967	1287	1693	0	1.967	1287	1693	0	585.2	30083		
1004	400	1.981	892	1147	93.5	2.093	1349	1762	499.6	1.000	519	0	0	0	2.000	1277	1698	0	2.000	1277	1698	0	593.1	30686		
1005	0	1.747	808	1197	110.8	2.330	1474	1958	535.3	1.000	519	0	0	0	2.213	1360	1828	0	2.213	1360	1828	0	646.1	36700		
1006	400	1.761	856	1239	108.6	2.403	1521	2028	536.8	1.000	519	0	0	0	2.276	1417	1895	0	2.276	1417	1895	0	648.4	38025		
1007	0	1.892	875	1308	113.9	2.631	1553	2133	589.4	1.000	519	0	0	0	2.382	1444	2000	0	2.382	1444	2000	0	703.4	43718		
1008	400	1.878	900	1335	113.3	2.704	1567	2170	597.1	1.000	519	0	0	0	2.545	1461	2036	0	2.545	1461	2036	0	710.4	44968		
1009	0	2.043	893	1408	122.1	3.048	1653	2305	659.5	1.000	519	0	0	0	2.805	1514	2165	0	2.805	1514	2165	0	761.6	52397		
1010	400	2.316	929	1543	133.9	3.594	1668	2493	774.4	1.000	519	0	0	0	3.356	1559	2353	0	3.356	1559	2353	0	808.3	63096		
1011	0	2.336	916	1539	135.2	3.619	1676	2505	772.9	1.000	519	0	0	0	3.377	1563	2361	0	3.377	1563	2361	0	808.2	66640		
1012	400	1.752	842	1223	108.9	2.692	1552	2154	601.9	1.000	519	0	0	0	2.514	1443	2012	0	2.514	1443	2012	0	710.7	44441		
1013	0	1.750	841	1221	108.8	3.024	1626	2314	653.4	1.000	519	0	0	0	2.787	1515	2160	0	2.787	1515	2160	0	768.2	51567		
1014	0	1.742	875	1241	106.1	3.598	1670	2395	774.3	1.000	519	0	0	0	3.274	1574	2324	0	3.274	1574	2324	0	800.5	64153		
1015	0	1.899	886	1335	113.0	3.021	1663	2341	654.7	1.000	519	0	0	0	2.812	1549	2193	0	2.812	1549	2193	0	767.7	52317		
1016	0	2.278	897	1503	134.7	3.010	1620	2306	660.2	1.000	519	0	0	0	2.859	1497	2170	0	2.859	1497	2170	0	784.9	55601		
1017	400	2.297	857	1484	136.7	3.039	1666	2348	650.6	1.000	519	0	0	0	2.879	1527	2188	0	2.879	1527	2188	0	787.9	55804		
1018	0	2.611	898	1508	133.4	3.023	1628	2316	658.5	1.000	519	0	0	0	2.918	1490	2182	0	2.918	1490	2182	0	811.9	55066		
1019	0	2.815	919	1681	163.6	3.020	1630	2316	658.5	1.000	519	0	0	0	2.948	1488	2190	0	2.948	1488	2190	0	822.4	55964		
1020	0	3.011	912	1720	176.0	3.013	1628	2313	657.6	1.000	519	0	0	0	2.971	1477	2188	0	2.971	1477	2188	0	833.5	56681		

TEST POINT	AMB P	PSTA	RH PCT	V / V	S / V	W / W	S / W	LVM	LBM	NF	PNL (FULL SIZE, 2400 FT. SIDELINE), DB						
											ANGLE RELATIVE TO INLET, DEGREES	70	90	120	130		
1001	511	14.368	41.	0.68	0	0	0	1.37	-10.00	-4.6	82.2	84.6	91.4	94.9	95.1	94.5	91.4
1002	510	14.257	64	0.70	0	0	0	1.44	-10.00	-4.4	84.0	85.7	84.2	88.7	90.4	86.7	80.8
1003	513	14.305	39	0.62	0	0	0	1.73	-5.58	-4.3	84.0	85.4	85.7	93.2	96.7	97.4	96.7
1004	509	14.229	69	0.65	0	0	0	1.77	-4.95	-4.6	86.4	88.3	87.3	91.4	92.9	92.4	89.7
1005	513	14.340	39	0.61	0	0	0	2.16	-2.68	-5.2	86.2	91.1	91.2	97.3	100.2	100.6	99.5
1006	509	14.222	71	0.61	0	0	0	2.34	-2.34	-5.2	92.9	95.1	94.0	97.4	98.5	98.0	91.0
1007	513	14.364	41	0.61	0	0	0	2.55	-1.31	-5.8	91.7	94.2	94.6	100.2	103.3	105.9	105.4
1008	510	14.221	70	0.62	0	0	0	2.65	-1.32	-5.9	96.5	98.1	101.0	102.7	102.3	100.9	95.7
1009	512	14.504	42	0.61	0	0	0	2.80	-0.68	-6.6	98.4	100.2	103.4	107.0	109.7	113.6	110.4
1010	509	14.219	74	0.62	0	0	0	2.99	-0.57	-6.6	98.8	100.6	104.0	105.3	105.1	103.0	99.8
1011	511	14.312	58	0.62	0	0	0	3.27	0.17	-7.7	99.1	101.4	101.8	107.5	109.4	115.0	105.4
1012	509	14.221	74	0.61	0	0	0	3.29	0.20	-7.7	103.7	105.4	104.4	107.9	108.6	109.5	103.2
1013	511	14.322	58	0.57	0	0	0	2.59	-1.41	-5.9	92.0	94.6	95.2	100.4	103.7	106.0	103.6
1015	513	14.305	43	0.53	0	0	0	2.88	-0.72	-6.5	94.3	96.8	97.7	102.6	105.9	107.6	106.0
1017	512	14.302	51	0.50	0	0	0	3.25	0.06	-7.5	97.5	100.2	100.8	106.6	109.2	114.2	108.8
1019	512	14.365	40	0.57	0	0	0	2.96	-0.67	-6.5	94.9	97.2	98.0	103.3	106.1	110.1	106.3
1021	513	14.360	41	0.65	0	0	0	2.91	-0.57	-6.7	96.6	98.6	98.6	104.3	106.4	110.8	108.0
1022	509	14.227	74	0.63	0	0	0	2.98	-0.52	-6.7	99.7	101.1	100.2	103.6	105.8	104.9	100.2
1023	513	14.297	41	0.69	0	0	0	2.93	-0.45	-6.9	95.2	97.9	98.5	103.9	105.8	110.8	107.3
1024	513	14.320	40	0.73	0	0	0	2.91	-0.41	-7.0	95.0	97.5	98.2	106.2	108.7	112.6	107.3
1027	513	14.326	40	0.74	0	0	0	2.91	-0.41	-7.1	95.0	97.5	98.2	106.2	108.7	112.6	107.3

c. Test Points 1013, 1015 and 1017 having subsonic inner streams are to be compared with 1007, 1021 and 1011 that have supersonic inner streams to determine, if any, the benefit of subsonic inner streams on front quadrant shock noise.

3.2.2 Test Matrices for Unsuppressed Coannular Plug Nozzle With 180° Thermal Acoustic Shield (TAS-11 and -12)

As described in Table 3-I, the unsuppressed coannular plug nozzle with the 180° partial thermal acoustic shield was tested at shield to outer stream velocity ratio, $V_{r,0}^{s,o}$ of 0.64* (TAS-11) and 0.83* (TAS-12) to investigate the sensitivity of $V_{r,0}^{s,o}$ on the acoustic benefit of a thermal acoustic shield. Tables 3-V and 3-VI summarize the test matrices for TAS-11 and TAS-12, respectively. The distribution of test points is as follows:

a. Test Points 1103 through 1112 and 1133 through 1142 of TAS-11 simulate typical engine operating conditions with the shield in sideline and community orientations, respectively.

b. V^{mix} of Static Test Points 1103/1133, 1105/1135, 1107/1137, 1109/1139 and 1111/1141 match reasonably with those of 1001, 1003, 1005, 1007 and 1021 of the unshielded baseline coannular nozzle (TAS-10), respectively. Similarly, V^{mix} of corresponding flight points of TAS-11 and TAS-10 match with one another.

c. Test Points 1203 through 1212 of TAS-12 simulate typical engine operating conditions with the 180° shield in sideline orientation.

d. Typical take-off Test Point 1209/1210 of TAS-12 has $V^i/V^o \approx 0.65$ and $V^s/V^o \approx 0.83$. The inner stream of this test point was modified during Test Point 1221/1222 to yield $V^i/V^o \approx V^s/V^o \approx 0.83$ such that the effect of equal shear by the shield and inner streams on the primary outer stream can be determined.

*These ratios refer to a typical AST/VCE take-off condition only.

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Table 3-V. Test Matrix of Unsuppressed Coannular Plug Nozzle with 180° TAS at $V_r \approx 0.64$, Sideline and Community Orientations; TAS-11 (English Units)

NOZZLE MODEL 11 AREA (MODEL SIZE-INNER= 4.640, OUTER=23.400, SHIELD=17.240, FULL SIZE-TOTAL=1400) 90. IN.

TEST POINT	AC FPS	I P R	I T DEG.R	I V V	I W W	I S W	I P R	O T DEG.R	O V V	O W W	O P R	S T DEG.R	S V V	S W W	S P R	MIX T DEG.R	MIX V V	MIX W W	TOTAL FPS	THRUST LBS
1103	488	14.310	66.	0.61	0.55	0.36	1.48	-10.00	-3.4	83.9	85.6	85.6	85.6	92.4	96.7	97.9	96.2	92.9		
1104	489	14.346	66.	0.61	0.55	0.37	1.45	-10.00	-3.3	84.7	85.5	84.7	85.5	89.4	90.6	90.6	88.4	83.4		
1105	488	14.400	61.	0.61	0.57	0.36	1.95	-8.94	-3.9	88.5	90.1	90.7	90.7	96.3	100.1	101.9	101.2	99.0		
1106	490	14.357	49.	0.62	0.58	0.37	1.92	-9.15	-3.9	88.9	91.8	90.5	91.8	94.3	94.8	95.8	93.9	89.6		
1107	488	14.406	63.	0.61	0.60	0.36	2.33	-3.62	-4.5	92.0	93.5	93.5	93.5	99.7	103.0	104.6	105.3	102.0		
1108	491	14.344	59.	0.61	0.61	0.37	2.25	-3.52	-4.7	93.9	95.1	94.0	94.0	98.0	98.4	98.4	96.1	93.6		
1109	488	14.395	70.	0.65	0.63	0.36	2.73	-2.01	-5.2	94.8	96.3	96.6	96.6	103.0	107.1	109.6	109.3	103.3		
1110	489	14.347	64.	0.65	0.64	0.37	2.74	-1.93	-5.2	97.4	98.4	98.4	98.4	101.3	102.3	104.7	104.6	98.7		
1111	489	14.390	64.	0.62	0.68	0.36	3.02	-0.85	-6.4	99.6	101.0	101.3	101.3	106.7	106.7	108.5	108.4	102.9		
1112	490	14.368	55.	0.61	0.68	0.36	3.02	-0.82	-6.4	102.9	103.7	102.8	102.8	106.7	106.6	108.5	108.4	102.9		
1113	496	14.316	85.	0.62	0.54	0.35	1.39	-10.00	-3.3	82.9	84.9	84.5	84.5	91.3	94.8	94.9	93.7	91.9		
1135	496	14.348	82.	0.60	0.57	0.36	1.92	-9.64	-3.9	86.9	89.2	89.2	89.2	95.2	98.0	99.8	99.7	95.5		
1136	496	14.254	82.	0.61	0.58	0.37	1.90	-8.43	-3.9	89.3	91.2	90.0	90.0	93.5	93.3	94.8	93.6	89.2		
1137	496	14.353	81.	0.61	0.60	0.36	2.26	-3.70	-4.5	90.9	93.0	92.8	92.8	98.9	101.7	102.8	103.0	100.3		
1138	496	14.297	81.	0.61	0.61	0.37	2.32	-3.51	-4.5	93.0	94.6	93.7	93.7	97.6	97.8	99.9	98.8	93.9		
1139	496	14.330	82.	0.65	0.63	0.36	2.65	-2.07	-5.2	93.9	96.0	95.7	95.7	101.9	105.1	107.8	107.8	102.1		
1140	496	14.302	81.	0.66	0.63	0.37	2.68	-2.00	-5.2	96.6	98.2	97.0	97.0	100.5	101.0	104.5	104.1	97.8		
1141	496	14.342	84.	0.61	0.67	0.35	2.97	-0.83	-6.4	99.1	101.0	100.5	100.5	106.3	107.3	110.3	110.0	103.7		
1142	496	14.289	83.	0.62	0.68	0.35	2.98	-0.80	-6.4	102.5	103.9	102.6	102.6	106.0	105.5	107.8	106.0	101.8		

Table 3-V. Test Matrix of Unsuppressed Coannular Plug Nozzle with 180° TAS at $V_{I,0} \sim 0.64$, Sideline and Community Orientations; TAS-11 (International Units).

NOZZLE MODEL 11 , AREA (MODEL SIZE-INNER=0 0030 , OUTER=0 0151 , SHIELD=0 0111 , FULL SIZE-TOTAL=0.9031) SQ. METERS

TEST POINT	V AC	I P	I R	T DEG.K	I V	I W	I H	I W	I H	O P	O T	O V	O W	O H	S R	S T	S V	S W	S H	MIX P	MIX T	MIX V	MIX W	THRUST TOTAL
	MPS			DEG.K	MPS	KG/S				DEG.K	DEG.K	MPS	KG/S		DEG.K	DEG.K	MPS	KG/S		DEG.K	DEG.K	MPS	KG/S	N
1103	0	1.566	459	333	27.0	2.111	776	549	139.7	1.235	767	301	50.3	1.735	734	485	217.0	6304						
1104	122	1.571	459	334	27.1	2.092	772	545	139.2	1.241	753	301	51.4	1.727	729	481	217.7	6274						
1105	0	1.746	462	369	30.7	2.389	827	607	154.1	1.307	815	348	55.5	1.920	777	517	240.3	7765						
1106	122	1.753	465	372	30.7	2.377	821	604	153.4	1.317	803	350	56.6	1.917	771	514	240.9	7744						
1107	0	1.873	489	401	32.1	2.685	863	656	169.5	1.393	852	394	61.1	2.117	815	564	262.7	9265						
1108	122	1.875	475	395	32.6	2.693	836	647	172.1	1.410	817	393	63.7	2.125	788	556	268.4	9327						
1109	0	2.272	506	461	37.5	3.025	921	713	184.6	1.499	911	449	66.2	2.371	865	619	288.3	11159						
1110	122	2.286	523	470	37.0	3.043	918	713	185.4	1.523	898	453	68.2	2.381	863	621	290.6	11282						
1111	0	2.317	503	465	38.3	3.604	906	752	222.0	1.709	896	508	78.8	2.763	858	663	339.2	14044						
1112	122	2.327	496	462	38.7	3.609	911	754	221.3	1.731	890	511	80.3	2.772	859	663	340.3	14116						
1133	0	1.579	456	335	27.3	2.081	769	542	138.5	1.223	761	293	49.2	1.718	727	459	215.0	6162						
1134	122	1.573	463	336	27.0	2.092	768	543	138.9	1.238	750	299	51.1	1.726	726	460	217.0	6236						
1135	0	1.747	458	368	30.8	2.385	834	610	152.5	1.299	825	346	54.5	1.916	783	518	237.8	7701						
1136	122	1.736	455	369	31.1	2.388	824	606	152.8	1.317	803	350	56.9	1.921	771	515	240.7	7750						
1137	0	1.859	481	397	32.3	2.677	857	653	169.0	1.383	849	390	60.5	2.108	809	561	261.8	9173						
1138	122	1.875	493	404	32.0	2.696	875	662	167.7	1.408	855	401	62.1	2.125	823	568	261.8	9302						
1139	0	2.283	503	461	37.6	3.009	907	705	184.3	1.487	899	441	65.9	2.359	852	613	287.8	11026						
1140	122	2.275	524	470	36.7	3.020	912	709	184.0	1.514	893	449	67.8	2.374	858	617	288.5	11130						
1141	0	2.319	492	460	38.7	3.619	896	748	223.5	1.707	886	504	79.2	2.768	848	659	341.3	14059						
1142	122	2.327	494	461	38.6	3.624	898	750	222.7	1.734	881	509	80.9	2.780	848	660	342.2	14121						

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Table 3-VI. Test Matrix of Unsuppressed Coannular Plug Nozzle with 180° TAS at $V_r \approx 0.83$, Sideline Orientation; TAS-12 (English Units).

NOZZLE MODEL 12		AREA I		MODEL SIZE-INNER= 4 640, OUTER=23 400, SHIELD-17 240, FULL SIZE-TOTAL=1400) SQ. IN.																		
TEST POINT	V AC	P R	I T	I V	I W	I P	O R	O T	O V	O W	O P	S R	S T	S V	S W	S P	MIX R	MIX T	MIX V	MIX W	TURST TOTAL	
	FPS		DEG R	DEG T	FPS	FPS	PPS	DEG R	DEG T	FPS	FPS	PPS	DEG R	DEG T	FPS	FPS	PPS	DEG R	DEG T	FPS	FPS	LBS
1203	0	1.568	842	1105	59.0	2.084	1404	1793	307.8	1.480	1390	1333	156.1	1.797	1396	1578	522.8	25644				
1204	400	1.579	836	1109	59.7	2.108	1395	1799	311.3	1.509	1360	1340	162.3	1.821	1322	1505	533.3	26271				
1205	0	1.756	824	1213	68.3	2.389	1497	1999	339.6	1.640	1468	1540	172.9	2.029	1415	1770	580.7	31547				
1206	400	1.747	829	1212	67.7	2.395	1487	1995	341.9	1.673	1458	1533	170.9	2.044	1403	1771	588.5	32388				
1207	0	1.867	896	1326	69.9	2.693	1563	2163	376.4	1.831	1533	1738	191.0	2.272	1487	1940	637.3	38438				
1208	400	1.881	880	1321	71.1	2.682	1560	2157	373.9	1.864	1530	1738	193.0	2.281	1476	1937	638.0	38413				
1209	0	2.279	908	1513	83.7	3.033	1657	2320	411.3	2.038	1642	1927	206.0	2.375	1563	2120	701.0	46182				
1210	400	2.286	930	1534	82.8	3.033	1649	2334	411.3	2.081	1620	1927	209.4	2.506	1556	2119	703.5	46326				
1211	0	2.324	901	1523	85.5	3.613	1539	2395	508.8	2.444	1531	2045	253.5	3.036	1472	2202	847.8	56033				
1212	400	2.325	912	1532	85.0	3.607	1550	2403	505.7	2.473	1531	2057	256.5	3.043	1490	2211	847.2	56217				
1220	400	3.031	827	1642	116.4	3.070	1668	2393	411.0	2.090	1637	1942	209.1	2.657	1526	2124	736.5	48619				
1221	0	3.021	1144	1931	98.6	3.033	1653	2397	411.7	2.059	1633	1925	206.3	2.622	1578	2162	716.6	48165				
1222	400	3.030	1137	1927	99.0	3.053	1656	2345	412.6	2.085	1626	1938	210.2	2.656	1576	2169	721.8	48668				

TEST POINT	T AMB	P AMB	RH	V / V	I O	S O	S O	S O	S O	W / W	NF	LBM	LVM	ANGL	RELATIVE	FT	ST	DB					
	DEG R	PSTA	PCT											60	70	80	90	100	110	120	130	140	150
1203	503	14.522	46.	0.62	0.74	0.51	1.57	-10.00	-3.6	83.5	66.0	84.1	92.9	96.3	98.0	97.6	94.2						
1204	502	14.458	48.	0.62	0.75	0.52	1.59	-10.00	-3.6	86.0	86.8	85.3	84.8	81.4	82.2	80.3	84.8						
1205	504	14.441	48.	0.61	0.77	0.51	2.06	-4.45	-4.4	87.7	90.2	86.5	86.3	89.6	102.4	102.6	99.7						
1206	502	14.451	42.	0.61	0.78	0.52	2.07	-4.24	-4.5	90.0	92.1	89.7	91.7	95.7	96.8	95.5	90.1						
1207	503	14.512	47.	0.61	0.80	0.51	2.47	-2.42	-5.1	91.7	93.8	92.2	100.1	104.0	104.6	107.1	107.2						
1208	502	14.463	47.	0.61	0.81	0.52	2.46	-2.38	-5.1	93.3	95.0	94.0	98.4	99.0	101.1	99.9	95.2						
1209	503	14.508	45.	0.65	0.82	0.50	2.63	-1.27	-5.8	96.4	98.5	97.7	103.7	106.5	110.1	110.7	105.3						
1210	502	14.474	49.	0.66	0.83	0.51	2.85	-1.24	-5.8	99.0	100.0	98.3	102.0	103.2	103.5	105.3	93.8						
1211	503	14.470	46.	0.64	0.85	0.50	3.02	-0.31	-7.3	98.4	100.0	100.2	105.8	108.3	112.5	113.3	107.7						
1212	501	14.468	47.	0.64	0.86	0.51	3.04	-0.30	-7.3	101.7	103.4	101.8	105.5	107.5	107.5	109.0	102.5						
1220	503	14.475	84.	0.70	0.83	0.51	2.86	-1.01	-6.1	102.4	104.0	101.8	104.5	104.3	106.0	105.0	100.5						
1221	502	14.499	46.	0.83	0.82	0.50	2.94	-1.06	-6.0	99.2	101.2	100.9	105.7	107.5	111.8	112.2	105.8						
1222	504	14.458	44.	0.82	0.83	0.51	2.95	-1.00	-6.1	102.4	103.6	101.8	104.9	104.0	106.5	107.8	100.8						

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3.2.3 Test Matrix for Unsuppressed Coannular Plug Nozzle with 360° Thermal Acoustic Shield (TAS-14)

Configuration TAS-14 employs a full 360° thermal acoustic shield of 1/2" thickness on the baseline coannular plug nozzle (TAS-10). The shield flow area of this configuration is equal to that of the 1" thick 180° partial shield of TAS-11 and TAS-12. This configuration was tested with the choke plates identical to those used with TAS-12 so that the shield to outer stream velocity and weight flow ratios of TAS-12 and TAS-14 are comparable. A comparison of the acoustic data of these two configurations should indicate the benefit of a partial thick shield over a thinner full shield of equal area.

The test matrix of this configuration is presented in Table 3-VII . The distribution of the test points is as follows:

a. Test Points 1403-1412 simulate typical engine operating conditions with a shield to outer stream velocity ratio of 0.83 at take-off.

b. Typical take-off Test Point 1409/1410 has $V^i/V^o \approx 0.65$ and $V^s/V^o \approx 0.83$. The inner stream was modified for Test Point 1421/1422 to yield $V^i/V^o \approx V^s/V^o \approx 0.83$.

Table 3-VII. Test Matrix of Unsuppressed Coannular Plug Nozzle with 360° TAS at $V_{I,0} = 0.83$, TAS-14 (English Units).

NOZZLE MODEL 14 AREA I MODEL SIZE-INNER= 4.640, OUTER=23.400, SHIELDS=17.770, FULL SIZE-TOTAL=1399) SQ. IN.

TEST POINT	V AC FPS	P R	I T DEG.R	I V FPS	I W FPS	I P FPS	O T DEG.R	O V FPS	O W FPS	O P FPS	S R DEG.R	S T DEG.R	S V FPS	S W FPS	S P FPS	MIX R DEG.R	MIX T DEG.R	MIX V FPS	MIX W FPS	THRUST TOTAL LBS
1403	0	1.610	858	1145	59.7	2.054	1413	1783	296.9	1.500	1406	1362	161.2	1.789	1347	1578	517.8	25403		
1404	400	1.604	823	1118	60.7	2.056	1432	1796	295.2	1.522	1390	1377	165.5	1.796	1348	1584	521.4	25685		
1405	0	1.747	847	1225	66.2	2.310	1505	1970	323.3	1.651	1491	1951	177.3	1.987	1424	1762	566.8	30864		
1406	400	1.762	843	1224	66.6	2.326	1507	1978	325.0	1.695	1466	1967	183.2	2.008	1417	1760	574.8	31436		
1407	0	1.879	893	1330	69.7	2.614	1581	2146	356.9	1.848	1563	1746	195.9	2.232	1498	1929	622.5	37317		
1408	400	1.889	890	1333	70.2	2.629	1588	2136	359.7	1.866	1521	1748	199.0	2.258	1472	1924	627.9	37544		
1409	0	2.279	884	1493	83.3	2.970	1657	2312	391.3	2.074	1637	1933	210.5	2.525	1557	2096	685.1	44629		
1410	400	2.293	852	1554	80.8	2.956	1650	2319	393.4	2.120	1623	1950	216.3	2.556	1565	2114	690.8	45366		
1411	0	2.330	934	1552	82.8	3.494	1531	2363	485.2	2.478	1512	2046	262.5	2.981	1468	2182	630.5	56323		
1412	400	2.318	944	1556	82.0	3.500	1530	2363	486.7	2.517	1500	2053	268.0	2.998	1469	2185	636.7	56815		
1415	0	1.748	856	1232	65.9	2.919	1684	2303	389.2	2.071	1634	1929	210.5	2.462	1569	2079	665.6	43008		
1421	0	3.034	1166	1955	96.2	2.966	1662	2323	394.2	2.085	1639	1941	211.5	2.631	1587	2167	701.9	47068		
1422	400	3.074	1168	1965	97.3	2.957	1653	2314	393.3	2.120	1617	1947	216.2	2.644	1676	2194	706.8	47314		

TEST POINT	T AMB DEG.R	P AMB PCT	RH V / V	RH V / V	S O W / W	S O W / W	LVM	LBM	NF DB	PNL (FULL SIZE, 2400 FT. SIDELINE), DB							
										ANGLE RELATIVE TO INLET, DEGREES	60	70	90	120	130	140	150
1403	513	14.426	75	0.64	0.76	0.54	1.53	-10.00	-3.6	83.6	85.7	84.9	92.2	96.1	97.8	97.4	94.9
1404	513	14.432	61	0.62	0.77	0.56	1.54	-10.00	-3.6	84.4	85.8	84.2	88.6	88.8	92.3	90.3	86.3
1405	514	14.429	75	0.62	0.78	0.55	1.55	-5.77	-4.1	87.3	85.5	88.7	95.3	100.1	101.3	101.3	99.3
1406	514	14.412	60	0.62	0.79	0.56	1.99	-4.76	-4.3	89.0	90.1	88.5	93.0	93.1	96.9	96.7	91.9
1407	513	14.432	74	0.62	0.81	0.62	2.40	-2.63	-4.9	91.3	93.2	92.4	98.9	103.4	105.3	106.1	102.7
1408	512	14.350	64	0.62	0.82	0.55	2.39	-2.50	-5.0	91.6	93.3	92.1	96.7	97.5	100.7	100.0	95.9
1409	514	14.411	67	0.65	0.84	0.54	2.75	-1.40	-5.6	95.2	98.2	97.2	102.9	105.2	108.3	110.8	105.6
1410	512	14.417	68	0.67	0.84	0.55	2.80	-1.32	-5.7	98.3	99.9	97.8	101.4	103.0	105.3	105.6	101.5
1411	513	14.408	68	0.66	0.87	0.54	2.93	-0.40	-7.2	95.9	97.9	97.4	103.4	108.1	111.1	112.5	106.8
1412	513	14.418	68	0.66	0.87	0.55	2.94	-0.37	-7.2	98.6	100.2	98.6	103.2	105.5	107.9	108.6	104.7
1415	513	14.322	71	0.53	0.84	0.54	2.72	-1.62	-5.4	93.3	95.3	94.6	101.5	106.0	108.5	110.1	106.0
1421	512	14.408	70	0.84	0.84	0.54	2.69	-1.14	-5.9	99.7	101.6	101.1	105.7	107.8	110.6	112.4	106.0
1422	513	14.382	66	0.85	0.84	0.55	2.88	-1.10	-5.9	104.0	104.9	102.3	104.8	105.4	106.5	106.5	103.4

Table 3-VII. Test Matrix of Unsuppressed Coannular Plug Nozzle with 360° TAS at $V_{T \infty} = 0.83$, TAS-14 (International Units).

NOZZLE MODEL 14 , AREA (MODEL SIZE-INNER=0 0030, OUTER=0 0151, SHIELD=0 0115 , FULL SIZE-TOTAL=0.9031) SQ.METERS

TEST POINT	V AC MPS	P R	I T DEG.K	I V MPS	I W KG/S	I P R	O T DEG.K	O V MPS	O W KG/S	O P R	S T DEG.K	S V MPS	S W KG/S	MIX P R	MIX T DEG.K	MIX V MPS	W TOTAL KG/S	THRUST TOTAL N
1403	0	1.610	477	349	27.1	2.054	785	543	134.7	1.500	781	415	73.1	1.789	748	481	234.9	7062
1404	122	1.504	457	341	27.5	2.055	795	547	135.9	1.522	772	420	75.1	1.795	749	483	235.0	7135
1405	0	1.747	471	373	30.0	2.310	836	600	146.6	1.651	828	473	80.4	1.987	791	534	257.1	8581
1406	122	1.752	468	373	30.2	2.326	837	603	147.4	1.685	815	478	83.1	2.008	787	536	260.7	8740
1407	0	1.879	496	405	31.6	2.614	878	654	161.9	1.848	868	532	88.9	2.232	832	588	282.4	10375
1408	122	1.889	494	405	31.8	2.629	865	651	163.2	1.866	835	533	89.8	2.258	818	586	284.8	10436
1409	0	2.279	491	455	37.8	2.940	921	705	177.5	2.074	909	589	95.5	2.525	865	639	310.8	12407
1410	122	2.283	529	474	36.7	2.956	922	707	178.4	2.120	902	595	98.1	2.556	870	644	313.2	12612
1411	0	2.330	519	473	37.6	3.494	861	720	220.1	2.478	840	624	119.1	2.981	814	666	376.7	15658
1412	122	2.318	524	474	37.2	3.500	850	720	220.8	2.517	833	625	121.5	2.998	813	656	379.5	15795
1415	0	1.748	476	376	29.9	2.919	919	702	176.5	2.071	908	588	95.5	2.462	872	634	301.9	11957
1421	0	3.034	649	596	43.6	2.966	923	708	178.8	2.085	910	592	95.9	2.631	882	658	318.4	13086
1422	122	3.074	649	599	44.1	2.957	919	705	178.4	2.120	898	593	98.1	2.644	875	656	320.8	13134

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3.3 Test Matrices of Suppressed Coannular Plug Nozzles

A total of 69 acoustic test points was completed on the mechanically suppressed coannular plug nozzle with and without thermal acoustic shields. The test configurations consisted of:

a. The baseline coannular configuration with the 20-shallow-chute mechanical suppressor in the outer stream (TAS-15).

b. The baseline TAS-15 with the 1" thick 180° shield and the choke plates selected to give V^S/V^O of 0.64, 0.83 and 0.48 (TAS-16, -17 and -18) at a typical take-off condition.

c. The baseline TAS-15 with 1/2" thick 360° shield (TAS-19) with the choke plates identical to these of TAS-17 to give V^S/V^O of 0.83.

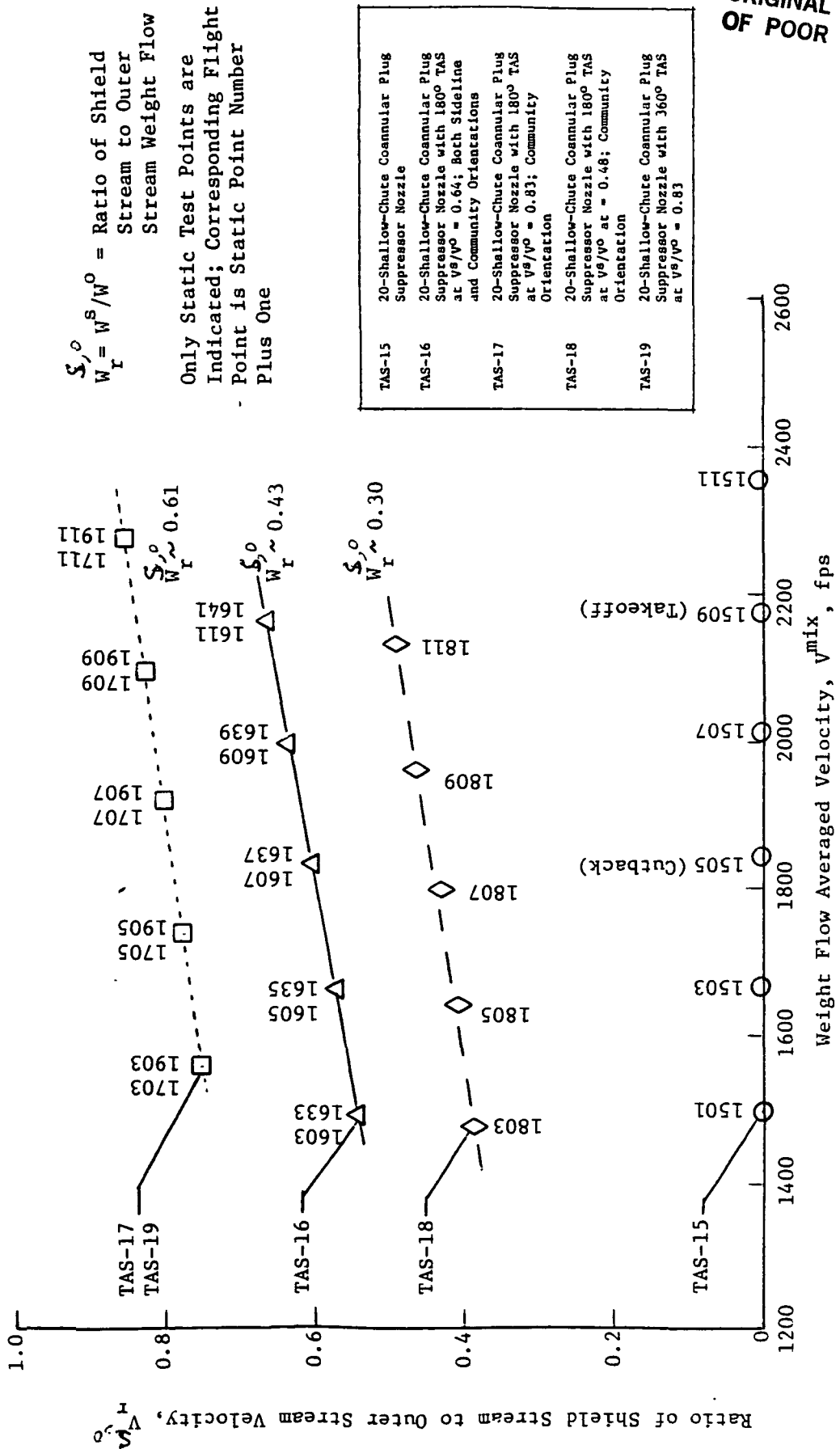
Figures 3.3 and 3.4 describe the scope of acoustic tests on an engine operating line in terms of shield to outer stream velocity ratios as a function of mass averaged velocity, V^{mix} and outer stream pressure ratio, P_r^O .

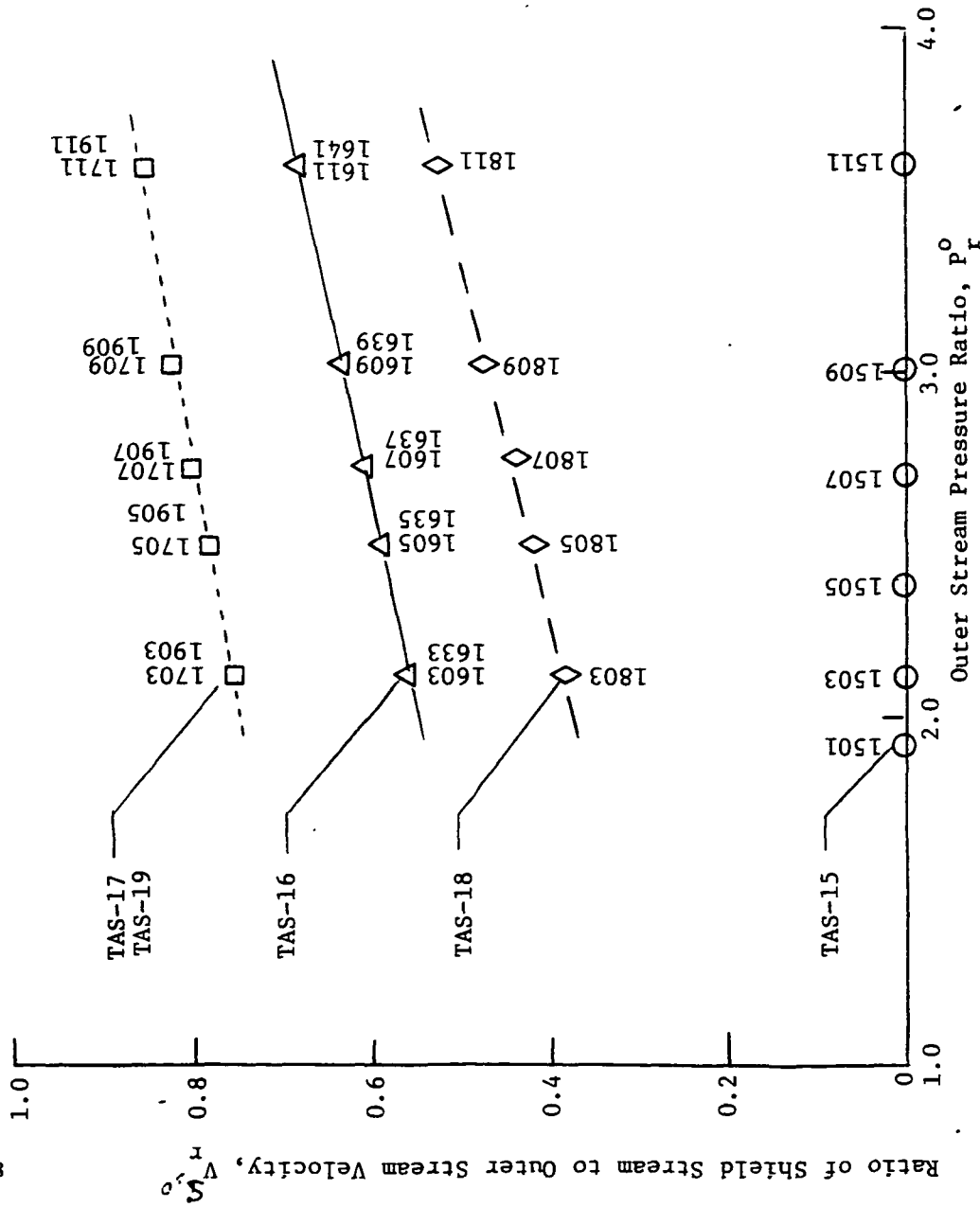
3.3.1 Test Matrix for Suppressed Baseline Coannular Plug Nozzle (TAS-15)

Table 3-VIII summarizes the test matrix for the baseline suppressor coannular plug configuration. The test points simulate typical engine operating conditions under static and simulated flight.

3.3.2 Test Matrix for Suppressed Coannular Plug Nozzle With 180° Thermal Acoustic Shield (TAS-16, -17 AND -18)

As described in Table 3-I, the suppressed coannular plug nozzle with 180° thermal acoustic shield was tested at shield to outer stream velocity ratio, V_r^S , of 0.64 (TAS-16), 0.83 (TAS-17) and 0.48 (TAS-18) to investigate the sensitivity of V_r^S on the acoustic benefit of the thermal acoustic shield. Tables 3-IX, 3-X and 3-XI summarize the test matrices for TAS-16, TAS-17 and TAS-18, respectively. The distribution of the test points is as follows:





$S_r^0 = W^B/W^O =$ Ratio of Shield Stream to Outer Stream Weight Flow

Only Static Test Points are Indicated; Corresponding Flight Point is Static Point Number Plus One

TAS-15	20-Shallow-Chute Coannular Plug Suppressor Nozzle
TAS-16	20-Shallow-Chute Coannular Plug Suppressor Nozzle with 180° TAS at $V_s/V_o = 0.84$; Both Sideline and Community Orientations
TAS-17	20-Shallow-Chute Coannular Plug Suppressor Nozzle with 180° TAS at $V_s/V_o = 0.83$; Community Orientation
TAS-18	20-Shallow-Chute Coannular Plug Suppressor Nozzle with 180° TAS at $V_s/V_o = 0.48$; Community Orientation
TAS-19	20-Shallow-Chute Coannular Plug Suppressor Nozzle with 360° TAS at $V_s/V_o = 0.83$

Figure 3.4 Description of Acoustic Tests as a Function of Outer Stream Pressure Ratio; Suppressed Coannular Plug Nozzles.

Table 3-VIII. Test Matrix for Suppressed Baseline Coannular Plug Nozzle;
TAS-15 (English Units).

NOZZLE MODEL 15		AREA (MODEL SIZE-INNER= 4 000, OUTER=19,900, SHIELD= 0 001, FULL SIZE-TOTAL=1400) SQ. IN.																							
TEST POINT	V AC FPS	I P R	I T DEG.R	I V FPS	I W FPS	I P R	O P R	O T DEG.R	O V FPS	O W FPS	O P R	S T DEG.R	S V FPS	S W FPS	S P R	S T DEG.R	S V FPS	S W FPS	S P R	MIX T DEG.R	MIX V FPS	MIX T DEG.R	MIX V FPS	W TOTAL FPS	THRUST TOTAL LBS
1501	0	1.578	827	1102	98	0	1.926	1203	1574	494	8	1.000	519	0	0.	1.863	1141	1496	592.8	27588					
1502	400	1.600	823	1114	100.0	0	1.978	1223	1617	496.1	1.000	519	0	0.	1.908	1156	1532	596.1	28392						
1503	0	1.571	820	1093	97.8	0	2.118	1310	1747	520.1	1.000	519	0	0.	2.015	1233	1643	617.9	31559						
1504	400	1.604	817	1114	100.6	0	2.122	1397	1808	495.9	1.000	519	0	0.	2.021	1300	1691	596.5	31351						
1505	0	1.889	817	1277	121.0	0	2.330	1468	1954	540.1	1.000	519	0	0.	2.253	1349	1830	661.1	37601						
1506	400	1.786	819	1225	114.0	0	2.428	1491	2012	548.1	1.000	519	0	0.	2.298	1376	1876	662.1	38611						
1507	0	1.745	874	1243	107.6	0	2.588	1560	2159	603.8	1.000	519	0	0.	2.512	1456	2020	711.3	44671						
1508	400	1.907	884	1338	113.5	0	2.747	1621	2180	606.2	1.000	519	0	0.	2.587	1454	2047	719.8	45780						
1509	0	2.328	899	1522	139.9	0	3.029	1642	2328	662.8	1.000	519	0	0.	2.880	1512	2187	802.6	54664						
1510	400	2.318	908	1527	136.1	0	3.087	1641	2344	663.7	1.000	519	0	0.	2.928	1516	2205	799.8	54803						
1511	0	2.325	898	1520	139.7	0	3.099	1671	2436	780.4	1.000	519	0	0.	3.354	1594	2348	920.2	67158						
1512	400	2.371	903	1540	139.6	0	3.654	1672	2509	779.5	1.000	519	0	0.	3.407	1555	2362	919.3	67485						

TEST POINT	T AMB DEG R	P AMB PSTA	RH V / V PCT	RH V / V	S V / V	S W / W	LVM	LBM	NF DB	PNL (FULL SIZE 2400 FT SIDELINE), DB							
										ANGLE RELATIVE TO INLET DEGREES	60	70	90	120	130	140	150
1501	505	14.464	58.	0.70	0.	0.	1.33	-10.00	-4.7	84.0	86.9	88.0	94.3	95.6	94.2	92.0	86.3
1502	513	14.238	48.	0.69	0.	0.	1.40	-8.51	-4.7	89.5	91.7	90.9	95.2	95.3	91.7	87.2	82.1
1503	506	14.465	58.	0.63	0.	0.	1.73	-4.67	-4.9	86.2	89.1	90.0	96.4	97.4	96.2	94.9	91.8
1504	513	14.225	47.	0.62	0.	0.	1.82	-4.51	-4.8	91.4	93.5	93.2	97.5	98.3	95.0	91.0	85.6
1505	507	14.471	55.	0.65	0.	0.	2.19	-2.55	-5.4	91.1	94.1	95.4	100.1	100.0	99.0	98.2	93.7
1506	513	14.206	49.	0.61	0.	0.	2.27	-2.22	-5.4	96.1	97.5	97.6	100.8	101.2	98.6	94.8	89.5
1507	507	14.460	55.	0.58	0.	0.	2.62	-1.43	-5.9	93.8	97.6	98.4	103.0	103.4	101.2	100.1	96.5
1508	511	14.209	50.	0.61	0.	0.	2.66	-1.20	-6.1	98.8	101.9	101.6	104.0	103.9	101.5	98.4	92.7
1509	509	14.459	54.	0.65	0.	0.	2.96	-0.52	-6.8	95.6	99.5	100.6	105.4	104.6	103.6	102.3	99.1
1510	511	14.200	51.	0.65	0.	0.	2.98	-0.44	-6.8	100.8	103.7	103.3	106.3	105.9	103.9	100.7	95.1
1511	510	14.449	51.	0.61	0.	0.	3.27	0.18	-7.7	97.6	101.0	101.9	107.3	106.7	105.9	103.6	103.6
1512	511	14.217	45.	0.61	0.	0.	3.29	0.24	-7.8	102.7	105.3	104.3	107.9	107.9	105.8	102.2	97.3

Table 3-VIII. Test Matrix for Suppressed Baseline Coannular Plug Nozzle;
TAS-15 (International Units).

NOZZLE MODEL 15 , AREA (MODEL SIZE-INNER=0.0026, OUTER=0.0128, SHIELD=0.0000 , FULL SIZE-TOTAL=0.9031) SQ. METERS

TEST POINT	V AC	MPS	I P R	I T	I DEG.K	I V	I MPS	I W	I KG/S	O P R	O T	O DEG.K	O V	O MPS	O W	O KG/S	S P R	S T	S DEG.K	S V	S MPS	S W	S KG/S	MIX P R	MIX T	MIX DEG.K	MIX V	MIX MPS	W TOTAL	W KG/S	THRUST TOTAL	THRUST N
1501	0	1.578	459	336	44.5	1.926	668	480	224.4	1.000	288	0	0.	0.	0.	0.	1.863	634	456	268.9	7664											
1502	122	1.600	457	340	45.4	1.978	680	493	225.0	1.000	288	0	0.	0.	0.	0.	1.908	642	467	270.4	7893											
1503	0	1.671	456	333	44.4	2.116	728	532	235.9	1.000	288	0	0.	0.	0.	0.	2.016	695	501	280.3	8774											
1504	122	1.604	454	339	45.6	2.122	776	551	224.9	1.000	288	0	0.	0.	0.	0.	2.021	722	516	270.6	8716											
1505	0	1.889	454	389	54.9	2.330	815	595	245.0	1.000	288	0	0.	0.	0.	0.	2.235	749	558	299.8	10454											
1506	122	1.786	455	374	51.7	2.428	829	613	248.6	1.000	288	0	0.	0.	0.	0.	2.298	764	572	300.3	10734											
1507	0	1.745	485	379	48.8	2.688	867	658	273.9	1.000	288	0	0.	0.	0.	0.	2.512	809	616	322.7	12419											
1508	122	1.907	491	408	51.5	2.747	867	664	275.0	1.000	288	0	0.	0.	0.	0.	2.567	808	624	326.5	12730											
1509	0	2.328	499	464	63.4	3.029	912	709	300.6	1.000	288	0	0.	0.	0.	0.	2.880	840	667	364.1	15170											
1510	122	2.318	505	465	61.7	3.087	912	714	301.0	1.000	288	0	0.	0.	0.	0.	2.928	842	672	362.8	15236											
1511	0	2.328	499	463	63.4	3.599	929	761	354.0	1.000	288	0	0.	0.	0.	0.	3.354	863	716	417.4	18671											
1512	122	2.371	501	469	63.4	3.654	929	765	353.6	1.000	288	0	0.	0.	0.	0.	3.407	864	720	417.0	18762											

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Table 3-IX. Test Matrix for Suppressed Coannular Plug Nozzle with 180° TAS at $V_r = 0.64$, Sideline and Community Orientations; TAS-16 (English Units).

NOZZLE MODEL 16 AREA I MODEL SIZE-INRIF= 4.000, OUTER=19.000, SHIFD=1/2.00, FULL SIZE TOTAL=1400.1 SQ. IN.

TEST POINT	V AC FPS	P R	I T DEG.R	I V FPS	I W FPS	I S FPS	O P	O T	O R	O V FPS	O W FPS	O S FPS	S P	S T DEG.R	S V FPS	S W FPS	S S FPS	MIX P	MIX V	MIX T DEG.R	MIX V	MIX W	MIX S	TOTAL FPS	TOTAL LBS	THRUST LBS	
																											1603
1603	0	1.565	821	1088	56.5	2.090	1307	1785	290.9	1.242	1373	996	124.1	1.699	1318	1494	471.5	21698									
1604	400	1.581	831	1107	56.9	2.110	1403	1800	290.0	1.258	1360	1024	124.2	1.714	1325	1511	475.2	22318									
1605	0	1.749	832	1215	64.2	2.376	1468	1900	318.9	1.317	1472	1133	140.5	1.838	1408	1678	519.7	27053									
1606	400	1.766	839	1229	64.6	2.401	1521	2021	316.6	1.336	1473	1190	140.0	1.859	1425	1699	521.1	27525									
1607	0	1.872	869	1309	67.5	2.685	1547	2148	353.1	1.407	1523	1310	151.2	2.079	1462	1828	571.6	32401									
1608	400	2.096	885	1424	66.4	2.993	1536	2283	352.4	1.475	1519	1309	163.4	2.245	1453	1916	622.2	34673									
1609	0	2.276	904	1509	79.4	2.970	1637	2407	378.9	1.500	1618	1163	162.0	2.245	1453	1916	622.2	34673									
1610	400	2.296	890	1506	80.0	3.055	1619	2340	385.9	1.516	1608	1203	169.4	2.341	1533	2014	634.3	39763									
1611	0	2.328	891	1515	81.7	3.615	1665	2495	457.3	1.734	1646	1203	192.4	2.729	1571	2177	731.4	49407									
1612	400	2.343	901	1529	81.3	3.623	1670	2501	455.0	1.764	1632	1220	197.0	2.729	1571	2177	731.4	49407									
1613	0	1.580	785	1075	58.5	2.097	1389	1790	246.9	1.243	1371	994	124.3	1.700	1310	1485	448.0	21774									
1614	400	1.755	841	1225	64.1	2.376	1495	1992	314.0	1.262	1476	1168	137.3	1.891	1409	1677	516.4	26068									
1615	0	1.764	842	1230	64.5	2.405	1514	2017	314.2	1.246	1473	1203	141.5	1.902	1419	1677	516.4	26068									
1616	400	1.898	915	1356	64.6	2.721	1578	2183	347.3	1.445	1538	1362	157.3	2.108	1492	1862	559.3	32353									
1617	0	2.286	901	1510	79.0	3.042	1681	2308	382.3	1.527	1628	1497	165.6	2.335	1530	2012	626.8	39193									
1618	400	2.310	899	1516	79.3	3.071	1672	2362	380.7	1.563	1629	1537	170.8	2.362	1553	2032	630.8	39640									
1619	0	2.334	918	1540	79.7	3.615	1687	2512	448.5	1.740	1633	1217	192.1	2.713	1596	2193	720.3	45092									
1620	400	2.347	931	1555	79.2	3.615	1688	2520	449.6	1.785	1646	1244	198.5	2.745	1591	2203	727.3	49749									
1621	0	3.032	1118	1911	93.9	3.038	1669	2350	379.1	1.520	1615	1490	164.6	2.412	1502	2066	636.5	40883									
1622	400	1.707	882	1225	60.7	3.041	1652	2339	302.0	1.526	1630	1497	165.3	2.281	1569	1999	607.9	37769									

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TEST POINT	AMB DEG R	P PSIA	RH PCT	V / V	S O	W / W	LVM	LBM	NF DB	PNL (FURL SIZE, 2400 FT SIDELINE), DB				
										50	60	70	80	90
1603	518	14.525	48	0.61	0.56	0.43	1.27	-10.00	-3.2	83.5	85.0	86.3	87.5	88.7
1604	524	14.421	46	0.51	0.57	0.44	1.29	-10.00	-3.2	87.7	88.2	88.0	89.2	90.6
1605	519	14.523	48	0.61	0.58	0.43	1.76	-10.00	-3.6	87.6	91.4	90.7	96.5	96.3
1606	523	14.421	46	0.61	0.59	0.44	1.80	-10.00	-3.8	91.8	91.4	91.2	96.5	96.9
1607	520	14.511	48	0.61	0.61	0.43	2.13	-4.04	-4.4	90.3	92.4	93.9	99.1	98.3
1608	523	13.021	38	0.63	0.62	0.46	2.38	-2.38	-1.6	94.4	95.0	94.8	99.4	99.1
1609	521	14.492	48	0.65	0.63	0.43	2.49	-2.38	-5.0	92.8	91.4	95.7	100.9	101.4
1610	523	14.397	48	0.64	0.64	0.44	2.54	-2.09	-5.1	94.7	96.6	97.0	101.2	99.1
1611	522	14.480	48	0.61	0.68	0.42	2.89	-0.96	-6.2	94.7	96.6	98.0	103.3	106.9
1612	524	14.394	48	0.61	0.69	0.43	2.89	-10.00	-6.2	98.0	99.1	99.5	103.7	102.9
1613	514	14.284	44	0.60	0.56	0.43	1.27	-10.00	-3.2	82.8	85.6	85.7	93.2	92.1
1614	517	14.240	38	0.62	0.57	0.45	1.31	-10.00	-3.3	86.9	89.0	87.8	93.0	88.7
1615	515	14.331	42	0.61	0.59	0.44	1.78	-10.00	-3.7	87.5	90.5	90.4	96.6	95.1
1616	519	14.252	37	0.61	0.60	0.45	1.82	-10.00	-3.7	86.9	92.6	91.0	96.1	95.6
1617	516	14.334	40	0.61	0.61	0.44	2.19	-3.89	-4.4	89.4	92.8	93.3	99.3	98.6
1618	517	14.232	37	0.62	0.62	0.45	2.23	-3.65	-4.4	89.4	90.4	94.7	99.3	99.2
1619	516	14.335	39	0.65	0.64	0.43	2.57	-2.16	-5.0	91.4	94.7	95.2	101.2	101.8
1620	516	14.234	39	0.64	0.65	0.43	2.61	-2.02	-5.1	90.3	98.3	95.9	101.1	103.3
1621	517	14.300	37	0.61	0.68	0.41	2.93	-0.96	-6.0	93.6	96.6	97.3	104.1	106.2
1622	517	14.217	38	0.62	0.69	0.44	2.95	-0.88	-6.1	93.6	100.7	98.6	103.3	101.6
1623	517	14.317	38	0.61	0.64	0.43	2.68	-1.87	-5.2	91.6	91.9	95.1	101.7	100.6
1624	517	14.336	38	0.52	0.64	0.43	2.54	-2.41	-4.8	91.1	91.5	95.0	100.4	101.5

Table 3-IX. Test Matrix for Suppressed Coannular Plug Nozzle with 180° TAS at $V_{T0} = 0.64$, Sideline and Community Orientations; TAS-16 (International Units).

NO771E MODEL 16 AREA (MODEL SIZE-INMP: 0.0026, OUTER: 0.0128, SHIELD: 0.0111, FUEL SIZE: TOTAL: 0.0031) 30 METERS

TEST POINT	V AC MPS	P	I MPS	T DEG K	I MPS	V MPS	I MPS	W KG/S	P	O MPS	T DEG K	O MPS	V MPS	W KG/S	P	S DEG K	T DEG K	S MPS	V MPS	W KG/S	P	MIX R	MIX T	MIX V	MIX K	MIX MPS	TOTAL KG/S	TOTAL N		
																													0	1
1603	0	1.565	456	332	25	6	2	0.90	771	844	132	0	1.242	763	304	56	3	1.699	731	485	213	9	6080							
1604	122	1.581	462	337	28	8	2	1.10	779	850	131	0	1.256	761	312	58	2	1.714	736	461	215	6	6205							
1605	0	1.744	462	370	29	1	2	3.76	827	606	144	7	1.317	818	353	61	9	1.802	780	510	235	7	7521							
1606	122	1.766	466	375	29	3	2	4.01	845	616	143	5	1.336	822	363	63	5	1.900	792	518	236	4	7652							
1607	0	1.872	483	399	30	6	2	6.95	859	655	160	2	1.407	849	399	68	6	2.079	812	587	259	4	9030							
1608	122	2.096	492	434	30	1	2	8.95	864	687	174	8	1.453	841	423	74	1	2.246	816	584	264	1	9640							
1609	0	2.276	502	460	36	0	2	9.70	909	703	171	8	1.500	890	446	73	5	2.393	855	605	281	4	10635							
1610	122	2.296	496	459	36	3	3	0.15	916	713	175	0	1.546	894	460	76	6	2.331	857	614	282	2	11055							
1611	0	2.328	495	452	37	1	3	6.15	925	761	207	4	1.734	914	519	87	3	2.713	874	664	331	8	13761							
1612	122	2.343	500	466	36	4	3	6.73	929	762	206	4	1.761	917	521	89	3	2.759	875	665	332	6	13833							
1613	0	1.580	436	328	26	5	2	0.97	772	816	130	1	1.243	763	304	56	1	1.700	728	455	213	0	6053							
1614	122	1.587	462	339	25	9	2	1.25	770	849	131	6	1.269	751	316	59	8	1.722	728	456	217	3	6245							
1633	0	1.755	467	373	29	1	2	3.76	831	607	142	4	1.322	820	356	62	3	1.881	783	511	233	8	7470							
1636	122	1.754	468	375	29	2	2	4.05	841	615	142	5	1.346	810	367	64	6	1.967	789	517	236	2	7644							
1637	0	1.877	494	404	30	4	2	7.03	870	661	158	2	1.416	857	405	69	9	2.080	823	562	257	5	9049							
1638	122	1.898	508	413	29	3	2	7.21	877	665	157	5	1.415	857	415	71	4	2.108	829	568	258	2	9161							
1639	0	2.286	501	480	35	8	3	0.42	917	713	173	4	1.577	904	456	75	1	2.323	861	613	284	3	10896							
1640	122	2.310	500	482	36	0	3	0.71	929	720	172	7	1.563	905	468	77	5	2.343	863	619	285	1	11078							
1641	0	2.334	510	470	36	2	3	6.15	937	766	203	4	1.740	921	523	87	1	2.713	887	668	326	7	13640							
1642	122	2.347	517	474	35	9	3	6.45	938	768	203	9	1.785	915	532	90	1	2.745	886	671	329	9	13843							
1645	0	3.032	621	583	42	6	3	0.38	927	716	171	9	1.520	914	457	74	2	2.412	879	630	298	7	11366							
1651	0	1.707	490	373	27	5	3	0.41	918	713	173	3	1.529	903	456	75	0	2.379	875	633	295	8	11650							

Table 3-X. Test Matrix of Suppressed Coannular Plug Nozzle with 180° TAS at $V_{I,0}$ 0.83, Community Orientation; TAS-17 (English Units).

NOZZLE MODEL 17 AREA I MODEL SIZE-INNER= 4 000, OUTER=19.900, SHIELD=17 240, FULL SIZE-TOTAL=1400 } SO. IN.

TEST POINT	V AC FPS	P R	I T DEG.R	I V FPS	I W FPS	I W FPS	P R	O T DEG.R	O V FPS	O W FPS	O W FPS	S R	S T DEG.R	S V FPS	S W FPS	S W FPS	P R	MIX R	MIX T DEG.R	MIX V	MIX V	W TOTAL PPS	THRUST TOTAL LBS
1703	0	1.572	852	1114	55.8	2 100	1431	1819	283.1	1.492	1417	1359	172.0	1.788	1363	1587	510.9	25205					
1704	400	1.567	833	1113	57.1	2.075	1385	1776	283.4	1.516	1356	1355	180.1	1.786	1314	1557	520.7	25201					
1705	0	1.746	850	1226	63.4	2.395	1539	2027	311.7	1.656	1515	1568	190.6	2.011	1451	1782	585.7	31339					
1706	400	1.761	839	1227	64.4	2.385	1484	1988	314.4	1.693	1481	1565	200.0	2.022	1401	1757	578.9	31618					
1707	0	1.678	897	1333	66.7	2.685	1590	2179	343.0	1.834	1571	1740	209.4	2.239	1509	1939	619.1	37316					
1708	400	1.679	879	1320	67.4	2.704	1566	2169	346.9	1.888	1532	1785	211.9	2.274	1481	1938	626.2	37210					
1709	0	2.286	900	1509	78.8	3.060	1671	2358	380.8	2.072	1649	1939	224.3	2.562	1578	2123	683.9	45126					
1710	400	2.297	913	1523	78.2	3.059	1655	2346	380.9	2.131	1618	1954	232.0	2.587	1559	2121	691.1	45556					
1711	0	2.329	908	1530	79.8	3.093	1654	2482	449.4	2.441	1636	2114	265.4	2.983	1573	2264	784.6	65900					
1712	400	2.337	919	1542	79.6	3.067	1676	2515	455.5	2.538	1646	2162	275.0	3.060	1592	2300	810.1	67905					
1715	0	1.758	899	1268	62.2	3.041	1666	2349	379.0	2.065	1645	1932	223.9	2.502	1587	2108	685.1	43570					
1721	0	3.021	1158	1944	91.6	3.057	1650	2342	382.9	2.071	1632	1928	225.5	2.643	1580	2157	700.1	46930					
1722	400	3.046	1135	1929	93.0	3.054	1653	2343	380.6	2.116	1620	1947	230.3	2.660	1574	2158	704.0	47231					

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TEST POINT	T AMB DEG.R	P AMB PSIA	RH PCT	RH V / V	I V / V	S V / V	S O / W	S O / W	S O / W	LVM	LBM	NF DB	PNL (FULL SIZE 2400 FT SIDELINE), DB					
													ANGLE RELATIVE TO INLET, DEGREES	60	70	90	120	130	140	150
1703	520	14.289	21	0.61	0.75	0.61	1.82	-10.00	-3.5	83.8	86.9	88.4	95.4	92.3	92.0	91.5	87.1	
1704	510	14.245	29	0.63	0.76	0.64	1.48	-10.00	-3.7	88.9	91.0	90.6	95.3	90.1	87.9	84.5	77.6	
1705	520	14.300	21	0.61	0.77	0.61	2.02	-4.71	-4.1	87.8	91.0	91.8	97.8	97.4	96.5	95.9	92.7	
1706	512	14.242	24	0.62	0.79	0.64	2.00	-4.52	-4.3	92.4	93.8	93.8	98.4	93.3	92.5	89.8	83.0	
1707	520	14.294	19	0.61	0.80	0.61	2.39	-2.59	-4.8	89.7	93.1	94.4	100.3	100.7	99.8	100.1	97.5	
1708	514	14.249	27	0.61	0.81	0.61	2.41	-2.41	-5.0	94.9	96.6	96.6	100.5	96.8	96.1	93.7	87.3	
1709	520	14.288	22	0.64	0.82	0.69	2.78	-1.31	-5.7	92.3	95.9	95.2	102.4	103.8	103.5	104.4	101.5	
1710	516	14.221	26	0.65	0.83	0.61	2.80	-1.23	-5.8	96.3	98.6	97.5	102.2	100.3	98.9	96.4	83.4	
1711	518	14.269	25	0.62	0.85	0.59	3.07	-0.39	-6.8	95.3	98.4	98.9	104.5	105.7	108.4	109.6	104.8	
1712	518	14.266	20	0.61	0.86	0.60	3.14	-0.26	-6.9	100.0	101.9	100.8	103.9	105.7	105.1	105.8	99.7	
1721	519	14.286	24	0.83	0.82	0.59	2.86	-1.11	-5.9	92.3	95.7	97.1	102.9	104.2	104.8	106.8	102.9	
1722	516	14.228	25	0.82	0.83	0.61	2.87	-1.06	-5.9	96.9	99.3	97.9	102.0	100.2	100.3	99.8	94.7	

Table 3-X. Test Matrix of Suppressed Coannular Plug Nozzle with 180° TAS at $V_{r,0} = 0.83$, Community Orientation; TAS-17 (International Units).

NOZZLE MODEL 17 , AREA I MODEL SIZE-INNER=0.0026, OUTER=0.0128, SHIELD=0.0111 , FULL SIZE-TOTAL=0.9031) SQ. METERS

TEST POINT	V AC	MPS	I P R	I T R	I V	I W	I P R	O T R	O V	O W	O P R	S T R	S V	S W	S P R	MIX T R	MIX V	MIX W	TOTAL	THRUST
1703	0	1.572	473	339	25.3	2.100	795	554	128.4	1.492	787	414	78.0	1.788	757	484	231.8	7007		
1704	122	1.587	463	339	25.9	2.075	769	541	128.6	1.516	753	413	81.7	1.786	730	476	236.2	7006		
1705	0	1.746	472	374	28.8	2.385	852	618	141.4	1.656	842	478	86.4	2.011	806	543	256.6	8713		
1706	122	1.761	466	374	29.2	2.385	824	605	142.6	1.693	806	477	90.7	2.022	778	536	262.6	8790		
1707	0	1.878	498	406	30.3	2.686	883	664	155.6	1.834	873	530	95.0	2.239	838	591	280.8	10374		
1708	122	1.879	488	402	30.5	2.704	870	661	157.4	1.888	851	535	95.1	2.274	823	591	284.0	10484		
1709	0	2.286	500	460	35.7	3.060	929	719	172.7	2.072	916	591	101.8	2.562	875	647	310.2	12546		
1710	122	2.297	507	464	35.5	3.059	919	715	172.8	2.131	898	595	105.2	2.587	856	646	313.5	12665		
1711	0	2.329	504	466	36.2	3.523	919	756	203.8	2.441	909	644	120.4	2.983	874	690	360.4	13341		
1712	122	2.337	511	470	36.1	3.667	931	767	206.6	2.538	914	659	124.8	3.060	884	701	367.5	16099		
1715	0	1.758	499	386	28.2	3.041	926	716	171.9	2.065	914	589	101.6	2.502	882	642	301.7	12113		
1721	0	3.021	644	592	41.6	3.057	917	714	173.7	2.071	907	588	102.3	2.643	878	657	317.6	13047		
1722	122	3.046	630	588	42.2	3.054	918	714	172.7	2.116	900	593	104.5	2.660	874	658	319.3	13131		

P188-03

Table 3-XI. Test Matrix for Suppressed Coannular Plug Nozzle with 180° TAS at $V_{I,0} = 0.48$,
Community Orientation; TAS-18 (English Units).

NOZZLE MODEL 18 , AREA (MODEL SIZE-INNER= 4 000, OUTER=19 900, SHIELD=17 240, FULL SIZE-TOTAL=1400) SQ. IN.

TEST POINT	V AC FPS	I P R	I T DEG.R	I V FPS	I W PPS	I W FPS	I W PPS	O T DEG.R	O V FPS	O W PPS	O W FPS	O W PPS	S R DEG.R	S T DEG.R	S T FPS	S T PPS	S W FPS	S W PPS	P R	P R	MIX T DEG.R	MIX T FPS	MIX T PPS	MIX V	W TOTAL PPS	W TOTAL LBS	THRUST TOTAL
1803	0	1.544	837	1084	55.0	2.056	1359	1749	289.6	1.096	1343	645	79.4	1.670	1288	1456	424.0	19186									
1804	400	1.593	844	1117	56.6	2.105	1392	1796	286.8	1.123	1339	724	90.0	1.691	1310	1485	433.4	20000									
1805	0	1.747	818	1204	64.7	2.361	1493	1985	313.1	1.142	1477	815	92.2	1.846	1397	1648	470.0	24057									
1806	400	1.768	856	1244	64.1	2.404	1507	2012	314.7	1.164	1447	860	99.9	1.869	1408	1669	478.7	24832									
1807	0	1.906	891	1343	65.2	2.719	1565	2173	345.9	1.185	1545	938	102.4	2.052	1475	1821	513.5	29068									
1808	400	1.886	906	1344	66.7	2.717	1585	2187	346.3	1.212	1523	991	110.4	2.081	1485	1827	523.3	29718									
1809	0	2.272	879	1486	79.6	3.021	1639	2338	379.2	1.236	1635	1115	116.7	2.236	1546	1972	575.6	35275									
1810	400	2.300	861	1480	80.9	3.055	1682	2365	377.9	1.272	1616	1138	120.9	2.274	1554	1985	579.6	35763									
1811	0	2.321	907	1527	79.9	3.588	1644	2473	452.3	1.375	1619	1304	141.1	2.586	1551	2116	673.3	44272									
1812	400	2.336	912	1535	79.8	3.621	1647	2482	453.5	1.385	1594	1308	144.0	2.605	1549	2121	677.3	44650									

TEST POINT	T AMB DEG.R	P AMB PSIA	RH PCT	I V / V	I V / V	S O W / W	S O W / W	LVM	LBM	NF	DB	PNL (FULL SIZE, 2400 FT SIDELINE), DB					
												ANGLE RELATIVE TO INLET, DEGREES					
													120	130	140	150	
1803	525	14.545	68	0.62	0.37	0.27	1.12	-10.00	-3.1	81.5	84.2	84.6	91.8	91.7	80.4	89.0	83.7
1804	523	14.251	74	0.62	0.40	0.31	1.22	-10.00	-3.1	87.2	86.7	87.8	92.6	88.9	86.1	83.9	78.4
1805	523	14.374	73	0.61	0.41	0.29	1.67	-10.00	-3.7	86.7	89.4	90.0	95.7	95.2	94.2	89.3	89.3
1806	520	14.260	81	0.62	0.43	0.32	1.74	-10.00	-3.6	90.6	92.8	91.5	96.3	93.0	90.4	88.4	82.0
1807	521	14.120	77	0.62	0.43	0.30	2.11	-5.17	-4.2	89.9	93.3	93.8	99.4	97.9	97.3	96.7	93.7
1808	519	14.242	85	0.61	0.45	0.32	2.14	-5.00	-4.2	94.0	95.2	95.5	99.9	95.9	93.6	85.2	85.2
1809	521	14.359	80	0.64	0.48	0.31	2.46	-2.84	-4.8	92.3	95.4	95.9	101.6	101.8	101.7	101.4	99.3
1810	519	14.247	86	0.63	0.48	0.32	2.49	-2.68	-4.8	96.6	98.9	98.9	101.9	98.9	97.0	95.6	89.1
1811	520	14.332	80	0.62	0.53	0.31	2.77	-1.40	-5.8	94.3	97.1	97.6	104.1	104.3	105.2	102.7	102.7
1812	520	14.251	81	0.62	0.53	0.32	2.78	-1.34	-5.9	95.3	100.2	99.2	103.6	101.5	100.2	99.6	93.6

Table 3-XI. Test Matrix for Suppressed Coannular Plug Nozzle with 180° TAS at $V_{T,0} \approx 0.48$, Community Orientation; TAS-18 (International Units).

NOZZLE MODEL 18 , AREA I MODEL SIZE-INNER=0.0026, OUTER=0.0128, SHIELD=0.0111 , FULL SIZE-TOTAL=0.9031) SQ. METERS

TEST POINT	V AC MPS	P R	I T DEG.K	I V MPS	I W KG/S	I P R	O T DEG.K	O V MPS	O W KG/S	S P R	S T DEG.K	S V MPS	S W KG/S	MIX P R	MIX T DEG.K	MIX V MPS	W KG/S	THRUST N
1803	0	1.544	465	330	24.9	2.056	755	533	131.4	1.096	746	197	96.0	1.670	716	444	192.3	5334
1804	122	1.583	469	340	25.7	2.105	774	547	130.1	1.123	744	221	40.8	1.691	728	453	196.6	5560
1805	0	1.747	455	367	29.3	2.361	830	605	142.0	1.142	821	248	41.8	1.846	776	502	213.2	6691
1806	122	1.768	476	379	29.1	2.404	837	613	142.7	1.164	804	262	45.3	1.869	782	509	217.1	6904
1807	0	1.906	495	409	29.6	2.719	869	662	156.9	1.185	858	286	46.4	2.052	820	555	232.8	8081
1808	122	1.885	503	410	30.2	2.717	881	666	157.1	1.212	846	302	50.1	2.051	825	557	237.4	8262
1809	0	2.272	488	453	36.1	3.021	922	713	172.0	1.256	908	340	52.9	2.256	859	601	261.1	9907
1810	122	2.300	478	451	36.7	3.058	934	721	171.4	1.272	898	347	54.8	2.274	863	605	262.9	9943
1811	0	2.321	504	465	36.3	3.588	913	754	205.1	1.375	899	398	64.0	2.586	862	645	305.4	12308
1812	122	2.336	506	468	36.2	3.621	915	757	205.7	1.385	886	399	65.3	2.605	861	646	307.2	12413

P188-03

a. Test Points 1603 through 1612 and 1633 through 1642 of TAS-16 simulate typical engine operating conditions with the shield in sideline and community orientation, respectively. Test Points 1651, 1639 and 1645 yield variation in P_r^i (1.71, 2.28 and 3.03) for a fixed P_r^o (\approx 3.04). The objective of these three test points is to determine, if any, the benefit of subsonic inner stream on front quadrant shock associated noise.

b. Test Points 1703 through 1712 of TAS-17 simulate typical engine operating conditions with shield in community orientation. The typical take-off Test Point 1709/1720 of this configuration has $V^i/V^o \approx$ 0.64 and $V^s/V^o \approx$ 0.83. The inner stream of this test point was modified during Test Point 1721/1722 to yield $V^i/V^o \approx V^s/V^o \approx$ 0.83 such that the effect of equal stress by the shield and inner streams on the primary outer stream can be determined.

c. Test Points 1803 through 1812 of TAS-18 simulate typical engine operating conditions with shield in community orientation.

3.3.3 Test Matrix for Suppressed Coannular Plug Nozzle With 360° Thermal Acoustic Shield (TAS-19)

Configuration TAS-19 employs a full 360° thermal acoustic shield of 1/2" thickness on the suppressor baseline coannular plug nozzle (TAS-15). The shield flow area of this configuration is equal to that of the 1" thick 180° partial shield of TAS-16 through TAS-18. This configuration was tested with the choke plates identical to those used with TAS-17 so that the shield to outer stream velocity and weight flow ratios of TAS-17 and TAS-19 are comparable.

The test matrix of this configuration is presented in Table 3-XII. The distribution of the test points is as follows:

Table 3-XII. Test Matrix for Suppressed Coannular Plug Nozzle with 360° TAS at $V_I = 0.83$; TAS-19 (English Units).

NOZZLE MODEL 19 AREA I MODEL SIZE-INNER= 4.000, OUTER=19.900, SHIELD=17.770, FULL SIZE-TOTAL=1399 } SQ. IN.

TEST POINT	V AC	P R	I T	I T	I V	I W	I P	O R	O T	O V	O W	O P	S R	S T	S V	S W	S P	MIX R	MIX T	MIX V	MIX W	THRUST TOTAL
1903	0	1.578	817	1095	56.5	2.101	1378	1785	285.7	1.532	1368	1377	185.1	1.802	1315	1568	527.4	26703				
1904	400	1.573	832	1102	55.8	2.110	1390	1798	284.8	1.561	1360	1400	190.4	1.817	1321	1582	531.0	26109				
1905	0	1.751	830	1274	63.6	2.391	1477	1982	312.4	1.700	1465	1579	203.6	2.019	1402	1766	579.8	31639				
1906	400	1.751	819	1206	64.0	2.376	1488	1986	309.4	1.727	1456	1596	207.7	2.027	1404	1762	581.0	31818				
1907	0	1.871	871	1310	66.6	2.691	1563	2162	343.0	1.904	1546	1774	217.5	2.269	1483	1937	627.1	37746				
1908	400	1.877	881	1320	66.4	2.701	1556	2161	344.2	1.945	1524	1788	223.2	2.292	1474	1941	633.8	38241				
1909	0	2.278	905	1510	77.8	3.032	1649	2334	375.4	2.144	1631	1968	238.8	2.571	1559	2178	692.8	45543				
1910	400	2.283	895	1503	77.9	3.042	1647	2335	375.3	2.189	1615	1983	243.8	2.595	1552	2119	698.0	45981				
1911	0	2.324	896	1518	79.4	3.614	1658	2490	447.1	2.565	1643	2170	284.2	3.035	1878	2283	810.7	57815				
1912	400	2.322	906	1528	78.7	3.613	1639	2475	448.6	2.607	1609	2164	281.2	3.084	1858	2273	818.5	57820				
1921	0	3.018	1128	1916	91.8	3.045	1663	2348	375.9	2.155	1641	1981	238.7	2.582	1586	2168	706.4	47595				
1922	400	3.033	1143	1933	91.3	3.043	1656	2342	375.1	2.188	1624	1987	242.7	2.677	1579	2168	709.1	47782				

TEST POINT	T AMB	P AMB	RH	V/V	V/V	W/W	S/O	S/O	LVM	LBM	NF	DB	PNL (FULL SIZE, 2400 FT. SIDELINE), DB				
													DEG R	PSIA	PCT	ANGLE RELATIVE TO INLET, DEGREES	70	120	140
1903	483	14.333	49.	0.61	0.77	0.65	1.58	-10.00	-3.7	84.8	87.5	88.5	95.4	94.2	94.4	93.3	69.1
1904	496	14.282	42.	0.61	0.78	0.67	1.61	-10.00	-3.8	89.7	91.7	91.1	96.1	90.5	89.6	86.5	80.2
1905	494	14.326	43.	0.61	0.80	0.65	2.07	-4.58	-4.3	87.4	90.5	91.9	98.0	96.6	98.0	97.9	85.1
1906	495	14.269	43.	0.61	0.80	0.67	2.08	-4.45	-4.3	91.7	94.5	94.1	98.6	94.0	92.7	90.5	84.5
1907	495	14.324	44.	0.61	0.82	0.63	2.49	-2.44	-5.0	89.8	92.5	93.7	99.9	99.2	101.5	101.8	99.4
1908	485	14.283	45.	0.61	0.83	0.65	2.50	-2.32	-5.1	93.0	95.8	95.4	99.8	97.0	95.1	94.7	90.3
1909	486	14.339	39.	0.65	0.84	0.63	2.87	-1.28	-5.8	91.7	94.0	95.1	101.1	103.3	105.3	107.8	103.6
1910	495	14.277	43.	0.64	0.85	0.65	2.88	-1.21	-5.8	95.3	97.3	96.6	100.8	100.4	99.5	100.0	95.8
1911	486	14.311	41.	0.61	0.87	0.64	3.20	-0.30	-6.9	94.3	96.5	97.4	104.1	106.5	109.8	111.8	104.7
1912	495	14.275	42.	0.62	0.87	0.65	3.18	-0.27	-7.0	97.5	99.7	99.1	103.2	104.2	104.9	104.3	99.7
1921	495	14.318	46.	0.82	0.84	0.63	2.98	-1.06	-5.9	92.7	95.0	96.0	102.3	104.2	107.2	110.6	104.4
1922	496	14.262	39.	0.83	0.85	0.65	2.98	-1.02	-6.0	96.2	97.8	97.2	101.4	100.6	101.4	102.0	97.4

Table 3-XII. Test Matrix for Suppressed Coannular Plug Nozzle with 360° TAS at $V_{T,0}^D$ 0.63; TAS-19 (International Units).

NOZZLE MODEL 19 , AREA (MODEL SIZE-INNER=0 0026, OUTER=0 0128, SHIELD=0 0115 , FULL SIZE-TOTAL=0.9031) SQ. METERS

TEST POINT	V MPS	AC MPS	I		I		I		O		O		S		S		MIX		MIX		TOTAL		THRUST	
			P	R	T	R	V	R	W	R	T	R	V	R	W	R	T	R	V	R	T	R	V	W	N
1903	0	1.578	454	334	25.6	2.101	766	544	129.6	1.532	761	420	84.0	1.802	731	478	239.2	7148						
1904	122	1.573	452	335	25.3	2.110	772	548	129.2	1.561	756	427	86.4	1.817	734	482	240.8	7259						
1905	0	1.751	461	370	28.8	2.381	821	604	141.7	1.700	814	461	92.3	2.019	779	535	262.9	8796						
1906	122	1.751	455	368	29.0	2.378	827	606	140.3	1.727	810	487	94.2	2.027	780	537	263.6	8846						
1907	0	1.871	484	399	30.2	2.691	868	659	155.6	1.904	859	541	98.6	2.259	824	590	284.4	10494						
1908	122	1.877	489	402	30.1	2.701	865	659	156.1	1.945	847	545	101.2	2.292	819	592	287.5	10632						
1909	0	2.278	503	460	35.2	3.032	916	711	170.8	2.144	906	600	108.2	2.571	866	645	314.2	12662						
1910	122	2.283	497	456	35.3	3.042	915	712	170.7	2.189	897	604	110.6	2.595	852	648	316.6	12783						
1911	0	2.324	498	463	36.0	3.614	921	759	202.8	2.565	913	662	128.9	3.035	877	696	367.7	15090						
1912	122	2.322	503	465	35.7	3.613	911	754	203.5	2.607	894	659	132.1	3.054	866	693	371.3	16075						
1921	0	3.018	627	584	41.7	3.045	924	716	170.5	2.155	912	604	108.3	2.662	881	661	320.4	13232						
1922	122	3.033	635	589	41.4	3.043	920	714	170.2	2.188	902	606	110.1	2.677	877	661	321.7	13284						

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a. Test Points 1903 through 1912 simulate typical engine operating conditions with shield to outer stream velocity ratio of 0.83 at takeoff.

b. Typical takeoff Test Point 1909/1910 has $V^i/V^0 \approx 0.65$ and $V^s/V^0 \approx 0.83$. The inner stream was modified for Test Point 1921/1922 to yield $V^i/V^0 \approx V^s/V^0 \approx 0.83$.

4.0 ACOUSTIC TEST DATA

The far-field acoustic data measured with the test nozzles described in Section 2.0 at each of the test conditions defined in Section 3.0 are presented in this section. A brief description of the acoustic tables is provided in Subsection 4.1. This is followed by the acoustic data tables that are presented under Subsection 4.2.

A summary of the acoustic data acquisition and reduction procedures along with a brief description of the General Electric's Anechoic Test Facility is provided in the comprehensive data report on the single flow thermal acoustic study of this program*.

4.1 Description of Acoustic Data Tables

The far-field acoustic data for a given test point are described under three successive tabulations. Sample sheets of these tabulations are provided in Tables 4-I through 4-III. The scope of each of these tabulations is summarized below:

<u>SAMPLE SHEET</u>	<u>SIZE</u>	<u>EXTRAPOLATED DISTANCE</u>	<u>TYPE OF DATA</u>
Table 4-I	Actual Size	12.2m (40 ft.) Arc	Untransformed, but corrected for background noise and standard day (15° C and 75% relative humidity, Shield and Bass air attenuation model).

*"Free Jet Feasibility Study of a Thermal Acoustic Shield Concept for AST/VCE Application - Single Flow", Comprehensive Data Report, Volumes I and II by Majjigi, R.K., Brausch, J.F., Janardan, B.A., Hoerst, D.J., Price, A.O. and Knott, P.R., R82AEB493, July 1982. (NASA CR-168302)

TABLE 4-II. DESCRIPTION OF ACOUSTIC DATA SHEET - PAGE 2 OF TEST POINT DATA SET

DATPRC - FLTRAN 11/10/81 14.545

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
40.0 FT. ARC

IDENTIFICATION - 81F-ZER-0101 X0101L

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.
50													
63													
80													
100													
125													
160													
200													
250													
315													
400													
500													
630													
800													
1000													
1250													
1600													
2000													
2500													
3150													
4000													
5000													
6300													
8000													
10000													
12500													
16000													
20000													
25000													
31500													
40000													
50000													
63000													
80000													

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NASJ-22137

VEHICLE NO. = ADH004	TEST DATE = 08-12-81	LOCAT = C41 ANECH CH	CONFIG = 1	MODEL = CO	FLTVEL = 0. FPS
TAIL NO. = 8059	TEST LEGA = NO	PMT AREA = FULL SPHERE	TANK F = 80.00	RAND HG = 89.78	REL HUM = 50.9 PCT
WIND DIR =	DEG WIND VEL = MPH	EXT DIST = 40.0 FT	EXT CONFIG = ARC	NIKE HT =	NBFR =
FXINL =	LBS XNHL = RPM	XNHL =	V8 = 1340.3 FPS	AE8 =	25.3 50 IN
FXIAMB =	LBS XNLR = RPM	XNLR =	V18 =	FP8 AE18 =	0. 50 IN
RUNPT = 81F-ZER-0101	TAPE = X0101L	TEST PT NO = 0101	NC =	880	CORR FAN SPEED =
					RPM

Test Point Number

<u>SAMPLE SHEET</u>	<u>SIZE</u>	<u>EXTRAPOLATED DISTANCE</u>	<u>TYPE OF DATA</u>
Table 4-II	Actual Model	12.2m (40 ft.) Arc	Flight-transformed model data. Refraction and turbulence corrections applied. (For static test points, this is identical to untransformed, but corrected for background standard day data).
Table 4-III	0.9032m ²	731.5m (2400 ft.) Sideline	Flight-transformed model data that is scaled and extrapolated to a typical AST case.

The far-field acoustic data provided in these tables consist of 1/3-octave-band sound pressure levels (SPL, Reference 20 N/m²) and overall sound pressure levels (OASPL) at angles to the inlet of 40° through 160° (in 10° increments). In addition, the perceived noise level (PNL), the tone corrected perceived noise level (PNLT) and A-weighted overall sound pressure level (dBA) have been computed at each of the microphone angles and are presented.

4.2 Acoustic Data of Unsuppressed Coannular Plug Nozzles

For easy reference, the scope of acoustic tests with the unsuppressed coannular configurations summarized in Table 3-I is repeated in Table 4-IV and the acoustic test points associated with each of the test configurations identified.

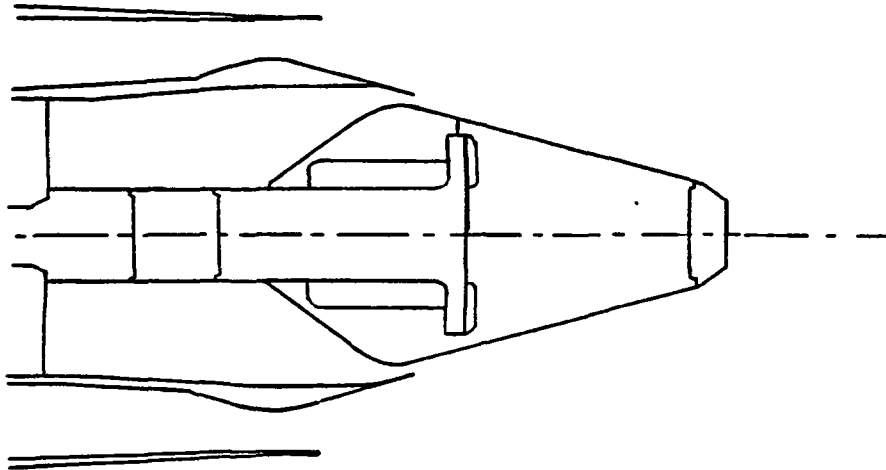
The acoustic data are presented in Subsections 4.2.1 through 4.2.3.

Table 4-IV. IDENTIFICATION OF ACOUSTIC TEST POINTS OF UNSUPPRESSED COANNULAR PLUG NOZZLES.

BASELINE NOZZLE	SHIELD		TEST POINTS		v^s/v^o	CONFIG. NAME	ACOUSTIC TEST POINTS
	TYPE	ORIENT.	STATIC	FLIGHT			
Unsuppressed Coannular Plug Nozzle	No Shield	-	14	7	0.0	TAS-10	1001 thru 1012 1013, 1015, 1017, 1019, 1021, 1022, 1023, 1025, 1027
	180° Partial Shield	Sideline	5	5	0.64	TAS-11	1103-1112
		Community	5	5			
	360° Full Shield	Sideline	6	7	0.83	TAS-12	1203-1212 1220, 1221, 1222
		Axi-Symmetric	7	6	0.83	TAS-14	1403- 1412 1415, 1421, 1422

NOTE: The Shield to Outer Stream Velocity Ratios of This Table Correspond to a Typical Takeoff Condition of $P_0 \sim 3.025$, $T_0 \sim 1640^\circ R$, $P_1^i \sim 2.28$, $T_1^i \sim 880^\circ R$.

4.2.1 Acoustic Data of Unsuppressed Baseline Coannular Plug Nozzle (TAS-10).



IDENTIFICATION - MODEL 83F-ZER-1001 X1001C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	80.1	80.2	80.4	76.7	75.6	78.7	77.8	83.0	79.9	80.7	83.9	87.3	81.5	123.0
63	88.3	87.6	80.8	84.4	82.2	86.6	86.6	82.6	86.1	84.6	86.3	91.7	88.4	130.2
80	88.3	88.6	84.3	82.6	82.2	87.8	87.0	87.1	86.8	88.4	90.5	91.2	74.4	129.1
100	81.7	88.2	84.0	83.8	85.4	88.8	88.1	89.8	87.8	91.1	93.2	95.9	77.8	131.2
125	79.9	84.9	87.4	86.2	87.3	89.7	89.3	89.0	89.2	92.3	98.4	100.6	83.0	134.1
160	80.2	80.0	85.0	81.3	83.1	86.7	85.6	87.8	88.0	92.6	97.9	100.6	88.8	134.3
200	80.8	82.8	86.3	82.4	84.5	87.6	90.2	91.4	92.1	94.1	99.5	104.2	91.9	136.2
250	78.8	85.3	85.6	82.6	85.0	89.3	90.2	92.1	94.1	99.2	104.0	107.5	95.1	139.6
315	81.8	85.1	86.6	84.9	87.3	90.4	92.3	93.2	94.6	100.0	105.1	108.3	98.9	140.6
400	81.1	85.1	86.4	84.7	86.5	89.4	100.5	94.4	96.9	102.9	106.6	109.5	100.2	142.5
500	82.3	86.1	86.9	85.2	87.0	90.9	91.5	94.2	96.9	103.2	106.8	109.0	100.9	142.1
630	82.3	86.1	87.1	85.9	88.2	91.8	93.0	95.4	97.6	103.7	107.5	108.2	101.1	142.2
800	84.3	86.1	87.6	86.4	88.8	92.4	93.0	96.2	98.9	103.7	105.8	106.0	101.2	141.2
1000	87.8	90.3	90.3	88.1	89.7	93.3	93.4	97.6	98.6	103.6	105.5	103.9	100.1	140.9
1250	85.4	90.5	90.0	88.9	90.6	94.0	93.9	97.5	99.5	102.8	103.7	103.4	99.8	140.2
1600	86.6	88.7	89.7	88.3	90.5	94.7	95.5	98.3	100.4	102.0	104.6	102.8	100.4	140.4
2000	87.6	89.6	89.6	88.4	90.2	93.6	95.3	98.4	99.8	102.6	103.6	102.4	101.1	140.2
2500	86.5	89.3	89.8	88.3	91.0	93.8	94.5	98.1	99.5	101.8	102.3	100.8	100.1	139.5
3150	86.6	88.9	89.5	88.2	90.1	93.9	95.0	97.7	100.8	100.7	100.9	99.0	98.2	138.9
4000	85.6	87.7	89.1	87.2	89.9	93.4	94.5	97.6	98.7	99.0	98.9	98.5	98.0	137.9
5000	84.7	88.2	88.3	86.9	89.4	93.1	93.3	97.1	98.1	99.3	98.3	97.3	98.1	137.6
6300	83.7	87.3	87.4	86.7	89.0	92.7	93.2	96.4	97.5	97.2	97.4	97.1	98.1	137.0
8000	81.9	85.3	86.3	85.5	87.9	91.4	92.4	95.0	96.0	95.7	96.1	95.5	97.1	136.1
10000	81.1	86.0	86.5	85.5	87.6	91.4	91.6	94.4	95.9	94.6	94.9	95.2	95.8	136.0
12500	79.2	82.7	84.5	83.8	86.4	90.1	90.5	92.7	94.1	93.5	93.5	93.9	94.9	135.4
16000	77.0	82.5	83.0	83.2	84.2	88.2	89.0	91.7	92.6	90.9	91.8	91.5	91.9	135.0
20000	75.5	78.8	81.4	80.9	82.1	86.1	86.7	88.6	89.5	88.3	88.7	89.5	89.0	134.1
25000	73.1	77.1	78.9	79.2	79.8	84.4	84.3	83.9	86.6	85.3	85.6	86.9	86.3	133.6
31500	70.0	74.1	75.4	77.1	76.9	81.1	80.0	80.8	82.9	81.8	82.3	82.2	82.2	133.1
40000	65.7	68.8	72.3	72.7	73.3	77.7	76.5	76.5	78.8	78.4	78.9	78.6	77.5	133.4
50000	60.3	64.2	66.3	67.1	68.1	72.9	71.3	71.1	73.2	72.3	73.3	72.9	70.9	132.2
63000	55.3	58.9	61.4	61.5	62.1	67.6	65.2	65.3	68.1	65.8	66.2	66.2	63.8	131.9
80000	50.2	52.4	54.4	54.1	55.6	61.4	58.3	58.9	60.6	59.1	61.0	58.9	55.2	131.8
GASPL	98.2	101.3	101.9	100.2	102.1	105.7	107.6	109.4	111.0	114.0	116.5	117.7	112.0	153.1
PNL	110.8	113.6	114.2	112.8	114.7	118.4	119.7	122.1	124.2	125.7	127.1	127.0	123.9	
PNLT	110.8	113.6	114.2	113.4	115.2	118.4	121.1	122.1	124.2	125.7	127.1	127.0	123.9	
DBA	97.2	100.1	100.6	99.2	101.3	104.9	106.1	108.8	110.7	113.2	115.0	115.0	111.3	

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NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH127	TEST DATE = 03-17-83	LOCAT = C41 ANECH CH	CONFIG = 10	MODEL = AN	FLTVEL = 0. FPS
IAPLHA = SB59	TEST WIND DIR = NO	PWL AREA = FULL SPHERE	TAMB F = 51.41	PAPMB NO = 89.89	RELHUM = 40.9 PCT
WIND DIR =	DEG WIND VEL =	EXT DIST = 40.0 FT	EXT CONFIG = ARC	MIKE NO =	NBFR =
FNINI =	LBS XNLR	RPM	RPM	V6 =	V8 =
FNRAMB =	LBS XNLR	RPM	RPM	V6 = 1091.9 FPS	AEG = 4.8 SQ IN
RUNPT = 83F-ZER-1001	TAPE = X1001C	TEST PT NO = 1001	NC =	V6 = 1603.9 FPS	AE16 = 23.4 SQ IN
					CORR FAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1001 X10011

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	59.1	64.2	66.8	65.8	68.5	71.8	73.5	74.0	74.8	79.0	82.6	83.6	70.9	157.6
63	58.5	64.1	66.5	65.5	67.7	70.7	71.7	75.2	77.0	82.0	84.1	84.8	72.1	159.5
80	59.8	65.1	67.0	66.0	68.2	72.2	72.7	75.0	77.0	82.2	84.3	84.3	72.8	159.0
100	59.7	65.0	67.1	66.6	69.4	73.1	74.1	76.1	77.6	82.6	84.9	83.4	72.8	159.2
125	61.6	65.0	67.6	67.1	69.9	73.6	74.1	76.9	78.8	82.6	83.1	81.0	72.6	158.2
150	64.8	69.0	70.1	68.6	70.7	74.4	74.4	78.1	79.4	82.3	82.6	78.7	71.2	157.9
200	62.2	68.9	69.6	69.2	71.4	74.9	74.7	77.9	79.1	81.3	80.5	77.8	70.4	157.1
250	63.1	66.9	69.0	68.4	71.1	75.4	76.1	78.4	79.8	80.2	81.1	76.7	70.4	157.4
315	63.6	67.4	68.8	68.3	70.6	74.1	76.7	78.3	78.8	80.4	79.6	75.8	70.3	157.2
400	62.0	66.7	68.5	67.8	70.9	74.0	74.5	77.6	78.2	79.2	77.8	73.6	68.2	158.4
500	61.6	66.9	67.8	67.4	69.7	73.7	74.7	76.9	79.1	77.6	75.9	71.1	65.3	155.9
630	60.1	64.3	67.0	66.1	69.3	72.9	73.9	76.4	76.7	75.5	73.4	69.8	64.0	154.8
800	58.6	64.2	65.8	65.4	68.5	72.3	72.3	75.6	75.7	75.4	72.2	67.8	62.8	154.6
1000	57.0	62.9	64.6	64.9	67.7	71.6	72.0	74.6	74.7	72.8	70.7	66.8	61.5	154.0
1250	54.5	60.4	63.1	63.3	66.3	70.0	70.8	72.8	72.8	70.8	68.7	64.2	58.9	153.0
1600	52.6	59.2	62.6	62.7	65.5	69.4	69.5	71.6	71.9	68.9	66.4	62.3	55.0	153.0
2000	49.1	55.8	59.7	60.3	63.8	67.6	67.6	69.1	69.3	66.6	63.5	58.8	50.6	152.4
2500	44.8	54.0	56.8	56.8	60.5	64.7	65.3	67.1	66.5	62.4	59.6	53.2	42.3	152.0
3150	39.3	48.2	52.8	54.1	56.3	60.7	60.9	60.9	60.9	56.7	52.5	45.7	30.3	151.0
4000	29.9	40.0	45.7	48.4	50.3	55.3	54.8	53.0	53.4	48.3	42.4	33.3	12.3	150.9
5000	16.2	28.6	35.1	40.0	41.6	46.3	44.7	43.7	42.6	36.3	28.5	14.1	150.1	
6300	9.7	19.9	24.4	27.6	32.7	30.7	28.3	26.1	18.3	6.9			150.3	
8000					3.2	9.2	6.4	2.6					148.2	
10000													148.9	
12500													148.8	
15000														
20000														
25000														
31500														
40000														
50000														
63000														
80000														
GNAPL	73.0	77.7	79.6	79.0	81.6	85.2	87.2	88.5	89.6	91.9	92.6	91.5	81.7	169.6
PNL	76.7	82.2	84.6	84.6	87.4	91.4	92.0	94.0	94.9	95.1	94.5	91.4	83.1	
PNLT	76.7	82.2	84.6	84.6	87.9	91.9	92.6	94.6	94.9	95.1	94.5	91.4	83.1	
DBA	68.8	71.9	74.1	73.9	76.7	80.5	81.0	83.5	84.1	83.5	82.1	78.3	72.1	

ORIGINAL PAGE IS OF POOR QUALITY

MODEL AREA = 180.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.086 FREQ SHIFT = -6

NASA_DUAL_FLOW_THERMAL_SHIELD/DFTAS-10/NAS3-22137

VEHICL = ADH127 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = MAX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 51.41 PAMB HO = 20.25 RELHUM = 40.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBER =
 FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1091.9 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNL = RPM XNHR = RPM V18 = 1603.9 FPS AE18 = 23.4 SQ IN
 RUNPT = 83F-ZER-1001 TAPE = X10011 TEST PT NO = 1001 NC = AE090 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1002 X1002C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PML

50	80.2	81.2	77.7	74.3	77.8	76.7	82.0	79.7	81.3	85.4	90.0	123.4
63			87.6		84.6	83.3	90.1	86.4		86.8	93.0	127.5
80	81.3	88.7	83.1	81.2	78.2	86.5	85.3	86.0	88.2	88.5	89.5	127.3
100	79.9	85.8	82.0	79.9	85.7	84.9	86.7	85.8	86.8	89.1	93.8	128.1
125	77.9	80.8	83.4	81.4	80.8	86.1	85.2	85.2	86.0	86.7	93.3	129.9
160			76.8	81.4	77.0	74.1	81.5	89.7	84.5	86.6	87.8	93.9
200			81.9	75.8	81.7	83.5	86.9	89.2	88.5	94.2	99.9	87.5
250	73.1	78.0	79.1	77.1	76.7	82.5	84.1	88.9	88.8	93.3	98.8	102.0
315			79.7		83.4	84.2	87.9	89.5	93.8	99.6	102.3	91.6
400	76.7	78.7	79.6	77.8	77.7	83.6	87.2	90.8	96.6	101.1	102.5	90.3
500	76.8	79.2	80.7	78.5	78.3	84.2	85.6	88.1	91.1	97.7	101.6	100.8
630	76.7	79.7	80.7	79.2	79.9	85.7	86.9	88.8	91.6	98.1	102.0	98.5
800	78.4	79.8	81.3	79.9	79.7	86.5	87.2	90.1	93.1	98.2	100.6	95.5
1000	80.4	80.7	82.2	80.7	81.0	87.2	87.9	91.8	93.8	97.9	99.8	92.7
1250	78.8	82.6	82.7	81.5	81.2	88.3	91.2	94.2	97.3	97.4	90.8	82.3
1600	79.5	81.4	82.3	82.2	82.4	88.6	89.2	92.5	95.1	97.2	97.1	89.5
2000	80.0	80.5	82.2	81.3	81.5	87.8	89.5	92.8	94.7	97.2	95.3	88.3
2500	78.8	81.7	82.7	81.4	82.2	88.7	88.9	92.5	94.4	96.7	95.0	87.2
3150	79.7	81.0	82.6	81.7	81.4	87.9	89.6	92.1	95.4	96.0	93.8	86.4
4000	78.4	80.8	82.6	80.8	81.9	87.6	89.3	91.6	93.8	93.7	92.2	85.5
5000	80.2	81.1	82.3	80.8	81.9	88.3	89.2	91.6	93.4	93.9	91.6	85.3
6300	78.6	80.7	82.0	80.7	81.3	87.5	88.0	91.5	92.1	91.6	90.5	85.0
8000	78.5	79.5	81.3	80.4	80.4	86.6	87.4	89.2	90.8	90.8	89.1	83.5
10000	78.1	80.2	81.4	80.4	80.6	86.5	87.3	89.3	90.8	90.6	88.1	83.7
12500	77.4	78.7	80.0	78.9	79.4	85.8	85.9	87.6	89.1	87.7	86.4	83.4
16000	76.3	78.2	78.9	79.3	77.7	83.8	84.9	86.3	85.1	84.7	81.7	78.3
20000	75.3	76.8	77.7	76.8	75.4	82.1	83.2	83.4	85.1	84.7	81.7	78.3
25000	73.2	74.8	75.6	75.3	73.8	80.0	80.9	79.4	82.0	79.7	78.3	76.9
31500	70.4	71.8	72.8	73.4	71.4	77.1	76.8	76.4	78.3	75.8	73.2	66.8
40000	66.6	68.8	69.9	70.2	68.0	74.4	74.0	73.1	74.3	71.8	69.8	63.1
50000	61.9	62.8	64.1	65.0	63.6	69.7	68.6	67.7	69.1	66.4	66.6	63.9
63000	56.7	57.7	59.6	59.6	57.6	64.6	62.9	62.8	64.0	60.2	61.7	58.3
80000	48.5	48.8	52.6	52.6	58.9	55.8	56.6	57.3	53.1	50.8	42.6	27.5

GASPL 92.4 95.0 96.3 94.1 93.9 100.4 101.3 103.9 105.9 108.5 110.7 110.3 98.2 147.0
 PNL 103.9 105.8 108.0 106.0 112.8 112.6 112.6 112.6 119.1 120.4 120.7 117.9 107.1
 PNL 110.5 112.5 108.0 112.7 112.6 112.6 120.4 116.6 119.1 127.1 120.7 117.9 107.1
 DBA 90.9 92.5 93.8 92.6 92.9 99.2 100.1 103.1 106.4 107.9 108.8 105.3 95.0

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

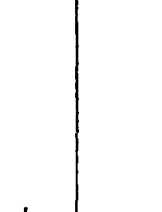
VEHICLE = ADH142 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AN FLTVEL = 400. FPS
 IAPLHA = 9859 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 50.96 PAMB NO = 80.00 RELHUM = 64.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = 1.00 NBFR =
 FNIN1 = LBS XNL RPM XNHR = RPM V8 = 1130.0 FPS AE9 = 4.0 80 IN
 FNRAMB = LBS XNL RPM XNHR = RPM V18 = 1621.6 FPS AE18 = 23.4 80 IN
 RUNPT = 83F-400-1002 TAPE = X1002C TEST PT NO = 1002 NC = AE090 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1002 X1002F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL



FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
250	81.5	84.7	84.2	80.4	78.4	82.5	82.7	83.0	87.3	91.0	96.6	100.0	91.5	132.4
315	81.5	84.7	84.2	80.4	79.0	83.6	83.2	86.0	88.5	93.8	98.2	100.8	91.5	133.6
400	82.0	84.7	84.6	80.8	79.5	83.9	83.9	85.1	88.7	94.8	98.7	99.5	89.8	133.6
500	83.0	84.9	84.4	81.1	80.1	84.5	84.6	85.7	89.2	95.3	99.4	97.9	88.9	133.4
630	83.9	85.2	85.4	81.8	81.8	86.1	85.8	86.4	91.2	95.8	98.5	96.2	90.0	133.2
800	84.4	86.1	85.7	82.7	81.7	87.1	86.2	87.8	92.5	96.2	98.8	95.1	94.1	133.6
1000	86.1	86.2	86.3	83.5	83.1	87.9	87.1	89.7	92.9	95.7	96.4	93.1	92.1	132.9
1250	88.1	87.2	87.3	84.3	83.6	88.2	87.6	89.2	94.0	95.8	96.2	91.9	92.1	133.1
1600	86.5	89.1	87.8	85.2	84.8	89.6	88.7	90.7	93.9	96.1	95.7	91.0	92.4	133.4
2000	87.1	87.9	87.6	86.0	84.2	89.1	89.3	91.3	94.1	96.1	95.0	90.7	93.3	133.4
2500	87.6	87.1	87.5	85.3	85.7	90.3	89.2	91.5	95.6	95.8	94.0	89.9	91.3	133.5
3150	90.2	90.5	89.9	86.7	85.2	90.0	90.4	91.5	95.2	94.7	93.9	90.6	93.1	133.8
4000	90.1	90.0	87.2	86.2	86.2	90.2	91.1	92.2	94.9	95.0	93.2	90.4	92.4	133.8
5000	89.8	89.7	90.1	86.6	86.5	91.3	91.3	92.3	94.1	93.4	92.9	90.9	92.6	133.8
6300	90.5	90.1	89.8	86.8	85.8	90.5	90.3	92.6	93.2	93.0	92.0	89.9	92.7	133.6
8000	88.7	89.5	89.4	86.5	85.0	89.6	89.6	90.5	93.5	93.1	91.3	90.3	92.7	133.6
10000	88.4	88.2	88.6	86.1	85.2	89.5	89.6	90.6	92.8	91.3	90.5	90.6	92.5	133.5
12500	87.8	88.6	88.4	85.7	84.0	88.8	88.3	89.4	92.1	89.3	89.5	89.5	91.2	133.4
15000	86.6	86.5	86.4	83.8	81.7	86.8	87.4	88.2	90.0	87.1	86.4	86.9	88.7	132.8
20000	82.2	83.4	83.2	82.6	79.5	85.1	85.7	85.3	87.2	84.6	83.4	84.9	86.0	132.0
25000	80.6	81.4	81.4	79.5	77.8	83.0	83.2	81.1	84.6	81.9	81.5	82.6	83.1	131.9
31500	77.7	78.6	78.7	77.2	75.4	80.1	79.3	78.3	81.2	78.5	78.9	79.7	79.8	132.0
40000	74.1	74.7	74.9	74.5	72.1	77.4	76.3	74.7	76.6	73.7	74.4	74.7	74.9	132.2
50000	69.9	71.3	71.6	70.9	68.2	72.7	70.9	69.5	72.6	68.9	71.0	70.7	70.5	132.4
63000	67.1	66.7	66.5	65.9	62.2	67.6	65.4	64.8	67.2	63.5	64.1	65.1	64.0	132.5
80000	60.4	60.1	59.7	59.0	55.4	61.9	58.0	56.2	57.4	53.7	54.3	55.3	54.2	132.1
CASPL	100.3	100.8	100.7	97.9	96.9	101.5	101.4	102.8	105.8	107.2	108.6	107.8	104.8	147.2
PNL	112.7	113.2	112.9	110.0	109.1	113.5	113.7	115.1	118.1	119.0	118.8	116.4	116.7	
PNLT	112.7	113.2	112.9	110.0	109.1	113.5	113.7	115.1	118.1	119.0	118.8	116.4	116.7	
DBA	182.4	182.3	182.0	181.3	177.8	183.7	180.6	180.4	181.2	177.6	178.4	179.1	178.3	

ORIGINAL PAGE IS OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DTAS-10/NAS3-22137

VEHICL = AOH142 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AM FLTVEL = 400. FPS
 IAPLHA = SB88 TEGA = NO PWL AREA = FULL SPIERE TAMB F = 50.96 PAMB HQ = 89.00 RELHUM = 64.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = 1.00

FNINI = LBS XNL RPM XNH RPM V8 = 1130.0 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 1621.6 FPS AE16 = 23.4 SQ IN

RUNPT = 83F-400-1002 TAPE = X1002F TEST PT NO = 1002 NC = AEO90 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1002 X10021

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	59.0	63.8	64.3	61.3	60.3	65.0	64.5	66.8	68.6	72.9	75.7	76.1	63.5	150.6
63	59.5	63.7	64.8	61.6	60.7	65.3	65.1	65.9	68.8	73.8	76.2	74.8	61.8	150.4
80	60.4	63.9	64.8	61.9	61.3	65.9	65.8	66.5	69.3	74.3	76.8	73.1	60.7	150.4
100	61.2	64.2	65.5	62.5	63.0	67.4	67.0	67.1	71.2	74.8	75.9	71.3	61.6	150.2
125	61.7	64.9	65.6	63.4	62.8	68.3	67.3	68.5	72.4	75.1	76.0	70.1	65.5	150.6
160	63.2	64.9	66.1	64.1	64.1	69.0	68.0	70.2	72.7	74.3	73.4	67.9	63.2	149.9
200	64.9	65.6	66.9	64.7	64.3	69.2	68.4	69.6	73.7	74.2	73.0	66.3	62.7	150.1
250	63.0	67.3	67.2	65.4	65.4	70.4	69.3	70.9	73.3	74.3	72.1	65.0	62.3	150.4
315	63.2	65.8	66.6	65.9	64.5	69.5	69.6	71.2	73.2	73.9	71.0	64.1	62.4	150.4
400	63.1	64.5	66.2	64.8	65.7	70.5	69.2	71.0	74.3	73.2	69.5	62.6	59.4	150.4
500	65.3	67.5	68.2	65.9	64.9	69.8	70.0	70.7	73.5	71.7	68.9	62.6	60.2	150.8
630	64.5	66.5	66.0	66.1	65.5	69.7	70.4	71.0	72.8	71.6	67.7	61.7	58.4	150.9
800	63.6	65.8	67.6	65.1	65.6	70.5	70.4	70.8	71.7	69.4	66.8	61.4	57.3	150.8
1000	63.8	65.8	67.0	65.0	64.7	69.4	69.0	70.8	70.4	68.6	65.3	59.6	56.2	150.6
1250	61.4	64.6	66.2	64.4	63.4	68.3	68.1	68.3	70.3	68.2	63.9	59.1	54.6	150.4
1600	59.9	62.4	64.6	63.3	63.1	67.6	67.5	67.8	68.9	65.5	62.0	57.7	51.7	150.4
2000	57.8	61.7	63.6	62.2	61.2	66.2	65.5	65.9	67.2	62.4	59.4	54.5	46.8	150.3
2500	54.3	58.0	60.3	59.1	57.9	63.3	63.6	63.5	63.8	58.6	54.2	48.7	39.0	149.8
3150	46.0	51.8	54.6	55.8	53.7	59.7	59.9	58.6	53.0	47.2	41.0	27.3	149.0	
4000	37.4	44.4	48.2	48.7	48.3	53.8	53.6	50.3	51.4	44.9	38.3	29.0	9.2	148.8
5000	33.9	39.1	38.4	40.1	40.1	45.3	43.9	41.2	40.9	33.1	25.1	11.6	149.0	
6300	2.1	14.7	22.1	26.3	26.2	32.4	30.4	26.5	23.8	13.7	2.4	149.2	149.2	
8000				2.6	3.3	8.9	6.0	1.0					149.4	
10000													149.5	
12500													149.1	
15000														
20000														
25000														
31500														
40000														
50000														
63000														
80000														

MODEL AREA = 180.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.086 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFIAS-10/NAS3-22137

VEHICL = ADH142 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AN FLTVEL = 400. FPS
 TAPLHA = SB899 IEGA = NO PNL AREA = FULL SPHERE TAMB F = 50.98 PAMB HG = 29.08 RELHUM = 64.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBR
 FNINI = LBS XNL = RPM XNHR = RPM V8 = 1130.0 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1621.6 FPS AE16 = 23.4 SQ IN

INPT 3F 1000 TAPE = 721 PT = 10 IC AE 3 DRR 3 SPE 1 RP

IDENTIFICATION - MODEL 83F-ZER-1003 X1003C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL	
50	60.4	60.2	78.9	78.5	76.1	80.4	79.3	85.0	80.9	80.9	78.7	86.6	88.1	80.2	124.3	
63	86.5	86.3	85.9	85.6	82.7	87.6	86.5	82.4	86.8	87.4	87.4	93.8	92.5	90.4	130.9	
80	83.8	88.8	85.8	84.1	84.7	88.8	88.0	88.4	89.1	89.2	91.5	92.2	91.5	92.2	79.1	130.2
100	83.5	88.7	85.8	85.0	86.9	89.5	88.6	91.0	89.5	92.6	94.5	96.6	80.1	132.4		
125	80.9	85.4	86.2	87.0	86.3	90.7	89.6	89.7	89.7	89.7	93.0	98.9	101.3	84.2	134.8	
160	80.7	81.0	85.5	82.5	84.1	88.0	93.4	89.6	90.0	94.3	99.7	102.6	90.0	136.6		
200	82.0	82.6	86.1	83.4	85.7	88.6	90.5	92.6	94.3	95.6	101.3	106.0	93.4	137.8		
250	81.3	86.8	87.1	84.6	86.5	90.3	92.0	93.6	95.1	100.7	105.8	108.7	97.1	141.1		
315	82.1	85.9	85.9	85.9	86.5	91.9	93.3	94.7	96.1	101.5	107.3	109.5	100.4	142.2		
400	83.1	86.6	87.9	85.7	87.8	91.1	101.0	95.2	98.4	104.9	108.8	111.5	102.4	144.4		
500	83.8	87.9	88.1	86.4	88.5	92.4	93.0	95.7	98.1	105.0	108.6	110.6	102.9	143.6		
630	83.8	87.3	88.3	87.1	90.0	93.6	94.2	96.4	99.1	105.7	109.5	110.0	103.6	144.1		
800	85.8	87.4	89.4	87.7	90.0	94.4	94.5	97.7	100.4	105.7	107.8	108.3	103.9	143.2		
1000	85.3	92.0	91.8	89.4	91.4	94.8	95.7	98.9	101.6	105.4	107.8	108.4	103.1	143.0		
1250	87.2	91.7	91.7	90.4	92.6	95.7	95.6	98.8	101.7	104.8	106.2	108.1	103.0	142.4		
1600	87.8	90.0	90.9	90.3	92.0	95.9	97.0	99.3	101.7	104.5	106.6	106.5	103.9	142.7		
2000	89.0	91.1	91.5	90.2	92.0	95.4	97.1	99.9	101.8	104.3	105.8	106.1	103.9	142.5		
2500	88.5	91.3	91.6	89.6	92.4	96.1	96.2	99.9	101.5	104.3	104.8	103.6	103.6	141.6		
3150	88.1	90.4	91.2	89.5	91.5	95.4	96.7	99.5	102.6	103.4	103.4	103.8	102.7	141.5		
4000	88.9	89.2	90.8	88.7	91.2	95.4	95.8	99.1	101.0	101.2	102.4	103.4	102.3	140.6		
5000	86.0	89.4	90.0	88.4	90.7	94.9	94.8	98.6	100.4	101.3	101.3	102.3	100.8	140.0		
6300	84.7	88.3	88.9	87.7	89.4	90.7	94.4	98.4	99.7	99.4	98.9	101.6	100.1	139.4		
8000	83.1	86.8	88.1	87.3	89.4	93.2	94.1	96.5	97.8	98.2	98.3	100.0	99.1	138.3		
10000	82.9	86.3	87.3	87.3	89.4	92.9	93.4	95.9	97.9	97.4	96.4	98.7	98.3	138.1		
12500	81.9	85.2	87.3	86.4	88.2	91.9	92.0	94.2	95.4	95.5	95.0	97.9	97.2	137.4		
16000	79.9	84.6	86.8	86.0	86.6	90.0	90.9	93.3	94.2	92.5	92.9	95.6	94.3	137.0		
20000	77.8	82.4	83.8	84.0	84.8	88.0	88.6	89.5	91.5	90.2	90.8	92.9	91.9	136.2		
25000	74.8	79.3	80.9	81.7	82.8	86.9	86.3	86.1	88.6	87.6	89.6	89.6	89.0	135.8		
31500	71.5	77.4	77.4	77.4	79.2	83.3	82.8	82.9	84.7	83.6	84.6	85.7	84.2	135.4		
40000	67.3	71.7	73.6	75.0	75.7	80.1	78.9	79.4	80.2	80.3	81.0	81.7	80.0	135.6		
50000	65.1	65.7	67.8	69.8	70.2	74.8	73.2	73.7	75.4	74.7	75.2	76.3	74.0	134.5		
63000	58.9	60.6	63.1	63.4	64.3	69.6	68.7	70.5	69.1	70.4	70.7	70.7	67.5	134.4		
80000	51.4	53.6	56.1	55.8	57.3	63.1	60.5	61.9	63.8	61.4	64.0	63.5	60.1	134.4		

GASPL 99.5 102.5 103.2 101.7 103.7 107.4 108.8 110.8 112.8 116.0 118.6 119.9 114.8 155.1
 PNL 112.2 115.0 115.7 114.1 116.2 120.0 121.2 123.7 126.0 127.9 129.5 130.2 127.0
 PNL 112.2 115.0 115.7 114.6 116.2 120.0 122.5 123.7 126.0 127.9 129.5 130.2 127.0
 DBA 98.7 101.6 102.2 100.6 102.9 106.6 107.6 110.3 112.5 115.3 117.2 117.8 114.3

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH128	TEST DATE = 03-17-83	LOCAT = C41 ANECH CH	CONFIG = 10	MODEL = AX	FLTVEL = 0. FPS
I ALPHA = SB59	TEST WIND VELOCITY = NO	PWL AREA = FULL SPHERE	TAMB F = 53.90	PAMB HQ = 20.19	RELHUM = 98.9 PCT
WIND DIR =	DEG WIND VELOCITY =	EXT DIST = 40.0 FT	EXT CONFIG = ARC	MIKE MT =	NBFR =
FNINI =	LBS XNLR =	RPM XNHR =	V8 = 1088.7 FPS	AE8 =	4.8 80 IN
FNRAMB =	LBS XNLR =	RPM XNHR =	V18 = 1764.6 FPS	AE18 =	83.4 80 IN
RUNPI = 83F-ZER-1003	TAPE = X1003C	TEST PI NO = 1003	NC = AE090	CORR FAN SPEED =	RPM

ORIGINAL PAGE IS OF POOR QUALITY

IDENTIFICATION - 83F-ZER-1003 X10031

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL	
50	59.6	64.9	66.0	66.8	69.8	73.3	74.5	75.5	76.3	80.5	84.9	84.9	84.9	72.4	159.2
63	60.6	65.6	68.0	68.5	69.0	72.5	82.2	76.0	78.5	84.0	85.3	86.8	86.8	74.4	161.4
80	61.3	66.9	68.2	67.2	69.7	73.7	74.2	76.5	78.2	84.0	86.1	86.0	86.0	74.8	160.8
100	61.2	66.3	68.4	67.9	71.1	74.9	75.4	77.1	79.1	84.6	86.9	85.1	85.1	75.3	161.1
125	62.8	68.2	69.3	68.4	71.1	75.6	75.6	78.4	80.3	84.6	85.1	83.2	83.2	75.4	160.2
160	66.3	70.7	71.6	69.9	72.4	75.9	76.7	79.4	81.4	84.1	84.8	81.2	81.2	74.2	160.0
200	64.0	70.2	71.3	70.7	73.4	76.7	76.4	79.1	81.3	83.3	83.0	80.6	80.6	73.6	159.4
250	64.3	68.2	70.3	70.4	72.6	76.6	77.6	79.4	81.0	82.7	83.1	80.5	80.5	73.9	159.7
315	65.1	68.9	70.6	70.0	72.3	75.8	77.4	79.8	80.8	82.1	81.9	79.5	79.5	73.0	159.4
400	64.0	68.7	70.3	69.1	72.4	76.2	76.2	79.4	80.2	81.7	80.3	76.6	76.6	71.7	158.8
500	63.1	67.4	69.5	68.7	71.2	75.2	76.4	78.7	80.9	80.4	78.4	76.8	76.8	69.8	158.5
630	61.3	65.7	66.8	67.6	70.5	74.9	75.1	77.9	78.9	77.7	76.9	74.7	74.7	68.3	157.5
800	59.8	65.5	67.6	66.9	69.7	74.1	73.8	77.1	77.9	77.4	75.2	72.8	72.8	65.5	157.0
1000	58.0	63.9	66.0	65.9	69.5	73.4	73.7	76.6	76.9	75.1	73.2	71.3	71.3	63.5	156.4
1250	55.8	61.9	64.9	65.1	67.8	71.8	72.6	74.3	74.6	73.3	71.0	68.7	68.7	60.9	155.3
1600	54.3	61.0	64.3	64.5	67.3	71.0	71.3	73.1	73.9	71.6	67.9	65.8	65.8	57.5	155.1
2000	51.9	58.4	62.5	62.9	65.4	69.3	69.2	70.7	70.6	68.6	65.0	62.9	62.9	52.9	154.4
2500	47.7	56.1	59.7	61.4	62.8	66.9	67.1	68.7	68.1	64.0	60.7	57.3	57.3	44.6	154.0
3150	41.7	50.9	55.2	57.2	59.0	62.6	62.8	62.7	62.8	58.7	54.7	49.1	49.1	33.2	153.2
4000	31.6	42.3	47.7	50.9	53.3	57.8	56.8	55.3	55.4	50.3	44.4	36.0	36.0	15.0	152.8
5000	17.7	28.4	37.2	42.6	43.9	48.5	47.5	45.8	44.4	38.2	30.8	17.6	17.6	152.4	152.4
6300	11.6	20.9	26.7	29.8	35.0	33.0	31.1	27.4	20.2	9.0	152.8	152.8	152.8	151.5	151.5
8000			1.3	5.3	11.0	8.3	5.2	0.4			151.4	151.4	151.4	151.4	151.4
10000															
12500															
15000															
20000															
25000															
31500															
40000															
50000															
63000															
80000															
GASPL	74.4	79.2	81.1	80.4	83.1	87.0	88.5	89.9	91.4	93.9	94.9	93.7	93.7	84.4	171.7
PWL	78.5	84.0	86.4	86.7	89.2	93.2	93.7	95.6	96.7	97.4	96.7	94.4	94.4	86.2	
PNLT	78.5	84.0	86.4	87.2	89.8	93.8	94.3	96.2	97.3	97.4	96.7	94.4	94.4	86.2	
DBA	88.3	73.5	75.9	75.5	78.3	82.3	82.7	85.1	86.0	85.8	84.6	82.1	82.1	75.3	

MODEL AREA = 180.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.086 FREQ SHIFT = -6

NASA DUAL FLOW THERMAL SHIELD/DETIAS-10/NAS3-22137

VEHICLE = ADH128 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = S859 IEGA = NO PWL AREA = FULL SPHERE TAMF F = 53.80 PAMB HQ = 89.13 RELHUM = 38.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBER =

FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1088.7 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1764.6 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1003 TAPE = X10031 TEST PT NO = 1003 NC = AE090 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1004 X1004C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	63.4	63.2	79.2	77.5	75.8	79.4	78.3	83.5	82.2	82.7	87.4	89.8	86.7	125.2
63	86.0	85.5	87.6	82.9	80.7	85.8	85.4	90.1	88.6	87.1	88.3	93.0	91.4	129.7
80	82.8	88.8	85.9	83.6	82.7	88.1	87.7	87.6	89.3	88.9	90.5	91.2	85.9	129.8
100	81.5	87.7	84.0	83.0	83.6	87.8	87.1	88.8	87.5	89.6	91.7	96.1	86.6	130.6
125	79.6	82.9	84.9	83.7	84.3	87.4	87.3	87.0	86.9	89.5	95.9	99.1	88.5	132.1
160	77.7	78.2	82.7	79.5	79.9	84.2	95.9	86.0	90.2	90.8	96.2	99.1	89.8	133.3
200	79.3	79.3	82.3	78.9	79.6	84.1	88.0	88.1	91.3	90.4	96.5	102.0	91.6	133.7
250	76.5	80.3	80.8	79.4	80.7	84.3	85.7	87.6	90.6	95.2	100.5	103.7	91.9	135.9
315	78.1	80.4	81.6	79.9	81.3	85.4	87.5	90.2	91.9	95.5	101.6	104.0	93.9	136.7
400	78.3	80.8	82.1	79.7	81.0	85.4	82.0	89.2	92.9	99.2	103.6	104.5	92.4	138.0
500	78.6	80.9	82.4	81.2	82.0	86.4	89.3	90.2	92.9	99.7	103.8	103.3	90.4	137.8
630	78.5	81.6	83.1	81.6	83.2	87.6	89.0	91.1	93.6	100.7	104.3	101.2	88.6	137.8
800	80.6	81.4	83.6	81.9	83.8	87.6	88.8	91.9	95.6	101.2	102.8	98.3	87.2	137.1
1000	82.5	83.0	84.3	83.1	84.2	89.1	89.9	93.6	96.3	100.9	102.3	94.9	85.6	136.8
1250	81.2	84.7	84.7	83.6	85.1	89.0	90.1	93.3	96.7	100.0	100.2	93.3	85.5	135.9
1600	81.8	83.5	84.6	84.5	86.0	90.6	91.5	94.5	97.4	100.0	100.3	92.5	85.2	136.3
2000	82.5	83.3	84.0	83.9	85.4	89.8	91.8	94.6	97.7	100.0	98.5	91.1	84.4	135.9
2600	82.1	84.2	84.8	83.7	86.4	90.2	91.2	95.0	97.2	99.9	97.5	89.8	85.0	135.7
3150	82.0	83.3	84.6	83.9	85.4	90.8	91.9	94.1	97.7	98.5	96.5	89.4	83.9	135.5
4000	81.9	83.0	84.4	83.8	85.7	90.5	91.6	94.4	96.3	97.3	95.0	88.5	83.6	134.4
5000	82.0	83.6	84.8	83.4	85.4	90.7	91.8	94.1	95.6	97.5	94.3	88.1	82.8	134.4
6300	82.1	83.7	84.6	83.8	85.1	90.1	90.9	93.8	94.8	95.5	93.5	87.5	82.0	133.7
8000	82.4	84.3	84.8	83.5	84.9	89.2	90.2	92.0	93.6	93.9	92.3	87.3	81.8	132.9
10000	83.3	84.4	85.6	84.5	85.3	89.3	89.6	91.3	93.2	93.4	91.0	87.7	82.5	133.1
12500	84.9	84.6	85.1	84.3	84.1	88.8	88.7	90.1	91.7	91.3	89.6	85.9	82.1	132.8
16000	82.4	84.3	84.8	84.5	83.1	87.3	87.9	89.3	90.2	88.9	87.9	85.1	79.6	132.8
20000	80.4	82.2	83.1	82.3	81.8	85.6	85.7	86.1	87.0	86.0	84.9	82.3	77.0	132.0
25000	78.7	80.0	80.5	79.9	84.7	83.9	82.4	84.5	82.5	82.0	80.7	74.0	132.0	
31500	72.9	74.8	75.8	78.2	76.7	81.1	80.6	79.9	81.1	78.9	78.8	76.2	70.1	131.8
40000	68.9	71.1	72.4	73.4	73.2	78.0	77.1	76.2	76.7	74.8	76.2	72.9	66.4	132.0
50000	63.6	64.9	66.5	68.5	67.6	72.9	71.8	70.7	71.4	69.8	69.5	67.4	60.7	131.1
63000	58.0	59.7	61.4	62.3	62.2	68.2	66.0	65.3	66.6	64.1	64.9	61.0	54.7	131.1
80000	52.8	53.9	54.9	55.1	55.4	61.7	58.9	59.7	59.6	57.2	57.4	54.6	47.0	131.3

GASPL 96.1 98.1 98.6 97.3 98.2 102.7 104.4 106.0 108.3 111.4 113.1 112.4 102.3 149.6

PNLT 107.3 109.0 110.0 109.0 110.5 115.2 116.6 118.8 121.4 123.8 123.2 120.2 111.6

PNLT 107.3 109.0 110.0 109.0 110.5 115.2 118.0 121.4 123.8 123.2 120.2 111.6

DBA 93.5 95.1 96.1 95.2 96.8 101.4 102.6 105.3 107.9 110.9 111.3 107.7 97.9

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH143 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = A807 FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 50.05 PAMB HO = 20.07 RELHUM = 69.3 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNL RPM XNH RPM V6 = 1146.6 FPS AE8 = 4.6 SQ IN
FNRAMB = LBS XNLR RPM XNHR RPM V18 = 1761.5 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1004 TAPE = X1004C TEST PT NO = 1004 NC = AE090 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1004 X1004F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL



250	83.7	86.3	85.4	82.5	82.2	84.3	84.3	84.7	89.6	93.6	98.6	101.8	93.8	134.4
315	83.7	86.3	85.4	82.5	83.0	85.6	86.5	88.2	90.4	96.2	100.6	102.7	93.5	135.8
400	85.5	86.6	86.5	83.3	82.8	85.6	90.9	86.9	90.6	96.9	101.1	102.2	93.1	136.0
500	85.2	86.7	86.7	82.8	83.8	86.7	88.2	87.9	91.4	98.0	101.8	100.9	93.2	136.1
630	86.3	87.4	87.4	84.6	85.2	88.0	87.9	88.8	93.8	99.0	101.0	99.2	94.4	135.9
800	86.2	88.0	88.1	85.1	85.8	88.2	87.8	89.6	94.8	99.1	101.0	97.0	95.2	135.9
1000	87.8	88.7	88.5	86.3	89.7	89.1	91.4	95.5	98.5	99.2	95.8	95.5	95.5	135.5
1250	89.2	89.4	86.7	87.4	89.8	89.4	91.3	96.3	98.6	99.5	95.0	95.2	95.2	135.8
1600	88.8	91.2	89.9	87.3	88.8	91.7	91.0	92.7	96.9	98.8	97.8	93.6	94.2	135.8
2000	89.5	90.0	89.9	88.4	88.1	91.1	91.6	93.1	96.8	99.3	97.3	93.0	95.8	135.9
2500	90.2	89.9	89.3	87.9	89.3	91.9	91.3	93.9	97.8	99.3	96.8	92.9	94.7	136.1
3150	90.8	90.6	90.2	87.9	89.3	92.6	92.5	93.4	97.7	98.3	96.6	93.6	96.3	136.2
4000	92.4	92.2	91.9	89.4	90.0	93.0	93.3	94.9	97.0	98.5	95.8	93.0	95.4	136.5
5000	92.3	92.0	91.8	89.6	90.0	93.7	93.8	94.7	96.6	96.9	95.6	93.1	95.2	136.4
6300	92.2	92.6	92.3	89.4	89.7	93.1	93.1	94.7	96.0	95.9	95.0	93.5	95.5	136.3
8000	92.5	91.9	89.7	89.0	92.2	92.4	93.1	96.2	96.2	94.5	94.5	94.5	96.5	136.6
10000	90.4	90.3	88.0	88.4	92.3	91.9	92.8	95.4	94.6	93.3	93.5	95.7	95.7	136.1
12500	90.2	90.5	90.9	88.7	88.1	91.8	91.1	91.9	94.4	93.0	92.5	92.8	94.2	136.2
16000	90.2	89.2	89.9	88.0	87.1	90.3	90.3	91.1	91.8	90.5	89.7	80.0	81.5	136.0
20000	89.3	89.5	89.1	87.9	85.9	88.6	88.1	88.0	89.4	87.2	86.9	88.4	88.5	136.8
25000	86.8	86.8	85.0	83.9	87.7	86.0	83.9	87.2	84.8	85.0	85.3	86.1	85.9	135.9
31500	82.5	82.5	80.8	84.1	81.6	82.9	81.6	82.9	80.8	81.5	82.0	82.3	83.4	135.4
40000	78.8	77.8	77.9	79.3	77.8	81.0	79.1	77.3	78.3	76.5	76.6	77.3	77.4	135.4
50000	76.0	76.0	75.8	75.2	72.2	75.9	73.9	72.0	75.0	72.5	73.8	72.9	73.5	136.9
63000	68.8	68.8	68.9	69.4	66.8	71.2	68.4	67.0	69.6	67.2	68.1	68.3	67.7	135.5
80000	61.6	62.1	62.4	61.7	60.0	64.7	61.2	61.4	59.8	57.4	58.2	58.5	57.9	134.9

ORIGINAL PAGE IS OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DETAS-10/NAS3-22137

VEHICLE	ADH143	TEST DATE	03-17-83	LOCAT	C41 ANECH CH	CONFIG	10	MODEL	AM	FLTVEL	400. FPS
IAPLHA	SB59	LEGA	NO	PWL AREA	FULL SPHERE	TAMB F	50.08	PAMB NG	97	RELHUM	69.3 PCT
WIND DIR		DEG WIND VEL		EXT DIST	40.0 FT	EXT CONFIG	ARC	MIKE HT			
FNIN1	LBS XNL	RPM	RPM	XNH	RPM	V8	1146.6 FPS	AE8		4.6 SQ IN	
FNRAMB	LBS XNLR	RPM	RPM	XNHR	RPM	V18	1761.5 FPS	AE18		23.4 SQ IN	
RUNPT	83F-400-1004	TAPE	X1004F	TEST PT NO	1004	NC	AE090	CORR FAN SPEED		RPM	

IDENTIFICATION - 83F-400-1004 X10041

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	61.2	65.3	65.6	63.3	64.3	67.0	67.8	69.0	70.6	75.3	78.1	78.1	78.1	65.5 152.8
63	63.0	65.6	66.6	64.1	64.0	67.0	72.2	67.8	70.7	75.9	78.6	77.5	77.5	65.0 153.0
80	62.7	66.7	66.8	63.7	65.1	68.1	69.4	68.7	71.5	77.0	79.3	76.1	76.1	65.0 153.0
100	63.6	66.2	67.4	65.4	66.4	69.3	69.1	69.5	73.8	77.9	78.4	74.3	74.3	66.1 152.9
125	63.5	66.8	68.1	65.8	66.9	69.4	68.9	70.3	74.8	77.9	78.3	72.0	72.0	66.7 152.9
150	65.3	66.5	68.5	66.0	67.3	70.8	70.1	72.0	75.3	77.2	76.3	70.5	70.5	66.6 152.5
200	67.0	68.0	69.0	67.1	68.2	70.7	70.2	71.6	75.9	77.0	76.3	69.4	69.4	65.8 152.8
250	65.3	69.4	69.3	67.5	69.1	72.4	71.6	72.9	76.3	77.0	74.3	67.5	64.1	152.8
315	65.5	67.8	68.9	68.3	68.4	71.6	71.9	72.9	75.8	77.1	73.4	66.4	64.9	152.9
400	65.7	67.3	68.0	67.4	69.3	72.0	71.3	73.4	76.4	76.7	72.3	65.6	62.8	153.1
500	64.8	67.8	68.5	67.1	68.9	72.6	72.2	72.6	76.0	75.2	71.6	65.6	63.4	153.1
630	66.8	68.8	69.8	68.2	69.4	72.6	72.7	73.7	74.9	75.0	70.3	64.3	61.4	153.5
800	66.2	68.1	69.4	68.1	69.1	72.9	72.9	73.2	74.1	73.0	69.4	63.6	60.0	153.4
1000	65.5	68.3	69.5	67.6	68.5	72.0	71.8	72.9	73.2	71.5	68.3	63.2	58.9	153.3
1250	64.8	67.6	68.7	67.5	67.4	70.8	70.9	71.0	73.0	71.4	67.1	63.2	58.4	153.5
1600	61.1	64.6	66.4	65.3	67.2	70.4	69.8	70.0	71.5	68.9	64.8	60.6	54.9	153.1
2000	60.2	63.6	66.0	65.2	65.3	69.3	68.3	68.4	69.6	66.1	62.5	57.7	49.9	153.2
2500	59.0	61.7	63.7	63.4	63.4	66.8	66.6	66.5	65.7	62.0	57.5	51.7	41.8	153.0
3150	52.2	58.0	60.5	61.1	60.1	63.1	62.4	61.2	60.8	55.6	50.7	44.5	29.8	152.8
4000	42.6	49.8	53.6	54.2	54.4	58.6	56.5	53.0	54.0	47.8	41.8	31.7	12.1	152.8
5000	27.4	37.1	42.6	45.4	45.4	49.3	47.5	44.5	42.6	35.3	27.7	13.9		152.4
6300	4.9	17.7	23.2	31.0	31.9	36.0	33.2	29.0	25.5	16.5	4.6			152.4
8000		0.8	6.7	7.3	12.1	9.0	3.5							152.9
10000														152.5
12500														151.9
15000														
20000														
25000														
31500														
40000														
50000														
63000														
80000														

MODEL AREA = 180.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.066 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH149 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB58 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 50.05 PAMB HG = 80.87 RELHUM = 69.3 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBER =

FNINI = LBS XNL RPM XNH V8 = 1146.6 FPS AE8 = 4.8 SQ IN
 FNRAMB = LBS XNLR RPM XNHR V18 = 1761.5 FPS AE18 = 23.4 SQ IN

NPT 3F-4-0041 100 RPM

IDENTIFICATION - MODEL 83F-ZER-1005 X1005C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	82.1	82.2	81.7	78.2	78.8	82.2	79.8	85.7	83.2	82.2	88.1	90.1	80.2	125.7
63	87.8	87.9	90.1	84.9	85.0	89.1	87.7	94.1	89.1	86.4	93.3	95.2	89.6	132.1
80	86.3	91.8	88.1	86.6	86.7	91.3	90.0	90.6	90.8	91.2	94.3	94.5	78.1	132.6
100	85.7	91.7	88.0	87.8	88.6	92.3	91.9	93.3	92.0	95.1	96.5	99.4	81.8	134.8
125	83.9	87.7	88.9	88.7	90.3	93.2	92.6	92.5	92.4	95.8	102.1	104.6	87.2	137.8
160	82.9	83.5	87.2	84.5	86.4	90.5	96.9	91.8	92.2	97.1	102.4	105.4	92.8	138.3
200	84.3	85.1	88.1	85.1	88.0	91.6	93.0	94.6	96.8	98.1	104.0	108.7	96.1	140.5
250	83.3	89.3	89.3	87.1	88.5	92.1	94.2	95.9	97.8	103.2	108.5	111.7	99.4	143.8
315	84.3	88.1	88.1	87.2	90.8	93.9	95.8	96.4	98.6	104.2	109.8	112.8	102.9	145.0
400	85.3	88.6	89.6	87.7	90.3	93.4	104.0	97.7	101.1	107.4	111.8	114.5	104.4	147.2
500	86.6	89.6	90.6	88.4	90.8	94.6	95.3	97.9	101.6	107.7	112.6	114.5	106.2	147.4
630	86.5	90.1	90.8	89.9	92.2	95.3	97.0	99.4	102.1	108.7	112.8	114.2	107.6	147.6
800	88.8	90.6	92.1	90.7	92.5	96.4	97.3	100.2	103.9	109.0	111.3	114.0	108.4	147.4
1000	94.5	95.8	95.8	92.9	94.2	97.8	98.4	101.9	104.8	108.9	111.0	112.4	108.6	147.0
1250	91.4	95.2	95.2	94.4	96.1	99.0	101.8	105.2	107.6	109.2	111.9	108.8	146.3	
1600	91.3	93.5	94.4	92.8	95.0	99.2	102.5	105.9	107.7	109.9	112.5	109.2	146.8	
2000	93.5	95.9	95.8	93.4	95.0	98.1	103.4	105.3	107.6	109.8	112.1	109.6	146.8	
2500	91.7	95.0	95.6	93.6	95.9	98.8	102.6	105.2	107.8	109.3	110.1	108.6	146.1	
3150	91.6	94.2	94.7	93.0	94.5	98.4	102.7	105.8	106.9	107.9	109.3	105.4	145.3	
4000	90.1	93.0	93.8	91.7	94.7	98.4	102.3	104.5	105.5	107.4	107.9	104.3	144.4	
5000	89.5	92.9	93.5	91.4	93.7	97.6	101.1	103.6	105.3	106.1	106.1	103.3	143.6	
6300	89.2	93.5	93.9	91.9	94.2	97.4	101.7	103.5	103.2	105.4	104.9	101.8	143.1	
8000	88.1	92.5	94.1	92.5	93.4	96.4	97.6	100.0	101.5	101.5	102.8	103.2	100.3	141.9
10000	87.6	92.0	94.0	92.8	94.4	96.9	96.6	100.9	100.9	101.1	102.5	100.0	141.6	
12500	86.2	90.5	92.8	91.9	94.0	97.2	96.0	97.5	99.2	99.0	99.3	101.4	98.5	141.3
16000	84.9	89.7	90.6	91.6	92.3	95.6	95.1	96.3	97.5	96.3	97.0	98.6	95.5	140.8
20000	81.9	86.7	88.3	88.8	90.0	93.8	92.6	93.5	94.2	94.3	93.6	96.0	92.9	139.9
25000	78.4	83.4	85.2	86.0	87.1	91.4	90.8	89.9	91.9	90.9	90.7	92.4	90.0	139.5
31500	75.6	79.2	81.5	83.2	83.3	88.2	87.1	86.9	88.3	87.5	87.7	88.8	85.5	139.2
40000	71.1	75.5	77.2	78.6	79.5	84.4	83.2	83.2	84.3	84.7	84.4	85.2	81.9	139.5
50000	66.7	69.5	71.9	73.4	73.6	78.9	77.8	77.3	79.3	79.4	79.0	79.9	75.6	138.4
63000	63.0	63.4	66.7	67.0	67.9	74.2	71.5	71.8	74.4	73.0	73.5	74.5	69.5	138.2
80000	53.7	56.7	59.3	60.6	61.1	67.5	64.6	65.2	67.5	66.3	67.6	68.1	62.2	138.4

GASPL	103.1	106.3	106.8	105.2	107.0	110.4	111.7	113.7	116.2	119.2	122.1	124.2	118.8	158.8
PNL	115.7	118.7	119.3	117.4	119.4	122.8	124.0	126.7	129.3	131.3	133.5	135.0	131.0	
PNLT	117.8	120.0	119.3	117.4	119.4	122.8	125.4	126.7	129.3	131.3	133.5	135.0	131.0	
DBA	102.6	105.6	106.0	104.1	106.1	109.5	110.4	113.4	116.1	118.7	121.0	122.8	118.7	

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICL	=	ADH129	TEST DATE	=	03-17-83	LOCAT	=	C41 ANECH CH	CONFIG	=	10	MODEL	=	ARC	FLTVEL	=	0. FPS
IAPLHA	=	SB59	IEGA	=	NO	PWL AREA	=	FULL SPHERE	TAMB F	=	54.29	PAMB	=	MIKE	RELHUM	=	36.7 PCT
WIND DIR	=		DEG	=		EXT DIST	=	40.0 FT	EXT CONFIG	=	ARC	MIKE	=	MIKE	NBFR	=	
FNIN1	=	LBS	XNLR	=		RPM	=	RPM	V8	=	1196.5 FPS	AE8	=	AE8		=	4.6 SQ IN
FNRAMB	=	LBS	XNLR	=		RPM	=	RPM	V18	=	1958.1 FPS	AE18	=	AE18		=	23.4 SQ IN
RUNPT	=	83F-ZER-1005	TAPE	=	X1005C	TEST PT NO	=	1005	NC	=	AE090	CORR FAN SPEED	=	RPM			

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1005 X1005F

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	82.1	82.2	81.7	78.2	78.8	82.2	79.8	85.7	83.2	82.2	88.1	90.1	80.2	125.7
63	87.8	87.3	90.1	84.9	85.0	89.1	87.7	94.1	89.1	86.4	93.3	95.2	89.6	132.1
80	86.3	91.6	88.1	86.6	86.7	91.3	90.0	90.6	90.8	91.2	94.3	94.5	78.1	132.6
100	85.7	91.7	88.0	87.8	88.6	92.3	91.9	93.3	92.0	92.4	95.6	99.4	81.8	134.8
125	83.9	87.7	88.9	88.7	90.3	93.2	92.6	92.5	92.4	95.6	102.1	104.6	87.2	137.8
160	82.9	83.5	87.2	84.5	86.4	90.5	96.9	91.8	92.2	97.1	102.4	105.4	92.8	138.3
200	84.3	85.1	88.1	85.1	88.0	91.6	93.0	94.6	96.8	98.1	104.0	108.7	96.1	140.5
250	83.3	89.3	89.3	87.1	88.5	92.1	94.2	95.9	97.8	103.2	108.5	111.7	99.4	143.8
315	84.3	88.1	88.1	87.2	90.8	93.9	95.8	96.4	98.6	104.2	109.8	112.8	102.9	145.0
400	85.3	88.6	89.6	87.7	90.3	93.4	104.0	97.7	101.1	107.4	111.8	114.5	104.4	147.2
500	86.6	89.6	90.6	88.4	90.8	94.6	95.3	97.9	101.6	107.7	112.6	114.5	106.2	147.4
630	86.5	90.1	90.8	89.9	92.2	95.3	97.0	99.4	102.1	108.7	112.8	114.2	107.6	147.6
800	88.6	90.6	92.1	90.7	92.5	96.4	97.3	100.2	103.9	109.0	111.3	114.0	108.4	147.4
1000	94.5	95.8	95.8	92.9	94.2	97.8	98.4	101.9	104.8	108.9	111.0	112.4	108.6	147.0
1250	91.4	95.2	95.2	94.4	96.1	99.0	98.1	101.8	105.2	107.8	109.2	111.9	108.8	146.3
1600	91.3	93.5	94.4	92.8	95.0	99.2	99.2	102.5	105.9	107.7	109.9	112.5	109.2	146.8
2000	93.5	95.9	95.8	93.4	95.0	98.1	99.1	103.4	105.3	107.8	109.8	112.1	109.6	146.8
2500	91.7	95.0	95.6	93.6	95.9	98.8	99.2	102.6	105.2	107.8	109.3	110.1	108.6	146.1
3150	91.6	94.2	94.7	93.0	94.5	98.4	99.5	102.7	105.8	106.9	107.9	109.3	105.4	145.3
4000	90.1	93.0	93.8	91.7	94.7	98.4	98.0	102.3	104.5	105.5	107.4	107.9	104.3	144.4
5000	89.5	92.9	93.5	91.4	93.7	97.6	98.3	101.1	103.6	105.3	106.1	106.1	103.3	143.6
6300	89.2	93.5	93.9	91.9	94.2	97.4	98.2	101.7	103.5	103.2	105.4	104.9	101.8	143.1
8000	88.1	92.5	94.1	92.5	93.4	96.4	97.6	100.0	101.5	101.6	102.8	103.2	100.3	141.9
10000	87.6	92.0	94.0	92.8	94.0	96.9	96.6	99.4	100.9	100.9	101.1	102.5	100.0	141.8
12500	86.2	90.5	92.8	91.9	94.0	97.2	96.0	97.5	99.2	99.0	99.3	101.4	98.5	141.3
16000	84.9	89.7	90.6	91.6	92.3	95.6	95.1	96.3	97.5	96.3	97.0	98.6	95.5	140.8
20000	81.9	86.7	88.3	88.8	90.0	93.8	92.6	93.5	94.2	94.3	93.6	96.0	92.9	139.9
25000	78.4	83.4	85.2	86.0	87.1	91.4	90.6	89.9	91.9	90.9	92.4	90.0	139.5	
31500	75.6	79.2	81.5	83.2	83.3	88.2	87.1	86.9	88.3	87.5	87.8	88.8	85.5	139.2
40000	71.1	75.6	77.2	78.6	79.5	84.4	83.2	83.2	84.3	84.7	84.4	85.2	81.9	139.5
50000	65.7	69.5	71.9	73.4	73.6	78.9	77.3	79.3	79.3	79.0	79.0	79.9	75.6	138.4
63000	60.0	63.4	66.7	67.0	67.9	74.2	71.5	71.8	74.4	73.0	73.5	74.5	69.5	138.2
80000	53.7	56.7	59.3	60.6	61.1	67.5	64.6	65.2	67.5	66.3	67.6	68.1	62.2	138.4

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DEIAS-10/NAS3-22137

VEHICL = ADH129 TEST DATE = 03-17-63 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = 10 FLTVEL = 0. FPS
 IAPLHA = SB59 ISMA = NO PWL AREA = FULL SPHERE TAMB F = 54.29 PAMB HO = 10000 RELHUM = 98.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONEIG = ARC

FNINI = LBS XNLR = RPM XNH = RPM V8 = 1196.5 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1958.1 FPS AE18 = 23.4 SQ IN

INPT 3F-1000 SHAPE = 305F 1000 PT = 1000 CORR SPEED = 1000 RPT

IDENTIFICATION - 83F-ZER-1005 X10051

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	61.9	67.2	69.3	68.0	72.0	75.3	77.0	77.3	78.8	83.3	87.4	88.1	74.9	162.0
63	62.8	67.6	69.7	68.5	71.5	74.7	85.2	78.5	81.2	86.5	89.3	89.8	76.4	164.2
80	64.0	68.8	70.7	69.2	72.0	76.0	76.6	78.7	81.7	86.7	90.1	89.8	78.0	164.3
100	63.9	69.0	70.9	70.6	73.4	76.6	78.1	80.1	82.1	87.6	90.2	89.4	79.3	164.6
125	66.1	69.9	72.1	71.4	73.6	77.6	78.4	80.9	83.8	87.8	88.6	89.0	79.9	164.3
160	71.6	75.5	75.8	73.4	75.2	78.9	79.4	82.4	84.6	87.6	88.1	87.2	79.7	164.0
200	68.2	73.7	74.8	74.7	76.9	79.9	78.9	82.1	84.8	86.3	86.0	86.3	79.4	163.3
250	67.8	71.7	73.8	72.9	75.6	79.9	79.8	82.7	85.3	85.9	86.3	85.5	79.1	163.8
315	69.6	73.7	74.8	73.3	75.3	78.6	79.4	83.3	84.3	85.6	85.9	85.5	78.8	163.8
400	67.2	72.4	74.3	73.1	75.9	79.0	79.2	82.1	83.9	85.2	84.8	82.8	76.7	163.1
500	66.6	71.2	73.0	72.1	74.2	78.2	79.2	81.9	84.1	83.9	82.9	81.3	72.5	162.3
630	64.6	69.5	71.8	70.6	74.0	77.9	78.4	81.2	82.4	82.0	81.9	79.2	70.3	161.4
800	63.3	69.0	71.1	69.9	72.7	76.8	77.3	79.6	81.2	81.4	79.9	76.6	68.0	160.6
1000	62.5	69.2	71.0	70.1	73.0	76.3	77.0	79.8	80.6	78.8	78.7	74.6	65.3	160.1
1250	60.8	67.6	70.9	70.3	71.8	75.0	76.1	77.8	78.3	76.6	75.5	72.0	62.1	158.9
1600	59.1	66.2	70.1	70.0	72.3	75.0	74.5	76.6	76.9	75.1	72.6	69.6	59.2	158.8
2000	56.2	63.6	68.0	68.4	71.1	74.6	73.2	73.9	74.3	72.2	69.3	66.4	54.1	158.3
2500	52.7	61.2	64.5	66.9	68.6	72.0	71.4	71.4	67.8	64.7	60.3	45.9	157.8	
3150	45.7	55.2	59.7	62.0	64.3	68.3	66.9	66.8	65.6	62.7	57.5	52.1	34.3	156.9
4000	35.2	46.3	52.0	55.2	57.6	62.3	61.3	59.1	58.7	53.9	47.5	38.8	16.1	156.4
5000	21.7	33.8	41.2	46.1	47.9	53.4	51.8	49.8	48.0	42.0	33.9	20.6		156.2
6300	15.4	24.5	30.3	33.7	33.7	39.3	37.4	34.9	31.5	24.5	12.4			156.4
8000		4.9	8.7	15.1	12.9	8.8	4.2							155.4
10000														155.2
12500														155.4
15000														
20000														
25000														
31500														
40000														
50000														
63000														
80000														
CASPL	78.3	83.0	84.7	83.8	86.3	89.9	91.3	92.9	94.8	97.1	98.4	98.1	88.7	175.4
PWL	82.7	88.2	91.1	91.2	93.6	97.3	97.2	98.7	100.2	100.9	100.6	99.5	90.7	
PWL	83.4	88.9	91.1	91.8	94.2	97.8	97.8	98.4	100.8	100.9	100.6	99.5	90.7	
DBA	72.3	77.9	80.3	79.8	82.2	85.7	85.9	88.3	89.5	89.4	88.9	87.2	79.4	

ORIGINAL PAGE IS OF POOR QUALITY

MODEL AREA = 180.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.086 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DETAS-10/NAS3-22137

VEHICLE = ADH129 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AX FLTVEL = 0. FPS
TAPLHA = SB59 TEST DATE = NO PWL AREA = FULL SPHERE TAMB F = 54.29 PAMB HO = 89.80 RELHUM = 38.7 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = 10

FN1NI = LBS XNL = RPM XNH = RPM V8 = 1196.5 FPS AE8 = 4.8 SQ IN
FN1RB = LBS XNLR = RPM XNHR = RPM V18 = 1958.1 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1005 TAPE = X10051 TEST PT NO = 1005 NC = AEO90 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1006 X1006C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

50	85.9	85.2	81.7	79.7	78.1	82.4	80.8	85.5	84.7	84.0	91.4	91.8	92.7	128.1
63	88.5	86.3	81.1	85.4	83.7	88.6	86.9	91.4	90.3	87.4	93.0	95.0	94.9	132.2
80	86.3	91.6	87.3	86.9	86.2	90.8	90.0	90.6	91.3	90.9	93.5	94.2	94.6	132.7
100	85.0	90.7	87.5	86.5	86.4	90.5	90.6	92.3	91.0	92.6	94.7	98.4	93.6	133.7
125	83.1	86.4	88.7	87.7	87.8	91.2	91.1	90.7	90.7	93.0	99.1	102.8	96.7	135.9
160	81.9	81.5	85.0	82.5	83.4	87.0	83.9	89.3	90.7	94.3	100.4	103.4	96.0	136.3
200	82.8	82.6	85.3	81.9	83.0	87.1	89.7	91.4	94.3	94.6	100.8	106.5	97.4	137.9
250	79.8	83.1	84.3	82.9	84.0	87.8	89.0	91.1	93.8	99.4	105.5	108.7	97.9	140.7
315	81.3	84.1	84.9	83.4	84.3	88.9	90.8	92.9	95.6	101.2	106.8	109.0	99.4	141.6
400	81.8	84.1	85.4	83.2	84.8	89.1	96.3	93.2	97.9	103.4	108.3	110.0	97.9	143.0
500	82.3	84.9	86.4	84.4	85.8	90.1	92.8	94.2	97.6	105.0	109.6	109.3	97.2	143.4
630	82.8	85.3	86.6	85.4	86.5	91.3	92.2	95.4	98.8	106.4	109.8	107.7	93.9	143.4
800	84.1	84.6	87.1	85.7	86.8	91.9	93.0	96.4	99.9	106.0	108.3	104.5	93.4	142.3
1000	86.5	87.5	88.3	86.6	88.4	93.2	94.2	97.8	100.8	105.9	107.3	101.4	92.6	141.6
1250	85.2	88.9	89.2	87.9	88.8	93.2	94.1	98.3	101.2	105.0	105.2	98.8	91.3	140.8
1600	85.8	87.7	89.4	88.5	89.8	94.9	96.0	99.0	102.9	105.2	106.1	97.3	90.7	141.5
2000	86.5	87.6	88.5	87.9	89.4	94.3	96.0	100.1	102.5	105.5	105.0	96.8	91.1	141.3
2500	86.1	88.2	89.0	87.7	90.1	94.7	96.7	99.5	101.7	105.4	104.2	95.8	91.0	140.9
3150	87.3	88.3	89.6	88.1	89.2	94.8	96.6	102.9	104.5	103.0	96.2	89.6	89.6	140.8
4000	87.2	88.3	89.6	88.1	90.0	95.2	96.1	99.9	101.5	102.7	102.7	95.5	89.4	140.1
5000	90.7	92.1	91.5	88.7	89.7	95.2	95.8	99.6	100.9	103.7	101.8	94.6	88.8	140.2
6300	91.9	94.2	93.5	90.6	90.9	94.8	95.4	99.6	100.3	101.7	101.5	96.3	90.3	140.0
8000	91.4	93.5	94.8	93.0	91.7	94.2	95.4	98.3	99.0	100.6	100.3	96.0	88.6	139.8
10000	90.8	92.8	94.4	93.2	92.8	96.1	95.6	97.3	98.7	99.6	99.5	95.7	90.5	139.8
12500	89.3	90.5	92.6	92.3	92.1	95.8	95.4	96.1	97.5	97.7	97.1	94.8	89.9	139.4
16000	87.1	90.6	91.5	92.0	91.1	94.8	94.4	95.3	96.6	95.1	95.6	92.8	87.8	139.5
20000	84.7	87.2	88.8	88.8	88.3	92.6	92.7	93.3	94.0	93.0	92.1	90.5	86.2	138.9
25000	81.2	83.9	86.0	86.3	86.1	91.2	90.9	89.7	91.2	89.8	89.2	88.2	82.5	138.7
31500	78.2	80.3	81.6	83.5	82.2	87.6	87.3	87.2	87.9	85.9	85.0	84.2	78.6	138.4
40000	73.7	76.2	77.7	79.2	78.2	83.9	82.9	83.3	84.0	82.6	83.0	80.9	75.2	138.6
50000	68.5	70.5	71.8	73.6	73.2	79.0	77.7	77.6	79.0	76.9	74.7	68.5	68.5	137.5
63000	62.6	64.3	66.8	67.1	67.3	73.6	70.9	71.9	73.5	70.8	71.3	68.6	62.3	137.0
80000	58.0	57.6	59.4	59.7	59.8	67.4	64.3	65.3	66.3	64.9	64.1	61.7	53.9	137.2

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE	= ADH144	TEST DATE	= 03-17-83	LOCAT	= C41 ANECH CH	CONFIG	= 10	MODEL	= AX	FLTVEL	= 400. FPS
IAPLHA	= SB99	LEGA	= NO	PWL AREA	= FULL SPHERE	TAMB F	= 50.05	PAMB HQ	= 99.98	RELHUM	= 70.6 PCT
WIND DIR	=	DEG WIND VEL	=	EXT DIST	= 40.0 FT	EXT CONFIG	= ARC	MIKE HY	=	NBFR	=
FNINI	=	LBS XNL	=	RPM XNH	=	RPM V8	= 1239.0 FPS	AE8	=	4.9 SQ IN	=
FNRAMB	=	LBS XNLR	=	RPM XNHR	=	RPM V18	= 2028.3 FPS	AE18	=	20.4 SQ IN	=
RUNPT	= 83F-400-1006	TAPE	= X1006C	TEST PT NO	= 1006	NC	= AE090	CORR FAN SPEED	=	RPM	=

IDENTIFICATION - 83F-400-1006 X1006F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PML

250	87.4	89.3	89.1	86.1	85.5	87.8	87.4	87.9	93.4	98.4	103.9	106.8	99.3	139.3
315	87.4	89.3	89.1	86.1	86.0	89.1	89.8	91.0	95.6	100.7	105.5	108.4	99.1	140.9
400	88.7	90.3	89.7	86.7	86.6	89.4	95.3	91.1	95.4	102.3	107.0	108.3	100.0	141.7
500	89.2	90.3	90.2	86.5	87.7	90.5	91.8	92.0	96.7	103.8	107.4	107.6	98.6	141.8
600	90.0	91.3	91.4	87.9	88.4	91.7	91.2	93.1	98.2	104.0	106.8	105.8	101.0	141.4
800	90.5	91.7	91.6	88.9	88.8	92.4	92.1	94.3	99.6	104.5	106.5	104.2	102.8	141.5
1000	91.8	91.1	92.2	89.3	90.6	93.9	93.4	95.8	100.1	103.7	104.5	101.6	101.5	140.5
1250	94.2	94.0	93.4	90.2	91.1	94.0	93.5	96.3	101.8	103.8	105.2	99.7	100.6	140.9
1600	92.8	95.4	94.4	91.6	92.4	95.9	95.5	97.2	101.8	104.6	99.8	101.7	141.3	
2000	93.5	94.2	94.6	92.4	92.1	95.6	95.9	98.6	101.4	104.9	104.3	99.3	102.1	141.4
2500	94.2	94.1	93.8	91.9	93.1	96.4	95.9	98.5	103.1	104.4	103.5	100.0	100.9	141.4
3150	93.8	94.8	94.5	91.9	92.5	96.8	97.2	98.9	102.5	103.3	103.8	100.0	101.3	141.4
4000	94.8	95.0	95.2	92.5	94.2	97.8	97.3	99.9	101.9	104.4	103.1	99.2	102.0	141.8
5000	97.5	97.3	97.1	93.9	93.7	98.2	97.5	99.9	102.1	103.2	103.7	101.9	103.3	142.3
6300	97.5	98.4	97.1	93.3	94.6	97.8	97.4	100.3	101.2	102.6	103.0	102.1	102.9	142.3
8000	97.1	98.1	98.0	94.5	95.5	97.2	97.5	99.2	101.8	102.4	102.8	102.0	103.8	142.6
10000	96.9	98.7	99.5	97.0	96.9	99.1	98.0	98.9	100.7	100.3	99.7	100.2	102.1	142.7
12500	97.7	99.0	99.6	97.4	96.1	98.8	97.6	97.6	100.7	98.6	99.2	99.2	100.9	143.1
16000	95.7	96.1	97.3	96.0	95.1	97.8	96.7	96.9	97.8	96.3	95.6	96.8	98.3	142.5
20000	93.1	95.8	95.3	92.3	92.3	95.6	94.6	94.4	94.2	92.2	92.0	93.9	95.2	142.0
25000	90.0	91.8	92.5	91.5	90.7	94.2	92.3	89.7	92.5	90.2	90.5	91.5	92.8	141.7
31500	88.5	90.0	90.6	89.3	86.8	90.6	89.1	87.8	90.0	88.2	88.7	89.4	90.5	142.4
40000	84.7	85.6	85.4	85.7	82.8	86.9	84.9	84.3	86.2	83.9	84.1	84.8	85.4	142.2
50000	79.8	81.0	81.1	81.0	77.8	82.0	80.0	79.3	82.0	79.0	79.9	80.2	80.7	141.9
63000	73.6	74.4	74.3	74.5	71.9	76.6	73.4	73.8	76.3	74.9	74.8	75.7	75.0	141.5
80000	66.3	66.7	67.8	66.5	64.4	70.4	66.8	67.2	66.5	65.1	65.0	65.9	65.2	140.5

ORIGINAL PAGE IS
OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DEFTAS-10/NAS3-22137

VEHICLE = ADH144	TEST DATE = 03-17-83	LOCAT = C41 ANECH CH	CONFIG = 10	MODEL = AX	FLTVEL = 400. FPS
IAPLHA = SB08	IEGA = NO	PWL AREA = FULL SPHERE	TAMB F = 50.05	PAMB HD = 89.98	RELHUM = 70.6 PCT
WIND DIR =	DEG WIND VEL =	MPH EXT DIST = 40.0 FT	EXT CONFIG = ARC	MIKE HT =	NBER =
FNIN1 =	LBS XNL =	RPM XNH =	RPM V8 =	AE8 =	4.8 SQ IN
FNINB =	LBS XNLR =	RPM XNHR =	RPM V18 =	AE18 =	23.4 SQ IN
RUNPT = 83F-400-1006	TAPE = X1006F	TEST PT NO = 1006	NC =	CORR FAN SPEED =	RPM

IDENTIFICATION - 83F-400-1006 X10061

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	64.9	68.4	69.3	66.9	67.3	70.5	71.1	71.8	75.7	79.8	83.1	83.7	71.1	157.8
63	66.2	69.3	69.8	67.6	67.8	70.8	76.5	71.9	75.6	81.3	84.5	83.6	71.9	158.7
80	66.6	69.9	70.9	67.3	68.9	71.8	73.0	72.8	76.8	82.8	84.9	82.7	70.4	158.8
100	67.4	70.2	71.4	68.6	69.6	73.0	72.4	73.8	78.2	82.9	84.2	81.0	72.7	158.4
125	67.7	70.6	71.8	69.6	69.9	73.6	73.2	74.9	79.6	83.3	83.8	79.2	74.3	158.4
160	68.8	69.7	72.0	69.8	71.6	75.1	74.4	76.4	79.9	82.4	81.5	76.3	72.6	157.4
200	71.0	72.5	73.0	70.6	71.9	75.0	74.3	76.7	81.4	82.3	82.0	74.1	71.2	157.9
250	69.3	73.6	73.8	71.7	72.8	76.6	76.1	77.4	81.1	82.7	81.1	73.8	71.6	158.3
315	69.5	72.1	73.7	72.3	72.4	76.1	76.2	78.5	80.4	82.7	80.3	72.7	71.3	158.4
400	69.7	71.5	72.5	71.4	73.1	76.5	76.9	78.0	81.7	81.8	79.0	72.7	69.0	158.4
500	68.8	71.8	72.8	71.1	72.1	76.6	76.9	78.1	80.8	80.3	78.8	72.0	68.4	158.3
630	69.3	71.5	73.1	71.3	73.6	77.3	76.7	78.7	79.9	81.0	77.5	70.5	68.0	158.7
800	71.4	73.3	74.6	72.4	72.7	77.4	76.5	78.4	79.6	79.3	77.6	72.4	68.0	159.3
1000	70.8	74.1	74.2	71.5	73.3	76.8	76.1	78.5	78.3	78.2	76.3	71.8	66.4	159.3
1250	69.7	74.3	74.8	72.4	73.9	75.6	76.0	77.0	78.6	77.6	76.4	70.7	65.7	159.8
1600	69.4	72.9	75.6	74.2	74.7	77.1	75.8	76.1	76.8	74.6	71.2	67.3	61.3	159.7
2000	67.7	72.1	74.8	73.9	73.3	76.2	74.8	74.1	75.8	71.7	69.2	64.1	56.5	160.1
2500	63.8	67.6	71.2	71.4	71.3	74.3	72.9	72.3	71.7	67.8	63.4	58.5	48.6	159.5
3150	63.9	64.2	67.2	68.6	66.6	70.1	68.9	67.6	65.6	60.7	55.8	50.1	36.6	159.0
4000	46.8	54.7	59.3	60.7	61.2	65.1	62.8	58.8	59.3	53.1	47.3	37.9	18.9	158.7
5000	34.7	44.6	50.3	52.2	51.5	55.8	53.7	50.7	49.7	42.7	34.9	21.3		159.4
6300	12.7	29.5	32.6	37.5	37.0	41.8	39.0	36.0	33.5	23.8	12.1			159.2
8000		6.1	12.5	12.9	18.2	15.1	10.8	7.0						158.9
9000														158.4
10000														157.5
16000														
20000														
25000														
31500														
40000														
50000														
63000														
80000														

MODEL AREA = 180.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.066 FREQ SHIFT = -6

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH144 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB00 WIND DIR = 150 DEG WIND VEL = NO MPH EXT DIST = 2400.0 FT EXT CONFIG = SL PAMB NO = 80 MIKE NO = 80 RELHUM = 70.8 PCT
 WIND DIR = 150 DEG WIND VEL = NO MPH XNHR = RPM V6 = V8 = AE8 = AE18 = AE28 = AE30 = CORR TAN SPEED = RPM

FNIN1 = LBS XNL = RPM XNHR = RPM V6 = V8 = AE8 = AE18 = AE28 = AE30 = CORR TAN SPEED = RPM
 FNAMB = LBS XNLR = RPM XNHR = RPM V6 = V8 = AE8 = AE18 = AE28 = AE30 = CORR TAN SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1007 X1007C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	83.6	84.7	83.4	80.7	80.6	83.7	80.6	86.0	87.4	86.0	89.9	95.1	84.2	128.6
60	89.6	89.6	87.4	88.2	88.2	91.8	89.2	92.4	94.3	93.9	94.3	101.5	91.4	135.1
80	87.5	93.1	88.6	87.9	88.2	92.6	92.2	92.9	92.3	92.3	96.5	97.0	80.9	134.4
100	88.2	95.2	90.5	90.3	91.6	94.8	94.4	96.3	94.3	97.1	99.0	102.1	85.1	137.5
125	85.1	89.2	92.4	91.7	92.8	95.7	94.8	95.0	94.2	97.5	104.6	106.6	90.0	140.0
160	84.7	84.7	86.3	87.9	87.9	91.7	98.4	94.3	94.2	99.6	105.4	107.9	95.0	140.8
200	85.8	86.6	89.8	87.1	90.2	93.8	94.7	96.4	99.3	100.6	106.5	111.7	99.1	143.2
250	85.3	90.3	91.1	89.1	90.5	93.8	95.7	97.9	99.3	106.2	111.5	114.7	102.1	146.7
315	86.8	90.1	89.9	89.9	92.3	96.1	97.3	98.7	101.1	107.5	113.3	115.5	105.7	148.0
400	88.1	90.8	91.9	89.9	92.3	95.1	105.8	99.2	103.6	110.7	115.8	117.0	107.7	150.3
500	88.8	92.1	92.1	91.2	92.8	96.6	97.0	100.2	103.9	111.2	116.6	118.0	108.9	150.9
630	89.3	92.6	93.1	91.9	94.5	97.8	99.0	101.1	104.8	112.2	117.3	118.5	110.5	151.6
800	92.6	93.1	94.6	92.4	94.8	98.9	98.8	102.4	105.9	112.2	116.3	118.8	112.7	151.8
1000	97.0	100.0	98.1	95.9	96.4	99.8	100.2	104.4	107.3	111.9	115.8	117.4	112.6	151.1
1250	96.2	100.5	99.5	98.6	99.4	101.5	101.1	104.3	107.7	111.1	114.2	117.9	113.8	151.0
1600	95.1	97.0	98.2	96.5	98.5	101.6	102.2	104.8	108.7	111.0	115.4	118.3	113.9	151.5
2000	96.5	99.1	98.5	96.6	97.5	100.8	102.3	105.9	108.3	111.5	115.1	117.4	112.9	151.1
2500	94.7	98.3	99.1	96.6	98.7	101.1	101.7	105.6	107.7	111.5	114.5	114.8	111.3	150.1
3150	95.1	98.4	98.7	97.0	97.5	100.9	102.2	105.2	109.0	110.6	114.4	113.5	108.9	149.6
4000	93.6	97.7	98.1	96.2	97.1	100.9	101.5	105.3	107.5	108.7	112.6	111.7	107.8	148.2
5000	92.4	97.6	98.0	95.6	97.2	100.6	100.8	104.6	107.1	109.3	111.8	110.0	106.5	147.7
6300	91.7	97.3	97.8	96.2	98.0	100.4	101.0	104.2	106.2	107.4	110.6	108.3	105.3	146.9
8000	90.8	96.0	97.3	96.2	97.1	100.1	100.3	102.7	104.7	105.7	108.3	107.7	103.8	145.8
10000	90.1	95.2	96.7	96.0	97.9	100.6	100.5	102.6	104.8	106.5	106.5	106.5	103.5	145.7
12500	88.9	92.7	95.5	94.9	96.7	100.1	99.7	101.0	102.6	102.5	104.5	105.9	102.2	145.1
16000	87.1	92.4	93.6	94.5	95.3	98.3	98.6	99.8	100.7	99.7	103.2	103.6	99.3	144.6
20000	85.1	89.7	91.1	92.0	93.3	97.0	97.1	97.3	99.0	97.7	99.9	101.0	86.4	144.1
25000	82.2	85.9	88.2	89.8	90.9	95.2	94.9	93.9	95.9	94.4	96.9	97.7	92.8	143.7
31500	79.3	82.3	84.6	86.8	87.3	91.2	90.9	90.5	91.6	91.3	83.3	83.3	88.5	143.0
40000	78.4	79.1	81.1	82.9	83.3	87.7	87.3	86.3	87.6	88.2	90.4	90.3	84.4	143.6
50000	68.9	72.9	75.2	76.9	77.4	83.0	81.6	80.6	83.1	82.9	85.1	85.2	78.4	142.6
63000	63.9	67.3	69.8	70.6	71.9	77.7	75.8	75.4	78.5	77.1	80.6	78.3	73.1	142.5
80000	61.1	62.8	63.0	65.2	65.2	71.1	69.0	69.3	71.8	71.1	74.7	73.2	66.3	143.1
GASPL	106.1	109.8	109.9	108.5	109.9	113.0	114.2	116.3	119.1	122.6	126.8	128.4	122.6	162.7
PNL	118.6	122.4	122.7	121.0	122.2	125.4	126.5	129.2	132.2	134.9	138.7	139.4	134.2	
PNLT	118.6	123.5	122.7	121.6	122.7	125.4	127.9	129.2	132.2	134.9	138.7	139.4	134.2	
DBA	105.9	109.4	109.5	107.7	109.1	112.1	113.0	116.0	118.9	122.2	126.0	127.5	122.6	

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NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH130	TEST DATE = 03-17-83	LOCAT = C41 ANECH CH	CONFIG = 10	MODEL = PAMB H9	FLTVEL = 0. FPS
IAPLHA = SB89	ISSA = NO	PWL AREA = FULL SPHERE	TAMB F = 53.53	MIKE HT =	RELHUM = 40.8 PCT
WIND DIR =	DEG WIND VEL =	EXT DIST = 40.0 FT	EXT CONFIG = ARC	MIKE HT =	NBFR =
FNIN1 =	LBS XNLR =	RPM XNII =	RPM V8 =	AE8 =	4.9 SQ IN
FNRAMB =	LBS XNLR =	RPM XNHR =	RPM V18 =	AE18 =	23.4 SQ IN
RUNPT = 83F-ZER-1007	TAPE = X1007C	TEST PI NO = 1007	NC =	AE090 =	CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1007 X1007F

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	83.6	84.7	83.4	80.7	80.8	83.7	80.8	86.0	87.4	86.0	89.9	95.1	84.2	128.6
63	89.8	89.5	90.8	87.4	88.2	91.8	89.2	92.4	94.3	93.9	94.3	101.5	91.4	135.1
80	87.5	83.1	88.8	87.9	88.2	92.6	92.2	92.9	92.3	92.9	96.5	97.0	80.9	134.4
100	88.2	95.2	90.5	90.3	91.6	94.8	94.8	96.3	94.3	97.1	99.0	102.1	85.1	137.5
125	85.1	89.2	92.4	91.7	92.6	95.7	94.8	95.0	94.2	97.5	104.6	106.6	90.0	140.0
160	84.7	84.7	88.7	86.3	87.9	91.7	98.4	94.3	94.2	99.6	105.4	107.9	95.0	140.8
200	85.8	86.6	89.8	87.1	90.2	93.8	94.7	95.4	99.3	100.6	106.5	111.7	89.1	143.2
250	85.3	90.3	91.1	89.1	90.5	93.8	95.7	97.9	99.3	106.2	111.5	114.7	102.1	146.7
315	86.8	90.1	89.9	89.9	92.3	96.1	97.3	98.7	101.1	107.5	113.3	115.5	105.7	148.0
400	88.1	90.8	91.9	89.9	92.3	95.1	105.8	99.2	103.6	110.7	115.8	117.0	107.7	150.3
500	88.8	92.1	92.1	91.2	92.8	96.6	97.0	100.2	103.9	111.2	116.6	118.0	108.9	150.8
630	88.3	92.6	93.1	91.9	94.5	97.8	99.0	101.1	104.8	112.2	117.3	118.5	110.6	151.8
800	92.6	93.1	94.6	92.4	94.8	98.9	98.8	102.4	105.9	112.2	116.3	118.8	112.7	151.6
1000	97.0	100.0	98.1	95.9	96.4	99.8	100.2	104.4	107.3	111.9	115.8	117.4	112.6	151.1
1250	96.2	100.5	99.5	98.6	99.4	101.5	101.1	104.3	107.7	111.1	114.2	117.9	113.8	151.0
1600	95.1	97.0	98.2	96.5	98.5	101.6	102.2	104.8	108.7	111.0	115.4	118.3	113.9	151.5
2000	96.5	99.1	98.5	96.6	97.5	100.8	102.3	105.9	108.3	111.5	117.4	112.9	115.1	151.1
2500	94.7	98.3	99.1	96.6	98.7	101.1	101.7	105.6	107.7	111.5	114.5	114.8	111.3	150.1
3150	95.1	98.4	98.7	97.0	97.5	100.9	102.2	105.2	109.0	110.6	114.4	113.5	108.9	149.6
4000	93.6	97.7	98.1	96.2	97.1	100.9	101.5	105.3	107.5	108.7	112.6	111.7	107.8	148.2
5000	92.4	97.6	98.0	95.6	97.2	100.6	100.8	104.6	107.1	109.3	111.8	110.0	106.5	147.7
6300	91.7	97.3	97.8	96.2	98.0	100.4	101.0	104.2	106.2	107.4	110.6	108.3	105.3	146.8
8000	90.8	96.0	97.3	96.2	97.1	100.1	100.3	102.7	104.7	105.7	108.3	107.7	103.8	145.8
10000	90.1	95.2	96.7	96.0	97.9	100.6	100.6	102.6	104.6	104.6	106.6	106.5	103.5	145.7
12500	88.9	92.7	95.5	94.9	96.7	100.1	99.7	101.0	102.6	102.5	104.5	105.9	102.2	145.1
16000	87.1	92.4	93.6	94.5	95.3	98.3	98.6	99.8	100.7	99.7	103.2	103.6	99.3	144.6
20000	85.1	88.7	91.1	92.0	93.3	97.0	97.1	97.3	99.0	97.7	99.9	101.0	96.4	144.1
25000	82.2	85.9	88.2	89.8	90.9	95.2	94.9	93.9	95.9	94.4	96.9	97.7	92.8	143.7
31500	79.3	82.3	84.6	86.8	87.3	91.2	90.9	90.5	91.8	91.3	93.3	93.3	88.5	143.0
40000	79.4	79.1	81.1	82.9	83.3	87.7	87.3	86.3	87.6	88.2	90.4	90.3	84.4	143.5
50000	69.5	72.9	75.2	76.9	77.4	83.0	81.6	80.6	83.1	82.9	85.1	85.2	78.4	142.6
63000	69.8	67.3	69.8	70.6	71.9	77.7	76.8	75.4	78.5	77.1	80.6	78.3	73.1	142.5
80000	67.3	61.1	62.8	63.0	65.2	71.1	69.0	69.3	71.8	71.1	74.7	73.2	66.3	143.1
GASPL	106.1	109.9	108.5	109.9	113.0	114.2	116.3	119.1	122.6	126.8	128.4	122.6	162.7	
PWL	118.8	122.4	122.7	121.0	122.2	125.4	126.5	129.2	132.2	134.9	138.7	139.4	134.2	
PWLT	118.8	123.5	122.7	121.6	122.7	125.4	126.5	129.2	132.2	134.9	138.7	139.4	134.2	
DBA	179.6	183.3	185.3	185.9	187.6	193.3	191.4	191.4	194.0	193.2	196.6	195.1	188.7	

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFIAS-10/NA33-22137

VEHICLE = ADH130 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AX FLTVEL = 0. FPS
 ALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 53.53 PAMB HG = 2000 REHUM = 40.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBER

FNINI = LBS XNLR = RPM XNHR = RPM V8 = 1307.8 FPS AE6 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V16 = 2133.5 FPS AE16 = 23.4 SQ IN

WPT IF-Z-00707F = 1000 RPM SPEC = AEC

IDENTIFICATION - 83F-ZER-1007 X10071

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	64.4	69.2	70.0	70.8	73.5	77.5	78.5	79.5	81.3	86.5	90.9	90.9	90.9	77.7
63	65.6	69.9	72.0	70.7	73.5	76.5	87.0	80.0	83.7	89.7	93.3	92.3	92.3	79.6
80	66.3	71.1	72.2	72.0	74.0	78.0	81.0	84.0	90.2	94.1	93.3	93.3	93.3	80.8
100	66.7	71.5	73.1	72.6	75.6	79.1	80.1	81.9	84.9	91.1	94.7	93.6	93.6	82.3
125	69.8	72.0	74.6	73.1	75.9	80.1	79.9	83.1	85.8	91.1	93.6	93.7	93.7	84.1
160	74.1	78.7	77.9	76.4	77.4	80.9	81.2	84.9	87.1	90.6	92.8	92.2	92.2	83.7
200	73.0	78.9	79.1	79.0	80.2	82.4	81.9	84.6	87.3	89.5	91.0	92.2	92.2	84.4
250	71.6	75.2	77.5	76.7	79.1	82.4	82.8	84.9	88.0	89.2	91.8	92.2	92.2	83.9
315	72.6	76.9	77.6	76.5	77.8	81.3	82.7	85.8	87.3	89.4	91.1	90.8	90.8	82.0
400	70.2	75.7	77.8	76.1	78.7	81.2	81.7	85.1	86.4	88.9	90.1	87.6	87.6	79.5
500	70.1	76.4	77.0	76.1	77.2	80.7	81.9	84.4	87.4	89.4	91.4	86.6	86.6	76.0
600	68.0	74.2	76.0	75.1	76.5	80.4	80.8	84.2	85.4	85.2	87.1	83.0	83.0	73.7
800	66.3	73.7	75.5	74.1	76.2	79.8	79.8	83.1	84.6	85.3	85.7	80.6	80.6	71.3
1000	65.0	72.9	75.0	74.3	76.7	79.3	79.7	82.3	83.4	83.0	83.9	78.0	78.0	68.8
1250	63.5	71.1	74.1	74.0	75.5	78.8	78.8	80.5	81.5	80.8	80.9	76.4	76.4	65.6
1600	61.6	69.5	72.6	73.2	75.7	78.6	78.6	79.8	80.6	79.1	78.1	73.5	73.5	62.7
2000	58.9	65.8	70.7	71.4	73.9	77.6	76.9	77.4	77.8	75.6	74.5	70.8	70.8	57.8
2500	54.9	63.9	67.4	69.9	71.5	74.8	74.8	75.2	74.6	71.2	71.0	65.3	65.3	49.6
3150	49.0	58.2	62.5	65.3	67.5	71.6	71.4	70.5	70.4	66.2	63.7	57.1	57.1	37.8
4000	39.0	48.8	55.0	58.9	61.3	66.1	65.3	63.1	62.7	57.4	53.7	44.1	44.1	18.8
5000	25.5	36.8	44.3	49.7	52.0	56.4	55.6	53.4	51.5	45.8	39.5	25.2	25.2	160.0
6300	3.4	19.0	28.3	34.6	37.5	42.6	41.4	38.0	34.9	28.2	18.4			160.0
8000	0.2	8.5	12.5	19.2	16.7	12.2	8.1							159.6
10000														160.1
12500														
16000														
20000														
25000														
31500														
40000														
50000														
63000														
80000														

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GASPL	61.5	66.7	68.0	67.3	69.2	92.4	93.7	95.5	97.6	100.5	103.1	102.4	92.5	179.4
PNL	65.6	91.7	94.2	94.6	96.6	100.2	100.3	101.7	103.3	104.5	105.9	104.4	94.7	
PNLT	65.6	92.3	94.9	95.2	97.2	100.7	100.9	102.3	103.9	104.5	105.9	104.4	94.7	
DBA	75.3	81.6	83.8	83.4	85.4	88.7	88.9	91.2	92.6	93.1	94.3	91.9	83.0	

MODEL AREA = 160.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.088 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFIAS-10/NAS3-22137

VEHICL	=	ADH190	TEST DATE	=	03-17-83	LOCAT	=	C41 ANECH CH	CONFIG	=	10	MODEL	=	AM	FLTVEL	=	0. FPS
IAPLHA	=	SB59	LEGA	=	NO	PWL AREA	=	FULL SPHERE	TAMB F	=	53.53	PAMB HQ	=	28.34	RELHUM	=	40.6 PCT
WIND DIR	=	DEG	WIND VEL	=	MPH	EXT DIST	=	2400.0 FT	EXT CONFIG	=	SL	MIKE HT	=		NBER	=	
FNINI	=	LBS	XNLR	=	RPM	XNH	=	RPM	V8	=	1307.8 FPS	AE8	=	4.8 SQ IN		=	
FNRAMB	=	LBS	XNLR	=	RPM	XNHR	=	RPM	V18	=	2133.5 FPS	AE18	=	23.4 SQ IN		=	
RUNPT	=	83F-ZER-1007	TAPE	=	X10071	TEST PT NO	=	1007	NC	=	AE090	CORR FAN SPEED	=	RPM		=	

IDENTIFICATION - MODEL 83F-400-1008 X1008C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	87.9	87.4	87.7	82.0	81.6	83.9	83.8	86.5	88.9	87.7	92.4	93.8	84.0	129.5
63	90.8	89.8	91.8	87.4	87.4	91.1	90.9	90.9	94.3	93.6	94.5	95.5	90.4	133.8
80	89.5	94.8	89.1	89.4	90.2	93.8	93.5	93.1	93.6	93.9	96.6	97.5	85.4	135.4
100	87.7	93.7	89.9	89.3	90.9	93.8	94.4	95.8	93.8	95.3	97.7	101.9	87.1	136.7
125	85.9	88.9	90.7	90.5	92.6	94.7	94.3	94.2	93.7	96.5	103.1	106.3	90.7	139.2
160	83.9	83.5	87.2	85.5	87.1	89.7	97.1	90.5	93.5	97.1	103.4	106.4	94.3	139.1
200	84.5	84.3	87.1	84.6	87.5	91.1	93.0	93.9	96.8	97.9	104.3	109.5	96.9	140.9
250	82.5	86.1	87.1	86.4	89.0	91.8	92.5	94.9	97.1	103.4	109.3	111.7	99.1	144.0
315	84.1	87.1	87.6	86.7	89.5	92.9	94.0	96.2	98.9	105.7	111.1	113.0	101.2	145.6
400	85.1	87.8	88.4	86.9	90.0	92.9	98.8	96.7	101.6	108.7	113.5	114.5	100.4	147.7
500	85.8	88.4	89.6	88.2	91.3	94.1	95.3	97.7	101.9	110.5	115.1	113.8	97.7	148.4
630	86.3	88.8	89.8	88.9	92.0	94.6	96.7	99.1	102.3	110.4	115.3	112.7	95.6	148.3
800	87.3	88.4	89.9	88.9	92.5	95.6	97.3	100.2	103.6	110.0	113.3	108.3	93.7	146.8
1000	92.0	94.0	92.6	90.6	94.2	97.3	98.4	101.8	105.6	110.6	113.0	106.4	93.3	146.6
1250	90.7	95.2	93.5	91.9	94.8	97.7	98.8	101.8	106.0	110.0	111.2	103.8	93.5	145.9
1600	89.3	91.5	92.1	92.0	94.5	98.4	99.5	102.5	106.9	109.5	110.1	102.0	92.2	145.5
2000	91.0	92.8	93.0	91.9	93.9	97.8	99.3	103.4	106.0	109.5	109.0	100.6	93.6	145.1
2500	93.4	94.7	94.3	92.5	95.9	98.5	99.2	103.5	105.9	109.7	108.2	100.0	94.0	145.1
3150	94.0	95.3	95.1	93.1	94.9	98.8	100.4	103.4	106.9	108.5	107.5	101.2	93.6	145.0
4000	93.9	94.8	95.9	93.6	96.0	98.7	99.3	103.2	105.3	107.0	106.7	100.8	93.9	144.1
5000	93.2	96.4	96.3	93.8	96.2	98.9	99.3	102.8	105.1	108.0	107.3	100.8	93.8	144.8
6300	93.4	95.7	96.0	94.1	96.4	98.8	99.6	102.8	104.6	106.2	107.0	101.0	94.3	144.3
8000	93.2	95.7	96.3	94.3	95.7	98.7	99.7	101.3	103.7	104.8	105.1	98.8	94.1	143.5
10000	92.6	95.1	96.6	95.4	96.6	99.1	99.1	101.0	103.2	104.1	103.5	99.4	93.5	143.6
12500	91.8	94.0	95.1	94.3	96.3	99.3	99.1	100.1	102.0	101.7	101.1	98.8	92.6	143.2
16000	90.9	94.1	94.0	94.5	95.3	97.5	98.6	99.6	99.3	99.6	99.6	96.8	91.3	143.3
20000	87.9	90.7	91.6	91.8	93.1	95.6	96.6	96.8	97.5	97.0	96.6	94.5	88.0	142.5
25000	84.4	87.2	88.8	89.3	90.6	94.5	94.6	92.9	94.8	93.5	92.4	86.0	86.0	142.3
31500	81.0	83.6	84.7	87.1	87.5	91.2	90.9	90.8	91.9	90.0	89.8	88.2	82.2	142.2
40000	77.6	79.8	81.5	82.3	83.3	87.7	87.3	86.4	88.1	86.0	86.6	84.5	78.1	142.4
50000	71.3	73.9	75.0	76.7	77.8	82.9	81.8	80.9	81.9	80.8	81.0	78.3	71.9	141.2
63000	65.3	67.7	69.7	70.6	71.5	77.0	75.3	75.8	77.4	75.0	75.7	72.3	66.0	140.9
80000	59.1	62.1	63.4	62.9	65.3	71.3	68.3	68.5	70.1	67.9	68.6	65.4	57.6	141.0

GASPL 104.8 107.2 107.3 106.0 108.0 111.0 112.1 114.4 117.2 121.1 123.6 121.9 109.3 159.2
 PNL 117.5 119.4 119.7 117.9 120.2 123.2 124.5 127.2 130.3 133.2 133.9 130.3 120.0
 PNL 118.5 119.4 119.7 118.4 120.8 123.2 125.2 127.2 130.3 133.2 133.9 130.3 120.0
 DBA 103.7 105.8 105.9 104.2 106.6 109.6 110.7 113.9 117.0 120.6 122.1 118.2 106.4

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICL = ADH145 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = 83F-400-1008 FLTVEL = 400. FPS
 IAPLHA = SB89 IEGA = NO MPH PWL AREA = FULL SPHERE TAMB F = 60.64 PAMB MB = 29.99 RELHUM = 70.0 POT
 WIND DIR = DEG WIND VEL = RPM XNH XNHR = 40.0 FT EXT DIST = ARC EXT CONFIG = ARC MIKE MI = 20.4 SQ IN NBFR =
 FNIN1 = LBS XNL LBS XNLR = RPM RPM = RPM V8 = 1335.3 FPS AEG = 20.4 SQ IN V18 = 2169.5 FPS AE18 =
 RUNPT = 83F-400-1008 TAPE = X1008C TEST PI NO = 1008 NC = AE090 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1008 X1008F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

60

63

80

100

125

150

200	90.4	92.5	92.0	89.7	90.6	91.6	91.0	92.1	96.4	102.7	107.9	110.6	100.9	143.1
315	90.4	92.5	92.0	89.7	91.3	93.1	93.0	94.0	99.1	105.7	110.5	112.7	101.5	145.3
400	91.7	93.5	92.6	90.1	91.8	93.1	97.7	94.4	99.4	107.4	112.1	112.4	100.2	146.2
500	92.7	94.2	93.3	90.3	93.2	94.5	94.2	95.3	100.1	107.7	112.8	112.4	100.2	146.5
630	93.5	94.8	94.6	91.6	93.9	95.0	95.7	96.8	101.8	107.7	111.5	110.2	100.9	145.5
800	94.0	95.2	94.9	92.4	94.6	96.2	96.3	97.9	104.0	108.8	111.7	108.4	102.8	145.8
1000	95.0	94.8	95.0	92.5	96.1	97.9	97.6	99.6	104.6	108.3	109.9	105.9	102.9	145.0
1250	96.2	99.5	97.0	93.8	97.0	98.5	98.1	99.7	105.7	107.8	108.8	103.8	101.0	144.8
1600	97.5	101.2	98.3	95.4	97.0	99.4	99.0	100.7	105.1	108.3	108.3	103.1	103.5	144.9
2000	97.0	98.0	97.4	95.9	96.6	99.1	99.1	101.8	105.5	106.9	106.0	103.1	104.6	145.1
2500	96.7	99.4	98.3	95.9	98.8	100.1	99.3	102.4	107.1	108.4	108.0	105.1	105.1	145.7
3150	100.8	101.1	99.6	95.6	98.1	100.8	101.0	102.7	106.3	107.7	108.0	105.5	106.1	145.8
4000	100.9	101.5	100.4	97.3	99.7	101.3	100.6	103.2	106.1	108.6	108.5	105.4	105.9	146.3
5000	101.5	101.5	101.6	98.2	100.2	101.9	100.8	103.0	105.9	107.3	108.7	106.2	106.9	146.5
6300	100.7	103.1	102.1	98.8	100.4	101.8	101.2	103.1	105.8	106.7	107.6	105.7	107.4	146.5
8000	100.7	102.2	101.7	98.8	99.7	101.7	102.1	105.8	106.5	106.5	105.8	107.1	146.6	
10000	100.3	102.1	101.8	98.8	100.6	102.1	101.3	102.2	105.5	104.9	104.7	105.5	106.2	146.6
12500	99.4	101.2	101.8	99.7	100.4	102.3	101.5	101.8	104.8	103.1	103.7	103.8	105.1	146.8
15000	98.2	99.6	99.8	98.0	99.4	100.5	101.1	101.3	102.1	101.0	100.8	101.4	102.6	146.4
20000	96.8	99.2	98.3	97.8	97.1	98.6	98.8	98.7	98.7	97.0	96.9	98.9	99.4	145.8
25000	93.2	95.3	95.3	94.5	95.2	97.5	96.4	93.7	97.5	95.2	95.2	96.4	97.1	145.7
31500	91.8	93.3	93.4	92.4	92.1	94.2	93.0	92.1	95.0	92.5	93.3	94.0	94.3	146.3
40000	87.5	88.9	88.4	89.3	87.9	90.7	89.6	88.1	89.3	88.0	88.5	88.6	89.0	146.0
50000	83.7	84.6	84.9	84.1	82.4	85.9	84.2	82.6	85.8	83.3	84.5	84.2	84.9	145.8
63000	78.5	77.8	77.4	77.6	76.1	80.0	77.8	77.7	80.0	77.9	79.2	79.3	78.7	145.1
80000	68.8	70.2	70.7	70.0	69.9	74.3	70.7	70.4	70.2	68.1	69.4	69.5	68.8	144.2

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE	ADH145	TEST DATE	03-17-83	LOCAT	C41 ANECH CH	CONFIG	10	MODEL	AX	FLTVEL	400.0 FPS
IAPLHA	SB99	TEST DATE	NO	PWL AREA	FULL SPHERE	TAMB F	50.64	PAMB HG	80.00	RELHUM	70.0 PCT
WIND DIR		DEG		EXT DIST	40.0 FT	EXT CONFIG	ARC	MIKE HT		NBER	
FNIN1	LBS	XNL	RPM	XNH	RPM	V8	1335.3 FPS	AE8			4.6 SQ IN
FNRAMB	LBS	XNLR	RPM	XNHR	RPM	V16	2169.5 FPS	AE16			23.4 SQ IN
RUNPT	83F-400-1008	TAPE	X1008F	TEST PT NO	1008	NC	AE090	CORR FAN SPEED			RPM

IDENTIFICATION - 83F-400-1008 X10081

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	68.0	71.6	72.2	70.5	72.6	74.5	74.2	74.9	79.3	84.8	88.1	88.0	73.5	162.3
63	69.3	72.6	72.7	70.9	73.1	74.5	78.9	75.2	79.5	86.5	89.6	87.7	72.1	163.1
80	70.2	73.2	73.4	71.1	74.4	75.8	75.4	76.1	80.2	86.7	90.3	87.6	72.1	163.6
100	70.9	73.7	74.7	72.4	75.1	76.3	76.9	77.6	81.8	86.7	88.9	85.4	72.6	162.5
125	71.2	74.1	74.8	73.1	75.7	77.4	77.4	78.6	84.0	87.6	88.9	83.4	74.3	162.8
150	72.1	73.5	74.8	73.0	77.1	79.1	78.6	80.2	84.4	87.0	87.0	80.6	74.0	162.0
200	75.0	77.9	76.6	74.2	77.8	79.5	79.0	80.1	85.3	86.3	85.6	78.2	71.6	161.7
250	74.0	78.3	77.7	75.5	77.6	80.1	79.6	80.8	84.5	86.5	84.8	77.1	73.4	161.9
315	73.0	75.8	76.4	75.8	76.9	79.6	79.4	81.7	84.6	86.8	84.0	76.5	73.7	162.1
400	74.2	76.8	77.0	75.4	78.8	80.3	79.3	81.9	85.8	85.8	83.5	77.8	73.2	162.7
500	75.8	78.1	77.9	75.8	77.8	80.6	80.7	81.9	84.6	84.7	83.1	77.5	73.2	162.8
630	75.4	78.1	78.3	76.2	79.0	80.8	79.9	82.0	84.0	85.1	82.9	76.7	71.8	163.3
800	75.4	77.6	79.2	76.7	79.3	81.1	79.8	81.5	83.4	83.4	82.6	76.7	71.6	163.4
1000	74.0	78.7	79.3	76.9	79.2	80.8	79.9	81.3	83.0	82.3	80.9	75.4	70.8	163.5
1250	73.3	77.3	78.4	76.6	78.5	80.3	80.2	79.9	82.5	81.6	79.2	74.5	68.9	163.5
1500	71.8	76.4	77.9	76.0	78.1	80.1	79.2	79.4	81.5	79.2	76.2	72.6	65.4	163.6
2000	69.4	74.3	77.0	76.1	77.5	79.7	78.7	78.2	80.0	76.2	73.6	68.7	60.7	163.8
2500	66.0	71.1	73.7	73.4	75.6	77.0	77.3	76.7	78.0	72.5	68.6	63.1	53.0	163.3
3150	60.6	67.7	69.7	71.1	71.3	73.1	73.1	71.9	70.1	65.5	60.7	56.0	40.7	162.8
4000	50.0	58.2	62.1	63.7	65.7	68.4	66.9	62.8	64.3	58.2	52.0	42.8	23.2	162.7
5000	37.8	47.8	53.1	55.3	56.8	59.3	57.7	55.0	54.7	47.1	39.5	25.9		163.3
6300	15.5	28.8	35.7	41.0	42.1	45.6	43.8	39.8	36.6	27.9	16.5			163.0
8000			9.9	15.6	17.5	22.1	19.3	14.3	10.8					162.8
12500														162.0
16000														161.2
20000														
25000														
31500														
40000														
50000														
63000														
80000														

MODEL AREA = 180.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.086 FREQ SHIFT # -8

NASA DUAL FLOW THERMAL SHIELD/DFTIAS-10/NAS3-22137

VEHICLE = ADH145 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AN FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 50.64 PAMB HQ = 20.85 RELHUM = 70.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NRFR

FNIN1 = LBS XNL = RPM XNHR = RPM V8 = 1335.3 FPS AE8 = 4.6 SQ IN
 FNINB = LBS XNL = RPM XNHR = RPM V18 = 2169.5 FPS AE18 = 23.4 SQ IN

JNPT 33F 1000 TAPE = 10081 TEST PTIME = 1000 NC AF000 CORR TAN SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1009 BACKGROUND X1009C

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	86.4	86.8	84.2	83.0	83.3	87.7	87.3	90.5	89.7	87.2	96.1	97.1	93.5	132.2
60	90.8	89.5	88.6	90.2	94.3	93.0	94.6	95.6	95.6	90.1	100.5	100.0	100.1	136.8
80	90.0	96.1	91.6	90.4	91.5	96.1	95.0	94.6	95.8	95.9	99.0	100.0	87.1	137.2
100	90.0	97.7	93.9	92.8	93.9	97.0	96.6	98.3	96.5	99.6	101.0	104.6	89.3	139.8
125	86.4	91.4	94.2	93.5	94.8	97.7	96.8	97.0	97.2	100.5	106.9	109.1	93.0	142.3
160	85.4	87.2	90.7	88.6	89.9	93.2	99.9	95.5	96.2	102.1	107.4	109.9	97.8	142.8
200	87.8	88.1	90.8	89.4	92.5	95.8	98.0	98.4	102.1	103.4	108.8	113.7	101.6	145.4
250	87.3	92.3	93.3	91.9	93.5	95.8	98.0	100.4	103.1	109.4	114.5	116.5	104.4	149.2
315	88.6	91.9	91.2	91.2	94.3	98.4	99.8	101.2	104.1	111.2	116.6	117.8	107.9	150.8
400	91.1	94.1	94.6	92.4	94.5	97.9	107.0	102.9	106.6	115.4	119.8	119.5	108.9	153.7
500	91.6	94.9	95.6	94.2	96.3	99.6	100.3	103.7	108.1	117.2	120.8	120.0	111.4	154.6
630	92.8	96.8	96.8	95.1	97.7	101.6	101.7	105.1	109.6	119.2	122.3	120.5	113.1	156.0
800	95.6	97.1	98.1	96.4	98.0	102.1	102.8	106.2	110.6	117.7	121.6	120.8	114.7	155.5
1000	100.0	104.0	102.6	99.6	103.6	104.4	107.6	111.3	116.4	121.0	120.2	115.6	115.2	
1250	105.4	111.2	111.0	110.1	109.6	110.2	108.1	110.0	113.2	119.1	127.7	128.9	123.0	161.9
1600	98.6	101.5	101.9	100.5	102.0	105.1	105.7	108.3	112.2	115.0	120.9	121.0	115.2	155.2
2000	99.5	103.3	102.3	99.9	101.2	104.6	105.6	109.1	112.3	115.5	120.3	119.1	113.6	154.8
2500	101.2	105.3	105.6	102.3	103.7	105.3	105.2	109.1	112.0	116.5	121.0	118.3	114.3	155.1
3150	98.8	102.9	103.4	102.0	102.3	105.6	105.5	108.7	112.3	114.9	119.1	116.5	111.2	153.6
4000	97.1	101.2	102.6	101.0	103.1	105.3	105.0	108.6	111.0	113.2	118.1	115.4	110.0	152.6
5000	96.4	101.4	102.5	100.1	102.2	105.6	104.8	107.8	110.3	114.0	117.3	113.5	108.8	152.1
6300	95.4	100.3	101.8	100.6	102.7	105.4	105.7	108.4	109.9	111.4	115.8	112.8	107.5	151.3
8000	93.8	98.2	100.5	100.2	101.6	104.6	104.6	107.2	108.2	110.4	114.0	111.2	105.8	150.2
10000	93.1	98.4	99.7	101.6	104.8	104.6	105.8	107.6	109.3	113.1	110.2	104.7	150.0	
12500	91.8	95.9	98.3	98.4	100.7	104.4	104.0	105.2	106.4	107.5	111.5	108.4	103.9	149.5
16000	90.6	95.4	97.0	98.0	99.3	102.8	102.9	104.0	104.9	105.5	109.4	106.6	101.2	149.2
20000	87.9	92.5	94.6	95.5	96.8	100.8	100.9	101.0	102.2	103.2	106.4	103.2	98.2	148.3
25000	85.2	89.7	91.7	93.0	94.1	98.7	97.4	97.9	99.7	98.0	100.0	98.7	93.8	146.8
31500	82.6	85.8	88.4	90.3	90.6	95.0	94.5	94.5	95.9	95.1	97.8	95.3	89.3	146.7
40000	78.5	82.4	84.6	85.7	86.8	91.3	90.3	90.6	92.4	91.8	95.0	91.6	85.5	147.1
50000	73.1	76.4	78.5	80.5	81.5	86.3	84.9	85.2	87.2	87.0	90.2	86.5	79.7	146.4
63000	67.7	71.1	73.1	74.7	75.5	81.3	79.1	80.2	82.8	82.4	85.2	81.6	75.2	146.7
80000	61.8	64.4	66.6	67.3	69.3	75.6	72.5	74.4	77.3	77.7	79.5	76.3	68.8	147.8
CASPL	110.7	115.4	115.5	114.2	115.1	117.6	117.8	120.0	122.9	127.9	133.0	132.7	126.6	167.7
PNL	123.1	127.6	127.6	125.6	127.0	129.7	130.0	132.7	135.7	139.6	144.2	143.6	137.4	
PNLT	125.2	131.4	130.5	129.0	129.7	131.7	131.1	132.7	135.7	140.7	146.5	146.4	140.0	
DBA	110.9	115.7	115.6	114.1	114.8	117.0	116.9	119.7	122.8	127.4	132.8	132.5	126.8	

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NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH132	TEST DATE = 03-17-83	LOCAT = C41 ANECH CH	CONFIG = 10	MODEL =	FLTVEL =	O. FPS
JAPLHA = SB59	LEGA = NO	PWL AREA = FULL SPHERE	TAMB F = 53.31	PAMB HD =	RELHUM =	41.7 PCT
WIND DIR =	DEG WIND VEL =	EXT DIST = 40.0 FT	EXT CONFIG = ARC	MIKE HT =	NBFR =	
FNINI =	LBS XNL	RPM XNH	RPM V8	AE8	4.8 SQ IN	
FNRAMB =	LBS XNLR	RPM XNHR	RPM V18	AE18	23.4 SQ IN	
RUNPT = 83F-ZER-1009	TAPE =	TEST PI NO = 1009	NC =	CORR FAN SPEED =	RPM	

IDENTIFICATION - 83F-ZER-1009 X10091

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	66.1	70.9	71.8	72.0	75.5	79.8	81.0	82.0	84.3	90.3	94.1	93.1	79.9	167.8
63	68.6	73.1	74.7	73.2	75.7	79.2	88.2	83.7	86.7	94.5	97.3	94.8	81.9	170.7
80	69.0	73.8	75.7	75.0	77.5	81.0	81.5	84.5	88.2	96.2	98.3	95.3	83.3	171.8
100	70.2	75.8	76.9	75.9	78.9	82.9	85.9	89.6	88.1	98.7	95.6	95.6	84.8	172.9
125	72.8	78.0	78.1	77.1	79.1	83.4	83.9	86.9	90.6	96.6	98.9	95.7	86.1	172.5
160	77.1	82.7	82.4	80.1	81.7	84.7	85.4	88.1	91.1	95.1	98.1	94.9	86.7	172.1
200	82.2	89.7	90.6	90.5	90.4	91.2	88.9	90.4	92.8	97.5	104.5	103.2	93.6	178.9
250	75.1	79.7	81.3	80.7	82.6	85.9	86.3	88.4	91.5	93.2	97.3	95.0	85.1	172.2
315	75.6	81.2	81.3	79.8	81.6	85.1	85.9	89.0	91.3	93.4	96.4	92.5	82.8	171.6
400	76.7	83.7	84.3	81.8	83.7	85.5	85.2	88.6	90.7	93.9	96.5	91.1	82.4	172.0
500	73.8	79.9	81.7	81.1	82.0	85.4	85.2	87.9	90.6	91.9	94.1	88.6	78.3	170.6
630	71.5	77.7	80.5	79.8	82.5	84.9	84.3	87.4	88.9	89.7	92.6	86.7	76.0	169.6
800	70.3	77.4	80.0	78.6	81.2	84.8	83.8	86.3	87.9	90.1	91.2	84.0	73.5	169.1
1000	68.7	75.9	79.0	78.8	81.4	84.3	84.4	86.6	87.1	87.0	89.1	82.9	71.0	168.3
1250	66.5	73.3	77.3	78.0	80.0	83.2	83.0	85.0	85.0	85.5	86.7	79.9	67.6	167.2
1600	64.5	72.7	75.8	76.9	79.5	82.9	82.5	83.0	83.6	83.5	84.6	77.3	63.9	167.0
2000	61.6	69.1	73.4	74.8	77.6	81.8	81.6	81.5	80.6	81.5	73.3	59.6	59.6	166.5
2500	58.4	55.9	70.9	73.4	75.5	79.3	79.1	79.4	78.9	77.0	77.2	69.3	51.6	166.2
3150	51.7	60.9	66.0	68.8	71.0	75.3	75.1	74.3	73.6	71.7	70.2	59.3	38.5	165.3
4000	42.0	52.6	58.5	62.2	64.6	69.6	68.4	66.6	66.5	60.9	56.8	45.1	19.9	163.8
5000	28.8	40.4	48.1	53.2	55.3	60.2	59.1	57.4	55.6	49.6	44.0	27.2		163.7
6300	8.5	22.3	31.9	37.5	40.8	45.2	44.5	42.3	39.7	31.7	23.0			164.1
8000		3.5	12.0	16.5	22.5	20.0	16.7	12.1	1.2					163.3
10000														163.7
12500														164.8
16000														
20000														
25000														
31500														
40000														
50000														
63000														
80000														

ORIGINAL PAGE IS
OF POOR QUALITY

MODEL AREA = 160.9 SQ CM (29.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.086 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/OETAS-10/NAS3-22137

VEHICLE = ADH198	TEST DATE = 03-17-83	LOCAT = C41 ANECH CH	CONFIG = 10	MODEL = AV	FLTVEL = 0. FPS
TAPLHA = 8859	LEGAL = NO	PWL AREA = FULL SPHERE	TAMB F = 53.31	PAMB NO = 8859	RELHUM = 41.7 PCT
WIND DIR =	DEQ. WIND VEL =	EXT DIST = 2400.0 FT	EXT CONFIG = SL	MIKE NO =	NBER =
FNINI =	LBS XNL =	RPM	RPM	V8 =	V18 =
FNRAMB =	LBS XNLR =	RPM	RPM	V8 = 1407.6 FPS	AE8 = 4.6 SQ IN
				V18 = 2305.3 FPS	AE18 = 23.4 SQ IN
RUNPT = 83F-ZER-1009	TAPE =	TEST PT NO = 1009	NC =	AE090	CORR FAN SPEED =

IDENTIFICATION - MODEL 83F-400-1010 X1010C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	88.4	88.4	83.9	84.0	82.3	84.4	84.6	89.0	89.4	88.5	93.6	93.8	90.0	130.5
63	92.5	91.0	88.3	91.1	89.2	92.1	91.7	91.4	93.8	92.1	96.0	95.2	92.4	134.6
80	90.3	96.8	91.6	91.6	92.7	95.8	94.7	94.1	95.3	94.9	98.0	98.5	89.1	136.9
100	89.0	96.0	91.3	90.8	93.4	96.3	96.4	97.3	95.5	96.8	99.2	103.4	92.1	138.5
125	87.6	90.4	92.9	92.7	94.6	96.4	95.6	95.7	95.2	97.3	104.6	108.3	94.0	140.9
160	85.2	84.5	88.7	86.3	88.1	90.7	97.1	93.0	94.2	99.1	105.2	107.9	96.8	140.5
200	85.3	86.1	87.8	85.9	88.7	91.6	94.0	95.4	98.3	98.6	104.8	111.2	99.9	142.3
250	82.8	87.3	87.8	87.4	89.7	92.1	94.0	96.1	98.3	104.6	110.3	114.0	101.9	145.7
315	84.8	87.6	88.1	87.4	90.3	93.4	94.8	96.9	100.4	106.5	112.3	114.8	104.2	147.1
400	85.6	88.6	89.9	87.7	90.5	93.4	98.3	97.2	102.6	109.2	114.6	115.8	103.9	148.7
500	86.1	88.9	90.4	88.7	91.5	94.1	95.5	98.7	102.6	111.0	116.1	115.8	102.4	149.6
630	85.5	90.3	90.8	89.6	92.7	95.3	97.2	100.4	103.8	111.7	116.8	115.2	100.6	150.0
800	89.3	89.9	91.8	90.2	93.0	96.4	97.5	100.9	105.4	112.0	115.8	113.5	98.9	149.3
1000	92.5	93.5	93.8	91.8	94.7	97.6	98.9	103.1	106.6	112.1	115.0	111.2	97.6	148.8
1250	91.2	95.2	94.5	93.6	96.3	98.5	103.3	107.0	110.8	113.4	108.3	96.5	147.5	
1600	94.8	95.7	94.5	94.0	96.5	100.1	100.5	104.0	108.1	111.0	113.6	107.0	96.7	147.8
2000	98.0	98.8	95.7	93.9	95.7	99.1	100.8	105.1	108.2	112.0	113.5	106.1	97.1	148.2
2600	96.4	99.4	99.8	97.5	98.1	100.2	100.9	105.5	107.9	111.9	112.7	104.8	98.0	148.1
3150	96.5	97.8	98.6	97.6	99.9	101.0	101.9	105.6	108.9	111.3	112.3	105.4	97.8	148.0
4000	96.9	98.0	99.1	96.8	99.7	101.7	102.1	105.4	108.3	110.0	112.0	105.5	98.1	147.7
5000	96.5	98.1	99.2	97.2	98.9	101.6	101.8	105.6	107.8	111.0	111.0	104.6	97.8	147.7
6300	95.9	96.4	100.2	98.5	99.9	102.3	101.9	105.8	107.8	109.5	110.2	103.5	96.5	147.4
8000	94.9	96.9	98.5	98.2	99.9	101.2	101.6	104.7	106.7	107.6	108.5	102.0	95.3	146.5
10000	95.5	97.5	98.6	98.4	99.8	102.3	101.8	104.2	106.2	107.1	107.0	101.6	95.4	146.6
12500	94.8	96.2	98.1	97.0	99.0	101.8	101.6	103.5	105.2	105.4	105.0	101.0	95.3	146.3
16000	92.6	96.0	95.9	97.2	98.0	100.7	100.5	102.7	103.6	102.8	103.6	99.3	93.0	146.3
20000	90.6	94.3	95.2	96.2	96.2	99.2	99.6	99.7	101.4	100.4	100.3	97.2	91.4	145.8
25000	87.4	89.4	90.8	92.2	93.6	97.6	97.3	96.4	98.7	97.2	96.7	94.6	88.5	145.4
31500	83.8	86.1	87.6	90.0	90.0	93.6	92.9	93.2	95.1	93.4	93.8	91.0	84.4	145.0
40000	79.6	82.0	83.8	85.2	86.3	90.4	89.5	89.3	91.1	90.2	90.8	86.5	80.1	145.4
50000	73.4	76.7	78.0	79.5	80.9	85.2	84.1	83.7	85.4	85.1	84.8	80.8	73.4	144.2
63000	68.1	69.8	72.3	73.4	75.3	79.5	78.1	78.4	81.0	80.1	80.5	74.8	67.5	144.3
80000	63.2	63.9	65.7	66.0	67.6	73.9	70.9	71.9	74.2	74.3	72.9	68.0	59.4	144.5
GASPL	107.5	109.6	110.1	109.0	110.8	113.2	113.7	116.6	119.4	122.9	125.9	124.3	112.8	161.6
PWL	120.2	122.1	122.6	121.1	123.3	125.4	126.1	129.3	132.3	135.4	137.4	133.0	123.8	
PNTL	120.2	122.1	122.6	121.1	123.9	125.4	126.6	129.3	132.3	135.4	137.4	133.0	123.8	
DBA	106.6	108.6	109.1	107.5	109.5	111.7	112.3	116.0	119.0	122.6	125.0	121.3	110.2	

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH146 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 49.68 PAMB HG = 29.85 RELHUM = 74.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CNFIG = ARC MIKE HT = NBFR

FNIN1 = LBS XNL RPM XNHR = RPM V8 = 1440.3 FPS AE9 = 4.8 SQ IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V16 = 2341.1 FPS AE16 = 23.4 SQ IN

INLET = 83F-400-1010 TAPE = X1010C TEST PI NO = 1010 NC = AE090 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1010 X1010F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

200	90.7	93.8	92.8	90.7	91.3	92.1	92.5	93.1	98.1	103.7	109.4	112.6	104.0	144.7
315	90.7	93.8	92.8	90.7	92.1	93.6	93.8	94.9	100.3	106.4	111.8	114.1	105.1	146.6
400	92.5	94.0	93.1	90.8	92.3	93.6	97.2	95.0	100.4	108.3	113.5	114.8	105.2	147.8
500	93.2	95.0	94.8	91.1	93.4	94.5	94.5	96.5	101.8	109.3	114.7	115.3	105.5	148.7
630	93.8	95.3	95.4	92.1	94.7	95.7	96.3	98.2	103.8	110.1	114.5	115.0	106.7	148.8
800	94.2	96.7	95.9	93.1	95.1	96.9	96.7	98.8	105.4	110.8	114.3	114.0	107.9	148.7
1000	97.0	96.3	96.9	93.8	96.7	98.2	98.2	101.1	105.9	109.5	112.8	111.2	106.9	147.4
1250	98.9	99.2	98.4	95.1	98.6	99.3	98.2	101.4	107.2	109.8	113.0	109.9	101.1	147.7
1600	98.8	101.7	99.6	97.3	98.9	101.2	100.0	102.3	107.5	111.0	113.1	109.1	107.7	148.2
2000	101.8	101.8	100.3	97.7	98.8	100.3	100.6	103.6	107.7	111.5	112.9	108.5	109.3	148.5
2500	104.0	103.8	100.7	96.8	100.7	101.9	101.1	104.5	109.3	111.4	113.2	109.9	109.9	149.2
3150	101.9	104.5	104.1	100.9	103.2	103.0	102.6	105.1	109.4	110.9	113.5	110.5	110.6	149.7
4000	104.1	104.5	104.4	102.0	103.4	104.3	103.4	105.5	108.9	111.8	112.5	109.4	110.2	149.7
5000	104.5	104.7	104.9	101.5	103.0	104.6	103.3	105.8	108.9	110.3	111.6	108.3	108.8	149.3
6300	103.9	104.8	103.1	102.0	103.9	105.3	103.4	106.0	108.0	108.9	110.2	107.1	107.9	149.8
8000	103.2	105.0	105.9	103.2	103.9	104.2	103.2	104.9	108.3	109.0	109.5	107.6	108.8	149.3
10000	102.0	103.3	104.0	102.8	103.8	105.3	103.9	105.0	108.3	108.4	108.7	108.0	109.4	149.6
12500	102.4	103.7	103.8	102.6	103.1	104.8	103.9	104.9	107.3	106.3	107.8	105.8	107.7	149.6
15000	101.1	101.8	102.8	100.7	102.0	103.7	102.9	104.1	106.0	104.7	105.1	105.0	106.2	149.5
20000	98.8	101.2	101.2	100.5	100.8	102.2	102.0	101.5	104.1	102.3	102.0	102.8	103.5	149.5
25000	98.7	99.5	99.7	99.1	98.2	100.6	99.8	98.3	101.1	99.3	100.1	100.4	100.8	149.6
31500	94.7	95.5	95.6	95.3	94.6	96.6	95.3	95.0	97.8	96.8	98.1	97.0	97.8	149.3
40000	90.0	91.3	91.4	92.2	90.9	93.4	91.9	91.0	92.3	91.8	92.2	91.7	91.6	148.9
50000	86.7	86.9	87.2	87.1	85.5	88.2	86.4	85.2	88.3	87.0	88.2	86.0	86.3	148.4
63000	78.5	79.6	80.5	80.4	79.9	82.5	80.4	79.5	82.8	82.6	81.9	80.6	79.9	147.8
80000	71.7	72.2	73.3	72.8	72.2	76.9	73.1	73.0	73.0	72.8	72.1	70.8	70.1	146.8

80000	114.0	116.1	114.9	112.6	113.9	115.2	114.4	116.2	119.9	122.4	125.1	124.3	120.9	162.8
PNL	126.0	126.8	126.5	123.8	125.5	126.5	125.8	128.0	132.0	134.7	136.9	134.7	133.2	
PNLT	126.0	126.8	126.5	123.8	125.5	126.5	126.3	128.0	132.0	134.7	136.9	134.7	133.2	
DBA	184.3	195.1	196.0	195.7	195.0	198.8	195.8	195.3	196.8	196.5	196.1	194.7	194.2	

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH146 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = 10 FLTVEL = 400. FPS
 IAPLHA = SB50 IIEGA = NO PWL AREA = FULL SPHERE TAMB F = 49.68 PAMB NO = 0000 RELHUM = 74.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = 0000 NBER = 0000
 FNIN1 = LBS XNL RPM XNH RPM V8 = 1440.3 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2341.1 FPS AE18 = 23.4 SQ IN
 RUNPT = 83F-400-1010 TAPE = X1010F TEST PT NO = 1010 NC = AE090 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1010 X10101

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	68.2	72.8	72.9	71.5	73.3	75.0	75.1	75.8	80.5	85.5	89.3	89.4	77.1	163.6
63	70.0	73.1	73.2	71.7	73.6	75.0	75.5	75.9	80.5	87.3	91.0	90.1	77.1	164.8
80	70.7	74.0	74.9	71.9	74.6	75.8	75.7	77.3	81.9	88.3	92.1	90.5	77.3	165.6
100	71.1	74.2	75.4	72.9	75.9	77.0	77.4	78.9	83.9	89.1	91.9	90.2	78.4	165.8
125	71.5	75.6	75.8	73.8	76.2	78.1	77.8	79.5	85.3	89.6	91.6	89.0	79.3	165.7
160	74.1	75.0	76.7	74.3	77.6	79.3	79.2	81.6	85.7	88.2	89.8	85.9	77.9	164.4
200	75.6	77.6	78.0	75.5	79.4	80.2	79.0	81.7	86.8	88.2	89.8	84.3	77.7	164.6
250	75.3	79.9	79.0	77.5	79.5	81.9	80.6	82.5	86.9	89.2	89.6	83.1	77.7	165.2
315	77.8	79.6	79.4	77.6	79.1	80.8	81.0	83.5	86.8	89.3	89.0	81.9	78.5	165.4
400	79.6	81.2	79.4	76.4	80.7	82.0	81.1	84.0	88.0	88.8	88.7	82.6	78.0	166.1
500	76.9	81.4	82.4	80.1	82.9	82.9	82.2	84.2	87.7	87.9	88.5	82.6	77.7	166.6
630	78.5	81.0	82.3	80.8	82.8	83.8	82.7	84.4	86.9	88.3	86.9	80.7	76.1	166.7
800	78.4	80.8	82.4	80.0	82.0	83.8	82.3	84.3	86.5	86.3	85.5	78.8	73.5	166.3
1000	77.2	80.5	82.2	80.2	82.6	84.2	82.1	84.1	85.2	84.5	83.5	76.8	71.3	165.9
1250	75.8	80.1	82.7	81.1	82.3	82.8	81.6	82.8	85.0	84.1	82.1	76.3	70.7	166.2
1600	73.5	77.6	80.1	80.0	81.7	83.3	81.7	82.3	84.4	82.7	75.1	68.6	66.6	
2000	72.4	76.8	79.0	79.1	80.2	82.2	81.1	81.4	82.5	79.5	77.8	71.7	63.4	166.6
2500	68.9	73.3	76.6	76.1	78.3	80.2	79.1	79.9	76.2	72.9	66.7	56.5	44.8	166.5
3150	62.6	69.6	72.6	73.7	75.1	76.8	76.3	74.7	75.5	70.7	58.9	44.8	36.4	166.4
4000	55.5	62.4	66.5	68.3	68.6	71.6	70.3	67.4	67.9	62.2	56.9	46.8	26.9	166.6
5000	40.9	50.0	55.3	58.2	59.2	61.8	59.9	57.9	57.5	51.3	44.2	28.9	1.1	166.2
6300	18.0	31.2	38.7	44.0	45.1	48.4	46.1	42.7	39.5	31.8	20.2			165.9
8000	1.1	12.2	18.6	20.6	24.4	21.5	16.8	13.2	1.2					165.4
10000														164.8
12500														163.8
16000														
20000														
25000														
31500														
40000														
50000														
63000														
80000														

MODEL AREA = 180.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.086 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS9-22137

VEHICLE = ADH146 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AX FLTVEL = 400. FPS
 JAPLHA = SB59 IEGA = NO PWL AREA = FULL SPIERE TAMB F = 49.68 PAMB HQ = 29.09 RELHUM = 74.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXI CONFIG = SL MIKE HT = 29.09 REHLUM = 74.1 PCT

FNIN1 = LBS XNL RPM XNH RPM V8 = 1440.3 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2341.1 FPS AE18 = 23.4 SQ IN

INPT = 83F-400-1010 TAPE = V10101 TEST PT. NO = 1010 NC = AE000 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1011 X1011C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PML

50	87.4	88.4	88.7	84.5	86.8	88.4	89.6	91.5	92.4	96.7	97.9	97.6	88.0	134.3
63	92.5	92.5	94.1	90.4	94.0	96.1	95.0	94.1	96.6	101.6	101.8	101.2	94.4	138.9
80	93.0	98.8	94.1	93.4	95.5	98.6	97.5	97.4	98.1	98.2	101.8	102.2	88.6	139.8
100	93.0	100.8	98.3	95.5	97.4	100.3	99.9	101.8	99.5	102.1	103.7	107.9	91.6	142.8
125	89.4	93.4	96.4	96.0	98.3	100.7	100.6	100.0	99.7	103.0	109.9	112.3	86.5	145.4
160	87.9	90.0	92.2	90.8	92.6	96.0	103.9	99.0	99.5	104.6	110.2	113.4	101.5	146.0
200	91.3	90.3	93.6	92.1	95.2	98.8	100.7	100.6	104.3	105.4	111.5	117.2	105.1	148.5
250	89.8	94.1	95.3	94.6	96.7	98.3	99.7	102.9	104.8	111.7	117.0	120.0	108.1	152.1
315	90.6	93.9	94.1	93.2	96.5	99.4	101.3	103.4	105.9	113.5	118.8	120.5	111.4	153.3
400	92.8	95.3	95.9	94.2	96.5	99.6	105.0	103.7	108.1	116.9	121.1	122.3	112.4	156.4
500	93.8	96.4	96.8	95.4	98.0	100.6	101.8	105.2	109.4	118.5	122.8	122.3	113.7	156.5
630	94.5	97.8	97.6	96.6	99.2	102.3	103.7	106.4	110.1	119.7	124.3	123.2	115.6	157.8
800	98.1	98.4	99.1	97.7	100.0	102.9	103.8	107.7	111.9	119.9	124.8	123.0	116.9	158.1
1000	101.8	106.0	103.8	101.1	103.2	105.1	105.4	109.1	113.3	118.9	124.8	123.2	117.4	158.2
1250	101.9	108.0	107.2	105.1	106.1	107.0	106.6	110.0	113.5	118.0	124.9	123.1	116.3	158.2
1600	104.8	108.5	107.4	104.8	106.3	107.4	107.7	110.5	114.9	118.2	126.6	122.5	115.7	159.1
2000	103.8	107.1	106.7	105.6	106.2	106.7	107.6	111.1	114.2	118.8	125.3	119.9	114.6	158.0
2500	102.7	106.2	106.5	105.0	108.4	108.6	107.2	111.1	113.9	119.2	123.0	117.8	113.6	156.8
3150	100.8	104.8	103.4	103.9	106.5	109.8	109.2	111.1	114.7	118.3	121.6	116.5	111.1	156.9
4000	99.5	103.6	105.7	103.6	106.5	108.5	108.9	111.7	113.6	116.8	120.3	115.1	110.2	154.9
5000	98.3	103.7	105.3	103.7	106.3	108.7	108.6	111.7	112.9	116.8	118.9	113.6	108.4	154.4
6300	97.5	103.0	104.8	103.7	106.5	108.4	108.7	111.7	112.4	115.1	117.6	112.1	106.9	153.6
8000	96.6	101.9	104.2	103.9	106.3	108.1	107.8	110.2	111.2	113.5	116.0	110.7	105.7	152.7
10000	96.2	101.3	103.3	103.9	106.5	108.7	108.0	109.2	111.2	114.5	109.6	104.4	152.6	
12500	94.8	99.3	101.9	102.3	105.8	108.0	107.1	107.6	109.7	110.9	112.8	107.8	103.1	152.0
16000	92.9	98.8	100.3	101.5	103.6	106.3	106.4	107.3	107.9	108.2	111.7	106.1	100.0	151.9
20000	91.1	95.4	97.8	98.3	101.0	104.3	104.1	104.3	105.7	106.0	109.1	103.4	97.6	151.2
25000	87.7	92.8	94.8	95.9	98.7	102.5	102.2	100.8	103.1	103.4	102.3	100.0	93.8	150.3
31500	84.6	89.2	91.2	93.9	95.1	99.0	98.2	97.8	99.5	100.8	99.6	95.6	89.5	150.2
40000	80.3	85.2	87.7	89.7	90.8	95.2	94.3	94.1	96.0	98.1	97.8	93.0	86.4	150.9
50000	74.1	78.5	82.6	84.4	85.8	90.3	89.0	89.1	92.0	94.0	93.1	88.0	80.7	150.7
63000	69.7	74.0	77.0	78.4	80.9	84.9	84.0	84.4	86.9	89.6	88.7	83.5	75.2	151.2
80000	63.4	67.6	70.8	71.5	74.9	80.0	77.2	79.1	81.3	84.4	82.8	78.1	69.1	152.4

CASPL 112.8 116.7 118.0 120.0 120.0 122.4 118.0 120.0 122.4 125.0 129.9 135.0 132.9 125.8 169.4

PNL 125.6 129.5 129.5 127.9 130.6 132.8 132.8 135.2 138.0 142.2 146.5 143.2 137.0

PNLT 125.6 129.5 129.5 127.9 131.2 132.8 133.3 135.8 138.0 142.2 146.5 143.2 137.0

DBA 113.0 116.8 116.9 115.2 117.4 119.1 119.1 122.0 124.9 129.6 134.8 131.8 125.5

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICL = ADH139	TEST DATE = 03-17-83	LOCAT = C41 ANECH CH	CONFIG = 10	MODEL = 10	FLTVEL = 0. FPS
IAPLHA = SB59	IEGA = NO	PWL AREA = FULL SPHERE	TAMB F = 51.64	PAMB HG = 99.14	RELHUM = 67.6 PCT
WIND DIR =	DEG WIND VEL =	MPH EXT DIST = 40.0 FT	EXT CONFIG = ARC	MIKE HT =	NBFR =
FNIN1 =	LBS XNL =	RPM XNH =	RPM V8 = 1543.2 FPS	AE8 =	AE8 IN = 1.9 90 IN
FNRAMB =	LBS XNLR =	RPM XNHR =	RPM V18 = 2493.0 FPS	AE18 =	AE18 IN = 23.4 90 IN
RUNPT = 83F-ZER-1011	TAPE = X1011C	TEST PT NO = 1011	NC = AE090	CORR FAN SPEED =	RPM

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IDENTIFICATION - 83F-ZER-1011 X1011F

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	87.4	88.4	88.7	84.5	86.8	88.4	89.6	91.5	92.4	96.7	97.9	97.6	88.0	134.3
63	92.5	92.5	94.1	90.4	94.0	96.1	95.0	94.1	96.6	101.6	101.8	101.2	94.4	138.9
80	93.0	98.8	94.1	93.4	95.6	98.6	97.6	97.4	98.1	98.2	101.8	102.2	88.6	139.6
100	93.0	100.5	96.9	95.5	97.4	100.3	99.9	101.6	99.5	102.1	103.7	107.9	91.6	142.6
125	89.4	93.4	98.4	96.0	98.3	100.7	100.6	100.0	99.7	103.0	109.9	112.3	96.5	145.4
160	87.9	90.0	92.8	90.8	92.8	96.0	103.9	99.0	99.5	104.6	110.2	113.4	101.5	146.0
200	91.3	90.3	93.6	92.1	95.2	98.8	100.7	100.6	104.3	105.4	111.5	117.2	105.1	148.5
250	89.8	94.1	95.3	94.6	96.7	98.3	99.7	102.9	104.8	111.7	117.0	120.0	108.1	152.1
315	90.6	93.9	94.1	93.2	96.5	99.4	101.3	103.4	105.9	113.5	118.8	120.5	111.4	153.3
400	92.8	95.3	95.9	94.2	96.5	99.6	105.0	103.7	108.1	116.9	121.1	122.3	112.4	155.4
500	93.6	96.4	96.9	95.4	98.0	100.6	101.8	105.2	109.4	118.5	122.8	122.3	113.7	156.5
630	94.5	97.8	97.6	96.6	99.2	102.3	103.7	106.4	110.1	119.7	124.3	123.2	115.6	157.8
800	98.1	98.4	99.1	97.7	100.0	102.9	103.8	107.7	111.9	119.7	124.8	123.0	116.9	158.1
1000	101.8	106.0	103.8	101.1	103.2	105.1	105.4	109.1	113.3	118.9	124.8	123.2	117.4	158.2
1250	101.8	108.0	107.2	105.1	106.1	107.0	106.6	110.0	113.5	118.0	124.9	123.1	116.3	158.2
1600	104.8	108.5	107.4	104.8	106.3	107.4	107.7	110.5	114.9	118.2	126.6	122.5	115.7	159.1
2000	105.8	107.1	106.7	105.6	106.2	106.6	107.6	111.1	114.2	118.5	125.3	119.9	114.6	158.0
2500	102.7	108.2	108.5	105.0	108.4	108.8	107.2	111.1	113.9	119.2	123.0	117.8	113.6	156.8
3150	100.6	104.8	105.4	103.9	106.5	108.8	108.2	111.1	114.7	118.3	121.6	116.5	111.1	155.9
4000	99.5	103.6	105.7	103.6	106.5	108.5	108.9	111.7	113.6	116.8	120.3	115.1	110.2	154.9
5000	98.3	103.7	105.3	103.7	106.3	108.7	108.6	111.7	112.9	116.8	118.9	113.6	108.4	154.4
6300	97.5	103.0	104.8	103.7	106.5	108.4	108.7	111.7	112.4	115.1	117.6	112.1	106.9	153.6
8000	95.6	101.9	104.2	103.9	106.3	108.1	107.8	110.2	111.2	113.5	116.0	110.7	105.7	152.7
10000	96.2	101.3	103.3	103.9	106.5	108.7	108.0	109.2	111.2	112.1	114.5	109.6	104.4	152.5
12500	94.6	99.3	101.9	102.3	105.8	108.0	107.1	107.6	109.7	110.6	112.8	107.8	103.1	152.0
16000	92.9	98.6	100.3	101.5	103.6	105.3	105.4	107.3	107.9	108.2	111.7	106.1	100.0	151.9
20000	91.1	95.4	97.8	98.3	101.0	104.3	104.1	104.3	105.7	106.0	109.1	103.4	97.6	151.2
25000	87.7	92.8	94.8	95.9	98.7	102.5	102.2	100.8	103.1	103.4	102.3	100.0	93.8	150.3
31500	84.6	89.2	91.2	93.9	95.1	99.0	98.2	97.8	99.5	100.8	99.6	95.6	89.5	150.2
40000	80.3	85.2	87.7	89.7	90.8	95.2	94.3	94.1	96.0	98.1	97.8	93.0	86.4	150.9
50000	74.1	79.5	82.6	84.4	85.8	90.3	89.0	89.1	92.0	94.0	93.1	88.0	80.7	150.7
63000	69.7	74.0	77.0	78.4	80.9	84.9	84.0	84.4	86.9	89.6	88.7	83.5	75.2	151.2
80000	63.4	67.6	70.8	71.5	74.9	80.0	77.2	79.1	81.3	84.4	82.8	78.1	69.1	152.4

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 40.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DEIAS-10/NAS3-22137

VEHICLE = ADH139 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = 10 FLTVEL = 0. FPS
 IAPLHA = SB68 TEST AREA = NO PML AREA = FULL SPHERE TAMB F = 51.64 PAMB MS = 1.14 RELHUM = 57.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE NR = 1

FNIN1 = LBS XNL = RPM XNHR = RPM V8 = 1543.2 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V16 = 2493.0 FPS AE16 = 23.4 SQ IN

IDENTIFICATION - 83F-ZER-1011 X10111

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	68.1	72.9	74.3	74.0	77.8	80.8	82.5	84.3	86.0	92.5	96.4	95.9	83.4	170.3
63	70.3	74.4	76.0	75.0	77.7	81.0	86.2	84.5	88.2	96.0	98.6	97.5	84.4	172.4
80	71.3	76.4	77.0	76.2	79.2	82.0	83.0	86.0	89.5	97.5	100.3	97.5	85.5	173.5
100	71.9	76.8	77.6	77.4	80.4	83.6	84.9	87.1	90.1	98.6	101.7	98.4	87.3	174.8
125	75.3	77.2	79.1	78.4	81.1	84.1	84.9	88.4	91.8	98.6	102.1	98.0	88.4	175.1
160	78.8	84.7	83.8	81.6	84.2	86.2	86.4	89.6	93.1	97.6	101.8	97.9	88.4	175.2
200	78.7	86.4	86.4	85.5	86.9	87.9	87.4	90.4	93.1	96.5	101.7	97.5	86.9	175.2
250	81.3	86.7	86.8	84.9	86.9	88.1	88.3	90.7	94.3	96.4	103.1	96.5	85.6	176.1
315	81.8	84.9	85.8	85.5	86.5	87.0	87.9	91.0	93.3	96.6	101.3	93.3	83.7	175.0
400	78.2	83.6	85.2	84.5	88.4	88.9	87.2	90.6	92.6	96.6	98.5	90.5	81.7	173.7
500	75.8	81.8	83.7	83.1	86.2	89.6	88.9	90.3	93.0	95.3	96.6	88.5	78.2	172.9
630	73.9	80.1	83.6	82.4	85.9	88.0	88.2	90.5	91.5	93.3	94.7	86.4	76.1	171.9
800	72.2	79.8	82.9	82.2	85.3	87.9	87.6	90.2	90.5	92.9	92.7	84.2	73.1	171.3
1000	70.6	78.6	82.0	81.8	85.2	87.4	87.5	89.8	89.6	90.9	90.9	81.8	70.3	170.6
1250	69.2	77.0	81.0	81.7	84.7	86.7	86.2	88.0	87.9	88.6	88.6	79.4	67.6	169.7
1600	67.7	75.6	79.4	81.1	84.4	86.8	85.9	86.5	87.2	86.4	86.0	76.7	63.6	169.5
2000	64.8	72.4	77.0	78.7	83.0	85.5	84.0	84.9	83.9	82.8	72.7	58.7	69.0	169.0
2500	60.7	70.3	74.2	76.9	79.8	82.8	82.6	82.7	81.8	79.4	67.8	50.4	68.8	168.8
3150	54.9	63.9	69.2	71.5	75.2	78.8	78.3	77.5	77.1	74.4	72.9	59.6	39.0	168.1
4000	44.5	55.7	61.6	65.0	69.2	73.4	72.7	69.9	69.9	66.3	59.1	46.4	19.9	167.3
5000	30.8	43.7	50.9	56.8	59.8	64.2	62.9	60.7	59.2	55.3	45.8	27.4	167.2	167.2
6300	8.4	25.2	35.0	41.5	45.0	50.1	48.4	45.8	43.3	38.0	25.8	0.4	167.9	167.9
8000		7.5	15.9	20.9	26.6	24.1	20.6	16.9	8.2				167.6	167.6
10000													168.1	168.1
12500													169.4	169.4
15000														
20000														
25000														
31500														
40000														
50000														
63000														
80000														

ORIGINAL PAGE IS OF POOR QUALITY

MODEL AREA = 180.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.066 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH139. TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = 10 FLTVEL = 0. FPS
 IAPLHA = SB59. REGA = NO PWL AREA = FULL SPHERE TAMB F = 51.64 PAMB HD = 0.0 RELHUM = 57.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = 0.0 NBER = 0

FNINI = LBS XNL RPM XNH RPM V8 = 1543.2 FPS AEG = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2493.0 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1011 TAPE = X10111 TEST PT NO = 1011 NC = AE090 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1012 X1012C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	91.4	92.7	88.4	87.7	87.6	88.4	88.8	90.5	91.4	90.7	98.1	97.8	91.0	134.0
60	92.6	94.0	95.3	91.9	92.9	95.3	94.9	95.4	96.1	95.1	102.0	100.2	91.9	136.1
80	93.3	98.6	94.3	94.1	95.2	98.8	97.7	97.1	97.6	97.7	101.5	101.7	89.9	139.8
100	92.5	98.7	94.0	93.0	96.1	98.8	98.9	100.0	98.3	99.8	102.2	106.6	91.6	141.3
125	90.4	92.4	94.9	94.7	97.3	99.2	98.6	98.5	97.9	100.5	107.1	111.3	96.2	143.7
160	87.4	86.0	90.7	88.8	90.9	93.0	101.4	95.8	96.2	102.3	107.9	111.1	99.5	143.6
200	87.5	88.3	89.1	87.6	91.0	94.1	97.0	97.6	100.8	101.9	107.3	114.2	103.1	145.2
250	85.3	89.3	90.1	89.1	92.0	94.6	95.7	98.6	100.8	107.7	113.5	116.7	104.6	148.6
315	86.6	89.6	90.1	88.9	92.5	95.1	97.3	99.2	102.6	110.0	115.6	117.5	106.9	150.0
400	88.3	90.6	91.9	89.2	93.3	95.9	101.0	100.2	105.1	112.9	118.3	119.0	106.9	152.2
500	89.1	91.1	92.4	91.2	94.0	96.9	98.3	101.4	105.9	115.0	120.1	118.8	105.4	153.3
630	89.8	92.3	92.8	91.9	95.2	98.6	99.7	103.4	106.8	115.9	120.8	118.0	103.4	153.7
800	92.6	92.9	94.1	92.9	96.3	99.1	101.0	104.4	108.6	116.0	120.3	116.0	102.4	153.2
1000	96.8	98.0	97.6	95.6	97.7	100.8	102.2	104.1	110.1	115.6	120.8	114.9	101.1	153.4
1250	101.9	104.7	100.6	98.1	100.6	102.5	102.6	106.3	110.5	113.3	120.2	113.8	101.8	153.1
1600	103.1	106.0	106.1	103.0	103.6	104.5	107.5	111.9	115.0	121.1	112.8	102.2	103.8	153.8
2000	101.5	103.8	104.7	104.4	105.4	104.1	105.0	108.9	111.2	115.7	119.5	111.1	102.6	153.2
2500	99.6	101.9	102.8	101.5	106.1	107.5	105.7	108.5	110.9	116.4	118.2	109.5	102.6	152.8
3150	101.5	103.1	102.3	100.6	102.9	106.3	107.9	109.4	112.9	116.5	117.0	109.7	101.6	152.7
4000	101.4	103.0	103.1	101.0	103.5	105.2	106.8	109.9	111.8	114.7	115.5	108.0	101.6	151.6
5000	102.0	104.1	103.2	101.6	103.7	105.6	106.5	110.1	111.5	115.0	114.3	106.3	100.6	151.5
6300	101.8	104.4	104.2	102.3	104.1	106.1	106.4	110.0	111.3	113.5	113.5	106.2	99.7	151.2
8000	100.6	102.7	104.0	102.5	104.1	105.7	105.6	108.2	110.2	111.8	111.3	104.0	98.6	150.2
10000	100.0	102.0	103.8	102.9	104.5	106.8	105.8	108.0	109.9	111.1	109.7	103.6	97.9	150.4
12500	98.3	99.5	101.8	101.5	104.3	106.8	105.8	107.0	108.1	109.1	107.3	103.3	96.8	150.0
16000	95.8	98.7	100.1	100.4	102.0	104.7	105.0	106.4	107.0	106.5	105.8	101.0	94.7	149.8
20000	93.4	95.9	97.3	97.2	99.5	102.7	102.6	103.5	104.4	104.6	103.1	98.7	91.9	149.1
25000	90.4	92.9	94.2	94.5	97.1	100.9	100.3	99.9	101.9	101.2	99.4	96.9	89.7	148.7
31500	86.5	88.6	89.9	91.8	93.3	97.1	96.9	97.5	98.6	98.0	96.3	92.2	85.2	148.5
40000	83.1	85.1	86.1	88.1	89.4	94.0	93.1	93.4	94.7	95.3	93.7	88.6	81.1	149.0
50000	78.7	79.5	81.4	82.6	84.0	88.8	87.4	88.1	89.5	91.0	88.4	82.7	75.3	148.2
63000	71.2	74.7	76.0	77.3	78.4	83.2	81.5	82.8	85.4	86.5	84.2	77.5	69.2	148.6
80000	69.6	69.6	71.2	71.2	72.5	77.6	75.5	77.0	80.1	81.7	78.1	69.9	61.1	149.9
0ASPL	112.4	114.7	114.6	113.4	115.4	117.4	117.8	120.3	122.7	127.1	130.6	127.4	116.0	165.7
PNL	124.8	126.9	126.9	125.3	128.0	129.7	130.7	133.1	135.8	139.9	142.0	136.6	127.3	
PNLT	124.9	126.9	128.1	125.9	128.6	130.3	131.3	133.1	135.8	139.9	142.0	136.6	127.3	
DBA	112.2	114.5	114.3	112.7	114.6	116.3	116.8	119.8	122.5	126.8	130.2	124.8	113.9	

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS9-22137

VEHICLE = ADH148	TEST DATE = 03-17-83	LOCAT = C41 ANECH CH	CONFIG = 10	MODEL = AX	FLTVEL = 400. FPS
IAPLHA = SB59	TEST DATE = NO	PML AREA = FULL SPHERE	TAMB F = 50.14	PAMB H0 = 20.98	RELHUM = 73.6 PCT
WIND DIR =	DEG WIND VEL =	EXT DIST = 40.0 FT	EXT CONFIG = ARC	MIKE HT =	NBFR =
FNINI =	LBS XNLR	RPM XNHR	V8 = 1538.8 FPS	AE6 =	4.8 SQ IN
FNRAMB =	LBS XNLR	RPM XNHR	V10 = 2504.7 FPS	AE10 =	29.4 SQ IN
RUNPT = 83F-400-1012	TAPE = X1012C	TEST PT NO = 1012	NC = AE090	CORR FAN SPEED =	RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1012 X1012F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

200	93.2	95.8	95.0	92.4	93.6	94.6	94.3	95.7	100.3	107.0	112.5	115.2	106.7	147.6
315	93.2	95.8	95.0	92.4	94.3	95.3	96.3	97.1	102.7	110.0	115.4	117.3	108.1	149.9
400	94.3	96.0	95.1	92.3	95.1	96.1	100.0	98.0	103.5	112.1	117.3	117.6	108.1	151.2
500	96.0	97.0	96.8	92.6	95.9	97.2	97.2	99.1	104.7	113.3	116.4	117.7	108.0	151.9
630	96.8	97.5	97.4	94.6	97.2	99.0	98.7	101.1	106.9	113.9	118.7	117.2	109.9	152.2
800	97.5	98.7	97.9	95.4	98.3	99.7	100.1	102.2	108.8	114.1	119.8	117.5	111.2	153.0
1000	100.3	99.3	99.2	96.5	99.4	101.4	101.4	104.0	109.4	114.0	119.5	116.6	112.1	152.8
1250	102.1	102.7	101.6	98.4	102.6	103.3	102.0	104.4	111.0	113.8	120.5	115.6	112.6	153.4
1600	108.5	110.1	104.6	101.0	103.4	104.7	104.0	105.8	110.6	114.9	119.4	114.4	113.5	153.4
2000	109.3	111.1	110.1	105.9	107.9	105.3	104.9	107.5	110.7	116.0	118.4	113.2	113.8	153.8
2500	107.6	109.3	109.3	109.3	109.1	109.1	105.9	107.5	113.1	116.5	117.6	113.8	113.3	154.0
3150	107.3	108.6	108.2	105.7	106.1	108.3	108.5	108.7	112.6	115.4	116.6	112.7	113.6	153.4
4000	108.5	109.3	107.6	104.8	107.1	107.8	108.1	109.9	112.0	115.5	115.3	110.7	112.4	153.0
5000	108.3	108.3	108.6	105.5	107.6	108.6	108.0	110.2	112.3	114.1	114.7	110.8	111.8	153.0
6300	108.7	110.3	108.7	106.3	108.1	109.1	107.8	110.2	111.7	112.9	113.0	109.1	111.2	152.7
8000	107.7	110.7	108.7	106.9	108.2	108.7	107.5	108.6	111.9	112.8	112.1	109.4	111.3	153.0
10000	107.6	109.1	109.5	107.0	108.6	109.8	107.9	108.8	111.1	111.9	110.7	110.2	111.1	153.2
12500	106.9	108.2	109.0	107.1	108.9	109.8	108.1	108.3	110.7	110.0	110.0	108.6	109.8	153.5
16000	107.4	107.3	108.2	106.3	106.0	107.7	107.4	107.8	108.3	108.4	107.5	106.6	107.3	153.3
20000	101.7	103.9	104.5	103.8	104.1	105.7	104.9	104.8	107.0	106.2	105.1	105.9	106.0	152.6
25000	101.5	102.7	102.7	101.1	101.7	103.9	102.7	101.6	104.2	103.3	102.4	101.9	102.4	152.6
31500	97.7	99.0	98.6	97.6	97.9	100.1	99.3	99.0	100.6	101.0	100.1	98.5	98.9	152.4
40000	93.0	93.8	93.7	94.0	94.0	97.0	95.4	94.6	95.3	96.4	94.3	92.0	92.4	151.8
50000	89.2	90.0	89.5	89.9	88.6	91.8	89.5	88.9	91.6	92.1	90.1	86.4	85.0	151.5
63000	81.9	83.4	83.8	83.5	83.0	86.2	83.3	83.1	87.8	88.9	85.6	80.4	78.5	151.6
80000	74.9	77.1	76.9	76.7	77.1	80.6	77.3	77.4	78.0	79.1	75.8	70.5	68.7	151.0

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

GASPL 119.0 120.4 119.7 117.2 118.7 119.5 118.6 119.9 123.2 126.5 129.7 127.4 124.3 166.7

PNL 130.6 131.8 130.6 128.5 130.1 130.7 130.3 131.9 135.3 138.6 140.8 137.5 136.6

PNLT 130.6 131.8 131.8 128.5 130.1 130.7 130.9 131.9 135.3 138.6 140.8 137.5 136.6

DBA 187.8 199.4 199.3 199.1 199.1 202.5 199.4 201.5 202.6 192.4 194.6 193.1

VEHICLE = ADH148 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AX FLTVEL = 400. FPS

IAPLHA = SB50 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC PAMB HD = 80.14 REIHUM = 73.6 PCT

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1538.8 FPS AE8 = 4.6 SQ IN

FNAMB = LBS XNLR = RPM XNHR = RPM V18 = 2504.7 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1012 TAPE = X1012F TEST PT NO = 1012 NC = AE090 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1012 X10121

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	70.7	74.8	75.2	73.3	75.6	76.7	77.5	78.0	82.9	89.1	92.9	92.6	80.1	166.9
63	71.8	75.1	75.2	73.2	76.3	77.5	81.2	78.8	83.6	91.1	94.8	92.9	80.0	168.1
80	73.4	76.0	76.0	73.4	77.1	78.6	78.4	79.9	84.8	92.3	95.9	93.0	79.9	168.9
100	74.1	76.5	77.4	75.4	78.4	80.3	79.9	81.8	86.9	92.8	96.1	92.3	81.6	169.2
125	74.7	77.6	77.8	76.1	79.4	80.9	81.2	82.9	88.7	92.9	97.1	92.5	82.6	170.0
160	77.3	78.0	79.0	77.0	80.4	82.6	82.4	84.6	89.2	92.6	96.6	91.4	83.2	169.8
200	78.9	81.2	81.2	78.8	83.4	84.2	82.8	84.7	90.6	92.2	97.3	90.0	83.2	170.4
250	85.0	88.3	84.0	81.1	84.0	85.4	84.6	86.0	90.0	93.1	95.8	88.4	83.4	170.4
315	85.4	89.0	89.2	85.8	88.2	85.8	85.2	87.3	89.8	93.8	94.5	86.6	83.0	170.8
400	83.1	86.7	88.0	87.4	89.1	89.3	85.9	87.0	91.8	93.9	93.2	86.5	81.4	171.0
500	82.3	85.5	85.5	84.8	85.8	88.1	88.2	87.9	91.1	92.4	91.8	84.8	80.9	170.4
630	82.9	85.8	85.6	83.7	86.5	87.3	87.4	88.8	89.9	92.0	89.8	82.0	78.4	170.0
800	82.1	85.3	86.1	84.0	86.7	87.8	87.0	88.7	89.9	90.2	88.6	81.3	76.5	170.0
1000	82.0	85.0	85.9	84.5	86.8	88.0	86.6	88.3	88.8	88.5	86.3	78.8	74.7	168.7
1250	81.3	85.8	85.5	84.7	86.6	87.3	85.9	86.5	88.7	87.9	84.7	78.2	73.2	170.0
1600	78.3	83.3	85.6	84.2	86.4	87.8	85.8	86.0	87.2	86.2	77.3	70.3	170.2	
2000	76.9	81.3	84.2	83.6	86.0	87.2	83.6	84.8	85.9	83.1	79.9	73.6	65.5	170.4
2500	75.2	78.8	82.1	81.7	82.2	84.2	83.6	83.2	82.2	79.9	75.3	68.3	67.7	170.3
3150	66.8	72.4	75.8	77.0	78.3	80.3	79.2	78.0	78.4	74.7	69.0	62.1	47.4	169.6
4000	58.3	65.7	69.5	70.3	72.2	74.8	73.2	70.7	71.0	66.3	59.2	48.3	28.5	169.6
5000	43.9	53.5	58.5	60.5	62.5	65.3	63.9	61.9	60.4	55.6	46.2	30.4	2.2	169.4
6300	21.0	33.8	40.9	45.7	48.1	51.9	49.5	46.4	42.6	36.3	22.3			168.8
8000	4.1	14.5	21.4	23.7	28.0	24.6	20.4	16.6	6.3					168.5
10000														168.6
12500														168.0
16000														
20000														
25000														
31500														
40000														
50000														
63000														
80000														

CASPL 93.2 96.7 97.0 95.3 97.5 98.4 97.4 98.3 101.2 103.9 106.1 101.5 92.6 183.6

PWL 98.7 103.7 105.4 104.4 106.7 107.9 106.7 106.9 108.6 109.5 109.5 103.2 96.2

PWLT 99.7 104.2 106.0 105.0 107.2 108.5 107.3 107.4 108.6 110.1 110.8 103.2 96.2

DBA 80.3 84.1 85.1 83.7 85.7 86.8 85.6 86.3 87.9 88.5 88.5 80.8 85.6

MODEL AREA = 180.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.066 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH148 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10

IAPLHA = S959 IEGA = NO PWL AREA = FULL SPIERE TAMB F = 50.14

WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1538.8 FPS AE8 = 4.6 SQ IN

FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2504.7 FPS AE18 = 23.4 SQ IN

UNP 83F-400-10121

IDENTIFICATION - MODEL 83F-ZER-1013 X1013C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	84.1	84.9	84.9	83.0	81.1	83.4	84.6	85.2	86.7	88.5	91.1	97.3	86.7	130.2
63	89.8	91.0	90.8	88.1	87.7	91.6	90.7	92.9	93.1	89.1	93.3	102.2	82.6	135.0
80	89.8	94.6	88.8	89.1	89.5	94.3	93.5	93.1	93.8	93.9	97.3	98.2	81.6	135.5
100	88.2	95.0	90.8	91.1	95.3	94.9	96.5	94.5	94.5	97.1	98.5	102.4	85.8	137.6
125	84.9	88.9	91.9	91.0	92.3	95.4	95.8	95.2	94.7	98.0	104.4	105.6	90.7	140.0
160	84.7	85.5	88.5	86.8	87.6	91.7	99.4	94.3	94.2	99.6	105.2	107.6	96.0	140.7
200	86.3	86.8	89.6	87.4	89.5	93.8	96.7	96.9	99.6	101.1	106.5	111.5	99.9	143.2
250	85.5	91.3	91.3	89.9	91.0	94.1	95.7	98.4	100.1	106.7	112.0	115.0	103.1	147.1
315	87.1	90.1	90.6	89.7	92.0	95.9	97.3	98.4	101.6	108.0	113.1	115.3	106.4	147.8
400	88.1	91.3	91.9	89.7	91.8	95.1	100.3	99.7	103.4	110.9	115.3	117.5	108.4	150.2
500	89.3	92.4	93.1	91.2	92.8	96.9	97.5	100.4	104.4	112.0	116.6	117.8	109.9	151.0
630	89.8	93.6	93.3	92.6	93.7	97.8	99.0	101.9	105.1	112.4	117.3	118.7	111.4	151.8
800	92.8	94.1	94.9	93.4	94.8	98.6	99.5	102.4	106.4	112.5	116.3	118.0	113.7	151.5
1000	97.5	101.8	99.1	95.8	96.4	99.8	100.4	103.8	107.3	112.1	115.8	117.4	113.9	151.3
1250	95.7	100.7	100.2	98.9	99.6	101.7	101.6	104.3	107.5	111.5	114.2	117.6	114.3	151.0
1600	95.3	97.2	98.1	96.5	98.0	101.9	102.2	105.0	108.9	111.5	115.8	117.5	114.2	151.4
2000	96.5	99.8	99.2	96.6	97.2	100.8	102.3	105.9	108.7	112.0	115.3	116.6	112.9	151.0
2500	94.4	99.0	99.8	97.5	98.6	101.8	101.7	105.6	108.4	111.7	115.0	114.8	111.8	150.3
3150	94.5	99.1	98.9	97.1	97.0	101.0	102.2	105.4	109.2	111.3	114.3	112.5	108.9	149.5
4000	93.5	98.1	99.4	96.9	98.3	100.7	101.6	105.2	108.1	109.5	112.5	111.6	108.2	148.4
5000	91.8	97.0	98.8	96.7	97.8	101.2	101.6	105.2	107.9	110.3	111.6	108.9	105.4	149.0
6300	91.0	96.5	98.1	97.2	99.0	101.4	102.0	104.7	106.9	108.1	110.6	108.4	104.3	147.2
8000	88.6	95.4	97.2	96.6	97.5	100.8	101.3	103.1	105.2	106.8	108.0	105.9	103.2	145.9
10000	87.7	94.5	96.3	96.4	97.7	101.0	101.0	103.0	104.9	105.6	106.5	105.6	102.2	145.8
12500	87.6	93.0	95.9	95.0	97.1	100.3	100.6	101.3	103.2	103.5	104.3	104.3	101.1	145.1
16000	86.1	92.6	94.5	95.5	96.8	99.0	99.1	100.5	101.9	100.9	103.1	101.6	98.5	145.0
20000	83.9	89.4	92.1	92.8	93.5	97.0	97.9	97.8	99.0	98.7	99.8	99.4	95.1	144.2
25000	80.7	86.3	89.1	89.6	90.7	95.5	95.4	94.0	96.3	95.6	95.1	96.5	91.6	143.6
31500	77.8	82.2	85.0	87.1	87.1	91.7	91.5	90.8	92.5	92.3	91.7	91.8	87.8	143.1
40000	76.9	78.5	80.5	82.5	82.8	88.2	87.3	86.9	88.8	88.6	88.8	89.3	83.4	143.4
50000	68.6	72.5	74.8	76.9	77.8	83.1	81.3	80.9	83.5	84.1	83.4	83.8	77.2	142.4
63000	62.5	66.8	69.5	70.5	71.7	77.7	75.5	76.0	79.2	77.9	79.8	78.0	72.5	142.6
80000	58.9	61.1	63.1	63.1	64.7	70.8	68.7	69.7	72.3	73.7	73.9	72.6	65.9	143.3
GASPL	106.0	110.2	110.0	109.0	110.0	113.3	114.1	116.5	119.4	123.1	126.8	126.2	125.0	162.8
PWL	116.5	122.8	123.3	121.4	122.5	125.6	126.6	129.4	132.5	135.4	138.7	139.0	134.5	
PWLI	119.6	124.3	123.3	121.4	122.5	125.6	127.1	129.4	132.5	135.4	138.7	139.0	134.5	
DBA	105.7	109.9	110.0	108.2	109.2	112.4	113.1	116.1	119.3	122.7	126.1	127.1	123.0	

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OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH140 TEST DATE = 03-17-63 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AN FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 51.84 PAMS NO = 10 RELHUM = 88.3 PCT
 WIND DIR = DEG WIND VEL = MPH MPH = 40.0 FT EXT CONFIG = ARC MIKE HT = 10 NBFR =
 FNINI = LBS XNL RPM XNH XNHR = RPM V8 = 1223.3 FPS AE8 = 4.8 SG IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 2154.4 FPS AE18 = 4.8 SG IN
 RUNPT = 83F-ZER-1013 TAPE = X1013C TEST PT NO = 1013 NC = AE090 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1013 X1013F

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	84.1	84.9	84.9	83.0	81.1	83.4	84.6	85.2	88.7	88.5	91.1	97.3	86.7	130.2	
63	89.8	91.0	90.8	88.1	87.7	91.6	90.7	92.9	93.1	89.1	93.3	102.2	82.6	135.0	
80	89.8	94.6	89.8	89.1	89.5	94.3	93.5	93.1	93.8	93.9	97.3	98.2	81.6	135.5	
100	88.2	95.0	90.8	90.8	91.1	95.3	94.9	96.5	94.5	97.1	98.5	102.4	85.8	137.8	
125	84.9	88.9	91.8	91.0	92.3	95.4	95.8	95.2	94.7	98.0	104.4	106.6	90.7	140.0	
150	84.7	85.5	88.5	86.8	87.6	91.7	93.4	94.3	94.2	99.6	105.2	107.6	96.0	140.7	
200	86.3	86.8	89.6	87.4	89.5	93.8	96.7	96.9	99.6	101.1	106.5	111.5	99.9	143.2	
250	85.5	91.3	89.9	91.0	94.1	95.7	98.4	100.1	106.7	112.0	115.0	103.1	147.1		
315	87.1	90.1	90.6	89.7	92.0	95.9	97.3	98.4	101.6	108.0	113.1	115.3	106.4	147.9	
400	88.1	91.3	91.9	89.7	91.8	95.1	100.3	99.7	103.4	110.9	115.3	117.5	108.4	150.2	
500	89.3	92.4	93.1	91.2	92.8	96.9	97.5	100.4	104.4	112.0	116.6	117.8	109.9	151.0	
630	89.8	93.6	93.3	92.6	93.7	97.8	99.0	101.9	105.1	112.4	117.3	118.7	111.4	151.8	
800	92.8	94.1	94.9	93.4	94.8	98.6	99.5	102.4	106.4	112.5	116.3	118.0	113.7	151.5	
1000	97.5	101.8	99.1	95.8	96.4	99.8	100.4	103.8	107.3	112.1	115.8	117.4	113.9	151.3	
1250	95.7	100.7	100.2	98.9	99.6	101.7	101.6	104.3	107.5	111.5	114.2	117.6	114.3	151.0	
1600	95.3	97.2	98.1	96.5	98.0	101.9	102.2	105.0	108.9	111.5	115.8	117.5	114.2	151.4	
2000	96.5	99.8	99.2	96.6	97.2	100.8	102.3	105.9	108.7	112.0	115.3	116.6	112.9	151.0	
2500	94.4	99.0	99.8	97.5	98.6	101.8	101.7	105.6	108.4	111.7	115.0	114.8	111.8	150.3	
3150	94.5	99.1	98.9	97.1	97.0	101.0	102.2	105.4	109.2	111.3	114.3	112.5	108.9	149.5	
4000	93.5	98.1	98.4	96.9	98.3	100.7	101.6	105.2	108.1	109.5	112.5	111.6	108.2	148.4	
5000	91.8	97.0	98.8	96.7	97.8	101.2	101.6	105.2	107.9	110.3	111.6	108.9	105.4	148.0	
6300	91.0	96.5	98.1	97.2	99.0	101.4	102.0	104.7	106.9	108.1	110.6	108.4	104.3	147.2	
8000	89.6	95.4	97.2	96.6	97.5	100.8	101.3	103.1	105.2	106.8	108.0	105.9	103.2	145.9	
10000	88.7	94.5	96.3	96.4	97.7	101.0	101.0	103.0	104.9	105.6	106.5	105.6	102.2	145.8	
12500	87.8	93.0	95.9	95.0	97.1	100.3	100.6	101.3	103.2	103.5	104.3	104.3	101.1	145.1	
15000	86.1	92.6	94.5	95.5	95.8	99.0	99.1	100.5	101.9	100.9	103.1	101.6	98.5	145.0	
20000	83.9	89.4	92.1	92.8	93.5	97.0	97.9	97.8	99.0	98.7	99.8	99.4	95.1	144.2	
25000	80.7	86.3	89.1	89.6	90.7	96.5	96.4	94.0	96.3	95.6	95.1	96.5	91.6	143.6	
31500	77.6	82.2	85.0	87.1	87.1	91.7	91.5	90.8	92.5	92.3	91.7	91.8	87.8	143.1	
40000	73.9	78.5	80.5	82.5	82.8	88.2	87.3	86.9	88.8	88.6	88.8	89.3	83.4	143.4	
50000	68.6	72.5	74.8	76.9	77.8	83.1	81.3	80.9	83.5	84.1	83.4	83.8	77.2	142.4	
63000	62.5	66.8	69.5	70.5	71.7	77.7	75.5	76.0	79.2	77.9	79.8	78.0	72.5	142.6	
80000	56.9	61.1	63.1	63.1	64.7	70.6	68.7	69.7	72.3	73.7	73.9	72.6	65.9	143.3	
NASA DUAL FLOW THERMAL SHIELD/DETIAS-10/NAS9-22137															
MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES															
VEHICLE = ADH140 TEST DATE = 03-17-63 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AX FLTVEL = 0. FPS															
IAPLHA = SB50 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 51.64 PAMB HGT = 89.17 RELHUM = 56.3 PCT															
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = 1.00 NBER =															
FNIN1 = LBS XNL RPM XNH RPM V8 = 1223.3 FPS AE8 = 4.6 SQ IN															
FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2154.4 FPS AE18 = 23.4 SQ IN															
IPT AF-Z 0130 TYPE = 333F 1000 RPM SPEED = 1000 RPM															

IDENTIFICATION - 83F-ZER-1013 X10131

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	64.6	69.2	70.6	70.5	73.3	77.3	78.5	79.3	81.8	87.0	90.6	90.6	78.4	164.9
63	65.6	70.4	72.0	70.5	73.0	76.5	81.5	80.5	83.5	90.0	92.8	92.8	80.4	167.2
80	66.8	71.4	73.2	72.0	74.0	78.2	78.7	81.2	84.5	91.0	94.1	93.0	81.8	168.0
100	67.2	72.6	73.4	74.9	79.1	80.1	82.6	85.1	86.3	91.4	94.7	93.9	83.1	168.8
125	70.1	73.0	74.6	74.1	75.9	79.9	80.6	83.1	86.3	91.3	93.6	93.0	85.1	168.5
160	74.6	80.5	78.9	76.4	77.4	80.9	81.4	84.4	87.1	90.8	92.8	92.2	84.9	168.3
200	72.5	79.2	79.8	79.2	80.4	82.7	82.4	84.6	87.1	90.0	91.0	92.0	84.9	168.0
250	71.8	75.4	77.5	76.7	78.6	82.6	82.8	85.2	88.3	89.7	92.3	91.5	84.1	168.4
315	72.6	77.7	78.3	76.5	77.5	81.3	82.6	85.7	87.8	89.8	91.3	90.0	82.0	168.0
400	69.9	76.4	78.5	77.0	78.6	81.9	81.7	85.1	87.1	89.1	90.5	87.5	79.9	167.3
500	69.5	76.1	77.2	76.3	76.6	80.9	81.8	84.6	87.5	88.3	89.3	84.5	76.0	166.5
630	67.9	74.6	77.4	75.7	77.6	80.3	81.0	84.0	86.0	86.1	87.0	82.9	74.1	165.4
800	65.7	73.0	76.4	75.2	76.8	80.4	80.6	83.7	85.5	86.4	85.5	79.4	70.1	164.9
1000	64.3	72.1	75.3	75.3	77.7	80.3	80.7	82.8	84.1	83.7	83.9	78.1	67.8	164.2
1250	62.2	70.5	74.0	74.5	76.0	79.5	79.7	81.0	81.9	81.9	80.6	74.6	65.1	162.9
1600	60.2	68.8	72.4	73.6	75.6	79.1	78.9	80.2	81.0	79.9	72.7	61.4	162.8	
2000	57.5	66.2	71.0	71.5	74.2	77.7	77.8	77.8	78.4	76.6	74.3	69.2	56.7	162.1
2500	53.9	64.1	68.4	70.9	72.0	75.6	75.3	75.8	72.4	70.9	53.3	48.9	161.9	
3150	47.7	57.9	63.5	66.0	67.7	71.6	72.1	71.0	70.4	67.2	63.7	55.6	35.5	161.2
4000	37.5	49.2	55.9	58.8	61.2	66.4	65.9	63.2	63.1	58.6	51.9	42.9	17.7	160.6
5000	23.8	36.7	44.7	50.0	51.8	56.9	56.1	53.7	52.2	46.8	37.8	23.7	160.1	
6300	1.9	19.4	27.8	34.2	37.0	43.2	41.4	38.6	36.1	28.6	16.8	160.4	159.4	
8000			8.5	12.9	19.3	16.4	12.4	8.5				159.4	159.8	
10000													160.3	
12500														
15000														
20000														
25000														
31500														
40000														
50000														
63000														
80000														

GASPL 81.5 87.3 88.6 87.7 89.2 92.7 93.3 95.6 97.9 101.0 103.1 102.1 93.2 179.5
 PNL 85.5 92.0 94.6 95.2 96.8 100.4 100.7 102.0 103.7 105.0 106.0 103.8 94.9
 PNLT 86.1 92.8 94.6 95.7 97.3 101.0 101.3 102.6 104.3 105.0 106.0 103.8 94.9
 DBA 74.9 81.7 84.3 84.0 85.7 89.1 89.4 91.4 93.1 93.8 94.4 91.4 83.2

MODEL AREA = 180.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.086 FREQ SHIFT = -6

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH140 TEST DATE = 03-17-63 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 WIND DIR = DEG WIND VEL = MPH PNL AREA = FULL SPHERE TAMB F = 51.64 PAMB HQ = 89.1 RELHUM = 58.3 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBER =

FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1253.3 FPS AE6 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2154.4 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1013 TAPE = X10131 TEST PT NO = 1013 NC = AEO90 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1015 BACKGROUND X1015C

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	85.1	85.7	84.7	82.2	82.3	84.7	79.3	89.0	89.7	88.5	96.6	96.6	86.2	131.5
63	90.0	89.5	91.8	88.4	90.2	93.1	86.2	92.1	94.6	92.9	101.5	102.2	93.9	136.8
80	90.3	96.1	91.1	90.1	91.6	95.6	89.0	94.4	95.8	95.2	98.8	99.5	84.4	136.6
100	90.0	97.2	92.5	92.0	93.9	97.0	91.4	98.3	96.8	99.3	100.5	104.4	88.1	139.3
125	86.4	91.7	94.2	93.5	95.1	97.9	92.3	97.5	96.9	100.0	106.1	109.3	93.2	142.1
160	85.2	86.7	89.7	88.0	89.6	93.0	94.6	95.5	95.5	101.6	107.2	109.6	98.0	142.3
200	88.5	87.8	91.3	89.1	92.7	95.3	92.2	98.1	101.3	102.6	108.3	114.0	102.1	145.3
250	87.0	92.1	92.6	91.9	93.2	95.6	92.5	100.1	101.8	108.2	113.5	117.0	105.1	148.8
315	88.3	91.6	91.4	91.4	94.0	97.1	94.0	100.4	103.6	110.0	115.3	117.5	108.9	150.1
400	89.8	92.8	93.9	92.2	93.8	97.1	100.5	101.2	105.9	112.8	117.6	119.5	109.9	152.2
500	91.1	93.8	94.6	92.9	94.8	98.4	93.8	102.9	106.6	114.2	118.8	119.5	111.7	153.0
630	91.5	94.8	95.1	93.9	96.2	99.6	95.7	103.6	107.3	114.7	119.8	120.5	114.1	154.0
800	95.1	95.6	96.6	94.7	97.0	100.4	95.8	104.9	108.9	114.7	119.3	121.0	115.7	154.2
1000	99.3	102.8	100.3	97.6	98.9	101.6	97.2	106.4	109.6	114.1	119.0	119.9	116.1	153.8
1250	98.7	103.2	103.0	101.6	102.1	103.5	96.1	106.8	110.2	114.1	117.7	120.1	116.0	153.6
1600	97.1	99.5	100.4	98.8	100.6	103.9	99.2	107.3	110.9	113.7	118.9	120.3	115.2	153.9
2000	97.3	100.6	100.5	98.1	99.7	102.8	98.6	107.9	110.8	114.3	118.8	118.1	113.6	153.3
2500	96.4	101.5	102.1	99.0	100.7	103.3	98.5	107.8	110.2	114.8	118.0	115.3	112.6	152.5
3150	96.1	100.7	101.4	99.4	100.0	103.3	99.5	107.9	111.3	113.6	116.6	114.0	110.2	151.6
4000	94.6	99.4	101.0	99.2	101.9	103.3	98.5	108.0	110.2	112.4	114.9	112.4	109.0	150.5
5000	93.7	98.3	101.2	99.1	101.4	103.8	98.2	106.8	109.3	113.2	113.7	111.0	107.2	150.1
6300	92.6	96.7	100.0	99.3	101.1	103.9	98.9	107.1	109.1	110.8	113.3	109.8	106.8	149.4
8000	91.5	97.4	99.0	98.4	100.5	103.6	98.8	106.1	107.9	109.1	111.0	108.1	104.2	148.3
10000	91.8	97.4	99.1	98.7	100.5	103.5	98.5	105.5	107.5	108.0	109.5	107.6	102.7	148.1
12500	91.1	95.9	98.0	98.3	100.4	103.1	97.2	104.4	105.8	106.2	107.4	106.1	101.6	147.5
16000	89.6	97.0	98.3	98.3	99.3	101.8	96.9	104.0	104.4	103.5	106.4	103.8	99.8	147.5
20000	87.2	92.5	94.7	95.4	96.8	99.8	94.7	100.6	102.1	101.1	102.9	101.3	96.2	146.5
25000	83.8	89.1	91.6	92.8	93.8	98.6	92.0	97.3	99.6	97.4	99.4	97.8	92.4	146.0
31500	80.9	85.6	87.8	90.1	90.4	94.7	88.5	94.3	95.4	93.9	96.1	94.1	88.0	145.6
40000	76.8	81.7	84.2	85.6	86.2	90.3	84.9	89.9	91.3	90.7	92.6	90.9	84.3	145.7
50000	71.2	75.9	78.2	79.9	80.9	86.2	79.1	84.6	86.6	85.8	88.6	85.1	78.3	145.2
63000	65.4	70.4	72.6	74.4	75.5	80.5	73.1	79.7	81.8	80.7	83.9	80.1	72.9	145.4
80000	60.8	64.0	66.5	66.6	68.8	74.9	66.6	73.2	76.2	76.1	77.6	74.3	64.6	146.3
GASPL	107.8	112.0	112.5	111.1	112.8	115.5	111.1	118.9	121.6	125.5	129.6	130.3	124.6	165.1
PWL	120.2	124.5	125.2	123.4	125.4	127.7	123.6	131.7	134.6	137.9	141.4	140.7	135.7	
PWLT	120.2	125.7	124.6	126.0	127.7	124.7	131.7	134.6	137.9	141.4	140.7	135.7		
DBA	107.8	111.7	112.1	110.3	111.8	114.5	110.0	118.5	121.4	125.1	129.0	129.3	124.5	

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH137	TEST DATE = 03-17-83	LOCAT = C41 ANECH CH	CONFIG = 10	MODEL = PAMB H9	AX = 19	FLTVEL = 0. FPS
IAPLHA = SB59	DEG WIND VEL = NO	PWL AREA = FULL SPHERE	TAMB F = 53.62	MIKE HT =	RELHUM = 49.4 PCT	
WIND DIR =	MPH =	EXT DIST = 40.0 FT	EXT CONFIG = ARC		NBFR =	
FNINI =	LBS XNL =	RPM =	RPM =	V8 = 1221.4 FPS	AE8 =	4.9 SG IN
FNRAMB =	LBS XNLR =	RPM =	RPM =	V16 = 2314.4 FPS	AE16 =	23.4 SG IN
RUNPT = 83F-ZER-1015	TAPE = X1015C	TEST PT NO = 1015	NC = AE080	CORR FAN SPEED =		RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1015 X1015F

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	85.1	85.7	84.7	82.2	82.3	84.7	79.3	89.0	89.7	88.5	96.6	96.6	86.2	131.5
63	90.0	89.5	91.8	88.4	90.2	93.1	86.2	92.1	94.6	92.9	101.5	102.2	93.9	136.8
80	90.3	96.1	91.1	90.1	91.5	95.6	89.0	94.4	95.8	95.2	98.8	99.5	84.4	136.6
100	90.0	97.2	92.5	92.0	93.9	97.0	91.4	98.3	96.8	99.3	100.5	104.4	88.1	139.3
125	86.4	91.7	94.2	93.5	95.1	97.9	92.3	97.5	96.9	100.0	106.1	109.3	93.2	142.1
160	85.2	86.7	89.7	88.0	89.6	93.0	94.6	95.5	95.5	101.8	107.2	109.6	98.0	142.3
200	88.5	87.8	91.3	89.1	92.7	95.3	92.2	98.1	101.3	102.6	108.3	114.0	102.1	145.3
250	87.0	92.1	92.6	91.9	93.2	95.6	92.5	100.1	101.8	108.2	113.5	117.0	105.1	148.8
315	86.3	91.6	91.4	91.4	94.0	97.1	94.0	100.4	103.6	110.0	115.3	117.5	108.9	150.1
400	89.8	92.8	93.8	92.2	93.8	97.1	100.5	101.2	105.9	112.9	117.6	119.5	109.9	152.2
500	91.1	93.9	94.8	92.9	94.8	98.4	93.8	102.9	106.6	114.2	118.8	119.5	111.7	153.0
630	91.5	94.8	95.1	93.9	96.2	99.6	95.7	103.6	107.3	114.7	119.8	120.5	114.1	154.0
800	95.1	95.6	96.6	94.7	97.0	100.4	95.8	104.9	108.9	114.7	119.3	121.0	115.7	154.2
1000	99.3	102.8	100.3	97.6	98.9	101.6	97.2	106.4	109.6	114.1	119.0	119.9	116.1	153.8
1250	98.7	103.2	103.0	101.6	102.1	103.5	98.1	106.8	110.2	114.1	117.7	120.1	116.0	153.6
1600	97.1	99.5	100.4	98.8	100.5	103.9	99.2	107.3	113.7	118.9	120.3	115.2	153.9	
2000	97.3	100.6	100.5	98.1	99.7	102.8	98.8	107.9	110.8	114.3	118.8	118.1	113.6	153.3
2500	96.4	101.5	102.1	99.0	100.7	103.3	98.5	107.8	110.2	114.8	118.0	115.3	112.6	152.5
3150	96.1	100.7	101.4	99.4	100.0	103.3	98.5	107.9	111.3	113.6	116.6	114.0	110.2	151.6
4000	94.6	99.4	101.0	99.2	101.9	103.3	98.5	108.0	110.2	112.4	114.9	112.4	109.0	150.5
5000	93.7	98.3	101.2	99.1	101.4	103.8	98.2	106.8	109.3	113.2	113.7	111.0	107.2	150.1
6300	92.6	99.7	100.0	99.3	101.1	103.9	98.9	107.1	109.1	110.8	113.3	109.8	105.8	149.4
8000	91.6	97.4	99.0	98.4	100.5	103.6	98.6	106.1	107.9	109.1	111.0	108.1	104.2	148.3
10000	91.6	97.4	99.1	98.7	100.5	103.5	98.5	105.5	107.5	108.0	109.5	107.6	102.7	148.1
12500	91.1	95.9	98.0	98.3	100.4	103.1	97.2	104.4	105.8	106.2	107.4	106.1	101.6	147.5
16000	89.6	95.9	97.0	95.3	99.3	101.8	98.9	104.0	104.4	103.5	105.4	103.8	99.8	147.5
20000	87.2	92.5	94.7	95.4	96.8	99.8	94.7	100.6	102.1	101.1	102.9	101.3	96.2	146.5
25000	83.8	89.1	91.6	92.9	93.8	98.6	92.0	97.3	99.6	97.4	99.4	97.8	92.4	146.0
31500	80.6	85.6	87.8	90.1	90.4	94.7	88.5	94.3	95.4	93.9	96.1	94.1	88.0	145.6
40000	78.8	81.7	84.2	85.6	86.2	90.3	84.9	89.9	91.3	90.7	92.6	90.9	84.3	145.7
50000	71.2	75.9	78.2	79.9	80.9	86.2	79.1	84.6	86.6	85.8	88.6	85.1	78.3	145.2
63000	65.4	70.4	72.6	74.4	75.5	80.5	73.1	79.7	81.8	80.7	83.9	80.1	72.9	145.4
80000	60.6	64.0	66.5	66.6	68.8	74.9	66.6	73.2	76.2	76.1	77.6	74.3	64.6	146.3
GASPL	107.8	112.0	112.5	111.1	112.8	115.5	111.1	118.9	121.6	125.5	129.6	130.3	124.6	165.1
PNL	120.2	124.5	125.2	123.4	125.4	127.7	123.6	131.7	134.6	137.9	141.4	140.7	135.7	
PNLT	120.2	125.6	125.7	124.6	126.0	127.7	124.7	134.6	137.9	141.4	140.7	135.7		
DBA	182.4	186.2	186.6	189.4	191.1	196.8	188.9	195.4	198.0	197.6	199.6	196.2	187.7	

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DETA-10/NAS3-22137

VEHICLE = ADH197 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB000 IBCA = NO PWL AREA = FULL SPHERE TAMB F = 53.62 PAMB HQ = 10 REHLUM = 43.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONE IGT = ARC MIKE HT = NBER

FNIN1 = LBS XNHL = RPM XNH = RPM V8 = 1221.4 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2314.4 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1015 TAPE = X1015F TEST PT NO = 1015 NC = AE090 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1015 X10151

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	65.9	70.7	71.5	72.3	75.3	78.5	75.3	81.3	83.8	89.0	92.9	92.9	80.9	167.1
63	67.3	71.9	74.0	73.0	75.0	78.5	81.7	82.0	86.0	92.0	95.1	94.8	81.9	169.2
80	68.6	74.9	74.7	73.7	76.0	79.7	75.0	83.7	86.7	93.2	96.3	94.8	83.5	170.0
100	68.9	73.9	75.1	74.6	77.4	80.9	76.9	84.4	87.4	93.6	97.2	95.6	85.8	170.9
125	72.3	74.5	76.8	75.4	78.1	81.6	76.9	85.6	88.8	93.6	96.6	96.0	87.1	171.2
160	78.3	81.5	80.1	78.1	79.9	82.7	78.2	86.9	89.4	92.8	96.1	94.7	87.2	170.8
200	78.5	81.7	82.6	82.0	82.9	84.4	78.9	87.1	89.8	92.5	94.5	94.5	86.6	170.6
250	73.6	77.7	79.8	78.9	81.1	84.6	79.8	87.4	90.3	91.9	95.3	94.2	85.1	170.8
315	73.3	78.4	79.6	78.0	80.1	83.3	79.2	87.8	89.8	92.1	94.9	91.5	82.8	170.2
400	72.0	78.9	80.8	78.6	80.7	83.4	78.5	87.4	88.9	92.2	93.5	88.0	80.7	169.4
500	71.1	77.6	79.7	78.6	79.7	83.2	79.2	87.1	89.6	90.6	91.6	88.0	77.2	168.6
630	69.0	75.9	79.0	78.0	81.2	82.8	77.8	86.9	88.1	88.9	89.3	83.7	75.0	167.5
800	67.5	75.4	78.8	77.6	80.4	83.0	77.2	85.3	86.9	89.3	87.6	81.5	72.0	167.0
1000	65.9	74.3	77.2	77.5	79.9	82.8	77.6	85.3	86.3	86.6	79.5	69.2	166.4	
1250	64.2	72.5	75.7	76.2	79.0	82.2	77.2	84.0	84.7	84.2	83.6	76.9	66.0	165.3
1600	63.2	71.6	75.2	75.9	78.4	81.6	76.4	82.7	83.6	82.2	81.0	74.7	61.9	165.1
2000	61.1	69.0	73.1	74.8	77.5	80.5	74.3	80.8	81.0	79.3	77.4	71.0	57.3	164.5
2500	57.4	67.4	70.9	73.7	75.5	78.3	73.1	79.4	78.3	75.0	74.2	65.5	50.1	164.5
3150	51.0	61.0	66.1	68.6	71.1	74.4	68.9	73.8	73.5	69.5	66.8	57.4	37.6	163.5
4000	40.6	52.0	58.4	62.1	64.2	69.5	62.5	66.5	66.4	60.3	56.2	44.2	18.5	163.0
5000	26.8	40.1	47.3	53.0	55.0	59.9	53.1	57.2	55.1	48.4	42.3	25.9	162.5	
6300	4.8	21.7	31.5	37.3	40.3	45.3	39.0	41.6	38.5	30.6	20.6	182.6	162.2	
8000			3.2	11.4	15.9	22.4	14.1	16.1	11.6			162.4	163.3	

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
8000														
10000														
12500														
15000														
20000														
25000														
31500														
40000														
50000														
63000														
80000														

GASPL	PNL	PNLT	DBA
63.4	68.0	90.6	69.6
67.5	94.3	96.8	97.7
67.5	94.9	97.5	98.2
76.7	83.7	86.4	86.3

MODEL AREA = 180.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.066 FREQ SHIFT = -6

NASA_DUAL_FLOW_THERMAL_SHIELD/DTAS-10/NAS9-22137

VEHICLE	ADMIN	TEST DATE	LOCAT	C41 ANECH CH	CONFIG	MODEL	FLTVEL
JAPLHA	SB59	03-17-83	PWL AREA	FULL SPHERE	TAMB F	53.62	0. FPS
WIND DIR			EXT DIST	2400.0 FT	EXT CONFIG	SL	43.4 PCT
FNINI	LBS XNL	RPM	XNHR	RPM	V8	1221.4 FPS	AE9
FNRAMB	LBS XNLR	RPM	XNHR	RPM	V16	2314.4 FPS	AE16

RUNPT = 83F-ZER-1015 TAPE = 10151 PT = 1 CORR = 0 SPE = 0 RP = 0

IDENTIFICATION - MODEL 83F-ZER-1017 X1017C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	88.1	88.2	85.7	84.5	84.1	88.4	89.8	91.7	91.4	96.5	98.1	97.8	88.0	134.2
63	92.3	92.9	94.8	91.6	92.7	96.1	95.0	95.6	96.3	101.1	101.8	102.7	93.9	139.1
80	93.0	96.1	92.9	92.9	94.0	98.1	97.2	97.1	98.6	98.4	101.5	102.0	86.6	139.6
100	93.0	100.9	98.9	95.8	96.9	100.0	99.6	101.3	99.5	101.8	103.2	106.9	91.1	142.4
125	89.1	93.4	95.4	95.7	97.8	99.7	99.8	100.2	99.7	102.8	109.4	111.8	95.5	145.0
160	87.2	89.5	92.5	90.5	91.9	95.5	103.9	98.0	99.2	104.3	109.7	112.4	100.5	145.3
200	90.5	90.6	93.1	91.6	94.2	97.8	100.7	100.9	103.8	105.4	111.3	116.5	104.6	148.0
250	89.0	93.6	94.3	93.6	95.2	97.8	99.0	102.4	104.8	111.4	116.3	119.0	107.1	151.3
315	90.6	93.1	94.1	93.2	95.0	99.6	101.0	102.9	106.4	113.7	118.6	120.0	110.2	153.0
400	92.3	95.6	95.6	93.7	95.8	99.4	104.5	103.9	108.6	117.4	120.6	121.3	110.9	155.0
500	93.6	96.6	97.1	94.9	97.3	100.9	102.0	105.7	109.4	118.5	122.6	121.8	113.2	156.3
630	93.8	97.6	97.6	96.4	98.7	102.3	103.2	106.6	110.6	120.2	123.8	123.0	114.6	157.6
800	97.6	98.4	98.6	97.9	99.3	103.4	104.3	107.9	111.9	119.7	123.8	123.3	116.2	157.7
1000	100.5	104.5	103.1	101.1	101.9	104.3	106.4	109.3	113.3	119.6	124.8	122.9	116.4	158.2
1250	100.9	106.7	106.5	104.1	105.1	107.0	106.6	109.3	113.7	119.0	124.4	123.9	116.0	158.3
1600	101.6	106.0	105.9	103.0	104.5	107.4	107.7	110.3	114.4	118.7	125.8	123.0	115.7	158.8
2000	102.0	105.3	105.5	103.1	104.0	106.3	107.6	110.9	114.2	118.8	123.8	120.6	114.4	157.3
2500	99.9	104.7	105.5	103.0	105.2	107.5	108.7	111.1	113.4	119.0	122.0	117.8	112.3	156.1
3150	99.0	103.1	104.4	102.4	104.5	107.8	108.2	110.9	114.7	118.1	120.3	116.7	110.4	155.2
4000	97.3	102.3	104.0	102.6	104.6	107.3	107.9	110.7	113.1	116.8	118.8	116.1	108.2	154.2
5000	95.6	102.0	103.6	102.5	104.3	107.3	107.9	110.7	113.0	116.9	117.9	114.2	106.9	153.8
6300	96.0	101.6	103.2	102.5	104.5	107.2	108.0	110.7	112.0	114.9	117.2	113.2	105.7	153.2
8000	95.4	101.0	103.1	102.2	104.1	107.2	107.1	109.0	110.8	114.8	114.8	111.0	104.3	152.0
10000	95.1	100.2	102.7	102.7	104.6	107.3	106.9	108.6	110.5	112.5	113.8	110.2	103.5	152.0
12500	93.7	98.2	100.8	101.7	103.4	106.9	106.2	107.0	108.9	110.9	112.2	108.4	102.4	151.4
16000	92.0	97.7	99.2	100.9	101.9	105.2	105.2	106.9	107.3	108.6	111.5	107.0	100.1	151.5
20000	89.7	94.5	97.2	97.6	99.6	103.4	103.2	104.1	105.3	106.3	108.2	103.6	97.0	150.6
25000	87.0	91.8	93.9	95.4	96.5	101.6	101.2	100.0	102.4	102.7	101.6	100.0	93.1	149.5
31500	83.5	87.8	90.1	92.5	93.3	97.9	96.9	97.2	99.4	100.2	99.3	95.5	89.0	148.5
40000	79.7	84.5	87.0	88.0	89.9	94.8	93.1	93.1	95.6	97.8	96.3	92.3	85.4	150.2
50000	74.0	78.6	81.2	83.3	84.2	89.3	87.4	88.0	90.4	93.4	91.6	88.0	79.4	149.6
63000	69.3	73.1	75.8	77.3	79.0	83.8	82.1	83.0	86.3	89.6	87.6	82.1	73.3	150.3
80000	62.9	68.3	68.8	70.5	72.5	79.0	76.5	77.6	80.0	84.4	81.1	76.2	67.2	151.4
0ASPL	110.8	115.3	115.8	114.5	116.1	119.0	119.5	121.9	124.8	130.1	134.3	132.9	125.1	168.9
PWL	123.2	127.6	128.4	126.7	128.5	131.5	132.1	134.7	137.9	142.2	145.6	143.4	136.0	
PNT	123.2	128.4	128.4	126.7	129.1	131.5	132.7	134.7	137.9	142.2	145.6	143.4	136.0	
DBA	110.7	115.2	115.7	113.8	115.8	118.2	118.6	121.6	124.7	129.8	134.0	132.0	124.8	

ORIGINAL PAGE IS
OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICL = ADH138	TEST DATE = 03-17-83	LOCAT = C41 ANECH CH	CONFIG = 10	MODEL = 83F-ZER-1017	FLTVEL = 0. FPS
TAPLHA = SB88	LEGA = NO	PWL AREA = FULL SPHERE	TAMB F = 53.17	PAMB HS = 7.0	RELHUM = 51.0 PCT
WIND DIR =	DEG WIND VEL =	EXT DIST = 40.0 FT	EXT CONFIG = ARC	MIKE HT =	NBFR =
FNIN1 =	LBS XNLR =	RPM XNH =	RPM XNHR =	AE9 =	4.6 SQ IN
FNRAMB =	LBS XNLR =	RPM XNH =	RPM XNHR =	AE10 =	23.4 SQ IN
RUNPT = 83F-ZER-1017	TAPE = X1017C	TEST PT NO = 1017	NC = AE090	CORR FAN SPEED =	RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1017 X1017F

ANGLES MEASURED FROM INLFT, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	88.1	88.2	88.7	84.5	84.1	88.4	89.8	91.7	91.4	96.5	98.1	97.8	88.0	134.2
63	92.3	92.3	94.8	91.6	92.7	96.1	95.0	95.6	96.3	101.1	101.8	102.7	93.9	139.1
80	93.0	98.1	93.6	92.9	94.0	98.1	97.2	97.1	98.6	98.4	101.5	102.0	86.6	139.6
100	93.0	100.5	95.8	95.8	96.9	100.0	99.6	101.3	99.5	101.8	103.2	106.9	91.1	142.4
125	89.1	93.4	96.4	95.7	97.8	99.8	100.2	99.7	102.8	109.4	111.8	111.8	95.5	145.0
160	87.2	89.5	92.5	90.5	91.9	95.5	103.9	98.0	99.2	104.3	109.7	112.4	100.5	145.3
200	90.6	90.6	93.1	91.6	94.2	97.8	100.7	100.9	103.8	105.4	111.3	116.5	104.6	148.0
250	89.0	93.6	94.3	93.6	95.2	97.8	99.0	102.4	104.8	111.4	116.3	119.0	107.1	151.3
315	90.6	93.1	94.1	93.2	96.0	99.6	101.0	102.9	106.4	113.7	118.6	120.0	110.2	153.0
400	92.3	95.6	95.6	93.7	95.8	99.4	104.5	103.9	108.6	117.4	120.6	121.3	110.9	155.0
500	93.8	96.6	97.1	94.9	97.3	100.9	102.0	105.7	109.4	118.5	122.6	121.6	113.2	156.3
630	93.8	97.6	97.6	96.4	98.7	102.3	103.2	106.6	110.6	120.2	123.8	123.0	114.6	157.6
800	97.6	98.4	98.6	97.9	99.3	103.4	104.3	107.9	111.9	119.7	123.8	123.3	116.2	157.7
1000	100.8	104.5	103.1	101.1	101.9	104.3	105.4	109.3	113.3	119.6	124.8	122.9	116.4	158.2
1250	100.9	106.7	106.5	104.1	105.1	107.0	106.6	109.3	113.7	119.0	124.4	123.9	116.0	158.3
1600	101.6	106.0	105.9	103.0	104.5	107.4	107.7	110.3	114.4	118.7	125.8	123.0	115.7	158.8
2000	102.0	105.3	105.5	103.1	104.0	106.3	107.6	110.9	114.2	118.8	123.8	120.6	114.4	157.3
2500	98.9	104.7	105.5	103.0	105.2	107.5	106.7	111.1	113.4	119.0	122.0	117.8	112.3	156.1
3150	99.0	103.1	104.4	102.4	104.6	107.8	108.2	110.9	114.7	118.1	120.3	116.7	110.4	155.2
4000	97.3	102.3	104.0	102.6	104.6	107.3	107.9	110.7	113.1	116.8	118.8	116.1	108.2	154.2
5000	96.6	102.0	103.6	102.5	104.3	107.3	107.9	110.7	113.0	116.9	117.9	114.2	106.9	153.8
6300	96.0	101.6	103.2	102.5	104.5	107.2	108.0	110.7	112.0	114.9	117.2	113.2	105.7	153.2
8000	95.4	101.0	103.1	102.2	104.1	107.2	107.1	109.0	110.8	113.4	114.8	111.0	104.3	152.0
10000	95.1	100.2	102.7	102.7	104.6	107.3	106.9	108.6	110.5	112.5	113.8	110.2	103.5	152.0
12500	93.7	98.2	100.8	101.7	103.4	106.9	106.2	107.0	108.9	110.9	112.2	108.4	102.4	151.4
16000	92.0	97.7	99.2	100.9	101.9	105.2	105.2	106.9	107.3	108.6	111.5	107.0	100.1	151.5
20000	89.7	94.5	97.2	97.6	99.6	103.4	103.2	104.1	105.3	106.3	108.2	103.5	97.0	150.6
25000	87.0	91.8	93.9	95.4	96.6	101.6	101.2	100.0	102.4	102.7	101.6	100.0	93.1	149.5
31500	83.5	87.8	90.1	92.5	93.3	97.9	96.9	97.2	99.4	100.2	99.3	95.5	89.0	149.5
40000	79.7	84.5	87.0	88.0	89.9	94.8	93.1	93.1	95.6	97.8	96.3	92.3	85.4	150.2
50000	74.0	78.6	81.2	83.3	84.2	89.3	87.4	88.0	90.4	93.4	91.6	88.0	79.4	149.5
63000	68.3	73.1	75.8	77.3	79.0	83.8	82.1	83.0	86.3	89.6	87.6	82.1	73.3	150.3
80000	62.9	66.3	68.8	70.5	72.5	79.0	76.5	77.6	80.0	84.4	81.1	76.2	67.2	151.4

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DTIAS-10/NAS3-22137

VEHICLE = ADH138 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AN FLTVEL = 0 FPS
 IAPLHA = SB59 IEQA = NO PWL AREA = FULL SPHERE TAMP F = 53.17 PAMB HG = 89.17 RELHUM = 61.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NRFR

FNINI = LBS XNL RPM XNH XNHR = RPM V8 = 1241.4 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 2495.4 FPS AE18 = 23.4 SQ IN

IDENTIFICATION - 83F-ZER-1017 X1017F

IDENTIFICATION - 83F-ZER-1017 X10171

ANGLES MEASURED FROM INLET, DEGREES

FREQ.	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	68.1	72.2	74.3	74.0	77.3	81.0	82.3	83.8	86.5	92.8	96.1	95.4	82.2	170.0
63	69.8	74.6	75.7	74.5	77.0	80.7	85.7	84.7	88.7	95.5	98.1	96.5	82.9	172.0
80	71.0	75.6	77.2	75.7	78.5	82.2	83.2	86.5	89.5	97.5	100.1	97.0	86.0	173.2
100	71.2	76.5	77.6	77.1	79.9	83.6	84.4	87.4	90.6	99.1	101.2	98.1	86.3	174.6
125	74.8	77.2	78.6	78.6	80.4	84.6	85.4	88.6	91.8	98.6	101.1	98.2	87.6	174.7
160	77.8	83.2	82.9	81.6	82.9	85.4	86.4	89.9	93.1	98.3	101.8	97.7	87.4	175.2
200	77.7	85.2	86.1	84.5	85.9	87.9	87.4	89.6	93.3	97.5	101.2	98.2	86.6	175.3
250	78.1	84.2	85.3	83.2	85.1	88.1	88.3	90.4	93.8	96.9	102.3	97.0	85.6	175.8
315	78.1	83.2	84.6	83.0	84.3	86.8	87.9	90.7	93.3	96.6	99.8	94.0	83.5	174.3
400	75.4	82.1	84.2	82.5	85.2	87.7	86.7	90.6	92.1	95.4	97.5	90.5	80.4	173.1
500	74.0	80.1	82.7	81.6	84.2	87.6	87.9	90.1	93.0	95.1	95.3	88.8	77.5	172.2
630	71.7	78.9	81.9	81.5	83.9	86.8	87.3	89.6	91.1	93.4	93.3	87.4	76.2	171.2
800	70.5	78.1	81.2	81.0	83.3	86.5	86.9	89.2	90.5	92.9	91.8	84.7	71.7	170.8
1000	69.3	77.2	80.3	80.6	83.3	86.2	86.8	89.9	89.2	90.6	90.5	82.9	69.1	170.1
1250	68.0	76.1	79.8	80.1	82.6	85.8	85.8	88.8	87.5	88.5	87.4	79.7	66.2	168.9
1600	66.6	74.4	78.8	80.0	82.5	85.4	84.7	85.8	86.6	86.8	85.3	77.3	62.7	169.0
2000	63.7	71.3	75.9	78.1	80.6	84.3	83.4	84.0	84.1	82.2	73.4	58.1	168.4	
2500	59.8	69.2	73.0	76.3	78.2	81.6	81.5	82.3	81.2	80.1	79.3	69.7	50.5	168.4
3150	53.6	63.0	68.8	70.8	73.8	77.9	77.4	77.3	76.7	74.8	72.0	59.7	38.3	167.6
4000	43.8	54.6	60.6	64.6	66.9	72.4	71.7	69.2	69.1	65.6	58.4	46.4	19.2	166.5
5000	29.7	42.4	49.8	55.4	57.9	63.1	61.5	60.1	59.1	54.7	45.5	27.4		166.4
6300	7.7	24.4	34.3	39.8	44.0	49.7	47.2	44.9	42.8	37.8	24.3			167.1
8000		6.2	14.9	19.3	25.5	22.6	19.6	15.3	7.6					166.5
10000														167.3
12500														168.4
16000														
20000														
25000														
31500														
40000														
50000														
63000														
80000														

MODEL AREA = 160.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.086 FREQ SHIFT = 7.0

NASA DUAL FLOW THERMAL SHIELD/DFIAS-10/NAS3-22137

VEHICLE = ADH100	TEST DATE = 03-17-63	LOCAT = C41 ANECH CH	CONFIG = 10	MODEL = PAMB HQ	FLTVEL = 0.0 FPS
IAPLMA = SB99	TEGA = NO	PWL AREA = FULL SPHERE	TAMB F = 53.17	PAMB HQ	RELHUM = 51.0 PCT
WIND DIR =	DEG WIND VEL =	EXT DIST = 2400.0 FT	EXT CONFIG = SL	MIKE HT =	MBFR =
FNINI =	LBS XNL	XNH	RPM	V8	= 1241.4 FPS
FNRAMB =	LBS XNLR	XNHR	RPM	V16	= 2495.4 FPS
RUNPT = 83F-ZER-1017	TAPE	TEST PT NO = 1017	NC	AE9	= 4.6 SQ IN
				AE16	= 23.4 SQ IN
				CORR FAN SPEED =	RPM

IDENTIFICATION - MODEL 83F-ZER-1019 X1019C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	85.9	86.4	85.9	83.0	82.1	84.9	83.8	89.7	89.7	87.5	96.1	95.8	85.5	131.3
63	91.3	90.8	92.8	88.9	89.2	93.1	92.0	95.9	94.8	93.4	101.3	101.7	89.9	137.1
80	90.5	91.1	91.3	91.5	96.3	95.5	95.1	95.6	96.2	99.8	99.5	99.5	83.4	137.4
100	90.0	97.2	92.8	92.0	92.9	97.0	96.9	98.3	96.5	99.3	100.7	104.6	87.3	139.6
125	87.1	91.2	93.8	93.2	94.8	97.9	97.3	97.0	96.9	100.5	107.1	109.6	92.5	142.8
160	85.7	87.5	90.2	88.3	89.1	93.5	93.4	95.8	96.2	102.1	107.7	109.9	98.5	142.8
200	86.3	88.1	91.8	89.1	91.7	95.8	97.5	98.4	101.1	102.6	109.0	114.2	101.6	145.6
250	87.0	92.1	93.1	91.4	93.0	95.3	97.2	99.9	101.8	108.7	114.3	116.7	104.9	149.0
315	88.6	91.4	91.8	90.9	93.8	97.9	99.3	100.4	103.1	110.7	118.8	117.5	107.9	150.3
400	90.3	93.1	93.9	91.9	93.8	96.9	106.0	101.7	105.6	113.4	118.6	119.3	109.4	152.7
500	91.3	93.9	94.9	92.9	94.8	98.6	98.8	102.7	106.1	114.5	119.6	119.8	111.4	153.4
630	91.5	95.3	95.1	93.9	95.7	100.1	100.5	103.9	106.8	115.4	120.5	120.5	113.6	154.4
800	95.1	96.4	96.9	94.7	96.0	100.6	101.5	104.9	108.4	115.2	120.1	120.5	114.9	154.3
1000	100.0	103.0	101.3	98.1	99.2	101.8	102.4	106.6	109.3	114.9	120.0	120.4	115.4	154.4
1250	98.2	103.0	103.7	101.9	102.1	104.0	103.4	106.3	109.7	113.8	119.9	121.1	115.6	154.3
1600	97.6	100.0	100.4	99.3	101.5	104.4	104.7	107.8	111.2	113.7	120.1	120.3	114.2	154.4
2000	98.5	101.8	101.3	98.4	99.5	103.1	104.3	108.1	111.0	114.3	120.1	118.1	112.1	153.8
2500	98.2	102.8	102.6	99.6	100.4	103.8	103.5	108.1	110.7	115.0	119.5	116.1	111.6	153.3
3150	97.8	101.7	101.9	100.2	100.5	103.6	104.7	108.0	111.5	113.9	117.9	114.3	109.2	152.3
4000	95.6	99.7	101.1	99.7	101.6	103.9	103.7	108.1	110.5	112.4	116.4	112.7	108.0	151.2
5000	94.5	98.6	100.8	99.4	100.7	104.6	104.3	107.4	110.1	113.3	115.0	111.1	106.5	150.7
6300	93.4	99.3	100.4	99.7	100.7	104.7	105.0	107.7	109.5	110.9	114.4	110.3	105.3	150.1
8000	92.9	98.0	99.3	98.5	100.1	103.7	104.4	106.5	107.3	109.4	112.3	108.2	103.8	148.9
10000	92.1	97.5	99.2	99.0	100.1	104.1	104.1	105.9	107.8	108.6	110.6	108.2	103.5	148.9
12500	91.4	95.7	98.0	98.4	99.7	103.4	103.0	104.7	106.1	107.2	108.5	106.9	101.9	148.3
16000	90.1	95.6	97.0	98.8	98.3	102.0	102.6	104.0	104.9	104.2	106.9	104.6	99.7	148.2
20000	87.6	92.4	94.8	95.3	96.0	100.2	100.6	101.3	102.4	102.2	104.3	102.4	96.1	147.6
25000	84.6	89.8	92.1	92.9	93.5	99.1	98.3	96.8	99.1	98.9	99.6	98.4	93.0	146.7
31500	81.0	85.4	88.0	90.7	90.0	94.9	94.3	94.1	95.7	95.9	96.9	94.2	88.7	146.5
40000	77.6	81.7	84.7	86.1	86.4	91.4	90.6	90.4	91.7	92.3	94.0	90.7	84.6	146.9
50000	71.9	76.0	78.3	80.8	80.8	86.6	84.7	84.5	86.7	88.0	88.7	85.3	79.0	146.0
63000	67.0	70.4	73.1	74.7	75.0	80.8	78.9	80.0	82.6	83.4	85.2	80.4	73.2	146.8
80000	63.7	66.4	67.6	68.8	75.4	73.3	73.9	75.9	78.2	78.8	74.3	66.6	147.6	

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH131	TEST DATE = 03-17-83	LOCAT = C41 ANECH CH	CONFIG = 10	MODEL = AN	FLTVEL = 0. FPS
IAPLHA = 8899	LEGA = NO	PWL AREA = FULL SPHERE	TAMB F = 53.26	PAMB HG = 29.18	RELHUM = 40.9 PCT
WIND DIR =	DEG WIND VEL =	EXT DIST = 40.0 FT	EXT CONFIG = ARC	MIKE HT =	NBSFR =
FNINI =	LBS ANL	RPM	XNH	RPM	V8 = 1335.1 FPS
FNRAMB =	LBS XNLR	RPM	XNHR	RPM	V16 = 2340.7 FPS
RUNPT = 83F-ZER-1019	TAPE = X1019C	TEST PT NO = 1019	NC = AE090	CORR FAN SPEED =	RPM

IDENTIFICATION - 83F-ZER-1019 X1019F

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	65.9	66.4	65.9	63.0	62.1	64.9	63.6	69.7	69.7	87.5	96.1	95.8	85.5	131.3
63	91.3	90.6	92.6	88.9	89.2	93.1	92.0	95.9	94.8	93.4	101.3	101.7	89.9	137.1
80	90.5	96.1	91.3	90.9	91.5	96.3	95.5	95.1	95.6	96.2	99.8	99.5	83.4	137.4
100	90.0	97.2	92.8	92.0	92.9	97.0	96.9	98.3	96.5	99.3	100.7	104.6	87.3	139.6
125	87.1	91.2	89.9	93.2	94.8	97.9	97.3	97.0	96.9	100.5	107.1	109.6	92.5	142.8
160	85.7	87.5	80.2	88.3	89.1	93.5	99.4	95.8	96.2	102.1	107.7	109.9	88.5	142.8
200	88.3	88.1	91.8	89.1	91.7	95.8	97.5	98.4	101.1	102.6	109.0	114.2	101.6	146.6
250	87.0	92.1	93.1	93.4	93.0	95.3	97.2	99.9	101.8	108.7	114.3	116.7	104.9	149.0
315	88.6	91.4	91.6	90.9	93.8	97.9	99.3	100.4	103.1	110.7	115.8	117.5	107.9	150.3
400	90.3	93.1	93.9	91.9	93.6	96.9	106.0	101.7	105.6	113.4	118.6	119.3	109.4	152.7
500	91.3	93.9	94.9	92.9	94.6	98.6	102.7	106.1	114.5	119.6	119.8	111.4	153.4	
630	91.5	95.3	95.1	93.9	95.7	100.1	100.6	103.9	106.8	115.4	120.5	113.6	154.4	
800	95.1	96.4	96.9	94.7	96.0	100.6	101.5	104.9	108.4	115.2	120.1	120.5	114.9	154.3
1000	100.0	103.0	101.3	98.1	99.2	101.8	102.4	106.6	109.3	114.9	120.0	120.4	115.4	154.4
1250	98.2	103.0	103.7	101.9	102.1	104.0	103.4	106.3	109.7	113.6	118.9	121.1	115.5	154.3
1600	97.6	100.0	100.4	99.3	101.5	104.4	104.7	107.8	111.2	113.7	120.3	114.2	154.4	
2000	98.5	101.8	101.3	98.4	99.5	103.1	104.3	108.1	111.0	114.3	120.1	118.1	112.1	153.6
2500	98.2	102.6	102.6	99.6	100.4	103.6	103.6	108.0	110.7	115.0	119.5	111.6	153.3	
3150	97.8	101.7	101.9	100.2	100.5	103.6	104.7	108.0	111.5	113.9	117.9	114.3	109.2	152.3
4000	95.6	99.7	101.1	99.7	101.6	103.9	103.7	108.1	110.5	112.4	116.4	112.7	108.0	151.2
5000	94.5	98.6	100.8	99.4	100.7	104.6	104.3	107.4	110.1	113.3	115.0	111.1	106.5	150.7
6300	93.4	99.3	100.4	99.7	100.7	104.7	105.0	107.7	109.5	110.9	114.4	110.3	105.3	150.1
8000	92.9	98.0	99.3	98.5	100.1	103.7	104.4	106.5	107.3	109.4	112.3	108.2	103.8	148.9
10000	92.1	97.5	99.2	99.0	100.1	104.1	104.1	105.9	107.8	108.6	110.6	108.2	103.5	148.9
12500	91.4	95.7	98.0	98.4	99.7	103.4	104.7	106.1	107.2	108.5	106.9	101.9	148.3	
16000	90.1	95.6	97.0	98.6	98.3	102.0	102.6	104.0	104.9	104.2	106.9	104.6	99.7	148.2
20000	87.6	92.4	94.6	95.3	95.0	100.2	100.6	101.3	102.4	102.2	104.3	102.4	96.1	147.6
25000	84.6	89.8	92.1	92.9	93.5	99.1	98.3	96.8	99.1	98.9	99.6	98.4	93.0	146.7
31500	81.0	85.4	88.0	90.7	90.0	94.9	94.3	94.1	95.7	95.9	96.9	94.2	88.7	146.5
40000	77.5	81.7	84.7	86.1	85.4	81.4	80.6	80.4	91.7	92.3	94.0	90.7	84.6	146.9
50000	71.9	76.0	78.3	80.8	80.8	86.6	84.7	84.5	86.7	88.0	88.7	85.3	79.0	146.0
63000	67.0	70.4	73.1	74.7	75.0	80.8	78.9	80.0	82.6	83.4	85.2	80.4	73.2	146.6
80000	60.9	63.7	66.4	67.6	68.6	75.4	73.3	73.9	76.9	78.2	78.8	74.3	66.6	147.6
GASPL	108.5	112.5	111.4	112.5	116.0	116.0	119.1	121.7	125.8	130.6	130.4	123.9	165.6	
PNL	121.3	125.2	125.6	123.9	125.2	128.2	129.0	131.9	134.8	138.1	142.6	140.9	134.9	
PNLT	122.4	126.3	125.6	125.0	125.9	128.2	130.1	131.9	134.8	138.1	142.6	140.9	134.9	
DBA	182.9	186.0	188.7	189.2	191.0	197.3	195.3	195.9	198.6	199.8	200.8	196.3	189.0	

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICL = ADH191 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = 10 FLTVEL = 0. FPS
 IAPLHA = 8859 PWA = NO PWL AREA = FULL SPHERE TAMB F = 53.26 PAMB HO = 40.0 FT RELHUM = 40.3 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = 10 FT NRBR = 10

FNIN1 = LBS XNL RPM XNHR = RPM V8 = 1335.1 FPS AE9 = 4.6 SQ IN
 FNRAMB = LBS XNL RPM XNHR = RPM V18 = 2340.7 FPS AE18 = 29.4 SQ IN

RUNPT = 83F-ZER-1019 TAPE = X1019F TEST PT NO = 1019 NC = AE090 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1019 X10191

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	66.1	70.4	71.8	71.6	75.0	79.3	80.5	81.3	83.3	89.8	93.4	92.9	79.9	167.3
63	67.8	72.1	74.0	72.7	75.0	78.2	87.2	82.5	85.7	92.5	96.1	94.5	81.4	169.7
80	68.8	72.9	75.0	73.7	76.0	80.0	83.5	86.2	93.5	97.1	95.0	83.3	170.4	
100	68.9	74.3	75.1	74.6	76.9	81.4	81.6	84.6	86.9	94.4	97.9	95.6	85.3	171.3
125	72.3	75.2	76.8	75.4	77.1	81.9	82.6	85.6	88.3	94.1	97.4	95.5	86.4	171.3
160	77.1	81.7	81.1	78.6	80.2	82.9	83.4	87.1	89.1	93.6	97.1	95.2	86.4	171.4
200	75.0	81.4	83.3	82.2	82.9	84.9	84.2	86.6	89.3	92.3	95.7	95.5	86.1	171.3
250	74.1	78.2	79.8	79.4	82.1	85.1	85.3	87.9	90.5	91.9	96.6	94.2	84.1	171.4
315	74.6	79.7	80.3	78.3	79.8	83.6	84.7	88.0	90.1	92.1	96.1	91.5	81.3	170.8
400	73.7	79.9	81.5	79.1	80.4	84.0	83.5	87.6	89.4	92.4	95.1	89.8	79.7	170.3
500	72.9	78.7	80.3	79.4	80.2	83.4	84.4	87.1	89.9	90.9	92.9	86.3	76.3	168.3
630	70.1	76.2	79.0	78.6	81.0	83.4	83.1	86.9	88.4	89.0	90.9	84.0	74.0	168.1
800	68.3	75.7	78.3	77.9	79.7	83.8	83.3	85.8	87.7	89.3	88.9	81.6	71.3	167.7
1000	66.7	74.9	77.5	77.8	79.4	83.6	83.7	85.8	86.6	86.5	87.7	80.0	68.8	167.1
1250	65.5	73.1	76.1	76.3	78.5	82.3	82.8	84.3	84.0	84.5	84.9	76.9	65.6	165.9
1600	63.6	71.7	75.3	76.2	78.0	82.2	82.0	83.1	83.9	82.8	82.1	75.3	62.7	165.9
2000	61.4	68.8	73.2	74.9	76.9	80.8	80.2	81.2	81.3	80.4	78.5	71.8	57.6	165.3
2500	57.9	67.1	70.9	74.2	74.5	78.5	78.8	79.4	78.8	75.7	74.7	66.3	50.1	165.2
3150	51.4	60.9	66.2	68.5	70.2	74.8	74.8	74.5	73.8	70.7	68.2	58.5	37.5	164.6
4000	41.4	52.8	58.9	62.1	64.0	70.0	68.8	66.0	65.9	61.8	56.4	44.8	19.0	163.7
5000	27.2	40.0	47.7	53.6	54.6	60.1	59.0	57.0	55.4	50.4	43.1	26.1		163.4
6300	9.8	21.6	31.9	37.8	40.6	45.3	44.8	42.1	39.0	32.3	22.1			163.8
8000	3.3	12.3	15.9	22.6	19.8	16.0	11.7	2.2						163.0
12500														163.8
16000														164.5
20000														
25000														
31500														
40000														
50000														
63000														
80000														

MODEL AREA = 180.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.066 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH191 TEST DATE = 03-17-63 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AN
 IAPLHA = SB58 TEST DATE = NO PWL AREA = FULL SPHERE TAMB F = 53.26 PAMB HQ = 0.00 FLTVEL = 0. FPS
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = 1.00 RELHUM = 40.3 PCT
 FNINI = LBS XNLR = RPM XNH = XNH RPM V8 = 1335.1 FPS AE9 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = XNHR RPM V18 = 2340.7 FPS AE18 = 23.4 SQ IN

PRINT - 83F-ZER-1019 TAPE = X10191 TEST PT = 10191 AEC
 INSTRUMENT = 83F-ZER-1019 TAPE = X10191 INSTRUMENT = 83F-ZER-1019 TAPE = X10191 INSTRUMENT = 83F-ZER-1019 TAPE = X10191

IDENTIFICATION - MODEL 83F-ZER-1021 X1021C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	65.6	66.2	64.7	62.5	62.1	67.4	66.3	90.7	90.2	88.7	97.6	97.6	87.2	132.5
63	90.5	90.6	82.6	67.9	90.2	95.1	92.7	95.4	95.1	93.9	101.3	100.5	93.6	137.1
80	90.3	96.1	91.3	91.3	92.0	95.8	95.0	94.9	95.6	95.2	99.3	99.7	85.9	137.2
100	89.7	97.7	93.8	92.6	93.9	97.0	96.9	98.3	96.8	99.3	101.0	104.9	88.6	139.8
125	86.6	90.7	93.9	93.2	95.3	97.7	96.6	97.0	97.2	100.5	106.9	109.6	93.2	142.5
160	85.9	87.5	90.2	88.3	90.1	93.5	100.6	96.3	97.0	102.6	107.7	110.6	99.0	143.3
200	88.8	88.3	91.3	89.4	92.5	95.8	98.0	98.9	101.6	102.9	109.0	114.5	102.6	145.9
250	87.5	92.3	93.3	92.4	93.5	95.8	97.7	100.9	102.3	108.7	114.5	117.2	105.6	149.4
315	88.3	91.6	92.1	90.9	94.3	97.9	99.5	100.9	103.6	110.7	116.6	118.3	108.9	151.0
400	90.8	93.3	93.9	91.9	94.0	96.9	105.8	101.7	105.4	113.4	118.6	119.8	110.2	152.9
500	91.6	94.4	94.6	93.2	95.5	98.6	99.3	102.9	108.9	114.5	120.6	120.8	112.2	154.2
630	92.0	95.1	95.3	94.4	96.7	99.8	100.5	103.9	107.3	115.2	121.3	122.0	114.1	155.2
800	95.8	96.1	96.9	95.4	97.3	101.1	101.5	105.2	108.6	115.9	121.3	122.0	116.2	155.5
1000	98.5	102.5	101.3	98.9	99.4	102.3	102.7	106.6	109.8	114.6	121.0	122.2	116.6	155.5
1250	98.9	104.7	104.0	103.1	103.4	105.0	104.4	107.3	110.2	114.8	120.9	122.9	117.0	155.9
1600	99.6	103.0	102.4	100.5	102.3	104.6	105.2	107.5	111.2	114.0	120.9	122.3	115.7	155.5
2000	101.5	104.3	103.3	99.9	101.0	103.6	104.8	108.1	111.0	114.5	120.3	120.4	114.1	154.7
2500	102.4	105.5	105.3	102.6	102.9	104.3	104.0	108.4	110.7	115.3	119.8	117.6	113.6	154.0
3150	99.8	102.9	103.9	103.0	103.8	105.9	105.0	107.7	111.5	114.1	118.9	116.3	111.4	153.2
4000	98.1	101.7	103.1	100.7	103.4	106.8	105.5	108.3	110.7	112.7	117.1	115.2	109.5	152.2
5000	96.9	101.9	103.0	100.9	102.4	105.6	105.8	107.8	110.4	113.0	116.0	113.3	108.0	151.6
6300	95.9	100.6	102.3	100.9	103.2	105.7	106.0	108.9	109.9	111.4	114.6	112.6	106.8	151.0
8000	94.6	99.2	101.0	100.0	102.1	105.1	105.3	107.5	108.0	109.4	113.0	110.7	106.0	149.9
10000	94.1	98.7	100.2	100.5	102.1	105.1	105.1	107.1	108.3	108.6	111.1	110.2	105.5	149.8
12500	92.7	96.7	99.3	98.9	100.7	104.4	104.2	105.4	106.6	107.0	109.7	107.7	103.4	149.1
16000	80.9	85.9	87.6	88.3	89.6	93.0	103.1	104.6	105.5	104.2	108.2	106.6	101.8	148.9
20000	86.2	89.9	93.0	95.3	95.5	97.0	101.0	101.1	102.5	102.0	105.1	103.2	98.4	148.0
25000	86.2	89.9	92.7	93.3	94.1	99.2	98.6	97.7	99.9	97.9	99.7	98.9	93.8	147.0
31500	82.8	86.3	88.3	89.8	90.8	96.0	94.4	94.5	96.1	94.8	96.8	95.1	89.8	146.7
40000	78.9	83.3	85.3	86.7	87.1	91.7	91.0	90.5	92.1	92.0	95.2	92.1	85.9	147.4
50000	79.3	76.6	79.5	81.0	81.9	86.5	85.1	85.4	87.4	87.5	90.4	87.0	80.1	146.7
63000	68.4	71.3	73.8	75.1	76.2	81.8	79.3	80.6	83.3	81.3	85.9	82.1	74.9	147.0
80000	62.1	64.6	67.4	68.0	70.0	76.1	73.0	74.4	77.3	76.9	79.5	76.7	68.8	147.9
GASPL	110.9	114.0	114.2	112.7	114.1	117.0	117.3	119.5	122.0	126.0	131.4	131.9	125.3	166.5
PNL	125.7	127.1	127.3	125.7	127.0	129.9	129.7	132.2	134.9	138.3	143.2	142.6	136.6	
PNLT	123.7	127.8	127.3	126.9	127.6	129.9	130.7	132.2	134.9	138.3	143.2	142.6	136.6	
DBA	110.5	114.0	114.2	112.3	113.6	116.2	116.2	119.0	121.7	125.5	131.0	131.2	125.1	

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH133	TEST DATE = 03-17-83	LOCAT = C41 ANECH CH	CONFIG = 10	MODEL =	FAN =	PLTVEL =	O. FPS
IAPLHA = SB59	LEGA = NO	PWL AREA = FULL SPHERE	TAMB F = 53.49	PAMB HG =	MIKE HT =	RELHUM =	40.8 PCT
WIND DIR =	DEG WIND VEL =	EXT DIST = 40.0 FT	EXT CONFIG = ARC	MIKE HT =	MIKE HT =	RELHUM =	40.8 PCT
FNINI =	LBS XNL	RPM XNH	RPM V8	AE8	AE8	AE8	4.0 SQ IN
FNRAMB =	LBS XNLR	RPM XNHR	RPM V18	AE18	AE18	AE18	23.4 SQ IN
RUNPT = 83F-ZER-1021	TAPE = X1021C	TEST PT NO = 1021	NC =	AE090	AE090	AE090	CORR FAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1021 X1021F

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	85.6	86.2	84.7	82.5	82.1	87.4	86.3	90.7	90.2	88.7	97.6	97.6	87.2	132.5
63	90.5	90.8	92.3	87.9	90.2	95.1	92.7	95.4	95.1	93.9	101.3	100.5	93.6	137.1
80	90.3	91.1	91.3	91.1	92.0	95.8	95.0	94.9	95.6	95.2	99.3	99.7	85.9	137.2
100	88.7	97.7	93.8	92.8	93.9	97.0	96.9	98.3	96.8	99.3	101.0	104.9	88.6	139.6
125	86.6	90.7	93.9	93.2	95.3	97.7	96.6	97.0	97.2	100.5	106.9	108.6	93.2	142.5
150	85.9	87.5	90.2	88.3	90.1	93.5	100.6	96.3	97.0	102.6	107.7	110.6	99.0	143.3
200	88.8	88.8	91.0	89.4	92.5	95.8	98.0	98.9	101.6	102.9	109.0	114.5	102.6	145.9
250	87.5	92.3	93.3	92.4	93.5	95.8	97.7	100.9	102.3	108.7	114.5	117.2	105.6	149.4
315	88.3	91.6	92.1	90.9	94.3	97.9	99.5	100.9	103.6	110.7	116.6	118.3	108.9	151.0
400	90.8	93.3	93.9	91.9	94.0	96.9	105.8	101.7	105.4	113.4	118.6	119.8	110.2	152.9
500	91.6	94.4	94.6	93.2	95.5	98.6	99.3	102.9	105.9	114.5	120.6	120.6	112.2	154.2
630	92.0	95.1	95.0	94.4	96.7	99.8	100.6	103.9	107.3	115.2	122.0	114.1	155.2	
800	95.8	98.1	96.9	95.4	97.3	101.1	101.5	105.2	108.6	115.5	121.3	122.0	116.2	155.5
1000	99.5	102.6	101.3	98.9	99.4	102.3	102.7	106.6	109.8	114.6	121.0	122.2	116.6	155.5
1250	98.9	104.7	104.0	103.1	103.4	105.0	104.4	107.3	110.2	114.8	120.8	122.9	117.0	155.9
1600	99.6	103.0	102.4	100.5	102.3	104.6	105.2	107.6	111.2	114.0	120.9	122.3	115.7	156.5
2000	101.5	104.3	103.3	99.9	101.0	103.6	104.8	108.1	111.0	114.5	120.3	120.4	114.1	154.7
2500	102.4	105.5	105.3	102.6	102.9	104.3	104.0	108.4	110.7	115.3	119.8	117.6	113.6	154.0
3150	99.8	102.9	103.9	103.0	103.6	105.9	105.0	107.7	111.5	114.1	118.9	116.3	111.4	153.2
4000	98.1	101.7	103.1	100.7	103.4	106.8	105.5	108.3	110.7	112.7	117.1	115.2	109.5	152.2
5000	96.9	101.9	103.0	100.9	102.4	105.6	105.8	107.6	110.4	113.0	116.0	115.3	108.0	151.6
6300	95.9	100.8	102.3	100.9	103.2	105.7	105.0	108.9	109.9	111.4	114.6	112.6	106.8	151.0
8000	94.6	99.2	101.0	100.0	102.1	105.1	105.3	108.0	109.4	113.0	110.7	106.0	149.9	
10000	94.1	98.7	100.2	100.5	102.1	105.1	105.1	107.1	108.3	108.6	111.1	110.2	105.5	149.8
12500	92.7	96.7	99.3	98.9	100.7	104.4	104.2	105.4	106.6	107.0	109.7	107.7	103.4	149.1
16000	90.9	95.9	97.6	98.3	99.8	103.0	103.1	104.8	105.5	104.2	108.2	105.6	101.8	148.9
20000	88.9	93.0	95.3	95.6	97.0	101.0	101.1	101.8	102.6	102.0	105.1	103.2	99.4	148.0
25000	86.2	89.9	92.7	93.3	94.1	98.2	98.6	97.7	99.9	97.9	98.7	98.9	98.8	147.0
31500	82.6	86.3	88.3	90.8	90.8	96.0	94.4	94.5	96.1	94.8	96.8	95.1	89.8	146.7
40000	78.9	83.3	85.7	86.7	87.1	91.7	91.0	90.5	92.1	92.0	95.2	92.1	85.9	147.4
50000	79.3	76.6	79.5	81.0	81.9	86.6	85.1	85.4	87.4	87.3	80.4	87.0	80.1	146.7
63000	68.4	71.3	73.8	75.1	76.2	81.8	79.3	80.6	83.3	81.3	85.9	82.1	74.9	147.0
80000	62.1	64.6	67.4	68.0	70.0	76.1	73.0	74.4	77.3	76.9	79.5	76.7	68.8	147.9
GASPL	110.3	114.0	114.2	112.7	114.1	117.0	117.3	119.5	122.0	126.0	131.4	131.9	125.3	166.5
PWL	129.7	127.3	125.7	127.0	129.9	129.7	132.2	134.9	138.3	143.2	142.6	142.6	136.6	
PNLT	127.6	127.3	126.9	127.6	129.9	130.7	132.2	134.9	138.3	143.2	142.6	142.6	136.6	
DBA	184.2	187.0	189.6	190.6	192.1	197.9	195.2	196.4	199.2	198.5	201.5	198.5	190.9	

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH139 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AN FLTVEL = 0. FPS
 TAPLHA = 5859 TEST DATE = NO PWL AREA = FULL SPHERE TAMB F = 53.48 PAMB HP = 33.4 BELUM = 40.6 FOT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = 100 FT

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1503.1 FPS AE9 = 4.8 SQ IN
 FNFRMB = LBS XNLR = RPM XNHR = RPM V18 = 2305.6 FPS AE10 = 33.4 SQ IN

PT = 021 SPE = 101 AEC = 101

IDENTIFICATION - 83F-ZER-1021 X10211

ANGLES MEASURED FROM INLET, DEGREES

FREQ	40.	50.	60.	70.	80.	90.	100.	110.	120.	130.	140.	150.	160.	PWL
50	70.7	72.0	71.8	75.5	79.3	80.8	81.8	83.8	89.8	94.1	93.6	80.9	168.0	
63	68.3	72.4	74.0	72.7	75.2	78.2	87.0	82.5	85.5	92.5	95.1	95.0	82.1	169.9
80	69.0	74.7	74.7	74.0	76.7	80.0	80.5	83.7	86.0	93.5	98.1	96.0	84.0	171.2
100	69.4	74.0	75.4	75.1	77.9	81.1	81.6	84.6	87.4	94.1	98.7	97.1	85.8	172.2
125	73.1	75.0	76.5	76.1	78.4	82.4	82.6	85.9	88.6	94.3	98.6	97.0	87.6	172.4
160	76.6	81.2	81.1	79.4	80.4	83.4	83.7	87.1	89.6	93.3	98.1	96.9	87.7	172.5
200	75.7	83.2	83.6	83.5	84.2	85.9	85.2	87.6	89.8	93.3	97.7	97.2	87.6	172.9
250	76.1	81.2	81.8	80.7	82.9	85.4	85.8	87.7	90.5	92.2	97.3	96.2	85.6	172.5
315	77.6	82.2	82.3	79.8	81.3	84.1	85.2	88.0	90.1	92.4	96.4	93.8	83.3	171.7
400	78.0	82.9	84.0	82.1	82.9	84.5	84.0	87.9	89.4	92.7	95.3	90.3	81.7	171.0
500	74.8	79.9	82.3	82.1	83.5	85.7	84.7	86.9	89.9	91.1	93.9	88.3	78.5	170.2
630	72.5	78.2	81.0	79.6	82.7	86.4	84.8	87.2	88.6	89.2	91.6	86.5	75.5	169.2
800	70.8	78.0	80.5	79.4	81.4	84.8	84.8	86.3	87.9	89.1	89.9	83.8	72.8	168.6
1000	69.2	76.4	79.5	79.1	81.9	84.6	84.7	87.1	87.1	87.0	87.2	82.3	70.3	168.0
1250	67.2	74.3	77.8	77.8	80.5	83.8	83.8	85.3	84.8	84.6	85.7	79.4	67.9	166.9
1600	65.6	72.9	76.3	77.7	80.6	83.2	83.0	84.3	84.8	82.6	82.6	77.3	64.7	166.7
2000	62.6	69.8	74.4	75.4	77.8	81.8	81.4	81.9	81.8	80.1	79.7	72.6	59.1	166.0
2500	58.7	67.4	71.4	73.7	76.0	79.5	79.3	80.2	79.3	75.7	78.0	67.3	52.1	165.8
3150	52.7	61.4	66.7	68.8	71.3	75.6	75.4	74.8	73.9	70.4	68.9	59.3	38.8	165.0
4000	43.0	52.9	59.5	62.4	64.6	70.1	69.1	66.8	66.7	60.9	56.5	45.3	19.9	164.0
5000	29.0	40.8	48.0	53.7	55.5	61.2	59.1	57.4	55.8	49.3	43.0	26.9		163.7
6300	6.9	23.3	32.6	38.4	41.2	46.7	45.2	42.3	39.4	31.9	23.2			164.4
8000			4.4	12.5	17.0	22.7	20.2	16.9	12.3	1.6				163.6
10000														164.0
12500														164.9
16000														
20000														
25000														
31500														
40000														
50000														
63000														
80000														

ORIGINAL PAGE IS OF POOR QUALITY

MODEL AREA = 160.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.066 FREQ SHIFT P - 8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICL = ADH133 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = 2400.0 FT EXT CONFIG = SL FLTVEL = 0. FPS
 IALPHA = 8888 TEST DATE = 03-17-83 PWL AREA = FULL SPHERE TAMB F = 59.49 PAWS = 100.0 RELHUM = 40.8 PCT
 WIND DIR = DEG WIND VEL = MPH MPH EXT DIST = 2400.0 FT V8 = 1503.1 FPS AE8 = 4.8 SQ IN
 FNINI = LBS XNL RPM XNH RPM V16 = 2305.6 FPS AE16 = 23.4 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V16 = 2305.6 FPS AE16 = 23.4 SQ IN
 RUNPT = 83F-ZER-1021 TAPE = X10211 TEST PT NO = 1021 NC = AE080 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1022 X1022C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

50	89.4	89.4	89.7	89.2	83.1	84.7	85.6	88.2	89.4	89.7	94.1	95.3	90.2	131.2
63	92.3	91.6	91.3	89.9	89.7	92.1	92.9	93.6	94.3	93.1	96.0	97.5	92.4	135.4
80	90.8	96.3	91.9	91.1	92.5	95.6	94.7	94.4	95.1	94.9	98.0	98.2	87.6	136.7
100	89.5	96.0	91.9	90.8	92.9	95.8	95.9	97.3	95.3	95.1	98.5	103.1	89.6	138.1
125	87.6	90.4	92.4	92.0	94.1	96.2	95.8	95.5	94.7	97.3	104.9	108.3	93.5	140.9
160	84.7	84.2	88.5	86.5	88.6	90.7	97.9	92.8	94.2	98.8	104.9	107.9	97.0	140.5
200	85.8	86.3	88.1	85.4	89.2	91.8	94.2	95.9	98.6	99.1	105.3	111.5	100.1	142.7
250	83.0	88.1	87.8	87.6	89.7	93.1	93.7	96.6	104.4	110.8	114.5	102.6	148.1	
315	84.8	87.6	88.1	87.7	90.3	93.1	95.3	97.2	100.1	106.7	112.3	114.8	104.4	147.1
400	86.8	88.6	89.4	87.2	90.3	93.1	99.0	97.4	102.9	109.7	114.8	116.3	104.7	149.1
500	86.8	89.4	90.4	88.8	91.5	94.6	95.8	98.4	102.6	111.2	116.1	116.0	103.2	149.8
630	87.0	90.3	90.6	89.4	92.7	96.1	97.0	100.1	103.6	112.2	117.3	115.7	101.1	150.5
800	88.6	89.9	91.4	89.9	93.0	95.1	97.8	100.7	105.6	112.2	116.3	114.0	99.9	149.7
1000	92.0	93.8	93.8	92.1	94.7	97.6	98.7	102.6	106.8	111.9	115.8	111.4	98.3	149.1
1250	92.2	96.2	95.2	93.4	96.1	99.0	99.3	103.3	107.5	111.5	113.4	109.1	97.8	147.9
1600	98.6	98.2	96.4	94.8	96.5	99.4	101.2	103.8	108.4	111.5	113.0	107.0	97.2	148.0
2000	100.5	101.6	100.0	96.4	96.9	99.1	101.0	105.1	108.2	112.0	113.0	108.1	97.9	148.2
2500	98.4	100.9	101.8	100.0	100.4	100.7	101.2	105.0	107.7	112.4	113.0	105.3	98.8	148.4
3150	98.0	99.1	99.8	98.9	100.9	103.0	102.4	105.1	109.7	112.0	112.3	105.9	98.6	148.6
4000	98.2	98.8	100.6	98.0	100.0	103.2	103.3	105.6	108.0	111.0	111.5	105.3	98.1	148.0
5000	97.7	99.6	100.0	97.9	99.9	102.1	103.3	105.6	107.6	111.7	110.8	104.3	97.8	148.0
6300	98.8	99.4	99.9	99.0	100.9	102.6	103.1	105.3	108.3	110.2	110.0	103.5	96.7	147.8
8000	96.4	97.9	98.7	98.7	100.1	101.9	102.9	105.0	106.9	108.8	108.0	101.7	96.1	146.9
10000	96.3	98.0	98.0	98.1	100.0	102.5	103.0	104.7	106.9	107.8	106.4	101.6	95.9	147.0
12500	94.8	96.5	98.0	97.7	99.3	101.7	102.3	103.5	105.1	106.1	104.5	101.0	95.3	146.5
16000	93.3	96.5	96.9	97.7	98.0	100.4	101.5	102.8	104.3	103.2	103.0	99.5	93.2	146.6
20000	91.3	92.9	94.5	95.0	96.0	98.7	100.1	99.5	101.9	101.1	100.0	97.4	91.4	146.0
25000	87.4	89.7	91.2	92.5	93.8	97.4	97.8	96.1	98.7	97.2	96.9	94.9	88.7	145.5
31500	84.0	86.4	87.7	90.1	90.3	93.7	93.7	93.8	95.4	94.0	93.1	91.0	84.4	145.3
40000	80.2	82.7	83.7	85.6	86.4	89.5	90.1	89.5	91.7	90.1	89.7	87.1	80.7	145.5
50000	74.3	76.6	78.4	79.9	81.3	85.3	84.5	84.1	87.1	85.3	84.3	80.5	73.8	144.7
63000	69.0	70.8	72.8	73.6	75.5	80.0	78.4	78.9	81.5	80.6	79.8	75.1	67.7	144.6
80000	63.2	64.8	66.0	66.8	68.4	73.4	71.9	72.7	76.0	74.6	72.7	67.8	59.9	145.1

CASPL 108.9 110.7 110.9 109.6 111.2 113.6 114.4 116.6 119.6 123.4 126.0 124.6 113.3 161.9
PWL 121.5 123.3 123.7 122.1 123.9 126.2 126.9 129.3 132.7 136.0 137.4 133.3 124.3
PNLT 121.5 123.3 123.7 122.6 124.5 126.2 127.5 129.3 132.7 136.0 137.9 133.3 124.3
DBA 108.6 110.2 110.3 108.6 110.2 112.4 113.1 116.0 119.2 123.1 125.0 121.7 110.8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH147 TEST DATE = 03-17-63 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AX FLTVEL = 400. FPS
 IALPHA = SB99 DEG WIND VEL = NO MPH PWL AREA = FULL SPHERE TAMB F = 50.28 PAMB PB = 28.07 RELHUM = 74.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = 1.0 NBFR =

FNINI = LBS XNL RPM XNH RPM V8 = 1484.1 FPS AE8 = 1.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V16 = 2348.1 FPS AE16 = 89.4 SQ IN

RUNPT = 83F-400-1022 TAPE = X1022C TEST PT NO = 1022 NC = AE090 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1022 X1022F

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 90.9 | 94.5 | 92.8 | 90.9 | 91.3 | 93.1 | 92.2 | 93.6 | 97.9 | 103.9 | 109.4 | 112.6 | 104.3 | 144.8 |
| 315 | 90.9 | 94.5 | 92.8 | 90.9 | 92.1 | 93.3 | 94.3 | 95.2 | 100.6 | 107.0 | 112.1 | 114.7 | 105.9 | 147.1 |
| 400 | 92.5 | 94.0 | 93.1 | 91.1 | 92.0 | 93.4 | 98.0 | 95.3 | 100.5 | 108.6 | 113.6 | 115.1 | 105.0 | 148.0 |
| 500 | 93.7 | 94.7 | 94.1 | 90.5 | 93.4 | 95.0 | 94.8 | 96.3 | 101.6 | 109.8 | 115.2 | 115.8 | 106.0 | 149.1 |
| 630 | 94.5 | 95.8 | 95.4 | 92.4 | 94.7 | 96.5 | 96.0 | 97.9 | 104.1 | 110.4 | 115.1 | 115.6 | 107.7 | 149.3 |
| 800 | 94.7 | 96.7 | 95.6 | 92.9 | 95.1 | 96.7 | 96.7 | 98.6 | 105.7 | 110.6 | 115.1 | 114.3 | 108.7 | 149.1 |
| 1000 | 97.3 | 96.3 | 96.5 | 93.5 | 96.7 | 98.2 | 97.9 | 100.6 | 106.5 | 110.4 | 112.9 | 112.1 | 108.3 | 147.9 |
| 1250 | 98.7 | 99.6 | 98.2 | 95.5 | 98.3 | 99.8 | 98.8 | 101.4 | 107.5 | 110.3 | 112.8 | 109.9 | 107.6 | 147.8 |
| 1600 | 99.0 | 102.2 | 100.0 | 96.9 | 98.4 | 100.4 | 100.8 | 102.1 | 107.6 | 111.2 | 112.8 | 109.4 | 108.7 | 148.2 |
| 2000 | 104.7 | 103.3 | 100.3 | 97.6 | 99.1 | 100.3 | 100.9 | 103.7 | 107.5 | 112.1 | 113.3 | 109.1 | 110.2 | 149.0 |
| 2500 | 107.3 | 107.2 | 104.4 | 99.5 | 102.9 | 102.4 | 101.4 | 104.0 | 110.1 | 112.2 | 113.2 | 110.4 | 110.7 | 150.1 |
| 3150 | 103.6 | 105.7 | 105.9 | 103.3 | 104.2 | 105.0 | 103.1 | 104.6 | 109.1 | 111.8 | 112.9 | 110.2 | 110.5 | 150.0 |
| 4000 | 105.6 | 105.7 | 105.4 | 103.2 | 104.0 | 105.5 | 105.2 | 105.7 | 108.6 | 112.5 | 112.1 | 109.1 | 110.0 | 150.0 |
| 5000 | 105.7 | 106.5 | 106.4 | 102.7 | 104.0 | 105.1 | 104.8 | 105.8 | 109.4 | 111.0 | 111.3 | 108.2 | 108.9 | 149.8 |
| 6300 | 105.2 | 106.3 | 105.8 | 102.7 | 104.9 | 105.6 | 104.6 | 106.4 | 108.5 | 110.1 | 109.9 | 107.1 | 108.9 | 149.6 |
| 8000 | 104.1 | 105.9 | 105.6 | 103.7 | 104.2 | 104.9 | 104.7 | 105.5 | 109.2 | 109.9 | 109.2 | 107.8 | 109.5 | 149.8 |
| 10000 | 103.5 | 104.3 | 104.3 | 103.2 | 104.0 | 105.5 | 105.2 | 105.7 | 108.3 | 109.1 | 108.1 | 107.9 | 109.4 | 149.9 |
| 12500 | 103.1 | 104.4 | 104.3 | 102.4 | 103.3 | 104.7 | 104.6 | 104.9 | 108.1 | 106.9 | 107.4 | 107.1 | 108.1 | 149.9 |
| 16000 | 101.1 | 102.0 | 102.7 | 101.4 | 102.0 | 103.4 | 103.9 | 104.4 | 106.4 | 105.5 | 105.0 | 105.5 | 106.5 | 149.8 |
| 20000 | 99.2 | 101.7 | 101.2 | 101.0 | 100.0 | 101.7 | 102.5 | 101.2 | 104.1 | 102.2 | 102.2 | 102.9 | 103.6 | 149.8 |
| 25000 | 96.7 | 97.4 | 98.2 | 97.7 | 98.4 | 100.4 | 100.3 | 98.0 | 101.5 | 99.9 | 99.5 | 100.5 | 101.0 | 149.3 |
| 31500 | 94.7 | 95.7 | 95.8 | 95.6 | 94.9 | 96.7 | 96.1 | 95.6 | 98.7 | 96.9 | 97.0 | 97.5 | 98.0 | 149.5 |
| 40000 | 90.5 | 91.6 | 91.5 | 92.3 | 91.0 | 93.5 | 92.6 | 91.3 | 94.0 | 92.1 | 91.8 | 91.5 | 92.2 | 149.3 |
| 50000 | 86.3 | 87.5 | 87.1 | 87.4 | 85.9 | 88.3 | 86.9 | 85.7 | 88.9 | 87.8 | 87.6 | 86.4 | 86.7 | 148.7 |
| 63000 | 79.4 | 80.5 | 80.9 | 80.8 | 80.1 | 83.0 | 80.7 | 80.1 | 84.2 | 82.6 | 81.1 | 79.5 | 79.4 | 148.2 |
| 80000 | 72.7 | 73.2 | 73.8 | 73.0 | 73.0 | 76.4 | 73.9 | 73.5 | 74.4 | 72.7 | 71.3 | 69.7 | 69.6 | 147.1 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DEFAS-10/NAS3-22137

VEHICLE = ADH147 TEST DATE = 03-17-63 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 JEGA = NO PWL AREA = FULL SPHERE TAMB F = 50.28 PAMB NO = 20.97 RELHUM = 74.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBER

FNINI = LBS XNLR = RPM XNH = RPM V8 = 1484.1 FPS AE8 = 4.8 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2348.1 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1022 TAPE = X1022F TEST PT NO = 1022 NC = AE090 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1022 X10221

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 68.5 | 73.6 | 72.9 | 71.8 | 73.3 | 74.7 | 75.6 | 76.1 | 80.8 | 86.0 | 89.6 | 90.0 | 77.9 | 164.1 |
| 63 | 70.0 | 73.1 | 73.2 | 71.9 | 73.3 | 74.6 | 79.3 | 76.2 | 80.6 | 87.6 | 91.1 | 90.4 | 77.9 | 165.0 |
| 80 | 71.2 | 73.7 | 74.2 | 71.3 | 74.6 | 76.3 | 76.0 | 77.1 | 81.7 | 88.8 | 92.6 | 91.0 | 77.8 | 166.1 |
| 100 | 71.9 | 74.7 | 75.4 | 73.1 | 75.9 | 77.8 | 77.2 | 78.7 | 84.2 | 89.4 | 92.5 | 90.7 | 79.4 | 166.3 |
| 125 | 72.0 | 75.8 | 76.6 | 73.6 | 76.2 | 77.9 | 78.0 | 79.3 | 85.6 | 89.4 | 92.4 | 89.3 | 80.1 | 166.1 |
| 160 | 74.3 | 75.0 | 76.3 | 74.0 | 77.7 | 79.3 | 78.9 | 81.2 | 86.3 | 89.0 | 90.0 | 86.8 | 79.3 | 164.9 |
| 200 | 75.5 | 78.1 | 77.8 | 75.8 | 79.1 | 80.7 | 79.6 | 81.8 | 87.1 | 88.8 | 89.6 | 84.3 | 78.2 | 164.8 |
| 250 | 75.5 | 80.4 | 79.4 | 77.0 | 79.0 | 81.1 | 81.4 | 82.2 | 87.0 | 89.4 | 89.3 | 83.3 | 78.7 | 165.2 |
| 315 | 80.8 | 81.1 | 79.4 | 77.5 | 79.4 | 80.8 | 81.2 | 83.6 | 86.6 | 89.9 | 89.4 | 82.5 | 79.4 | 165.9 |
| 400 | 82.8 | 84.6 | 83.1 | 79.1 | 82.9 | 82.5 | 81.4 | 83.6 | 88.7 | 89.6 | 88.7 | 83.1 | 78.8 | 167.0 |
| 500 | 78.6 | 82.7 | 84.2 | 82.5 | 83.9 | 84.9 | 82.7 | 83.8 | 87.4 | 88.8 | 88.0 | 82.2 | 77.6 | 166.9 |
| 630 | 80.0 | 82.2 | 83.3 | 82.1 | 83.0 | 84.3 | 84.0 | 84.6 | 86.6 | 89.0 | 86.6 | 80.4 | 76.0 | 167.0 |
| 800 | 79.6 | 82.5 | 83.9 | 81.2 | 83.0 | 84.3 | 83.8 | 84.3 | 86.9 | 87.0 | 85.2 | 78.7 | 73.7 | 166.8 |
| 1000 | 78.5 | 82.0 | 83.0 | 80.9 | 83.6 | 84.5 | 83.3 | 84.6 | 85.7 | 85.7 | 83.3 | 76.8 | 72.4 | 166.8 |
| 1250 | 78.8 | 81.1 | 82.4 | 81.6 | 82.6 | 83.5 | 83.2 | 83.3 | 86.0 | 86.0 | 81.8 | 76.5 | 71.3 | 166.8 |
| 1600 | 75.0 | 78.6 | 80.3 | 80.5 | 81.9 | 83.6 | 83.1 | 82.9 | 84.4 | 83.4 | 79.6 | 75.0 | 68.6 | 166.9 |
| 2000 | 73.1 | 77.5 | 79.4 | 78.8 | 80.5 | 82.1 | 81.8 | 81.4 | 83.3 | 80.0 | 77.3 | 72.1 | 63.7 | 166.9 |
| 2500 | 68.9 | 73.5 | 76.6 | 76.8 | 78.2 | 79.9 | 80.1 | 79.8 | 80.3 | 77.0 | 72.8 | 67.2 | 56.9 | 166.8 |
| 3150 | 63.0 | 70.1 | 72.6 | 74.2 | 74.3 | 76.3 | 76.7 | 74.4 | 75.5 | 70.7 | 66.0 | 59.0 | 44.9 | 166.5 |
| 4000 | 53.5 | 60.4 | 65.0 | 66.9 | 68.9 | 71.3 | 70.8 | 67.2 | 68.3 | 62.9 | 56.3 | 47.0 | 27.0 | 166.3 |
| 5000 | 40.9 | 50.3 | 55.5 | 58.5 | 59.5 | 61.9 | 60.7 | 58.5 | 58.4 | 51.5 | 43.2 | 29.4 | 1.4 | 166.5 |
| 6300 | 18.5 | 31.5 | 38.7 | 44.0 | 45.2 | 48.9 | 46.7 | 43.0 | 41.3 | 32.1 | 19.8 | | | 166.2 |
| 8000 | 1.7 | 12.0 | 19.0 | 21.0 | 24.5 | 22.0 | 17.2 | 13.9 | 1.9 | | | | | 165.7 |
| 10000 | | | | | | | | | | | | | | 165.1 |
| 12500 | | | | | | | | | | | | | | 164.1 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 160.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.066 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH147 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AN FLTVEL = 400. FPS
 IAPLHA = SB59 IEQA = NO PWL AREA = FULL SPHERE TAMB F = 50.28 PAMB HQ = 28.37 RELHUM = 74.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBER =

FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1484.1 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2348.1 FPS AE18 = 23.4 SQ IN

NPT 3F-4 022 PIPE = 21 T PT 1C AEC ARR SPEE RPN

IDENTIFICATION - MODEL 83F-ZER-1023 X1023C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 85.4 | 86.4 | 85.2 | 83.0 | 82.6 | 87.7 | 86.6 | 88.7 | 89.7 | 88.7 | 97.1 | 97.3 | 86.7 | 132.1 |
| 63 | 90.8 | 90.8 | 89.8 | 89.1 | 89.7 | 94.3 | 93.2 | 93.9 | 94.6 | 91.4 | 101.3 | 100.0 | 91.6 | 136.6 |
| 80 | 90.5 | 95.8 | 91.3 | 91.4 | 92.5 | 95.1 | 95.2 | 94.9 | 95.8 | 96.2 | 99.5 | 100.0 | 84.9 | 137.4 |
| 100 | 90.5 | 98.0 | 93.9 | 92.8 | 94.1 | 97.3 | 97.1 | 98.8 | 96.8 | 100.3 | 101.5 | 105.1 | 88.6 | 140.2 |
| 125 | 86.9 | 91.4 | 93.9 | 93.5 | 95.6 | 97.4 | 97.1 | 97.2 | 96.7 | 100.5 | 106.6 | 109.6 | 93.7 | 142.5 |
| 160 | 86.2 | 87.2 | 89.7 | 89.0 | 90.1 | 93.5 | 100.1 | 96.3 | 96.0 | 102.1 | 107.7 | 110.4 | 98.8 | 143.1 |
| 200 | 88.8 | 88.3 | 91.3 | 89.6 | 93.0 | 95.6 | 97.7 | 98.1 | 101.6 | 103.1 | 108.5 | 114.2 | 102.6 | 145.6 |
| 250 | 87.0 | 92.8 | 93.3 | 92.1 | 93.5 | 95.6 | 97.5 | 100.4 | 102.1 | 108.4 | 114.0 | 117.5 | 105.4 | 149.3 |
| 315 | 88.6 | 91.9 | 92.1 | 91.7 | 94.5 | 97.9 | 99.5 | 101.4 | 103.6 | 110.2 | 116.3 | 118.3 | 108.9 | 150.8 |
| 400 | 90.3 | 93.1 | 93.9 | 91.9 | 94.8 | 97.1 | 105.8 | 101.4 | 105.9 | 113.2 | 118.1 | 120.3 | 110.4 | 152.9 |
| 500 | 91.8 | 94.4 | 94.6 | 92.9 | 95.8 | 98.4 | 98.8 | 102.7 | 106.6 | 114.7 | 119.6 | 120.5 | 111.9 | 153.8 |
| 630 | 92.3 | 95.6 | 95.6 | 94.6 | 96.7 | 100.1 | 101.5 | 103.6 | 107.6 | 115.7 | 120.5 | 121.0 | 113.9 | 154.6 |
| 800 | 95.8 | 96.4 | 97.1 | 95.2 | 97.8 | 100.9 | 101.5 | 105.2 | 109.1 | 115.7 | 120.6 | 121.8 | 115.9 | 155.1 |
| 1000 | 100.3 | 104.0 | 101.6 | 98.9 | 100.2 | 102.6 | 103.2 | 105.9 | 110.6 | 115.1 | 121.0 | 121.4 | 116.1 | 155.3 |
| 1250 | 99.4 | 104.2 | 104.0 | 102.4 | 102.9 | 105.0 | 104.1 | 107.3 | 111.0 | 114.6 | 120.7 | 122.1 | 115.8 | 155.4 |
| 1600 | 98.3 | 101.0 | 101.9 | 100.8 | 102.3 | 105.1 | 105.2 | 108.0 | 112.2 | 114.5 | 121.4 | 121.3 | 114.7 | 155.4 |
| 2000 | 99.8 | 102.3 | 102.5 | 99.4 | 100.7 | 103.6 | 105.1 | 108.6 | 111.8 | 115.0 | 120.8 | 119.1 | 113.1 | 154.8 |
| 2500 | 98.9 | 102.3 | 103.1 | 100.3 | 101.9 | 104.6 | 104.7 | 108.6 | 111.2 | 115.5 | 119.5 | 116.6 | 112.8 | 153.7 |
| 3150 | 98.1 | 101.4 | 102.2 | 100.2 | 101.5 | 104.6 | 105.5 | 108.2 | 112.3 | 115.9 | 118.5 | 116.0 | 110.7 | 153.4 |
| 4000 | 96.3 | 99.9 | 101.3 | 99.7 | 102.1 | 104.8 | 104.7 | 108.6 | 111.2 | 113.9 | 116.6 | 113.7 | 109.0 | 151.9 |
| 5000 | 95.2 | 100.1 | 101.5 | 99.6 | 101.9 | 104.4 | 105.3 | 108.1 | 110.4 | 114.0 | 115.5 | 112.5 | 107.5 | 151.4 |
| 6300 | 94.2 | 99.3 | 100.8 | 99.9 | 102.4 | 104.9 | 104.7 | 108.1 | 110.4 | 112.1 | 114.6 | 111.8 | 106.3 | 151.8 |
| 8000 | 93.3 | 98.2 | 100.0 | 99.5 | 101.1 | 104.4 | 104.8 | 106.5 | 108.2 | 110.7 | 113.0 | 109.7 | 105.3 | 149.7 |
| 10000 | 93.8 | 98.7 | 100.5 | 99.5 | 101.6 | 104.3 | 104.8 | 106.3 | 108.8 | 109.6 | 111.1 | 109.2 | 104.2 | 149.8 |
| 12500 | 92.4 | 96.5 | 99.3 | 99.2 | 101.2 | 103.9 | 103.5 | 105.2 | 106.6 | 108.0 | 109.5 | 108.2 | 102.9 | 149.1 |
| 16000 | 91.4 | 96.6 | 98.3 | 99.1 | 99.8 | 102.8 | 102.6 | 104.3 | 105.0 | 105.0 | 107.9 | 105.8 | 99.5 | 148.8 |
| 20000 | 89.2 | 94.0 | 95.6 | 96.3 | 97.3 | 101.1 | 100.9 | 101.3 | 102.5 | 103.0 | 105.2 | 102.5 | 96.4 | 148.1 |
| 25000 | 86.2 | 91.0 | 93.3 | 93.8 | 95.4 | 99.7 | 98.9 | 97.7 | 99.8 | 97.8 | 99.5 | 98.5 | 93.3 | 147.2 |
| 31500 | 82.7 | 87.4 | 89.4 | 91.4 | 91.9 | 95.8 | 95.3 | 95.1 | 96.1 | 95.4 | 96.9 | 94.6 | 89.1 | 147.0 |
| 40000 | 79.3 | 83.4 | 86.2 | 86.6 | 87.9 | 92.3 | 91.1 | 90.6 | 92.2 | 91.9 | 94.3 | 91.4 | 85.5 | 147.4 |
| 50000 | 79.1 | 77.8 | 80.3 | 81.8 | 82.5 | 87.6 | 85.7 | 85.3 | 87.7 | 87.1 | 89.7 | 86.1 | 79.0 | 146.8 |
| 63000 | 67.7 | 71.7 | 75.2 | 75.8 | 77.1 | 82.1 | 79.9 | 80.3 | 83.4 | 82.0 | 85.0 | 80.7 | 73.8 | 147.0 |
| 80000 | 61.9 | 65.5 | 67.8 | 68.8 | 70.7 | 76.2 | 73.7 | 74.0 | 77.5 | 79.4 | 75.1 | 67.2 | 67.2 | 148.0 |
| 0A9PL | 109.9 | 113.5 | 112.0 | 113.7 | 116.5 | 117.2 | 119.5 | 122.5 | 125.5 | 131.1 | 131.3 | 124.7 | 166.3 | |
| PWL | 121.8 | 125.3 | 126.0 | 124.2 | 126.1 | 128.8 | 129.6 | 132.3 | 135.5 | 139.2 | 143.0 | 141.8 | 135.9 | |
| PWLT | 121.8 | 126.6 | 126.0 | 124.2 | 126.7 | 128.8 | 130.7 | 132.3 | 135.5 | 139.2 | 143.0 | 141.8 | 135.9 | |
| DBA | 109.1 | 112.7 | 113.1 | 111.2 | 112.9 | 115.6 | 116.1 | 119.1 | 122.3 | 126.1 | 130.8 | 130.5 | 124.4 | |

ORIGINAL PAGE S
OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/OFTAS-10/NAS3-22137

| | | | | | | | | | | | | | | | | | |
|----------|---|--------------|-----------|---|----------|------------|---|--------------|------------|---|------------|----------------|---|------------|--------|---|----------|
| VEHICL | = | ADH134 | TEST DATE | = | 03-17-83 | LOCAT | = | C41 ANECH CH | CONFIG | = | 10 | MODEL | = | AY | FLTVEL | = | 0. FPS |
| JAPLHA | = | SB59 | TEST WIND | = | NO | PWL AREA | = | FULL SPHERE | TAMB F | = | 53.93 | PAMB HG | = | 22 | RELHUM | = | 40.9 PCT |
| WIND DIR | = | | DEG WIND | = | | EXT DIST | = | 40.0 FT | EXT CONFIG | = | ARC | MIKE HT | = | | NBFR | = | |
| FNIN1 | = | LBS XNL | RPM | = | | XNH | = | RPM | V8 | = | 1608.5 FPS | AE9 | = | 4.0 SQ IN | | | |
| FNRAMB | = | LBS XNL | RPM | = | | XNHR | = | RPM | V18 | = | 2315.8 FPS | AE18 | = | 29.4 SQ IN | | | |
| RUNPT | = | 83F-ZER-1023 | TAPE | = | X1023C | TEST PT NO | = | 1023 | NC | = | AE090 | CORR FAN SPEED | = | RPM | | | |

IDENTIFICATION - 83F-ZER-1023 X1023F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 85.4 | 86.4 | 85.2 | 83.0 | 82.6 | 87.7 | 86.6 | 88.7 | 89.7 | 88.7 | 97.1 | 97.3 | 86.7 | 132.1 |
| 63 | 90.8 | 90.5 | 92.8 | 89.1 | 89.7 | 94.3 | 93.2 | 93.9 | 94.6 | 91.4 | 101.3 | 100.0 | 91.6 | 136.6 |
| 80 | 90.5 | 95.8 | 91.3 | 91.4 | 92.5 | 96.1 | 95.2 | 94.9 | 95.8 | 96.2 | 99.5 | 100.0 | 84.9 | 137.4 |
| 100 | 90.5 | 98.0 | 93.3 | 92.8 | 94.1 | 97.3 | 97.1 | 98.8 | 96.8 | 100.3 | 101.5 | 105.1 | 88.6 | 140.2 |
| 125 | 86.9 | 91.4 | 93.9 | 93.5 | 95.6 | 97.4 | 97.1 | 97.2 | 96.7 | 100.5 | 106.6 | 109.6 | 93.7 | 142.5 |
| 160 | 86.2 | 87.2 | 89.7 | 89.0 | 90.1 | 93.5 | 100.1 | 96.3 | 96.0 | 102.1 | 107.7 | 110.4 | 98.8 | 143.1 |
| 200 | 88.8 | 88.3 | 91.3 | 89.6 | 93.0 | 95.6 | 97.7 | 98.1 | 101.6 | 103.1 | 108.5 | 114.2 | 102.6 | 145.6 |
| 250 | 87.0 | 92.8 | 93.3 | 92.1 | 93.5 | 95.6 | 97.5 | 100.4 | 102.1 | 108.4 | 114.0 | 117.5 | 105.4 | 149.3 |
| 315 | 88.6 | 91.9 | 92.1 | 91.7 | 94.5 | 97.9 | 99.5 | 101.4 | 103.6 | 110.2 | 116.3 | 118.3 | 108.9 | 150.8 |
| 400 | 90.3 | 93.1 | 93.9 | 91.9 | 94.5 | 97.1 | 105.8 | 101.4 | 105.9 | 113.2 | 118.1 | 120.3 | 110.4 | 152.9 |
| 500 | 91.8 | 94.4 | 94.6 | 92.9 | 95.8 | 98.4 | 99.8 | 102.7 | 106.6 | 114.7 | 119.6 | 120.5 | 111.9 | 153.8 |
| 630 | 92.3 | 95.6 | 95.6 | 94.6 | 96.7 | 100.1 | 101.5 | 103.6 | 107.6 | 115.7 | 120.5 | 121.0 | 113.9 | 154.6 |
| 800 | 95.8 | 96.4 | 97.1 | 95.2 | 97.8 | 100.9 | 101.5 | 105.2 | 109.1 | 115.7 | 120.6 | 121.8 | 115.9 | 155.1 |
| 1000 | 100.3 | 104.0 | 101.6 | 98.9 | 100.2 | 102.6 | 103.2 | 106.9 | 110.6 | 115.1 | 121.0 | 121.4 | 116.1 | 155.3 |
| 1250 | 99.4 | 104.2 | 104.0 | 102.4 | 102.9 | 105.0 | 104.1 | 107.3 | 111.0 | 114.6 | 120.7 | 122.1 | 115.8 | 155.4 |
| 1600 | 98.3 | 101.0 | 101.9 | 100.8 | 102.3 | 105.1 | 105.2 | 108.0 | 112.2 | 114.5 | 121.4 | 121.3 | 114.7 | 155.4 |
| 2000 | 98.8 | 102.3 | 102.5 | 99.4 | 100.7 | 103.6 | 105.1 | 108.6 | 111.8 | 115.0 | 120.8 | 119.1 | 113.1 | 154.6 |
| 2500 | 98.9 | 102.3 | 103.1 | 100.3 | 101.9 | 104.6 | 104.7 | 108.6 | 111.2 | 115.5 | 119.5 | 116.6 | 112.8 | 153.7 |
| 3150 | 98.1 | 101.4 | 102.2 | 100.2 | 101.5 | 104.6 | 105.5 | 108.2 | 112.3 | 115.9 | 118.6 | 116.0 | 110.7 | 153.4 |
| 4000 | 96.3 | 99.9 | 101.3 | 99.7 | 102.1 | 104.8 | 104.7 | 108.6 | 111.2 | 113.9 | 116.6 | 113.7 | 109.0 | 151.9 |
| 5000 | 95.2 | 100.1 | 101.5 | 99.6 | 101.9 | 104.4 | 105.3 | 108.1 | 110.4 | 114.0 | 115.5 | 112.5 | 107.5 | 151.4 |
| 6300 | 94.2 | 99.3 | 100.8 | 99.9 | 102.4 | 104.9 | 104.7 | 108.1 | 110.4 | 112.1 | 114.6 | 111.8 | 106.3 | 150.8 |
| 8000 | 93.3 | 98.2 | 100.0 | 99.5 | 101.1 | 104.4 | 104.8 | 106.5 | 108.2 | 110.7 | 113.0 | 109.7 | 105.3 | 149.7 |
| 10000 | 93.8 | 98.7 | 100.5 | 99.5 | 101.6 | 104.3 | 104.8 | 106.3 | 108.8 | 109.6 | 111.1 | 108.2 | 104.2 | 149.6 |
| 12500 | 92.4 | 96.5 | 99.3 | 99.2 | 101.2 | 103.9 | 103.5 | 105.2 | 106.6 | 108.0 | 109.5 | 108.2 | 102.9 | 149.1 |
| 16000 | 91.4 | 98.6 | 98.3 | 99.1 | 99.8 | 102.8 | 102.6 | 104.3 | 105.0 | 105.0 | 107.9 | 105.8 | 99.5 | 148.8 |
| 20000 | 89.2 | 94.0 | 95.6 | 96.3 | 97.3 | 101.1 | 100.9 | 101.3 | 102.5 | 103.0 | 105.2 | 102.5 | 96.4 | 148.1 |
| 25000 | 86.2 | 91.0 | 93.3 | 93.8 | 95.4 | 99.7 | 98.9 | 97.7 | 99.8 | 97.8 | 99.5 | 98.5 | 93.3 | 147.2 |
| 31500 | 82.7 | 87.4 | 89.4 | 91.4 | 91.9 | 95.8 | 95.3 | 95.1 | 96.1 | 95.4 | 96.9 | 94.6 | 89.1 | 147.0 |
| 40000 | 78.3 | 83.4 | 86.2 | 86.8 | 87.9 | 92.3 | 91.1 | 90.6 | 92.2 | 91.9 | 94.3 | 91.4 | 85.5 | 147.4 |
| 50000 | 73.1 | 77.8 | 80.3 | 81.8 | 82.5 | 87.6 | 85.7 | 85.3 | 87.7 | 87.1 | 89.7 | 86.1 | 79.0 | 146.8 |
| 63000 | 67.7 | 71.7 | 75.2 | 75.8 | 77.1 | 82.1 | 79.9 | 80.3 | 83.4 | 83.0 | 85.0 | 80.7 | 73.8 | 147.0 |
| 80000 | 61.9 | 65.5 | 67.8 | 68.9 | 70.7 | 76.2 | 73.7 | 74.0 | 77.5 | 77.3 | 79.4 | 75.1 | 67.2 | 148.0 |
| GASPL | 109.3 | 113.0 | 113.5 | 112.0 | 113.7 | 116.5 | 117.2 | 119.5 | 122.5 | 126.5 | 131.1 | 131.3 | 124.7 | 166.3 |
| PWL | 121.8 | 125.3 | 126.0 | 124.2 | 126.1 | 128.8 | 129.6 | 132.3 | 135.5 | 139.2 | 143.0 | 141.8 | 135.9 | |
| PWL | 121.8 | 126.6 | 126.0 | 124.2 | 126.7 | 128.8 | 130.7 | 132.3 | 135.5 | 139.2 | 143.0 | 141.8 | 135.9 | |
| DBA | 183.9 | 187.7 | 190.4 | 191.4 | 192.9 | 198.2 | 195.9 | 196.1 | 199.4 | 198.9 | 201.2 | 197.0 | 189.9 | |

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MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/BFIAS-10/NAS9-22137

VEHICLE = ADH134 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB68 TRGA = NO PML AREA = FULL SPHERE TAMB F = 53.93 PAMB HG = 20.0 MIKE HT = 40.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1608.5 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2315.8 FPS AE18 = 23.4 SQ IN

NPT F-Z 023 PE 3F 101 PT 101 C AEC JRR SPEC RPN

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1023 X10231

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| 50 | 66.1 | 70.9 | 72.9 | 72.5 | 75.8 | 79.3 | 80.8 | 82.3 | 83.8 | 89.3 | 93.9 | 93.6 | 80.9 | 167.8 |
| 63 | 67.8 | 72.1 | 74.0 | 72.7 | 75.7 | 78.5 | 87.0 | 82.2 | 86.0 | 92.2 | 95.6 | 95.5 | 82.4 | 169.9 |
| 80 | 69.3 | 73.4 | 74.7 | 73.7 | 77.0 | 79.7 | 81.0 | 83.5 | 86.7 | 93.7 | 97.1 | 96.8 | 83.8 | 170.8 |
| 100 | 69.7 | 74.5 | 75.6 | 75.4 | 77.9 | 81.4 | 82.6 | 84.4 | 87.6 | 94.6 | 97.9 | 96.1 | 85.6 | 171.6 |
| 125 | 73.1 | 75.2 | 77.1 | 75.9 | 78.9 | 82.1 | 82.6 | 85.9 | 89.1 | 94.6 | 97.9 | 96.7 | 87.4 | 172.1 |
| 160 | 77.3 | 82.7 | 81.4 | 79.4 | 81.2 | 83.7 | 84.2 | 87.4 | 90.4 | 93.8 | 98.1 | 96.2 | 87.2 | 172.3 |
| 200 | 76.2 | 82.7 | 83.6 | 82.7 | 83.7 | 85.9 | 84.9 | 87.6 | 90.6 | 93.0 | 97.5 | 96.5 | 86.4 | 172.4 |
| 250 | 74.8 | 79.2 | 81.3 | 80.9 | 82.9 | 85.9 | 85.8 | 88.2 | 91.5 | 92.7 | 97.8 | 95.2 | 84.6 | 172.4 |
| 315 | 75.8 | 80.2 | 81.6 | 79.3 | 81.1 | 84.1 | 85.4 | 88.5 | 90.8 | 92.9 | 96.9 | 92.5 | 82.3 | 171.6 |
| 400 | 74.5 | 79.7 | 81.8 | 79.8 | 81.9 | 84.7 | 86.1 | 89.9 | 92.9 | 95.1 | 99.3 | 81.0 | 170.7 | |
| 500 | 73.1 | 78.4 | 80.5 | 79.4 | 81.2 | 84.4 | 85.2 | 87.4 | 90.6 | 92.9 | 93.6 | 88.1 | 77.8 | 170.4 |
| 630 | 70.8 | 76.5 | 79.2 | 78.6 | 81.5 | 84.4 | 84.1 | 87.4 | 89.1 | 90.5 | 91.1 | 85.0 | 76.0 | 168.9 |
| 800 | 69.1 | 76.2 | 79.0 | 78.1 | 80.9 | 83.6 | 84.3 | 86.6 | 87.9 | 90.1 | 89.4 | 83.1 | 72.3 | 168.4 |
| 1000 | 67.5 | 74.9 | 78.0 | 78.1 | 81.2 | 83.8 | 83.4 | 86.3 | 87.6 | 87.8 | 81.5 | 69.7 | 167.8 | |
| 1250 | 66.0 | 73.3 | 76.8 | 77.3 | 79.5 | 83.0 | 83.3 | 84.3 | 85.0 | 85.8 | 85.7 | 78.4 | 67.1 | 166.7 |
| 1600 | 65.3 | 72.9 | 76.5 | 76.7 | 79.5 | 82.4 | 82.7 | 83.6 | 84.9 | 83.8 | 82.6 | 76.3 | 63.4 | 166.6 |
| 2000 | 62.4 | 69.6 | 74.5 | 75.6 | 78.4 | 81.3 | 80.7 | 81.8 | 81.1 | 79.5 | 73.1 | 58.6 | 166.1 | |
| 2500 | 59.2 | 68.1 | 72.2 | 74.4 | 76.1 | 79.3 | 78.9 | 79.7 | 78.9 | 76.5 | 73.7 | 67.6 | 49.9 | 165.8 |
| 3150 | 53.0 | 62.4 | 67.0 | 69.5 | 71.5 | 75.6 | 75.1 | 74.5 | 73.9 | 71.5 | 69.0 | 58.6 | 37.8 | 165.1 |
| 4000 | 43.0 | 53.9 | 60.0 | 63.0 | 65.9 | 70.6 | 69.4 | 66.9 | 66.5 | 60.7 | 56.3 | 44.9 | 19.4 | 164.2 |
| 5000 | 28.9 | 41.9 | 49.4 | 54.3 | 56.6 | 61.0 | 59.9 | 58.0 | 55.9 | 49.9 | 43.0 | 26.5 | 164.0 | |
| 6300 | 7.3 | 23.4 | 33.4 | 38.5 | 42.1 | 47.2 | 45.3 | 42.4 | 39.5 | 31.8 | 22.3 | 164.0 | | |
| 8000 | 5.3 | 13.3 | 17.6 | 23.8 | 20.8 | 16.6 | 12.7 | 1.3 | | | | | 163.8 | |
| 10000 | | | | | | | | | | | | | 164.0 | |
| 12500 | | | | | | | | | | | | | 165.0 | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 160.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.066 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/OFTAS-10/NAS9-22137

VEHICLE = ADH134 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AX FLTVEL = 0. FPS
 I ALPHA = SB69 TEST DATE = NO PWL AREA = FULL SPHERE TAMB F = 53.93 PAMB NO = 89.11 RELHUM = 40.5 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = 11.1 NBER =

FNIN1 = LBS XNL RPM XNH RPM V8 = 1608.5 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2315.6 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1023 TAPE = X10231 TEST PT NO = 1023 NC = AE090 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1025 X1025F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.4 | 86.7 | 85.9 | 83.2 | 83.3 | 86.7 | 87.1 | 91.5 | 90.4 | 89.7 | 98.1 | 97.8 | 87.7 | 133.1 | |
| 63 | 91.5 | 90.3 | 92.8 | 88.6 | 90.5 | 95.1 | 92.7 | 94.6 | 94.8 | 93.6 | 101.3 | 101.5 | 93.4 | 137.2 | |
| 80 | 91.0 | 96.3 | 91.6 | 91.4 | 92.2 | 96.3 | 95.0 | 94.6 | 95.8 | 96.2 | 100.0 | 100.2 | 84.6 | 137.6 | |
| 100 | 90.5 | 98.0 | 93.5 | 93.0 | 94.6 | 97.3 | 97.1 | 99.0 | 97.3 | 99.6 | 101.5 | 104.9 | 88.6 | 140.2 | |
| 125 | 87.4 | 91.0 | 94.2 | 93.5 | 95.8 | 98.2 | 97.3 | 97.5 | 97.3 | 100.8 | 107.1 | 109.8 | 93.7 | 142.9 | |
| 160 | 86.2 | 87.7 | 91.0 | 89.3 | 90.6 | 94.5 | 100.4 | 96.8 | 96.5 | 102.8 | 107.9 | 110.9 | 99.3 | 143.5 | |
| 200 | 88.8 | 89.1 | 92.3 | 90.4 | 93.7 | 95.5 | 99.1 | 99.8 | 103.2 | 106.9 | 115.7 | 120.3 | 120.5 | 112.2 | 154.3 |
| 250 | 87.8 | 93.3 | 93.6 | 92.6 | 93.7 | 95.8 | 98.2 | 100.9 | 102.6 | 109.2 | 114.5 | 117.5 | 106.1 | 149.6 | |
| 315 | 88.8 | 91.6 | 92.4 | 91.4 | 95.0 | 97.9 | 99.5 | 101.2 | 103.9 | 111.7 | 116.6 | 118.5 | 108.9 | 151.2 | |
| 400 | 90.6 | 93.8 | 94.4 | 92.4 | 94.5 | 97.4 | 106.5 | 102.2 | 106.1 | 114.4 | 118.6 | 120.3 | 110.7 | 153.3 | |
| 500 | 91.3 | 94.1 | 95.1 | 93.7 | 95.5 | 99.1 | 99.8 | 103.2 | 106.9 | 115.7 | 120.3 | 120.5 | 112.2 | 154.3 | |
| 600 | 91.3 | 95.6 | 95.8 | 94.4 | 96.7 | 100.1 | 101.5 | 104.1 | 107.6 | 117.2 | 122.0 | 121.7 | 113.6 | 155.7 | |
| 800 | 96.1 | 96.4 | 97.6 | 95.4 | 97.3 | 100.9 | 101.8 | 104.9 | 109.1 | 116.7 | 122.3 | 122.0 | 115.9 | 156.0 | |
| 1000 | 100.3 | 104.3 | 101.8 | 98.9 | 100.4 | 102.8 | 103.2 | 106.6 | 110.1 | 115.9 | 122.5 | 121.4 | 115.9 | 156.0 | |
| 1250 | 98.4 | 105.0 | 105.0 | 103.4 | 103.9 | 104.5 | 104.1 | 107.3 | 110.7 | 115.3 | 122.4 | 121.9 | 115.8 | 156.1 | |
| 1600 | 99.6 | 103.0 | 102.4 | 100.8 | 102.8 | 105.1 | 105.5 | 108.3 | 111.7 | 115.2 | 123.6 | 121.5 | 114.2 | 156.6 | |
| 2000 | 101.3 | 103.3 | 102.8 | 100.6 | 101.0 | 103.6 | 104.8 | 108.1 | 111.5 | 115.8 | 123.3 | 118.9 | 112.9 | 155.9 | |
| 2500 | 100.7 | 103.9 | 104.3 | 101.6 | 102.9 | 105.1 | 104.5 | 108.2 | 111.5 | 115.8 | 122.0 | 116.8 | 112.8 | 155.0 | |
| 3150 | 99.1 | 102.2 | 102.9 | 101.2 | 102.5 | 105.6 | 105.7 | 108.4 | 112.3 | 115.1 | 120.4 | 115.5 | 110.4 | 153.9 | |
| 4000 | 96.6 | 100.4 | 101.8 | 100.2 | 102.6 | 105.1 | 105.5 | 108.3 | 110.7 | 113.4 | 118.9 | 114.2 | 109.0 | 152.7 | |
| 5000 | 94.7 | 100.1 | 101.5 | 99.6 | 101.9 | 104.4 | 105.3 | 108.1 | 110.3 | 113.5 | 117.3 | 112.5 | 107.5 | 151.9 | |
| 6300 | 94.4 | 99.5 | 101.1 | 99.6 | 102.2 | 104.9 | 104.9 | 107.9 | 109.4 | 111.6 | 116.3 | 112.1 | 106.3 | 151.2 | |
| 8000 | 93.6 | 98.5 | 100.3 | 99.0 | 101.1 | 104.1 | 105.1 | 106.7 | 108.2 | 109.9 | 114.5 | 109.4 | 104.8 | 150.1 | |
| 10000 | 92.8 | 98.4 | 100.7 | 99.7 | 101.1 | 103.8 | 104.6 | 106.3 | 107.8 | 108.8 | 113.3 | 109.4 | 104.7 | 149.9 | |
| 12500 | 92.7 | 97.7 | 100.0 | 99.1 | 101.2 | 103.9 | 103.5 | 104.9 | 106.1 | 107.5 | 111.7 | 107.4 | 103.2 | 149.4 | |
| 15000 | 90.9 | 97.4 | 99.1 | 99.0 | 100.3 | 103.0 | 102.6 | 103.8 | 105.0 | 104.7 | 109.7 | 105.6 | 100.3 | 149.2 | |
| 20000 | 89.1 | 94.0 | 96.6 | 97.1 | 98.3 | 101.3 | 100.4 | 101.3 | 102.3 | 102.5 | 106.6 | 103.0 | 97.2 | 148.4 | |
| 25000 | 85.7 | 90.9 | 93.2 | 94.3 | 95.6 | 100.0 | 98.9 | 97.9 | 99.5 | 97.7 | 100.7 | 98.4 | 93.6 | 147.4 | |
| 31500 | 82.4 | 87.3 | 89.4 | 91.3 | 91.9 | 96.0 | 95.2 | 94.8 | 95.6 | 94.8 | 97.6 | 94.9 | 89.6 | 147.0 | |
| 40000 | 78.7 | 83.9 | 85.6 | 87.0 | 88.1 | 92.3 | 91.1 | 90.9 | 92.2 | 92.1 | 95.3 | 91.9 | 85.3 | 147.6 | |
| 50000 | 73.4 | 78.0 | 80.3 | 81.5 | 82.7 | 87.6 | 85.7 | 85.2 | 87.2 | 87.1 | 90.5 | 85.8 | 80.0 | 146.8 | |
| 63000 | 67.7 | 72.2 | 74.9 | 75.7 | 76.8 | 82.3 | 79.6 | 80.2 | 82.6 | 81.7 | 85.5 | 80.9 | 74.7 | 146.9 | |
| 80000 | 61.9 | 65.2 | 68.2 | 68.9 | 70.6 | 76.4 | 73.4 | 74.5 | 76.9 | 77.3 | 80.1 | 75.6 | 68.4 | 148.1 | |

ORIGINAL PAGE IS OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 46.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DETS-10/NAS3-22137

VEHICLE = ADH195 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AN FLTVEL = 0. FPS
 IAPLHA = SB99 WIND AREA = FULL SPHERE TAMB F = 53.44 PAMS NO = 0019 RELNUM = 41.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = 1.0 NBER =

FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1681.0 FPS AE8 = 4.8 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2316.0 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1025 TAPE = X1025F TEST PT NO = 1025 NC = AE090 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1025 X10251

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|
| 50 | 66.4 | 70.7 | 72.5 | 72.3 | 76.3 | 79.3 | 80.8 | 82.0 | 84.0 | 90.8 | 94.1 | 93.9 | 80.9 | 169.2 |
| 63 | 68.1 | 72.9 | 74.5 | 73.2 | 75.7 | 78.7 | 87.7 | 83.0 | 86.2 | 93.5 | 96.1 | 95.5 | 82.6 | 170.3 |
| 80 | 68.8 | 73.1 | 75.2 | 74.5 | 76.7 | 80.5 | 81.0 | 84.0 | 87.0 | 94.7 | 97.8 | 95.8 | 84.0 | 171.2 |
| 100 | 69.2 | 74.5 | 75.9 | 75.1 | 77.9 | 81.4 | 82.6 | 84.9 | 87.6 | 96.1 | 99.4 | 96.9 | 85.3 | 172.7 |
| 125 | 73.3 | 75.2 | 77.6 | 75.1 | 78.4 | 82.1 | 82.9 | 85.6 | 89.1 | 95.6 | 99.6 | 97.0 | 87.4 | 173.0 |
| 160 | 77.3 | 83.0 | 81.6 | 79.4 | 81.4 | 83.9 | 84.2 | 87.1 | 89.9 | 94.6 | 99.6 | 96.2 | 86.9 | 173.0 |
| 200 | 76.2 | 83.4 | 84.6 | 83.7 | 84.7 | 85.4 | 84.9 | 87.6 | 90.3 | 93.8 | 99.2 | 96.2 | 86.4 | 173.1 |
| 250 | 76.1 | 81.2 | 81.8 | 80.9 | 83.4 | 85.9 | 85.8 | 88.4 | 91.0 | 93.4 | 100.1 | 95.5 | 84.1 | 173.6 |
| 315 | 77.3 | 81.2 | 81.8 | 80.5 | 81.3 | 84.1 | 85.2 | 88.0 | 90.6 | 93.6 | 99.4 | 92.3 | 82.0 | 172.9 |
| 400 | 76.2 | 80.9 | 83.0 | 81.1 | 82.9 | 85.2 | 84.5 | 87.9 | 90.2 | 93.2 | 97.5 | 89.6 | 80.9 | 172.0 |
| 500 | 74.1 | 79.1 | 81.2 | 80.4 | 82.2 | 85.4 | 85.4 | 87.4 | 90.6 | 92.1 | 95.4 | 87.6 | 77.5 | 170.9 |
| 630 | 71.0 | 77.0 | 79.7 | 79.1 | 82.0 | 84.6 | 84.8 | 87.2 | 88.6 | 90.0 | 93.4 | 85.5 | 75.0 | 169.7 |
| 800 | 68.6 | 76.2 | 79.0 | 78.1 | 80.9 | 83.6 | 84.3 | 86.6 | 87.9 | 89.6 | 91.2 | 83.0 | 72.3 | 168.8 |
| 1000 | 67.7 | 75.1 | 78.3 | 77.8 | 80.9 | 83.8 | 83.7 | 86.1 | 86.6 | 87.3 | 89.6 | 81.8 | 69.7 | 168.2 |
| 1250 | 66.2 | 73.6 | 77.0 | 76.8 | 79.5 | 82.7 | 83.5 | 84.5 | 85.0 | 85.0 | 87.2 | 78.2 | 66.6 | 167.0 |
| 1600 | 64.3 | 72.7 | 76.8 | 77.0 | 79.0 | 81.9 | 82.5 | 83.6 | 83.9 | 83.1 | 84.8 | 76.5 | 63.9 | 166.9 |
| 2000 | 62.6 | 70.8 | 75.2 | 75.6 | 78.3 | 81.3 | 80.6 | 81.3 | 80.6 | 81.7 | 72.3 | 58.8 | 58.8 | 166.4 |
| 2500 | 58.7 | 68.9 | 72.9 | 74.4 | 76.5 | 79.5 | 78.8 | 79.2 | 78.8 | 78.2 | 77.5 | 67.3 | 50.6 | 166.2 |
| 3150 | 53.0 | 62.4 | 68.0 | 70.3 | 72.5 | 75.9 | 74.6 | 74.5 | 73.6 | 71.0 | 70.5 | 59.1 | 38.5 | 165.4 |
| 4000 | 42.5 | 53.9 | 60.0 | 63.5 | 66.1 | 70.9 | 69.4 | 67.1 | 66.3 | 60.7 | 57.5 | 44.9 | 19.6 | 164.4 |
| 5000 | 28.6 | 41.9 | 49.1 | 54.2 | 56.5 | 61.2 | 59.9 | 57.7 | 55.3 | 49.4 | 43.8 | 26.7 | 164.0 | |
| 6300 | 6.7 | 23.8 | 32.9 | 38.7 | 42.3 | 47.2 | 45.2 | 42.6 | 39.4 | 32.0 | 23.3 | 164.8 | | |
| 8000 | 5.3 | 13.1 | 17.6 | 23.6 | 20.8 | 16.8 | 12.2 | 1.2 | | | | 163.8 | | |
| 10000 | | | | | | | | | | | | 163.9 | | |
| 12500 | | | | | | | | | | | | 165.1 | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| GASPL | 65.3 | 90.7 | 92.2 | 91.2 | 93.3 | 95.9 | 96.6 | 98.5 | 100.7 | 104.9 | 109.1 | 105.5 | 94.8 | 183.8 |
| PNL | 90.0 | 96.0 | 98.5 | 98.7 | 101.0 | 104.0 | 103.9 | 105.2 | 106.6 | 108.9 | 112.8 | 107.3 | 96.4 | |
| PNLT | 90.0 | 96.6 | 99.1 | 99.3 | 101.6 | 104.5 | 104.5 | 105.8 | 107.2 | 109.6 | 112.8 | 107.3 | 96.4 | |
| DBA | 79.2 | 87.8 | 87.4 | 89.8 | 92.6 | 92.7 | 94.6 | 95.9 | 97.4 | 101.1 | 94.6 | 84.3 | | |

MODEL AREA = 180.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.066 FREQ SHIFT = -8
 NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VEHICLE = ADH135 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AX FLTVEL = 0. FPS
 TAPLHA = SB59 IEGA = NO MPH PWL AREA = FULL SPHERE TAMB F = 53.44 PAMB NO = 80 RELHUM = 41.3 PCT
 WIND DIR = DEG WIND VEL = EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBER =

FN1N1 = LBS XNL = RPM = XNH = RPM = V8 = = 1681.0 FPS AE8 = = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM = XNHR = RPM = V18 = = 2316.0 FPS AE18 = = 23.4 SQ IN
 JNPT 13F-102 TAPE = 251 PT = 1 CORR SP = AE NC RF

IDENTIFICATION - MODEL 83F-ZER-1027 X1027C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.9 | 87.2 | 84.8 | 84.0 | 82.8 | 87.7 | 87.8 | 90.0 | 89.9 | 89.0 | 97.4 | 97.8 | 87.5 | 132.6 |
| 60 | 91.3 | 91.0 | 89.1 | 89.4 | 90.5 | 94.3 | 93.5 | 95.6 | 94.6 | 91.4 | 101.5 | 100.0 | 83.1 | 137.0 |
| 80 | 91.3 | 96.0 | 91.6 | 91.4 | 92.5 | 96.6 | 95.0 | 94.9 | 96.3 | 96.2 | 100.0 | 100.0 | 84.4 | 137.7 |
| 100 | 91.0 | 98.0 | 93.5 | 92.8 | 94.1 | 97.0 | 97.1 | 99.3 | 97.5 | 99.8 | 101.5 | 106.1 | 88.6 | 140.3 |
| 125 | 86.9 | 91.7 | 94.4 | 94.0 | 95.8 | 98.2 | 97.6 | 97.5 | 97.4 | 100.5 | 107.6 | 110.1 | 93.7 | 143.1 |
| 160 | 86.9 | 87.7 | 90.5 | 89.0 | 90.6 | 94.2 | 100.4 | 96.5 | 96.7 | 103.1 | 108.7 | 111.4 | 99.3 | 144.0 |
| 200 | 88.5 | 89.3 | 91.8 | 89.9 | 93.2 | 96.6 | 97.7 | 98.9 | 101.8 | 103.1 | 109.3 | 114.5 | 102.9 | 146.0 |
| 250 | 87.3 | 93.3 | 93.8 | 92.4 | 93.7 | 96.1 | 98.0 | 100.6 | 102.6 | 109.2 | 114.8 | 117.7 | 105.6 | 149.8 |
| 315 | 89.3 | 92.1 | 91.6 | 91.7 | 94.5 | 98.4 | 99.8 | 100.9 | 103.4 | 110.7 | 116.6 | 118.5 | 109.2 | 151.1 |
| 400 | 91.3 | 93.6 | 94.4 | 92.2 | 94.3 | 97.1 | 105.8 | 102.2 | 105.6 | 113.9 | 119.1 | 120.0 | 109.9 | 153.2 |
| 500 | 91.3 | 94.6 | 95.1 | 93.4 | 95.8 | 98.9 | 99.8 | 102.9 | 105.9 | 115.0 | 120.6 | 120.5 | 111.7 | 154.2 |
| 630 | 92.5 | 95.8 | 96.1 | 94.6 | 97.0 | 100.3 | 101.2 | 104.4 | 107.8 | 116.4 | 122.3 | 121.2 | 113.4 | 155.6 |
| 800 | 96.1 | 96.6 | 97.4 | 95.7 | 97.9 | 101.1 | 102.0 | 105.2 | 108.9 | 116.5 | 122.3 | 122.0 | 115.2 | 156.0 |
| 1000 | 100.3 | 104.3 | 102.1 | 99.4 | 100.4 | 102.8 | 102.9 | 105.6 | 109.8 | 115.4 | 123.0 | 121.9 | 114.9 | 156.2 |
| 1250 | 100.7 | 105.5 | 105.2 | 103.6 | 103.9 | 105.2 | 104.1 | 107.3 | 110.7 | 114.8 | 122.4 | 122.1 | 114.8 | 156.1 |
| 1600 | 103.6 | 106.2 | 104.9 | 102.3 | 102.8 | 105.2 | 107.8 | 111.7 | 114.5 | 123.1 | 121.0 | 113.2 | 113.2 | 156.2 |
| 2000 | 106.0 | 105.6 | 106.3 | 103.6 | 103.0 | 104.6 | 105.1 | 108.9 | 111.3 | 115.0 | 122.3 | 118.6 | 112.1 | 155.4 |
| 2500 | 104.4 | 105.3 | 106.6 | 105.1 | 106.4 | 106.6 | 105.2 | 108.6 | 111.0 | 115.5 | 120.8 | 116.1 | 111.6 | 154.4 |
| 3150 | 100.8 | 103.7 | 104.9 | 103.2 | 105.0 | 108.1 | 107.0 | 108.7 | 111.8 | 114.6 | 119.1 | 115.3 | 109.4 | 153.5 |
| 4000 | 97.6 | 101.9 | 103.6 | 101.7 | 104.1 | 107.1 | 107.2 | 109.1 | 111.0 | 112.7 | 117.6 | 113.9 | 107.8 | 152.3 |
| 5000 | 96.4 | 101.9 | 103.0 | 100.9 | 102.7 | 105.9 | 106.3 | 108.8 | 110.1 | 113.3 | 116.8 | 112.0 | 106.0 | 151.8 |
| 6300 | 95.4 | 101.8 | 100.6 | 103.2 | 105.9 | 106.9 | 109.1 | 109.9 | 111.4 | 115.3 | 111.1 | 104.8 | 101.1 | 151.1 |
| 8000 | 94.3 | 99.2 | 101.0 | 100.5 | 101.8 | 105.6 | 105.6 | 107.7 | 108.5 | 109.6 | 113.3 | 110.0 | 103.0 | 150.0 |
| 10000 | 94.1 | 99.4 | 102.0 | 100.7 | 102.3 | 105.1 | 105.1 | 107.3 | 108.8 | 109.1 | 112.1 | 109.7 | 102.2 | 150.1 |
| 12500 | 93.2 | 98.2 | 100.5 | 100.4 | 101.9 | 104.9 | 104.2 | 105.2 | 106.4 | 107.2 | 110.0 | 108.2 | 100.4 | 149.3 |
| 16000 | 91.1 | 97.2 | 99.1 | 99.8 | 100.8 | 103.8 | 102.9 | 104.6 | 105.2 | 104.5 | 108.5 | 105.8 | 98.5 | 149.2 |
| 20000 | 89.2 | 94.0 | 96.4 | 97.1 | 98.6 | 102.1 | 101.4 | 101.3 | 102.5 | 101.8 | 105.2 | 102.5 | 95.7 | 148.3 |
| 25000 | 86.2 | 91.3 | 93.3 | 94.6 | 95.7 | 100.3 | 99.4 | 98.0 | 99.8 | 97.3 | 100.0 | 98.7 | 92.1 | 147.5 |
| 31500 | 82.7 | 87.7 | 89.4 | 91.7 | 92.0 | 96.6 | 95.6 | 95.1 | 96.4 | 94.7 | 97.4 | 94.4 | 87.4 | 147.2 |
| 40000 | 79.3 | 84.0 | 86.2 | 87.6 | 88.2 | 92.9 | 91.7 | 91.2 | 92.5 | 91.7 | 94.8 | 91.2 | 83.6 | 147.7 |
| 50000 | 73.4 | 78.1 | 80.2 | 82.1 | 83.1 | 87.7 | 86.0 | 85.3 | 87.3 | 86.7 | 89.8 | 85.9 | 77.8 | 146.8 |
| 63000 | 67.8 | 72.3 | 75.3 | 75.8 | 77.6 | 82.4 | 80.0 | 80.8 | 83.2 | 81.8 | 85.3 | 80.0 | 72.1 | 147.1 |
| 80000 | 62.0 | 66.3 | 68.9 | 68.7 | 71.0 | 77.0 | 74.2 | 74.6 | 77.6 | 76.2 | 78.9 | 74.4 | 65.0 | 148.0 |

ASPL 112.2 115.1 115.4 113.8 115.1 117.7 117.8 119.9 122.2 126.5 132.5 131.4 123.7 166.9

PWL 125.2 128.0 128.3 127.2 129.7 130.8 131.7 133.3 135.2 138.7 144.1 141.7 134.8

PNT 125.2 129.0 128.3 127.2 129.7 130.8 131.7 133.3 135.2 138.7 144.1 141.7 134.8

DBA 112.7 115.3 115.4 113.5 114.7 117.1 116.9 119.5 122.0 125.0 132.3 130.4 123.3

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS9-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|--------------------|
| VEHICL = ADH136 | TEST DATE = 03-17-83 | LOCAT = C41 ANECH CH | CONFIG = 10 | MODEL = AX | FLTVEL = 0. FPS |
| IAPLHA = SB59 | TEST WIND VELO = NO | PWL AREA = FULL SPHERE | TAMB F = 54.20 | PAMB = 0.17 | RELHUM = 40.4 PCT. |
| WIND DIR = | DEG WIND VELO = | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE = | NBFR = |
| FNINI = | LBS XNL | RPM XNH | V8 = 1720.4 FPS | AE8 = | 4.9 SQ IN |
| FNRAMB = | LBS XNLR | RPM XNHR | V18 = 2313.0 FPS | AE18 = | 23.4 SQ IN |
| RUNPT = 83F-ZER-1027 | TAPE = X1027C | TEST PT NO = 1027 | NC = AE090 | CORR FAN SPEED = | RPM |

IDENTIFICATION - 83F-ZER-1027 X1027F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.9 | 87.2 | 84.0 | 84.0 | 82.8 | 87.7 | 87.8 | 90.0 | 89.9 | 89.0 | 97.4 | 97.8 | 87.5 | 132.6 |
| 63 | 91.3 | 91.0 | 83.1 | 89.4 | 90.5 | 94.3 | 93.5 | 95.6 | 94.6 | 91.4 | 101.5 | 100.0 | 93.1 | 137.0 |
| 80 | 91.3 | 91.0 | 83.1 | 89.4 | 90.5 | 94.3 | 93.5 | 95.6 | 94.6 | 91.4 | 101.5 | 100.0 | 93.1 | 137.0 |
| 100 | 91.0 | 90.0 | 83.0 | 89.4 | 90.5 | 94.3 | 93.5 | 95.6 | 94.6 | 91.4 | 101.5 | 100.0 | 93.1 | 137.0 |
| 125 | 86.9 | 87.7 | 84.0 | 84.0 | 82.8 | 87.7 | 87.8 | 90.0 | 89.9 | 89.0 | 97.4 | 97.8 | 87.5 | 140.3 |
| 160 | 86.9 | 87.7 | 84.0 | 84.0 | 82.8 | 87.7 | 87.8 | 90.0 | 89.9 | 89.0 | 97.4 | 97.8 | 87.5 | 143.1 |
| 200 | 88.5 | 89.3 | 91.8 | 89.9 | 93.2 | 96.6 | 97.7 | 98.9 | 101.8 | 103.1 | 109.3 | 114.5 | 102.9 | 144.0 |
| 250 | 87.3 | 93.3 | 93.8 | 92.4 | 93.7 | 96.1 | 98.0 | 100.6 | 102.6 | 108.2 | 114.6 | 117.7 | 105.6 | 149.8 |
| 315 | 89.3 | 92.1 | 91.6 | 91.7 | 94.5 | 98.4 | 98.8 | 100.9 | 103.4 | 110.7 | 116.6 | 116.5 | 108.2 | 151.1 |
| 400 | 91.3 | 93.6 | 94.4 | 92.2 | 94.3 | 97.1 | 105.8 | 102.2 | 105.6 | 113.9 | 119.1 | 120.0 | 109.9 | 153.2 |
| 500 | 91.3 | 94.6 | 95.1 | 93.4 | 95.8 | 98.9 | 99.8 | 102.9 | 105.9 | 115.0 | 120.6 | 120.5 | 111.7 | 154.2 |
| 600 | 92.5 | 95.8 | 96.1 | 94.6 | 97.0 | 100.3 | 101.2 | 104.4 | 107.8 | 116.4 | 122.3 | 121.2 | 113.4 | 155.8 |
| 800 | 96.1 | 96.6 | 97.4 | 95.7 | 97.5 | 101.1 | 102.0 | 105.2 | 108.9 | 116.5 | 122.3 | 122.0 | 115.2 | 156.0 |
| 1000 | 100.3 | 104.3 | 102.1 | 99.4 | 100.4 | 102.8 | 102.9 | 106.6 | 109.8 | 115.4 | 123.0 | 121.9 | 114.9 | 156.2 |
| 1250 | 100.7 | 105.5 | 105.2 | 103.6 | 103.9 | 105.2 | 104.1 | 107.3 | 110.7 | 114.8 | 122.4 | 122.1 | 114.8 | 156.1 |
| 1600 | 103.6 | 106.2 | 104.9 | 102.3 | 102.8 | 105.9 | 105.2 | 107.8 | 111.7 | 114.5 | 123.1 | 121.0 | 113.2 | 156.2 |
| 2000 | 106.0 | 106.6 | 106.3 | 103.6 | 103.6 | 104.6 | 105.1 | 108.9 | 111.3 | 115.0 | 122.3 | 118.6 | 112.1 | 155.4 |
| 2500 | 104.4 | 106.3 | 106.5 | 105.1 | 106.4 | 106.6 | 105.2 | 108.6 | 111.0 | 115.5 | 120.8 | 116.1 | 111.6 | 154.4 |
| 3150 | 100.8 | 103.7 | 104.9 | 103.2 | 104.0 | 108.1 | 107.0 | 108.7 | 111.8 | 114.6 | 119.1 | 115.3 | 109.4 | 153.5 |
| 4000 | 97.6 | 101.8 | 103.6 | 101.7 | 104.1 | 107.1 | 107.2 | 109.1 | 111.0 | 112.7 | 117.6 | 113.9 | 107.8 | 152.3 |
| 5000 | 96.4 | 101.9 | 103.0 | 100.9 | 102.7 | 105.9 | 106.3 | 108.8 | 110.1 | 113.3 | 116.8 | 112.0 | 106.0 | 151.8 |
| 6300 | 95.4 | 101.0 | 101.8 | 100.8 | 103.2 | 105.9 | 105.9 | 109.1 | 109.9 | 111.4 | 115.3 | 111.1 | 104.8 | 151.1 |
| 8000 | 94.3 | 99.2 | 101.0 | 100.5 | 101.8 | 105.6 | 105.6 | 107.7 | 108.5 | 109.6 | 113.3 | 110.0 | 103.0 | 150.0 |
| 10000 | 94.1 | 99.4 | 102.0 | 100.7 | 102.3 | 105.1 | 105.1 | 107.3 | 108.8 | 109.1 | 112.1 | 109.7 | 102.2 | 150.1 |
| 12500 | 93.2 | 98.2 | 100.5 | 100.4 | 101.9 | 104.9 | 104.2 | 105.2 | 106.4 | 107.2 | 110.0 | 108.2 | 100.4 | 149.3 |
| 16000 | 91.1 | 97.2 | 99.1 | 99.8 | 100.8 | 103.8 | 102.9 | 104.6 | 105.2 | 104.5 | 108.5 | 105.8 | 98.5 | 148.2 |
| 20000 | 89.2 | 94.0 | 96.4 | 97.1 | 98.6 | 102.1 | 101.4 | 101.3 | 102.5 | 101.8 | 105.2 | 102.5 | 95.7 | 148.3 |
| 25000 | 86.2 | 91.3 | 93.3 | 94.6 | 95.7 | 100.3 | 99.4 | 98.0 | 99.6 | 97.3 | 100.0 | 98.7 | 92.1 | 147.5 |
| 31500 | 82.7 | 87.7 | 89.4 | 91.7 | 92.0 | 96.6 | 95.6 | 95.1 | 96.4 | 94.7 | 97.4 | 94.4 | 87.4 | 147.2 |
| 40000 | 79.3 | 84.0 | 85.2 | 87.6 | 88.2 | 92.9 | 91.7 | 91.2 | 92.5 | 91.7 | 94.8 | 91.2 | 83.6 | 147.7 |
| 50000 | 73.4 | 78.1 | 80.2 | 82.1 | 83.1 | 87.7 | 86.0 | 85.3 | 87.3 | 86.7 | 89.8 | 85.9 | 77.8 | 146.8 |
| 63000 | 67.6 | 72.3 | 75.3 | 75.8 | 77.6 | 82.4 | 80.0 | 80.8 | 83.2 | 81.8 | 85.3 | 80.0 | 72.1 | 147.1 |
| 80000 | 62.0 | 66.3 | 68.9 | 68.7 | 71.0 | 77.0 | 74.2 | 74.6 | 77.6 | 76.2 | 78.9 | 74.4 | 65.0 | 148.0 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFIAS-10/NAS3-22137

VEHICL = ADH188 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = AN FLTVEL = 0. FPS
 IAPLHA = SB500 LEGA = NO PWL AREA = FULL SPHERE TAMB F = 54.20 PAMB HO = 0.0 RELHUM = 40.4 PCT
 WIND_DIR = DEG WIND_VEL = MPH EXT_DIST = 40.0 FT EXT_CONFIG = ARC MIKE_HTR = 0.0 NBER = 0

FNINI = LBS XNL = RPM XNH = RPM V8 = 1720.4 FPS AE6 = 4.6 SQ IN
 FNFRMB = LBS XNLR = RPM XNHR = RPM V18 = 2313.0 FPS AE18 = 23.4 SQ IN

IPT IF-Z-027 PE = 1.7 F T FT 10 AEO IRR 1 SPEL RPY

IDENTIFICATION - 83F-ZER-1027 X10271

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| 50 | 66.9 | 71.2 | 71.6 | 72.5 | 75.6 | 79.6 | 81.0 | 81.6 | 83.5 | 89.8 | 94.1 | 93.9 | 81.2 | 168.1 |
| 63 | 68.8 | 72.6 | 74.5 | 73.0 | 75.5 | 78.5 | 87.0 | 83.0 | 85.7 | 93.0 | 96.6 | 95.3 | 81.9 | 170.2 |
| 80 | 68.6 | 73.6 | 75.3 | 74.2 | 77.0 | 80.2 | 81.0 | 83.7 | 86.0 | 94.0 | 98.1 | 95.6 | 83.5 | 171.2 |
| 100 | 69.9 | 74.6 | 76.3 | 76.4 | 78.1 | 81.6 | 82.4 | 85.1 | 87.9 | 95.4 | 99.7 | 96.4 | 85.1 | 172.5 |
| 125 | 73.3 | 78.5 | 77.3 | 76.4 | 78.6 | 82.4 | 83.1 | 85.9 | 88.8 | 95.3 | 99.6 | 97.0 | 86.6 | 172.9 |
| 160 | 77.3 | 83.0 | 81.9 | 79.9 | 81.4 | 83.9 | 83.9 | 87.1 | 89.6 | 94.1 | 100.1 | 96.7 | 85.9 | 173.2 |
| 200 | 77.5 | 83.9 | 84.8 | 84.0 | 84.7 | 86.2 | 84.9 | 87.6 | 90.3 | 93.3 | 99.2 | 96.5 | 85.4 | 173.1 |
| 250 | 80.1 | 84.4 | 84.3 | 82.4 | 83.4 | 86.6 | 85.6 | 87.9 | 91.0 | 92.7 | 99.6 | 95.0 | 83.1 | 173.2 |
| 315 | 82.1 | 84.4 | 85.3 | 83.5 | 83.3 | 85.1 | 85.4 | 88.8 | 90.3 | 92.9 | 98.4 | 92.0 | 81.3 | 172.3 |
| 400 | 80.0 | 83.7 | 85.3 | 84.6 | 86.4 | 86.7 | 85.2 | 88.1 | 89.7 | 92.9 | 96.3 | 88.8 | 79.7 | 171.4 |
| 500 | 75.6 | 80.6 | 83.3 | 82.4 | 84.7 | 87.9 | 86.7 | 87.9 | 90.1 | 91.6 | 94.1 | 87.3 | 76.5 | 170.5 |
| 630 | 72.0 | 78.5 | 81.5 | 80.6 | 83.5 | 86.6 | 86.6 | 87.9 | 88.9 | 89.2 | 92.1 | 85.2 | 73.7 | 169.3 |
| 800 | 70.3 | 77.9 | 80.5 | 79.4 | 81.7 | 85.1 | 85.3 | 87.3 | 87.6 | 89.3 | 90.7 | 82.5 | 70.8 | 168.7 |
| 1000 | 68.7 | 76.6 | 79.0 | 78.6 | 81.9 | 84.6 | 84.7 | 87.3 | 87.1 | 87.0 | 88.6 | 80.8 | 68.2 | 168.0 |
| 1250 | 67.0 | 74.3 | 77.8 | 78.3 | 80.3 | 84.3 | 84.0 | 85.5 | 85.3 | 84.8 | 85.9 | 78.7 | 64.3 | 167.0 |
| 1600 | 65.6 | 73.7 | 78.0 | 78.0 | 80.2 | 83.2 | 83.0 | 84.6 | 84.3 | 83.6 | 83.6 | 76.8 | 61.4 | 167.1 |
| 2000 | 63.1 | 71.3 | 75.7 | 76.9 | 79.1 | 82.3 | 81.4 | 81.7 | 81.6 | 80.4 | 80.0 | 73.1 | 56.1 | 166.3 |
| 2500 | 58.9 | 68.7 | 73.0 | 75.2 | 77.1 | 80.3 | 79.1 | 79.9 | 79.1 | 76.0 | 76.2 | 67.6 | 48.9 | 166.2 |
| 3150 | 53.0 | 62.5 | 67.8 | 70.3 | 72.8 | 76.6 | 75.7 | 74.6 | 73.9 | 70.3 | 69.0 | 58.6 | 37.1 | 165.2 |
| 4000 | 49.0 | 54.2 | 60.1 | 63.8 | 66.2 | 71.2 | 69.9 | 67.2 | 66.6 | 60.2 | 56.8 | 45.2 | 18.2 | 164.5 |
| 5000 | 28.9 | 42.2 | 49.2 | 54.6 | 56.6 | 61.8 | 60.2 | 58.0 | 56.2 | 49.2 | 43.6 | 26.3 | | 164.2 |
| 6300 | 7.3 | 23.9 | 33.5 | 39.3 | 42.4 | 47.8 | 45.8 | 42.9 | 39.8 | 31.6 | 22.8 | | | 164.7 |
| 8000 | | 5.1 | 13.7 | 18.2 | 23.9 | 21.1 | 16.9 | 12.3 | 0.8 | | | | | 163.7 |
| 10000 | | | | | | | | | | | | | | 164.1 |
| 12500 | | | | | | | | | | | | | | 165.0 |
| 15000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

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MODEL AREA = 180.9 SQ CM (28.0 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.086 FREQ SHIFT = -9

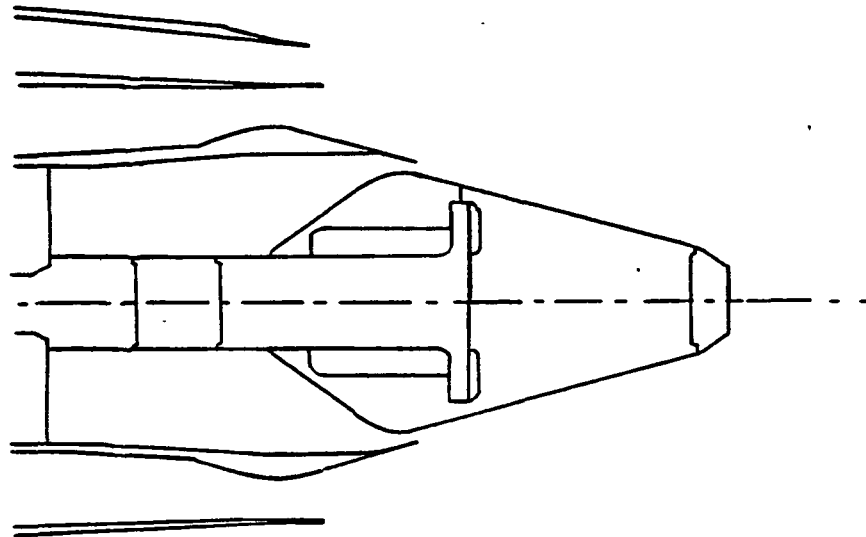
NASA DUAL FLOW THERMAL SHIELD/DEFAS-10/NAS3-22137

VEHICLE = ADH188 TEST DATE = 03-17-63 LOCAT = C41 ANECH CH CONFIG = 10 MODEL = PAMB HT = 100.0 PLTVEL = 0. FPS
 IAPLHA = S899 IPRM = NO PWL AREA = FULL SPHERE TAMB F = 54.20 RELHUM = 40.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONE LG = SL MIKE HT = 100.0

FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1720.4 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V16 = 2313.0 FPS AE16 = 23.4 SQ IN

RUNPT = 63F-ZER-1027 TAPE = X10271 TEST PT NO = 1027 NC = AE090 CORR FAN SPEED = RPM

4.2.2 Acoustic Data of Unsuppressed Coannular Plug Nozzle with
180° Thermal Acoustic Shield (TAS-11 and TAS-12).



TAS-11 (Shield to Outer Stream Velocity Ratio at
Takeoff is 0.64).

IDENTIFICATION - MODEL 83F-ZER-1103 X1103C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.6 | 84.9 | 84.7 | 81.7 | 81.6 | 84.4 | 84.6 | 88.7 | 85.4 | 84.2 | 89.9 | 92.3 | 86.5 | 128.3 |
| 63 | 91.5 | 90.3 | 94.3 | 89.4 | 88.0 | 91.3 | 92.2 | 96.6 | 91.6 | 89.1 | 92.5 | 97.5 | 96.6 | 135.0 |
| 80 | 86.5 | 93.6 | 89.8 | 88.1 | 88.5 | 92.3 | 91.7 | 91.6 | 92.6 | 92.9 | 97.3 | 96.0 | 80.1 | 134.3 |
| 100 | 85.2 | 92.5 | 88.8 | 88.0 | 90.1 | 94.0 | 92.6 | 94.5 | 94.0 | 97.3 | 98.0 | 101.1 | 83.6 | 136.4 |
| 125 | 83.6 | 87.7 | 90.9 | 89.7 | 91.3 | 94.2 | 92.8 | 92.7 | 93.2 | 96.8 | 103.1 | 105.6 | 89.2 | 138.7 |
| 160 | 82.4 | 83.2 | 88.5 | 84.8 | 86.9 | 90.7 | 97.4 | 91.5 | 93.2 | 97.6 | 102.9 | 105.9 | 94.0 | 138.8 |
| 200 | 84.8 | 85.6 | 88.1 | 85.9 | 88.7 | 92.1 | 94.5 | 94.6 | 99.3 | 99.4 | 105.0 | 109.7 | 97.6 | 141.6 |
| 250 | 83.8 | 88.8 | 89.1 | 86.9 | 89.5 | 92.6 | 94.2 | 95.6 | 100.3 | 104.1 | 109.3 | 111.7 | 100.6 | 144.3 |
| 315 | 84.6 | 88.4 | 87.9 | 87.7 | 90.5 | 93.9 | 96.5 | 95.7 | 100.9 | 105.0 | 109.8 | 112.5 | 103.7 | 145.1 |
| 400 | 85.6 | 88.8 | 89.9 | 87.7 | 90.7 | 94.1 | 105.7 | 97.2 | 101.9 | 107.9 | 111.6 | 113.0 | 105.2 | 146.9 |
| 500 | 85.8 | 89.6 | 90.1 | 88.7 | 91.3 | 94.6 | 95.0 | 97.4 | 101.4 | 109.0 | 111.3 | 112.8 | 105.7 | 146.5 |
| 630 | 86.0 | 89.8 | 90.6 | 89.6 | 91.7 | 95.6 | 96.7 | 98.6 | 102.3 | 108.9 | 112.0 | 111.7 | 106.1 | 146.5 |
| 800 | 88.3 | 89.9 | 91.4 | 89.9 | 92.3 | 95.9 | 96.3 | 99.7 | 103.4 | 109.2 | 110.3 | 110.5 | 107.2 | 145.9 |
| 1000 | 92.8 | 95.5 | 93.8 | 91.6 | 93.7 | 96.8 | 96.7 | 100.6 | 104.1 | 108.4 | 109.3 | 108.9 | 106.4 | 145.3 |
| 1250 | 92.8 | 93.5 | 93.0 | 92.6 | 94.4 | 98.0 | 97.4 | 100.0 | 104.2 | 107.6 | 108.4 | 108.6 | 105.8 | 144.8 |
| 1600 | 90.6 | 92.0 | 92.9 | 91.8 | 94.6 | 98.2 | 98.3 | 100.6 | 104.9 | 107.5 | 108.4 | 107.8 | 106.5 | 144.8 |
| 2000 | 91.3 | 94.1 | 93.6 | 91.4 | 94.0 | 96.9 | 97.9 | 101.2 | 104.6 | 107.6 | 107.8 | 106.9 | 105.4 | 144.5 |
| 2500 | 89.2 | 92.3 | 92.4 | 91.6 | 94.2 | 97.6 | 97.5 | 100.9 | 103.8 | 106.8 | 106.1 | 103.9 | 102.9 | 143.3 |
| 3150 | 89.2 | 91.5 | 91.8 | 90.5 | 93.1 | 96.9 | 97.6 | 100.0 | 104.1 | 105.5 | 104.2 | 100.9 | 98.0 | 142.2 |
| 4000 | 87.4 | 90.3 | 90.9 | 89.6 | 93.2 | 96.2 | 96.6 | 99.9 | 103.1 | 103.0 | 102.0 | 97.3 | 94.9 | 140.7 |
| 5000 | 86.5 | 89.7 | 90.1 | 88.5 | 92.0 | 96.0 | 96.1 | 98.9 | 101.7 | 102.6 | 99.4 | 93.4 | 92.4 | 139.7 |
| 6300 | 84.7 | 89.1 | 89.4 | 88.2 | 92.3 | 95.5 | 95.8 | 99.0 | 100.2 | 100.0 | 96.7 | 91.1 | 90.4 | 138.5 |
| 8000 | 83.5 | 87.4 | 89.0 | 87.6 | 90.3 | 94.1 | 95.0 | 96.6 | 98.9 | 97.6 | 94.0 | 89.1 | 89.0 | 137.2 |
| 10000 | 82.8 | 87.6 | 88.9 | 88.4 | 90.5 | 93.8 | 94.5 | 95.5 | 97.5 | 96.4 | 92.3 | 89.4 | 89.0 | 136.9 |
| 12500 | 82.3 | 86.7 | 88.0 | 87.7 | 89.8 | 93.0 | 92.8 | 93.8 | 95.4 | 93.4 | 90.3 | 88.0 | 88.0 | 136.0 |
| 16000 | 80.0 | 85.8 | 86.5 | 87.5 | 87.9 | 91.1 | 91.2 | 92.5 | 93.4 | 90.2 | 89.1 | 86.7 | 85.9 | 135.6 |
| 20000 | 78.0 | 82.8 | 84.4 | 84.5 | 85.6 | 88.6 | 88.9 | 89.0 | 89.8 | 87.5 | 86.2 | 85.3 | 84.1 | 134.5 |
| 25000 | 74.8 | 80.4 | 81.4 | 81.9 | 82.9 | 87.0 | 86.6 | 85.6 | 86.2 | 83.3 | 82.8 | 83.3 | 82.2 | 134.1 |
| 31500 | 71.5 | 76.0 | 77.3 | 79.2 | 79.4 | 83.6 | 82.0 | 82.2 | 82.5 | 80.1 | 79.8 | 78.7 | 77.5 | 133.6 |
| 40000 | 67.8 | 72.1 | 73.3 | 74.7 | 75.5 | 79.5 | 78.0 | 78.1 | 78.1 | 76.3 | 76.1 | 75.1 | 73.3 | 133.5 |
| 50000 | 61.4 | 65.8 | 67.7 | 68.7 | 69.3 | 74.0 | 71.8 | 71.7 | 72.3 | 70.2 | 69.0 | 67.0 | 62.0 | 131.9 |
| 63000 | 55.5 | 59.8 | 61.8 | 62.4 | 63.2 | 68.8 | 65.3 | 66.2 | 66.2 | 63.3 | 64.7 | 62.6 | 60.3 | 131.3 |
| 80000 | 49.0 | 52.9 | 54.6 | 55.1 | 56.5 | 62.7 | 59.0 | 59.4 | 59.8 | 56.6 | 57.6 | 55.1 | 50.8 | 131.6 |

ORIGINAL PAGE IS OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICL = ADH149 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH' CONFIG = 11 MODEL = SL' FLTVEL = O. FPS
 TAPLHA = SB59 IEGA = ND PWL AREA = FULL SPHERE TAMB F = 28.63 PAMB HG = 29.13 RELHUM = 65.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT. EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL RPM XNH RPM V8 = 1091.1 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 1802.1 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1103 TAPE = X1103C TEST PT NO 1103 NC = AF091 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1103 X1103F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.6 | 84.9 | 84.7 | 81.7 | 81.6 | 84.4 | 84.6 | 88.7 | 85.4 | 84.2 | 89.9 | 92.3 | 86.5 | 128.3 |
| 63 | 91.5 | 90.3 | 94.3 | 89.4 | 88.0 | 91.3 | 92.2 | 96.6 | 91.6 | 89.1 | 92.5 | 97.5 | 96.6 | 135.0 |
| 80 | 86.5 | 93.6 | 89.8 | 88.1 | 88.5 | 92.3 | 91.7 | 91.6 | 92.6 | 92.9 | 97.3 | 96.0 | 80.1 | 134.3 |
| 100 | 85.2 | 92.5 | 88.8 | 88.8 | 90.1 | 94.0 | 92.6 | 94.5 | 94.0 | 97.3 | 98.0 | 101.1 | 83.6 | 136.4 |
| 125 | 83.6 | 87.7 | 90.9 | 89.7 | 91.3 | 94.2 | 92.8 | 92.7 | 93.2 | 96.8 | 103.1 | 105.6 | 89.2 | 138.7 |
| 160 | 82.4 | 83.2 | 88.5 | 84.8 | 86.9 | 90.7 | 97.4 | 91.5 | 93.2 | 97.6 | 102.9 | 105.9 | 94.0 | 138.8 |
| 200 | 84.8 | 85.6 | 88.1 | 85.9 | 88.7 | 92.1 | 94.5 | 94.6 | 99.3 | 99.4 | 105.0 | 109.7 | 97.6 | 141.6 |
| 250 | 83.8 | 88.8 | 89.1 | 86.9 | 89.5 | 92.6 | 94.2 | 95.6 | 100.3 | 104.1 | 109.3 | 111.7 | 100.6 | 144.3 |
| 315 | 84.6 | 88.4 | 87.9 | 87.7 | 90.5 | 93.9 | 96.5 | 95.7 | 100.9 | 105.0 | 109.8 | 112.5 | 103.7 | 145.1 |
| 400 | 85.6 | 88.8 | 89.9 | 87.7 | 90.7 | 94.1 | 105.7 | 97.2 | 101.9 | 107.9 | 111.6 | 113.0 | 105.2 | 146.9 |
| 500 | 85.8 | 89.6 | 90.1 | 88.7 | 91.3 | 94.6 | 95.0 | 97.4 | 101.4 | 109.0 | 111.3 | 112.8 | 105.7 | 146.5 |
| 630 | 86.0 | 89.8 | 90.6 | 89.6 | 91.7 | 95.6 | 96.7 | 98.6 | 102.3 | 108.9 | 112.0 | 111.7 | 106.1 | 146.5 |
| 800 | 83.3 | 89.9 | 91.4 | 89.9 | 92.3 | 95.9 | 96.3 | 99.7 | 103.4 | 109.2 | 110.3 | 110.5 | 107.2 | 145.9 |
| 1000 | 82.8 | 95.5 | 93.8 | 91.6 | 93.7 | 96.8 | 96.7 | 100.6 | 104.1 | 108.4 | 109.3 | 108.9 | 106.4 | 145.3 |
| 1250 | 89.2 | 93.5 | 93.0 | 92.6 | 94.4 | 98.0 | 97.4 | 100.0 | 104.2 | 107.6 | 108.4 | 108.6 | 105.8 | 144.8 |
| 1500 | 90.6 | 92.0 | 92.9 | 91.8 | 94.6 | 98.2 | 98.3 | 100.6 | 104.9 | 107.5 | 108.4 | 107.8 | 106.5 | 144.8 |
| 2000 | 91.3 | 94.1 | 93.6 | 91.4 | 94.0 | 96.9 | 97.9 | 101.2 | 104.6 | 107.6 | 107.8 | 106.9 | 105.4 | 144.5 |
| 2500 | 89.2 | 92.3 | 92.4 | 91.6 | 94.2 | 97.6 | 97.6 | 100.9 | 103.8 | 106.8 | 106.1 | 103.9 | 102.9 | 143.3 |
| 3150 | 89.2 | 91.5 | 91.8 | 90.5 | 93.1 | 96.9 | 97.6 | 100.0 | 104.1 | 105.5 | 104.2 | 100.9 | 98.0 | 142.2 |
| 4000 | 87.4 | 90.3 | 90.9 | 89.6 | 93.2 | 96.2 | 96.6 | 99.9 | 103.1 | 103.0 | 102.0 | 97.3 | 94.9 | 140.7 |
| 5000 | 86.5 | 89.7 | 90.1 | 88.5 | 92.3 | 96.0 | 96.1 | 98.9 | 101.7 | 102.6 | 99.4 | 93.4 | 92.4 | 139.7 |
| 6300 | 84.7 | 89.1 | 89.4 | 88.2 | 92.0 | 95.5 | 95.8 | 99.0 | 100.2 | 100.0 | 96.7 | 91.1 | 90.4 | 138.5 |
| 8000 | 83.5 | 87.4 | 89.0 | 87.6 | 90.3 | 94.1 | 95.0 | 96.6 | 98.9 | 97.6 | 94.0 | 89.1 | 89.0 | 137.2 |
| 10000 | 82.8 | 87.6 | 88.9 | 88.4 | 90.5 | 93.8 | 94.5 | 95.5 | 96.4 | 92.3 | 89.4 | 89.0 | 89.0 | 136.9 |
| 12500 | 82.3 | 86.7 | 88.0 | 87.7 | 89.8 | 93.0 | 92.8 | 93.8 | 95.4 | 90.3 | 88.0 | 88.0 | 88.0 | 136.9 |
| 16000 | 80.0 | 85.8 | 86.5 | 87.5 | 87.9 | 91.1 | 91.2 | 92.5 | 93.4 | 90.2 | 89.1 | 86.7 | 85.9 | 135.6 |
| 20000 | 78.0 | 82.8 | 84.4 | 84.5 | 85.6 | 88.6 | 88.9 | 89.0 | 89.8 | 87.5 | 86.2 | 85.3 | 84.1 | 134.5 |
| 25000 | 74.8 | 80.4 | 81.4 | 81.9 | 82.9 | 87.0 | 86.6 | 85.6 | 86.2 | 83.2 | 82.8 | 83.2 | 82.2 | 134.1 |
| 31500 | 71.5 | 76.0 | 77.3 | 79.2 | 79.4 | 83.6 | 82.0 | 82.2 | 82.5 | 80.1 | 79.8 | 78.7 | 77.5 | 133.6 |
| 40000 | 67.8 | 72.1 | 73.3 | 74.7 | 75.5 | 79.5 | 78.0 | 78.1 | 78.1 | 76.3 | 76.1 | 75.1 | 73.3 | 133.5 |
| 50000 | 61.4 | 65.8 | 67.7 | 68.7 | 69.3 | 74.0 | 71.8 | 71.7 | 72.3 | 70.2 | 69.0 | 67.0 | 67.0 | 131.9 |
| 63000 | 55.5 | 59.8 | 61.8 | 62.4 | 63.2 | 68.2 | 65.3 | 66.2 | 66.2 | 63.2 | 62.6 | 60.3 | 60.3 | 131.3 |
| 80000 | 49.0 | 52.9 | 54.6 | 55.1 | 56.5 | 62.7 | 59.0 | 59.4 | 59.8 | 56.6 | 57.6 | 55.1 | 50.8 | 131.6 |
| OASPL | 101.6 | 104.8 | 105.0 | 103.5 | 105.8 | 109.2 | 111.1 | 112.0 | 115.3 | 118.9 | 120.8 | 121.7 | 116.1 | 157.0 |
| PWL | 113.7 | 116.6 | 116.9 | 115.6 | 118.2 | 121.7 | 122.7 | 124.7 | 128.1 | 130.4 | 130.7 | 130.1 | 126.4 | |
| PNLT | 115.0 | 117.9 | 116.9 | 115.6 | 118.2 | 121.7 | 124.3 | 124.7 | 128.1 | 130.4 | 130.7 | 130.1 | 126.4 | |
| DBA | 171.3 | 175.4 | 177.2 | 177.9 | 179.0 | 184.7 | 181.4 | 181.8 | 182.1 | 179.2 | 180.1 | 178.0 | 174.9 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/OFTAS-11/NAS3-22137

VEHICL = ADH149 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FELTVEL = 0. FPS
 IAPLHA = SBS9 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 28.63 PAMB HG = 29.13 RELHUM = 65.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =
 FNIN1 = LBS XNL RPM XNH RPM V8 = 1091.1 FPS AE8 = 4.6 SO IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 1802.1 FPS AE18 = 23.4 SQ IN
 RIUMPT = R3F-7FR-1103 TAPE = X1103F TFST PT NO = 1103 NC = AE091 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H., STD. DAY, SB 2400.0 FT., SL

IDENTIFICATION - 83F-ZER-1103 X11031
ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 59.2 | 65.8 | 67.1 | 65.6 | 68.6 | 71.9 | 73.4 | 74.4 | 78.4 | 81.1 | 84.7 | 85.0 | 70.5 | 159.2 |
| 63 | 60.0 | 65.3 | 65.9 | 66.4 | 69.7 | 73.2 | 75.7 | 74.4 | 78.9 | 81.9 | 85.3 | 85.7 | 73.5 | 160.0 |
| 80 | 60.9 | 65.8 | 67.9 | 66.4 | 69.9 | 73.4 | 84.9 | 75.9 | 79.9 | 84.8 | 86.9 | 86.1 | 74.9 | 161.8 |
| 100 | 61.1 | 66.5 | 68.1 | 67.3 | 70.4 | 73.9 | 74.1 | 76.1 | 79.3 | 85.8 | 86.6 | 85.8 | 75.3 | 161.4 |
| 125 | 61.2 | 66.6 | 68.4 | 68.2 | 70.7 | 74.7 | 75.7 | 77.2 | 80.2 | 85.7 | 87.2 | 84.6 | 75.5 | 161.4 |
| 160 | 63.3 | 66.5 | 69.1 | 68.4 | 71.2 | 74.9 | 75.2 | 78.1 | 81.1 | 85.8 | 85.3 | 83.2 | 76.2 | 160.8 |
| 200 | 67.5 | 71.9 | 71.3 | 69.9 | 72.4 | 75.7 | 75.4 | 78.9 | 81.6 | 84.8 | 84.0 | 81.2 | 74.9 | 160.2 |
| 250 | 63.6 | 69.6 | 70.3 | 70.7 | 72.9 | 76.6 | 75.9 | 78.1 | 81.5 | 83.7 | 82.8 | 80.5 | 73.6 | 159.7 |
| 315 | 64.6 | 67.7 | 69.9 | 69.6 | 72.8 | 76.5 | 76.5 | 78.3 | 81.9 | 83.2 | 82.3 | 79.1 | 73.5 | 159.7 |
| 400 | 64.7 | 69.4 | 70.1 | 68.8 | 71.9 | 74.9 | 75.7 | 78.6 | 81.1 | 82.9 | 81.3 | 77.5 | 71.4 | 159.4 |
| 500 | 62.1 | 67.2 | 68.6 | 68.6 | 71.8 | 75.3 | 75.1 | 77.9 | 80.0 | 81.7 | 78.9 | 73.8 | 67.8 | 158.2 |
| 630 | 61.4 | 65.9 | 67.5 | 67.2 | 70.3 | 74.3 | 74.7 | 76.7 | 79.9 | 79.8 | 76.5 | 70.0 | 61.8 | 157.1 |
| 800 | 59.1 | 64.1 | 66.2 | 65.8 | 70.0 | 73.2 | 73.4 | 76.2 | 78.4 | 76.9 | 73.6 | 65.5 | 57.4 | 155.6 |
| 1000 | 57.5 | 63.0 | 65.0 | 64.3 | 68.7 | 72.6 | 72.5 | 74.8 | 76.6 | 75.9 | 70.4 | 60.8 | 53.5 | 154.6 |
| 1250 | 54.9 | 61.7 | 63.7 | 63.6 | 68.0 | 71.6 | 71.7 | 74.3 | 74.6 | 72.6 | 66.8 | 57.4 | 49.7 | 153.5 |
| 1600 | 52.4 | 59.0 | 62.4 | 62.2 | 65.5 | 69.5 | 70.3 | 71.2 | 72.3 | 69.2 | 62.8 | 53.6 | 45.5 | 152.1 |
| 2000 | 49.9 | 57.8 | 61.1 | 62.0 | 64.8 | 68.3 | 68.8 | 69.1 | 69.7 | 66.6 | 59.3 | 51.4 | 41.7 | 151.8 |
| 2500 | 46.6 | 54.8 | 58.5 | 59.7 | 62.5 | 66.0 | 65.6 | 65.7 | 65.8 | 61.4 | 54.6 | 46.3 | 35.0 | 150.9 |
| 3150 | 40.0 | 50.4 | 54.0 | 56.9 | 58.3 | 61.8 | 61.6 | 61.9 | 60.9 | 54.8 | 49.1 | 39.0 | 23.4 | 150.5 |
| 4000 | 30.4 | 41.3 | 45.7 | 49.2 | 51.6 | 55.0 | 54.9 | 53.7 | 52.1 | 46.0 | 38.6 | 27.3 | 5.7 | 149.4 |
| 5000 | 15.8 | 29.7 | 35.9 | 39.6 | 42.3 | 47.0 | 46.0 | 43.3 | 40.7 | 32.6 | 23.7 | 9.9 | 149.0 | |
| 6300 | 9.9 | 18.5 | 24.9 | 27.5 | 32.4 | 30.1 | 27.8 | 23.7 | 13.9 | 1.8 | | | 148.4 | |
| 8000 | | | | | 4.1 | 9.2 | 6.6 | 3.2 | | | | | 146.2 | |
| 10000 | | | | | | | | | | | | | 146.5 | |
| 12500 | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

OASPL 74.2 79.1 80.3 79.8 82.8 86.4 88.8 88.9 91.8 94.8 95.3 93.8 84.4 171.5
 PNLT 78.3 83.9 85.6 85.6 88.7 92.4 93.0 94.4 96.7 97.9 96.2 92.9 84.7
 PNLT 79.0 84.6 85.6 85.6 88.7 92.4 93.0 94.9 96.7 97.9 96.2 92.9 84.7
 DBA 67.9 73.1 74.8 74.6 78.0 81.6 81.9 84.0 86.1 86.6 84.4 80.5 73.7

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7
 NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH149 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 0. FPS
 TAPLHA = S859 TEST TEGA = NO PWL AREA = FULL SPHERE TAMB F = 28.63 PAMB HG = 29.13 RELHUM = 65.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =
 FNINI = LBS XNI = RPM XNH = RPM V8 = 1091.1 FPS AEB = 4.6 SQ IN
 FAN/AMB = LBS XNI = RPM XNHR = RPM V18 = 1802.1 FPS AE18 = 23.4 SQ IN
 DIMT - REF 200.1103 TAPE = X11031 TEST PT NO = 1103 NC = AEO91 CORR FAN SPEED = RPM

DATPROC - FLTRAN UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
 59.0 DEG. F., 70 PERCENT RH, STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-400-1104 X1104C
 BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|-------|------|------|-------|-------|-------|-------|-------|
| 50 | 84.7 | 85.0 | 83.3 | 80.1 | 78.7 | 83.1 | 83.1 | 88.2 | 84.7 | 83.3 | 89.3 | 93.7 | 127.9 | |
| 63 | 88.7 | 92.5 | 86.4 | 89.6 | 88.5 | 91.7 | 91.1 | 90.8 | 91.7 | 90.8 | 94.7 | 94.8 | 133.1 | |
| 80 | 85.8 | 92.7 | 88.0 | 87.6 | 88.5 | 91.7 | 91.1 | 90.8 | 91.7 | 90.8 | 94.7 | 94.8 | 133.1 | |
| 100 | 83.7 | 90.7 | 87.6 | 86.2 | 87.9 | 91.7 | 90.7 | 92.5 | 91.2 | 92.9 | 95.4 | 99.6 | 134.0 | |
| 125 | 83.0 | 86.1 | 88.4 | 87.3 | 89.8 | 91.4 | 90.7 | 90.4 | 90.1 | 93.4 | 99.9 | 103.1 | 135.9 | |
| 160 | 80.3 | 85.9 | 81.9 | 83.7 | 86.6 | 82.5 | 87.9 | 90.7 | 93.5 | 99.4 | 102.4 | 90.8 | 135.2 | |
| 200 | 80.8 | 84.3 | 80.2 | 83.3 | 87.1 | 89.8 | 91.0 | 95.6 | 94.3 | 100.5 | 105.7 | 95.2 | 137.4 | |
| 250 | 77.9 | 83.1 | 83.9 | 82.1 | 84.8 | 87.5 | 88.4 | 90.3 | 96.8 | 98.9 | 104.0 | 107.7 | 95.4 | 139.7 |
| 315 | 81.9 | 83.0 | 81.4 | 84.2 | 88.3 | 91.0 | 92.0 | 95.4 | 99.7 | 105.1 | 107.5 | 97.3 | 140.1 | |
| 400 | 80.5 | 83.7 | 84.0 | 81.9 | 85.1 | 88.3 | 101.8 | 91.6 | 96.4 | 102.2 | 106.1 | 107.2 | 95.7 | 141.4 |
| 500 | 80.7 | 83.8 | 85.3 | 83.0 | 85.7 | 88.8 | 89.1 | 92.4 | 95.6 | 102.4 | 106.3 | 105.8 | 92.4 | 140.3 |
| 630 | 80.4 | 83.8 | 84.3 | 83.7 | 87.4 | 90.0 | 90.4 | 92.6 | 96.3 | 103.4 | 106.3 | 103.7 | 89.4 | 140.1 |
| 800 | 82.0 | 83.1 | 85.3 | 84.1 | 86.4 | 90.9 | 90.7 | 93.4 | 97.1 | 103.2 | 104.8 | 100.0 | 88.0 | 139.1 |
| 1000 | 83.5 | 85.3 | 85.8 | 84.8 | 87.1 | 91.0 | 91.4 | 94.8 | 98.1 | 103.1 | 103.5 | 96.2 | 86.7 | 138.5 |
| 1250 | 81.4 | 86.4 | 85.7 | 84.8 | 87.6 | 91.2 | 91.6 | 94.5 | 98.2 | 102.6 | 101.7 | 94.6 | 86.2 | 137.8 |
| 1600 | 82.3 | 84.5 | 85.4 | 85.3 | 88.0 | 92.1 | 92.7 | 95.0 | 98.9 | 101.8 | 101.6 | 93.8 | 85.8 | 137.7 |
| 2000 | 82.0 | 84.4 | 85.0 | 84.6 | 87.5 | 90.8 | 92.1 | 95.4 | 98.3 | 101.8 | 100.6 | 92.4 | 85.9 | 137.3 |
| 2500 | 81.7 | 84.0 | 85.1 | 84.5 | 87.4 | 91.1 | 91.3 | 95.1 | 98.0 | 101.1 | 98.3 | 90.9 | 86.3 | 136.5 |
| 3150 | 81.4 | 83.5 | 84.2 | 83.9 | 87.0 | 91.4 | 92.3 | 94.5 | 98.1 | 99.2 | 96.4 | 90.3 | 84.9 | 135.6 |
| 4000 | 80.7 | 82.5 | 84.1 | 83.1 | 87.4 | 91.4 | 92.0 | 94.6 | 96.5 | 96.7 | 94.2 | 88.5 | 84.0 | 134.4 |
| 5000 | 80.7 | 83.2 | 83.6 | 82.9 | 86.6 | 90.9 | 91.3 | 93.6 | 96.2 | 96.2 | 92.9 | 86.8 | 82.4 | 133.9 |
| 6300 | 80.5 | 83.3 | 83.4 | 82.9 | 86.4 | 89.6 | 89.9 | 92.4 | 94.2 | 93.6 | 91.1 | 85.3 | 81.2 | 132.5 |
| 8000 | 81.5 | 83.1 | 83.5 | 82.5 | 85.2 | 88.5 | 89.5 | 90.8 | 93.2 | 91.7 | 89.2 | 84.6 | 80.5 | 131.6 |
| 10000 | 81.3 | 83.6 | 83.9 | 83.6 | 86.3 | 88.7 | 88.5 | 90.0 | 91.7 | 90.6 | 87.8 | 84.1 | 81.1 | 131.5 |
| 12500 | 81.3 | 83.5 | 83.8 | 83.4 | 85.7 | 88.8 | 87.8 | 88.5 | 89.9 | 88.6 | 85.8 | 83.5 | 80.3 | 131.3 |
| 16000 | 79.6 | 82.9 | 82.8 | 83.8 | 85.2 | 87.4 | 86.5 | 87.6 | 88.7 | 85.9 | 84.7 | 82.5 | 77.7 | 131.4 |
| 20000 | 77.4 | 79.9 | 80.8 | 80.8 | 83.1 | 85.2 | 85.0 | 84.1 | 85.4 | 83.3 | 81.6 | 79.4 | 74.8 | 130.6 |
| 25000 | 74.9 | 77.5 | 78.0 | 79.3 | 80.0 | 83.6 | 82.5 | 81.9 | 82.3 | 79.6 | 77.1 | 72.5 | 130.4 | |
| 31500 | 71.7 | 74.2 | 74.9 | 76.9 | 76.8 | 80.2 | 78.9 | 78.6 | 78.7 | 76.4 | 75.0 | 73.3 | 68.4 | 130.2 |
| 40000 | 67.9 | 70.3 | 70.7 | 72.6 | 72.7 | 76.6 | 74.8 | 74.5 | 74.6 | 72.2 | 71.2 | 69.7 | 64.7 | 130.2 |
| 50000 | 62.0 | 64.2 | 64.5 | 67.1 | 67.2 | 72.4 | 69.9 | 68.8 | 69.0 | 66.2 | 65.1 | 63.6 | 58.6 | 129.4 |
| 63000 | 56.1 | 58.1 | 61.0 | 60.8 | 66.6 | 64.1 | 63.5 | 63.8 | 60.0 | 59.7 | 57.0 | 51.8 | 128.8 | |
| 80000 | 47.2 | 50.2 | 52.0 | 52.5 | 60.8 | 55.9 | 57.2 | 57.0 | 51.4 | 49.8 | 43.0 | 128.4 | | |

ORIGINAL PAGE IS OF POOR QUALITY

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| OASPL | 95.5 | 99.8 | 100.0 | 98.4 | 100.7 | 104.2 | 106.5 | 107.0 | 109.7 | 113.2 | 115.2 | 115.5 | 104.5 | 151.3 |
| PWL | 106.2 | 109.8 | 110.5 | 109.6 | 112.4 | 116.3 | 117.5 | 119.4 | 122.4 | 124.7 | 124.4 | 122.3 | 112.1 | |
| PWLT | 112.8 | 109.8 | 110.5 | 110.1 | 113.1 | 116.3 | 119.5 | 119.4 | 122.4 | 124.7 | 124.4 | 122.3 | 118.7 | |
| DBA | 93.1 | 95.8 | 96.4 | 95.7 | 98.7 | 102.5 | 104.0 | 105.7 | 108.9 | 112.4 | 112.9 | 110.1 | 99.5 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

| | | | | | | | | | | | | | | | | | |
|----------|---|--------------|--------------|---|----------|------------|---|--------------|------------|-----|-------|---------|----------------|-------|--------|---|------------|
| VEHICLE | = | ADH158 | TEST DATE | = | 03-17-83 | LOCAT | = | C41 ANECH CH | CONFIG | = | 11 | MODEL | = | SL | FLTVEL | = | 400. FPS |
| IAPLHA | = | SB59 | IEGA | = | NO | PWL AREA | = | FULL SPHERE | TAMB F | = | 29.55 | PAMB HG | = | 29.21 | RELHUM | = | 66.3 PCT |
| WIND DIR | = | | DEG WIND VEL | = | | MPH | = | 40.0 FT | EXT CONFIG | = | ARC | MIKE HT | = | | NBFR | = | |
| FNIM1 | = | LBS XNL | | = | RPM | XNH | | = | RPM | VB | | = | 1096.2 FPS | AEB | | = | 4.6 SO IN |
| FNRAMB | = | LBS XNLR | | = | RPM | XNLR | | = | RPM | V18 | | = | 1787.8 FPS | AE18 | | = | 23.4 SO IN |
| RUNPT | = | 83F-400-1104 | TAPE | = | X1104C | TEST PT NO | = | 1104 | NC | | = | AE091 | CORR FAN SPEED | = | | | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1104 X1104F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

50
63
80
100
125
160
200
250
315
400
500
630
800
1000
1250
1600
2000
2500
3150
4000
5000
6300
8000
10000
12500
16000
20000
25000
31500
40000
50000
63000
80000

Table with 13 columns (40-160) and 30 rows (50-80000) of pressure level data.

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH15B TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 400. FPS
IAPLHA = SB59 TEGA = NO PWL AREA = FULL SPHERE TAMB F = 29.55 PAMB HG = 29.21 RELHUM = 66.3 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNLR = RPM XNHR = RPM V8 = 1096.2 FPS AEB = 4.6 SO IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1787.8 FPS AE18 = 23.4 SO IN
RINPT = 83F-400-1104 TAPE = X1104F TEST PT NO = 1104 NC CORR FAN SPEED = RPM

DATPROC - FLTRAN FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS.
 59.0 DEG. F., 70 PERCENT R.H., STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1104 X11041

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 61.3 | 66.6 | 66.9 | 64.2 | 65.6 | 66.8 | 66.1 | 66.1 | 71.1 | 73.8 | 77.5 | 78.5 | 67.0 | 152.7 |
| 63 | 61.3 | 66.5 | 66.9 | 64.1 | 65.1 | 67.8 | 69.2 | 68.7 | 72.0 | 76.2 | 78.5 | 78.7 | 66.7 | 153.5 |
| 80 | 62.3 | 65.2 | 66.0 | 63.5 | 66.1 | 67.8 | 79.9 | 68.1 | 71.2 | 76.5 | 78.9 | 77.8 | 64.8 | 154.2 |
| 100 | 63.5 | 67.0 | 66.9 | 64.0 | 66.7 | 68.4 | 67.1 | 68.7 | 72.0 | 77.5 | 79.0 | 76.3 | 63.5 | 153.2 |
| 125 | 63.6 | 67.0 | 68.2 | 65.1 | 68.4 | 69.6 | 68.4 | 68.8 | 73.1 | 77.6 | 78.0 | 73.6 | 64.4 | 152.7 |
| 160 | 63.0 | 66.8 | 67.0 | 65.7 | 67.4 | 70.4 | 68.6 | 69.5 | 74.2 | 77.8 | 77.0 | 70.6 | 64.9 | 152.4 |
| 200 | 64.4 | 65.9 | 67.9 | 65.9 | 68.0 | 70.5 | 69.3 | 70.9 | 74.4 | 77.2 | 75.1 | 68.9 | 64.1 | 151.9 |
| 250 | 65.5 | 67.8 | 68.2 | 66.5 | 68.4 | 70.6 | 69.4 | 70.5 | 75.1 | 76.3 | 74.9 | 67.8 | 63.1 | 152.1 |
| 315 | 63.0 | 68.7 | 67.8 | 66.3 | 69.2 | 71.5 | 70.5 | 71.0 | 74.4 | 76.3 | 73.8 | 66.2 | 62.7 | 152.2 |
| 400 | 66.2 | 68.6 | 68.9 | 67.7 | 68.0 | 70.2 | 69.8 | 71.3 | 74.2 | 75.7 | 71.7 | 64.8 | 63.2 | 152.1 |
| 500 | 62.5 | 65.8 | 66.5 | 65.7 | 68.4 | 70.4 | 69.0 | 71.0 | 74.7 | 74.2 | 70.1 | 64.5 | 61.8 | 151.6 |
| 630 | 64.4 | 67.3 | 68.0 | 66.5 | 68.0 | 70.7 | 70.4 | 70.8 | 74.1 | 72.6 | 68.6 | 63.2 | 60.9 | 151.7 |
| 800 | 63.4 | 66.2 | 66.8 | 65.7 | 68.4 | 70.9 | 70.7 | 71.7 | 73.2 | 71.5 | 66.4 | 60.5 | 58.2 | 151.6 |
| 1000 | 61.4 | 64.8 | 66.4 | 64.8 | 67.7 | 70.5 | 69.9 | 70.4 | 71.3 | 68.9 | 64.7 | 58.9 | 56.1 | 150.8 |
| 1250 | 61.1 | 64.8 | 65.4 | 64.2 | 66.9 | 68.8 | 68.2 | 69.0 | 70.3 | 67.0 | 62.7 | 57.7 | 54.1 | 150.3 |
| 1600 | 59.4 | 63.8 | 64.2 | 63.3 | 64.5 | 66.9 | 67.1 | 66.9 | 68.8 | 65.6 | 60.4 | 55.3 | 51.3 | 150.1 |
| 2000 | 55.7 | 59.8 | 61.2 | 60.6 | 64.6 | 66.3 | 65.2 | 65.4 | 64.6 | 60.8 | 55.0 | 50.6 | 44.9 | 149.0 |
| 2500 | 52.5 | 57.8 | 59.6 | 59.8 | 62.6 | 64.8 | 62.3 | 61.1 | 63.2 | 57.8 | 53.1 | 47.7 | 38.3 | 149.4 |
| 3150 | 47.6 | 53.7 | 56.1 | 56.5 | 59.6 | 61.1 | 59.0 | 58.5 | 56.5 | 51.2 | 45.1 | 38.1 | 25.6 | 149.2 |
| 4000 | 37.9 | 46.6 | 49.5 | 51.9 | 53.2 | 54.6 | 52.8 | 49.6 | 47.6 | 40.5 | 32.5 | 24.9 | 6.9 | 148.7 |
| 5000 | 23.6 | 33.8 | 39.0 | 41.2 | 44.0 | 46.6 | 43.3 | 39.6 | 36.9 | 29.0 | 19.5 | 6.6 | 148.4 | |
| 6300 | 4.2 | 17.5 | 23.9 | 28.0 | 28.9 | 32.1 | 28.4 | 24.2 | 20.3 | 10.1 | | | 149.0 | |
| 8000 | | | 3.0 | 5.9 | 9.4 | 4.9 | | | | | | | 148.2 | |
| 10000 | | | | | | | | | | | | | 147.7 | |
| 12500 | | | | | | | | | | | | | 147.3 | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

OASPL 75.3 78.8 79.3 77.6 79.8 82.0 83.5 82.0 85.2 87.3 87.3 87.2 84.9 75.3 165.3
 PNLT 80.8 84.7 85.5 84.7 87.2 89.4 88.5 88.5 90.6 90.8 88.4 88.4 83.4 77.0
 PNLT 81.3 84.7 85.5 85.3 87.2 89.4 88.5 88.5 90.6 90.8 88.4 88.4 83.4 77.0
 DBA 70.8 74.2 75.0 73.8 76.2 78.5 77.9 78.5 80.6 80.6 79.7 76.4 70.6 66.9

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7
 NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH15B TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 400 FPS.
 IAPLVA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 29.55 PAMB HG = 29.21 RELHUM = 66.3 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =
 FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1096.2 FPS AEB = 4.6 SQ IN
 FNRRMB = LBS XNLR = RPM XNHR = RPM V18 = 1787.8 FPS AE18 = 23.4 SQ IN
 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1105 X1105C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.6 | 87.2 | 87.2 | 84.0 | 83.1 | 85.4 | 86.8 | 87.5 | 88.2 | 86.2 | 92.1 | 95.8 | 90.0 | 130.5 |
| 63 | 93.5 | 91.8 | 96.3 | 90.9 | 90.2 | 93.3 | 95.7 | 95.1 | 92.8 | 90.9 | 95.5 | 103.5 | 98.6 | 137.5 |
| 80 | 89.5 | 95.8 | 91.3 | 90.4 | 91.7 | 95.3 | 94.7 | 94.4 | 95.6 | 94.9 | 98.8 | 99.0 | 82.9 | 136.8 |
| 100 | 88.0 | 95.2 | 91.3 | 90.8 | 92.9 | 96.8 | 95.6 | 98.0 | 96.0 | 99.3 | 100.0 | 103.1 | 86.8 | 138.8 |
| 125 | 85.9 | 89.7 | 93.4 | 92.7 | 94.1 | 96.2 | 94.8 | 95.5 | 96.2 | 99.8 | 106.9 | 108.3 | 92.0 | 141.7 |
| 160 | 84.4 | 86.0 | 90.5 | 86.8 | 89.1 | 93.2 | 100.6 | 94.3 | 96.2 | 100.6 | 106.2 | 108.4 | 96.5 | 141.7 |
| 200 | 86.8 | 87.3 | 89.8 | 88.1 | 91.2 | 94.8 | 97.7 | 96.6 | 102.1 | 103.1 | 108.5 | 112.5 | 100.6 | 144.6 |
| 250 | 85.8 | 91.1 | 91.1 | 90.1 | 91.7 | 94.8 | 96.2 | 97.9 | 102.8 | 107.6 | 112.8 | 115.2 | 103.6 | 147.7 |
| 315 | 86.8 | 90.6 | 89.9 | 89.9 | 92.8 | 96.1 | 99.8 | 98.7 | 103.4 | 109.0 | 113.8 | 115.8 | 106.4 | 148.6 |
| 400 | 87.8 | 91.3 | 91.9 | 89.9 | 92.7 | 95.9 | 110.5 | 99.4 | 104.4 | 111.9 | 115.3 | 116.7 | 107.7 | 150.7 |
| 500 | 88.6 | 92.1 | 92.9 | 91.4 | 94.0 | 96.9 | 97.8 | 100.4 | 104.4 | 112.2 | 115.6 | 117.3 | 109.2 | 150.5 |
| 630 | 89.5 | 93.6 | 93.3 | 92.4 | 95.2 | 98.3 | 99.2 | 101.9 | 105.3 | 112.9 | 115.8 | 117.0 | 110.6 | 150.7 |
| 800 | 91.8 | 93.1 | 94.4 | 92.9 | 95.3 | 99.1 | 99.3 | 102.7 | 106.6 | 113.0 | 114.3 | 117.0 | 111.4 | 150.5 |
| 1000 | 97.5 | 100.6 | 98.1 | 94.9 | 96.2 | 100.1 | 100.2 | 103.6 | 107.6 | 111.9 | 114.0 | 115.7 | 111.4 | 150.0 |
| 1250 | 92.9 | 97.7 | 97.7 | 97.6 | 98.9 | 101.5 | 100.4 | 103.5 | 107.7 | 111.6 | 112.4 | 115.6 | 111.0 | 149.6 |
| 1600 | 93.6 | 95.8 | 96.4 | 95.3 | 97.3 | 101.2 | 101.8 | 103.8 | 107.9 | 111.3 | 113.6 | 114.8 | 110.5 | 149.5 |
| 2000 | 94.6 | 98.4 | 96.8 | 94.9 | 96.5 | 99.6 | 100.9 | 104.4 | 107.8 | 111.6 | 113.1 | 112.9 | 107.9 | 148.9 |
| 2500 | 92.3 | 96.1 | 96.2 | 94.4 | 97.3 | 100.1 | 100.6 | 104.0 | 107.6 | 111.1 | 111.6 | 109.4 | 104.9 | 147.6 |
| 3150 | 92.2 | 95.8 | 95.5 | 94.0 | 96.4 | 99.7 | 100.8 | 103.4 | 107.9 | 110.0 | 110.2 | 105.9 | 101.0 | 146.5 |
| 4000 | 89.9 | 94.3 | 94.9 | 93.3 | 96.0 | 99.5 | 99.6 | 103.4 | 106.8 | 107.6 | 107.0 | 103.0 | 98.1 | 144.8 |
| 5000 | 90.1 | 95.0 | 95.1 | 93.0 | 95.3 | 98.7 | 99.4 | 102.2 | 105.2 | 106.9 | 104.9 | 100.2 | 95.6 | 143.7 |
| 6300 | 89.7 | 95.4 | 95.9 | 94.2 | 95.8 | 98.5 | 99.3 | 102.2 | 104.3 | 104.0 | 102.2 | 97.4 | 94.9 | 142.7 |
| 8000 | 88.3 | 94.6 | 95.5 | 94.6 | 95.8 | 98.1 | 98.3 | 99.9 | 102.4 | 101.8 | 99.7 | 96.4 | 93.2 | 141.5 |
| 10000 | 87.5 | 93.1 | 94.6 | 94.9 | 97.0 | 98.5 | 97.8 | 99.5 | 101.2 | 100.2 | 97.3 | 95.4 | 92.2 | 141.3 |
| 12500 | 85.5 | 91.4 | 92.7 | 92.9 | 95.5 | 98.2 | 97.3 | 97.5 | 99.1 | 97.6 | 95.2 | 94.5 | 92.3 | 140.5 |
| 16000 | 83.9 | 90.4 | 91.4 | 92.5 | 93.3 | 96.0 | 95.9 | 96.0 | 96.8 | 94.1 | 94.0 | 93.3 | 90.3 | 140.0 |
| 20000 | 82.2 | 86.6 | 89.0 | 89.6 | 90.5 | 94.0 | 93.6 | 92.9 | 93.7 | 91.4 | 90.9 | 90.9 | 87.2 | 139.1 |
| 25000 | 78.7 | 84.0 | 85.0 | 87.1 | 87.8 | 92.4 | 91.3 | 90.5 | 90.8 | 87.4 | 87.4 | 89.1 | 83.8 | 138.9 |
| 31500 | 75.2 | 79.8 | 81.4 | 83.6 | 83.8 | 88.2 | 86.9 | 87.3 | 86.9 | 84.6 | 84.2 | 84.8 | 79.4 | 138.2 |
| 40000 | 70.6 | 76.2 | 77.4 | 78.8 | 80.1 | 84.1 | 82.6 | 82.4 | 82.4 | 80.4 | 80.7 | 80.4 | 75.4 | 137.9 |
| 50000 | 64.7 | 69.4 | 71.0 | 73.0 | 73.4 | 78.5 | 76.1 | 76.5 | 76.4 | 74.5 | 74.5 | 74.1 | 68.9 | 136.2 |
| 63000 | 59.1 | 63.3 | 65.6 | 66.5 | 67.7 | 73.1 | 70.1 | 70.7 | 71.3 | 68.3 | 69.0 | 67.2 | 63.1 | 135.8 |
| 80000 | 51.5 | 56.9 | 58.6 | 59.1 | 60.6 | 66.7 | 63.1 | 63.7 | 64.6 | 61.3 | 62.6 | 60.9 | 54.6 | 135.9 |

DASPL 104.9 108.7 108.6 107.3 109.2 112.3 114.8 115.1 118.6 122.7 125.1 126.5 120.0 161.1
 PNLT 116.9 120.7 119.3 121.4 124.6 125.9 127.8 131.6 134.4 135.6 135.5 129.8
 PNLT 118.6 122.4 120.7 119.9 121.9 124.6 128.1 128.4 131.6 134.4 136.3 135.5 129.8
 DBA 104.1 107.9 107.6 106.1 108.1 111.3 112.6 114.7 118.3 122.1 123.7 124.7 119.3

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICL = ADH150 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL' FLTVEL = O. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 29.18 PAMB HG = 29.32 RELHUM = 61.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL RPM XNHR = RPM V8 = 1212.0 FPS AEB = 4.6 SQ IN
 FNFRMB = LBS XNL RPM XNHR = RPM V18 = 1993.1 FPS AE18 = 23.4 SQ IN
 COND FAN SPEED = RPM
 TEST P1 = 1105 NC = AEO91

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40 O FT. ARC

IDENTIFICATION - 83F-ZER-1105 X1105F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.6 | 87.2 | 87.2 | 84.0 | 83.1 | 85.4 | 86.8 | 87.5 | 88.2 | 86.2 | 92.1 | 95.8 | 90.0 | 130.5 |
| 63 | 93.5 | 91.8 | 96.3 | 90.9 | 90.2 | 93.3 | 95.7 | 95.1 | 92.8 | 90.9 | 95.5 | 103.5 | 98.6 | 137.5 |
| 80 | 89.5 | 95.8 | 91.3 | 90.4 | 91.7 | 95.3 | 94.7 | 94.4 | 95.6 | 94.9 | 98.8 | 99.0 | 82.9 | 136.8 |
| 100 | 88.0 | 95.2 | 91.3 | 90.8 | 92.9 | 96.8 | 95.6 | 98.0 | 96.0 | 99.3 | 100.0 | 103.1 | 86.8 | 138.8 |
| 125 | 85.9 | 89.7 | 93.4 | 92.7 | 94.1 | 96.2 | 94.8 | 95.5 | 96.2 | 99.8 | 106.9 | 108.3 | 92.0 | 141.7 |
| 160 | 84.4 | 86.0 | 90.5 | 86.8 | 89.1 | 93.2 | 100.6 | 94.3 | 96.2 | 100.6 | 106.2 | 108.4 | 96.5 | 141.7 |
| 200 | 86.8 | 87.3 | 89.8 | 88.1 | 91.2 | 94.8 | 97.7 | 96.6 | 102.1 | 103.1 | 108.5 | 112.5 | 100.6 | 144.6 |
| 250 | 85.8 | 91.1 | 91.1 | 90.1 | 91.7 | 94.8 | 96.2 | 97.9 | 102.8 | 107.6 | 112.8 | 115.2 | 103.6 | 147.7 |
| 315 | 86.8 | 90.6 | 89.9 | 89.9 | 92.8 | 96.1 | 99.8 | 98.7 | 103.4 | 109.0 | 113.8 | 115.8 | 106.4 | 148.6 |
| 400 | 87.8 | 91.3 | 91.9 | 89.9 | 92.7 | 95.9 | 110.5 | 99.4 | 104.4 | 111.9 | 115.3 | 116.7 | 107.7 | 150.7 |
| 500 | 88.6 | 92.1 | 92.9 | 91.4 | 94.0 | 96.9 | 97.8 | 100.4 | 104.4 | 112.2 | 115.6 | 117.3 | 109.2 | 150.5 |
| 630 | 89.5 | 93.6 | 93.3 | 92.4 | 95.2 | 98.3 | 99.2 | 101.9 | 105.3 | 112.9 | 115.8 | 117.0 | 110.6 | 150.7 |
| 800 | 91.8 | 93.1 | 94.4 | 92.9 | 95.3 | 99.1 | 99.3 | 102.7 | 106.6 | 113.0 | 114.3 | 117.0 | 111.4 | 150.5 |
| 1000 | 97.5 | 100.6 | 98.1 | 94.9 | 96.2 | 100.1 | 100.2 | 103.6 | 107.6 | 111.9 | 114.0 | 115.7 | 111.4 | 150.0 |
| 1250 | 92.9 | 97.7 | 97.7 | 97.6 | 98.9 | 101.5 | 100.4 | 103.5 | 107.7 | 111.6 | 112.4 | 115.6 | 111.0 | 149.6 |
| 1600 | 93.6 | 95.8 | 96.4 | 95.3 | 97.3 | 101.2 | 101.8 | 103.8 | 107.9 | 111.3 | 113.6 | 114.8 | 110.5 | 149.5 |
| 2000 | 94.6 | 96.8 | 96.8 | 94.9 | 96.5 | 99.6 | 100.9 | 104.4 | 107.8 | 111.6 | 113.1 | 112.9 | 107.9 | 148.9 |
| 2500 | 92.3 | 96.1 | 96.2 | 94.4 | 97.3 | 100.1 | 100.6 | 104.4 | 107.6 | 111.1 | 111.6 | 109.4 | 104.9 | 147.6 |
| 3150 | 92.2 | 95.8 | 95.5 | 94.0 | 96.4 | 99.7 | 100.8 | 103.0 | 107.9 | 110.0 | 110.2 | 105.9 | 101.0 | 146.5 |
| 4000 | 89.9 | 94.3 | 94.9 | 93.3 | 96.0 | 99.5 | 99.6 | 103.4 | 106.8 | 107.6 | 107.0 | 103.0 | 98.1 | 144.8 |
| 5000 | 90.1 | 95.0 | 95.1 | 93.0 | 95.3 | 98.7 | 99.4 | 102.2 | 105.2 | 106.9 | 104.9 | 100.2 | 95.6 | 143.7 |
| 6300 | 89.7 | 95.4 | 95.9 | 94.2 | 95.8 | 98.5 | 99.3 | 102.2 | 104.3 | 104.0 | 102.2 | 97.4 | 94.9 | 142.7 |
| 8000 | 88.3 | 94.6 | 95.5 | 94.6 | 95.8 | 98.1 | 98.3 | 99.9 | 102.4 | 101.8 | 99.7 | 96.4 | 93.2 | 141.5 |
| 10000 | 87.5 | 93.1 | 94.6 | 94.9 | 97.0 | 98.5 | 97.8 | 99.5 | 101.2 | 100.2 | 97.3 | 95.4 | 92.2 | 141.3 |
| 12500 | 85.5 | 91.4 | 92.7 | 92.9 | 95.5 | 98.2 | 97.3 | 97.5 | 99.1 | 97.6 | 95.2 | 94.5 | 92.3 | 140.5 |
| 16000 | 83.9 | 90.4 | 91.4 | 92.5 | 93.3 | 96.0 | 95.9 | 96.0 | 96.8 | 94.1 | 94.0 | 93.3 | 90.3 | 140.0 |
| 20000 | 82.2 | 86.6 | 89.0 | 89.6 | 90.5 | 94.0 | 93.6 | 92.9 | 93.7 | 91.4 | 90.9 | 90.9 | 87.2 | 139.1 |
| 25000 | 78.7 | 84.0 | 85.0 | 87.1 | 87.8 | 92.4 | 91.3 | 90.5 | 90.8 | 87.4 | 87.4 | 89.1 | 83.8 | 138.9 |
| 31500 | 75.2 | 79.8 | 81.4 | 83.6 | 83.8 | 88.2 | 86.9 | 84.6 | 84.2 | 84.8 | 84.2 | 84.8 | 79.4 | 138.2 |
| 40000 | 70.6 | 76.2 | 77.4 | 78.8 | 80.1 | 84.1 | 82.6 | 82.4 | 82.2 | 80.4 | 80.7 | 80.4 | 75.4 | 137.9 |
| 50000 | 64.7 | 69.4 | 71.0 | 73.0 | 73.4 | 78.5 | 76.1 | 76.5 | 76.4 | 74.5 | 74.1 | 68.9 | 136.2 | |
| 63000 | 59.1 | 63.3 | 65.6 | 66.5 | 67.7 | 73.1 | 70.1 | 70.7 | 71.3 | 68.3 | 69.0 | 67.2 | 63.1 | 135.8 |
| 80000 | 51.5 | 56.9 | 58.6 | 59.1 | 60.6 | 66.7 | 63.1 | 63.7 | 64.6 | 61.3 | 62.6 | 60.9 | 54.6 | 135.9 |

ORIGINAL PAGE IS OF POOR QUALITY

QASPL 104.9 108.7 108.6 107.3 109.2 112.3 114.8 115.1 118.6 122.7 125.1 126.5 120.0 161.1
 PNL 116.9 120.7 120.7 119.3 121.4 124.6 125.9 127.8 131.6 134.4 135.6 135.5 129.8
 PNL 118.6 122.4 120.7 119.9 121.9 124.6 128.1 128.4 131.6 134.4 136.3 135.5 129.8
 DBA 174.3 179.3 181.1 182.0 183.2 188.9 185.7 186.3 186.9 183.9 184.9 183.4 177.9

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICL = ADH150 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 29.18 PAMB HG = 29.32 RELHUM = 61.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40 O FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1212.0 FPS AF8 = 4.6 SO IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V1B = 1993.1 FPS AE1B = 23.4 SO IN
 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1105 X11051

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 61.2 | 68.0 | 69.1 | 68.9 | 70.9 | 74.1 | 75.4 | 76.6 | 80.9 | 84.6 | 88.2 | 88.5 | 73.5 | 162.6 |
| 63 | 62.3 | 67.6 | 67.9 | 68.7 | 71.9 | 75.4 | 78.9 | 77.4 | 81.4 | 85.9 | 89.3 | 89.0 | 76.3 | 163.5 |
| 80 | 63.2 | 68.3 | 69.9 | 68.6 | 71.9 | 75.1 | 89.6 | 78.1 | 82.4 | 88.8 | 90.7 | 89.9 | 77.4 | 165.6 |
| 100 | 63.9 | 69.0 | 70.8 | 70.1 | 73.1 | 76.1 | 76.9 | 79.1 | 82.3 | 89.1 | 90.9 | 90.3 | 78.8 | 165.4 |
| 125 | 64.7 | 70.3 | 71.2 | 71.0 | 74.2 | 77.5 | 78.2 | 80.5 | 83.2 | 89.7 | 91.0 | 89.9 | 80.0 | 165.6 |
| 160 | 66.8 | 69.7 | 72.1 | 71.4 | 74.2 | 78.2 | 78.2 | 81.1 | 84.4 | 89.6 | 89.3 | 89.7 | 80.4 | 165.4 |
| 200 | 72.2 | 76.9 | 75.6 | 73.1 | 74.9 | 78.9 | 78.9 | 81.9 | 85.1 | 88.3 | 88.7 | 88.0 | 79.9 | 164.9 |
| 250 | 67.3 | 73.8 | 75.0 | 75.7 | 77.4 | 80.1 | 78.9 | 81.6 | 85.0 | 87.7 | 86.8 | 87.5 | 78.9 | 164.5 |
| 315 | 67.6 | 71.5 | 73.4 | 73.1 | 75.5 | 79.5 | 80.0 | 81.6 | 84.9 | 87.0 | 87.6 | 86.1 | 77.5 | 164.4 |
| 400 | 68.0 | 73.7 | 73.4 | 72.3 | 74.4 | 77.7 | 78.8 | 81.8 | 84.4 | 86.9 | 86.5 | 83.5 | 73.9 | 163.8 |
| 500 | 65.1 | 70.9 | 72.3 | 71.4 | 74.8 | 77.8 | 78.1 | 81.5 | 83.7 | 85.9 | 84.5 | 79.3 | 69.8 | 162.5 |
| 630 | 64.5 | 70.1 | 71.3 | 70.7 | 73.6 | 77.0 | 78.0 | 79.7 | 83.6 | 84.4 | 82.5 | 75.0 | 64.8 | 161.4 |
| 800 | 61.6 | 68.2 | 70.2 | 69.6 | 72.8 | 76.4 | 76.4 | 79.7 | 82.1 | 81.4 | 78.7 | 71.3 | 60.6 | 159.7 |
| 1000 | 61.0 | 68.3 | 70.0 | 68.9 | 71.7 | 75.3 | 75.8 | 78.1 | 80.1 | 80.2 | 75.9 | 67.5 | 56.8 | 158.6 |
| 1250 | 59.9 | 68.0 | 70.2 | 69.6 | 71.7 | 74.6 | 75.2 | 77.6 | 78.6 | 76.6 | 72.3 | 63.7 | 54.2 | 157.6 |
| 1600 | 57.1 | 66.3 | 68.9 | 69.2 | 71.0 | 73.5 | 73.5 | 74.5 | 75.9 | 73.4 | 68.6 | 60.9 | 49.8 | 156.4 |
| 2000 | 54.6 | 63.3 | 66.9 | 68.5 | 71.3 | 73.0 | 72.1 | 73.1 | 73.5 | 70.4 | 64.3 | 57.4 | 44.9 | 156.2 |
| 2500 | 49.8 | 59.5 | 63.2 | 64.9 | 68.2 | 71.2 | 70.0 | 69.4 | 69.5 | 65.6 | 59.6 | 52.7 | 39.2 | 155.4 |
| 3150 | 43.9 | 55.1 | 58.9 | 61.9 | 63.7 | 66.8 | 66.3 | 65.4 | 64.3 | 58.7 | 54.0 | 45.6 | 27.8 | 154.9 |
| 4000 | 34.5 | 45.1 | 51.4 | 54.4 | 56.5 | 60.4 | 59.6 | 57.6 | 56.0 | 49.9 | 43.2 | 32.9 | 8.8 | 154.0 |
| 5000 | 19.6 | 33.3 | 39.5 | 44.7 | 47.2 | 52.4 | 50.7 | 48.1 | 45.3 | 36.7 | 28.3 | 15.8 | | 153.8 |
| 6300 | | 13.7 | 22.5 | 29.2 | 31.9 | 37.0 | 35.0 | 32.9 | 28.0 | 18.5 | 6.1 | | | 153.1 |
| 8000 | | | | 3.9 | 8.7 | 13.8 | 11.2 | 7.5 | 0.7 | | | | | 152.8 |
| 10000 | | | | | | | | | | | | | | 151.1 |
| 12500 | | | | | | | | | | | | | | 150.7 |
| 16000 | | | | | | | | | | | | | | 150.8 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH150 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 0 FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 29.18 PAMB HG = 29.32 RELHUM = 61.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FMIN1 = LBS XNL RPM XNH RPM XNH RPM VR = 1212.0 FPS AE8 = 4.6 SQ IN
 FMAX1 = LBS XNL RPM XNH RPM XNH RPM VIB = 1993.0 FPS AEJ8 = 23.4 SQ IN
 CORR FAN SPEED = RPM

DATPROC - FLTRAN UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-400-1106 X1106C
 BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 87.6 | 87.7 | 84.7 | 82.2 | 82.3 | 84.9 | 84.3 | 89.0 | 87.4 | 86.2 | 92.6 | 94.8 | 92.7 | 130.3 |
| 63 | 91.0 | 90.8 | 92.6 | 89.4 | 88.2 | 91.6 | 93.2 | 97.1 | 92.1 | 91.9 | 94.0 | 98.5 | 98.6 | 135.6 |
| 80 | 89.3 | 95.6 | 90.8 | 90.6 | 91.5 | 94.6 | 93.7 | 92.9 | 94.3 | 94.7 | 97.8 | 97.7 | 92.4 | 136.1 |
| 100 | 87.2 | 93.7 | 90.0 | 89.5 | 90.9 | 95.3 | 94.4 | 96.0 | 94.5 | 96.3 | 98.2 | 101.9 | 91.6 | 137.1 |
| 125 | 85.6 | 88.9 | 91.2 | 90.5 | 92.6 | 94.9 | 93.8 | 93.2 | 93.4 | 96.8 | 103.4 | 106.6 | 94.0 | 139.4 |
| 160 | 82.7 | 83.0 | 88.0 | 84.0 | 86.9 | 89.5 | 95.6 | 90.8 | 93.7 | 97.3 | 102.9 | 105.9 | 95.8 | 138.6 |
| 200 | 83.5 | 84.6 | 86.6 | 83.6 | 86.7 | 90.6 | 92.0 | 93.6 | 97.8 | 97.4 | 103.8 | 109.2 | 97.9 | 140.7 |
| 250 | 81.5 | 86.1 | 86.3 | 84.9 | 87.5 | 90.3 | 91.7 | 93.6 | 98.8 | 102.1 | 108.3 | 111.5 | 100.1 | 143.5 |
| 315 | 82.6 | 85.6 | 85.6 | 85.4 | 88.3 | 91.4 | 93.8 | 94.2 | 98.9 | 103.2 | 109.1 | 111.5 | 101.4 | 144.0 |
| 400 | 83.6 | 86.3 | 87.1 | 85.7 | 88.2 | 91.6 | 103.5 | 94.7 | 99.6 | 106.2 | 110.6 | 112.3 | 100.7 | 145.6 |
| 500 | 84.1 | 87.1 | 87.9 | 86.4 | 89.0 | 92.4 | 92.5 | 95.4 | 98.9 | 107.0 | 111.1 | 110.8 | 98.2 | 144.9 |
| 630 | 84.0 | 87.1 | 87.8 | 86.6 | 90.0 | 93.6 | 94.2 | 96.9 | 100.1 | 107.7 | 111.0 | 109.5 | 95.4 | 144.8 |
| 800 | 85.6 | 86.9 | 88.2 | 86.9 | 89.8 | 93.9 | 94.8 | 97.4 | 101.4 | 107.7 | 109.9 | 106.0 | 93.4 | 143.8 |
| 1000 | 87.0 | 88.8 | 89.3 | 88.4 | 90.5 | 94.6 | 95.5 | 98.9 | 102.3 | 107.9 | 108.8 | 102.0 | 93.6 | 143.3 |
| 1250 | 85.2 | 90.2 | 89.8 | 88.6 | 91.1 | 94.7 | 95.1 | 98.5 | 103.0 | 107.1 | 107.0 | 100.4 | 91.8 | 142.5 |
| 1600 | 85.9 | 88.5 | 89.5 | 88.8 | 91.3 | 95.9 | 96.8 | 99.3 | 103.5 | 106.5 | 107.2 | 98.3 | 90.7 | 142.5 |
| 2000 | 85.9 | 87.7 | 88.6 | 88.2 | 90.8 | 94.7 | 96.2 | 100.0 | 102.6 | 106.6 | 105.6 | 97.5 | 91.5 | 141.9 |
| 2500 | 85.3 | 88.1 | 89.5 | 88.2 | 91.0 | 95.2 | 96.1 | 99.5 | 102.1 | 106.2 | 104.4 | 95.4 | 91.2 | 141.3 |
| 3150 | 85.5 | 87.8 | 89.1 | 87.6 | 90.7 | 95.2 | 96.1 | 99.4 | 102.7 | 104.6 | 102.3 | 95.7 | 89.6 | 140.5 |
| 4000 | 85.8 | 87.6 | 88.8 | 87.4 | 90.8 | 94.8 | 95.7 | 98.8 | 101.4 | 102.2 | 101.1 | 94.1 | 89.4 | 139.3 |
| 5000 | 88.4 | 89.6 | 89.7 | 87.1 | 90.1 | 94.8 | 94.9 | 97.8 | 100.8 | 102.2 | 100.0 | 93.2 | 88.5 | 139.0 |
| 6300 | 89.5 | 91.4 | 91.2 | 88.5 | 90.6 | 93.8 | 94.3 | 97.3 | 99.1 | 99.3 | 97.7 | 92.2 | 87.7 | 137.8 |
| 8000 | 88.8 | 91.9 | 92.7 | 90.4 | 90.8 | 93.3 | 93.8 | 95.4 | 96.9 | 97.3 | 95.2 | 89.9 | 85.9 | 136.9 |
| 10000 | 88.4 | 91.0 | 93.0 | 91.6 | 92.2 | 94.2 | 93.7 | 94.7 | 96.1 | 95.3 | 93.4 | 89.6 | 85.9 | 137.0 |
| 12500 | 87.1 | 88.7 | 90.6 | 90.2 | 91.8 | 94.6 | 92.9 | 93.0 | 94.2 | 92.6 | 91.3 | 88.8 | 85.4 | 136.4 |
| 16000 | 84.9 | 88.7 | 89.4 | 89.2 | 89.8 | 92.8 | 92.1 | 92.5 | 92.8 | 90.3 | 89.5 | 86.9 | 83.1 | 136.5 |
| 20000 | 82.9 | 85.3 | 87.2 | 86.8 | 87.9 | 91.2 | 90.8 | 89.6 | 89.9 | 88.1 | 86.8 | 84.2 | 80.5 | 136.0 |
| 25000 | 79.4 | 82.1 | 83.4 | 84.2 | 85.4 | 89.1 | 88.9 | 87.4 | 87.2 | 84.8 | 82.8 | 82.8 | 78.3 | 135.9 |
| 31500 | 75.8 | 78.2 | 79.7 | 81.2 | 81.7 | 85.6 | 85.3 | 84.4 | 84.5 | 81.2 | 80.3 | 79.5 | 74.3 | 135.7 |
| 40000 | 71.5 | 74.5 | 75.7 | 77.2 | 77.5 | 81.9 | 80.4 | 80.3 | 79.5 | 76.9 | 76.2 | 75.3 | 70.3 | 135.4 |
| 50000 | 65.4 | 68.2 | 69.6 | 70.9 | 72.3 | 77.2 | 74.7 | 74.6 | 74.0 | 71.0 | 70.4 | 68.7 | 63.5 | 134.3 |
| 63000 | 59.7 | 62.4 | 64.1 | 64.3 | 65.8 | 71.2 | 68.2 | 68.8 | 69.1 | 64.8 | 65.1 | 62.8 | 57.5 | 133.7 |
| 80000 | 51.9 | 55.0 | 56.7 | 56.7 | 58.2 | 64.6 | 60.9 | 62.1 | 61.4 | 57.6 | 57.5 | 56.1 | 49.3 | 133.4 |

ORIGINAL PAGE IS
 OF POOR QUALITY

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| OASPL | 100.9 | 103.8 | 103.9 | 102.6 | 104.5 | 108.0 | 109.7 | 110.8 | 113.7 | 117.8 | 120.0 | 119.8 | 109.3 | 155.7 |
| PWL | 112.5 | 114.8 | 115.1 | 113.6 | 116.2 | 120.1 | 121.2 | 123.6 | 126.6 | 129.6 | 129.7 | 127.1 | 117.9 | |
| PWL | 112.5 | 114.8 | 115.1 | 114.2 | 116.8 | 120.1 | 123.0 | 123.6 | 126.6 | 129.6 | 129.7 | 127.1 | 117.9 | |
| DBA | 98.3 | 100.7 | 101.4 | 100.0 | 102.4 | 106.3 | 107.6 | 110.0 | 113.3 | 117.1 | 118.0 | 115.1 | 104.7 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

| | | | | | | | | | | | | | |
|----------|----------------|--------------|------------|------------|----------------|-----------|------------|----------------|---------|------------|------------|---|------------|
| VEHICLE | = ADH157 | TEST DATE | = 03-17-83 | LOCAT | = C41 ANECH CH | CONFIG | = 11 | MODEL | = SL | FLTVEL | = 400. FPS | | |
| IAPLHA | = SB59 | IEGA | = NO | PWL AREA | = FULL SPHERE | TAMB F | = 30.92 | PAMB HG | = 29.23 | RELHUM | = 48.6 PCT | | |
| WIND DIR | = | DEG WIND VEL | = | MPH | EXT DIST | = 40.0 FT | EXT CONFIG | = ARC | MIKE HT | = | NBFR | = | |
| FNIN1 | = | LBS XNL | = | RPM | XNH | = | RPM | V8 | = | 1221.0 FPS | AEB | = | 4.6 SQ IN |
| FNAMB | = | LBS XNLR | = | RPM | XNHR | = | RPM | V18 | = | 1981.0 FPS | AE18 | = | 23.4 SQ IN |
| RUNPT | = 83F-400-1106 | TAPE | = | TEST PT NO | = 1106 | NC | = AE091 | CORR FAN SPEED | = | | | | RPM |

DATPROC - FLTRAN

07/07/83 16.103 PAGE 3

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F. 70 PERCENT R.H. STD. DAY, 58 40.0 FT ARC

IDENTIFICATION - 83F-400-1106 X1106F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160 | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | | | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | |
| 125 | | | | | | | | | | | | | | |
| 160 | | | | | | | | | | | | | | |
| 200 | | | | | | | | | | | | | | |
| 250 | 89.4 | 92.5 | 91.3 | 88.2 | 89.1 | 90.3 | 90.2 | 90.6 | 96.6 | 100.4 | 106.1 | 109.3 | 101.3 | 141.7 |
| 315 | 89.4 | 92.5 | 91.3 | 88.2 | 90.1 | 91.6 | 92.8 | 92.2 | 97.3 | 103.4 | 107.8 | 110.6 | 101.9 | 143.2 |
| 400 | 90.3 | 92.0 | 90.6 | 88.8 | 90.1 | 91.9 | 102.5 | 92.6 | 96.6 | 104.2 | 108.5 | 109.8 | 100.9 | 143.6 |
| 500 | 91.2 | 92.7 | 92.1 | 89.1 | 90.9 | 92.7 | 91.5 | 93.2 | 98.0 | 105.2 | 108.8 | 109.4 | 100.4 | 143.3 |
| 630 | 91.8 | 93.5 | 92.9 | 89.9 | 91.9 | 94.0 | 93.2 | 94.6 | 99.6 | 105.6 | 108.1 | 107.1 | 100.8 | 142.8 |
| 800 | 91.7 | 93.5 | 92.9 | 90.1 | 91.8 | 94.4 | 93.8 | 95.2 | 101.0 | 106.3 | 107.8 | 104.4 | 103.6 | 142.7 |
| 1000 | 93.3 | 93.3 | 93.2 | 90.5 | 92.6 | 95.2 | 94.7 | 96.8 | 101.7 | 105.5 | 105.9 | 102.7 | 101.7 | 141.9 |
| 1250 | 94.7 | 95.3 | 94.4 | 92.0 | 93.4 | 95.6 | 94.5 | 96.5 | 102.3 | 105.0 | 106.1 | 100.5 | 100.2 | 141.8 |
| 1600 | 92.9 | 96.7 | 94.9 | 92.4 | 94.4 | 97.0 | 96.2 | 97.5 | 101.8 | 105.6 | 105.1 | 100.3 | 101.8 | 142.0 |
| 2000 | 96.3 | 97.4 | 96.4 | 93.8 | 93.5 | 96.0 | 96.0 | 98.5 | 101.8 | 105.5 | 104.3 | 98.8 | 102.1 | 141.9 |
| 2500 | 93.5 | 94.2 | 93.9 | 92.2 | 94.5 | 96.8 | 96.3 | 98.3 | 102.8 | 104.4 | 102.7 | 99.5 | 100.9 | 141.3 |
| 3150 | 95.7 | 97.0 | 96.6 | 93.5 | 94.5 | 97.3 | 96.7 | 98.7 | 102.7 | 103.1 | 102.6 | 99.1 | 101.9 | 141.4 |
| 4000 | 95.9 | 96.8 | 96.4 | 93.1 | 95.1 | 97.3 | 97.3 | 99.1 | 102.0 | 103.1 | 101.4 | 98.0 | 100.8 | 141.2 |
| 5000 | 96.1 | 96.6 | 96.2 | 93.2 | 94.1 | 97.8 | 96.8 | 98.2 | 101.2 | 101.1 | 100.3 | 98.1 | 101.0 | 140.6 |
| 6300 | 95.8 | 96.3 | 95.5 | 91.9 | 94.5 | 96.8 | 96.5 | 98.3 | 99.6 | 99.8 | 98.4 | 96.5 | 99.8 | 139.9 |
| 8000 | 96.3 | 97.6 | 96.7 | 93.1 | 94.7 | 96.8 | 96.1 | 96.8 | 99.7 | 98.7 | 97.2 | 96.3 | 99.5 | 140.1 |
| 10000 | 95.2 | 97.8 | 97.9 | 94.7 | 96.2 | 97.2 | 96.2 | 96.6 | 95.6 | 93.5 | 92.5 | 93.1 | 96.6 | 139.7 |
| 12500 | 95.3 | 97.1 | 98.3 | 95.8 | 95.9 | 97.6 | 94.3 | 93.0 | 94.7 | 91.8 | 91.3 | 91.7 | 94.8 | 139.9 |
| 16000 | 93.4 | 94.3 | 95.3 | 94.0 | 93.9 | 95.8 | 93.6 | 92.5 | 92.2 | 89.9 | 89.0 | 89.4 | 92.6 | 139.3 |
| 20000 | 90.9 | 93.9 | 93.7 | 92.6 | 92.0 | 94.2 | 92.2 | 89.6 | 90.1 | 87.2 | 85.5 | 88.6 | 91.0 | 139.4 |
| 25000 | 88.2 | 89.9 | 90.9 | 89.6 | 90.0 | 92.1 | 90.4 | 87.4 | 88.2 | 84.4 | 83.9 | 86.1 | 87.8 | 139.2 |
| 31500 | 86.7 | 88.2 | 88.0 | 87.3 | 86.3 | 88.6 | 86.7 | 84.4 | 84.1 | 81.0 | 80.6 | 82.7 | 84.7 | 139.4 |
| 40000 | 82.3 | 83.4 | 83.5 | 83.4 | 82.1 | 84.9 | 81.9 | 80.3 | 78.9 | 75.5 | 75.2 | 76.5 | 78.3 | 138.9 |
| 50000 | 77.6 | 79.4 | 79.1 | 79.0 | 76.9 | 80.2 | 76.2 | 74.6 | 75.0 | 70.2 | 70.8 | 71.6 | 73.2 | 138.6 |
| 63000 | 70.5 | 72.1 | 72.0 | 71.8 | 70.4 | 74.2 | 69.6 | 68.8 | 64.5 | 64.7 | 66.3 | 66.5 | 67.3 | 137.3 |
| 80000 | 63.4 | 64.8 | 65.1 | 63.7 | 62.8 | 67.6 | 62.4 | 62.1 | 59.0 | 54.7 | 54.9 | 56.5 | 56.7 | 136.7 |
| OASPL | 107.1 | 108.6 | 108.2 | 105.6 | 106.7 | 108.9 | 109.1 | 109.3 | 113.0 | 116.2 | 117.7 | 117.4 | 113.6 | 155.2 |
| PWL | 119.0 | 120.3 | 119.7 | 116.7 | 118.3 | 120.6 | 120.6 | 121.9 | 125.5 | 127.4 | 127.4 | 125.0 | 125.5 | |
| PWLT | 120.0 | 120.3 | 119.7 | 116.7 | 118.3 | 120.6 | 122.3 | 121.9 | 125.5 | 127.4 | 127.4 | 125.0 | 125.5 | |
| DBA | 186.1 | 187.7 | 187.7 | 187.0 | 185.7 | 189.9 | 185.1 | 184.5 | 183.0 | 178.6 | 178.9 | 180.3 | 180.9 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00 DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH157 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 400. FPS
TAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 30.92 PAMB HG = 29.23 RELHUM = 48.6 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL RPM XNH RPM V8 = 1221.0 FPS AE8 = 4.6 SQ IN
FAIRAMB = LBS XNL RPM XNH RPM V18 = 198.0 FPS AE18 = 23.4 SQ IN
COND FAN SPEED = RPM

DATPROC - FLTRAN FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1106 X11061

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 64.9 | 69.5 | 69.3 | 66.9 | 68.2 | 69.6 | 69.4 | 69.3 | 74.7 | 77.4 | 81.6 | 82.6 | 71.2 | 156.6 |
| 63 | 64.9 | 69.5 | 69.3 | 66.9 | 68.2 | 69.6 | 69.4 | 69.3 | 74.7 | 77.4 | 81.6 | 82.6 | 71.2 | 156.6 |
| 80 | 65.6 | 68.9 | 68.6 | 67.5 | 69.2 | 71.1 | 81.0 | 71.0 | 75.4 | 80.4 | 83.2 | 83.8 | 71.7 | 158.1 |
| 100 | 66.5 | 69.6 | 70.0 | 67.7 | 70.0 | 71.9 | 70.6 | 71.9 | 76.0 | 82.0 | 84.1 | 83.4 | 70.0 | 158.3 |
| 125 | 66.9 | 70.3 | 70.7 | 68.5 | 70.9 | 73.1 | 72.2 | 73.2 | 77.5 | 82.3 | 83.3 | 80.0 | 70.2 | 157.7 |
| 160 | 66.7 | 70.1 | 70.6 | 68.6 | 70.7 | 73.4 | 72.7 | 73.7 | 78.7 | 82.9 | 82.8 | 77.0 | 72.6 | 157.6 |
| 200 | 68.0 | 69.7 | 70.7 | 68.8 | 71.3 | 74.1 | 73.4 | 75.0 | 79.3 | 81.9 | 80.7 | 75.0 | 70.2 | 156.8 |
| 250 | 69.1 | 71.4 | 71.7 | 70.1 | 71.9 | 74.2 | 73.0 | 74.6 | 79.6 | 81.1 | 80.5 | 72.3 | 68.1 | 156.7 |
| 315 | 66.8 | 72.5 | 71.9 | 70.1 | 72.6 | 75.3 | 74.5 | 75.3 | 78.8 | 81.3 | 79.1 | 71.6 | 68.8 | 156.9 |
| 400 | 69.7 | 72.6 | 73.0 | 71.2 | 71.4 | 74.0 | 73.9 | 75.9 | 78.3 | 80.8 | 77.7 | 69.3 | 68.0 | 156.8 |
| 500 | 66.4 | 69.1 | 70.1 | 69.3 | 72.1 | 74.5 | 73.9 | 75.4 | 79.0 | 79.3 | 75.6 | 69.4 | 65.8 | 156.2 |
| 630 | 68.0 | 71.4 | 72.4 | 70.1 | 71.7 | 74.6 | 73.9 | 75.3 | 78.4 | 77.4 | 74.9 | 68.2 | 65.7 | 156.3 |
| 800 | 67.5 | 70.6 | 71.7 | 69.4 | 71.9 | 74.3 | 74.1 | 75.3 | 76.9 | 73.0 | 66.3 | 63.3 | 63.3 | 156.1 |
| 1000 | 67.1 | 69.9 | 71.1 | 69.1 | 70.5 | 74.4 | 73.2 | 74.0 | 76.0 | 74.4 | 71.2 | 65.5 | 62.2 | 155.5 |
| 1250 | 66.0 | 69.0 | 69.8 | 67.3 | 70.5 | 72.9 | 72.5 | 73.7 | 73.9 | 72.5 | 68.5 | 62.7 | 59.2 | 154.8 |
| 1600 | 65.2 | 69.2 | 70.1 | 67.7 | 70.0 | 71.8 | 71.4 | 71.4 | 73.1 | 70.3 | 66.0 | 60.7 | 56.0 | 153.0 |
| 2000 | 62.2 | 68.0 | 70.2 | 68.3 | 70.5 | 71.7 | 70.4 | 70.1 | 67.8 | 63.8 | 59.6 | 55.1 | 49.3 | 154.6 |
| 2500 | 59.7 | 65.2 | 68.7 | 67.8 | 68.6 | 70.6 | 67.1 | 65.0 | 65.1 | 59.8 | 55.7 | 49.9 | 41.8 | 154.8 |
| 3150 | 53.4 | 58.9 | 62.8 | 63.4 | 64.3 | 66.5 | 64.0 | 61.9 | 59.7 | 54.5 | 49.0 | 41.6 | 30.1 | 154.2 |
| 4000 | 43.2 | 52.4 | 56.0 | 57.3 | 58.0 | 60.7 | 58.2 | 54.3 | 52.4 | 45.7 | 37.9 | 30.6 | 12.7 | 154.3 |
| 5000 | 29.2 | 39.2 | 45.4 | 47.2 | 49.5 | 52.0 | 49.8 | 45.0 | 42.7 | 33.7 | 24.8 | 12.7 | | 154.1 |
| 6300 | 8.6 | 22.1 | 29.2 | 32.9 | 34.4 | 37.5 | 34.8 | 30.1 | 25.3 | 14.8 | 2.6 | | | 154.3 |
| 8000 | | | 2.0 | 8.5 | 10.7 | 14.7 | 10.5 | 5.3 | | | | | | 153.8 |
| 10000 | | | | | | | | | | | | | | 152.2 |
| 12500 | | | | | | | | | | | | | | 151.6 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| OASPL | 79.2 | 82.7 | 83.3 | 81.4 | 83.4 | 85.8 | 86.6 | 86.1 | 89.4 | 92.1 | 92.4 | 90.2 | 80.9 | 170.1 |
| PNL | 85.5 | 89.9 | 91.8 | 90.5 | 92.0 | 94.3 | 93.1 | 92.9 | 94.8 | 95.8 | 93.9 | 89.6 | 82.5 | |
| PNLT | 86.1 | 89.9 | 92.4 | 91.0 | 92.0 | 94.3 | 93.6 | 93.4 | 94.8 | 95.8 | 95.0 | 89.6 | 82.5 | |
| DBA | 75.4 | 79.0 | 80.3 | 78.4 | 80.4 | 82.8 | 81.9 | 82.7 | 84.8 | 84.8 | 82.1 | 76.0 | 72.1 | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH157 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 400. FPS
 IAPLHA = 5859 IEQA = NO MPH EXT DIST = 2400.0 FT EXT CONFIG = SL PAMB HG = 29.23 RELIUM = 48.6 PCT
 WIND DIR = DEG WIND VEL = MPH RPM XNH XNHR = 1221.0 FPS AEB = 4.6 SQ IN
 FNIN1 = LBS XNL = RPM XNH XNHR = 1981.0 FPS AE18 = 23.4 SQ IN
 FNIN2 = LBS XNL = RPM XNH XNHR = 1981.0 FPS AE18 = 23.4 SQ IN
 CORR FAN SPEED = AF091

IDENTIFICATION - MODEL 83F-ZER-1107 X1107C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 87.4 | 88.7 | 86.2 | 84.2 | 85.3 | 87.4 | 86.3 | 88.7 | 90.2 | 87.0 | 95.4 | 98.1 | 88.7 | 132.1 |
| 63 | 92.0 | 92.8 | 92.1 | 92.6 | 92.2 | 95.3 | 93.7 | 94.9 | 94.8 | 90.4 | 101.8 | 104.0 | 98.6 | 138.4 |
| 80 | 91.0 | 97.6 | 92.8 | 92.4 | 93.7 | 97.8 | 96.7 | 95.4 | 97.6 | 96.9 | 101.3 | 101.0 | 85.1 | 138.8 |
| 100 | 89.5 | 97.7 | 92.8 | 93.0 | 95.4 | 99.3 | 98.1 | 99.8 | 98.2 | 100.8 | 101.7 | 105.4 | 89.3 | 140.9 |
| 125 | 87.1 | 91.4 | 94.7 | 93.7 | 95.3 | 97.9 | 96.6 | 96.2 | 97.4 | 100.8 | 107.4 | 109.6 | 94.0 | 142.7 |
| 160 | 85.2 | 88.0 | 91.7 | 88.5 | 90.6 | 94.7 | 103.4 | 96.0 | 97.7 | 102.3 | 107.7 | 110.4 | 98.8 | 143.6 |
| 200 | 88.0 | 88.6 | 91.1 | 89.6 | 93.2 | 96.3 | 99.5 | 98.1 | 103.8 | 104.4 | 110.3 | 114.7 | 102.6 | 146.5 |
| 250 | 87.8 | 91.8 | 92.6 | 91.4 | 93.5 | 96.8 | 97.7 | 100.1 | 104.6 | 109.6 | 114.8 | 117.2 | 105.6 | 149.7 |
| 315 | 88.8 | 91.6 | 91.4 | 91.4 | 94.5 | 97.6 | 102.3 | 99.9 | 105.6 | 110.2 | 116.1 | 117.8 | 108.4 | 150.6 |
| 400 | 90.3 | 93.3 | 93.6 | 91.9 | 94.7 | 97.9 | 113.5 | 101.2 | 107.1 | 113.7 | 117.6 | 119.2 | 109.7 | 153.1 |
| 500 | 90.8 | 94.4 | 94.9 | 92.9 | 96.0 | 99.1 | 99.5 | 102.2 | 106.9 | 114.7 | 118.6 | 119.3 | 111.7 | 152.9 |
| 630 | 91.5 | 95.3 | 95.1 | 93.9 | 97.0 | 100.1 | 103.6 | 107.8 | 115.2 | 119.5 | 120.0 | 113.1 | 153.8 | |
| 800 | 94.6 | 95.6 | 96.4 | 94.7 | 97.3 | 100.9 | 101.3 | 104.2 | 109.1 | 115.5 | 118.8 | 119.5 | 114.7 | 153.6 |
| 1000 | 101.0 | 104.1 | 101.1 | 97.6 | 98.9 | 102.1 | 102.4 | 105.4 | 110.1 | 114.6 | 118.5 | 119.2 | 114.4 | 153.4 |
| 1250 | 96.2 | 101.5 | 101.5 | 100.4 | 101.6 | 103.7 | 103.1 | 105.8 | 110.7 | 113.3 | 117.2 | 119.1 | 113.8 | 152.9 |
| 1600 | 96.4 | 98.3 | 98.4 | 97.6 | 100.6 | 103.7 | 104.0 | 106.6 | 110.9 | 113.3 | 117.9 | 117.8 | 112.0 | 152.6 |
| 2000 | 96.8 | 100.4 | 98.6 | 96.9 | 99.0 | 102.6 | 103.9 | 107.4 | 110.8 | 114.1 | 116.9 | 115.2 | 108.7 | 151.7 |
| 2500 | 96.8 | 100.8 | 99.9 | 97.6 | 100.0 | 102.9 | 103.8 | 106.4 | 109.8 | 114.1 | 116.6 | 111.1 | 107.1 | 151.0 |
| 3150 | 97.7 | 101.5 | 101.0 | 98.0 | 99.1 | 102.7 | 104.1 | 106.3 | 110.1 | 112.5 | 114.0 | 109.4 | 103.5 | 149.6 |
| 4000 | 96.7 | 100.8 | 101.4 | 99.1 | 100.7 | 102.5 | 102.8 | 106.2 | 109.1 | 110.3 | 111.8 | 106.8 | 100.6 | 148.2 |
| 5000 | 94.3 | 99.3 | 100.6 | 98.8 | 101.3 | 103.0 | 102.9 | 105.5 | 108.2 | 110.6 | 109.2 | 103.9 | 98.6 | 147.5 |
| 6300 | 92.7 | 97.8 | 98.9 | 98.2 | 100.8 | 103.2 | 102.8 | 105.2 | 107.0 | 107.5 | 107.2 | 102.1 | 96.6 | 146.3 |
| 8000 | 91.3 | 96.4 | 97.7 | 96.9 | 99.8 | 102.6 | 102.5 | 103.1 | 105.4 | 105.6 | 104.5 | 99.9 | 94.7 | 145.0 |
| 10000 | 90.8 | 96.1 | 97.9 | 97.2 | 99.3 | 102.3 | 102.5 | 102.8 | 104.0 | 103.4 | 102.5 | 98.6 | 93.9 | 144.7 |
| 12500 | 90.0 | 94.4 | 96.2 | 95.7 | 99.0 | 102.0 | 101.5 | 101.5 | 102.3 | 101.1 | 100.0 | 97.5 | 92.8 | 144.2 |
| 16000 | 88.2 | 93.5 | 95.1 | 95.7 | 97.1 | 99.8 | 100.4 | 100.0 | 98.4 | 98.8 | 94.9 | 90.8 | 143.8 | |
| 20000 | 86.2 | 91.2 | 92.3 | 92.4 | 95.0 | 97.8 | 97.8 | 96.9 | 96.7 | 95.7 | 95.4 | 92.2 | 87.7 | 142.8 |
| 25000 | 83.0 | 88.0 | 89.5 | 90.1 | 91.8 | 95.9 | 95.0 | 93.7 | 94.0 | 90.9 | 90.1 | 89.1 | 84.9 | 142.3 |
| 31500 | 78.7 | 84.3 | 85.1 | 87.4 | 87.5 | 91.9 | 91.1 | 90.8 | 90.4 | 86.7 | 85.7 | 84.6 | 80.2 | 141.6 |
| 40000 | 74.6 | 79.7 | 80.9 | 82.3 | 84.1 | 87.8 | 86.3 | 86.2 | 86.2 | 82.9 | 82.2 | 81.0 | 75.5 | 141.3 |
| 50000 | 68.5 | 73.2 | 74.8 | 77.1 | 77.7 | 82.3 | 80.1 | 80.3 | 80.2 | 77.2 | 76.1 | 74.6 | 69.9 | 139.8 |
| 63000 | 62.8 | 67.1 | 69.6 | 70.0 | 71.5 | 76.8 | 73.8 | 74.5 | 74.3 | 70.8 | 70.8 | 68.0 | 63.7 | 139.2 |
| 80000 | 56.8 | 60.4 | 62.4 | 62.6 | 64.6 | 70.5 | 66.8 | 67.5 | 67.3 | 64.1 | 63.4 | 60.9 | 55.6 | 139.2 |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH151 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 0. FPS
 JAPLHA = SB59 IEGA = ND PWL AREA = FULL SPHERE TAMB F = 28.67 PAMB HG = 29.33 RELHUM = 63.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR HT =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1317.2 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2153.6 FPS AE18 = 23.4 SQ IN

PRINT = 83F ZER-1107 TEST PT. NO. = 1107 NC = AF091 CORR. FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59 0 DEG. F., 70 PERCENT R.H. STD DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1107 X1107F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 87.4 | 88.7 | 86.2 | 84.2 | 85.3 | 87.4 | 86.3 | 88.7 | 90.2 | 87.0 | 95.4 | 98.1 | 88.7 | 132.1 |
| 63 | 92.0 | 92.8 | 92.1 | 92.6 | 92.2 | 95.3 | 93.7 | 94.9 | 94.8 | 90.4 | 101.8 | 104.0 | 98.6 | 138.4 |
| 80 | 91.0 | 97.6 | 92.8 | 92.4 | 93.7 | 97.8 | 96.7 | 95.4 | 97.6 | 96.9 | 101.3 | 101.0 | 85.1 | 138.8 |
| 100 | 89.5 | 97.7 | 92.8 | 93.0 | 95.4 | 99.3 | 98.1 | 99.8 | 98.3 | 100.8 | 101.7 | 105.4 | 89.3 | 140.9 |
| 125 | 87.1 | 91.4 | 94.7 | 93.7 | 95.3 | 97.9 | 96.6 | 96.2 | 97.4 | 100.8 | 107.4 | 109.6 | 94.0 | 142.7 |
| 160 | 85.2 | 88.0 | 91.7 | 88.5 | 90.6 | 94.7 | 103.4 | 96.0 | 97.7 | 102.3 | 107.7 | 110.4 | 98.8 | 143.6 |
| 200 | 88.0 | 88.6 | 91.1 | 89.6 | 93.2 | 96.3 | 99.5 | 98.1 | 103.8 | 104.4 | 110.3 | 114.7 | 102.6 | 146.5 |
| 250 | 87.8 | 91.8 | 92.6 | 91.4 | 93.5 | 96.8 | 97.7 | 100.1 | 104.6 | 109.6 | 114.8 | 117.2 | 105.6 | 149.7 |
| 315 | 88.8 | 91.6 | 91.4 | 91.4 | 94.5 | 97.6 | 102.3 | 99.9 | 105.6 | 110.2 | 116.1 | 117.8 | 108.4 | 150.6 |
| 400 | 90.3 | 93.3 | 93.6 | 91.9 | 94.7 | 97.9 | 113.5 | 101.2 | 107.1 | 113.7 | 117.6 | 119.2 | 109.7 | 153.1 |
| 500 | 90.8 | 94.4 | 94.9 | 92.9 | 96.0 | 99.1 | 99.5 | 102.2 | 106.9 | 114.7 | 118.6 | 119.3 | 111.7 | 152.9 |
| 630 | 91.5 | 95.3 | 95.1 | 93.9 | 97.0 | 100.1 | 101.0 | 103.6 | 107.8 | 115.2 | 119.5 | 120.0 | 113.1 | 153.8 |
| 800 | 94.6 | 95.6 | 96.4 | 94.7 | 97.3 | 100.9 | 101.3 | 104.2 | 109.1 | 115.5 | 118.8 | 119.5 | 114.7 | 153.6 |
| 1000 | 101.0 | 104.1 | 101.1 | 97.6 | 98.9 | 102.1 | 102.4 | 105.4 | 110.1 | 114.6 | 118.5 | 119.2 | 114.4 | 153.4 |
| 1250 | 96.2 | 101.5 | 101.5 | 100.4 | 101.6 | 103.7 | 103.1 | 105.8 | 110.7 | 113.3 | 117.2 | 119.1 | 113.8 | 152.9 |
| 1600 | 96.4 | 98.3 | 98.4 | 97.6 | 100.6 | 103.7 | 104.0 | 106.6 | 113.3 | 117.9 | 117.8 | 112.0 | 112.0 | 152.6 |
| 2000 | 96.8 | 100.4 | 98.6 | 96.9 | 99.0 | 102.6 | 103.9 | 107.4 | 110.8 | 114.1 | 116.9 | 115.2 | 108.7 | 151.7 |
| 2500 | 96.8 | 100.8 | 99.9 | 97.6 | 100.0 | 102.9 | 103.8 | 106.4 | 109.8 | 114.1 | 116.6 | 111.1 | 107.1 | 151.0 |
| 3150 | 97.7 | 101.5 | 101.0 | 98.0 | 99.1 | 102.7 | 104.1 | 106.3 | 110.1 | 112.5 | 114.0 | 109.4 | 103.5 | 149.6 |
| 4000 | 96.7 | 100.8 | 101.4 | 99.1 | 100.7 | 102.5 | 102.8 | 105.2 | 109.1 | 110.3 | 111.8 | 106.8 | 100.6 | 148.2 |
| 5000 | 94.3 | 99.3 | 100.6 | 98.8 | 101.3 | 103.0 | 102.9 | 105.5 | 108.2 | 110.6 | 109.2 | 103.9 | 98.6 | 147.5 |
| 6300 | 92.7 | 97.8 | 98.9 | 98.2 | 100.8 | 103.2 | 102.8 | 105.2 | 107.0 | 107.5 | 107.2 | 102.1 | 96.6 | 146.3 |
| 8000 | 91.3 | 96.4 | 97.7 | 96.9 | 99.8 | 102.6 | 102.5 | 103.1 | 105.4 | 105.6 | 104.5 | 99.9 | 94.7 | 145.0 |
| 10000 | 90.8 | 95.1 | 97.9 | 97.2 | 99.3 | 102.3 | 102.5 | 102.8 | 104.0 | 103.4 | 102.5 | 98.6 | 93.9 | 144.7 |
| 12500 | 90.0 | 94.4 | 96.2 | 95.7 | 99.0 | 102.0 | 101.5 | 101.5 | 102.3 | 101.1 | 100.0 | 97.5 | 92.8 | 144.2 |
| 16000 | 88.2 | 93.5 | 95.1 | 95.7 | 97.1 | 99.8 | 100.4 | 100.0 | 100.0 | 98.4 | 98.8 | 94.9 | 90.8 | 143.8 |
| 20000 | 86.2 | 91.2 | 92.3 | 92.4 | 95.0 | 97.8 | 97.8 | 96.9 | 96.7 | 95.4 | 92.2 | 87.7 | 142.8 | |
| 25000 | 83.0 | 88.0 | 89.5 | 90.1 | 91.8 | 95.9 | 95.0 | 93.7 | 94.0 | 90.9 | 90.1 | 84.9 | 142.3 | |
| 31500 | 78.7 | 84.3 | 85.1 | 87.4 | 87.5 | 91.9 | 91.1 | 90.8 | 90.4 | 86.7 | 85.7 | 84.6 | 80.2 | 141.6 |
| 40000 | 74.6 | 79.7 | 80.9 | 82.3 | 84.1 | 87.8 | 86.3 | 86.2 | 85.7 | 82.9 | 82.2 | 81.0 | 75.5 | 141.3 |
| 50000 | 68.5 | 73.2 | 74.8 | 77.1 | 77.7 | 82.3 | 80.1 | 80.3 | 80.2 | 77.2 | 76.1 | 74.6 | 69.9 | 139.8 |
| 63000 | 62.8 | 67.1 | 69.6 | 70.0 | 71.5 | 76.8 | 73.8 | 74.5 | 74.3 | 70.8 | 70.8 | 68.0 | 63.7 | 139.2 |
| 80000 | 56.8 | 60.4 | 62.4 | 62.6 | 64.6 | 70.5 | 66.8 | 67.5 | 67.3 | 64.1 | 63.4 | 60.9 | 55.6 | 139.2 |

ORIGINAL PAGE IS OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICL = ADH151 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 28.67 PAMB HG = 29.33 RELHUM = 63.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =
 FNIN1 = LBS XNL RPM XN1 = RPM VB = 1317.2 FPS AEB = 4.6 SQ IN
 FNFRMB = LBS XNLR RPM XNLR = RPM V18 = 2153.6 FPS AE18 = 23.4 SQ IN
 PRINT - 03F-ZER-1107 TAPE = X1107F TEST PT NO = 1107 NC = AE091 CORR FAN SPEED = RPM

DATPROC - FLITRAN FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
 59.0 DEG F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1107 X11071

ANGLES MEASURED FROM INLET, DEGREES

| FREQ. | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| 50 | 63.2 | 68.8 | 70.6 | 70.1 | 72.6 | 76.1 | 76.9 | 78.9 | 82.6 | 86.6 | 90.2 | 90.5 | 75.5 | 164.6 |
| 63 | 64.3 | 68.6 | 69.4 | 70.2 | 73.7 | 76.9 | 81.4 | 78.7 | 83.7 | 87.2 | 91.5 | 91.0 | 78.3 | 165.5 |
| 80 | 65.7 | 70.3 | 71.6 | 70.6 | 73.9 | 77.1 | 92.6 | 79.9 | 85.1 | 90.6 | 92.9 | 92.4 | 79.4 | 168.0 |
| 100 | 66.1 | 71.2 | 72.8 | 71.6 | 75.1 | 78.4 | 78.6 | 80.8 | 84.8 | 91.6 | 93.9 | 92.3 | 81.3 | 167.8 |
| 125 | 66.7 | 72.1 | 72.9 | 72.5 | 76.0 | 79.2 | 80.0 | 82.2 | 85.7 | 91.9 | 94.7 | 92.9 | 82.5 | 168.7 |
| 160 | 69.6 | 72.2 | 74.1 | 73.1 | 76.2 | 79.9 | 80.2 | 82.6 | 86.9 | 92.1 | 93.8 | 92.2 | 83.7 | 168.5 |
| 200 | 75.7 | 80.4 | 78.6 | 75.9 | 77.7 | 80.9 | 81.2 | 83.6 | 87.6 | 91.0 | 93.2 | 91.5 | 82.9 | 168.3 |
| 250 | 70.6 | 77.6 | 78.8 | 78.4 | 80.1 | 82.4 | 81.6 | 83.8 | 88.0 | 89.4 | 91.6 | 91.0 | 81.6 | 167.8 |
| 315 | 70.3 | 74.0 | 75.4 | 75.3 | 78.8 | 82.0 | 82.2 | 84.3 | 87.9 | 89.0 | 91.8 | 89.1 | 79.0 | 167.5 |
| 400 | 70.2 | 75.7 | 75.1 | 74.3 | 76.9 | 80.7 | 81.7 | 84.8 | 87.4 | 89.4 | 90.3 | 85.8 | 74.7 | 166.6 |
| 500 | 69.6 | 75.7 | 76.1 | 74.7 | 77.5 | 80.6 | 81.3 | 83.5 | 86.0 | 88.9 | 89.5 | 81.0 | 72.1 | 165.9 |
| 630 | 70.0 | 75.9 | 76.8 | 74.7 | 76.3 | 80.0 | 81.2 | 83.0 | 85.9 | 86.9 | 86.3 | 78.5 | 67.3 | 164.5 |
| 800 | 68.3 | 74.6 | 76.7 | 75.3 | 77.5 | 79.4 | 79.6 | 82.4 | 84.4 | 84.2 | 83.4 | 75.1 | 63.1 | 163.1 |
| 1000 | 65.3 | 72.6 | 75.5 | 74.6 | 77.7 | 79.6 | 79.3 | 81.3 | 83.1 | 83.0 | 80.1 | 71.3 | 59.8 | 162.4 |
| 1250 | 62.9 | 70.5 | 73.2 | 73.6 | 76.7 | 79.4 | 78.7 | 80.6 | 81.3 | 80.1 | 77.3 | 68.4 | 56.0 | 161.2 |
| 1600 | 60.1 | 68.0 | 71.1 | 71.5 | 75.0 | 78.0 | 77.8 | 77.7 | 78.8 | 77.2 | 73.3 | 64.4 | 51.3 | 160.0 |
| 2000 | 57.8 | 66.3 | 70.1 | 70.7 | 73.6 | 76.8 | 76.8 | 76.3 | 76.2 | 73.6 | 69.6 | 60.7 | 46.7 | 159.6 |
| 2500 | 54.3 | 62.5 | 66.7 | 67.6 | 71.7 | 75.0 | 74.3 | 73.4 | 72.8 | 69.1 | 64.3 | 55.7 | 39.7 | 159.1 |
| 3150 | 48.2 | 58.1 | 62.7 | 65.1 | 67.5 | 70.5 | 70.8 | 69.4 | 67.6 | 63.0 | 58.8 | 47.1 | 28.3 | 158.7 |
| 4000 | 38.5 | 49.7 | 54.6 | 57.1 | 61.0 | 64.2 | 63.9 | 61.6 | 59.0 | 54.2 | 47.8 | 34.2 | 9.4 | 157.7 |
| 5000 | 23.9 | 37.3 | 44.0 | 47.7 | 51.2 | 55.9 | 54.4 | 51.4 | 48.5 | 40.3 | 31.1 | 15.8 | 157.2 | 157.2 |
| 6000 | 0.6 | 18.2 | 26.3 | 33.0 | 35.6 | 40.8 | 39.2 | 36.5 | 31.6 | 20.5 | 7.6 | 156.5 | 156.5 | 156.5 |
| 8000 | | | | | | | | | | | | | | 156.2 |
| 10000 | | | | | | | | | | | | | | 154.7 |
| 12500 | | | | | | | | | | | | | | 154.1 |
| 16000 | | | | | | | | | | | | | | 154.1 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

OASPL 81.1 86.5 87.3 86.4 89.0 92.0 95.5 94.4 97.6 101.0 103.0 101.3 90.8 178.7
 PNL 86.0 92.0 93.5 93.5 96.5 99.7 100.3 100.7 103.0 104.6 105.3 102.0 91.5
 PNL 86.9 92.9 93.5 94.1 96.5 99.7 100.8 101.2 103.5 104.6 105.3 102.0 91.5
 DBA 75.5 81.8 83.5 82.9 85.7 88.5 88.6 90.2 92.3 93.4 93.8 89.6 79.8

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH151 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 28.67 PAMB HG = 29.33 RELHUM = 63.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1317.2 FPS AEB = 4.6 SQ IN
 PAMR = 105 PAMR = RPM RPM V18 = 2157.6 FPS
 23.4 SQ IN
 CORR FAN SPEED = DPM

DATPROC - FLTRAN UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE.
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-400-1108 X1108C
 BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.9 | 90.2 | 87.7 | 85.0 | 84.3 | 86.4 | 86.8 | 89.2 | 90.7 | 89.0 | 94.4 | 96.1 | 91.7 | 131.9 |
| 63 | 92.5 | 93.5 | 94.1 | 91.1 | 90.0 | 93.6 | 95.2 | 96.4 | 95.6 | 94.9 | 96.8 | 98.0 | 96.9 | 136.7 |
| 80 | 90.3 | 97.3 | 92.1 | 91.9 | 93.0 | 96.3 | 95.5 | 94.1 | 95.8 | 95.4 | 99.3 | 99.0 | 89.1 | 137.4 |
| 100 | 88.2 | 95.5 | 91.3 | 90.8 | 92.6 | 97.0 | 96.1 | 97.0 | 95.8 | 97.6 | 99.5 | 104.1 | 90.3 | 138.7 |
| 125 | 87.6 | 90.2 | 93.2 | 92.2 | 94.8 | 96.7 | 95.3 | 95.0 | 95.2 | 98.3 | 105.6 | 108.6 | 94.5 | 141.3 |
| 160 | 84.2 | 84.0 | 90.0 | 85.8 | 88.6 | 91.5 | 96.4 | 92.3 | 95.0 | 99.6 | 105.4 | 108.4 | 98.0 | 140.9 |
| 200 | 85.0 | 86.1 | 87.8 | 85.9 | 88.7 | 92.3 | 94.0 | 94.9 | 99.6 | 99.4 | 106.0 | 111.7 | 100.1 | 143.0 |
| 250 | 82.8 | 87.8 | 88.1 | 87.4 | 90.0 | 93.1 | 94.0 | 96.1 | 100.8 | 105.1 | 111.0 | 114.0 | 102.4 | 146.1 |
| 315 | 84.1 | 87.1 | 87.6 | 87.4 | 90.0 | 93.4 | 95.8 | 96.2 | 100.9 | 106.5 | 112.3 | 114.3 | 104.2 | 146.9 |
| 400 | 84.6 | 88.1 | 89.1 | 87.4 | 90.5 | 93.1 | 104.2 | 96.2 | 101.4 | 108.9 | 114.1 | 115.2 | 103.2 | 148.4 |
| 500 | 85.8 | 88.6 | 90.1 | 88.2 | 91.3 | 94.4 | 95.0 | 97.4 | 101.4 | 110.2 | 115.1 | 114.8 | 101.2 | 148.7 |
| 630 | 85.8 | 89.1 | 90.1 | 89.1 | 92.2 | 95.1 | 95.7 | 98.6 | 102.6 | 110.7 | 115.0 | 113.0 | 98.9 | 148.3 |
| 800 | 87.1 | 88.4 | 90.9 | 89.4 | 92.3 | 96.1 | 96.5 | 99.2 | 103.1 | 110.7 | 113.1 | 109.5 | 97.4 | 146.8 |
| 1000 | 90.0 | 92.1 | 92.6 | 90.6 | 93.4 | 97.1 | 97.4 | 100.6 | 105.1 | 111.1 | 112.5 | 106.7 | 95.4 | 146.7 |
| 1250 | 88.2 | 93.0 | 91.7 | 91.6 | 93.9 | 97.0 | 96.9 | 100.0 | 105.2 | 109.6 | 109.9 | 103.9 | 94.5 | 145.0 |
| 1600 | 88.4 | 91.0 | 91.9 | 91.6 | 94.8 | 97.9 | 98.8 | 101.3 | 105.9 | 109.8 | 110.6 | 102.8 | 94.5 | 145.5 |
| 2000 | 89.8 | 91.1 | 91.6 | 90.7 | 93.8 | 97.1 | 98.6 | 101.7 | 105.6 | 110.1 | 109.9 | 101.7 | 94.9 | 145.3 |
| 2500 | 93.8 | 94.8 | 93.1 | 91.4 | 94.0 | 97.1 | 98.3 | 101.9 | 105.3 | 109.3 | 108.8 | 99.6 | 95.4 | 144.8 |
| 3150 | 94.4 | 96.5 | 96.5 | 93.8 | 94.4 | 97.7 | 98.8 | 101.8 | 105.9 | 108.5 | 107.2 | 100.1 | 94.0 | 144.4 |
| 4000 | 93.7 | 95.8 | 96.7 | 94.3 | 96.0 | 97.7 | 98.1 | 101.9 | 104.1 | 105.8 | 106.0 | 99.3 | 93.4 | 143.2 |
| 5000 | 92.8 | 95.5 | 96.4 | 93.5 | 95.8 | 98.5 | 97.6 | 100.7 | 103.5 | 106.2 | 104.7 | 97.4 | 92.6 | 142.8 |
| 6300 | 92.0 | 95.1 | 95.7 | 94.0 | 96.5 | 98.5 | 98.3 | 100.7 | 102.0 | 102.7 | 102.0 | 95.7 | 90.4 | 141.6 |
| 8000 | 92.3 | 94.4 | 95.0 | 93.4 | 95.8 | 98.6 | 97.6 | 98.9 | 100.5 | 100.4 | 99.0 | 93.4 | 89.2 | 140.5 |
| 10000 | 91.8 | 94.4 | 96.2 | 95.0 | 96.1 | 98.3 | 97.6 | 98.6 | 100.3 | 99.0 | 97.6 | 93.5 | 88.8 | 140.8 |
| 12500 | 90.6 | 92.8 | 94.6 | 94.0 | 96.1 | 98.8 | 97.6 | 97.6 | 98.4 | 97.2 | 95.3 | 92.6 | 88.3 | 140.7 |
| 16000 | 89.5 | 93.1 | 94.0 | 93.9 | 94.7 | 97.7 | 97.0 | 97.1 | 97.4 | 94.0 | 94.2 | 91.0 | 86.5 | 141.1 |
| 20000 | 86.6 | 90.3 | 91.2 | 91.2 | 92.1 | 95.9 | 95.0 | 94.6 | 94.6 | 92.4 | 91.3 | 89.1 | 84.6 | 140.5 |
| 25000 | 83.6 | 87.0 | 88.0 | 89.0 | 90.2 | 94.1 | 93.7 | 91.9 | 92.2 | 89.2 | 87.6 | 87.6 | 82.8 | 140.6 |
| 31500 | 79.9 | 83.1 | 84.3 | 86.1 | 86.5 | 90.6 | 89.6 | 89.0 | 88.8 | 85.7 | 84.4 | 83.5 | 78.6 | 140.3 |
| 40000 | 76.3 | 78.9 | 80.2 | 81.3 | 82.1 | 87.0 | 85.5 | 84.7 | 85.0 | 81.4 | 81.1 | 79.7 | 74.2 | 140.2 |
| 50000 | 69.4 | 72.7 | 74.0 | 75.8 | 76.4 | 81.5 | 79.6 | 79.0 | 78.9 | 75.5 | 73.5 | 67.8 | 67.8 | 138.8 |
| 63000 | 63.1 | 66.6 | 68.6 | 69.5 | 70.5 | 75.8 | 72.8 | 73.0 | 74.0 | 69.6 | 69.8 | 67.5 | 61.1 | 138.3 |
| 80000 | 56.6 | 59.5 | 60.7 | 61.4 | 63.1 | 69.2 | 66.1 | 66.0 | 66.6 | 61.9 | 62.7 | 60.4 | 53.9 | 138.0 |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH156 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 31.42 PAMB HG = 29.20 RELHUM = 58.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0-FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM VB = 1300.3 FPS AEB = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM v18 = 2121.6 FPS AE18 = 23.4 SQ IN
 RUNPT = 83F-400-1108 TAPE = X1108C TEST PT NO = 1108 NC = AEO91 CORR FAN SPEED = RPM

DATPROC - FLTRAN

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT ARC

IDENTIFICATION - 83F-400-1108 X1108F

ANGLES MEASURED FROM INLET, DEGREES

FREQ PWL
 50
 63
 80
 100
 125
 160
 200

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 90.7 | 94.3 | 93.0 | 90.7 | 91.6 | 93.1 | 92.5 | 93.1 | 98.5 | 103.6 | 109.3 | 112.0 | 104.0 | 144.5 |
| 315 | 90.7 | 94.3 | 93.0 | 90.7 | 91.8 | 93.6 | 94.8 | 94.1 | 99.0 | 106.1 | 111.2 | 113.6 | 104.3 | 146.1 |
| 400 | 91.8 | 93.5 | 92.6 | 90.8 | 92.3 | 93.4 | 103.2 | 94.0 | 99.1 | 107.5 | 112.5 | 113.8 | 103.9 | 147.1 |
| 500 | 92.2 | 94.5 | 94.1 | 90.8 | 93.2 | 94.7 | 94.0 | 95.2 | 100.5 | 108.2 | 112.8 | 112.9 | 103.7 | 146.8 |
| 630 | 93.5 | 95.0 | 95.1 | 91.6 | 94.2 | 95.5 | 94.7 | 96.4 | 101.5 | 108.7 | 111.5 | 110.8 | 105.0 | 146.0 |
| 800 | 93.5 | 95.5 | 95.1 | 92.6 | 94.3 | 96.7 | 95.6 | 97.0 | 103.7 | 109.5 | 111.4 | 109.0 | 105.2 | 146.0 |
| 1000 | 94.8 | 94.8 | 96.0 | 93.0 | 95.6 | 97.7 | 96.6 | 98.5 | 104.0 | 108.1 | 109.1 | 106.4 | 104.6 | 144.6 |
| 1250 | 97.7 | 98.5 | 97.4 | 94.3 | 96.2 | 97.8 | 96.2 | 98.1 | 104.9 | 108.4 | 109.8 | 105.3 | 104.5 | 145.1 |
| 1600 | 95.8 | 99.5 | 96.9 | 95.4 | 97.3 | 98.9 | 98.3 | 99.5 | 104.8 | 109.1 | 109.4 | 104.6 | 105.4 | 145.2 |
| 2000 | 96.0 | 97.5 | 97.2 | 95.4 | 96.4 | 98.4 | 98.5 | 100.2 | 105.1 | 108.9 | 109.0 | 103.3 | 106.7 | 145.2 |
| 2500 | 97.5 | 97.7 | 96.9 | 94.7 | 96.6 | 98.7 | 98.5 | 100.9 | 106.1 | 108.5 | 107.9 | 104.2 | 105.7 | 145.1 |
| 3150 | 99.3 | 99.8 | 97.4 | 94.8 | 97.2 | 99.7 | 99.4 | 101.2 | 105.2 | 106.6 | 107.4 | 104.1 | 105.7 | 144.7 |
| 4000 | 99.7 | 101.4 | 100.8 | 97.4 | 99.6 | 100.3 | 99.3 | 102.0 | 104.5 | 106.9 | 105.9 | 102.1 | 104.8 | 144.8 |
| 5000 | 100.4 | 102.0 | 102.1 | 98.8 | 99.8 | 101.5 | 99.2 | 100.9 | 103.9 | 104.4 | 104.2 | 101.4 | 103.6 | 144.4 |
| 6300 | 100.2 | 102.2 | 102.2 | 98.4 | 100.6 | 101.5 | 100.5 | 101.7 | 103.3 | 103.1 | 102.4 | 100.2 | 103.3 | 144.4 |
| 8000 | 99.3 | 101.7 | 101.4 | 98.7 | 99.9 | 101.6 | 99.9 | 100.5 | 103.8 | 102.4 | 101.7 | 100.8 | 103.3 | 144.4 |
| 10000 | 99.4 | 100.8 | 100.5 | 98.0 | 100.1 | 101.3 | 100.0 | 100.4 | 101.3 | 99.8 | 98.2 | 98.3 | 100.9 | 143.8 |
| 12500 | 98.7 | 100.5 | 101.4 | 99.2 | 100.1 | 101.8 | 99.5 | 98.5 | 100.4 | 96.8 | 97.3 | 96.9 | 99.2 | 144.2 |
| 16000 | 96.9 | 98.4 | 99.3 | 97.7 | 98.7 | 100.7 | 98.7 | 97.7 | 96.9 | 94.2 | 93.5 | 94.3 | 96.7 | 143.8 |
| 20000 | 95.5 | 98.3 | 98.3 | 97.2 | 96.7 | 98.9 | 96.4 | 94.5 | 95.2 | 91.6 | 90.4 | 93.4 | 95.5 | 144.0 |
| 25000 | 94.7 | 97.2 | 96.6 | 95.2 | 94.8 | 97.1 | 95.1 | 91.9 | 92.6 | 88.9 | 88.0 | 90.1 | 92.1 | 144.5 |
| 31500 | 90.9 | 93.0 | 92.6 | 92.1 | 91.1 | 93.6 | 91.0 | 89.0 | 89.5 | 85.5 | 85.5 | 87.1 | 88.5 | 144.1 |
| 40000 | 86.3 | 88.3 | 88.1 | 88.3 | 86.7 | 90.0 | 87.0 | 84.6 | 83.9 | 80.0 | 80.1 | 81.4 | 82.6 | 143.7 |
| 50000 | 82.4 | 83.8 | 83.6 | 83.1 | 81.0 | 84.5 | 81.0 | 79.0 | 81.2 | 76.7 | 77.4 | 78.0 | 78.5 | 143.2 |
| 63000 | 74.6 | 76.6 | 76.5 | 76.7 | 75.1 | 78.8 | 74.6 | 73.7 | 74.4 | 69.3 | 70.5 | 71.2 | 71.5 | 142.0 |
| 80000 | 66.7 | 69.0 | 69.6 | 68.9 | 67.7 | 72.2 | 67.6 | 66.2 | 64.6 | 59.5 | 60.7 | 61.4 | 61.7 | 141.4 |

QASPL 110.4 112.1 111.8 109.3 110.7 112.3 111.7 112.1 116.0 119.5 121.6 121.0 117.0 158.9
 PNL 122.3 123.9 123.4 120.4 122.2 123.6 122.9 124.5 128.3 131.1 131.8 129.4 129.1
 PNL2 122.3 123.9 123.4 120.4 122.2 123.6 124.4 124.5 128.3 131.1 131.8 129.4 129.1
 DBA 190.0 192.0 192.2 191.9 190.4 194.5 190.2 188.9 188.6 183.7 184.7 185.5 185.9

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICL = ADH156 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 31.42 PAMB HG = 29.20 RELHUM = 58.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =
 FNIN1 = LBS XNL = RPM XNH = RPM VB = 1300.3 FPS AEB = 4.6 SO IN
 FNIRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2121.6 FPS AE18 = 23.4 SO IN
 PUMPT = 83F-400-1108 TAPF = X1108F TEST PT NO = 1108 NC = AEO91 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H., STD. DAY, SB 2400.0 FT., SL

IDENTIFICATION - 83F-400-1108 X11081

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 66.1 | 71.2 | 71.1 | 69.4 | 70.7 | 72.4 | 71.7 | 71.9 | 76.6 | 80.6 | 84.8 | 85.3 | 73.9 | 159.4 |
| 63 | 66.1 | 71.2 | 71.0 | 69.4 | 71.0 | 72.9 | 73.9 | 72.9 | 77.1 | 83.1 | 86.6 | 86.8 | 74.2 | 161.0 |
| 80 | 67.1 | 70.4 | 70.6 | 69.5 | 71.5 | 72.6 | 72.7 | 72.7 | 77.1 | 84.4 | 87.8 | 86.9 | 73.7 | 162.0 |
| 100 | 67.5 | 71.3 | 72.0 | 69.5 | 72.3 | 73.9 | 73.1 | 73.9 | 78.4 | 85.0 | 88.1 | 85.9 | 73.2 | 161.7 |
| 125 | 68.7 | 71.8 | 73.0 | 70.2 | 73.2 | 74.6 | 73.7 | 75.0 | 79.3 | 85.5 | 86.7 | 83.7 | 74.4 | 160.9 |
| 160 | 68.4 | 72.1 | 72.8 | 71.1 | 73.2 | 75.7 | 74.5 | 75.5 | 81.4 | 86.0 | 86.4 | 81.6 | 74.2 | 160.9 |
| 200 | 69.5 | 71.2 | 73.5 | 71.3 | 74.3 | 76.6 | 75.3 | 76.7 | 81.6 | 84.4 | 83.8 | 78.7 | 73.1 | 159.6 |
| 250 | 72.1 | 74.6 | 75.0 | 72.3 | 74.6 | 76.4 | 74.7 | 76.1 | 82.2 | 84.5 | 84.2 | 77.2 | 72.4 | 160.0 |
| 315 | 69.8 | 75.2 | 73.9 | 73.1 | 75.5 | 77.3 | 76.5 | 77.3 | 81.8 | 84.8 | 83.3 | 75.9 | 72.4 | 160.2 |
| 400 | 69.4 | 72.8 | 73.7 | 72.8 | 74.3 | 76.5 | 76.3 | 77.6 | 81.6 | 84.2 | 82.4 | 73.9 | 72.6 | 160.1 |
| 500 | 70.3 | 72.5 | 73.1 | 71.7 | 74.1 | 76.4 | 76.0 | 77.9 | 82.3 | 83.3 | 80.7 | 74.1 | 70.7 | 160.0 |
| 630 | 71.5 | 74.2 | 73.2 | 71.5 | 74.4 | 77.0 | 76.6 | 77.8 | 80.9 | 81.0 | 79.7 | 73.3 | 69.5 | 159.6 |
| 800 | 71.4 | 75.2 | 76.1 | 73.6 | 76.4 | 77.2 | 76.1 | 78.3 | 79.8 | 80.7 | 77.6 | 70.4 | 67.1 | 159.7 |
| 1000 | 71.4 | 75.3 | 76.9 | 74.6 | 76.2 | 78.1 | 75.6 | 76.7 | 78.8 | 77.7 | 75.2 | 68.8 | 64.8 | 159.3 |
| 1250 | 70.4 | 74.9 | 76.5 | 73.7 | 76.5 | 77.6 | 76.4 | 77.0 | 77.6 | 75.8 | 72.6 | 66.5 | 62.7 | 159.3 |
| 1600 | 68.1 | 73.3 | 74.8 | 73.3 | 75.1 | 77.1 | 75.2 | 75.1 | 77.2 | 74.0 | 70.5 | 65.3 | 59.8 | 159.3 |
| 2000 | 66.5 | 71.1 | 72.8 | 71.5 | 74.4 | 75.8 | 74.3 | 73.9 | 73.6 | 70.0 | 65.3 | 60.3 | 53.6 | 158.7 |
| 2500 | 63.0 | 68.6 | 71.9 | 71.2 | 72.9 | 74.8 | 73.3 | 70.5 | 70.8 | 64.8 | 61.6 | 55.2 | 46.1 | 159.1 |
| 3150 | 56.9 | 63.0 | 66.9 | 67.1 | 69.1 | 71.4 | 69.1 | 67.1 | 64.5 | 58.8 | 53.5 | 46.6 | 34.3 | 158.7 |
| 4000 | 47.8 | 56.8 | 60.7 | 61.9 | 62.8 | 65.4 | 62.4 | 59.3 | 57.5 | 50.1 | 42.7 | 35.3 | 17.1 | 158.9 |
| 5000 | 35.6 | 46.5 | 51.1 | 52.8 | 54.2 | 57.0 | 54.5 | 49.6 | 47.1 | 38.2 | 28.9 | 16.7 | | |
| 6300 | 12.9 | 26.9 | 33.8 | 37.7 | 39.2 | 42.5 | 39.1 | 34.7 | 30.7 | 19.3 | 7.5 | | | |
| 8000 | | 6.6 | 13.4 | 15.3 | 19.8 | 15.6 | 9.7 | 2.4 | | | | | | |
| 10000 | | | | | | | | | | | | | | |
| 12500 | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS OF POOR QUALITY

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| OASPL | 81.9 | 85.6 | 86.4 | 84.6 | 86.9 | 88.7 | 88.6 | 88.5 | 92.2 | 95.3 | 96.2 | 93.7 | 84.1 | 173.8 |
| PWL | 88.7 | 93.3 | 95.1 | 94.0 | 96.1 | 98.0 | 96.4 | 96.2 | 98.4 | 99.3 | 98.1 | 93.6 | 86.6 | |
| PNT | 89.9 | 94.3 | 95.7 | 94.5 | 96.1 | 98.0 | 96.4 | 96.7 | 99.0 | 99.3 | 98.1 | 93.6 | 86.6 | |
| DBA | 78.9 | 83.0 | 84.3 | 82.5 | 84.8 | 86.5 | 85.0 | 85.7 | 88.0 | 88.3 | 86.5 | 80.2 | 75.9 | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

| | | | | | | | | | | | | | | | | | |
|----------|---|--------------|--------------|---|----------|------------|---|--------------|------------|---|------------|----------------|---|------------|--------|---|----------|
| VEHICL | = | ADH156 | TEST DATE | = | 03-17-83 | LOCAT | = | C41 ANECH CH | CONFIG | = | 11 | MODEL | = | SL | FLIVEL | = | 400. FPS |
| IAPLHA | = | SB59 | IEGA | = | NO | PWL AREA | = | FULL SPHERE | TAMB F | = | 31.42 | PAMB HG | = | 29.20 | RELHUM | = | 58.6 PCT |
| WIND DIR | = | | DEG WIND VEL | = | MPH | EXT DIST | = | 2400.0 FT | EXT CONFIG | = | SL | MIKE HT | = | | NBFR | = | |
| FNIN1 | = | | LBS XNL | = | RPM | XNH | = | RPM | V8 | = | 1300.3 FPS | AEB | = | 4.6 SQ IN | | = | |
| FNRAMB | = | | LBS XNLR | = | RPM | XNHR | = | RPM | V18 | = | 2121.6 FPS | AE18 | = | 23.4 SQ IN | | = | |
| QURST | = | 83F 400 1108 | TADF | = | Y11081 | TRST DT NO | = | 1108 | NC | = | AF091 | CORR FAN SPEED | = | RPM | | = | |

DATPROC - FLTRAN UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
59.0 DEG F, 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-ZER-1109 X1109C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 89.6 | 90.9 | 89.2 | 86.7 | 87.3 | 89.7 | 90.8 | 92.7 | 92.7 | 91.2 | 98.4 | 99.3 | 84.5 | 134.6 |
| 63 | 96.5 | 96.3 | 97.8 | 94.4 | 94.7 | 98.3 | 98.2 | 98.4 | 98.1 | 96.4 | 102.0 | 101.2 | 95.1 | 140.0 |
| 80 | 93.5 | 99.8 | 95.1 | 94.9 | 96.5 | 100.1 | 98.5 | 97.4 | 99.8 | 99.2 | 103.3 | 102.7 | 86.4 | 140.9 |
| 100 | 91.7 | 100.0 | 95.3 | 95.3 | 97.4 | 100.8 | 99.6 | 101.8 | 100.3 | 103.6 | 104.0 | 107.6 | 91.3 | 143.0 |
| 125 | 89.4 | 93.4 | 97.2 | 96.2 | 98.1 | 100.4 | 98.3 | 98.7 | 99.7 | 104.0 | 110.4 | 112.6 | 97.0 | 145.6 |
| 160 | 87.2 | 90.5 | 95.0 | 90.8 | 92.1 | 96.5 | 103.9 | 99.0 | 100.2 | 105.6 | 111.2 | 113.4 | 101.8 | 146.4 |
| 200 | 90.5 | 90.3 | 93.3 | 91.6 | 95.0 | 98.3 | 101.2 | 100.4 | 105.1 | 106.6 | 112.8 | 116.7 | 104.9 | 148.6 |
| 250 | 89.8 | 92.8 | 94.1 | 93.4 | 96.0 | 98.3 | 99.2 | 101.9 | 105.8 | 112.1 | 116.8 | 119.2 | 107.4 | 151.7 |
| 315 | 90.8 | 93.6 | 93.6 | 92.9 | 96.0 | 98.9 | 103.8 | 102.2 | 107.4 | 113.5 | 118.6 | 120.0 | 109.9 | 153.0 |
| 400 | 92.6 | 95.6 | 95.9 | 93.9 | 97.2 | 100.4 | 114.5 | 103.4 | 109.9 | 116.7 | 120.6 | 120.7 | 111.4 | 155.3 |
| 500 | 93.6 | 96.4 | 96.4 | 95.2 | 97.8 | 101.1 | 102.0 | 104.9 | 109.9 | 118.2 | 122.1 | 121.5 | 112.9 | 155.9 |
| 630 | 94.0 | 97.6 | 97.3 | 96.4 | 99.5 | 102.6 | 103.2 | 106.1 | 111.1 | 119.2 | 123.0 | 121.7 | 113.9 | 156.7 |
| 800 | 97.3 | 98.1 | 98.6 | 96.9 | 99.5 | 103.4 | 103.8 | 107.2 | 112.6 | 119.5 | 122.3 | 121.5 | 115.2 | 156.6 |
| 1000 | 101.8 | 104.8 | 102.3 | 99.9 | 101.4 | 104.8 | 105.4 | 109.1 | 113.8 | 118.9 | 122.8 | 120.7 | 114.1 | 156.6 |
| 1250 | 98.9 | 104.7 | 104.0 | 102.4 | 104.1 | 106.0 | 105.4 | 109.3 | 114.5 | 118.8 | 121.9 | 120.1 | 113.0 | 156.2 |
| 1600 | 100.4 | 102.8 | 102.4 | 101.1 | 103.3 | 106.7 | 107.0 | 109.6 | 115.2 | 118.8 | 122.1 | 118.0 | 111.0 | 156.0 |
| 2000 | 102.1 | 103.6 | 102.8 | 100.7 | 102.3 | 105.1 | 106.6 | 110.7 | 114.8 | 118.8 | 121.3 | 114.7 | 108.7 | 155.4 |
| 2500 | 102.0 | 105.5 | 104.1 | 100.8 | 103.7 | 106.1 | 106.5 | 110.6 | 114.0 | 119.1 | 118.6 | 111.9 | 107.4 | 154.3 |
| 3150 | 100.9 | 104.5 | 105.0 | 102.5 | 103.8 | 106.6 | 107.0 | 110.5 | 115.1 | 118.7 | 116.7 | 110.3 | 105.2 | 153.9 |
| 4000 | 97.9 | 102.3 | 103.4 | 102.3 | 105.7 | 106.7 | 107.3 | 110.6 | 114.0 | 115.8 | 114.7 | 107.5 | 102.8 | 152.4 |
| 5000 | 96.8 | 102.0 | 101.0 | 104.2 | 107.4 | 106.8 | 109.9 | 112.9 | 116.1 | 113.4 | 105.9 | 100.3 | 152.0 | |
| 6300 | 95.9 | 101.1 | 101.6 | 101.2 | 103.7 | 106.9 | 106.7 | 109.7 | 111.5 | 113.4 | 111.6 | 103.9 | 98.8 | 150.7 |
| 8000 | 94.3 | 98.9 | 100.7 | 100.9 | 103.0 | 106.1 | 105.5 | 107.9 | 109.9 | 111.6 | 110.2 | 102.4 | 97.5 | 149.6 |
| 10000 | 93.6 | 98.9 | 100.2 | 100.2 | 102.6 | 105.8 | 105.6 | 107.3 | 109.3 | 110.5 | 108.3 | 101.4 | 96.7 | 149.3 |
| 12500 | 92.6 | 96.8 | 99.1 | 99.0 | 101.6 | 105.3 | 104.6 | 105.8 | 107.2 | 108.5 | 105.8 | 99.8 | 95.4 | 148.6 |
| 16000 | 90.6 | 95.9 | 97.3 | 98.2 | 100.0 | 103.2 | 103.1 | 104.2 | 105.2 | 105.6 | 103.8 | 97.5 | 91.8 | 147.9 |
| 20000 | 88.2 | 93.2 | 94.8 | 95.9 | 97.2 | 101.0 | 101.1 | 100.9 | 102.2 | 102.3 | 100.4 | 95.5 | 89.5 | 146.9 |
| 25000 | 85.5 | 90.6 | 91.6 | 93.1 | 94.8 | 98.9 | 98.6 | 97.8 | 99.4 | 97.8 | 94.5 | 91.4 | 86.9 | 146.2 |
| 31500 | 82.3 | 86.5 | 88.0 | 90.2 | 90.6 | 94.8 | 94.0 | 94.7 | 95.0 | 94.4 | 91.3 | 86.9 | 82.2 | 145.4 |
| 40000 | 77.5 | 82.6 | 84.1 | 85.7 | 86.3 | 90.7 | 89.6 | 90.4 | 91.1 | 87.6 | 83.1 | 78.1 | 145.2 | |
| 50000 | 71.6 | 76.1 | 78.0 | 79.7 | 80.8 | 85.7 | 84.0 | 83.7 | 85.6 | 86.3 | 80.7 | 76.7 | 144.1 | |
| 63000 | 65.7 | 70.3 | 72.3 | 73.4 | 74.9 | 80.2 | 77.2 | 78.4 | 80.7 | 80.3 | 76.2 | 71.4 | 143.9 | |
| 80000 | 58.5 | 63.4 | 65.4 | 66.8 | 68.0 | 74.4 | 71.0 | 72.7 | 74.6 | 73.4 | 70.6 | 64.8 | 144.4 | |
| 0ASPL | 111.1 | 114.7 | 114.5 | 113.1 | 115.4 | 118.3 | 120.0 | 121.3 | 125.2 | 129.7 | 132.2 | 130.8 | 122.8 | 167.3 |
| PWL | 124.0 | 127.7 | 127.9 | 126.0 | 128.7 | 130.8 | 131.8 | 134.3 | 138.3 | 142.2 | 143.1 | 139.3 | 132.1 | |
| PNT | 125.3 | 128.8 | 127.9 | 126.5 | 129.2 | 130.8 | 134.0 | 134.9 | 138.3 | 142.2 | 143.1 | 139.3 | 132.1 | |
| DBA | 111.0 | 114.5 | 114.1 | 112.4 | 114.8 | 117.5 | 118.4 | 121.1 | 125.2 | 129.4 | 131.5 | 128.8 | 121.8 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH152 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = O. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 29.14 PAMB HG = 29.31 RELHUM = 69.6 PCT
 WIND_DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1512.2 FPS AEB = 4.6 SO IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2337.6 FPS AE18 = 23.4 SO IN

TEMP = 83F-ZER-1109 DATE = X1109C TEST PT NO = 1100 NC = AE091 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1109 X1109F

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150 160. PWL

| | | | | | | | | | | | | | | | |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| FREQ | 50 | 59.6 | 90.9 | 89.2 | 86.7 | 87.3 | 89.7 | 90.8 | 92.7 | 92.7 | 91.2 | 98.4 | 99.3 | 84.5 | 134.6 |
| | 63 | 96.5 | 96.3 | 97.8 | 94.4 | 94.7 | 98.3 | 98.2 | 98.4 | 98.1 | 96.4 | 102.0 | 101.2 | 95.1 | 140.0 |
| | 80 | 93.5 | 99.8 | 95.1 | 94.9 | 96.5 | 100.1 | 98.5 | 97.4 | 99.8 | 99.2 | 103.3 | 102.7 | 86.4 | 140.9 |
| | 100 | 91.7 | 100.0 | 95.3 | 95.3 | 97.4 | 100.8 | 99.6 | 101.8 | 100.3 | 103.6 | 104.0 | 107.6 | 91.3 | 143.0 |
| | 125 | 89.4 | 93.4 | 97.2 | 96.2 | 98.1 | 100.4 | 98.3 | 98.7 | 99.7 | 104.0 | 112.6 | 97.0 | 145.6 | |
| | 160 | 87.2 | 90.5 | 95.0 | 90.8 | 92.1 | 96.5 | 103.9 | 99.0 | 100.2 | 105.6 | 111.2 | 113.4 | 101.8 | 146.4 |
| | 200 | 90.5 | 90.3 | 93.3 | 91.6 | 95.0 | 98.3 | 101.2 | 100.4 | 105.1 | 106.6 | 112.8 | 116.7 | 104.9 | 148.6 |
| | 250 | 89.8 | 92.8 | 94.1 | 93.4 | 96.0 | 98.3 | 99.2 | 101.9 | 105.8 | 112.1 | 116.8 | 119.2 | 107.4 | 151.7 |
| | 315 | 90.8 | 93.6 | 93.6 | 92.9 | 96.0 | 98.9 | 103.8 | 102.2 | 107.4 | 113.5 | 118.6 | 120.0 | 109.9 | 153.0 |
| | 400 | 92.6 | 95.6 | 95.9 | 93.9 | 97.2 | 100.4 | 114.5 | 103.4 | 109.9 | 116.7 | 120.6 | 120.7 | 111.4 | 155.3 |
| | 500 | 93.6 | 96.4 | 96.4 | 95.2 | 97.8 | 101.1 | 102.0 | 104.9 | 109.9 | 118.2 | 122.1 | 121.5 | 112.9 | 155.9 |
| | 630 | 94.0 | 97.6 | 97.3 | 96.4 | 99.5 | 102.6 | 103.2 | 106.1 | 111.1 | 119.2 | 123.0 | 121.7 | 113.9 | 156.7 |
| | 800 | 97.3 | 98.1 | 98.6 | 96.9 | 99.5 | 103.4 | 103.8 | 107.2 | 112.6 | 119.5 | 122.3 | 121.5 | 115.2 | 156.6 |
| | 1000 | 101.8 | 104.8 | 102.3 | 99.9 | 101.4 | 104.8 | 105.4 | 109.1 | 113.8 | 118.9 | 122.8 | 120.7 | 114.1 | 156.6 |
| | 1250 | 98.9 | 104.7 | 104.0 | 102.4 | 104.1 | 106.0 | 105.4 | 109.3 | 114.5 | 118.8 | 121.9 | 120.1 | 113.0 | 156.2 |
| | 1600 | 100.4 | 102.8 | 102.4 | 101.1 | 103.3 | 106.7 | 107.0 | 109.6 | 115.2 | 118.8 | 122.1 | 118.0 | 111.0 | 156.0 |
| | 2000 | 102.1 | 103.6 | 102.8 | 100.7 | 102.3 | 105.1 | 106.6 | 110.7 | 114.8 | 118.8 | 121.3 | 114.7 | 108.7 | 155.4 |
| | 2500 | 102.0 | 105.5 | 104.1 | 100.8 | 103.7 | 106.1 | 106.5 | 110.6 | 114.0 | 119.1 | 118.6 | 111.9 | 107.4 | 154.3 |
| | 3150 | 100.9 | 104.5 | 105.0 | 102.5 | 103.8 | 106.6 | 107.0 | 110.5 | 115.1 | 118.7 | 116.7 | 110.3 | 105.2 | 153.9 |
| | 4000 | 97.9 | 102.3 | 103.4 | 102.3 | 105.7 | 107.3 | 107.3 | 110.6 | 114.0 | 115.8 | 114.7 | 107.5 | 102.8 | 152.4 |
| | 5000 | 96.8 | 102.0 | 102.3 | 101.0 | 104.2 | 107.4 | 106.8 | 109.9 | 112.9 | 116.1 | 113.4 | 105.9 | 100.3 | 152.0 |
| | 6300 | 95.9 | 101.1 | 101.6 | 101.2 | 103.7 | 106.9 | 106.7 | 109.7 | 111.5 | 113.4 | 111.6 | 103.9 | 98.8 | 150.7 |
| | 8000 | 94.3 | 98.9 | 100.7 | 100.9 | 103.0 | 106.1 | 105.5 | 107.9 | 109.9 | 111.6 | 110.2 | 102.4 | 97.5 | 149.6 |
| | 10000 | 93.6 | 98.9 | 100.2 | 100.2 | 102.6 | 105.8 | 105.6 | 107.3 | 109.3 | 110.5 | 108.3 | 101.4 | 96.7 | 149.3 |
| | 12500 | 92.6 | 96.8 | 99.1 | 99.0 | 101.6 | 105.3 | 104.6 | 105.8 | 107.2 | 108.5 | 105.8 | 99.8 | 95.4 | 148.6 |
| | 16000 | 90.6 | 95.9 | 97.3 | 98.2 | 100.0 | 103.2 | 103.1 | 104.2 | 105.2 | 105.6 | 103.8 | 97.5 | 91.8 | 147.9 |
| | 20000 | 88.2 | 94.8 | 94.8 | 95.9 | 97.2 | 101.0 | 101.1 | 100.9 | 102.2 | 102.3 | 100.4 | 95.5 | 89.5 | 146.9 |
| | 25000 | 85.5 | 90.6 | 91.6 | 93.1 | 94.8 | 98.9 | 98.6 | 97.8 | 99.4 | 97.8 | 94.5 | 91.4 | 86.9 | 146.2 |
| | 31500 | 82.3 | 86.5 | 88.0 | 90.2 | 90.6 | 94.8 | 94.0 | 94.7 | 95.0 | 94.4 | 91.3 | 86.9 | 82.2 | 145.4 |
| | 40000 | 77.5 | 82.6 | 84.1 | 85.7 | 86.3 | 90.7 | 89.7 | 89.6 | 90.4 | 91.1 | 87.6 | 83.1 | 78.1 | 145.2 |
| | 50000 | 71.6 | 76.1 | 78.0 | 79.7 | 80.8 | 85.7 | 84.0 | 83.7 | 85.6 | 86.3 | 80.7 | 76.7 | 72.0 | 144.1 |
| | 63000 | 65.7 | 70.3 | 72.3 | 73.4 | 74.9 | 80.2 | 77.2 | 78.4 | 80.7 | 80.3 | 76.2 | 71.4 | 65.0 | 143.9 |
| | 80000 | 58.5 | 63.4 | 65.4 | 66.8 | 68.0 | 74.4 | 71.0 | 72.7 | 74.6 | 73.4 | 70.6 | 64.8 | 57.3 | 144.4 |

ORIGINAL PAGE IS
OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0 DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS9-22137

VEHICLE = ADH152 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = O. FPS
 ALPHA = 5859 IEGA = NO PWT AREA = FULL SPHERE TAMB F = 29.14 PAMB HG = 29.31 RELHUM = 69.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XN1L = RPM XNHI = RPM VB = 1512.2 FPS AEB = 4.6 SO IN
 FNRAMB = LBS XN1R = RPM XNHR = RPM V1B = 2337.6 FPS AE1B = 23.4 SO IN
 RUNPT = 83F-7FR-1109 TAPF = X1109F TFST PT NO = 1109 MC = AFO91 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400 0 FT. SL

IDENTIFICATION - 83F-ZER-1109 X11091

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 65.2 | 69.8 | 72.1 | 72.1 | 75.1 | 77.6 | 78.4 | 80.6 | 83.9 | 89.1 | 92.2 | 92.5 | 77.3 | 166.6 |
| 63 | 66.3 | 70.6 | 71.7 | 71.7 | 75.2 | 78.2 | 82.9 | 80.9 | 85.4 | 90.4 | 90.4 | 93.2 | 79.8 | 167.9 |
| 80 | 67.9 | 72.5 | 73.9 | 72.6 | 76.4 | 79.6 | 93.6 | 82.1 | 87.9 | 93.6 | 95.9 | 93.9 | 81.2 | 170.2 |
| 100 | 68.9 | 73.2 | 74.3 | 73.8 | 76.9 | 80.4 | 81.1 | 83.6 | 87.8 | 95.1 | 97.4 | 94.6 | 82.5 | 170.8 |
| 125 | 69.2 | 74.3 | 75.2 | 75.0 | 78.5 | 81.7 | 82.2 | 84.7 | 88.9 | 95.9 | 98.2 | 94.6 | 83.3 | 171.6 |
| 160 | 72.3 | 74.7 | 76.4 | 75.4 | 78.4 | 82.4 | 82.6 | 85.6 | 90.4 | 96.1 | 97.3 | 94.2 | 84.2 | 171.5 |
| 200 | 76.5 | 81.2 | 79.8 | 78.1 | 80.2 | 83.7 | 84.2 | 87.4 | 91.3 | 95.3 | 97.5 | 93.0 | 82.6 | 171.5 |
| 250 | 73.3 | 80.8 | 81.3 | 80.4 | 82.6 | 84.6 | 83.9 | 87.3 | 91.8 | 94.9 | 96.3 | 92.0 | 80.9 | 171.1 |
| 315 | 74.3 | 78.5 | 79.4 | 78.8 | 81.5 | 85.0 | 85.2 | 87.3 | 92.1 | 94.5 | 96.1 | 89.3 | 78.0 | 170.9 |
| 400 | 75.5 | 78.9 | 79.4 | 78.1 | 80.1 | 83.1 | 84.5 | 88.1 | 91.4 | 94.1 | 94.7 | 85.2 | 74.6 | 170.3 |
| 500 | 74.8 | 80.4 | 80.3 | 77.9 | 81.3 | 83.8 | 84.1 | 87.7 | 90.2 | 93.9 | 91.4 | 81.8 | 72.3 | 169.2 |
| 630 | 73.2 | 78.8 | 80.7 | 79.2 | 81.0 | 84.0 | 84.2 | 87.2 | 90.8 | 93.1 | 89.0 | 79.5 | 69.0 | 168.8 |
| 800 | 69.5 | 76.1 | 78.7 | 78.5 | 82.5 | 83.6 | 84.1 | 86.9 | 89.3 | 89.6 | 86.4 | 75.8 | 65.3 | 167.3 |
| 1000 | 67.7 | 75.3 | 77.2 | 76.8 | 80.6 | 84.0 | 83.2 | 85.8 | 87.8 | 89.4 | 84.3 | 73.2 | 61.5 | 166.9 |
| 1250 | 66.1 | 73.7 | 75.9 | 76.5 | 79.7 | 83.1 | 82.7 | 85.0 | 86.8 | 86.1 | 81.8 | 70.1 | 58.2 | 165.6 |
| 1600 | 63.1 | 70.5 | 74.1 | 75.5 | 78.3 | 81.5 | 80.8 | 82.5 | 83.3 | 83.2 | 79.1 | 66.8 | 54.0 | 164.5 |
| 2000 | 60.6 | 69.1 | 72.4 | 73.8 | 76.9 | 80.3 | 79.9 | 80.9 | 81.5 | 80.7 | 75.4 | 63.5 | 49.5 | 164.3 |
| 2500 | 56.9 | 64.9 | 69.6 | 71.0 | 74.4 | 78.4 | 77.4 | 77.8 | 77.7 | 76.5 | 70.2 | 58.1 | 42.3 | 163.5 |
| 3150 | 50.6 | 60.5 | 64.9 | 67.6 | 70.4 | 74.0 | 73.5 | 73.6 | 72.8 | 70.2 | 63.7 | 49.8 | 29.3 | 162.8 |
| 4000 | 40.5 | 51.7 | 57.2 | 60.6 | 63.3 | 67.5 | 67.1 | 65.6 | 64.6 | 60.8 | 52.8 | 37.4 | 11.1 | 161.8 |
| 5000 | 26.4 | 39.9 | 46.1 | 50.8 | 54.2 | 58.9 | 58.0 | 55.5 | 53.9 | 47.1 | 35.4 | 18.1 | | 161.1 |
| 6300 | 4.2 | 20.4 | 29.2 | 35.9 | 38.7 | 43.7 | 42.1 | 40.3 | 36.2 | 28.2 | 13.3 | | | 160.3 |
| 8000 | | | 2.6 | 10.8 | 14.9 | 20.5 | 18.3 | 14.7 | 8.9 | | | | | 160.1 |
| 10000 | | | | | | | | | | | | | | 158.8 |
| 12500 | | | | | | | | | | | | | | 159.3 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

OASPL 84.0 89.2 90.0 89.3 92.1 95.1 97.5 97.9 101.5 105.3 106.6 103.0 91.3 182.0
 PNL 88.9 94.8 96.3 96.6 99.6 103.0 103.2 104.5 107.1 109.6 109.3 103.3 91.9
 PNLT 89.6 95.4 96.8 97.1 99.6 103.0 103.2 105.1 107.7 109.6 109.3 103.3 91.9
 DBA 78.8 84.7 86.4 86.1 89.2 92.1 92.0 94.4 96.8 98.8 97.5 90.5 79.8

MODEL AREA = 292.1 SQ CM (.453 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH152 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 0. FPS
 TAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 29.14 PAMB HG = 29.31 RELHUM = 69.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =
 FNIN1 = LBS XNL RPM XNH RPM V8 = 1512.2 FPS AEB = 4.6 SQ IN
 FNIDAMB = LBS XNLR RPM XNHR RPM V18 = 2337.6 FPS AE18 = 23.4 SQ IN
 PRINT = R3F 7ER 1109 TAPP = X11091 TFST PT NO = 1109 NC CORR FAN SPEED = RPM

UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-400-1110 X1110C
 BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 91.6 | 91.7 | 88.7 | 85.7 | 86.3 | 88.7 | 89.1 | 93.0 | 91.9 | 90.7 | 97.4 | 98.1 | 88.5 | 134.0 |
| 63 | 94.8 | 95.8 | 96.1 | 91.6 | 93.2 | 96.6 | 99.0 | 98.6 | 98.1 | 94.1 | 103.0 | 101.2 | 95.9 | 139.7 |
| 80 | 92.3 | 99.6 | 94.3 | 94.6 | 96.0 | 98.8 | 98.0 | 96.6 | 98.1 | 97.7 | 101.8 | 101.2 | 91.1 | 139.9 |
| 100 | 91.0 | 98.0 | 93.8 | 93.0 | 95.1 | 99.0 | 98.4 | 99.5 | 97.8 | 99.8 | 101.5 | 105.6 | 93.3 | 140.8 |
| 125 | 89.6 | 92.2 | 94.7 | 94.5 | 96.8 | 98.7 | 97.3 | 97.2 | 97.4 | 100.5 | 108.9 | 110.6 | 96.5 | 143.2 |
| 160 | 87.4 | 86.2 | 92.0 | 88.0 | 91.1 | 94.0 | 98.6 | 95.5 | 97.2 | 102.6 | 108.2 | 111.1 | 100.3 | 143.6 |
| 200 | 87.5 | 88.6 | 89.8 | 87.6 | 91.2 | 94.3 | 95.7 | 97.4 | 102.3 | 102.1 | 108.5 | 114.2 | 103.1 | 145.5 |
| 250 | 85.8 | 90.1 | 90.6 | 89.6 | 92.5 | 94.8 | 96.0 | 98.1 | 102.3 | 107.6 | 113.5 | 117.0 | 104.9 | 148.8 |
| 315 | 87.3 | 90.4 | 90.1 | 89.4 | 92.3 | 95.4 | 98.3 | 98.4 | 103.4 | 109.5 | 115.3 | 117.3 | 106.9 | 149.8 |
| 400 | 88.1 | 91.1 | 92.1 | 89.9 | 93.2 | 95.6 | 107.5 | 99.2 | 104.9 | 112.9 | 117.8 | 119.0 | 106.7 | 152.2 |
| 500 | 88.6 | 91.6 | 93.1 | 91.4 | 94.0 | 96.4 | 97.0 | 100.2 | 104.6 | 114.2 | 119.3 | 118.3 | 105.2 | 152.6 |
| 630 | 89.0 | 91.8 | 92.8 | 91.9 | 95.2 | 97.6 | 98.5 | 101.6 | 105.8 | 114.9 | 119.8 | 117.0 | 103.1 | 152.7 |
| 800 | 91.1 | 92.4 | 93.6 | 92.2 | 95.0 | 98.6 | 99.0 | 102.4 | 107.1 | 114.7 | 119.8 | 115.5 | 101.7 | 152.5 |
| 1000 | 94.3 | 96.0 | 96.3 | 94.4 | 96.2 | 99.3 | 100.2 | 103.6 | 108.1 | 114.9 | 119.0 | 112.9 | 100.4 | 151.8 |
| 1250 | 92.7 | 97.2 | 96.5 | 95.6 | 97.9 | 100.6 | 103.8 | 109.0 | 114.3 | 117.4 | 111.1 | 99.5 | 150.8 | |
| 1600 | 95.6 | 97.3 | 97.2 | 95.8 | 98.3 | 101.7 | 102.5 | 105.3 | 110.2 | 115.3 | 118.4 | 109.8 | 99.7 | 151.7 |
| 2000 | 96.6 | 98.4 | 97.8 | 95.9 | 97.3 | 100.9 | 101.6 | 105.2 | 109.5 | 115.3 | 116.6 | 107.9 | 100.2 | 150.8 |
| 2500 | 98.0 | 100.3 | 99.4 | 96.6 | 99.5 | 101.8 | 101.5 | 105.4 | 109.5 | 114.8 | 115.6 | 106.9 | 100.9 | 150.3 |
| 3150 | 97.7 | 100.0 | 100.5 | 98.5 | 99.6 | 102.7 | 102.6 | 104.8 | 110.1 | 114.2 | 114.2 | 105.8 | 99.2 | 149.8 |
| 4000 | 96.4 | 98.8 | 99.2 | 98.1 | 100.7 | 102.4 | 102.6 | 104.9 | 108.3 | 112.0 | 112.0 | 104.3 | 97.9 | 148.2 |
| 5000 | 97.3 | 99.5 | 99.1 | 97.0 | 99.0 | 103.5 | 102.4 | 104.4 | 107.7 | 111.6 | 109.9 | 102.1 | 96.4 | 147.6 |
| 6300 | 96.5 | 99.6 | 99.4 | 98.0 | 99.8 | 102.5 | 102.3 | 104.5 | 106.5 | 109.2 | 107.7 | 99.9 | 94.4 | 146.4 |
| 8000 | 95.0 | 97.2 | 98.5 | 97.4 | 99.0 | 101.3 | 101.3 | 102.9 | 104.9 | 106.8 | 104.7 | 97.7 | 92.5 | 145.0 |
| 10000 | 95.1 | 97.6 | 98.2 | 97.2 | 99.3 | 101.6 | 101.6 | 102.6 | 104.3 | 105.5 | 102.8 | 96.9 | 92.0 | 144.9 |
| 12500 | 94.3 | 96.3 | 97.3 | 96.0 | 98.3 | 101.8 | 101.1 | 100.8 | 102.4 | 103.0 | 100.8 | 96.1 | 90.8 | 144.4 |
| 16000 | 91.8 | 95.9 | 96.5 | 96.4 | 97.0 | 100.2 | 100.3 | 100.1 | 100.7 | 100.1 | 98.7 | 94.5 | 89.0 | 144.3 |
| 20000 | 90.1 | 92.9 | 94.5 | 93.6 | 95.2 | 98.2 | 97.8 | 97.1 | 97.9 | 97.4 | 96.1 | 92.1 | 86.6 | 143.6 |
| 25000 | 87.2 | 90.0 | 91.3 | 91.6 | 92.7 | 96.6 | 96.0 | 95.0 | 95.3 | 93.7 | 92.1 | 90.4 | 84.3 | 143.5 |
| 31500 | 83.9 | 86.6 | 87.2 | 88.6 | 89.0 | 92.9 | 91.9 | 92.1 | 91.9 | 90.2 | 88.7 | 86.6 | 80.4 | 143.1 |
| 40000 | 79.6 | 82.5 | 83.5 | 83.9 | 85.1 | 89.1 | 87.8 | 87.7 | 87.3 | 85.7 | 85.0 | 82.5 | 76.0 | 143.0 |
| 50000 | 73.0 | 76.0 | 77.1 | 78.1 | 79.0 | 83.8 | 81.9 | 81.8 | 81.7 | 79.9 | 78.6 | 76.1 | 70.2 | 141.5 |
| 63000 | 67.4 | 70.2 | 71.4 | 71.8 | 72.8 | 77.9 | 75.6 | 76.1 | 76.6 | 73.7 | 73.6 | 70.0 | 63.2 | 141.0 |
| 80000 | 60.1 | 62.8 | 64.8 | 64.0 | 65.6 | 71.5 | 68.1 | 68.6 | 69.0 | 66.5 | 65.7 | 63.5 | 55.2 | 140.7 |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| DASPL | 108.2 | 110.9 | 110.8 | 109.3 | 111.3 | 114.3 | 115.2 | 116.4 | 120.2 | 125.6 | 128.9 | 126.6 | 115.0 | 163.3 |
| PWL | 121.1 | 123.5 | 123.8 | 122.0 | 124.2 | 126.7 | 127.2 | 129.2 | 133.4 | 138.0 | 139.5 | 134.8 | 125.4 | |
| PNLT | 121.1 | 123.5 | 123.8 | 122.7 | 124.8 | 126.7 | 128.8 | 129.2 | 133.4 | 138.0 | 139.5 | 134.8 | 125.4 | |
| DBA | 107.3 | 109.7 | 109.7 | 108.0 | 110.1 | 113.0 | 113.4 | 115.8 | 120.0 | 125.3 | 128.0 | 123.3 | 112.2 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

| | | | | | | | | | | | | | | | | | |
|----------|---|--------|--------------|---|----------|----------|---|--------------|------------|---|-------|---------|---|-------|--------|---|----------|
| VEHICLE | = | ADH155 | TEST DATE | = | 03-17-83 | LOCAT | = | C41 ANECH CH | CONFIG | = | 11 | MODEL | = | SL | FLTVEL | = | 400. FPS |
| IAPLHA | = | SB59 | IEGA | = | NO | PWL AREA | = | FULL SPHERE | TAMB F | = | 30.19 | PAMB HG | = | 29.21 | RELHUM | = | 63.5 PCT |
| WIND DIR | = | | DEG WIND VEL | = | MPH | EXT DIST | = | 40.0 FT | EXT CONFIG | = | ARC | MIKE HT | = | | NBFR | = | |

| | | | | | | | | | | | | | | |
|--------|---|--------------|------|-----|--------|------------|-----|------|----|------------|-------|----------------|------------|-----|
| FNIN1 | = | LBS XNL | = | RPM | XNH | = | RPM | V8 | = | 1542.7 FPS | AE8 | = | 4.6 SQ IN | |
| FNRAMB | = | LBS XNLR | = | RPM | XNHR | = | RPM | V18 | = | 2339.6 FPS | AE18 | = | 23.4 SQ IN | |
| RUNPT | = | 83F-400-1110 | TAPE | = | X1110C | TEST PT NO | = | 1110 | NC | = | AE091 | CORR FAN SPEED | = | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD DAY, SB 40.0 FT ARC

IDENTIFICATION - 83F-400-1110 X1110F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 93.7 | 96.5 | 95.5 | 92.9 | 94.1 | 94.8 | 94.5 | 95.2 | 101.0 | 106.6 | 112.3 | 115.0 | 106.7 | 147.4 |
| 63 | 93.7 | 96.5 | 95.5 | 92.9 | 94.1 | 95.6 | 97.3 | 96.4 | 102.5 | 110.1 | 114.9 | 117.3 | 107.8 | 149.8 |
| 80 | 95.0 | 96.8 | 95.1 | 92.8 | 95.1 | 95.9 | 106.5 | 97.0 | 102.3 | 111.4 | 116.6 | 117.2 | 107.9 | 150.8 |
| 100 | 95.7 | 97.5 | 97.1 | 93.3 | 95.9 | 96.7 | 96.0 | 97.9 | 103.7 | 112.3 | 117.4 | 116.8 | 107.8 | 151.0 |
| 125 | 96.3 | 98.0 | 98.1 | 94.9 | 97.2 | 98.0 | 97.5 | 99.3 | 105.4 | 112.7 | 118.3 | 116.8 | 109.2 | 151.6 |
| 160 | 96.7 | 98.2 | 97.9 | 95.4 | 97.1 | 99.2 | 98.1 | 100.2 | 106.8 | 113.3 | 118.1 | 115.5 | 110.4 | 151.4 |
| 200 | 98.8 | 98.8 | 98.7 | 95.8 | 98.1 | 100.0 | 99.4 | 101.5 | 107.8 | 112.9 | 116.6 | 113.8 | 109.7 | 150.5 |
| 250 | 100.3 | 101.4 | 100.6 | 97.5 | 100.1 | 101.5 | 100.0 | 101.8 | 109.1 | 113.9 | 117.5 | 112.3 | 109.7 | 151.1 |
| 315 | 100.3 | 103.7 | 101.7 | 99.4 | 100.7 | 102.7 | 102.1 | 103.5 | 108.8 | 114.3 | 116.2 | 110.9 | 110.7 | 150.8 |
| 400 | 103.1 | 103.7 | 102.4 | 99.6 | 99.6 | 102.2 | 101.4 | 103.7 | 109.3 | 114.4 | 115.8 | 110.6 | 112.2 | 150.9 |
| 500 | 102.3 | 103.5 | 102.2 | 99.3 | 102.1 | 103.5 | 101.4 | 104.4 | 110.3 | 114.2 | 114.8 | 109.9 | 110.9 | 150.6 |
| 630 | 103.6 | 105.4 | 103.8 | 100.1 | 102.8 | 104.7 | 103.2 | 104.1 | 109.2 | 112.6 | 113.1 | 108.7 | 109.8 | 149.8 |
| 800 | 104.5 | 106.2 | 105.8 | 102.7 | 104.4 | 105.0 | 103.8 | 104.9 | 108.6 | 112.1 | 110.8 | 106.3 | 107.9 | 149.4 |
| 1000 | 104.0 | 105.2 | 104.9 | 102.7 | 103.0 | 106.5 | 103.8 | 104.5 | 107.5 | 109.8 | 108.7 | 104.2 | 106.1 | 148.4 |
| 1250 | 104.7 | 106.2 | 104.9 | 101.8 | 103.8 | 105.5 | 103.9 | 104.6 | 106.5 | 108.1 | 106.5 | 102.8 | 105.3 | 147.9 |
| 1600 | 103.8 | 106.2 | 105.1 | 102.7 | 103.1 | 104.3 | 103.3 | 103.5 | 106.6 | 107.5 | 105.5 | 103.2 | 105.9 | 147.9 |
| 2000 | 102.2 | 103.6 | 104.0 | 101.9 | 103.4 | 104.5 | 103.8 | 103.5 | 105.8 | 106.2 | 104.8 | 103.5 | 105.6 | 147.9 |
| 2500 | 101.9 | 103.8 | 103.4 | 101.5 | 102.4 | 104.8 | 103.5 | 102.4 | 105.1 | 104.4 | 103.8 | 102.9 | 104.6 | 148.0 |
| 3150 | 100.7 | 101.9 | 102.1 | 99.7 | 101.0 | 103.2 | 102.7 | 102.0 | 102.8 | 102.3 | 101.7 | 100.9 | 102.5 | 147.8 |
| 4000 | 97.7 | 101.1 | 100.9 | 99.7 | 99.2 | 101.2 | 100.2 | 99.0 | 99.7 | 98.0 | 96.8 | 97.9 | 98.7 | 147.2 |
| 5000 | 95.4 | 97.5 | 98.2 | 96.3 | 97.3 | 99.6 | 97.9 | 95.9 | 97.7 | 96.0 | 95.8 | 96.5 | 96.5 | 147.2 |
| 6300 | 94.5 | 96.1 | 95.9 | 94.6 | 93.6 | 95.9 | 94.0 | 93.5 | 93.8 | 92.3 | 92.0 | 92.4 | 92.7 | 147.4 |
| 8000 | 90.4 | 91.9 | 90.9 | 90.8 | 89.7 | 92.1 | 89.9 | 89.0 | 88.2 | 86.3 | 85.5 | 85.9 | 86.8 | 146.9 |
| 10000 | 85.7 | 87.3 | 86.9 | 85.7 | 83.6 | 86.8 | 83.8 | 82.7 | 85.2 | 82.5 | 83.2 | 82.8 | 83.1 | 146.5 |
| 12500 | 78.1 | 79.9 | 79.5 | 79.0 | 77.4 | 80.9 | 78.1 | 78.0 | 78.7 | 76.5 | 77.4 | 76.1 | 76.1 | 145.4 |
| 16000 | 71.0 | 72.6 | 72.4 | 71.2 | 70.2 | 74.5 | 70.3 | 70.1 | 68.9 | 66.6 | 66.7 | 67.6 | 66.3 | 144.5 |

OASPL 114.4 116.1 115.3 112.8 114.1 115.9 115.2 115.4 119.9 124.4 127.4 125.7 121.4 163.3
 PNL 126.7 128.3 127.6 124.7 126.4 127.8 126.7 127.6 132.2 136.3 137.7 134.2 133.2
 PNL1 126.7 128.3 127.6 124.7 126.4 127.8 126.7 127.6 132.2 136.3 137.7 134.2 133.2
 DBA 193.9 195.5 195.2 194.2 192.9 196.8 193.2 192.9 192.9 190.6 190.6 191.4 190.5

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00 DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICL = ADH155 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 400 FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 30.19 PAMB HG = 29.21 RELHUM = 63.5 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL RPM XNH RPM VB = 1542.7 FPS AEB = 4.6 SO IN
 FNRM1 = LBS XNL RPM XNR RPM V18 = 2339.6 FPS AE18 = 23.4 SO IN
 P1MPT = 83F-400-1110 1APF = X1110F TEST PT NO = 1110 NC CORR FAN SPEED = RPM

DATPROC - FLTRAN FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
 59.0 DEG. F . 70 PERCENT R.H. STD. DAY. 58 2400.0 FT. SL

IDENTIFICATION - 83F-400-1110 X11101

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 69.1 | 73.5 | 73.6 | 71.7 | 73.2 | 74.1 | 73.7 | 73.9 | 79.1 | 83.5 | 87.7 | 88.2 | 76.7 | 162.3 |
| 63 | 69.1 | 73.5 | 71.7 | 73.2 | 74.9 | 76.4 | 75.1 | 80.5 | 87.0 | 90.4 | 90.5 | 77.7 | 164.7 | |
| 80 | 70.4 | 73.7 | 73.1 | 71.5 | 74.2 | 75.1 | 85.6 | 75.7 | 80.3 | 88.3 | 92.0 | 90.3 | 77.6 | 165.7 |
| 100 | 71.0 | 74.3 | 75.0 | 72.0 | 75.0 | 75.9 | 75.1 | 76.6 | 81.6 | 89.2 | 92.7 | 89.8 | 77.4 | 165.9 |
| 125 | 71.4 | 74.8 | 76.0 | 73.5 | 76.2 | 77.1 | 76.5 | 77.9 | 83.3 | 89.4 | 93.4 | 89.7 | 78.6 | 166.5 |
| 160 | 71.7 | 74.8 | 75.6 | 73.8 | 76.0 | 78.2 | 77.0 | 78.7 | 84.5 | 89.9 | 93.1 | 88.1 | 79.4 | 166.3 |
| 200 | 73.5 | 75.2 | 76.2 | 74.0 | 76.8 | 78.8 | 78.1 | 79.8 | 85.3 | 89.3 | 91.4 | 86.1 | 78.2 | 165.4 |
| 250 | 74.7 | 77.5 | 77.9 | 75.6 | 78.6 | 80.2 | 78.5 | 79.9 | 86.4 | 90.0 | 91.9 | 84.2 | 77.6 | 166.0 |
| 315 | 74.3 | 79.4 | 78.6 | 77.1 | 79.0 | 81.1 | 80.3 | 81.3 | 85.8 | 90.1 | 90.1 | 82.2 | 77.7 | 165.7 |
| 400 | 76.5 | 79.0 | 78.9 | 77.0 | 77.5 | 80.2 | 79.3 | 81.1 | 85.9 | 89.7 | 89.2 | 81.2 | 78.2 | 165.8 |
| 500 | 75.2 | 78.4 | 78.3 | 76.4 | 79.6 | 81.2 | 79.3 | 81.4 | 86.5 | 89.0 | 87.6 | 79.7 | 75.8 | 165.5 |
| 630 | 75.9 | 79.8 | 79.5 | 76.8 | 79.9 | 82.0 | 80.3 | 80.8 | 85.0 | 87.0 | 85.4 | 77.9 | 73.6 | 164.7 |
| 800 | 76.1 | 80.0 | 81.1 | 79.0 | 81.2 | 82.0 | 80.6 | 81.1 | 83.9 | 85.9 | 82.4 | 74.5 | 70.4 | 164.3 |
| 1000 | 74.9 | 78.8 | 78.6 | 78.6 | 79.5 | 83.1 | 80.2 | 80.3 | 82.4 | 83.1 | 79.7 | 71.6 | 67.3 | 163.3 |
| 1250 | 74.9 | 78.9 | 79.2 | 77.2 | 79.8 | 81.6 | 79.9 | 80.0 | 80.8 | 80.7 | 76.6 | 69.1 | 64.7 | 162.8 |
| 1600 | 72.6 | 77.8 | 78.5 | 77.2 | 78.3 | 79.8 | 78.5 | 78.1 | 80.1 | 79.2 | 74.4 | 67.6 | 62.4 | 162.8 |
| 2000 | 69.3 | 73.8 | 76.3 | 75.5 | 77.6 | 79.1 | 78.1 | 77.2 | 78.1 | 76.4 | 71.9 | 65.5 | 58.4 | 162.8 |
| 2500 | 66.3 | 71.8 | 73.9 | 73.4 | 75.1 | 77.8 | 76.3 | 74.3 | 75.5 | 72.5 | 68.2 | 61.2 | 51.5 | 162.9 |
| 3150 | 60.6 | 66.5 | 69.6 | 69.1 | 71.4 | 73.9 | 73.1 | 71.3 | 70.4 | 67.0 | 61.7 | 53.2 | 40.0 | 162.7 |
| 4000 | 50.1 | 59.6 | 63.2 | 64.4 | 65.2 | 67.6 | 66.3 | 63.7 | 62.1 | 56.5 | 49.1 | 39.9 | 20.3 | 162.1 |
| 5000 | 36.4 | 46.8 | 52.7 | 54.0 | 56.8 | 59.6 | 57.3 | 53.6 | 52.2 | 45.4 | 36.0 | 22.5 | | 162.1 |
| 6300 | 16.4 | 30.0 | 37.1 | 40.3 | 41.7 | 44.8 | 42.1 | 39.1 | 35.0 | 26.1 | 13.9 | | | 162.3 |
| 8000 | | 9.5 | 15.9 | 18.4 | 21.8 | 18.5 | 14.1 | 6.7 | | | | | | 161.8 |
| 10000 | | | | | | | | | | | | | | 161.4 |
| 12500 | | | | | | | | | | | | | | 160.3 |
| 16000 | | | | | | | | | | | | | | 159.4 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS OF POOR QUALITY

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH155 TEST DATE = 03-17-83 LOCAL = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 30.19 PAMB HG = 29.21 RELHUM = 63.5 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =
 FNIN1 = LBS XNL RPM XNHR = RPM V8 = 1542.7 FPS AEB = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 2339.6 FPS AE18 = 23.4 SQ IN
 CORR FAN SPEED = RPM

UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-ZER-1111 X1111C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 91.4 | 93.2 | 90.4 | 89.0 | 89.8 | 91.2 | 93.6 | 93.7 | 95.4 | 96.0 | 99.6 | 100.3 | 88.2 | 136.5 |
| 63 | 96.5 | 96.8 | 98.6 | 94.6 | 96.7 | 99.6 | 98.2 | 94.4 | 99.3 | 101.6 | 102.3 | 106.0 | 94.6 | 141.4 |
| 80 | 95.5 | 102.1 | 97.1 | 96.9 | 98.5 | 101.6 | 100.2 | 99.6 | 101.6 | 101.4 | 106.0 | 105.2 | 90.4 | 143.1 |
| 100 | 93.7 | 102.0 | 97.0 | 97.3 | 99.1 | 103.0 | 101.9 | 104.0 | 102.0 | 105.1 | 106.2 | 109.9 | 94.1 | 145.1 |
| 125 | 91.4 | 94.7 | 98.4 | 98.0 | 100.3 | 102.4 | 101.6 | 101.0 | 102.4 | 105.5 | 112.4 | 115.1 | 100.0 | 147.8 |
| 160 | 88.9 | 92.5 | 96.2 | 92.3 | 93.9 | 98.5 | 108.6 | 101.3 | 102.2 | 107.6 | 113.4 | 115.9 | 104.8 | 149.0 |
| 200 | 93.3 | 91.6 | 94.6 | 93.1 | 97.0 | 100.6 | 106.0 | 102.4 | 107.3 | 109.1 | 115.0 | 119.5 | 108.1 | 151.3 |
| 250 | 91.0 | 94.6 | 96.1 | 95.4 | 97.7 | 100.3 | 101.2 | 104.1 | 107.6 | 114.6 | 120.0 | 122.0 | 110.6 | 154.5 |
| 315 | 92.3 | 95.1 | 95.1 | 94.2 | 97.0 | 101.4 | 104.5 | 104.2 | 108.9 | 117.2 | 121.8 | 122.3 | 112.7 | 155.8 |
| 400 | 94.3 | 97.3 | 97.1 | 95.4 | 98.2 | 101.6 | 107.2 | 105.4 | 111.6 | 120.2 | 124.1 | 123.7 | 114.2 | 157.9 |
| 500 | 95.6 | 97.9 | 98.6 | 96.9 | 99.3 | 102.6 | 103.0 | 106.7 | 111.4 | 121.2 | 125.3 | 123.3 | 115.2 | 158.6 |
| 630 | 95.8 | 99.1 | 99.1 | 98.1 | 101.0 | 104.1 | 105.0 | 107.4 | 112.3 | 122.7 | 126.3 | 124.0 | 116.4 | 159.6 |
| 800 | 99.3 | 100.4 | 100.4 | 99.2 | 101.0 | 104.6 | 105.3 | 108.2 | 113.9 | 122.7 | 126.6 | 123.8 | 117.4 | 159.9 |
| 1000 | 104.5 | 107.8 | 105.3 | 102.6 | 103.7 | 105.8 | 106.4 | 110.1 | 115.1 | 122.6 | 126.8 | 122.7 | 116.6 | 159.9 |
| 1250 | 107.4 | 111.7 | 108.0 | 105.4 | 105.6 | 107.5 | 107.1 | 110.0 | 115.0 | 122.1 | 125.4 | 121.4 | 114.8 | 159.0 |
| 1600 | 110.1 | 110.8 | 110.4 | 108.6 | 107.6 | 108.7 | 108.3 | 111.3 | 116.4 | 121.8 | 125.4 | 119.8 | 113.0 | 158.9 |
| 2000 | 108.6 | 109.9 | 109.5 | 109.2 | 109.8 | 110.4 | 108.4 | 111.7 | 115.8 | 122.3 | 123.8 | 117.7 | 111.2 | 158.3 |
| 3150 | 104.1 | 108.0 | 108.5 | 106.8 | 108.9 | 112.2 | 112.6 | 112.5 | 116.4 | 120.7 | 120.2 | 113.6 | 107.2 | 156.7 |
| 4000 | 101.9 | 106.8 | 107.9 | 106.3 | 108.7 | 111.2 | 111.3 | 113.1 | 115.6 | 118.5 | 118.7 | 111.5 | 105.9 | 155.5 |
| 5000 | 100.5 | 106.2 | 107.1 | 105.7 | 107.7 | 111.0 | 110.1 | 112.9 | 114.5 | 119.1 | 117.4 | 109.6 | 104.1 | 155.1 |
| 6300 | 99.5 | 105.1 | 105.9 | 106.0 | 108.3 | 111.0 | 109.8 | 111.0 | 113.8 | 117.0 | 116.2 | 108.9 | 102.9 | 154.3 |
| 8000 | 98.5 | 103.7 | 105.2 | 104.9 | 107.0 | 110.1 | 109.5 | 110.7 | 112.2 | 115.3 | 114.7 | 106.7 | 101.2 | 153.2 |
| 10000 | 97.8 | 103.4 | 104.7 | 104.7 | 105.8 | 109.6 | 109.1 | 109.8 | 111.8 | 114.2 | 113.1 | 105.7 | 100.2 | 152.9 |
| 12500 | 96.6 | 101.5 | 102.9 | 103.3 | 105.6 | 109.3 | 108.1 | 108.8 | 110.2 | 112.2 | 111.3 | 105.1 | 98.4 | 152.4 |
| 16000 | 94.6 | 100.1 | 101.8 | 102.9 | 104.2 | 107.2 | 107.3 | 107.1 | 108.5 | 109.3 | 108.7 | 101.8 | 95.5 | 151.8 |
| 20000 | 92.4 | 97.4 | 99.3 | 99.9 | 101.4 | 105.2 | 104.8 | 104.4 | 105.7 | 106.2 | 105.1 | 98.9 | 92.9 | 150.8 |
| 25000 | 89.4 | 94.3 | 95.8 | 97.3 | 98.8 | 102.6 | 101.8 | 101.2 | 102.1 | 101.0 | 98.4 | 95.6 | 89.8 | 149.6 |
| 31500 | 85.9 | 90.4 | 91.2 | 94.1 | 94.6 | 98.5 | 97.4 | 97.8 | 98.2 | 97.3 | 96.0 | 91.9 | 85.7 | 148.9 |
| 40000 | 81.4 | 86.3 | 87.8 | 89.6 | 90.9 | 94.9 | 93.6 | 93.5 | 94.3 | 94.5 | 92.0 | 88.2 | 81.0 | 149.1 |
| 50000 | 75.0 | 80.5 | 81.1 | 83.6 | 84.5 | 89.9 | 87.2 | 88.1 | 89.0 | 89.4 | 86.1 | 82.1 | 75.2 | 147.9 |
| 63000 | 69.1 | 74.5 | 75.2 | 77.8 | 78.6 | 84.7 | 81.7 | 82.8 | 84.2 | 83.5 | 81.9 | 76.8 | 69.0 | 147.9 |
| 80000 | 62.4 | 68.3 | 70.0 | 70.7 | 72.7 | 79.1 | 75.2 | 76.8 | 77.7 | 78.3 | 74.8 | 70.5 | 61.5 | 148.7 |
| QASPL | 116.2 | 119.3 | 119.0 | 117.8 | 119.5 | 122.1 | 121.9 | 123.3 | 126.7 | 132.9 | 135.7 | 133.0 | 125.3 | 170.3 |
| PNL | 128.4 | 131.5 | 131.8 | 130.4 | 132.6 | 135.2 | 135.2 | 136.4 | 139.7 | 144.9 | 146.2 | 141.7 | 134.7 | |
| PNLT | 128.9 | 131.5 | 131.8 | 130.9 | 133.2 | 135.2 | 136.0 | 137.1 | 139.7 | 144.9 | 146.2 | 141.7 | 134.7 | |
| DBA | 116.6 | 119.5 | 119.1 | 117.7 | 119.3 | 121.7 | 121.0 | 123.0 | 126.5 | 132.6 | 135.0 | 131.0 | 124.1 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH153 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL 1 FLTVEL = 0 FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 30.29 PAMB HG = 29.30 RELHUM = 64.1 PCT
 WIND DIR. = DEG WIND VEL. = MPH EXT. DIST. = 40.0 FT. EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL RPM XNH RPM V8 = 1524.4 FPS AE8 = 4.6 SQ IN
 FNFRMB = LBS XNLR RPM XNHR RPM V18 = 2466.2 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1111 TAPE = X1111C TEST PT NO = 1111 NC = AEO91 CORR FAN SPEED = RPM

DATPROC - FLIRAN

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1111 X1111F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 91.4 | 93.2 | 90.4 | 89.0 | 89.8 | 91.2 | 93.6 | 93.7 | 95.4 | 96.0 | 99.6 | 100.3 | 88.2 | 136.5 |
| 60 | 96.5 | 96.8 | 98.6 | 94.6 | 96.7 | 99.6 | 98.2 | 94.4 | 99.3 | 101.6 | 102.3 | 106.0 | 94.6 | 141.4 |
| 80 | 95.5 | 102.1 | 97.1 | 96.9 | 98.5 | 101.6 | 100.2 | 99.6 | 101.6 | 101.6 | 106.0 | 105.2 | 90.4 | 143.1 |
| 100 | 93.7 | 102.0 | 97.0 | 97.3 | 99.1 | 103.0 | 101.9 | 104.0 | 102.0 | 105.1 | 106.2 | 109.9 | 94.1 | 145.1 |
| 125 | 91.4 | 94.7 | 98.4 | 98.0 | 100.3 | 102.4 | 101.6 | 101.0 | 102.4 | 105.5 | 112.4 | 115.1 | 100.0 | 147.8 |
| 160 | 88.9 | 92.5 | 96.2 | 92.3 | 93.9 | 98.5 | 108.6 | 101.3 | 102.2 | 107.6 | 113.4 | 115.9 | 104.8 | 149.0 |
| 200 | 93.3 | 91.6 | 94.6 | 93.1 | 97.0 | 100.6 | 106.0 | 102.4 | 107.3 | 109.1 | 115.0 | 119.5 | 108.1 | 151.3 |
| 250 | 91.0 | 94.6 | 96.1 | 95.4 | 97.7 | 100.3 | 101.2 | 104.1 | 107.6 | 114.6 | 120.0 | 122.0 | 110.6 | 154.5 |
| 315 | 92.3 | 95.1 | 95.1 | 94.2 | 97.0 | 101.4 | 104.5 | 104.2 | 108.9 | 117.2 | 121.8 | 122.3 | 112.7 | 155.8 |
| 400 | 94.3 | 97.3 | 97.1 | 95.4 | 98.2 | 101.6 | 107.2 | 105.4 | 111.6 | 120.2 | 124.1 | 123.7 | 114.2 | 157.9 |
| 500 | 95.6 | 97.9 | 98.6 | 96.9 | 99.3 | 102.6 | 103.0 | 106.7 | 111.4 | 121.2 | 125.3 | 123.3 | 115.2 | 158.6 |
| 630 | 95.8 | 99.1 | 99.1 | 98.1 | 101.0 | 104.1 | 105.0 | 107.4 | 112.3 | 122.7 | 126.3 | 124.0 | 116.4 | 159.6 |
| 800 | 99.3 | 100.4 | 100.4 | 99.2 | 101.0 | 104.6 | 105.3 | 108.2 | 113.9 | 122.7 | 126.6 | 123.8 | 117.4 | 159.9 |
| 1000 | 104.5 | 107.8 | 105.3 | 102.6 | 103.7 | 105.8 | 106.4 | 110.1 | 115.1 | 122.6 | 126.8 | 122.7 | 116.6 | 159.9 |
| 1250 | 107.4 | 111.7 | 108.0 | 105.4 | 105.6 | 107.5 | 107.1 | 110.0 | 115.2 | 122.1 | 125.4 | 121.4 | 114.8 | 159.0 |
| 1600 | 110.1 | 110.8 | 110.4 | 108.6 | 107.6 | 108.7 | 111.3 | 116.4 | 121.8 | 125.4 | 119.8 | 113.0 | 158.9 | |
| 2000 | 108.6 | 109.9 | 109.5 | 109.2 | 109.8 | 110.4 | 108.4 | 111.7 | 115.8 | 122.3 | 123.8 | 117.7 | 111.2 | 158.3 |
| 2500 | 105.2 | 108.8 | 109.4 | 107.8 | 110.7 | 113.3 | 110.3 | 112.1 | 115.8 | 121.8 | 121.8 | 114.4 | 109.9 | 157.5 |
| 3150 | 104.1 | 108.0 | 108.5 | 106.8 | 108.9 | 112.2 | 112.6 | 112.5 | 116.4 | 120.7 | 120.2 | 113.6 | 107.2 | 156.7 |
| 4000 | 101.9 | 106.8 | 107.9 | 106.3 | 108.7 | 111.2 | 111.3 | 113.1 | 115.6 | 118.5 | 118.7 | 111.5 | 105.9 | 155.5 |
| 5000 | 100.5 | 106.2 | 107.1 | 105.7 | 107.7 | 111.0 | 110.1 | 112.9 | 114.5 | 119.1 | 117.4 | 109.6 | 104.1 | 155.1 |
| 6300 | 99.5 | 105.1 | 105.9 | 106.0 | 108.3 | 111.0 | 109.8 | 113.0 | 113.8 | 117.0 | 116.2 | 108.9 | 102.9 | 154.3 |
| 8000 | 98.5 | 103.7 | 104.9 | 107.0 | 110.1 | 109.5 | 110.7 | 112.2 | 115.3 | 114.7 | 106.7 | 101.2 | 153.2 | |
| 10000 | 97.8 | 103.4 | 104.7 | 104.7 | 106.8 | 109.6 | 109.1 | 109.8 | 111.8 | 114.2 | 113.1 | 105.7 | 100.2 | 152.9 |
| 12500 | 96.6 | 101.5 | 102.9 | 103.3 | 105.6 | 109.3 | 108.1 | 108.8 | 110.2 | 112.2 | 111.3 | 105.1 | 98.4 | 152.4 |
| 16000 | 94.6 | 100.1 | 101.8 | 102.9 | 104.2 | 107.2 | 107.3 | 107.1 | 108.5 | 109.3 | 108.7 | 101.8 | 95.5 | 151.8 |
| 20000 | 92.4 | 97.4 | 99.3 | 99.9 | 101.4 | 105.2 | 104.8 | 104.4 | 105.7 | 106.2 | 105.1 | 98.9 | 92.9 | 150.8 |
| 25000 | 89.4 | 94.3 | 95.8 | 97.3 | 98.8 | 102.6 | 101.8 | 101.2 | 102.1 | 101.0 | 98.4 | 95.6 | 89.8 | 149.6 |
| 31500 | 85.9 | 90.4 | 91.2 | 94.1 | 94.6 | 98.5 | 97.4 | 97.8 | 98.2 | 97.3 | 96.0 | 91.9 | 85.7 | 148.9 |
| 40000 | 81.4 | 86.3 | 87.8 | 89.6 | 90.9 | 94.9 | 93.6 | 93.5 | 94.3 | 94.5 | 92.0 | 88.2 | 81.0 | 149.1 |
| 50000 | 75.0 | 80.5 | 81.1 | 83.6 | 84.5 | 89.9 | 87.2 | 88.1 | 89.0 | 89.4 | 86.1 | 82.1 | 75.2 | 147.9 |
| 63000 | 69.1 | 74.5 | 76.2 | 77.8 | 78.6 | 84.7 | 81.7 | 82.8 | 84.2 | 83.5 | 81.9 | 76.8 | 69.0 | 147.9 |
| 80000 | 62.4 | 68.3 | 70.0 | 70.7 | 72.7 | 79.1 | 75.2 | 76.8 | 77.7 | 78.3 | 74.8 | 70.5 | 61.5 | 148.7 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

N-SA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICL = ADH153 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = O. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 30.29 PAMB HG = 29.30 RELHUM = 64.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =
 FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1524.4 FPS AEB = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2466.2 FPS AE18 = 23.4 SQ IN
 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG F., 70 PERCENT R.H. STD. DAY, SB 2400 O FT SL

IDENTIFICATION - 83F-ZER-1111 X11111

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| 50 | 66.5 | 71.5 | 74.1 | 74.1 | 76.9 | 79.6 | 80.4 | 82.9 | 85.6 | 91.6 | 95.5 | 95.2 | 80.5 | 169.4 |
| 63 | 67.8 | 72.1 | 73.2 | 72.9 | 76.2 | 80.7 | 83.7 | 82.9 | 86.9 | 94.2 | 97.3 | 95.5 | 82.5 | 170.7 |
| 80 | 69.7 | 74.3 | 75.1 | 74.1 | 77.4 | 80.9 | 86.4 | 84.1 | 89.6 | 97.1 | 99.4 | 96.9 | 83.9 | 172.8 |
| 100 | 70.9 | 74.7 | 76.6 | 75.6 | 78.4 | 81.9 | 82.1 | 85.3 | 89.3 | 98.1 | 100.6 | 96.3 | 84.8 | 173.5 |
| 125 | 71.0 | 75.8 | 76.9 | 76.7 | 80.0 | 83.2 | 84.0 | 86.0 | 90.2 | 99.4 | 101.5 | 96.9 | 85.8 | 174.5 |
| 160 | 74.3 | 77.0 | 78.1 | 77.6 | 79.9 | 83.7 | 84.2 | 86.6 | 91.6 | 99.3 | 101.6 | 96.4 | 86.4 | 174.8 |
| 200 | 79.2 | 84.2 | 82.8 | 80.9 | 82.4 | 84.7 | 85.2 | 88.4 | 92.6 | 99.0 | 101.5 | 95.0 | 85.1 | 174.8 |
| 250 | 81.8 | 87.8 | 85.3 | 83.4 | 84.1 | 86.1 | 85.6 | 88.1 | 92.5 | 98.2 | 99.8 | 93.2 | 82.6 | 173.9 |
| 315 | 84.0 | 86.5 | 87.4 | 86.3 | 85.8 | 87.0 | 86.5 | 89.1 | 93.4 | 97.5 | 99.3 | 91.1 | 80.0 | 173.9 |
| 400 | 82.0 | 85.2 | 86.1 | 86.6 | 87.6 | 88.4 | 86.2 | 89.1 | 92.4 | 97.6 | 97.2 | 88.3 | 77.2 | 173.2 |
| 500 | 78.1 | 83.6 | 85.6 | 84.9 | 88.3 | 91.0 | 87.8 | 89.2 | 92.0 | 96.7 | 94.7 | 84.3 | 74.8 | 172.4 |
| 630 | 76.4 | 82.3 | 84.3 | 83.4 | 86.0 | 89.5 | 89.7 | 89.2 | 92.1 | 95.1 | 92.5 | 82.7 | 71.0 | 171.6 |
| 800 | 73.6 | 80.6 | 83.2 | 82.6 | 85.5 | 88.2 | 88.1 | 89.4 | 90.9 | 92.4 | 90.4 | 79.8 | 68.4 | 170.4 |
| 1000 | 71.5 | 79.5 | 82.0 | 81.6 | 84.2 | 87.5 | 86.5 | 88.8 | 89.3 | 92.4 | 88.4 | 77.0 | 65.2 | 170.0 |
| 1250 | 69.6 | 77.7 | 80.2 | 81.3 | 84.2 | 87.1 | 88.3 | 88.3 | 88.3 | 88.3 | 88.3 | 88.3 | 88.3 | 169.2 |
| 1600 | 67.4 | 75.3 | 78.7 | 79.5 | 82.3 | 85.5 | 84.8 | 85.2 | 85.6 | 87.0 | 83.6 | 71.1 | 57.8 | 168.1 |
| 2000 | 64.9 | 73.6 | 76.9 | 78.3 | 81.1 | 84.1 | 83.4 | 83.4 | 84.0 | 84.5 | 80.1 | 67.7 | 53.0 | 167.9 |
| 2500 | 60.9 | 69.6 | 73.3 | 75.2 | 78.4 | 82.4 | 80.9 | 80.8 | 80.7 | 80.3 | 75.7 | 63.4 | 45.3 | 167.3 |
| 3150 | 54.6 | 64.8 | 69.4 | 72.3 | 74.6 | 77.9 | 77.7 | 76.5 | 76.0 | 74.0 | 68.7 | 54.0 | 33.0 | 166.7 |
| 4000 | 44.7 | 55.9 | 61.6 | 64.6 | 67.5 | 71.7 | 70.8 | 69.1 | 68.0 | 64.7 | 57.5 | 40.9 | 14.6 | 165.7 |
| 5000 | 30.4 | 43.6 | 50.3 | 55.0 | 58.2 | 62.6 | 61.2 | 58.9 | 56.6 | 50.3 | 39.4 | 22.3 | | 164.5 |
| 6300 | 7.9 | 24.3 | 32.4 | 39.8 | 42.7 | 47.3 | 45.5 | 43.5 | 39.4 | 31.1 | 17.9 | | | 163.8 |
| 8000 | | | 6.3 | 14.7 | 19.6 | 24.6 | 22.3 | 18.6 | 12.8 | 2.2 | | | | 162.8 |
| 10000 | | | | | | | | | | | | | | 163.6 |

OASPL 89.5 94.1 94.7 94.2 96.2 98.8 98.3 99.8 102.9 108.6 110.1 105.2 93.7 185.1
 PNL 94.6 99.6 101.0 101.3 103.7 106.7 106.1 106.8 108.7 112.9 112.9 105.7 94.5
 PNL1 94.6 99.6 101.0 101.8 103.7 106.7 106.1 107.3 109.2 113.5 112.9 105.7 94.5
 DBA 84.0 89.4 91.2 91.1 93.6 96.5 95.5 96.8 98.4 101.8 101.0 92.8 82.1

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICL = ADH153 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 30.29 PAMB HG = 29.30 RELHUM = 64.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =
 FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1524.4 FPS AEB = 4.6 SQ IN
 FNPRAMB = LBS XNL = RPM XNHR = RPM V18 = 2466.2 FPS AE18 = 23.4 SQ IN
 PUMPT = R3F 7EP-1111 TAPE = X11111 TFST PT NO = 1111 NC = AEO91 CORR FAN SPEED = RPM

DATPROC - FLTRAN UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
59.0 DEG. F. 70 PERCENT R.H. STD. DAY, SR 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-400-1112 X1112C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 93.1 | 93.4 | 89.7 | 87.7 | 88.8 | 90.2 | 91.3 | 93.7 | 93.7 | 92.7 | 98.9 | 100.3 | 91.0 | 135.7 |
| 63 | 95.5 | 96.0 | 96.8 | 94.2 | 98.1 | 99.2 | 98.6 | 97.1 | 95.1 | 102.3 | 102.0 | 95.6 | 139.9 | |
| 80 | 95.0 | 101.3 | 95.8 | 96.6 | 97.2 | 100.8 | 99.7 | 98.6 | 99.8 | 99.4 | 103.8 | 103.2 | 89.9 | 141.7 |
| 100 | 94.2 | 100.2 | 95.3 | 95.3 | 97.6 | 102.0 | 101.4 | 102.5 | 100.8 | 102.1 | 104.0 | 108.9 | 94.3 | 143.6 |
| 125 | 92.1 | 94.4 | 97.4 | 96.7 | 99.3 | 101.4 | 99.8 | 100.0 | 100.2 | 102.8 | 109.6 | 113.6 | 99.5 | 146.0 |
| 160 | 89.7 | 88.5 | 94.2 | 89.5 | 92.4 | 96.5 | 100.6 | 97.8 | 99.5 | 104.3 | 110.4 | 113.9 | 103.0 | 146.0 |
| 200 | 89.5 | 91.1 | 92.1 | 90.4 | 93.2 | 96.6 | 98.0 | 99.9 | 104.6 | 104.4 | 110.8 | 117.0 | 106.1 | 148.1 |
| 250 | 87.3 | 92.1 | 92.1 | 91.9 | 94.0 | 97.1 | 98.0 | 100.6 | 105.1 | 109.9 | 115.8 | 119.2 | 107.9 | 151.1 |
| 315 | 88.8 | 91.4 | 91.9 | 91.4 | 94.3 | 97.1 | 100.3 | 100.9 | 105.6 | 112.5 | 118.1 | 120.5 | 110.2 | 152.8 |
| 400 | 89.8 | 92.1 | 94.1 | 92.2 | 95.0 | 97.9 | 109.0 | 101.2 | 107.4 | 114.9 | 120.1 | 121.5 | 110.2 | 154.5 |
| 500 | 90.8 | 93.6 | 94.6 | 92.4 | 95.8 | 98.6 | 99.5 | 102.9 | 106.9 | 117.0 | 121.6 | 121.3 | 108.7 | 155.2 |
| 630 | 91.5 | 94.3 | 94.8 | 93.9 | 96.7 | 100.1 | 101.0 | 104.1 | 108.3 | 117.9 | 123.0 | 120.5 | 107.6 | 155.9 |
| 800 | 94.8 | 96.1 | 96.6 | 94.7 | 97.0 | 100.9 | 101.8 | 105.2 | 109.6 | 118.5 | 123.1 | 119.3 | 106.9 | 155.9 |
| 1000 | 102.5 | 102.3 | 100.3 | 97.9 | 99.2 | 102.8 | 103.0 | 106.9 | 111.3 | 118.4 | 123.5 | 117.2 | 104.9 | 156.0 |
| 1250 | 104.7 | 108.5 | 105.3 | 101.9 | 101.9 | 104.2 | 103.1 | 106.8 | 112.0 | 117.6 | 121.7 | 116.1 | 104.3 | 154.9 |
| 1600 | 104.9 | 107.5 | 109.2 | 107.8 | 106.6 | 106.4 | 105.3 | 108.3 | 112.4 | 118.0 | 122.1 | 114.6 | 104.5 | 155.5 |
| 2000 | 103.1 | 105.4 | 106.3 | 106.5 | 109.3 | 109.9 | 106.4 | 108.5 | 112.8 | 118.9 | 120.1 | 112.4 | 104.4 | 154.4 |
| 2500 | 102.0 | 104.4 | 104.7 | 103.1 | 107.3 | 111.4 | 109.6 | 109.4 | 112.8 | 118.6 | 118.9 | 110.4 | 104.4 | 154.4 |
| 3150 | 102.4 | 104.0 | 104.1 | 103.1 | 105.2 | 108.7 | 110.5 | 111.4 | 113.4 | 117.5 | 116.5 | 109.9 | 102.3 | 153.5 |
| 4000 | 101.7 | 103.6 | 104.0 | 102.9 | 105.5 | 108.0 | 108.4 | 111.5 | 112.9 | 115.6 | 114.6 | 107.8 | 101.2 | 152.4 |
| 5000 | 101.6 | 104.6 | 104.4 | 102.5 | 104.6 | 107.8 | 107.2 | 110.5 | 112.3 | 115.5 | 112.9 | 105.7 | 99.9 | 151.8 |
| 6300 | 100.5 | 103.9 | 104.5 | 103.5 | 105.8 | 108.0 | 107.6 | 110.3 | 112.3 | 113.3 | 111.7 | 103.7 | 98.1 | 151.4 |
| 8000 | 99.5 | 101.9 | 103.0 | 102.9 | 104.5 | 107.6 | 106.8 | 107.9 | 110.4 | 111.6 | 109.7 | 101.9 | 96.7 | 150.2 |
| 10000 | 99.3 | 102.1 | 103.1 | 102.9 | 104.8 | 107.8 | 106.8 | 107.5 | 109.4 | 109.6 | 107.2 | 101.4 | 95.7 | 149.9 |
| 12500 | 97.7 | 99.4 | 100.9 | 101.1 | 103.7 | 106.9 | 105.7 | 105.7 | 107.3 | 107.8 | 104.9 | 99.7 | 94.7 | 149.1 |
| 16000 | 95.8 | 98.4 | 99.3 | 100.6 | 102.2 | 105.5 | 105.0 | 106.2 | 106.2 | 104.8 | 103.2 | 97.3 | 92.0 | 149.2 |
| 20000 | 93.1 | 95.8 | 96.7 | 97.3 | 99.4 | 103.4 | 102.7 | 102.3 | 103.1 | 101.8 | 99.5 | 95.1 | 88.9 | 148.1 |
| 25000 | 89.8 | 92.6 | 93.7 | 94.9 | 96.7 | 101.3 | 100.2 | 99.6 | 99.9 | 97.8 | 95.0 | 92.5 | 86.7 | 147.6 |
| 31500 | 86.8 | 88.9 | 89.7 | 91.7 | 92.7 | 97.6 | 95.8 | 96.7 | 96.0 | 93.7 | 91.0 | 88.2 | 82.5 | 147.0 |
| 40000 | 82.5 | 84.8 | 85.8 | 86.7 | 88.2 | 93.2 | 91.9 | 91.3 | 91.8 | 90.5 | 88.0 | 84.3 | 78.1 | 146.7 |
| 50000 | 76.1 | 78.8 | 79.6 | 81.4 | 82.0 | 87.9 | 85.2 | 85.6 | 86.2 | 84.8 | 81.9 | 78.4 | 72.3 | 145.3 |
| 63000 | 69.7 | 72.4 | 74.2 | 74.6 | 76.1 | 82.5 | 79.2 | 79.9 | 81.1 | 78.4 | 76.6 | 72.6 | 65.8 | 144.9 |
| 80000 | 62.7 | 64.8 | 66.8 | 67.2 | 69.4 | 75.8 | 72.2 | 73.3 | 74.2 | 72.4 | 69.7 | 66.0 | 57.8 | 145.0 |
| OASPL | 113.5 | 116.1 | 116.2 | 115.2 | 117.0 | 119.7 | 119.5 | 120.7 | 123.7 | 128.9 | 132.1 | 129.8 | 118.6 | 166.9 |
| PWL | 126.0 | 128.1 | 128.3 | 127.3 | 129.6 | 132.8 | 133.0 | 134.2 | 136.8 | 141.3 | 142.7 | 138.0 | 129.0 | |
| PNTL | 126.0 | 129.3 | 129.4 | 128.5 | 130.3 | 132.8 | 134.5 | 134.7 | 136.8 | 141.3 | 142.7 | 138.0 | 129.0 | |
| DBA | 113.5 | 116.0 | 116.1 | 114.9 | 116.8 | 119.2 | 118.7 | 120.4 | 123.5 | 128.8 | 131.5 | 127.0 | 116.2 | |

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NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH154 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 400. FPS
 IAPLHA = SB559 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 30.42 PAMB HG = 29.25 RELHUM = 54.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL RPM XNH = RPM VB = 1517.1 FPS AEB = 4.6 SO IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 2473.9 FPS AE18 = 23.4 SO IN
 RUNPT = 83F-400-1112 TAPE = X1112C TEST PT NO = 1112 NC = AEO91 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59 0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1112 X1112F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | | | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | |
| 125 | | | | | | | | | | | | | | |
| 160 | | | | | | | | | | | | | | |
| 200 | | | | | | | | | | | | | | |
| 250 | 95.2 | 98.5 | 97.0 | 95.2 | 95.6 | 97.1 | 96.5 | 97.5 | 103.4 | 109.7 | 115.1 | 118.3 | 110.0 | 150.4 |
| 315 | 95.2 | 98.5 | 97.0 | 95.2 | 96.1 | 97.3 | 99.3 | 99.0 | 105.2 | 112.2 | 117.3 | 119.9 | 111.4 | 152.3 |
| 400 | 96.5 | 97.8 | 96.8 | 94.8 | 96.8 | 98.1 | 108.0 | 99.1 | 104.7 | 114.3 | 119.0 | 120.3 | 111.5 | 153.5 |
| 500 | 97.5 | 98.5 | 99.1 | 95.6 | 97.7 | 99.0 | 98.5 | 100.7 | 106.3 | 115.5 | 120.8 | 120.4 | 112.4 | 154.4 |
| 630 | 98.5 | 100.0 | 99.6 | 95.9 | 98.7 | 100.5 | 100.0 | 101.9 | 108.1 | 116.6 | 121.7 | 120.8 | 114.6 | 155.3 |
| 800 | 99.2 | 100.7 | 99.9 | 97.4 | 99.0 | 101.4 | 100.9 | 103.1 | 110.1 | 116.9 | 122.7 | 119.8 | 115.0 | 155.6 |
| 1000 | 101.8 | 102.1 | 101.4 | 98.1 | 100.8 | 103.5 | 102.2 | 104.8 | 111.0 | 116.4 | 121.2 | 119.1 | 114.7 | 154.8 |
| 1250 | 109.1 | 107.7 | 104.4 | 100.6 | 103.7 | 105.0 | 102.5 | 104.9 | 111.6 | 116.9 | 121.7 | 117.6 | 115.0 | 155.2 |
| 1600 | 111.6 | 114.2 | 109.6 | 104.8 | 108.5 | 107.5 | 104.9 | 106.7 | 112.2 | 118.0 | 119.9 | 115.7 | 115.3 | 155.4 |
| 2000 | 109.8 | 111.8 | 112.7 | 110.6 | 112.0 | 111.2 | 106.3 | 107.0 | 112.6 | 118.2 | 119.1 | 114.1 | 115.7 | 155.6 |
| 2500 | 110.7 | 112.0 | 111.7 | 110.5 | 110.8 | 113.0 | 109.8 | 108.4 | 113.6 | 117.5 | 117.1 | 114.0 | 114.0 | 155.2 |
| 3150 | 112.4 | 113.2 | 111.8 | 108.5 | 108.4 | 110.7 | 111.5 | 109.4 | 113.7 | 116.1 | 115.5 | 112.1 | 112.9 | 154.6 |
| 4000 | 110.0 | 110.7 | 109.6 | 107.5 | 109.2 | 110.6 | 109.6 | 111.4 | 113.1 | 115.8 | 113.7 | 109.6 | 111.2 | 153.7 |
| 5000 | 109.3 | 110.3 | 109.7 | 107.5 | 108.6 | 110.8 | 108.7 | 110.6 | 113.4 | 113.9 | 112.7 | 107.9 | 109.7 | 153.2 |
| 6300 | 109.0 | 111.3 | 110.3 | 107.4 | 109.8 | 111.0 | 109.4 | 110.6 | 112.1 | 112.8 | 111.5 | 107.0 | 109.6 | 153.2 |
| 8000 | 107.8 | 110.4 | 110.1 | 108.2 | 108.6 | 110.6 | 108.9 | 108.6 | 112.0 | 111.9 | 110.2 | 107.9 | 110.0 | 153.0 |
| 10000 | 106.7 | 108.3 | 108.5 | 107.4 | 108.8 | 110.8 | 109.1 | 108.7 | 110.6 | 111.0 | 108.8 | 107.1 | 109.7 | 152.8 |
| 12500 | 106.1 | 108.2 | 108.3 | 107.2 | 108.3 | 109.9 | 108.1 | 107.2 | 110.1 | 108.6 | 107.9 | 105.6 | 108.0 | 152.8 |
| 16000 | 106.8 | 107.2 | 107.4 | 106.0 | 106.8 | 108.5 | 107.4 | 107.2 | 107.7 | 106.5 | 105.1 | 104.3 | 105.6 | 152.8 |
| 20000 | 104.6 | 105.8 | 105.3 | 105.1 | 104.0 | 106.4 | 105.1 | 104.0 | 104.9 | 102.9 | 100.9 | 101.6 | 102.7 | 152.2 |
| 25000 | 101.2 | 102.7 | 102.1 | 101.1 | 101.3 | 104.3 | 102.2 | 100.9 | 101.8 | 99.8 | 97.9 | 98.3 | 99.7 | 151.5 |
| 31500 | 97.2 | 98.7 | 98.3 | 98.0 | 97.2 | 100.6 | 97.8 | 98.0 | 99.2 | 98.1 | 96.6 | 96.4 | 97.5 | 151.4 |
| 40000 | 93.3 | 94.2 | 93.5 | 93.9 | 92.8 | 96.2 | 94.4 | 93.3 | 94.0 | 92.8 | 90.8 | 90.9 | 92.0 | 150.8 |
| 50000 | 88.6 | 89.6 | 89.2 | 88.5 | 86.6 | 90.9 | 87.7 | 87.5 | 86.4 | 86.0 | 85.6 | 86.2 | 86.2 | 149.9 |
| 63000 | 81.2 | 82.7 | 82.1 | 82.3 | 80.7 | 85.5 | 81.5 | 83.4 | 81.5 | 79.6 | 79.6 | 79.6 | 79.0 | 149.0 |
| 80000 | 73.4 | 74.8 | 75.1 | 74.0 | 74.0 | 78.8 | 74.3 | 74.7 | 73.6 | 71.7 | 69.8 | 69.7 | 69.2 | 148.1 |

0ASPL 120.7 122.1 119.0 120.2 121.6 120.1 120.2 123.9 128.0 131.0 129.5 125.5 167.5
 PNL 133.4 134.6 133.4 131.0 131.9 133.7 132.7 132.9 136.3 139.8 140.8 138.1 136.8
 PNLT 133.4 136.0 133.4 131.0 131.9 133.7 134.2 132.9 136.3 139.8 140.8 138.1 136.8
 DBA 196.5 197.9 197.8 197.2 196.5 201.1 197.1 197.2 197.5 195.6 193.9 193.8 193.6

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH154 TEST DATE = 03-17-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = SL FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 30.42 PAMB HG = 29.25 RELHJM = 54.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1517.1 FPS AE8 = 4.6 SO IN
 FNPRMB = LBS XNLR = RPM XNHR = RPM V18 = 2473.9 FPS AE18 = 23.4 SO IN
 PRINT - RPF-400 1112 TAPE = X1112F TEST PT NO = 1112 NC = AEO91 CORR FAN SPEED = RPM

DATPROC - FLTRAN FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
 59.0 DEG. F. 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1112 X11121

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 70.6 | 75.5 | 75.1 | 73.9 | 74.7 | 76.4 | 75.6 | 76.3 | 81.4 | 86.7 | 90.6 | 91.6 | 79.9 | 165.3 |
| 63 | 70.6 | 75.5 | 75.0 | 73.9 | 75.2 | 76.6 | 78.5 | 77.7 | 83.2 | 89.2 | 92.8 | 93.1 | 81.2 | 167.2 |
| 80 | 71.9 | 74.7 | 74.8 | 73.5 | 76.0 | 77.4 | 87.2 | 77.8 | 82.7 | 91.2 | 94.4 | 93.5 | 81.2 | 168.4 |
| 100 | 72.8 | 75.3 | 77.0 | 74.2 | 76.8 | 78.2 | 77.6 | 79.4 | 84.2 | 92.3 | 96.1 | 93.5 | 82.0 | 169.3 |
| 125 | 73.7 | 76.8 | 77.5 | 74.5 | 77.7 | 79.6 | 79.0 | 80.5 | 85.9 | 93.4 | 96.9 | 93.6 | 84.0 | 170.2 |
| 160 | 74.2 | 77.3 | 77.6 | 75.8 | 77.9 | 80.4 | 79.8 | 81.5 | 87.8 | 93.5 | 97.7 | 92.4 | 84.0 | 170.5 |
| 200 | 76.5 | 78.5 | 78.9 | 76.4 | 79.6 | 82.3 | 80.9 | 83.1 | 88.5 | 92.7 | 95.9 | 91.4 | 83.3 | 169.7 |
| 250 | 83.5 | 83.8 | 81.7 | 78.7 | 82.2 | 83.7 | 81.0 | 83.0 | 88.8 | 93.0 | 96.1 | 89.4 | 82.9 | 170.1 |
| 315 | 85.5 | 89.9 | 86.5 | 82.6 | 86.7 | 85.8 | 83.1 | 84.4 | 89.2 | 93.7 | 93.9 | 87.0 | 82.3 | 170.3 |
| 400 | 83.2 | 87.1 | 89.3 | 88.0 | 89.8 | 89.2 | 84.1 | 84.4 | 89.2 | 93.5 | 92.5 | 84.7 | 81.7 | 170.5 |
| 500 | 83.6 | 86.8 | 87.8 | 87.5 | 88.3 | 90.7 | 87.3 | 85.4 | 89.8 | 92.3 | 90.0 | 83.8 | 78.9 | 170.2 |
| 630 | 84.7 | 87.6 | 87.6 | 85.1 | 85.6 | 88.1 | 88.6 | 86.1 | 89.5 | 90.5 | 87.8 | 81.2 | 76.7 | 169.5 |
| 800 | 81.7 | 84.5 | 84.9 | 83.7 | 86.0 | 87.5 | 86.4 | 87.7 | 88.4 | 89.7 | 85.4 | 77.9 | 73.7 | 168.6 |
| 1000 | 80.2 | 83.6 | 84.6 | 83.4 | 85.0 | 87.4 | 85.1 | 86.4 | 88.3 | 87.2 | 83.7 | 75.2 | 70.8 | 168.1 |
| 1250 | 79.2 | 83.9 | 84.6 | 82.7 | 85.8 | 87.2 | 85.3 | 85.9 | 86.4 | 85.5 | 81.6 | 73.3 | 68.9 | 168.1 |
| 1600 | 76.7 | 82.1 | 83.6 | 82.8 | 83.8 | 86.0 | 84.1 | 83.2 | 85.4 | 83.5 | 79.0 | 72.4 | 66.6 | 167.9 |
| 2000 | 73.8 | 78.5 | 80.7 | 81.0 | 83.1 | 85.3 | 83.3 | 82.3 | 82.9 | 81.2 | 79.9 | 69.2 | 62.5 | 167.7 |
| 2500 | 70.5 | 76.3 | 78.8 | 79.1 | 81.1 | 83.0 | 80.9 | 79.1 | 80.6 | 76.7 | 72.2 | 63.9 | 54.9 | 167.7 |
| 3150 | 66.8 | 71.9 | 74.9 | 75.4 | 77.2 | 79.2 | 77.8 | 76.6 | 75.3 | 71.1 | 65.1 | 56.6 | 43.1 | 167.7 |
| 4000 | 56.9 | 64.3 | 67.7 | 69.8 | 70.0 | 72.9 | 71.1 | 68.7 | 67.2 | 61.4 | 53.2 | 43.6 | 24.4 | 167.1 |
| 5000 | 42.1 | 52.0 | 56.6 | 58.8 | 60.7 | 64.2 | 61.6 | 58.5 | 56.3 | 49.1 | 38.9 | 25.0 | | 166.4 |
| 6300 | 19.1 | 32.6 | 39.5 | 43.7 | 45.3 | 49.4 | 45.9 | 43.6 | 40.4 | 32.0 | 18.5 | | | 166.3 |
| 8000 | | 1.9 | 12.0 | 19.0 | 21.5 | 25.9 | 23.0 | 18.3 | 12.5 | 0.5 | | | | 165.7 |
| 10000 | | | | | | | | | | | | | | 164.8 |
| 12500 | | | | | | | | | | | | | | 163.9 |
| 16000 | | | | | | | | | | | | | | 163.0 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS OF POOR QUALITY

| | | | | | | | | | | | | | | |
|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| OASPL | 92.8 | 96.2 | 96.3 | 94.9 | 96.7 | 98.1 | 96.6 | 96.2 | 99.7 | 103.5 | 105.5 | 101.9 | 92.8 | 182.4 |
| PWL | 98.8 | 102.9 | 103.7 | 102.8 | 104.8 | 106.7 | 105.0 | 104.3 | 106.6 | 108.5 | 108.4 | 102.9 | 95.5 | |
| PWLT | 98.8 | 103.6 | 104.3 | 103.4 | 104.8 | 106.7 | 105.0 | 104.9 | 107.2 | 109.3 | 108.4 | 102.9 | 95.5 | |
| DBA | 89.6 | 93.3 | 94.0 | 92.9 | 94.7 | 96.4 | 94.5 | 94.3 | 96.4 | 97.5 | 96.2 | 89.9 | 84.3 | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

| | | | | | | | | | | | | | | | | | |
|----------|---|--------------|--------------|---|----------|----------|------|--------------|------------|---|-------|---------|-----|-------|--------|---|------------------|
| VEHICLE | = | ADH154 | TEST DATE | = | 03-17-83 | LOCAT | = | C41 ANECH CH | CONFIG | = | 11 | MODEL | = | SL | FLTVEL | = | 400. FPS |
| TAPLHA | = | 5859 | TEGA | = | NO | PWL AREA | = | FULL SPHERE | TAMB F | = | 30.42 | PAMB HG | = | 29.25 | RELHUM | = | 54.7 PCT |
| WIND DIR | = | | DEG WIND VEL | = | | MPH | = | 2400.0 FT | EXT CONFIG | = | SL | MIKE HT | = | | NBFR | = | |
| FNIN1 | = | LBS XNL | | = | | RPM | XNH | | | = | | RPM | V8 | | | = | 4.6 SQ IN |
| FNRAMB | = | LBS XNLR | | = | | RPM | XNHR | | | = | | RPM | V18 | | | = | 23.4 SQ IN |
| PUMPT | = | 83F-400-1112 | TAPE | | | | | | | = | | NC | | | | = | CORR FAN SPEED = |
| | | | | | | | | | | | | | | | | | |

IDENTIFICATION - MODEL 83F-ZER-1133 X1133C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 83.6 | 85.2 | 85.4 | 82.2 | 81.3 | 83.4 | 84.8 | 87.7 | 84.7 | 82.0 | 90.6 | 91.3 | 92.0 | 128.4 |
| 63 | 87.5 | 92.8 | 95.6 | 90.6 | 87.2 | 89.8 | 92.7 | 94.6 | 90.8 | 89.6 | 92.0 | 98.2 | 104.4 | 136.3 |
| 80 | 87.8 | 92.6 | 88.6 | 87.4 | 88.2 | 92.8 | 91.0 | 91.4 | 90.6 | 91.9 | 95.0 | 94.7 | 94.4 | 133.6 |
| 100 | 86.5 | 92.0 | 88.5 | 88.3 | 89.9 | 93.3 | 91.4 | 94.3 | 91.8 | 95.6 | 95.7 | 99.1 | 102.6 | 136.2 |
| 125 | 83.6 | 87.4 | 89.7 | 89.2 | 91.1 | 93.2 | 91.3 | 91.5 | 91.9 | 95.3 | 101.4 | 103.6 | 105.8 | 138.5 |
| 160 | 82.2 | 82.7 | 86.7 | 83.8 | 86.6 | 89.7 | 93.4 | 91.3 | 93.2 | 96.3 | 100.9 | 104.1 | 107.3 | 138.9 |
| 200 | 84.0 | 86.3 | 87.8 | 85.9 | 88.0 | 91.6 | 92.0 | 93.9 | 97.6 | 98.6 | 104.3 | 107.7 | 111.1 | 142.3 |
| 250 | 84.8 | 89.3 | 88.6 | 86.9 | 89.0 | 92.6 | 93.7 | 95.6 | 97.3 | 102.9 | 107.8 | 110.5 | 113.1 | 144.8 |
| 315 | 86.1 | 88.6 | 88.1 | 87.7 | 89.8 | 93.9 | 97.3 | 96.7 | 99.6 | 103.5 | 108.3 | 111.5 | 114.7 | 146.0 |
| 400 | 86.8 | 88.3 | 88.6 | 87.7 | 90.0 | 92.9 | 105.2 | 97.7 | 100.1 | 105.9 | 110.1 | 112.5 | 114.9 | 147.3 |
| 500 | 87.3 | 89.9 | 90.1 | 88.7 | 90.8 | 95.6 | 95.3 | 98.4 | 101.4 | 106.7 | 110.3 | 112.5 | 114.7 | 147.1 |
| 630 | 88.0 | 89.3 | 90.6 | 89.4 | 92.0 | 95.1 | 96.0 | 99.1 | 101.3 | 107.9 | 109.5 | 111.5 | 113.4 | 146.5 |
| 800 | 88.8 | 90.1 | 91.1 | 89.4 | 92.8 | 96.1 | 96.8 | 100.2 | 103.1 | 107.5 | 109.6 | 110.3 | 111.0 | 145.8 |
| 1000 | 92.7 | 93.3 | 92.8 | 91.1 | 93.4 | 97.1 | 97.4 | 100.8 | 103.3 | 106.9 | 107.8 | 109.7 | 111.6 | 145.4 |
| 1250 | 91.2 | 93.4 | 93.2 | 91.1 | 93.6 | 97.0 | 97.1 | 100.5 | 103.5 | 106.0 | 106.9 | 107.6 | 108.3 | 144.1 |
| 1600 | 91.3 | 91.5 | 92.4 | 91.0 | 93.3 | 97.1 | 98.0 | 101.3 | 103.6 | 104.5 | 106.1 | 106.8 | 107.4 | 143.5 |
| 2000 | 92.0 | 92.3 | 92.7 | 91.1 | 93.2 | 97.1 | 97.3 | 101.1 | 103.5 | 105.0 | 104.8 | 104.6 | 104.4 | 142.7 |
| 2500 | 90.2 | 91.7 | 91.8 | 90.3 | 92.7 | 96.3 | 96.5 | 99.8 | 101.7 | 103.7 | 102.2 | 101.8 | 101.4 | 141.0 |
| 3150 | 89.8 | 91.6 | 91.4 | 89.4 | 92.0 | 96.3 | 96.4 | 99.4 | 101.5 | 101.8 | 99.3 | 97.5 | 95.6 | 139.6 |
| 4000 | 88.0 | 89.6 | 90.5 | 88.9 | 92.0 | 95.5 | 95.6 | 99.0 | 100.4 | 99.1 | 96.5 | 92.6 | 88.6 | 138.1 |
| 5000 | 87.2 | 89.2 | 90.1 | 88.5 | 91.0 | 94.5 | 94.9 | 97.9 | 98.2 | 97.3 | 94.1 | 89.7 | 85.2 | 136.8 |
| 6300 | 85.6 | 89.0 | 88.9 | 87.2 | 90.5 | 93.5 | 94.3 | 97.2 | 97.2 | 94.6 | 90.4 | 87.4 | 84.4 | 135.8 |
| 8000 | 83.8 | 87.4 | 87.7 | 86.7 | 89.3 | 92.6 | 92.6 | 95.2 | 95.4 | 91.5 | 88.2 | 84.7 | 81.1 | 134.4 |
| 10000 | 83.2 | 86.8 | 87.5 | 86.9 | 88.7 | 92.2 | 92.0 | 94.5 | 93.6 | 89.8 | 86.9 | 83.1 | 79.2 | 134.1 |
| 12500 | 80.9 | 84.9 | 85.8 | 85.2 | 87.5 | 91.2 | 90.3 | 90.8 | 90.9 | 87.7 | 83.3 | 81.4 | 79.6 | 132.7 |
| 16000 | 79.4 | 84.5 | 84.9 | 84.7 | 86.0 | 88.5 | 88.6 | 89.5 | 89.1 | 84.5 | 81.8 | 79.0 | 76.3 | 132.3 |
| 20000 | 76.4 | 82.0 | 82.4 | 82.7 | 83.7 | 85.9 | 85.5 | 85.2 | 85.3 | 81.2 | 78.5 | 76.6 | 74.8 | 131.0 |
| 25000 | 73.3 | 78.5 | 79.0 | 80.1 | 80.8 | 84.6 | 83.3 | 81.8 | 82.0 | 77.2 | 74.5 | 73.3 | 72.1 | 130.7 |
| 31500 | 70.0 | 74.6 | 76.1 | 76.7 | 77.2 | 80.4 | 78.8 | 78.4 | 77.6 | 73.0 | 70.1 | 69.0 | 67.9 | 129.9 |
| 40000 | 65.1 | 70.7 | 71.7 | 72.8 | 72.5 | 77.2 | 74.2 | 74.9 | 74.2 | 69.5 | 66.6 | 64.0 | 61.5 | 130.0 |
| 50000 | 59.4 | 64.5 | 65.6 | 66.6 | 67.1 | 72.2 | 69.1 | 69.1 | 67.7 | 63.5 | 61.0 | 59.2 | 57.3 | 128.8 |
| 63000 | 53.8 | 58.4 | 60.4 | 61.1 | 61.9 | 66.9 | 63.2 | 63.6 | 63.1 | 58.1 | 55.0 | 52.3 | 49.6 | 128.8 |
| 80000 | 49.5 | 52.2 | 53.4 | 53.1 | 54.4 | 61.0 | 57.2 | 56.2 | 55.6 | 50.1 | 47.6 | 45.4 | 43.3 | 128.9 |

OASPL 102.0 104.3 104.6 102.8 104.9 108.5 110.4 111.7 113.7 116.8 119.0 120.9 123.1 156.6
 PNL 114.3 116.3 116.5 114.8 117.2 121.0 121.7 124.2 125.9 127.5 127.8 128.4 129.8
 PNL1 114.3 116.3 116.5 115.3 117.2 121.0 123.2 124.2 125.9 127.5 128.4 128.4 129.8
 DBA 101.3 102.7 103.0 101.4 103.9 107.5 108.6 111.2 113.3 115.7 117.0 118.2 119.8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH160 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO ' FLTVEL = O. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.48 PAMB HG = 29.15 RELHUM = 84.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT. EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM VB = 1098.6 FPS AEB = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM VIB = 1777.8 FPS AE18 = 23.4 SQ IN
 TEST PT IN = 1.00 = AEOPS
 CORR FAN SPEED = 0.00

DATPROC - FLITRAN

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS.
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1133 X1133F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 83.6 | 85.2 | 85.4 | 82.2 | 81.3 | 83.4 | 84.8 | 87.7 | 84.7 | 82.0 | 90.6 | 91.3 | 92.0 | 128.4 |
| 63 | 87.5 | 92.8 | 95.6 | 90.6 | 87.2 | 89.8 | 92.7 | 94.6 | 90.8 | 89.6 | 92.0 | 98.2 | 104.4 | 136.3 |
| 80 | 87.8 | 92.6 | 88.6 | 87.4 | 88.2 | 92.8 | 91.0 | 91.4 | 90.6 | 91.9 | 95.0 | 94.7 | 94.4 | 133.6 |
| 100 | 86.5 | 92.0 | 88.5 | 88.3 | 89.9 | 93.3 | 91.4 | 94.3 | 91.8 | 95.6 | 95.7 | 99.1 | 102.6 | 136.2 |
| 125 | 83.6 | 87.4 | 89.7 | 89.2 | 91.1 | 93.2 | 91.3 | 91.5 | 91.9 | 95.3 | 101.4 | 103.6 | 105.8 | 138.5 |
| 160 | 82.2 | 82.7 | 86.7 | 83.8 | 86.6 | 89.7 | 93.4 | 91.3 | 93.2 | 96.3 | 100.9 | 104.1 | 107.3 | 138.9 |
| 200 | 84.0 | 86.3 | 87.8 | 85.9 | 88.0 | 91.6 | 92.0 | 93.9 | 97.6 | 98.6 | 104.3 | 107.7 | 111.1 | 142.3 |
| 250 | 84.8 | 89.3 | 88.6 | 86.9 | 89.0 | 92.6 | 93.7 | 95.6 | 97.3 | 102.9 | 107.8 | 110.5 | 113.1 | 144.8 |
| 315 | 86.1 | 88.6 | 88.1 | 87.7 | 89.8 | 93.9 | 97.3 | 96.7 | 99.6 | 103.5 | 108.3 | 111.5 | 114.7 | 146.0 |
| 400 | 86.8 | 88.3 | 88.6 | 87.7 | 90.0 | 92.9 | 105.2 | 97.7 | 100.1 | 105.9 | 110.1 | 112.5 | 114.9 | 147.3 |
| 500 | 87.3 | 89.9 | 90.1 | 88.7 | 90.8 | 95.6 | 95.3 | 98.4 | 101.4 | 106.7 | 110.3 | 112.5 | 114.7 | 147.1 |
| 630 | 88.0 | 89.3 | 90.6 | 89.4 | 92.0 | 95.1 | 96.0 | 99.1 | 101.3 | 107.9 | 109.5 | 111.5 | 113.4 | 146.5 |
| 800 | 88.8 | 90.1 | 91.1 | 89.4 | 92.8 | 96.1 | 96.8 | 100.2 | 103.1 | 107.5 | 109.6 | 110.3 | 111.0 | 145.8 |
| 1000 | 92.7 | 93.3 | 92.8 | 91.1 | 93.4 | 97.1 | 97.4 | 100.8 | 103.3 | 106.9 | 107.8 | 109.7 | 111.6 | 145.4 |
| 1250 | 91.2 | 93.4 | 93.2 | 91.1 | 93.6 | 97.0 | 97.1 | 100.5 | 103.5 | 106.0 | 106.9 | 107.6 | 108.3 | 144.1 |
| 1600 | 91.3 | 91.5 | 92.4 | 91.0 | 93.3 | 97.1 | 98.0 | 101.3 | 103.6 | 104.5 | 106.1 | 106.8 | 107.4 | 143.5 |
| 2000 | 92.0 | 92.3 | 92.7 | 91.1 | 93.2 | 97.1 | 97.3 | 101.1 | 103.5 | 105.0 | 104.8 | 104.6 | 104.4 | 142.7 |
| 2500 | 90.2 | 91.7 | 91.8 | 90.3 | 92.7 | 96.3 | 96.5 | 99.8 | 101.7 | 102.2 | 101.8 | 101.4 | 141.0 | |
| 3150 | 89.8 | 91.6 | 91.4 | 89.4 | 92.0 | 96.3 | 96.4 | 99.4 | 101.5 | 101.8 | 99.3 | 97.5 | 95.6 | 139.6 |
| 4000 | 88.0 | 89.6 | 90.5 | 88.9 | 92.0 | 95.5 | 95.6 | 99.0 | 100.4 | 99.1 | 96.5 | 92.6 | 88.6 | 138.1 |
| 5000 | 87.2 | 89.2 | 90.1 | 88.5 | 91.0 | 94.5 | 94.9 | 97.9 | 98.2 | 97.3 | 94.1 | 89.7 | 85.2 | 136.8 |
| 6300 | 85.6 | 89.0 | 88.9 | 87.2 | 90.5 | 93.5 | 94.3 | 97.2 | 94.6 | 90.4 | 87.4 | 84.4 | 84.4 | 135.8 |
| 8000 | 83.8 | 87.4 | 87.7 | 86.7 | 89.3 | 92.6 | 92.6 | 95.2 | 95.4 | 91.5 | 88.2 | 84.7 | 81.1 | 134.4 |
| 10000 | 83.2 | 86.8 | 87.5 | 86.9 | 88.7 | 92.2 | 92.0 | 94.5 | 93.6 | 89.8 | 86.9 | 83.1 | 79.2 | 134.1 |
| 12500 | 80.9 | 84.9 | 85.8 | 85.2 | 87.5 | 91.2 | 90.3 | 90.8 | 90.9 | 87.7 | 83.3 | 81.4 | 79.6 | 132.7 |
| 16000 | 79.4 | 84.5 | 84.9 | 84.7 | 86.0 | 88.5 | 88.6 | 89.5 | 89.1 | 84.5 | 81.8 | 79.0 | 76.3 | 132.3 |
| 20000 | 76.4 | 82.0 | 82.4 | 82.7 | 83.7 | 85.9 | 85.5 | 85.2 | 85.3 | 81.2 | 78.5 | 76.6 | 74.8 | 131.0 |
| 25000 | 73.3 | 78.5 | 79.0 | 80.1 | 80.8 | 84.6 | 83.3 | 81.8 | 82.0 | 77.2 | 74.5 | 73.3 | 72.1 | 130.7 |
| 31500 | 70.0 | 74.6 | 76.1 | 76.7 | 77.2 | 80.4 | 78.8 | 78.4 | 77.6 | 73.0 | 70.1 | 69.0 | 67.9 | 129.9 |
| 40000 | 65.1 | 70.7 | 71.7 | 72.8 | 72.5 | 77.2 | 74.2 | 74.9 | 74.2 | 69.5 | 66.6 | 64.0 | 61.5 | 130.0 |
| 50000 | 59.4 | 64.5 | 65.6 | 66.6 | 67.1 | 72.2 | 69.1 | 69.1 | 67.7 | 63.5 | 61.0 | 59.2 | 57.3 | 128.8 |
| 63000 | 53.8 | 58.4 | 60.4 | 61.1 | 61.9 | 66.9 | 63.2 | 63.6 | 63.1 | 58.1 | 55.0 | 52.3 | 49.6 | 128.8 |
| 80000 | 49.5 | 52.2 | 53.4 | 53.1 | 54.4 | 61.0 | 57.2 | 56.2 | 55.6 | 50.1 | 47.6 | 45.4 | 43.3 | 128.9 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/OFTAS-11/NAS3-22137

VEHICLE = ADH160 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 0. FPS
 TAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.48 PAMB HG = 29.15 RELHUM = 84.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1098.6 FPS AEB = 4.6 SO IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1777.8 FPS AE18 = 23.4 SO IN
 CORR FAN SPEED = RPM

DATPROC - FLTRAN FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F, 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1133 X11331

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 60.2 | 66.3 | 66.6 | 65.6 | 68.1 | 71.9 | 72.9 | 74.4 | 75.4 | 79.9 | 83.2 | 83.7 | 83.1 | 159.7 |
| 63 | 61.5 | 65.6 | 66.2 | 66.4 | 68.9 | 73.2 | 76.4 | 75.4 | 77.7 | 80.4 | 83.8 | 84.7 | 84.6 | 160.9 |
| 80 | 62.2 | 65.3 | 66.6 | 66.4 | 69.1 | 72.1 | 84.4 | 76.4 | 78.1 | 82.8 | 85.4 | 85.6 | 84.7 | 162.2 |
| 100 | 62.6 | 66.7 | 68.1 | 67.3 | 69.9 | 74.9 | 74.4 | 77.1 | 79.3 | 83.6 | 85.6 | 85.6 | 84.3 | 162.0 |
| 125 | 63.2 | 66.1 | 68.4 | 68.0 | 71.0 | 74.2 | 75.0 | 77.7 | 79.2 | 84.7 | 84.7 | 84.4 | 82.8 | 161.4 |
| 160 | 63.8 | 66.7 | 68.8 | 67.9 | 71.6 | 75.1 | 75.6 | 78.6 | 80.8 | 84.0 | 84.6 | 82.9 | 79.9 | 160.7 |
| 200 | 67.5 | 69.7 | 70.3 | 69.4 | 72.1 | 75.9 | 76.1 | 79.1 | 80.8 | 83.3 | 82.5 | 82.0 | 80.1 | 160.3 |
| 250 | 65.5 | 69.5 | 70.5 | 69.2 | 72.1 | 75.6 | 75.6 | 78.6 | 80.7 | 82.1 | 81.3 | 79.5 | 76.1 | 159.0 |
| 315 | 65.3 | 67.2 | 69.3 | 68.8 | 71.5 | 75.5 | 76.2 | 79.0 | 80.6 | 80.2 | 80.0 | 78.1 | 74.5 | 158.4 |
| 400 | 65.4 | 67.6 | 69.3 | 68.5 | 71.1 | 75.1 | 75.2 | 78.5 | 80.0 | 80.3 | 78.2 | 75.2 | 70.4 | 157.6 |
| 500 | 63.0 | 66.6 | 68.0 | 67.3 | 70.2 | 74.0 | 74.0 | 76.9 | 77.9 | 78.6 | 75.1 | 71.7 | 66.3 | 155.9 |
| 630 | 62.1 | 66.0 | 67.1 | 66.1 | 69.2 | 73.6 | 73.6 | 76.1 | 77.2 | 76.2 | 71.6 | 66.6 | 59.4 | 154.5 |
| 800 | 59.6 | 63.4 | 65.8 | 65.1 | 68.8 | 72.5 | 72.4 | 75.2 | 75.7 | 72.9 | 68.2 | 60.9 | 51.1 | 153.0 |
| 1000 | 58.2 | 62.5 | 65.0 | 64.4 | 67.4 | 71.1 | 71.3 | 73.8 | 73.1 | 70.6 | 65.1 | 57.0 | 46.3 | 151.7 |
| 1250 | 55.8 | 61.7 | 63.2 | 62.6 | 66.5 | 69.6 | 72.6 | 72.6 | 71.5 | 67.3 | 60.5 | 53.6 | 43.8 | 150.7 |
| 1600 | 52.6 | 59.0 | 61.2 | 61.3 | 64.5 | 68.1 | 67.8 | 69.8 | 68.9 | 63.2 | 57.1 | 49.1 | 37.7 | 149.3 |
| 2000 | 50.2 | 57.0 | 59.8 | 60.4 | 63.0 | 66.7 | 66.3 | 68.0 | 65.9 | 60.1 | 54.0 | 45.1 | 32.0 | 149.0 |
| 2500 | 45.3 | 53.0 | 56.2 | 57.1 | 60.2 | 64.3 | 63.0 | 62.7 | 61.3 | 55.7 | 47.6 | 39.7 | 26.5 | 147.6 |
| 3150 | 39.4 | 49.1 | 52.5 | 54.1 | 56.4 | 59.2 | 59.0 | 58.9 | 56.6 | 49.1 | 41.8 | 31.3 | 13.8 | 147.2 |
| 4000 | 28.7 | 40.5 | 44.8 | 47.4 | 49.7 | 52.4 | 51.6 | 49.9 | 47.7 | 39.7 | 30.8 | 18.6 | | 145.9 |
| 5000 | 14.3 | 27.8 | 33.5 | 37.8 | 40.2 | 44.6 | 42.7 | 39.5 | 36.5 | 26.5 | 15.5 | | | 145.6 |
| 6300 | | 8.5 | 17.3 | 22.3 | 25.3 | 29.2 | 26.9 | 24.0 | 18.8 | 6.9 | | | | 144.8 |
| 8000 | | | | | 1.1 | 6.9 | 2.8 | 0.0 | | | | | | 144.9 |
| 10000 | | | | | | | | | | | | | | 143.7 |
| 12500 | | | | | | | | | | | | | | 143.8 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

OASPL 75.1 78.4 79.9 79.1 82.1 85.9 88.4 88.9 90.4 92.8 93.6 93.2 91.8 171.0
 PNL 79.0 82.9 84.9 84.5 87.4 91.3 91.8 93.9 94.8 94.9 93.7 91.9 89.1
 PNL1 79.0 82.9 84.9 84.5 87.9 91.3 91.8 93.9 94.8 94.9 93.7 91.9 89.1
 DBA 68.7 72.4 74.2 73.7 76.8 80.6 80.7 83.2 83.8 83.5 81.5 79.3 76.2

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREO SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICL = ADH160 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 0. FPS
 TAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.48 PAMB HG = 29.15 RELHUM = 84.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =
 FNIN1 = LBS XNL = RPM XNH = RPM VB = 1098.6 FPS AEB = 4.6 SQ IN
 FN1AMB = LBS XNL = RPM XNH = RPM VIBD = 1777.8 FPS AF1A = 23.4 SQ IN
 CORR FAN SPEED = RPM

UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
 59.0 DEG. F... 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-400-1134 X1134C
 BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.4 | 87.2 | 87.4 | 83.7 | 80.8 | 82.2 | 84.6 | 86.7 | 84.9 | 85.7 | 89.4 | 92.6 | 87.7 | 128.6 |
| 63 | 88.3 | 93.0 | 97.1 | 92.6 | 87.2 | 89.1 | 93.7 | 94.4 | 89.8 | 88.9 | 90.3 | 98.7 | 96.4 | 135.3 |
| 80 | 88.0 | 92.1 | 88.3 | 87.9 | 88.2 | 92.3 | 91.5 | 91.1 | 91.1 | 91.4 | 94.3 | 94.7 | 86.4 | 133.2 |
| 100 | 85.5 | 91.0 | 88.0 | 86.5 | 88.1 | 92.0 | 90.1 | 93.0 | 90.0 | 92.8 | 94.2 | 98.9 | 87.1 | 133.8 |
| 125 | 84.1 | 86.2 | 88.2 | 88.0 | 90.1 | 91.9 | 90.3 | 90.2 | 89.7 | 92.8 | 98.9 | 102.3 | 89.5 | 135.4 |
| 160 | 80.4 | 80.5 | 85.5 | 82.3 | 83.6 | 86.7 | 92.1 | 87.5 | 89.7 | 92.8 | 98.9 | 101.6 | 92.3 | 134.6 |
| 200 | 81.8 | 82.6 | 85.6 | 81.9 | 83.2 | 86.8 | 88.7 | 89.9 | 94.3 | 93.6 | 99.8 | 104.7 | 93.6 | 136.5 |
| 250 | 81.3 | 83.1 | 84.3 | 82.6 | 84.5 | 87.6 | 88.2 | 90.1 | 94.1 | 98.4 | 103.3 | 106.7 | 95.9 | 138.9 |
| 315 | 81.1 | 84.1 | 85.4 | 83.4 | 84.5 | 88.4 | 92.5 | 91.4 | 94.4 | 99.5 | 103.8 | 106.8 | 96.4 | 139.3 |
| 400 | 81.3 | 83.1 | 84.6 | 82.9 | 85.0 | 88.1 | 99.2 | 91.4 | 94.1 | 100.9 | 105.6 | 106.7 | 95.2 | 140.5 |
| 500 | 82.1 | 83.6 | 85.6 | 83.4 | 85.8 | 89.4 | 89.3 | 92.7 | 94.6 | 102.2 | 106.3 | 105.8 | 92.2 | 140.2 |
| 630 | 82.0 | 83.1 | 85.1 | 83.4 | 86.7 | 89.6 | 90.2 | 92.9 | 95.3 | 102.9 | 105.5 | 102.7 | 90.6 | 139.4 |
| 800 | 82.8 | 83.6 | 84.9 | 84.2 | 87.3 | 89.9 | 90.5 | 94.2 | 97.1 | 103.2 | 105.6 | 99.8 | 88.7 | 139.4 |
| 1000 | 84.7 | 85.0 | 86.3 | 84.8 | 87.4 | 91.3 | 91.2 | 94.6 | 97.3 | 102.9 | 103.8 | 97.7 | 88.1 | 138.5 |
| 1250 | 83.4 | 86.7 | 86.5 | 84.9 | 86.8 | 90.7 | 90.8 | 94.3 | 98.0 | 102.0 | 102.9 | 94.6 | 86.5 | 137.8 |
| 1600 | 83.6 | 84.5 | 86.4 | 85.3 | 88.0 | 91.6 | 92.0 | 95.8 | 97.9 | 100.7 | 102.8 | 94.0 | 86.7 | 137.6 |
| 2000 | 84.0 | 84.3 | 85.7 | 84.4 | 87.2 | 91.1 | 91.8 | 95.6 | 98.0 | 101.5 | 101.5 | 92.1 | 86.6 | 137.4 |
| 2500 | 83.2 | 84.2 | 84.8 | 84.5 | 86.9 | 90.3 | 91.2 | 94.8 | 96.9 | 100.2 | 99.2 | 91.6 | 86.1 | 136.1 |
| 3150 | 82.8 | 84.1 | 85.1 | 83.9 | 86.7 | 90.5 | 90.7 | 94.1 | 96.2 | 98.8 | 96.6 | 89.7 | 84.4 | 134.9 |
| 4000 | 81.5 | 83.3 | 85.0 | 83.4 | 87.0 | 90.8 | 90.9 | 93.7 | 95.6 | 96.1 | 95.0 | 87.3 | 83.7 | 133.9 |
| 5000 | 81.5 | 82.2 | 83.9 | 82.8 | 86.3 | 90.2 | 90.6 | 93.7 | 94.0 | 94.8 | 92.6 | 86.4 | 81.9 | 132.9 |
| 6300 | 80.9 | 83.3 | 83.4 | 81.9 | 85.3 | 89.0 | 88.5 | 91.9 | 92.2 | 92.4 | 89.1 | 83.9 | 80.4 | 131.3 |
| 8000 | 81.3 | 83.2 | 83.0 | 81.9 | 85.1 | 87.6 | 89.9 | 90.2 | 89.3 | 87.2 | 81.7 | 79.3 | 130.0 | |
| 10000 | 81.7 | 83.0 | 83.3 | 82.4 | 85.0 | 88.0 | 86.7 | 89.2 | 88.9 | 87.1 | 84.7 | 80.3 | 77.9 | 129.7 |
| 12500 | 80.9 | 81.9 | 82.5 | 82.4 | 85.5 | 87.8 | 85.8 | 86.8 | 86.6 | 85.0 | 82.0 | 79.7 | 76.5 | 129.3 |
| 16000 | 79.7 | 81.8 | 82.2 | 82.5 | 84.8 | 86.0 | 84.3 | 85.2 | 85.4 | 82.6 | 79.8 | 77.6 | 73.5 | 129.4 |
| 20000 | 77.6 | 79.6 | 79.2 | 80.4 | 82.0 | 83.2 | 82.6 | 82.7 | 81.3 | 79.0 | 76.7 | 74.9 | 71.4 | 128.4 |
| 25000 | 74.1 | 76.7 | 76.5 | 77.6 | 78.8 | 81.6 | 80.0 | 79.0 | 78.8 | 75.2 | 73.5 | 73.1 | 67.7 | 128.0 |
| 31500 | 70.3 | 73.1 | 73.9 | 75.2 | 75.3 | 78.4 | 76.1 | 76.4 | 74.7 | 71.0 | 70.4 | 69.3 | 63.5 | 127.9 |
| 40000 | 65.8 | 69.2 | 69.9 | 70.8 | 70.8 | 75.4 | 72.7 | 71.7 | 68.0 | 66.8 | 65.3 | 59.7 | 59.7 | 128.2 |
| 50000 | 60.9 | 63.5 | 63.8 | 65.4 | 65.9 | 71.0 | 67.6 | 67.3 | 66.0 | 62.3 | 61.8 | 59.9 | 54.4 | 127.5 |
| 63000 | 54.6 | 57.4 | 58.9 | 60.1 | 60.9 | 66.0 | 62.0 | 62.1 | 61.1 | 56.6 | 55.5 | 53.8 | 47.6 | 127.6 |
| 80000 | 47.3 | 51.0 | 52.2 | 51.9 | 53.2 | 60.3 | 54.7 | 55.5 | 53.9 | 49.4 | 49.3 | 47.2 | 40.0 | 127.8 |
| QASPL | 97.7 | 100.3 | 101.5 | 99.3 | 100.7 | 103.9 | 105.5 | 106.7 | 108.5 | 112.7 | 115.1 | 114.9 | 104.7 | 150.8 |
| PNL | 108.6 | 110.1 | 111.2 | 109.8 | 112.4 | 115.9 | 116.6 | 119.1 | 120.9 | 124.0 | 124.6 | 121.8 | 112.7 | |
| PNLT | 108.6 | 110.1 | 111.2 | 110.4 | 113.1 | 115.9 | 118.0 | 119.1 | 120.9 | 124.0 | 124.6 | 121.8 | 112.7 | |
| DBA | 94.5 | 95.9 | 96.9 | 95.6 | 98.4 | 102.0 | 103.0 | 105.7 | 107.9 | 111.8 | 113.2 | 109.7 | 99.5 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH161 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.89 PAMB HG = 29.06 RELHUM = 83.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL RPM XNH RPM V8 = 1102.6 FPS AEB = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V1B = 1782.7 FPS AE1B = 23.4 SQ IN
 RUNPT = 83F-400-1134 TAPE = X1134C TEST PT NO = 1134 NC = AE085 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS

59.0 DEG. F., 70 PERCENT R.H., STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1134 X1134F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

Table with 13 columns (FREQ 40-160) and multiple rows of pressure level data.

0ASPL 103.1 103.5 103.3 100.7 102.2 104.2 104.3 104.9 107.5 110.8 112.7 111.8 108.1 149.8

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS) = 400.00, DIAM (IN) = 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/MAS3-22137

VEHICLE = ADH161 TEST DATE = 03-28-83 LOCAL = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 400. FPS

TAPLHA = SB59 TEGA = NO MPII = RPM XNH XNL RPM XNH XNL RPM XNH XNL RPM XNH XNL RPM XNH XNL RPM XNH XNL RPM

WIND DIR = DEG WIND VEL = RPM XNL XNL RPM XNH XNL RPM XNH XNL RPM XNH XNL RPM XNH XNL RPM XNH XNL RPM

DBA 181.0 182.6 182.2 181.9 180.5 185.1 178.7 177.7 175.4 170.4 170.5 171.4 171.5

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H., STD. DAY, SB 2400.0 FT SL

IDENTIFICATION - 83F-400-1134 X11341

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 63.5 | 65.7 | 66.8 | 64.4 | 65.1 | 66.9 | 65.9 | 65.7 | 70.1 | 73.6 | 76.3 | 77.8 | 66.2 | 151.9 |
| 63 | 63.5 | 65.7 | 66.8 | 64.3 | 65.4 | 67.9 | 70.7 | 68.2 | 69.8 | 75.0 | 78.1 | 78.3 | 66.2 | 153.0 |
| 80 | 63.5 | 67.0 | 68.0 | 65.4 | 65.9 | 67.6 | 77.3 | 68.0 | 70.3 | 76.3 | 78.9 | 77.8 | 64.6 | 153.8 |
| 100 | 64.1 | 66.2 | 67.4 | 64.9 | 66.7 | 68.9 | 67.3 | 69.1 | 71.1 | 77.1 | 78.3 | 75.4 | 64.8 | 152.7 |
| 125 | 64.9 | 66.8 | 68.5 | 65.5 | 67.7 | 69.1 | 68.2 | 69.1 | 73.1 | 77.6 | 78.7 | 73.4 | 65.0 | 152.9 |
| 160 | 64.7 | 66.1 | 67.8 | 65.3 | 68.2 | 69.4 | 68.4 | 70.3 | 73.7 | 77.8 | 77.7 | 72.7 | 67.1 | 152.9 |
| 200 | 65.2 | 66.4 | 67.5 | 66.0 | 68.3 | 70.8 | 69.1 | 70.8 | 74.1 | 76.7 | 76.4 | 69.0 | 64.6 | 152.2 |
| 250 | 66.8 | 67.6 | 68.7 | 66.5 | 67.6 | 70.2 | 68.6 | 70.3 | 74.1 | 75.5 | 76.5 | 68.5 | 64.7 | 152.2 |
| 315 | 64.9 | 68.8 | 68.5 | 66.3 | 68.7 | 71.0 | 69.7 | 71.8 | 74.2 | 76.1 | 74.9 | 66.2 | 63.9 | 152.4 |
| 400 | 64.6 | 66.3 | 68.2 | 66.5 | 67.8 | 70.4 | 69.5 | 71.5 | 73.2 | 75.0 | 72.8 | 65.7 | 63.2 | 151.8 |
| 500 | 64.5 | 65.7 | 67.2 | 65.4 | 67.4 | 69.6 | 68.9 | 70.8 | 72.6 | 73.7 | 70.1 | 63.7 | 61.1 | 151.0 |
| 630 | 63.1 | 65.2 | 66.0 | 65.4 | 67.2 | 69.9 | 68.5 | 70.2 | 72.9 | 71.7 | 69.2 | 61.8 | 60.4 | 150.8 |
| 800 | 62.0 | 64.6 | 66.0 | 64.5 | 68.1 | 70.3 | 69.5 | 70.6 | 71.2 | 70.4 | 66.7 | 60.6 | 57.9 | 150.6 |
| 1000 | 62.8 | 65.6 | 67.3 | 65.0 | 67.3 | 69.8 | 69.3 | 70.6 | 69.7 | 68.1 | 63.3 | 57.9 | 55.5 | 150.3 |
| 1250 | 61.9 | 63.9 | 65.7 | 64.1 | 65.8 | 68.1 | 66.8 | 68.8 | 67.9 | 65.3 | 61.4 | 55.2 | 52.9 | 149.3 |
| 1600 | 59.8 | 63.8 | 64.2 | 62.4 | 64.3 | 66.1 | 65.3 | 66.4 | 65.7 | 62.0 | 57.3 | 51.4 | 47.9 | 148.5 |
| 2000 | 55.5 | 59.8 | 60.7 | 60.0 | 63.3 | 65.5 | 63.2 | 64.3 | 60.3 | 56.1 | 50.4 | 46.0 | 40.4 | 147.2 |
| 2500 | 52.9 | 57.2 | 59.0 | 58.6 | 62.3 | 63.8 | 60.2 | 58.7 | 58.9 | 53.6 | 47.6 | 42.1 | 33.5 | 147.4 |
| 3150 | 47.2 | 52.2 | 54.8 | 55.5 | 59.2 | 59.7 | 56.5 | 55.3 | 51.2 | 45.5 | 38.9 | 32.4 | 21.0 | 147.1 |
| 4000 | 38.0 | 45.5 | 48.9 | 50.5 | 52.0 | 52.7 | 50.0 | 47.4 | 44.1 | 36.1 | 28.7 | 20.9 | 2.1 | 147.0 |
| 5000 | 23.9 | 33.5 | 37.4 | 40.8 | 42.2 | 44.6 | 40.9 | 36.7 | 32.9 | 23.6 | 14.9 | 2.5 | | 146.6 |
| 6300 | 0.5 | 14.4 | 20.6 | 25.2 | 27.4 | 30.3 | 25.6 | 22.0 | 17.5 | 6.0 | | | | 146.3 |
| 8000 | | | 1.3 | 4.0 | 8.2 | 2.8 | | | | | | | | 146.5 |
| 10000 | | | | | | | | | | | | | | 147.1 |
| 12500 | | | | | | | | | | | | | | 146.6 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS
OF POOR QUALITY

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| OASPL | 76.1 | 78.3 | 79.5 | 77.5 | 79.4 | 81.6 | 82.2 | 81.9 | 84.1 | 86.8 | 87.4 | 84.6 | 75.6 | 164.7 |
| PNL | 81.0 | 84.3 | 85.4 | 84.0 | 86.7 | 88.6 | 87.1 | 87.8 | 88.8 | 89.7 | 88.6 | 82.5 | 76.9 | |
| PNLT | 82.0 | 84.3 | 85.4 | 84.0 | 86.7 | 88.6 | 87.1 | 87.8 | 88.8 | 89.7 | 88.6 | 82.5 | 76.9 | |
| DBA | 71.0 | 73.5 | 74.8 | 73.3 | 75.6 | 77.8 | 76.7 | 78.1 | 78.8 | 78.8 | 76.8 | 70.2 | 66.8 | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICL = ADH161 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 400 FPS
 IAPLHA = SB59 IEQA = NO PWL AREA = FULL SPHERE TAMB F = 36.89 PAMB HG = 29.06 RELHUM = 83.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =
 FNIN1 = LBS XNL RPM XN1 = RPM V8 = 1102.6 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 1782.7 FPS AE18 = 23.4 SQ IN
 RIUMPT = 83F-400-1134 TAPF = X11341 TEST PT NO = 1134 NC = AEO85 CORR FAN SPEED = RPM

UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE

59.0 DEG. F., 70 PERCENT R.H., STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-ZER-1135 X1135C BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.4 | 88.7 | 85.4 | 82.2 | 83.6 | 85.2 | 85.1 | 86.5 | 86.9 | 91.0 | 92.6 | 94.6 | 87.5 | 130.2 |
| 63 | 89.8 | 92.0 | 93.6 | 91.1 | 90.5 | 92.3 | 92.7 | 92.9 | 92.3 | 96.1 | 94.3 | 98.7 | 94.9 | 135.5 |
| 80 | 90.0 | 94.8 | 90.8 | 90.4 | 91.0 | 95.6 | 93.7 | 94.4 | 94.1 | 94.7 | 97.8 | 97.7 | 83.4 | 136.1 |
| 100 | 89.2 | 95.2 | 92.0 | 91.8 | 92.9 | 96.8 | 94.9 | 98.0 | 95.3 | 98.8 | 98.7 | 103.1 | 86.3 | 138.5 |
| 125 | 86.6 | 90.2 | 92.9 | 92.7 | 94.6 | 96.7 | 94.8 | 95.7 | 95.4 | 98.5 | 105.4 | 107.3 | 91.7 | 140.8 |
| 160 | 85.2 | 86.0 | 89.5 | 87.0 | 88.9 | 92.2 | 96.6 | 94.3 | 96.2 | 99.8 | 104.9 | 107.9 | 96.5 | 140.7 |
| 200 | 87.3 | 87.8 | 89.3 | 88.4 | 90.7 | 94.8 | 95.5 | 96.1 | 100.1 | 102.4 | 107.8 | 111.0 | 100.4 | 143.4 |
| 250 | 87.5 | 90.6 | 91.3 | 89.9 | 92.0 | 94.8 | 96.2 | 98.1 | 100.8 | 106.9 | 111.5 | 114.2 | 103.9 | 146.7 |
| 315 | 88.8 | 89.9 | 89.4 | 89.4 | 92.0 | 96.6 | 98.3 | 99.2 | 102.1 | 108.0 | 112.6 | 114.8 | 106.2 | 147.6 |
| 400 | 89.6 | 91.1 | 91.1 | 89.7 | 93.0 | 96.1 | 106.7 | 99.7 | 102.6 | 110.2 | 114.3 | 116.0 | 107.9 | 149.4 |
| 500 | 90.1 | 92.1 | 92.6 | 91.2 | 93.8 | 97.9 | 98.5 | 100.9 | 104.1 | 111.2 | 115.6 | 116.3 | 108.7 | 149.9 |
| 630 | 90.5 | 92.6 | 93.1 | 91.4 | 94.5 | 97.6 | 99.0 | 101.6 | 104.3 | 112.2 | 115.3 | 115.5 | 110.6 | 149.9 |
| 800 | 92.6 | 92.9 | 93.6 | 91.9 | 95.3 | 98.4 | 99.3 | 102.4 | 105.9 | 111.7 | 114.8 | 115.0 | 111.4 | 149.7 |
| 1000 | 95.5 | 96.5 | 96.1 | 94.6 | 96.4 | 100.1 | 99.7 | 103.3 | 106.1 | 111.6 | 113.5 | 114.4 | 111.8 | 149.3 |
| 1250 | 94.4 | 97.2 | 96.2 | 94.6 | 97.1 | 99.7 | 99.8 | 103.5 | 107.0 | 113.2 | 113.3 | 110.8 | 148.8 | |
| 1600 | 94.1 | 95.0 | 96.1 | 94.0 | 97.0 | 100.1 | 100.7 | 104.0 | 106.6 | 109.5 | 112.3 | 111.8 | 108.9 | 147.8 |
| 2000 | 95.5 | 95.6 | 95.7 | 94.1 | 96.7 | 99.6 | 100.1 | 104.1 | 106.2 | 109.8 | 111.3 | 108.6 | 105.9 | 146.9 |
| 2500 | 92.7 | 94.7 | 94.8 | 93.8 | 96.2 | 99.3 | 99.7 | 103.1 | 105.4 | 109.0 | 109.0 | 105.3 | 102.1 | 145.4 |
| 3150 | 92.3 | 94.6 | 94.9 | 92.9 | 95.5 | 99.3 | 99.9 | 102.9 | 104.7 | 107.3 | 106.6 | 101.2 | 97.6 | 144.0 |
| 4000 | 90.5 | 92.8 | 94.0 | 92.1 | 95.3 | 98.5 | 98.9 | 102.5 | 103.9 | 104.3 | 103.8 | 96.8 | 93.9 | 142.3 |
| 5000 | 90.2 | 92.7 | 93.6 | 92.3 | 94.5 | 97.7 | 98.1 | 101.5 | 102.6 | 100.9 | 94.7 | 90.4 | 140.8 | |
| 6300 | 90.4 | 94.3 | 94.4 | 92.0 | 94.3 | 97.5 | 100.5 | 100.5 | 100.4 | 98.2 | 91.6 | 88.9 | 140.0 | |
| 8000 | 88.8 | 94.2 | 95.0 | 92.7 | 94.6 | 96.6 | 96.3 | 98.2 | 98.7 | 97.1 | 95.0 | 89.2 | 86.8 | 138.8 |
| 10000 | 88.2 | 92.0 | 93.8 | 93.1 | 95.0 | 97.2 | 96.0 | 98.0 | 96.9 | 94.9 | 93.5 | 87.4 | 85.4 | 138.7 |
| 12500 | 86.7 | 89.5 | 91.3 | 91.4 | 94.0 | 96.8 | 95.3 | 94.8 | 94.9 | 92.5 | 89.6 | 86.0 | 83.0 | 137.7 |
| 16000 | 84.7 | 89.5 | 90.0 | 90.0 | 92.0 | 94.5 | 93.6 | 93.0 | 92.9 | 89.8 | 87.6 | 83.8 | 80.0 | 137.2 |
| 20000 | 81.9 | 86.8 | 87.4 | 87.9 | 89.9 | 91.5 | 91.3 | 90.2 | 89.3 | 86.5 | 84.0 | 80.6 | 77.9 | 136.3 |
| 25000 | 78.5 | 83.2 | 83.7 | 85.1 | 86.7 | 89.8 | 89.0 | 86.8 | 86.5 | 83.4 | 80.8 | 78.1 | 73.5 | 135.9 |
| 31500 | 75.3 | 79.6 | 80.6 | 81.6 | 82.5 | 85.6 | 84.6 | 83.6 | 82.4 | 79.2 | 77.1 | 74.0 | 69.7 | 135.1 |
| 40000 | 69.8 | 74.6 | 76.1 | 77.3 | 77.5 | 82.1 | 79.9 | 79.4 | 79.2 | 75.2 | 73.8 | 70.0 | 65.6 | 135.0 |
| 50000 | 63.8 | 68.2 | 70.0 | 71.0 | 71.5 | 77.9 | 74.0 | 73.2 | 72.7 | 68.7 | 64.4 | 59.1 | 133.8 | |
| 63000 | 57.2 | 62.1 | 64.6 | 65.2 | 66.1 | 72.9 | 67.7 | 67.3 | 63.0 | 61.7 | 58.5 | 52.3 | 133.6 | |
| 80000 | 50.2 | 54.1 | 57.3 | 56.8 | 58.3 | 68.7 | 60.6 | 60.1 | 59.0 | 54.8 | 54.5 | 51.1 | 43.7 | 134.5 |
| 0ASPL | 105.1 | 107.4 | 107.6 | 106.2 | 108.5 | 111.6 | 113.0 | 114.6 | 116.8 | 121.3 | 124.2 | 124.9 | 119.5 | 159.8 |
| PWL | 117.3 | 119.6 | 119.9 | 118.2 | 120.6 | 124.0 | 124.8 | 127.3 | 129.1 | 132.4 | 133.8 | 132.7 | 128.2 | |
| PWLT | 117.3 | 119.6 | 119.9 | 118.7 | 121.3 | 124.0 | 126.1 | 127.3 | 129.1 | 132.4 | 134.4 | 132.7 | 128.2 | |
| DBA | 104.4 | 106.2 | 106.5 | 104.8 | 107.4 | 110.5 | 111.4 | 114.2 | 116.4 | 120.5 | 122.7 | 122.6 | 118.7 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH171 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = O. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.89 PAMB HG = 29.21 RELHUM = 82.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT. EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL RPM XNHR = RPM V8 = 1208 3 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 2000.1 FPS AE18 = 23.4 SQ IN

RINPT = 83F-ZER-1135 TAPE X1135C TEST PT NO = 1135 CORR FAN SPEED = RPM

DATPROC - FLTRAN

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1135 X1135F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.4 | 88.7 | 85.4 | 82.2 | 83.6 | 85.2 | 85.1 | 86.5 | 86.9 | 91.0 | 92.6 | 94.6 | 87.5 | 130.2 |
| 63 | 89.8 | 92.0 | 93.6 | 91.1 | 90.5 | 92.3 | 92.7 | 92.9 | 92.3 | 96.1 | 94.3 | 98.7 | 94.9 | 135.5 |
| 80 | 90.0 | 94.8 | 90.8 | 90.4 | 91.0 | 95.6 | 93.7 | 94.4 | 94.1 | 94.7 | 97.8 | 97.7 | 83.4 | 136.1 |
| 100 | 89.2 | 95.2 | 92.0 | 91.8 | 92.9 | 96.8 | 94.9 | 98.0 | 95.3 | 98.8 | 98.7 | 103.1 | 86.3 | 138.5 |
| 125 | 86.6 | 90.2 | 92.9 | 92.7 | 94.6 | 96.7 | 94.8 | 95.7 | 95.4 | 98.5 | 105.4 | 107.3 | 91.7 | 140.8 |
| 160 | 85.2 | 86.0 | 89.5 | 87.0 | 88.9 | 92.2 | 96.6 | 94.3 | 96.2 | 99.8 | 104.9 | 107.9 | 96.5 | 140.7 |
| 200 | 87.3 | 87.8 | 89.3 | 88.4 | 90.7 | 94.8 | 95.5 | 96.1 | 100.1 | 102.4 | 107.8 | 111.0 | 100.4 | 143.4 |
| 250 | 87.5 | 90.6 | 91.3 | 89.9 | 92.0 | 94.8 | 96.2 | 98.1 | 100.8 | 106.9 | 111.5 | 114.2 | 103.9 | 146.7 |
| 315 | 88.8 | 89.9 | 89.4 | 89.4 | 89.4 | 92.0 | 96.6 | 99.3 | 99.2 | 102.1 | 108.0 | 112.6 | 114.8 | 147.6 |
| 400 | 89.6 | 91.1 | 91.1 | 89.7 | 93.0 | 96.1 | 106.7 | 99.7 | 102.6 | 110.2 | 114.3 | 116.0 | 107.9 | 149.4 |
| 500 | 90.1 | 92.1 | 92.6 | 91.2 | 93.8 | 97.9 | 98.5 | 100.9 | 104.1 | 111.2 | 115.6 | 116.3 | 108.7 | 149.9 |
| 630 | 90.5 | 92.6 | 93.1 | 91.4 | 94.5 | 97.6 | 99.0 | 101.6 | 104.3 | 112.2 | 115.3 | 115.5 | 110.6 | 149.9 |
| 800 | 92.6 | 92.9 | 93.6 | 91.9 | 95.3 | 98.4 | 99.3 | 102.4 | 105.9 | 111.7 | 114.8 | 115.0 | 111.4 | 149.7 |
| 1000 | 95.5 | 96.5 | 96.1 | 94.6 | 96.4 | 100.4 | 99.7 | 103.3 | 106.1 | 111.6 | 113.5 | 114.4 | 111.8 | 149.3 |
| 1250 | 94.4 | 97.2 | 96.2 | 94.6 | 97.1 | 99.7 | 99.8 | 103.5 | 107.0 | 110.8 | 113.2 | 113.3 | 110.8 | 148.8 |
| 1600 | 94.1 | 95.0 | 96.1 | 94.0 | 97.0 | 100.1 | 100.7 | 104.0 | 106.6 | 109.5 | 112.3 | 111.8 | 108.9 | 147.8 |
| 2000 | 95.5 | 95.6 | 95.7 | 94.1 | 96.7 | 99.6 | 100.1 | 104.1 | 106.2 | 109.8 | 111.3 | 108.6 | 105.9 | 146.9 |
| 2500 | 92.7 | 94.7 | 94.8 | 93.8 | 96.2 | 99.3 | 99.7 | 103.1 | 105.4 | 109.0 | 109.0 | 105.3 | 102.1 | 145.4 |
| 3150 | 92.3 | 94.6 | 94.9 | 92.9 | 95.5 | 99.3 | 99.9 | 102.9 | 104.7 | 107.3 | 106.6 | 101.2 | 97.6 | 144.0 |
| 4000 | 90.5 | 92.8 | 94.0 | 92.1 | 95.3 | 98.5 | 98.9 | 102.5 | 103.9 | 104.3 | 103.8 | 96.8 | 93.9 | 142.3 |
| 5000 | 90.2 | 92.7 | 93.6 | 92.3 | 94.5 | 97.7 | 98.1 | 101.5 | 101.5 | 102.6 | 100.9 | 94.7 | 90.4 | 140.8 |
| 6300 | 90.4 | 94.3 | 94.4 | 92.0 | 94.3 | 97.5 | 97.5 | 100.5 | 100.5 | 100.4 | 98.2 | 91.6 | 88.9 | 140.0 |
| 8000 | 88.8 | 94.2 | 95.0 | 92.7 | 94.6 | 96.6 | 96.3 | 98.2 | 98.7 | 97.1 | 95.0 | 89.2 | 86.8 | 138.8 |
| 10000 | 88.2 | 92.0 | 93.8 | 93.1 | 95.0 | 97.2 | 96.0 | 98.0 | 96.9 | 94.9 | 93.5 | 87.4 | 85.4 | 138.7 |
| 12500 | 86.7 | 89.5 | 91.3 | 91.4 | 94.0 | 96.8 | 95.3 | 94.8 | 94.9 | 92.5 | 89.6 | 86.0 | 83.0 | 137.7 |
| 16000 | 84.7 | 89.5 | 90.0 | 90.0 | 92.0 | 94.5 | 93.6 | 93.0 | 92.9 | 89.8 | 87.6 | 83.8 | 80.0 | 137.2 |
| 20000 | 81.9 | 86.8 | 87.4 | 87.9 | 89.9 | 91.5 | 91.3 | 90.2 | 89.3 | 86.5 | 84.0 | 80.6 | 77.9 | 136.3 |
| 25000 | 78.5 | 83.2 | 83.7 | 85.1 | 86.7 | 89.8 | 89.0 | 86.8 | 86.5 | 83.4 | 80.8 | 78.1 | 73.5 | 135.9 |
| 31500 | 75.3 | 79.6 | 80.6 | 81.6 | 82.5 | 85.6 | 84.6 | 83.6 | 82.4 | 79.2 | 77.1 | 74.0 | 69.7 | 135.1 |
| 40000 | 69.8 | 74.6 | 76.1 | 77.3 | 77.5 | 82.1 | 79.9 | 79.4 | 79.2 | 75.2 | 73.8 | 70.0 | 65.6 | 135.0 |
| 50000 | 63.8 | 68.2 | 70.0 | 71.0 | 71.5 | 77.9 | 74.0 | 73.2 | 72.7 | 68.7 | 67.7 | 64.4 | 59.1 | 133.8 |
| 63000 | 57.2 | 62.1 | 64.6 | 65.2 | 66.1 | 72.9 | 67.7 | 67.7 | 67.3 | 63.0 | 61.7 | 58.5 | 52.3 | 133.6 |
| 80000 | 50.2 | 54.1 | 57.3 | 56.8 | 58.3 | 68.7 | 60.6 | 60.1 | 59.0 | 54.8 | 54.5 | 51.1 | 43.7 | 134.5 |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| OASPL | 105.1 | 107.4 | 107.6 | 106.2 | 108.5 | 111.6 | 113.0 | 114.6 | 116.8 | 121.3 | 124.2 | 124.9 | 119.5 | 159.8 |
| PNL | 117.3 | 119.6 | 119.9 | 118.2 | 120.6 | 124.0 | 124.8 | 127.3 | 129.1 | 132.4 | 133.8 | 132.7 | 128.2 | |
| PNL | 117.3 | 119.6 | 119.9 | 118.7 | 121.3 | 124.0 | 126.1 | 127.3 | 129.1 | 132.4 | 134.4 | 132.7 | 128.2 | |
| DBA | 172.9 | 177.2 | 179.9 | 180.0 | 181.2 | 190.1 | 183.2 | 182.9 | 182.1 | 177.9 | 177.1 | 173.8 | 167.3 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICL = ADH171 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = O. FPS
 IAPLHA = SB59 DEG WIND VEL = NO MPH PWL AREA = FULL SPHERE TAMB F = 36.89 PAMB HG = 29.21 RELHUM = 82.2 PCT
 WIND DIR = EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =
 FNINI = LBS XNLR = RPM XNHR = RPM V8 = 1208.3 FPS AEB = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2000.1 FPS AE18 = 23.4 SQ IN
 QUINT = 83F 7EP-1135 TAPP = X1135F TFST PT NO = 1135 NC = AEOR5 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS.
59.0 DEG. F., 70 PERCENT R.H., STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1135 X11351

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 63.0 | 67.5 | 69.4 | 68.6 | 71.1 | 74.1 | 75.4 | 76.9 | 78.9 | 83.9 | 87.0 | 87.5 | 73.8 | 161.6 |
| 63 | 64.3 | 66.8 | 67.4 | 68.2 | 71.2 | 75.9 | 78.4 | 77.9 | 80.2 | 84.9 | 88.0 | 88.0 | 76.0 | 162.5 |
| 80 | 64.9 | 68.0 | 69.1 | 68.4 | 72.1 | 75.4 | 85.9 | 78.4 | 80.6 | 87.1 | 89.7 | 89.1 | 77.7 | 164.3 |
| 100 | 65.4 | 69.0 | 70.6 | 69.8 | 72.9 | 77.1 | 77.6 | 79.6 | 82.1 | 88.1 | 90.9 | 89.3 | 78.3 | 164.8 |
| 125 | 65.7 | 69.3 | 70.9 | 70.0 | 73.5 | 76.7 | 78.0 | 80.2 | 82.2 | 88.9 | 90.5 | 88.4 | 80.0 | 164.8 |
| 160 | 67.6 | 69.5 | 71.3 | 70.4 | 74.1 | 77.4 | 78.1 | 80.9 | 83.6 | 88.3 | 89.8 | 87.6 | 80.4 | 164.6 |
| 200 | 70.2 | 72.9 | 73.6 | 72.9 | 75.1 | 78.9 | 78.4 | 81.6 | 83.6 | 88.0 | 88.2 | 86.7 | 80.4 | 164.2 |
| 250 | 68.8 | 73.3 | 73.5 | 72.7 | 75.6 | 78.4 | 78.3 | 81.6 | 84.2 | 86.9 | 87.5 | 85.2 | 78.6 | 163.7 |
| 315 | 68.0 | 70.7 | 73.1 | 71.8 | 75.2 | 78.5 | 78.9 | 81.8 | 83.6 | 85.2 | 86.3 | 83.1 | 75.9 | 162.7 |
| 400 | 68.9 | 70.9 | 72.3 | 71.5 | 74.6 | 77.6 | 77.9 | 81.5 | 82.8 | 85.0 | 84.7 | 79.2 | 71.9 | 161.8 |
| 500 | 65.5 | 69.6 | 71.0 | 70.8 | 73.7 | 77.0 | 77.2 | 80.1 | 81.6 | 83.8 | 81.9 | 75.2 | 67.0 | 160.3 |
| 630 | 64.6 | 69.0 | 70.6 | 69.6 | 72.7 | 76.6 | 77.1 | 79.6 | 80.5 | 81.7 | 78.9 | 70.4 | 61.4 | 158.9 |
| 800 | 62.2 | 66.7 | 69.3 | 68.4 | 72.1 | 75.5 | 75.7 | 78.7 | 79.2 | 78.2 | 75.5 | 65.1 | 56.5 | 157.2 |
| 1000 | 61.2 | 66.0 | 68.5 | 68.1 | 70.9 | 74.3 | 74.5 | 77.3 | 76.3 | 75.9 | 71.9 | 62.1 | 51.5 | 155.7 |
| 1250 | 60.6 | 67.0 | 68.7 | 67.3 | 70.2 | 73.6 | 73.5 | 75.8 | 74.8 | 73.1 | 68.3 | 57.9 | 48.3 | 154.9 |
| 1600 | 57.6 | 65.8 | 68.4 | 67.3 | 69.8 | 72.1 | 71.6 | 72.8 | 72.1 | 68.7 | 63.9 | 53.7 | 43.3 | 153.7 |
| 2000 | 55.3 | 62.3 | 66.1 | 66.7 | 69.3 | 71.7 | 70.3 | 71.5 | 69.2 | 65.1 | 60.5 | 49.4 | 38.2 | 153.6 |
| 2500 | 51.0 | 57.5 | 61.7 | 63.4 | 66.8 | 69.8 | 68.1 | 66.7 | 65.3 | 60.5 | 53.9 | 44.3 | 29.9 | 152.6 |
| 3150 | 44.7 | 54.1 | 57.5 | 59.4 | 62.4 | 65.2 | 64.0 | 62.4 | 60.4 | 54.4 | 47.6 | 36.1 | 17.5 | 152.1 |
| 4000 | 34.2 | 45.3 | 49.8 | 52.7 | 56.0 | 57.9 | 57.3 | 54.9 | 51.7 | 45.0 | 36.3 | 22.6 | 151.2 | |
| 5000 | 19.5 | 32.5 | 38.2 | 42.8 | 46.2 | 49.8 | 48.4 | 44.4 | 41.0 | 32.7 | 21.7 | 4.7 | 150.8 | |
| 6300 | 13.4 | 21.8 | 27.3 | 30.6 | 34.5 | 32.7 | 29.3 | 23.6 | 13.1 | | | | 150.0 | |
| 8000 | | | 2.4 | 6.1 | 11.9 | 8.5 | 4.5 | | | | | | 149.9 | |
| 10000 | | | | | | | | | | | | | 148.7 | |
| 12500 | | | | | | | | | | | | | 148.5 | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

OASPL 78.1 81.6 83.1 82.3 85.4 88.8 90.7 91.7 93.4 97.4 98.8 97.2 88.1 174.4

PWL 82.6 86.9 89.2 89.2 92.2 95.2 95.1 97.1 98.0 99.8 99.7 96.5 88.2

PWLT 82.6 86.9 89.2 89.7 92.2 95.2 95.1 97.6 98.0 99.8 99.7 96.5 88.2

DBA 71.8 76.3 78.4 77.8 80.8 84.0 84.0 86.4 87.1 88.5 87.8 83.9 76.6

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICL = ADH171 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 0. FPS
IAPLHA = SB59 IEGA = NO MPH = 0 PWB AREA = FULL SPHERE TAMB F = 36.89 PAMB HG = 29.21 RELHUM = 82.2 PCT
WIND DIR = DEG WIND VEL = XNH RPM XNH RPM VIB = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNMI = LBS XNL RPM XNH RPM VIB = 1208.3 FPS AEB = 4.6 SO IN
FNDA MB = LBS XNL RPM XNH RPM VIB = 2000.1 FPS AE18 = 23.4 SO IN
FNDR = 83F ZER 1135 TAMP = X11351 TEST PT NO = 1135 NC CORR FAN SPEED = RPM

DATPRC - FLTRAN UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
59.0 DEG. F. 70 PERCENT R.H. STD. DAY. SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-400-1136 X1136C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|-------|------|-------|-------|-------|-------|-------|-------|
| 50 | 88.6 | 88.9 | 87.7 | 85.5 | 82.1 | 84.2 | 85.8 | 86.5 | 86.7 | 87.5 | 93.1 | 94.3 | 89.5 | 130.3 |
| 63 | 90.5 | 94.5 | 97.3 | 93.9 | 89.5 | 91.1 | 93.0 | 94.6 | 92.3 | 93.3 | 93.2 | 96.5 | 97.0 | 136.0 |
| 80 | 90.0 | 95.1 | 90.6 | 90.1 | 90.5 | 95.1 | 93.0 | 93.4 | 93.3 | 93.2 | 96.5 | 97.0 | 86.6 | 135.4 |
| 100 | 88.2 | 93.2 | 90.3 | 89.0 | 90.6 | 94.5 | 92.6 | 95.8 | 93.0 | 95.8 | 96.5 | 101.4 | 88.6 | 136.4 |
| 125 | 86.6 | 88.9 | 90.7 | 90.5 | 92.6 | 94.4 | 93.3 | 93.0 | 92.4 | 96.0 | 102.6 | 106.1 | 92.0 | 138.8 |
| 160 | 84.2 | 82.2 | 87.7 | 84.5 | 86.1 | 89.0 | 93.9 | 90.3 | 93.2 | 96.6 | 101.7 | 105.1 | 95.5 | 137.7 |
| 200 | 84.3 | 84.6 | 86.6 | 84.1 | 85.7 | 89.3 | 91.0 | 92.1 | 97.1 | 96.6 | 102.8 | 108.2 | 97.6 | 139.7 |
| 250 | 83.5 | 86.1 | 86.3 | 85.1 | 87.5 | 90.6 | 92.0 | 93.6 | 97.6 | 101.6 | 107.5 | 111.0 | 100.1 | 142.9 |
| 315 | 84.3 | 86.1 | 86.4 | 85.4 | 86.8 | 90.9 | 95.0 | 94.2 | 97.6 | 103.2 | 108.6 | 111.5 | 100.9 | 143.7 |
| 400 | 84.8 | 86.6 | 86.9 | 84.9 | 87.7 | 90.9 | 102.2 | 94.4 | 97.4 | 105.2 | 110.3 | 111.7 | 100.2 | 145.0 |
| 500 | 85.3 | 86.4 | 87.9 | 86.2 | 88.3 | 92.4 | 92.3 | 95.4 | 98.1 | 106.2 | 111.1 | 111.0 | 97.2 | 144.8 |
| 630 | 85.8 | 86.6 | 88.3 | 85.9 | 89.2 | 92.6 | 93.5 | 96.4 | 98.3 | 107.2 | 110.3 | 108.7 | 95.1 | 144.1 |
| 800 | 86.3 | 86.6 | 87.9 | 86.7 | 89.8 | 93.1 | 94.5 | 97.7 | 100.6 | 107.2 | 110.1 | 106.3 | 93.9 | 143.8 |
| 1000 | 86.2 | 88.5 | 89.6 | 87.8 | 90.4 | 94.3 | 94.4 | 98.1 | 101.1 | 107.6 | 108.5 | 103.7 | 92.3 | 143.1 |
| 1250 | 87.4 | 89.9 | 90.0 | 88.6 | 90.3 | 93.7 | 94.8 | 98.5 | 102.2 | 106.5 | 107.9 | 100.3 | 91.8 | 142.4 |
| 1600 | 87.6 | 88.0 | 89.4 | 88.8 | 91.3 | 94.9 | 96.0 | 99.3 | 102.6 | 105.5 | 107.3 | 99.3 | 91.2 | 142.1 |
| 2000 | 89.0 | 88.1 | 89.0 | 87.9 | 90.5 | 94.8 | 95.6 | 99.9 | 102.5 | 105.8 | 106.5 | 97.9 | 91.1 | 141.9 |
| 2500 | 87.2 | 88.2 | 88.5 | 87.8 | 90.4 | 94.5 | 95.5 | 99.1 | 101.2 | 105.5 | 104.7 | 97.3 | 91.8 | 141.0 |
| 3150 | 87.3 | 88.1 | 89.1 | 87.4 | 90.5 | 94.8 | 94.9 | 98.4 | 100.7 | 103.6 | 102.8 | 96.0 | 90.1 | 139.8 |
| 4000 | 87.3 | 87.8 | 88.7 | 86.6 | 90.6 | 94.5 | 94.4 | 98.5 | 100.1 | 101.6 | 101.3 | 94.1 | 89.7 | 138.8 |
| 5000 | 88.5 | 88.7 | 89.6 | 87.3 | 89.8 | 93.5 | 93.9 | 97.7 | 98.7 | 100.3 | 98.9 | 93.4 | 87.9 | 137.8 |
| 6300 | 90.9 | 91.8 | 90.9 | 87.7 | 90.0 | 93.0 | 93.0 | 96.2 | 98.0 | 97.9 | 95.4 | 90.1 | 86.1 | 136.7 |
| 8000 | 90.0 | 92.4 | 93.2 | 90.4 | 90.1 | 92.6 | 91.8 | 94.4 | 95.7 | 94.6 | 92.5 | 87.5 | 84.8 | 135.7 |
| 10000 | 89.7 | 90.5 | 92.1 | 91.4 | 92.0 | 93.2 | 92.0 | 94.2 | 93.7 | 92.9 | 90.5 | 85.6 | 83.2 | 135.7 |
| 12500 | 87.7 | 89.0 | 90.8 | 89.4 | 91.5 | 93.8 | 91.5 | 91.8 | 91.4 | 89.5 | 86.8 | 84.5 | 81.5 | 135.1 |
| 16000 | 86.5 | 88.8 | 89.5 | 88.7 | 90.3 | 91.5 | 90.3 | 88.8 | 87.2 | 86.6 | 83.8 | 82.7 | 80.4 | 134.3 |
| 20000 | 79.8 | 82.1 | 86.4 | 86.7 | 88.2 | 89.2 | 88.2 | 88.8 | 87.2 | 86.6 | 83.8 | 82.7 | 80.4 | 134.3 |
| 25000 | 79.8 | 82.7 | 83.8 | 84.1 | 85.0 | 88.4 | 87.3 | 85.5 | 84.3 | 80.7 | 79.5 | 79.1 | 73.2 | 134.5 |
| 31500 | 76.0 | 78.6 | 80.4 | 80.9 | 80.7 | 84.6 | 82.8 | 82.4 | 80.6 | 77.0 | 76.6 | 75.0 | 70.0 | 133.9 |
| 40000 | 71.3 | 75.2 | 76.2 | 76.3 | 76.7 | 80.9 | 78.9 | 78.7 | 78.0 | 74.0 | 73.5 | 71.2 | 65.4 | 134.2 |
| 50000 | 65.6 | 68.0 | 70.1 | 70.8 | 71.3 | 75.7 | 73.0 | 72.8 | 71.2 | 68.0 | 67.7 | 66.2 | 59.1 | 132.8 |
| 63000 | 59.0 | 61.9 | 64.1 | 64.5 | 66.4 | 70.9 | 66.7 | 67.8 | 66.3 | 62.3 | 61.2 | 59.3 | 52.6 | 132.7 |
| 80000 | 51.7 | 53.9 | 56.7 | 55.9 | 57.7 | 64.0 | 59.9 | 60.7 | 58.6 | 54.6 | 54.8 | 52.2 | 44.8 | 132.2 |

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| DASPL | 102.0 | 104.0 | 104.5 | 102.8 | 104.2 | 107.4 | 108.7 | 110.3 | 112.6 | 117.1 | 119.8 | 119.5 | 108.7 | 155.2 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PWL | 113.8 | 114.9 | 115.2 | 113.4 | 115.8 | 119.5 | 120.3 | 123.0 | 125.2 | 128.8 | 129.6 | 126.9 | 117.6 | |
| PNLT | 113.8 | 114.9 | 115.2 | 114.1 | 116.5 | 119.5 | 121.7 | 123.0 | 125.2 | 128.8 | 130.2 | 126.9 | 117.6 | |
| DBA | 99.8 | 100.6 | 101.4 | 99.7 | 102.0 | 105.6 | 106.7 | 109.7 | 112.2 | 116.4 | 118.1 | 115.1 | 104.4 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH162 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 37.02 PAMB HG = 29.02 RELHUM = 81.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =
 FNIN1 = LBS XNL RPM XNH = RPM V8 = 1209.7 FPS AEB = 4.6 SO IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 1989.3 FPS AE18 = 23.4 SO IN
 RUNPT = 83F-400-1136 TAPE = X1136C TEST PT NO = 1136 NC = AEO85 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1136 X1136F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|-------|------|-------|-------|-------|-------|-------|-------|
| 50 | 50.8 | 92.1 | 91.0 | 88.3 | 89.0 | 90.6 | 90.4 | 90.3 | 95.4 | 100.5 | 105.7 | 109.3 | 100.8 | 141.5 |
| 63 | 90.8 | 92.1 | 91.0 | 88.3 | 88.5 | 91.1 | 94.1 | 92.2 | 95.1 | 102.5 | 107.6 | 110.1 | 101.4 | 142.7 |
| 80 | 91.3 | 92.1 | 91.0 | 88.6 | 89.5 | 91.1 | 101.3 | 92.3 | 95.9 | 103.5 | 108.5 | 110.0 | 99.9 | 143.4 |
| 100 | 92.0 | 91.7 | 91.6 | 88.2 | 90.2 | 92.7 | 91.3 | 93.2 | 96.3 | 104.7 | 108.0 | 108.6 | 99.9 | 142.7 |
| 125 | 93.0 | 92.8 | 92.9 | 89.6 | 91.2 | 93.0 | 92.5 | 94.1 | 98.9 | 105.2 | 108.5 | 107.5 | 101.5 | 142.9 |
| 160 | 93.5 | 93.0 | 93.4 | 89.4 | 91.8 | 93.6 | 93.6 | 95.5 | 99.8 | 106.1 | 107.6 | 106.2 | 102.4 | 142.7 |
| 200 | 94.0 | 93.1 | 92.9 | 90.2 | 92.6 | 94.9 | 93.6 | 96.0 | 101.0 | 105.0 | 106.9 | 102.8 | 101.7 | 141.9 |
| 250 | 95.8 | 94.9 | 94.6 | 91.5 | 92.6 | 94.5 | 94.2 | 96.5 | 101.6 | 104.2 | 106.6 | 101.9 | 101.4 | 141.8 |
| 315 | 94.5 | 96.0 | 94.9 | 92.2 | 93.7 | 95.9 | 95.5 | 97.5 | 101.8 | 104.7 | 106.1 | 100.8 | 101.5 | 141.9 |
| 400 | 95.2 | 94.5 | 94.6 | 92.6 | 93.1 | 96.1 | 95.4 | 98.4 | 101.1 | 105.1 | 105.1 | 101.2 | 103.3 | 141.8 |
| 500 | 96.7 | 94.6 | 94.3 | 91.9 | 93.3 | 96.1 | 95.7 | 98.1 | 101.1 | 103.8 | 103.8 | 100.5 | 102.2 | 141.2 |
| 630 | 94.8 | 94.8 | 94.0 | 91.9 | 93.7 | 96.8 | 95.6 | 97.9 | 101.4 | 102.7 | 103.0 | 99.3 | 102.3 | 140.8 |
| 800 | 94.9 | 94.8 | 94.7 | 91.8 | 94.8 | 97.1 | 96.0 | 98.8 | 100.3 | 101.7 | 100.9 | 98.9 | 100.8 | 140.3 |
| 1000 | 97.6 | 96.8 | 96.2 | 92.4 | 93.8 | 96.5 | 95.9 | 98.4 | 100.2 | 99.9 | 98.1 | 96.3 | 99.7 | 139.9 |
| 1250 | 95.9 | 95.5 | 95.4 | 92.1 | 93.7 | 96.0 | 95.3 | 97.4 | 99.0 | 97.8 | 96.3 | 94.5 | 98.9 | 139.0 |
| 1500 | 96.0 | 96.7 | 95.4 | 91.6 | 93.8 | 95.6 | 94.3 | 96.2 | 97.3 | 96.4 | 94.4 | 92.5 | 96.9 | 138.5 |
| 1800 | 95.1 | 97.3 | 97.7 | 94.3 | 96.0 | 96.2 | 94.3 | 96.0 | 92.8 | 90.4 | 88.0 | 88.7 | 92.7 | 138.6 |
| 2100 | 96.5 | 96.7 | 97.3 | 95.6 | 95.5 | 96.8 | 93.0 | 91.8 | 92.3 | 88.5 | 87.4 | 87.6 | 90.7 | 139.0 |
| 2400 | 94.0 | 94.6 | 95.5 | 93.2 | 94.3 | 94.5 | 91.8 | 90.0 | 88.9 | 85.6 | 84.9 | 85.6 | 89.0 | 138.4 |
| 2700 | 92.4 | 94.0 | 93.8 | 92.1 | 92.2 | 92.2 | 90.2 | 87.2 | 87.2 | 83.1 | 82.3 | 84.9 | 86.0 | 138.5 |
| 3000 | 88.2 | 90.6 | 90.1 | 89.4 | 89.1 | 91.4 | 88.7 | 85.5 | 84.4 | 80.2 | 80.2 | 81.6 | 83.5 | 138.2 |
| 3300 | 84.3 | 86.5 | 86.7 | 86.1 | 84.8 | 87.6 | 84.3 | 82.4 | 82.5 | 78.1 | 77.9 | 78.7 | 79.8 | 137.7 |
| 3600 | 79.7 | 81.6 | 82.5 | 82.0 | 81.3 | 83.9 | 80.4 | 78.7 | 76.2 | 72.4 | 72.5 | 74.0 | 73.9 | 137.4 |
| 3900 | 77.4 | 80.0 | 79.5 | 78.2 | 75.9 | 78.7 | 74.5 | 72.8 | 72.2 | 67.7 | 67.0 | 68.0 | 68.3 | 137.8 |
| 4200 | 70.8 | 71.9 | 72.5 | 71.7 | 71.0 | 73.9 | 68.2 | 67.8 | 66.0 | 61.5 | 62.0 | 62.4 | 61.9 | 136.9 |
| 4500 | 62.7 | 64.3 | 65.1 | 63.9 | 62.3 | 67.0 | 61.3 | 60.7 | 56.2 | 51.7 | 52.2 | 52.6 | 52.1 | 136.1 |

OASPL 107.7 107.9 107.7 105.0 106.3 108.2 108.1 108.9 111.9 115.5 117.8 117.5 113.3 154.7
 PNL 119.6 119.3 118.8 115.8 117.8 120.1 119.6 121.6 124.3 126.6 127.4 125.1 125.4
 PNL 119.6 119.3 118.8 115.8 117.8 120.1 121.0 121.6 124.3 126.6 127.4 125.1 125.4
 DBA 185.7 187.4 187.9 186.8 185.4 189.3 183.9 183.1 180.2 175.7 176.0 176.6 176.3

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH162 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 400. FPS
 TAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 37.02 PAMB HG = 29.02 RELHUM = 81.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =
 FNIN1 = LBS XNL = RPM XNH = RPM VB = 1209.7 FPS AE8 = 4.6 SQ IN
 FNIR1 = LBS XNL = RPM XNH = RPM VJB = 1989.3 FPS AE18 = 23.4 SQ IN
 PUMPT - 83F-400-1136 TAPF = X1136F TFST PT NO = 1136 NC CORR FAN SPEED = RPM

DATPROC - FLTRAN

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F... 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1136 X11361

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 66.3 | 69.1 | 69.1 | 67.0 | 68.2 | 69.9 | 69.6 | 69.1 | 73.5 | 77.4 | 81.1 | 82.6 | 70.7 | 156.4 |
| 63 | 66.2 | 69.1 | 69.0 | 67.0 | 67.6 | 70.4 | 73.3 | 71.0 | 73.2 | 79.4 | 83.0 | 83.3 | 71.2 | 157.6 |
| 80 | 66.7 | 69.0 | 69.0 | 67.4 | 68.7 | 70.4 | 80.4 | 71.0 | 73.9 | 80.4 | 83.9 | 83.2 | 69.7 | 158.3 |
| 100 | 67.2 | 68.5 | 69.5 | 66.9 | 69.2 | 71.9 | 70.3 | 71.9 | 74.2 | 81.5 | 83.3 | 81.7 | 69.5 | 157.6 |
| 125 | 68.2 | 69.5 | 70.7 | 68.2 | 70.2 | 72.1 | 71.5 | 72.7 | 76.8 | 81.9 | 83.7 | 80.4 | 70.8 | 157.8 |
| 160 | 68.4 | 69.6 | 71.1 | 67.8 | 70.7 | 72.7 | 72.5 | 73.9 | 77.5 | 82.7 | 82.6 | 78.9 | 71.4 | 157.6 |
| 200 | 68.7 | 69.4 | 70.5 | 68.5 | 71.3 | 73.8 | 72.4 | 74.3 | 78.5 | 81.4 | 81.6 | 75.0 | 70.2 | 156.8 |
| 250 | 70.2 | 71.0 | 71.9 | 69.5 | 71.1 | 73.2 | 72.7 | 74.6 | 78.9 | 80.3 | 81.0 | 73.8 | 69.2 | 156.7 |
| 315 | 68.4 | 71.8 | 71.8 | 69.9 | 71.9 | 74.3 | 73.8 | 75.3 | 78.7 | 80.5 | 80.0 | 72.0 | 68.6 | 156.8 |
| 400 | 68.6 | 69.8 | 71.2 | 70.0 | 71.0 | 74.1 | 73.3 | 75.8 | 77.6 | 80.4 | 78.5 | 71.8 | 69.3 | 156.7 |
| 500 | 69.5 | 69.5 | 70.5 | 68.9 | 70.9 | 73.8 | 73.2 | 75.1 | 77.3 | 78.6 | 76.6 | 70.3 | 67.1 | 156.1 |
| 630 | 67.1 | 69.2 | 69.7 | 68.6 | 70.9 | 74.2 | 72.8 | 74.5 | 77.2 | 77.0 | 75.3 | 68.4 | 66.1 | 155.7 |
| 800 | 66.5 | 68.6 | 70.0 | 68.0 | 71.6 | 74.1 | 72.8 | 75.1 | 75.6 | 75.5 | 72.5 | 67.1 | 63.3 | 155.2 |
| 1000 | 68.6 | 70.1 | 71.0 | 68.3 | 70.2 | 73.1 | 72.3 | 74.3 | 75.1 | 73.2 | 69.1 | 63.7 | 60.8 | 154.8 |
| 1250 | 66.1 | 68.1 | 69.7 | 67.5 | 69.7 | 72.1 | 71.3 | 72.8 | 73.3 | 70.5 | 66.5 | 60.7 | 58.2 | 153.9 |
| 1600 | 64.9 | 68.4 | 68.8 | 66.2 | 69.0 | 71.1 | 69.5 | 70.8 | 70.7 | 68.0 | 63.2 | 56.9 | 53.4 | 153.4 |
| 2000 | 62.2 | 67.5 | 69.9 | 67.8 | 70.3 | 70.7 | 68.6 | 69.5 | 65.0 | 60.6 | 55.1 | 50.7 | 45.5 | 153.5 |
| 2500 | 60.9 | 64.7 | 67.8 | 67.8 | 68.3 | 69.8 | 65.7 | 63.7 | 62.7 | 56.6 | 51.7 | 45.9 | 37.7 | 153.9 |
| 3150 | 54.0 | 59.2 | 63.0 | 62.5 | 64.7 | 65.2 | 62.2 | 59.4 | 56.5 | 50.2 | 44.9 | 37.9 | 26.5 | 153.3 |
| 4000 | 44.8 | 52.5 | 56.1 | 56.8 | 58.3 | 58.7 | 56.3 | 51.9 | 49.5 | 41.6 | 34.7 | 26.8 | 7.6 | 153.4 |
| 5000 | 29.2 | 40.0 | 44.6 | 47.1 | 48.5 | 51.3 | 48.1 | 43.2 | 38.9 | 29.5 | 21.1 | 8.2 | | 153.1 |
| 6300 | 6.3 | 20.4 | 27.9 | 31.7 | 32.9 | 36.5 | 32.4 | 28.0 | 23.7 | 11.9 | | | | 152.6 |
| 8000 | | | 1.0 | 7.1 | 10.0 | 13.7 | 9.0 | 3.7 | | | | | | 152.7 |
| 10000 | | | | | | | | | | | | | | 151.8 |
| 12500 | | | | | | | | | | | | | | 151.0 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

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| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| OASPL | 80.0 | 81.8 | 82.8 | 80.8 | 82.9 | 85.2 | 85.7 | 85.8 | 88.4 | 91.5 | 92.4 | 90.2 | 80.7 | 169.6 |
| PNL | 85.9 | 89.3 | 91.2 | 90.0 | 91.6 | 93.5 | 91.8 | 92.3 | 93.3 | 94.8 | 93.8 | 89.2 | 82.6 | |
| PNLT | 85.9 | 89.3 | 91.7 | 90.5 | 91.6 | 93.5 | 91.8 | 92.8 | 93.3 | 94.8 | 93.8 | 89.2 | 82.6 | |
| DBA | 75.8 | 78.1 | 79.5 | 77.7 | 79.9 | 82.0 | 80.7 | 82.3 | 83.5 | 83.9 | 82.3 | 76.3 | 72.2 | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICL = ADH162 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEQA = NO PWL AREA = FULL SPHERE TAMB F = 37.02 PAMB HG = 29.02 RELHUM = 81.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =
 FNIN1 = LBS XNL RPM XNH RPM V8 = 1209.7 FPS AEB = 4.6 SQ IN
 FNFRMB = LBS XNLR RPM XNHR RPM V1B = 1989.3 FPS AE1B = 23.4 SQ IN
 PUMPT = 60F 400 1136 TAPT - Y11361 TEST PT NO = 1136 NC - AF085 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1137 X1137C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.1 | 88.9 | 86.2 | 84.7 | 85.1 | 86.7 | 90.8 | 91.5 | 91.4 | 90.7 | 93.6 | 99.6 | 89.5 | 133.2 |
| 63 | 91.0 | 93.8 | 94.8 | 92.1 | 91.7 | 94.3 | 95.7 | 96.4 | 96.6 | 96.4 | 95.5 | 98.2 | 93.9 | 137.0 |
| 80 | 91.8 | 96.8 | 92.3 | 91.4 | 92.7 | 97.3 | 95.2 | 95.6 | 95.6 | 96.2 | 99.3 | 99.7 | 85.4 | 137.7 |
| 100 | 90.5 | 98.0 | 93.3 | 93.0 | 94.6 | 98.5 | 96.1 | 99.0 | 96.8 | 100.3 | 101.0 | 104.9 | 89.3 | 140.2 |
| 125 | 88.1 | 91.4 | 94.7 | 94.0 | 96.6 | 98.9 | 96.6 | 97.0 | 96.9 | 100.8 | 107.6 | 109.3 | 94.0 | 142.8 |
| 160 | 86.2 | 87.7 | 91.0 | 88.3 | 90.1 | 94.0 | 99.1 | 96.3 | 97.7 | 101.8 | 106.9 | 109.9 | 98.8 | 142.7 |
| 200 | 89.0 | 89.3 | 90.8 | 89.6 | 92.0 | 96.3 | 97.5 | 98.4 | 101.6 | 103.6 | 109.3 | 113.5 | 102.4 | 145.4 |
| 250 | 89.5 | 91.8 | 92.6 | 91.6 | 94.0 | 96.8 | 97.5 | 99.9 | 103.1 | 108.6 | 113.8 | 116.5 | 105.6 | 148.8 |
| 315 | 90.6 | 92.1 | 91.1 | 91.2 | 94.3 | 98.4 | 101.3 | 100.9 | 104.6 | 110.5 | 114.6 | 117.5 | 108.4 | 150.0 |
| 400 | 91.6 | 93.3 | 93.4 | 92.7 | 94.7 | 98.4 | 109.7 | 101.4 | 105.4 | 112.7 | 116.8 | 118.2 | 109.9 | 151.8 |
| 500 | 92.6 | 94.4 | 94.6 | 93.4 | 96.0 | 100.1 | 100.3 | 103.2 | 106.9 | 114.0 | 118.1 | 119.5 | 111.2 | 152.7 |
| 630 | 93.3 | 95.1 | 95.3 | 94.4 | 97.0 | 99.8 | 101.0 | 103.9 | 107.1 | 114.2 | 117.5 | 118.5 | 112.6 | 152.3 |
| 800 | 96.1 | 95.9 | 96.4 | 94.4 | 98.0 | 100.6 | 101.8 | 105.4 | 109.4 | 113.7 | 117.6 | 118.8 | 113.4 | 152.6 |
| 1000 | 99.2 | 101.5 | 99.6 | 97.6 | 99.2 | 102.1 | 102.7 | 106.3 | 109.6 | 114.1 | 116.8 | 118.7 | 113.3 | 152.5 |
| 1250 | 98.2 | 101.2 | 100.7 | 98.9 | 100.3 | 102.7 | 102.8 | 106.3 | 110.0 | 113.3 | 116.9 | 116.8 | 112.0 | 151.9 |
| 1600 | 98.1 | 98.0 | 98.9 | 97.3 | 100.0 | 103.1 | 103.5 | 107.5 | 110.6 | 112.2 | 116.3 | 115.0 | 109.2 | 151.1 |
| 2000 | 98.3 | 99.6 | 99.0 | 96.6 | 99.0 | 102.8 | 103.3 | 107.4 | 110.0 | 112.8 | 114.8 | 111.9 | 106.1 | 150.1 |
| 2500 | 96.7 | 100.2 | 99.0 | 97.0 | 98.9 | 102.3 | 103.0 | 106.6 | 108.7 | 112.2 | 112.5 | 108.6 | 102.8 | 148.7 |
| 3150 | 97.8 | 101.1 | 100.4 | 97.4 | 98.5 | 102.0 | 102.4 | 106.1 | 108.7 | 110.3 | 109.6 | 105.0 | 99.4 | 147.3 |
| 4000 | 96.3 | 99.8 | 101.5 | 98.6 | 100.3 | 102.0 | 101.7 | 105.7 | 107.4 | 107.6 | 107.1 | 101.3 | 96.7 | 146.0 |
| 5000 | 94.2 | 98.0 | 99.9 | 98.3 | 100.3 | 102.0 | 101.9 | 104.5 | 105.5 | 106.6 | 104.4 | 99.2 | 94.2 | 144.9 |
| 6300 | 93.1 | 97.8 | 98.1 | 97.5 | 100.3 | 102.5 | 101.5 | 103.7 | 104.7 | 103.9 | 101.2 | 97.2 | 91.9 | 144.0 |
| 8000 | 91.8 | 95.9 | 97.2 | 96.2 | 98.8 | 101.4 | 100.6 | 102.4 | 102.4 | 100.6 | 98.3 | 95.0 | 89.5 | 142.6 |
| 10000 | 91.4 | 95.8 | 97.3 | 96.1 | 98.5 | 101.0 | 100.0 | 101.7 | 101.2 | 98.6 | 96.5 | 92.1 | 88.7 | 142.4 |
| 12500 | 89.7 | 93.0 | 95.3 | 95.2 | 98.2 | 100.8 | 99.3 | 99.5 | 98.9 | 96.5 | 93.1 | 90.7 | 86.0 | 141.8 |
| 16000 | 88.7 | 93.0 | 94.2 | 94.5 | 96.5 | 99.5 | 98.6 | 98.0 | 97.4 | 94.1 | 91.1 | 88.3 | 83.0 | 141.9 |
| 20000 | 86.6 | 90.0 | 91.4 | 92.4 | 94.7 | 96.7 | 95.8 | 94.9 | 94.3 | 91.2 | 87.2 | 85.1 | 80.6 | 140.9 |
| 25000 | 82.8 | 87.0 | 88.5 | 89.4 | 90.7 | 94.8 | 93.0 | 91.5 | 91.2 | 85.9 | 83.3 | 82.1 | 75.9 | 140.3 |
| 31500 | 79.2 | 82.8 | 85.1 | 86.1 | 87.5 | 90.6 | 89.1 | 88.6 | 87.1 | 82.7 | 80.3 | 77.9 | 71.7 | 139.7 |
| 40000 | 74.0 | 78.3 | 80.3 | 82.0 | 82.2 | 87.3 | 84.4 | 84.1 | 84.1 | 79.4 | 77.0 | 74.2 | 67.3 | 139.7 |
| 50000 | 68.1 | 71.6 | 73.2 | 75.8 | 76.3 | 81.8 | 78.0 | 77.9 | 73.4 | 71.1 | 68.1 | 62.0 | 54.8 | 138.2 |
| 63000 | 62.9 | 65.5 | 67.8 | 69.4 | 70.8 | 76.6 | 71.6 | 72.9 | 72.7 | 67.0 | 65.1 | 61.4 | 54.8 | 137.8 |
| 80000 | 58.9 | 58.8 | 61.0 | 61.2 | 62.5 | 70.1 | 65.8 | 65.6 | 65.0 | 59.7 | 57.7 | 55.0 | 46.6 | 137.8 |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH170 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO 1 FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.93 PAMB HG = 29.22 RELHUM = 81.5 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1303.9 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2143.1 FPS AE18 = 23.4 SQ IN

DIAPHT = 83F-ZER-1137 TAPE = X1137C TEST PT NO = 1137 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1137 X1137F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.1 | 88.9 | 86.2 | 84.7 | 85.1 | 86.7 | 90.8 | 91.5 | 91.4 | 90.7 | 93.6 | 99.6 | 89.5 | 133.2 |
| 63 | 91.0 | 93.8 | 94.8 | 92.1 | 91.7 | 94.3 | 95.7 | 96.4 | 96.6 | 96.4 | 95.5 | 98.2 | 93.9 | 137.0 |
| 80 | 91.8 | 96.8 | 92.3 | 91.4 | 92.7 | 97.3 | 95.2 | 95.6 | 95.6 | 96.2 | 99.3 | 99.7 | 85.4 | 137.7 |
| 100 | 90.5 | 98.0 | 93.3 | 93.0 | 94.6 | 98.5 | 96.1 | 99.0 | 96.8 | 100.3 | 101.0 | 104.9 | 89.3 | 140.2 |
| 125 | 88.1 | 91.4 | 94.7 | 94.0 | 96.6 | 98.9 | 96.6 | 97.0 | 96.9 | 100.8 | 107.6 | 109.3 | 94.0 | 142.8 |
| 160 | 86.2 | 87.7 | 91.0 | 88.3 | 90.1 | 94.0 | 99.1 | 96.3 | 97.7 | 101.8 | 106.9 | 109.9 | 98.8 | 142.7 |
| 200 | 89.0 | 89.3 | 90.8 | 89.6 | 92.0 | 96.3 | 97.5 | 98.4 | 101.6 | 103.6 | 109.3 | 113.5 | 102.4 | 145.4 |
| 250 | 89.5 | 91.8 | 92.6 | 91.6 | 94.0 | 96.8 | 97.5 | 99.9 | 103.1 | 108.6 | 113.8 | 116.5 | 105.6 | 148.8 |
| 315 | 90.6 | 92.1 | 91.1 | 91.2 | 94.3 | 98.4 | 101.3 | 100.9 | 104.6 | 110.5 | 114.6 | 117.5 | 108.4 | 150.0 |
| 400 | 91.6 | 93.3 | 93.4 | 92.7 | 94.7 | 98.4 | 109.7 | 101.4 | 105.4 | 112.7 | 116.8 | 118.2 | 109.9 | 151.8 |
| 500 | 92.6 | 94.4 | 94.6 | 93.4 | 96.0 | 100.1 | 100.3 | 103.2 | 106.9 | 114.0 | 118.1 | 119.5 | 111.2 | 152.7 |
| 630 | 93.3 | 95.1 | 95.3 | 94.4 | 97.0 | 99.8 | 101.0 | 103.9 | 107.1 | 114.2 | 117.5 | 118.5 | 112.6 | 152.3 |
| 800 | 96.1 | 95.9 | 96.4 | 94.4 | 98.0 | 100.6 | 101.8 | 105.4 | 109.4 | 113.7 | 117.6 | 118.8 | 113.2 | 152.6 |
| 1000 | 99.2 | 101.5 | 99.6 | 97.6 | 99.2 | 102.1 | 102.7 | 106.3 | 109.6 | 114.1 | 116.8 | 118.7 | 113.3 | 152.5 |
| 1250 | 98.2 | 101.2 | 100.7 | 98.9 | 100.3 | 102.7 | 102.8 | 106.3 | 110.0 | 113.3 | 116.9 | 116.8 | 112.0 | 151.9 |
| 1600 | 98.1 | 98.0 | 98.9 | 97.3 | 100.0 | 103.1 | 103.5 | 107.5 | 110.6 | 112.2 | 116.3 | 115.0 | 109.2 | 151.1 |
| 2000 | 98.3 | 99.6 | 99.0 | 96.6 | 99.0 | 102.8 | 103.3 | 107.4 | 110.0 | 112.8 | 114.8 | 111.9 | 106.1 | 150.1 |
| 2500 | 96.7 | 100.2 | 99.0 | 97.0 | 98.9 | 102.3 | 103.0 | 106.6 | 108.5 | 112.2 | 112.5 | 108.6 | 102.8 | 148.7 |
| 3150 | 97.8 | 101.1 | 100.4 | 97.4 | 98.5 | 102.0 | 102.4 | 106.1 | 108.7 | 110.3 | 109.6 | 105.0 | 99.4 | 147.3 |
| 4000 | 96.3 | 99.8 | 101.5 | 98.6 | 100.3 | 102.0 | 101.7 | 105.7 | 107.4 | 107.6 | 107.1 | 101.3 | 96.7 | 146.0 |
| 5000 | 94.2 | 98.0 | 99.9 | 98.3 | 100.3 | 102.0 | 101.9 | 104.5 | 105.5 | 106.6 | 104.4 | 99.2 | 94.2 | 144.9 |
| 6300 | 93.1 | 97.8 | 98.1 | 97.5 | 100.3 | 102.5 | 101.5 | 103.7 | 104.7 | 103.9 | 101.2 | 97.2 | 91.9 | 144.0 |
| 8000 | 91.8 | 95.9 | 97.2 | 96.2 | 98.8 | 101.4 | 100.6 | 102.4 | 102.4 | 100.6 | 98.3 | 95.0 | 89.5 | 142.6 |
| 10000 | 91.4 | 95.8 | 97.3 | 96.1 | 98.5 | 101.0 | 100.0 | 101.7 | 101.2 | 98.6 | 96.5 | 92.1 | 88.7 | 142.4 |
| 12500 | 89.7 | 93.0 | 95.3 | 95.2 | 98.2 | 100.8 | 99.3 | 99.5 | 98.9 | 96.5 | 93.1 | 90.7 | 86.0 | 141.8 |
| 16000 | 88.7 | 93.0 | 94.2 | 94.5 | 96.5 | 99.5 | 98.6 | 98.0 | 97.4 | 94.1 | 91.1 | 88.3 | 83.0 | 141.9 |
| 20000 | 86.6 | 90.0 | 91.4 | 92.4 | 94.7 | 96.7 | 95.8 | 94.9 | 94.3 | 91.2 | 87.2 | 85.1 | 80.6 | 140.9 |
| 25000 | 82.8 | 87.0 | 88.5 | 89.4 | 90.7 | 94.8 | 93.0 | 91.5 | 91.2 | 85.9 | 83.2 | 82.1 | 75.9 | 140.3 |
| 31500 | 79.2 | 82.8 | 85.1 | 86.1 | 87.5 | 90.6 | 89.1 | 88.6 | 87.1 | 82.7 | 80.3 | 77.9 | 71.7 | 139.7 |
| 40000 | 74.0 | 78.3 | 80.3 | 82.0 | 82.2 | 87.3 | 84.4 | 84.1 | 84.1 | 79.4 | 77.0 | 74.2 | 67.3 | 139.7 |
| 50000 | 68.1 | 71.6 | 73.2 | 75.8 | 76.3 | 81.8 | 78.7 | 78.0 | 77.9 | 73.4 | 71.1 | 68.1 | 62.0 | 138.2 |
| 63000 | 62.9 | 65.5 | 67.8 | 69.4 | 70.8 | 76.6 | 71.6 | 72.9 | 72.7 | 67.0 | 65.1 | 61.4 | 54.8 | 137.8 |
| 80000 | 58.9 | 58.8 | 61.0 | 61.2 | 62.5 | 70.1 | 65.8 | 65.6 | 65.0 | 59.7 | 57.7 | 55.0 | 46.6 | 137.8 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0 DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH170 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 0. FPS
 TAPLHA = S859 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.93 PAMB HG = 29.22 RELHUM = 81.5 PCT
 WIND DTR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =
 FNIN1 = LBS XNLR RPM XNHR = RPM V8 = 1303.9 FPS AEB = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 2143.1 FPS AE18 = 23.4 SQ IN
 PUMPT - 83F-7FD 1137 TAPF = X1137F TEST PT NO = 1137 NC = AE085 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS.
59.0 DEG. F., 70 PERCENT R.H. STD DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1137 X11371

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 65.0 | 68.8 | 70.6 | 70.4 | 73.1 | 76.1 | 76.6 | 81.1 | 85.6 | 89.2 | 89.7 | 89.7 | 75.5 | 163.7 |
| 63 | 66.0 | 69.1 | 69.2 | 69.9 | 73.4 | 77.7 | 80.4 | 79.7 | 87.4 | 90.0 | 90.7 | 90.7 | 78.3 | 164.9 |
| 80 | 66.9 | 70.3 | 71.4 | 71.4 | 73.9 | 77.6 | 88.9 | 80.1 | 83.4 | 89.6 | 92.2 | 91.4 | 79.7 | 166.7 |
| 100 | 67.9 | 71.2 | 72.6 | 72.1 | 75.1 | 79.4 | 81.8 | 84.8 | 90.8 | 93.4 | 92.6 | 92.6 | 80.8 | 167.6 |
| 125 | 68.5 | 71.8 | 73.2 | 73.0 | 76.0 | 79.0 | 80.0 | 82.5 | 84.9 | 90.9 | 92.7 | 91.4 | 82.0 | 167.2 |
| 160 | 71.1 | 72.5 | 74.1 | 72.9 | 76.9 | 79.6 | 80.6 | 83.9 | 87.1 | 90.3 | 92.6 | 91.4 | 82.4 | 167.5 |
| 200 | 74.0 | 77.9 | 77.1 | 75.9 | 80.9 | 81.4 | 84.6 | 87.1 | 90.5 | 91.5 | 91.0 | 91.0 | 81.9 | 167.4 |
| 250 | 72.5 | 77.3 | 78.0 | 76.9 | 78.8 | 81.4 | 81.3 | 84.3 | 87.2 | 89.4 | 91.3 | 88.7 | 79.9 | 166.8 |
| 315 | 72.0 | 73.7 | 75.8 | 75.0 | 78.2 | 81.5 | 81.7 | 85.3 | 87.6 | 87.9 | 90.3 | 86.3 | 76.2 | 166.0 |
| 400 | 71.7 | 74.9 | 75.6 | 74.0 | 76.8 | 80.9 | 81.2 | 84.8 | 86.6 | 88.1 | 88.2 | 82.5 | 72.1 | 165.0 |
| 500 | 69.5 | 75.1 | 75.2 | 74.1 | 76.4 | 80.0 | 80.5 | 83.6 | 84.9 | 87.1 | 85.4 | 78.4 | 67.7 | 163.6 |
| 630 | 70.1 | 75.5 | 76.1 | 74.1 | 75.7 | 79.4 | 79.6 | 82.8 | 84.5 | 84.7 | 81.9 | 74.1 | 63.2 | 162.2 |
| 800 | 67.9 | 73.7 | 76.8 | 74.9 | 77.1 | 79.0 | 78.5 | 82.0 | 82.7 | 81.4 | 78.7 | 69.6 | 59.2 | 160.9 |
| 1000 | 65.2 | 71.3 | 74.7 | 74.1 | 76.7 | 78.6 | 78.3 | 80.3 | 80.3 | 79.9 | 75.4 | 66.6 | 55.3 | 159.8 |
| 1250 | 63.3 | 70.5 | 74.2 | 72.8 | 76.2 | 78.6 | 77.5 | 79.1 | 79.0 | 76.6 | 71.3 | 63.4 | 51.3 | 158.9 |
| 1600 | 60.6 | 67.5 | 70.7 | 70.8 | 74.1 | 76.8 | 75.8 | 77.0 | 75.9 | 72.2 | 67.1 | 59.4 | 46.1 | 157.5 |
| 2000 | 58.5 | 66.0 | 69.6 | 69.7 | 72.8 | 75.5 | 74.3 | 75.3 | 73.4 | 68.8 | 63.6 | 54.1 | 41.4 | 157.3 |
| 2500 | 54.0 | 61.0 | 65.7 | 67.1 | 71.0 | 73.8 | 72.1 | 71.5 | 69.3 | 64.5 | 57.4 | 49.0 | 32.9 | 156.7 |
| 3150 | 48.7 | 57.6 | 61.8 | 63.9 | 66.9 | 70.2 | 69.0 | 67.4 | 64.9 | 58.7 | 51.1 | 40.6 | 20.5 | 156.8 |
| 4000 | 39.0 | 48.5 | 53.8 | 57.2 | 60.7 | 63.2 | 61.8 | 59.7 | 56.7 | 49.7 | 39.6 | 27.1 | 2.2 | 155.8 |
| 5000 | 23.7 | 36.3 | 43.0 | 47.0 | 50.2 | 54.8 | 52.4 | 49.2 | 45.7 | 35.2 | 24.2 | 8.7 | | 155.2 |
| 6300 | 1.2 | 16.7 | 26.3 | 31.8 | 35.5 | 39.4 | 37.1 | 34.2 | 28.3 | 16.6 | 2.3 | | | 154.6 |
| 8000 | | | | | | | | | | | | | | 154.6 |
| 10000 | | | | | | | | | | | | | | 153.1 |
| 12500 | | | | | | | | | | | | | | 152.7 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

OASPL 81.6 85.7 86.8 85.9 88.6 91.7 93.6 94.6 96.8 99.9 101.6 100.3 89.8 177.4

PWL 86.1 90.9 93.0 92.8 95.9 98.9 98.6 100.4 101.7 102.8 103.0 100.3 89.9

PNTL 86.1 91.4 93.0 93.4 96.5 98.9 98.6 101.0 101.7 102.8 103.0 100.3 89.9

DBA 75.8 81.1 83.0 82.2 85.0 87.7 87.3 89.8 90.8 91.5 91.2 87.5 77.8

MODEL AREA = 292.1 SQ CM (.45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = 7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICL = ADH170 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 0. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.93 PAMB HG = 29.22 RELHUM = 81.5 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM V8 = 1303.9 FPS AEB = 4.6 SQ IN
FNRAMB = LBS XNL = RPM VJ8 = 2143.1 FPS AE18 = 23.4 SQ IN
PUMP = 83F ZFR 1177 TAPF = X11371 TEST PT NO = 1137 NC = AEORS CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1138 X1138C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 91.1 | 90.7 | 87.2 | 85.0 | 85.6 | 86.7 | 85.3 | 89.5 | 88.2 | 92.2 | 94.4 | 95.8 | 91.5 | 132.1 |
| 63 | 92.3 | 94.5 | 96.1 | 93.1 | 91.5 | 92.8 | 94.7 | 95.9 | 93.1 | 96.9 | 96.0 | 98.2 | 97.4 | 136.9 |
| 80 | 93.0 | 97.6 | 93.1 | 93.4 | 93.7 | 97.8 | 96.0 | 96.4 | 96.1 | 95.4 | 98.8 | 99.0 | 91.9 | 138.1 |
| 100 | 90.7 | 96.2 | 92.8 | 91.8 | 93.4 | 97.8 | 95.9 | 99.3 | 99.3 | 98.1 | 98.5 | 104.4 | 92.6 | 139.3 |
| 125 | 88.9 | 90.4 | 92.7 | 92.2 | 94.6 | 96.9 | 95.1 | 95.2 | 94.7 | 97.5 | 104.6 | 107.8 | 95.0 | 140.7 |
| 160 | 86.2 | 84.2 | 89.5 | 86.8 | 88.6 | 92.0 | 96.1 | 93.0 | 95.0 | 98.6 | 105.4 | 108.6 | 98.0 | 140.9 |
| 200 | 86.5 | 87.1 | 87.8 | 86.1 | 88.5 | 91.8 | 93.7 | 95.1 | 99.6 | 99.4 | 106.0 | 110.7 | 99.9 | 142.4 |
| 250 | 85.3 | 87.8 | 88.6 | 87.6 | 89.7 | 93.3 | 94.5 | 96.4 | 100.3 | 105.1 | 111.0 | 114.0 | 103.1 | 146.1 |
| 315 | 86.6 | 88.1 | 87.6 | 87.2 | 90.3 | 93.9 | 97.5 | 96.9 | 100.9 | 106.7 | 112.3 | 115.0 | 104.2 | 147.3 |
| 400 | 87.3 | 88.1 | 89.4 | 87.7 | 90.7 | 93.4 | 104.5 | 97.2 | 101.1 | 108.4 | 113.8 | 115.5 | 103.4 | 148.4 |
| 500 | 88.1 | 89.4 | 90.6 | 88.9 | 91.0 | 94.9 | 95.3 | 98.2 | 101.6 | 110.5 | 115.1 | 114.8 | 101.4 | 148.7 |
| 630 | 88.3 | 89.1 | 90.6 | 89.4 | 92.5 | 95.3 | 96.0 | 99.4 | 102.1 | 111.2 | 114.8 | 113.0 | 99.1 | 148.3 |
| 800 | 89.3 | 89.6 | 90.6 | 89.9 | 93.3 | 95.9 | 97.0 | 100.4 | 104.4 | 111.2 | 114.3 | 111.0 | 97.7 | 147.9 |
| 1000 | 91.5 | 92.0 | 93.1 | 91.3 | 93.7 | 97.3 | 97.3 | 101.6 | 104.6 | 111.6 | 113.5 | 108.4 | 96.3 | 147.4 |
| 1250 | 90.4 | 92.9 | 93.2 | 91.1 | 93.8 | 97.0 | 97.3 | 101.8 | 105.7 | 111.3 | 111.9 | 104.8 | 95.5 | 146.5 |
| 1600 | 90.8 | 91.0 | 92.4 | 91.3 | 94.5 | 98.1 | 98.5 | 102.5 | 106.4 | 110.0 | 112.1 | 103.8 | 94.9 | 146.3 |
| 2000 | 92.0 | 91.3 | 92.5 | 90.9 | 94.2 | 97.8 | 98.6 | 103.1 | 106.5 | 110.8 | 111.5 | 102.6 | 95.6 | 146.4 |
| 2500 | 93.9 | 94.2 | 93.0 | 91.0 | 93.9 | 97.8 | 98.5 | 102.6 | 105.4 | 111.0 | 110.7 | 103.1 | 95.8 | 146.1 |
| 3150 | 95.8 | 96.1 | 95.4 | 92.4 | 94.2 | 98.0 | 97.9 | 102.2 | 105.7 | 109.6 | 108.3 | 102.0 | 95.1 | 145.0 |
| 4000 | 94.8 | 95.3 | 96.2 | 93.9 | 95.6 | 97.8 | 97.4 | 101.7 | 104.6 | 107.1 | 107.1 | 99.6 | 94.5 | 143.8 |
| 5000 | 94.0 | 94.5 | 95.9 | 94.3 | 95.8 | 98.0 | 97.4 | 100.7 | 103.0 | 106.6 | 104.9 | 97.7 | 92.2 | 142.9 |
| 6300 | 92.7 | 94.8 | 95.4 | 94.2 | 96.0 | 98.7 | 97.5 | 100.2 | 101.7 | 102.9 | 101.2 | 94.7 | 90.1 | 141.3 |
| 8000 | 92.3 | 94.2 | 94.0 | 93.5 | 95.3 | 98.1 | 96.1 | 98.7 | 100.2 | 100.1 | 97.8 | 91.7 | 87.8 | 140.0 |
| 10000 | 92.7 | 94.1 | 95.1 | 93.1 | 95.3 | 98.3 | 96.5 | 98.2 | 98.7 | 97.4 | 95.2 | 89.4 | 85.9 | 139.8 |
| 12500 | 91.0 | 92.5 | 93.5 | 92.9 | 94.5 | 97.8 | 96.0 | 96.3 | 96.1 | 95.0 | 91.3 | 88.2 | 84.5 | 139.2 |
| 16000 | 89.5 | 92.5 | 92.2 | 92.5 | 94.3 | 96.8 | 95.3 | 95.2 | 95.4 | 91.8 | 89.1 | 86.3 | 82.0 | 139.6 |
| 20000 | 86.6 | 89.8 | 89.9 | 90.4 | 92.7 | 94.4 | 94.0 | 92.7 | 91.8 | 89.0 | 87.0 | 84.6 | 79.9 | 139.0 |
| 25000 | 83.5 | 86.9 | 86.7 | 88.1 | 89.2 | 93.3 | 91.7 | 89.5 | 89.0 | 84.6 | 83.0 | 82.5 | 76.9 | 138.9 |
| 31500 | 79.7 | 82.5 | 83.6 | 84.8 | 86.2 | 89.6 | 87.5 | 86.5 | 85.6 | 80.9 | 80.0 | 78.4 | 72.9 | 138.4 |
| 40000 | 74.7 | 77.8 | 79.3 | 80.2 | 80.9 | 85.5 | 83.1 | 82.6 | 82.6 | 77.6 | 76.9 | 74.6 | 68.8 | 138.3 |
| 50000 | 68.5 | 71.6 | 72.7 | 74.2 | 75.0 | 81.1 | 77.4 | 76.4 | 76.3 | 71.8 | 71.4 | 68.8 | 62.7 | 137.1 |
| 63000 | 62.1 | 65.5 | 67.2 | 68.1 | 69.7 | 75.0 | 70.8 | 71.4 | 71.2 | 66.1 | 65.3 | 62.4 | 56.5 | 136.6 |
| 80000 | 54.3 | 57.2 | 59.5 | 59.7 | 61.2 | 68.1 | 64.0 | 63.8 | 63.2 | 58.9 | 57.9 | 55.5 | 48.6 | 136.0 |

ORIGINAL PAGE IS OF POOR QUALITY

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| DASPL | 105.7 | 107.2 | 107.3 | 105.9 | 107.9 | 111.0 | 111.6 | 113.6 | 116.4 | 121.5 | 124.0 | 123.1 | 111.9 | 159.2 |
| PWL | 118.8 | 119.6 | 119.9 | 118.0 | 120.1 | 123.0 | 123.3 | 126.4 | 129.4 | 133.7 | 134.6 | 130.9 | 121.5 | |
| PNTL | 118.8 | 119.6 | 119.9 | 118.0 | 120.7 | 123.0 | 124.6 | 127.0 | 129.4 | 133.7 | 134.6 | 130.9 | 121.5 | |
| DBA | 104.4 | 105.1 | 105.6 | 103.8 | 106.1 | 109.2 | 109.6 | 113.0 | 116.2 | 121.2 | 122.7 | 119.3 | 108.3 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

| | | | | | | | | | | | | | | | | | |
|----------|---|--------------|--------------|---|----------|------------|---|--------------|------------|---|-------|----------------|---|-------|------------|---|----------|
| VEHICL | = | ADH163 | TEST DATE | = | 03-28-83 | LOCAT | = | C41 ANECH CH | CONFIG | = | 11 | MODEL | = | CO | FLTVEL | = | 400. FPS |
| JAPLHA | = | SR59 | IEGA | = | NO | PWL AREA | = | FULL SPHERE | TAMB F | = | 36.89 | PAMB HG | = | 29.11 | RELHUM | = | 80.7 PCT |
| WIND DIR | = | | DEG WIND VEL | = | | EXT DIST | = | 40.0 FT | EXT CONFIG | = | ARC | MIKE HT | = | | NBFR | = | |
| FNIN1 | = | | LBS XNL | = | | RPM XNH | = | | RPM V8 | = | | AEB | = | | 4.6 SQ IN | | |
| FNINB | = | | LBS XNLR | = | | RPM XNHR | = | | RPM V18 | = | | AEB | = | | 23.4 SQ IN | | |
| RUNPT | = | 83F-400-1138 | TAPE | = | | TEST PT NO | = | 1138 | NC | = | AE085 | CORR FAN SPEED | = | | RPM | | |

DATPROC - FLTRAN

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1138 X1138F

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

FREQ

50

63

80

100

125

160

200

250

315

500

630

800

1000

1250

1600

2000

2500

3150

4000

5000

6300

8000

10000

12500

16000

20000

25000

31500

40000

50000

63000

80000

| | | | | | | | | | | | | | |
|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 93.2 | 94.3 | 93.5 | 90.9 | 91.3 | 93.3 | 92.9 | 93.2 | 98.6 | 103.9 | 109.4 | 112.8 | 104.0 | 144.9 |
| 93.2 | 94.3 | 93.5 | 90.9 | 92.1 | 94.1 | 96.6 | 94.9 | 98.9 | 105.7 | 111.1 | 113.9 | 104.6 | 146.3 |
| 94.3 | 94.5 | 92.6 | 90.6 | 92.6 | 93.6 | 103.5 | 95.1 | 99.4 | 107.7 | 112.5 | 113.8 | 104.2 | 147.1 |
| 94.7 | 94.3 | 94.2 | 91.0 | 92.9 | 95.2 | 94.2 | 96.0 | 100.0 | 108.7 | 112.5 | 112.9 | 103.9 | 146.8 |
| 95.7 | 95.6 | 92.4 | 94.4 | 95.7 | 95.0 | 97.1 | 102.7 | 109.2 | 112.8 | 112.3 | 105.3 | 147.1 | |
| 95.0 | 95.5 | 95.6 | 92.9 | 95.3 | 96.4 | 96.1 | 98.3 | 103.3 | 110.1 | 112.6 | 111.0 | 106.4 | 147.0 |
| 97.0 | 96.1 | 95.7 | 93.5 | 95.8 | 97.9 | 96.4 | 99.5 | 104.4 | 109.7 | 110.9 | 107.1 | 105.3 | 145.9 |
| 98.2 | 98.0 | 94.9 | 96.1 | 97.8 | 97.7 | 99.7 | 105.3 | 108.6 | 111.3 | 106.3 | 105.0 | 145.9 | |
| 98.3 | 94.8 | 97.0 | 99.2 | 98.0 | 100.8 | 105.7 | 109.7 | 111.0 | 105.4 | 106.0 | 146.3 | | |
| 97.5 | 97.6 | 95.1 | 96.9 | 99.1 | 98.4 | 101.6 | 105.1 | 110.4 | 110.8 | 106.6 | 106.9 | 146.5 | |
| 97.9 | 97.8 | 94.9 | 96.6 | 98.4 | 98.6 | 101.5 | 106.0 | 109.7 | 109.1 | 106.3 | 107.1 | 146.1 | |
| 99.7 | 97.7 | 97.7 | 97.0 | 100.1 | 98.6 | 101.6 | 105.7 | 107.9 | 108.5 | 104.5 | 106.8 | 145.4 | |
| 100.6 | 99.3 | 95.7 | 99.1 | 100.3 | 98.7 | 101.8 | 103.9 | 107.2 | 106.0 | 102.1 | 104.1 | 144.6 | |
| 101.2 | 101.4 | 98.2 | 99.8 | 101.0 | 98.9 | 100.8 | 103.7 | 104.5 | 103.4 | 100.4 | 103.4 | 144.1 | |
| 101.2 | 101.7 | 99.1 | 100.1 | 101.7 | 99.7 | 101.2 | 102.8 | 102.5 | 100.9 | 98.3 | 101.9 | 143.9 | |
| 101.4 | 101.1 | 98.9 | 99.4 | 101.1 | 98.4 | 100.1 | 102.3 | 101.0 | 99.7 | 97.3 | 101.2 | 143.5 | |
| 100.6 | 99.5 | 98.0 | 99.3 | 101.3 | 99.0 | 100.1 | 99.1 | 97.9 | 94.8 | 94.7 | 97.8 | 142.8 | |
| 100.2 | 100.3 | 97.4 | 98.5 | 100.8 | 97.9 | 97.2 | 98.2 | 94.7 | 92.6 | 92.8 | 95.4 | 142.8 | |
| 97.3 | 98.1 | 98.3 | 96.7 | 98.3 | 99.8 | 97.0 | 95.8 | 94.1 | 90.8 | 89.1 | 89.8 | 142.5 | |
| 97.5 | 95.8 | 96.7 | 97.4 | 95.5 | 92.7 | 91.9 | 87.1 | 85.8 | 88.3 | 89.7 | 142.7 | | |
| 94.4 | 93.6 | 93.1 | 93.8 | 96.3 | 93.1 | 89.5 | 89.3 | 84.1 | 83.6 | 85.0 | 86.4 | 142.4 | |
| 91.3 | 91.2 | 90.8 | 92.6 | 88.9 | 86.5 | 87.1 | 81.7 | 81.3 | 82.1 | 83.2 | 142.9 | | |
| 87.3 | 87.1 | 85.5 | 88.5 | 84.5 | 82.6 | 81.3 | 76.3 | 76.1 | 76.6 | 77.5 | 142.3 | | |
| 82.7 | 82.0 | 79.5 | 84.1 | 78.8 | 76.4 | 77.1 | 71.6 | 71.1 | 71.1 | 72.2 | 141.6 | | |
| 75.1 | 75.1 | 74.3 | 78.0 | 72.3 | 71.4 | 70.6 | 65.8 | 65.1 | 65.7 | 65.8 | 140.5 | | |
| 67.9 | 68.2 | 67.5 | 65.8 | 71.1 | 65.4 | 63.8 | 60.8 | 56.0 | 55.3 | 55.9 | 56.0 | 139.8 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH163 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.89 PAMB HG = 29.11 RELHUM = 80.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1324.5 FPS AEB = 4.6 SQ IN
 FNAMB = LBS XNL = RPM XNHR = RPM V18 = 2171.8 FPS AE1B = 23.4 SQ IN
 PUMP = R3F 400-1138 TAPE = X1138F TEST PT NO = 1138 NC = AF085 CORR FAN SPEED = RPM

DATPROC - FLTRAN FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1138 X11381

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 68.6 | 71.2 | 71.6 | 69.7 | 70.5 | 72.6 | 72.1 | 72.0 | 76.7 | 80.9 | 84.8 | 86.1 | 73.9 | 159.8 |
| 63 | 68.6 | 71.2 | 71.5 | 69.7 | 71.2 | 73.4 | 75.7 | 73.7 | 76.9 | 82.7 | 86.5 | 87.1 | 74.5 | 161.2 |
| 80 | 69.6 | 71.4 | 70.6 | 69.3 | 71.7 | 72.9 | 82.7 | 73.8 | 77.4 | 84.6 | 87.8 | 86.9 | 73.9 | 162.0 |
| 100 | 70.0 | 71.1 | 72.1 | 69.7 | 72.0 | 74.4 | 73.3 | 74.6 | 77.9 | 85.5 | 87.8 | 85.9 | 73.5 | 161.7 |
| 125 | 70.8 | 72.5 | 73.4 | 71.0 | 73.4 | 74.9 | 74.0 | 75.7 | 80.6 | 86.0 | 88.0 | 85.2 | 74.6 | 162.0 |
| 160 | 70.9 | 72.1 | 73.3 | 71.3 | 74.2 | 75.4 | 75.0 | 76.7 | 81.0 | 86.7 | 87.6 | 83.6 | 75.4 | 161.9 |
| 200 | 71.7 | 72.4 | 73.2 | 71.8 | 74.5 | 76.8 | 75.1 | 77.8 | 82.0 | 86.1 | 85.6 | 79.4 | 73.8 | 160.8 |
| 250 | 73.1 | 74.3 | 75.3 | 72.9 | 74.6 | 76.4 | 75.2 | 77.8 | 82.6 | 84.7 | 85.6 | 78.1 | 72.8 | 160.8 |
| 315 | 71.7 | 75.0 | 75.2 | 72.5 | 75.2 | 77.5 | 76.2 | 78.5 | 82.7 | 85.4 | 85.0 | 76.7 | 73.0 | 161.2 |
| 400 | 71.9 | 72.8 | 74.2 | 72.5 | 74.8 | 77.1 | 76.3 | 79.0 | 81.7 | 85.7 | 84.2 | 77.1 | 72.9 | 161.4 |
| 500 | 72.5 | 72.7 | 74.0 | 71.9 | 74.1 | 77.1 | 76.2 | 78.5 | 82.2 | 84.5 | 82.0 | 76.2 | 72.0 | 161.0 |
| 630 | 72.2 | 74.1 | 73.5 | 71.4 | 74.1 | 77.4 | 75.8 | 78.2 | 81.4 | 82.2 | 80.8 | 73.6 | 70.6 | 160.3 |
| 800 | 72.3 | 74.4 | 74.6 | 72.0 | 75.9 | 77.3 | 75.5 | 78.1 | 79.2 | 81.0 | 77.7 | 70.4 | 66.7 | 159.5 |
| 1000 | 72.0 | 74.5 | 76.2 | 74.0 | 76.2 | 77.6 | 75.3 | 78.7 | 78.5 | 77.9 | 74.4 | 67.8 | 64.6 | 159.0 |
| 1250 | 71.6 | 73.9 | 76.0 | 74.5 | 76.0 | 77.9 | 75.7 | 76.5 | 77.1 | 75.2 | 71.0 | 64.6 | 61.3 | 158.8 |
| 1600 | 68.8 | 73.0 | 74.5 | 73.5 | 74.6 | 76.6 | 73.7 | 74.7 | 75.7 | 72.6 | 68.5 | 61.7 | 57.8 | 158.4 |
| 2000 | 66.5 | 70.8 | 71.8 | 71.5 | 73.6 | 75.8 | 73.2 | 73.6 | 71.3 | 68.1 | 61.8 | 56.7 | 50.5 | 157.7 |
| 2500 | 63.9 | 68.3 | 70.8 | 69.3 | 71.3 | 73.8 | 70.7 | 69.2 | 68.3 | 62.7 | 56.9 | 51.1 | 42.3 | 157.7 |
| 3150 | 57.3 | 62.7 | 65.8 | 66.1 | 68.7 | 70.5 | 67.4 | 65.1 | 61.7 | 55.4 | 49.1 | 42.1 | 29.5 | 157.4 |
| 4000 | 47.8 | 56.2 | 59.9 | 60.5 | 62.8 | 63.9 | 61.5 | 57.4 | 54.2 | 45.6 | 38.1 | 30.3 | 11.3 | 157.6 |
| 5000 | 32.9 | 43.7 | 48.1 | 50.8 | 53.2 | 56.3 | 52.6 | 47.2 | 43.8 | 33.5 | 24.6 | 11.6 | | 157.3 |
| 6300 | 12.8 | 26.9 | 32.5 | 36.8 | 38.9 | 41.4 | 37.0 | 32.2 | 28.3 | 15.5 | 3.3 | | | 157.8 |
| 8000 | | | 5.9 | 12.1 | 14.1 | 18.3 | 13.1 | 7.6 | | | | | | 157.2 |
| 10000 | | | | | | | | | | | | | | 156.5 |
| 12500 | | | | | | | | | | | | | | 155.4 |
| 16000 | | | | | | | | | | | | | | 154.7 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

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| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| OASPL | 83.4 | 85.4 | 86.4 | 84.5 | 86.7 | 88.8 | 88.5 | 89.1 | 92.3 | 95.9 | 96.9 | 94.3 | 84.5 | 173.8 |
| PNL | 89.7 | 93.0 | 94.6 | 93.2 | 95.4 | 97.6 | 95.7 | 96.2 | 97.8 | 99.9 | 98.8 | 93.9 | 86.7 | |
| PNLT | 89.7 | 93.0 | 95.2 | 93.8 | 96.0 | 97.6 | 95.7 | 96.7 | 97.8 | 99.9 | 98.8 | 93.9 | 86.7 | |
| DBA | 80.0 | 82.5 | 83.8 | 82.2 | 84.4 | 86.4 | 84.2 | 85.7 | 87.7 | 89.0 | 87.4 | 81.1 | 76.3 | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH163 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 400. FPS
 TAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.89 PAMB HG = 29.11 RELHUM = 80.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNN1 = LBS XNL RPM XNHR = RPM V8 = 1324.5 FPS AEB = 4.6 SQ IN
 FNRAMB = LBS XNL RPM XNHR = RPM V18 = 2171.8 FPS AE1B = 23.4 SQ IN
 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1139 X1139C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PMI |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 89.9 | 90.9 | 89.7 | 85.7 | 86.6 | 89.9 | 92.3 | 92.7 | 93.2 | 91.7 | 99.4 | 100.1 | 89.2 | 135.3 |
| 63 | 93.5 | 94.8 | 97.1 | 93.6 | 94.0 | 96.6 | 96.5 | 97.1 | 98.1 | 96.4 | 101.8 | 103.7 | 94.1 | 139.5 |
| 80 | 94.5 | 98.6 | 94.3 | 93.9 | 95.5 | 99.3 | 97.5 | 97.1 | 97.8 | 97.9 | 102.0 | 102.0 | 86.9 | 139.9 |
| 100 | 92.2 | 99.7 | 95.5 | 95.5 | 97.1 | 100.0 | 98.4 | 101.5 | 98.5 | 102.8 | 103.0 | 106.9 | 91.1 | 142.3 |
| 125 | 89.6 | 92.7 | 96.4 | 96.0 | 98.3 | 99.9 | 98.3 | 99.0 | 99.2 | 102.3 | 108.6 | 111.6 | 96.2 | 144.5 |
| 160 | 87.7 | 89.5 | 93.5 | 90.5 | 91.6 | 96.0 | 103.1 | 98.5 | 100.2 | 103.8 | 108.9 | 111.9 | 101.3 | 144.9 |
| 200 | 91.0 | 91.1 | 92.8 | 92.1 | 94.7 | 98.1 | 101.2 | 100.1 | 104.3 | 106.4 | 111.8 | 115.7 | 104.1 | 147.8 |
| 250 | 91.3 | 94.3 | 94.8 | 93.9 | 96.2 | 98.6 | 99.7 | 102.1 | 105.6 | 111.6 | 116.0 | 118.7 | 108.1 | 151.2 |
| 315 | 92.3 | 94.1 | 93.9 | 92.7 | 96.0 | 100.4 | 103.5 | 103.7 | 107.6 | 113.0 | 117.3 | 119.8 | 110.4 | 152.5 |
| 400 | 94.1 | 95.3 | 95.4 | 93.9 | 96.5 | 99.9 | 111.2 | 104.7 | 108.4 | 115.7 | 119.8 | 120.5 | 111.7 | 154.4 |
| 500 | 95.1 | 96.4 | 97.1 | 95.7 | 98.0 | 101.6 | 102.0 | 105.9 | 109.6 | 117.5 | 121.1 | 121.5 | 112.9 | 155.4 |
| 630 | 95.8 | 96.8 | 97.6 | 96.1 | 98.7 | 101.8 | 103.0 | 106.4 | 110.1 | 118.2 | 121.8 | 121.2 | 114.4 | 155.8 |
| 800 | 98.8 | 97.9 | 98.6 | 96.9 | 100.3 | 103.1 | 104.0 | 107.4 | 112.1 | 117.7 | 122.3 | 121.3 | 114.9 | 156.1 |
| 1000 | 101.5 | 103.8 | 102.1 | 100.3 | 101.4 | 104.8 | 104.7 | 108.3 | 112.1 | 117.9 | 122.0 | 120.2 | 113.8 | 155.8 |
| 1250 | 100.7 | 104.2 | 103.5 | 101.9 | 103.8 | 106.0 | 105.6 | 108.8 | 113.5 | 118.0 | 121.9 | 117.8 | 112.3 | 155.6 |
| 1600 | 101.3 | 101.7 | 101.9 | 99.8 | 102.8 | 105.9 | 106.7 | 110.0 | 113.6 | 117.5 | 121.1 | 115.8 | 109.4 | 154.8 |
| 2000 | 102.3 | 103.1 | 102.0 | 99.9 | 101.7 | 105.1 | 106.1 | 109.9 | 113.2 | 117.8 | 119.3 | 111.6 | 107.4 | 153.8 |
| 2500 | 102.4 | 104.5 | 103.0 | 101.3 | 102.4 | 105.3 | 105.5 | 109.1 | 112.4 | 117.7 | 116.2 | 109.6 | 105.6 | 152.7 |
| 3150 | 101.3 | 103.9 | 105.1 | 102.1 | 102.7 | 105.3 | 105.4 | 108.9 | 112.0 | 116.1 | 114.1 | 106.7 | 101.9 | 151.5 |
| 4000 | 98.8 | 101.1 | 103.0 | 101.4 | 104.1 | 106.0 | 105.2 | 108.7 | 111.1 | 113.6 | 112.1 | 104.8 | 99.7 | 150.2 |
| 5000 | 97.5 | 100.5 | 101.9 | 100.5 | 103.3 | 106.0 | 104.9 | 107.7 | 109.5 | 112.3 | 109.6 | 102.4 | 97.7 | 149.0 |
| 6300 | 96.4 | 100.1 | 101.4 | 99.7 | 102.5 | 105.5 | 105.3 | 107.2 | 108.7 | 109.9 | 106.9 | 100.4 | 96.4 | 148.0 |
| 8000 | 94.3 | 98.7 | 100.0 | 99.7 | 101.8 | 104.1 | 103.6 | 105.4 | 106.7 | 107.6 | 104.3 | 98.5 | 95.5 | 146.6 |
| 10000 | 94.7 | 97.3 | 99.8 | 98.9 | 101.5 | 104.5 | 104.0 | 105.2 | 105.4 | 105.9 | 104.5 | 97.4 | 94.7 | 146.6 |
| 12500 | 92.2 | 95.7 | 98.0 | 98.2 | 100.7 | 103.8 | 103.0 | 102.5 | 103.1 | 104.2 | 101.1 | 95.0 | 91.3 | 145.7 |
| 16000 | 91.2 | 95.3 | 96.7 | 97.0 | 99.5 | 102.0 | 100.6 | 101.5 | 101.6 | 100.8 | 97.8 | 92.3 | 87.8 | 145.2 |
| 20000 | 88.4 | 92.5 | 93.9 | 94.7 | 96.9 | 98.9 | 99.0 | 97.9 | 98.1 | 98.0 | 94.7 | 89.4 | 84.9 | 144.1 |
| 25000 | 85.3 | 89.7 | 90.7 | 91.6 | 93.2 | 97.3 | 96.7 | 94.5 | 94.7 | 92.4 | 89.3 | 86.3 | 79.7 | 143.4 |
| 31500 | 81.2 | 85.6 | 87.3 | 88.9 | 89.7 | 93.6 | 92.1 | 91.6 | 91.1 | 89.2 | 85.6 | 82.0 | 75.5 | 142.9 |
| 40000 | 76.0 | 80.4 | 82.8 | 84.0 | 84.9 | 89.3 | 87.1 | 86.9 | 87.9 | 85.2 | 81.7 | 77.2 | 70.8 | 142.5 |
| 50000 | 69.8 | 73.9 | 76.5 | 78.3 | 79.0 | 84.9 | 81.5 | 81.2 | 80.9 | 79.1 | 76.4 | 71.3 | 64.5 | 141.3 |
| 63000 | 64.2 | 68.3 | 70.8 | 72.2 | 74.0 | 79.3 | 75.4 | 75.7 | 76.5 | 72.7 | 70.9 | 65.5 | 58.0 | 141.1 |
| 80000 | 57.4 | 61.3 | 64.1 | 64.0 | 65.8 | 73.4 | 69.1 | 68.9 | 69.3 | 67.3 | 62.9 | 57.8 | 49.9 | 141.3 |
| QASPL | 111.6 | 113.9 | 114.1 | 112.5 | 114.6 | 117.5 | 118.5 | 120.2 | 123.4 | 128.2 | 131.2 | 130.0 | 122.5 | 166.1 |
| PNL | 124.6 | 126.9 | 127.7 | 125.5 | 127.6 | 130.1 | 130.4 | 133.0 | 135.9 | 140.3 | 141.2 | 137.6 | 130.9 | |
| PNLT | 124.6 | 127.6 | 127.7 | 125.5 | 128.2 | 130.1 | 132.1 | 133.6 | 135.9 | 140.3 | 141.2 | 137.6 | 130.9 | |
| DBA | 111.6 | 113.6 | 113.7 | 111.9 | 113.9 | 116.7 | 117.1 | 120.0 | 123.2 | 127.9 | 130.4 | 127.8 | 121.2 | |

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NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH169 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO 1 FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.75 PAMB HG = 29.18 RELHUM = 82.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT. DIST = 40.0 FT EXT. CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM VB = 1511.5 FPS AEB = 4.6 SO IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2314.4 FPS AE18 = 23.4 SO IN

RUNPT = 83F-ZER-1139 TAPE = X1139C TEST PT NO = 1139 CORR FAN SPEED = RPM

DATPROC - FLTRAN

07/07/83 16.103 PAGE 3

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H., STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1139 X1139F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 89.9 | 90.9 | 89.7 | 85.7 | 86.6 | 89.9 | 92.3 | 92.7 | 93.2 | 91.7 | 99.4 | 100.1 | 89.2 | 135.3 |
| 63 | 93.5 | 94.8 | 97.1 | 93.6 | 94.0 | 96.6 | 96.5 | 97.1 | 98.1 | 96.4 | 101.8 | 103.7 | 94.1 | 139.5 |
| 80 | 94.5 | 98.6 | 94.3 | 93.9 | 95.5 | 99.3 | 97.5 | 97.1 | 97.8 | 97.9 | 102.0 | 102.0 | 86.9 | 139.9 |
| 100 | 92.2 | 99.7 | 95.5 | 97.1 | 100.0 | 98.4 | 101.5 | 98.5 | 102.8 | 103.0 | 106.9 | 91.1 | 142.3 | |
| 125 | 89.6 | 92.7 | 96.4 | 96.0 | 98.3 | 99.9 | 98.3 | 99.0 | 99.2 | 102.3 | 108.6 | 111.6 | 96.2 | 144.5 |
| 160 | 87.7 | 89.5 | 93.5 | 90.5 | 91.6 | 96.0 | 103.1 | 98.5 | 100.2 | 103.8 | 108.9 | 111.9 | 101.3 | 144.9 |
| 200 | 91.0 | 91.1 | 92.8 | 92.1 | 94.7 | 98.1 | 101.2 | 100.1 | 104.3 | 106.4 | 111.8 | 115.7 | 104.1 | 147.8 |
| 250 | 91.3 | 94.3 | 94.8 | 93.9 | 96.2 | 98.6 | 99.7 | 102.1 | 105.6 | 111.6 | 116.0 | 118.7 | 108.1 | 151.2 |
| 315 | 92.3 | 94.1 | 93.9 | 92.7 | 96.0 | 100.4 | 103.5 | 103.7 | 107.6 | 113.0 | 117.3 | 119.8 | 110.4 | 152.5 |
| 400 | 94.1 | 95.3 | 95.4 | 93.9 | 96.5 | 99.9 | 111.2 | 104.7 | 108.4 | 115.7 | 119.8 | 120.5 | 111.7 | 154.4 |
| 500 | 95.1 | 96.4 | 97.1 | 95.7 | 98.0 | 101.6 | 102.0 | 105.9 | 109.6 | 117.5 | 121.1 | 121.5 | 112.9 | 155.4 |
| 630 | 95.8 | 96.8 | 97.6 | 96.1 | 98.7 | 101.8 | 103.0 | 106.4 | 110.1 | 118.2 | 121.8 | 121.2 | 114.4 | 155.8 |
| 800 | 98.8 | 97.9 | 98.6 | 96.9 | 100.3 | 103.1 | 104.0 | 107.4 | 112.1 | 117.7 | 122.3 | 121.3 | 114.9 | 156.1 |
| 1000 | 101.5 | 103.8 | 102.1 | 100.3 | 101.4 | 104.8 | 104.7 | 108.3 | 112.1 | 117.9 | 122.0 | 120.2 | 113.8 | 155.8 |
| 1250 | 100.7 | 104.2 | 103.5 | 101.9 | 103.8 | 106.0 | 105.6 | 108.8 | 113.5 | 118.0 | 121.9 | 117.8 | 112.3 | 155.6 |
| 1600 | 101.3 | 101.7 | 101.9 | 99.8 | 102.8 | 105.9 | 106.7 | 110.0 | 113.6 | 117.5 | 121.1 | 115.8 | 109.4 | 154.8 |
| 2000 | 102.3 | 103.1 | 102.0 | 99.9 | 101.7 | 105.1 | 106.1 | 109.9 | 113.2 | 117.8 | 119.3 | 111.6 | 107.4 | 153.8 |
| 2500 | 102.4 | 104.5 | 103.0 | 101.3 | 102.4 | 105.3 | 105.9 | 109.1 | 112.4 | 117.7 | 116.2 | 109.6 | 105.6 | 152.7 |
| 3150 | 101.3 | 103.9 | 105.1 | 102.1 | 102.7 | 105.3 | 105.4 | 108.9 | 112.0 | 116.1 | 114.1 | 106.7 | 101.9 | 151.5 |
| 4000 | 98.8 | 101.1 | 103.0 | 101.4 | 104.1 | 106.0 | 105.2 | 108.7 | 111.1 | 113.6 | 112.1 | 104.8 | 99.7 | 150.2 |
| 5000 | 97.5 | 100.5 | 101.9 | 100.5 | 103.3 | 106.0 | 104.9 | 107.7 | 109.5 | 112.3 | 109.6 | 102.4 | 97.7 | 149.0 |
| 6300 | 96.4 | 100.1 | 101.4 | 99.7 | 102.5 | 105.5 | 105.3 | 107.2 | 108.7 | 109.9 | 106.9 | 100.4 | 96.4 | 148.0 |
| 8000 | 94.3 | 98.7 | 100.0 | 99.7 | 101.8 | 104.1 | 103.6 | 105.4 | 106.7 | 107.6 | 104.3 | 98.5 | 95.5 | 146.6 |
| 10000 | 94.7 | 97.3 | 99.8 | 98.9 | 101.5 | 104.5 | 104.0 | 105.2 | 105.4 | 105.9 | 104.5 | 97.4 | 94.7 | 146.6 |
| 12500 | 92.2 | 95.7 | 98.0 | 98.2 | 100.7 | 103.8 | 103.0 | 102.5 | 103.1 | 104.2 | 101.1 | 95.0 | 91.3 | 145.7 |
| 16000 | 91.2 | 95.3 | 96.7 | 97.0 | 99.5 | 102.0 | 100.6 | 101.5 | 101.6 | 100.8 | 97.8 | 92.3 | 87.8 | 145.2 |
| 20000 | 88.4 | 92.5 | 93.9 | 94.7 | 96.9 | 98.9 | 99.0 | 97.9 | 98.1 | 98.0 | 94.7 | 89.4 | 84.9 | 144.1 |
| 25000 | 85.3 | 89.7 | 90.7 | 91.6 | 93.2 | 97.3 | 96.7 | 94.5 | 94.7 | 92.4 | 89.3 | 86.3 | 79.7 | 143.4 |
| 31500 | 81.2 | 85.6 | 87.3 | 88.9 | 89.7 | 93.6 | 92.1 | 91.6 | 91.1 | 89.2 | 85.6 | 82.0 | 75.5 | 142.9 |
| 40000 | 76.0 | 80.4 | 82.8 | 84.0 | 84.9 | 89.3 | 87.1 | 86.9 | 87.9 | 85.2 | 81.7 | 77.2 | 70.8 | 142.5 |
| 50000 | 69.8 | 73.9 | 76.5 | 78.3 | 79.0 | 84.9 | 81.5 | 81.2 | 80.9 | 79.1 | 76.4 | 71.3 | 64.5 | 141.3 |
| 63000 | 64.2 | 68.3 | 70.8 | 72.2 | 74.0 | 79.3 | 75.4 | 75.7 | 76.5 | 72.7 | 70.9 | 65.5 | 58.0 | 141.1 |
| 80000 | 57.4 | 61.3 | 64.1 | 64.0 | 65.8 | 73.4 | 69.1 | 68.9 | 69.3 | 67.3 | 62.9 | 57.8 | 49.9 | 141.3 |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| OASPL | 111.6 | 113.9 | 114.1 | 112.5 | 114.6 | 117.5 | 118.5 | 120.2 | 123.4 | 128.2 | 131.2 | 130.0 | 122.5 | 166.1 |
| PWL | 124.6 | 126.9 | 127.7 | 125.5 | 127.6 | 130.1 | 130.4 | 133.0 | 135.9 | 140.3 | 141.2 | 137.6 | 130.9 | |
| PWL | 124.6 | 127.6 | 127.7 | 125.5 | 128.2 | 130.1 | 132.1 | 133.6 | 135.9 | 140.3 | 141.2 | 137.6 | 130.9 | |
| DBA | 179.8 | 183.9 | 186.5 | 187.2 | 188.8 | 195.4 | 191.3 | 191.3 | 191.7 | 189.3 | 185.8 | 180.7 | 173.2 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH169 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.75 PAMB HG = 29.18 RELHUM = 82.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL RPM XNH XNHR V8 = 1511.5 FPS AEB = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM RPM V18 = 2314.4 FPS AE18 = 23.4 SQ IN
 CORR FAN SPEED = RPM

PRINT - BDF 760 1139 TAPE - Y1139F TEST PT NO = 1139 NC = AFO85

ORIGINAL PAGE IS OF POOR QUALITY

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1139 X11391

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 66.7 | 71.3 | 72.9 | 72.6 | 75.4 | 77.9 | 78.9 | 80.9 | 83.6 | 88.6 | 91.5 | 92.0 | 78.0 | 166.1 |
| 63 | 67.8 | 71.1 | 71.9 | 71.4 | 75.2 | 79.7 | 82.7 | 82.4 | 85.7 | 89.9 | 92.8 | 93.0 | 80.3 | 167.4 |
| 80 | 69.4 | 72.3 | 73.4 | 72.6 | 75.6 | 79.1 | 80.4 | 83.4 | 86.4 | 92.6 | 95.2 | 93.6 | 81.4 | 169.3 |
| 100 | 70.4 | 73.2 | 75.1 | 74.3 | 77.1 | 80.9 | 81.1 | 84.6 | 87.6 | 94.3 | 96.4 | 94.6 | 82.5 | 170.3 |
| 125 | 71.0 | 73.6 | 75.4 | 74.7 | 77.7 | 81.0 | 82.0 | 85.0 | 87.9 | 94.9 | 97.0 | 94.1 | 83.7 | 170.7 |
| 160 | 73.8 | 74.5 | 76.3 | 75.4 | 79.1 | 82.1 | 82.9 | 85.9 | 89.8 | 94.3 | 97.3 | 93.9 | 83.9 | 171.0 |
| 200 | 76.2 | 80.2 | 79.6 | 78.6 | 80.1 | 83.7 | 83.4 | 86.6 | 89.6 | 94.3 | 96.7 | 92.5 | 82.4 | 170.7 |
| 250 | 75.0 | 80.3 | 80.7 | 79.9 | 82.3 | 84.6 | 84.1 | 86.8 | 90.7 | 94.1 | 96.3 | 89.7 | 80.1 | 170.5 |
| 315 | 75.3 | 77.4 | 78.8 | 77.5 | 81.0 | 84.2 | 84.9 | 87.8 | 90.6 | 93.2 | 95.0 | 87.1 | 76.4 | 169.7 |
| 400 | 75.7 | 78.4 | 78.5 | 77.3 | 79.6 | 83.1 | 83.9 | 87.3 | 89.8 | 93.0 | 92.7 | 82.2 | 73.4 | 168.7 |
| 500 | 75.3 | 79.3 | 79.2 | 78.3 | 79.9 | 83.0 | 83.0 | 86.1 | 88.6 | 92.6 | 89.1 | 79.4 | 70.5 | 167.6 |
| 630 | 73.6 | 78.2 | 80.9 | 78.8 | 79.9 | 82.6 | 82.6 | 85.6 | 87.7 | 90.4 | 86.4 | 75.9 | 65.7 | 166.4 |
| 800 | 70.4 | 74.9 | 78.3 | 77.6 | 80.9 | 83.0 | 82.0 | 85.0 | 86.4 | 87.4 | 83.7 | 73.1 | 62.2 | 165.1 |
| 1000 | 68.5 | 73.8 | 76.7 | 76.4 | 79.7 | 82.6 | 81.3 | 83.6 | 84.3 | 85.7 | 80.6 | 69.8 | 58.8 | 163.9 |
| 1250 | 66.6 | 72.7 | 75.7 | 75.1 | 78.5 | 81.6 | 81.2 | 82.6 | 83.0 | 82.6 | 77.1 | 66.7 | 55.8 | 162.9 |
| 1600 | 63.1 | 70.3 | 73.4 | 74.3 | 77.1 | 79.6 | 78.8 | 80.0 | 80.1 | 79.2 | 73.1 | 62.9 | 52.1 | 161.5 |
| 2000 | 61.8 | 67.5 | 72.1 | 72.4 | 75.8 | 79.0 | 78.3 | 78.8 | 77.7 | 76.1 | 71.5 | 59.4 | 47.4 | 161.5 |
| 2500 | 56.5 | 63.8 | 68.5 | 70.1 | 73.5 | 76.8 | 75.8 | 74.5 | 73.6 | 72.3 | 65.4 | 53.3 | 38.2 | 160.6 |
| 3150 | 51.2 | 59.9 | 64.3 | 66.4 | 69.9 | 72.7 | 71.0 | 70.9 | 69.2 | 65.4 | 57.8 | 44.6 | 25.3 | 160.1 |
| 4000 | 40.7 | 51.0 | 56.3 | 59.4 | 63.0 | 65.4 | 65.1 | 62.6 | 60.4 | 56.5 | 47.1 | 31.4 | 6.5 | 159.0 |
| 5000 | 26.2 | 39.0 | 45.2 | 49.3 | 52.7 | 57.3 | 56.2 | 52.2 | 49.2 | 41.7 | 30.2 | 13.0 | | 157.8 |
| 6300 | 3.2 | 19.4 | 28.5 | 34.5 | 37.8 | 42.5 | 40.1 | 37.2 | 32.3 | 23.1 | 7.5 | | | 157.4 |
| 8000 | | 1.4 | 9.1 | 13.6 | 19.1 | 15.8 | 11.9 | 6.4 | | | | | | 156.2 |
| 10000 | | | | | | | | | | | | | | 156.2 |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| OASPL | 84.7 | 88.4 | 89.7 | 88.8 | 91.4 | 94.4 | 95.9 | 97.2 | 99.9 | 104.1 | 105.7 | 102.4 | 91.2 | 180.8 |
| PWL | 89.5 | 93.9 | 96.0 | 95.7 | 98.8 | 101.9 | 101.8 | 103.2 | 105.1 | 107.8 | 107.8 | 102.1 | 91.2 | |
| PNT | 89.5 | 93.9 | 96.6 | 96.3 | 99.3 | 101.9 | 101.8 | 103.8 | 105.1 | 107.8 | 107.8 | 102.1 | 91.2 | |
| DBA | 79.4 | 83.8 | 86.0 | 85.3 | 88.1 | 90.9 | 90.5 | 92.7 | 94.4 | 96.8 | 95.8 | 88.9 | 78.8 | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH169 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 0. FPS
 TAPLHA = SB59 IEGA = NO MPH = 2400.0 FT EXT DIST = 2400.0 FT EXT CONFIG = SL TAMB F = 36.75 PAMB HG = 29.18 RELHUM = 82.4 PCT
 WIND DIR = DEG WIND VEL = RPM XNHR XNHR XNHR V8 = 1511.5 FPS AE8 = 4.6 SQ IN
 FNIN1 = LBS XNL RPM XNL RPM XNL RPM V18 = 2314.4 FPS AE18 = 23.4 SQ IN
 FNFRAMB = LBS XNL RPM XNL RPM XNL RPM TEST PT NO = 1139 NC CORR FAN SPEED = RPM
 RINPT = 83F-7FR-1139 TAPF = X11391

DATPROC - FLTRAN UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
59.0 DEG. F., 70 PERCENT R.H., STD. DAY, SB 40.0 FT ARC

IDENTIFICATION - MODEL 83F-400-1140 X1140C
BACKGROUND 82F-400.0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 92.4 | 91.9 | 88.2 | 85.5 | 86.6 | 87.4 | 87.3 | 91.0 | 92.4 | 93.0 | 100.6 | 96.3 | 91.7 | 134.7 |
| 63 | 93.5 | 96.3 | 96.1 | 93.4 | 92.0 | 94.1 | 94.7 | 96.1 | 97.1 | 95.9 | 102.3 | 99.2 | 97.4 | 138.5 |
| 80 | 94.3 | 98.8 | 94.3 | 94.1 | 95.7 | 98.8 | 96.7 | 97.4 | 97.3 | 96.9 | 100.3 | 101.0 | 88.9 | 139.4 |
| 100 | 92.7 | 98.5 | 94.5 | 93.3 | 95.6 | 99.8 | 98.4 | 100.8 | 97.3 | 99.6 | 100.5 | 106.4 | 91.1 | 141.1 |
| 125 | 90.9 | 92.4 | 94.4 | 95.0 | 97.6 | 98.9 | 97.3 | 97.7 | 96.2 | 100.0 | 106.9 | 110.1 | 96.0 | 143.0 |
| 160 | 87.9 | 85.7 | 91.0 | 88.0 | 89.9 | 93.5 | 97.1 | 95.5 | 96.5 | 101.1 | 106.4 | 109.9 | 99.8 | 142.3 |
| 200 | 88.0 | 89.1 | 89.3 | 88.1 | 90.5 | 94.1 | 95.7 | 97.1 | 101.3 | 101.6 | 107.8 | 112.5 | 102.1 | 144.2 |
| 250 | 86.8 | 89.6 | 90.6 | 89.6 | 92.0 | 95.1 | 96.2 | 98.4 | 101.8 | 107.6 | 113.5 | 116.5 | 105.4 | 148.5 |
| 315 | 88.3 | 90.1 | 89.9 | 88.9 | 91.8 | 95.6 | 99.3 | 98.7 | 103.4 | 109.5 | 114.8 | 117.0 | 106.4 | 149.5 |
| 400 | 89.3 | 90.6 | 91.4 | 89.7 | 92.7 | 95.4 | 107.0 | 99.7 | 103.1 | 111.9 | 116.8 | 118.0 | 106.2 | 151.2 |
| 500 | 89.8 | 91.6 | 92.9 | 90.9 | 93.8 | 97.1 | 97.5 | 100.7 | 104.6 | 113.7 | 118.6 | 118.3 | 104.4 | 152.2 |
| 630 | 91.0 | 91.8 | 93.3 | 91.6 | 94.7 | 97.3 | 98.5 | 101.9 | 104.6 | 114.7 | 119.3 | 116.2 | 102.6 | 152.2 |
| 800 | 92.3 | 93.1 | 92.7 | 95.5 | 98.4 | 99.3 | 103.2 | 106.9 | 114.0 | 119.3 | 114.8 | 101.4 | 151.9 | |
| 1000 | 95.0 | 95.8 | 96.1 | 94.1 | 96.2 | 100.1 | 99.9 | 103.6 | 107.6 | 114.1 | 117.8 | 112.7 | 100.3 | 150.9 |
| 1250 | 94.4 | 97.9 | 96.5 | 95.1 | 97.6 | 100.2 | 100.1 | 104.5 | 109.0 | 113.8 | 117.9 | 109.3 | 99.5 | 150.8 |
| 1600 | 95.8 | 96.2 | 96.9 | 95.0 | 97.5 | 101.1 | 101.7 | 106.0 | 109.6 | 114.2 | 118.1 | 109.3 | 99.7 | 151.2 |
| 2000 | 97.8 | 96.8 | 96.2 | 95.1 | 97.0 | 100.8 | 101.6 | 106.1 | 110.6 | 115.0 | 117.0 | 107.1 | 100.1 | 150.9 |
| 2500 | 99.7 | 100.2 | 98.8 | 96.0 | 98.2 | 101.0 | 101.7 | 105.6 | 109.2 | 116.2 | 116.5 | 107.8 | 101.1 | 151.1 |
| 3150 | 98.5 | 100.1 | 101.9 | 99.1 | 98.2 | 101.5 | 101.9 | 104.9 | 109.0 | 114.8 | 114.6 | 106.2 | 99.6 | 150.0 |
| 4000 | 97.8 | 98.6 | 99.7 | 98.4 | 100.1 | 101.8 | 101.2 | 104.7 | 107.9 | 111.8 | 112.1 | 103.6 | 98.2 | 148.0 |
| 5000 | 97.2 | 97.7 | 99.1 | 97.0 | 99.0 | 101.5 | 100.9 | 104.0 | 106.2 | 110.4 | 109.4 | 101.4 | 95.2 | 146.5 |
| 6300 | 97.1 | 98.8 | 99.1 | 96.7 | 98.5 | 101.5 | 101.3 | 103.7 | 105.5 | 107.9 | 106.4 | 97.7 | 93.4 | 145.3 |
| 8000 | 95.0 | 96.9 | 98.7 | 97.7 | 98.6 | 100.1 | 99.5 | 101.4 | 102.9 | 104.8 | 103.5 | 95.5 | 91.5 | 143.6 |
| 10000 | 95.9 | 96.8 | 97.6 | 97.4 | 99.0 | 100.7 | 99.5 | 101.2 | 101.9 | 102.1 | 100.7 | 93.4 | 89.9 | 143.2 |
| 12500 | 94.2 | 95.2 | 97.0 | 96.4 | 97.7 | 100.8 | 99.0 | 98.8 | 99.6 | 100.5 | 97.3 | 92.2 | 88.3 | 142.6 |
| 16000 | 92.5 | 95.0 | 95.7 | 96.5 | 97.3 | 99.5 | 98.1 | 98.2 | 98.4 | 97.3 | 94.6 | 89.8 | 85.3 | 142.8 |
| 20000 | 90.1 | 92.0 | 92.9 | 93.7 | 95.4 | 97.0 | 96.3 | 95.2 | 94.3 | 93.5 | 91.7 | 87.1 | 83.1 | 141.8 |
| 25000 | 86.8 | 89.0 | 90.0 | 91.4 | 92.5 | 95.8 | 94.2 | 92.0 | 91.5 | 89.6 | 88.0 | 85.1 | 79.5 | 141.7 |
| 31500 | 83.0 | 85.1 | 87.4 | 88.1 | 88.7 | 91.8 | 90.8 | 89.6 | 87.9 | 85.0 | 83.6 | 81.2 | 75.2 | 141.3 |
| 40000 | 77.5 | 81.1 | 82.1 | 84.3 | 83.7 | 88.8 | 86.6 | 85.4 | 84.9 | 82.2 | 80.5 | 77.4 | 71.1 | 141.5 |
| 50000 | 71.6 | 73.9 | 76.2 | 77.5 | 78.0 | 83.6 | 80.2 | 79.7 | 78.6 | 75.9 | 74.4 | 71.8 | 65.5 | 140.0 |
| 63000 | 64.7 | 68.1 | 70.3 | 71.7 | 72.5 | 77.9 | 73.9 | 74.2 | 73.8 | 69.2 | 68.7 | 65.7 | 58.5 | 139.5 |
| 80000 | 58.1 | 60.8 | 63.1 | 65.8 | 64.3 | 71.9 | 67.1 | 67.4 | 65.8 | 63.3 | 62.0 | 59.3 | 50.3 | 139.7 |
| QASPL | 109.0 | 110.4 | 110.7 | 109.3 | 110.9 | 113.6 | 114.4 | 116.4 | 119.5 | 125.2 | 128.5 | 126.0 | 114.7 | 162.8 |
| PNL | 122.0 | 123.3 | 124.2 | 122.1 | 123.6 | 126.0 | 126.5 | 129.2 | 132.5 | 138.0 | 139.6 | 134.1 | 125.3 | |
| PNLT | 122.0 | 123.3 | 124.2 | 122.9 | 124.4 | 126.0 | 127.9 | 129.7 | 132.5 | 138.0 | 140.2 | 134.1 | 125.3 | |
| DBA | 108.3 | 109.3 | 109.8 | 107.9 | 109.5 | 112.3 | 112.8 | 116.0 | 119.5 | 125.1 | 127.8 | 122.8 | 112.0 | |

ORIGINAL PAGE IS
OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH165 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 37.02 PAMB HG = 29.12 RELHUM = 81.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HJ = NBFR =
 FNIN1 = LBS XNL RPM XNH = RPM V8 = 1540.5 FPS AEB = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 2325.0 FPS AE18 = 23.4 SQ IN
 RUNPT = 83F-400-1140 TAPE = X1140C TEST PT NO = 1140 NC = AE085 CORR FAN SPEED = RPM

DATPROC - FLTRAN

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS

59.0 DEG. F., 70 PERCENT R.H. STD DAY, SB 40.0 FT ARC

IDENTIFICATION - 83F-400-1140 X1140F

ANGLES MEASURED FROM INLET, DEGREES

FREQ PWL
50
63
80
100
125
160
200

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 94.7 | 96.0 | 95.5 | 92.9 | 93.6 | 95.1 | 94.7 | 95.3 | 101.0 | 106.6 | 111.8 | 114.7 | 106.2 | 147.1 |
| 315 | 94.7 | 96.0 | 95.5 | 92.9 | 93.6 | 95.8 | 98.3 | 96.6 | 100.8 | 109.1 | 114.0 | 116.3 | 107.3 | 148.9 |
| 400 | 96.0 | 96.5 | 94.8 | 92.3 | 94.5 | 95.6 | 106.0 | 97.5 | 102.4 | 111.0 | 116.0 | 117.3 | 107.2 | 150.5 |
| 500 | 96.4 | 96.6 | 96.1 | 92.9 | 95.7 | 97.5 | 96.5 | 98.5 | 102.4 | 112.0 | 116.9 | 116.0 | 107.5 | 150.4 |
| 630 | 97.5 | 98.0 | 97.9 | 94.4 | 96.7 | 97.7 | 97.4 | 99.6 | 105.2 | 111.9 | 117.8 | 116.0 | 109.0 | 151.0 |
| 800 | 97.7 | 98.2 | 98.4 | 95.1 | 97.6 | 98.9 | 98.4 | 101.0 | 106.4 | 112.7 | 117.0 | 115.4 | 110.6 | 150.9 |
| 1000 | 98.0 | 98.6 | 98.2 | 96.2 | 98.1 | 100.7 | 99.2 | 101.6 | 107.7 | 112.2 | 116.9 | 111.7 | 109.4 | 150.2 |
| 1250 | 101.2 | 101.3 | 100.5 | 97.3 | 99.7 | 101.0 | 99.4 | 102.5 | 108.6 | 112.9 | 117.3 | 111.9 | 109.8 | 150.8 |
| 1600 | 100.7 | 103.5 | 101.0 | 98.4 | 99.9 | 102.2 | 101.3 | 104.3 | 109.2 | 114.0 | 116.5 | 110.0 | 110.5 | 150.7 |
| 2000 | 102.9 | 102.4 | 101.9 | 98.8 | 99.3 | 102.1 | 101.4 | 104.6 | 108.9 | 115.7 | 116.5 | 111.3 | 112.1 | 151.5 |
| 2500 | 103.3 | 101.7 | 100.4 | 98.4 | 100.5 | 102.6 | 101.9 | 104.5 | 109.2 | 114.8 | 115.2 | 110.3 | 111.3 | 150.7 |
| 3150 | 105.3 | 105.1 | 102.8 | 99.1 | 101.1 | 103.6 | 102.6 | 104.3 | 108.8 | 112.5 | 113.3 | 108.2 | 110.3 | 149.6 |
| 4000 | 103.9 | 105.1 | 106.2 | 102.7 | 103.7 | 104.3 | 102.4 | 104.7 | 107.1 | 110.8 | 110.3 | 105.6 | 106.8 | 148.6 |
| 5000 | 105.3 | 105.4 | 103.0 | 103.1 | 104.5 | 102.3 | 104.0 | 106.6 | 108.6 | 107.6 | 102.2 | 105.4 | 104.7 | 147.7 |
| 6300 | 104.7 | 104.5 | 104.9 | 101.9 | 102.5 | 104.5 | 103.1 | 104.0 | 104.8 | 106.3 | 105.6 | 101.0 | 104.7 | 146.9 |
| 8000 | 104.2 | 105.2 | 104.7 | 101.3 | 102.6 | 103.1 | 101.7 | 102.2 | 104.8 | 104.8 | 104.1 | 100.3 | 104.4 | 146.6 |
| 10000 | 102.2 | 103.3 | 104.3 | 102.2 | 103.0 | 103.7 | 101.9 | 102.7 | 103.5 | 104.4 | 102.0 | 100.3 | 103.6 | 146.7 |
| 12500 | 102.8 | 102.9 | 102.8 | 101.6 | 101.8 | 103.8 | 101.5 | 100.6 | 103.1 | 102.3 | 100.5 | 99.2 | 101.9 | 146.7 |
| 16000 | 100.5 | 100.8 | 101.7 | 100.2 | 101.3 | 102.5 | 100.6 | 100.2 | 97.8 | 96.9 | 95.7 | 94.1 | 96.9 | 146.0 |
| 20000 | 98.4 | 100.2 | 100.0 | 99.8 | 99.5 | 100.0 | 99.8 | 99.0 | 95.8 | 94.4 | 92.1 | 90.8 | 90.9 | 145.6 |
| 25000 | 95.4 | 96.6 | 96.6 | 96.4 | 97.1 | 98.8 | 95.7 | 92.0 | 91.6 | 88.2 | 87.1 | 87.8 | 88.7 | 145.2 |
| 31500 | 94.1 | 95.0 | 94.6 | 94.4 | 93.3 | 94.8 | 92.2 | 89.6 | 89.5 | 86.3 | 84.9 | 84.9 | 85.5 | 145.7 |
| 40000 | 89.5 | 90.3 | 91.1 | 90.4 | 88.3 | 91.8 | 88.1 | 85.4 | 83.6 | 80.4 | 79.2 | 79.6 | 80.3 | 145.5 |
| 50000 | 83.6 | 86.0 | 85.5 | 86.1 | 82.6 | 86.6 | 81.7 | 79.7 | 74.6 | 74.4 | 74.5 | 74.2 | 144.7 | |
| 63000 | 76.7 | 77.8 | 78.7 | 78.4 | 77.1 | 80.9 | 75.3 | 74.2 | 73.2 | 70.2 | 69.2 | 69.6 | 68.1 | 143.5 |
| 80000 | 68.4 | 70.5 | 71.3 | 71.1 | 68.9 | 74.9 | 68.5 | 67.4 | 63.4 | 60.4 | 59.4 | 59.7 | 58.3 | 143.1 |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0ASPL | 114.9 | 115.3 | 115.1 | 112.6 | 113.5 | 115.1 | 114.3 | 115.2 | 119.0 | 124.0 | 127.1 | 125.1 | 121.1 | 162.7 |
| PNL | 127.4 | 127.4 | 127.6 | 124.5 | 125.7 | 126.9 | 125.8 | 127.5 | 131.5 | 136.2 | 137.6 | 133.8 | 133.1 | |
| PNLT | 127.4 | 127.4 | 127.6 | 124.5 | 125.7 | 126.9 | 127.3 | 127.5 | 131.5 | 136.2 | 137.6 | 133.8 | 133.1 | |
| DBA | 191.8 | 193.5 | 194.2 | 194.0 | 192.0 | 197.0 | 191.1 | 189.8 | 187.4 | 184.1 | 183.2 | 183.5 | 182.4 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS) = 400.00, DIAM (IN) = 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICL = ADH165 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 37.02 PAMB HG = 29.12 RELHUM = 81.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =
 FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1540.5 FPS AEB = 4.6 SO IN
 FNFRMB = LBS XNLR = RPM XNHR = RPM V18 = 2325.0 FPS AE18 = 23.4 SO IN
 RUNPT = 83F-400-1140 TAPE = X1140F TEST PT NO = 1140 NC = AE085 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1140 X11401

ANGLES MEASURED FROM INLET, DEGREES

| FREQ. | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 70.1 | 73.0 | 73.6 | 71.7 | 72.7 | 74.4 | 73.9 | 74.0 | 79.1 | 83.5 | 87.2 | 88.0 | 76.2 | 162.0 |
| 63 | 70.1 | 73.0 | 73.5 | 71.7 | 72.7 | 75.1 | 77.4 | 75.4 | 78.8 | 86.1 | 89.4 | 89.5 | 77.2 | 163.8 |
| 80 | 71.4 | 73.4 | 72.8 | 71.0 | 73.7 | 74.9 | 85.1 | 76.2 | 80.4 | 87.9 | 91.3 | 90.4 | 76.9 | 165.4 |
| 100 | 71.7 | 73.5 | 74.0 | 71.6 | 74.7 | 76.7 | 75.6 | 77.1 | 80.4 | 88.9 | 92.2 | 89.0 | 77.1 | 165.3 |
| 125 | 72.7 | 74.8 | 75.7 | 73.0 | 75.7 | 76.9 | 76.4 | 78.2 | 83.0 | 88.7 | 92.9 | 88.9 | 78.3 | 165.9 |
| 160 | 73.7 | 74.8 | 76.1 | 73.6 | 76.4 | 77.9 | 77.2 | 79.4 | 84.1 | 89.3 | 92.0 | 88.1 | 79.6 | 165.8 |
| 200 | 74.7 | 74.9 | 75.7 | 74.5 | 76.9 | 79.5 | 77.9 | 79.9 | 85.2 | 88.6 | 91.6 | 84.0 | 77.9 | 165.1 |
| 250 | 75.6 | 77.3 | 77.8 | 75.4 | 78.2 | 79.7 | 77.9 | 80.6 | 85.9 | 89.0 | 91.7 | 83.7 | 77.7 | 165.7 |
| 315 | 74.6 | 79.2 | 77.9 | 76.2 | 78.1 | 80.5 | 79.5 | 82.0 | 86.2 | 89.7 | 90.5 | 81.2 | 77.5 | 165.6 |
| 400 | 76.3 | 77.7 | 78.5 | 76.2 | 77.1 | 80.1 | 79.3 | 82.0 | 85.5 | 90.9 | 90.0 | 81.9 | 78.1 | 166.4 |
| 500 | 76.1 | 76.6 | 76.6 | 75.4 | 78.1 | 80.3 | 79.4 | 81.5 | 85.4 | 89.6 | 88.0 | 80.2 | 76.2 | 165.6 |
| 630 | 77.6 | 79.4 | 78.5 | 75.8 | 78.3 | 80.9 | 79.7 | 80.9 | 84.6 | 86.8 | 85.6 | 77.3 | 74.1 | 164.5 |
| 800 | 75.5 | 78.9 | 81.5 | 79.0 | 80.5 | 81.3 | 79.2 | 81.0 | 82.4 | 84.6 | 82.0 | 73.9 | 69.3 | 163.5 |
| 1000 | 76.2 | 78.6 | 80.3 | 78.9 | 79.5 | 81.1 | 78.8 | 79.9 | 81.5 | 81.9 | 78.6 | 69.5 | 66.6 | 162.6 |
| 1250 | 74.8 | 77.1 | 79.2 | 77.2 | 78.5 | 80.6 | 79.0 | 79.4 | 79.1 | 79.0 | 75.8 | 67.3 | 64.1 | 161.8 |
| 1600 | 73.1 | 76.9 | 78.2 | 75.9 | 77.9 | 78.6 | 76.9 | 76.8 | 78.2 | 76.4 | 73.0 | 64.8 | 60.9 | 161.5 |
| 2000 | 69.3 | 73.5 | 76.5 | 75.8 | 77.3 | 78.3 | 76.1 | 76.2 | 75.8 | 74.6 | 69.1 | 62.3 | 56.3 | 161.6 |
| 2500 | 67.2 | 71.0 | 73.3 | 73.6 | 74.6 | 76.8 | 74.3 | 72.6 | 73.2 | 70.4 | 64.9 | 57.5 | 48.8 | 161.6 |
| 3150 | 60.5 | 65.4 | 69.3 | 69.6 | 71.7 | 73.2 | 71.0 | 69.6 | 65.4 | 61.6 | 55.7 | 46.4 | 34.4 | 160.9 |
| 4000 | 50.8 | 58.7 | 62.4 | 64.5 | 65.5 | 66.4 | 64.0 | 60.6 | 56.8 | 50.6 | 43.2 | 32.8 | 13.8 | 160.5 |
| 5000 | 36.4 | 46.0 | 51.1 | 54.1 | 56.5 | 58.8 | 55.1 | 49.7 | 46.1 | 37.5 | 28.1 | 14.4 | | 160.1 |
| 6300 | 16.0 | 28.9 | 35.8 | 40.1 | 41.4 | 43.7 | 40.3 | 35.2 | 30.6 | 20.1 | 6.8 | | | 160.6 |
| 8000 | | | 9.7 | 15.4 | 16.9 | 21.6 | 16.7 | 10.4 | 2.1 | | | | | 160.4 |
| 10000 | | | | | | | | | | | | | | 159.6 |
| 12500 | | | | | | | | | | | | | | 158.4 |
| 16000 | | | | | | | | | | | | | | 158.0 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|-------|------|------|-------|-------|-------|------|------|-------|
| QASPL | 86.7 | 89.0 | 90.0 | 88.1 | 89.9 | 91.7 | 91.4 | 91.8 | 95.4 | 99.7 | 101.6 | 97.7 | 88.3 | 177.6 |
| PWL | 93.4 | 96.6 | 98.2 | 97.0 | 98.8 | 100.5 | 98.8 | 99.0 | 101.0 | 104.5 | 104.1 | 97.8 | 91.2 | |
| PWLT | 93.4 | 96.6 | 98.8 | 97.6 | 99.3 | 100.5 | 98.8 | 99.6 | 101.8 | 104.5 | 104.1 | 97.8 | 91.2 | |
| DBA | 83.8 | 86.4 | 88.0 | 86.3 | 87.8 | 89.4 | 87.6 | 88.6 | 90.8 | 93.4 | 92.7 | 85.2 | 80.3 | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH165 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 400 FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 37.02 PAMB HG = 29.12 RELHUM = 81.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =
 FNIN1 = LBS XNL RPM XNHR V8 = 1540.5 FPS AEB = 4.6 SQ IN
 FNFRMB = LBS XNL RPM XNHR V18 = 2325.0 FPS AE18 = 23.4 SQ IN
 PUMPT = R3F-400-1140 TAPE = X11401 TFST PT NO = 1140 NC = AEO85 CORR FAN SPEED = RPM

DATPROC - FLTRAN UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
 59.0 DEG. F., 70 PERCENT R.H., STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-ZER-1141 X1141C
 BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 93.1 | 93.7 | 91.7 | 89.5 | 89.8 | 90.9 | 94.6 | 93.7 | 94.2 | 99.2 | 100.6 | 101.1 | 90.7 | 137.4 |
| 60 | 96.3 | 98.3 | 97.3 | 97.4 | 96.5 | 98.6 | 98.7 | 96.4 | 98.8 | 102.6 | 102.5 | 102.2 | 96.9 | 141.1 |
| 80 | 96.5 | 100.6 | 96.3 | 96.6 | 97.5 | 101.8 | 99.7 | 99.4 | 100.1 | 100.9 | 104.3 | 104.0 | 89.6 | 142.2 |
| 100 | 95.0 | 102.0 | 97.8 | 97.3 | 99.1 | 102.8 | 101.1 | 104.5 | 101.0 | 105.1 | 105.5 | 109.6 | 93.8 | 144.9 |
| 125 | 92.1 | 94.7 | 97.7 | 97.5 | 100.1 | 102.4 | 101.6 | 101.2 | 101.2 | 104.8 | 111.4 | 113.8 | 99.0 | 146.9 |
| 160 | 89.7 | 91.5 | 94.7 | 92.0 | 93.6 | 97.2 | 106.6 | 101.0 | 102.7 | 106.1 | 111.9 | 114.9 | 104.3 | 147.8 |
| 200 | 93.3 | 92.8 | 94.1 | 93.1 | 96.2 | 100.1 | 103.7 | 102.1 | 106.6 | 107.9 | 113.8 | 118.0 | 107.4 | 149.9 |
| 250 | 93.3 | 95.1 | 95.8 | 95.1 | 97.5 | 100.6 | 101.5 | 104.4 | 107.3 | 113.9 | 118.5 | 121.0 | 110.4 | 153.5 |
| 315 | 94.6 | 95.4 | 94.9 | 94.9 | 97.5 | 101.6 | 105.8 | 105.2 | 108.4 | 115.5 | 119.8 | 121.8 | 112.7 | 154.7 |
| 400 | 96.1 | 96.8 | 97.6 | 95.7 | 98.7 | 101.9 | 112.0 | 106.4 | 109.9 | 118.2 | 122.3 | 123.2 | 113.9 | 156.8 |
| 500 | 97.3 | 98.4 | 98.6 | 97.4 | 99.8 | 103.9 | 104.8 | 107.7 | 111.4 | 120.0 | 123.8 | 123.8 | 114.9 | 157.8 |
| 630 | 98.3 | 99.3 | 99.8 | 98.4 | 101.0 | 104.3 | 105.2 | 108.6 | 111.6 | 121.2 | 124.8 | 123.2 | 115.9 | 158.4 |
| 800 | 101.3 | 100.6 | 100.9 | 99.4 | 102.5 | 105.1 | 106.0 | 110.2 | 114.4 | 121.0 | 125.3 | 122.0 | 115.7 | 158.5 |
| 1000 | 105.5 | 106.3 | 105.3 | 103.1 | 103.9 | 107.1 | 106.9 | 110.6 | 114.8 | 121.1 | 124.5 | 120.9 | 114.3 | 158.1 |
| 1250 | 108.9 | 109.4 | 107.0 | 104.4 | 105.6 | 107.7 | 107.3 | 111.0 | 115.2 | 120.3 | 123.4 | 117.6 | 112.3 | 157.2 |
| 1600 | 111.1 | 109.7 | 109.4 | 106.3 | 106.0 | 108.6 | 109.0 | 112.3 | 115.4 | 119.7 | 122.3 | 116.3 | 110.9 | 156.8 |
| 2000 | 110.8 | 110.1 | 110.0 | 107.9 | 108.2 | 109.1 | 108.6 | 112.1 | 115.0 | 120.0 | 122.5 | 113.1 | 108.9 | 156.1 |
| 2500 | 107.2 | 108.7 | 108.8 | 107.5 | 108.9 | 110.8 | 109.0 | 111.8 | 114.2 | 119.7 | 117.5 | 111.8 | 108.1 | 155.2 |
| 3150 | 106.5 | 107.9 | 107.9 | 106.4 | 108.0 | 111.5 | 110.2 | 112.1 | 114.0 | 117.3 | 116.1 | 109.7 | 105.4 | 154.1 |
| 4000 | 104.7 | 106.1 | 107.5 | 105.4 | 107.5 | 110.3 | 109.6 | 112.0 | 113.1 | 115.8 | 114.3 | 107.1 | 104.2 | 153.1 |
| 5000 | 103.2 | 105.5 | 107.4 | 105.5 | 107.5 | 109.0 | 109.6 | 112.0 | 111.7 | 114.8 | 112.6 | 105.9 | 103.4 | 152.4 |
| 6300 | 102.4 | 105.5 | 106.4 | 105.2 | 107.3 | 110.2 | 109.5 | 111.4 | 111.2 | 112.6 | 110.6 | 105.1 | 102.4 | 151.8 |
| 8000 | 100.0 | 103.7 | 104.2 | 104.9 | 106.8 | 109.4 | 108.1 | 110.2 | 109.9 | 110.3 | 108.7 | 104.2 | 101.5 | 150.9 |
| 10000 | 99.7 | 103.0 | 104.3 | 103.9 | 106.7 | 109.7 | 109.7 | 108.7 | 109.4 | 108.0 | 102.6 | 100.9 | 150.9 | |
| 12500 | 97.7 | 100.7 | 102.8 | 102.9 | 105.2 | 108.7 | 107.5 | 106.8 | 106.4 | 107.4 | 104.3 | 100.7 | 98.7 | 150.0 |
| 16000 | 96.2 | 99.3 | 101.2 | 101.7 | 104.3 | 106.5 | 105.6 | 105.7 | 105.6 | 105.0 | 102.3 | 98.5 | 94.5 | 149.7 |
| 20000 | 93.4 | 97.5 | 97.9 | 99.4 | 101.4 | 103.7 | 103.5 | 102.7 | 102.6 | 102.0 | 99.5 | 94.9 | 90.9 | 148.7 |
| 25000 | 89.5 | 94.2 | 95.2 | 96.6 | 98.0 | 101.8 | 101.0 | 99.5 | 99.5 | 95.6 | 94.3 | 91.8 | 85.9 | 148.0 |
| 31500 | 85.8 | 89.8 | 91.6 | 93.4 | 94.0 | 98.1 | 96.3 | 95.8 | 95.4 | 92.5 | 90.3 | 87.0 | 80.5 | 147.2 |
| 40000 | 80.0 | 85.6 | 86.9 | 88.3 | 89.2 | 94.1 | 92.2 | 91.9 | 91.9 | 88.0 | 86.8 | 82.7 | 75.6 | 147.0 |
| 50000 | 74.3 | 79.4 | 80.5 | 82.6 | 83.5 | 89.4 | 86.2 | 85.5 | 85.4 | 82.2 | 80.7 | 76.9 | 70.1 | 145.7 |
| 63000 | 68.2 | 73.6 | 76.1 | 77.0 | 78.6 | 84.6 | 80.2 | 80.7 | 81.0 | 77.5 | 74.4 | 70.2 | 62.3 | 146.0 |
| 80000 | 64.2 | 67.3 | 69.9 | 69.5 | 71.1 | 78.4 | 73.6 | 74.6 | 74.1 | 70.8 | 67.7 | 62.8 | 54.4 | 146.3 |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS9-22137

VEHICLE = ADH168 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO ' FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.48 PAMB HG = 29.20 RELHUM = 84.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNIN1 = LBS XNL RPM XNHR = RPM V8 = 1508.4 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNL RPM XNHR = RPM V18 = 2455.6 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1141 TAPE = X1141C TEST PT NO = 1141 NC = AE085 CORR FAN SPEED = RPM

DATPROC - FLTRAN

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS

59.0 DEG. F. 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1141 X1141F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 93.1 | 93.7 | 91.7 | 89.5 | 89.8 | 90.9 | 94.6 | 93.7 | 94.2 | 99.2 | 100.6 | 101.1 | 90.7 | 137.4 |
| 63 | 96.3 | 98.3 | 97.3 | 97.4 | 96.5 | 98.6 | 98.7 | 96.4 | 98.8 | 102.6 | 102.5 | 102.2 | 96.9 | 141.1 |
| 80 | 96.5 | 100.6 | 96.3 | 96.6 | 97.5 | 101.8 | 99.7 | 99.4 | 100.1 | 100.9 | 104.3 | 104.0 | 89.6 | 142.2 |
| 100 | 95.0 | 102.0 | 97.8 | 97.3 | 99.1 | 102.8 | 101.1 | 104.5 | 101.0 | 105.1 | 105.5 | 109.6 | 93.8 | 144.9 |
| 125 | 92.1 | 94.7 | 97.7 | 97.5 | 100.1 | 102.4 | 101.6 | 101.2 | 101.2 | 104.8 | 111.4 | 113.8 | 99.0 | 146.9 |
| 160 | 89.7 | 91.5 | 94.7 | 92.0 | 93.6 | 97.2 | 106.6 | 101.0 | 102.7 | 106.1 | 111.9 | 114.9 | 104.3 | 147.8 |
| 200 | 93.3 | 92.8 | 94.1 | 93.1 | 96.2 | 100.1 | 103.7 | 102.1 | 106.6 | 107.9 | 113.8 | 118.0 | 107.4 | 149.9 |
| 250 | 93.3 | 95.1 | 95.8 | 95.1 | 97.5 | 100.6 | 101.5 | 104.4 | 107.3 | 113.9 | 118.5 | 121.0 | 110.4 | 153.5 |
| 315 | 94.6 | 95.4 | 94.9 | 94.9 | 97.5 | 101.6 | 105.8 | 105.2 | 108.4 | 115.5 | 119.8 | 121.8 | 112.7 | 154.7 |
| 400 | 96.1 | 96.8 | 97.6 | 95.7 | 98.7 | 101.9 | 112.0 | 106.4 | 109.9 | 118.2 | 122.3 | 123.2 | 113.9 | 156.8 |
| 500 | 97.3 | 98.4 | 98.6 | 97.4 | 99.8 | 103.9 | 104.8 | 107.7 | 111.4 | 120.0 | 123.8 | 123.8 | 114.9 | 157.8 |
| 630 | 98.3 | 99.3 | 99.8 | 98.4 | 101.0 | 104.3 | 105.2 | 108.6 | 111.6 | 121.2 | 124.8 | 123.2 | 115.9 | 158.4 |
| 800 | 101.3 | 100.6 | 100.9 | 99.4 | 102.5 | 105.1 | 106.0 | 110.2 | 114.4 | 121.0 | 125.3 | 122.0 | 115.5 | 158.5 |
| 1000 | 105.5 | 106.3 | 105.3 | 103.1 | 103.9 | 107.1 | 106.9 | 110.6 | 114.8 | 121.1 | 124.5 | 120.9 | 114.3 | 158.1 |
| 1250 | 108.9 | 109.4 | 107.0 | 104.4 | 105.6 | 107.7 | 107.3 | 111.0 | 115.2 | 120.3 | 123.4 | 117.6 | 112.3 | 157.2 |
| 1600 | 111.1 | 109.7 | 109.4 | 106.3 | 106.0 | 108.6 | 109.0 | 112.3 | 115.4 | 119.7 | 122.3 | 116.3 | 110.9 | 156.8 |
| 2000 | 110.8 | 110.1 | 110.0 | 107.9 | 108.2 | 109.1 | 108.6 | 112.1 | 115.0 | 120.0 | 120.5 | 113.1 | 108.9 | 156.1 |
| 2500 | 107.2 | 108.7 | 108.8 | 107.5 | 108.9 | 110.8 | 109.0 | 111.8 | 114.2 | 119.7 | 117.5 | 111.8 | 108.1 | 155.2 |
| 3150 | 106.5 | 107.9 | 107.9 | 106.4 | 108.0 | 111.5 | 110.5 | 112.1 | 114.0 | 117.3 | 116.1 | 109.7 | 105.4 | 154.1 |
| 4000 | 104.7 | 106.1 | 107.5 | 105.4 | 107.5 | 110.3 | 109.6 | 112.0 | 113.1 | 115.8 | 114.3 | 107.1 | 104.2 | 153.1 |
| 5000 | 103.2 | 105.5 | 107.4 | 105.5 | 107.5 | 109.0 | 109.6 | 112.0 | 111.7 | 114.8 | 112.6 | 105.9 | 103.4 | 152.4 |
| 6300 | 102.4 | 105.5 | 106.4 | 105.2 | 107.3 | 110.2 | 109.5 | 111.4 | 111.2 | 112.6 | 110.6 | 105.1 | 102.4 | 151.8 |
| 8000 | 100.0 | 103.7 | 105.2 | 104.9 | 106.8 | 109.4 | 108.1 | 110.2 | 109.9 | 110.3 | 108.7 | 104.2 | 101.5 | 150.9 |
| 10000 | 99.7 | 103.0 | 104.3 | 103.9 | 106.7 | 109.7 | 108.2 | 109.7 | 108.7 | 109.4 | 108.0 | 102.6 | 100.9 | 150.9 |
| 12500 | 97.7 | 100.7 | 102.8 | 102.9 | 105.2 | 108.7 | 107.5 | 106.8 | 106.4 | 107.4 | 104.3 | 100.7 | 98.7 | 150.0 |
| 16000 | 96.2 | 99.3 | 101.2 | 101.7 | 104.3 | 106.5 | 105.6 | 105.7 | 105.6 | 105.0 | 102.3 | 98.5 | 94.5 | 149.7 |
| 20000 | 93.4 | 97.5 | 97.9 | 99.4 | 101.4 | 103.7 | 103.5 | 102.7 | 102.6 | 102.0 | 99.5 | 94.9 | 90.9 | 148.7 |
| 25000 | 89.5 | 94.2 | 95.2 | 96.6 | 98.0 | 101.8 | 101.0 | 99.5 | 99.5 | 95.6 | 94.3 | 91.8 | 85.9 | 148.0 |
| 31500 | 85.8 | 89.8 | 91.6 | 93.4 | 94.0 | 98.1 | 96.3 | 95.8 | 95.4 | 92.5 | 90.3 | 87.0 | 80.5 | 147.2 |
| 40000 | 80.0 | 85.6 | 86.9 | 88.3 | 89.2 | 94.1 | 92.2 | 91.9 | 91.9 | 88.0 | 86.8 | 82.7 | 75.6 | 147.0 |
| 50000 | 74.3 | 79.4 | 80.5 | 82.6 | 83.5 | 89.4 | 86.2 | 85.5 | 85.4 | 82.2 | 80.7 | 76.9 | 70.1 | 145.7 |
| 63000 | 68.2 | 73.6 | 76.1 | 77.0 | 78.6 | 84.6 | 80.2 | 80.7 | 81.0 | 77.5 | 74.4 | 70.2 | 62.3 | 146.0 |
| 80000 | 64.2 | 67.3 | 69.9 | 69.5 | 71.1 | 78.4 | 73.6 | 74.6 | 74.1 | 70.8 | 67.7 | 62.8 | 54.4 | 146.3 |

0ASPL 117.9 118.6 118.7 117.1 118.7 121.4 121.5 123.2 125.4 130.8 133.5 131.8 124.1 168.6
 PNL 130.4 131.2 131.4 129.9 131.5 134.5 134.1 136.1 138.0 142.6 143.2 139.7 133.4
 PNL1 130.4 131.9 131.4 129.9 132.1 134.5 135.5 136.8 138.0 142.6 143.2 139.7 133.4
 DBA 185.7 189.6 191.9 192.2 193.7 200.4 196.0 196.7 196.4 193.0 190.2 185.7 177.8

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH168 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 0. FPS
 TAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.48 PAMB HG = 29.20 RELHUM = 84.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL RPM XN1 = RPM VB = 1508.4 FPS AE8 = 4.6 SO IN
 FNRAMB = LBS XNLR RPM XNLR = RPM VIB = 2455.6 FPS AE18 = 23.4 SO IN
 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H., STD. DAY, SB 2400.0 FT., SI

IDENTIFICATION - 83F-ZER-1141 X11411

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|-------|------|-------|-------|
| 50 | 68.7 | 72.0 | 73.9 | 73.9 | 76.6 | 79.9 | 80.6 | 83.1 | 85.4 | 90.9 | 94.0 | 94.2 | 80.3 | 168.4 |
| 63 | 70.0 | 72.3 | 72.9 | 73.7 | 76.7 | 80.9 | 84.9 | 83.9 | 86.4 | 92.4 | 95.3 | 95.0 | 82.5 | 169.6 |
| 80 | 71.4 | 73.8 | 75.6 | 74.4 | 77.9 | 81.1 | 91.1 | 85.1 | 87.9 | 95.1 | 97.7 | 96.4 | 83.7 | 171.7 |
| 100 | 72.6 | 75.2 | 76.6 | 76.1 | 78.9 | 83.1 | 83.9 | 86.3 | 89.3 | 96.8 | 99.1 | 96.8 | 84.5 | 172.7 |
| 125 | 73.5 | 76.1 | 77.7 | 77.0 | 80.0 | 83.5 | 84.2 | 87.2 | 89.4 | 97.9 | 100.0 | 96.1 | 85.2 | 173.3 |
| 160 | 76.3 | 77.2 | 78.6 | 77.9 | 81.4 | 84.1 | 84.9 | 88.6 | 92.1 | 97.5 | 100.3 | 94.6 | 84.7 | 173.4 |
| 200 | 80.2 | 82.7 | 82.8 | 81.4 | 82.6 | 85.9 | 85.6 | 88.9 | 92.3 | 97.5 | 99.2 | 93.2 | 82.9 | 173.0 |
| 250 | 83.3 | 85.5 | 84.2 | 82.4 | 84.1 | 86.4 | 85.8 | 89.1 | 92.5 | 96.4 | 97.8 | 89.5 | 80.1 | 172.1 |
| 315 | 85.0 | 85.4 | 86.3 | 84.0 | 84.2 | 87.0 | 87.2 | 90.0 | 92.3 | 95.4 | 96.3 | 87.6 | 77.9 | 171.7 |
| 400 | 84.2 | 85.4 | 86.5 | 85.3 | 86.1 | 87.1 | 86.4 | 89.5 | 91.5 | 95.3 | 93.9 | 83.7 | 74.9 | 171.0 |
| 500 | 80.0 | 83.6 | 85.0 | 84.6 | 86.4 | 88.5 | 86.5 | 88.9 | 90.4 | 94.6 | 90.3 | 81.7 | 73.0 | 170.1 |
| 630 | 78.8 | 82.2 | 83.6 | 83.1 | 85.2 | 88.9 | 87.4 | 88.8 | 89.7 | 91.7 | 88.3 | 78.8 | 69.2 | 169.0 |
| 800 | 76.4 | 79.9 | 82.8 | 81.6 | 84.3 | 87.2 | 86.4 | 88.2 | 88.4 | 89.7 | 85.9 | 75.4 | 66.7 | 168.0 |
| 1000 | 74.2 | 78.8 | 82.2 | 81.4 | 83.9 | 85.6 | 86.0 | 86.6 | 88.1 | 83.6 | 73.3 | 64.5 | 67.3 | |
| 1250 | 72.5 | 78.2 | 80.7 | 80.6 | 83.2 | 86.4 | 85.5 | 86.8 | 85.5 | 80.8 | 71.4 | 61.7 | 166.8 | |
| 1600 | 68.9 | 75.3 | 78.7 | 79.5 | 82.1 | 84.8 | 83.3 | 84.8 | 83.4 | 81.9 | 77.6 | 68.7 | 58.1 | 165.8 |
| 2000 | 66.8 | 73.3 | 76.6 | 77.4 | 81.0 | 84.2 | 82.5 | 83.3 | 80.9 | 79.6 | 75.0 | 64.6 | 53.7 | 165.8 |
| 2500 | 62.0 | 68.8 | 73.2 | 74.9 | 78.0 | 81.8 | 80.3 | 78.7 | 76.8 | 75.5 | 68.6 | 59.0 | 45.6 | 164.9 |
| 3150 | 56.2 | 63.9 | 68.7 | 71.1 | 74.7 | 77.2 | 76.0 | 75.1 | 73.1 | 69.7 | 62.3 | 50.8 | 32.0 | 164.6 |
| 4000 | 45.7 | 56.0 | 60.3 | 64.1 | 67.5 | 70.1 | 69.6 | 67.4 | 64.9 | 60.5 | 51.8 | 36.9 | 12.5 | 163.6 |
| 5000 | 30.5 | 43.5 | 49.7 | 54.3 | 57.4 | 61.8 | 60.4 | 57.2 | 54.0 | 45.0 | 35.2 | 18.5 | | 162.9 |
| 6300 | 7.7 | 23.7 | 32.8 | 39.0 | 42.1 | 47.0 | 44.4 | 41.5 | 36.5 | 26.3 | 12.3 | | | 162.1 |
| 8000 | | | 5.4 | 13.4 | 17.8 | 23.9 | 20.8 | 17.0 | 10.4 | | | | | 161.9 |
| 10000 | | | | | | | | | | | | | | 160.6 |
| 12500 | | | | | | | | | | | | | | 161.2 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| DASPL | 91.1 | 93.3 | 94.4 | 93.4 | 95.4 | 98.1 | 98.4 | 99.9 | 101.9 | 106.7 | 108.1 | 104.2 | 92.7 | 183.3 |
| PWL | 96.2 | 99.1 | 101.0 | 100.5 | 103.3 | 106.3 | 105.5 | 106.6 | 107.3 | 110.3 | 110.0 | 103.7 | 92.9 | |
| PWLT | 96.2 | 99.1 | 101.5 | 101.1 | 103.3 | 106.3 | 105.5 | 106.6 | 107.3 | 110.3 | 110.0 | 103.7 | 92.9 | |
| DBA | 86.0 | 89.0 | 91.0 | 90.5 | 92.8 | 95.5 | 94.5 | 96.1 | 96.5 | 99.0 | 97.7 | 90.1 | 80.2 | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH168 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 0. FPS
 TAPLHA = SB59 IEGA = NO MPH = 2400.0 FT EXT DIST = 2400.0 FT EXT CONFIG = SL TAMB F = 36.48 PAMB HG = 29.20 RELHUM = 84.0 PCT
 WIND DIR = DEG WIND VEL = MPH RPM = 1508.4 FPS AE8 = 4.6 SQ IN
 RPM = 2455.6 FPS AE18 = 29.4 SQ IN

FNIN1 = LBS XNL = RPM = XNH = RPM = 1508.4 FPS AE8 = 4.6 SQ IN
 FAPAMB = LBS XNLB = RPM = XNHR = RPM = 2455.6 FPS AE18 = 29.4 SQ IN
 CORR FAN SPEED = 0.0
 PRINT - DAT 7FD-1141 TAPE = X11411 TEST PT NO = 1141 NC = AFORS CORR FAN SPEED = 0.0

IDENTIFICATION - MODEL 83F-400-1142 X1142C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 94.6 | 94.2 | 89.4 | 88.5 | 87.8 | 91.2 | 92.3 | 94.0 | 94.2 | 94.2 | 101.1 | 101.6 | 89.7 | 136.9 |
| 63 | 96.8 | 97.5 | 98.6 | 95.1 | 94.5 | 97.1 | 99.0 | 98.4 | 97.6 | 98.1 | 102.8 | 101.7 | 98.1 | 140.4 |
| 80 | 96.8 | 101.1 | 96.8 | 97.4 | 98.5 | 101.6 | 98.7 | 99.1 | 99.1 | 98.4 | 103.0 | 103.0 | 90.6 | 141.7 |
| 100 | 95.7 | 101.0 | 96.3 | 95.8 | 98.1 | 101.5 | 100.4 | 103.0 | 99.8 | 102.1 | 103.0 | 108.4 | 93.3 | 143.3 |
| 125 | 92.9 | 94.2 | 96.7 | 96.5 | 99.3 | 100.9 | 99.6 | 99.2 | 98.7 | 101.8 | 108.6 | 112.8 | 98.2 | 145.2 |
| 160 | 90.7 | 87.5 | 93.0 | 90.0 | 92.4 | 96.2 | 101.6 | 97.3 | 99.5 | 104.1 | 108.9 | 112.9 | 102.8 | 145.2 |
| 200 | 91.3 | 92.3 | 91.3 | 89.9 | 93.2 | 96.3 | 98.7 | 99.4 | 103.6 | 103.9 | 110.3 | 116.0 | 105.6 | 147.3 |
| 250 | 89.8 | 92.1 | 92.6 | 91.6 | 93.7 | 97.1 | 98.0 | 100.9 | 104.1 | 109.9 | 115.3 | 119.0 | 108.4 | 150.8 |
| 315 | 90.8 | 92.1 | 91.1 | 91.4 | 94.0 | 97.6 | 101.0 | 100.7 | 105.6 | 112.0 | 117.1 | 119.8 | 109.7 | 152.1 |
| 400 | 92.1 | 92.6 | 93.9 | 91.7 | 95.5 | 97.4 | 109.0 | 101.4 | 106.1 | 113.9 | 119.8 | 121.2 | 110.2 | 154.1 |
| 500 | 92.3 | 93.9 | 94.9 | 93.2 | 96.0 | 99.6 | 100.0 | 103.4 | 107.1 | 116.7 | 121.6 | 121.3 | 108.9 | 155.1 |
| 630 | 93.5 | 94.3 | 96.1 | 93.6 | 96.2 | 99.8 | 100.2 | 104.4 | 108.3 | 118.2 | 123.0 | 120.0 | 107.6 | 155.8 |
| 800 | 96.8 | 96.9 | 96.9 | 95.4 | 97.8 | 100.9 | 102.3 | 105.7 | 110.4 | 118.0 | 123.8 | 119.0 | 106.4 | 156.2 |
| 1000 | 104.2 | 102.5 | 101.8 | 98.8 | 99.7 | 102.6 | 102.4 | 106.8 | 111.1 | 118.1 | 123.5 | 117.4 | 105.6 | 155.9 |
| 1250 | 106.2 | 107.4 | 105.5 | 101.9 | 102.1 | 104.0 | 103.6 | 107.5 | 112.2 | 118.0 | 122.9 | 114.8 | 105.3 | 155.6 |
| 1600 | 107.1 | 106.2 | 107.9 | 105.5 | 105.0 | 105.6 | 104.7 | 108.3 | 112.4 | 117.0 | 122.1 | 113.5 | 104.4 | 155.0 |
| 2000 | 106.0 | 106.1 | 106.7 | 105.6 | 107.2 | 107.8 | 105.3 | 108.9 | 112.7 | 118.3 | 120.8 | 110.4 | 103.9 | 154.7 |
| 2500 | 103.4 | 104.5 | 104.8 | 104.3 | 105.7 | 109.3 | 107.0 | 108.3 | 112.2 | 118.2 | 117.7 | 109.3 | 104.2 | 153.6 |
| 3150 | 104.3 | 104.9 | 104.1 | 102.6 | 104.7 | 107.8 | 107.7 | 109.4 | 112.7 | 117.1 | 115.8 | 107.2 | 102.1 | 152.7 |
| 4000 | 103.5 | 104.1 | 104.7 | 102.6 | 104.3 | 107.0 | 106.4 | 110.0 | 111.9 | 114.6 | 114.3 | 104.8 | 100.4 | 151.5 |
| 5000 | 103.2 | 104.2 | 105.1 | 102.8 | 104.3 | 106.0 | 106.4 | 109.2 | 110.5 | 113.8 | 112.1 | 102.9 | 98.7 | 150.6 |
| 6300 | 102.4 | 104.3 | 104.9 | 103.7 | 105.5 | 106.7 | 106.0 | 109.0 | 110.2 | 111.7 | 109.4 | 101.1 | 97.9 | 150.0 |
| 8000 | 101.0 | 102.7 | 104.2 | 102.9 | 105.3 | 106.9 | 105.1 | 107.2 | 108.7 | 109.6 | 107.3 | 100.0 | 96.0 | 149.0 |
| 10000 | 100.7 | 102.6 | 103.3 | 102.9 | 104.7 | 107.2 | 106.0 | 106.7 | 107.9 | 108.6 | 105.2 | 98.4 | 94.9 | 149.1 |
| 12500 | 99.2 | 99.7 | 101.8 | 101.4 | 104.2 | 106.8 | 105.5 | 104.8 | 105.4 | 102.6 | 97.0 | 93.2 | 148.4 | 148.4 |
| 16000 | 97.5 | 99.5 | 100.2 | 100.2 | 102.3 | 105.3 | 103.3 | 104.2 | 104.1 | 103.0 | 100.3 | 94.6 | 89.8 | 148.1 |
| 20000 | 94.4 | 97.3 | 97.4 | 97.9 | 100.2 | 102.2 | 101.8 | 100.9 | 100.8 | 99.7 | 97.2 | 91.9 | 86.6 | 147.1 |
| 25000 | 91.8 | 93.2 | 94.2 | 95.1 | 96.7 | 101.1 | 99.5 | 98.2 | 97.7 | 94.6 | 92.5 | 89.3 | 82.9 | 146.8 |
| 31500 | 88.0 | 89.5 | 90.8 | 92.1 | 93.2 | 96.6 | 95.3 | 94.3 | 94.1 | 90.4 | 88.8 | 85.4 | 78.2 | 146.0 |
| 40000 | 82.2 | 85.1 | 86.3 | 87.2 | 87.9 | 92.8 | 90.6 | 90.3 | 90.6 | 87.1 | 85.2 | 81.2 | 74.3 | 145.8 |
| 50000 | 76.3 | 78.4 | 80.4 | 81.7 | 82.5 | 88.1 | 85.2 | 84.7 | 84.3 | 81.1 | 78.9 | 76.1 | 68.0 | 144.7 |
| 63000 | 69.4 | 73.0 | 76.3 | 75.9 | 77.5 | 82.6 | 78.9 | 79.4 | 79.2 | 76.9 | 73.1 | 69.2 | 62.0 | 144.6 |
| 80000 | 61.9 | 65.3 | 69.0 | 68.0 | 70.0 | 77.1 | 71.8 | 72.6 | 71.5 | 69.7 | 66.2 | 62.8 | 54.1 | 144.7 |

ORIGINAL PAGE IS
OF POOR QUALITY

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| QASPL | 115.4 | 116.1 | 116.4 | 114.9 | 116.5 | 118.7 | 118.4 | 120.1 | 123.0 | 128.4 | 132.2 | 129.3 | 118.6 | 166.6 |
| PNL | 127.8 | 128.5 | 128.7 | 127.1 | 128.7 | 131.4 | 131.2 | 133.3 | 136.1 | 140.7 | 142.5 | 137.1 | 128.8 | |
| PNLT | 127.8 | 129.5 | 128.7 | 127.7 | 129.4 | 131.4 | 132.6 | 133.9 | 136.1 | 140.7 | 142.5 | 137.1 | 128.8 | |
| DBA | 115.4 | 115.9 | 116.2 | 114.5 | 115.8 | 117.9 | 117.2 | 119.7 | 122.9 | 128.2 | 131.6 | 126.4 | 116.1 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH166 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.48 PAMB HG = 29.09 RELHUM = 82.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNN1 = LBS XNL = RPM XNH = RPM VB = 1512.8 FPS AE8 = 4.6 SO IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2459.2 FPS AE18 = 23.4 SO IN

RUNPT = 83F-400-1142 TAPE = X1142C TEST PT NO = 1142 NC = AE085 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1142 X1142F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | | | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | |
| 125 | | | | | | | | | | | | | | |
| 160 | | | | | | | | | | | | | | |
| 200 | | | | | | | | | | | | | | |
| 250 | 97.4 | 98.3 | 97.4 | 94.8 | 95.3 | 97.1 | 96.2 | 97.3 | 103.4 | 109.2 | 114.2 | 117.6 | 109.5 | 149.7 |
| 315 | 97.4 | 98.3 | 97.4 | 94.8 | 95.8 | 97.8 | 100.1 | 98.7 | 104.0 | 111.3 | 117.2 | 119.7 | 111.4 | 152.0 |
| 400 | 98.5 | 98.5 | 96.1 | 94.8 | 97.2 | 97.6 | 108.1 | 99.4 | 105.0 | 114.1 | 119.1 | 120.4 | 111.7 | 153.5 |
| 500 | 99.0 | 98.5 | 98.5 | 94.9 | 97.9 | 100.0 | 99.0 | 101.3 | 106.2 | 115.6 | 120.7 | 119.8 | 112.4 | 154.2 |
| 630 | 100.0 | 100.3 | 99.9 | 96.6 | 98.1 | 100.2 | 99.2 | 102.1 | 108.7 | 116.0 | 122.3 | 120.3 | 114.0 | 155.3 |
| 800 | 100.9 | 100.5 | 101.0 | 97.1 | 99.5 | 101.4 | 101.4 | 103.5 | 109.9 | 116.7 | 122.8 | 120.2 | 115.9 | 155.8 |
| 1000 | 102.5 | 101.9 | 100.9 | 98.3 | 101.3 | 103.2 | 101.7 | 104.8 | 111.1 | 116.7 | 122.2 | 117.6 | 115.5 | 155.1 |
| 1250 | 111.2 | 108.3 | 106.1 | 101.7 | 103.9 | 104.8 | 103.0 | 105.6 | 111.5 | 115.8 | 121.6 | 116.5 | 115.0 | 155.0 |
| 1600 | 113.2 | 113.2 | 109.9 | 104.9 | 106.9 | 106.7 | 104.3 | 106.6 | 112.0 | 117.3 | 120.3 | 113.3 | 114.4 | 155.1 |
| 2000 | 113.4 | 111.4 | 111.9 | 108.4 | 109.5 | 109.1 | 105.1 | 107.4 | 112.0 | 117.8 | 118.0 | 113.1 | 115.4 | 154.9 |
| 2500 | 111.3 | 110.8 | 110.7 | 108.8 | 108.6 | 110.9 | 107.2 | 107.3 | 112.5 | 117.0 | 116.4 | 111.2 | 113.7 | 154.2 |
| 3150 | 111.0 | 111.1 | 110.2 | 108.4 | 107.8 | 109.8 | 108.3 | 108.7 | 112.7 | 115.0 | 115.2 | 109.0 | 112.1 | 153.4 |
| 4000 | 110.5 | 110.5 | 109.0 | 106.6 | 107.9 | 109.6 | 107.6 | 109.9 | 111.3 | 114.2 | 112.9 | 106.8 | 109.8 | 152.5 |
| 5000 | 110.2 | 110.2 | 110.1 | 107.1 | 108.2 | 109.0 | 107.9 | 109.2 | 111.9 | 113.0 | 111.3 | 106.5 | 111.0 | 152.4 |
| 6300 | 109.5 | 110.2 | 110.4 | 107.3 | 109.6 | 109.7 | 108.2 | 109.8 | 110.9 | 111.5 | 109.8 | 106.1 | 109.9 | 152.4 |
| 8000 | 109.7 | 110.9 | 110.6 | 108.4 | 109.4 | 109.9 | 107.3 | 108.3 | 110.8 | 111.3 | 108.7 | 105.4 | 109.8 | 152.7 |
| 10000 | 108.2 | 109.1 | 109.8 | 107.5 | 108.8 | 110.2 | 108.4 | 108.2 | 109.4 | 110.1 | 107.5 | 105.4 | 109.0 | 152.5 |
| 12500 | 107.5 | 108.7 | 108.6 | 107.1 | 108.8 | 109.8 | 108.0 | 106.7 | 108.2 | 107.1 | 105.3 | 103.2 | 106.0 | 152.3 |
| 16000 | 108.3 | 107.6 | 108.2 | 106.3 | 106.3 | 108.3 | 105.6 | 105.8 | 105.5 | 104.6 | 103.1 | 101.3 | 103.5 | 152.2 |
| 20000 | 103.4 | 104.7 | 104.5 | 103.5 | 104.2 | 105.2 | 104.1 | 102.6 | 101.0 | 97.7 | 96.2 | 96.1 | 96.6 | 150.6 |
| 25000 | 99.7 | 101.9 | 101.1 | 100.6 | 101.3 | 104.1 | 101.0 | 98.4 | 99.2 | 95.8 | 95.3 | 95.4 | 95.2 | 150.4 |
| 31500 | 99.1 | 99.3 | 98.8 | 98.2 | 97.8 | 99.6 | 97.0 | 95.1 | 97.2 | 94.1 | 93.3 | 93.1 | 93.7 | 150.6 |
| 40000 | 94.5 | 94.8 | 94.6 | 94.3 | 92.5 | 95.8 | 92.6 | 91.5 | 90.1 | 87.0 | 85.7 | 86.2 | 85.2 | 149.9 |
| 50000 | 88.3 | 89.9 | 89.7 | 89.1 | 87.1 | 86.8 | 85.1 | 86.8 | 84.8 | 82.2 | 82.1 | 82.5 | 149.3 | |
| 63000 | 81.4 | 82.3 | 82.9 | 82.6 | 82.1 | 85.6 | 80.8 | 80.4 | 78.9 | 76.7 | 73.6 | 73.3 | 71.6 | 148.3 |
| 80000 | 73.1 | 75.4 | 77.2 | 75.3 | 74.6 | 80.1 | 73.2 | 72.6 | 69.1 | 66.9 | 63.8 | 63.4 | 61.7 | 148.3 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH166 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 400. FPS
 TAPLHA = SB599 TEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.48 PAMB HG = 29.09 RELHUM = 82.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1512.8 FPS AEB = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2459.2 FPS AE18 = 23.4 SQ IN
 PUMPT - 83F 400 1142 TAPF - 1142F TEST PT NO = 1142 NC = AF085 CORR FAN SPEED = RPM

DATPROC - FLTRAN

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H., STD DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1142 X11421

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 72.8 | 75.3 | 75.5 | 73.6 | 74.5 | 76.4 | 75.4 | 76.1 | 81.5 | 86.2 | 89.6 | 90.8 | 79.5 | 164.6 |
| 63 | 72.8 | 75.3 | 75.4 | 73.6 | 75.0 | 77.1 | 79.3 | 77.5 | 82.0 | 88.3 | 92.6 | 92.9 | 81.3 | 166.9 |
| 80 | 73.9 | 75.4 | 74.1 | 73.5 | 76.4 | 76.9 | 87.2 | 78.1 | 82.9 | 91.0 | 94.4 | 93.5 | 81.5 | 169.4 |
| 100 | 74.2 | 75.3 | 76.4 | 73.5 | 77.0 | 79.2 | 78.1 | 79.9 | 84.2 | 92.5 | 96.0 | 92.9 | 82.0 | 169.1 |
| 125 | 75.2 | 77.0 | 77.7 | 75.2 | 77.1 | 79.4 | 78.2 | 80.7 | 86.6 | 92.7 | 97.5 | 93.2 | 83.4 | 170.2 |
| 160 | 75.8 | 77.1 | 78.7 | 75.5 | 78.4 | 80.4 | 80.2 | 82.0 | 87.6 | 93.3 | 97.8 | 92.8 | 84.8 | 170.7 |
| 200 | 77.3 | 78.2 | 78.4 | 76.6 | 80.1 | 82.0 | 80.4 | 83.1 | 88.6 | 93.0 | 96.9 | 89.9 | 84.0 | 170.0 |
| 250 | 85.6 | 84.3 | 83.4 | 79.8 | 82.4 | 83.4 | 81.5 | 83.6 | 88.8 | 91.9 | 96.0 | 88.4 | 82.8 | 169.9 |
| 315 | 87.1 | 89.0 | 86.8 | 82.6 | 85.2 | 85.0 | 82.5 | 84.4 | 89.0 | 93.0 | 94.3 | 84.6 | 81.4 | 170.0 |
| 400 | 86.8 | 86.7 | 88.5 | 85.8 | 87.3 | 87.1 | 83.0 | 84.8 | 88.6 | 93.1 | 91.4 | 83.7 | 81.4 | 169.8 |
| 500 | 84.2 | 85.6 | 86.9 | 85.8 | 86.1 | 88.6 | 84.7 | 84.3 | 89.1 | 91.8 | 89.2 | 81.1 | 78.7 | 169.1 |
| 630 | 83.3 | 85.4 | 86.0 | 85.1 | 85.0 | 87.2 | 85.5 | 85.4 | 88.4 | 89.4 | 87.5 | 78.2 | 75.9 | 168.3 |
| 800 | 82.1 | 84.4 | 84.4 | 82.9 | 84.7 | 86.6 | 84.4 | 86.2 | 86.6 | 88.0 | 84.5 | 75.1 | 72.3 | 167.4 |
| 1000 | 81.1 | 83.5 | 84.9 | 82.9 | 84.6 | 85.6 | 84.3 | 85.1 | 86.8 | 86.3 | 82.3 | 73.9 | 72.1 | 167.3 |
| 1250 | 79.7 | 82.8 | 84.7 | 82.6 | 85.5 | 85.9 | 84.1 | 85.1 | 85.2 | 84.2 | 80.0 | 72.3 | 69.2 | 167.3 |
| 1600 | 78.5 | 82.5 | 84.0 | 83.0 | 84.6 | 85.3 | 82.6 | 82.9 | 84.2 | 82.9 | 77.5 | 69.9 | 66.3 | 167.6 |
| 2000 | 75.3 | 79.3 | 82.0 | 81.0 | 83.1 | 84.7 | 82.6 | 81.7 | 81.6 | 80.3 | 74.6 | 67.4 | 61.8 | 167.4 |
| 2500 | 71.9 | 76.7 | 79.0 | 79.1 | 81.6 | 82.8 | 80.8 | 78.6 | 78.6 | 75.2 | 69.7 | 61.4 | 52.9 | 167.2 |
| 3150 | 68.3 | 72.2 | 75.8 | 75.7 | 76.7 | 79.0 | 76.0 | 75.1 | 73.1 | 69.0 | 63.1 | 53.6 | 41.0 | 167.1 |
| 4000 | 55.7 | 63.2 | 66.8 | 68.3 | 70.3 | 71.6 | 70.1 | 67.3 | 63.4 | 56.2 | 48.5 | 38.1 | 18.3 | 165.5 |
| 5000 | 40.6 | 51.2 | 55.6 | 58.3 | 60.7 | 64.0 | 60.4 | 56.1 | 53.7 | 45.1 | 36.2 | 22.0 | | 165.3 |
| 6300 | 21.0 | 33.1 | 40.0 | 43.8 | 45.9 | 48.4 | 45.1 | 40.7 | 38.3 | 27.9 | 15.3 | | | 165.5 |
| 8000 | | 2.5 | 13.1 | 19.4 | 21.1 | 25.6 | 21.2 | 16.6 | 8.6 | | | | | 164.8 |
| 10000 | | | | | | | | | | | | | | 164.2 |
| 12500 | | | | | | | | | | | | | | 163.2 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS OF POOR QUALITY

QASPL 94.1 95.5 96.1 94.1 95.8 97.0 95.4 95.7 99.1 103.0 105.6 101.4 92.8 182.0
 PNLT 100.3 102.5 103.9 102.6 104.7 106.0 104.1 103.8 105.5 107.8 108.0 101.8 95.3
 PNLT 100.9 103.2 104.5 103.1 105.2 106.0 104.1 103.8 106.3 107.8 108.0 101.8 96.5
 DBA 90.5 92.7 93.9 92.4 94.0 95.3 93.0 93.4 95.2 96.7 95.9 88.4 84.1

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-11/NAS3-22137

VEHICLE = ADH166 TEST DATE = 03-28-83 LOCAT = C41 ANECH CH CONFIG = 11 MODEL = CO FLTVEL = 400. FPS
 TAPLHA = SB59 IEQA = NO MPH EXT DIST = 2400.0 FT EXT CONFIG = SL TAMB F = 36.48 PAMB HG = 29.09 RELHUM = 82.8 PCT
 WIND DIR = DEG WIND VEL = MPH RPM XNH XNHR = RPM XNHL XNLR = RPM XNHL XNLR = RPM XNHL XNLR = RPM XNHL XNLR =
 FNIN1 = LBS XNL = RPM XNH = 1512.8 FPS AE8 = 4.6 SQ IN
 FNFRAMB = LBS XNLR = RPM XNHR = 2459.2 FPS AE18 = 23.4 SQ IN

TAS-12 (Shield to Outer Stream Velocity Ratio at
Takeoff is 0.83).

IDENTIFICATION - MODEL 83F-ZER-1203 X1203C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.1 | 87.4 | 87.4 | 80.7 | 81.3 | 84.2 | 85.3 | 88.7 | 86.2 | 89.7 | 92.4 | 94.6 | 92.0 | 130.2 |
| 63 | 87.8 | 93.8 | 97.6 | 90.6 | 88.5 | 90.6 | 95.5 | 95.6 | 90.6 | 94.1 | 93.8 | 98.5 | 98.4 | 136.3 |
| 80 | 88.5 | 93.0 | 90.6 | 89.0 | 93.3 | 91.7 | 92.1 | 92.6 | 92.9 | 95.8 | 96.0 | 96.0 | 82.6 | 134.3 |
| 100 | 88.7 | 94.5 | 90.5 | 88.5 | 91.1 | 94.8 | 93.1 | 95.8 | 93.8 | 97.6 | 98.5 | 101.6 | 85.3 | 137.1 |
| 125 | 84.9 | 89.2 | 91.4 | 89.7 | 93.1 | 95.9 | 93.3 | 94.5 | 93.7 | 97.3 | 104.1 | 105.8 | 89.7 | 139.4 |
| 160 | 83.8 | 85.0 | 88.5 | 84.5 | 87.6 | 91.2 | 94.1 | 98.5 | 97.7 | 100.1 | 107.9 | 111.8 | 113.8 | 105.7 |
| 200 | 85.8 | 86.1 | 88.8 | 84.6 | 88.2 | 92.6 | 93.0 | 94.4 | 97.3 | 100.1 | 106.0 | 109.5 | 98.4 | 141.6 |
| 250 | 85.5 | 88.8 | 89.6 | 86.9 | 90.2 | 93.6 | 94.2 | 96.4 | 98.6 | 105.1 | 110.3 | 112.5 | 101.6 | 145.1 |
| 315 | 86.6 | 88.9 | 89.1 | 86.7 | 90.5 | 95.1 | 96.0 | 96.9 | 99.9 | 106.0 | 110.8 | 113.0 | 104.7 | 145.8 |
| 400 | 87.8 | 89.6 | 90.4 | 86.9 | 91.2 | 94.1 | 98.5 | 97.7 | 100.1 | 107.9 | 111.8 | 113.8 | 105.7 | 146.8 |
| 500 | 87.6 | 90.1 | 91.6 | 87.9 | 92.0 | 95.9 | 95.8 | 98.9 | 101.6 | 109.2 | 113.1 | 114.3 | 106.9 | 147.7 |
| 630 | 88.5 | 90.6 | 91.6 | 88.4 | 93.2 | 95.8 | 96.5 | 99.4 | 101.8 | 109.7 | 112.8 | 113.5 | 107.6 | 147.5 |
| 800 | 90.3 | 91.1 | 91.9 | 88.9 | 94.3 | 96.6 | 97.3 | 100.7 | 103.4 | 109.7 | 112.6 | 112.3 | 108.4 | 147.3 |
| 1000 | 93.0 | 93.5 | 93.6 | 90.6 | 94.9 | 97.8 | 97.4 | 101.1 | 103.6 | 109.4 | 111.3 | 111.2 | 108.1 | 146.7 |
| 1250 | 91.2 | 94.5 | 94.0 | 90.9 | 94.6 | 97.2 | 97.4 | 101.0 | 104.7 | 109.1 | 109.7 | 109.1 | 106.8 | 145.7 |
| 1600 | 91.6 | 92.6 | 93.9 | 90.8 | 95.3 | 98.7 | 98.2 | 102.1 | 104.9 | 106.8 | 109.6 | 108.8 | 105.5 | 145.2 |
| 2000 | 91.6 | 93.1 | 94.0 | 90.7 | 94.8 | 97.9 | 98.1 | 101.9 | 104.5 | 107.1 | 108.3 | 106.4 | 103.4 | 144.4 |
| 2500 | 90.2 | 92.6 | 92.6 | 90.3 | 94.2 | 97.3 | 97.8 | 101.4 | 103.5 | 106.8 | 107.1 | 104.1 | 100.1 | 143.4 |
| 3150 | 89.1 | 92.0 | 92.7 | 89.5 | 93.6 | 97.4 | 97.5 | 101.0 | 103.1 | 105.0 | 104.7 | 100.3 | 96.5 | 142.0 |
| 4000 | 87.4 | 91.0 | 92.1 | 89.0 | 93.5 | 97.2 | 97.6 | 100.4 | 102.3 | 102.8 | 102.0 | 97.2 | 93.8 | 140.7 |
| 5000 | 86.4 | 89.5 | 91.4 | 88.7 | 92.7 | 96.2 | 96.6 | 99.7 | 100.7 | 101.4 | 100.1 | 95.6 | 91.4 | 139.5 |
| 6300 | 85.2 | 89.6 | 90.2 | 87.5 | 91.8 | 96.0 | 96.0 | 99.2 | 100.0 | 99.8 | 97.7 | 93.2 | 90.1 | 138.7 |
| 8000 | 83.6 | 87.8 | 89.1 | 86.5 | 91.4 | 94.5 | 94.7 | 97.0 | 97.8 | 96.7 | 95.9 | 91.8 | 88.6 | 137.1 |
| 10000 | 83.3 | 86.4 | 88.2 | 86.2 | 90.1 | 94.5 | 93.8 | 96.3 | 97.1 | 95.1 | 94.8 | 91.2 | 87.5 | 136.9 |
| 12500 | 80.9 | 84.8 | 86.6 | 84.7 | 88.7 | 93.3 | 92.5 | 93.8 | 94.9 | 93.3 | 91.8 | 89.5 | 86.0 | 135.8 |
| 16000 | 79.0 | 84.4 | 85.3 | 83.8 | 87.6 | 90.8 | 90.9 | 92.1 | 92.9 | 90.6 | 89.2 | 86.9 | 83.1 | 135.1 |
| 20000 | 76.2 | 81.8 | 82.9 | 81.0 | 85.2 | 87.5 | 88.3 | 89.0 | 88.8 | 87.5 | 86.8 | 85.0 | 80.7 | 133.9 |
| 25000 | 73.3 | 78.4 | 79.2 | 78.6 | 81.2 | 86.3 | 85.5 | 85.0 | 86.4 | 83.8 | 83.5 | 81.6 | 77.2 | 133.3 |
| 31500 | 69.2 | 73.9 | 75.9 | 75.3 | 77.7 | 81.8 | 81.3 | 81.5 | 81.9 | 80.2 | 79.7 | 76.9 | 73.5 | 132.4 |
| 40000 | 63.8 | 69.7 | 71.6 | 70.7 | 72.4 | 78.3 | 76.3 | 76.5 | 78.7 | 76.3 | 76.1 | 72.4 | 68.1 | 132.2 |
| 50000 | 57.9 | 63.2 | 65.3 | 64.5 | 66.3 | 72.6 | 70.0 | 70.9 | 72.0 | 69.3 | 69.5 | 66.6 | 62.4 | 130.4 |
| 63000 | 51.6 | 57.2 | 60.2 | 58.5 | 61.9 | 67.2 | 63.2 | 65.2 | 66.6 | 62.7 | 63.4 | 59.3 | 54.2 | 130.0 |
| 80000 | 46.2 | 50.1 | 52.3 | 49.7 | 54.0 | 60.4 | 56.5 | 57.0 | 57.5 | 55.3 | 55.5 | 51.3 | 45.5 | 129.1 |
| 0ASPL | 102.3 | 105.1 | 105.9 | 102.6 | 106.4 | 109.7 | 110.0 | 112.7 | 114.9 | 119.2 | 122.0 | 122.7 | 116.7 | 157.6 |
| PNL | 114.3 | 117.0 | 117.8 | 114.7 | 118.7 | 122.2 | 122.5 | 125.5 | 127.4 | 130.5 | 131.7 | 130.6 | 125.8 | |
| PNLT | 114.3 | 117.5 | 117.8 | 115.2 | 119.3 | 122.2 | 122.5 | 125.5 | 127.4 | 130.5 | 132.3 | 130.6 | 125.8 | |
| DBA | 101.3 | 103.5 | 104.1 | 101.2 | 105.1 | 108.7 | 108.9 | 112.2 | 114.6 | 118.3 | 120.3 | 120.1 | 115.6 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|----------------------|
| VEHICL = ADH18G | TEST DATE = 03-30-83 | LOCAT = C41 ANECH CH | CONFIG = 12 | MODEL = C0 | FLTVEL = 0. FPS |
| IAPLHA = SB59 | DEG WIND VEL = NO | PWL AREA = FULL SPHERE | TAMB F = 43.81 | PAMB HG = 29.57 | RELHUM = 45.7 PCT |
| WIND DIR = | DEG WIND VEL = | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNIN1 = | LBS XNL = | RPM = | RPM = | V8 = 1104.8 FPS | AE8 = 4.6 SQ IN |
| FNRAMB = | LBS XNLR = | RPM = | RPM = | V18 = 1792.9 FPS | AE18 = 23.4 SQ IN |
| RUNPT = 83F-ZER-1203 | TAPE = | TEST PT NO = 1203 | NC = | AE086 = | CORR FAN SPEED = RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
55.0 DEG F., 70 PERCENT R.H. STD DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1203 X1203F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.1 | 87.4 | 87.4 | 80.7 | 81.3 | 84.2 | 85.3 | 88.7 | 86.2 | 89.7 | 92.4 | 94.6 | 92.0 | 130.2 |
| 63 | 87.8 | 93.8 | 97.6 | 90.6 | 88.5 | 90.6 | 95.5 | 95.6 | 90.6 | 94.1 | 93.8 | 98.5 | 98.4 | 136.3 |
| 80 | 88.5 | 93.3 | 90.6 | 87.6 | 89.0 | 93.3 | 91.7 | 92.1 | 92.6 | 92.9 | 85.8 | 96.0 | 82.6 | 134.3 |
| 100 | 80.7 | 94.5 | 90.5 | 88.5 | 91.1 | 94.8 | 93.1 | 95.8 | 93.8 | 97.6 | 98.5 | 101.6 | 85.3 | 137.1 |
| 125 | 84.9 | 89.2 | 91.4 | 89.7 | 93.1 | 93.1 | 93.3 | 94.5 | 93.7 | 97.3 | 104.1 | 105.8 | 89.7 | 139.4 |
| 160 | 83.9 | 85.0 | 88.5 | 84.5 | 87.6 | 91.2 | 93.4 | 92.0 | 93.5 | 98.1 | 103.4 | 106.1 | 95.0 | 138.9 |
| 200 | 85.8 | 86.1 | 88.8 | 84.6 | 88.2 | 92.6 | 93.0 | 94.4 | 97.3 | 100.1 | 106.0 | 109.5 | 98.4 | 141.6 |
| 250 | 85.5 | 88.8 | 89.8 | 86.9 | 90.2 | 93.6 | 94.2 | 96.4 | 98.6 | 105.1 | 110.3 | 112.5 | 101.6 | 145.1 |
| 315 | 86.6 | 88.9 | 89.1 | 86.7 | 90.5 | 95.1 | 96.0 | 96.9 | 99.9 | 106.0 | 110.8 | 113.0 | 104.7 | 145.8 |
| 400 | 87.8 | 89.6 | 90.4 | 86.9 | 91.2 | 94.1 | 98.5 | 97.7 | 100.1 | 107.9 | 111.8 | 113.8 | 105.7 | 146.8 |
| 500 | 87.6 | 90.1 | 91.6 | 87.9 | 92.0 | 95.9 | 95.8 | 98.9 | 101.6 | 109.2 | 113.1 | 114.3 | 106.9 | 147.7 |
| 630 | 88.5 | 90.6 | 91.6 | 88.4 | 93.2 | 95.8 | 96.5 | 99.4 | 101.8 | 109.7 | 112.8 | 113.5 | 107.6 | 147.5 |
| 800 | 90.3 | 91.1 | 91.9 | 88.9 | 94.3 | 96.6 | 97.3 | 100.7 | 103.4 | 109.7 | 112.6 | 112.3 | 108.4 | 147.3 |
| 1000 | 93.0 | 93.5 | 93.6 | 90.6 | 94.9 | 97.8 | 97.4 | 101.1 | 103.6 | 109.4 | 111.2 | 111.2 | 108.1 | 146.7 |
| 1250 | 91.2 | 94.5 | 94.0 | 90.9 | 94.6 | 97.2 | 97.4 | 101.0 | 104.7 | 109.1 | 109.7 | 109.1 | 106.8 | 145.7 |
| 1600 | 91.6 | 92.8 | 93.9 | 90.8 | 95.3 | 98.7 | 98.2 | 102.1 | 104.9 | 106.8 | 109.6 | 108.8 | 105.5 | 145.2 |
| 2000 | 91.6 | 93.1 | 94.0 | 90.7 | 94.8 | 97.9 | 98.1 | 101.9 | 104.5 | 107.1 | 108.3 | 106.4 | 103.4 | 144.4 |
| 2500 | 90.2 | 92.5 | 92.6 | 90.3 | 94.2 | 97.3 | 97.8 | 101.4 | 103.5 | 106.8 | 107.1 | 104.1 | 100.1 | 143.4 |
| 3150 | 89.1 | 92.0 | 92.7 | 89.5 | 93.6 | 97.4 | 97.5 | 101.0 | 103.1 | 105.0 | 104.7 | 100.3 | 96.5 | 142.0 |
| 4000 | 87.4 | 91.0 | 92.1 | 89.0 | 93.5 | 97.2 | 97.6 | 100.4 | 102.3 | 102.8 | 102.0 | 97.2 | 93.8 | 140.7 |
| 5000 | 86.4 | 89.5 | 91.4 | 88.7 | 92.7 | 96.2 | 96.6 | 99.7 | 100.7 | 101.4 | 100.1 | 95.6 | 91.4 | 139.5 |
| 6300 | 85.2 | 89.6 | 90.2 | 87.5 | 91.8 | 96.0 | 96.0 | 99.2 | 100.0 | 99.8 | 97.7 | 93.2 | 90.1 | 138.7 |
| 8000 | 83.6 | 87.8 | 89.1 | 86.5 | 91.4 | 94.5 | 94.7 | 97.0 | 97.8 | 96.7 | 85.9 | 91.8 | 88.6 | 137.1 |
| 10000 | 83.3 | 86.4 | 88.2 | 86.2 | 90.1 | 94.6 | 93.8 | 96.3 | 97.1 | 95.1 | 94.8 | 91.2 | 87.5 | 136.9 |
| 12500 | 80.9 | 84.8 | 86.6 | 84.7 | 88.7 | 93.3 | 92.5 | 93.8 | 94.9 | 93.3 | 91.8 | 89.5 | 86.0 | 135.8 |
| 16000 | 79.0 | 84.4 | 85.3 | 83.8 | 87.6 | 90.8 | 90.9 | 92.1 | 92.9 | 90.6 | 89.2 | 86.9 | 83.1 | 135.1 |
| 20000 | 76.2 | 81.8 | 82.9 | 81.0 | 85.2 | 87.5 | 88.3 | 89.0 | 88.8 | 87.5 | 86.8 | 85.0 | 80.7 | 133.9 |
| 25000 | 73.3 | 78.4 | 79.2 | 78.6 | 81.2 | 86.3 | 85.5 | 85.0 | 86.4 | 83.8 | 83.5 | 81.6 | 77.2 | 133.3 |
| 31500 | 69.2 | 73.9 | 75.9 | 75.3 | 77.7 | 81.8 | 81.3 | 81.5 | 81.9 | 80.2 | 79.7 | 76.9 | 73.5 | 132.4 |
| 40000 | 63.8 | 69.7 | 71.6 | 70.7 | 72.4 | 78.3 | 76.3 | 76.5 | 78.7 | 76.3 | 76.1 | 72.4 | 68.1 | 132.2 |
| 50000 | 57.9 | 63.2 | 65.3 | 64.5 | 66.3 | 72.6 | 70.0 | 70.9 | 72.0 | 69.3 | 69.5 | 66.6 | 62.4 | 130.4 |
| 63000 | 51.6 | 57.2 | 60.2 | 58.5 | 61.9 | 67.2 | 63.2 | 65.2 | 66.6 | 62.7 | 63.4 | 59.3 | 54.2 | 130.0 |
| 80000 | 46.2 | 50.1 | 52.3 | 49.7 | 54.0 | 60.4 | 56.5 | 57.0 | 57.5 | 55.3 | 55.5 | 51.3 | 45.5 | 129.1 |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GASPL | 102.3 | 105.1 | 105.9 | 102.6 | 106.4 | 109.7 | 110.0 | 112.7 | 114.9 | 119.2 | 122.0 | 122.7 | 116.7 | 167.6 |
| PWL | 114.3 | 117.0 | 117.6 | 114.7 | 118.7 | 122.2 | 122.5 | 125.5 | 127.4 | 130.5 | 131.7 | 130.6 | 125.8 | |
| PWLT | 114.3 | 117.5 | 117.8 | 115.2 | 119.3 | 122.2 | 122.5 | 125.5 | 127.4 | 130.5 | 132.3 | 130.6 | 125.8 | |
| DPA | 168.2 | 172.7 | 175.2 | 173.2 | 176.8 | 182.8 | 179.1 | 181.1 | 178.2 | 178.5 | 174.6 | 169.5 | | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1 000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS 12/NAS3-22137

VEHICL = ADH186 TEST DATE = 03-30-83 LOCAT = C41 ANEQ CH CONFIG = 12 MODEL = CO FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA - FULL SPHERE TAMB F = 43.81 PAMB HG = 29.57 RELHUM = 45.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1104.8 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1792.9 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1203 TAPE = X1203F TEST PT NO = 1203 NC = AE08E RPM FAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1203 X12031

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------------|
| 50 | 61.0 | 65.8 | 67.6 | 65.6 | 69.4 | 72.9 | 73.4 | 75.1 | 76.6 | 82.1 | 85.7 | 85.7 | 85.7 | 71.5 160.0 |
| 63 | 62.0 | 65.8 | 67.2 | 65.4 | 69.7 | 74.4 | 75.2 | 75.7 | 77.9 | 82.9 | 86.3 | 86.2 | 86.2 | 74.5 160.7 |
| 80 | 63.2 | 66.5 | 68.4 | 65.6 | 70.4 | 73.4 | 77.6 | 76.4 | 78.1 | 84.8 | 87.2 | 86.9 | 86.9 | 75.4 161.7 |
| 100 | 62.9 | 67.0 | 69.6 | 66.6 | 71.1 | 75.1 | 74.9 | 77.6 | 79.6 | 86.1 | 88.4 | 87.3 | 87.3 | 76.5 162.6 |
| 125 | 63.7 | 67.3 | 69.4 | 67.0 | 72.2 | 75.0 | 75.5 | 78.0 | 79.7 | 86.4 | 88.0 | 86.4 | 86.4 | 77.0 162.4 |
| 160 | 65.3 | 67.7 | 69.6 | 67.4 | 73.2 | 75.7 | 76.2 | 79.1 | 81.1 | 86.3 | 87.6 | 84.9 | 84.9 | 77.4 162.2 |
| 200 | 67.7 | 69.9 | 71.1 | 68.9 | 73.7 | 75.7 | 76.2 | 79.4 | 81.1 | 85.8 | 86.0 | 83.5 | 83.5 | 76.6 161.6 |
| 250 | 65.6 | 70.6 | 71.3 | 68.9 | 73.1 | 75.9 | 75.9 | 79.1 | 82.0 | 85.2 | 84.1 | 81.0 | 81.0 | 74.6 160.6 |
| 315 | 65.5 | 68.5 | 70.9 | 68.6 | 73.5 | 77.0 | 76.5 | 79.8 | 81.9 | 82.5 | 83.6 | 80.1 | 80.1 | 72.5 160.1 |
| 400 | 65.0 | 68.4 | 70.6 | 68.1 | 72.6 | 75.9 | 76.0 | 79.3 | 81.1 | 82.4 | 81.7 | 77.0 | 77.0 | 69.4 159.3 |
| 500 | 63.1 | 67.4 | 68.8 | 67.4 | 71.8 | 75.0 | 75.3 | 78.4 | 79.7 | 81.6 | 79.9 | 74.0 | 74.0 | 65.1 158.3 |
| 630 | 61.4 | 66.3 | 68.5 | 66.2 | 70.8 | 74.7 | 74.7 | 77.7 | 78.8 | 79.3 | 77.0 | 69.5 | 69.5 | 60.3 156.9 |
| 800 | 59.0 | 64.9 | 67.4 | 65.3 | 70.3 | 74.1 | 74.4 | 76.6 | 77.6 | 76.6 | 73.6 | 65.5 | 65.5 | 56.3 155.6 |
| 1000 | 57.4 | 62.8 | 64.6 | 62.6 | 69.2 | 72.8 | 73.0 | 75.5 | 75.6 | 74.7 | 71.1 | 53.0 | 52.5 | 54.4 |
| 1250 | 55.3 | 62.3 | 64.5 | 62.9 | 67.8 | 72.1 | 72.0 | 74.6 | 74.3 | 72.4 | 67.9 | 59.4 | 49.5 | 53.6 |
| 1600 | 52.5 | 59.4 | 62.6 | 61.1 | 66.7 | 69.9 | 69.9 | 71.6 | 71.3 | 68.4 | 64.7 | 56.2 | 45.2 | 52.0 |
| 2000 | 50.3 | 56.7 | 60.5 | 59.8 | 64.4 | 69.1 | 68.1 | 69.9 | 69.3 | 65.3 | 61.9 | 53.2 | 40.2 | 51.8 |
| 2500 | 45.3 | 52.8 | 57.0 | 56.7 | 61.5 | 66.3 | 65.3 | 65.8 | 65.4 | 61.4 | 56.2 | 47.8 | 32.9 | 50.7 |
| 3150 | 39.0 | 49.0 | 52.8 | 53.2 | 58.0 | 61.6 | 61.3 | 61.4 | 60.5 | 55.3 | 49.2 | 38.2 | 20.6 | 50.0 |
| 4000 | 28.5 | 40.3 | 45.3 | 45.7 | 51.3 | 54.0 | 54.4 | 53.7 | 51.2 | 46.0 | 39.1 | 26.9 | 2.3 | 148.8 |
| 5000 | 14.3 | 27.7 | 33.7 | 36.3 | 40.7 | 46.3 | 44.9 | 42.7 | 40.9 | 33.1 | 24.4 | 8.2 | | 148.2 |
| 6300 | 7.8 | 17.1 | 21.0 | 25.6 | 30.7 | 29.4 | 27.2 | 23.1 | 14.0 | 1.6 | | | | 147.3 |
| 8000 | | | 1.0 | 8.1 | 5.0 | 1.6 | | | | | | | | 147.1 |
| 10000 | | | | | | | | | | | | | | 145.3 |
| 12500 | | | | | | | | | | | | | | 144.9 |
| 16000 | | | | | | | | | | | | | | 144.0 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |
| GASPL | 75.4 | 79.1 | 81.0 | 78.8 | 83.5 | 86.9 | 87.3 | 89.7 | 91.4 | 95.2 | 96.5 | 94.9 | 85.2 | 172.1 |
| PNL | 78.9 | 83.5 | 86.0 | 84.1 | 88.9 | 92.9 | 92.6 | 95.1 | 96.3 | 98.0 | 97.6 | 94.2 | 85.3 | |
| PNLT | 78.9 | 83.5 | 86.0 | 84.1 | 89.5 | 92.9 | 92.6 | 95.7 | 96.3 | 98.0 | 97.6 | 94.2 | 85.3 | |
| DBA | 68.4 | 73.1 | 75.5 | 73.6 | 78.4 | 82.1 | 82.0 | 84.6 | 85.6 | 86.4 | 85.4 | 81.3 | 73.5 | |

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MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VEHICLE = ADH186 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = C0 FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 43.81 PAMB HG = 29.57 RELHUM = 45.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNIN1 = LRS XNL = RPM XNH = RPM V8 = 1104.8 FPS AE8 = 4.6 SQ IN
 FNRRMB = LRS XNLR = RPM XNHR = RPM V18 = 1792.9 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1203 TAPE = X12031 TEST PT NO = 1203 NC = AE086 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1204 X1204C
BACKGROUND 83F-400-1100 X11000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------------|
| 50 | 86.7 | | | | 79.8 | 81.5 | | | 85.1 | 83.8 | 90.0 | 91.8 | | 125.7 |
| 63 | 87.6 | | | | 86.1 | 88.2 | | | 87.3 | 89.9 | | | | 125.9 |
| 80 | 88.5 | 92.6 | 88.8 | 88.6 | 88.4 | 93.0 | 90.7 | 90.7 | 90.8 | 91.1 | 94.6 | 95.5 | | 133.3 |
| 100 | 86.8 | 92.1 | 88.8 | 87.3 | 88.4 | 92.1 | 90.4 | 93.4 | 91.0 | 94.7 | 95.6 | 100.6 | | 134.8 |
| 125 | 85.0 | 87.4 | 89.6 | 89.1 | 90.7 | 93.1 | 90.7 | 91.8 | 90.5 | 94.1 | 100.9 | 103.8 | | 88.2 136.8 |
| 160 | 82.0 | 81.1 | 84.7 | 82.5 | 84.4 | 87.5 | 88.8 | 87.4 | 90.3 | 94.0 | 100.4 | 103.6 | | 91.6 135.9 |
| 200 | 82.0 | 82.9 | 83.8 | 81.0 | 83.5 | 87.9 | 88.1 | 90.7 | 95.2 | 95.6 | 101.8 | 106.2 | | 94.2 138.0 |
| 250 | 81.3 | 84.1 | 84.5 | 83.8 | 86.0 | 88.9 | 89.7 | 90.9 | 95.1 | 99.6 | 105.3 | 108.5 | | 96.3 140.5 |
| 315 | 81.7 | 84.1 | 83.2 | 85.5 | 89.5 | 89.5 | 89.8 | 92.3 | 96.0 | 100.7 | 106.1 | 108.8 | | 97.5 141.1 |
| 400 | 82.7 | 84.2 | 84.8 | 83.4 | 85.3 | 89.2 | 95.1 | 92.0 | 95.3 | 102.4 | 107.3 | 108.5 | | 96.1 141.7 |
| 500 | 82.7 | 85.0 | 85.4 | 84.5 | 86.3 | 90.5 | 90.8 | 93.6 | 96.3 | 104.0 | 108.1 | 107.5 | | 92.9 141.9 |
| 630 | 83.7 | 85.0 | 86.2 | 84.5 | 86.8 | 90.5 | 90.8 | 94.3 | 96.1 | 105.4 | 107.3 | 104.7 | | 90.2 141.3 |
| 800 | 84.8 | 85.8 | 86.3 | 85.1 | 88.2 | 91.0 | 92.2 | 95.9 | 98.1 | 104.2 | 106.6 | 102.5 | | 88.4 140.6 |
| 1000 | 86.0 | 86.7 | 87.7 | 86.3 | 88.3 | 92.0 | 92.1 | 96.1 | 99.1 | 105.1 | 106.0 | 99.4 | | 88.6 140.5 |
| 1250 | 84.6 | 88.2 | 87.2 | 86.1 | 88.5 | 92.4 | 92.3 | 96.2 | 99.7 | 104.1 | 105.2 | 96.1 | | 87.2 139.8 |
| 1600 | 85.1 | 86.2 | 87.4 | 87.0 | 89.0 | 93.1 | 93.2 | 97.0 | 99.7 | 102.7 | 104.1 | 95.0 | | 86.3 139.2 |
| 2000 | 85.5 | 85.6 | 86.1 | 86.1 | 88.7 | 92.5 | 93.1 | 97.6 | 99.5 | 103.1 | 102.8 | 93.4 | | 86.9 138.9 |
| 2500 | 84.7 | 85.5 | 86.3 | 85.5 | 88.1 | 92.5 | 92.7 | 96.9 | 98.8 | 102.3 | 101.1 | 93.3 | | 86.3 138.0 |
| 3150 | 84.3 | 85.7 | 86.2 | 85.2 | 87.9 | 92.8 | 92.2 | 96.2 | 98.6 | 100.4 | 98.2 | 90.3 | | 84.5 136.7 |
| 4000 | 83.6 | 85.2 | 86.1 | 84.9 | 88.0 | 92.3 | 92.4 | 96.3 | 97.7 | 98.7 | 96.4 | 88.4 | | 83.0 135.9 |
| 5000 | 83.4 | 84.2 | 85.3 | 84.6 | 87.5 | 90.9 | 91.6 | 95.8 | 96.1 | 98.0 | 94.8 | 88.0 | | 82.3 135.0 |
| 6300 | 82.9 | 84.8 | 84.9 | 83.4 | 86.8 | 90.5 | 91.1 | 94.6 | 95.5 | 95.7 | 92.6 | 86.6 | | 81.5 134.0 |
| 8000 | 82.3 | 84.5 | 84.5 | 83.6 | 85.9 | 89.8 | 89.9 | 92.9 | 93.9 | 93.4 | 90.8 | 85.1 | | 81.2 132.9 |
| 10000 | 83.2 | 84.9 | 84.8 | 83.6 | 84.6 | 88.9 | 89.3 | 92.1 | 93.2 | 91.7 | 89.4 | 84.7 | | 80.2 132.6 |
| 12500 | 82.1 | 84.2 | 81.9 | 83.2 | 81.1 | 88.4 | 88.4 | 89.6 | 91.0 | 90.1 | 87.9 | 84.7 | | 79.2 131.9 |
| 16000 | 80.5 | 83.0 | 83.6 | 82.7 | 83.0 | 86.6 | 86.3 | 88.3 | 90.2 | 87.4 | 85.9 | 82.6 | | 77.6 131.8 |
| 20000 | 77.6 | 79.7 | 81.0 | 80.0 | 82.1 | 83.6 | 84.5 | 84.9 | 86.1 | 84.2 | 83.3 | 80.2 | | 75.2 130.6 |
| 25000 | 74.7 | 77.6 | 78.1 | 78.1 | 79.2 | 83.3 | 82.2 | 81.8 | 83.2 | 80.6 | 79.5 | 77.7 | | 72.3 130.4 |
| 31500 | 70.9 | 73.3 | 74.8 | 75.3 | 75.3 | 79.1 | 78.7 | 78.5 | 79.5 | 77.2 | 76.0 | 73.8 | | 68.0 130.0 |
| 40000 | 65.7 | 68.8 | 70.0 | 70.4 | 70.4 | 75.7 | 74.3 | 74.6 | 76.3 | 73.1 | 72.9 | 69.8 | | 63.9 130.0 |
| 50000 | 59.8 | 63.1 | 64.2 | 64.5 | 64.9 | 71.3 | 68.7 | 68.7 | 69.8 | 67.4 | 67.4 | 65.0 | | 58.5 128.8 |
| 63000 | 53.5 | 57.3 | 59.1 | 58.8 | 59.8 | 66.0 | 62.3 | 63.0 | 64.0 | 61.0 | 61.0 | 58.7 | | 51.8 128.4 |
| 80000 | 47.8 | 50.2 | 52.1 | 50.2 | 52.0 | 58.9 | 56.4 | 56.4 | 56.6 | 53.9 | 54.4 | 51.5 | | 43.8 128.2 |
| OASPL | 98.6 | 100.4 | 100.1 | 99.2 | 101.3 | 105.0 | 105.2 | 108.1 | 110.2 | 114.6 | 116.9 | 116.5 | 104.2 | 152.3 |
| PWL | 110.0 | 111.1 | 111.3 | 110.5 | 113.3 | 117.4 | 117.3 | 120.7 | 122.9 | 126.0 | 126.4 | 123.3 | 112.3 | |
| PILT | 110.0 | 111.1 | 118.0 | 111.2 | 114.0 | 118.0 | 118.1 | 120.7 | 122.9 | 126.0 | 126.4 | 123.3 | 112.3 | |
| DBA | 96.0 | 97.4 | 98.0 | 97.0 | 99.5 | 103.5 | 103.8 | 107.6 | 109.7 | 113.8 | 114.9 | 111.6 | 100.0 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VEHICLE = ADH174 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = C0 FLTVEL = 400. FPS
 TAILHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 42.40 PAMB HG = 29.46 RELHUM = 47.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNL RPM XNH RPM = 1708.8 FPS AE0 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM = 1799.2 FPS AE18 = 23.4 SQ IN

RUN'T = 83F-400-1204 TAPE = X1204C TEST PT NO = 1204 NC = AE086 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
53.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1204 X1204F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|-------|-------|-------|------|-------|
| 250 | 69.1 | 90.5 | 69.4 | 87.1 | 87.6 | 86.9 | 88.2 | 88.0 | 93.7 | 97.6 | 103.0 | 106.5 | 97.3 | 138.8 |
| 315 | 89.1 | 90.5 | 89.4 | 87.1 | 87.3 | 89.7 | 88.9 | 90.3 | 93.0 | 99.6 | 104.4 | 106.8 | 97.3 | 139.6 |
| 400 | 89.3 | 90.5 | 89.6 | 86.6 | 87.1 | 89.5 | 94.0 | 89.8 | 93.9 | 101.1 | 105.3 | 106.3 | 95.5 | 140.0 |
| 500 | 89.9 | 90.3 | 89.5 | 86.7 | 88.2 | 90.8 | 89.7 | 91.3 | 93.7 | 102.6 | 104.6 | 104.1 | 94.6 | 139.4 |
| 630 | 90.4 | 91.4 | 91.4 | 88.0 | 88.8 | 90.9 | 89.8 | 91.9 | 96.2 | 101.9 | 104.7 | 103.4 | 95.6 | 139.3 |
| 800 | 91.4 | 91.4 | 91.2 | 88.0 | 90.2 | 91.5 | 91.2 | 93.6 | 97.6 | 103.3 | 104.7 | 101.4 | 98.1 | 139.7 |
| 1000 | 92.4 | 92.2 | 91.3 | 88.6 | 90.5 | 92.6 | 91.3 | 93.9 | 98.3 | 102.2 | 103.7 | 97.7 | 96.0 | 138.9 |
| 1250 | 93.3 | 93.0 | 92.7 | 89.8 | 90.8 | 93.2 | 91.6 | 94.1 | 98.5 | 101.2 | 102.9 | 97.0 | 95.5 | 138.5 |
| 1600 | 92.3 | 94.7 | 92.3 | 89.8 | 91.4 | 94.1 | 92.7 | 95.2 | 98.6 | 101.8 | 102.0 | 95.7 | 96.4 | 138.6 |
| 2000 | 92.7 | 92.7 | 92.6 | 90.3 | 91.4 | 93.8 | 92.8 | 96.1 | 98.3 | 101.5 | 100.8 | 96.3 | 96.7 | 138.4 |
| 2500 | 93.2 | 92.1 | 92.3 | 90.1 | 91.1 | 94.1 | 92.9 | 95.7 | 98.6 | 100.1 | 98.3 | 93.6 | 95.0 | 137.5 |
| 3150 | 92.3 | 92.1 | 91.8 | 89.7 | 91.7 | 94.8 | 92.8 | 95.5 | 98.6 | 99.1 | 97.1 | 92.1 | 93.5 | 137.1 |
| 4000 | 94.7 | 94.6 | 93.5 | 90.7 | 92.2 | 94.8 | 93.8 | 96.4 | 97.0 | 98.5 | 95.6 | 91.8 | 93.2 | 137.3 |
| 5000 | 93.9 | 94.2 | 93.5 | 90.7 | 92.1 | 93.9 | 93.3 | 96.0 | 97.3 | 97.2 | 94.7 | 92.4 | 95.0 | 137.0 |
| 6300 | 93.6 | 93.2 | 92.8 | 90.6 | 91.3 | 93.5 | 93.3 | 95.6 | 95.7 | 93.8 | 91.6 | 91.6 | 95.3 | 136.6 |
| 8000 | 93.0 | 93.7 | 92.3 | 89.2 | 90.0 | 92.8 | 92.3 | 94.2 | 96.1 | 94.4 | 92.9 | 91.7 | 94.7 | 136.2 |
| 10000 | 89.4 | 90.9 | 90.6 | 88.1 | 88.7 | 91.9 | 91.6 | 93.9 | 94.6 | 93.6 | 92.0 | 92.2 | 93.9 | 135.6 |
| 12500 | 90.0 | 91.0 | 90.1 | 87.8 | 88.1 | 91.4 | 90.8 | 91.3 | 94.9 | 91.5 | 90.7 | 90.7 | 92.9 | 135.5 |
| 16000 | 88.5 | 89.8 | 88.7 | 86.9 | 87.1 | 89.6 | 88.7 | 90.0 | 90.9 | 88.9 | 88.4 | 88.3 | 90.2 | 134.9 |
| 20000 | 86.4 | 88.2 | 87.9 | 86.0 | 86.1 | 86.6 | 86.9 | 86.8 | 87.7 | 84.8 | 84.0 | 85.0 | 86.4 | 134.2 |
| 25000 | 82.9 | 84.3 | 84.7 | 82.7 | 83.8 | 86.3 | 84.0 | 82.7 | 85.6 | 83.3 | 82.5 | 83.1 | 84.2 | 134.1 |
| 31500 | 82.1 | 83.6 | 82.7 | 81.1 | 79.3 | 82.1 | 81.0 | 80.2 | 83.5 | 80.3 | 80.7 | 80.6 | 81.7 | 134.7 |
| 40000 | 74.6 | 76.3 | 76.9 | 76.4 | 75.0 | 76.7 | 76.8 | 76.5 | 76.7 | 74.2 | 74.6 | 75.1 | 75.4 | 133.4 |
| 50000 | 71.8 | 73.6 | 73.4 | 72.3 | 69.5 | 74.3 | 70.8 | 70.1 | 71.8 | 68.8 | 69.2 | 69.9 | 69.8 | 133.2 |
| 63000 | 64.9 | 67.0 | 66.6 | 65.4 | 64.4 | 69.0 | 64.3 | 64.3 | 66.3 | 64.8 | 65.0 | 64.2 | 64.2 | 132.6 |
| 80000 | 57.2 | 59.8 | 60.0 | 58.2 | 56.6 | 61.9 | 58.5 | 57.9 | 56.5 | 53.8 | 55.0 | 55.2 | 54.4 | 131.9 |

ORIGINAL PAGE IS OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VEHICLE = ADH174 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = C8 FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 42.40 PAMB HG = 29.46 RELHUM = 47.9 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1108.8 FPS AE8 = 4.6 SQ IN
FNRAMB = LBS XNLR = RPM XNIR = RPM V18 = 1799.2 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1204 TAPE = X1204F TEST PT NO = 1204 NC = AE086 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400 1204 X1204

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| 50 | 64.6 | 67.5 | 67.4 | 65.9 | 66.8 | 68.2 | 67.4 | 66.7 | 71.7 | 74.8 | 78.5 | 79.7 | 67.3 | 153.7 |
| 63 | 64.6 | 67.5 | 67.4 | 65.8 | 66.4 | 68.9 | 68.0 | 69.0 | 71.0 | 76.5 | 79.8 | 80.0 | 67.1 | 154.5 |
| 80 | 64.7 | 67.4 | 67.6 | 65.3 | 66.2 | 68.7 | 73.2 | 68.5 | 71.9 | 78.0 | 80.6 | 79.5 | 65.3 | 154.9 |
| 100 | 65.2 | 67.1 | 67.5 | 65.4 | 67.3 | 70.0 | 68.8 | 70.0 | 71.7 | 79.4 | 79.9 | 77.2 | 64.2 | 154.3 |
| 125 | 65.6 | 68.2 | 69.3 | 66.6 | 67.8 | 70.0 | 68.8 | 70.5 | 74.1 | 78.7 | 79.9 | 76.3 | 64.9 | 154.2 |
| 160 | 66.4 | 68.0 | 68.9 | 66.4 | 69.1 | 70.6 | 70.1 | 72.1 | 75.3 | 79.9 | 79.7 | 74.1 | 67.1 | 154.6 |
| 200 | 67.2 | 68.6 | 68.9 | 66.9 | 69.2 | 71.5 | 70.0 | 72.1 | 75.8 | 78.6 | 78.4 | 70.0 | 64.5 | 153.8 |
| 250 | 67.7 | 69.1 | 70.0 | 67.9 | 69.3 | 71.0 | 70.1 | 72.2 | 75.8 | 77.2 | 77.3 | 68.8 | 63.3 | 153.4 |
| 315 | 68.2 | 70.4 | 69.3 | 67.6 | 69.7 | 72.5 | 70.9 | 72.9 | 75.6 | 77.5 | 75.9 | 67.0 | 63.4 | 153.5 |
| 400 | 66.1 | 68.0 | 69.2 | 68.3 | 69.2 | 71.9 | 70.7 | 73.5 | 74.9 | 76.8 | 74.2 | 66.9 | 62.7 | 153.3 |
| 500 | 66.0 | 67.0 | 68.5 | 67.2 | 68.6 | 71.8 | 70.4 | 72.7 | 74.8 | 74.9 | 71.2 | 63.4 | 59.9 | 152.4 |
| 630 | 64.6 | 66.5 | 67.5 | 66.4 | 68.9 | 72.2 | 70.0 | 72.2 | 74.3 | 73.4 | 69.3 | 61.2 | 57.3 | 152.0 |
| 800 | 66.4 | 68.5 | 68.8 | 67.0 | 69.0 | 71.8 | 70.6 | 72.6 | 72.4 | 72.3 | 67.2 | 60.1 | 55.7 | 152.2 |
| 1000 | 64.9 | 67.5 | 68.4 | 66.6 | 68.5 | 70.5 | 69.8 | 71.9 | 72.2 | 70.5 | 65.7 | 59.8 | 56.1 | 151.9 |
| 1250 | 63.8 | 65.8 | 67.1 | 66.0 | 67.3 | 69.6 | 69.3 | 71.0 | 70.8 | 68.3 | 63.9 | 57.9 | 54.7 | 151.5 |
| 1600 | 61.8 | 65.3 | 65.7 | 63.8 | 65.2 | 68.3 | 67.5 | 68.8 | 69.6 | 66.1 | 61.8 | 56.2 | 51.3 | 151.1 |
| 2000 | 56.5 | 61.1 | 62.8 | 61.7 | 63.0 | 66.4 | 65.9 | 67.4 | 66.8 | 63.8 | 59.1 | 54.2 | 46.6 | 150.5 |
| 2500 | 54.4 | 59.1 | 60.5 | 59.7 | 60.9 | 64.4 | 63.6 | 63.2 | 64.9 | 59.6 | 55.1 | 49.0 | 39.8 | 150.4 |
| 3150 | 48.5 | 54.4 | 56.2 | 56.3 | 57.5 | 60.3 | 59.1 | 59.4 | 58.5 | 53.5 | 48.4 | 40.6 | 27.7 | 149.8 |
| 4000 | 38.7 | 46.7 | 50.3 | 50.7 | 52.2 | 53.0 | 53.0 | 51.5 | 50.0 | 43.3 | 36.4 | 27.0 | 8.0 | 149.1 |
| 5000 | 33.9 | 33.6 | 39.2 | 40.4 | 43.3 | 46.3 | 43.4 | 40.4 | 40.1 | 32.6 | 23.4 | 9.8 | 149.0 | |
| 6300 | 4.0 | 17.5 | 23.9 | 26.8 | 27.4 | 31.0 | 29.1 | 25.9 | 24.7 | 14.2 | 2.6 | 149.7 | 148.3 | |
| 8000 | | 1.5 | 3.6 | 8.4 | 5.4 | 1.6 | | | | | | | 148.1 | |
| 10000 | | | | | | | | | | | | | 147.5 | |
| 12500 | | | | | | | | | | | | | 146.8 | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DETA3-12/NAS3-22137

VEHIC = ADH174 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = CO FLTVEL = 400. FPS
IAPLIA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 42.40 PAMB HG = 29.46 RELHUM = 47.9 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1108.8 FPS AE8 = 4.6 SQ IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1799.2 FPS AE18 = 23.4 SQ IN

STIMT = 83F-400-1204 TABE = X1204 TEST POINT NO = 1204

IDENTIFICATION - MODEL 83F-ZER-1205 X1205C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 85.9 | 89.4 | 87.9 | 83.2 | 85.1 | 85.9 | 87.6 | 90.2 | 91.4 | 90.0 | 93.9 | 92.8 | 92.2 | 131.5 |
| 63 | 91.5 | 95.8 | 96.8 | 92.4 | 91.2 | 93.6 | 96.5 | 95.6 | 94.1 | 91.1 | 95.3 | 97.5 | 96.9 | 136.8 |
| 80 | 91.5 | 95.8 | 92.3 | 90.1 | 92.2 | 97.1 | 94.7 | 94.6 | 95.1 | 95.7 | 99.0 | 99.2 | 84.1 | 137.2 |
| 100 | 90.7 | 97.5 | 93.0 | 91.0 | 94.4 | 97.5 | 95.6 | 99.0 | 96.0 | 100.3 | 101.2 | 104.9 | 89.1 | 140.0 |
| 125 | 87.6 | 91.2 | 94.2 | 92.2 | 95.8 | 98.4 | 95.8 | 97.0 | 96.2 | 100.5 | 107.1 | 109.1 | 93.7 | 142.4 |
| 160 | 85.9 | 87.2 | 91.2 | 86.8 | 90.1 | 94.0 | 96.4 | 96.0 | 96.5 | 102.1 | 107.7 | 109.6 | 98.3 | 142.6 |
| 200 | 88.8 | 87.3 | 90.6 | 86.9 | 91.0 | 95.3 | 96.0 | 97.1 | 99.8 | 102.6 | 109.5 | 112.7 | 101.6 | 144.8 |
| 250 | 88.3 | 90.6 | 91.8 | 89.9 | 93.2 | 95.8 | 97.0 | 99.1 | 101.3 | 108.9 | 114.0 | 116.2 | 105.4 | 148.7 |
| 315 | 88.8 | 91.1 | 89.2 | 93.0 | 97.1 | 98.8 | 99.7 | 102.6 | 109.5 | 115.1 | 116.8 | 107.4 | 149.5 | |
| 400 | 90.3 | 92.1 | 89.9 | 89.2 | 93.5 | 96.4 | 103.2 | 100.2 | 102.9 | 111.9 | 117.1 | 118.0 | 109.2 | 151.2 |
| 500 | 90.6 | 93.1 | 93.9 | 90.7 | 94.3 | 97.6 | 98.0 | 100.9 | 104.1 | 113.0 | 117.8 | 118.5 | 110.4 | 151.9 |
| 630 | 91.0 | 93.6 | 94.3 | 91.4 | 95.0 | 98.1 | 98.7 | 101.6 | 104.6 | 113.4 | 117.0 | 118.0 | 111.9 | 151.6 |
| 800 | 93.6 | 94.6 | 95.6 | 93.2 | 96.5 | 99.6 | 99.3 | 102.7 | 106.4 | 113.7 | 116.6 | 117.3 | 112.9 | 151.5 |
| 1000 | 96.3 | 98.8 | 98.6 | 94.6 | 97.7 | 100.3 | 100.4 | 102.9 | 106.8 | 113.4 | 115.3 | 117.2 | 112.6 | 151.1 |
| 1250 | 94.7 | 98.2 | 98.2 | 95.6 | 98.4 | 100.7 | 100.4 | 103.8 | 107.2 | 112.6 | 114.9 | 114.9 | 111.8 | 150.2 |
| 1600 | 94.9 | 96.0 | 97.7 | 94.1 | 97.8 | 101.2 | 101.0 | 104.8 | 107.4 | 111.0 | 114.9 | 114.0 | 110.2 | 149.6 |
| 2000 | 94.8 | 97.1 | 97.5 | 94.2 | 97.3 | 100.9 | 101.1 | 104.7 | 107.5 | 111.6 | 113.6 | 111.4 | 107.2 | 148.7 |
| 2500 | 92.7 | 96.3 | 96.9 | 93.6 | 97.5 | 100.3 | 100.8 | 103.4 | 106.5 | 111.6 | 112.3 | 109.4 | 105.1 | 147.8 |
| 3150 | 92.1 | 95.5 | 96.0 | 93.0 | 96.3 | 100.6 | 100.5 | 103.8 | 106.8 | 110.4 | 110.2 | 107.1 | 101.5 | 146.6 |
| 4000 | 90.9 | 94.5 | 95.6 | 92.5 | 96.7 | 99.7 | 99.8 | 103.4 | 106.0 | 108.0 | 108.5 | 103.2 | 99.1 | 145.1 |
| 5000 | 90.2 | 94.2 | 95.3 | 92.5 | 96.0 | 99.2 | 99.2 | 102.7 | 104.4 | 107.4 | 106.6 | 102.1 | 96.1 | 144.2 |
| 6300 | 89.7 | 94.6 | 95.4 | 91.7 | 96.0 | 99.0 | 99.3 | 102.2 | 103.8 | 105.0 | 103.5 | 99.9 | 95.6 | 143.0 |
| 8000 | 87.9 | 93.8 | 95.1 | 91.8 | 95.2 | 98.7 | 97.7 | 100.3 | 101.6 | 102.5 | 101.6 | 98.3 | 93.6 | 141.6 |
| 10000 | 87.5 | 91.9 | 94.0 | 91.5 | 95.3 | 98.3 | 97.6 | 99.8 | 101.1 | 100.8 | 100.6 | 97.7 | 94.2 | 141.4 |
| 12500 | 85.7 | 89.5 | 91.4 | 90.2 | 94.0 | 97.5 | 96.3 | 97.3 | 98.0 | 98.8 | 97.6 | 96.2 | 91.8 | 140.2 |
| 16000 | 83.8 | 88.6 | 90.1 | 89.1 | 92.6 | 95.4 | 94.9 | 95.8 | 96.7 | 95.7 | 95.2 | 93.9 | 88.9 | 139.7 |
| 20000 | 80.7 | 85.9 | 87.8 | 86.3 | 90.1 | 92.3 | 92.9 | 92.5 | 92.9 | 92.8 | 92.3 | 91.5 | 86.2 | 138.5 |
| 25000 | 77.6 | 82.2 | 84.5 | 83.4 | 86.1 | 90.7 | 90.3 | 88.6 | 90.5 | 89.1 | 88.8 | 87.9 | 82.6 | 137.9 |
| 31500 | 73.6 | 78.5 | 81.1 | 80.1 | 82.3 | 86.4 | 85.9 | 85.3 | 86.3 | 85.6 | 85.3 | 83.8 | 78.0 | 137.1 |
| 40000 | 68.6 | 73.3 | 75.8 | 75.5 | 76.7 | 82.7 | 80.9 | 80.9 | 82.8 | 81.5 | 81.7 | 79.5 | 74.0 | 136.9 |
| 50000 | 62.3 | 67.1 | 69.2 | 69.3 | 71.4 | 77.0 | 75.1 | 75.0 | 76.1 | 75.2 | 75.9 | 73.2 | 67.2 | 135.2 |
| 63000 | 56.2 | 61.6 | 64.1 | 63.4 | 65.8 | 71.4 | 68.1 | 69.4 | 70.8 | 69.4 | 70.0 | 66.2 | 60.3 | 134.7 |
| 80000 | 49.6 | 55.8 | 57.3 | 55.1 | 57.7 | 64.3 | 61.2 | 61.7 | 62.7 | 61.3 | 63.9 | 59.7 | 52.1 | 134.2 |

ORIGINAL PAGE IS
OF POOR QUALITY

DASPL 105.5 108.7 109.1 106.1 109.5 112.6 113.0 115.3 117.9 123.3 126.6 127.2 120.9 161.7
 PWL 117.4 120.6 121.3 118.2 121.7 125.2 125.4 128 1 130.8 135.0 136.7 135.6 130.2
 PNLT 117.4 121.3 121.3 118.7 122.3 125.2 126.2 128 7 130.8 135.0 136.7 135.6 130.2
 DBA 104.6 107.5 108.1 104.9 106.4 111.6 111.8 114.8 117.7 122.6 125.1 125.1 120.0

NASA DUAL FLOW THERMAL SHIELD/DF-TAS-12/NAS3-22137

VEITCL = ADHT85 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = C0 FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 44.40 PAMB HG = 29.40 RELHUM = 45.4 PCT
 WIND DIR = DEG WIND VEL. = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =
 FNINT = LBS XNL = RPM XNH = RPM V8 = 1213.4 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1998.8 FPS AE18 = 23.4 SQ IN
 RUNPT = 63F-ZER-1205 TAPE = X1205C TEST PT NO = 1205 NC = AE086 CORR FAN SPEED = RPM

FLIGHT TRANSMIRED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 33F-ZER-1205 X1205F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.9 | 89.4 | 87.9 | 83.2 | 85.1 | 85.9 | 87.6 | 90.2 | 91.4 | 90.0 | 93.9 | 92.8 | 92.2 | 131.5 |
| 63 | 90.5 | 95.8 | 96.8 | 92.4 | 91.2 | 93.6 | 96.5 | 95.6 | 94.1 | 91.1 | 95.3 | 97.5 | 96.9 | 136.8 |
| 80 | 91.5 | 95.8 | 92.3 | 90.1 | 92.2 | 97.1 | 94.7 | 94.6 | 95.1 | 95.7 | 99.0 | 99.2 | 84.1 | 137.2 |
| 100 | 90.7 | 97.5 | 93.0 | 91.0 | 94.4 | 97.5 | 95.6 | 99.0 | 96.0 | 100.3 | 101.2 | 104.9 | 89.1 | 140.0 |
| 125 | 87.6 | 91.2 | 94.2 | 92.2 | 95.6 | 98.4 | 95.8 | 97.0 | 96.2 | 100.5 | 107.1 | 109.1 | 93.7 | 142.4 |
| 160 | 86.9 | 87.2 | 91.2 | 86.8 | 90.1 | 94.0 | 96.4 | 96.0 | 96.5 | 102.1 | 107.7 | 109.6 | 98.3 | 142.6 |
| 200 | 88.8 | 87.3 | 90.6 | 86.9 | 91.0 | 95.3 | 96.0 | 97.1 | 99.8 | 102.6 | 109.5 | 112.7 | 101.6 | 144.8 |
| 250 | 88.3 | 90.6 | 91.8 | 89.9 | 93.2 | 95.8 | 97.0 | 99.1 | 101.3 | 108.9 | 114.0 | 116.2 | 105.4 | 148.7 |
| 315 | 88.8 | 91.1 | 91.4 | 89.2 | 93.0 | 97.1 | 98.8 | 99.7 | 102.6 | 109.5 | 115.1 | 116.8 | 107.4 | 149.5 |
| 400 | 90.3 | 92.1 | 92.9 | 89.2 | 93.5 | 96.4 | 103.2 | 100.2 | 102.9 | 111.9 | 117.1 | 118.0 | 109.2 | 151.2 |
| 500 | 90.6 | 93.1 | 93.9 | 90.7 | 94.3 | 97.6 | 98.0 | 100.9 | 104.1 | 113.0 | 117.8 | 118.5 | 110.4 | 151.9 |
| 630 | 91.0 | 93.6 | 94.3 | 91.4 | 95.0 | 98.1 | 98.7 | 101.6 | 104.6 | 113.4 | 117.0 | 118.0 | 111.9 | 151.6 |
| 800 | 93.6 | 94.6 | 95.6 | 93.2 | 96.5 | 99.6 | 99.6 | 102.7 | 106.4 | 113.7 | 116.6 | 117.3 | 112.9 | 151.5 |
| 1000 | 96.3 | 98.8 | 98.6 | 94.6 | 97.7 | 100.3 | 100.4 | 102.9 | 106.8 | 113.4 | 115.3 | 117.2 | 112.6 | 151.1 |
| 1250 | 94.7 | 98.2 | 98.2 | 95.6 | 98.4 | 100.7 | 100.4 | 103.8 | 107.2 | 112.6 | 114.9 | 114.9 | 111.8 | 150.2 |
| 1600 | 94.9 | 96.0 | 97.7 | 94.1 | 97.8 | 101.2 | 101.0 | 104.8 | 107.4 | 111.0 | 114.9 | 114.0 | 110.2 | 149.6 |
| 2000 | 94.8 | 97.1 | 97.5 | 94.2 | 97.3 | 100.9 | 101.1 | 104.7 | 107.5 | 111.6 | 113.6 | 111.4 | 107.2 | 148.7 |
| 2500 | 92.7 | 96.3 | 96.9 | 93.6 | 97.5 | 100.3 | 100.8 | 103.4 | 106.5 | 111.6 | 112.3 | 109.4 | 105.1 | 147.8 |
| 3150 | 92.1 | 95.5 | 96.0 | 93.0 | 96.3 | 100.6 | 100.5 | 103.8 | 106.8 | 110.4 | 110.2 | 107.1 | 101.5 | 146.6 |
| 4000 | 90.9 | 94.5 | 95.6 | 92.5 | 96.7 | 99.7 | 99.8 | 103.4 | 106.0 | 108.0 | 108.5 | 103.2 | 99.1 | 145.1 |
| 5000 | 90.2 | 94.2 | 95.3 | 92.5 | 96.0 | 99.2 | 99.8 | 102.7 | 104.4 | 107.4 | 106.6 | 102.1 | 96.1 | 144.2 |
| 6300 | 89.7 | 94.6 | 95.4 | 91.7 | 96.0 | 99.0 | 99.3 | 102.2 | 103.8 | 105.0 | 103.5 | 98.9 | 95.6 | 143.0 |
| 8000 | 87.9 | 93.8 | 95.1 | 91.8 | 95.2 | 98.7 | 97.7 | 100.3 | 101.6 | 102.5 | 101.6 | 98.3 | 93.6 | 141.6 |
| 10000 | 87.5 | 91.9 | 94.0 | 91.5 | 95.3 | 98.3 | 97.6 | 99.8 | 101.1 | 100.8 | 100.6 | 97.7 | 94.2 | 141.4 |
| 12500 | 85.7 | 89.5 | 91.4 | 90.2 | 94.0 | 97.5 | 96.3 | 97.3 | 98.0 | 98.8 | 97.6 | 96.2 | 91.8 | 140.2 |
| 16000 | 83.3 | 88.6 | 90.1 | 89.1 | 92.6 | 95.4 | 94.9 | 95.8 | 96.7 | 95.7 | 95.2 | 93.9 | 88.9 | 139.7 |
| 20000 | 80.7 | 85.9 | 87.8 | 86.3 | 90.1 | 92.3 | 92.9 | 92.5 | 92.9 | 92.8 | 92.3 | 91.5 | 86.2 | 138.5 |
| 25000 | 77.6 | 82.2 | 84.5 | 83.4 | 86.1 | 90.7 | 90.3 | 88.6 | 90.5 | 89.1 | 88.8 | 87.9 | 82.6 | 137.9 |
| 31500 | 73.6 | 78.5 | 81.1 | 80.1 | 82.3 | 86.4 | 85.9 | 85.3 | 86.3 | 85.6 | 85.3 | 83.8 | 78.0 | 137.1 |
| 40000 | 68.6 | 73.3 | 75.8 | 73.5 | 76.7 | 82.7 | 80.9 | 80.9 | 82.8 | 81.5 | 81.7 | 79.5 | 74.0 | 136.9 |
| 50000 | 62.3 | 67.1 | 69.2 | 69.3 | 71.4 | 77.0 | 75.1 | 75.0 | 76.1 | 75.2 | 75.9 | 73.2 | 67.2 | 135.2 |
| 63000 | 56.2 | 61.6 | 64.1 | 63.4 | 65.8 | 71.4 | 68.1 | 69.4 | 70.8 | 69.4 | 70.0 | 66.2 | 60.3 | 134.7 |
| 80000 | 49.6 | 55.8 | 57.3 | 55.1 | 57.7 | 64.3 | 61.2 | 61.7 | 62.7 | 61.3 | 63.9 | 59.7 | 52.1 | 134.2 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/MAS3-22137

VEHICL = ADH185 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = C0 FLTVEL = 0. FPS
 IALPHA = SWS9 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 44.40 PAMB HG = 29.40 RELHUM = 45.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNLI = RPM XNH = RPM V8 = 1213.4 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1998.8 FPS AE18 = 23.4 SQ IN

PRINT = 33F-750 1205 TAPE = X1205F [] IC [] AE [] SPEC [] JRR [] RPI []

IDENTIFICATION - 83F-ZER-1205 X12051

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|------------|
| 50 | 63.7 | 67.5 | 69.9 | 68.6 | 72.4 | 75.1 | 76.1 | 77.9 | 79.4 | 85.9 | 89.5 | 89.5 | 89.5 | 75.3 163.6 |
| 63 | 64.3 | 68.1 | 69.4 | 67.9 | 72.2 | 76.4 | 77.9 | 78.4 | 80.7 | 86.4 | 90.5 | 90.0 | 90.0 | 77.3 164.4 |
| 80 | 65.7 | 69.0 | 70.9 | 67.9 | 72.6 | 75.6 | 82.4 | 78.9 | 80.9 | 88.8 | 92.4 | 91.1 | 91.1 | 78.9 166.1 |
| 100 | 65.9 | 70.0 | 71.8 | 69.3 | 73.4 | 76.9 | 77.1 | 79.6 | 82.1 | 89.8 | 93.1 | 91.6 | 91.6 | 80.0 166.8 |
| 125 | 66.2 | 70.3 | 72.2 | 70.0 | 74.0 | 77.2 | 77.7 | 80.2 | 82.4 | 90.2 | 92.2 | 90.9 | 90.9 | 81.3 166.5 |
| 160 | 66.6 | 71.2 | 73.4 | 71.6 | 75.4 | 78.7 | 78.2 | 81.1 | 84.1 | 90.3 | 91.6 | 89.9 | 89.9 | 81.9 166.4 |
| 200 | 71.0 | 75.2 | 76.1 | 72.9 | 76.4 | 79.2 | 79.2 | 81.1 | 84.3 | 89.8 | 90.0 | 89.5 | 81.1 | 166.0 |
| 250 | 69.1 | 74.3 | 75.5 | 73.7 | 76.9 | 79.4 | 78.9 | 81.8 | 84.5 | 88.7 | 89.3 | 86.7 | 79.6 | 165.1 |
| 315 | 69.8 | 71.7 | 74.6 | 71.8 | 76.0 | 79.5 | 79.2 | 82.6 | 84.4 | 86.7 | 88.8 | 85.3 | 77.2 | 164.5 |
| 400 | 68.2 | 72.4 | 74.1 | 71.6 | 75.1 | 78.9 | 79.0 | 82.1 | 84.1 | 86.9 | 87.0 | 82.0 | 73.1 | 163.6 |
| 500 | 65.6 | 71.1 | 73.0 | 70.6 | 75.0 | 78.0 | 78.3 | 80.4 | 82.7 | 86.4 | 85.2 | 79.3 | 70.1 | 162.7 |
| 630 | 64.4 | 69.8 | 71.7 | 69.7 | 73.5 | 78.0 | 77.7 | 80.4 | 82.6 | 84.8 | 82.5 | 76.2 | 65.3 | 161.6 |
| 800 | 62.5 | 68.4 | 70.9 | 68.8 | 73.5 | 76.6 | 76.6 | 79.6 | 81.3 | 81.9 | 80.1 | 71.5 | 61.6 | 160.0 |
| 1000 | 61.2 | 67.5 | 70.2 | 68.3 | 72.4 | 75.8 | 76.3 | 78.5 | 79.3 | 80.7 | 77.6 | 69.5 | 57.2 | 159.1 |
| 1250 | 59.8 | 67.3 | 69.7 | 67.1 | 72.0 | 75.1 | 75.2 | 77.6 | 78.1 | 77.7 | 73.6 | 66.2 | 55.0 | 157.9 |
| 1600 | 56.7 | 65.4 | 68.5 | 66.4 | 70.4 | 72.9 | 72.9 | 74.9 | 75.0 | 74.1 | 70.5 | 62.7 | 50.2 | 156.5 |
| 2000 | 54.6 | 62.2 | 66.2 | 65.0 | 69.6 | 72.8 | 71.9 | 73.4 | 73.3 | 71.0 | 67.7 | 59.7 | 47.0 | 156.4 |
| 2500 | 50.1 | 57.6 | 61.8 | 62.2 | 66.8 | 70.6 | 69.1 | 69.3 | 68.4 | 66.9 | 62.0 | 54.5 | 38.7 | 155.1 |
| 3150 | 43.8 | 53.3 | 57.6 | 58.5 | 63.0 | 66.1 | 65.3 | 65.2 | 64.3 | 60.3 | 55.2 | 46.2 | 26.4 | 154.6 |
| 4000 | 33.1 | 44.4 | 50.1 | 51.0 | 56.1 | 58.8 | 58.9 | 57.3 | 55.3 | 51.3 | 44.7 | 33.5 | 7.9 | 153.4 |
| 5000 | 18.6 | 31.6 | 39.0 | 41.1 | 45.5 | 50.6 | 49.7 | 46.3 | 45.0 | 38.4 | 29.8 | 14.6 | | 152.8 |
| 6300 | 12.4 | 22.2 | 25.8 | 30.4 | 35.3 | 34.0 | 31.0 | 27.5 | 19.4 | 7.3 | | | | 152.0 |
| 8000 | | | 0.6 | 5.4 | 12.4 | 9.6 | 5.9 | 1.3 | | | | | | 151.8 |
| 10000 | | | | | | | | | | | | | | 150.1 |
| 12500 | | | | | | | | | | | | | | 149.6 |
| 16000 | | | | | | | | | | | | | | 149.1 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |
| 8ASPL | 78.5 | 82.8 | 84.7 | 82.4 | 86.4 | 89.7 | 90.3 | 92.2 | 94.3 | 99.2 | 101.1 | 99.5 | 89.4 | 176.4 |
| PNI | 82.4 | 87.7 | 90.2 | 88.5 | 92.9 | 96.3 | 96.0 | 98.0 | 99.6 | 102.4 | 102.6 | 99.7 | 89.9 | |
| PNLT | 82.4 | 87.7 | 90.2 | 89.0 | 93.4 | 96.3 | 96.0 | 98.5 | 99.6 | 102.4 | 102.6 | 99.7 | 89.9 | |
| DRA | 71.8 | 77.3 | 79.7 | 77.6 | 81.8 | 85.2 | 85.0 | 87.5 | 89.0 | 91.2 | 90.6 | 86.7 | 78.0 | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DIF-TAS 12/NAS3-22137

VEHICLE = ADH185 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = C0 FLTVEL = 0. FPS
 IAPLIA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 44.40 PAMB HG = 29.40 RELHUM = 45.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EX1 CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL RPM XNHR = RPM V8 = 1213.4 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 1998.8 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER 1205 TAPE = X12051 TEST PT NO = 1205 NC = AE086 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1206 X1206C
BACKGROUND 83F-400-1100 X11000

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100 110 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 82.4 | 90.2 | 88.4 | 83.2 | 81.8 | 65.9 | 86.3 | 91.0 | 87.7 | 88.5 | 94.4 | 95.1 | 88.2 | 131.4 |
| 63 | 91.0 | 94.3 | 97.8 | 92.6 | 89.5 | 92.6 | 96.0 | 98.1 | 93.1 | 92.4 | 94.5 | 100.2 | 95.6 | 137.2 |
| 80 | 91.0 | 95.3 | 91.6 | 91.4 | 91.2 | 95.6 | 93.7 | 93.6 | 94.3 | 93.9 | 97.3 | 98.2 | 89.6 | 136.2 |
| 100 | 90.0 | 95.0 | 91.3 | 90.0 | 91.4 | 95.3 | 94.1 | 96.8 | 94.5 | 97.6 | 98.5 | 103.1 | 90.6 | 137.8 |
| 125 | 86.4 | 90.2 | 92.4 | 92.0 | 93.6 | 96.4 | 94.6 | 94.7 | 93.9 | 97.5 | 103.9 | 107.1 | 93.0 | 140.1 |
| 160 | 85.2 | 84.0 | 88.5 | 86.0 | 87.6 | 91.0 | 94.9 | 91.8 | 94.2 | 98.1 | 103.9 | 107.1 | 96.5 | 139.6 |
| 200 | 85.5 | 86.1 | 87.6 | 84.9 | 86.2 | 90.8 | 92.0 | 93.9 | 96.8 | 97.9 | 104.5 | 109.2 | 98.1 | 140.9 |
| 250 | 84.0 | 87.3 | 87.3 | 86.1 | 88.0 | 92.3 | 92.7 | 94.9 | 97.1 | 103.1 | 108.8 | 111.5 | 100.4 | 143.7 |
| 315 | 84.6 | 87.4 | 87.9 | 86.7 | 88.5 | 92.9 | 94.8 | 95.9 | 99.1 | 104.0 | 110.1 | 112.3 | 101.9 | 144.8 |
| 400 | 85.6 | 87.1 | 88.4 | 86.9 | 88.5 | 92.9 | 98.2 | 95.7 | 98.6 | 106.4 | 112.1 | 112.8 | 100.4 | 146.0 |
| 500 | 85.8 | 87.4 | 89.1 | 87.7 | 89.5 | 93.9 | 93.8 | 96.4 | 99.6 | 107.7 | 112.1 | 112.0 | 98.2 | 146.0 |
| 630 | 86.5 | 88.1 | 89.6 | 88.1 | 90.2 | 93.8 | 94.2 | 97.4 | 99.6 | 108.9 | 111.8 | 109.7 | 96.6 | 145.5 |
| 800 | 87.3 | 88.1 | 89.4 | 88.4 | 90.8 | 94.6 | 95.0 | 98.7 | 102.1 | 108.7 | 111.6 | 107.0 | 94.2 | 145.1 |
| 1000 | 89.3 | 90.1 | 91.1 | 89.6 | 91.2 | 95.6 | 95.7 | 99.4 | 102.6 | 108.9 | 110.0 | 104.2 | 92.9 | 144.4 |
| 1250 | 87.9 | 91.0 | 91.5 | 89.9 | 91.4 | 96.0 | 95.6 | 99.5 | 103.2 | 108.3 | 109.2 | 100.1 | 92.7 | 143.8 |
| 1600 | 88.9 | 89.3 | 90.9 | 91.0 | 92.6 | 96.2 | 97.0 | 100.8 | 103.7 | 107.3 | 108.6 | 99.1 | 91.7 | 143.4 |
| 2000 | 88.8 | 88.9 | 90.3 | 89.4 | 91.8 | 96.6 | 96.9 | 100.4 | 103.6 | 107.6 | 107.9 | 97.7 | 91.7 | 143.2 |
| 2500 | 88.0 | 89.8 | 89.9 | 89.9 | 92.0 | 96.4 | 96.5 | 99.9 | 103.0 | 106.6 | 106.1 | 97.4 | 91.6 | 142.3 |
| 3150 | 87.9 | 89.3 | 90.3 | 89.5 | 91.9 | 96.4 | 96.3 | 100.0 | 102.4 | 105.5 | 104.0 | 95.4 | 89.3 | 141.3 |
| 4000 | 88.4 | 89.1 | 90.9 | 88.0 | 91.8 | 95.7 | 96.4 | 99.9 | 101.8 | 103.1 | 101.5 | 94.0 | 88.9 | 140.1 |
| 5000 | 89.5 | 89.3 | 90.7 | 89.0 | 91.1 | 95.0 | 95.9 | 99.0 | 100.8 | 102.4 | 100.2 | 92.4 | 87.4 | 139.4 |
| 6300 | 90.5 | 91.7 | 91.8 | 89.3 | 90.6 | 95.1 | 95.4 | 98.8 | 100.1 | 100.8 | 98.5 | 91.2 | 86.5 | 138.9 |
| 8000 | 89.4 | 91.1 | 92.7 | 90.1 | 90.5 | 94.3 | 94.0 | 96.8 | 98.4 | 98.3 | 96.7 | 90.1 | 85.6 | 137.7 |
| 10000 | 89.0 | 90.4 | 92.2 | 91.0 | 91.6 | 94.3 | 93.8 | 96.8 | 97.8 | 97.1 | 96.1 | 90.2 | 86.0 | 137.9 |
| 12500 | 87.1 | 88.2 | 90.5 | 89.9 | 91.2 | 94.5 | 93.0 | 94.2 | 95.4 | 95.0 | 93.0 | 89.4 | 85.2 | 137.1 |
| 16000 | 85.6 | 87.7 | 89.1 | 88.6 | 89.4 | 92.7 | 91.5 | 92.9 | 94.2 | 91.9 | 91.5 | 87.2 | 82.9 | 136.8 |
| 20000 | 82.4 | 84.8 | 86.4 | 86.2 | 87.2 | 90.2 | 90.1 | 90.2 | 90.5 | 88.9 | 88.7 | 84.9 | 80.4 | 135.9 |
| 25000 | 78.7 | 81.5 | 83.0 | 83.7 | 84.1 | 89.0 | 87.6 | 87.1 | 88.3 | 85.1 | 84.8 | 82.5 | 77.4 | 135.7 |
| 31500 | 75.1 | 77.4 | 79.2 | 80.4 | 80.2 | 84.9 | 83.3 | 83.7 | 81.4 | 81.5 | 78.5 | 78.5 | 73.3 | 134.8 |
| 40000 | 70.1 | 72.6 | 75.1 | 75.9 | 75.4 | 81.1 | 78.9 | 79.8 | 80.9 | 77.2 | 77.8 | 74.5 | 69.4 | 134.9 |
| 50000 | 63.4 | 66.4 | 68.0 | 69.4 | 69.5 | 75.9 | 73.0 | 73.6 | 74.4 | 71.1 | 72.0 | 68.9 | 63.6 | 133.3 |
| 63000 | 57.4 | 60.6 | 63.1 | 63.9 | 64.9 | 70.2 | 68.2 | 68.2 | 69.3 | 65.0 | 65.5 | 62.1 | 56.7 | 132.9 |
| 80000 | 49.9 | 53.2 | 55.7 | 55.4 | 56.2 | 63.6 | 59.7 | 60.7 | 61.4 | 57.1 | 58.2 | 54.8 | 49.0 | 132.4 |
| GASPL | 102.5 | 104.5 | 105.3 | 103.6 | 104.9 | 108.9 | 109.3 | 111.8 | 114.1 | 118.7 | 121.2 | 120.4 | 109.2 | 156.5 |
| PNLT | 114.1 | 115.5 | 116.5 | 115.0 | 116.9 | 121.1 | 121.5 | 124.5 | 126.8 | 130.4 | 131.1 | 127.7 | 117.5 | |
| PNLT | 114.1 | 115.5 | 116.5 | 115.7 | 117.6 | 121.7 | 122.1 | 124.5 | 126.8 | 130.4 | 131.1 | 127.7 | 117.9 | |
| DBA | 100.2 | 101.4 | 102.5 | 101.1 | 103.1 | 107.2 | 107.6 | 111.0 | 113.7 | 118.1 | 119.5 | 115.8 | 104.9 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

| | | | | | | | | | | | | | | | | | |
|----------|---|--------------|--------------|---|----------|------------|---|--------------|------------|-----|-------|---------|----------------|-------|--------|---|------------|
| VEHICL | = | ADH175 | TEST DATE | = | 03-30-83 | LOCAT | = | C41 ANECH CH | CONFIG | = | 12 | MODEL | = | CO | FLTVEL | = | 400. FPS |
| IAPLHA | = | 3D59 | LEGA | = | NO | PWL AREA | = | FULL SPHERE | TAMB P | = | 49.13 | PAMB HG | = | 29.42 | RELHUM | = | 42.0 PCT |
| WIND DIR | = | | DEG WIND VEL | = | | NPII | = | 40.0 FT | EXT CONFIG | = | ARC | MIKE HT | = | | NBFR | = | |
| FNINI | = | LBS XNL | | = | RPM | XNHR | | = | RPM | V8 | | = | 1211.8 FPS | AE8 | | = | 4.6 SQ IN |
| FNFAVB | = | LBS XNLR | | = | RPM | XNHR | | = | RPM | V18 | | = | 1995.1 FPS | AE18 | | = | 23.4 SQ IN |
| RUNPT | = | 83F 400-1206 | TAPE | = | X1206C | TEST PT NO | = | 1206 | NC | | = | AE085 | CURR FAN SPEED | = | | | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1206 X1206F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 91.9 | 93.7 | 92.2 | 89.4 | 89.6 | 92.3 | 91.2 | 91.8 | 96.8 | 101.1 | 107.1 | 110.0 | 101.8 | 142.5 |
| 315 | 91.9 | 93.7 | 92.2 | 89.4 | 90.3 | 93.1 | 93.8 | 93.9 | 96.2 | 103.5 | 109.1 | 111.0 | 101.5 | 143.8 |
| 400 | 92.3 | 93.8 | 92.8 | 90.1 | 90.3 | 93.1 | 97.2 | 93.5 | 97.4 | 105.0 | 109.5 | 111.0 | 100.9 | 144.2 |
| 500 | 93.2 | 93.5 | 93.3 | 90.3 | 91.4 | 94.2 | 92.7 | 94.2 | 97.5 | 106.3 | 109.5 | 109.5 | 101.3 | 144.0 |
| 630 | 93.5 | 93.8 | 94.4 | 91.1 | 92.2 | 94.2 | 93.2 | 95.1 | 100.3 | 106.5 | 109.8 | 108.0 | 101.5 | 143.9 |
| 800 | 94.2 | 94.5 | 94.6 | 91.6 | 92.8 | 95.2 | 94.1 | 96.4 | 101.2 | 107.2 | 108.9 | 106.5 | 102.7 | 143.7 |
| 1000 | 95.0 | 94.6 | 94.5 | 92.0 | 93.3 | 96.2 | 94.9 | 97.2 | 101.9 | 106.5 | 107.9 | 102.1 | 101.6 | 142.9 |
| 1250 | 96.7 | 96.4 | 96.1 | 93.2 | 93.7 | 96.8 | 94.9 | 97.5 | 102.6 | 105.8 | 107.6 | 101.3 | 101.3 | 142.8 |
| 1600 | 95.6 | 97.5 | 96.7 | 93.6 | 95.0 | 97.2 | 96.5 | 99.0 | 102.7 | 106.4 | 107.1 | 100.1 | 101.4 | 143.0 |
| 2000 | 96.5 | 95.8 | 96.2 | 93.9 | 94.4 | 97.9 | 96.7 | 98.9 | 102.7 | 106.2 | 106.0 | 100.6 | 102.4 | 142.7 |
| 2500 | 96.5 | 95.5 | 95.6 | 93.4 | 94.9 | 98.0 | 96.7 | 98.0 | 102.4 | 105.2 | 104.1 | 98.7 | 99.8 | 141.9 |
| 3150 | 95.6 | 96.4 | 95.3 | 94.0 | 95.7 | 98.5 | 96.9 | 99.3 | 102.9 | 103.7 | 102.6 | 98.4 | 100.8 | 141.6 |
| 4000 | 98.3 | 98.2 | 97.6 | 95.1 | 95.5 | 98.3 | 97.9 | 100.1 | 101.8 | 103.1 | 101.2 | 96.7 | 99.2 | 141.6 |
| 5000 | 96.0 | 95.8 | 96.7 | 93.5 | 95.1 | 98.0 | 97.8 | 99.3 | 101.7 | 102.0 | 100.2 | 96.3 | 99.3 | 140.9 |
| 6300 | 96.9 | 96.0 | 96.5 | 93.9 | 94.6 | 98.1 | 97.4 | 99.5 | 100.5 | 100.2 | 99.2 | 96.1 | 99.3 | 140.6 |
| 8000 | 97.7 | 98.2 | 97.4 | 94.0 | 94.5 | 97.3 | 96.2 | 97.9 | 100.6 | 99.7 | 99.4 | 96.9 | 100.1 | 141.0 |
| 10000 | 96.5 | 97.5 | 98.2 | 94.6 | 95.6 | 97.3 | 96.2 | 98.2 | 99.2 | 98.6 | 97.1 | 96.5 | 99.2 | 141.0 |
| 12500 | 95.9 | 96.6 | 97.4 | 95.2 | 95.2 | 97.5 | 95.4 | 96.1 | 98.7 | 96.3 | 96.3 | 95.1 | 97.8 | 141.0 |
| 16000 | 93.7 | 93.8 | 95.2 | 93.6 | 93.5 | 95.7 | 93.9 | 94.8 | 95.0 | 93.1 | 93.3 | 92.3 | 94.6 | 140.1 |
| 20000 | 91.5 | 92.9 | 93.4 | 91.9 | 91.3 | 93.2 | 92.3 | 91.7 | 91.9 | 88.4 | 88.4 | 89.0 | 90.8 | 139.4 |
| 25000 | 87.8 | 89.4 | 90.1 | 88.9 | 88.7 | 92.0 | 89.2 | 87.5 | 88.7 | 86.1 | 86.5 | 86.4 | 88.0 | 138.9 |
| 31500 | 86.1 | 87.6 | 87.7 | 86.8 | 84.8 | 87.9 | 85.1 | 84.1 | 87.4 | 83.6 | 84.5 | 84.0 | 85.8 | 139.3 |
| 40000 | 81.6 | 82.7 | 83.0 | 82.6 | 80.0 | 84.1 | 80.9 | 81.1 | 80.4 | 76.8 | 78.0 | 77.7 | 79.3 | 138.5 |
| 50000 | 76.1 | 77.5 | 78.5 | 77.7 | 74.1 | 78.9 | 74.7 | 74.2 | 77.3 | 73.0 | 74.0 | 73.5 | 75.0 | 137.8 |
| 63000 | 69.6 | 70.3 | 70.4 | 70.3 | 69.5 | 73.2 | 68.3 | 69.5 | 70.0 | 65.6 | 67.2 | 66.7 | 67.7 | 136.5 |
| 80000 | 61.0 | 63.0 | 64.1 | 63.3 | 60.8 | 66.6 | 61.5 | 61.4 | 60.2 | 55.8 | 57.4 | 56.9 | 57.9 | 135.8 |
| 0ASPL | 108.5 | 108.5 | 108.8 | 106.2 | 106.9 | 109.6 | 108.8 | 110.4 | 113.5 | 117.0 | 119.0 | 118.1 | 113.5 | 155.8 |
| PNL | 120.8 | 120.9 | 120.6 | 118.0 | 118.8 | 121.6 | 120.9 | 122.8 | 125.8 | 128.2 | 128.4 | 125.6 | 124.9 | |
| PNLT | 120.8 | 120.9 | 120.6 | 118.0 | 118.8 | 121.6 | 121.6 | 122.8 | 125.8 | 128.2 | 128.4 | 125.6 | 124.9 | |
| DBA | 184.1 | 185.9 | 186.7 | 186.1 | 184.0 | 188.9 | 184.1 | 184.3 | 184.4 | 180.1 | 181.5 | 181.1 | 182.2 | |

ORIGINAL PAGE IS
OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VEHICLE = ADH175 TEST DATE = 03-30 63 LOCAT = C41 ANECII CH CONFIG = 12 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 43.13 PAMB HG = 29.42 RELHUM = 42.0 PCT
 WIND DIR = DEU WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC NIKE HT = NBFR =

FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1211.8 FPS AE8 = 4.6 SQ IN
 INRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1995.1 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1206 TAPE = X1206F TEST PT NO = 1206 NC = AE086 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1206 X12061

ANGLES MEASURED FROM INLET, DEGREES

| FRFQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 67.3 | 70.7 | 70.3 | 68.2 | 68.7 | 71.6 | 70.4 | 70.6 | 74.9 | 78.1 | 82.5 | 83.3 | 71.7 | 157.4 |
| 63 | 67.3 | 70.7 | 70.3 | 68.2 | 69.5 | 72.4 | 73.0 | 72.7 | 74.3 | 80.5 | 84.6 | 84.2 | 71.4 | 158.7 |
| 80 | 67.6 | 70.7 | 70.8 | 68.8 | 69.5 | 72.4 | 76.3 | 72.2 | 75.4 | 81.9 | 84.8 | 84.2 | 70.7 | 159.1 |
| 100 | 68.5 | 70.3 | 71.3 | 69.0 | 70.5 | 73.4 | 71.8 | 72.9 | 75.4 | 83.2 | 84.7 | 82.6 | 70.9 | 158.9 |
| 125 | 68.7 | 70.5 | 72.2 | 69.7 | 71.2 | 73.4 | 72.2 | 73.7 | 78.2 | 83.2 | 84.9 | 80.9 | 70.8 | 158.8 |
| 160 | 69.2 | 71.1 | 72.3 | 70.1 | 71.7 | 74.2 | 73.0 | 74.9 | 78.9 | 83.8 | 83.9 | 79.1 | 71.7 | 158.6 |
| 200 | 69.7 | 70.9 | 72.0 | 70.3 | 72.0 | 75.1 | 73.6 | 75.5 | 79.4 | 82.9 | 82.6 | 74.4 | 70.1 | 157.8 |
| 250 | 71.1 | 72.5 | 73.4 | 71.3 | 72.1 | 75.4 | 73.4 | 75.5 | 79.8 | 81.9 | 82.0 | 73.1 | 69.1 | 157.7 |
| 315 | 69.5 | 73.2 | 73.6 | 71.4 | 73.2 | 75.6 | 74.8 | 76.7 | 79.7 | 82.1 | 81.0 | 71.4 | 68.4 | 157.9 |
| 400 | 69.9 | 71.1 | 72.7 | 71.3 | 72.3 | 75.9 | 74.5 | 76.3 | 79.2 | 81.4 | 79.4 | 71.2 | 68.4 | 157.6 |
| 500 | 69.3 | 70.3 | 71.8 | 70.5 | 72.5 | 75.7 | 74.2 | 75.8 | 78.6 | 80.0 | 77.0 | 68.6 | 64.7 | 156.8 |
| 630 | 67.9 | 70.8 | 71.1 | 70.7 | 72.9 | 75.8 | 74.1 | 76.0 | 78.6 | 78.0 | 74.9 | 67.6 | 64.6 | 156.5 |
| 800 | 69.9 | 72.0 | 72.9 | 71.3 | 72.3 | 75.3 | 74.7 | 76.4 | 77.1 | 76.9 | 72.9 | 65.0 | 61.7 | 156.5 |
| 1000 | 67.0 | 69.1 | 71.5 | 69.4 | 71.5 | 74.6 | 74.2 | 75.2 | 76.5 | 75.3 | 71.2 | 63.7 | 60.4 | 155.8 |
| 1250 | 67.1 | 68.7 | 70.8 | 69.2 | 70.6 | 74.2 | 73.4 | 74.9 | 74.8 | 72.8 | 69.3 | 62.3 | 58.6 | 155.5 |
| 1600 | 66.5 | 69.8 | 70.8 | 68.6 | 69.7 | 72.7 | 71.4 | 72.5 | 74.1 | 71.3 | 68.3 | 61.4 | 56.7 | 155.9 |
| 2000 | 63.6 | 67.7 | 70.4 | 68.1 | 69.9 | 71.8 | 70.5 | 71.8 | 71.5 | 68.2 | 58.5 | 51.9 | 48.5 | 155.9 |
| 2500 | 60.2 | 64.6 | 67.9 | 67.2 | 68.0 | 70.5 | 68.2 | 68.1 | 69.1 | 64.3 | 60.7 | 53.4 | 44.7 | 155.9 |
| 3150 | 53.7 | 58.4 | 62.8 | 63.0 | 63.8 | 66.4 | 64.4 | 64.2 | 62.6 | 57.8 | 53.2 | 44.6 | 32.1 | 155.0 |
| 4000 | 43.9 | 51.4 | 55.7 | 56.7 | 57.3 | 59.7 | 58.3 | 56.4 | 54.3 | 46.9 | 40.8 | 31.0 | 12.4 | 154.3 |
| 5000 | 28.7 | 38.7 | 44.6 | 46.6 | 48.2 | 52.0 | 48.7 | 45.2 | 43.2 | 35.4 | 27.5 | 13.0 | | 153.8 |
| 6300 | 8.0 | 21.4 | 29.9 | 32.5 | 32.9 | 36.8 | 33.2 | 29.7 | 28.6 | 17.4 | 6.4 | | | 154.2 |
| 8000 | | 1.5 | 7.7 | 8.6 | 13.8 | 9.5 | 6.1 | | | | | | | 153.4 |
| 10000 | | | | | | | | | | | | | | 152.7 |
| 12500 | | | | | | | | | | | | | | 151.4 |
| 16000 | | | | | | | | | | | | | | 150.7 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DITAS-12/NAS3-22137

VEHICLE = ADH175 TEST DATE = 03-30 83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO MPH PWL AREA = FULL SPHERE TAMB F = 43.13 PAMB HG = 29.42 RELHUM = 42.0 PCT
 WIND DIR = DEG WIND VEL = MPH EX1 DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNLR = RPM XNH = RPM V8 = 1211 6 FPS AE8 = 4.6 SQ IN
 FNIRMB = LBS XNLR = RPM XNH = RPM V18 = 1995.1 FPS AE10 = 23.4 SQ IN

TEST = 83F-400-1206 CASE = X12061 TEST N = 1200 R F = 10000 RPM

IDENTIFICATION - MODEL 83F-ZER-1207 X1207C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.9 | 89.2 | 88.9 | 86.0 | 86.6 | 87.9 | 91.6 | 93.7 | 92.2 | 91.7 | 100.9 | 99.3 | 89.2 | 135.3 |
| 63 | 93.8 | 94.3 | 93.1 | 93.9 | 93.2 | 96.3 | 99.2 | 99.9 | 96.3 | 97.1 | 102.3 | 102.7 | 93.1 | 140.1 |
| 80 | 93.5 | 97.8 | 93.8 | 92.1 | 94.5 | 99.1 | 96.7 | 97.1 | 96.8 | 97.4 | 101.5 | 101.5 | 87.1 | 139.3 |
| 100 | 92.5 | 100.0 | 95.3 | 93.3 | 96.6 | 99.8 | 98.1 | 100.8 | 97.8 | 102.8 | 102.5 | 106.6 | 90.8 | 141.9 |
| 125 | 89.6 | 92.9 | 95.7 | 93.7 | 97.8 | 100.2 | 97.3 | 98.5 | 98.4 | 102.8 | 108.6 | 111.1 | 93.7 | 144.2 |
| 160 | 87.9 | 89.2 | 93.0 | 89.3 | 92.1 | 95.7 | 98.6 | 97.5 | 99.0 | 103.8 | 109.2 | 111.9 | 101.0 | 144.5 |
| 200 | 90.5 | 89.3 | 92.1 | 88.9 | 93.0 | 97.6 | 98.2 | 98.4 | 102.8 | 105.6 | 111.3 | 115.2 | 104.1 | 147.1 |
| 250 | 90.3 | 92.3 | 94.1 | 91.4 | 95.0 | 97.8 | 99.0 | 101.1 | 104.3 | 110.9 | 115.8 | 118.2 | 107.4 | 150.7 |
| 315 | 91.3 | 93.1 | 93.1 | 90.9 | 95.0 | 99.4 | 101.0 | 101.7 | 105.6 | 112.7 | 117.1 | 118.8 | 109.7 | 151.8 |
| 400 | 92.8 | 94.1 | 94.9 | 91.4 | 95.5 | 98.9 | 107.2 | 102.7 | 106.9 | 115.4 | 119.6 | 120.3 | 110.7 | 153.9 |
| 500 | 93.3 | 95.1 | 96.4 | 93.2 | 96.6 | 100.6 | 100.5 | 103.9 | 108.1 | 116.7 | 120.8 | 121.0 | 112.4 | 154.9 |
| 630 | 94.3 | 96.3 | 97.1 | 93.9 | 98.0 | 100.3 | 101.5 | 104.9 | 108.8 | 117.4 | 121.0 | 121.0 | 114.1 | 155.2 |
| 800 | 97.1 | 97.4 | 94.7 | 98.8 | 101.1 | 102.8 | 105.7 | 110.6 | 111.2 | 121.1 | 121.0 | 115.2 | 155.3 | |
| 1000 | 100.3 | 102.5 | 101.1 | 97.4 | 99.9 | 103.3 | 103.2 | 106.4 | 111.1 | 117.4 | 120.8 | 120.9 | 115.6 | 155.4 |
| 1250 | 98.2 | 102.5 | 102.2 | 98.9 | 101.9 | 104.0 | 103.6 | 107.0 | 111.7 | 116.3 | 120.2 | 118.9 | 114.8 | 154.5 |
| 1600 | 98.6 | 99.5 | 100.4 | 97.1 | 100.8 | 104.4 | 104.5 | 107.8 | 111.7 | 115.5 | 119.6 | 117.8 | 112.5 | 153.8 |
| 2000 | 98.8 | 100.9 | 100.5 | 97.2 | 100.5 | 103.9 | 104.4 | 107.9 | 111.8 | 118.6 | 118.1 | 110.4 | 153.0 | |
| 2500 | 98.2 | 101.5 | 100.9 | 97.8 | 100.5 | 104.1 | 104.3 | 107.1 | 110.8 | 116.1 | 116.6 | 112.6 | 108.9 | 151.9 |
| 3150 | 97.9 | 101.7 | 102.0 | 97.7 | 100.3 | 103.9 | 104.0 | 107.2 | 110.8 | 114.2 | 114.7 | 110.3 | 106.0 | 150.6 |
| 4000 | 96.9 | 100.5 | 101.9 | 97.8 | 101.2 | 103.9 | 103.8 | 107.6 | 110.3 | 112.0 | 113.5 | 107.7 | 104.3 | 149.6 |
| 5000 | 94.9 | 99.0 | 101.1 | 98.0 | 101.0 | 103.7 | 103.6 | 106.4 | 108.7 | 111.9 | 110.9 | 105.6 | 102.1 | 148.5 |
| 6300 | 93.6 | 97.9 | 99.2 | 96.5 | 100.5 | 104.0 | 103.3 | 106.5 | 108.5 | 109.7 | 108.9 | 104.2 | 101.1 | 147.7 |
| 8000 | 92.1 | 96.5 | 97.6 | 95.0 | 99.4 | 102.7 | 101.9 | 104.5 | 106.3 | 107.0 | 107.1 | 102.8 | 99.3 | 146.1 |
| 10000 | 91.5 | 95.2 | 97.0 | 95.2 | 98.6 | 102.6 | 101.8 | 104.6 | 105.6 | 105.6 | 105.6 | 101.4 | 98.7 | 145.8 |
| 12500 | 89.4 | 92.8 | 95.1 | 93.7 | 97.5 | 101.5 | 100.5 | 101.3 | 103.2 | 103.8 | 103.1 | 100.5 | 97.0 | 144.7 |
| 16000 | 87.5 | 92.4 | 94.3 | 92.8 | 96.1 | 99.1 | 99.2 | 99.3 | 102.0 | 101.2 | 101.2 | 97.9 | 94.1 | 144.2 |
| 20000 | 85.0 | 89.9 | 91.3 | 90.0 | 94.0 | 96.3 | 97.1 | 96.8 | 98.7 | 98.3 | 98.6 | 95.2 | 91.5 | 143.3 |
| 25000 | 81.9 | 86.7 | 88.0 | 87.9 | 90.6 | 94.7 | 93.6 | 92.8 | 96.0 | 94.3 | 93.8 | 91.1 | 87.3 | 142.3 |
| 31500 | 77.8 | 82.8 | 84.5 | 84.4 | 86.7 | 90.4 | 88.8 | 89.8 | 91.3 | 90.8 | 89.8 | 86.5 | 82.3 | 141.4 |
| 40000 | 73.1 | 78.3 | 80.5 | 80.0 | 81.7 | 86.6 | 84.7 | 85.1 | 87.3 | 86.7 | 85.9 | 81.8 | 77.9 | 141.2 |
| 50000 | 67.0 | 71.6 | 73.9 | 73.6 | 75.9 | 81.5 | 78.6 | 79.0 | 80.8 | 80.2 | 79.4 | 76.5 | 71.5 | 139.5 |
| 63000 | 61.0 | 65.6 | 68.8 | 67.8 | 70.7 | 76.1 | 72.1 | 73.8 | 75.8 | 74.3 | 73.2 | 69.7 | 64.1 | 139.2 |
| 80000 | 55.0 | 59.5 | 61.2 | 59.8 | 62.1 | 69.5 | 65.6 | 66.4 | 67.7 | 68.7 | 66.9 | 62.4 | 55.6 | 139.1 |
| GASPL | 109.3 | 112.2 | 112.6 | 109.4 | 112.7 | 115.9 | 116.4 | 118.7 | 122.1 | 127.2 | 130.5 | 130.2 | 123.5 | 165.3 |
| PNL | 121.9 | 125.1 | 125.6 | 122.1 | 125.4 | 128.5 | 128.8 | 131.7 | 134.8 | 139.1 | 140.9 | 139.0 | 133.2 | |
| PNLT | 121.9 | 125.9 | 125.6 | 122.1 | 126.0 | 128.5 | 129.9 | 131.7 | 134.8 | 139.1 | 140.9 | 139.0 | 133.2 | |
| DBA | 108.8 | 111.7 | 112.0 | 108.6 | 111.9 | 115.1 | 115.3 | 118.3 | 121.9 | 126.7 | 129.5 | 128.4 | 122.8 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|-------------------|
| VEHICL = ADHT84 | TEST DATE = 03-30-83 | LOCAT = C41 ANECH CH | CONFIG = 12 | MODEL = C01 | FLTVEL = 0. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 43.85 | PAMB HG = 29.56 | RELHUM = 46.7 PCT |
| WIND DIR = | DEG WIND VEL = | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNIIN1 = | LBS XNLR = | RPM XNHR = | V8 = 1326.0 FPS | AE8 = | 4.6 SQ IN |
| FNRAMB = | LBS XNLR = | RPM XNHR = | V18 = 2162.6 FPS | AE18 = | 23.4 SQ IN |
| RUNPT = 83F-ZER-1207 | TAPE = | TEST PT NO = 1207 | NC = | CORR FAN SPEED = | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1207 X1207F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50 | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.9 | 89.2 | 88.9 | 86.0 | 86.6 | 87.9 | 91.6 | 93.7 | 92.2 | 91.7 | 100.9 | 99.3 | 89.2 | 135.3 |
| 63 | 93.8 | 94.3 | 99.1 | 93.9 | 93.2 | 96.3 | 99.2 | 99.9 | 96.3 | 97.1 | 102.3 | 102.7 | 93.1 | 140.1 |
| 80 | 93.5 | 97.8 | 93.8 | 92.1 | 94.5 | 99.1 | 96.7 | 97.1 | 96.6 | 97.4 | 101.5 | 101.5 | 87.1 | 139.3 |
| 100 | 92.5 | 100.0 | 95.3 | 93.3 | 96.6 | 99.8 | 98.1 | 100.8 | 97.8 | 102.8 | 106.6 | 106.6 | 90.8 | 141.9 |
| 125 | 89.6 | 92.9 | 93.7 | 97.8 | 100.2 | 97.3 | 98.5 | 98.4 | 102.8 | 108.6 | 111.1 | 111.1 | 95.7 | 144.2 |
| 160 | 87.9 | 89.2 | 93.0 | 89.3 | 92.1 | 95.7 | 98.6 | 97.5 | 99.0 | 103.8 | 109.2 | 111.9 | 101.0 | 144.5 |
| 200 | 90.5 | 89.3 | 92.1 | 88.9 | 93.0 | 97.6 | 98.2 | 98.4 | 102.8 | 105.6 | 111.3 | 115.2 | 104.1 | 147.1 |
| 250 | 90.3 | 92.3 | 94.1 | 91.4 | 95.0 | 97.8 | 99.0 | 101.1 | 104.3 | 110.9 | 115.8 | 118.2 | 107.4 | 150.7 |
| 315 | 91.3 | 93.1 | 93.1 | 90.9 | 95.0 | 99.4 | 101.0 | 101.7 | 105.6 | 112.7 | 117.1 | 118.8 | 109.7 | 151.8 |
| 400 | 92.8 | 94.1 | 94.9 | 91.4 | 95.5 | 98.9 | 107.2 | 102.7 | 106.9 | 115.4 | 119.6 | 120.3 | 110.7 | 153.9 |
| 500 | 93.3 | 95.1 | 96.4 | 93.2 | 96.8 | 100.6 | 100.5 | 103.9 | 108.1 | 116.7 | 120.8 | 121.0 | 112.4 | 154.9 |
| 630 | 94.3 | 96.3 | 97.1 | 93.9 | 98.0 | 100.3 | 101.5 | 104.9 | 108.8 | 117.4 | 121.0 | 121.0 | 114.1 | 155.2 |
| 800 | 97.1 | 97.1 | 97.4 | 94.7 | 98.8 | 101.1 | 102.8 | 105.7 | 110.6 | 117.2 | 121.1 | 121.0 | 115.2 | 155.3 |
| 1000 | 100.3 | 102.5 | 101.1 | 97.4 | 99.9 | 103.3 | 103.2 | 106.4 | 111.1 | 117.4 | 120.8 | 120.9 | 115.6 | 155.4 |
| 1250 | 90.2 | 102.5 | 102.2 | 98.9 | 101.9 | 104.0 | 103.6 | 107.0 | 111.7 | 116.3 | 120.2 | 118.9 | 114.8 | 154.5 |
| 1600 | 98.6 | 99.5 | 100.4 | 97.1 | 100.8 | 104.4 | 104.5 | 107.8 | 111.7 | 115.5 | 119.6 | 117.8 | 112.5 | 153.8 |
| 2000 | 98.8 | 100.9 | 100.5 | 97.2 | 100.5 | 103.9 | 104.4 | 107.9 | 111.8 | 116.1 | 118.6 | 115.1 | 110.4 | 153.0 |
| 2500 | 93.2 | 101.5 | 100.9 | 97.8 | 100.5 | 104.1 | 104.3 | 107.1 | 110.8 | 116.1 | 116.6 | 112.6 | 108.9 | 151.9 |
| 3150 | 97.9 | 101.7 | 102.0 | 97.7 | 100.3 | 103.9 | 104.0 | 107.2 | 110.8 | 114.2 | 114.7 | 110.3 | 106.0 | 150.6 |
| 4000 | 96.9 | 100.5 | 101.9 | 97.8 | 101.2 | 103.9 | 103.8 | 107.6 | 110.3 | 112.0 | 113.5 | 107.7 | 104.3 | 149.6 |
| 5000 | 94.9 | 99.0 | 101.1 | 98.0 | 101.0 | 103.7 | 103.6 | 106.4 | 108.7 | 111.9 | 110.9 | 105.6 | 102.1 | 148.5 |
| 6300 | 93.6 | 97.9 | 99.2 | 96.5 | 100.5 | 104.0 | 103.3 | 106.5 | 108.5 | 109.7 | 108.9 | 104.2 | 101.1 | 147.7 |
| 8000 | 92.1 | 96.5 | 97.6 | 95.0 | 99.4 | 102.7 | 101.9 | 104.5 | 106.3 | 107.0 | 107.1 | 102.8 | 99.3 | 146.1 |
| 10000 | 91.5 | 95.2 | 97.0 | 95.2 | 98.6 | 102.6 | 101.8 | 104.6 | 105.6 | 105.5 | 105.6 | 101.4 | 98.7 | 145.8 |
| 12500 | 89.4 | 92.8 | 93.1 | 93.7 | 97.5 | 101.5 | 100.5 | 101.3 | 103.2 | 103.8 | 103.1 | 100.5 | 97.0 | 144.7 |
| 16000 | 87.5 | 92.4 | 94.3 | 92.8 | 96.1 | 99.1 | 99.2 | 99.3 | 102.0 | 101.2 | 101.2 | 97.9 | 94.1 | 144.2 |
| 20000 | 85.0 | 89.9 | 91.3 | 90.0 | 94.0 | 96.3 | 97.1 | 96.0 | 98.7 | 98.3 | 98.6 | 95.2 | 91.5 | 143.3 |
| 25000 | 81.9 | 86.7 | 88.0 | 87.9 | 90.6 | 94.7 | 93.6 | 92.8 | 96.0 | 94.3 | 93.8 | 91.1 | 87.3 | 142.3 |
| 31500 | 77.8 | 82.8 | 84.5 | 84.4 | 86.7 | 90.4 | 88.8 | 89.8 | 91.3 | 90.8 | 89.8 | 86.5 | 82.3 | 141.4 |
| 40000 | 73.1 | 78.3 | 80.5 | 80.0 | 81.7 | 86.6 | 84.7 | 85.1 | 87.3 | 86.7 | 85.9 | 81.8 | 77.9 | 141.2 |
| 50000 | 67.0 | 71.6 | 73.9 | 73.6 | 75.9 | 81.5 | 78.6 | 79.0 | 80.8 | 80.2 | 79.4 | 75.9 | 71.5 | 139.5 |
| 63000 | 61.0 | 65.6 | 68.8 | 67.8 | 70.7 | 76.1 | 72.1 | 73.8 | 75.8 | 74.3 | 73.2 | 69.7 | 64.1 | 139.2 |
| 80000 | 55.0 | 59.5 | 61.2 | 59.8 | 62.1 | 69.5 | 65.6 | 66.4 | 67.7 | 68.7 | 66.9 | 62.4 | 55.6 | 139.1 |
| GASPL | 109.3 | 112.2 | 112.6 | 109.4 | 112.7 | 115.9 | 116.4 | 118.7 | 122.1 | 127.2 | 130.5 | 130.2 | 123.5 | 165.3 |
| PWL | 121.9 | 125.1 | 125.6 | 122.1 | 125.4 | 128.5 | 128.8 | 131.7 | 134.8 | 139.1 | 140.9 | 139.0 | 133.2 | |
| PWL | 121.9 | 125.6 | 125.6 | 122.1 | 126.0 | 128.5 | 129.9 | 131.7 | 134.8 | 139.1 | 140.9 | 139.0 | 133.2 | |
| DBA | 177.2 | 181.7 | 184.0 | 182.8 | 185.3 | 191.8 | 188.1 | 189.0 | 190.6 | 190.7 | 189.2 | 185.2 | 179.3 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VEHICLE = ADH184 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = CO FLTVEL = 0. FPS
IAPLHA = SB59 IEGA = NG PWL AREA = FULL SPHERE TAMB F = 43.85 PAMB HQ = 29.55 RELHUM = 46.7 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1326.0 FPS AE8 = 4.6 SQ IN
FNAMB = LBS XNLR = RPM XNHR = RPM V18 = 2162.6 FPS AE18 = 23.4 SQ IN

SCRIPT - 83F-ZER-1207 CASE = Y 83FZ1207F 1207F AEO

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1207 X12071

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 65.7 | 69.3 | 72.1 | 70.1 | 74.1 | 77.1 | 78.1 | 79.9 | 82.4 | 87.9 | 91.2 | 91.5 | 77.3 | 165.6 |
| 63 | 66.8 | 70.1 | 71.2 | 69.7 | 74.2 | 78.7 | 80.2 | 80.4 | 83.7 | 89.7 | 92.5 | 92.0 | 79.5 | 166.7 |
| 80 | 68.2 | 71.0 | 72.9 | 70.1 | 74.6 | 78.1 | 86.4 | 81.4 | 84.9 | 92.3 | 94.9 | 93.4 | 80.4 | 168.8 |
| 100 | 68.6 | 72.0 | 74.3 | 71.8 | 75.9 | 79.9 | 70.6 | 82.6 | 86.1 | 93.6 | 96.1 | 94.1 | 82.0 | 169.8 |
| 125 | 69.5 | 73.1 | 74.9 | 72.5 | 77.0 | 79.5 | 80.5 | 83.5 | 86.7 | 94.2 | 96.2 | 93.9 | 83.5 | 170.1 |
| 160 | 72.1 | 73.7 | 75.1 | 73.1 | 77.7 | 80.2 | 81.7 | 84.1 | 88.4 | 93.8 | 96.1 | 93.7 | 84.2 | 170.2 |
| 200 | 75.0 | 78.9 | 78.6 | 75.6 | 78.7 | 82.2 | 81.9 | 84.6 | 88.6 | 93.8 | 95.5 | 93.2 | 84.1 | 170.3 |
| 250 | 72.6 | 78.6 | 79.5 | 76.9 | 80.4 | 82.6 | 82.1 | 85.1 | 89.0 | 92.4 | 94.6 | 90.7 | 82.6 | 169.4 |
| 315 | 72.5 | 75.2 | 77.4 | 74.8 | 79.0 | 82.8 | 82.7 | 85.6 | 88.6 | 91.2 | 93.6 | 89.1 | 79.5 | 168.7 |
| 400 | 72.2 | 76.1 | 77.1 | 74.6 | 78.4 | 81.9 | 82.2 | 85.3 | 88.3 | 91.4 | 92.0 | 85.7 | 76.4 | 167.9 |
| 500 | 71.1 | 76.4 | 77.0 | 74.9 | 78.0 | 81.8 | 81.8 | 84.2 | 86.9 | 90.9 | 89.4 | 82.5 | 73.8 | 166.8 |
| 630 | 70.2 | 76.1 | 77.7 | 74.4 | 77.5 | 81.2 | 81.2 | 83.9 | 86.6 | 88.6 | 87.0 | 79.4 | 69.8 | 165.5 |
| 800 | 68.5 | 74.3 | 77.2 | 74.0 | 78.0 | 80.9 | 80.6 | 83.9 | 85.6 | 85.8 | 85.1 | 76.0 | 66.8 | 164.5 |
| 1000 | 65.9 | 72.3 | 75.9 | 73.8 | 77.4 | 80.3 | 80.0 | 82.3 | 83.5 | 85.2 | 81.8 | 73.0 | 63.2 | 163.4 |
| 1250 | 63.8 | 70.5 | 73.5 | 71.8 | 76.5 | 80.1 | 79.2 | 81.8 | 82.8 | 82.4 | 79.1 | 70.4 | 60.5 | 162.6 |
| 1600 | 60.9 | 68.1 | 71.0 | 69.6 | 74.6 | 78.1 | 77.1 | 79.1 | 79.7 | 78.6 | 76.0 | 67.2 | 55.9 | 161.0 |
| 2000 | 53.6 | 65.4 | 69.2 | 68.8 | 72.9 | 77.1 | 76.1 | 78.1 | 77.8 | 75.8 | 72.7 | 63.5 | 51.5 | 160.8 |
| 2500 | 53.8 | 60.8 | 65.5 | 65.7 | 70.3 | 74.6 | 73.3 | 73.3 | 73.6 | 71.9 | 67.5 | 58.8 | 43.9 | 159.6 |
| 3150 | 47.5 | 57.0 | 61.9 | 62.2 | 66.5 | 69.8 | 69.6 | 68.7 | 69.5 | 65.8 | 61.2 | 50.2 | 31.6 | 159.1 |
| 4000 | 37.3 | 48.1 | 53.6 | 54.7 | 60.1 | 62.8 | 63.2 | 61.5 | 61.0 | 56.8 | 50.9 | 37.2 | 13.1 | 158.2 |
| 5000 | 22.8 | 36.0 | 42.5 | 45.6 | 50.0 | 54.6 | 53.0 | 50.5 | 50.5 | 43.7 | 34.8 | 17.8 | | 157.2 |
| 763000 | 16.6 | 25.7 | 30.0 | 34.8 | 39.3 | 36.9 | 35.5 | 32.5 | 32.5 | 24.6 | 11.7 | | | 156.3 |
| 8000 | | | 5.1 | 10.3 | 16.4 | 13.3 | 10.2 | 5.8 | | | | | | 156.1 |
| 10000 | | | | | | | | | | | | | | 154.4 |
| 12500 | | | | | | | | | | | | | | 154.1 |
| 16000 | | | | | | | | | | | | | | 154.0 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

GASPL 82.3 86.7 88.2 85.7 89.6 92.9 93.7 95.5 98.5 103.1 104.9 102.4 91.8 180.0

PWL 86.6 91.7 93.8 92.2 96.3 100.1 99.9 101.7 104.0 106.6 107.1 103.2 93.0

PWLT 86.6 91.7 93.8 92.7 96.8 100.1 99.9 102.2 104.0 106.6 107.1 103.2 93.0

DBA 76.4 81.9 84.1 81.8 85.7 89.2 88.8 91.3 93.3 95.4 95.3 90.3 81.0

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VEHICLE = ADH184 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = C0 FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 43.85 PAMB HG = 29.55 RELHUM = 46.7 PCT
 WIND DIR = DEG WIND VEL = MPH M3H EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1326.0 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2162.6 FPS AE18 = 23.4 SQ IN

RUNPT = 33F ZER-1207 TAPE = X12071 TEST PT NO = 1207 NC = AE086 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1208 X1208C
BACKGROUND 83F-400-1100 X11000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 92.1 | 91.7 | 90.2 | 86.0 | 85.6 | 87.2 | 89.1 | 91.5 | 89.9 | 93.7 | 95.9 | 97.3 | 88.2 | 133.5 |
| 63 | 92.8 | 94.8 | 98.6 | 93.6 | 92.2 | 93.1 | 96.0 | 97.4 | 94.6 | 97.1 | 96.0 | 100.0 | 95.9 | 137.9 |
| 80 | 92.8 | 97.1 | 93.6 | 93.1 | 93.5 | 98.0 | 96.0 | 95.9 | 96.3 | 96.4 | 99.8 | 100.0 | 88.9 | 138.3 |
| 100 | 92.0 | 97.2 | 93.3 | 92.0 | 93.6 | 98.0 | 96.6 | 99.5 | 96.3 | 99.1 | 100.2 | 105.1 | 91.6 | 140.0 |
| 125 | 90.4 | 92.2 | 94.4 | 94.5 | 96.8 | 99.2 | 96.3 | 97.2 | 96.2 | 99.3 | 106.6 | 109.8 | 95.2 | 142.7 |
| 160 | 88.2 | 86.0 | 90.5 | 87.5 | 89.6 | 93.2 | 95.1 | 93.8 | 95.2 | 99.8 | 106.4 | 109.4 | 98.5 | 141.8 |
| 200 | 87.5 | 87.8 | 89.1 | 86.9 | 89.2 | 93.1 | 94.2 | 95.9 | 98.6 | 100.4 | 107.3 | 112.0 | 100.9 | 143.5 |
| 250 | 86.0 | 88.6 | 89.6 | 88.9 | 91.0 | 94.3 | 94.7 | 96.6 | 99.3 | 105.9 | 112.0 | 114.7 | 103.4 | 146.8 |
| 315 | 86.8 | 88.9 | 88.9 | 88.7 | 90.5 | 95.1 | 96.3 | 97.4 | 100.9 | 107.7 | 113.1 | 115.5 | 104.7 | 147.9 |
| 400 | 87.3 | 88.8 | 90.1 | 88.7 | 91.7 | 94.6 | 100.7 | 97.4 | 100.9 | 109.7 | 114.8 | 116.5 | 104.2 | 149.2 |
| 500 | 88.1 | 89.9 | 91.4 | 89.4 | 92.3 | 96.1 | 96.0 | 98.4 | 102.1 | 111.7 | 116.1 | 115.8 | 102.2 | 149.8 |
| 630 | 88.8 | 90.1 | 91.3 | 89.9 | 93.0 | 96.3 | 96.5 | 99.4 | 102.1 | 112.2 | 116.0 | 114.5 | 100.1 | 149.5 |
| 800 | 90.1 | 90.6 | 92.6 | 91.7 | 94.0 | 96.9 | 97.5 | 100.7 | 104.4 | 112.0 | 115.1 | 112.0 | 98.2 | 148.6 |
| 1000 | 91.8 | 92.3 | 93.6 | 92.1 | 94.2 | 98.1 | 98.4 | 102.1 | 105.1 | 112.6 | 114.0 | 109.9 | 96.9 | 148.2 |
| 1250 | 90.9 | 94.0 | 94.5 | 92.9 | 94.6 | 98.5 | 98.6 | 102.3 | 106.0 | 111.8 | 113.2 | 105.9 | 95.8 | 147.4 |
| 1600 | 92.4 | 92.0 | 93.9 | 93.3 | 95.8 | 99.2 | 99.7 | 103.3 | 105.9 | 110.8 | 112.4 | 105.0 | 96.0 | 146.8 |
| 2000 | 93.3 | 93.4 | 94.0 | 92.9 | 95.3 | 99.4 | 99.6 | 103.7 | 106.8 | 111.1 | 111.8 | 102.7 | 95.9 | 146.6 |
| 2500 | 94.0 | 94.8 | 94.6 | 93.8 | 95.2 | 99.1 | 99.3 | 102.6 | 106.0 | 111.1 | 110.1 | 102.4 | 95.9 | 146.1 |
| 3150 | 95.9 | 96.2 | 95.5 | 93.8 | 95.6 | 99.6 | 99.3 | 103.3 | 105.8 | 109.5 | 108.2 | 100.8 | 94.2 | 145.2 |
| 4000 | 94.9 | 95.8 | 96.9 | 94.5 | 96.5 | 99.9 | 99.6 | 103.4 | 105.0 | 107.8 | 106.7 | 98.5 | 93.3 | 144.4 |
| 5000 | 92.9 | 94.5 | 96.1 | 94.7 | 96.5 | 99.7 | 99.6 | 102.2 | 103.7 | 107.4 | 105.1 | 97.9 | 92.1 | 143.7 |
| 6300 | 92.4 | 94.4 | 94.7 | 93.5 | 96.3 | 99.7 | 99.0 | 102.0 | 104.0 | 105.5 | 103.2 | 96.2 | 90.9 | 143.0 |
| 8000 | 92.4 | 93.8 | 94.4 | 92.8 | 94.9 | 99.0 | 98.2 | 100.5 | 102.1 | 103.0 | 101.1 | 94.5 | 90.1 | 141.7 |
| 10000 | 91.7 | 93.2 | 94.7 | 94.0 | 94.3 | 98.8 | 97.8 | 100.8 | 101.5 | 102.3 | 100.8 | 94.4 | 90.0 | 142.0 |
| 12500 | 90.2 | 91.5 | 93.3 | 92.7 | 94.5 | 98.0 | 97.3 | 98.5 | 99.7 | 100.0 | 97.8 | 94.2 | 89.0 | 141.2 |
| 16000 | 88.7 | 91.6 | 92.0 | 91.5 | 93.3 | 96.8 | 95.9 | 97.0 | 98.1 | 97.3 | 96.1 | 93.3 | 87.0 | 141.0 |
| 20000 | 85.9 | 88.5 | 89.9 | 89.9 | 91.2 | 94.2 | 94.8 | 94.4 | 94.8 | 94.2 | 92.7 | 90.4 | 85.6 | 140.2 |
| 25000 | 82.8 | 85.1 | 85.6 | 87.8 | 87.9 | 93.0 | 92.2 | 90.9 | 92.4 | 90.9 | 89.9 | 87.5 | 82.2 | 139.9 |
| 31500 | 78.9 | 81.1 | 82.6 | 84.0 | 84.4 | 88.7 | 87.7 | 86.1 | 86.6 | 86.4 | 83.9 | 77.9 | 79.9 | 139.0 |
| 40000 | 73.7 | 77.1 | 75.1 | 79.3 | 79.3 | 85.2 | 83.0 | 83.7 | 85.1 | 82.7 | 82.7 | 79.6 | 74.0 | 139.1 |
| 50000 | 67.8 | 71.1 | 72.0 | 73.1 | 73.5 | 80.1 | 77.4 | 77.8 | 78.4 | 76.9 | 76.7 | 74.1 | 68.1 | 137.6 |
| 63000 | 61.3 | 65.1 | 66.6 | 67.7 | 68.1 | 74.7 | 70.7 | 72.7 | 73.1 | 71.1 | 70.3 | 67.5 | 60.6 | 137.3 |
| 80000 | 53.4 | 56.8 | 59.5 | 59.1 | 60.2 | 68.1 | 64.2 | 65.0 | 65.5 | 63.2 | 63.2 | 59.8 | 53.2 | 136.9 |
| GASPL | 105.9 | 107.5 | 108.1 | 106.6 | 108.4 | 112.0 | 112.1 | 114.6 | 116.9 | 122.3 | 124.9 | 124.1 | 112.4 | 160.0 |
| PWL | 119.0 | 120.0 | 120.6 | 118.9 | 120.8 | 124.4 | 124.4 | 127.5 | 129.8 | 134.3 | 135.0 | 131.7 | 121.7 | |
| PNTL | 119.0 | 120.0 | 120.6 | 119.7 | 121.7 | 125.0 | 125.2 | 127.5 | 129.8 | 134.3 | 135.5 | 131.7 | 121.7 | |
| DBA | 104.6 | 105.5 | 106.2 | 104.9 | 106.9 | 110.6 | 110.6 | 113.9 | 116.6 | 121.8 | 123.4 | 120.2 | 108.7 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VERTICI. = ADH176 TEST DATE = 03-30-83 LOCAT = CAT ANECH CH CONFIG = 12 MODEL = C81 FLTVEL = 400. FPS
I/APLHA = SB59 IEQA = NO PWL AREA = FULL SPHERE TAMB I = 43.04 PAMB HG = 29.46 RELHUM = 46.6 PCT
WIND DIR = DEG WIND VEL = MPH EXI DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

F/NINT = LBS XNL = RPM XNH = RPM V8 = 1321.2 FPS AE8 = 4.6 SQ IN
F/NRMB = LBS XNLR = RPM XNHR = RPM V18 = 2157.0 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1208 TAPE = X1208C TEST PT NO = 1208 NC = AE086 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1208 X1208F

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

FREQ 50 63 80 100 125 160 200

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 93.9 | 95.0 | 94.5 | 92.2 | 92.6 | 94.3 | 93.3 | 93.6 | 98.6 | 104.0 | 110.1 | 113.3 | 104.5 | 145.5 |
| 315 | 93.9 | 95.0 | 94.5 | 92.2 | 92.6 | 94.3 | 93.3 | 93.6 | 98.6 | 104.0 | 110.1 | 113.3 | 104.5 | 145.5 |
| 400 | 94.5 | 95.3 | 93.8 | 92.1 | 93.6 | 94.9 | 99.8 | 95.3 | 99.9 | 109.0 | 113.4 | 114.7 | 104.9 | 147.9 |
| 500 | 95.0 | 95.2 | 95.1 | 92.1 | 94.2 | 96.5 | 95.0 | 95.2 | 100.1 | 109.7 | 113.9 | 114.4 | 105.0 | 148.1 |
| 630 | 95.5 | 96.3 | 96.4 | 92.9 | 94.9 | 96.7 | 95.5 | 97.2 | 102.7 | 110.0 | 113.6 | 113.4 | 105.8 | 147.9 |
| 800 | 96.5 | 96.5 | 96.4 | 93.4 | 96.1 | 97.4 | 96.6 | 96.5 | 103.8 | 111.1 | 113.2 | 112.6 | 107.0 | 147.9 |
| 1000 | 97.8 | 97.1 | 97.7 | 95.3 | 96.4 | 98.7 | 97.7 | 100.1 | 104.7 | 110.2 | 112.1 | 108.1 | 105.5 | 146.7 |
| 1250 | 99.4 | 98.8 | 98.7 | 95.8 | 96.9 | 99.3 | 97.9 | 100.3 | 105.0 | 109.5 | 111.7 | 107.8 | 106.3 | 146.6 |
| 1600 | 98.6 | 100.5 | 99.7 | 96.6 | 98.3 | 100.2 | 99.3 | 101.6 | 106.0 | 110.0 | 111.3 | 105.4 | 106.2 | 146.7 |
| 2000 | 100.0 | 98.5 | 99.2 | 97.2 | 97.9 | 100.7 | 99.4 | 102.2 | 105.7 | 110.5 | 110.1 | 105.8 | 106.9 | 146.6 |
| 2500 | 101.0 | 99.9 | 99.4 | 96.9 | 98.1 | 100.7 | 99.5 | 101.5 | 106.0 | 109.4 | 108.7 | 104.8 | 105.7 | 145.9 |
| 3150 | 101.2 | 101.2 | 99.9 | 97.9 | 98.7 | 101.7 | 99.9 | 102.6 | 105.9 | 108.2 | 107.6 | 102.7 | 104.9 | 145.6 |
| 4000 | 102.1 | 101.9 | 100.4 | 97.8 | 100.2 | 102.5 | 100.7 | 103.3 | 104.5 | 107.8 | 106.0 | 102.0 | 103.6 | 145.4 |
| 5000 | 102.4 | 102.5 | 102.6 | 99.2 | 100.5 | 102.7 | 101.1 | 102.2 | 105.4 | 106.5 | 104.7 | 101.0 | 103.4 | 145.5 |
| 6300 | 100.4 | 101.9 | 101.9 | 99.6 | 100.3 | 102.7 | 101.0 | 102.5 | 104.2 | 104.8 | 103.6 | 100.5 | 103.6 | 145.0 |
| 8000 | 99.7 | 100.9 | 100.4 | 98.2 | 98.9 | 102.0 | 100.4 | 101.5 | 104.0 | 104.5 | 103.7 | 100.8 | 103.8 | 144.8 |
| 10000 | 99.5 | 100.2 | 99.9 | 97.3 | 98.4 | 101.8 | 100.1 | 102.0 | 103.2 | 103.4 | 101.9 | 101.6 | 103.5 | 144.8 |
| 12500 | 98.6 | 99.3 | 99.9 | 98.2 | 99.1 | 101.0 | 99.7 | 100.2 | 102.4 | 101.5 | 101.0 | 101.4 | 102.2 | 144.9 |
| 16000 | 99.3 | 99.4 | 99.4 | 97.5 | 97.4 | 99.8 | 98.3 | 98.8 | 98.7 | 97.7 | 96.5 | 97.0 | 99.0 | 144.4 |
| 20000 | 94.7 | 96.8 | 95.3 | 94.8 | 95.2 | 97.2 | 95.8 | 95.5 | 95.9 | 95.2 | 94.5 | 94.9 | 96.4 | 143.6 |
| 25000 | 91.2 | 93.1 | 93.6 | 92.6 | 92.5 | 96.0 | 94.1 | 92.0 | 94.0 | 92.2 | 92.3 | 92.6 | 93.4 | 143.3 |
| 31500 | 90.1 | 91.2 | 91.3 | 90.9 | 89.0 | 89.0 | 89.9 | 89.0 | 92.2 | 89.7 | 90.0 | 89.8 | 91.0 | 143.7 |
| 40000 | 85.4 | 86.3 | 86.4 | 86.2 | 83.9 | 88.2 | 85.4 | 85.6 | 85.3 | 83.7 | 83.8 | 83.9 | 84.7 | 142.8 |
| 50000 | 79.8 | 81.9 | 81.5 | 81.2 | 78.1 | 83.1 | 79.5 | 79.2 | 81.7 | 79.8 | 80.0 | 80.1 | 142.2 | |
| 63000 | 73.0 | 75.0 | 74.4 | 74.0 | 72.7 | 77.7 | 73.1 | 74.6 | 75.0 | 72.8 | 73.4 | 73.0 | 73.3 | 141.2 |
| 80000 | 65.0 | 67.6 | 67.1 | 64.8 | 64.8 | 71.1 | 66.3 | 66.4 | 65.2 | 63.0 | 63.6 | 63.2 | 63.5 | 140.3 |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GASPL | 112.1 | 112.3 | 112.1 | 109.7 | 110.7 | 113.2 | 112.0 | 113.4 | 116.7 | 121.0 | 123.0 | 122.6 | 117.8 | 159.8 |
| PNL | 124.5 | 124.5 | 124.2 | 121.3 | 122.8 | 125.2 | 123.8 | 125.8 | 128.9 | 132.3 | 132.7 | 130.2 | 129.1 | |
| PNLT | 124.5 | 124.5 | 124.2 | 121.3 | 122.8 | 125.2 | 124.6 | 125.8 | 128.9 | 132.3 | 132.7 | 130.2 | 129.1 | |
| DBA | 188.2 | 190.4 | 190.2 | 189.8 | 187.7 | 193.3 | 188.9 | 189.3 | 189.3 | 187.2 | 187.6 | 187.4 | 187.7 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DIAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VEHICLE = AD1176 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = CG FLTVEL = 400. FPS
 TAPLIA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 43.04 PAMB HG = 29.45 RELHUM = 46.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNII = RPM V8 = 1321.2 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2157.0 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1208 TAPE = X1208F TEST PT NO = 1208 NC = AE086 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1208 X12081

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|------------|
| 50 | 69.4 | 72.0 | 72.6 | 70.9 | 71.8 | 73.6 | 72.4 | 72.4 | 76.6 | 81.8 | 85.5 | 86.5 | 86.5 | 74.4 160.4 |
| 63 | 69.4 | 72.0 | 72.5 | 70.9 | 71.5 | 74.6 | 74.3 | 74.2 | 76.7 | 83.9 | 87.5 | 88.1 | 87.5 | 75.2 162.1 |
| 80 | 69.9 | 72.2 | 71.8 | 70.6 | 72.7 | 74.1 | 78.9 | 74.1 | 77.9 | 85.9 | 88.8 | 87.9 | 87.9 | 74.7 162.8 |
| 100 | 70.3 | 72.1 | 73.0 | 70.7 | 73.3 | 75.7 | 74.1 | 74.9 | 78.0 | 86.6 | 89.1 | 87.5 | 87.5 | 74.5 163.0 |
| 125 | 70.9 | 73.0 | 74.2 | 71.5 | 73.9 | 75.9 | 74.5 | 75.7 | 80.6 | 86.7 | 88.8 | 86.3 | 86.3 | 75.2 162.8 |
| 160 | 71.4 | 73.1 | 74.1 | 71.8 | 75.0 | 76.4 | 75.5 | 77.0 | 81.5 | 87.7 | 88.2 | 85.2 | 85.2 | 76.0 162.8 |
| 200 | 72.5 | 73.4 | 73.2 | 73.5 | 75.1 | 77.6 | 76.4 | 78.3 | 82.2 | 86.5 | 86.8 | 80.4 | 80.4 | 74.0 161.6 |
| 250 | 73.8 | 74.9 | 76.0 | 73.8 | 75.4 | 77.9 | 76.4 | 78.3 | 82.2 | 85.6 | 86.1 | 79.7 | 74.1 | 161.5 |
| 315 | 72.5 | 76.2 | 76.6 | 74.4 | 76.5 | 78.6 | 77.5 | 79.3 | 83.0 | 85.7 | 85.2 | 76.7 | 73.2 | 161.6 |
| 400 | 73.4 | 73.8 | 75.7 | 74.6 | 75.6 | 78.7 | 77.3 | 79.6 | 82.3 | 85.8 | 83.5 | 76.4 | 72.9 | 161.5 |
| 500 | 73.8 | 74.8 | 75.5 | 74.0 | 75.6 | 78.4 | 77.0 | 78.6 | 82.2 | 84.2 | 81.6 | 74.6 | 70.7 | 160.9 |
| 630 | 73.5 | 75.5 | 75.7 | 74.6 | 75.8 | 79.0 | 77.1 | 79.3 | 81.6 | 82.5 | 79.9 | 71.8 | 68.7 | 160.5 |
| 800 | 73.8 | 75.8 | 75.7 | 74.0 | 77.0 | 79.5 | 77.5 | 79.6 | 79.9 | 81.6 | 77.6 | 70.2 | 66.1 | 160.4 |
| 1000 | 73.4 | 75.8 | 77.5 | 75.1 | 76.9 | 79.3 | 77.5 | 78.1 | 80.3 | 79.8 | 75.6 | 68.4 | 64.5 | 160.4 |
| 1250 | 70.5 | 73.8 | 72.9 | 74.9 | 76.3 | 78.9 | 77.9 | 78.5 | 77.5 | 73.7 | 66.7 | 66.7 | 63.0 | 159.9 |
| 1600 | 60.6 | 72.6 | 73.0 | 72.8 | 74.2 | 77.4 | 75.0 | 76.1 | 72.6 | 65.3 | 60.4 | 159.7 | | |
| 2000 | 66.6 | 70.4 | 72.1 | 70.9 | 72.6 | 76.3 | 74.4 | 75.5 | 73.7 | 69.0 | 63.6 | 56.3 | 159.7 | |
| 2500 | 63.0 | 67.4 | 70.2 | 71.8 | 74.0 | 72.5 | 72.1 | 72.9 | 69.6 | 65.3 | 59.7 | 49.1 | 159.8 | |
| 3150 | 55.3 | 64.0 | 67.3 | 66.9 | 67.6 | 70.5 | 68.7 | 68.2 | 66.3 | 62.4 | 56.4 | 49.2 | 36.5 | 159.3 |
| 4000 | 47.0 | 55.3 | 58.6 | 59.6 | 61.3 | 63.7 | 62.8 | 60.3 | 59.3 | 53.7 | 46.8 | 36.9 | 18.0 | 158.5 |
| 5000 | 32.2 | 42.4 | 48.1 | 50.3 | 52.0 | 56.0 | 53.5 | 49.7 | 48.5 | 41.6 | 33.3 | 19.3 | | 158.2 |
| 6300 | 12.0 | 25.0 | 32.4 | 36.5 | 37.0 | 40.6 | 38.0 | 34.6 | 33.4 | 23.5 | 12.0 | | | 158.6 |
| 8000 | 4.9 | 11.3 | 12.5 | 18.0 | 14.1 | 10.6 | 3.8 | | | | | | | 157.7 |
| 10000 | | | | | | | | | | | | | | 157.1 |
| 12500 | | | | | | | | | | | | | | 156.1 |
| 16000 | | | | | | | | | | | | | | 155.2 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.660 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VEHICL = ADH176 TEST DATE = 03-30-63 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = C0 FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO MPH PNL AREA = FULL SPHERE TAMB F = 43.04 PAMB HG = 29.45 RELHUM = 46.6 PCT
 WIND DIR = DEG WIND VEL = RPM XNHR XNHR = 1321.2 FPS AE8 = 4.6 SQ IN
 FNIN1 = LBS XNL RPM XNHR = 2157.0 FPS AE18 = 23.4 SQ IN
 FNRAMB = LBS XNL RPM XNHR = 2400.0 FT EXT CONFIG = SL MIKE HT =

SHIFT - 83F-400-1208 X12081 TEST FT N 1203 AEOI TR F SPEE RPM

IDENTIFICATION - MODEL 83F-ZER-1209 X1209C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 50.4 | 91.4 | 90.7 | 86.5 | 90.6 | 91.2 | 93.8 | 91.2 | 94.2 | 101.2 | 101.4 | 101.3 | 89.5 | 137.8 |
| 63 | 95.0 | 97.3 | 98.8 | 93.6 | 96.5 | 98.1 | 97.5 | 99.1 | 98.8 | 103.4 | 102.8 | 104.0 | 95.6 | 141.4 |
| 80 | 95.5 | 100.1 | 96.1 | 95.6 | 96.0 | 100.8 | 98.5 | 98.6 | 99.1 | 99.7 | 103.3 | 104.0 | 88.6 | 141.4 |
| 100 | 95.0 | 102.0 | 98.3 | 97.0 | 97.9 | 102.0 | 100.1 | 103.5 | 100.8 | 104.8 | 104.7 | 109.1 | 93.3 | 144.3 |
| 125 | 91.9 | 94.9 | 97.9 | 97.2 | 100.1 | 102.7 | 100.6 | 101.0 | 101.2 | 104.3 | 111.6 | 113.8 | 98.2 | 146.9 |
| 160 | 69.7 | 91.0 | 95.0 | 92.3 | 92.9 | 97.0 | 105.1 | 99.5 | 100.7 | 105.3 | 111.2 | 114.1 | 103.5 | 146.9 |
| 200 | 93.3 | 91.3 | 94.1 | 92.4 | 95.2 | 99.6 | 103.7 | 100.1 | 104.8 | 107.1 | 113.8 | 117.7 | 106.6 | 149.6 |
| 250 | 92.8 | 94.1 | 95.3 | 94.6 | 96.5 | 99.6 | 100.5 | 102.9 | 106.1 | 113.4 | 118.3 | 120.5 | 109.6 | 153.0 |
| 315 | 93.3 | 94.9 | 94.9 | 94.4 | 96.8 | 101.1 | 104.3 | 103.4 | 107.9 | 115.5 | 120.1 | 121.5 | 111.9 | 154.5 |
| 400 | 95.1 | 95.8 | 97.1 | 95.2 | 96.7 | 100.6 | 111.5 | 104.4 | 108.1 | 117.9 | 121.8 | 122.0 | 113.2 | 156.1 |
| 500 | 95.1 | 97.4 | 98.4 | 96.4 | 98.5 | 102.6 | 102.5 | 105.4 | 110.4 | 119.7 | 123.6 | 123.0 | 114.2 | 157.4 |
| 630 | 96.5 | 97.6 | 98.6 | 96.6 | 99.2 | 102.6 | 103.5 | 106.4 | 110.1 | 120.9 | 124.3 | 123.0 | 116.1 | 158.0 |
| 800 | 99.3 | 98.6 | 99.6 | 97.9 | 101.5 | 104.1 | 104.6 | 107.9 | 112.1 | 120.5 | 124.8 | 122.5 | 116.9 | 158.2 |
| 1000 | 103.0 | 105.3 | 104.3 | 101.1 | 102.2 | 105.6 | 105.2 | 108.6 | 113.1 | 120.9 | 124.3 | 122.4 | 116.9 | 158.1 |
| 1250 | 103.7 | 107.2 | 103.6 | 104.6 | 106.5 | 106.5 | 109.5 | 109.5 | 113.7 | 120.1 | 123.7 | 120.6 | 116.5 | 157.4 |
| 1600 | 107.6 | 107.0 | 106.7 | 103.3 | 104.0 | 107.2 | 110.6 | 113.9 | 118.8 | 122.9 | 119.0 | 113.2 | 113.2 | 156.6 |
| 2000 | 108.3 | 107.6 | 107.8 | 105.4 | 105.3 | 107.1 | 106.6 | 110.9 | 114.3 | 119.8 | 121.6 | 116.7 | 111.9 | 156.2 |
| 2500 | 105.2 | 106.3 | 106.6 | 107.0 | 108.8 | 107.0 | 110.1 | 113.5 | 119.3 | 120.1 | 115.4 | 110.6 | 110.6 | 155.3 |
| 3150 | 102.9 | 105.5 | 106.0 | 103.8 | 106.1 | 110.4 | 108.5 | 110.5 | 113.6 | 118.2 | 118.2 | 113.1 | 108.5 | 154.4 |
| 4000 | 100.9 | 103.5 | 104.4 | 102.8 | 105.7 | 108.9 | 108.8 | 110.9 | 112.5 | 116.3 | 116.5 | 111.0 | 107.1 | 153.1 |
| 5000 | 99.4 | 102.5 | 104.1 | 102.5 | 104.5 | 107.5 | 107.6 | 110.4 | 111.5 | 115.4 | 115.1 | 110.4 | 106.1 | 152.2 |
| 6300 | 98.2 | 101.9 | 102.7 | 101.3 | 104.3 | 108.0 | 107.6 | 110.3 | 111.6 | 114.0 | 112.7 | 108.7 | 106.4 | 151.5 |
| 8000 | 96.1 | 99.8 | 101.6 | 100.5 | 103.4 | 106.2 | 106.2 | 108.5 | 109.6 | 111.5 | 111.6 | 107.3 | 104.8 | 150.2 |
| 10000 | 96.0 | 98.4 | 100.5 | 99.7 | 102.6 | 106.3 | 105.8 | 107.8 | 108.8 | 110.3 | 111.1 | 106.4 | 104.5 | 150.0 |
| 12500 | 93.2 | 96.3 | 98.6 | 98.2 | 101.0 | 105.0 | 104.5 | 105.3 | 106.9 | 108.8 | 108.1 | 105.0 | 101.7 | 148.9 |
| 16000 | 91.5 | 95.8 | 97.5 | 97.0 | 99.6 | 103.1 | 102.9 | 103.8 | 105.4 | 105.4 | 106.7 | 103.1 | 98.8 | 148.4 |
| 20000 | 88.4 | 92.8 | 94.9 | 95.0 | 96.5 | 100.2 | 100.3 | 100.7 | 101.8 | 102.7 | 103.0 | 100.4 | 95.9 | 147.2 |
| 25000 | 85.8 | 90.1 | 91.2 | 92.3 | 93.5 | 98.1 | 97.5 | 97.2 | 99.4 | 99.5 | 99.2 | 95.8 | 92.0 | 146.4 |
| 31500 | 81.5 | 85.9 | 87.9 | 88.8 | 89.6 | 94.5 | 92.7 | 93.2 | 95.2 | 95.9 | 95.7 | 91.7 | 86.7 | 145.6 |
| 40000 | 77.0 | 81.1 | 83.9 | 84.6 | 84.8 | 80.5 | 88.8 | 89.5 | 91.9 | 92.0 | 92.3 | 87.6 | 82.1 | 145.8 |
| 50000 | 70.9 | 75.2 | 77.5 | 78.4 | 78.2 | 85.3 | 82.7 | 83.4 | 85.7 | 86.7 | 86.5 | 82.3 | 76.1 | 144.4 |
| 63000 | 64.3 | 68.9 | 71.4 | 72.4 | 73.6 | 79.4 | 76.0 | 78.4 | 80.9 | 81.6 | 81.1 | 76.3 | 69.4 | 144.3 |
| 80000 | 57.9 | 62.0 | 64.0 | 64.1 | 66.5 | 73.1 | 74.5 | 71.5 | 74.0 | 75.2 | 74.7 | 69.0 | 62.9 | 145.1 |
| 0ASPL | 114.8 | 116.3 | 116.4 | 114.5 | 116.4 | 119.5 | 119.9 | 121.6 | 124.4 | 130.6 | 133.7 | 132.1 | 125.2 | 168.3 |
| PWL | 127.7 | 128.9 | 129.4 | 127.7 | 129.5 | 133.0 | 132.6 | 134.6 | 137.3 | 142.5 | 144.2 | 141.2 | 135.3 | |
| PWL T | 127.7 | 129.6 | 129.4 | 127.7 | 130.3 | 133.6 | 134.3 | 135.3 | 137.3 | 142.5 | 144.8 | 141.2 | 135.3 | |
| DEA | 115.2 | 116.3 | 116.4 | 114.4 | 116.1 | 119.0 | 118.7 | 121.3 | 124.3 | 130.2 | 132.9 | 130.3 | 124.4 | |

ORIGINAL PAGE IS
OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/DFTAS 12/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|-----------------|----------------------|
| VERTCL = ADHT82 | TEST DATE = 03-30-83 | LOCAT = C41 ANECH CH | CONFIG = 12 | MODEL = CO | FLTVEL = 0. FPS |
| IAPLHA = SR59 | DEG WIND VEL = NO | PWL AREA = FULL SPHERE | TAMB F = 43.99 | PAMB HG = 29.54 | RELHUM = 45.0 PCT |
| WIND DIR = | MPH | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNTNT = | LBS XNL | RPM | XNH | RPM | V8 = 1512.6 FPS |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V18 = 2339.7 FPS |
| RUNPT = 83F-ZER-1209 | TAPE | TFST PT NO = 1209 | NC | AE086 | CORR FAN SPEED = RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83FZER-1209 XT209F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 90.4 | 91.4 | 90.7 | 86.5 | 90.6 | 91.2 | 93.8 | 94.2 | 101.2 | 101.4 | 101.3 | 89.5 | 137.8 | |
| 63 | 95.0 | 97.3 | 98.8 | 93.6 | 96.5 | 98.1 | 97.5 | 99.1 | 98.8 | 103.4 | 102.8 | 104.0 | 95.6 | 141.4 |
| 80 | 95.5 | 100.1 | 96.1 | 95.6 | 96.0 | 100.8 | 98.5 | 98.6 | 99.1 | 99.7 | 103.3 | 104.0 | 88.6 | 141.4 |
| 100 | 95.0 | 102.0 | 98.3 | 97.0 | 102.0 | 100.1 | 103.5 | 100.8 | 104.8 | 104.7 | 109.1 | 93.3 | 144.3 | |
| 125 | 91.9 | 94.9 | 97.9 | 97.2 | 100.1 | 102.7 | 100.6 | 101.2 | 104.3 | 111.6 | 113.8 | 98.2 | 146.9 | |
| 160 | 89.7 | 91.0 | 95.0 | 92.3 | 92.9 | 97.0 | 105.1 | 99.5 | 100.7 | 105.3 | 111.2 | 114.1 | 103.5 | 146.9 |
| 200 | 93.3 | 91.3 | 94.1 | 92.4 | 95.2 | 99.6 | 103.7 | 100.1 | 104.8 | 107.1 | 113.8 | 117.7 | 106.6 | 149.6 |
| 250 | 92.8 | 94.1 | 95.3 | 94.6 | 96.5 | 99.6 | 100.5 | 102.9 | 106.1 | 113.4 | 118.3 | 120.5 | 109.6 | 153.0 |
| 315 | 93.3 | 94.9 | 94.9 | 94.4 | 96.8 | 101.1 | 104.3 | 103.4 | 107.9 | 115.5 | 120.1 | 121.5 | 111.9 | 154.5 |
| 400 | 95.1 | 95.8 | 97.1 | 95.2 | 96.7 | 100.6 | 111.5 | 104.4 | 108.1 | 117.9 | 121.8 | 122.0 | 113.2 | 156.1 |
| 500 | 95.1 | 97.4 | 98.4 | 96.4 | 98.5 | 102.6 | 102.5 | 105.4 | 110.4 | 119.7 | 123.6 | 123.0 | 114.2 | 157.4 |
| 630 | 96.5 | 97.6 | 98.6 | 96.6 | 99.2 | 102.6 | 103.5 | 106.4 | 110.1 | 120.9 | 124.3 | 123.0 | 116.1 | 158.0 |
| 800 | 99.3 | 98.6 | 99.6 | 97.9 | 101.5 | 104.1 | 104.8 | 107.9 | 112.1 | 120.5 | 124.8 | 122.5 | 116.9 | 158.2 |
| 1000 | 103.0 | 105.3 | 104.3 | 101.1 | 102.2 | 105.6 | 105.2 | 108.6 | 113.1 | 120.9 | 124.3 | 122.4 | 116.9 | 158.1 |
| 1250 | 103.7 | 107.2 | 103.6 | 104.6 | 106.5 | 105.9 | 109.5 | 113.7 | 120.1 | 123.7 | 120.6 | 115.5 | 157.4 | |
| 1600 | 107.6 | 107.0 | 106.7 | 103.3 | 104.0 | 107.2 | 110.6 | 113.9 | 118.8 | 122.9 | 119.0 | 113.2 | 156.6 | |
| 2000 | 108.3 | 107.6 | 107.8 | 105.4 | 103.3 | 107.1 | 106.6 | 110.9 | 114.3 | 119.8 | 121.6 | 116.7 | 156.2 | |
| 2500 | 105.2 | 106.3 | 106.6 | 105.6 | 107.0 | 106.8 | 107.0 | 110.1 | 113.5 | 119.3 | 120.1 | 115.4 | 110.6 | 155.3 |
| 3150 | 102.9 | 105.5 | 106.0 | 103.8 | 106.1 | 110.4 | 108.5 | 110.5 | 113.6 | 118.2 | 118.2 | 113.1 | 108.5 | 154.4 |
| 4000 | 100.9 | 103.5 | 104.4 | 102.8 | 105.7 | 108.9 | 108.8 | 110.9 | 112.5 | 116.3 | 116.5 | 111.0 | 107.1 | 153.1 |
| 5000 | 99.4 | 102.5 | 104.1 | 102.5 | 104.5 | 107.5 | 107.6 | 110.4 | 111.5 | 115.4 | 115.1 | 110.4 | 106.1 | 152.2 |
| 6300 | 98.2 | 101.9 | 102.7 | 101.3 | 104.3 | 108.0 | 107.6 | 110.3 | 111.6 | 114.0 | 112.7 | 108.7 | 106.4 | 151.5 |
| 8000 | 96.1 | 99.8 | 101.6 | 100.5 | 103.4 | 106.2 | 106.2 | 108.5 | 109.6 | 111.5 | 111.6 | 107.3 | 104.8 | 150.2 |
| 10000 | 96.0 | 98.4 | 100.5 | 99.7 | 102.6 | 106.2 | 105.8 | 108.6 | 110.3 | 111.1 | 106.4 | 104.5 | 150.0 | |
| 12500 | 93.2 | 96.3 | 98.6 | 98.2 | 101.0 | 105.0 | 104.5 | 105.3 | 106.9 | 108.8 | 108.1 | 105.0 | 101.7 | 148.9 |
| 16000 | 91.5 | 95.8 | 97.5 | 97.0 | 99.6 | 103.1 | 102.9 | 103.6 | 105.4 | 105.4 | 106.7 | 103.1 | 98.8 | 148.4 |
| 20000 | 88.4 | 92.8 | 94.9 | 95.0 | 96.5 | 100.2 | 100.8 | 100.7 | 101.8 | 102.7 | 103.0 | 100.4 | 95.9 | 147.2 |
| 25000 | 85.8 | 90.1 | 91.2 | 92.3 | 93.5 | 98.1 | 97.5 | 99.4 | 99.5 | 99.2 | 95.8 | 92.0 | 146.4 | |
| 31500 | 81.5 | 85.9 | 87.3 | 88.8 | 89.6 | 94.3 | 92.7 | 93.2 | 95.2 | 95.9 | 95.7 | 91.7 | 86.7 | 145.6 |
| 40000 | 77.0 | 81.1 | 83.9 | 84.6 | 84.8 | 80.5 | 86.8 | 89.5 | 91.9 | 92.0 | 92.3 | 87.6 | 82.1 | 145.8 |
| 50000 | 70.9 | 75.2 | 77.3 | 78.4 | 78.2 | 85.3 | 82.7 | 83.4 | 85.7 | 86.5 | 86.5 | 82.3 | 76.1 | 144.4 |
| 63000 | 64.3 | 68.9 | 71.4 | 72.4 | 73.6 | 79.4 | 76.0 | 78.4 | 80.9 | 81.6 | 81.1 | 76.3 | 69.4 | 144.3 |
| 80000 | 57.9 | 62.0 | 64.0 | 64.1 | 66.5 | 73.1 | 74.5 | 74.5 | 74.0 | 75.2 | 74.7 | 69.0 | 62.9 | 145.1 |

MODEL/FULL SCALE FAC - IN=1 000, CALC=1 000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VEHICL = AD1102 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = CO¹ FLTVEL = 0. FPS
 IAPLHA = SB:19 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 43.99 PAMB HG = 29.54 RELHUM = 45.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =
 FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1512.6 FPS AE8 = 4.6 SQ IN
 FNRAMB = LRS XNLR = RPM XNHR = RPM V18 = 2339.7 FPS AE18 = 23.4 SQ IN

IDENTIFICATION - 83F-ZER-1209 X12091

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 68.2 | 71.0 | 73.4 | 73.4 | 75.6 | 78.3 | 79.6 | 81.6 | 84.1 | 90.4 | 83.7 | 93.7 | 79.5 | 167.9 |
| 63 | 68.8 | 71.8 | 72.9 | 73.2 | 75.9 | 80.4 | 83.4 | 82.2 | 85.9 | 92.4 | 95.5 | 94.7 | 81.8 | 169.4 |
| 80 | 70.4 | 72.8 | 75.1 | 73.9 | 75.9 | 79.9 | 83.1 | 86.1 | 86.1 | 94.6 | 97.2 | 95.1 | 82.9 | 171.0 |
| 100 | 70.4 | 74.2 | 76.3 | 75.1 | 77.6 | 81.9 | 81.6 | 84.1 | 88.3 | 96.6 | 98.9 | 96.1 | 83.8 | 172.3 |
| 125 | 71.7 | 74.3 | 76.4 | 75.2 | 78.2 | 81.7 | 82.5 | 85.0 | 87.9 | 97.7 | 99.5 | 95.9 | 85.5 | 172.9 |
| 160 | 74.3 | 75.2 | 77.4 | 76.4 | 80.4 | 83.2 | 83.7 | 86.4 | 89.9 | 97.1 | 99.8 | 95.2 | 85.9 | 173.1 |
| 200 | 77.7 | 81.7 | 81.8 | 79.4 | 80.9 | 84.4 | 83.9 | 86.9 | 90.6 | 97.3 | 99.0 | 94.7 | 85.4 | 173.0 |
| 250 | 78.1 | 83.3 | 83.0 | 81.7 | 83.1 | 85.1 | 84.4 | 87.6 | 91.0 | 96.2 | 98.1 | 92.5 | 83.4 | 172.3 |
| 315 | 81.5 | 82.7 | 83.6 | 81.1 | 82.3 | 85.5 | 85.5 | 88.3 | 90.9 | 94.5 | 96.8 | 90.3 | 80.2 | 171.5 |
| 400 | 81.7 | 82.9 | 84.4 | 82.8 | 83.1 | 85.2 | 84.5 | 86.3 | 90.9 | 95.1 | 95.0 | 87.2 | 77.9 | 171.1 |
| 500 | 78.1 | 81.1 | 82.8 | 82.6 | 84.5 | 86.5 | 84.6 | 87.2 | 89.7 | 94.1 | 92.9 | 85.3 | 75.6 | 170.2 |
| 630 | 75.2 | 79.8 | 81.8 | 80.4 | 83.3 | 87.7 | 85.7 | 87.2 | 89.4 | 92.6 | 80.5 | 82.2 | 72.3 | 169.3 |
| 800 | 72.6 | 77.4 | 79.7 | 79.0 | 82.5 | 85.9 | 85.6 | 87.1 | 87.9 | 90.1 | 88.1 | 79.3 | 69.6 | 168.0 |
| 1000 | 70.4 | 75.8 | 79.0 | 78.3 | 80.9 | 84.1 | 84.0 | 86.3 | 86.3 | 88.7 | 86.1 | 77.8 | 67.2 | 167.1 |
| 1250 | 68.3 | 74.5 | 77.0 | 76.6 | 80.3 | 84.2 | 83.5 | 85.6 | 85.9 | 86.7 | 82.9 | 74.9 | 65.8 | 166.4 |
| 1600 | 65.0 | 71.4 | 75.1 | 75.1 | 78.7 | 81.4 | 81.4 | 83.1 | 83.0 | 83.1 | 80.5 | 71.7 | 61.4 | 165.1 |
| 2000 | 63.1 | 68.7 | 72.7 | 73.3 | 76.9 | 80.8 | 80.1 | 81.4 | 81.1 | 80.5 | 78.2 | 68.5 | 57.2 | 164.9 |
| 2500 | 57.5 | 64.3 | 69.0 | 70.2 | 73.8 | 78.1 | 77.3 | 77.3 | 77.4 | 76.9 | 72.4 | 63.3 | 48.7 | 163.8 |
| 3150 | 51.5 | 60.5 | 65.1 | 66.4 | 70.0 | 73.8 | 73.2 | 73.0 | 73.0 | 70.0 | 65.6 | 55.4 | 36.3 | 163.3 |
| 4000 | 40.8 | 51.3 | 57.3 | 59.7 | 62.5 | 66.7 | 66.9 | 65.4 | 64.2 | 61.2 | 55.4 | 42.4 | 17.5 | 162.1 |
| 5000 | 26.7 | 39.4 | 45.7 | 50.0 | 52.9 | 58.0 | 56.9 | 54.9 | 53.9 | 48.8 | 40.2 | 22.5 | | 161.3 |
| 6300 | 3.4 | 19.7 | 29.1 | 34.4 | 37.7 | 43.1 | 40.8 | 38.9 | 36.4 | 29.8 | 17.6 | | | 160.5 |
| 8000 | | 2.4 | 9.7 | 13.5 | 20.3 | 17.4 | 14.5 | 10.4 | | | | | | 160.7 |
| 10000 | | | | | | | | | | | | | | 159.3 |
| 12500 | | | | | | | | | | | | | | 159.2 |
| 16000 | | | | | | | | | | | | | | 160.0 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

GASPL 88.0 91.0 92.3 91.1 93.2 96.4 97.0 98.3 100.7 106.4 108.1 104.3 104.3 93.5 163.1

PWL 93.2 96.4 98.5 97.7 100.1 103.7 103.5 104.8 106.5 110.4 110.7 105.3 105.3 94.9

PNTL 94.3 96.4 99.1 98.2 100.6 103.7 103.5 104.8 106.5 110.4 110.7 105.3 105.3 94.9

DBA 62.8 66.3 68.2 67.5 90.1 93.5 92.7 94.7 95.9 99.1 98.8 92.3 92.3 82.6

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTA5-12/NAS3-22137

VEHICL = ADH182 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = C01 FLTVEL = 0. FPS
 IAPLHA : SB59 IEGA = NG PWL AREA = FULL SPHERE TAMB F = 43.99 PAMB HG = 29.54 RELHUM = 45.0 PCT
 WIND DIR = DEG WIND VEL = MPH MFM EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1512.6 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2339.7 FPS AE18 = 23.4 SQ IN

RUNPT - 83F-ZER-1209 TAPE = X12091 TEST PT NO = 1209 NC = AF086 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1210 X1210C
BACKGROUND 83F-400-1100 X11000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 93.6 | 93.2 | 91.2 | 88.2 | 86.6 | 89.2 | 90.1 | 95.0 | 96.7 | 94.7 | 101.6 | 101.6 | 90.2 | 137.2 |
| 63 | 94.8 | 97.0 | 100.1 | 94.1 | 92.5 | 95.3 | 97.2 | 99.9 | 97.1 | 97.9 | 102.8 | 103.5 | 97.1 | 140.4 |
| 80 | 95.0 | 99.8 | 95.6 | 95.9 | 96.0 | 100.1 | 97.7 | 97.4 | 97.8 | 98.4 | 102.3 | 102.5 | 91.6 | 140.5 |
| 100 | 94.5 | 99.7 | 95.6 | 94.5 | 96.4 | 100.5 | 99.1 | 101.3 | 98.8 | 101.6 | 102.5 | 107.1 | 94.1 | 142.2 |
| 125 | 92.1 | 94.2 | 96.9 | 96.7 | 98.3 | 100.4 | 98.6 | 98.7 | 98.2 | 101.8 | 108.4 | 111.6 | 97.5 | 144.5 |
| 160 | 89.9 | 87.7 | 92.2 | 90.5 | 91.4 | 95.5 | 98.9 | 95.8 | 97.7 | 103.3 | 109.2 | 112.6 | 101.5 | 144.8 |
| 200 | 89.5 | 90.6 | 91.1 | 89.1 | 92.0 | 95.8 | 97.7 | 98.1 | 101.6 | 103.1 | 109.8 | 115.0 | 103.6 | 146.3 |
| 250 | 87.5 | 91.1 | 91.8 | 90.9 | 93.2 | 96.1 | 97.2 | 99.4 | 101.8 | 108.6 | 114.5 | 117.5 | 106.4 | 149.5 |
| 315 | 89.3 | 91.4 | 91.1 | 90.2 | 92.8 | 96.9 | 98.8 | 99.4 | 103.6 | 111.0 | 116.8 | 118.8 | 107.7 | 151.2 |
| 400 | 90.3 | 91.6 | 92.9 | 91.4 | 93.7 | 96.6 | 103.2 | 99.7 | 103.6 | 112.7 | 118.3 | 119.3 | 107.4 | 152.3 |
| 500 | 90.3 | 92.9 | 94.1 | 91.9 | 94.5 | 98.4 | 98.5 | 101.2 | 105.6 | 115.0 | 120.3 | 119.0 | 105.4 | 153.5 |
| 630 | 91.5 | 92.8 | 94.6 | 92.6 | 95.0 | 98.3 | 99.0 | 102.1 | 105.6 | 116.2 | 120.8 | 118.2 | 104.4 | 153.7 |
| 800 | 93.8 | 93.9 | 94.9 | 93.9 | 96.8 | 99.4 | 99.8 | 103.7 | 107.9 | 116.0 | 121.1 | 116.5 | 103.2 | 153.6 |
| 1000 | 97.0 | 97.0 | 97.0 | 95.4 | 97.2 | 100.6 | 100.7 | 104.4 | 108.3 | 116.4 | 120.0 | 115.2 | 101.9 | 153.0 |
| 1250 | 100.9 | 102.2 | 99.7 | 97.6 | 98.6 | 101.5 | 101.1 | 105.0 | 110.0 | 116.1 | 119.7 | 111.6 | 101.5 | 152.7 |
| 1600 | 103.9 | 104.5 | 104.7 | 100.6 | 99.8 | 102.2 | 103.0 | 106.3 | 109.9 | 115.5 | 118.9 | 110.5 | 100.7 | 152.3 |
| 2000 | 102.3 | 103.1 | 104.6 | 103.4 | 103.7 | 103.1 | 102.3 | 106.7 | 109.8 | 116.1 | 117.3 | 108.1 | 100.2 | 151.8 |
| 2500 | 99.5 | 101.5 | 101.9 | 101.3 | 104.2 | 106.6 | 103.5 | 106.6 | 109.8 | 115.6 | 118.1 | 107.6 | 100.6 | 151.0 |
| 3150 | 98.9 | 100.5 | 100.5 | 99.0 | 101.6 | 105.3 | 107.0 | 109.8 | 113.9 | 113.4 | 105.3 | 98.2 | 150.0 | |
| 4000 | 98.4 | 99.2 | 100.9 | 98.5 | 100.4 | 103.9 | 104.8 | 107.6 | 109.8 | 112.2 | 112.0 | 102.5 | 97.3 | 149.0 |
| 5000 | 97.9 | 99.0 | 100.3 | 98.2 | 100.5 | 102.3 | 104.1 | 107.2 | 108.2 | 111.3 | 109.6 | 102.1 | 95.8 | 148.0 |
| 6300 | 96.9 | 99.1 | 99.7 | 97.7 | 100.0 | 102.5 | 103.5 | 106.7 | 108.5 | 110.0 | 107.9 | 100.4 | 94.4 | 147.4 |
| 8000 | 94.8 | 96.8 | 98.3 | 97.8 | 99.4 | 101.7 | 101.9 | 106.5 | 107.5 | 105.8 | 99.0 | 93.8 | 145.9 | |
| 10000 | 95.2 | 96.7 | 97.9 | 97.2 | 98.8 | 102.5 | 102.1 | 105.1 | 106.0 | 106.3 | 104.8 | 98.9 | 94.0 | 146.1 |
| 12500 | 92.9 | 94.5 | 96.3 | 95.7 | 98.0 | 101.2 | 101.0 | 102.5 | 104.4 | 105.0 | 102.6 | 98.2 | 92.5 | 145.3 |
| 16000 | 91.8 | 94.3 | 95.3 | 95.3 | 96.3 | 99.8 | 99.9 | 101.0 | 102.7 | 102.1 | 100.9 | 97.1 | 90.8 | 145.0 |
| 20000 | 88.7 | 91.8 | 92.5 | 93.0 | 95.3 | 97.0 | 98.1 | 99.1 | 99.0 | 97.5 | 94.7 | 88.7 | 143.9 | |
| 25000 | 85.8 | 88.4 | 89.2 | 90.4 | 91.8 | 95.9 | 95.5 | 94.8 | 97.0 | 95.5 | 84.7 | 91.4 | 85.3 | 143.7 |
| 31500 | 82.5 | 84.7 | 86.2 | 87.3 | 88.0 | 91.8 | 91.1 | 91.5 | 93.0 | 90.7 | 80.3 | 80.7 | 142.8 | |
| 40000 | 76.8 | 80.5 | 82.2 | 83.2 | 82.7 | 87.9 | 85.6 | 86.8 | 89.5 | 87.4 | 85.6 | 82.0 | 76.4 | 142.7 |
| 50000 | 70.9 | 74.3 | 75.9 | 77.0 | 76.6 | 83.2 | 81.0 | 81.7 | 83.0 | 80.9 | 81.1 | 76.7 | 70.4 | 141.4 |
| 63000 | 64.7 | 68.0 | 70.3 | 71.0 | 71.7 | 77.5 | 74.1 | 76.0 | 77.5 | 75.5 | 74.7 | 70.1 | 63.3 | 140.9 |
| 80000 | 58.3 | 60.7 | 62.7 | 62.5 | 63.9 | 71.0 | 66.9 | 68.6 | 69.9 | 69.4 | 66.9 | 62.9 | 55.8 | 140.5 |

NASA DUAL FLOW THERMAL SHIELD/DFIAS-12/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|------------------|-------------------|
| VERTCL = ADH177 | TEST DATE = 03-30-83 | LOCAT = C41 ANECH CH | CONFIG = 12 | MODEL = C01 | FLTVEL = 400. FPS |
| IAPLHA = SB53 | IEGA = N0 | PWL AREA = FULL SPHERE | TAMB F = 42.72 | PAMB HG = 29.47 | RELHUM = 48.7 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | EXT CONFIG = ARC | NIKE HT = |
| FNINT = | LBS XNL = | RPM | XNH = | RPM - | V8 = 1533.8 FPS |
| FNRAMB = | LBS XNLR = | RPM | XNHR = | RPM | V18 = 2334.3 FPS |
| RUNPT = 83F-400-1210 | TAPE = | X1210C | TEST PT NO = 1210 | NC = | AE086 |
| | | | | | CORR FAN SPEED = |
| | | | | | RPM |
| | | | | | AE9 = 4.6 SQ IN |
| | | | | | AE18 = 23.4 SQ IN |

IDENTIFICATION - 83F-400-1210 X1210F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | | | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | |
| 125 | | | | | | | | | | | | | | |
| 160 | | | | | | | | | | | | | | |
| 200 | | | | | | | | | | | | | | |
| 250 | 95.4 | 97.5 | 96.8 | 94.2 | 94.5 | 96.1 | 95.7 | 96.3 | 101.2 | 108.0 | 113.7 | 116.5 | 107.5 | 148.8 |
| 315 | 95.4 | 97.5 | 96.8 | 94.2 | 94.6 | 97.1 | 97.8 | 97.3 | 101.3 | 109.9 | 115.5 | 117.6 | 108.6 | 150.1 |
| 400 | 97.0 | 97.8 | 96.1 | 93.6 | 95.6 | 96.9 | 102.2 | 97.5 | 103.3 | 112.1 | 117.6 | 117.9 | 109.1 | 151.4 |
| 500 | 97.6 | 97.8 | 97.7 | 94.7 | 96.4 | 98.7 | 97.5 | 98.9 | 103.5 | 113.6 | 118.5 | 118.1 | 109.1 | 152.1 |
| 630 | 98.0 | 99.3 | 99.1 | 95.4 | 96.9 | 98.7 | 98.0 | 99.9 | 106.2 | 113.9 | 119.5 | 117.8 | 110.7 | 152.7 |
| 800 | 99.2 | 99.2 | 99.9 | 96.1 | 98.8 | 99.9 | 101.5 | 107.1 | 115.0 | 119.3 | 117.9 | 112.1 | 153.0 | |
| 1000 | 101.3 | 100.2 | 99.9 | 97.5 | 98.9 | 101.2 | 99.9 | 102.3 | 108.8 | 114.5 | 118.7 | 114.1 | 111.5 | 152.1 |
| 1250 | 102.3 | 101.7 | 100.8 | 98.1 | 100.4 | 102.3 | 100.5 | 103.0 | 108.9 | 114.2 | 113.2 | 110.9 | 151.7 | |
| 1600 | 107.4 | 107.5 | 103.8 | 100.4 | 101.7 | 103.2 | 102.6 | 104.6 | 109.0 | 115.0 | 116.7 | 110.9 | 110.4 | 151.6 |
| 2000 | 110.6 | 110.1 | 109.0 | 103.6 | 105.9 | 104.4 | 102.4 | 105.1 | 109.5 | 115.2 | 111.2 | 111.8 | 152.1 | |
| 2500 | 107.3 | 107.5 | 108.5 | 106.4 | 107.1 | 108.2 | 103.7 | 105.6 | 110.0 | 113.8 | 113.8 | 109.1 | 109.5 | 151.4 |
| 3150 | 107.1 | 108.1 | 105.5 | 105.4 | 105.4 | 108.7 | 105.9 | 106.3 | 110.5 | 112.5 | 112.6 | 106.3 | 108.4 | 150.9 |
| 4000 | 109.2 | 109.4 | 107.8 | 104.5 | 104.1 | 106.5 | 105.9 | 107.5 | 109.0 | 111.7 | 110.3 | 106.0 | 107.0 | 150.4 |
| 5000 | 105.9 | 106.0 | 106.6 | 103.2 | 101.5 | 106.2 | 105.5 | 107.2 | 109.4 | 110.4 | 108.6 | 104.1 | 105.0 | 149.4 |
| 6300 | 105.1 | 105.7 | 106.2 | 103.0 | 101.1 | 105.5 | 105.1 | 106.8 | 108.2 | 108.8 | 107.7 | 104.3 | 106.8 | 148.9 |
| 8000 | 104.2 | 105.7 | 105.3 | 102.4 | 103.4 | 104.7 | 103.9 | 105.7 | 108.5 | 108.4 | 107.7 | 105.2 | 107.8 | 148.9 |
| 10000 | 102.0 | 103.2 | 103.8 | 102.3 | 102.8 | 105.5 | 104.3 | 106.2 | 107.2 | 107.6 | 105.8 | 104.9 | 106.6 | 148.7 |
| 12500 | 102.1 | 102.8 | 103.2 | 101.5 | 101.6 | 104.2 | 103.3 | 103.7 | 106.4 | 105.6 | 105.1 | 104.7 | 105.7 | 148.5 |
| 16000 | 102.0 | 102.4 | 102.7 | 100.5 | 100.4 | 102.8 | 102.3 | 102.5 | 103.8 | 103.5 | 102.6 | 103.0 | 104.1 | 148.3 |
| 20000 | 97.4 | 99.5 | 99.6 | 98.6 | 99.3 | 100.0 | 100.5 | 99.7 | 102.3 | 100.9 | 100.7 | 100.6 | 101.6 | 147.8 |
| 25000 | 94.0 | 96.4 | 96.2 | 95.7 | 96.4 | 98.9 | 98.0 | 96.6 | 99.2 | 96.9 | 97.2 | 97.1 | 98.1 | 147.2 |
| 31500 | 93.2 | 94.5 | 93.8 | 93.4 | 92.5 | 94.8 | 93.5 | 93.4 | 96.2 | 93.9 | 93.9 | 92.7 | 94.5 | 147.1 |
| 40000 | 89.0 | 89.9 | 90.0 | 89.6 | 87.3 | 90.9 | 89.0 | 88.4 | 90.4 | 88.3 | 88.3 | 88.2 | 89.1 | 146.4 |
| 50000 | 82.9 | 85.3 | 85.6 | 85.0 | 81.2 | 86.2 | 83.5 | 83.5 | 85.5 | 83.5 | 83.4 | 82.4 | 83.1 | 145.8 |
| 63000 | 76.1 | 78.2 | 78.3 | 77.9 | 76.3 | 80.5 | 76.5 | 77.7 | 79.4 | 78.9 | 77.1 | 76.8 | 77.3 | 144.9 |
| 80000 | 68.3 | 70.5 | 71.2 | 70.5 | 68.5 | 74.0 | 69.3 | 70.3 | 69.6 | 69.0 | 67.3 | 67.0 | 67.5 | 143.8 |
| 0ASPL | 117.6 | 117.9 | 117.4 | 114.6 | 115.4 | 117.1 | 115.8 | 117.1 | 120.6 | 125.1 | 128.2 | 126.6 | 121.9 | 164.2 |
| PNL | 130.5 | 130.8 | 129.8 | 127.1 | 128.0 | 130.0 | 128.1 | 129.7 | 133.0 | 136.5 | 137.7 | 134.3 | 133.0 | |
| PNLT | 131.6 | 130.8 | 129.8 | 127.1 | 128.0 | 130.0 | 128.0 | 129.7 | 133.0 | 136.5 | 137.7 | 134.3 | 133.0 | |
| DBA | 191.4 | 193.5 | 191.0 | 193.4 | 191.3 | 196.2 | 192.1 | 193.0 | 193.6 | 192.8 | 191.4 | 190.9 | 191.6 | |

227

MODEL/FULL SCALE FAC - IN-1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTA: -12/NAS3-22137

| | | | | | |
|------------------|----------------------|------------------------|--------------------|-----------------|-------------------|
| VEHICLE = ADH177 | TEST DATE = 03-30-83 | LOCAT = C41 ANECH CH | CONFIG = 12 | MODEL = CG | FLTVEL = 400. FPS |
| IAPLIA = SB59 | IEGA = NG | PWL AREA = FULL SPHERE | TAMB F = 42.72 | PAMB HG = 29.47 | RELHUM = 48.7 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = |

| | | | | | | | | | | | | |
|----------|----------|---|-----|------|---|-----|-----|---|------------|------|---|------------|
| FNIN1 = | LBS XNL | = | RPM | XNH | = | RPM | V8 | = | 1533.8 FPS | AE8 | = | 4.6 SQ IN |
| FNRAMB = | LBS XNLR | = | RPM | XNHR | = | RPM | V18 | = | 2334.3 FPS | AE18 | = | 23.4 SQ IN |

RUNPT = 83F-400-1210 TAPE = X1210F TEST PT NO = 1210 NC = AE086 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1210 X12101

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 70.9 | 74.5 | 74.8 | 72.9 | 74.0 | 75.4 | 74.9 | 75.0 | 73.3 | 85.0 | 89.2 | 89.7 | 77.4 | 163.7 |
| 53 | 70.9 | 74.5 | 74.8 | 72.9 | 73.7 | 76.4 | 76.9 | 76.1 | 79.3 | 86.9 | 90.9 | 90.8 | 78.4 | 165.0 |
| 80 | 72.4 | 74.7 | 74.1 | 72.3 | 74.7 | 76.1 | 81.4 | 76.2 | 81.3 | 89.0 | 92.9 | 91.0 | 77.8 | 166.3 |
| 100 | 72.9 | 74.6 | 75.6 | 73.4 | 75.5 | 77.9 | 76.5 | 77.5 | 81.4 | 90.5 | 93.8 | 91.1 | 78.7 | 167.0 |
| 125 | 73.2 | 76.0 | 77.0 | 74.0 | 75.9 | 77.9 | 77.0 | 78.4 | 84.0 | 90.7 | 94.7 | 90.7 | 80.1 | 167.6 |
| 160 | 74.2 | 75.8 | 77.6 | 74.0 | 77.7 | 78.9 | 77.7 | 79.9 | 84.8 | 91.6 | 94.3 | 90.6 | 81.1 | 167.9 |
| 200 | 76.0 | 76.6 | 77.4 | 75.7 | 77.6 | 80.1 | 78.6 | 80.6 | 86.3 | 90.9 | 93.5 | 86.4 | 80.0 | 167.0 |
| 250 | 76.7 | 77.8 | 78.1 | 76.2 | 78.9 | 80.9 | 78.9 | 81.1 | 86.2 | 90.3 | 92.5 | 85.1 | 78.8 | 166.6 |
| 315 | 81.4 | 83.3 | 80.7 | 78.2 | 80.0 | 81.6 | 80.8 | 82.3 | 86.0 | 90.7 | 90.7 | 82.2 | 77.4 | 166.5 |
| 400 | 84.1 | 85.4 | 85.5 | 81.0 | 83.8 | 82.4 | 80.0 | 82.5 | 86.1 | 90.3 | 88.6 | 81.8 | 77.8 | 167.0 |
| 500 | 80.1 | 82.4 | 84.7 | 83.4 | 84.7 | 85.9 | 81.2 | 82.6 | 86.1 | 88.6 | 86.7 | 79.0 | 74.4 | 166.3 |
| 630 | 79.4 | 82.5 | 83.1 | 82.2 | 82.6 | 86.0 | 83.0 | 83.0 | 86.3 | 86.9 | 84.9 | 75.4 | 72.2 | 165.8 |
| 800 | 80.9 | 83.2 | 83.1 | 80.8 | 80.9 | 83.4 | 82.7 | 83.8 | 84.3 | 85.5 | 82.0 | 74.3 | 69.5 | 165.3 |
| 1000 | 75.9 | 78.3 | 81.5 | 79.0 | 80.9 | 82.8 | 81.9 | 83.0 | 84.3 | 83.7 | 79.6 | 71.5 | 66.2 | 164.3 |
| 1250 | 75.3 | 78.3 | 80.5 | 78.4 | 80.0 | 81.6 | 81.1 | 82.2 | 82.5 | 81.4 | 77.9 | 70.6 | 66.2 | 163.8 |
| 1600 | 73.0 | 77.3 | 78.8 | 77.0 | 78.7 | 80.1 | 79.2 | 80.3 | 81.9 | 80.1 | 76.5 | 69.7 | 64.4 | 163.8 |
| 2000 | 69.0 | 73.4 | 76.1 | 75.8 | 77.1 | 80.1 | 78.6 | 79.7 | 79.5 | 77.8 | 72.9 | 66.9 | 59.4 | 163.6 |
| 2500 | 66.4 | 70.8 | 73.6 | 73.4 | 73.3 | 77.3 | 76.1 | 75.7 | 76.8 | 73.7 | 69.5 | 63.0 | 52.7 | 163.4 |
| 3150 | 62.0 | 67.0 | 70.3 | 69.9 | 70.8 | 73.5 | 72.7 | 71.9 | 71.3 | 68.2 | 62.6 | 55.3 | 41.6 | 163.2 |
| 4000 | 49.8 | 58.0 | 61.9 | 63.3 | 65.3 | 66.5 | 66.6 | 64.5 | 64.7 | 59.4 | 53.1 | 42.6 | 23.3 | 162.7 |
| 5000 | 35.0 | 45.7 | 50.7 | 53.4 | 55.8 | 58.8 | 57.4 | 54.3 | 53.7 | 46.3 | 38.1 | 23.8 | | 162.1 |
| 6300 | 15.1 | 28.4 | 35.0 | 39.1 | 40.5 | 43.7 | 41.6 | 39.1 | 37.3 | 27.8 | 15.9 | | | 162.0 |
| 8000 | | 8.5 | 14.6 | 15.9 | 20.6 | 17.7 | 13.5 | 8.9 | | | | | | 161.3 |
| 12500 | | | | | | | | | | | | | | 160.7 |
| 16030 | | | | | | | | | | | | | | 159.8 |
| 20000 | | | | | | | | | | | | | | 158.7 |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DETAS-12/NAS3-22137

VEHICLE = ADH177 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = CO¹ FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 42.72 PAMB HG = 29.47 REHLM = 48.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL NIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1533.8 FPS AE8 = 4.6 SQ IN
 FNRMB = LBS XNLR = RPM XNIR = RPM V18 = 2334.3 FPS AE18 = 23.4 SQ IN

POINT 83F-400-1210 TAPE = 12101

IDENTIFICATION - MODEL 83F-ZIR-1211 X1211C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 92.4 | 94.9 | 94.7 | 90.7 | 91.8 | 92.2 | 92.3 | 94.2 | 95.2 | 100.7 | 101.6 | 101.1 | 97.7 | 138.4 |
| 63 | 95.8 | 98.5 | 100.6 | 96.6 | 97.5 | 99.3 | 98.0 | 99.4 | 99.6 | 102.9 | 102.5 | 102.5 | 101.9 | 141.9 |
| 80 | 98.3 | 102.1 | 97.8 | 97.9 | 98.5 | 100.3 | 100.7 | 100.9 | 100.6 | 101.7 | 105.5 | 105.5 | 93.4 | 143.5 |
| 100 | 96.7 | 103.5 | 99.0 | 98.5 | 100.1 | 103.8 | 102.6 | 105.3 | 102.0 | 105.8 | 106.2 | 110.6 | 96.1 | 145.9 |
| 125 | 93.1 | 96.7 | 99.2 | 99.0 | 101.3 | 104.2 | 101.8 | 102.7 | 103.2 | 105.8 | 112.6 | 115.3 | 100.7 | 148.3 |
| 160 | 90.9 | 92.7 | 97.0 | 94.0 | 94.0 | 99.0 | 101.6 | 101.8 | 103.0 | 107.3 | 113.2 | 116.4 | 106.0 | 148.7 |
| 200 | 94.5 | 93.3 | 95.1 | 93.9 | 96.7 | 101.1 | 102.5 | 102.6 | 106.6 | 108.6 | 115.5 | 119.5 | 108.9 | 151.3 |
| 250 | 94.0 | 95.1 | 96.8 | 96.1 | 98.7 | 101.1 | 102.2 | 104.4 | 107.3 | 114.6 | 120.0 | 122.2 | 112.1 | 154.7 |
| 315 | 95.1 | 96.1 | 95.9 | 95.4 | 98.0 | 102.1 | 104.8 | 104.7 | 109.1 | 116.7 | 121.3 | 123.0 | 114.2 | 155.9 |
| 400 | 95.3 | 97.8 | 98.4 | 96.2 | 98.5 | 101.6 | 112.0 | 105.7 | 109.1 | 119.7 | 123.8 | 124.8 | 115.9 | 158.2 |
| 500 | 97.1 | 99.1 | 99.9 | 98.2 | 100.3 | 103.9 | 104.3 | 104.4 | 111.4 | 121.7 | 125.3 | 125.3 | 116.9 | 159.5 |
| 630 | 98.5 | 99.8 | 100.1 | 99.1 | 101.0 | 104.3 | 105.0 | 108.4 | 112.1 | 122.7 | 126.5 | 125.0 | 118.4 | 160.1 |
| 800 | 101.6 | 102.4 | 102.4 | 100.9 | 103.0 | 105.1 | 105.8 | 108.9 | 113.9 | 122.7 | 127.1 | 124.8 | 119.2 | 160.4 |
| 1000 | 106.5 | 108.0 | 105.8 | 103.1 | 103.7 | 107.1 | 106.7 | 110.4 | 114.3 | 122.9 | 127.0 | 124.9 | 118.4 | 160.5 |
| 1250 | 108.4 | 110.0 | 108.7 | 105.0 | 106.1 | 108.2 | 107.6 | 110.5 | 115.7 | 122.1 | 126.4 | 122.1 | 117.3 | 159.7 |
| 1600 | 103.9 | 108.8 | 100.9 | 107.1 | 107.8 | 108.9 | 108.5 | 112.3 | 115.4 | 121.5 | 125.6 | 120.8 | 115.7 | 159.1 |
| 2000 | 108.3 | 108.6 | 108.0 | 106.9 | 108.6 | 108.9 | 110.6 | 108.9 | 111.9 | 115.8 | 123.6 | 118.9 | 114.4 | 158.1 |
| 2500 | 106.0 | 108.0 | 107.6 | 106.6 | 107.7 | 110.6 | 109.5 | 111.9 | 115.3 | 121.3 | 122.6 | 118.1 | 113.1 | 157.5 |
| 3150 | 104.1 | 107.2 | 107.5 | 106.0 | 107.3 | 110.9 | 110.3 | 112.5 | 115.1 | 120.2 | 120.4 | 116.1 | 111.5 | 156.4 |
| 4000 | 102.4 | 105.5 | 106.9 | 105.5 | 107.5 | 110.7 | 109.6 | 112.9 | 114.8 | 118.3 | 120.0 | 114.3 | 109.8 | 155.5 |
| 5000 | 100.7 | 104.7 | 106.4 | 105.2 | 107.0 | 109.7 | 109.6 | 112.2 | 113.7 | 117.9 | 118.4 | 113.4 | 108.4 | 154.8 |
| 6300 | 100.2 | 104.4 | 105.7 | 104.5 | 106.6 | 109.8 | 109.3 | 111.5 | 113.1 | 116.5 | 116.5 | 111.9 | 107.9 | 153.9 |
| 8000 | 98.1 | 102.6 | 103.6 | 103.8 | 106.2 | 108.7 | 108.2 | 110.0 | 112.1 | 114.5 | 115.4 | 110.8 | 107.6 | 153.0 |
| 10000 | 97.8 | 101.7 | 103.2 | 103.5 | 105.6 | 108.8 | 108.1 | 110.1 | 111.1 | 112.8 | 114.1 | 109.4 | 106.2 | 152.6 |
| 12500 | 95.2 | 99.0 | 101.1 | 102.2 | 104.7 | 108.0 | 107.3 | 107.8 | 109.2 | 111.8 | 111.6 | 108.2 | 104.7 | 151.9 |
| 16000 | 94.0 | 98.1 | 99.5 | 100.5 | 102.8 | 106.0 | 105.4 | 106.3 | 108.1 | 108.9 | 110.4 | 106.3 | 101.5 | 151.4 |
| 20000 | 90.6 | 95.5 | 96.4 | 97.9 | 100.0 | 103.0 | 103.1 | 103.2 | 104.8 | 106.7 | 106.7 | 103.4 | 99.1 | 150.2 |
| 25000 | 88.0 | 92.6 | 93.6 | 95.3 | 96.9 | 101.5 | 100.4 | 99.9 | 102.1 | 101.9 | 100.9 | 99.5 | 93.7 | 149.2 |
| 31500 | 84.4 | 87.8 | 90.6 | 92.0 | 92.6 | 97.2 | 95.9 | 96.4 | 97.6 | 98.3 | 98.1 | 95.1 | 89.9 | 148.4 |
| 40000 | 79.4 | 84.1 | 85.5 | 88.1 | 87.5 | 93.2 | 91.5 | 91.7 | 95.1 | 95.2 | 94.7 | 90.6 | 85.5 | 148.6 |
| 50000 | 72.8 | 77.9 | 79.5 | 81.4 | 81.4 | 88.3 | 85.6 | 87.1 | 88.9 | 89.9 | 88.9 | 85.5 | 80.3 | 147.5 |
| 63000 | 66.8 | 72.4 | 74.5 | 75.6 | 77.1 | 83.1 | 79.7 | 81.9 | 84.8 | 85.3 | 84.8 | 79.5 | 73.1 | 148.0 |
| 80000 | 59.4 | 65.8 | 67.5 | 67.6 | 69.7 | 76.8 | 73.7 | 75.7 | 77.7 | 80.2 | 77.4 | 73.0 | 65.4 | 148.4 |
| OASPL | 116.7 | 118.3 | 118.3 | 117.0 | 118.6 | 121.4 | 121.3 | 123.3 | 126.2 | 132.7 | 136.1 | 134.3 | 127.5 | 170.5 |
| PNL | 128.8 | 130.8 | 131.1 | 129.7 | 131.3 | 134.4 | 134.1 | 136.4 | 138.9 | 144.5 | 146.7 | 143.6 | 137.8 | |
| PNLT | 128.8 | 131.5 | 131.1 | 129.7 | 132.0 | 134.4 | 135.3 | 137.0 | 138.9 | 144.5 | 146.7 | 143.6 | 137.8 | |
| DBA | 117.0 | 118.3 | 118.2 | 116.7 | 118.2 | 120.8 | 120.3 | 122.9 | 126.0 | 132.3 | 135.4 | 132.5 | 126.5 | |

NASA DUAL FLOW THERMAL SHIELD/OFTAS-12/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|-------------------|
| VEHICLE = ADH183 | TEST DATE = 03-30-83 | LOCAT = C41 ANECH CH | CONFIG = 12 | MODEL = C81 | FLTVEL = 0. FPS |
| IAPLHA = SB59 | LEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 43.45 | PAMB HG = 29.46 | RELHUM = 45.6 PCT |
| WIND DIR = | DEG WIND VEL = | MPH EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNTNI = | LBS XNLR = | RPM XNH = | V8 = 1522.8 FPS | AE8 = | 4.6 SQ IN |
| FNRMB = | LBS XNLR = | RPM XNHR = | V18 = 2394.9 FPS | AE18 = | 23.4 SQ IN |
| RUNPT = 83F-ZER-1211 | TAPE = X1211C | TEST PT NO = 1211 | NC = AE086 | CORR FAN SPEED = | RPM |

229

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1211 X12111

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|
| 50 | 69.5 | 72.0 | 74.9 | 74.9 | 77.9 | 80.4 | 81.4 | 83.1 | 85.4 | 91.6 | 95.5 | 95.5 | 82.0 | 169.6 |
| 63 | 70.5 | 73.1 | 73.9 | 74.2 | 77.2 | 81.4 | 83.9 | 83.4 | 87.2 | 93.7 | 96.8 | 96.2 | 84.0 | 170.8 |
| 80 | 71.7 | 74.8 | 76.4 | 74.9 | 77.6 | 80.9 | 81.1 | 84.4 | 87.1 | 96.6 | 99.2 | 97.9 | 85.7 | 173.1 |
| 100 | 72.4 | 76.0 | 77.8 | 76.8 | 79.4 | 83.1 | 83.4 | 86.1 | 89.3 | 98.6 | 101.1 | 98.3 | 86.5 | 174.4 |
| 125 | 73.7 | 76.6 | 77.9 | 77.7 | 80.0 | 83.5 | 84.0 | 87.0 | 89.9 | 99.4 | 101.7 | 97.9 | 87.8 | 175.0 |
| 160 | 76.6 | 79.0 | 80.1 | 79.4 | 81.9 | 84.2 | 84.7 | 87.4 | 91.6 | 99.3 | 102.1 | 97.4 | 88.2 | 175.3 |
| 200 | 81.2 | 84.4 | 83.3 | 81.4 | 82.4 | 85.9 | 85.4 | 88.6 | 91.8 | 99.3 | 101.7 | 97.2 | 86.9 | 175.4 |
| 250 | 82.8 | 86.1 | 86.0 | 83.9 | 84.6 | 86.9 | 86.1 | 88.6 | 93.0 | 98.2 | 100.8 | 94.0 | 85.1 | 174.6 |
| 315 | 83.8 | 84.5 | 85.9 | 84.8 | 86.0 | 87.3 | 86.7 | 90.1 | 92.4 | 97.2 | 99.6 | 92.1 | 82.7 | 174.0 |
| 400 | 81.7 | 83.9 | 84.6 | 84.3 | 86.6 | 88.7 | 86.7 | 89.3 | 92.4 | 97.1 | 97.0 | 89.5 | 80.4 | 173.0 |
| 500 | 78.8 | 82.9 | 83.8 | 83.6 | 85.3 | 88.3 | 87.1 | 88.9 | 91.4 | 96.1 | 95.4 | 88.0 | 78.1 | 172.4 |
| 630 | 76.4 | 81.6 | 83.3 | 82.7 | 84.5 | 88.2 | 87.5 | 89.2 | 90.9 | 94.6 | 92.7 | 85.2 | 75.3 | 171.3 |
| 800 | 74.1 | 79.4 | 82.2 | 81.8 | 84.3 | 87.6 | 86.4 | 89.1 | 90.1 | 92.1 | 91.6 | 82.5 | 72.4 | 170.4 |
| 1000 | 71.7 | 78.0 | 81.2 | 81.1 | 83.4 | 86.3 | 86.0 | 88.0 | 88.6 | 91.2 | 89.4 | 80.8 | 69.5 | 169.7 |
| 1250 | 70.3 | 77.0 | 80.0 | 79.9 | 82.8 | 85.9 | 85.3 | 86.9 | 87.4 | 89.2 | 86.6 | 78.2 | 67.3 | 168.8 |
| 1600 | 67.0 | 74.2 | 77.1 | 78.4 | 81.4 | 84.2 | 83.4 | 84.6 | 85.5 | 86.1 | 84.2 | 75.2 | 64.2 | 167.9 |
| 2000 | 64.8 | 71.9 | 75.5 | 77.0 | 79.9 | 83.3 | 82.4 | 83.6 | 83.3 | 83.0 | 81.2 | 71.5 | 59.0 | 167.5 |
| 2500 | 59.5 | 67.1 | 71.5 | 74.1 | 77.5 | 81.1 | 80.1 | 79.7 | 79.6 | 79.8 | 75.9 | 66.5 | 51.6 | 166.8 |
| 3150 | 54.0 | 62.7 | 67.1 | 69.9 | 73.2 | 76.8 | 75.8 | 75.7 | 75.7 | 73.5 | 70.4 | 58.6 | 39.1 | 166.3 |
| 4000 | 43.0 | 54.0 | 58.7 | 62.7 | 66.0 | 69.4 | 69.1 | 67.9 | 67.1 | 65.2 | 59.1 | 45.4 | 20.8 | 165.1 |
| 5000 | 29.0 | 41.9 | 48.1 | 53.0 | 56.4 | 61.5 | 59.9 | 57.6 | 56.6 | 51.2 | 41.9 | 26.2 | 164.1 | 163.3 |
| 6300 | 6.4 | 21.7 | 31.8 | 37.6 | 40.7 | 46.1 | 44.0 | 42.1 | 38.8 | 32.2 | 20.1 | 163.5 | 162.4 | 162.9 |
| 8000 | 4.1 | 13.1 | 16.2 | 23.0 | 20.1 | 16.7 | 13.6 | 2.9 | | | | | | 163.3 |

| | | | | | | | | | | | | | | |
|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| GASPL | 90.1 | 93.1 | 94.1 | 93.4 | 95.4 | 98.2 | 98.4 | 99.9 | 102.4 | 108.4 | 110.4 | 106.4 | 95.7 | 185.3 |
| PNL | 94.8 | 98.4 | 100.2 | 102.7 | 105.9 | 105.4 | 106.8 | 108.3 | 112.5 | 113.3 | 107.7 | 97.0 | | |
| PNL1 | 94.8 | 98.4 | 100.6 | 100.7 | 102.7 | 105.9 | 105.4 | 107.3 | 108.3 | 113.1 | 113.3 | 107.7 | 97.0 | |
| DBA | 81.3 | 88.3 | 90.1 | 90.0 | 92.4 | 95.4 | 94.5 | 96.4 | 97.8 | 101.3 | 101.4 | 94.6 | 84.8 | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALFD AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DF1AS-12/NA33-22137

VEHICL = ADH163 TEST DATE = 01-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = CO¹ FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 43.45 PAMB HG = 29.46 RELHUM = 45.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL NIKE HT =

FNIN1 = LBS XNL = RPM XNII = RPM V8 = 1522.8 FPS AE8 = 4.6 SQ IN
 FNFRMB = LBS XNLR = RPM XNIIIR = RPM V18 = 2394.9 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1211 TAPE = X12111 TEST PT NO = 1211 NC = AE086 C5RR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1212 X1212C
BACKGROUND 83F-400-1100 X11000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 95.9 | 95.4 | 92.9 | 88.2 | 88.3 | 92.4 | 92.1 | 96.0 | 94.4 | 94.0 | 102.4 | 101.6 | 91.7 | 137.8 |
| 63 | 97.3 | 97.5 | 100.6 | 94.1 | 95.0 | 97.6 | 97.0 | 97.1 | 98.1 | 96.9 | 102.5 | 100.5 | 94.1 | 140.1 |
| 80 | 97.5 | 101.8 | 97.8 | 90.5 | 101.8 | 99.7 | 99.1 | 99.5 | 99.4 | 103.8 | 103.2 | 89.6 | 142.2 | |
| 100 | 97.0 | 101.5 | 96.8 | 96.3 | 98.4 | 102.3 | 100.4 | 103.0 | 102.6 | 103.7 | 109.1 | 93.3 | 143.9 | |
| 125 | 94.4 | 95.2 | 97.9 | 98.2 | 99.8 | 101.9 | 100.6 | 100.5 | 99.7 | 102.8 | 110.1 | 113.8 | 99.0 | 146.3 |
| 160 | 92.4 | 89.0 | 94.0 | 91.8 | 93.6 | 97.5 | 103.1 | 98.3 | 99.5 | 105.1 | 110.7 | 114.4 | 103.5 | 146.6 |
| 200 | 92.3 | 92.6 | 92.3 | 91.4 | 94.0 | 97.6 | 99.7 | 99.6 | 103.3 | 104.6 | 111.8 | 116.7 | 106.4 | 148.2 |
| 250 | 90.0 | 93.1 | 93.3 | 92.4 | 94.5 | 97.6 | 99.5 | 101.1 | 103.8 | 110.4 | 116.5 | 120.0 | 108.6 | 151.7 |
| 315 | 91.6 | 92.9 | 92.6 | 91.9 | 94.3 | 98.4 | 100.3 | 100.9 | 104.9 | 112.7 | 118.3 | 120.8 | 110.4 | 153.0 |
| 400 | 92.3 | 93.6 | 94.6 | 92.4 | 95.2 | 98.1 | 105.7 | 101.7 | 105.4 | 114.7 | 120.3 | 121.5 | 109.9 | 154.4 |
| 500 | 92.6 | 94.4 | 95.6 | 94.2 | 96.0 | 99.4 | 99.8 | 103.2 | 106.9 | 117.5 | 122.6 | 121.5 | 109.4 | 155.8 |
| 630 | 94.5 | 95.6 | 96.3 | 94.6 | 96.5 | 100.1 | 100.7 | 104.4 | 106.8 | 118.4 | 123.5 | 120.5 | 107.9 | 156.2 |
| 800 | 97.3 | 96.9 | 97.6 | 95.7 | 97.8 | 101.1 | 102.0 | 105.2 | 109.6 | 118.0 | 124.6 | 119.0 | 106.9 | 156.6 |
| 1000 | 104.8 | 103.3 | 101.6 | 98.6 | 99.4 | 102.8 | 102.7 | 106.1 | 110.3 | 118.1 | 124.0 | 117.7 | 106.4 | 156.2 |
| 1250 | 104.4 | 107.2 | 106.0 | 102.6 | 102.1 | 103.2 | 103.1 | 106.5 | 111.2 | 117.3 | 123.4 | 114.9 | 104.8 | 155.7 |
| 1600 | 105.1 | 105.3 | 107.4 | 105.3 | 106.0 | 106.2 | 104.7 | 108.1 | 111.4 | 116.5 | 122.6 | 113.5 | 104.0 | 155.1 |
| 2000 | 103.8 | 103.1 | 104.5 | 103.4 | 106.0 | 108.4 | 105.4 | 108.4 | 112.0 | 117.1 | 120.8 | 110.9 | 103.4 | 154.2 |
| 2500 | 102.8 | 103.6 | 103.1 | 101.8 | 103.0 | 107.8 | 106.8 | 108.4 | 111.0 | 117.1 | 118.6 | 109.9 | 103.4 | 153.1 |
| 3150 | 102.4 | 103.0 | 103.7 | 101.5 | 102.6 | 106.6 | 106.6 | 109.8 | 111.3 | 116.0 | 116.7 | 107.8 | 100.7 | 152.2 |
| 4000 | 101.9 | 102.3 | 103.6 | 101.5 | 103.2 | 106.4 | 105.8 | 109.6 | 111.5 | 114.3 | 115.0 | 105.7 | 100.3 | 151.3 |
| 5000 | 101.9 | 102.2 | 104.4 | 102.0 | 103.2 | 105.7 | 105.6 | 109.2 | 110.7 | 114.1 | 113.9 | 104.6 | 98.9 | 150.9 |
| 6300 | 100.9 | 103.1 | 104.4 | 102.0 | 103.0 | 106.2 | 105.8 | 108.5 | 110.8 | 112.3 | 112.0 | 103.4 | 97.9 | 150.2 |
| 8000 | 99.9 | 101.8 | 103.1 | 102.0 | 103.2 | 105.7 | 104.4 | 107.5 | 109.3 | 110.2 | 110.6 | 102.0 | 96.8 | 149.3 |
| 10000 | 99.7 | 101.2 | 102.9 | 101.7 | 103.1 | 106.1 | 105.1 | 107.1 | 108.8 | 109.8 | 109.6 | 102.4 | 97.2 | 149.5 |
| 12500 | 97.6 | 99.0 | 101.3 | 100.7 | 102.7 | 106.2 | 104.2 | 105.0 | 107.1 | 108.2 | 107.0 | 101.7 | 96.0 | 149.0 |
| 16000 | 95.7 | 98.0 | 99.7 | 99.7 | 101.0 | 104.0 | 103.1 | 104.2 | 106.1 | 105.8 | 105.3 | 99.8 | 93.3 | 148.7 |
| 20000 | 92.9 | 95.5 | 97.1 | 96.9 | 99.2 | 101.7 | 101.8 | 100.9 | 103.2 | 102.4 | 102.4 | 97.4 | 91.1 | 147.8 |
| 25000 | 90.2 | 92.8 | 94.0 | 94.7 | 95.6 | 100.5 | 99.4 | 98.1 | 100.3 | 98.6 | 98.1 | 94.2 | 88.1 | 147.4 |
| 31500 | 86.6 | 88.8 | 91.0 | 91.7 | 91.8 | 96.2 | 94.4 | 94.6 | 96.0 | 95.0 | 94.6 | 90.0 | 83.1 | 146.6 |
| 40000 | 81.4 | 84.5 | 86.5 | 87.0 | 87.2 | 92.7 | 90.2 | 91.1 | 93.5 | 91.1 | 81.2 | 84.8 | 78.7 | 146.9 |
| 50000 | 75.0 | 78.5 | 80.4 | 81.3 | 81.4 | 87.5 | 84.3 | 84.8 | 87.0 | 85.6 | 85.9 | 79.7 | 73.2 | 145.4 |
| 63000 | 68.7 | 72.3 | 75.0 | 75.3 | 76.5 | 81.8 | 78.1 | 79.3 | 81.7 | 79.5 | 79.4 | 73.2 | 66.3 | 145.0 |
| 80000 | 61.5 | 64.9 | 68.7 | 67.5 | 68.1 | 75.7 | 71.9 | 72.6 | 74.6 | 73.3 | 72.6 | 66.9 | 58.3 | 145.2 |
| GASPL | 114.2 | 115.9 | 114.1 | 115.4 | 118.3 | 117.8 | 120.0 | 122.6 | 128.2 | 132.9 | 129.8 | 118.8 | 166.9 | |
| PWL | 126.5 | 127.3 | 128.1 | 126.1 | 127.5 | 130.7 | 130.5 | 133.2 | 135.4 | 140.3 | 143.2 | 137.7 | 128.6 | |
| PWLT | 127.8 | 128.9 | 128.1 | 126.8 | 128.2 | 130.7 | 131.5 | 133.7 | 135.4 | 140.3 | 143.2 | 137.7 | 128.6 | |
| DBA | 114.0 | 114.8 | 115.5 | 113.4 | 114.7 | 117.4 | 116.6 | 119.5 | 122.3 | 127.8 | 132.3 | 126.7 | 116.2 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

| | | | | | |
|----------------------|----------------------|--------------------------|------------------|------------------|-------------------|
| VEHICL = ADH178 | TEST DATE = 03-30-83 | LOCAT = C41 ANECH CH | CONFIG = 12 | MODEL = C81 | FLTVEL = 400. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULLI. SPHERE | TAMB F = 42.31 | PAMB HG = 29.46 | RELHUM = 47.4 PCT |
| WIND DIR = | DEG WIND VEL = | EXT DIST = 40.0 FT | EXT CONFIG = ARC | NIKE HT = | NBFR = |
| FNINI = | LBS XNL | RPM | XNH | RPM | V8 = 1531.9 FPS |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V16 = 2403.0 FPS |
| | | | | | AE8 = 4.6 SQ IN |
| | | | | | AE16 = 23.4 SQ IN |
| RUNPT = 83F-400-1212 | TAPE = X1212C | TLST PT NO = 1212 | NC = AE086 | CORR FAN SPEED = | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. SID. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1212P XT1212F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 97.6 | 59.3 | 98.1 | 95.6 | 96.0 | 97.6 | 98.0 | 98.0 | 102.6 | 109.9 | 115.4 | 118.6 | 110.3 | 150.7 |
| 315 | 97.6 | 99.3 | 98.1 | 95.6 | 96.1 | 98.6 | 99.3 | 99.0 | 103.1 | 112.0 | 117.6 | 119.9 | 111.1 | 152.3 |
| 400 | 99.2 | 99.2 | 97.5 | 95.7 | 97.0 | 98.4 | 104.8 | 99.6 | 104.6 | 114.7 | 119.9 | 120.5 | 112.2 | 153.9 |
| 500 | 99.0 | 99.4 | 97.5 | 95.6 | 97.9 | 99.7 | 100.9 | 101.7 | 115.9 | 121.3 | 120.4 | 112.6 | 154.6 | |
| 630 | 100.2 | 100.6 | 100.5 | 97.6 | 98.3 | 100.5 | 99.7 | 102.1 | 107.9 | 115.9 | 123.0 | 120.3 | 114.5 | 155.7 |
| 800 | 101.1 | 101.2 | 100.8 | 97.3 | 93.5 | 101.7 | 101.1 | 103.0 | 109.2 | 116.8 | 123.4 | 120.5 | 116.7 | 156.2 |
| 1000 | 102.9 | 101.7 | 101.6 | 98.5 | 101.1 | 103.5 | 102.0 | 104.1 | 110.1 | 115.9 | 122.6 | 117.5 | 115.0 | 155.2 |
| 1250 | 111.9 | 109.1 | 106.0 | 101.6 | 103.9 | 104.0 | 102.5 | 104.6 | 110.5 | 115.3 | 122.1 | 116.4 | 114.4 | 155.0 |
| 1600 | 111.2 | 112.8 | 110.2 | 105.5 | 108.0 | 107.2 | 104.3 | 106.4 | 111.4 | 116.1 | 120.5 | 114.0 | 114.1 | 154.8 |
| 2000 | 110.1 | 109.6 | 111.0 | 108.0 | 106.7 | 109.7 | 105.2 | 107.0 | 110.8 | 116.7 | 118.9 | 114.8 | 114.8 | 154.4 |
| 2500 | 111.2 | 109.6 | 109.8 | 107.4 | 105.8 | 109.4 | 107.0 | 107.4 | 111.5 | 115.6 | 117.2 | 111.7 | 112.2 | 153.5 |
| 3150 | 109.5 | 110.0 | 108.3 | 105.9 | 105.7 | 108.7 | 107.1 | 109.1 | 112.4 | 114.7 | 115.9 | 110.0 | 112.1 | 152.9 |
| 4000 | 109.0 | 109.0 | 108.9 | 105.6 | 106.9 | 109.0 | 107.0 | 109.6 | 111.5 | 114.5 | 114.6 | 108.5 | 110.1 | 152.5 |
| 5000 | 109.4 | 109.0 | 109.4 | 106.2 | 107.3 | 108.7 | 107.0 | 109.2 | 111.8 | 112.8 | 113.0 | 107.7 | 109.6 | 152.2 |
| 6300 | 109.3 | 108.9 | 110.1 | 106.8 | 107.1 | 109.2 | 107.4 | 108.7 | 110.7 | 111.3 | 112.2 | 106.9 | 109.3 | 152.0 |
| 8000 | 108.2 | 109.7 | 110.1 | 106.7 | 107.2 | 108.7 | 106.3 | 107.9 | 110.8 | 111.5 | 111.9 | 108.3 | 110.6 | 152.4 |
| 10000 | 107.0 | 108.3 | 108.6 | 106.5 | 107.1 | 109.1 | 107.2 | 107.9 | 110.0 | 109.3 | 110.4 | 108.4 | 110.1 | 152.3 |
| 12500 | 106.6 | 107.3 | 108.2 | 106.0 | 107.3 | 109.2 | 106.5 | 106.2 | 109.4 | 108.8 | 109.0 | 107.0 | 108.0 | 152.3 |
| 16000 | 106.8 | 106.8 | 107.7 | 105.5 | 105.1 | 107.0 | 105.4 | 105.4 | 107.4 | 106.4 | 107.1 | 105.5 | 106.6 | 152.2 |
| 20000 | 101.6 | 103.2 | 104.0 | 103.1 | 103.8 | 104.7 | 104.1 | 102.3 | 105.8 | 104.2 | 104.3 | 103.7 | 104.7 | 151.5 |
| 25000 | 101.0 | 102.3 | 102.5 | 100.7 | 100.2 | 103.5 | 101.8 | 100.0 | 101.8 | 100.7 | 101.0 | 100.0 | 100.4 | 151.4 |
| 31500 | 97.5 | 98.8 | 98.7 | 97.8 | 96.4 | 98.2 | 96.8 | 96.2 | 99.8 | 97.3 | 98.1 | 95.4 | 97.1 | 151.0 |
| 40000 | 93.1 | 94.0 | 94.8 | 91.9 | 91.8 | 95.7 | 92.5 | 92.6 | 93.9 | 92.3 | 93.3 | 90.8 | 91.9 | 150.6 |
| 50000 | 87.5 | 89.3 | 89.9 | 88.8 | 86.0 | 90.5 | 86.7 | 86.3 | 89.2 | 86.8 | 87.5 | 84.8 | 85.8 | 149.6 |
| 63000 | 80.1 | 82.4 | 82.8 | 82.2 | 81.1 | 84.8 | 80.3 | 80.6 | 83.3 | 81.8 | 81.6 | 79.5 | 78.7 | 148.8 |
| 80000 | 72.4 | 74.7 | 76.0 | 74.7 | 72.7 | 78.7 | 74.0 | 73.7 | 73.5 | 71.9 | 71.8 | 69.7 | 68.9 | 148.0 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VEHIC. = ADH178 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = CO FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 42.31 PAMB HG = 29.46 RELHUM = 47.4 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNLR = RPM XNH = RPM V8 = 1531.9 FPS AE8 = 4.6 SQ IN
FNKAMB = LBS XNLR = RPM XNHR = RPM V18 = 2403.0 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1212 TAPE = XT1212F TEST PT NO = 1212 NC = AE086 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION 83F 400-1212 X12121

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 73.0 | 75.3 | 76.2 | 74.4 | 75.2 | 76.9 | 77.1 | 76.8 | 80.7 | 86.9 | 90.8 | 91.8 | 80.2 | 165.6 |
| 63 | 73.0 | 76.2 | 76.2 | 74.3 | 75.2 | 77.9 | 78.5 | 77.7 | 81.2 | 88.9 | 93.0 | 93.1 | 81.0 | 167.2 |
| 80 | 74.5 | 76.1 | 75.5 | 74.0 | 76.1 | 77.6 | 83.9 | 78.3 | 82.6 | 91.6 | 95.3 | 93.6 | 81.9 | 168.8 |
| 100 | 74.3 | 76.2 | 77.1 | 74.2 | 77.0 | 78.9 | 77.8 | 79.6 | 82.7 | 92.7 | 96.6 | 93.4 | 82.2 | 169.5 |
| 125 | 75.4 | 77.3 | 78.4 | 76.2 | 77.3 | 79.6 | 78.7 | 80.7 | 85.8 | 92.7 | 98.2 | 93.2 | 83.8 | 170.6 |
| 160 | 76.0 | 77.8 | 78.5 | 76.3 | 70.3 | 80.7 | 80.0 | 81.4 | 86.9 | 93.4 | 98.3 | 93.1 | 85.6 | 171.1 |
| 200 | 77.6 | 78.1 | 79.1 | 76.8 | 79.8 | 82.3 | 80.7 | 82.1 | 87.6 | 92.3 | 97.4 | 89.8 | 83.5 | 170.1 |
| 250 | 85.2 | 85.2 | 83.3 | 79.6 | 82.4 | 82.7 | 81.0 | 82.6 | 87.8 | 91.4 | 96.4 | 88.3 | 82.3 | 169.9 |
| 315 | 85.1 | 88.5 | 87.1 | 83.3 | 86.2 | 85.6 | 82.6 | 84.1 | 88.3 | 91.9 | 94.4 | 85.3 | 81.1 | 169.7 |
| 400 | 83.5 | 84.8 | 87.5 | 85.4 | 86.5 | 87.7 | 83.1 | 84.4 | 87.4 | 92.0 | 92.3 | 84.3 | 80.7 | 169.3 |
| 500 | 84.1 | 84.4 | 86.0 | 84.4 | 83.4 | 87.1 | 84.5 | 84.4 | 87.7 | 90.7 | 90.0 | 81.6 | 77.1 | 168.4 |
| 630 | 81.7 | 84.4 | 84.1 | 82.5 | 82.9 | 86.0 | 84.3 | 85.7 | 88.1 | 89.1 | 88.2 | 79.1 | 75.9 | 167.8 |
| 800 | 80.6 | 82.8 | 84.2 | 81.9 | 83.7 | 86.0 | 83.8 | 85.8 | 86.8 | 88.3 | 86.3 | 76.8 | 72.6 | 167.4 |
| 1000 | 80.4 | 82.3 | 84.2 | 82.1 | 83.7 | 85.3 | 83.5 | 85.1 | 86.7 | 86.2 | 84.0 | 75.1 | 70.7 | 167.1 |
| 1250 | 79.4 | 81.5 | 84.4 | 82.2 | 83.0 | 85.4 | 83.4 | 84.0 | 85.0 | 83.9 | 82.3 | 73.2 | 68.7 | 166.9 |
| 1600 | 77.1 | 81.3 | 83.6 | 81.3 | 82.4 | 84.1 | 81.5 | 82.5 | 84.3 | 80.8 | 72.7 | 67.2 | 167.3 | |
| 2000 | 74.1 | 78.4 | 80.9 | 80.1 | 81.4 | 83.6 | 81.5 | 81.4 | 82.2 | 81.1 | 77.4 | 70.5 | 62.9 | 167.2 |
| 2500 | 70.9 | 75.3 | 78.6 | 77.9 | 80.1 | 82.3 | 79.3 | 78.2 | 79.8 | 76.9 | 73.4 | 65.3 | 54.9 | 167.2 |
| 3150 | 66.7 | 71.4 | 75.3 | 74.9 | 75.5 | 77.7 | 75.8 | 74.8 | 74.9 | 71.0 | 67.1 | 57.8 | 44.1 | 167.1 |
| 4000 | 54.0 | 61.7 | 66.4 | 67.8 | 69.8 | 71.1 | 70.2 | 67.1 | 68.2 | 62.7 | 56.7 | 45.7 | 26.4 | 166.4 |
| 5000 | 41.9 | 51.6 | 57.0 | 58.4 | 59.6 | 63.5 | 61.3 | 57.7 | 56.3 | 50.0 | 42.0 | 26.6 | | 166.3 |
| 6300 | 19.5 | 32.7 | 39.9 | 43.5 | 44.5 | 48.0 | 44.9 | 41.9 | 41.1 | 31.2 | 20.1 | | | 165.9 |
| 8000 | 1.7 | 13.3 | 19.0 | 20.5 | 25.4 | 21.2 | 17.6 | 12.4 | | | | | | 165.5 |
| 10000 | | | | | | | | | | | | | | 164.5 |
| 12500 | | | | | | | | | | | | | | 163.7 |
| 16000 | | | | | | | | | | | | | | 162.9 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

GASPL 93.0 94.6 95.6 93.3 94.7 96.5 94.6 95.4 98.4 102.7 106.2 101.7 92.9 182.1
 PNL 98.9 101.7 103.4 101.6 103.4 105.5 103.3 103.5 105.5 107.5 109.0 102.5 95.1
 PNT 100.0 102.7 104.0 102.3 103.4 105.5 103.3 103.5 106.2 107.5 109.0 102.5 95.1
 DBA 89.3 91.6 93.2 91.3 92.5 94.5 94.5 92.2 93.1 95.0 96.3 96.8 89.0 83.6

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA QUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VCHICL = ADH178 TEST DATE = 03-30-83 I.CAT = C41 ANECH CH CONF19 = 12 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PML AREA = FULL SPIERE TAMB F = 42.31 PAMB HG = 29.46 RELHUM = 47.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1531.9 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2403.0 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1212 TAPE X12121 TEST PT NA = 1213 NC = AE05 SARR FAN SPEED RPM

IDENTIFICATION - MODEL 83F-400-1220 X1220C
BACKGROUND 83F-400-1100 X11000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 94.1 | 93.4 | 90.7 | 87.7 | 87.0 | 91.9 | 92.1 | 93.5 | 93.7 | 93.7 | 101.9 | 101.6 | 91.7 | 137.0 |
| 60 | 95.5 | 96.5 | 98.6 | 94.1 | 93.4 | 96.8 | 96.7 | 98.4 | 97.6 | 96.4 | 102.3 | 103.7 | 96.9 | 140.1 |
| 80 | 95.5 | 99.8 | 96.5 | 96.1 | 96.5 | 100.3 | 98.0 | 97.9 | 98.3 | 97.9 | 102.0 | 102.2 | 87.4 | 140.6 |
| 100 | 95.2 | 100.5 | 96.0 | 95.3 | 96.9 | 100.5 | 98.9 | 101.3 | 98.8 | 101.1 | 102.2 | 107.6 | 91.8 | 142.4 |
| 125 | 92.6 | 94.2 | 96.7 | 96.5 | 98.6 | 100.7 | 99.1 | 93.2 | 98.2 | 101.8 | 108.4 | 112.1 | 97.2 | 144.7 |
| 160 | 90.2 | 87.7 | 92.0 | 90.0 | 91.9 | 95.2 | 99.6 | 95.8 | 97.7 | 103.1 | 109.2 | 112.4 | 101.5 | 144.6 |
| 200 | 90.5 | 90.8 | 91.3 | 89.6 | 92.5 | 96.1 | 97.0 | 98.1 | 102.1 | 103.6 | 110.3 | 115.2 | 104.6 | 146.7 |
| 250 | 68.5 | 91.3 | 92.3 | 91.4 | 93.5 | 96.3 | 97.2 | 99.4 | 102.3 | 108.9 | 114.8 | 118.2 | 107.1 | 150.0 |
| 315 | 89.6 | 91.4 | 91.6 | 90.9 | 93.3 | 97.1 | 98.8 | 99.9 | 103.6 | 111.5 | 117.3 | 119.0 | 108.9 | 151.6 |
| 400 | 91.3 | 92.1 | 93.9 | 91.2 | 94.2 | 96.9 | 104.7 | 99.9 | 104.1 | 113.4 | 118.3 | 119.8 | 108.4 | 152.7 |
| 500 | 91.6 | 93.4 | 94.6 | 93.2 | 94.8 | 98.6 | 98.8 | 101.7 | 106.1 | 116.2 | 120.8 | 119.8 | 106.9 | 154.2 |
| 630 | 92.8 | 94.1 | 95.1 | 93.4 | 95.5 | 99.1 | 99.2 | 102.9 | 106.3 | 116.9 | 120.8 | 118.7 | 105.6 | 154.1 |
| 800 | 95.6 | 96.4 | 96.4 | 94.9 | 97.0 | 99.9 | 100.8 | 104.2 | 108.4 | 116.7 | 121.6 | 117.3 | 104.9 | 154.2 |
| 1000 | 103.2 | 101.8 | 100.3 | 97.8 | 98.2 | 101.8 | 101.4 | 105.3 | 109.1 | 117.1 | 121.5 | 115.9 | 102.6 | 154.3 |
| 1250 | 108.2 | 108.9 | 106.2 | 101.4 | 101.1 | 103.0 | 102.1 | 105.8 | 110.5 | 116.3 | 120.2 | 113.1 | 102.8 | 153.6 |
| 1600 | 108.6 | 109.0 | 110.9 | 107.8 | 105.5 | 104.6 | 104.2 | 107.0 | 110.6 | 115.2 | 119.6 | 111.5 | 101.9 | 153.5 |
| 2000 | 105.8 | 106.8 | 109.0 | 108.1 | 109.2 | 108.6 | 104.8 | 107.1 | 110.7 | 116.0 | 118.5 | 109.3 | 101.1 | 153.3 |
| 2500 | 103.6 | 104.4 | 104.8 | 104.0 | 107.1 | 111.2 | 108.4 | 107.8 | 109.9 | 115.9 | 115.5 | 108.0 | 101.0 | 152.3 |
| 3150 | 103.0 | 103.8 | 104.6 | 102.4 | 104.2 | 109.3 | 109.4 | 109.6 | 110.9 | 114.0 | 114.3 | 105.7 | 99.3 | 151.4 |
| 4000 | 101.4 | 102.0 | 103.4 | 102.3 | 104.0 | 106.5 | 107.3 | 110.4 | 110.5 | 112.5 | 111.7 | 103.0 | 97.9 | 150.2 |
| 5000 | 99.9 | 101.4 | 102.5 | 100.9 | 102.9 | 105.9 | 106.0 | 110.1 | 110.4 | 112.0 | 109.8 | 102.1 | 95.8 | 149.0 |
| 6300 | 99.0 | 100.9 | 101.0 | 99.8 | 101.5 | 105.1 | 105.6 | 109.3 | 110.6 | 110.7 | 107.5 | 100.5 | 94.8 | 149.0 |
| 8000 | 97.4 | 99.2 | 100.8 | 99.0 | 100.6 | 103.7 | 103.9 | 106.5 | 108.2 | 108.3 | 106.3 | 99.3 | 94.1 | 147.3 |
| 10000 | 97.5 | 98.3 | 99.3 | 99.2 | 100.3 | 103.8 | 103.5 | 106.3 | 106.9 | 107.1 | 105.2 | 98.4 | 93.7 | 147.1 |
| 12500 | 95.5 | 96.5 | 98.3 | 97.2 | 100.0 | 103.3 | 102.1 | 103.3 | 104.7 | 105.0 | 103.1 | 98.3 | 92.6 | 146.2 |
| 16000 | 94.1 | 96.0 | 97.4 | 96.7 | 98.7 | 101.7 | 100.8 | 102.4 | 103.8 | 103.0 | 101.3 | 97.2 | 90.7 | 146.2 |
| 20000 | 90.8 | 94.5 | 95.1 | 94.9 | 97.1 | 99.4 | 99.5 | 99.6 | 101.5 | 100.2 | 98.7 | 94.8 | 89.3 | 145.7 |
| 25000 | 88.8 | 91.9 | 92.4 | 93.0 | 91.1 | 97.9 | 97.6 | 99.2 | 98.9 | 95.7 | 92.6 | 86.2 | 86.2 | 145.8 |
| 31500 | 85.8 | 89.1 | 90.3 | 90.8 | 91.3 | 95.2 | 94.2 | 94.7 | 95.8 | 93.9 | 89.0 | 83.0 | 83.0 | 146.0 |
| 40000 | 81.6 | 85.5 | 86.7 | 87.5 | 87.3 | 92.5 | 90.8 | 91.1 | 93.3 | 91.3 | 80.1 | 85.3 | 79.4 | 146.9 |
| 50000 | 75.6 | 79.6 | 80.9 | 82.0 | 82.4 | 87.5 | 85.4 | 87.0 | 87.8 | 86.1 | 84.8 | 80.4 | 74.0 | 146.1 |
| 63000 | 70.1 | 73.9 | 76.2 | 76.6 | 77.3 | 82.3 | 79.7 | 81.6 | 83.1 | 80.7 | 78.9 | 73.9 | 67.9 | 146.2 |
| 80000 | 63.8 | 67.3 | 69.3 | 68.5 | 69.1 | 76.4 | 73.6 | 74.3 | 76.2 | 75.9 | 72.5 | 68.1 | 60.5 | 146.5 |
| QASPL | 115.0 | 115.9 | 116.5 | 114.6 | 115.5 | 118.2 | 117.6 | 119.6 | 121.6 | 126.9 | 130.3 | 128.1 | 116.9 | 165.3 |
| PNL | 126.9 | 127.7 | 128.8 | 127.4 | 128.7 | 131.9 | 131.5 | 133.1 | 134.6 | 138.9 | 140.6 | 135.9 | 126.4 | |
| PNLT | 126.9 | 128.2 | 129.9 | 129.0 | 129.4 | 131.9 | 132.5 | 133.1 | 134.6 | 138.9 | 140.6 | 135.9 | 126.4 | |
| DBA | 115.4 | 116.0 | 116.8 | 114.8 | 115.7 | 118.1 | 117.2 | 119.3 | 121.4 | 126.5 | 129.5 | 124.9 | 114.0 | |

ORIGINAL PAGE IS OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3 22107

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|-----------------|-------------------|
| VEHICLE = ADH79 | TEST DATE = 03-30-83 | LOCAT = C41 ANECIT CH | CONFIG = 12 | MODEL = CO | FLTVEL = 400. FPS |
| TAI'ALPHA = SB59 | ILGA = NO | PWL ARFA = FULL SPHERC | TAMB F = 44.22 | PAMB HG = 29.47 | RELHUM = 83.9 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = |
| FNINT = | LBS XNL | RPM | XNH | RPM | V8 = 1642.4 FPS |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V18 = 2352.5 FPS |
| RUNFL = 80F-400-1220 | TAPE = X1220C | TEST PT NO = 1220 | NC = | AE086 | CORR FAN SPEED = |
| | | | | | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1220 XT220F

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

FREQ
50
63
80
100
125
160

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 200 | 96.4 | 97.8 | 97.3 | 94.7 | 95.1 | 96.3 | 95.7 | 96.2 | 101.3 | 108.6 | 114.3 | 116.7 | 108.7 | 149.2 |
| 315 | 96.4 | 97.8 | 97.3 | 94.7 | 95.1 | 97.3 | 97.8 | 97.9 | 101.9 | 110.7 | 115.6 | 118.2 | 109.6 | 150.6 |
| 400 | 97.3 | 97.8 | 96.6 | 94.3 | 96.0 | 97.1 | 103.8 | 97.8 | 103.8 | 113.4 | 118.1 | 119.7 | 109.6 | 152.2 |
| 500 | 98.0 | 97.8 | 98.4 | 94.3 | 96.7 | 99.0 | 97.7 | 99.4 | 104.3 | 114.4 | 118.6 | 118.7 | 110.4 | 152.6 |
| 630 | 99.2 | 99.8 | 99.6 | 96.6 | 97.4 | 99.5 | 98.2 | 100.6 | 106.8 | 114.8 | 120.1 | 118.7 | 112.6 | 153.5 |
| 800 | 100.0 | 100.2 | 99.9 | 96.8 | 98.8 | 100.4 | 99.9 | 102.0 | 107.9 | 115.7 | 120.8 | 118.7 | 113.8 | 154.1 |
| 1000 | 101.4 | 101.4 | 100.5 | 97.9 | 99.8 | 102.4 | 100.7 | 103.3 | 109.3 | 114.9 | 119.5 | 115.8 | 113.0 | 152.9 |
| 1250 | 110.3 | 107.5 | 104.6 | 100.8 | 103.0 | 105.8 | 101.5 | 103.8 | 109.7 | 114.1 | 119.1 | 114.4 | 112.4 | 152.9 |
| 1600 | 115.6 | 115.1 | 111.0 | 104.7 | 107.5 | 103.8 | 105.3 | 110.0 | 115.0 | 118.1 | 112.3 | 111.6 | 111.6 | 154.2 |
| 2000 | 115.2 | 114.4 | 115.1 | 110.8 | 111.7 | 109.8 | 104.6 | 105.6 | 109.7 | 115.4 | 115.6 | 112.2 | 112.2 | 154.7 |
| 2500 | 112.1 | 112.5 | 113.7 | 111.7 | 110.1 | 112.9 | 108.6 | 106.7 | 111.1 | 113.9 | 114.8 | 109.6 | 110.9 | 154.1 |
| 3150 | 111.3 | 111.1 | 110.2 | 108.2 | 107.5 | 111.3 | 110.1 | 109.0 | 111.6 | 113.1 | 112.8 | 107.4 | 109.8 | 152.8 |
| 4000 | 110.6 | 110.5 | 110.2 | 106.7 | 107.7 | 109.0 | 108.9 | 110.6 | 111.3 | 112.4 | 110.5 | 105.8 | 106.5 | 152.1 |
| 5000 | 109.0 | 108.7 | 109.1 | 107.0 | 107.0 | 108.9 | 107.7 | 110.3 | 111.7 | 111.3 | 108.4 | 104.4 | 105.6 | 151.5 |
| 6300 | 107.3 | 108.1 | 108.3 | 105.7 | 105.7 | 108.1 | 107.4 | 109.7 | 110.0 | 109.7 | 108.3 | 104.7 | 107.3 | 150.8 |
| 8000 | 106.3 | 107.5 | 106.7 | 104.5 | 104.7 | 106.7 | 106.0 | 107.3 | 109.3 | 109.2 | 108.0 | 104.7 | 107.8 | 150.1 |
| 10000 | 104.5 | 105.6 | 103.6 | 103.6 | 104.3 | 106.9 | 105.8 | 107.4 | 107.8 | 107.9 | 106.7 | 105.4 | 107.1 | 149.9 |
| 12500 | 104.3 | 104.4 | 104.6 | 103.4 | 104.6 | 106.3 | 104.4 | 104.7 | 107.4 | 106.4 | 105.5 | 104.9 | 105.9 | 149.8 |
| 16000 | 104.6 | 104.4 | 104.7 | 102.1 | 102.8 | 104.7 | 103.1 | 103.8 | 106.0 | 104.7 | 103.8 | 103.3 | 105.0 | 150.0 |
| 20000 | 100.1 | 101.1 | 101.7 | 100.0 | 101.2 | 102.4 | 101.9 | 101.3 | 104.6 | 102.3 | 101.8 | 102.2 | 103.0 | 149.5 |
| 25000 | 96.1 | 99.1 | 98.8 | 97.6 | 98.7 | 100.9 | 100.0 | 99.5 | 102.0 | 100.0 | 99.9 | 99.3 | 100.5 | 149.6 |
| 31500 | 96.2 | 98.0 | 97.0 | 96.0 | 95.9 | 98.2 | 96.6 | 96.5 | 100.0 | 98.0 | 97.5 | 96.3 | 97.9 | 150.5 |
| 40000 | 92.3 | 94.3 | 94.1 | 93.0 | 91.9 | 95.5 | 93.2 | 92.8 | 95.0 | 93.2 | 92.7 | 91.9 | 93.0 | 150.6 |
| 50000 | 87.7 | 90.3 | 90.1 | 89.3 | 87.0 | 90.5 | 87.8 | 88.6 | 90.8 | 88.3 | 87.2 | 85.8 | 87.6 | 150.4 |
| 63000 | 80.8 | 83.5 | 83.4 | 82.9 | 81.9 | 85.3 | 81.9 | 83.0 | 84.8 | 84.2 | 81.4 | 80.4 | 80.7 | 149.9 |
| 80000 | 73.8 | 76.3 | 77.1 | 76.0 | 73.7 | 79.4 | 75.7 | 75.3 | 75.0 | 74.3 | 71.6 | 70.6 | 70.9 | 149.3 |

GASPL 121.9 121.6 121.2 118.1 118.4 119.9 118.2 119.0 121.8 125.7 129.0 127.4 123.1 165.9
 PNL 133.8 133.5 133.7 131.1 130.7 132.8 131.2 131.9 134.2 137.0 138.4 134.9 134.0
 PNL1 135.4 134.8 133.7 131.1 130.7 132.8 132.2 131.9 134.2 137.0 138.4 134.9 134.0
 DBA 196.4 199.0 199.4 198.5 196.6 201.4 197.9 198.1 198.9 198.0 195.6 194.5 195.1

MODEL/FULLI. SCALE. FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VEHICL = ADH179 TEST DATE = 03-30-83 LOCAT = C41 AN/CH CH CONFIG = 12 MODEL = C0 FLTVEL = 400. FPS
 IAPIHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 44.22 PAMB HQ = 29.47 RELHUM = 83.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LRS XNL = RPM XNH = RPM V8 = 1642.4 FPS AE9 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2352.5 FPS AE18 = 23.4 SQ IN

83F-400-1220 PWT 122 RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1220 X12201

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| 50 | 71.9 | 74.7 | 75.3 | 73.4 | 74.3 | 75.6 | 74.9 | 74.9 | 79.3 | 85.5 | 89.7 | 90.0 | 78.7 | 164.1 |
| 63 | 71.9 | 74.7 | 75.3 | 73.4 | 74.2 | 76.6 | 76.9 | 76.6 | 79.9 | 87.7 | 91.0 | 91.4 | 79.5 | 165.5 |
| 80 | 72.6 | 74.7 | 74.6 | 73.0 | 75.1 | 76.4 | 82.9 | 76.6 | 81.8 | 90.3 | 93.5 | 91.8 | 79.3 | 167.1 |
| 100 | 73.3 | 74.7 | 76.3 | 73.0 | 75.7 | 78.2 | 76.8 | 78.1 | 82.2 | 91.3 | 93.9 | 91.7 | 80.0 | 167.5 |
| 120 | 74.4 | 76.5 | 77.5 | 75.2 | 76.4 | 78.6 | 77.2 | 79.2 | 84.6 | 91.5 | 95.3 | 91.5 | 81.9 | 168.4 |
| 160 | 75.0 | 76.8 | 77.6 | 75.2 | 77.6 | 79.4 | 78.0 | 80.5 | 85.6 | 92.3 | 95.8 | 91.3 | 82.8 | 169.0 |
| 200 | 76.1 | 77.8 | 78.0 | 76.2 | 78.6 | 81.3 | 79.4 | 81.6 | 86.9 | 91.3 | 94.2 | 88.1 | 81.6 | 167.8 |
| 250 | 84.6 | 83.6 | 81.9 | 78.8 | 81.5 | 82.4 | 80.0 | 81.9 | 87.0 | 90.1 | 93.4 | 86.3 | 80.3 | 167.8 |
| 315 | 89.5 | 90.9 | 88.0 | 82.4 | 85.7 | 84.0 | 82.0 | 83.1 | 87.0 | 90.7 | 92.0 | 83.6 | 78.6 | 169.1 |
| 400 | 88.6 | 89.7 | 91.7 | 88.2 | 89.6 | 87.9 | 82.5 | 83.0 | 86.2 | 90.7 | 89.0 | 82.2 | 78.2 | 169.6 |
| 500 | 85.0 | 87.3 | 89.9 | 88.8 | 87.6 | 90.5 | 86.2 | 83.6 | 87.3 | 88.8 | 87.7 | 79.5 | 75.8 | 169.0 |
| 630 | 83.5 | 85.4 | 86.0 | 84.8 | 84.6 | 86.6 | 87.2 | 85.6 | 87.4 | 87.5 | 85.1 | 76.5 | 73.6 | 167.7 |
| 800 | 82.2 | 84.3 | 85.5 | 83.0 | 84.5 | 86.0 | 85.7 | 86.9 | 86.6 | 86.2 | 82.1 | 74.1 | 69.0 | 167.0 |
| 1000 | 80.0 | 82.0 | 84.0 | 82.8 | 83.4 | 85.5 | 84.2 | 86.2 | 86.6 | 84.6 | 79.4 | 71.8 | 66.7 | 166.4 |
| 1250 | 77.5 | 80.7 | 82.6 | 81.1 | 81.6 | 84.2 | 83.4 | 85.0 | 84.3 | 82.4 | 78.4 | 70.9 | 66.7 | 165.7 |
| 1600 | 75.2 | 79.1 | 80.1 | 79.1 | 79.9 | 82.1 | 81.3 | 81.9 | 82.7 | 80.8 | 76.8 | 69.1 | 64.3 | 165.0 |
| 2000 | 71.6 | 75.8 | 78.6 | 77.1 | 78.6 | 81.3 | 80.1 | 80.9 | 80.0 | 78.1 | 73.8 | 67.4 | 59.9 | 164.8 |
| 2500 | 68.7 | 72.5 | 75.0 | 75.4 | 77.4 | 79.4 | 77.2 | 77.9 | 77.9 | 74.5 | 69.8 | 63.2 | 52.8 | 164.7 |
| 3150 | 64.6 | 69.0 | 72.3 | 71.5 | 73.2 | 75.4 | 73.5 | 73.2 | 73.6 | 69.3 | 63.8 | 55.6 | 42.5 | 164.9 |
| 4000 | 52.4 | 59.6 | 64.0 | 64.7 | 67.2 | 68.8 | 67.9 | 66.0 | 66.9 | 60.8 | 54.2 | 44.1 | 24.6 | 164.4 |
| 5000 | 37.1 | 48.4 | 53.3 | 55.3 | 58.1 | 60.9 | 59.4 | 57.1 | 56.5 | 49.3 | 40.9 | 26.0 | 164.5 | 165.4 |
| 6300 | 18.1 | 31.8 | 38.2 | 41.7 | 44.0 | 47.0 | 44.7 | 42.2 | 41.2 | 31.6 | 19.4 | 165.4 | 165.5 | 165.3 |
| 8000 | 2.0 | 12.7 | 18.1 | 20.6 | 25.2 | 21.8 | 17.8 | 13.5 | 0.9 | | | | | 164.8 |
| 10000 | | | | | | | | | | | | | | 164.2 |
| 12500 | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| GASPL | 94.8 | 96.3 | 95.9 | 94.6 | 95.4 | 96.8 | 94.9 | 95.1 | 97.6 | 101.3 | 103.5 | 99.9 | 90.7 | 160.9 |
| PNL | 100.4 | 102.4 | 104.0 | 101.8 | 102.9 | 104.5 | 102.5 | 102.9 | 104.3 | 106.0 | 106.0 | 100.5 | 92.7 | |
| PNLT | 101.3 | 103.2 | 104.5 | 102.3 | 103.5 | 104.5 | 102.5 | 103.4 | 105.0 | 106.8 | 106.0 | 100.5 | 92.7 | |
| DBA | 90.6 | 92.6 | 93.8 | 92.0 | 92.6 | 94.6 | 92.8 | 93.3 | 94.2 | 94.6 | 93.7 | 86.9 | 81.3 | |

MODEL ARFA = 292.1 SQ CM (45.3 SQ IN) SCALED ARFA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VEHICLE = ADH179 TEST DATE = 03-30-83 LOCAT = C41 ANECH C/H CONFIG = 12 MODEL = CO' FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 44.22 PAMB HG = 29.47 RELHUM = 83.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNN1 = LBS XNLR = RPM XNH = RPM V8 = 1642.4 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNIR = RPM V18 = 2352.5 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1220 TAPE = X12201 TEST PT NO = 1220 NC = AE086 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1221 X1221C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 92.6 | 94.2 | 91.9 | 92.0 | 91.1 | 91.2 | 94.3 | 93.2 | 93.9 | 101.0 | 100.6 | 101.6 | 92.2 | 138.0 |
| 63 | 96.8 | 99.3 | 101.6 | 98.1 | 96.2 | 98.6 | 98.5 | 99.1 | 98.3 | 101.6 | 102.5 | 101.7 | 98.4 | 141.6 |
| 80 | 95.5 | 99.6 | 96.1 | 95.9 | 95.5 | 101.1 | 99.7 | 98.9 | 98.8 | 99.9 | 103.8 | 103.7 | 99.1 | 141.6 |
| 100 | 95.2 | 102.0 | 97.8 | 97.5 | 98.6 | 102.5 | 100.6 | 103.0 | 100.8 | 105.1 | 105.2 | 109.9 | 93.6 | 144.6 |
| 125 | 91.6 | 95.2 | 97.9 | 98.2 | 100.3 | 102.9 | 101.3 | 101.7 | 101.2 | 104.8 | 111.9 | 113.8 | 98.7 | 147.1 |
| 160 | 89.2 | 91.7 | 95.0 | 92.5 | 93.6 | 97.5 | 105.9 | 99.8 | 101.2 | 106.3 | 112.2 | 114.9 | 104.5 | 147.7 |
| 200 | 93.0 | 91.6 | 94.6 | 92.6 | 95.7 | 99.8 | 103.5 | 101.1 | 105.8 | 108.1 | 114.8 | 118.2 | 107.1 | 150.3 |
| 250 | 92.3 | 93.8 | 95.6 | 95.1 | 97.7 | 100.3 | 101.2 | 103.4 | 106.8 | 114.6 | 119.3 | 121.7 | 110.4 | 154.1 |
| 315 | 93.8 | 95.4 | 94.4 | 94.4 | 96.8 | 101.1 | 104.5 | 103.9 | 108.4 | 116.0 | 120.6 | 122.0 | 112.4 | 155.0 |
| 400 | 95.1 | 96.1 | 97.4 | 95.4 | 97.7 | 101.6 | 111.7 | 104.9 | 109.4 | 118.9 | 123.1 | 123.5 | 113.4 | 157.2 |
| 500 | 95.6 | 97.9 | 98.9 | 96.9 | 98.8 | 102.9 | 103.0 | 106.2 | 110.9 | 121.2 | 124.6 | 124.0 | 114.9 | 158.4 |
| 630 | 97.3 | 98.6 | 99.1 | 97.9 | 100.0 | 103.6 | 104.0 | 107.6 | 111.3 | 122.4 | 125.8 | 123.5 | 116.6 | 159.2 |
| 800 | 100.3 | 100.1 | 100.9 | 99.4 | 101.5 | 104.4 | 105.0 | 108.4 | 113.4 | 122.7 | 126.6 | 123.3 | 117.4 | 159.7 |
| 1000 | 105.8 | 107.3 | 105.8 | 103.4 | 102.9 | 105.8 | 105.9 | 109.4 | 113.8 | 122.9 | 125.8 | 122.7 | 117.1 | 159.4 |
| 1250 | 109.4 | 111.7 | 108.5 | 106.1 | 106.1 | 107.7 | 106.9 | 109.8 | 115.0 | 121.8 | 125.4 | 120.6 | 114.8 | 158.9 |
| 1600 | 113.6 | 111.5 | 111.4 | 107.8 | 106.8 | 108.4 | 107.5 | 110.8 | 114.9 | 120.5 | 124.4 | 119.0 | 113.0 | 158.1 |
| 2000 | 111.8 | 110.9 | 111.3 | 110.2 | 110.3 | 109.9 | 107.9 | 111.4 | 114.8 | 120.6 | 122.8 | 116.4 | 111.7 | 157.4 |
| 2500 | 108.0 | 108.8 | 109.6 | 108.3 | 110.7 | 113.3 | 109.5 | 110.9 | 114.3 | 120.3 | 121.1 | 115.6 | 110.9 | 156.7 |
| 3150 | 106.4 | 107.5 | 108.5 | 106.5 | 108.6 | 113.2 | 111.5 | 111.8 | 114.3 | 118.7 | 119.4 | 114.1 | 108.5 | 155.7 |
| 4000 | 104.2 | 106.0 | 106.9 | 105.5 | 107.2 | 110.9 | 110.3 | 112.9 | 113.8 | 117.5 | 118.0 | 111.8 | 107.1 | 154.6 |
| 5000 | 102.4 | 104.5 | 106.4 | 104.7 | 107.0 | 109.7 | 109.4 | 112.2 | 113.2 | 116.9 | 116.9 | 111.6 | 106.6 | 154.0 |
| 6300 | 100.7 | 104.1 | 104.5 | 103.5 | 105.6 | 109.5 | 109.1 | 111.8 | 112.6 | 115.3 | 115.2 | 109.9 | 106.1 | 153.1 |
| 8000 | 98.6 | 101.8 | 103.4 | 102.5 | 104.7 | 107.2 | 109.5 | 111.3 | 113.2 | 113.9 | 109.0 | 104.8 | 151.8 | |
| 10000 | 98.0 | 100.9 | 102.4 | 102.5 | 104.1 | 107.6 | 106.8 | 109.3 | 110.3 | 112.3 | 113.3 | 107.4 | 104.5 | 151.7 |
| 12500 | 95.7 | 98.2 | 100.5 | 100.7 | 102.7 | 106.5 | 106.0 | 106.8 | 108.4 | 110.3 | 110.1 | 105.7 | 102.0 | 150.5 |
| 16000 | 94.0 | 97.5 | 99.2 | 99.5 | 101.3 | 104.5 | 103.8 | 104.7 | 106.6 | 108.1 | 108.4 | 103.6 | 98.5 | 149.9 |
| 20000 | 90.4 | 94.5 | 96.3 | 96.9 | 98.7 | 101.4 | 101.5 | 101.6 | 103.5 | 104.9 | 104.9 | 101.1 | 96.3 | 148.7 |
| 25000 | 87.2 | 91.0 | 92.3 | 93.7 | 94.9 | 99.7 | 98.6 | 98.1 | 101.0 | 101.1 | 100.3 | 96.7 | 91.9 | 147.8 |
| 31500 | 83.1 | 87.3 | 89.0 | 90.9 | 91.3 | 95.2 | 94.6 | 94.6 | 96.8 | 97.3 | 96.8 | 92.5 | 86.6 | 147.0 |
| 40000 | 77.6 | 82.5 | 84.5 | 85.5 | 86.2 | 91.4 | 89.7 | 90.6 | 93.5 | 93.4 | 92.7 | 87.5 | 82.5 | 146.8 |
| 50000 | 71.7 | 76.5 | 78.1 | 79.5 | 80.4 | 86.7 | 84.3 | 85.0 | 87.8 | 89.1 | 87.9 | 82.5 | 76.5 | 146.1 |
| 63000 | 66.4 | 71.0 | 73.0 | 74.3 | 75.2 | 80.5 | 77.6 | 79.8 | 82.2 | 84.5 | 82.4 | 76.4 | 69.5 | 145.9 |
| 80000 | 63.0 | 65.1 | 66.6 | 66.5 | 67.4 | 75.2 | 71.9 | 73.3 | 75.8 | 78.6 | 76.6 | 70.7 | 62.3 | 146.7 |
| 0ASPL | 118.7 | 119.1 | 119.4 | 117.4 | 118.6 | 121.4 | 121.1 | 122.6 | 125.5 | 132.1 | 135.1 | 132.8 | 125.4 | 169.6 |
| PWL | 130.8 | 132.0 | 131.7 | 130.3 | 132.1 | 135.2 | 134.4 | 136.0 | 138.2 | 143.7 | 145.5 | 141.7 | 135.5 | |
| PWLT | 130.8 | 132.0 | 131.7 | 130.8 | 132.8 | 135.2 | 136.0 | 136.0 | 138.2 | 143.7 | 146.0 | 141.7 | 135.5 | |
| DPA | 119.3 | 119.5 | 119.4 | 117.6 | 118.7 | 121.4 | 120.2 | 122.4 | 125.3 | 131.6 | 134.4 | 130.8 | 124.5 | |

NASA DUAL FLOW THERMAL SHIELD/DFIAS-12/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|------------------|-------------------|
| VEHICL = ADH101 | TEST DATE = 03-30-83 | LOCAT = C41 ANECH CH | CONFIG = 12 | MODEL = C0 | FLTVEL = 0. FPS |
| TAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 42.76 | PAMB HG = 29.52 | RELHUM = 46.4 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = |
| FN1MT = | LBS XNL = | RPM | XNH = | RPM | V8 = 1930.9 FPS |
| FN1RMB = | LBS XNLR = | RPM | XNHR = | RPM | V18 = 2336.8 FPS |
| RUNPT = 83F-ZER-1221 | TAPE = X1221C | TEST PT NO = 1221 | NC = AE086 | CORR FAN SPEED = | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1221 X1221F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 92.6 | 94.2 | 91.9 | 92.0 | 91.1 | 91.2 | 94.3 | 93.2 | 93.9 | 101.0 | 100.6 | 101.6 | 92.2 | 138.0 |
| 63 | 96.8 | 99.3 | 101.6 | 98.1 | 96.2 | 98.6 | 98.5 | 99.1 | 98.3 | 101.6 | 102.5 | 101.7 | 98.4 | 141.6 |
| 80 | 95.5 | 99.6 | 96.1 | 95.9 | 96.5 | 101.1 | 99.7 | 98.9 | 98.8 | 99.9 | 103.8 | 103.7 | 89.1 | 141.6 |
| 100 | 95.2 | 102.0 | 97.8 | 97.5 | 98.6 | 102.5 | 100.6 | 103.0 | 100.8 | 105.1 | 105.2 | 109.9 | 93.6 | 144.6 |
| 125 | 91.6 | 95.2 | 97.9 | 98.2 | 100.3 | 102.9 | 101.3 | 101.7 | 101.2 | 104.8 | 111.9 | 113.8 | 98.7 | 147.1 |
| 160 | 89.2 | 91.7 | 95.0 | 92.5 | 93.6 | 97.5 | 105.9 | 99.6 | 101.2 | 106.3 | 112.2 | 114.9 | 104.5 | 147.7 |
| 200 | 93.0 | 91.6 | 94.6 | 92.6 | 95.7 | 99.8 | 103.5 | 101.1 | 105.8 | 108.1 | 114.8 | 118.2 | 107.1 | 150.3 |
| 250 | 92.3 | 93.8 | 95.6 | 95.1 | 97.7 | 100.3 | 101.2 | 103.4 | 105.8 | 114.6 | 119.3 | 121.7 | 110.4 | 154.1 |
| 315 | 93.8 | 95.4 | 94.4 | 94.4 | 96.8 | 101.1 | 104.5 | 103.9 | 108.4 | 116.0 | 120.6 | 122.0 | 112.4 | 155.0 |
| 400 | 95.1 | 96.1 | 97.4 | 95.4 | 97.7 | 101.6 | 111.7 | 104.9 | 109.4 | 118.9 | 123.1 | 123.5 | 113.4 | 157.2 |
| 500 | 95.6 | 97.9 | 98.9 | 96.9 | 98.8 | 102.9 | 103.0 | 106.2 | 110.9 | 121.2 | 124.6 | 124.0 | 114.9 | 158.4 |
| 630 | 97.3 | 98.6 | 99.1 | 97.9 | 100.0 | 103.6 | 104.0 | 107.6 | 111.3 | 122.4 | 125.8 | 123.5 | 116.6 | 159.2 |
| 800 | 100.3 | 100.1 | 100.9 | 99.4 | 101.5 | 104.4 | 105.0 | 108.4 | 113.4 | 122.7 | 126.6 | 123.3 | 117.4 | 159.7 |
| 1000 | 105.8 | 107.3 | 105.8 | 103.4 | 102.8 | 105.8 | 105.9 | 109.4 | 113.8 | 122.9 | 125.8 | 122.7 | 117.1 | 159.4 |
| 1250 | 105.4 | 111.7 | 108.5 | 106.1 | 106.1 | 107.7 | 106.9 | 109.8 | 115.0 | 121.8 | 125.4 | 120.6 | 114.8 | 158.9 |
| 1600 | 113.6 | 111.5 | 111.4 | 107.8 | 108.4 | 107.5 | 110.8 | 114.9 | 120.5 | 124.4 | 119.0 | 113.0 | 113.0 | 158.1 |
| 2000 | 111.8 | 110.9 | 111.3 | 110.2 | 110.3 | 109.9 | 107.9 | 111.4 | 114.8 | 120.6 | 122.8 | 116.4 | 111.7 | 157.4 |
| 2500 | 109.0 | 108.8 | 109.6 | 108.3 | 110.7 | 113.3 | 109.5 | 110.9 | 114.3 | 120.3 | 121.1 | 115.6 | 110.9 | 156.7 |
| 3150 | 106.4 | 107.5 | 108.5 | 106.5 | 108.6 | 113.2 | 111.5 | 111.8 | 114.3 | 118.7 | 119.4 | 114.1 | 108.5 | 155.7 |
| 4000 | 104.2 | 106.0 | 106.9 | 105.5 | 107.2 | 110.9 | 110.3 | 112.9 | 113.8 | 117.5 | 118.0 | 111.8 | 107.1 | 154.6 |
| 5000 | 102.4 | 104.5 | 106.4 | 104.7 | 107.0 | 109.7 | 109.4 | 112.2 | 113.2 | 116.9 | 116.9 | 111.6 | 106.6 | 154.0 |
| 6300 | 100.7 | 104.1 | 104.5 | 103.5 | 105.8 | 109.5 | 109.1 | 111.8 | 112.6 | 115.3 | 115.2 | 109.9 | 106.1 | 153.1 |
| 8000 | 98.6 | 101.8 | 103.4 | 102.5 | 104.7 | 107.7 | 107.2 | 109.5 | 111.3 | 113.2 | 113.9 | 109.0 | 104.8 | 151.8 |
| 10000 | 98.0 | 100.9 | 102.4 | 102.5 | 104.1 | 107.6 | 106.8 | 109.3 | 110.3 | 112.3 | 113.3 | 107.4 | 104.5 | 151.7 |
| 12500 | 95.7 | 98.2 | 100.5 | 100.6 | 106.7 | 106.5 | 106.0 | 106.8 | 108.4 | 110.3 | 110.1 | 105.7 | 102.0 | 150.5 |
| 16000 | 94.0 | 97.5 | 99.2 | 99.5 | 101.3 | 104.5 | 103.8 | 104.7 | 106.6 | 108.1 | 108.4 | 103.6 | 98.5 | 149.9 |
| 20000 | 90.4 | 94.5 | 96.3 | 96.9 | 98.7 | 101.4 | 101.6 | 103.5 | 104.9 | 104.9 | 101.1 | 96.3 | 148.7 | |
| 25000 | 87.2 | 91.0 | 92.3 | 93.7 | 94.9 | 99.7 | 98.6 | 98.1 | 101.0 | 101.1 | 100.3 | 96.7 | 91.9 | 147.8 |
| 31500 | 83.1 | 87.3 | 89.0 | 90.9 | 91.3 | 95.2 | 94.6 | 96.8 | 96.8 | 96.8 | 92.5 | 86.6 | 147.0 | |
| 40000 | 77.6 | 82.5 | 84.5 | 85.5 | 86.2 | 91.4 | 89.7 | 90.6 | 93.5 | 93.4 | 92.7 | 87.5 | 82.5 | 146.8 |
| 50000 | 71.7 | 76.5 | 78.1 | 79.5 | 80.4 | 86.7 | 84.3 | 85.0 | 87.8 | 89.1 | 87.9 | 82.5 | 76.5 | 146.1 |
| 63000 | 66.4 | 71.0 | 73.0 | 74.3 | 75.2 | 80.5 | 77.6 | 79.4 | 82.2 | 84.5 | 82.4 | 76.4 | 69.5 | 145.9 |
| 80000 | 63.0 | 65.1 | 66.6 | 66.5 | 67.4 | 75.2 | 71.9 | 73.3 | 75.8 | 78.6 | 76.6 | 70.7 | 62.3 | 146.7 |

MODL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DIAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VEHICLE = ADH181 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = CO FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 42.76 PAMB HG = 29.52 RELHUM = 46.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1930.9 FPS AE8 = 4.6 SQ IN
 FNINB = LBS XNLR = RPM XNHR = RPM V10 = 2336.8 FPS AE10 = 23.4 SQ IN

RUNPT = 83F-ZER-1221 TAPE = X1221F TEST PT NO - 1221 NC = AE006 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1221 X12211

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| 50 | 67.7 | 70.8 | 73.6 | 73.9 | 76.9 | 79.6 | 80.4 | 82.1 | 84.9 | 91.6 | 94.7 | 95.0 | 80.3 | 169.0 |
| 63 | 69.3 | 72.3 | 72.4 | 73.2 | 75.9 | 80.1 | 83.7 | 82.7 | 86.4 | 92.9 | 96.0 | 95.2 | 82.3 | 169.9 |
| 80 | 70.4 | 73.0 | 75.4 | 74.1 | 76.9 | 80.9 | 90.9 | 83.6 | 87.4 | 95.8 | 88.4 | 96.6 | 83.2 | 172.2 |
| 100 | 70.9 | 74.7 | 76.8 | 75.6 | 77.9 | 82.1 | 82.1 | 84.8 | 88.8 | 98.1 | 99.9 | 97.1 | 84.5 | 173.3 |
| 125 | 72.5 | 75.3 | 76.9 | 76.5 | 79.0 | 82.7 | 83.0 | 86.2 | 89.2 | 99.2 | 101.0 | 96.4 | 86.0 | 174.1 |
| 160 | 75.3 | 76.7 | 78.6 | 77.9 | 80.4 | 83.4 | 83.9 | 86.9 | 91.1 | 99.3 | 101.6 | 95.9 | 86.4 | 174.6 |
| 200 | 80.5 | 83.7 | 83.3 | 81.6 | 81.7 | 84.7 | 84.7 | 87.6 | 91.3 | 99.3 | 100.5 | 95.0 | 85.6 | 174.3 |
| 250 | 83.8 | 87.8 | 85.8 | 84.2 | 84.6 | 86.4 | 85.4 | 87.8 | 92.3 | 97.9 | 99.8 | 92.5 | 82.6 | 173.8 |
| 315 | 87.5 | 87.2 | 86.4 | 85.6 | 85.0 | 86.8 | 85.7 | 88.6 | 91.9 | 96.2 | 98.3 | 90.3 | 80.0 | 173.0 |
| 400 | 85.2 | 86.2 | 87.9 | 87.6 | 88.1 | 87.9 | 85.7 | 88.8 | 91.4 | 95.9 | 96.2 | 87.0 | 77.6 | 172.3 |
| 500 | 80.8 | 83.6 | 85.8 | 85.4 | 88.3 | 91.0 | 87.1 | 87.9 | 90.4 | 95.2 | 83.9 | 85.5 | 75.8 | 171.6 |
| 620 | 78.7 | 81.6 | 84.3 | 83.2 | 85.3 | 90.5 | 88.7 | 88.4 | 90.1 | 93.1 | 91.7 | 83.2 | 72.3 | 170.6 |
| 800 | 75.8 | 79.9 | 82.2 | 81.8 | 84.0 | 87.9 | 87.1 | 89.2 | 89.1 | 91.4 | 89.6 | 80.0 | 69.6 | 169.5 |
| 1000 | 73.4 | 77.8 | 81.2 | 80.6 | 83.4 | 86.3 | 85.3 | 88.0 | 88.1 | 90.2 | 87.9 | 79.0 | 67.7 | 168.9 |
| 1250 | 70.8 | 76.8 | 78.9 | 78.9 | 81.8 | 85.7 | 85.0 | 87.1 | 86.9 | 87.9 | 85.4 | 76.2 | 65.5 | 168.0 |
| 1600 | 67.5 | 73.4 | 76.8 | 77.1 | 79.9 | 83.2 | 82.4 | 84.1 | 84.8 | 84.9 | 82.7 | 73.5 | 61.4 | 166.7 |
| 2000 | 65.1 | 71.1 | 74.7 | 76.0 | 78.3 | 82.1 | 81.1 | 82.9 | 82.6 | 82.5 | 80.4 | 69.4 | 57.2 | 166.6 |
| 2500 | 60.0 | 66.3 | 71.0 | 72.6 | 75.5 | 79.5 | 78.8 | 78.7 | 78.8 | 78.3 | 74.4 | 64.0 | 48.9 | 165.4 |
| 3150 | 54.0 | 62.2 | 66.8 | 68.9 | 71.7 | 75.2 | 74.2 | 74.1 | 74.2 | 72.7 | 68.3 | 55.8 | 36.0 | 164.8 |
| 4000 | 42.7 | 53.0 | 58.7 | 61.6 | 64.7 | 67.9 | 67.5 | 66.4 | 65.8 | 63.4 | 67.3 | 43.1 | 18.0 | 163.6 |
| 5000 | 28.2 | 40.3 | 46.8 | 51.4 | 54.3 | 59.7 | 58.0 | 55.8 | 55.5 | 50.4 | 41.3 | 23.4 | | 162.7 |
| 6300 | 5.1 | 21.1 | 30.2 | 36.6 | 39.4 | 44.0 | 42.7 | 40.3 | 38.0 | 31.1 | 18.8 | | | 161.9 |
| 8000 | | | 3.0 | 10.6 | 14.9 | 21.2 | 18.3 | 15.7 | 12.0 | 1.1 | | | | 161.7 |
| 10000 | | | | | | | | | | | | | | 161.0 |
| 12500 | | | | | | | | | | | | | | 160.9 |
| 16000 | | | | | | | | | | | | | | 161.6 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NA3-22137

VEHICLE = ADH181 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = CO FLTVEL = 0. FPS

APPLIA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 42.76 PAMB HG = 29.52 RELHUM = 46.4 PCT

WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNL RPM XNH RPM V8 = 1930.9 FPS AE8 = 4.6 SQ IN

FNAMB = LBS XNLR RPM XNIR RPM V18 = 2336.8 FPS AE18 = 23.4 SQ IN

RR T SPEED RPM

AEO

12

12

12

IDENTIFICATION - MODEL 83F-400-1222 X1222C
BACKGROUND 83F-400-1100 X11000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 93.9 | 94.2 | 91.9 | 86.7 | 86.8 | 90.7 | 93.1 | 94.5 | 93.4 | 93.7 | 102.1 | 102.3 | 93.2 | 137.4 |
| 63 | 95.5 | 97.8 | 100.3 | 94.4 | 93.7 | 96.8 | 98.7 | 97.1 | 97.1 | 98.1 | 103.0 | 102.7 | 97.4 | 140.5 |
| 80 | 96.5 | 101.3 | 96.8 | 97.5 | 100.6 | 98.5 | 98.9 | 98.6 | 98.4 | 103.0 | 103.0 | 103.0 | 88.9 | 141.4 |
| 100 | 95.7 | 101.0 | 96.8 | 95.5 | 97.9 | 101.3 | 99.9 | 102.3 | 99.8 | 102.3 | 108.4 | 108.4 | 92.3 | 143.2 |
| 125 | 93.6 | 95.2 | 97.9 | 97.7 | 99.6 | 101.7 | 99.6 | 100.0 | 99.4 | 102.8 | 109.4 | 112.8 | 97.7 | 145.6 |
| 160 | 90.9 | 87.7 | 92.7 | 90.8 | 91.4 | 96.0 | 99.6 | 96.8 | 97.7 | 103.8 | 109.7 | 112.9 | 102.3 | 145.1 |
| 200 | 90.5 | 90.8 | 91.3 | 90.1 | 92.5 | 95.6 | 98.0 | 98.4 | 101.8 | 103.6 | 109.8 | 115.5 | 104.9 | 146.7 |
| 250 | 88.8 | 92.1 | 92.6 | 91.4 | 93.5 | 96.6 | 97.5 | 99.6 | 102.6 | 109.1 | 115.3 | 118.2 | 107.1 | 150.2 |
| 315 | 90.1 | 91.9 | 91.4 | 91.2 | 93.5 | 97.9 | 98.8 | 100.4 | 104.4 | 112.0 | 117.1 | 119.3 | 108.4 | 151.7 |
| 400 | 90.6 | 91.6 | 93.6 | 91.4 | 94.2 | 97.1 | 104.2 | 100.4 | 104.6 | 113.7 | 119.6 | 120.5 | 108.7 | 153.5 |
| 500 | 92.1 | 93.6 | 94.9 | 92.9 | 94.8 | 98.4 | 98.8 | 102.2 | 106.6 | 116.7 | 122.1 | 120.8 | 107.2 | 155.2 |
| 630 | 93.5 | 94.1 | 95.1 | 93.4 | 95.5 | 99.3 | 99.7 | 103.4 | 107.1 | 118.4 | 122.8 | 119.2 | 106.1 | 155.6 |
| 800 | 96.8 | 96.9 | 96.6 | 94.9 | 97.8 | 100.9 | 101.0 | 104.9 | 109.4 | 118.0 | 123.3 | 117.5 | 105.4 | 155.6 |
| 1000 | 103.8 | 101.5 | 100.3 | 98.4 | 99.2 | 101.8 | 101.4 | 105.6 | 109.8 | 118.1 | 123.8 | 116.2 | 104.4 | 155.9 |
| 1250 | 107.9 | 109.0 | 106.0 | 101.6 | 103.2 | 102.4 | 106.0 | 111.0 | 117.3 | 122.2 | 113.6 | 104.3 | 154.9 | |
| 1600 | 108.6 | 108.8 | 110.2 | 107.3 | 105.5 | 105.2 | 104.0 | 107.1 | 110.9 | 116.3 | 121.9 | 112.3 | 103.5 | 154.8 |
| 2000 | 106.3 | 106.1 | 108.0 | 107.9 | 110.3 | 110.1 | 105.1 | 107.7 | 111.3 | 116.6 | 120.1 | 102.2 | 154.2 | |
| 2500 | 103.7 | 103.8 | 104.1 | 104.3 | 108.0 | 111.8 | 108.3 | 107.9 | 110.5 | 116.3 | 118.1 | 109.1 | 101.9 | 153.2 |
| 3150 | 102.6 | 103.0 | 103.7 | 102.3 | 104.6 | 109.7 | 109.3 | 109.3 | 111.3 | 115.2 | 115.7 | 106.3 | 99.5 | 152.1 |
| 4000 | 101.2 | 101.5 | 103.1 | 101.3 | 104.2 | 106.9 | 107.1 | 110.6 | 111.5 | 113.0 | 113.7 | 104.3 | 98.1 | 150.9 |
| 5000 | 100.4 | 100.7 | 102.1 | 100.5 | 103.3 | 105.7 | 105.6 | 110.2 | 111.0 | 112.4 | 112.6 | 103.1 | 96.4 | 150.2 |
| 6300 | 98.9 | 100.6 | 101.2 | 99.0 | 102.3 | 105.6 | 105.6 | 109.0 | 110.8 | 111.0 | 109.7 | 101.4 | 95.9 | 149.3 |
| 8000 | 97.6 | 99.1 | 100.1 | 98.8 | 100.7 | 104.5 | 103.2 | 107.3 | 109.3 | 109.0 | 107.9 | 100.3 | 94.9 | 148.0 |
| 10000 | 96.3 | 98.5 | 99.5 | 99.5 | 100.1 | 103.8 | 102.9 | 106.1 | 108.3 | 107.8 | 107.1 | 99.2 | 94.2 | 147.7 |
| 12500 | 95.7 | 96.8 | 97.8 | 97.2 | 99.5 | 103.3 | 101.3 | 103.6 | 105.9 | 105.3 | 104.4 | 98.7 | 93.3 | 146.7 |
| 16000 | 94.0 | 95.9 | 97.0 | 96.3 | 98.1 | 101.6 | 99.7 | 101.6 | 104.7 | 103.1 | 102.7 | 97.4 | 90.8 | 146.3 |
| 20000 | 91.4 | 93.3 | 93.9 | 94.0 | 96.0 | 97.7 | 98.3 | 98.2 | 100.8 | 100.0 | 100.3 | 94.4 | 88.9 | 145.1 |
| 25000 | 88.5 | 90.1 | 90.9 | 91.1 | 92.7 | 97.3 | 95.7 | 95.7 | 95.4 | 95.7 | 95.4 | 91.6 | 85.7 | 144.4 |
| 31500 | 84.0 | 85.9 | 87.7 | 88.3 | 88.9 | 93.3 | 91.7 | 92.0 | 92.9 | 91.6 | 91.7 | 87.4 | 81.2 | 143.6 |
| 40000 | 79.5 | 82.4 | 83.1 | 83.9 | 83.6 | 85.3 | 86.8 | 88.0 | 89.9 | 87.8 | 88.3 | 83.1 | 77.1 | 143.6 |
| 50000 | 73.1 | 75.7 | 77.0 | 77.7 | 78.5 | 84.1 | 80.9 | 82.1 | 83.2 | 81.2 | 82.3 | 77.1 | 70.8 | 142.0 |
| 63000 | 66.3 | 69.4 | 71.7 | 71.2 | 72.4 | 78.4 | 74.2 | 76.7 | 77.9 | 76.1 | 76.3 | 70.1 | 64.2 | 141.6 |
| 80000 | 58.9 | 61.8 | 64.3 | 63.2 | 63.8 | 71.6 | 67.3 | 68.8 | 70.0 | 69.0 | 68.7 | 62.8 | 56.2 | 141.0 |
| 0ASPL | 115.1 | 115.7 | 116.0 | 114.4 | 116.1 | 118.7 | 117.5 | 119.7 | 122.2 | 127.7 | 132.1 | 128.6 | 117.2 | 166.0 |
| PNL | 127.0 | 127.4 | 129.3 | 127.2 | 129.3 | 132.5 | 131.4 | 133.3 | 135.2 | 139.5 | 142.2 | 136.6 | 127.1 | |
| PNLT | 127.0 | 128.7 | 129.4 | 123.0 | 130.5 | 133.0 | 132.3 | 133.3 | 135.2 | 139.5 | 142.2 | 136.6 | 127.1 | |
| DBA | 115.5 | 115.7 | 116.2 | 114.6 | 116.4 | 118.7 | 117.1 | 119.5 | 122.0 | 127.3 | 131.4 | 125.5 | 114.7 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAJ3-22137

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|------------------|-------------------|
| VEHICLE = ADH180 | TEST DATE = 03-30-83 | LOCAT = C41 ANECH CH | CONFIG = 12 | MODEL = C61 | FLTVEL = 400. FPS |
| IAP/HA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 44.36 | PAMB HG = 29.44 | RELHUM = 44.1 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = |
| FNIN1 = | LBS XNL = | RPM | XNH = | RPM | VB = 1927.2 FPS |
| FNKAMB = | LBS XNLR = | RPM | XNHR = | RPM | V18 = 2345.1 FPS |
| RUNPT = 83F-400-1222 | TAPE = | TEST PT NO = 1222 | NC = | AE086 | CORR FAN SPEED = |
| | | | | | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1222 X1222F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|-----|
|------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|-----|

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 96.4 | 98.3 | 97.4 | 94.6 | 95.0 | 96.6 | 96.0 | 96.5 | 102.0 | 109.0 | 114.0 | 117.0 | 108.2 | 149.3 |
| 315 | 96.4 | 98.3 | 97.4 | 94.6 | 95.3 | 98.1 | 97.8 | 98.4 | 102.3 | 110.9 | 116.8 | 118.9 | 109.9 | 151.3 |
| 400 | 97.8 | 90.3 | 96.3 | 94.6 | 96.1 | 97.4 | 103.3 | 98.3 | 104.3 | 113.8 | 119.3 | 119.6 | 109.8 | 153.1 |
| 500 | 98.1 | 98.1 | 98.5 | 94.8 | 96.6 | 98.7 | 97.7 | 99.9 | 104.9 | 115.7 | 120.3 | 118.9 | 110.7 | 153.6 |
| 630 | 98.0 | 98.6 | 98.6 | 96.2 | 97.3 | 99.7 | 96.7 | 101.0 | 107.6 | 115.8 | 121.6 | 118.6 | 112.8 | 154.4 |
| 800 | 100.5 | 100.0 | 99.8 | 96.7 | 99.5 | 101.4 | 100.1 | 102.7 | 108.5 | 116.5 | 122.8 | 118.6 | 114.3 | 155.3 |
| 1000 | 102.5 | 101.8 | 100.7 | 97.8 | 100.9 | 102.5 | 100.6 | 103.5 | 109.8 | 115.9 | 121.4 | 116.3 | 114.5 | 154.2 |
| 1250 | 110.8 | 107.3 | 104.7 | 101.3 | 103.5 | 104.0 | 101.7 | 104.1 | 110.0 | 115.0 | 121.3 | 116.1 | 113.8 | 154.3 |
| 1600 | 115.3 | 115.1 | 110.7 | 104.9 | 107.5 | 105.2 | 103.6 | 105.3 | 110.6 | 115.6 | 119.6 | 113.1 | 112.6 | 154.8 |
| 2000 | 115.3 | 114.3 | 114.4 | 110.3 | 112.9 | 111.4 | 104.9 | 106.2 | 110.2 | 115.8 | 118.2 | 112.7 | 113.0 | 155.3 |
| 2500 | 113.9 | 112.7 | 113.4 | 111.9 | 111.5 | 113.4 | 108.5 | 106.8 | 111.4 | 115.0 | 116.0 | 109.9 | 110.5 | 154.7 |
| 3150 | 114.1 | 112.7 | 111.3 | 109.7 | 107.9 | 111.7 | 109.9 | 108.5 | 112.2 | 113.3 | 114.3 | 107.9 | 108.8 | 153.7 |
| 4000 | 110.2 | 109.6 | 109.3 | 106.7 | 107.9 | 109.5 | 108.2 | 110.5 | 111.7 | 112.6 | 113.2 | 106.7 | 106.9 | 152.3 |
| 5000 | 108.7 | 108.2 | 108.9 | 106.0 | 107.3 | 108.7 | 107.1 | 110.2 | 111.8 | 111.5 | 110.5 | 105.2 | 106.6 | 151.5 |
| 6300 | 107.9 | 107.5 | 107.9 | 105.3 | 106.4 | 109.0 | 107.3 | 109.2 | 110.9 | 110.2 | 109.5 | 105.3 | 107.5 | 151.1 |
| 8000 | 106.2 | 107.2 | 106.9 | 103.7 | 104.7 | 107.5 | 105.2 | 107.9 | 110.2 | 109.3 | 109.1 | 104.7 | 107.5 | 150.4 |
| 10000 | 104.8 | 105.5 | 105.7 | 103.3 | 104.1 | 106.8 | 105.0 | 106.8 | 108.5 | 108.6 | 107.3 | 105.2 | 107.3 | 149.9 |
| 12500 | 105.1 | 104.6 | 104.7 | 102.7 | 104.1 | 106.3 | 103.5 | 104.6 | 107.9 | 106.0 | 106.2 | 104.4 | 105.5 | 149.7 |
| 16000 | 104.8 | 104.6 | 104.3 | 102.1 | 102.1 | 104.6 | 101.9 | 102.6 | 104.8 | 103.8 | 104.7 | 102.3 | 104.2 | 149.5 |
| 20000 | 100.0 | 101.0 | 101.3 | 99.6 | 100.0 | 101.7 | 100.7 | 99.6 | 102.9 | 101.2 | 101.5 | 100.8 | 102.0 | 148.6 |
| 25000 | 96.7 | 97.9 | 97.6 | 96.7 | 97.3 | 100.3 | 98.2 | 97.4 | 99.1 | 97.8 | 98.6 | 97.6 | 98.5 | 148.1 |
| 31500 | 95.9 | 96.2 | 95.5 | 94.1 | 93.5 | 96.3 | 94.2 | 93.8 | 96.5 | 94.3 | 95.5 | 93.8 | 95.1 | 148.2 |
| 40000 | 90.4 | 91.1 | 91.5 | 90.5 | 88.4 | 92.3 | 89.2 | 89.6 | 90.5 | 88.6 | 90.3 | 88.5 | 89.5 | 147.4 |
| 50000 | 85.6 | 87.2 | 86.5 | 85.7 | 83.1 | 87.1 | 83.4 | 83.9 | 85.8 | 84.0 | 85.0 | 82.2 | 83.9 | 146.7 |
| 63000 | 78.3 | 79.6 | 79.5 | 78.6 | 77.0 | 81.4 | 76.6 | 78.3 | 79.5 | 78.5 | 79.0 | 76.7 | 77.7 | 145.6 |
| 80000 | 70.0 | 71.8 | 72.6 | 70.6 | 68.4 | 74.6 | 69.7 | 70.4 | 69.7 | 68.7 | 69.2 | 66.9 | 67.9 | 144.4 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VEHICL = ADH180. TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = CD FLTVEL = 400. FPS
 IAPLHA = SB59 IEQA = NO PWL AREA = FULL SPHERE TAMB F = 44.36 PAMB HQ = 29.44 RELHUM = 44.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1927.2 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2345.1 FPS AE18 = 23.4 SQ IN

FNPT = 13F-1224 SHAPE = X1222F CORR = YES SPEC = RPM

FLIGHT TRANSFORMED, SCALFD, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1222 X12221

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 71.9 | 75.3 | 75.5 | 73.4 | 74.2 | 75.9 | 75.1 | 75.3 | 80.1 | 86.0 | 89.5 | 90.2 | 78.2 | 164.2 |
| 63 | 71.8 | 75.3 | 75.4 | 73.4 | 74.5 | 77.4 | 76.9 | 77.1 | 80.4 | 87.9 | 92.2 | 92.1 | 79.7 | 166.2 |
| 80 | 73.1 | 75.2 | 74.3 | 73.3 | 75.2 | 76.6 | 82.4 | 77.0 | 82.3 | 90.8 | 94.7 | 92.8 | 79.6 | 168.0 |
| 100 | 73.3 | 75.0 | 76.4 | 73.4 | 75.7 | 77.9 | 76.8 | 76.5 | 82.8 | 92.6 | 95.6 | 91.9 | 80.3 | 168.5 |
| 125 | 74.2 | 76.3 | 77.4 | 74.8 | 76.3 | 78.9 | 77.7 | 79.6 | 85.5 | 92.6 | 96.8 | 91.5 | 82.2 | 169.3 |
| 160 | 75.4 | 76.6 | 77.5 | 75.1 | 78.4 | 80.4 | 79.0 | 81.1 | 86.2 | 93.1 | 97.7 | 91.2 | 83.3 | 170.2 |
| 200 | 77.2 | 78.2 | 78.2 | 76.1 | 79.6 | 81.3 | 79.4 | 81.8 | 87.3 | 92.3 | 96.1 | 88.6 | 83.0 | 169.1 |
| 250 | 83.2 | 83.4 | 81.9 | 79.3 | 82.0 | 82.7 | 80.2 | 82.1 | 87.3 | 91.1 | 95.7 | 87.0 | 81.7 | 169.2 |
| 315 | 89.2 | 90.8 | 87.7 | 82.6 | 85.7 | 84.6 | 81.8 | 83.1 | 87.5 | 91.3 | 93.6 | 84.4 | 79.6 | 169.7 |
| 400 | 88.7 | 89.5 | 91.0 | 87.7 | 90.8 | 89.4 | 82.8 | 83.6 | 86.8 | 91.1 | 91.6 | 83.3 | 79.0 | 170.2 |
| 500 | 86.8 | 87.5 | 89.5 | 89.0 | 89.0 | 91.1 | 86.0 | 83.8 | 87.6 | 89.8 | 88.8 | 79.8 | 75.4 | 169.6 |
| 630 | 86.4 | 87.0 | 86.3 | 85.0 | 85.0 | 89.0 | 87.1 | 85.2 | 88.0 | 87.6 | 86.6 | 77.0 | 72.6 | 168.6 |
| 800 | 81.9 | 83.5 | 84.6 | 82.9 | 84.7 | 86.5 | 85.0 | 86.8 | 87.0 | 86.5 | 84.9 | 75.0 | 69.4 | 167.2 |
| 1000 | 79.7 | 81.5 | 83.7 | 81.9 | 83.7 | 85.3 | 83.5 | 86.1 | 86.7 | 84.8 | 81.5 | 72.6 | 67.8 | 166.5 |
| 1250 | 78.0 | 80.1 | 82.2 | 80.7 | 82.3 | 85.2 | 83.2 | 84.6 | 85.2 | 82.8 | 79.7 | 71.5 | 66.9 | 166.0 |
| 1600 | 75.1 | 78.8 | 80.3 | 78.3 | 80.0 | 82.9 | 80.4 | 82.5 | 83.6 | 80.9 | 78.0 | 64.0 | 65.3 | |
| 2000 | 71.8 | 75.7 | 77.9 | 76.9 | 78.4 | 81.3 | 79.2 | 80.4 | 80.8 | 78.8 | 74.4 | 67.2 | 60.0 | 164.8 |
| 2500 | 69.8 | 72.6 | 75.2 | 74.7 | 76.9 | 79.3 | 76.3 | 76.5 | 78.3 | 74.1 | 70.6 | 62.7 | 52.4 | 164.6 |
| 3150 | 64.8 | 69.3 | 71.8 | 71.5 | 72.5 | 75.3 | 72.3 | 72.0 | 72.4 | 68.4 | 64.7 | 54.6 | 41.7 | 164.4 |
| 4000 | 52.3 | 59.5 | 63.7 | 64.3 | 66.1 | 68.2 | 66.7 | 64.3 | 65.2 | 59.7 | 63.9 | 42.8 | 23.7 | 163.5 |
| 5000 | 37.7 | 47.2 | 52.1 | 54.3 | 56.7 | 60.3 | 57.6 | 55.0 | 53.6 | 47.1 | 39.5 | 24.2 | | 163.0 |
| 6300 | 17.8 | 30.1 | 36.7 | 39.8 | 41.6 | 45.1 | 42.3 | 39.5 | 37.7 | 28.2 | 17.5 | | | 163.1 |
| 8000 | 10.0 | 15.6 | 17.1 | 22.0 | 17.8 | 14.7 | 9.0 | | | | | | | 162.3 |
| 12500 | | | | | | | | | | | | | | 161.6 |
| 16000 | | | | | | | | | | | | | | 160.5 |
| 20000 | | | | | | | | | | | | | | 159.3 |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 292.1 SQ CM (45.3 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.560 FREQ SHIFT = -7

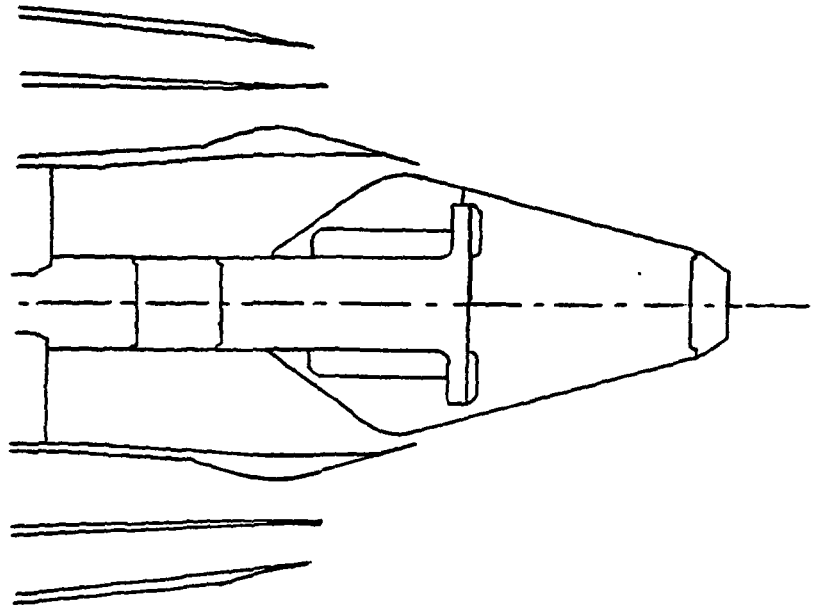
NASA DUAL FLOW THERMAL SHIELD/DFTAS-12/NAS3-22137

VEHICLE = ADH180 TEST DATE = 03-30-83 LOCAT = C41 ANECH CH CONFIG = 12 MODEL = CO' FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO MPH = 2400.0 FT EXT CONFIG = SL TAMB F = 44.36 PAMB HG = 29.44 RELHUM = 44.1 PCT
 WIND DIR = DEG WIND VEL =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1927.2 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2345.1 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1222 TAPE = X12221 TEST PT NO = 1222 NC = AE086 CORR FAN SPEED = RPM

4.2.3 Acoustic Data of Unsuppressed Coannular Plug Nozzle
with 360° Thermal Acoustic Shield (TAS-14).



IDENTIFICATION - MODEL 83F-ZER-1403 X1403C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.6 | 85.9 | 84.9 | 81.2 | 80.8 | 83.2 | 81.6 | 89.2 | 86.4 | 92.0 | 90.6 | 92.8 | 92.2 | 129.7 |
| 63 | 88.3 | 91.5 | 94.3 | 88.6 | 89.2 | 91.6 | 90.2 | 95.4 | 92.3 | 93.4 | 91.0 | 96.5 | 97.9 | 134.8 |
| 80 | 89.3 | 93.6 | 89.8 | 88.9 | 89.5 | 94.6 | 92.7 | 93.1 | 93.6 | 93.7 | 96.5 | 97.2 | 82.6 | 135.1 |
| 100 | 89.0 | 94.7 | 90.8 | 90.3 | 91.6 | 95.3 | 93.6 | 96.5 | 95.0 | 97.6 | 98.2 | 101.6 | 86.1 | 137.4 |
| 125 | 85.1 | 88.9 | 90.7 | 90.5 | 92.8 | 95.7 | 93.6 | 95.0 | 94.7 | 98.0 | 104.1 | 106.3 | 90.7 | 139.7 |
| 160 | 84.2 | 84.7 | 87.0 | 85.3 | 87.6 | 91.0 | 92.9 | 93.0 | 95.0 | 99.1 | 104.2 | 106.6 | 96.3 | 139.5 |
| 200 | 86.3 | 86.3 | 88.8 | 86.6 | 89.2 | 93.6 | 94.0 | 95.4 | 98.8 | 100.4 | 105.8 | 109.5 | 99.6 | 141.8 |
| 250 | 85.5 | 90.1 | 90.3 | 88.9 | 90.2 | 93.6 | 94.7 | 97.4 | 99.3 | 105.7 | 110.3 | 112.5 | 102.9 | 145.2 |
| 315 | 86.8 | 89.6 | 89.1 | 87.9 | 90.5 | 95.6 | 96.3 | 97.9 | 100.6 | 107.0 | 111.3 | 113.5 | 105.4 | 146.4 |
| 400 | 88.3 | 89.9 | 90.6 | 88.7 | 91.0 | 94.6 | 97.0 | 98.2 | 100.9 | 108.9 | 113.3 | 114.8 | 107.2 | 147.9 |
| 500 | 88.3 | 90.6 | 91.4 | 89.7 | 91.5 | 95.6 | 96.3 | 98.9 | 102.1 | 109.7 | 113.8 | 114.8 | 108.2 | 148.3 |
| 630 | 88.8 | 90.8 | 91.6 | 89.6 | 92.5 | 96.3 | 96.7 | 99.6 | 102.1 | 109.9 | 112.5 | 113.2 | 108.4 | 147.5 |
| 800 | 91.1 | 91.9 | 90.7 | 93.5 | 96.4 | 97.3 | 101.2 | 103.9 | 109.5 | 112.1 | 112.5 | 109.4 | 147.3 | |
| 1000 | 93.5 | 94.5 | 94.3 | 92.1 | 94.2 | 98.1 | 97.9 | 100.8 | 104.1 | 109.1 | 110.8 | 111.4 | 109.4 | 146.7 |
| 1250 | 91.9 | 95.4 | 95.0 | 93.1 | 94.6 | 98.0 | 97.6 | 101.0 | 104.2 | 108.0 | 109.9 | 109.8 | 109.0 | 145.9 |
| 1600 | 92.3 | 92.7 | 94.1 | 92.3 | 94.5 | 98.9 | 98.7 | 101.8 | 104.6 | 107.2 | 109.8 | 110.5 | 108.2 | 145.9 |
| 2000 | 92.5 | 93.8 | 94.2 | 91.9 | 93.9 | 97.8 | 98.0 | 101.9 | 104.2 | 107.0 | 108.3 | 108.3 | 107.1 | 144.9 |
| 2500 | 90.6 | 93.2 | 93.8 | 92.0 | 93.6 | 97.5 | 97.4 | 101.0 | 103.4 | 106.9 | 107.2 | 107.3 | 105.3 | 144.1 |
| 3150 | 90.2 | 92.3 | 92.6 | 90.6 | 93.2 | 97.2 | 97.1 | 100.8 | 103.2 | 105.0 | 105.3 | 103.9 | 100.6 | 142.5 |
| 4000 | 87.7 | 90.5 | 91.9 | 89.8 | 92.7 | 96.4 | 96.6 | 100.1 | 102.3 | 102.7 | 103.0 | 99.8 | 96.6 | 140.8 |
| 5000 | 86.3 | 88.8 | 90.7 | 88.6 | 91.6 | 95.4 | 96.2 | 99.1 | 100.6 | 102.2 | 100.2 | 96.3 | 92.8 | 139.5 |
| 6300 | 84.7 | 88.3 | 88.9 | 86.2 | 90.6 | 95.0 | 95.6 | 98.5 | 100.0 | 99.9 | 97.2 | 92.4 | 89.4 | 138.3 |
| 8000 | 82.8 | 86.1 | 87.7 | 86.6 | 89.5 | 93.8 | 93.8 | 96.1 | 97.6 | 96.9 | 95.2 | 91.2 | 88.5 | 136.6 |
| 10000 | 82.4 | 84.7 | 86.7 | 86.0 | 88.6 | 93.4 | 92.6 | 95.4 | 96.5 | 93.6 | 89.8 | 86.8 | 86.8 | 136.0 |
| 12500 | 79.8 | 82.6 | 84.4 | 84.1 | 86.9 | 92.2 | 91.7 | 92.9 | 94.0 | 92.0 | 90.2 | 87.6 | 84.9 | 134.6 |
| 16000 | 77.5 | 81.5 | 82.7 | 82.5 | 84.8 | 88.3 | 89.1 | 90.3 | 92.1 | 89.5 | 88.1 | 85.6 | 81.1 | 133.5 |
| 20000 | 74.0 | 78.2 | 79.6 | 80.1 | 82.6 | 85.6 | 86.2 | 87.1 | 88.2 | 86.2 | 84.1 | 82.0 | 78.0 | 132.0 |
| 25000 | 69.8 | 73.9 | 75.6 | 76.2 | 78.5 | 82.9 | 83.0 | 82.9 | 84.4 | 81.7 | 80.4 | 77.8 | 72.4 | 130.6 |
| 31500 | 65.9 | 69.6 | 72.6 | 73.0 | 74.5 | 78.6 | 78.3 | 79.4 | 79.8 | 77.5 | 76.3 | 72.9 | 67.3 | 129.6 |
| 40000 | 61.1 | 65.7 | 67.2 | 68.6 | 69.4 | 74.7 | 74.1 | 74.5 | 76.5 | 73.7 | 72.0 | 67.8 | 61.8 | 129.4 |
| 50000 | 55.5 | 59.6 | 61.4 | 62.3 | 63.1 | 69.9 | 68.0 | 68.7 | 69.3 | 66.1 | 62.0 | 54.3 | 47.6 | 127.8 |
| 63000 | 52.3 | 56.1 | 56.6 | 56.8 | 58.2 | 64.4 | 62.0 | 62.6 | 64.1 | 60.3 | 60.0 | 54.9 | 47.6 | 127.4 |
| 80000 | 50.9 | 53.7 | 51.9 | 49.6 | 51.1 | 58.8 | 57.3 | 56.2 | 56.1 | 53.2 | 52.8 | 47.4 | 40.8 | 128.1 |
| GASPL | 102.8 | 105.2 | 105.5 | 103.7 | 105.8 | 109.6 | 109.8 | 112.7 | 115.0 | 119.4 | 122.2 | 123.2 | 118.4 | 157.8 |
| PNLT | 114.9 | 117.1 | 117.6 | 115.9 | 118.1 | 122.1 | 122.1 | 125.4 | 127.5 | 130.6 | 131.9 | 132.0 | 128.3 | |
| PNLT | 114.9 | 117.6 | 117.6 | 115.9 | 118.7 | 122.1 | 122.1 | 125.4 | 127.5 | 130.6 | 131.9 | 132.0 | 128.3 | |
| DBA | 101.9 | 103.8 | 104.3 | 102.5 | 104.7 | 108.6 | 108.7 | 112.0 | 114.5 | 118.3 | 120.4 | 120.9 | 117.6 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

| | | | | | | | | | | | |
|------------|--------------|----------------|----------|--------------|--------------|--------------|------------|-----------|-------|------------------|----------|
| VEHICLE = | ADH201 | TEST DATE = | 04-05-83 | LOCAT = | C41 ANECH CH | CONFIG = | T4 | MODEL = | AX | FLTVEL = | 0. FPS |
| IAPLHA = | SB59 | IEGA = | NO | PWL AREA = | FULL SPHERE | TAMB F = | 53.40 | PAMB HG = | 29.37 | RELHUM = | 75.4 PCT |
| WIND DIR = | | DEG WIND VEL = | | EXT DIST = | 40.0 FT | EXT CONFIG = | ARC | MIKE HT = | | NBFR = | |
| FNTNT = | LBS XNL | RPM | RPM | XNH | RPM | V8 | 1145.1 FPS | AE8 | | 4.6 SQ IN | |
| FNRAMB = | LBS XNLR | RPM | RPM | XNHR | RPM | V18 | 1762.8 FPS | AE18 | | 23.4 SQ IN | |
| RUNPT = | 83F-ZER-1403 | TAPE | | TEST PT NO = | 1403 | NC | | | | CORR FAN SPEED = | RPM |

IDENTIFICATION - 83F-ZER-1403 X1403F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.6 | 85.9 | 84.9 | 81.2 | 80.8 | 83.2 | 81.6 | 89.2 | 86.4 | 92.0 | 90.6 | 92.8 | 92.2 | 129.7 |
| 63 | 88.3 | 91.5 | 94.3 | 88.6 | 89.2 | 91.6 | 90.2 | 95.4 | 92.3 | 93.4 | 91.0 | 96.5 | 97.9 | 134.8 |
| 80 | 89.3 | 93.6 | 89.8 | 88.9 | 89.5 | 94.6 | 92.7 | 93.1 | 93.6 | 93.7 | 96.5 | 97.2 | 82.6 | 135.1 |
| 100 | 89.0 | 94.7 | 90.8 | 90.3 | 91.6 | 95.3 | 93.6 | 96.5 | 95.0 | 97.6 | 98.2 | 101.6 | 86.1 | 137.4 |
| 125 | 85.1 | 88.9 | 90.7 | 90.5 | 92.8 | 95.7 | 93.6 | 95.0 | 94.7 | 98.0 | 104.1 | 106.3 | 90.7 | 139.7 |
| 160 | 84.2 | 84.7 | 87.0 | 85.3 | 87.6 | 91.0 | 92.9 | 93.0 | 95.0 | 99.1 | 104.2 | 106.6 | 96.3 | 139.5 |
| 200 | 86.3 | 86.3 | 88.8 | 86.6 | 89.2 | 93.6 | 94.0 | 95.4 | 98.8 | 100.4 | 105.8 | 109.5 | 99.6 | 141.8 |
| 250 | 85.5 | 90.1 | 90.3 | 88.9 | 90.2 | 93.6 | 94.7 | 97.4 | 99.3 | 105.7 | 110.3 | 112.5 | 102.9 | 145.2 |
| 315 | 86.8 | 89.6 | 89.1 | 87.9 | 90.5 | 95.6 | 96.3 | 97.9 | 100.6 | 107.0 | 111.3 | 113.5 | 105.4 | 146.4 |
| 400 | 88.3 | 89.9 | 90.6 | 88.7 | 91.0 | 94.6 | 97.0 | 98.2 | 100.9 | 108.9 | 113.3 | 114.8 | 107.2 | 147.9 |
| 500 | 88.3 | 90.6 | 91.4 | 89.7 | 91.5 | 95.6 | 96.3 | 98.9 | 102.1 | 109.7 | 113.8 | 114.8 | 108.2 | 148.3 |
| 630 | 88.8 | 90.8 | 91.6 | 89.6 | 92.5 | 96.3 | 96.7 | 99.6 | 102.1 | 109.9 | 112.5 | 113.2 | 108.4 | 147.5 |
| 800 | 91.1 | 91.1 | 91.9 | 90.7 | 93.5 | 96.4 | 97.3 | 101.2 | 103.9 | 109.5 | 112.1 | 112.5 | 109.4 | 147.3 |
| 1000 | 93.5 | 94.5 | 94.3 | 92.1 | 94.2 | 98.1 | 97.9 | 100.8 | 104.1 | 109.1 | 110.8 | 111.4 | 109.4 | 146.7 |
| 1250 | 91.9 | 95.4 | 95.0 | 93.1 | 94.6 | 98.0 | 97.6 | 101.0 | 104.2 | 108.0 | 109.9 | 109.8 | 109.0 | 145.9 |
| 1600 | 92.3 | 92.7 | 94.1 | 92.3 | 94.5 | 98.9 | 98.7 | 101.8 | 104.6 | 107.2 | 109.8 | 110.5 | 108.2 | 145.9 |
| 2000 | 92.5 | 93.8 | 94.2 | 91.9 | 93.9 | 97.8 | 98.0 | 101.9 | 104.2 | 107.0 | 108.3 | 108.3 | 107.1 | 144.9 |
| 2500 | 90.6 | 93.2 | 93.8 | 92.0 | 93.6 | 97.5 | 97.4 | 101.0 | 103.4 | 106.9 | 107.2 | 107.3 | 105.3 | 144.1 |
| 3150 | 90.2 | 92.3 | 92.6 | 90.6 | 93.2 | 97.2 | 97.1 | 100.8 | 103.2 | 105.0 | 105.3 | 103.9 | 100.6 | 142.5 |
| 4000 | 87.7 | 90.5 | 91.9 | 89.8 | 92.7 | 96.4 | 96.6 | 100.1 | 102.3 | 102.7 | 103.0 | 99.8 | 96.6 | 140.8 |
| 5000 | 86.3 | 88.8 | 90.7 | 88.6 | 91.6 | 95.4 | 96.2 | 99.1 | 100.6 | 102.2 | 100.2 | 96.3 | 92.8 | 139.5 |
| 6300 | 84.7 | 88.3 | 88.9 | 88.2 | 90.6 | 95.0 | 95.6 | 98.5 | 100.0 | 99.9 | 97.2 | 92.4 | 89.4 | 138.3 |
| 8000 | 82.8 | 85.1 | 87.7 | 86.6 | 89.5 | 93.8 | 93.8 | 96.1 | 97.6 | 96.9 | 95.2 | 91.2 | 88.5 | 136.6 |
| 10000 | 82.4 | 84.7 | 86.7 | 86.0 | 88.6 | 93.4 | 92.6 | 95.4 | 96.5 | 95.2 | 93.6 | 89.8 | 86.8 | 136.0 |
| 12500 | 79.8 | 82.6 | 84.4 | 84.1 | 86.9 | 92.2 | 91.7 | 92.9 | 94.0 | 92.0 | 90.2 | 87.6 | 84.9 | 134.6 |
| 15000 | 77.5 | 81.5 | 82.7 | 82.5 | 84.8 | 88.3 | 89.1 | 90.3 | 92.1 | 89.5 | 88.1 | 85.6 | 81.1 | 133.5 |
| 20000 | 74.0 | 78.2 | 79.6 | 80.1 | 82.6 | 85.6 | 86.2 | 87.1 | 88.2 | 86.2 | 84.1 | 82.0 | 78.0 | 132.0 |
| 25000 | 69.8 | 73.9 | 75.6 | 76.2 | 78.5 | 82.9 | 83.0 | 82.9 | 84.4 | 81.7 | 80.4 | 77.8 | 72.4 | 130.6 |
| 31500 | 65.9 | 69.6 | 72.6 | 73.0 | 74.5 | 78.6 | 78.3 | 79.4 | 79.8 | 77.5 | 76.3 | 72.9 | 67.3 | 129.6 |
| 40000 | 61.1 | 65.7 | 67.2 | 68.6 | 69.4 | 74.7 | 74.1 | 74.5 | 76.5 | 73.7 | 72.0 | 67.8 | 61.8 | 129.4 |
| 50000 | 55.5 | 59.8 | 61.4 | 62.3 | 63.1 | 69.9 | 68.0 | 68.7 | 69.3 | 67.4 | 66.1 | 62.0 | 54.3 | 127.8 |
| 63000 | 52.3 | 56.1 | 56.6 | 56.8 | 58.2 | 64.4 | 62.0 | 62.6 | 64.1 | 60.3 | 60.0 | 54.9 | 47.6 | 127.4 |
| 80000 | 50.9 | 53.7 | 51.9 | 49.6 | 51.1 | 58.8 | 57.3 | 55.2 | 56.1 | 53.2 | 52.8 | 47.4 | 40.8 | 128.1 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICL = ADH201 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 53.40 PAMB HG = 29.37 RELHUM = 78.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT. EXT CONFIG = ARC

FNIN1 = LBS XNL RPM = RPM V8 = 1145.1 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM = RPM V18 = 1782.8 FPS AE18 = 23.4 SQ IN

PT = -ZE 03 E X TEL TN 140 AIR F. SPEED RPM

DATPROC - FLTRAN
 FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1403 X14031
 ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 60.9 | 67.0 | 68.3 | 67.6 | 69.3 | 72.8 | 73.8 | 76.1 | 77.3 | 82.6 | 85.7 | 85.7 | 72.7 | 160.1 |
| 63 | 62.2 | 66.5 | 67.1 | 66.6 | 69.6 | 74.9 | 75.4 | 76.6 | 78.6 | 83.9 | 86.7 | 86.7 | 75.2 | 161.2 |
| 80 | 63.6 | 66.7 | 68.6 | 67.3 | 70.1 | 73.8 | 76.1 | 76.8 | 78.8 | 85.8 | 88.6 | 87.8 | 76.9 | 162.8 |
| 100 | 63.6 | 67.4 | 69.3 | 68.3 | 70.6 | 74.8 | 75.3 | 77.5 | 80.0 | 86.5 | 89.1 | 87.8 | 77.7 | 163.2 |
| 125 | 63.9 | 67.5 | 69.4 | 68.2 | 71.4 | 75.4 | 75.7 | 78.2 | 79.9 | 86.6 | 87.7 | 86.1 | 77.7 | 162.3 |
| 160 | 66.0 | 67.7 | 69.6 | 69.1 | 72.3 | 75.4 | 76.1 | 79.6 | 81.6 | 86.6 | 87.0 | 85.1 | 78.4 | 162.2 |
| 200 | 68.2 | 70.9 | 71.8 | 70.3 | 72.9 | 75.9 | 76.6 | 79.1 | 81.5 | 85.5 | 85.4 | 83.7 | 77.8 | 161.5 |
| 250 | 66.2 | 71.5 | 72.2 | 71.1 | 73.0 | 76.6 | 76.0 | 79.0 | 81.4 | 84.1 | 84.2 | 81.7 | 76.8 | 160.7 |
| 315 | 66.2 | 68.4 | 71.0 | 70.0 | 72.7 | 77.2 | 76.9 | 79.5 | 81.5 | 82.9 | 83.7 | 81.7 | 75.1 | 160.7 |
| 400 | 65.9 | 69.0 | 70.7 | 69.2 | 71.8 | 75.8 | 75.9 | 78.2 | 80.7 | 82.2 | 81.6 | 78.9 | 73.0 | 159.7 |
| 500 | 63.4 | 68.0 | 69.9 | 69.0 | 71.1 | 75.1 | 74.9 | 78.0 | 79.5 | 81.7 | 80.0 | 77.1 | 70.2 | 159.0 |
| 630 | 62.5 | 66.6 | 68.3 | 67.2 | 70.3 | 74.5 | 74.3 | 77.5 | 78.9 | 79.3 | 77.5 | 73.0 | 64.3 | 157.3 |
| 800 | 59.3 | 64.3 | 67.1 | 66.0 | 69.5 | 73.3 | 73.3 | 76.3 | 77.5 | 74.6 | 68.0 | 68.0 | 59.1 | 155.6 |
| 1000 | 57.3 | 62.1 | 65.5 | 64.4 | 68.0 | 71.9 | 72.6 | 74.9 | 75.4 | 75.4 | 71.2 | 63.6 | 53.9 | 154.3 |
| 1250 | 54.8 | 60.9 | 63.1 | 63.6 | 66.5 | 71.1 | 71.5 | 73.8 | 74.2 | 72.5 | 67.3 | 58.6 | 48.8 | 153.2 |
| 1600 | 51.6 | 57.7 | 61.0 | 61.2 | 64.7 | 69.2 | 69.0 | 70.7 | 71.0 | 68.5 | 64.0 | 55.6 | 45.0 | 151.4 |
| 2000 | 49.4 | 54.8 | 58.9 | 59.5 | 62.9 | 67.9 | 66.9 | 68.9 | 68.7 | 65.3 | 60.6 | 51.7 | 39.5 | 150.9 |
| 2500 | 44.1 | 50.6 | 54.8 | 56.0 | 59.6 | 65.2 | 64.4 | 64.8 | 64.4 | 60.4 | 54.5 | 45.9 | 31.8 | 149.5 |
| 3150 | 37.4 | 46.1 | 50.2 | 51.8 | 55.2 | 59.0 | 59.5 | 59.6 | 59.6 | 54.1 | 48.0 | 37.8 | 18.5 | 148.4 |
| 4000 | 26.3 | 36.7 | 41.9 | 44.8 | 48.6 | 52.0 | 52.2 | 51.8 | 50.5 | 44.6 | 36.5 | 24.0 | 146.9 | |
| 5000 | 10.7 | 23.1 | 30.1 | 33.8 | 37.9 | 42.8 | 42.4 | 40.5 | 38.8 | 30.9 | 21.3 | 4.4 | 145.5 | |
| 6300 | 3.4 | 13.7 | 18.6 | 22.5 | 27.4 | 26.4 | 25.0 | 21.0 | 11.3 | | | | 144.5 | |
| 8000 | | | | 4.5 | 2.7 | | | | | | | | 144.3 | |
| 10000 | | | | | | | | | | | | | 142.6 | |
| 12500 | | | | | | | | | | | | | 142.3 | |
| 16000 | | | | | | | | | | | | | 143.0 | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

DASPL 76.9 79.5 81.2 80.2 82.9 86.9 87.1 89.6 91.4 95.3 96.7 95.4 86.7 172.4
 PNL 79.3 83.6 85.7 84.9 87.9 92.2 92.2 92.2 94.8 96.1 97.8 97.4 94.8 87.0
 PNL 79.3 83.6 85.7 84.9 87.9 92.2 92.2 92.2 94.8 96.1 97.8 97.4 94.8 87.0
 DBA 68.9 73.1 75.2 74.4 77.4 81.6 81.5 84.2 85.4 86.4 86.4 85.5 82.6 75.9

MODEL AREA = 295.5 SQ CM (45.8 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.528 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICL = ADH201 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PML AREA = FULL SPHERE TAMB F = 53.40 PAMB HG = 29.37 RELHUM = 75.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1145.1 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1782.8 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1403 TAPE = X14031 TEST PT NO = 1403 NC = AE087 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1404 X1404C
BACKGROUND 83F-400-1400 X14000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 87.1 | | | | 79.4 | 81.6 | | 85.3 | 84.3 | 83.5 | 90.6 | 90.4 | | 126.0 |
| 63 | 86.5 | | | | 85.9 | 87.9 | | 89.1 | 89.1 | 89.1 | 90.7 | 90.7 | | 126.3 |
| 80 | 86.5 | 92.4 | 88.6 | 88.6 | 88.4 | 93.6 | 91.0 | 91.7 | 89.2 | 91.3 | 94.9 | 95.5 | | 133.5 |
| 100 | 87.5 | 92.7 | 89.1 | 87.6 | 89.0 | 93.1 | 91.7 | 94.9 | 90.0 | 94.7 | 96.3 | 100.3 | | 135.3 |
| 125 | 85.3 | 87.2 | 88.9 | 88.6 | 90.8 | 93.1 | 91.2 | 92.1 | 89.2 | 89.2 | 94.9 | 100.6 | 104.1 | 136.9 |
| 150 | 82.5 | 80.0 | 84.2 | 82.4 | 85.2 | 88.0 | 89.4 | 88.7 | 88.1 | 85.8 | 100.9 | 103.9 | 92.7 | 136.3 |
| 200 | 83.1 | 82.9 | 84.0 | 82.9 | 85.0 | 88.1 | 88.1 | 91.4 | 91.5 | 95.3 | 100.8 | 106.2 | 95.0 | 137.6 |
| 250 | 81.0 | 84.2 | 84.2 | 82.9 | 85.5 | 88.7 | 89.7 | 91.7 | 92.2 | 99.9 | 105.0 | 108.7 | 98.0 | 140.6 |
| 315 | 82.2 | 83.1 | 81.4 | 85.5 | 90.0 | 89.9 | 92.5 | 93.2 | 101.4 | 106.3 | 109.5 | 99.3 | 141.6 | |
| 400 | 82.9 | 84.4 | 84.7 | 83.4 | 85.1 | 89.2 | 91.8 | 92.8 | 93.8 | 103.2 | 107.6 | 110.0 | 98.9 | 142.5 |
| 500 | 82.7 | 84.5 | 85.9 | 83.8 | 86.4 | 90.2 | 91.0 | 93.8 | 94.5 | 104.2 | 108.1 | 108.8 | 95.4 | 142.3 |
| 630 | 83.0 | 84.5 | 86.2 | 84.0 | 87.1 | 90.8 | 91.1 | 94.3 | 94.3 | 104.9 | 107.0 | 106.2 | 93.1 | 141.4 |
| 800 | 84.5 | 84.5 | 86.0 | 84.8 | 87.9 | 91.1 | 91.9 | 95.9 | 96.6 | 104.5 | 106.6 | 103.0 | 89.8 | 140.6 |
| 1000 | 85.0 | 85.7 | 87.5 | 85.8 | 87.8 | 92.2 | 92.4 | 96.1 | 96.8 | 104.4 | 105.5 | 100.2 | 87.9 | 139.9 |
| 1250 | 84.6 | 87.7 | 86.1 | 88.3 | 91.9 | 92.3 | 96.0 | 97.7 | 103.8 | 104.4 | 96.8 | 87.8 | 139.2 | |
| 1600 | 85.0 | 85.7 | 87.6 | 86.0 | 88.5 | 92.8 | 93.7 | 97.3 | 97.9 | 102.2 | 103.6 | 96.5 | 86.9 | 138.7 |
| 2000 | 84.7 | 84.8 | 86.7 | 85.3 | 88.6 | 92.2 | 93.3 | 97.3 | 98.2 | 102.5 | 102.0 | 93.8 | 86.7 | 138.2 |
| 2500 | 83.9 | 85.7 | 85.7 | 85.4 | 89.2 | 92.9 | 92.9 | 96.5 | 96.7 | 102.9 | 100.7 | 93.5 | 87.3 | 137.9 |
| 3150 | 83.7 | 84.8 | 85.7 | 85.2 | 88.5 | 92.6 | 92.8 | 96.2 | 96.9 | 100.5 | 98.5 | 92.2 | 85.8 | 136.6 |
| 4000 | 82.7 | 83.5 | 84.8 | 84.2 | 87.8 | 92.1 | 93.0 | 96.6 | 96.0 | 99.0 | 97.0 | 90.3 | 85.4 | 135.8 |
| 5000 | 81.3 | 82.3 | 84.2 | 83.3 | 86.5 | 90.1 | 91.8 | 95.0 | 93.7 | 98.0 | 94.8 | 89.0 | 83.9 | 134.4 |
| 6300 | 80.5 | 82.4 | 83.5 | 82.0 | 85.2 | 89.3 | 90.5 | 93.5 | 93.0 | 96.2 | 92.5 | 87.5 | 82.9 | 133.2 |
| 8000 | 79.1 | 80.7 | 82.0 | 81.7 | 84.4 | 88.4 | 88.9 | 91.3 | 90.8 | 93.0 | 90.5 | 85.5 | 80.9 | 131.4 |
| 10000 | 78.8 | 79.8 | 81.4 | 80.8 | 83.3 | 87.2 | 87.9 | 90.9 | 89.6 | 91.6 | 89.5 | 84.6 | 80.5 | 131.0 |
| 12500 | 76.6 | 77.6 | 79.4 | 78.9 | 81.9 | 86.4 | 86.5 | 87.8 | 87.1 | 89.0 | 85.9 | 83.0 | 78.9 | 129.5 |
| 16000 | 75.9 | 77.7 | 78.2 | 78.1 | 79.8 | 84.3 | 84.2 | 85.4 | 85.3 | 85.6 | 83.9 | 81.1 | 75.6 | 128.6 |
| 20000 | 71.9 | 74.7 | 76.6 | 76.0 | 77.7 | 80.2 | 81.8 | 82.2 | 80.8 | 81.7 | 79.8 | 77.9 | 73.0 | 127.0 |
| 25000 | 69.3 | 71.6 | 72.9 | 73.4 | 74.6 | 79.6 | 79.4 | 78.7 | 77.2 | 76.6 | 75.8 | 74.0 | 68.0 | 126.4 |
| 31500 | 65.4 | 67.7 | 68.8 | 70.4 | 70.8 | 75.4 | 74.4 | 75.0 | 72.9 | 73.1 | 71.1 | 69.5 | 63.9 | 125.4 |
| 40000 | 60.6 | 64.4 | 65.2 | 65.5 | 66.3 | 72.2 | 70.5 | 71.4 | 69.0 | 68.8 | 67.9 | 65.5 | 59.0 | 125.6 |
| 50000 | 55.1 | 58.6 | 59.3 | 60.5 | 60.3 | 66.8 | 64.8 | 66.0 | 63.0 | 62.6 | 61.8 | 60.1 | 53.9 | 124.3 |
| 63000 | 50.2 | 55.1 | 55.5 | 55.2 | 55.9 | 61.9 | 58.8 | 60.0 | 57.8 | 56.9 | 56.2 | 53.2 | 47.6 | 124.4 |
| 80000 | 48.3 | 50.7 | 49.6 | 48.8 | 49.1 | 55.7 | 52.1 | 52.2 | 50.1 | 48.8 | 48.7 | 46.3 | 40.0 | 124.5 |
| GASPL | 98.2 | 99.6 | 99.4 | 98.4 | 101.1 | 104.9 | 105.0 | 108.1 | 108.2 | 114.5 | 116.7 | 117.3 | 105.8 | 152.2 |
| PNL | 109.2 | 110.1 | 110.4 | 110.1 | 113.3 | 117.2 | 117.5 | 120.8 | 121.0 | 126.2 | 126.2 | 124.3 | 113.6 | |
| PNLT | 109.2 | 110.1 | 117.1 | 110.7 | 113.9 | 117.2 | 117.5 | 121.3 | 121.0 | 126.2 | 126.2 | 124.3 | 113.6 | |
| DBA | 95.3 | 96.4 | 97.5 | 96.4 | 99.4 | 103.2 | 103.9 | 107.4 | 107.8 | 113.7 | 114.6 | 112.6 | 101.5 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VERTICL = ADRT89 TEST DATE = 04-05-83 LOCAT = C41 ANECH'CH CONFIG = 14 MODEL = AX FLTVEL = 400. FPS
IAPLHA = SB59 WEGA = NO PWL AREA = FULL SPHERE TAMB F = 53.71 PAMB HG = 29.38 RELHUM = 61.4 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINT = LBS XNL = RPM XNH = RPM V8 = 1117.6 FPS AE8 = 4.6 SQ IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V10 = 1795.6 FPS AE10 = 23.4 SQ IN

RUNPT = 83F-400-1404 TAPE = X1404C TEST PT NO = 1404 NC = AE087 COMPRESSOR SPEED = 7PM

IDENTIFICATION - 83F-400-1404 X1404F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|
| 250 | 86.6 | 90.4 | 89.0 | 86.1 | 87.1 | 88.7 | 88.0 | 88.3 | 91.1 | 98.8 | 103.5 | 107.4 | 99.2 | 139.5 |
| 315 | 88.5 | 90.4 | 89.0 | 86.1 | 87.3 | 90.2 | 89.0 | 90.6 | 91.8 | 100.7 | 105.0 | 108.5 | 100.2 | 140.8 |
| 400 | 89.8 | 89.5 | 89.4 | 84.8 | 87.9 | 89.5 | 90.9 | 90.9 | 92.4 | 101.6 | 105.6 | 107.9 | 98.3 | 140.7 |
| 500 | 90.1 | 90.5 | 89.5 | 86.7 | 88.3 | 90.6 | 90.0 | 91.7 | 92.3 | 102.5 | 104.9 | 106.2 | 98.0 | 140.1 |
| 630 | 90.4 | 90.9 | 90.9 | 87.3 | 89.1 | 91.2 | 90.2 | 92.1 | 94.8 | 102.3 | 104.9 | 104.1 | 97.2 | 139.6 |
| 800 | 90.6 | 90.9 | 91.2 | 87.5 | 90.0 | 91.6 | 91.0 | 93.7 | 95.4 | 102.7 | 104.4 | 102.5 | 97.8 | 139.4 |
| 1000 | 92.2 | 91.0 | 91.1 | 88.4 | 90.0 | 92.9 | 91.6 | 93.9 | 96.4 | 102.1 | 103.3 | 99.0 | 97.5 | 138.6 |
| 1250 | 93.6 | 92.2 | 92.6 | 89.4 | 90.6 | 92.7 | 91.6 | 94.0 | 96.9 | 100.9 | 102.8 | 99.1 | 97.0 | 138.4 |
| 1600 | 92.3 | 94.2 | 92.8 | 89.8 | 90.9 | 93.9 | 93.2 | 95.5 | 97.4 | 101.3 | 101.4 | 96.5 | 96.8 | 138.3 |
| 2000 | 92.7 | 92.2 | 92.8 | 89.8 | 91.3 | 93.5 | 93.1 | 95.8 | 96.3 | 100.7 | 100.7 | 96.9 | 98.2 | 138.4 |
| 2500 | 92.4 | 91.3 | 92.0 | 89.3 | 92.7 | 94.5 | 93.0 | 95.4 | 97.1 | 100.5 | 99.2 | 96.3 | 97.5 | 137.7 |
| 3150 | 94.3 | 94.5 | 92.9 | 90.7 | 92.3 | 94.7 | 93.5 | 95.6 | 97.4 | 100.0 | 98.9 | 95.3 | 98.1 | 138.0 |
| 4000 | 94.1 | 93.7 | 93.0 | 90.7 | 92.1 | 94.6 | 94.7 | 97.1 | 95.2 | 99.1 | 96.5 | 94.2 | 96.6 | 137.5 |
| 5000 | 93.0 | 92.5 | 92.3 | 90.0 | 91.1 | 93.1 | 93.9 | 95.7 | 94.9 | 97.9 | 94.8 | 93.3 | 96.2 | 136.5 |
| 6300 | 91.6 | 91.3 | 91.7 | 89.3 | 89.8 | 92.3 | 92.7 | 94.4 | 93.4 | 95.4 | 93.6 | 91.9 | 94.7 | 135.4 |
| 8000 | 90.6 | 91.2 | 90.9 | 87.8 | 89.0 | 91.4 | 91.2 | 92.6 | 92.7 | 94.6 | 93.1 | 91.5 | 94.6 | 134.9 |
| 10000 | 89.1 | 89.4 | 89.3 | 87.4 | 87.9 | 90.2 | 90.3 | 92.5 | 90.9 | 92.5 | 89.6 | 89.7 | 92.4 | 133.9 |
| 12500 | 88.4 | 88.2 | 88.3 | 86.2 | 86.5 | 89.4 | 89.0 | 89.7 | 89.6 | 89.8 | 88.5 | 88.7 | 90.2 | 133.2 |
| 16000 | 85.7 | 85.5 | 85.8 | 83.8 | 84.4 | 87.3 | 86.7 | 87.3 | 84.5 | 85.0 | 83.3 | 84.2 | 86.1 | 131.5 |
| 20000 | 84.6 | 85.2 | 84.2 | 82.6 | 81.8 | 83.2 | 83.7 | 83.2 | 80.4 | 79.4 | 78.9 | 80.1 | 81.0 | 130.4 |
| 25000 | 77.2 | 79.3 | 80.3 | 78.7 | 79.2 | 82.6 | 80.9 | 78.9 | 77.2 | 77.1 | 75.4 | 76.8 | 78.0 | 129.3 |
| 31500 | 76.6 | 77.7 | 77.5 | 76.4 | 75.4 | 78.4 | 76.0 | 75.4 | 75.1 | 74.7 | 74.2 | 74.7 | 75.0 | 129.4 |
| 40000 | 71.9 | 73.0 | 72.6 | 72.6 | 70.9 | 75.2 | 72.4 | 72.3 | 68.0 | 67.0 | 66.6 | 67.9 | 68.6 | 128.9 |
| 50000 | 65.7 | 69.3 | 68.5 | 67.4 | 64.9 | 69.8 | 65.2 | 65.0 | 63.9 | 62.6 | 62.2 | 62.3 | 63.5 | 128.1 |
| 63000 | 62.5 | 61.7 | 61.4 | 60.5 | 64.9 | 60.2 | 60.1 | 57.5 | 55.7 | 55.9 | 56.6 | 57.2 | 57.2 | 127.6 |
| 80000 | 53.8 | 57.5 | 56.4 | 54.6 | 53.7 | 58.7 | 53.5 | 52.2 | 47.7 | 45.9 | 46.1 | 46.7 | 47.4 | 127.9 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICL = ADH189 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 53.71 PAMB HG = 29.38 RELHUM = 61.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1117.6 FPS AE9 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1795.6 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1404 TAPE = X1404F TEST PT NO = 1404 NC = AE087 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1404 X14041

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 64.0 | 67.4 | 67.0 | 64.8 | 66.2 | 67.9 | 67.1 | 67.0 | 69.1 | 75.7 | 78.9 | 80.6 | 69.1 | 154.3 |
| 63 | 63.9 | 67.3 | 67.0 | 64.8 | 66.4 | 69.4 | 68.1 | 69.3 | 69.8 | 77.6 | 80.4 | 81.7 | 70.0 | 155.6 |
| 80 | 65.2 | 66.3 | 67.3 | 63.5 | 67.0 | 68.7 | 70.0 | 69.6 | 70.3 | 78.5 | 80.9 | 81.0 | 68.0 | 155.6 |
| 100 | 65.4 | 67.3 | 67.3 | 65.3 | 67.3 | 69.7 | 69.0 | 70.3 | 70.2 | 79.3 | 80.1 | 79.2 | 67.5 | 155.0 |
| 125 | 65.5 | 67.6 | 68.7 | 65.8 | 68.1 | 70.3 | 69.1 | 70.7 | 72.6 | 79.0 | 80.0 | 77.0 | 66.5 | 154.5 |
| 160 | 65.6 | 67.4 | 68.9 | 65.9 | 68.8 | 70.5 | 69.8 | 72.1 | 73.0 | 79.2 | 79.3 | 75.1 | 66.7 | 154.2 |
| 200 | 66.9 | 67.3 | 68.5 | 66.6 | 68.6 | 71.7 | 70.2 | 72.2 | 73.9 | 78.4 | 77.9 | 71.3 | 66.0 | 153.5 |
| 250 | 68.0 | 68.2 | 69.8 | 67.4 | 69.0 | 71.3 | 70.1 | 72.0 | 74.1 | 76.9 | 77.1 | 70.9 | 64.8 | 153.2 |
| 315 | 66.2 | 69.8 | 69.7 | 67.5 | 69.1 | 72.2 | 71.4 | 73.2 | 74.3 | 77.0 | 75.3 | 67.7 | 63.7 | 153.2 |
| 400 | 66.0 | 67.4 | 69.3 | 67.2 | 69.1 | 71.5 | 70.9 | 73.2 | 72.8 | 77.6 | 74.0 | 67.4 | 64.1 | 153.2 |
| 500 | 65.2 | 66.1 | 68.1 | 66.3 | 68.3 | 70.2 | 72.1 | 72.4 | 73.2 | 75.3 | 72.0 | 66.1 | 62.4 | 152.6 |
| 630 | 66.5 | 68.8 | 68.6 | 67.3 | 69.4 | 72.0 | 70.6 | 72.2 | 73.1 | 74.3 | 71.1 | 64.4 | 61.8 | 152.8 |
| 800 | 65.7 | 67.5 | 68.3 | 66.9 | 68.8 | 71.6 | 71.5 | 73.3 | 70.5 | 72.9 | 68.1 | 62.5 | 59.1 | 152.3 |
| 1000 | 63.9 | 65.7 | 67.1 | 65.8 | 67.5 | 69.6 | 70.3 | 71.5 | 69.7 | 71.1 | 65.8 | 60.6 | 57.3 | 151.4 |
| 1250 | 61.7 | 63.9 | 65.0 | 64.6 | 65.7 | 68.5 | 68.6 | 69.7 | 67.6 | 68.0 | 63.7 | 58.1 | 54.0 | 150.2 |
| 1600 | 59.4 | 62.8 | 64.2 | 62.4 | 64.2 | 66.8 | 66.4 | 67.2 | 66.0 | 66.1 | 61.9 | 55.9 | 51.1 | 149.7 |
| 2000 | 56.1 | 59.6 | 61.5 | 60.9 | 62.1 | 64.7 | 64.5 | 66.0 | 63.1 | 62.7 | 56.7 | 51.6 | 45.1 | 148.8 |
| 2500 | 52.7 | 56.3 | 58.7 | 58.1 | 59.2 | 62.4 | 61.7 | 61.6 | 60.0 | 57.8 | 52.8 | 46.9 | 37.0 | 148.0 |
| 3150 | 45.6 | 50.0 | 53.3 | 53.1 | 54.7 | 58.0 | 57.0 | 56.6 | 52.0 | 49.6 | 43.2 | 36.5 | 23.5 | 146.3 |
| 4000 | 36.9 | 43.7 | 46.5 | 47.3 | 47.7 | 49.6 | 49.7 | 47.9 | 42.7 | 37.9 | 31.3 | 22.0 | 2.6 | 145.2 |
| 5000 | 18.1 | 28.6 | 34.7 | 36.3 | 38.6 | 42.6 | 40.2 | 36.5 | 31.7 | 26.3 | 16.4 | 3.4 | 144.1 | |
| 6300 | 11.5 | 18.7 | 22.0 | 23.4 | 23.4 | 27.2 | 24.0 | 21.0 | 16.2 | 8.5 | | | 144.2 | |
| 8000 | | | | 4.9 | 0.9 | | | | | | | | 143.7 | |
| 10000 | | | | | | | | | | | | | 143.0 | |
| 12500 | | | | | | | | | | | | | 142.5 | |
| 16000 | | | | | | | | | | | | | 142.7 | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 60000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |
| GASPL | 77.4 | 79.3 | 80.2 | 78.2 | 80.3 | 82.7 | 82.0 | 83.5 | 84.0 | 88.7 | 89.1 | 87.8 | 77.5 | 165.9 |
| PWL | 81.9 | 84.4 | 85.8 | 84.2 | 86.1 | 88.6 | 88.1 | 89.4 | 88.8 | 92.3 | 90.3 | 86.3 | 78.3 | |
| PNLT | 83.1 | 84.4 | 85.8 | 84.2 | 86.1 | 88.6 | 88.1 | 89.4 | 88.8 | 92.3 | 90.3 | 86.3 | 78.3 | |
| DBA | 72.4 | 74.5 | 75.7 | 74.2 | 76.1 | 78.6 | 78.2 | 79.6 | 78.9 | 81.1 | 78.3 | 72.7 | 67.9 | |

MODEL AREA = 295.5 SQ CM (45.8 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.528 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICLE = ADH189 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = N6 PWL AREA = FULL SPHERE TAMB F = 53.71 PAMB HG = 29.38 RELHUM = 61.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1117.6 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1795.6 FPS AE18 = 23.4 SQ IN

IF-4 4041 PE = X JT = 14 PT = 14 AEO = 14 SPEED = 14 RPM

IDENTIFICATION - MODEL 83F-ZER-1405 X1405C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 85.9 | 87.9 | 86.2 | 83.0 | 82.8 | 84.9 | 82.8 | 87.7 | 90.9 | 92.5 | 92.6 | 100.6 | 87.0 | 132.7 |
| 63 | 90.3 | 92.3 | 94.1 | 88.9 | 90.2 | 93.6 | 90.9 | 95.1 | 96.6 | 95.6 | 94.3 | 102.0 | 96.4 | 136.7 |
| 80 | 91.5 | 95.3 | 91.1 | 90.4 | 91.5 | 97.1 | 94.7 | 94.9 | 95.3 | 94.7 | 97.8 | 99.0 | 84.4 | 136.9 |
| 100 | 91.0 | 97.2 | 92.5 | 91.8 | 93.4 | 97.8 | 96.1 | 99.0 | 96.5 | 99.8 | 100.0 | 103.9 | 88.6 | 139.5 |
| 125 | 87.4 | 90.4 | 92.9 | 92.5 | 95.3 | 97.9 | 96.3 | 97.2 | 96.7 | 99.8 | 106.4 | 108.6 | 93.7 | 141.9 |
| 160 | 86.4 | 87.5 | 89.5 | 88.0 | 89.6 | 93.5 | 95.9 | 96.0 | 97.2 | 101.3 | 106.9 | 109.4 | 99.3 | 142.2 |
| 200 | 89.0 | 88.1 | 90.1 | 88.9 | 92.0 | 95.8 | 96.5 | 97.4 | 101.3 | 102.9 | 108.3 | 113.0 | 102.9 | 144.8 |
| 250 | 88.0 | 91.3 | 92.1 | 90.9 | 93.0 | 95.6 | 96.7 | 99.4 | 101.8 | 107.9 | 112.8 | 115.7 | 105.6 | 148.0 |
| 315 | 89.3 | 91.1 | 90.9 | 89.7 | 92.5 | 97.6 | 98.0 | 100.2 | 103.4 | 109.0 | 113.6 | 116.5 | 108.4 | 149.0 |
| 400 | 90.8 | 92.1 | 92.4 | 91.2 | 93.5 | 96.9 | 99.3 | 100.7 | 103.6 | 110.9 | 115.6 | 117.5 | 109.4 | 150.3 |
| 500 | 90.8 | 92.9 | 93.9 | 91.7 | 94.3 | 98.1 | 99.0 | 101.4 | 105.4 | 112.2 | 116.8 | 118.0 | 110.9 | 151.3 |
| 630 | 91.5 | 93.3 | 94.3 | 92.4 | 95.2 | 98.6 | 99.5 | 101.9 | 104.8 | 112.9 | 116.0 | 117.5 | 112.1 | 151.1 |
| 800 | 94.1 | 94.1 | 94.9 | 93.4 | 96.5 | 99.4 | 100.3 | 103.4 | 107.4 | 113.0 | 115.3 | 117.5 | 113.7 | 151.2 |
| 1000 | 97.0 | 99.3 | 97.6 | 95.3 | 97.4 | 100.6 | 100.2 | 103.8 | 107.1 | 112.4 | 114.0 | 116.7 | 113.6 | 150.5 |
| 1250 | 96.2 | 99.4 | 99.5 | 97.4 | 98.1 | 100.7 | 100.8 | 104.3 | 108.0 | 111.3 | 112.9 | 115.3 | 113.0 | 149.8 |
| 1600 | 95.8 | 96.2 | 97.4 | 96.0 | 98.0 | 101.4 | 101.5 | 105.5 | 108.1 | 110.0 | 113.6 | 115.3 | 111.4 | 149.6 |
| 2000 | 96.3 | 97.3 | 97.2 | 95.4 | 97.2 | 100.6 | 101.0 | 105.1 | 108.2 | 110.7 | 113.0 | 112.8 | 109.1 | 148.8 |
| 2500 | 93.6 | 96.2 | 97.0 | 94.7 | 96.6 | 100.0 | 100.4 | 104.3 | 107.4 | 110.4 | 111.7 | 110.3 | 106.5 | 147.6 |
| 3150 | 93.0 | 95.8 | 95.8 | 93.8 | 96.2 | 100.2 | 100.4 | 104.3 | 107.9 | 109.0 | 109.8 | 107.4 | 102.8 | 146.5 |
| 4000 | 91.4 | 94.5 | 95.9 | 93.5 | 95.7 | 99.7 | 99.8 | 103.9 | 106.3 | 107.0 | 108.0 | 103.5 | 99.6 | 144.9 |
| 5000 | 90.1 | 93.3 | 95.2 | 93.4 | 95.4 | 98.4 | 99.5 | 103.6 | 104.8 | 105.9 | 105.5 | 100.5 | 96.3 | 143.6 |
| 6300 | 88.2 | 91.3 | 92.9 | 92.0 | 94.8 | 98.5 | 98.8 | 102.5 | 104.7 | 103.9 | 101.9 | 97.2 | 93.7 | 142.5 |
| 8000 | 86.3 | 89.3 | 91.7 | 90.9 | 93.5 | 97.3 | 97.5 | 100.1 | 102.1 | 100.9 | 100.2 | 95.2 | 92.3 | 140.7 |
| 10000 | 85.4 | 88.2 | 90.4 | 89.8 | 92.1 | 96.9 | 97.1 | 99.9 | 101.0 | 99.4 | 98.6 | 94.5 | 91.8 | 140.3 |
| 12500 | 83.1 | 85.6 | 88.1 | 87.8 | 90.9 | 95.2 | 95.4 | 96.9 | 97.7 | 96.8 | 95.2 | 93.6 | 90.2 | 138.6 |
| 16000 | 81.5 | 84.8 | 87.0 | 86.5 | 88.8 | 92.8 | 93.1 | 95.0 | 96.4 | 94.3 | 92.6 | 91.1 | 86.8 | 137.9 |
| 20000 | 77.8 | 82.0 | 83.8 | 83.8 | 86.6 | 89.4 | 90.7 | 91.6 | 92.7 | 90.4 | 88.9 | 88.0 | 83.5 | 136.4 |
| 25000 | 74.8 | 78.6 | 80.2 | 80.7 | 82.5 | 87.6 | 87.5 | 87.4 | 88.9 | 86.7 | 84.9 | 83.6 | 78.7 | 135.3 |
| 31500 | 70.4 | 74.6 | 76.6 | 77.2 | 78.5 | 83.1 | 83.1 | 83.7 | 84.4 | 82.5 | 80.3 | 78.7 | 72.6 | 134.1 |
| 40000 | 65.1 | 70.5 | 72.2 | 73.1 | 73.1 | 79.0 | 78.3 | 79.2 | 81.0 | 78.5 | 76.7 | 73.6 | 67.1 | 133.9 |
| 50000 | 59.7 | 65.3 | 66.1 | 67.1 | 67.6 | 73.9 | 71.6 | 73.0 | 73.5 | 71.6 | 70.7 | 66.3 | 60.6 | 132.0 |
| 63000 | 54.3 | 62.6 | 62.4 | 62.3 | 63.2 | 67.7 | 65.3 | 66.6 | 68.3 | 65.3 | 63.6 | 59.2 | 52.6 | 131.6 |
| 80000 | 51.6 | 61.4 | 59.2 | 56.3 | 57.8 | 62.3 | 60.3 | 59.4 | 60.6 | 57.5 | 56.6 | 52.7 | 44.8 | 132.7 |
| GASPL | 106.0 | 108.3 | 108.5 | 106.7 | 108.8 | 112.4 | 112.6 | 115.8 | 119.6 | 122.4 | 125.4 | 127.1 | 121.7 | 161.2 |
| PNLT | 117.9 | 120.3 | 120.8 | 119.0 | 121.2 | 124.9 | 125.2 | 128.6 | 131.6 | 133.9 | 135.8 | 135.9 | 131.0 | |
| PNLT | 117.9 | 121.0 | 120.8 | 119.0 | 121.8 | 124.9 | 125.2 | 128.6 | 131.6 | 133.9 | 135.8 | 135.9 | 131.0 | |
| DBA | 105.4 | 107.5 | 107.8 | 106.0 | 108.0 | 111.4 | 111.7 | 115.4 | 118.3 | 121.6 | 123.9 | 125.2 | 121.0 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|------------------|----------------------|
| VERTCL = ADH200 | TEST DATE = 04-05-83 | LOCAT = C41 ANECH'CH | CONFIG = 14 | MODEL = AX | FLTVEL = 0. FPS |
| IAPLHA = SB59 | LEGA = N0 | PWL AREA = FULL SPHERE | TAMB F = 53.49 | PAMB HG = 29.38 | RELHUM = 75.2 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = |
| FNNTI = | LBS XNL = | RPM | XNH = | RPM | V8 = 1224.8 FPS |
| FNRAMB = | LBS XNLR = | RPM | XNHR = | RPM | V18 = 1969.9 FPS |
| RUNPT = 83F-ZER-1405 | TAPE = | TEST PT NO = 1405 | NC = | AE087 | CORR FAN SPEED = RPM |

IDENTIFICATION - 83F-ZER-1405 X1405F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 85.9 | 87.9 | 86.2 | 83.0 | 82.8 | 84.9 | 82.8 | 87.7 | 90.9 | 92.5 | 92.6 | 100.6 | 87.0 | 132.7 |
| 63 | 90.3 | 92.3 | 94.1 | 88.9 | 90.2 | 93.6 | 90.9 | 95.1 | 96.6 | 95.6 | 94.3 | 102.0 | 96.4 | 136.7 |
| 80 | 91.5 | 95.3 | 91.1 | 90.4 | 91.5 | 97.1 | 94.7 | 94.9 | 95.3 | 94.7 | 97.8 | 99.0 | 84.4 | 136.9 |
| 100 | 91.0 | 97.2 | 92.5 | 91.8 | 93.4 | 97.8 | 96.1 | 99.0 | 96.5 | 99.8 | 100.0 | 103.9 | 88.6 | 139.5 |
| 125 | 87.4 | 90.4 | 92.9 | 92.5 | 95.3 | 97.9 | 96.3 | 97.2 | 96.7 | 99.8 | 106.4 | 108.6 | 93.7 | 141.9 |
| 160 | 86.4 | 87.5 | 89.5 | 88.0 | 89.6 | 93.5 | 95.9 | 96.0 | 97.2 | 101.3 | 106.9 | 109.4 | 99.3 | 142.2 |
| 200 | 89.0 | 88.1 | 90.1 | 88.9 | 92.0 | 95.8 | 96.5 | 97.4 | 101.3 | 102.9 | 108.3 | 113.0 | 102.9 | 144.8 |
| 250 | 88.0 | 91.3 | 92.1 | 90.9 | 93.0 | 95.6 | 96.7 | 99.4 | 101.8 | 107.9 | 112.8 | 115.7 | 105.6 | 148.0 |
| 315 | 89.3 | 91.1 | 90.9 | 89.7 | 92.5 | 97.6 | 98.0 | 100.2 | 103.4 | 109.0 | 113.6 | 116.5 | 108.4 | 149.0 |
| 400 | 90.8 | 92.1 | 92.4 | 91.2 | 93.5 | 96.9 | 99.3 | 100.7 | 103.6 | 110.9 | 115.6 | 117.5 | 109.4 | 150.3 |
| 500 | 90.8 | 92.9 | 93.9 | 91.7 | 94.3 | 98.1 | 99.0 | 101.4 | 105.4 | 112.2 | 116.8 | 118.0 | 110.9 | 151.3 |
| 630 | 91.5 | 93.3 | 94.3 | 92.4 | 95.2 | 98.6 | 99.5 | 101.9 | 104.8 | 112.9 | 116.0 | 117.5 | 112.1 | 151.1 |
| 800 | 94.1 | 94.1 | 94.9 | 93.4 | 96.5 | 99.4 | 100.3 | 103.4 | 107.4 | 113.0 | 115.3 | 117.3 | 113.7 | 151.2 |
| 1000 | 97.0 | 99.3 | 97.6 | 95.3 | 97.4 | 100.6 | 100.2 | 103.8 | 107.1 | 112.4 | 114.0 | 116.7 | 113.6 | 150.5 |
| 1250 | 96.2 | 99.4 | 99.5 | 97.4 | 98.1 | 100.7 | 100.8 | 104.3 | 108.0 | 111.3 | 112.9 | 115.3 | 113.0 | 149.8 |
| 1600 | 95.8 | 96.2 | 97.4 | 96.0 | 98.0 | 101.4 | 101.5 | 105.5 | 108.1 | 110.0 | 113.6 | 115.3 | 111.4 | 149.6 |
| 2000 | 96.3 | 97.3 | 97.2 | 95.4 | 97.2 | 100.6 | 101.0 | 105.1 | 108.2 | 110.7 | 113.0 | 112.8 | 109.1 | 148.8 |
| 2500 | 93.6 | 96.2 | 97.0 | 94.7 | 96.6 | 100.0 | 100.4 | 104.3 | 107.4 | 110.4 | 111.7 | 110.3 | 106.5 | 147.6 |
| 3150 | 93.0 | 95.8 | 95.8 | 93.8 | 96.2 | 100.2 | 100.4 | 104.3 | 107.9 | 109.0 | 109.8 | 107.4 | 102.8 | 146.5 |
| 4000 | 91.4 | 94.5 | 95.9 | 93.5 | 95.7 | 99.7 | 99.8 | 103.9 | 106.3 | 107.0 | 108.0 | 103.5 | 99.6 | 144.9 |
| 5000 | 90.1 | 93.3 | 95.2 | 93.4 | 95.4 | 98.4 | 99.5 | 103.6 | 104.8 | 105.9 | 105.5 | 100.5 | 96.3 | 143.6 |
| 6300 | 88.2 | 91.3 | 92.9 | 92.0 | 94.8 | 98.5 | 98.8 | 102.5 | 104.7 | 103.9 | 101.9 | 97.2 | 93.7 | 142.5 |
| 8000 | 86.3 | 89.3 | 91.7 | 90.9 | 93.5 | 97.3 | 97.5 | 100.1 | 102.1 | 100.9 | 100.2 | 95.2 | 92.3 | 140.7 |
| 10000 | 85.4 | 88.2 | 90.4 | 89.8 | 92.1 | 96.9 | 97.1 | 99.9 | 101.0 | 99.4 | 98.6 | 94.5 | 91.8 | 140.3 |
| 12500 | 83.1 | 85.6 | 88.1 | 87.8 | 90.9 | 95.2 | 95.4 | 96.9 | 97.7 | 96.8 | 95.2 | 93.6 | 90.2 | 138.6 |
| 16000 | 81.5 | 84.8 | 87.0 | 86.5 | 88.8 | 92.8 | 93.1 | 95.0 | 96.4 | 94.3 | 92.6 | 91.1 | 86.6 | 137.9 |
| 20000 | 77.8 | 82.0 | 83.6 | 83.8 | 86.6 | 89.4 | 90.7 | 91.6 | 92.7 | 90.4 | 88.9 | 88.0 | 83.5 | 136.4 |
| 25000 | 74.8 | 78.6 | 80.2 | 80.7 | 82.5 | 87.6 | 87.5 | 87.4 | 88.9 | 86.7 | 84.9 | 83.6 | 78.7 | 135.3 |
| 31500 | 70.4 | 74.6 | 76.2 | 77.2 | 78.5 | 83.1 | 83.1 | 83.7 | 84.4 | 82.5 | 80.3 | 78.7 | 72.6 | 134.1 |
| 40000 | 65.1 | 70.5 | 72.2 | 73.1 | 73.1 | 79.0 | 78.3 | 79.2 | 81.0 | 78.5 | 76.7 | 73.6 | 67.1 | 133.9 |
| 50000 | 59.7 | 65.3 | 66.1 | 67.1 | 67.6 | 73.9 | 71.6 | 73.0 | 73.5 | 71.6 | 70.7 | 66.3 | 60.6 | 132.0 |
| 63000 | 54.3 | 62.6 | 62.4 | 62.3 | 63.2 | 67.7 | 65.3 | 66.6 | 68.3 | 65.3 | 63.6 | 59.2 | 52.6 | 131.6 |
| 80000 | 51.6 | 61.4 | 59.2 | 56.3 | 57.8 | 62.3 | 60.3 | 59.4 | 60.6 | 57.5 | 56.6 | 52.7 | 44.8 | 132.7 |

GASPL 106.0 108.3 108.5 106.7 108.8 112.4 112.6 115.8 118.6 122.4 125.4 127.1 121.7 161.2
 PNL 117.9 120.3 120.8 119.0 121.2 124.9 125.2 128.6 131.6 133.9 135.8 135.9 131.0
 PNL 117.9 121.0 120.8 119.0 121.8 124.9 125.2 128.6 131.6 133.9 135.8 135.9 131.0
 DBA 172.7 182.1 180.3 178.3 179.6 184.2 182.2 182.2 183.5 180.6 179.3 175.4 168.3

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICL = ADH200 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 53.49 PAMB HG = 29.38 RELHUM = 75.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FNIN1 = LBS XNL RPM = RPM V8 = 1224.8 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM = RPM V18 = 1969.9 FPS AE18 = 23.4 SQ IN

PT: ZE 105 E X F T N 140 TELE SPEED RPM

IDENTIFICATION - 83F-ZER-1405 X14051

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 63.4 | 68.2 | 70.1 | 69.6 | 72.1 | 74.8 | 75.8 | 78.1 | 79.8 | 84.8 | 88.2 | 88.9 | 75.5 | 162.9 |
| 63 | 64.7 | 68.0 | 68.9 | 68.4 | 71.6 | 76.9 | 77.1 | 78.9 | 81.4 | 85.9 | 89.0 | 89.7 | 78.2 | 163.8 |
| 80 | 66.1 | 69.0 | 70.3 | 69.8 | 72.6 | 76.1 | 78.3 | 79.3 | 81.6 | 87.8 | 90.9 | 90.6 | 79.1 | 165.2 |
| 100 | 66.1 | 69.7 | 71.8 | 70.3 | 73.3 | 77.3 | 78.1 | 80.0 | 83.3 | 89.0 | 92.1 | 91.0 | 80.5 | 166.2 |
| 125 | 66.7 | 70.0 | 72.1 | 70.9 | 74.2 | 77.7 | 78.4 | 80.4 | 82.6 | 89.6 | 91.2 | 90.3 | 81.5 | 165.9 |
| 160 | 69.0 | 70.7 | 72.6 | 71.8 | 75.3 | 78.4 | 79.1 | 81.8 | 85.1 | 89.5 | 90.3 | 90.1 | 82.6 | 166.0 |
| 200 | 71.7 | 75.6 | 75.0 | 73.6 | 76.1 | 79.4 | 78.9 | 82.1 | 84.5 | 88.7 | 88.7 | 88.9 | 82.1 | 165.4 |
| 250 | 70.5 | 75.5 | 76.7 | 75.4 | 76.5 | 79.3 | 79.3 | 82.3 | 85.2 | 87.3 | 87.2 | 87.2 | 80.8 | 164.6 |
| 315 | 69.7 | 71.9 | 74.3 | 73.7 | 76.2 | 79.7 | 79.6 | 83.2 | 85.0 | 85.6 | 87.5 | 86.5 | 78.4 | 164.5 |
| 400 | 69.6 | 72.5 | 73.7 | 72.7 | 75.0 | 78.5 | 78.9 | 82.5 | 84.7 | 86.0 | 86.4 | 83.4 | 75.0 | 163.7 |
| 500 | 66.4 | 71.0 | 73.1 | 71.7 | 74.1 | 77.6 | 77.9 | 81.3 | 83.5 | 85.2 | 84.5 | 80.1 | 71.4 | 162.5 |
| 630 | 65.2 | 70.1 | 71.5 | 70.5 | 73.3 | 77.5 | 77.5 | 81.0 | 83.6 | 83.3 | 82.0 | 76.5 | 66.6 | 161.3 |
| 800 | 63.0 | 68.3 | 71.1 | 69.7 | 72.5 | 76.6 | 76.6 | 80.1 | 81.5 | 80.7 | 79.6 | 71.7 | 62.1 | 159.7 |
| 1000 | 61.0 | 66.6 | 70.0 | 69.2 | 71.8 | 74.9 | 75.9 | 79.4 | 79.6 | 79.2 | 76.4 | 67.9 | 57.4 | 158.5 |
| 1250 | 58.3 | 63.9 | 67.1 | 67.3 | 70.7 | 74.6 | 74.7 | 77.8 | 79.0 | 76.5 | 72.0 | 63.4 | 53.0 | 157.3 |
| 1600 | 55.1 | 60.9 | 65.0 | 65.4 | 68.7 | 72.7 | 72.7 | 75.5 | 75.5 | 72.5 | 69.0 | 59.6 | 48.8 | 155.6 |
| 2000 | 52.4 | 58.3 | 62.6 | 63.3 | 66.4 | 71.4 | 71.4 | 73.4 | 73.2 | 69.6 | 65.6 | 56.5 | 44.5 | 155.2 |
| 2500 | 47.4 | 53.6 | 58.5 | 59.7 | 63.6 | 68.2 | 68.2 | 68.8 | 68.1 | 64.8 | 59.5 | 51.9 | 37.0 | 153.5 |
| 3150 | 41.4 | 49.4 | 54.5 | 55.8 | 59.2 | 63.5 | 63.5 | 64.3 | 63.9 | 58.8 | 52.5 | 43.3 | 24.3 | 152.8 |
| 4000 | 30.1 | 40.4 | 45.9 | 48.5 | 52.6 | 55.8 | 56.7 | 56.3 | 55.0 | 48.9 | 41.2 | 30.0 | 5.1 | 151.3 |
| 5000 | 15.7 | 27.9 | 34.6 | 38.3 | 41.9 | 47.5 | 46.9 | 45.0 | 43.3 | 35.9 | 25.8 | 10.2 | 150.1 | |
| 6300 | 8.4 | 17.7 | 22.8 | 26.5 | 31.9 | 31.1 | 29.3 | 25.5 | 16.3 | 2.2 | | | 149.0 | |
| 8000 | | | 1.7 | 8.7 | 6.9 | 4.2 | | | | | | | 148.8 | |
| 10000 | | | | | | | | | | | | | 146.8 | |
| 12500 | | | | | | | | | | | | | 146.4 | |
| 16000 | | | | | | | | | | | | | 147.6 | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS OF POOR QUALITY

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|-------|-------|-------|------|------|-------|
| 0ASPL | 79.2 | 82.9 | 84.4 | 83.4 | 86.0 | 89.5 | 89.9 | 92.7 | 95.0 | 98.3 | 99.8 | 99.2 | 90.1 | 175.8 |
| PNL | 82.9 | 87.3 | 89.5 | 88.7 | 91.3 | 95.3 | 95.5 | 98.3 | 100.1 | 101.3 | 101.3 | 99.3 | 90.7 | |
| PNLT | 82.9 | 87.3 | 89.5 | 88.7 | 91.9 | 95.3 | 95.5 | 98.8 | 100.1 | 101.3 | 101.3 | 99.3 | 90.7 | |
| DBA | 72.3 | 76.7 | 78.9 | 78.1 | 80.8 | 84.6 | 84.8 | 87.9 | 89.6 | 90.0 | 89.6 | 87.1 | 79.1 | |

MODEL AREA = 295.5 SQ CM (45.8 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.528 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

| | | | | | | | | | | | | | | | | | |
|----------|---|--------------|--------------|-----|----------|------------|-----|--------------|------------|------------|-------|----------------|------------|-------|--------|---|----------|
| VEHICL | = | ADH200 | TEST DATE | = | 04-05-83 | LOCAT | = | C41 ANECH CH | CONFIG | = | 14 | MODEL | = | AX | FLTVEL | = | 0. FPS |
| IAPLHA | = | SB59 | IEGA | = | NO | PWL AREA | = | FULL SPHERE | TAMB F | = | 53.49 | PAMB HG | = | 29.38 | RELHUM | = | 78.2 PCT |
| WIND DIR | = | | DEG WIND VEL | = | MPH | EXT DIST | = | 2400.0 FT | EXT CONFIG | = | SL | MIKE HT | = | | NBFR | = | |
| FNIN1 | = | LBS XNL | = | RPM | XNH | = | RPM | V8 | = | 1224.8 FPS | AE8 | = | 4.6 SQ IN | | | | |
| FNRAMB | = | LBS XNLR | = | RPM | XNHR | = | RPM | V18 | = | 1969.9 FPS | AE18 | = | 23.4 SQ IN | | | | |
| RUNPT | = | 83F-ZER-1405 | TAPE | = | X14051 | TEST PT NO | = | 1405 | NC | = | AE087 | CORR FAN SPEED | = | | RPM | | |

IDENTIFICATION - MODEL 83F-400-1406 X1406C
BACKGROUND 83F-400-1400 X14000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 89.4 | 89.4 | 86.7 | 82.7 | 81.6 | 84.9 | 86.1 | 86.0 | 85.9 | 87.0 | 94.1 | 94.1 | 92.2 | 130.7 |
| 63 | 90.5 | 93.8 | 89.6 | 88.9 | 91.3 | 94.2 | 92.6 | 91.3 | 91.4 | 95.3 | 97.5 | 97.5 | 97.9 | 135.4 |
| 80 | 91.5 | 95.1 | 91.1 | 91.5 | 96.1 | 94.0 | 94.1 | 92.8 | 95.4 | 97.0 | 97.7 | 97.7 | 93.1 | 136.3 |
| 100 | 89.5 | 94.7 | 91.0 | 89.5 | 91.1 | 95.3 | 94.1 | 97.0 | 92.5 | 97.1 | 98.0 | 102.6 | 94.8 | 137.5 |
| 125 | 88.1 | 89.7 | 91.2 | 90.7 | 93.3 | 95.9 | 94.6 | 94.7 | 91.7 | 97.5 | 103.4 | 107.1 | 95.2 | 139.8 |
| 160 | 85.4 | 83.2 | 88.0 | 86.3 | 87.9 | 90.7 | 93.6 | 92.0 | 91.7 | 98.6 | 104.2 | 106.9 | 98.3 | 139.5 |
| 200 | 86.3 | 86.1 | 87.3 | 84.6 | 87.5 | 91.1 | 92.2 | 94.1 | 94.8 | 98.4 | 104.0 | 109.2 | 100.9 | 140.8 |
| 250 | 84.0 | 87.3 | 87.8 | 86.4 | 88.5 | 92.1 | 93.5 | 95.6 | 95.6 | 103.2 | 109.3 | 112.7 | 102.4 | 144.6 |
| 315 | 84.6 | 87.1 | 87.1 | 86.4 | 88.5 | 92.9 | 93.5 | 95.9 | 96.1 | 104.5 | 109.8 | 112.8 | 103.7 | 145.0 |
| 400 | 85.6 | 87.1 | 87.9 | 86.2 | 89.0 | 92.4 | 94.8 | 95.7 | 96.6 | 106.4 | 111.8 | 113.8 | 103.2 | 146.3 |
| 500 | 85.3 | 87.6 | 89.1 | 87.4 | 89.3 | 93.4 | 94.3 | 96.4 | 98.1 | 108.2 | 112.6 | 113.8 | 101.7 | 146.9 |
| 630 | 86.0 | 87.6 | 89.7 | 87.4 | 89.7 | 93.3 | 94.2 | 97.6 | 98.1 | 109.4 | 111.5 | 111.0 | 98.9 | 145.8 |
| 800 | 87.3 | 87.4 | 88.9 | 87.7 | 90.5 | 94.4 | 95.3 | 98.2 | 99.9 | 108.5 | 110.8 | 108.5 | 96.9 | 144.8 |
| 1000 | 89.0 | 89.3 | 90.8 | 88.6 | 91.4 | 95.6 | 95.7 | 99.1 | 100.3 | 108.6 | 109.8 | 105.7 | 95.4 | 144.2 |
| 1250 | 87.4 | 91.0 | 89.4 | 90.8 | 95.5 | 96.1 | 99.5 | 101.5 | 108.0 | 108.7 | 102.3 | 93.8 | 93.8 | 143.4 |
| 1600 | 88.1 | 89.0 | 90.6 | 89.3 | 92.0 | 95.6 | 97.5 | 101.4 | 106.2 | 108.1 | 101.3 | 93.2 | 142.7 | |
| 2000 | 88.0 | 88.8 | 88.6 | 91.2 | 95.8 | 97.1 | 100.6 | 101.0 | 106.8 | 107.5 | 99.1 | 92.9 | 142.5 | |
| 2500 | 87.9 | 89.5 | 89.8 | 89.0 | 92.4 | 95.8 | 96.4 | 100.0 | 100.2 | 106.5 | 105.7 | 99.3 | 93.3 | 141.8 |
| 3150 | 88.3 | 89.1 | 89.8 | 88.4 | 92.0 | 96.8 | 96.9 | 100.4 | 105.8 | 105.0 | 98.5 | 91.9 | 141.5 | |
| 4000 | 87.2 | 89.0 | 89.9 | 88.1 | 90.5 | 95.2 | 95.9 | 99.7 | 99.8 | 103.5 | 103.7 | 97.0 | 91.4 | 140.2 |
| 5000 | 86.4 | 88.2 | 89.8 | 87.9 | 90.2 | 94.4 | 95.1 | 99.1 | 98.1 | 103.2 | 101.6 | 95.6 | 90.1 | 139.4 |
| 6300 | 85.0 | 87.7 | 88.3 | 87.1 | 89.7 | 93.9 | 94.4 | 98.3 | 98.1 | 100.8 | 99.0 | 93.3 | 88.5 | 138.1 |
| 8000 | 83.7 | 86.3 | 86.8 | 86.3 | 88.7 | 92.7 | 93.4 | 96.3 | 96.3 | 98.6 | 96.4 | 90.8 | 86.1 | 136.6 |
| 10000 | 85.6 | 86.7 | 86.2 | 87.9 | 92.4 | 92.9 | 96.1 | 95.3 | 97.2 | 95.3 | 90.2 | 85.5 | 136.4 | |
| 12500 | 82.1 | 83.6 | 84.9 | 84.6 | 87.4 | 91.4 | 91.5 | 93.2 | 92.0 | 94.9 | 92.0 | 89.1 | 84.2 | 134.9 |
| 16000 | 81.1 | 84.2 | 84.4 | 83.9 | 85.9 | 89.1 | 89.0 | 91.1 | 90.0 | 91.2 | 89.5 | 86.7 | 81.4 | 134.0 |
| 20000 | 77.9 | 81.6 | 82.0 | 81.5 | 83.7 | 86.2 | 87.1 | 87.2 | 86.4 | 87.4 | 85.8 | 83.4 | 78.4 | 132.6 |
| 25000 | 74.8 | 78.0 | 79.0 | 79.5 | 81.1 | 85.4 | 84.3 | 83.7 | 83.2 | 82.6 | 81.5 | 79.6 | 74.0 | 132.0 |
| 31500 | 70.0 | 73.2 | 75.0 | 76.6 | 77.6 | 80.9 | 80.7 | 80.8 | 78.2 | 78.3 | 77.4 | 75.0 | 69.2 | 131.2 |
| 40000 | 65.6 | 69.2 | 70.6 | 71.8 | 72.1 | 77.2 | 75.6 | 76.7 | 75.4 | 74.9 | 73.2 | 70.8 | 64.6 | 131.1 |
| 50000 | 60.3 | 63.5 | 64.6 | 65.9 | 66.4 | 72.0 | 69.9 | 70.6 | 68.8 | 68.5 | 67.2 | 64.9 | 58.0 | 129.6 |
| 63000 | 54.5 | 58.6 | 59.9 | 60.7 | 61.8 | 67.3 | 63.7 | 64.9 | 63.6 | 62.2 | 60.8 | 58.1 | 51.3 | 129.5 |
| 80000 | 50.2 | 54.0 | 53.5 | 53.1 | 53.9 | 61.6 | 58.6 | 57.9 | 56.2 | 54.6 | 53.7 | 51.2 | 43.7 | 130.0 |
| OASPL | 101.5 | 103.6 | 103.8 | 102.1 | 104.3 | 108.2 | 108.8 | 111.6 | 111.6 | 118.6 | 121.1 | 121.4 | 111.5 | 156.3 |
| PNL | 113.1 | 114.6 | 115.3 | 113.8 | 116.6 | 120.9 | 121.4 | 124.5 | 124.7 | 130.4 | 131.2 | 128.9 | 120.0 | |
| PNLT | 113.1 | 114.6 | 115.3 | 113.8 | 117.2 | 120.9 | 121.4 | 124.5 | 124.7 | 130.4 | 131.2 | 128.9 | 120.0 | |
| DBA | 98.9 | 100.4 | 101.3 | 99.9 | 102.6 | 106.7 | 107.5 | 110.9 | 111.4 | 117.9 | 119.3 | 117.2 | 107.2 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICLE = ADH190 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 54.96 PAMB HG = 29.34 RELHUM = 59.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINT = LBS XNL RPM XNH RPM V8 = 1224.2 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 1978.1 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1406 TAPE = X1406C TEST PT NO = 1406 NC = AE087 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59.0 DEG F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1406 X1406F

ANGLES MEASURED FROM INLET, DEGREES

FREQ PWL
 50
 63
 80
 100
 125
 160
 200

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. |
|-------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|
| 250 | 91.8 | 93.7 | 92.7 | 89.6 | 90.1 | 92.1 | 91.6 | 92.0 | 94.1 | 101.9 | 107.0 | 110.6 | 103.5 |
| 315 | 91.8 | 93.7 | 92.7 | 89.6 | 90.3 | 93.1 | 92.7 | 94.1 | 94.6 | 104.0 | 109.3 | 112.3 | 104.5 |
| 400 | 92.3 | 93.5 | 92.1 | 89.8 | 90.8 | 92.6 | 93.9 | 93.8 | 96.2 | 105.9 | 110.4 | 113.1 | 104.6 |
| 500 | 93.2 | 93.4 | 92.8 | 89.6 | 91.2 | 93.7 | 93.4 | 94.5 | 96.2 | 107.2 | 109.6 | 111.2 | 103.8 |
| 630 | 93.0 | 94.0 | 94.1 | 90.9 | 91.7 | 93.7 | 93.3 | 95.5 | 98.5 | 106.8 | 109.7 | 110.2 | 104.8 |
| 800 | 93.7 | 94.0 | 94.4 | 90.9 | 92.6 | 94.9 | 94.5 | 96.2 | 99.3 | 107.5 | 109.3 | 108.7 | 105.8 |
| 1000 | 95.0 | 93.8 | 94.0 | 91.3 | 93.6 | 96.2 | 95.0 | 97.2 | 100.4 | 106.7 | 108.0 | 105.1 | 104.1 |
| 1250 | 95.7 | 95.8 | 95.9 | 92.2 | 93.1 | 96.3 | 95.5 | 97.6 | 100.6 | 105.2 | 107.8 | 104.5 | 103.9 |
| 1600 | 95.1 | 97.4 | 96.1 | 93.1 | 94.5 | 96.7 | 97.1 | 98.9 | 100.4 | 105.9 | 107.4 | 102.4 | 103.7 |
| 2000 | 95.7 | 95.5 | 95.9 | 93.1 | 93.9 | 97.1 | 96.9 | 99.2 | 100.2 | 106.4 | 106.4 | 103.5 | 105.0 |
| 2500 | 95.7 | 95.4 | 95.1 | 92.6 | 95.3 | 97.4 | 96.7 | 99.2 | 100.8 | 106.0 | 106.0 | 103.0 | 104.0 |
| 3150 | 95.5 | 96.1 | 95.2 | 93.2 | 95.8 | 98.8 | 97.6 | 99.8 | 101.0 | 104.5 | 105.4 | 102.2 | 103.9 |
| 4000 | 98.6 | 98.0 | 97.1 | 93.9 | 94.8 | 97.8 | 97.2 | 99.8 | 99.3 | 104.2 | 103.2 | 100.6 | 102.6 |
| 5000 | 97.5 | 98.0 | 97.4 | 93.9 | 94.8 | 97.4 | 96.6 | 99.4 | 100.0 | 102.4 | 101.3 | 99.0 | 101.7 |
| 6300 | 96.6 | 97.1 | 97.3 | 93.9 | 94.3 | 96.9 | 96.5 | 99.2 | 98.5 | 100.6 | 99.0 | 96.9 | 99.6 |
| 8000 | 95.1 | 96.5 | 95.6 | 92.9 | 93.3 | 95.7 | 95.7 | 97.3 | 98.0 | 99.7 | 98.5 | 96.8 | 99.4 |
| 10000 | 93.6 | 94.9 | 94.1 | 92.0 | 92.5 | 95.4 | 95.2 | 97.4 | 95.7 | 98.3 | 95.8 | 96.1 | 98.1 |
| 12500 | 93.5 | 94.0 | 93.6 | 91.6 | 92.0 | 94.4 | 93.9 | 95.0 | 94.3 | 95.2 | 93.9 | 94.1 | 95.7 |
| 16000 | 91.2 | 91.5 | 91.4 | 89.5 | 90.0 | 92.1 | 91.4 | 92.9 | 90.8 | 91.4 | 90.0 | 90.3 | 92.1 |
| 20000 | 87.0 | 89.4 | 88.7 | 87.2 | 87.8 | 89.2 | 89.3 | 88.8 | 86.6 | 85.5 | 84.7 | 85.8 | 87.0 |
| 25000 | 83.2 | 86.2 | 85.7 | 84.2 | 85.7 | 88.4 | 85.9 | 83.9 | 82.8 | 82.1 | 82.6 | 83.6 | 135.0 |
| 31500 | 82.2 | 84.0 | 83.6 | 82.6 | 82.2 | 83.9 | 82.3 | 81.3 | 82.2 | 81.6 | 80.4 | 81.0 | 81.6 |
| 40000 | 76.5 | 78.4 | 78.7 | 78.8 | 76.7 | 80.2 | 78.0 | 78.2 | 75.6 | 75.4 | 74.5 | 75.2 | 75.1 |
| 50000 | 71.7 | 74.0 | 74.0 | 73.7 | 71.0 | 75.0 | 71.9 | 71.8 | 70.9 | 69.6 | 68.9 | 69.2 | 69.2 |
| 63000 | 65.5 | 67.4 | 67.1 | 66.7 | 66.4 | 70.3 | 65.5 | 65.8 | 63.6 | 61.5 | 60.9 | 61.5 | 60.9 |
| 80000 | 58.2 | 61.1 | 60.9 | 60.1 | 58.5 | 64.6 | 60.0 | 57.9 | 53.8 | 51.7 | 51.1 | 51.7 | 51.0 |

ORIGINAL PAGE IS
 OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICLE = ADH190 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 400. FPS
 JAPLHA = SB59 JEGA = NO PWL AREA = FULL SPHERE TAMB F = 54.96 PAMB HG = 29.34 RELHUM = 58.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1224.2 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1978.1 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1406 TAPE = X1406F TEST PT NO = 1406 NC = AE087 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1406 X14061

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| 50 | 67.2 | 70.6 | 70.7 | 68.3 | 69.2 | 71.3 | 70.7 | 72.1 | 78.8 | 82.4 | 83.8 | 73.4 | 157.7 | |
| 63 | 67.1 | 70.6 | 70.7 | 68.3 | 69.4 | 72.3 | 71.8 | 72.8 | 72.6 | 80.9 | 84.7 | 85.5 | 74.3 | 159.4 |
| 80 | 67.6 | 70.4 | 70.0 | 68.5 | 69.9 | 71.8 | 73.0 | 72.4 | 74.2 | 82.8 | 85.7 | 86.2 | 74.3 | 160.4 |
| 100 | 68.4 | 70.2 | 70.7 | 68.2 | 70.2 | 72.9 | 72.4 | 73.1 | 74.1 | 84.0 | 84.8 | 84.1 | 73.4 | 159.6 |
| 125 | 68.1 | 70.7 | 71.9 | 69.4 | 70.6 | 72.8 | 72.2 | 74.1 | 76.3 | 83.5 | 84.8 | 83.0 | 74.1 | 159.4 |
| 160 | 68.6 | 70.5 | 72.0 | 69.3 | 71.4 | 73.9 | 73.3 | 74.6 | 77.0 | 84.0 | 84.2 | 81.3 | 74.7 | 159.2 |
| 200 | 69.7 | 70.1 | 71.4 | 69.5 | 72.3 | 75.0 | 73.7 | 75.4 | 77.8 | 83.0 | 82.7 | 77.4 | 72.5 | 158.1 |
| 250 | 71.0 | 71.8 | 73.1 | 70.2 | 71.6 | 74.9 | 73.9 | 75.6 | 77.8 | 81.3 | 82.1 | 76.3 | 71.7 | 157.7 |
| 315 | 69.0 | 73.1 | 73.0 | 70.8 | 72.6 | 75.0 | 75.3 | 76.6 | 77.3 | 81.6 | 81.2 | 73.6 | 70.7 | 157.8 |
| 400 | 69.1 | 70.7 | 72.4 | 70.5 | 71.7 | 75.1 | 74.7 | 76.6 | 76.7 | 81.6 | 79.7 | 74.0 | 70.9 | 157.8 |
| 500 | 68.5 | 70.2 | 71.2 | 69.6 | 72.8 | 75.0 | 74.2 | 76.2 | 77.0 | 80.8 | 78.8 | 72.8 | 68.8 | 157.6 |
| 630 | 67.8 | 70.4 | 70.9 | 69.8 | 72.9 | 76.1 | 74.7 | 76.5 | 76.7 | 78.8 | 77.6 | 71.2 | 67.7 | 157.3 |
| 800 | 70.2 | 71.8 | 72.4 | 70.1 | 71.5 | 74.7 | 73.9 | 76.1 | 74.6 | 78.0 | 74.8 | 68.9 | 65.1 | 156.8 |
| 1000 | 68.5 | 71.3 | 72.2 | 69.7 | 71.2 | 74.0 | 73.0 | 75.2 | 74.8 | 75.6 | 72.3 | 66.4 | 62.7 | 156.1 |
| 1250 | 66.7 | 69.7 | 71.6 | 69.2 | 70.2 | 73.0 | 72.4 | 74.5 | 72.7 | 73.2 | 69.1 | 63.1 | 58.9 | 155.2 |
| 1600 | 63.9 | 68.1 | 69.0 | 67.5 | 68.5 | 71.1 | 70.8 | 71.9 | 71.4 | 71.3 | 67.3 | 61.2 | 56.0 | 154.7 |
| 2000 | 60.6 | 65.1 | 66.3 | 65.5 | 66.7 | 69.8 | 69.4 | 70.9 | 67.9 | 68.4 | 62.9 | 58.1 | 50.8 | 154.0 |
| 2500 | 57.8 | 62.1 | 64.0 | 63.5 | 64.7 | 67.4 | 66.6 | 66.9 | 64.7 | 63.2 | 58.2 | 52.3 | 42.5 | 153.3 |
| 3150 | 51.2 | 56.1 | 58.9 | 58.8 | 50.3 | 52.8 | 51.8 | 52.3 | 58.3 | 56.0 | 49.9 | 42.6 | 29.5 | 151.9 |
| 4000 | 39.3 | 47.8 | 51.0 | 51.9 | 53.7 | 55.6 | 55.3 | 53.5 | 48.9 | 43.9 | 37.0 | 27.7 | 8.6 | 150.4 |
| 5000 | 24.1 | 35.5 | 40.2 | 41.8 | 45.1 | 48.3 | 45.2 | 41.5 | 37.3 | 32.0 | 23.0 | 9.2 | 149.9 | |
| 6300 | 4.0 | 17.8 | 24.8 | 28.2 | 30.2 | 32.7 | 30.4 | 26.9 | 23.4 | 15.5 | 2.3 | 150.4 | 149.4 | 149.9 |
| 8000 | | | 3.8 | 5.3 | 5.9 | 6.6 | 6.6 | 3.2 | | | | | 149.6 | 148.7 |
| 10000 | | | | | | | | | | | | | 148.7 | 147.8 |
| 12500 | | | | | | | | | | | | | 147.8 | 148.0 |
| 15000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

P188-02

MODEL AREA = 295.5 SQ CM (45.8 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.528 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICL = ADH190 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 400. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 54.96 PAMB HG = 29.34 RELHUM = 59.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT. EXT CONFIG = SL MIKE HT =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1224.2 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V16 = 1978.1 FPS AE16 = 23.4 SQ IN

TEL: 401-06 X14061 TEL: 401-06 X14061 TEL: 401-06 X14061 TEL: 401-06 X14061 TEL: 401-06 X14061

IDENTIFICATION - MODEL 83F-ZER-1407 X1407C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.4 | 89.7 | 88.9 | 86.0 | 84.1 | 87.4 | 88.3 | 93.5 | 91.9 | 92.0 | 99.9 | 99.3 | 89.5 | 134.8 |
| 63 | 93.3 | 96.0 | 97.8 | 94.1 | 92.4 | 95.6 | 95.7 | 98.9 | 97.6 | 97.1 | 101.0 | 99.2 | 92.9 | 138.9 |
| 80 | 93.8 | 97.3 | 93.1 | 92.9 | 94.2 | 99.3 | 96.7 | 96.4 | 97.6 | 97.4 | 101.0 | 101.0 | 86.6 | 139.2 |
| 100 | 92.2 | 99.5 | 95.3 | 94.5 | 95.9 | 100.0 | 98.6 | 101.3 | 98.8 | 102.1 | 102.2 | 106.4 | 90.8 | 141.9 |
| 125 | 89.1 | 91.9 | 94.7 | 97.1 | 99.7 | 98.1 | 98.5 | 98.7 | 102.5 | 109.1 | 110.8 | 96.7 | 144.2 | |
| 160 | 87.7 | 89.5 | 91.7 | 90.0 | 90.9 | 95.5 | 97.9 | 98.3 | 100.0 | 104.3 | 108.9 | 112.4 | 102.0 | 144.8 |
| 200 | 91.8 | 89.3 | 92.6 | 90.6 | 94.0 | 98.1 | 99.0 | 99.1 | 103.6 | 105.1 | 110.3 | 114.7 | 105.1 | 146.7 |
| 250 | 90.5 | 93.1 | 94.3 | 93.4 | 95.7 | 97.8 | 98.7 | 101.4 | 105.1 | 110.7 | 115.8 | 118.5 | 108.4 | 150.8 |
| 315 | 91.1 | 93.1 | 93.4 | 91.9 | 94.8 | 99.4 | 100.3 | 101.4 | 106.1 | 112.2 | 116.3 | 118.6 | 110.4 | 151.5 |
| 400 | 93.1 | 93.9 | 94.4 | 93.2 | 95.5 | 98.6 | 101.8 | 102.7 | 106.6 | 114.4 | 118.8 | 120.0 | 111.9 | 153.2 |
| 500 | 93.6 | 95.9 | 95.6 | 94.7 | 96.5 | 100.1 | 100.8 | 103.9 | 107.9 | 116.0 | 119.6 | 120.8 | 113.2 | 154.2 |
| 630 | 94.5 | 95.8 | 96.8 | 94.6 | 97.0 | 100.3 | 101.5 | 104.6 | 108.3 | 116.7 | 120.0 | 120.2 | 114.6 | 154.4 |
| 800 | 96.8 | 96.6 | 97.4 | 95.4 | 98.3 | 101.4 | 102.0 | 105.9 | 110.1 | 115.7 | 120.1 | 120.8 | 116.2 | 154.7 |
| 1000 | 100.5 | 102.0 | 100.6 | 98.1 | 99.7 | 103.1 | 102.9 | 106.3 | 110.6 | 115.1 | 118.8 | 120.7 | 115.9 | 154.2 |
| 1250 | 99.4 | 103.4 | 103.2 | 100.6 | 101.1 | 103.5 | 103.1 | 106.8 | 111.5 | 114.8 | 118.2 | 118.6 | 114.8 | 153.4 |
| 1600 | 98.6 | 99.7 | 100.6 | 98.5 | 100.8 | 103.9 | 104.2 | 107.5 | 111.4 | 113.5 | 118.8 | 117.5 | 111.9 | 153.0 |
| 2000 | 98.8 | 100.6 | 100.2 | 98.1 | 99.7 | 103.1 | 104.0 | 107.9 | 111.2 | 114.5 | 118.3 | 114.6 | 109.4 | 152.4 |
| 2500 | 98.4 | 101.9 | 100.8 | 98.7 | 99.9 | 103.2 | 103.7 | 106.8 | 110.2 | 114.7 | 115.7 | 112.3 | 107.5 | 151.1 |
| 3150 | 97.2 | 101.3 | 101.8 | 99.6 | 100.4 | 103.7 | 103.4 | 107.3 | 110.2 | 113.5 | 114.0 | 109.9 | 104.8 | 150.1 |
| 4000 | 94.4 | 98.7 | 100.1 | 98.3 | 101.0 | 103.7 | 102.8 | 106.6 | 109.5 | 111.2 | 112.5 | 106.3 | 102.4 | 148.8 |
| 5000 | 93.1 | 97.3 | 98.2 | 97.1 | 99.1 | 102.9 | 103.0 | 106.3 | 108.1 | 110.9 | 109.7 | 104.8 | 99.3 | 147.6 |
| 6300 | 91.7 | 96.1 | 97.4 | 95.5 | 98.3 | 102.5 | 103.1 | 105.7 | 108.0 | 108.6 | 107.7 | 102.0 | 97.7 | 146.6 |
| 8000 | 89.8 | 93.9 | 95.9 | 95.4 | 97.6 | 101.4 | 100.8 | 103.9 | 106.1 | 106.2 | 105.5 | 100.2 | 96.5 | 145.1 |
| 20000 | 88.9 | 92.4 | 94.7 | 94.5 | 96.7 | 100.9 | 100.7 | 103.6 | 104.8 | 104.4 | 103.6 | 99.3 | 95.6 | 144.5 |
| 31500 | 86.4 | 89.6 | 92.4 | 92.3 | 95.6 | 99.4 | 98.9 | 100.7 | 102.8 | 102.3 | 101.4 | 98.4 | 95.2 | 143.3 |
| 40000 | 84.3 | 89.3 | 91.2 | 91.5 | 93.6 | 97.6 | 97.7 | 98.5 | 101.4 | 99.6 | 99.6 | 95.4 | 93.1 | 142.8 |
| 50000 | 81.1 | 86.8 | 88.6 | 89.4 | 91.4 | 94.6 | 95.7 | 97.3 | 96.7 | 96.2 | 92.6 | 89.3 | 141.5 | |
| 250000 | 78.1 | 82.9 | 85.2 | 86.0 | 87.6 | 92.7 | 92.6 | 91.6 | 93.9 | 92.7 | 90.7 | 89.4 | 84.2 | 140.4 |
| 315000 | 74.2 | 78.8 | 81.6 | 83.0 | 83.7 | 87.8 | 87.8 | 87.7 | 89.6 | 88.5 | 87.3 | 84.9 | 78.1 | 139.3 |
| 400000 | 68.5 | 74.4 | 77.7 | 78.3 | 78.9 | 84.5 | 82.8 | 83.4 | 86.5 | 86.4 | 83.7 | 79.5 | 72.8 | 139.6 |
| 500000 | 64.9 | 68.7 | 71.0 | 72.2 | 73.3 | 78.8 | 77.0 | 77.7 | 79.4 | 80.8 | 78.8 | 73.5 | 65.5 | 138.0 |
| 630000 | 61.2 | 65.7 | 66.7 | 67.2 | 68.3 | 74.0 | 70.7 | 72.2 | 74.9 | 74.9 | 72.4 | 66.3 | 58.7 | 138.0 |
| 800000 | 60.0 | 63.0 | 62.0 | 59.7 | 60.9 | 67.4 | 64.4 | 64.8 | 67.4 | 67.5 | 66.6 | 59.0 | 50.9 | 138.2 |
| GASPL | 109.0 | 111.8 | 111.9 | 110.1 | 111.9 | 115.3 | 115.5 | 118.4 | 121.7 | 126.0 | 129.4 | 129.9 | 123.7 | 164.6 |
| PNL | 121.4 | 124.6 | 125.1 | 123.2 | 124.9 | 128.1 | 128.1 | 131.4 | 134.3 | 137.9 | 140.1 | 138.5 | 132.6 | |
| PNLT | 121.4 | 125.4 | 125.1 | 123.2 | 125.5 | 128.1 | 128.1 | 132.1 | 134.3 | 137.9 | 140.7 | 138.5 | 132.6 | |
| DBA | 108.6 | 111.4 | 111.5 | 109.5 | 111.2 | 114.5 | 114.6 | 118.0 | 121.4 | 125.3 | 128.4 | 128.1 | 122.8 | |

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NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|-------------------|
| VEHICLE = ADHT99 | TEST DATE = 04-05-83 | LOCAT = C41 ANECH CH | CONFIG = 14 | MODEL = AX | FLYVEL = 0. FPS |
| IAPLHA = SB59 | LEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 40.0 FT | PAMB HG = 29.38 | RELHUM = 74.1 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = | MIKE HT = | NBFR = |
| FNINT = | LBS XNLR | RPM | XNH | RPM | V8 = 1329.9 FPS |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | AE8 = 4.6 SQ IN |
| RUNPT = 83F-ZER-1407 | TAPE = X1407C | TEST PT NO = 1407 | NC = AE087 | CORR FAN SPEED = | RPM |

IDENTIFICATION - 83F-ZER-140Z X1407F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.4 | 89.7 | 88.9 | 86.0 | 84.1 | 87.4 | 88.3 | 93.5 | 91.9 | 92.0 | 99.9 | 99.3 | 89.5 | 134.8 |
| 63 | 93.3 | 96.0 | 97.8 | 94.1 | 92.4 | 95.6 | 95.7 | 98.9 | 97.6 | 97.1 | 101.0 | 99.2 | 92.9 | 138.9 |
| 80 | 93.8 | 97.3 | 93.1 | 92.9 | 94.2 | 93.3 | 96.7 | 96.4 | 97.6 | 97.4 | 101.0 | 101.0 | 86.6 | 139.2 |
| 100 | 92.2 | 99.5 | 95.3 | 94.5 | 95.9 | 100.0 | 98.6 | 101.3 | 98.8 | 102.1 | 102.2 | 106.4 | 90.8 | 141.9 |
| 125 | 89.1 | 91.9 | 94.7 | 94.7 | 97.1 | 99.7 | 98.1 | 98.5 | 98.7 | 102.5 | 109.1 | 110.8 | 96.7 | 144.2 |
| 160 | 87.7 | 89.5 | 91.7 | 90.0 | 90.9 | 95.5 | 97.9 | 98.3 | 100.0 | 104.3 | 108.9 | 112.4 | 102.0 | 144.8 |
| 200 | 91.8 | 89.3 | 92.6 | 90.6 | 94.0 | 98.1 | 95.0 | 99.1 | 103.6 | 105.1 | 110.3 | 114.7 | 105.1 | 146.7 |
| 250 | 90.5 | 93.1 | 94.3 | 93.4 | 95.7 | 97.8 | 98.7 | 101.4 | 105.1 | 110.7 | 115.8 | 118.5 | 108.4 | 150.8 |
| 315 | 91.1 | 93.1 | 93.4 | 91.9 | 94.8 | 99.4 | 100.3 | 101.4 | 106.1 | 112.2 | 116.3 | 118.8 | 110.4 | 151.5 |
| 400 | 93.1 | 93.9 | 94.4 | 93.2 | 95.5 | 98.6 | 101.8 | 102.7 | 106.6 | 114.4 | 118.8 | 120.0 | 111.9 | 153.2 |
| 500 | 93.6 | 95.9 | 95.6 | 94.7 | 96.5 | 100.1 | 100.8 | 103.9 | 107.9 | 116.0 | 119.6 | 120.8 | 113.2 | 154.2 |
| 630 | 94.5 | 95.8 | 96.8 | 94.6 | 97.0 | 100.3 | 101.5 | 104.6 | 108.3 | 116.7 | 120.0 | 120.2 | 114.6 | 154.4 |
| 800 | 96.8 | 96.6 | 97.4 | 95.4 | 98.3 | 101.4 | 102.9 | 105.9 | 110.1 | 115.7 | 120.1 | 120.8 | 116.2 | 154.7 |
| 1000 | 100.5 | 102.0 | 100.6 | 98.1 | 99.7 | 103.1 | 102.9 | 106.3 | 110.6 | 115.1 | 118.8 | 120.7 | 115.9 | 154.2 |
| 1250 | 99.4 | 103.4 | 103.2 | 100.6 | 101.1 | 103.5 | 103.1 | 106.8 | 111.5 | 114.8 | 118.2 | 118.6 | 114.8 | 153.4 |
| 1600 | 98.6 | 99.7 | 100.6 | 98.5 | 100.8 | 103.9 | 104.2 | 107.5 | 111.4 | 113.5 | 118.8 | 117.5 | 111.9 | 153.0 |
| 2000 | 98.8 | 100.6 | 100.2 | 98.1 | 99.7 | 103.1 | 104.0 | 107.9 | 111.2 | 114.5 | 118.3 | 114.6 | 109.4 | 152.4 |
| 2500 | 98.4 | 101.9 | 100.8 | 98.7 | 99.9 | 103.2 | 103.7 | 106.8 | 110.2 | 114.7 | 115.7 | 112.3 | 107.5 | 151.1 |
| 3150 | 97.2 | 101.3 | 101.8 | 99.6 | 100.4 | 103.7 | 103.4 | 107.3 | 110.2 | 113.5 | 114.0 | 109.9 | 104.8 | 150.1 |
| 4000 | 94.4 | 98.7 | 100.1 | 98.3 | 101.0 | 103.7 | 102.8 | 106.6 | 109.5 | 111.7 | 112.5 | 106.3 | 102.4 | 148.8 |
| 5000 | 93.1 | 97.3 | 98.2 | 97.1 | 99.1 | 102.9 | 103.0 | 106.3 | 108.1 | 110.9 | 109.7 | 104.8 | 99.3 | 147.6 |
| 6300 | 91.7 | 96.1 | 97.4 | 95.5 | 98.3 | 102.5 | 103.1 | 105.7 | 108.0 | 108.6 | 107.7 | 102.0 | 97.7 | 146.6 |
| 8000 | 89.8 | 93.9 | 95.9 | 95.4 | 97.6 | 101.4 | 100.8 | 103.9 | 106.1 | 106.2 | 105.5 | 100.2 | 96.5 | 145.1 |
| 10000 | 88.9 | 92.4 | 94.7 | 94.5 | 96.7 | 100.9 | 100.7 | 103.6 | 104.8 | 104.4 | 103.6 | 99.3 | 95.6 | 144.5 |
| 12500 | 86.4 | 89.6 | 92.4 | 92.3 | 95.6 | 99.4 | 98.9 | 100.7 | 102.8 | 102.3 | 101.4 | 98.4 | 95.2 | 143.3 |
| 16000 | 84.3 | 89.3 | 91.2 | 91.5 | 93.6 | 97.6 | 97.7 | 98.5 | 101.4 | 99.6 | 99.6 | 95.4 | 93.1 | 142.8 |
| 20000 | 81.1 | 86.8 | 88.6 | 89.4 | 91.4 | 94.6 | 95.7 | 95.4 | 97.3 | 96.7 | 96.2 | 92.6 | 89.3 | 141.5 |
| 25000 | 78.1 | 82.9 | 85.2 | 86.0 | 87.6 | 92.7 | 92.6 | 91.6 | 93.9 | 92.7 | 89.4 | 84.2 | 140.4 | |
| 31500 | 74.2 | 78.8 | 81.6 | 83.0 | 83.7 | 87.8 | 87.7 | 89.6 | 88.5 | 87.3 | 84.9 | 78.1 | 139.3 | |
| 40000 | 69.5 | 74.4 | 77.7 | 78.3 | 78.9 | 84.5 | 82.8 | 83.4 | 86.5 | 86.4 | 83.7 | 79.5 | 72.8 | 139.6 |
| 50000 | 64.9 | 68.7 | 71.0 | 72.2 | 73.3 | 78.8 | 77.0 | 77.7 | 79.4 | 80.8 | 78.8 | 73.5 | 65.5 | 138.0 |
| 63000 | 61.2 | 65.7 | 66.7 | 67.2 | 68.3 | 74.0 | 70.7 | 72.2 | 74.9 | 74.9 | 72.4 | 66.3 | 58.7 | 138.0 |
| 80000 | 60.0 | 63.0 | 62.0 | 59.7 | 60.9 | 64.4 | 64.8 | 67.4 | 67.5 | 66.6 | 59.0 | 50.9 | 138.2 | |
| 0ASPL | 109.0 | 111.8 | 111.9 | 110.1 | 111.9 | 115.3 | 115.3 | 118.4 | 121.7 | 126.0 | 129.4 | 129.9 | 123.7 | 164.6 |
| PNL | 121.4 | 124.6 | 125.1 | 123.2 | 124.9 | 128.1 | 128.1 | 131.4 | 134.3 | 137.9 | 140.1 | 138.5 | 132.6 | |
| PNLT | 121.4 | 125.4 | 125.1 | 123.2 | 125.5 | 128.1 | 128.1 | 132.1 | 134.3 | 137.9 | 140.7 | 138.5 | 132.6 | |
| DBA | 180.7 | 183.9 | 183.5 | 182.3 | 183.5 | 189.6 | 186.7 | 187.4 | 190.0 | 190.2 | 188.7 | 182.0 | 174.2 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICL = ADH199 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 53.40 PAMB HG = 29.38 RELHUM = 74.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1329.9 FPS AE9 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2146.2 FPS AE18 = 23.4 SQ IN

1PT F-ZI 307 E X F T PT 140 AEO7 CORR TAN SPEED RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT SL

IDENTIFICATION - 83F-ZER-1407 X14071

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160.

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|------------|
| 50 | 65.9 | 70.0 | 72.3 | 72.1 | 74.8 | 77.1 | 77.8 | 80.1 | 83.1 | 87.6 | 91.2 | 91.7 | 91.9 | 78.2 165.7 |
| 63 | 66.5 | 70.0 | 71.4 | 70.6 | 73.9 | 78.6 | 79.4 | 80.1 | 84.1 | 89.1 | 91.7 | 91.9 | 91.9 | 80.2 166.3 |
| 80 | 68.4 | 70.7 | 72.3 | 71.8 | 74.6 | 77.8 | 80.8 | 81.3 | 84.6 | 91.3 | 94.1 | 93.1 | 93.1 | 81.6 168.1 |
| 100 | 68.8 | 72.7 | 73.5 | 73.3 | 75.6 | 79.3 | 79.6 | 82.5 | 85.8 | 92.8 | 94.8 | 93.8 | 93.8 | 82.7 169.0 |
| 125 | 69.7 | 72.5 | 74.6 | 73.2 | 75.9 | 79.4 | 80.4 | 83.2 | 86.1 | 93.4 | 95.2 | 93.1 | 93.1 | 84.0 169.3 |
| 160 | 71.8 | 73.2 | 75.1 | 73.8 | 77.1 | 80.4 | 80.8 | 84.3 | 87.8 | 92.3 | 95.0 | 93.4 | 93.4 | 85.1 169.5 |
| 200 | 75.2 | 78.4 | 78.0 | 76.3 | 78.4 | 81.9 | 81.6 | 84.6 | 88.0 | 91.5 | 93.4 | 92.9 | 92.9 | 84.3 169.1 |
| 250 | 73.7 | 79.5 | 80.4 | 78.6 | 79.5 | 82.1 | 81.5 | 84.8 | 88.7 | 90.8 | 92.5 | 90.4 | 92.6 | 82.6 168.3 |
| 315 | 72.5 | 75.4 | 77.5 | 76.2 | 78.9 | 82.2 | 82.4 | 85.2 | 88.3 | 89.1 | 92.7 | 88.7 | 88.7 | 78.9 167.9 |
| 400 | 72.1 | 75.8 | 76.7 | 75.5 | 77.5 | 81.0 | 81.9 | 85.2 | 87.7 | 89.7 | 91.6 | 89.1 | 89.1 | 75.3 167.2 |
| 500 | 71.2 | 75.7 | 75.9 | 75.7 | 77.4 | 80.9 | 81.2 | 83.8 | 86.3 | 89.5 | 88.5 | 82.1 | 82.1 | 72.4 165.9 |
| 630 | 69.5 | 75.6 | 77.5 | 76.2 | 77.6 | 81.0 | 80.5 | 84.0 | 85.9 | 87.8 | 86.2 | 79.0 | 79.0 | 68.6 165.0 |
| 800 | 66.0 | 72.5 | 75.4 | 74.5 | 77.7 | 80.6 | 79.6 | 82.8 | 84.8 | 85.5 | 84.1 | 74.5 | 74.5 | 64.8 163.6 |
| 1000 | 64.0 | 70.6 | 73.0 | 72.9 | 75.5 | 79.4 | 79.4 | 82.1 | 82.9 | 84.2 | 80.7 | 72.1 | 72.1 | 60.4 162.5 |
| 1250 | 61.8 | 68.7 | 71.7 | 70.8 | 74.2 | 78.6 | 79.0 | 81.1 | 82.3 | 81.2 | 77.8 | 68.2 | 68.2 | 57.0 161.5 |
| 1600 | 58.6 | 65.4 | 69.3 | 69.9 | 72.7 | 76.8 | 76.0 | 78.4 | 79.5 | 77.4 | 74.3 | 64.6 | 64.6 | 53.0 159.9 |
| 2000 | 55.9 | 62.6 | 66.9 | 68.0 | 70.9 | 75.4 | 74.9 | 77.1 | 77.0 | 74.6 | 70.6 | 61.3 | 61.3 | 48.3 159.4 |
| 2500 | 50.7 | 57.6 | 62.8 | 64.2 | 68.4 | 72.4 | 71.7 | 72.6 | 73.2 | 70.3 | 65.7 | 56.6 | 56.6 | 42.0 158.2 |
| 3150 | 44.2 | 53.9 | 58.8 | 60.9 | 64.0 | 68.3 | 68.0 | 67.9 | 68.9 | 64.1 | 59.6 | 47.6 | 47.6 | 30.6 157.7 |
| 4000 | 33.4 | 45.2 | 50.9 | 54.0 | 57.4 | 61.0 | 61.7 | 60.0 | 59.6 | 55.2 | 48.5 | 34.5 | 34.5 | 10.9 156.4 |
| 5000 | 19.0 | 32.2 | 39.6 | 43.6 | 46.9 | 52.6 | 51.9 | 49.3 | 48.4 | 42.0 | 31.6 | 16.0 | 16.0 | 155.2 |
| 6300 | 12.6 | 22.7 | 28.6 | 31.8 | 36.6 | 35.9 | 33.3 | 30.7 | 22.3 | 9.2 | | | | 154.1 |
| 78000 | | | 3.3 | 7.4 | 14.2 | 11.4 | 8.4 | 4.9 | | | | | | 154.4 |
| 100000 | | | | | | | | | | | | | | 152.9 |
| 125000 | | | | | | | | | | | | | | 152.9 |
| 160000 | | | | | | | | | | | | | | 153.0 |
| 200000 | | | | | | | | | | | | | | |
| 250000 | | | | | | | | | | | | | | |
| 315000 | | | | | | | | | | | | | | |
| 400000 | | | | | | | | | | | | | | |
| 500000 | | | | | | | | | | | | | | |
| 630000 | | | | | | | | | | | | | | |
| 800000 | | | | | | | | | | | | | | |

MODEL AREA = 295.5 SQ CM (45.8 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.528 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICLE = ADH199 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMP F = 53.40 PAMB H9 = 29.38 RELHJM = 74.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1329.9 FPS AEB = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2146.2 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1407 TAPE = X14071 TEST PT NO = 1407 NC = AE087 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1408 X1408C
BACKGROUND 83F-400-1400 X14000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 91.9 | 90.7 | 86.4 | 83.7 | 84.3 | 86.2 | 86.1 | 90.7 | 88.7 | 92.2 | 95.4 | 95.8 | 91.2 | 132.4 |
| 63 | 92.5 | 92.3 | 92.8 | 89.9 | 90.2 | 92.3 | 91.7 | 96.4 | 94.3 | 96.6 | 96.5 | 100.7 | 97.9 | 136.7 |
| 80 | 93.3 | 97.1 | 93.1 | 93.5 | 98.1 | 96.0 | 96.1 | 94.8 | 96.4 | 99.0 | 99.0 | 99.5 | 89.6 | 138.1 |
| 100 | 92.7 | 97.5 | 93.3 | 92.0 | 93.9 | 98.0 | 97.1 | 99.5 | 96.0 | 98.8 | 100.0 | 105.4 | 92.1 | 140.0 |
| 125 | 90.4 | 91.2 | 93.2 | 93.0 | 95.8 | 98.2 | 97.1 | 97.5 | 94.4 | 99.0 | 105.6 | 109.3 | 95.7 | 142.0 |
| 160 | 87.9 | 85.2 | 89.2 | 87.8 | 89.4 | 93.2 | 95.4 | 94.3 | 94.7 | 100.8 | 106.4 | 109.4 | 100.0 | 141.8 |
| 200 | 88.0 | 87.6 | 88.1 | 86.6 | 89.5 | 93.3 | 94.0 | 96.4 | 97.8 | 99.4 | 106.3 | 112.0 | 102.1 | 143.2 |
| 250 | 85.5 | 88.6 | 89.1 | 88.4 | 90.5 | 93.6 | 95.2 | 97.4 | 98.1 | 105.7 | 111.3 | 115.0 | 104.6 | 146.7 |
| 315 | 86.3 | 88.4 | 87.6 | 87.4 | 89.8 | 94.9 | 95.5 | 97.9 | 99.9 | 107.5 | 112.8 | 115.5 | 106.4 | 147.8 |
| 400 | 87.3 | 88.4 | 89.6 | 87.9 | 90.8 | 94.1 | 96.8 | 97.9 | 99.6 | 109.2 | 114.6 | 116.5 | 106.4 | 149.0 |
| 500 | 87.6 | 89.1 | 90.6 | 88.7 | 91.5 | 95.4 | 96.0 | 98.7 | 100.9 | 111.2 | 116.1 | 116.8 | 104.9 | 150.0 |
| 630 | 88.5 | 89.3 | 90.6 | 89.1 | 91.7 | 95.3 | 96.5 | 99.6 | 100.8 | 111.9 | 115.0 | 114.7 | 102.9 | 149.1 |
| 800 | 89.3 | 89.4 | 90.6 | 89.2 | 92.8 | 96.4 | 97.0 | 100.9 | 103.1 | 111.0 | 114.8 | 112.5 | 100.7 | 148.3 |
| 1000 | 91.5 | 91.5 | 92.8 | 91.1 | 93.2 | 97.6 | 97.7 | 101.1 | 103.6 | 111.6 | 113.3 | 110.7 | 99.1 | 147.5 |
| 1250 | 90.4 | 93.7 | 93.7 | 91.6 | 93.3 | 97.5 | 98.1 | 101.5 | 104.5 | 111.3 | 111.9 | 106.1 | 97.3 | 146.5 |
| 1600 | 90.8 | 91.2 | 92.6 | 91.5 | 94.3 | 98.4 | 99.7 | 103.0 | 104.9 | 109.7 | 112.1 | 104.8 | 96.2 | 146.2 |
| 2000 | 93.0 | 92.6 | 92.7 | 91.4 | 93.7 | 98.3 | 99.3 | 103.4 | 105.2 | 110.5 | 112.0 | 103.6 | 96.1 | 146.4 |
| 2500 | 93.1 | 94.4 | 94.5 | 92.5 | 94.1 | 98.3 | 98.7 | 102.5 | 104.4 | 110.4 | 110.7 | 103.3 | 95.5 | 145.8 |
| 3150 | 93.3 | 93.8 | 94.6 | 92.9 | 94.7 | 99.3 | 99.1 | 102.4 | 104.7 | 109.8 | 109.5 | 102.2 | 95.9 | 145.3 |
| 4000 | 92.2 | 92.3 | 93.6 | 91.6 | 94.5 | 98.5 | 99.1 | 102.4 | 103.8 | 108.0 | 108.7 | 101.0 | 94.9 | 144.4 |
| 5000 | 91.6 | 91.9 | 93.3 | 91.2 | 93.9 | 97.9 | 98.3 | 102.1 | 102.9 | 107.5 | 106.3 | 98.6 | 93.3 | 143.4 |
| 6300 | 90.3 | 91.9 | 93.0 | 91.3 | 93.4 | 97.6 | 98.1 | 101.1 | 102.3 | 105.2 | 103.5 | 96.8 | 91.5 | 142.1 |
| 8000 | 88.9 | 90.7 | 92.3 | 91.8 | 93.2 | 96.5 | 96.9 | 99.8 | 100.5 | 102.4 | 101.3 | 94.0 | 90.1 | 140.6 |
| 10000 | 89.5 | 90.4 | 91.4 | 90.9 | 93.1 | 96.8 | 96.1 | 99.5 | 100.0 | 100.9 | 99.8 | 93.2 | 89.0 | 140.4 |
| 12500 | 87.8 | 88.3 | 90.4 | 90.1 | 92.4 | 96.4 | 96.2 | 96.7 | 97.5 | 99.6 | 96.7 | 93.1 | 88.1 | 139.6 |
| 16000 | 86.8 | 88.4 | 90.0 | 89.3 | 90.6 | 94.3 | 94.9 | 95.3 | 95.9 | 95.6 | 94.2 | 90.4 | 85.6 | 139.0 |
| 20000 | 83.0 | 85.3 | 87.2 | 87.1 | 88.6 | 91.4 | 92.6 | 92.3 | 92.3 | 91.2 | 87.3 | 83.3 | 83.3 | 138.0 |
| 25000 | 80.5 | 82.1 | 83.6 | 84.7 | 85.2 | 89.8 | 90.0 | 88.6 | 89.1 | 87.7 | 86.9 | 84.5 | 78.4 | 137.1 |
| 31500 | 76.2 | 78.6 | 80.8 | 82.0 | 81.7 | 85.6 | 85.6 | 84.9 | 84.3 | 83.7 | 83.3 | 80.4 | 73.6 | 136.2 |
| 40000 | 71.7 | 74.6 | 76.5 | 77.7 | 77.0 | 82.4 | 80.7 | 81.1 | 80.8 | 79.8 | 78.8 | 75.0 | 69.3 | 136.2 |
| 50000 | 66.0 | 68.2 | 70.3 | 72.0 | 71.1 | 77.4 | 75.6 | 75.5 | 74.2 | 72.9 | 72.3 | 68.8 | 63.4 | 134.8 |
| 63000 | 59.7 | 63.1 | 65.3 | 66.1 | 67.0 | 72.8 | 69.4 | 69.6 | 69.3 | 66.1 | 66.0 | 61.8 | 56.2 | 134.8 |
| 80000 | 52.7 | 56.5 | 57.7 | 57.8 | 59.3 | 65.9 | 62.8 | 62.6 | 62.2 | 59.3 | 58.7 | 54.5 | 48.6 | 134.5 |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

| | | | | | | | | | | | |
|------------|--------------|----------------|----------|--------------|--------------|--------------|-------|-----------|-------|----------|------------|
| VERTICL = | ADRI191 | TEST DATE = | 04-05-83 | LOCAT = | CAT ANECH CH | CONFIG = | 14 | MODEL = | AX | FLTVEL = | 400. FPS |
| IAPLHA = | SB59 | IEGA = | NO | PWL AREA = | FULL SPHERE | TAMB F = | 53.31 | PAMB HG = | 29.22 | RELHUM = | 64.3 PCT |
| WIND DIR = | | DEG WIND VEL = | | EXT DIST = | 40.0 FT | EXT CONFIG = | ARC | MIKE HT = | | NBFR = | |
| FN1N1 = | LBS XNL | RPM | | XNH | RPM | V6 | | AEB | | | 4.6 SQ IN |
| FNRAMB = | LBS XNLR | RPM | | XNHR | RPM | V18 | | AE18 | | | 23.4 SQ IN |
| RUNPT = | 83F-400-1408 | TAPE | | TEST PT NO = | 1408 | NC | | | | | |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1408 X1408F

ANGLES MEASURED FROM INLET, DEGREES

FREQ PWL
50 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160.
63
80
100
125
160
200

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 93.4 | 95.0 | 94.0 | 91.7 | 92.1 | 93.6 | 93.3 | 93.8 | 97.8 | 104.9 | 110.0 | 113.4 | 106.3 | 145.6 |
| 315 | 93.4 | 95.0 | 94.0 | 91.7 | 92.1 | 93.6 | 93.3 | 93.8 | 97.7 | 106.8 | 112.1 | 115.1 | 107.7 | 147.4 |
| 400 | 94.0 | 94.8 | 92.6 | 90.8 | 92.6 | 94.4 | 95.9 | 96.1 | 98.9 | 108.8 | 113.8 | 116.1 | 107.9 | 148.6 |
| 500 | 95.0 | 94.7 | 94.6 | 91.3 | 93.4 | 95.7 | 95.1 | 96.7 | 99.1 | 109.9 | 113.3 | 115.1 | 108.0 | 148.2 |
| 630 | 95.3 | 95.5 | 95.6 | 92.1 | 93.7 | 95.7 | 95.6 | 97.6 | 101.8 | 109.4 | 113.8 | 114.3 | 108.6 | 148.2 |
| 800 | 96.2 | 95.7 | 95.6 | 92.6 | 94.8 | 96.9 | 96.2 | 99.0 | 102.8 | 110.7 | 113.1 | 113.9 | 109.7 | 148.2 |
| 1000 | 97.0 | 95.8 | 95.7 | 92.8 | 95.3 | 98.2 | 97.1 | 99.4 | 103.4 | 110.0 | 111.3 | 109.0 | 107.7 | 146.4 |
| 1250 | 99.0 | 97.9 | 97.9 | 94.7 | 95.6 | 98.3 | 97.5 | 99.6 | 104.0 | 108.6 | 111.7 | 107.8 | 106.8 | 146.2 |
| 1600 | 97.5 | 99.8 | 98.7 | 95.2 | 96.7 | 99.4 | 99.3 | 101.4 | 104.6 | 109.6 | 111.7 | 106.7 | 106.8 | 146.6 |
| 2000 | 98.5 | 97.7 | 97.9 | 95.4 | 96.4 | 99.6 | 99.2 | 101.9 | 104.3 | 110.1 | 111.1 | 107.2 | 108.0 | 146.6 |
| 2500 | 100.5 | 99.0 | 98.0 | 95.3 | 97.0 | 99.9 | 98.9 | 101.8 | 105.1 | 110.0 | 110.5 | 106.7 | 107.9 | 146.5 |
| 3150 | 100.0 | 100.5 | 99.6 | 96.5 | 98.0 | 101.3 | 99.8 | 101.8 | 104.8 | 108.8 | 110.1 | 105.8 | 107.2 | 146.2 |
| 4000 | 100.8 | 100.5 | 100.2 | 97.3 | 98.2 | 101.0 | 100.3 | 102.5 | 103.8 | 108.1 | 107.5 | 103.2 | 105.4 | 145.4 |
| 5000 | 99.7 | 99.0 | 99.4 | 96.2 | 98.0 | 100.9 | 99.8 | 102.3 | 103.6 | 106.2 | 105.0 | 101.7 | 104.0 | 144.3 |
| 6300 | 99.1 | 98.6 | 99.1 | 96.0 | 97.4 | 100.6 | 99.9 | 101.4 | 102.5 | 104.0 | 103.7 | 99.8 | 103.4 | 143.5 |
| 8000 | 97.6 | 98.5 | 98.7 | 96.0 | 97.2 | 99.5 | 99.0 | 100.6 | 102.4 | 103.1 | 102.7 | 99.5 | 102.8 | 143.2 |
| 10000 | 96.0 | 97.1 | 97.8 | 96.3 | 97.0 | 99.8 | 98.3 | 100.7 | 101.0 | 102.9 | 100.6 | 100.3 | 102.5 | 143.3 |
| 12500 | 99.2 | 98.8 | 98.3 | 96.3 | 97.0 | 99.4 | 98.6 | 98.3 | 100.3 | 99.9 | 99.0 | 98.3 | 100.5 | 143.3 |
| 16000 | 96.9 | 96.2 | 96.8 | 94.9 | 94.7 | 97.3 | 97.4 | 97.1 | 96.9 | 96.6 | 95.7 | 94.6 | 97.4 | 142.3 |
| 20000 | 92.7 | 93.6 | 94.3 | 92.6 | 92.7 | 94.4 | 95.5 | 94.3 | 94.1 | 92.5 | 92.1 | 92.6 | 93.3 | 141.3 |
| 25000 | 88.4 | 89.9 | 90.9 | 89.9 | 89.8 | 92.8 | 92.1 | 89.9 | 90.7 | 90.0 | 90.1 | 90.2 | 90.2 | 140.6 |
| 31500 | 87.8 | 88.2 | 89.3 | 87.7 | 86.3 | 88.6 | 88.0 | 86.9 | 88.0 | 87.0 | 86.7 | 85.9 | 87.1 | 140.7 |
| 40000 | 82.7 | 83.8 | 84.6 | 84.2 | 81.6 | 85.4 | 83.1 | 82.9 | 80.0 | 78.6 | 78.4 | 77.8 | 79.2 | 139.8 |
| 50000 | 77.8 | 79.4 | 79.9 | 79.6 | 75.7 | 80.4 | 77.2 | 76.0 | 75.9 | 72.6 | 73.1 | 71.9 | 73.1 | 139.1 |
| 63000 | 71.2 | 72.1 | 72.9 | 71.6 | 75.8 | 71.0 | 70.0 | 70.3 | 67.3 | 67.3 | 66.1 | 67.2 | 138.5 | |
| 80000 | 63.4 | 65.5 | 66.3 | 65.5 | 63.9 | 68.9 | 64.4 | 63.0 | 60.4 | 57.5 | 57.5 | 56.3 | 57.4 | 138.0 |

DASP 110.8 110.8 110.5 107.9 109.1 111.8 111.1 112.9 115.3 120.8 123.2 123.4 119.4 159.3
 PNL 123.2 123.1 122.8 119.9 121.2 124.0 123.2 125.3 127.7 132.4 133.8 131.3 130.8
 PNLT 123.2 123.1 122.8 119.9 121.2 124.0 123.2 125.3 127.7 132.4 133.8 131.3 130.8
 DBA 186.4 188.0 188.8 188.3 186.5 191.1 186.8 185.6 184.4 181.5 181.5 180.4 181.5

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICL = ADH191 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 53.31 PAMB HG = 29.22 RELHJM = 64.3 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNINI = LBS XNL RPM XNH RPM V8 = 1332.5 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2136.1 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1408 TAPE = X1408F TEST PT NO = 1408 NC = AE087 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1408 X14081

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 68.8 | 72.0 | 72.0 | 70.4 | 71.2 | 72.8 | 72.4 | 72.5 | 75.8 | 81.8 | 85.4 | 86.6 | 76.2 | 160.5 |
| 63 | 68.8 | 71.9 | 72.0 | 70.4 | 71.7 | 74.3 | 73.8 | 74.8 | 75.7 | 83.7 | 87.5 | 88.3 | 77.5 | 162.2 |
| 80 | 69.3 | 71.6 | 70.5 | 69.5 | 71.7 | 73.6 | 75.0 | 74.7 | 76.9 | 85.7 | 89.1 | 89.2 | 77.6 | 163.5 |
| 100 | 70.2 | 71.5 | 72.5 | 69.9 | 72.5 | 74.9 | 74.1 | 75.3 | 77.0 | 86.7 | 88.5 | 88.1 | 77.5 | 163.1 |
| 125 | 70.4 | 72.2 | 73.4 | 70.7 | 72.6 | 74.8 | 74.6 | 76.2 | 79.6 | 86.1 | 88.9 | 87.1 | 77.9 | 163.0 |
| 160 | 71.1 | 72.3 | 73.3 | 71.0 | 73.7 | 75.9 | 75.1 | 77.4 | 80.4 | 87.3 | 88.0 | 86.5 | 78.6 | 163.1 |
| 200 | 71.7 | 72.1 | 73.2 | 71.0 | 74.0 | 77.0 | 75.7 | 77.6 | 80.9 | 86.4 | 86.0 | 81.2 | 76.1 | 161.3 |
| 250 | 73.3 | 73.9 | 75.1 | 72.7 | 74.0 | 76.9 | 75.9 | 77.6 | 81.3 | 84.7 | 86.0 | 79.6 | 74.6 | 161.0 |
| 315 | 71.4 | 75.5 | 75.6 | 72.9 | 74.9 | 77.7 | 77.5 | 79.1 | 81.5 | 85.3 | 85.6 | 78.0 | 73.8 | 161.4 |
| 400 | 71.8 | 73.0 | 74.4 | 72.7 | 74.2 | 77.6 | 77.0 | 79.3 | 80.8 | 85.4 | 84.5 | 77.7 | 73.9 | 161.5 |
| 500 | 73.3 | 73.8 | 74.1 | 72.3 | 74.4 | 77.5 | 76.4 | 78.5 | 81.2 | 84.8 | 83.3 | 76.5 | 72.8 | 161.4 |
| 630 | 72.2 | 74.8 | 75.3 | 73.1 | 75.1 | 78.6 | 76.9 | 78.4 | 80.5 | 83.1 | 82.3 | 74.9 | 70.9 | 161.1 |
| 800 | 72.4 | 74.3 | 75.4 | 73.5 | 74.9 | 78.0 | 77.1 | 78.7 | 79.1 | 81.5 | 79.1 | 71.4 | 67.9 | 160.2 |
| 1000 | 70.7 | 72.2 | 74.2 | 72.0 | 74.4 | 77.5 | 76.2 | 78.1 | 78.4 | 79.4 | 76.0 | 69.0 | 65.0 | 159.1 |
| 1250 | 69.2 | 71.2 | 73.3 | 71.3 | 73.3 | 76.7 | 75.8 | 76.7 | 76.7 | 76.6 | 73.8 | 66.0 | 62.7 | 158.4 |
| 1600 | 66.4 | 70.0 | 72.0 | 70.6 | 72.4 | 74.9 | 74.2 | 75.1 | 75.8 | 74.7 | 71.5 | 63.9 | 59.3 | 158.1 |
| 2000 | 63.0 | 67.3 | 70.0 | 69.8 | 71.9 | 74.3 | 72.6 | 74.2 | 73.2 | 73.1 | 67.7 | 62.3 | 55.2 | 158.1 |
| 2500 | 63.5 | 66.8 | 68.7 | 68.2 | 69.7 | 72.4 | 71.3 | 70.2 | 70.7 | 67.9 | 63.3 | 56.5 | 47.4 | 158.1 |
| 3150 | 56.9 | 60.8 | 64.3 | 64.3 | 65.0 | 68.0 | 67.7 | 66.5 | 64.4 | 61.1 | 55.6 | 46.9 | 34.8 | 157.2 |
| 4000 | 45.0 | 52.0 | 56.6 | 57.3 | 58.7 | 60.8 | 61.5 | 58.9 | 56.4 | 51.0 | 44.4 | 34.5 | 14.8 | 156.1 |
| 5000 | 29.3 | 39.1 | 45.3 | 47.5 | 49.2 | 52.7 | 51.5 | 47.6 | 45.2 | 39.3 | 31.0 | 16.8 | | 155.5 |
| 6300 | 9.7 | 22.0 | 29.4 | 33.4 | 34.4 | 37.4 | 36.1 | 32.5 | 29.2 | 20.8 | 8.6 | | | 155.5 |
| 8000 | | 3.1 | 9.2 | 10.2 | 15.1 | 11.7 | 8.0 | | | | | | | 154.7 |
| 10000 | | | | | | | | | | | | | | 153.9 |
| 12500 | | | | | | | | | | | | | | 153.3 |
| 16000 | | | | | | | | | | | | | | 152.8 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 295.5 SQ CM (45.8 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.528 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICLE = ADH191 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 53.31 PAMB HG = 29.22 RELHUM = 64.3 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNINI = LBS XNL RPM XNH RPM V8 = 1332.5 FPS AEG = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2136.1 FPS AE18 = 23.4 SQ IN

PT = F-4108 E = XL Y T = 140 AEOU = R F = PEE RPM

UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-ZER-1409 X1409C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| FREQ | 50 | 60 | 70 | 80 | 90 | 100 | 110 | 120 | 130 | 140 | 150 | 160 | PWL |
| 50 | 90.1 | 91.2 | 89.4 | 86.2 | 85.8 | 90.4 | 91.8 | 94.0 | 93.4 | 100.5 | 101.1 | 100.8 | 92.5 137.2 |
| 63 | 94.5 | 96.0 | 98.1 | 92.4 | 94.4 | 97.1 | 96.2 | 98.9 | 98.1 | 103.1 | 102.8 | 104.5 | 98.4 141.0 |
| 80 | 96.0 | 99.8 | 95.6 | 97.2 | 101.3 | 99.0 | 98.4 | 99.6 | 99.9 | 103.0 | 103.5 | 103.5 | 88.6 141.5 |
| 100 | 94.7 | 101.7 | 97.3 | 96.8 | 98.4 | 102.0 | 100.4 | 103.3 | 101.3 | 103.8 | 104.2 | 108.6 | 93.5 144.0 |
| 125 | 91.4 | 94.2 | 96.7 | 97.0 | 99.8 | 102.2 | 100.3 | 101.2 | 101.4 | 104.8 | 111.1 | 113.6 | 99.5 146.7 |
| 160 | 89.4 | 91.0 | 93.0 | 91.8 | 93.1 | 97.0 | 100.9 | 98.8 | 102.0 | 106.1 | 111.2 | 114.1 | 104.3 146.7 |
| 200 | 93.5 | 91.8 | 94.6 | 92.9 | 95.7 | 99.8 | 101.5 | 100.9 | 105.3 | 106.9 | 112.8 | 117.0 | 107.4 148.9 |
| 250 | 92.3 | 94.6 | 96.1 | 95.1 | 97.2 | 99.3 | 100.5 | 103.4 | 106.3 | 112.9 | 118.0 | 120.5 | 110.9 152.9 |
| 315 | 93.1 | 94.6 | 94.6 | 93.7 | 96.5 | 101.4 | 102.3 | 103.7 | 107.9 | 115.2 | 119.3 | 121.5 | 113.2 154.3 |
| 400 | 95.1 | 96.1 | 96.6 | 94.9 | 97.0 | 100.6 | 104.8 | 104.7 | 108.4 | 116.9 | 121.6 | 122.3 | 114.2 155.7 |
| 500 | 95.8 | 97.1 | 97.9 | 95.9 | 98.3 | 102.6 | 102.8 | 105.7 | 109.6 | 118.7 | 123.3 | 123.3 | 115.2 157.2 |
| 630 | 96.3 | 97.1 | 98.3 | 96.6 | 98.7 | 102.8 | 103.0 | 106.4 | 109.8 | 119.2 | 123.5 | 123.5 | 116.9 157.5 |
| 800 | 98.6 | 99.1 | 98.9 | 97.4 | 100.8 | 103.4 | 104.3 | 104.3 | 112.1 | 118.2 | 124.1 | 123.8 | 117.9 157.8 |
| 1000 | 102.5 | 105.0 | 103.1 | 100.8 | 102.2 | 105.1 | 105.2 | 108.1 | 112.6 | 118.1 | 123.5 | 123.4 | 117.4 157.5 |
| 1250 | 103.2 | 107.4 | 106.5 | 103.4 | 103.8 | 106.2 | 106.1 | 109.0 | 113.0 | 117.5 | 124.2 | 121.1 | 115.5 157.2 |
| 1600 | 108.1 | 107.5 | 106.6 | 102.5 | 103.5 | 106.6 | 106.5 | 109.3 | 113.6 | 116.7 | 123.1 | 119.0 | 112.4 156.3 |
| 2000 | 108.5 | 107.6 | 107.7 | 105.1 | 104.4 | 106.1 | 106.0 | 109.9 | 114.0 | 117.3 | 122.5 | 115.8 | 110.6 155.8 |
| 2500 | 103.9 | 105.7 | 106.3 | 105.2 | 106.9 | 108.2 | 106.2 | 109.0 | 113.2 | 117.7 | 120.7 | 114.8 | 109.3 154.9 |
| 3150 | 102.2 | 104.8 | 104.8 | 102.9 | 105.7 | 109.8 | 107.4 | 110.1 | 113.4 | 116.5 | 118.3 | 112.2 | 106.3 153.7 |
| 4000 | 100.7 | 103.3 | 104.4 | 102.0 | 104.0 | 107.9 | 107.8 | 109.9 | 112.5 | 115.0 | 117.0 | 109.8 | 105.4 152.6 |
| 5000 | 98.6 | 101.6 | 103.2 | 101.4 | 103.9 | 106.6 | 107.0 | 109.8 | 111.3 | 114.2 | 115.8 | 108.6 | 103.6 151.8 |
| 6300 | 98.0 | 101.4 | 102.2 | 100.8 | 102.9 | 106.6 | 106.6 | 109.5 | 111.0 | 111.7 | 113.7 | 107.2 | 103.5 150.7 |
| 8000 | 96.1 | 99.7 | 101.2 | 100.0 | 102.1 | 105.9 | 105.1 | 108.0 | 109.4 | 109.8 | 112.0 | 106.0 | 102.6 149.6 |
| 10000 | 95.2 | 98.5 | 100.0 | 99.6 | 102.0 | 105.2 | 104.7 | 107.2 | 108.9 | 108.8 | 110.7 | 104.9 | 102.2 149.3 |
| 12500 | 93.0 | 95.2 | 98.0 | 97.7 | 100.5 | 104.3 | 103.8 | 104.5 | 106.6 | 106.7 | 107.6 | 104.5 | 100.8 148.1 |
| 16000 | 90.9 | 95.2 | 96.7 | 96.4 | 98.7 | 101.5 | 101.3 | 102.9 | 105.6 | 104.0 | 106.0 | 102.5 | 97.2 147.5 |
| 20000 | 88.2 | 92.2 | 94.1 | 94.0 | 96.3 | 98.8 | 99.4 | 99.8 | 101.5 | 101.2 | 103.9 | 100.5 | 94.7 146.5 |
| 25000 | 85.0 | 89.1 | 90.3 | 91.4 | 93.2 | 97.3 | 96.5 | 96.0 | 99.1 | 97.1 | 99.3 | 94.8 | 90.1 145.5 |
| 31500 | 80.8 | 84.9 | 87.0 | 88.6 | 89.1 | 93.2 | 92.4 | 93.3 | 95.0 | 94.3 | 97.9 | 90.8 | 84.9 145.4 |
| 40000 | 75.5 | 80.1 | 82.9 | 84.1 | 84.6 | 90.2 | 88.0 | 89.7 | 92.7 | 91.7 | 94.7 | 86.5 | 81.3 146.1 |
| 50000 | 69.5 | 73.5 | 76.9 | 77.8 | 78.9 | 84.9 | 82.6 | 84.3 | 86.8 | 86.8 | 89.6 | 81.1 | 74.9 145.1 |
| 63000 | 64.7 | 69.1 | 71.2 | 72.1 | 73.5 | 79.7 | 76.6 | 79.6 | 81.6 | 83.8 | 85.1 | 75.3 | 67.4 145.8 |
| 80000 | 61.5 | 64.5 | 65.2 | 64.5 | 66.0 | 73.7 | 71.0 | 72.6 | 76.9 | 78.7 | 78.4 | 69.8 | 60.7 146.8 |
| 0ASPL | 114.6 | 116.1 | 116.1 | 114.1 | 115.8 | 118.8 | 118.5 | 121.0 | 124.2 | 128.9 | 133.5 | 132.4 | 125.5 167.9 |
| PNL | 127.6 | 128.9 | 127.3 | 129.0 | 132.4 | 131.6 | 134.0 | 137.1 | 140.9 | 144.5 | 140.9 | 134.6 | |
| PNLT | 127.6 | 129.3 | 128.9 | 127.3 | 129.7 | 132.4 | 131.6 | 134.6 | 137.1 | 140.9 | 145.1 | 140.9 | 134.6 |
| DBA | 115.0 | 116.2 | 116.2 | 113.9 | 115.4 | 116.3 | 117.6 | 120.6 | 124.0 | 128.2 | 132.9 | 130.7 | 124.4 |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

| | | | | | | | | | | | | | | | | | |
|----------|---|--------------|--------------|---|----------|------------|---|--------------|------------|---|------------|----------------|---|-------|------------|---|----------|
| VERTICL | = | ADH197 | TEST DATE | = | 04-05-83 | LOCAT | = | C41 ANECH CH | CONFIG | = | 14 | MODEL | = | AX | FLTVEL | = | 0. FPS |
| IAPLHA | = | SB59 | IEGA | = | NO | PWL AREA | = | FULL SPHERE | TAMB F | = | 54.43 | PAMB HG | = | 29.34 | RELHUM | = | 67.2 PCT |
| WIND DIR | = | | DEG WIND VEL | = | | EXT DIST | = | 40.0 FT | EXT CONFIG | = | ARC | MIKE HT | = | | NBFR | = | |
| FNIN1 | = | LBS XNL | RPM | = | | XNH | = | RPM | V8 | = | 1492.9 FPS | AE8 | = | | 4.6 SQ IN | | |
| FNRAMB | = | LBS XNLR | RPM | = | | XNHR | = | RPM | V18 | = | 2311.7 FPS | AE18 | = | | 23.4 SQ IN | | |
| RUNPT | = | 83F-ZER-1409 | TAPE | = | | TEST PT NO | = | 1409 | NC | = | AE087 | CORR FAN SPEED | = | | RPM | | |

IDENTIFICATION - 83F-ZER-1409 X1409F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 90.1 | 91.2 | 89.4 | 86.2 | 85.8 | 90.4 | 91.8 | 94.0 | 93.4 | 100.5 | 101.1 | 100.8 | 92.5 | 137.2 |
| 63 | 94.5 | 96.0 | 98.1 | 92.4 | 94.4 | 97.1 | 96.2 | 98.9 | 98.1 | 103.1 | 102.8 | 104.5 | 98.4 | 141.0 |
| 80 | 96.0 | 99.8 | 95.6 | 95.9 | 97.2 | 101.3 | 99.0 | 98.4 | 99.6 | 99.9 | 103.0 | 103.5 | 88.6 | 141.5 |
| 100 | 94.7 | 101.7 | 97.3 | 96.8 | 98.4 | 102.0 | 100.4 | 103.3 | 101.3 | 103.8 | 104.2 | 108.6 | 93.6 | 144.0 |
| 125 | 91.4 | 94.2 | 96.7 | 97.0 | 99.8 | 102.2 | 101.2 | 101.4 | 104.8 | 111.1 | 113.6 | 99.5 | 146.7 | |
| 160 | 89.4 | 91.0 | 93.0 | 91.8 | 93.1 | 97.0 | 100.9 | 98.8 | 102.0 | 106.1 | 111.2 | 114.1 | 104.3 | 146.7 |
| 200 | 93.5 | 91.8 | 94.6 | 92.9 | 95.7 | 99.8 | 101.5 | 100.9 | 105.3 | 106.9 | 112.8 | 117.0 | 107.4 | 148.9 |
| 250 | 92.3 | 94.6 | 96.1 | 95.1 | 97.2 | 99.3 | 100.5 | 103.4 | 106.3 | 112.9 | 118.0 | 120.5 | 110.9 | 152.9 |
| 315 | 93.1 | 94.6 | 94.6 | 93.7 | 96.5 | 101.4 | 102.3 | 103.7 | 107.9 | 115.2 | 119.3 | 121.5 | 113.2 | 154.3 |
| 400 | 95.1 | 96.1 | 96.6 | 94.9 | 97.0 | 100.6 | 104.8 | 104.7 | 108.4 | 116.9 | 121.6 | 122.3 | 114.2 | 155.7 |
| 500 | 95.8 | 97.1 | 97.9 | 95.9 | 98.3 | 102.6 | 102.8 | 105.7 | 109.6 | 118.7 | 123.3 | 123.3 | 115.2 | 157.2 |
| 630 | 96.3 | 98.3 | 96.6 | 98.7 | 102.8 | 103.0 | 106.4 | 109.8 | 119.2 | 123.5 | 123.5 | 116.9 | 157.5 | |
| 800 | 96.6 | 99.1 | 98.9 | 97.4 | 100.8 | 103.4 | 104.3 | 107.4 | 112.1 | 118.2 | 124.1 | 123.8 | 117.9 | 157.8 |
| 1000 | 102.5 | 105.0 | 103.1 | 100.8 | 102.2 | 105.1 | 105.2 | 108.1 | 112.6 | 118.1 | 123.5 | 123.4 | 117.4 | 157.5 |
| 1250 | 103.2 | 107.4 | 105.5 | 103.4 | 103.8 | 106.2 | 106.1 | 109.0 | 113.0 | 117.5 | 124.2 | 121.1 | 115.5 | 157.2 |
| 1600 | 108.1 | 107.5 | 106.6 | 102.5 | 103.5 | 106.6 | 106.5 | 109.3 | 113.6 | 116.7 | 123.1 | 119.0 | 112.4 | 156.3 |
| 2000 | 108.5 | 107.6 | 107.7 | 105.1 | 104.4 | 106.1 | 106.0 | 109.9 | 114.0 | 117.3 | 122.5 | 115.8 | 110.6 | 155.8 |
| 2500 | 103.9 | 105.7 | 106.3 | 105.2 | 106.9 | 108.2 | 106.2 | 109.0 | 113.2 | 117.7 | 120.7 | 114.8 | 109.3 | 154.9 |
| 3150 | 102.2 | 104.8 | 104.8 | 102.9 | 105.7 | 109.8 | 107.4 | 110.1 | 113.4 | 116.5 | 118.3 | 112.2 | 106.3 | 153.7 |
| 4000 | 100.7 | 103.3 | 104.4 | 102.0 | 104.0 | 107.9 | 107.8 | 109.9 | 112.5 | 115.0 | 117.0 | 109.8 | 105.4 | 152.6 |
| 5000 | 98.6 | 101.6 | 103.2 | 101.4 | 103.9 | 106.6 | 107.0 | 109.8 | 111.3 | 114.2 | 115.8 | 108.6 | 103.6 | 151.8 |
| 6300 | 98.0 | 101.4 | 102.2 | 100.8 | 102.9 | 106.6 | 106.6 | 109.5 | 111.0 | 111.7 | 113.7 | 107.2 | 103.5 | 150.7 |
| 8000 | 95.1 | 99.7 | 101.2 | 100.0 | 102.1 | 105.9 | 105.1 | 108.0 | 109.4 | 109.8 | 112.0 | 106.0 | 102.6 | 149.6 |
| 10000 | 95.2 | 98.5 | 100.0 | 99.6 | 100.2 | 105.2 | 104.7 | 107.2 | 108.9 | 108.8 | 110.7 | 104.9 | 102.2 | 149.3 |
| 12500 | 93.0 | 95.2 | 98.0 | 97.7 | 100.5 | 104.3 | 103.8 | 104.5 | 106.6 | 106.7 | 107.6 | 104.5 | 100.8 | 148.1 |
| 16000 | 90.9 | 95.2 | 96.7 | 96.4 | 98.7 | 101.5 | 101.3 | 102.9 | 105.6 | 104.0 | 106.0 | 102.5 | 97.2 | 147.5 |
| 20000 | 88.2 | 92.2 | 94.1 | 94.0 | 96.3 | 98.8 | 99.4 | 99.8 | 101.5 | 101.2 | 103.9 | 100.5 | 94.7 | 146.5 |
| 25000 | 85.0 | 89.1 | 90.3 | 91.4 | 93.2 | 97.3 | 96.5 | 96.0 | 99.1 | 97.1 | 99.3 | 94.8 | 90.1 | 145.5 |
| 31500 | 80.8 | 84.9 | 87.0 | 88.6 | 89.1 | 93.2 | 92.4 | 93.3 | 95.0 | 94.3 | 97.9 | 90.8 | 84.9 | 145.4 |
| 40000 | 75.5 | 80.1 | 82.9 | 84.1 | 84.6 | 90.2 | 88.0 | 89.7 | 92.7 | 91.7 | 94.7 | 86.5 | 81.3 | 146.1 |
| 50000 | 69.5 | 73.5 | 76.9 | 77.8 | 78.9 | 84.9 | 82.6 | 84.3 | 86.8 | 86.8 | 89.6 | 81.1 | 74.9 | 145.1 |
| 63000 | 64.7 | 69.1 | 71.2 | 72.1 | 73.5 | 79.7 | 76.6 | 79.6 | 81.6 | 83.8 | 85.1 | 75.3 | 67.4 | 145.8 |
| 80000 | 61.5 | 64.5 | 65.2 | 64.5 | 66.0 | 73.7 | 71.0 | 72.6 | 76.9 | 78.7 | 78.4 | 69.8 | 60.7 | 146.8 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICL = ADH197 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO MPH PWL AREA = FULL SPHERE TAMB F = 54.43 PAMB HQ = 29.34 RELHUM = 67.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1492.9 FPS AE6 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2311.7 FPS AE18 = 23.4 SQ IN

T = -ZE 09 F X T N 140 TEL T N 140 RPM

IDENTIFICATION - 83F-ZER-1409 X14091

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 67.7 | 71.5 | 74.1 | 73.8 | 76.3 | 78.6 | 79.6 | 82.1 | 84.3 | 89.8 | 93.4 | 93.7 | 80.7 | 167.8 |
| 63 | 68.5 | 71.5 | 72.6 | 72.4 | 75.6 | 80.6 | 81.4 | 82.4 | 85.9 | 92.1 | 94.7 | 94.7 | 83.0 | 169.1 |
| 80 | 70.4 | 73.0 | 74.6 | 73.6 | 76.1 | 79.8 | 83.8 | 83.3 | 86.3 | 93.8 | 96.9 | 95.3 | 83.9 | 170.6 |
| 100 | 71.1 | 73.9 | 75.8 | 74.5 | 77.3 | 81.8 | 81.8 | 84.3 | 87.5 | 95.5 | 98.6 | 96.3 | 84.7 | 172.0 |
| 125 | 71.4 | 73.8 | 76.1 | 75.2 | 77.7 | 81.9 | 81.9 | 84.9 | 87.6 | 95.9 | 98.7 | 96.3 | 86.2 | 172.3 |
| 160 | 74.5 | 75.7 | 76.6 | 75.8 | 79.6 | 82.4 | 83.1 | 85.8 | 89.8 | 94.8 | 99.0 | 96.4 | 86.9 | 172.7 |
| 200 | 77.2 | 81.4 | 80.5 | 79.1 | 80.9 | 83.9 | 83.9 | 86.3 | 90.0 | 94.5 | 98.2 | 95.7 | 85.8 | 172.4 |
| 250 | 77.5 | 83.5 | 83.7 | 81.4 | 82.3 | 84.8 | 84.5 | 87.0 | 90.2 | 93.6 | 98.5 | 92.9 | 83.3 | 172.1 |
| 315 | 82.0 | 83.1 | 83.5 | 80.2 | 81.7 | 84.9 | 84.6 | 87.0 | 90.5 | 92.4 | 97.0 | 90.3 | 79.4 | 171.1 |
| 400 | 81.9 | 82.8 | 84.2 | 82.5 | 82.3 | 84.0 | 83.9 | 87.2 | 90.5 | 92.5 | 95.9 | 86.4 | 76.5 | 170.6 |
| 500 | 76.7 | 80.5 | 82.4 | 82.2 | 84.4 | 85.9 | 83.7 | 86.0 | 89.3 | 92.5 | 93.5 | 84.6 | 74.2 | 169.7 |
| 630 | 74.5 | 79.1 | 80.5 | 79.5 | 82.8 | 87.0 | 84.5 | 86.7 | 89.1 | 90.8 | 90.5 | 81.3 | 70.1 | 168.5 |
| 800 | 72.3 | 77.0 | 79.6 | 78.3 | 80.7 | 84.9 | 84.6 | 86.1 | 87.8 | 88.8 | 88.6 | 78.0 | 67.8 | 167.4 |
| 1000 | 69.5 | 74.9 | 78.0 | 77.2 | 80.3 | 83.2 | 83.4 | 85.6 | 86.1 | 87.5 | 86.7 | 75.9 | 64.6 | 166.6 |
| 1250 | 68.1 | 74.0 | 76.4 | 76.1 | 78.8 | 82.7 | 82.5 | 84.8 | 85.3 | 84.3 | 83.8 | 73.4 | 62.8 | 165.6 |
| 1600 | 64.9 | 71.2 | 74.6 | 74.5 | 77.3 | 81.3 | 80.3 | 82.5 | 82.8 | 81.3 | 80.8 | 70.4 | 59.1 | 164.4 |
| 2000 | 62.2 | 68.7 | 72.2 | 73.1 | 76.2 | 79.7 | 79.0 | 80.7 | 81.1 | 79.0 | 77.7 | 66.8 | 54.9 | 164.1 |
| 2500 | 57.3 | 63.2 | 68.4 | 69.6 | 73.2 | 77.3 | 76.5 | 76.4 | 77.0 | 74.7 | 71.9 | 62.7 | 47.6 | 162.9 |
| 3150 | 50.9 | 59.8 | 64.2 | 65.8 | 69.1 | 72.1 | 71.6 | 72.3 | 73.1 | 68.6 | 66.0 | 54.7 | 34.7 | 162.4 |
| 4000 | 40.5 | 50.6 | 56.4 | 58.7 | 62.3 | 65.2 | 64.5 | 64.5 | 63.8 | 59.6 | 56.2 | 42.4 | 16.3 | 161.4 |
| 5000 | 25.9 | 38.3 | 44.8 | 49.0 | 52.6 | 57.2 | 55.8 | 53.7 | 53.5 | 46.4 | 40.2 | 21.4 | | 160.4 |
| 6300 | 2.7 | 18.7 | 28.1 | 34.2 | 37.1 | 42.0 | 40.5 | 38.9 | 36.1 | 28.1 | 19.8 | | | 160.3 |
| 8000 | | 1.3 | 5.1 | 13.2 | 19.9 | 16.6 | 14.7 | 11.1 | | | | | | 161.0 |
| 10000 | | | | | | | | | | | | | | 160.0 |
| 12500 | | | | | | | | | | | | | | 160.7 |
| 16000 | | | | | | | | | | | | | | 161.7 |

ORIGINAL PAGE IS
OF POOR QUALITY

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |
| GRSPL | 87.9 | 90.8 | 92.0 | 90.6 | 92.6 | 95.8 | 95.4 | 97.6 | 100.4 | 104.6 | 107.8 | 104.7 | 94.0 | 182.6 |
| PNL | 93.1 | 96.2 | 98.2 | 97.2 | 99.5 | 102.9 | 102.4 | 104.2 | 106.2 | 108.3 | 110.6 | 105.6 | 94.9 | |
| PNLT | 93.1 | 96.2 | 98.7 | 97.7 | 99.5 | 102.9 | 102.4 | 104.7 | 106.2 | 108.3 | 110.8 | 105.6 | 94.9 | |
| DBA | 82.5 | 85.9 | 87.8 | 86.8 | 89.2 | 92.6 | 91.8 | 93.9 | 95.6 | 97.2 | 99.0 | 92.3 | 82.2 | |

MODEL AREA = 295.5 SQ CM (45.8 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.528 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICL = ADH197 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO MPH = RPM XNHR = RPM V8 = 1492.9 FPS AE8 = 4.6 SQ IN
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL TAMB F = 54.43 PAMB HG = 29.34 MIKE HT = NBFR = 67.2 PCT

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1492.9 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2311.7 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1409 TAPE = X14091 TEST PT NO = 1409 NC = AE087 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1410 X1410C
BACKGROUND 83F-400-1400 X14000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 94.1 | 93.9 | 90.9 | 87.7 | 85.6 | 88.9 | 87.8 | 91.7 | 93.2 | 93.5 | 100.9 | 101.6 | 88.5 | 136.3 |
| 63 | 95.3 | 97.3 | 99.1 | 93.9 | 92.9 | 95.3 | 96.4 | 96.1 | 97.6 | 93.9 | 102.5 | 104.7 | 93.6 | 139.9 |
| 80 | 95.6 | 99.8 | 95.3 | 95.9 | 96.7 | 100.8 | 98.5 | 98.1 | 98.3 | 98.2 | 102.8 | 102.0 | 89.1 | 140.8 |
| 100 | 94.7 | 100.0 | 95.0 | 94.3 | 96.6 | 100.3 | 99.4 | 101.3 | 99.5 | 100.8 | 102.2 | 107.1 | 92.6 | 142.2 |
| 125 | 91.6 | 93.4 | 95.4 | 95.5 | 98.1 | 100.7 | 99.1 | 99.5 | 98.7 | 101.8 | 108.1 | 112.1 | 97.5 | 144.6 |
| 160 | 90.4 | 87.2 | 91.5 | 90.0 | 91.4 | 95.5 | 97.6 | 96.3 | 98.2 | 102.8 | 108.7 | 111.9 | 102.3 | 144.2 |
| 200 | 90.0 | 90.3 | 90.6 | 89.1 | 92.2 | 96.3 | 96.7 | 98.1 | 102.3 | 102.9 | 109.5 | 115.2 | 105.6 | 146.5 |
| 250 | 87.8 | 91.1 | 91.8 | 91.4 | 93.2 | 96.3 | 97.7 | 99.9 | 103.1 | 108.4 | 115.3 | 118.5 | 108.1 | 150.3 |
| 315 | 88.8 | 90.9 | 91.4 | 89.4 | 92.8 | 97.1 | 98.5 | 99.9 | 103.6 | 111.0 | 116.3 | 119.0 | 109.9 | 151.3 |
| 400 | 90.3 | 91.1 | 92.9 | 90.2 | 93.5 | 96.4 | 98.8 | 100.2 | 103.9 | 112.4 | 118.6 | 120.0 | 110.2 | 152.7 |
| 500 | 90.1 | 91.4 | 93.9 | 91.9 | 94.0 | 98.1 | 98.5 | 101.2 | 105.6 | 115.5 | 120.1 | 120.5 | 109.2 | 154.0 |
| 630 | 91.3 | 92.3 | 94.1 | 91.6 | 94.5 | 98.1 | 99.5 | 102.1 | 105.8 | 115.2 | 120.0 | 119.2 | 107.4 | 153.6 |
| 800 | 93.3 | 93.4 | 94.4 | 93.2 | 95.8 | 98.9 | 99.5 | 103.9 | 108.1 | 115.2 | 120.1 | 118.0 | 106.2 | 153.3 |
| 1000 | 96.3 | 96.5 | 97.1 | 94.6 | 96.7 | 100.1 | 100.4 | 103.8 | 108.3 | 114.9 | 118.6 | 116.7 | 104.9 | 152.3 |
| 1250 | 101.2 | 102.2 | 100.5 | 97.6 | 98.3 | 101.2 | 101.3 | 104.5 | 109.7 | 114.5 | 118.9 | 113.3 | 103.5 | 152.1 |
| 1600 | 104.3 | 104.0 | 105.1 | 99.5 | 99.3 | 101.9 | 103.0 | 106.0 | 110.4 | 114.0 | 118.8 | 112.0 | 102.4 | 152.1 |
| 2000 | 102.0 | 102.6 | 104.5 | 103.1 | 102.9 | 102.8 | 102.5 | 106.4 | 110.0 | 115.0 | 117.0 | 110.1 | 102.1 | 151.5 |
| 2500 | 99.1 | 99.9 | 101.5 | 101.0 | 104.1 | 106.7 | 103.7 | 106.0 | 109.4 | 115.2 | 116.7 | 109.3 | 102.3 | 151.4 |
| 3150 | 99.0 | 99.8 | 100.6 | 97.9 | 100.4 | 106.3 | 105.6 | 106.9 | 109.7 | 114.5 | 114.5 | 107.9 | 100.1 | 150.4 |
| 4000 | 97.2 | 98.3 | 100.1 | 97.8 | 99.5 | 103.4 | 104.6 | 107.7 | 109.0 | 112.7 | 104.8 | 99.1 | 149.1 | 149.1 |
| 5000 | 96.9 | 97.1 | 99.0 | 96.7 | 99.2 | 102.6 | 103.0 | 106.9 | 108.4 | 112.0 | 110.8 | 103.6 | 97.1 | 148.2 |
| 6300 | 96.3 | 97.9 | 98.7 | 96.8 | 98.6 | 102.6 | 102.9 | 106.6 | 108.6 | 110.0 | 108.5 | 100.5 | 95.5 | 147.3 |
| 8000 | 95.4 | 97.2 | 98.5 | 97.0 | 97.9 | 101.2 | 101.4 | 105.2 | 107.2 | 107.6 | 106.0 | 98.5 | 93.8 | 146.0 |
| 10000 | 95.5 | 97.1 | 98.6 | 97.7 | 98.0 | 101.5 | 101.8 | 105.0 | 105.9 | 106.1 | 104.7 | 97.7 | 92.5 | 145.9 |
| 12500 | 93.5 | 94.0 | 95.8 | 96.0 | 97.3 | 100.6 | 100.1 | 101.9 | 103.9 | 104.5 | 102.1 | 97.3 | 91.6 | 144.7 |
| 15000 | 92.5 | 94.0 | 95.2 | 95.0 | 95.8 | 98.8 | 98.1 | 99.6 | 102.1 | 101.3 | 100.1 | 95.3 | 89.5 | 144.1 |
| 20000 | 89.0 | 91.5 | 92.8 | 93.3 | 93.6 | 96.1 | 96.4 | 96.8 | 98.5 | 97.5 | 96.6 | 93.5 | 87.7 | 142.9 |
| 25000 | 85.2 | 88.0 | 89.6 | 90.1 | 90.2 | 95.0 | 94.2 | 93.3 | 94.8 | 93.6 | 92.5 | 89.7 | 83.1 | 142.2 |
| 31500 | 81.4 | 84.3 | 86.3 | 87.7 | 87.9 | 91.0 | 90.5 | 89.9 | 90.8 | 89.6 | 89.0 | 85.4 | 78.5 | 141.8 |
| 40000 | 76.5 | 79.8 | 81.8 | 82.5 | 82.8 | 87.9 | 86.7 | 86.3 | 87.6 | 87.0 | 84.8 | 80.2 | 73.5 | 142.0 |
| 50000 | 70.3 | 73.2 | 75.3 | 76.0 | 76.9 | 82.7 | 80.8 | 80.5 | 80.7 | 80.9 | 79.1 | 74.1 | 67.2 | 140.5 |
| 63000 | 64.3 | 68.1 | 69.6 | 71.2 | 71.3 | 77.3 | 73.9 | 74.9 | 76.1 | 75.7 | 72.8 | 67.6 | 60.5 | 140.3 |
| 80000 | 60.2 | 63.0 | 63.3 | 63.1 | 63.6 | 70.9 | 67.4 | 67.9 | 68.5 | 71.1 | 65.2 | 59.5 | 52.7 | 140.5 |
| QASPL | 111.0 | 112.0 | 112.7 | 110.7 | 112.1 | 115.3 | 115.2 | 117.8 | 120.7 | 125.9 | 129.5 | 128.5 | 118.1 | 164.1 |
| PWL | 123.2 | 124.0 | 125.2 | 123.4 | 125.6 | 128.8 | 128.7 | 131.1 | 133.6 | 138.3 | 140.4 | 136.5 | 127.5 | |
| PWLT | 123.2 | 124.6 | 125.2 | 124.0 | 126.3 | 128.8 | 128.7 | 131.1 | 133.6 | 138.3 | 140.4 | 136.5 | 127.5 | |
| DBA | 110.8 | 111.4 | 112.4 | 110.1 | 111.6 | 114.7 | 114.4 | 117.4 | 120.5 | 125.5 | 128.5 | 125.5 | 115.3 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VERTICAL = ADH192 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FTLVEL = 400. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 52.37 PAMB HG = 29.36 RELHUM = 68.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNIN1 = LBS XNL RPM XNH RPM V8 = 1553.6 FPS AEG = 4.6 SQ IN
 FNRAMB = LBS XNL RPM XNHR RPM V18 = 2318.7 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1410 TAPE = X1410C TEST PT NO = 1410 NIC = AEO67 -5R FAN SPEED = RPM

IDENTIFICATION - 83F-400-1410 X1410F

ANGLES MEASURED FROM INLET, DEGREES

FREQ PWL
50 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160.
63
80
100
125
160
200

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 95.7 | 97.5 | 96.8 | 94.7 | 94.6 | 96.3 | 95.6 | 96.3 | 101.6 | 108.4 | 113.6 | 116.9 | 109.8 | 149.1 |
| 315 | 95.7 | 97.5 | 96.8 | 94.7 | 94.6 | 97.3 | 97.7 | 98.1 | 101.9 | 110.0 | 116.1 | 118.6 | 111.5 | 150.9 |
| 400 | 96.5 | 97.3 | 96.3 | 92.8 | 95.3 | 96.6 | 97.9 | 98.3 | 103.7 | 113.1 | 117.8 | 119.8 | 112.1 | 152.5 |
| 500 | 97.5 | 97.1 | 97.6 | 93.4 | 95.9 | 98.5 | 97.6 | 99.2 | 104.1 | 113.6 | 118.3 | 119.6 | 112.4 | 152.7 |
| 630 | 97.8 | 97.8 | 98.9 | 95.4 | 98.5 | 98.6 | 100.1 | 106.9 | 113.8 | 119.2 | 119.9 | 114.2 | 153.4 | |
| 800 | 99.0 | 98.7 | 99.1 | 95.1 | 97.8 | 99.4 | 98.8 | 102.1 | 107.8 | 114.3 | 118.9 | 120.2 | 115.6 | 153.6 |
| 1000 | 100.6 | 99.5 | 99.3 | 96.7 | 98.4 | 100.7 | 100.0 | 102.4 | 108.9 | 113.6 | 118.7 | 116.6 | 114.2 | 152.5 |
| 1250 | 101.6 | 101.3 | 100.9 | 97.4 | 100.1 | 102.0 | 100.8 | 102.8 | 109.7 | 113.1 | 118.7 | 115.3 | 113.3 | 152.2 |
| 1600 | 107.8 | 107.6 | 104.6 | 100.5 | 101.2 | 102.9 | 102.6 | 104.5 | 109.5 | 114.4 | 117.1 | 113.7 | 113.3 | 152.0 |
| 2000 | 111.2 | 109.7 | 109.6 | 102.6 | 105.1 | 104.1 | 102.5 | 105.1 | 109.4 | 115.0 | 117.3 | 113.4 | 113.9 | 152.9 |
| 2500 | 106.9 | 106.9 | 108.1 | 106.0 | 107.1 | 108.4 | 103.9 | 105.1 | 110.0 | 114.7 | 115.4 | 112.3 | 112.1 | 152.1 |
| 3150 | 106.8 | 106.6 | 107.0 | 105.2 | 104.3 | 108.3 | 105.3 | 106.3 | 110.0 | 113.4 | 113.9 | 109.4 | 111.2 | 151.3 |
| 4000 | 109.4 | 108.7 | 107.9 | 103.4 | 103.2 | 106.0 | 105.8 | 107.7 | 109.2 | 112.5 | 111.8 | 107.8 | 108.8 | 150.7 |
| 5000 | 104.7 | 105.0 | 105.9 | 102.5 | 103.2 | 105.6 | 104.5 | 106.9 | 109.7 | 110.6 | 109.6 | 104.9 | 107.4 | 149.3 |
| 6300 | 104.3 | 103.8 | 104.8 | 101.5 | 102.7 | 105.6 | 104.6 | 106.8 | 108.8 | 108.7 | 107.7 | 103.6 | 106.6 | 148.6 |
| 8000 | 103.6 | 104.5 | 104.4 | 101.5 | 101.9 | 104.2 | 103.4 | 105.8 | 108.0 | 107.8 | 107.0 | 103.4 | 106.0 | 148.2 |
| 10000 | 102.5 | 103.6 | 104.0 | 101.5 | 102.1 | 104.5 | 104.0 | 105.9 | 106.6 | 106.9 | 105.1 | 103.8 | 105.6 | 148.2 |
| 12500 | 102.3 | 103.2 | 103.8 | 101.9 | 101.3 | 103.6 | 102.3 | 102.9 | 105.5 | 104.5 | 104.0 | 102.6 | 104.3 | 147.8 |
| 16000 | 99.9 | 99.6 | 100.5 | 99.7 | 99.8 | 101.8 | 100.4 | 100.7 | 103.1 | 102.0 | 101.7 | 101.8 | 103.1 | 147.0 |
| 20000 | 98.4 | 99.2 | 99.5 | 98.3 | 97.6 | 99.1 | 98.8 | 98.6 | 100.3 | 99.1 | 98.7 | 99.0 | 99.4 | 146.5 |
| 25000 | 94.3 | 96.0 | 96.5 | 96.0 | 94.8 | 98.0 | 96.6 | 95.2 | 97.0 | 95.9 | 95.9 | 96.1 | 146.1 | |
| 31500 | 92.5 | 94.1 | 94.2 | 93.2 | 92.5 | 94.0 | 93.0 | 91.7 | 94.2 | 93.6 | 92.2 | 91.3 | 92.2 | 146.3 |
| 40000 | 87.9 | 89.5 | 89.5 | 87.4 | 89.9 | 87.4 | 89.1 | 87.9 | 88.2 | 87.2 | 85.8 | 86.5 | 145.9 | |
| 50000 | 82.6 | 84.6 | 85.2 | 84.3 | 81.5 | 85.7 | 83.2 | 82.2 | 83.4 | 82.7 | 80.6 | 78.9 | 79.6 | 144.8 |
| 63000 | 75.4 | 77.1 | 77.7 | 76.9 | 75.9 | 80.3 | 76.0 | 76.0 | 76.6 | 78.7 | 73.1 | 70.4 | 70.5 | 143.7 |
| 80000 | 67.9 | 70.5 | 70.6 | 68.2 | 73.9 | 69.3 | 68.6 | 66.8 | 68.9 | 63.3 | 60.6 | 60.7 | 143.2 | |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| DASPL | 117.6 | 117.2 | 114.0 | 114.6 | 116.7 | 115.4 | 117.0 | 120.7 | 125.0 | 128.5 | 124.4 | 164.4 | | |
| PNL | 130.4 | 130.1 | 129.7 | 126.6 | 127.5 | 129.6 | 128.1 | 129.7 | 133.0 | 136.9 | 136.6 | 136.4 | 135.2 | |
| PNLT | 132.5 | 130.1 | 130.8 | 126.6 | 127.5 | 129.6 | 128.1 | 129.7 | 133.0 | 136.9 | 138.6 | 136.4 | 135.2 | |
| DBA | 190.9 | 193.1 | 193.4 | 193.1 | 191.0 | 196.1 | 191.9 | 191.4 | 191.0 | 192.6 | 187.8 | 185.5 | 185.9 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICL = ADH192 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 52.37 PAMB HG = 29.35 RELHUM = 68.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNIN1 = LBS XNL RPM XNH RPM V8 = 1553.6 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2318.7 FPS AE18 = 23.4 SQ IN
 RUNPT = 83F-400-1410 TAPE = X1410F TEST PT NO = 1410 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1410 X14101

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 71.1 | 74.5 | 74.8 | 73.4 | 74.0 | 75.6 | 74.9 | 75.0 | 79.6 | 85.3 | 89.0 | 90.1 | 79.7 | 164.0 |
| 63 | 71.1 | 74.4 | 74.7 | 73.4 | 73.7 | 76.6 | 76.8 | 76.8 | 79.9 | 86.9 | 91.4 | 91.7 | 81.3 | 165.8 |
| 80 | 71.8 | 74.1 | 74.3 | 71.5 | 74.4 | 75.8 | 77.0 | 77.0 | 81.6 | 89.9 | 93.1 | 92.9 | 81.8 | 167.3 |
| 100 | 72.7 | 73.9 | 75.5 | 72.1 | 75.0 | 77.6 | 76.6 | 77.8 | 82.0 | 90.4 | 93.5 | 92.6 | 82.0 | 167.5 |
| 125 | 72.9 | 74.5 | 76.7 | 73.9 | 75.4 | 77.6 | 77.6 | 78.7 | 84.7 | 90.5 | 94.3 | 92.8 | 83.5 | 168.3 |
| 160 | 73.9 | 75.3 | 76.8 | 73.5 | 76.6 | 78.4 | 77.6 | 80.5 | 85.5 | 90.9 | 93.8 | 92.8 | 84.5 | 168.5 |
| 200 | 75.3 | 76.9 | 76.8 | 74.9 | 77.1 | 79.5 | 78.6 | 80.6 | 86.4 | 89.9 | 93.4 | 88.9 | 82.7 | 167.3 |
| 250 | 76.0 | 77.3 | 78.1 | 75.4 | 78.6 | 80.6 | 79.3 | 80.8 | 86.9 | 89.1 | 93.0 | 87.1 | 81.1 | 167.0 |
| 315 | 81.7 | 83.3 | 81.5 | 78.2 | 79.4 | 81.2 | 80.8 | 82.2 | 86.4 | 90.1 | 91.0 | 85.0 | 80.2 | 166.9 |
| 400 | 84.6 | 84.9 | 86.1 | 80.0 | 82.9 | 82.1 | 80.3 | 82.4 | 85.9 | 90.3 | 90.6 | 83.9 | 79.9 | 167.7 |
| 500 | 79.7 | 81.7 | 84.3 | 83.0 | 84.5 | 86.0 | 81.4 | 82.1 | 86.1 | 89.5 | 88.2 | 82.1 | 77.0 | 167.0 |
| 630 | 79.0 | 80.9 | 82.7 | 81.8 | 81.4 | 85.6 | 83.4 | 82.9 | 85.7 | 87.7 | 86.2 | 78.5 | 75.0 | 165.1 |
| 800 | 81.0 | 82.5 | 83.1 | 79.6 | 79.9 | 82.9 | 82.6 | 83.9 | 84.5 | 86.3 | 83.4 | 76.1 | 71.2 | 165.5 |
| 1000 | 75.7 | 78.2 | 80.7 | 78.3 | 79.6 | 82.2 | 80.9 | 82.7 | 84.5 | 83.9 | 80.6 | 72.2 | 68.5 | 164.1 |
| 1250 | 74.4 | 76.4 | 79.1 | 76.8 | 78.6 | 81.7 | 80.5 | 82.1 | 83.0 | 81.3 | 77.9 | 69.8 | 65.9 | 163.4 |
| 1600 | 72.4 | 76.0 | 77.8 | 76.0 | 77.1 | 79.6 | 78.6 | 80.4 | 81.4 | 79.4 | 75.8 | 67.8 | 62.5 | 163.0 |
| 2000 | 68.5 | 73.8 | 76.2 | 75.0 | 76.3 | 79.0 | 78.2 | 79.4 | 78.8 | 77.0 | 72.2 | 65.8 | 58.4 | 163.1 |
| 2500 | 66.6 | 71.2 | 74.2 | 73.8 | 74.1 | 76.6 | 75.1 | 74.8 | 75.9 | 72.5 | 68.3 | 60.9 | 51.2 | 162.7 |
| 3150 | 59.8 | 64.2 | 68.0 | 69.1 | 70.2 | 72.4 | 70.7 | 70.1 | 70.6 | 66.5 | 61.7 | 54.0 | 40.5 | 161.8 |
| 4000 | 50.7 | 57.7 | 61.8 | 63.0 | 63.6 | 65.5 | 64.8 | 63.3 | 62.6 | 57.5 | 51.0 | 40.9 | 21.0 | 161.4 |
| 5000 | 35.2 | 45.3 | 51.0 | 53.7 | 54.1 | 57.9 | 56.0 | 52.8 | 51.5 | 45.2 | 36.9 | 22.3 | | 161.0 |
| 6300 | 14.4 | 27.9 | 35.3 | 38.8 | 40.6 | 42.8 | 41.0 | 37.3 | 35.4 | 27.4 | 14.1 | | | 161.1 |
| 8000 | | 8.5 | 14.9 | 15.9 | 20.6 | 17.7 | 13.0 | 6.4 | | | | | | 160.7 |
| 10000 | | | | | | | | | | | | | | 159.7 |
| 12500 | | | | | | | | | | | | | | 158.6 |
| 16000 | | | | | | | | | | | | | | 158.0 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

GASPL 90.0 91.5 92.7 90.1 91.5 93.6 92.1 93.3 96.7 100.6 103.0 100.9 92.2 179.3
 PNL 96.6 98.3 99.9 97.8 99.0 101.4 100.2 101.2 103.0 105.3 105.6 101.5 93.9
 PNLT 97.8 98.3 100.5 97.8 99.7 101.4 100.2 101.2 103.7 105.3 105.6 101.5 93.9
 DBA 86.5 88.3 89.9 87.7 88.8 91.3 89.7 90.9 92.7 94.2 93.7 88.2 82.6

MODEL AREA = 295.5 SQ CM (45.8 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.528 FREQ SHIFT = -7
 NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS9-22137

VEHICLE = ADH192 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CNFIG = 14 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO MPH = PWL AREA = FULL SPHERE TAMB F = 52.37 PAMB HG = 29.35 RELHUM = 68.1 PCT
 WIND DIR = DEG WIND VEL = EXT DIST = 2400.0 FT EXT CNFIG = SL MIKE HT = NBFR =

FNINI = LBS XNL = RPM = V8 = 1553.6 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM = V18 = 2318.7 FPS AE18 = 23.4 SQ IN

PT 2-41 110 5 X 1 141 R T PEE RPM

DATPROC - FLTRAN UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-ZER-1411 BACKGROUND X1411C

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 91.1 | 91.4 | 91.4 | 86.5 | 87.1 | 88.7 | 93.6 | 93.7 | 94.9 | 95.2 | 100.9 | 101.6 | 91.5 | 136.8 |
| 63 | 96.5 | 97.8 | 100.1 | 94.4 | 96.2 | 97.6 | 99.7 | 96.1 | 99.6 | 97.4 | 103.3 | 103.7 | 93.9 | 141.0 |
| 80 | 97.5 | 100.6 | 97.1 | 97.1 | 98.5 | 102.3 | 100.2 | 99.1 | 101.1 | 100.9 | 104.5 | 104.7 | 90.1 | 142.7 |
| 100 | 96.7 | 103.5 | 98.8 | 98.3 | 99.6 | 103.5 | 102.9 | 104.8 | 102.8 | 105.6 | 105.7 | 110.4 | 95.8 | 145.7 |
| 125 | 93.4 | 94.9 | 98.4 | 98.5 | 101.1 | 102.9 | 102.8 | 102.2 | 101.9 | 105.5 | 112.1 | 115.3 | 101.2 | 148.0 |
| 160 | 91.7 | 92.7 | 94.5 | 93.3 | 94.6 | 98.7 | 106.6 | 101.5 | 103.2 | 107.6 | 112.7 | 115.9 | 106.5 | 148.6 |
| 200 | 94.3 | 94.6 | 95.6 | 94.9 | 97.7 | 101.6 | 104.2 | 102.9 | 107.1 | 108.4 | 114.3 | 119.0 | 109.4 | 150.8 |
| 250 | 94.0 | 96.8 | 97.1 | 96.6 | 98.5 | 100.6 | 102.5 | 105.6 | 108.6 | 113.7 | 119.5 | 122.5 | 112.9 | 154.6 |
| 315 | 95.6 | 96.4 | 97.1 | 96.2 | 97.8 | 101.9 | 104.5 | 105.9 | 110.1 | 116.5 | 121.3 | 123.5 | 115.4 | 156.2 |
| 400 | 96.6 | 97.5 | 97.9 | 95.9 | 98.8 | 101.6 | 106.0 | 105.2 | 110.4 | 118.2 | 122.8 | 124.5 | 116.2 | 157.4 |
| 500 | 97.3 | 98.4 | 99.4 | 97.2 | 99.5 | 103.1 | 104.5 | 107.2 | 111.9 | 120.2 | 124.3 | 125.3 | 116.9 | 158.7 |
| 630 | 98.3 | 98.8 | 99.3 | 97.9 | 100.5 | 103.1 | 104.5 | 107.9 | 111.8 | 121.2 | 125.3 | 125.0 | 118.6 | 159.2 |
| 800 | 102.1 | 100.6 | 100.6 | 99.4 | 101.8 | 103.6 | 105.3 | 108.9 | 113.9 | 120.7 | 126.3 | 124.8 | 118.7 | 159.6 |
| 1000 | 104.0 | 105.8 | 104.6 | 101.6 | 103.7 | 105.8 | 105.9 | 109.6 | 114.3 | 120.6 | 126.3 | 124.2 | 117.4 | 159.5 |
| 1250 | 103.9 | 107.7 | 107.2 | 104.6 | 105.1 | 107.0 | 107.1 | 110.3 | 115.5 | 120.0 | 126.2 | 121.3 | 115.5 | 158.9 |
| 1600 | 103.8 | 104.2 | 105.4 | 103.0 | 105.0 | 107.4 | 107.4 | 111.5 | 115.6 | 119.5 | 125.3 | 119.5 | 113.7 | 158.1 |
| 2000 | 103.8 | 104.8 | 105.2 | 102.6 | 104.2 | 107.1 | 107.8 | 111.4 | 115.7 | 120.0 | 123.3 | 117.1 | 111.6 | 157.0 |
| 2500 | 103.4 | 104.9 | 104.8 | 103.2 | 104.4 | 107.2 | 107.9 | 110.8 | 114.9 | 120.9 | 120.7 | 115.5 | 111.0 | 156.1 |
| 3150 | 103.5 | 104.6 | 105.8 | 102.9 | 104.2 | 107.3 | 107.9 | 111.6 | 115.2 | 118.8 | 119.5 | 113.9 | 108.8 | 155.0 |
| 4000 | 100.9 | 103.5 | 105.4 | 103.5 | 105.5 | 106.9 | 107.8 | 111.6 | 114.3 | 117.5 | 118.2 | 111.8 | 107.1 | 154.1 |
| 5000 | 99.1 | 101.9 | 104.0 | 102.1 | 105.2 | 107.4 | 107.5 | 110.8 | 113.1 | 116.7 | 116.5 | 111.1 | 105.8 | 153.2 |
| 6300 | 97.7 | 101.9 | 103.0 | 101.3 | 104.1 | 107.8 | 108.1 | 110.8 | 112.8 | 115.2 | 115.0 | 109.5 | 105.5 | 152.6 |
| 8000 | 96.3 | 100.2 | 101.5 | 100.7 | 103.1 | 105.9 | 106.9 | 109.0 | 111.2 | 113.3 | 113.5 | 108.7 | 105.6 | 151.4 |
| 10000 | 96.2 | 98.8 | 101.1 | 100.4 | 102.5 | 106.0 | 106.5 | 109.0 | 110.7 | 112.1 | 113.2 | 107.9 | 104.9 | 151.4 |
| 12500 | 94.2 | 96.7 | 99.3 | 99.2 | 101.8 | 105.3 | 105.6 | 106.8 | 109.1 | 110.4 | 110.3 | 106.8 | 103.6 | 150.5 |
| 16000 | 91.9 | 95.7 | 97.9 | 98.0 | 100.3 | 103.7 | 103.8 | 105.5 | 107.8 | 108.3 | 108.3 | 104.0 | 101.0 | 150.1 |
| 20000 | 89.0 | 92.9 | 94.8 | 95.5 | 97.8 | 100.5 | 101.9 | 102.3 | 104.7 | 106.2 | 105.4 | 101.5 | 98.4 | 149.1 |
| 25000 | 84.9 | 89.5 | 91.6 | 92.6 | 93.9 | 98.8 | 98.7 | 98.8 | 101.6 | 100.4 | 98.1 | 97.0 | 92.3 | 147.4 |
| 31500 | 81.2 | 85.1 | 87.9 | 89.5 | 90.5 | 94.6 | 95.1 | 95.7 | 98.1 | 97.0 | 94.8 | 92.9 | 88.1 | 147.0 |
| 40000 | 75.9 | 81.2 | 83.7 | 85.2 | 85.4 | 91.1 | 90.1 | 91.5 | 95.5 | 94.7 | 91.8 | 88.6 | 84.2 | 147.6 |
| 50000 | 70.0 | 74.8 | 77.6 | 79.1 | 79.9 | 86.4 | 85.4 | 86.8 | 90.0 | 89.8 | 87.2 | 83.6 | 77.9 | 146.9 |
| 63000 | 64.7 | 69.3 | 72.1 | 73.1 | 75.2 | 81.2 | 79.3 | 81.8 | 86.5 | 86.7 | 82.8 | 79.3 | 72.2 | 146.0 |
| 80000 | 60.7 | 64.1 | 65.6 | 65.6 | 67.6 | 74.9 | 73.1 | 75.2 | 81.0 | 82.3 | 77.0 | 73.5 | 66.1 | 149.3 |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|-------------------|
| VEHICLE = ADH195 | TEST DATE = 04-05-83 | LOCAT = C41 ANECH CH | CONFIG = 14 | MODEL = AX | FLTVEL = 0. FPS |
| IAPLHA = SB59 | LEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 53.44 | PAMB HG = 29.33 | RELHJM = 68.0 PCT |
| WIND DIR = | DEG WIND VEL = | MPH = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNINT = | LBS XNL = | RPM = | XNH = | V8 = 1552.2 FPS | AE8 = 4.6 SQ IN |
| FNRAMB = | LBS XNLR = | RPM = | XNHR = | V18 = 2362.9 FPS | AE18 = 23.4 SQ IN |
| RUNPT = 63F-ZER-1411 | TAPE = X1411C | TEST PT NO = 1411 | NC = | CORR FAN SPEED = | RPM = |

IDENTIFICATION - 83F-ZER-1411 X1411F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 91.1 | 91.4 | 91.4 | 86.5 | 87.1 | 88.7 | 93.6 | 93.7 | 94.9 | 96.2 | 100.9 | 101.6 | 91.5 | 136.8 |
| 63 | 96.5 | 97.8 | 100.1 | 94.4 | 96.2 | 97.6 | 99.7 | 96.1 | 99.6 | 97.4 | 103.3 | 103.7 | 93.9 | 141.0 |
| 80 | 97.5 | 100.8 | 97.1 | 98.5 | 102.3 | 100.2 | 99.1 | 101.1 | 100.9 | 104.5 | 104.7 | 90.1 | 142.7 | |
| 100 | 96.7 | 103.5 | 98.8 | 98.3 | 99.6 | 103.5 | 102.9 | 104.8 | 102.8 | 105.6 | 105.7 | 110.4 | 95.8 | 145.7 |
| 125 | 93.4 | 94.9 | 98.4 | 98.5 | 101.1 | 102.9 | 102.8 | 101.9 | 105.5 | 112.1 | 115.3 | 101.2 | 148.0 | |
| 160 | 91.7 | 92.7 | 94.5 | 93.3 | 94.6 | 98.7 | 106.6 | 101.5 | 103.2 | 107.6 | 112.7 | 115.9 | 106.5 | 148.6 |
| 200 | 94.3 | 94.6 | 95.6 | 94.9 | 97.7 | 101.6 | 104.2 | 102.9 | 107.1 | 108.4 | 114.3 | 119.0 | 109.4 | 150.8 |
| 250 | 94.0 | 96.8 | 97.1 | 96.6 | 98.5 | 100.6 | 102.5 | 105.6 | 108.6 | 113.7 | 119.5 | 122.5 | 112.9 | 154.6 |
| 315 | 95.6 | 96.4 | 95.6 | 95.2 | 97.8 | 101.9 | 104.5 | 105.9 | 110.1 | 116.5 | 121.3 | 123.5 | 115.4 | 156.2 |
| 400 | 96.6 | 97.6 | 97.9 | 95.9 | 98.8 | 101.6 | 106.0 | 106.2 | 110.4 | 118.2 | 122.8 | 124.5 | 116.2 | 157.4 |
| 500 | 97.3 | 98.4 | 99.4 | 97.2 | 99.5 | 103.1 | 104.5 | 107.2 | 111.9 | 120.2 | 124.3 | 125.3 | 116.9 | 158.7 |
| 630 | 98.3 | 98.8 | 99.3 | 97.9 | 100.5 | 103.1 | 104.5 | 107.9 | 111.8 | 121.2 | 125.3 | 125.0 | 118.6 | 159.2 |
| 800 | 102.1 | 100.6 | 100.6 | 99.4 | 101.8 | 103.6 | 105.3 | 108.9 | 113.9 | 120.7 | 126.3 | 124.8 | 118.7 | 159.6 |
| 1000 | 104.0 | 105.8 | 104.6 | 101.6 | 103.7 | 105.8 | 105.9 | 109.6 | 114.3 | 120.6 | 126.3 | 124.2 | 117.4 | 159.5 |
| 1250 | 103.9 | 107.7 | 107.2 | 104.6 | 105.1 | 107.0 | 107.1 | 110.3 | 115.5 | 120.0 | 126.2 | 121.3 | 115.5 | 158.9 |
| 1600 | 103.8 | 104.2 | 105.4 | 103.0 | 105.0 | 107.4 | 107.7 | 111.5 | 115.6 | 119.5 | 125.3 | 119.5 | 113.7 | 158.1 |
| 2000 | 103.8 | 104.8 | 105.2 | 102.6 | 104.2 | 107.1 | 107.8 | 111.4 | 115.7 | 120.0 | 123.3 | 117.1 | 111.6 | 157.0 |
| 2500 | 103.4 | 104.9 | 104.8 | 103.2 | 104.4 | 107.2 | 107.9 | 110.8 | 114.9 | 120.7 | 123.3 | 115.5 | 111.0 | 156.1 |
| 3150 | 103.5 | 104.8 | 105.8 | 102.9 | 104.2 | 107.3 | 107.9 | 111.6 | 115.2 | 118.8 | 119.5 | 113.9 | 108.8 | 155.0 |
| 4000 | 100.9 | 103.5 | 105.4 | 103.5 | 105.2 | 106.9 | 107.8 | 111.6 | 114.3 | 117.5 | 118.2 | 111.8 | 107.1 | 154.1 |
| 5000 | 99.1 | 101.9 | 104.0 | 102.1 | 105.2 | 107.4 | 107.5 | 110.8 | 113.1 | 116.7 | 116.5 | 111.1 | 105.8 | 153.2 |
| 6300 | 97.7 | 101.9 | 103.0 | 101.3 | 104.1 | 107.8 | 108.1 | 110.8 | 112.8 | 115.2 | 115.0 | 109.5 | 105.5 | 152.6 |
| 8000 | 95.3 | 100.2 | 101.5 | 100.7 | 103.1 | 105.9 | 106.9 | 109.0 | 111.2 | 113.3 | 113.5 | 108.7 | 105.6 | 151.4 |
| 10000 | 96.2 | 98.8 | 101.1 | 100.4 | 102.5 | 106.0 | 106.5 | 109.0 | 110.7 | 112.1 | 113.2 | 107.9 | 104.9 | 151.4 |
| 12500 | 94.2 | 96.7 | 99.3 | 99.2 | 101.8 | 105.3 | 105.6 | 106.8 | 109.1 | 110.4 | 110.3 | 106.8 | 103.6 | 150.5 |
| 16000 | 91.9 | 95.7 | 97.9 | 98.0 | 100.3 | 103.7 | 103.8 | 105.5 | 107.8 | 108.3 | 108.3 | 104.0 | 101.0 | 150.1 |
| 20000 | 89.0 | 92.9 | 94.8 | 95.5 | 97.8 | 100.5 | 101.9 | 102.3 | 104.7 | 106.2 | 105.4 | 101.5 | 98.4 | 149.1 |
| 25000 | 84.9 | 89.5 | 91.6 | 92.6 | 93.9 | 98.8 | 98.7 | 98.8 | 101.6 | 100.4 | 98.1 | 97.0 | 92.3 | 147.4 |
| 31500 | 81.2 | 85.1 | 87.9 | 89.5 | 90.5 | 94.6 | 95.1 | 94.6 | 97.0 | 94.8 | 92.9 | 88.1 | 84.7 | 147.0 |
| 40000 | 75.9 | 81.2 | 83.7 | 85.2 | 85.4 | 91.1 | 90.1 | 91.5 | 95.5 | 94.7 | 91.8 | 88.6 | 84.2 | 147.6 |
| 50000 | 70.0 | 74.8 | 77.6 | 79.1 | 79.9 | 86.4 | 85.4 | 86.8 | 90.0 | 89.8 | 87.2 | 83.6 | 77.9 | 146.9 |
| 63000 | 64.7 | 69.3 | 72.1 | 73.1 | 75.2 | 81.2 | 79.3 | 81.8 | 86.5 | 86.7 | 82.8 | 79.3 | 72.2 | 148.0 |
| 80000 | 60.7 | 64.1 | 66.6 | 65.6 | 67.6 | 74.9 | 73.1 | 75.2 | 81.0 | 82.3 | 77.0 | 73.5 | 66.1 | 149.3 |
| GASPL | 113.9 | 115.9 | 116.3 | 114.4 | 116.4 | 119.1 | 120.0 | 122.6 | 126.1 | 131.2 | 135.2 | 133.9 | 126.8 | 169.6 |
| PWL | 126.8 | 128.5 | 129.3 | 127.3 | 129.3 | 131.7 | 132.6 | 135.5 | 138.9 | 143.5 | 145.7 | 142.2 | 136.2 | |
| PWL | 126.8 | 129.5 | 129.3 | 127.3 | 129.9 | 131.7 | 133.1 | 136.2 | 138.9 | 143.5 | 145.7 | 142.2 | 136.2 | |
| DBA | 182.1 | 185.9 | 187.9 | 188.4 | 190.2 | 197.0 | 195.3 | 197.4 | 202.7 | 203.6 | 198.8 | 195.3 | 188.3 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICL = ADH195 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 53.44 PAMB HG = 29.33 RELHUM = 68.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FNIN1 = LBS XNL RPM XNHR = RPM V8 = 1552.2 FPS AE9 = 4.6 SQ IN
 FNRAMB = LBS XNL RPM XNHR = RPM V18 = 2362.9 FPS AE18 = 23.4 SQ IN

IPT 1 F-7 ATT 7E C = A F T L PT 14 RPM SPEED RPM

DATPROC - FLTRAN
 FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1411 X14111

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| 50 | 69.4 | 73.7 | 75.1 | 75.3 | 77.6 | 79.8 | 81.6 | 84.3 | 86.6 | 90.6 | 94.9 | 95.7 | 82.7 | 169.5 |
| 60 | 71.0 | 73.3 | 73.6 | 73.9 | 76.9 | 81.1 | 83.6 | 84.6 | 88.1 | 93.4 | 96.7 | 96.7 | 85.2 | 171.0 |
| 80 | 71.9 | 74.5 | 75.8 | 74.6 | 77.8 | 80.8 | 85.1 | 84.8 | 88.3 | 95.1 | 98.1 | 97.6 | 85.9 | 172.2 |
| 100 | 72.6 | 75.2 | 77.3 | 75.8 | 78.6 | 82.3 | 83.6 | 85.8 | 89.8 | 97.0 | 99.6 | 98.3 | 86.5 | 173.5 |
| 125 | 73.4 | 75.5 | 77.1 | 76.4 | 79.4 | 82.2 | 83.4 | 86.4 | 89.6 | 97.9 | 100.4 | 97.8 | 88.0 | 174.0 |
| 160 | 77.0 | 77.2 | 78.3 | 77.8 | 80.6 | 82.6 | 84.1 | 87.3 | 91.6 | 97.3 | 101.3 | 97.4 | 87.6 | 174.5 |
| 200 | 78.7 | 82.1 | 82.0 | 79.8 | 82.4 | 84.6 | 84.6 | 87.8 | 91.8 | 97.0 | 100.9 | 96.4 | 85.8 | 174.3 |
| 250 | 78.2 | 83.7 | 84.4 | 82.6 | 83.5 | 85.6 | 85.5 | 88.3 | 92.7 | 96.1 | 100.5 | 93.2 | 83.3 | 173.8 |
| 315 | 77.7 | 79.9 | 82.3 | 80.7 | 83.2 | 85.7 | 85.9 | 89.2 | 92.5 | 95.1 | 99.2 | 90.8 | 80.6 | 173.0 |
| 400 | 77.1 | 80.0 | 81.7 | 80.0 | 82.0 | 85.0 | 85.6 | 88.7 | 92.2 | 95.2 | 96.6 | 87.6 | 77.5 | 171.8 |
| 500 | 76.2 | 79.7 | 80.9 | 80.2 | 81.9 | 84.9 | 85.4 | 87.8 | 91.0 | 95.7 | 93.5 | 85.4 | 75.9 | 171.0 |
| 630 | 75.7 | 79.1 | 81.5 | 79.5 | 81.3 | 84.5 | 85.0 | 88.2 | 90.9 | 93.1 | 91.8 | 83.0 | 72.6 | 169.9 |
| 800 | 72.5 | 77.3 | 80.6 | 79.8 | 82.2 | 83.9 | 84.6 | 87.9 | 89.5 | 91.3 | 89.8 | 80.0 | 69.6 | 169.0 |
| 1000 | 70.1 | 75.1 | 78.6 | 77.9 | 81.5 | 83.9 | 83.9 | 86.6 | 87.9 | 90.0 | 87.5 | 78.4 | 66.9 | 168.1 |
| 1250 | 67.9 | 74.5 | 77.2 | 76.6 | 80.0 | 83.9 | 84.0 | 86.1 | 87.1 | 87.8 | 85.1 | 75.7 | 64.8 | 167.4 |
| 1600 | 65.1 | 71.7 | 74.9 | 75.3 | 78.3 | 81.3 | 82.1 | 83.5 | 84.6 | 84.9 | 82.3 | 73.2 | 62.1 | 166.2 |
| 2000 | 63.2 | 68.9 | 73.3 | 73.9 | 76.7 | 80.5 | 80.7 | 82.5 | 82.9 | 82.2 | 80.2 | 69.8 | 57.6 | 166.2 |
| 2500 | 58.5 | 64.7 | 69.7 | 71.1 | 74.5 | 78.3 | 78.3 | 78.7 | 79.5 | 78.3 | 74.6 | 65.0 | 50.4 | 165.3 |
| 3150 | 51.9 | 60.3 | 65.4 | 67.3 | 70.6 | 74.4 | 74.2 | 74.8 | 75.3 | 72.8 | 68.2 | 56.3 | 38.4 | 164.9 |
| 4000 | 41.3 | 51.4 | 57.1 | 60.2 | 63.8 | 66.9 | 67.9 | 67.0 | 67.0 | 64.6 | 57.7 | 43.4 | 20.0 | 164.0 |
| 5000 | 25.8 | 38.8 | 46.0 | 50.2 | 53.3 | 58.7 | 58.1 | 56.4 | 56.0 | 49.6 | 39.0 | 23.6 | | 162.2 |
| 6300 | 3.1 | 18.9 | 29.0 | 35.1 | 38.5 | 43.4 | 43.1 | 41.3 | 39.3 | 30.8 | 16.7 | | | 161.8 |
| 8000 | | 2.2 | 10.2 | 14.0 | 20.8 | 18.7 | 16.5 | 14.0 | 2.4 | | | | | 162.4 |
| 10000 | | | | | | | | | | | | | | 161.7 |
| 12500 | | | | | | | | | | | | | | 162.8 |
| 16000 | | | | | | | | | | | | | | 164.2 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS
 OF POOR QUALITY

GASPL 87.0 90.4 92.0 90.8 93.1 95.9 96.7 99.2 102.3 106.8 109.6 106.2 95.3 184.3

PNL 91.4 95.9 97.9 97.3 100.1 103.4 103.9 105.9 108.1 111.1 112.5 106.8 95.9

PNLT 91.4 95.9 98.4 97.9 100.7 103.4 104.4 106.4 108.1 111.7 112.5 106.8 95.9

DBA 81.2 85.4 87.9 87.0 89.6 92.5 92.9 95.4 97.5 100.0 100.5 93.4 83.1

MODEL AREA = 295.5 SQ CM (45.8 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.528 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICL = ADH195 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 0. FPS

IAPLHA = SB59 IEGA = NO MPH PWL AREA = FULL SPHERE TAMB F = 53.44 PAMB HG = 29.33 RELHUM = 68.0 PCT

WIND DIR = DEG WIND VEL = EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = FPS AE8 = 4.6 SQ IN

FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1411 TAPE = X14111 TEST PT NO = 1411 NC = AE087 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1412 X1412C
BACKGROUND 83F-400-1400 X14000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 96.1 | 95.4 | 89.4 | 88.2 | 89.6 | 91.7 | 91.8 | 94.2 | 94.9 | 94.2 | 101.6 | 100.8 | 91.7 |
| 63 | 97.5 | 98.0 | 99.3 | 93.9 | 95.9 | 97.6 | 96.2 | 94.9 | 99.3 | 98.4 | 103.5 | 104.0 | 99.1 |
| 80 | 98.5 | 101.8 | 97.6 | 98.1 | 97.7 | 102.3 | 100.0 | 99.6 | 100.8 | 100.4 | 103.5 | 104.2 | 89.9 |
| 100 | 97.0 | 102.0 | 96.8 | 96.3 | 98.4 | 102.3 | 101.4 | 103.5 | 101.0 | 102.6 | 103.5 | 108.9 | 94.3 |
| 125 | 93.9 | 95.2 | 96.7 | 97.0 | 99.3 | 101.9 | 100.1 | 101.0 | 100.2 | 102.3 | 108.9 | 113.6 | 99.7 |
| 160 | 92.2 | 88.7 | 92.7 | 91.3 | 92.6 | 97.2 | 99.9 | 99.5 | 100.7 | 104.8 | 110.2 | 113.6 | 104.6 |
| 200 | 92.3 | 92.8 | 92.3 | 91.4 | 93.7 | 97.8 | 98.5 | 100.1 | 104.6 | 104.6 | 111.0 | 116.7 | 107.6 |
| 250 | 90.3 | 93.6 | 93.8 | 93.6 | 95.0 | 97.8 | 99.5 | 102.6 | 105.1 | 109.9 | 116.0 | 120.2 | 110.9 |
| 315 | 91.6 | 92.6 | 92.1 | 91.4 | 94.0 | 98.9 | 99.8 | 102.2 | 105.9 | 112.5 | 118.1 | 121.3 | 112.9 |
| 400 | 92.3 | 92.8 | 94.1 | 91.9 | 94.8 | 98.1 | 100.3 | 102.2 | 106.1 | 113.7 | 120.1 | 123.0 | 113.4 |
| 500 | 92.6 | 93.6 | 95.4 | 93.7 | 95.8 | 99.1 | 100.0 | 103.2 | 107.1 | 116.7 | 122.3 | 123.3 | 112.9 |
| 630 | 93.5 | 94.6 | 95.8 | 94.1 | 95.7 | 99.8 | 100.5 | 103.9 | 108.1 | 117.4 | 122.0 | 122.2 | 112.4 |
| 800 | 95.6 | 94.9 | 96.1 | 94.7 | 97.8 | 100.6 | 101.3 | 105.2 | 109.9 | 116.7 | 123.3 | 121.3 | 110.4 |
| 1000 | 98.5 | 100.0 | 99.3 | 97.1 | 98.2 | 102.1 | 101.9 | 106.1 | 110.1 | 116.9 | 122.3 | 119.9 | 109.4 |
| 1250 | 98.9 | 101.9 | 101.5 | 99.6 | 101.1 | 103.5 | 102.8 | 106.3 | 111.0 | 116.0 | 122.4 | 117.3 | 107.3 |
| 1600 | 99.6 | 99.5 | 100.6 | 99.3 | 101.0 | 104.6 | 104.5 | 107.3 | 111.6 | 116.0 | 121.6 | 115.8 | 105.9 |
| 2000 | 99.8 | 100.6 | 100.2 | 98.6 | 100.4 | 104.1 | 104.5 | 108.6 | 112.0 | 117.0 | 121.0 | 113.6 | 105.4 |
| 2500 | 101.4 | 101.7 | 101.0 | 99.2 | 100.6 | 104.0 | 104.4 | 107.5 | 111.4 | 118.2 | 119.5 | 112.3 | 105.8 |
| 3150 | 101.5 | 102.8 | 102.3 | 99.4 | 100.7 | 104.8 | 104.4 | 108.1 | 111.9 | 116.8 | 117.3 | 109.4 | 103.3 |
| 4000 | 98.4 | 100.3 | 101.9 | 100.1 | 102.2 | 104.4 | 104.1 | 108.2 | 111.3 | 115.5 | 115.5 | 107.0 | 101.6 |
| 5000 | 97.6 | 99.4 | 101.0 | 99.1 | 101.2 | 104.6 | 104.3 | 107.6 | 110.6 | 113.7 | 113.5 | 105.3 | 99.8 |
| 6300 | 97.5 | 99.4 | 100.2 | 97.8 | 100.9 | 104.8 | 105.1 | 108.0 | 110.1 | 112.2 | 111.5 | 103.2 | 98.0 |
| 8000 | 96.8 | 99.2 | 99.5 | 97.7 | 99.9 | 103.7 | 103.9 | 106.2 | 108.5 | 109.6 | 109.3 | 101.3 | 96.8 |
| 10000 | 97.0 | 98.5 | 100.1 | 98.4 | 100.3 | 103.8 | 103.5 | 107.0 | 108.4 | 108.3 | 107.5 | 100.4 | 96.9 |
| 12500 | 94.7 | 96.2 | 98.6 | 97.2 | 99.8 | 103.3 | 103.1 | 104.3 | 106.9 | 106.7 | 105.6 | 100.5 | 96.1 |
| 16000 | 93.2 | 95.0 | 97.2 | 96.5 | 97.5 | 102.0 | 101.8 | 103.2 | 105.8 | 104.8 | 104.3 | 98.0 | 94.0 |
| 20000 | 90.2 | 92.9 | 94.3 | 93.5 | 95.8 | 99.3 | 99.9 | 100.5 | 102.2 | 101.9 | 101.1 | 96.2 | 91.4 |
| 25000 | 86.4 | 89.3 | 90.6 | 90.9 | 92.2 | 97.0 | 97.2 | 96.5 | 98.3 | 97.1 | 96.1 | 93.2 | 86.6 |
| 31500 | 82.7 | 85.6 | 87.8 | 88.2 | 88.0 | 93.3 | 92.8 | 93.2 | 93.8 | 93.2 | 92.0 | 88.4 | 81.8 |
| 40000 | 77.1 | 81.2 | 83.2 | 83.3 | 83.6 | 90.0 | 87.8 | 88.9 | 90.7 | 90.6 | 88.9 | 84.1 | 76.6 |
| 50000 | 71.2 | 74.7 | 77.0 | 77.5 | 78.1 | 84.6 | 82.3 | 83.2 | 84.7 | 85.2 | 84.3 | 78.0 | 70.9 |
| 63000 | 65.3 | 69.7 | 71.7 | 71.5 | 73.8 | 79.1 | 75.4 | 77.7 | 80.4 | 81.1 | 71.1 | 64.0 | 64.3 |
| 80000 | 60.6 | 64.9 | 64.9 | 63.9 | 66.7 | 73.0 | 69.7 | 70.5 | 73.1 | 75.8 | 72.1 | 63.6 | 58.2 |
| GASPL | 111.3 | 112.9 | 112.9 | 111.2 | 113.1 | 116.6 | 116.5 | 119.4 | 122.7 | 127.8 | 132.2 | 131.2 | 121.6 |
| PWL | 124.5 | 125.8 | 125.9 | 123.9 | 125.9 | 129.0 | 129.0 | 132.3 | 135.6 | 140.5 | 143.1 | 139.2 | 130.8 |
| PWLT | 124.5 | 126.4 | 125.9 | 124.4 | 126.5 | 129.0 | 129.0 | 132.8 | 135.6 | 140.5 | 143.1 | 139.2 | 130.8 |
| DBA | 110.5 | 111.7 | 112.0 | 110.1 | 111.9 | 115.3 | 115.3 | 118.8 | 122.3 | 127.6 | 131.5 | 128.6 | 119.0 |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|-------------------|
| VEHICLE = ADH194 | TEST DATE = 04-05-83 | LOCAT = C41 ANECH CH | CONFIG = 14 | MODEL = AX | FLTVEL = 400. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 52.99 | PAMB HG = 29.36 | RELHUM = 68.4 PCT |
| WIND DIR = | DEG WIND VEL = | MPH EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNINT = | LBS XNL | RPM XNH | RPM V8 | = 1555.2 FPS | AE8 = 4.6 SQ IN |
| FNRAMB = | LBS XNLR | RPM XNHR | RPM V18 | = 2363.1 FPS | AE18 = 23.4 SQ IN |
| RUNPT = 83F-400-1412 | TAPE = X1412C | TEST PT NO = 1412 | NC = AE087 | CARR FAN SPEED = | RPM = |

IDENTIFICATION - 83F-400-1412 X1412F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | |
|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 80 | 97.9 | 99.8 | 98.6 | 96.5 | 97.8 | 97.6 | 99.0 | 103.8 | 109.7 | 115.0 | 118.8 | 112.4 | 150.9 |
| 100 | 97.9 | 99.8 | 98.6 | 95.8 | 99.1 | 98.9 | 100.4 | 104.2 | 111.2 | 117.4 | 121.3 | 114.3 | 153.1 |
| 125 | 99.3 | 99.0 | 97.1 | 94.8 | 96.5 | 98.4 | 99.5 | 100.4 | 105.5 | 114.6 | 120.3 | 122.8 | 155.1 |
| 160 | 99.2 | 98.7 | 98.7 | 95.1 | 97.7 | 99.5 | 99.2 | 101.4 | 106.9 | 115.9 | 120.8 | 122.9 | 155.7 |
| 200 | 100.1 | 100.7 | 100.3 | 97.1 | 97.6 | 100.2 | 99.8 | 102.3 | 109.0 | 115.6 | 122.7 | 123.4 | 156.7 |
| 250 | 100.7 | 100.7 | 100.6 | 97.5 | 99.7 | 101.2 | 100.7 | 103.5 | 109.8 | 116.5 | 122.5 | 119.9 | 156.9 |
| 300 | 102.6 | 100.9 | 100.9 | 98.1 | 99.8 | 102.7 | 101.6 | 104.8 | 110.4 | 115.4 | 122.5 | 120.9 | 155.9 |
| 350 | 103.5 | 104.3 | 102.7 | 99.6 | 103.0 | 104.3 | 104.7 | 111.2 | 115.4 | 121.7 | 119.4 | 117.0 | 155.2 |
| 400 | 104.4 | 106.8 | 105.5 | 102.6 | 103.4 | 105.7 | 104.2 | 105.9 | 111.6 | 116.5 | 121.2 | 117.3 | 155.0 |
| 450 | 106.6 | 105.6 | 105.6 | 103.0 | 102.9 | 105.3 | 104.5 | 107.3 | 111.5 | 118.2 | 120.2 | 116.6 | 155.0 |
| 500 | 105.9 | 106.1 | 104.8 | 102.2 | 103.1 | 105.6 | 104.7 | 106.7 | 112.3 | 117.0 | 118.3 | 114.0 | 153.7 |
| 550 | 106.5 | 106.3 | 105.0 | 102.5 | 103.6 | 106.8 | 105.1 | 107.6 | 112.2 | 116.7 | 116.7 | 113.7 | 152.8 |
| 600 | 106.8 | 107.7 | 106.7 | 102.9 | 105.9 | 107.0 | 105.3 | 108.2 | 111.5 | 114.3 | 114.7 | 109.8 | 152.0 |
| 650 | 106.0 | 107.0 | 107.6 | 104.7 | 105.2 | 107.6 | 105.8 | 107.7 | 111.0 | 112.8 | 112.5 | 107.6 | 151.2 |
| 700 | 105.1 | 106.1 | 106.8 | 104.0 | 104.9 | 107.8 | 106.6 | 108.1 | 110.0 | 110.8 | 111.1 | 106.5 | 150.6 |
| 750 | 104.8 | 105.9 | 105.9 | 102.5 | 103.9 | 106.7 | 105.8 | 106.7 | 110.9 | 110.5 | 110.3 | 106.7 | 150.6 |
| 800 | 104.0 | 105.6 | 105.0 | 102.2 | 104.3 | 106.8 | 105.8 | 106.1 | 110.0 | 109.7 | 109.2 | 107.5 | 150.9 |
| 850 | 103.8 | 104.7 | 105.3 | 102.6 | 104.4 | 106.3 | 105.4 | 105.7 | 109.4 | 108.1 | 108.3 | 106.4 | 150.8 |
| 900 | 103.9 | 104.1 | 105.0 | 102.1 | 102.1 | 105.0 | 104.1 | 104.5 | 106.5 | 106.1 | 105.9 | 104.3 | 150.5 |
| 950 | 101.9 | 103.5 | 103.2 | 100.9 | 100.4 | 102.3 | 102.3 | 102.1 | 103.6 | 102.4 | 102.0 | 102.4 | 149.9 |
| 1000 | 98.3 | 99.8 | 99.7 | 97.4 | 96.8 | 100.0 | 99.6 | 98.3 | 99.8 | 99.1 | 98.4 | 99.1 | 148.9 |
| 1050 | 93.8 | 95.4 | 95.2 | 93.9 | 92.6 | 96.3 | 95.2 | 94.9 | 96.7 | 96.4 | 95.4 | 94.1 | 148.3 |
| 1100 | 89.2 | 90.8 | 91.6 | 90.5 | 88.2 | 93.0 | 90.1 | 90.2 | 90.9 | 91.2 | 90.9 | 88.2 | 147.7 |
| 1150 | 83.2 | 85.0 | 85.6 | 85.2 | 82.7 | 87.6 | 84.5 | 84.3 | 85.7 | 85.7 | 84.2 | 80.2 | 146.8 |
| 1200 | 76.3 | 78.6 | 79.5 | 78.4 | 78.4 | 82.1 | 77.2 | 78.1 | 80.8 | 83.0 | 79.6 | 74.1 | 146.3 |
| 1250 | 68.9 | 72.1 | 72.7 | 70.9 | 71.3 | 76.0 | 71.5 | 70.9 | 71.0 | 73.2 | 69.8 | 64.2 | 145.5 |
| 1300 | 117.0 | 117.6 | 117.3 | 114.5 | 115.6 | 118.0 | 116.9 | 118.7 | 122.9 | 127.3 | 131.6 | 128.2 | 167.0 |
| 1350 | 128.3 | 129.9 | 129.2 | 126.3 | 127.9 | 129.8 | 128.5 | 130.8 | 135.1 | 139.2 | 141.6 | 139.2 | 138.7 |
| 1400 | 129.3 | 129.9 | 129.2 | 126.3 | 127.9 | 129.8 | 128.5 | 130.8 | 135.1 | 139.2 | 141.6 | 139.2 | 138.7 |
| 1450 | 191.9 | 194.6 | 195.3 | 193.8 | 193.7 | 198.1 | 193.8 | 193.6 | 194.9 | 196.8 | 193.6 | 188.6 | 189.9 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS9-22137

VEHICLE = ADH194 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CNFIG = 14 MODEL = AX FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 52.99 PAMB HG = 29.36 RELHUM = 68.4 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CNFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL RPM XNH = RPM V8 = 1556.2 FPS AE8 = 4.6 SQ IN
FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 2363.1 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1412 TAPE = X1412F TEST PT NO = 1412 NC = AE087 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1412 X14121

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 73.3 | 76.7 | 76.6 | 75.6 | 75.7 | 77.1 | 76.7 | 77.7 | 81.8 | 86.6 | 90.4 | 92.0 | 82.2 | 165.7 |
| 63 | 73.2 | 76.7 | 76.6 | 75.5 | 74.9 | 78.3 | 78.0 | 79.1 | 82.2 | 88.1 | 92.8 | 94.4 | 84.1 | 167.9 |
| 80 | 74.6 | 75.9 | 75.0 | 73.5 | 75.6 | 77.6 | 78.5 | 79.1 | 83.4 | 91.5 | 95.7 | 95.8 | 85.7 | 170.0 |
| 100 | 74.4 | 75.5 | 76.6 | 73.7 | 76.7 | 78.6 | 78.3 | 80.0 | 84.8 | 92.7 | 96.0 | 95.9 | 87.2 | 170.5 |
| 125 | 75.3 | 76.7 | 78.1 | 75.7 | 76.6 | 79.3 | 78.8 | 80.8 | 86.8 | 92.3 | 97.6 | 96.2 | 87.8 | 171.5 |
| 160 | 75.6 | 77.2 | 78.3 | 75.9 | 78.6 | 80.1 | 79.5 | 81.9 | 87.4 | 93.0 | 97.4 | 96.0 | 88.9 | 171.7 |
| 200 | 77.3 | 77.2 | 78.4 | 76.3 | 78.5 | 81.5 | 80.2 | 83.0 | 87.9 | 91.7 | 97.2 | 93.1 | 86.5 | 170.7 |
| 250 | 77.9 | 80.4 | 80.0 | 77.6 | 81.5 | 82.9 | 80.9 | 82.7 | 88.4 | 91.4 | 96.1 | 91.2 | 84.8 | 170.1 |
| 315 | 78.3 | 82.5 | 82.4 | 80.3 | 81.6 | 84.0 | 82.4 | 83.6 | 88.5 | 92.2 | 95.1 | 88.6 | 83.5 | 169.8 |
| 400 | 80.0 | 80.8 | 82.1 | 80.3 | 80.7 | 83.3 | 82.3 | 84.7 | 88.0 | 93.4 | 93.6 | 87.1 | 83.5 | 169.8 |
| 500 | 78.7 | 80.8 | 81.0 | 79.2 | 80.6 | 83.2 | 82.2 | 83.7 | 88.5 | 91.8 | 91.1 | 83.8 | 80.4 | 168.5 |
| 630 | 78.7 | 80.6 | 80.7 | 79.1 | 80.7 | 84.1 | 82.2 | 84.2 | 87.9 | 90.4 | 88.9 | 80.7 | 77.4 | 167.7 |
| 800 | 78.4 | 81.5 | 81.9 | 79.2 | 82.7 | 83.9 | 82.0 | 84.4 | 86.6 | 88.1 | 86.3 | 78.0 | 74.3 | 166.8 |
| 1000 | 76.9 | 80.2 | 82.4 | 80.5 | 81.6 | 84.2 | 82.1 | 83.5 | 85.8 | 86.0 | 83.5 | 74.9 | 70.8 | 166.0 |
| 1250 | 75.2 | 78.7 | 81.1 | 79.3 | 80.8 | 83.9 | 82.5 | 83.4 | 84.3 | 83.4 | 81.2 | 72.7 | 69.0 | 165.5 |
| 1600 | 73.6 | 77.5 | 79.3 | 77.0 | 79.1 | 82.1 | 81.0 | 81.3 | 84.2 | 82.1 | 79.1 | 71.1 | 67.2 | 165.5 |
| 2000 | 71.0 | 75.8 | 77.2 | 75.7 | 78.5 | 81.2 | 80.0 | 81.6 | 82.3 | 79.8 | 76.2 | 69.5 | 63.0 | 165.7 |
| 2500 | 68.1 | 72.7 | 75.7 | 74.5 | 77.1 | 79.3 | 78.2 | 77.6 | 79.7 | 76.1 | 72.6 | 64.7 | 55.6 | 165.7 |
| 3150 | 63.8 | 68.7 | 72.5 | 71.4 | 72.5 | 75.7 | 74.5 | 73.9 | 74.0 | 70.6 | 65.8 | 56.6 | 44.2 | 165.4 |
| 4000 | 54.2 | 61.9 | 65.5 | 65.6 | 66.4 | 68.7 | 68.3 | 66.8 | 65.9 | 60.8 | 54.3 | 44.4 | 24.5 | 164.8 |
| 5000 | 39.2 | 49.1 | 54.2 | 55.0 | 56.1 | 59.9 | 59.0 | 55.9 | 54.3 | 48.4 | 39.6 | 25.0 | | 163.8 |
| 6300 | 15.6 | 29.2 | 36.3 | 39.5 | 40.6 | 45.1 | 43.3 | 40.5 | 37.9 | 30.2 | 17.3 | | | 163.1 |
| 8000 | 10.1 | 15.5 | 16.8 | 22.7 | 18.7 | 15.2 | 9.4 | | | | | | | 162.6 |
| 10000 | | | | | | | | | | | | | | 161.6 |
| 12500 | | | | | | | | | | | | | | 161.1 |
| 16000 | | | | | | | | | | | | | | 160.4 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

DIAPHRAGM AREA = 295.5 SQ CM (45.8 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.528 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICL = ADH194 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 52.99 PAMB HQ = 29.36 RELHUM = 68.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FN1N1 = LBS XNL = RPM XINH = RPM V8 = 1556.2 FPS AEG = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2363.1 FPS AE18 = 23.4 SQ IN

PT 3F-Z 4TC SPE = 2T PT 14 AEL JRR SPEED RPI

IDENTIFICATION - MODEL 83F-ZER-1415 X1415C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 89.9 | 89.7 | 89.4 | 85.7 | 85.8 | 90.2 | 89.1 | 94.2 | 93.7 | 101.0 | 100.4 | 100.1 | 92.2 | 136.9 |
| 63 | 94.0 | 95.0 | 99.6 | 94.9 | 94.4 | 97.3 | 95.7 | 98.6 | 98.6 | 104.1 | 102.5 | 98.7 | 99.1 | 140.9 |
| 80 | 96.0 | 99.6 | 95.8 | 95.6 | 96.7 | 100.8 | 98.5 | 98.6 | 99.6 | 100.2 | 103.3 | 103.5 | 88.6 | 141.4 |
| 100 | 94.7 | 102.0 | 97.3 | 96.5 | 98.1 | 102.3 | 100.4 | 103.3 | 101.0 | 104.6 | 104.5 | 108.6 | 93.3 | 144.1 |
| 125 | 91.4 | 93.7 | 96.2 | 97.0 | 99.1 | 101.7 | 100.3 | 101.0 | 101.4 | 104.8 | 111.1 | 113.3 | 98.7 | 146.5 |
| 160 | 88.9 | 91.0 | 92.7 | 91.5 | 92.4 | 95.5 | 98.6 | 99.3 | 101.5 | 105.6 | 110.9 | 113.9 | 104.3 | 146.4 |
| 200 | 93.3 | 91.8 | 93.8 | 92.4 | 95.7 | 99.8 | 100.5 | 101.1 | 105.3 | 106.6 | 112.5 | 117.0 | 107.1 | 148.8 |
| 250 | 92.5 | 94.8 | 95.8 | 95.4 | 97.2 | 99.3 | 100.7 | 103.6 | 106.3 | 112.7 | 117.5 | 120.2 | 110.4 | 152.6 |
| 315 | 92.8 | 94.9 | 94.9 | 93.9 | 96.5 | 101.1 | 102.3 | 103.7 | 107.9 | 115.5 | 119.3 | 121.8 | 112.2 | 154.4 |
| 400 | 94.8 | 96.4 | 96.6 | 94.4 | 97.0 | 100.6 | 104.3 | 104.7 | 108.4 | 117.2 | 121.1 | 122.5 | 113.7 | 155.6 |
| 500 | 95.3 | 97.1 | 97.6 | 95.7 | 98.3 | 102.4 | 102.8 | 105.7 | 110.4 | 118.7 | 122.8 | 123.3 | 115.2 | 157.0 |
| 630 | 96.0 | 97.1 | 98.3 | 96.6 | 98.7 | 102.3 | 103.0 | 106.6 | 110.3 | 119.4 | 123.0 | 123.5 | 116.4 | 157.3 |
| 800 | 99.6 | 98.4 | 99.1 | 97.4 | 100.3 | 103.6 | 104.0 | 107.9 | 112.6 | 119.0 | 123.3 | 123.8 | 117.9 | 157.7 |
| 1000 | 102.5 | 104.0 | 102.6 | 100.3 | 101.9 | 104.8 | 105.2 | 108.3 | 112.8 | 118.9 | 123.3 | 124.2 | 117.1 | 157.8 |
| 1250 | 102.2 | 105.4 | 105.2 | 102.4 | 103.3 | 105.7 | 105.6 | 108.5 | 113.7 | 117.8 | 122.9 | 121.8 | 115.3 | 156.8 |
| 1600 | 100.6 | 101.7 | 102.6 | 100.8 | 103.0 | 105.9 | 105.7 | 110.0 | 113.9 | 117.0 | 123.1 | 119.8 | 112.4 | 156.3 |
| 2000 | 100.8 | 102.1 | 102.2 | 100.1 | 101.7 | 105.6 | 105.8 | 110.1 | 113.7 | 117.5 | 122.0 | 117.1 | 110.6 | 155.4 |
| 2500 | 98.4 | 101.4 | 101.8 | 100.0 | 101.6 | 105.2 | 105.9 | 109.5 | 112.9 | 117.7 | 119.7 | 115.5 | 109.0 | 154.2 |
| 3150 | 98.0 | 100.8 | 101.1 | 99.3 | 101.9 | 105.7 | 105.6 | 109.3 | 113.2 | 116.8 | 117.5 | 112.7 | 106.3 | 153.0 |
| 4000 | 95.9 | 98.0 | 100.4 | 99.0 | 101.7 | 105.2 | 105.3 | 109.1 | 111.8 | 115.0 | 116.2 | 109.8 | 104.9 | 151.7 |
| 5000 | 94.9 | 98.8 | 100.5 | 98.1 | 100.4 | 104.6 | 105.0 | 108.6 | 110.8 | 113.7 | 114.5 | 109.3 | 103.5 | 150.7 |
| 6300 | 94.0 | 98.8 | 99.4 | 98.3 | 100.8 | 104.3 | 104.8 | 108.0 | 110.8 | 111.9 | 112.7 | 107.5 | 101.7 | 149.8 |
| 8000 | 93.0 | 97.4 | 98.7 | 97.9 | 100.3 | 103.9 | 103.3 | 106.2 | 108.6 | 109.5 | 111.2 | 105.7 | 101.5 | 148.5 |
| 10000 | 92.6 | 96.2 | 98.2 | 97.5 | 99.7 | 103.9 | 103.2 | 105.9 | 107.8 | 108.0 | 109.4 | 105.3 | 101.6 | 148.1 |
| 12500 | 90.4 | 94.1 | 96.2 | 96.4 | 98.9 | 103.0 | 102.2 | 103.5 | 105.8 | 106.6 | 106.0 | 103.7 | 100.2 | 147.0 |
| 16000 | 89.1 | 93.9 | 95.0 | 95.6 | 97.1 | 100.9 | 99.7 | 101.1 | 104.7 | 104.4 | 104.9 | 101.7 | 96.9 | 146.6 |
| 20000 | 85.8 | 91.0 | 92.9 | 93.2 | 95.2 | 97.7 | 98.5 | 98.2 | 101.1 | 101.8 | 101.5 | 98.9 | 94.1 | 145.5 |
| 25000 | 83.1 | 87.7 | 89.5 | 90.5 | 91.6 | 96.5 | 95.9 | 94.7 | 97.0 | 96.5 | 98.0 | 94.9 | 89.0 | 144.4 |
| 31500 | 79.0 | 83.1 | 85.7 | 87.8 | 88.5 | 92.9 | 91.6 | 92.0 | 93.4 | 92.8 | 95.3 | 90.2 | 84.4 | 144.1 |
| 40000 | 73.9 | 79.0 | 81.2 | 82.6 | 83.9 | 89.0 | 86.9 | 88.2 | 90.5 | 90.8 | 93.5 | 85.6 | 79.1 | 144.8 |
| 50000 | 68.2 | 72.3 | 74.9 | 76.8 | 77.8 | 84.1 | 81.5 | 83.2 | 84.5 | 86.1 | 88.6 | 80.8 | 72.8 | 144.0 |
| 63000 | 63.3 | 68.1 | 70.1 | 71.3 | 72.9 | 78.6 | 75.7 | 77.5 | 80.5 | 82.3 | 83.5 | 73.9 | 65.8 | 144.4 |
| 80000 | 61.5 | 64.5 | 64.3 | 63.2 | 65.0 | 73.2 | 70.5 | 71.1 | 73.3 | 78.4 | 76.5 | 69.8 | 57.9 | 145.5 |
| QASPL | 111.0 | 113.4 | 113.6 | 111.9 | 113.9 | 117.4 | 117.5 | 120.6 | 124.1 | 129.1 | 133.0 | 132.7 | 125.3 | 167.6 |
| PNL | 122.8 | 125.4 | 125.8 | 124.2 | 126.4 | 130.1 | 130.2 | 133.5 | 136.9 | 141.0 | 143.8 | 141.3 | 134.3 | |
| PNLT | 122.8 | 126.3 | 125.8 | 124.2 | 127.1 | 130.1 | 130.2 | 134.1 | 136.9 | 141.0 | 144.4 | 141.3 | 134.3 | |
| DBA | 110.5 | 112.7 | 113.0 | 111.1 | 113.1 | 116.5 | 116.7 | 120.3 | 123.9 | 128.5 | 132.3 | 131.1 | 124.2 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|-------------------|
| VEHICLE = ADH198 | TEST DATE = 04-05-83 | LOCAT = C41 ANECH CH | CONFIG = 14 | MODEL = AX | FLTVEL = 0. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 54.25 | PAMB HG = 29.36 | RELHUM = 71.5 PCT |
| WIND DIR = | DEG WIND VEL = | MPH = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FN1NT = | LBS XNL = | RPM = | FNXN = | RPM = | V8 = 1232.0 FPS |
| FNRAMB = | LBS XNLR = | RPM = | FNXNR = | RPM = | V18 = 2303.0 FPS |
| RUNPT = 83F-ZER-1415 | TAPE = | TEST PT NO = 1415 | NC = | CORR FAN SPEED = | RPM = |

IDENTIFICATION - 83F-ZER-1415 X1415F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 89.9 | 88.7 | 89.4 | 85.7 | 85.8 | 90.2 | 89.1 | 94.2 | 93.7 | 101.0 | 100.4 | 100.1 | 92.2 | 136.9 |
| 63 | 94.0 | 96.0 | 94.9 | 94.4 | 97.3 | 95.7 | 98.6 | 98.8 | 104.1 | 102.5 | 98.7 | 99.1 | 140.9 | |
| 80 | 95.0 | 99.6 | 95.6 | 96.7 | 100.8 | 98.5 | 98.6 | 100.2 | 103.3 | 103.5 | 88.6 | 141.4 | | |
| 100 | 94.7 | 102.0 | 97.3 | 96.5 | 98.1 | 102.3 | 100.4 | 103.3 | 101.0 | 104.6 | 104.5 | 108.6 | 93.3 | 144.1 |
| 125 | 91.4 | 93.7 | 96.2 | 97.0 | 99.1 | 101.7 | 100.3 | 101.0 | 101.4 | 104.8 | 111.1 | 113.3 | 98.7 | 146.5 |
| 160 | 88.9 | 91.0 | 92.7 | 91.5 | 92.4 | 96.5 | 98.6 | 99.3 | 101.5 | 105.6 | 110.9 | 113.9 | 104.3 | 146.4 |
| 200 | 93.3 | 91.8 | 93.8 | 92.4 | 95.7 | 99.8 | 100.5 | 101.1 | 105.3 | 106.6 | 112.5 | 117.0 | 107.1 | 148.8 |
| 250 | 92.5 | 94.8 | 95.8 | 95.4 | 97.2 | 99.3 | 100.7 | 103.6 | 106.3 | 112.7 | 117.5 | 120.2 | 110.4 | 152.6 |
| 315 | 92.8 | 94.9 | 94.9 | 93.9 | 96.5 | 101.1 | 102.3 | 103.7 | 107.9 | 115.5 | 119.3 | 121.8 | 112.2 | 154.4 |
| 400 | 94.8 | 96.4 | 96.6 | 94.4 | 97.0 | 100.6 | 104.3 | 104.7 | 108.4 | 117.2 | 121.1 | 122.5 | 113.7 | 155.6 |
| 500 | 95.3 | 97.1 | 97.6 | 95.7 | 98.3 | 102.4 | 102.8 | 105.7 | 110.4 | 118.7 | 122.8 | 123.3 | 115.2 | 157.0 |
| 630 | 96.0 | 97.1 | 98.3 | 96.6 | 98.7 | 102.3 | 103.0 | 106.6 | 110.3 | 119.4 | 123.0 | 123.5 | 116.4 | 157.3 |
| 800 | 98.6 | 98.4 | 99.1 | 97.4 | 100.3 | 103.6 | 104.0 | 107.9 | 112.6 | 119.0 | 123.3 | 123.8 | 117.9 | 157.7 |
| 1000 | 102.5 | 104.0 | 102.6 | 100.3 | 101.9 | 104.8 | 105.2 | 108.3 | 112.8 | 118.9 | 123.3 | 124.2 | 117.1 | 157.8 |
| 1250 | 102.2 | 105.4 | 105.2 | 102.4 | 103.3 | 105.7 | 105.6 | 108.5 | 113.7 | 117.8 | 122.9 | 121.8 | 115.3 | 156.8 |
| 1600 | 100.6 | 101.7 | 102.6 | 100.8 | 103.0 | 105.9 | 105.7 | 110.0 | 113.9 | 117.0 | 123.1 | 119.8 | 112.4 | 156.3 |
| 2000 | 100.8 | 102.1 | 102.2 | 100.1 | 101.7 | 105.6 | 105.8 | 111.7 | 117.5 | 122.0 | 117.1 | 110.6 | 110.6 | 155.4 |
| 2500 | 98.4 | 101.4 | 101.8 | 100.0 | 101.6 | 105.2 | 105.9 | 109.5 | 112.9 | 117.7 | 119.7 | 115.5 | 109.0 | 154.2 |
| 3150 | 98.0 | 100.8 | 101.1 | 99.3 | 101.9 | 105.7 | 105.6 | 109.3 | 113.2 | 116.8 | 117.5 | 112.7 | 106.3 | 153.0 |
| 4000 | 95.9 | 99.0 | 100.4 | 99.0 | 101.7 | 105.2 | 105.3 | 109.1 | 111.8 | 115.0 | 116.2 | 109.8 | 104.9 | 151.7 |
| 5000 | 94.9 | 98.8 | 100.5 | 98.1 | 100.4 | 104.6 | 105.0 | 108.6 | 110.8 | 113.7 | 114.5 | 109.3 | 103.5 | 150.7 |
| 6300 | 94.0 | 98.8 | 99.4 | 98.3 | 100.8 | 104.3 | 104.8 | 108.0 | 110.8 | 111.9 | 112.7 | 107.5 | 101.7 | 149.8 |
| 8000 | 93.0 | 97.4 | 98.7 | 97.9 | 100.3 | 103.9 | 103.3 | 106.2 | 108.6 | 109.5 | 111.2 | 105.7 | 101.5 | 148.5 |
| 10000 | 92.6 | 96.2 | 98.2 | 97.5 | 99.7 | 103.9 | 103.2 | 105.9 | 107.8 | 108.0 | 109.4 | 105.3 | 101.6 | 148.1 |
| 12500 | 90.4 | 94.1 | 96.2 | 96.4 | 98.9 | 103.0 | 102.2 | 103.5 | 105.8 | 106.6 | 106.0 | 103.7 | 100.2 | 147.0 |
| 16000 | 89.1 | 93.9 | 95.0 | 95.6 | 97.1 | 100.9 | 99.7 | 101.1 | 104.7 | 104.4 | 104.9 | 101.7 | 96.9 | 146.6 |
| 20000 | 85.8 | 91.0 | 92.9 | 93.2 | 95.2 | 97.7 | 98.5 | 98.2 | 101.1 | 101.8 | 101.5 | 98.9 | 94.1 | 145.5 |
| 25000 | 83.1 | 87.7 | 89.5 | 90.5 | 91.6 | 96.5 | 95.9 | 94.7 | 97.0 | 96.5 | 98.0 | 94.9 | 89.0 | 144.4 |
| 31500 | 79.0 | 83.1 | 85.7 | 87.8 | 88.5 | 92.9 | 91.6 | 92.0 | 93.4 | 92.8 | 95.3 | 90.2 | 84.4 | 144.1 |
| 40000 | 73.9 | 79.0 | 81.2 | 82.6 | 83.9 | 89.0 | 86.9 | 88.2 | 90.5 | 90.8 | 93.5 | 86.6 | 79.1 | 144.8 |
| 50000 | 68.2 | 72.3 | 74.9 | 76.8 | 77.8 | 84.1 | 81.5 | 83.2 | 84.5 | 85.1 | 88.6 | 80.8 | 72.8 | 144.0 |
| 63000 | 63.3 | 66.1 | 70.1 | 71.3 | 72.9 | 78.6 | 75.7 | 77.5 | 80.5 | 82.3 | 83.5 | 73.9 | 65.8 | 144.4 |
| 80000 | 61.5 | 64.5 | 64.3 | 63.2 | 65.0 | 73.2 | 70.5 | 71.1 | 73.3 | 78.4 | 76.5 | 69.8 | 57.9 | 145.5 |
| 0ASPL | 111.0 | 113.4 | 113.6 | 111.9 | 113.9 | 117.4 | 117.5 | 120.6 | 124.1 | 129.1 | 133.0 | 132.7 | 125.3 | 167.6 |
| PNL | 122.8 | 125.4 | 125.8 | 124.2 | 126.4 | 130.1 | 130.2 | 133.5 | 136.9 | 141.0 | 143.8 | 141.3 | 134.3 | |
| PNLT | 122.8 | 126.3 | 125.8 | 124.2 | 127.1 | 130.1 | 130.2 | 136.9 | 141.0 | 144.4 | 141.3 | 134.3 | | |
| DBA | 182.4 | 185.8 | 186.2 | 186.2 | 187.8 | 195.0 | 192.3 | 193.3 | 195.7 | 199.6 | 198.8 | 191.4 | 181.2 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICLE = ADH198 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 54.26 PAMB HG = 29.36 RELHUM = 71.5 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNIN1 = LBS XNL RPM XNH RPM V8 = 1232.0 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2303.0 FPS AE18 = 23.4 SQ IN

PT F-ZL ITS E X F TEL No 1415 FAN SPEED RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1415 X14151

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| 50 | 67.9 | 71.7 | 73.8 | 74.1 | 76.3 | 78.6 | 79.8 | 82.3 | 84.3 | 89.6 | 92.9 | 93.4 | 80.2 | 167.5 |
| 63 | 68.2 | 71.8 | 72.9 | 72.6 | 75.6 | 80.4 | 81.4 | 82.4 | 85.9 | 92.4 | 94.7 | 94.9 | 82.0 | 169.2 |
| 80 | 70.1 | 73.2 | 74.6 | 73.1 | 76.1 | 79.8 | 83.3 | 83.3 | 86.3 | 94.1 | 96.4 | 95.6 | 83.4 | 170.5 |
| 100 | 70.6 | 73.9 | 75.5 | 74.3 | 77.3 | 81.6 | 81.8 | 84.3 | 88.3 | 95.5 | 98.1 | 96.3 | 84.7 | 171.8 |
| 125 | 71.2 | 73.8 | 76.1 | 75.2 | 77.7 | 81.4 | 81.9 | 85.2 | 88.1 | 96.1 | 98.2 | 96.3 | 85.7 | 172.2 |
| 160 | 74.5 | 74.9 | 76.8 | 75.8 | 79.1 | 82.6 | 82.9 | 86.3 | 90.3 | 95.5 | 98.3 | 96.4 | 86.9 | 172.5 |
| 200 | 77.2 | 80.4 | 80.0 | 78.6 | 80.6 | 83.6 | 83.9 | 86.6 | 90.3 | 95.2 | 97.9 | 96.4 | 85.6 | 172.6 |
| 250 | 76.5 | 81.5 | 82.4 | 80.4 | 81.8 | 84.3 | 84.0 | 86.5 | 90.9 | 93.8 | 97.2 | 93.7 | 83.1 | 171.7 |
| 315 | 74.5 | 77.4 | 79.5 | 78.5 | 81.2 | 84.2 | 83.9 | 87.7 | 90.8 | 92.6 | 97.0 | 91.0 | 79.4 | 171.1 |
| 400 | 74.1 | 77.3 | 78.7 | 77.5 | 79.5 | 83.5 | 83.6 | 87.5 | 90.2 | 92.7 | 95.4 | 87.6 | 76.5 | 170.3 |
| 500 | 71.2 | 76.2 | 77.9 | 77.0 | 79.1 | 82.9 | 83.4 | 86.5 | 89.0 | 92.5 | 92.5 | 85.4 | 73.9 | 169.1 |
| 630 | 70.2 | 75.1 | 76.8 | 76.0 | 79.1 | 83.0 | 82.8 | 86.0 | 88.9 | 91.1 | 89.7 | 81.8 | 70.1 | 167.8 |
| 800 | 67.5 | 72.8 | 75.6 | 75.2 | 78.5 | 82.1 | 82.1 | 85.3 | 87.0 | 88.8 | 87.8 | 87.3 | 67.3 | 166.5 |
| 1000 | 65.8 | 72.1 | 75.3 | 73.9 | 76.8 | 81.2 | 81.4 | 84.4 | 85.6 | 86.9 | 85.4 | 76.6 | 64.6 | 165.5 |
| 1250 | 64.1 | 71.4 | 73.7 | 73.6 | 76.7 | 80.4 | 80.7 | 83.3 | 85.0 | 84.5 | 82.8 | 73.7 | 61.0 | 164.7 |
| 1600 | 61.8 | 68.9 | 72.1 | 72.4 | 75.5 | 79.3 | 78.5 | 80.7 | 82.0 | 81.0 | 80.0 | 70.1 | 58.0 | 163.3 |
| 2000 | 59.7 | 66.4 | 70.4 | 71.0 | 73.9 | 78.4 | 77.4 | 79.4 | 80.0 | 78.1 | 76.4 | 67.3 | 54.3 | 162.9 |
| 2500 | 54.7 | 62.1 | 66.6 | 68.3 | 71.6 | 76.0 | 74.9 | 75.4 | 76.2 | 74.6 | 70.3 | 61.9 | 47.1 | 161.9 |
| 3150 | 49.0 | 58.4 | 62.5 | 64.9 | 67.5 | 71.5 | 70.0 | 70.4 | 72.2 | 68.9 | 64.9 | 53.9 | 34.3 | 161.5 |
| 4000 | 34.1 | 49.5 | 55.2 | 57.8 | 61.2 | 64.1 | 64.5 | 62.8 | 63.4 | 60.2 | 53.8 | 40.8 | 15.7 | 160.4 |
| 5000 | 28.0 | 43.9 | 48.2 | 51.0 | 56.4 | 55.2 | 52.3 | 51.4 | 45.8 | 38.9 | 21.5 | | | 159.3 |
| 6300 | 0.9 | 16.9 | 26.8 | 33.4 | 36.6 | 41.7 | 39.7 | 37.6 | 34.6 | 26.6 | 17.2 | | | 158.9 |
| 8000 | | | | 7.7 | 12.5 | 18.7 | 15.4 | 13.3 | 9.0 | | | | | 159.7 |
| 10000 | | | | | | | | | | | | | | 158.9 |
| 12500 | | | | | | | | | | | | | | 159.3 |
| 16000 | | | | | | | | | | | | | | 160.4 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |
| DASPL | 84.2 | 88.0 | 89.4 | 88.3 | 90.8 | 94.4 | 94.6 | 97.5 | 100.5 | 104.9 | 107.2 | 104.9 | 93.8 | 182.3 |
| PNL | 88.3 | 93.3 | 95.3 | 94.6 | 97.4 | 101.5 | 101.2 | 103.5 | 106.0 | 108.5 | 110.1 | 106.0 | 94.5 | |
| PNLT | 89.3 | 93.3 | 95.3 | 95.2 | 98.0 | 101.5 | 101.2 | 104.0 | 106.0 | 108.5 | 110.1 | 106.0 | 94.5 | |
| DBA | 77.4 | 82.3 | 84.4 | 83.8 | 86.6 | 90.4 | 90.2 | 93.1 | 95.3 | 97.3 | 98.3 | 92.9 | 82.0 | |

MODEL AREA = 295.5 SQ CM (45.8 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.528 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICLE = ADH198 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 54.25 PAMB H9 = 29.36 RELHUM = 71.5 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNHR = RPM V8 = 1232.0 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2303.0 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1415 TAPE = X14151 TEST PT NO = 1415 NC = AE067 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1421 X1421C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 92.4 | 94.7 | 90.7 | 89.5 | 88.8 | 90.4 | 91.8 | 93.0 | 94.9 | 93.7 | 100.1 | 101.1 | 90.0 | 136.4 |
| 63 | 96.3 | 98.0 | 99.1 | 96.1 | 95.7 | 97.6 | 97.4 | 97.1 | 99.8 | 94.1 | 102.3 | 100.2 | 92.6 | 140.1 |
| 80 | 97.0 | 101.1 | 97.1 | 97.1 | 97.2 | 101.6 | 99.5 | 99.6 | 100.8 | 100.7 | 104.3 | 104.5 | 89.6 | 142.4 |
| 100 | 95.0 | 102.2 | 97.3 | 96.8 | 98.1 | 102.8 | 101.4 | 103.8 | 102.0 | 104.8 | 104.7 | 108.9 | 93.8 | 144.5 |
| 125 | 91.9 | 94.2 | 96.2 | 97.2 | 99.3 | 102.4 | 101.6 | 101.5 | 101.7 | 105.3 | 111.9 | 114.6 | 100.0 | 147.4 |
| 160 | 89.9 | 92.2 | 93.7 | 92.5 | 92.6 | 98.0 | 105.1 | 100.8 | 102.5 | 107.6 | 112.4 | 116.6 | 105.5 | 148.2 |
| 200 | 93.5 | 92.8 | 94.3 | 93.4 | 95.7 | 100.8 | 103.0 | 101.6 | 105.8 | 107.9 | 113.8 | 118.2 | 107.9 | 150.0 |
| 250 | 92.8 | 95.1 | 95.6 | 95.4 | 97.2 | 99.8 | 101.0 | 104.4 | 107.6 | 113.4 | 119.0 | 121.5 | 111.1 | 153.8 |
| 315 | 93.6 | 95.1 | 94.1 | 94.4 | 96.3 | 101.9 | 103.8 | 104.4 | 108.9 | 115.7 | 120.3 | 122.8 | 113.4 | 155.3 |
| 400 | 95.1 | 96.4 | 96.6 | 95.2 | 97.8 | 101.4 | 106.8 | 105.2 | 109.1 | 117.7 | 122.8 | 123.8 | 114.7 | 156.9 |
| 500 | 96.1 | 97.4 | 98.1 | 96.4 | 98.5 | 102.9 | 103.8 | 106.4 | 110.9 | 120.0 | 124.6 | 124.5 | 115.7 | 158.4 |
| 630 | 96.8 | 97.6 | 98.6 | 97.1 | 99.5 | 103.3 | 104.0 | 107.9 | 111.6 | 121.2 | 125.5 | 124.2 | 116.6 | 159.0 |
| 800 | 100.8 | 100.6 | 99.9 | 98.9 | 101.0 | 104.4 | 104.5 | 108.7 | 113.6 | 120.7 | 126.1 | 124.0 | 117.4 | 159.3 |
| 1000 | 105.3 | 106.0 | 104.1 | 102.1 | 103.2 | 106.1 | 105.4 | 109.1 | 113.8 | 121.1 | 125.8 | 123.7 | 116.1 | 159.1 |
| 1250 | 111.4 | 112.7 | 109.2 | 105.1 | 104.8 | 107.0 | 106.6 | 109.8 | 115.2 | 119.8 | 126.2 | 120.8 | 113.8 | 158.9 |
| 1600 | 114.6 | 112.5 | 113.1 | 108.8 | 107.0 | 107.9 | 107.5 | 110.5 | 115.1 | 119.2 | 125.3 | 118.8 | 112.7 | 158.4 |
| 2000 | 111.8 | 110.6 | 112.0 | 110.9 | 111.2 | 110.9 | 111.2 | 107.8 | 111.5 | 119.8 | 123.0 | 116.8 | 110.9 | 157.4 |
| 2500 | 107.9 | 109.2 | 108.8 | 107.7 | 110.9 | 113.7 | 109.4 | 110.8 | 114.4 | 120.2 | 121.2 | 114.8 | 109.8 | 156.6 |
| 3150 | 107.0 | 108.6 | 108.8 | 106.3 | 107.7 | 112.8 | 112.1 | 111.6 | 114.7 | 118.8 | 120.0 | 112.9 | 107.8 | 155.8 |
| 4000 | 104.4 | 106.3 | 107.1 | 106.0 | 107.2 | 109.9 | 110.6 | 112.4 | 114.3 | 117.0 | 118.0 | 110.5 | 106.1 | 154.4 |
| 5000 | 102.6 | 105.4 | 106.5 | 106.6 | 106.7 | 109.9 | 109.3 | 112.6 | 113.6 | 116.4 | 116.8 | 109.6 | 104.8 | 153.8 |
| 6300 | 101.2 | 104.9 | 104.9 | 103.8 | 105.8 | 109.1 | 109.3 | 112.0 | 113.5 | 114.4 | 115.2 | 107.7 | 103.7 | 153.0 |
| 8000 | 98.8 | 102.7 | 103.2 | 102.8 | 104.6 | 108.2 | 107.4 | 109.7 | 111.7 | 112.5 | 113.0 | 107.0 | 103.6 | 151.6 |
| 10000 | 98.7 | 101.2 | 102.8 | 102.3 | 104.0 | 107.7 | 107.0 | 109.2 | 110.9 | 111.0 | 111.7 | 106.6 | 103.9 | 151.3 |
| 12500 | 96.5 | 98.4 | 100.5 | 100.7 | 103.0 | 106.3 | 105.5 | 106.3 | 108.9 | 109.2 | 109.0 | 106.0 | 102.3 | 150.1 |
| 16000 | 93.9 | 97.4 | 99.1 | 99.2 | 100.7 | 104.4 | 103.8 | 104.9 | 107.5 | 107.0 | 108.0 | 103.0 | 99.2 | 149.8 |
| 20000 | 90.7 | 94.6 | 96.3 | 96.5 | 98.2 | 101.0 | 101.8 | 101.7 | 104.2 | 104.6 | 105.1 | 100.2 | 95.9 | 148.7 |
| 25000 | 87.2 | 91.0 | 92.8 | 93.8 | 94.9 | 100.0 | 98.9 | 98.0 | 101.3 | 102.1 | 100.8 | 97.0 | 91.3 | 148.1 |
| 31500 | 82.9 | 87.1 | 88.9 | 90.2 | 91.0 | 95.3 | 94.6 | 95.2 | 97.6 | 99.2 | 97.5 | 92.9 | 86.4 | 147.6 |
| 40000 | 78.2 | 82.8 | 85.0 | 85.7 | 86.5 | 91.8 | 90.4 | 92.0 | 95.1 | 97.3 | 95.5 | 89.7 | 81.5 | 148.8 |
| 50000 | 72.6 | 77.4 | 78.7 | 80.2 | 80.5 | 87.3 | 84.9 | 86.6 | 90.1 | 93.4 | 90.8 | 85.0 | 75.3 | 148.5 |
| 63000 | 69.8 | 73.7 | 74.7 | 75.2 | 76.3 | 81.6 | 78.9 | 81.7 | 85.7 | 89.1 | 84.9 | 77.6 | 69.0 | 148.9 |
| 80000 | 69.9 | 72.0 | 69.8 | 69.0 | 69.8 | 76.3 | 73.5 | 75.9 | 78.2 | 85.3 | 80.5 | 72.7 | 61.8 | 150.8 |
| GASPL | 119.3 | 119.5 | 117.5 | 118.6 | 121.3 | 120.7 | 122.6 | 125.8 | 130.9 | 135.1 | 133.2 | 125.3 | 169.6 | |
| PWL | 131.3 | 131.7 | 131.9 | 130.5 | 132.0 | 135.0 | 134.5 | 135.8 | 138.6 | 143.0 | 145.6 | 141.4 | 134.9 | |
| PWL | 131.3 | 132.9 | 131.9 | 130.5 | 132.7 | 135.0 | 134.5 | 136.4 | 138.6 | 143.0 | 146.1 | 141.4 | 134.9 | |
| DBA | 120.0 | 120.0 | 119.9 | 117.7 | 118.8 | 121.2 | 120.2 | 122.3 | 125.6 | 130.5 | 134.6 | 131.1 | 124.0 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS9-22137

VEHICLE = ADHT96 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO MPH PWL AREA = FULL SPHERE TAMB F = 53.22 PAMB HQ = 29.33 RELHUM = 70.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FN1N1 = LBS XNL RPM XNH RPM V9 = 1955.0 FPS AE8 = 4.6 SQ IN
 FN1RMB = LBS XNLR RPM XNHR RPM V19 = 2323.2 FPS AE18 = 23.4 SQ IN
 RUNPT = 83F-ZER-1421 TAPE = X1421C TEST PT NO = 1421 NC = AEOR7 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1421 X1421F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 92.4 | 94.7 | 90.7 | 89.5 | 88.8 | 90.4 | 91.8 | 93.0 | 94.9 | 93.7 | 100.1 | 101.1 | 90.0 | 136.4 |
| 63 | 96.3 | 98.0 | 99.1 | 96.1 | 95.7 | 97.6 | 97.4 | 97.1 | 99.8 | 94.1 | 102.3 | 100.2 | 92.6 | 140.1 |
| 80 | 97.0 | 101.1 | 97.1 | 97.2 | 101.6 | 99.5 | 99.6 | 100.8 | 100.7 | 104.3 | 104.5 | 89.6 | 142.4 | |
| 100 | 95.0 | 102.2 | 97.3 | 96.8 | 98.1 | 102.8 | 101.4 | 103.8 | 102.0 | 104.8 | 104.7 | 108.9 | 93.8 | 144.5 |
| 125 | 91.9 | 94.2 | 96.2 | 97.2 | 99.3 | 102.4 | 101.6 | 101.5 | 101.7 | 105.3 | 111.9 | 114.6 | 100.0 | 147.4 |
| 160 | 89.9 | 92.2 | 93.7 | 92.5 | 92.6 | 98.0 | 105.1 | 100.8 | 102.5 | 107.6 | 112.4 | 115.6 | 105.5 | 148.2 |
| 200 | 93.5 | 92.8 | 94.3 | 93.4 | 95.7 | 100.8 | 103.0 | 101.6 | 105.8 | 107.9 | 113.8 | 118.2 | 107.9 | 150.0 |
| 250 | 92.8 | 95.1 | 95.6 | 95.4 | 97.2 | 99.8 | 101.0 | 104.4 | 107.6 | 113.4 | 119.0 | 121.5 | 111.1 | 153.8 |
| 315 | 93.6 | 96.1 | 94.1 | 94.4 | 96.3 | 101.9 | 103.8 | 104.4 | 108.9 | 115.7 | 120.3 | 122.8 | 113.4 | 155.3 |
| 400 | 95.1 | 96.4 | 96.6 | 95.2 | 97.8 | 101.4 | 106.8 | 105.2 | 109.1 | 117.7 | 122.8 | 123.8 | 114.7 | 156.9 |
| 500 | 96.1 | 97.4 | 98.1 | 96.4 | 98.5 | 102.9 | 103.8 | 106.4 | 110.9 | 120.0 | 124.6 | 124.5 | 115.7 | 158.4 |
| 630 | 96.8 | 97.6 | 98.6 | 97.1 | 99.5 | 103.3 | 104.0 | 107.9 | 111.6 | 121.2 | 125.5 | 124.2 | 116.6 | 159.0 |
| 800 | 100.8 | 100.6 | 99.9 | 98.9 | 101.0 | 104.4 | 104.5 | 108.7 | 113.6 | 120.7 | 126.1 | 124.0 | 117.4 | 159.3 |
| 1000 | 105.3 | 106.0 | 104.1 | 102.1 | 103.2 | 106.1 | 105.4 | 109.1 | 113.8 | 121.1 | 125.8 | 123.7 | 115.1 | 159.1 |
| 1250 | 111.4 | 112.7 | 109.2 | 105.1 | 104.8 | 107.0 | 106.6 | 109.8 | 115.2 | 119.8 | 126.2 | 120.8 | 113.8 | 158.9 |
| 1600 | 114.6 | 112.5 | 113.1 | 108.8 | 107.0 | 107.9 | 107.5 | 110.5 | 119.2 | 125.3 | 118.8 | 112.7 | 115.8 | 158.4 |
| 2000 | 111.8 | 110.6 | 112.0 | 110.9 | 111.2 | 110.1 | 107.8 | 111.1 | 115.2 | 119.8 | 123.0 | 116.8 | 110.9 | 157.4 |
| 2500 | 107.9 | 109.2 | 108.8 | 107.7 | 110.9 | 113.7 | 109.4 | 111.8 | 114.4 | 120.2 | 121.2 | 114.8 | 109.8 | 156.6 |
| 3150 | 107.0 | 108.6 | 108.8 | 106.3 | 107.7 | 112.8 | 112.1 | 111.6 | 114.7 | 118.8 | 120.0 | 112.9 | 107.8 | 155.8 |
| 4000 | 104.4 | 106.3 | 107.1 | 106.0 | 107.2 | 109.9 | 110.6 | 112.4 | 114.3 | 117.0 | 118.0 | 110.5 | 106.1 | 154.4 |
| 5000 | 102.6 | 105.4 | 106.5 | 104.6 | 106.7 | 109.9 | 109.3 | 112.6 | 113.6 | 116.4 | 116.8 | 109.6 | 104.8 | 153.8 |
| 6300 | 101.2 | 104.9 | 104.9 | 103.8 | 105.8 | 109.1 | 109.3 | 112.0 | 113.5 | 114.4 | 115.2 | 107.7 | 103.7 | 153.0 |
| 8000 | 98.7 | 102.7 | 103.7 | 102.9 | 104.6 | 108.2 | 107.4 | 109.7 | 111.7 | 112.5 | 113.0 | 107.0 | 103.6 | 151.6 |
| 10000 | 98.7 | 101.2 | 102.8 | 102.3 | 104.0 | 107.7 | 107.0 | 109.2 | 110.9 | 111.0 | 111.7 | 106.6 | 103.9 | 151.3 |
| 12500 | 96.5 | 98.4 | 100.5 | 100.7 | 103.0 | 106.3 | 105.5 | 106.3 | 108.9 | 109.2 | 109.0 | 105.0 | 102.3 | 150.1 |
| 16000 | 93.9 | 97.4 | 99.1 | 99.2 | 100.7 | 104.4 | 103.8 | 104.9 | 107.5 | 107.0 | 108.0 | 103.0 | 99.2 | 149.8 |
| 20000 | 90.7 | 94.6 | 96.3 | 96.5 | 98.2 | 101.0 | 101.8 | 101.7 | 104.2 | 104.6 | 105.1 | 100.2 | 95.9 | 148.7 |
| 25000 | 87.2 | 91.0 | 92.8 | 93.8 | 94.9 | 100.0 | 98.9 | 98.0 | 101.3 | 102.1 | 100.8 | 97.0 | 91.3 | 148.1 |
| 31500 | 82.9 | 87.1 | 88.9 | 90.2 | 91.0 | 95.3 | 94.6 | 95.2 | 97.6 | 99.2 | 97.5 | 92.9 | 86.4 | 147.6 |
| 40000 | 78.2 | 82.8 | 85.0 | 85.7 | 86.5 | 91.8 | 90.4 | 92.0 | 95.1 | 97.3 | 95.5 | 89.7 | 81.5 | 148.8 |
| 50000 | 72.6 | 77.4 | 78.7 | 80.2 | 80.5 | 87.3 | 84.9 | 86.6 | 90.1 | 93.4 | 90.8 | 85.0 | 75.3 | 148.5 |
| 63000 | 69.8 | 73.7 | 74.7 | 75.2 | 76.3 | 81.6 | 78.9 | 81.7 | 85.7 | 89.1 | 84.9 | 77.6 | 69.0 | 148.9 |
| 80000 | 68.9 | 72.0 | 69.8 | 69.0 | 69.8 | 76.3 | 73.5 | 75.9 | 78.2 | 85.3 | 80.5 | 72.7 | 61.8 | 150.8 |

ORIGINAL PAGE IS
OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICLE = ADH196 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 53.22 PAMB HG = 29.33 RELHUM = 70.0 PCT
 WIND DIR = DEG WIND VEL = MPH MPH EXT DIST = 40.0-FT EXT CONFIG = ARC

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1955.0 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2323.2 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-ZER-1421 TAPE = X1421F TEST PT NO = 1421 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1422 X1422C
BACKGROUND 83F-400-1400 X14000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 95.1 | 93.9 | 90.7 | 87.5 | 89.8 | 92.2 | 90.1 | 92.2 | 93.7 | 94.0 | 101.1 | 100.3 | 95.2 | 136.6 |
| 63 | 96.0 | 96.5 | 98.1 | 92.1 | 95.7 | 97.3 | 97.4 | 96.4 | 97.8 | 98.6 | 103.0 | 104.2 | 96.9 | 140.4 |
| 80 | 96.0 | 100.1 | 96.1 | 96.6 | 96.5 | 100.3 | 98.0 | 98.1 | 99.1 | 98.7 | 102.5 | 102.2 | 92.9 | 140.9 |
| 100 | 95.0 | 100.2 | 95.5 | 94.8 | 96.4 | 101.3 | 99.9 | 102.8 | 100.5 | 101.6 | 102.5 | 107.9 | 97.6 | 142.9 |
| 125 | 92.6 | 94.2 | 96.4 | 96.5 | 99.1 | 101.4 | 99.6 | 100.5 | 99.4 | 102.3 | 108.6 | 113.1 | 99.7 | 145.5 |
| 160 | 90.7 | 87.0 | 91.5 | 90.0 | 91.4 | 95.5 | 97.6 | 97.0 | 99.2 | 103.8 | 108.7 | 112.4 | 103.6 | 144.7 |
| 200 | 90.5 | 91.8 | 91.1 | 89.9 | 92.2 | 96.3 | 97.0 | 98.6 | 103.1 | 103.9 | 109.8 | 115.5 | 106.9 | 146.9 |
| 250 | 88.5 | 91.8 | 92.6 | 91.6 | 93.0 | 96.6 | 98.2 | 100.9 | 103.6 | 109.2 | 115.5 | 119.0 | 109.1 | 150.8 |
| 315 | 90.3 | 91.4 | 91.6 | 90.2 | 93.3 | 97.6 | 98.5 | 100.7 | 104.9 | 111.7 | 116.8 | 120.3 | 111.2 | 152.2 |
| 400 | 91.6 | 91.9 | 93.4 | 91.4 | 93.5 | 96.4 | 99.5 | 101.7 | 105.1 | 113.4 | 119.3 | 121.3 | 111.4 | 153.7 |
| 500 | 91.1 | 93.6 | 94.6 | 92.7 | 94.5 | 98.6 | 99.3 | 102.2 | 106.9 | 115.7 | 121.3 | 121.5 | 110.7 | 155.0 |
| 630 | 92.5 | 93.6 | 95.1 | 92.9 | 94.7 | 98.6 | 100.2 | 103.4 | 106.8 | 117.2 | 122.5 | 120.7 | 109.4 | 155.5 |
| 800 | 96.6 | 97.6 | 97.1 | 94.7 | 98.0 | 99.6 | 101.0 | 104.7 | 109.1 | 116.5 | 123.6 | 119.8 | 108.4 | 155.9 |
| 1000 | 105.5 | 104.0 | 103.1 | 98.8 | 99.2 | 101.8 | 101.9 | 105.6 | 109.6 | 116.9 | 123.0 | 118.9 | 107.9 | 155.6 |
| 1250 | 108.7 | 110.9 | 108.0 | 102.1 | 101.1 | 103.5 | 102.6 | 106.3 | 110.7 | 115.8 | 122.9 | 116.6 | 107.0 | 155.5 |
| 1600 | 109.3 | 111.9 | 108.0 | 106.0 | 105.4 | 105.4 | 107.3 | 111.4 | 115.5 | 122.3 | 115.3 | 105.9 | 105.9 | 155.4 |
| 2000 | 105.8 | 107.1 | 108.7 | 108.6 | 110.4 | 110.1 | 105.8 | 108.1 | 111.5 | 115.8 | 121.0 | 113.6 | 104.9 | 154.7 |
| 2500 | 104.9 | 105.4 | 104.8 | 104.0 | 107.6 | 112.0 | 109.7 | 108.0 | 111.2 | 116.4 | 118.0 | 111.0 | 104.3 | 153.5 |
| 3150 | 103.5 | 105.3 | 105.8 | 102.6 | 103.4 | 108.5 | 110.4 | 110.4 | 111.7 | 115.3 | 116.8 | 108.7 | 101.8 | 152.7 |
| 4000 | 101.4 | 103.0 | 103.9 | 102.3 | 104.5 | 106.9 | 107.3 | 110.7 | 111.5 | 113.2 | 114.7 | 106.0 | 100.1 | 151.3 |
| 5000 | 100.6 | 102.1 | 103.5 | 100.9 | 102.9 | 106.4 | 106.3 | 110.4 | 111.8 | 113.0 | 112.5 | 104.8 | 98.3 | 150.7 |
| 6300 | 100.0 | 101.6 | 102.2 | 99.8 | 101.9 | 105.8 | 106.9 | 110.1 | 112.3 | 111.5 | 110.2 | 102.3 | 96.2 | 150.2 |
| 8000 | 98.4 | 100.5 | 101.5 | 99.7 | 101.4 | 104.4 | 104.6 | 107.5 | 110.2 | 109.3 | 108.0 | 100.5 | 96.1 | 148.6 |
| 10000 | 98.2 | 99.3 | 100.8 | 99.4 | 100.5 | 103.8 | 104.0 | 106.8 | 108.9 | 107.6 | 106.7 | 99.2 | 94.5 | 148.1 |
| 12500 | 96.3 | 97.3 | 99.1 | 98.5 | 99.6 | 102.6 | 102.6 | 103.4 | 106.4 | 105.7 | 103.9 | 98.3 | 93.1 | 146.8 |
| 15000 | 94.5 | 97.0 | 98.0 | 97.2 | 98.1 | 100.8 | 100.4 | 102.0 | 105.1 | 102.8 | 102.6 | 95.3 | 90.5 | 145.4 |
| 20000 | 91.5 | 94.0 | 95.4 | 95.1 | 95.8 | 97.8 | 98.6 | 101.0 | 99.7 | 99.7 | 99.7 | 94.0 | 88.2 | 145.2 |
| 25000 | 87.7 | 90.6 | 91.9 | 92.4 | 92.5 | 96.6 | 95.7 | 95.3 | 97.4 | 95.2 | 93.6 | 91.0 | 84.1 | 144.1 |
| 31500 | 83.4 | 86.3 | 88.4 | 89.0 | 88.5 | 92.6 | 92.1 | 91.7 | 92.9 | 91.2 | 90.0 | 85.9 | 79.6 | 143.4 |
| 40000 | 78.6 | 81.7 | 83.9 | 84.9 | 84.1 | 89.0 | 87.6 | 88.0 | 90.0 | 88.2 | 86.2 | 81.8 | 75.1 | 143.6 |
| 50000 | 72.2 | 75.4 | 77.5 | 78.2 | 78.1 | 83.8 | 81.5 | 82.7 | 83.4 | 82.2 | 81.0 | 76.0 | 68.8 | 142.1 |
| 63000 | 66.0 | 70.1 | 72.2 | 72.7 | 73.6 | 78.3 | 75.4 | 77.2 | 78.9 | 78.5 | 75.8 | 69.1 | 62.3 | 142.3 |
| 80000 | 60.8 | 65.1 | 65.4 | 65.1 | 67.4 | 71.9 | 69.2 | 69.7 | 71.3 | 69.8 | 68.5 | 61.8 | 53.7 | 142.1 |
| GASPL | 115.9 | 117.3 | 117.2 | 114.9 | 116.1 | 118.6 | 118.1 | 120.0 | 122.7 | 127.0 | 132.1 | 129.9 | 119.9 | 166.3 |
| PWL | 127.6 | 129.1 | 129.7 | 127.7 | 129.3 | 132.5 | 132.1 | 133.5 | 135.6 | 139.3 | 142.6 | 137.9 | 129.5 | |
| PWLT | 127.6 | 129.6 | 130.7 | 128.4 | 130.5 | 133.0 | 132.1 | 134.1 | 135.6 | 139.3 | 143.2 | 137.9 | 129.5 | |
| DBA | 116.3 | 117.6 | 117.6 | 115.1 | 116.3 | 118.6 | 117.9 | 119.8 | 122.4 | 126.7 | 131.6 | 127.4 | 117.4 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|-----------------|----------------------|
| VEHICLE = ADHT93 | TEST DATE = 04-05-83 | LOCAT = C41 ANECH CH | CONFIG = 14 | MODEL = AX | FLTVEL = 400. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 53.44 | PAMB HG = 29.28 | RELHUM = 66.4 PCT |
| WIND DIR = | DEG WIND VEL = | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNTNT = | LBS XNL = | RPM XNH = | V8 = 1964.9 FPS | AE8 = | 4.6 SQ IN |
| FNRMB = | LBS XNLR = | RPM XNHR = | V10 = 2314.3 FPS | AE10 = | 23.4 SQ IN |
| RUNPT = 83F-400-1422 | TAPE = | TEST PT NO = 1422 | NC = | AE087 | CORR FAN SPEED = RPM |

IDENTIFICATION - 83F-400-1422 X1422F

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 96.3 | 98.2 | 97.5 | 94.9 | 94.6 | 96.6 | 96.3 | 97.3 | 102.6 | 109.0 | 113.9 | 118.0 | 110.6 | 149.9 |
| 315 | 96.3 | 98.2 | 97.5 | 94.9 | 95.1 | 97.8 | 97.7 | 98.9 | 103.3 | 111.1 | 116.9 | 119.9 | 112.8 | 152.0 |
| 400 | 98.0 | 97.8 | 96.6 | 93.6 | 95.1 | 96.6 | 98.7 | 99.9 | 105.0 | 113.4 | 119.1 | 120.8 | 113.6 | 153.6 |
| 500 | 97.7 | 97.2 | 97.6 | 94.4 | 96.4 | 99.0 | 98.4 | 100.2 | 105.0 | 115.0 | 120.7 | 121.0 | 114.4 | 154.5 |
| 630 | 98.7 | 100.0 | 99.6 | 96.1 | 96.6 | 99.2 | 99.3 | 101.3 | 107.8 | 114.9 | 122.5 | 121.5 | 116.3 | 155.7 |
| 800 | 99.5 | 99.8 | 99.8 | 96.2 | 99.5 | 100.2 | 100.2 | 102.7 | 108.9 | 116.1 | 123.0 | 122.3 | 118.5 | 156.5 |
| 1000 | 101.6 | 101.9 | 100.6 | 97.2 | 100.9 | 102.4 | 101.4 | 104.0 | 110.0 | 115.0 | 122.8 | 120.0 | 117.8 | 155.7 |
| 1250 | 112.8 | 110.1 | 107.7 | 101.9 | 103.0 | 104.3 | 102.1 | 104.6 | 110.8 | 114.7 | 122.4 | 118.8 | 115.9 | 155.7 |
| 1600 | 117.1 | 117.2 | 112.9 | 105.5 | 108.0 | 106.4 | 104.2 | 105.8 | 111.1 | 115.2 | 121.3 | 117.3 | 116.1 | 156.4 |
| 2000 | 116.1 | 116.9 | 116.2 | 111.1 | 113.1 | 111.3 | 105.7 | 106.9 | 111.3 | 116.4 | 118.7 | 115.3 | 116.1 | 156.5 |
| 2500 | 113.4 | 113.6 | 114.1 | 112.6 | 111.1 | 113.6 | 110.0 | 107.2 | 112.0 | 115.4 | 117.6 | 113.0 | 113.8 | 155.4 |
| 3150 | 115.3 | 114.3 | 111.9 | 109.3 | 106.6 | 110.5 | 110.0 | 109.8 | 112.4 | 113.8 | 115.8 | 112.0 | 112.0 | 154.4 |
| 4000 | 110.0 | 111.2 | 110.9 | 106.7 | 108.2 | 109.5 | 108.5 | 110.6 | 112.8 | 113.5 | 113.5 | 109.0 | 109.9 | 153.0 |
| 5000 | 109.0 | 109.7 | 109.6 | 107.0 | 107.0 | 109.4 | 108.0 | 110.5 | 113.4 | 112.0 | 111.1 | 106.1 | 107.0 | 152.3 |
| 6300 | 108.1 | 108.8 | 109.3 | 105.7 | 105.9 | 108.8 | 108.6 | 110.3 | 112.0 | 110.7 | 110.0 | 106.0 | 109.3 | 151.9 |
| 8000 | 107.3 | 108.2 | 107.9 | 104.5 | 105.4 | 107.4 | 106.8 | 108.3 | 111.0 | 109.3 | 109.1 | 105.0 | 108.1 | 151.0 |
| 10000 | 105.5 | 106.9 | 107.0 | 104.3 | 104.6 | 106.8 | 106.2 | 107.7 | 109.1 | 108.2 | 107.0 | 104.9 | 107.3 | 150.5 |
| 12500 | 105.1 | 105.4 | 106.1 | 103.7 | 103.6 | 105.6 | 104.9 | 104.5 | 108.3 | 105.7 | 106.1 | 103.3 | 105.3 | 149.9 |
| 16000 | 102.6 | 102.9 | 103.8 | 102.2 | 102.1 | 103.8 | 102.6 | 103.1 | 104.9 | 103.4 | 104.0 | 101.9 | 103.6 | 149.1 |
| 20000 | 100.4 | 102.2 | 102.3 | 100.6 | 99.9 | 100.8 | 101.0 | 99.9 | 102.8 | 100.6 | 99.8 | 100.6 | 100.9 | 148.6 |
| 25000 | 96.8 | 98.6 | 99.1 | 97.8 | 97.1 | 99.6 | 98.2 | 97.1 | 99.0 | 97.4 | 97.0 | 96.4 | 97.4 | 148.0 |
| 31500 | 95.0 | 96.7 | 96.5 | 95.5 | 93.1 | 95.6 | 94.5 | 93.5 | 96.5 | 94.5 | 93.4 | 92.6 | 93.7 | 148.1 |
| 40000 | 89.9 | 91.6 | 92.2 | 91.2 | 88.7 | 92.0 | 90.0 | 89.5 | 90.3 | 89.0 | 88.6 | 87.2 | 87.8 | 147.4 |
| 50000 | 84.7 | 86.5 | 87.3 | 86.7 | 82.7 | 86.8 | 83.8 | 84.2 | 85.3 | 84.4 | 82.1 | 78.3 | 78.4 | 145.5 |
| 63000 | 77.3 | 79.3 | 80.0 | 79.1 | 78.2 | 81.3 | 77.3 | 77.7 | 79.5 | 77.4 | 76.5 | 72.8 | 71.7 | 145.3 |
| 80000 | 69.7 | 72.6 | 73.1 | 72.1 | 72.0 | 74.9 | 71.1 | 70.4 | 69.7 | 67.6 | 66.7 | 63.0 | 61.9 | 145.0 |

OASPL 123.3 123.4 122.2 118.6 118.9 120.2 118.6 119.5 122.9 126.2 131.4 130.2 125.7 167.1
 PNL 135.7 135.4 134.5 131.7 131.3 133.3 131.9 132.3 135.4 137.9 140.9 138.0 137.1
 PNLT 137.8 137.2 134.5 131.7 132.5 133.3 131.9 132.3 135.4 137.9 140.9 138.0 137.1
 DBA 192.8 195.2 195.8 194.9 194.0 197.1 193.4 193.2 193.6 191.8 190.7 187.3 186.7

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICL = ADH193 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIO = 14 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 53.44 PAMB HG = 29.28 RELHUM = 66.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNL RPM XNH = RPM V8 = 1964.9 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 2314.3 FPS AE18 = 23.4 SQ IN
 IPT 4F-4 422 PE = 2F PT = T4 AEO SPEED = CORR RPM SPEED = RPM

DATPROC - FLTRAN
 FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1422 X14221

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 71.7 | 75.1 | 75.5 | 73.6 | 73.7 | 75.9 | 75.4 | 76.0 | 80.8 | 86.0 | 89.3 | 91.2 | 80.7 | 164.7 |
| 63 | 71.7 | 75.1 | 75.5 | 73.6 | 74.2 | 77.1 | 76.8 | 77.6 | 81.2 | 88.0 | 92.3 | 93.1 | 82.6 | 166.9 |
| 80 | 73.3 | 74.6 | 74.5 | 72.2 | 74.2 | 75.8 | 77.8 | 78.5 | 82.9 | 90.2 | 94.4 | 93.9 | 83.3 | 168.4 |
| 100 | 73.0 | 74.0 | 75.5 | 73.0 | 75.5 | 78.1 | 77.4 | 78.8 | 82.9 | 91.8 | 95.9 | 94.0 | 83.9 | 169.3 |
| 125 | 73.9 | 76.7 | 77.4 | 74.7 | 75.6 | 78.3 | 78.3 | 79.9 | 85.6 | 91.6 | 97.6 | 94.4 | 85.6 | 170.5 |
| 160 | 74.4 | 76.3 | 77.5 | 74.6 | 78.4 | 79.1 | 79.1 | 81.1 | 86.5 | 92.7 | 97.9 | 94.9 | 87.4 | 171.3 |
| 200 | 76.2 | 78.2 | 78.0 | 75.4 | 79.6 | 81.3 | 80.0 | 82.2 | 87.5 | 91.3 | 97.5 | 92.2 | 86.2 | 170.6 |
| 250 | 87.1 | 86.1 | 84.9 | 79.9 | 81.5 | 82.9 | 80.5 | 82.6 | 88.0 | 90.8 | 96.7 | 90.6 | 84.7 | 170.5 |
| 315 | 91.0 | 92.9 | 89.8 | 83.2 | 86.1 | 84.7 | 82.3 | 83.5 | 88.0 | 90.9 | 95.1 | 88.6 | 83.1 | 171.2 |
| 400 | 89.5 | 92.1 | 92.7 | 88.4 | 90.9 | 89.3 | 83.6 | 84.2 | 87.8 | 91.7 | 92.1 | 85.9 | 82.0 | 171.3 |
| 500 | 86.2 | 88.4 | 90.2 | 89.6 | 88.6 | 91.3 | 87.5 | 84.2 | 88.1 | 90.2 | 90.4 | 82.9 | 78.7 | 170.3 |
| 630 | 87.5 | 88.6 | 87.6 | 85.9 | 83.7 | 87.8 | 88.2 | 86.4 | 88.1 | 88.1 | 88.0 | 79.5 | 75.8 | 169.3 |
| 800 | 81.5 | 85.0 | 86.2 | 82.9 | 84.9 | 86.4 | 85.3 | 86.8 | 88.0 | 87.2 | 85.1 | 77.2 | 72.3 | 167.9 |
| 1000 | 79.9 | 83.0 | 84.4 | 82.8 | 83.3 | 85.9 | 84.3 | 86.3 | 88.2 | 85.2 | 82.0 | 73.4 | 68.1 | 167.2 |
| 1250 | 78.2 | 81.4 | 83.6 | 81.1 | 81.8 | 84.9 | 84.5 | 85.6 | 86.3 | 83.3 | 80.1 | 72.2 | 68.6 | 166.7 |
| 1600 | 76.1 | 79.8 | 81.3 | 79.0 | 80.6 | 82.8 | 82.0 | 82.8 | 84.4 | 80.9 | 77.9 | 69.4 | 64.7 | 165.9 |
| 2000 | 72.5 | 77.0 | 78.2 | 77.8 | 78.8 | 81.2 | 80.5 | 81.2 | 81.4 | 78.4 | 74.0 | 66.9 | 60.0 | 165.3 |
| 2500 | 69.4 | 73.4 | 76.5 | 75.6 | 76.3 | 78.6 | 77.6 | 76.4 | 78.7 | 73.7 | 70.4 | 61.6 | 52.1 | 164.7 |
| 3150 | 62.5 | 67.4 | 71.3 | 71.6 | 72.4 | 74.4 | 73.0 | 72.4 | 72.4 | 68.0 | 64.0 | 54.1 | 41.0 | 163.9 |
| 4000 | 52.7 | 60.7 | 64.6 | 65.2 | 65.9 | 67.2 | 67.0 | 64.6 | 65.1 | 59.0 | 52.1 | 42.5 | 22.5 | 163.5 |
| 5000 | 37.7 | 47.8 | 53.5 | 55.4 | 56.4 | 57.5 | 54.8 | 53.5 | 46.7 | 37.9 | 23.0 | | | 162.8 |
| 6300 | 16.9 | 30.5 | 37.6 | 41.1 | 41.1 | 44.4 | 42.6 | 39.1 | 37.6 | 28.4 | 15.3 | | | 163.0 |
| 8000 | 10.6 | 16.3 | 17.3 | 17.3 | 17.3 | 21.7 | 18.5 | 14.5 | 8.8 | | | | | 162.3 |
| 10000 | | | | | | | | | | | | | | 161.4 |
| 12500 | | | | | | | | | | | | | | 160.2 |
| 16000 | | | | | | | | | | | | | | 159.8 |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ASPL 96.2 98.1 98.0 95.0 96.0 97.3 95.3 95.6 98.7 101.8 105.9 102.6 94.6 182.0

PNL 101.5 104.0 104.9 102.3 103.5 104.8 102.8 103.2 105.4 106.5 108.5 103.4 96.5

PNLT 102.7 104.9 105.5 102.8 104.1 104.8 103.3 103.2 106.1 106.5 108.5 103.4 96.5

DBA 92.0 94.3 94.8 92.4 93.0 94.9 93.4 93.7 95.5 95.3 96.5 90.4 84.9

MODEL AREA = 295.5 SQ CM (45.8 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.528 FREQ SHIFT = -7

NASA DUAL FLOW THERMAL SHIELD/DFTAS-14/NAS3-22137

VEHICL = ADH193 TEST DATE = 04-05-83 LOCAT = C41 ANECH CH CONFIG = 14 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO MPH = RPM XNH = RPM V8 = 1964.9 FPS AE8 = 4.6 SQ IN
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL TAMB F = 53.44 PAMB HG = 29.28 RELHUM = 66.4 PCT
 MIKE HT = NBFR

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1964.9 FPS AE8 = 4.6 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2314.3 FPS AE18 = 23.4 SQ IN

RUNPT = 83F-400-1422 TAPE = X14221 TEST PT NO = 1422 NC = AE087 CORR FAN SPEED = RPM

4.3 Acoustic Data of Suppressed Coannular Plug Nozzles

For easy reference, the scope of acoustic tests with the suppressed coannular configurations summarized in Table 3-I is repeated in Table 4-V and the acoustic test points associated with each of the test configurations identified.

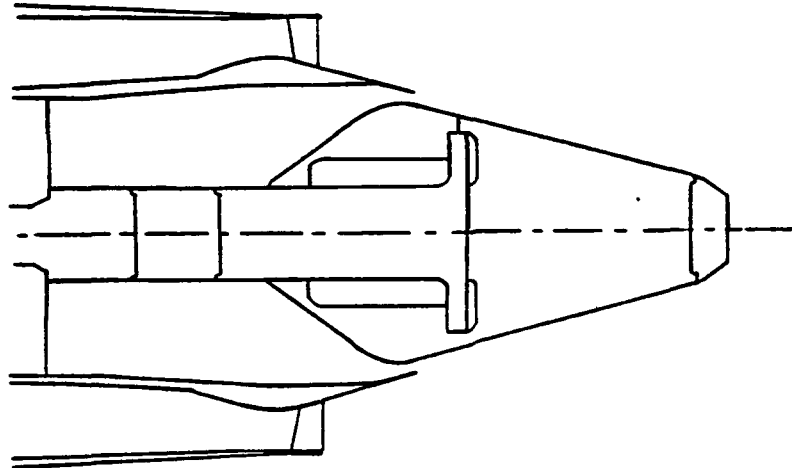
The acoustic data are presented in Subsections 4.3.1 through 4.3.3.

TABLE 4-V. IDENTIFICATION OF ACOUSTIC TEST POINTS OF SUPPRESSED COANNULAR PLUG NOZZLES.

| BASELINE NOZZLE | SHIELD | | TEST POINTS | | v^s/v^o | CONFIG. NAME | ACOUSTIC TEST POINTS | |
|--|---------------------|---------------|-------------|--------|-----------|--------------|------------------------------|------------------------------------|
| | TYPE | ORIENT. | STATIC | FLIGHT | | | | |
| Mechanically Suppressed Coannular Plug Nozzle with 20-Shallow-Chute Suppressor in Outer Stream | No Shield | - | 6 | 6 | 0.0 | TAS-15 | 1501 thru 1512 | |
| | 180° Partial Shield | Sideline | 5 | 5 | 0.64 | TAS-16 | 1603 thru 1612 | |
| | | Community | 7 | 5 | | | 1633 thru 1642
1645, 1651 | |
| | 360° Full Shield | Community | 7 | 7 | 6 | 0.83 | TAS-17 | 1703 thru 1712
1765, 1721, 1722 |
| | | Community | 5 | 5 | 5 | 0.48 | TAS-18 | 1803 thru 1812 |
| | | Axi-Symmetric | 6 | 6 | 6 | 0.83 | TAS-19 | 1903 thru 1912
1921, 1922 |

NOTE: The Shield to Outer Stream Velocity Ratios of This Table Correspond to a Typical Takeoff Condition of $P_r \sim 3.025$, $T_r^o \sim 1640^{\circ}R$, $P_r^i \sim 2.28$, $T_r^i \sim 880^{\circ}R$.

4.3.1 Acoustic Data of Suppressed Baseline Coannular Plug
Nozzle (TAS-15).



IDENTIFICATION - MODEL 83F-ZER-1501 X1501C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 76.1 | 82.7 | 83.2 | 76.2 | 73.6 | 76.7 | 79.3 | 81.0 | 76.7 | 83.2 | 81.4 | 88.6 | 84.5 | 123.4 |
| 63 | 81.5 | 90.8 | 94.1 | 84.6 | 82.0 | 83.1 | 89.2 | 91.9 | 85.8 | 89.6 | 85.5 | 95.7 | 95.1 | 132.1 |
| 80 | 80.3 | 83.6 | 81.6 | 80.6 | 79.5 | 84.1 | 83.5 | 83.9 | 83.3 | 84.7 | 86.8 | 87.7 | 75.6 | 125.6 |
| 100 | 78.0 | 83.2 | 80.0 | 80.0 | 81.4 | 82.1 | 85.3 | 83.3 | 87.8 | 88.5 | 91.6 | 75.8 | 126.8 | |
| 125 | 76.9 | 79.9 | 81.7 | 81.2 | 83.1 | 85.2 | 83.6 | 84.0 | 83.7 | 87.3 | 92.4 | 95.6 | 79.5 | 128.9 |
| 160 | 75.4 | 75.7 | 81.0 | 77.8 | 78.9 | 82.2 | 85.4 | 83.3 | 83.7 | 86.3 | 91.7 | 95.4 | 84.8 | 128.3 |
| 200 | 76.0 | 78.8 | 82.6 | 78.6 | 80.0 | 83.6 | 85.0 | 86.1 | 86.8 | 88.9 | 93.8 | 98.0 | 87.6 | 130.5 |
| 250 | 75.8 | 80.1 | 80.6 | 78.4 | 81.0 | 84.6 | 85.2 | 86.9 | 88.3 | 92.9 | 96.8 | 100.0 | 89.9 | 132.7 |
| 315 | 77.1 | 80.4 | 81.1 | 80.2 | 82.5 | 85.9 | 86.5 | 88.4 | 89.4 | 92.7 | 96.3 | 99.8 | 92.2 | 132.8 |
| 400 | 77.1 | 80.1 | 81.4 | 79.9 | 82.5 | 85.4 | 90.2 | 88.4 | 89.1 | 94.7 | 96.8 | 99.5 | 91.2 | 133.3 |
| 500 | 77.6 | 81.1 | 82.9 | 80.9 | 83.0 | 86.9 | 87.5 | 89.2 | 90.6 | 94.7 | 97.1 | 98.3 | 89.9 | 133.0 |
| 630 | 78.0 | 81.1 | 83.1 | 81.6 | 84.0 | 86.6 | 86.7 | 89.4 | 90.1 | 95.7 | 96.3 | 96.0 | 89.4 | 132.4 |
| 800 | 79.3 | 83.4 | 84.1 | 83.4 | 85.5 | 87.9 | 87.8 | 92.9 | 95.9 | 96.2 | 96.3 | 95.3 | 90.4 | 132.9 |
| 1000 | 81.8 | 83.3 | 85.1 | 83.3 | 85.2 | 88.3 | 87.4 | 90.6 | 91.6 | 94.9 | 95.3 | 93.9 | 88.6 | 132.2 |
| 1250 | 80.4 | 85.7 | 85.5 | 83.9 | 85.3 | 88.7 | 87.8 | 91.0 | 92.5 | 94.4 | 92.4 | 88.5 | 132.1 | |
| 1600 | 81.8 | 85.7 | 86.9 | 85.3 | 86.8 | 89.9 | 89.2 | 92.0 | 93.4 | 93.2 | 94.3 | 92.3 | 88.4 | 132.5 |
| 2000 | 82.5 | 86.3 | 86.5 | 85.9 | 87.5 | 90.6 | 90.1 | 92.6 | 94.2 | 94.5 | 92.4 | 89.9 | 133.4 | |
| 2500 | 81.7 | 87.7 | 87.1 | 86.5 | 87.7 | 91.0 | 90.7 | 93.3 | 94.5 | 97.0 | 95.5 | 94.1 | 92.1 | 134.3 |
| 3150 | 83.3 | 88.9 | 88.6 | 86.9 | 88.7 | 92.1 | 92.2 | 94.7 | 96.5 | 98.3 | 97.1 | 95.5 | 93.6 | 135.9 |
| 4000 | 83.5 | 88.6 | 89.2 | 87.6 | 89.8 | 93.0 | 92.4 | 96.0 | 97.6 | 98.4 | 98.8 | 97.9 | 96.5 | 137.0 |
| 5000 | 84.8 | 89.0 | 90.2 | 88.8 | 90.8 | 93.8 | 93.9 | 97.5 | 97.8 | 100.1 | 100.9 | 99.7 | 98.4 | 138.6 |
| 6300 | 85.7 | 91.1 | 91.2 | 89.5 | 91.8 | 95.3 | 95.3 | 98.3 | 99.3 | 100.5 | 101.7 | 101.0 | 100.7 | 139.9 |
| 8000 | 84.1 | 89.5 | 90.8 | 89.5 | 91.7 | 95.5 | 94.4 | 96.8 | 98.0 | 99.2 | 100.8 | 100.8 | 100.9 | 139.5 |
| 10000 | 84.1 | 89.4 | 90.0 | 92.1 | 95.9 | 94.9 | 98.6 | 98.6 | 98.3 | 100.1 | 100.5 | 101.0 | 100.5 | 140.2 |
| 12500 | 82.6 | 86.9 | 88.7 | 89.1 | 91.2 | 94.9 | 94.5 | 96.5 | 96.8 | 97.4 | 97.5 | 99.9 | 99.7 | 139.6 |
| 16000 | 80.7 | 86.6 | 87.8 | 88.3 | 90.1 | 93.5 | 93.1 | 95.3 | 96.9 | 96.1 | 96.9 | 97.6 | 96.5 | 139.7 |
| 20000 | 78.5 | 83.9 | 85.1 | 86.3 | 88.0 | 91.3 | 92.4 | 93.0 | 94.2 | 94.2 | 94.1 | 94.7 | 93.9 | 139.2 |
| 25000 | 76.5 | 81.2 | 82.5 | 83.8 | 85.2 | 89.8 | 89.9 | 90.2 | 91.7 | 91.2 | 91.0 | 91.7 | 88.9 | 138.8 |
| 31500 | 72.8 | 76.9 | 79.5 | 80.9 | 81.5 | 85.9 | 85.6 | 86.9 | 88.0 | 87.9 | 88.2 | 87.2 | 85.0 | 138.3 |
| 40000 | 67.6 | 72.8 | 74.5 | 76.4 | 77.3 | 82.2 | 81.0 | 83.3 | 85.1 | 84.7 | 84.7 | 82.5 | 80.4 | 138.6 |
| 50000 | 61.5 | 66.2 | 68.3 | 70.5 | 70.9 | 77.3 | 75.4 | 77.2 | 78.7 | 79.0 | 78.7 | 77.5 | 74.4 | 137.2 |
| 63000 | 55.4 | 60.1 | 63.4 | 64.2 | 65.8 | 71.6 | 69.4 | 72.2 | 73.8 | 73.2 | 73.7 | 71.4 | 68.2 | 137.0 |
| 80000 | 47.4 | 53.4 | 55.4 | 56.1 | 57.8 | 64.9 | 63.1 | 65.7 | 66.6 | 66.6 | 66.8 | 65.0 | 61.1 | 137.1 |
| GASPL | 95.6 | 100.6 | 101.7 | 100.1 | 101.9 | 105.3 | 105.2 | 107.7 | 108.7 | 110.1 | 111.1 | 111.7 | 109.2 | 151.4 |
| PNL | 108.0 | 112.9 | 113.4 | 111.8 | 113.7 | 117.0 | 117.1 | 119.9 | 120.9 | 122.7 | 123.6 | 123.3 | 120.9 | |
| PNLT | 108.0 | 112.9 | 113.4 | 111.8 | 113.7 | 117.0 | 117.6 | 119.9 | 122.6 | 122.7 | 123.6 | 123.3 | 120.9 | |
| DBA | 94.3 | 99.1 | 99.7 | 98.4 | 100.3 | 103.6 | 103.3 | 106.3 | 107.5 | 109.0 | 109.6 | 109.0 | 107.3 | |

ORIGINAL PAGE IS
OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

| | | | | | | | | | | | |
|------------|--------------|----------------|----------|--------------|--------------|--------------|-------|-----------|-------|------------------|------------|
| VERTICAL = | ADH202 | TEST DATE = | 04-12-83 | LOCAT = | C41 ANECH CH | CONFIG = | 15 | MODEL = | AX | FLTVEL = | 0. FPS |
| IAPLHA = | SB59 | IEGA = | NO | PWL AREA = | FULL SPHERE | TAMB F = | 45.95 | PAMB HG = | 29.45 | RELHUM = | 59.2 PCT |
| WIND DIR = | | DEG WIND VEL = | | EXT DIST = | 40.0 FT | EXT CONFIG = | ARC | MIKE HT = | | NBFR = | |
| FNI/NT = | LBS XNL | RPM | RPM | XNH | RPM | V8 | | AE8 | | | 4.0 SQ IN |
| FNRAMB = | LBS XNLR | RPM | RPM | XNHR | RPM | V18 | | AE18 | | | 19.9 SQ IN |
| RUNPT = | 83F-ZER-1501 | TAPE | | TEST PT NO = | 1501 | NC | | | | CORR FAN SPEED = | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1501 X1501F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|
| 50 | 76.1 | 82.7 | 83.2 | 76.2 | 73.6 | 76.7 | 79.3 | 81.0 | 76.7 | 83.2 | 81.4 | 88.6 | 84.5 | 123.4 |
| 63 | 81.5 | 93.6 | 94.1 | 84.6 | 82.0 | 83.1 | 89.2 | 91.9 | 85.8 | 89.6 | 85.5 | 95.7 | 95.1 | 132.1 |
| 80 | 80.3 | 83.6 | 81.6 | 80.6 | 79.5 | 84.1 | 83.5 | 83.9 | 83.3 | 84.7 | 86.8 | 87.7 | 75.6 | 125.6 |
| 100 | 78.0 | 83.2 | 80.0 | 80.0 | 81.4 | 84.0 | 82.1 | 85.3 | 83.3 | 87.8 | 88.5 | 91.6 | 75.8 | 126.8 |
| 125 | 76.9 | 79.9 | 81.7 | 81.2 | 83.1 | 85.2 | 83.6 | 84.0 | 83.7 | 87.3 | 92.4 | 95.6 | 79.5 | 128.9 |
| 160 | 75.4 | 75.7 | 81.0 | 77.8 | 78.9 | 82.2 | 85.4 | 83.3 | 83.7 | 86.3 | 91.7 | 95.4 | 84.8 | 128.3 |
| 200 | 76.0 | 78.8 | 82.6 | 78.6 | 80.0 | 83.6 | 85.0 | 86.1 | 86.8 | 88.9 | 93.8 | 98.0 | 87.6 | 130.5 |
| 250 | 75.8 | 80.1 | 80.6 | 78.4 | 81.0 | 84.6 | 85.2 | 86.9 | 88.3 | 92.9 | 96.8 | 100.0 | 89.9 | 132.7 |
| 315 | 77.1 | 80.4 | 81.1 | 80.2 | 82.5 | 85.9 | 86.5 | 88.4 | 89.4 | 92.7 | 96.3 | 99.8 | 92.2 | 132.8 |
| 400 | 77.1 | 80.1 | 81.4 | 79.9 | 82.5 | 85.4 | 90.2 | 88.4 | 89.1 | 94.7 | 96.8 | 99.5 | 91.2 | 133.3 |
| 500 | 77.6 | 81.1 | 82.9 | 80.9 | 83.0 | 86.9 | 87.5 | 89.2 | 90.6 | 94.7 | 97.1 | 98.3 | 89.9 | 133.0 |
| 630 | 78.0 | 81.1 | 83.1 | 81.6 | 84.0 | 86.6 | 86.7 | 89.4 | 90.1 | 95.7 | 96.3 | 96.0 | 89.4 | 132.4 |
| 800 | 79.3 | 83.4 | 84.1 | 83.4 | 85.5 | 87.9 | 87.8 | 92.9 | 95.9 | 96.2 | 96.3 | 95.3 | 90.4 | 133.9 |
| 1000 | 81.8 | 83.3 | 85.1 | 83.3 | 85.2 | 88.3 | 87.4 | 90.6 | 91.6 | 94.9 | 95.3 | 93.9 | 88.6 | 132.2 |
| 1250 | 80.4 | 85.7 | 85.5 | 83.9 | 85.3 | 88.7 | 87.8 | 91.0 | 92.5 | 94.5 | 94.4 | 92.4 | 88.5 | 132.1 |
| 1600 | 81.8 | 85.7 | 86.9 | 85.3 | 86.8 | 89.9 | 89.2 | 92.0 | 93.4 | 93.2 | 94.3 | 92.3 | 88.4 | 132.5 |
| 2000 | 82.5 | 86.3 | 86.5 | 85.9 | 87.5 | 90.6 | 90.1 | 92.6 | 94.2 | 95.3 | 94.5 | 92.4 | 89.9 | 133.4 |
| 2500 | 81.7 | 87.7 | 87.1 | 86.5 | 87.7 | 91.0 | 90.7 | 93.3 | 94.5 | 97.0 | 95.5 | 94.1 | 92.1 | 134.3 |
| 3150 | 83.3 | 88.9 | 88.6 | 86.9 | 88.7 | 92.1 | 92.2 | 94.7 | 96.5 | 98.3 | 97.1 | 95.5 | 93.6 | 135.9 |
| 4000 | 83.5 | 88.6 | 89.2 | 87.6 | 89.8 | 93.0 | 92.4 | 96.0 | 97.6 | 98.4 | 98.8 | 97.9 | 96.5 | 137.0 |
| 5000 | 84.8 | 89.0 | 90.2 | 88.8 | 90.8 | 93.8 | 93.9 | 97.5 | 97.8 | 100.1 | 100.9 | 99.7 | 98.4 | 138.6 |
| 6300 | 85.7 | 91.1 | 91.2 | 89.5 | 91.8 | 95.3 | 95.3 | 98.3 | 99.3 | 100.5 | 101.7 | 101.0 | 100.7 | 139.9 |
| 8000 | 84.1 | 89.5 | 90.8 | 89.5 | 91.7 | 95.5 | 94.4 | 96.8 | 98.0 | 99.2 | 100.8 | 100.8 | 100.9 | 139.5 |
| 10000 | 84.1 | 89.4 | 90.7 | 90.0 | 92.1 | 96.9 | 94.9 | 98.6 | 98.6 | 100.1 | 100.5 | 101.0 | 140.2 | |
| 12500 | 82.6 | 86.9 | 88.7 | 89.1 | 91.2 | 94.9 | 94.5 | 96.5 | 96.8 | 97.4 | 97.5 | 99.9 | 99.7 | 139.6 |
| 15000 | 80.7 | 86.6 | 87.8 | 88.3 | 90.1 | 93.5 | 93.1 | 95.3 | 96.9 | 96.1 | 96.9 | 97.6 | 96.5 | 139.7 |
| 20000 | 78.5 | 83.9 | 85.1 | 85.3 | 88.0 | 91.3 | 92.4 | 93.0 | 94.2 | 94.1 | 94.7 | 93.9 | 93.9 | 139.2 |
| 25000 | 76.5 | 81.2 | 82.5 | 83.8 | 85.2 | 89.8 | 89.9 | 90.2 | 91.7 | 91.2 | 91.0 | 91.7 | 88.9 | 138.8 |
| 31500 | 72.8 | 76.9 | 79.5 | 80.9 | 81.5 | 85.9 | 85.6 | 88.0 | 87.9 | 88.2 | 87.2 | 85.0 | 83.8 | 138.3 |
| 40000 | 67.6 | 72.8 | 74.5 | 76.4 | 77.3 | 82.2 | 81.0 | 83.3 | 85.1 | 84.7 | 84.7 | 82.5 | 80.4 | 138.6 |
| 50000 | 61.5 | 66.2 | 68.3 | 70.5 | 70.9 | 77.3 | 75.4 | 77.2 | 78.7 | 79.0 | 77.5 | 74.4 | 73.7 | 137.2 |
| 63000 | 55.4 | 60.1 | 63.4 | 64.2 | 65.8 | 71.6 | 69.4 | 72.2 | 73.8 | 73.2 | 73.7 | 71.4 | 68.2 | 137.0 |
| 80000 | 47.4 | 53.4 | 55.4 | 56.1 | 57.8 | 64.9 | 63.1 | 65.7 | 66.6 | 66.6 | 66.8 | 65.0 | 61.1 | 137.1 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICLE = ADH202 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 45.95 PAMB HG = 29.45 RELHUM = 59.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FN1NI = LBS XNL = RPM XNHR = RPM V8 = 1101.6 FPS AE8 = 4.0 SQ IN
 FN1NR = LBS XNLR = RPM XNHR = RPM V16 = 1574.3 FPS AE16 = 19.9 SQ IN

PT = Z-E 50T E = X L F = TE T K 150. AIR F. SPEED RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1501 X15011

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 55.3 | 59.9 | 62.2 | 61.5 | 64.5 | 67.5 | 72.2 | 70.0 | 70.0 | 74.5 | 75.1 | 75.5 | 63.9 | 150.9 |
| 63 | 55.8 | 60.9 | 63.7 | 62.5 | 65.0 | 69.0 | 69.5 | 70.7 | 71.5 | 74.5 | 75.3 | 74.3 | 62.6 | 150.7 |
| 80 | 56.2 | 60.8 | 63.9 | 63.1 | 65.9 | 68.6 | 68.6 | 70.9 | 70.9 | 75.4 | 74.5 | 71.9 | 61.9 | 150.1 |
| 100 | 57.4 | 63.0 | 64.9 | 64.9 | 67.4 | 69.9 | 69.6 | 74.4 | 76.6 | 75.9 | 74.4 | 71.1 | 62.8 | 151.6 |
| 125 | 59.7 | 62.8 | 65.7 | 64.7 | 67.0 | 70.2 | 69.2 | 72.0 | 72.2 | 74.4 | 73.2 | 69.6 | 60.8 | 149.9 |
| 160 | 58.2 | 65.1 | 66.0 | 65.1 | 67.0 | 70.5 | 69.5 | 72.3 | 73.0 | 73.9 | 72.2 | 67.8 | 60.3 | 149.8 |
| 200 | 59.4 | 64.9 | 67.2 | 66.4 | 68.3 | 71.6 | 70.7 | 73.1 | 73.7 | 72.4 | 71.9 | 67.4 | 59.7 | 150.2 |
| 250 | 59.7 | 65.2 | 66.6 | 66.8 | 68.8 | 72.0 | 71.4 | 73.5 | 74.3 | 74.2 | 71.8 | 67.1 | 60.6 | 151.0 |
| 315 | 58.5 | 66.3 | 66.8 | 67.1 | 68.7 | 72.2 | 71.8 | 73.9 | 74.2 | 75.6 | 72.3 | 68.2 | 61.9 | 152.0 |
| 400 | 59.6 | 67.0 | 68.1 | 67.2 | 69.5 | 73.0 | 73.0 | 74.9 | 75.9 | 76.5 | 73.4 | 69.0 | 62.5 | 153.5 |
| 500 | 58.3 | 66.4 | 68.4 | 67.6 | 70.3 | 73.7 | 72.9 | 76.0 | 76.8 | 76.1 | 74.6 | 70.7 | 64.4 | 154.7 |
| 630 | 60.1 | 66.4 | 68.9 | 68.5 | 71.0 | 74.2 | 74.1 | 77.2 | 76.5 | 77.5 | 76.2 | 71.9 | 65.3 | 156.3 |
| 800 | 60.5 | 68.1 | 69.7 | 68.9 | 71.8 | 75.4 | 75.3 | 77.7 | 77.8 | 77.5 | 76.5 | 72.4 | 66.4 | 157.6 |
| 1000 | 58.5 | 66.2 | 69.1 | 68.8 | 71.5 | 75.5 | 74.2 | 76.0 | 76.3 | 75.9 | 75.2 | 71.6 | 65.4 | 157.2 |
| 1250 | 57.9 | 65.8 | 68.7 | 69.1 | 71.8 | 75.7 | 74.6 | 77.7 | 76.6 | 74.7 | 74.0 | 70.5 | 64.1 | 157.9 |
| 1600 | 55.6 | 62.7 | 66.3 | 67.9 | 70.6 | 74.5 | 73.9 | 75.2 | 74.4 | 73.2 | 70.5 | 68.5 | 60.4 | 157.3 |
| 2000 | 52.8 | 61.8 | 65.0 | 66.8 | 69.3 | 73.0 | 72.3 | 73.8 | 74.1 | 71.3 | 68.9 | 64.6 | 54.2 | 157.4 |
| 2500 | 48.7 | 57.9 | 61.4 | 64.1 | 66.7 | 70.2 | 71.1 | 70.9 | 70.6 | 68.2 | 64.4 | 58.9 | 46.7 | 156.9 |
| 3150 | 43.3 | 52.7 | 57.0 | 60.1 | 62.5 | 67.4 | 67.2 | 66.5 | 66.2 | 62.7 | 57.9 | 50.9 | 33.3 | 156.5 |
| 4000 | 33.4 | 43.7 | 50.1 | 54.0 | 55.8 | 60.6 | 59.9 | 59.9 | 58.6 | 54.7 | 48.8 | 37.5 | 14.9 | 156.0 |
| 5000 | 18.5 | 32.0 | 39.0 | 44.0 | 46.6 | 52.1 | 50.3 | 50.9 | 49.5 | 44.0 | 35.5 | 19.1 | | 156.3 |
| 6300 | 11.2 | 20.6 | 27.3 | 30.2 | 37.3 | 34.6 | 34.0 | 31.0 | 24.0 | 11.7 | | | | 154.8 |
| 8000 | | 1.8 | 6.9 | 13.8 | 10.5 | 9.8 | 4.8 | | | | | | | 154.7 |
| 10000 | | | | | | | | | | | | | | 154.7 |
| 12500 | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

DASPL 70.7 77.3 79.4 79.3 81.8 85.3 85.0 87.1 87.4 87.6 86.3 83.3 75.2 168.7

PWL 76.2 84.0 86.9 88.0 90.5 94.3 94.0 95.4 95.6 94.2 92.0 88.3 80.0

PNLT 76.2 85.0 86.9 88.0 90.5 94.3 94.0 95.4 96.6 95.2 93.2 88.3 80.0

DBA 67.0 74.5 77.0 77.3 79.9 83.7 83.1 85.2 85.0 84.2 82.7 78.9 72.2

MODEL AREA = 153.9 SQ CM (23.9 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.661 FREQ SHIFT = -9

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICL = ADH202 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 45.95 PAMB HG = 29.45 RELHUM = 59.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1101.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1574.3 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1501 TAPE = X15011 TEST PT NO = 1501 NC = AE088 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1502 X1502C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 83.5 | 84.9 | 77.5 | 77.8 | 82.6 | 86.0 | 77.5 | 79.2 | 82.2 | 88.6 | 82.6 | 95.8 | 93.3 | 133.2 |
| 63 | 91.4 | 96.4 | 88.9 | 83.6 | 92.8 | 94.2 | 86.7 | | | | | | | 124.2 |
| 80 | 79.5 | 82.6 | 79.6 | 77.0 | 83.5 | 83.4 | 86.2 | | | | | | | 123.8 |
| 100 | 76.6 | 80.2 | 78.5 | 77.6 | 81.8 | 82.8 | 82.2 | 82.9 | 85.4 | 89.1 | | | | 123.9 |
| 125 | 74.3 | 77.4 | 79.9 | 76.4 | 78.1 | 80.5 | 81.1 | 81.4 | 83.1 | 88.0 | 91.1 | | | 124.8 |
| 150 | 75.5 | 82.2 | 73.8 | 76.2 | 86.0 | 80.6 | 84.8 | 82.0 | 87.4 | 90.9 | | | | 125.2 |
| 200 | 83.8 | 73.9 | | 77.0 | 83.0 | 83.7 | 84.0 | 82.3 | 87.6 | 92.1 | | | | 125.4 |
| 250 | 73.3 | 77.4 | 73.1 | 74.4 | 77.4 | 80.6 | 83.3 | 86.2 | 90.2 | 92.4 | 86.9 | 126.0 | | |
| 315 | 84.2 | | | 78.3 | 84.2 | 85.6 | 87.8 | 86.0 | 89.5 | 91.9 | 88.0 | 127.1 | | |
| 400 | 73.5 | 76.0 | 73.7 | 74.4 | 77.8 | 81.3 | 83.7 | 87.0 | 90.0 | 89.7 | 86.0 | 125.2 | | |
| 500 | 72.7 | 74.7 | 78.1 | 74.4 | 77.1 | 80.2 | 85.0 | 88.5 | 90.0 | 87.4 | 86.3 | 125.6 | | |
| 630 | 72.2 | 75.2 | 78.0 | 73.9 | 77.6 | 79.3 | 83.1 | 83.9 | 88.4 | 89.2 | 84.8 | 125.1 | | |
| 800 | 77.9 | 78.5 | 80.2 | 78.9 | 79.4 | 81.9 | 82.2 | 86.3 | 89.1 | 88.5 | 84.9 | 125.1 | | |
| 1000 | 76.2 | 76.8 | 78.4 | 77.2 | 79.4 | 82.9 | 81.4 | 87.3 | 89.0 | 87.7 | 80.9 | 125.8 | | |
| 1250 | 76.2 | 79.6 | 78.8 | 77.6 | 79.9 | 83.0 | 82.6 | 85.9 | 88.2 | 89.4 | 87.3 | 125.4 | | |
| 1600 | 78.7 | 80.9 | 82.3 | 80.6 | 82.1 | 85.0 | 84.6 | 87.0 | 89.4 | 89.4 | 87.3 | 127.4 | | |
| 2000 | 81.5 | 81.3 | 82.9 | 81.0 | 83.4 | 86.3 | 85.7 | 88.6 | 90.5 | 91.0 | 87.0 | 128.5 | | |
| 2500 | 82.8 | 82.7 | 83.3 | 82.7 | 84.0 | 87.7 | 86.4 | 89.3 | 90.9 | 92.7 | 87.2 | 129.6 | | |
| 3150 | 83.5 | 83.6 | 85.1 | 83.8 | 85.9 | 89.0 | 88.6 | 90.9 | 93.0 | 93.0 | 88.5 | 131.0 | | |
| 4000 | 84.3 | 84.6 | 86.2 | 84.8 | 87.2 | 90.2 | 89.6 | 92.7 | 94.1 | 93.0 | 90.3 | 132.2 | | |
| 5000 | 85.2 | 85.5 | 87.1 | 85.7 | 88.0 | 92.0 | 92.4 | 94.0 | 95.0 | 95.3 | 91.7 | 133.9 | | |
| 6300 | 86.7 | 87.9 | 87.9 | 87.0 | 89.3 | 93.0 | 92.8 | 95.2 | 96.0 | 95.9 | 92.9 | 135.1 | | |
| 8000 | 86.4 | 87.3 | 88.6 | 87.7 | 89.6 | 92.9 | 92.1 | 94.5 | 95.3 | 94.3 | 92.8 | 134.9 | | |
| 10000 | 86.6 | 87.5 | 89.2 | 88.3 | 90.4 | 94.1 | 93.1 | 95.4 | 95.6 | 93.7 | 92.4 | 136.0 | | |
| 12500 | 84.9 | 86.0 | 88.1 | 87.7 | 90.0 | 93.8 | 92.8 | 94.8 | 94.9 | 93.0 | 90.3 | 136.1 | | |
| 16000 | 83.1 | 85.8 | 87.2 | 87.2 | 88.7 | 92.7 | 92.3 | 93.5 | 94.1 | 91.9 | 89.3 | 135.5 | | |
| 20000 | 80.5 | 83.3 | 85.0 | 85.4 | 86.9 | 90.4 | 91.0 | 91.4 | 92.4 | 89.9 | 87.2 | 136.4 | | |
| 25000 | 78.2 | 81.1 | 82.4 | 83.1 | 84.2 | 89.6 | 89.5 | 89.6 | 90.1 | 86.6 | 84.9 | 136.8 | | |
| 31500 | 74.2 | 77.3 | 79.8 | 80.5 | 81.0 | 85.6 | 85.1 | 86.0 | 86.8 | 83.4 | 82.0 | 136.3 | | |
| 40000 | 70.6 | 73.4 | 75.7 | 76.7 | 78.8 | 82.7 | 80.8 | 82.6 | 84.0 | 80.0 | 79.0 | 135.9 | | |
| 50000 | 64.6 | 67.0 | 69.0 | 70.5 | 70.6 | 77.4 | 75.3 | 76.9 | 77.5 | 74.0 | 73.2 | 135.5 | | |
| 63000 | 57.7 | 60.7 | 60.7 | 64.8 | 65.8 | 72.1 | 68.7 | 71.1 | 72.6 | 67.8 | 67.2 | 135.1 | | |
| 80000 | 50.0 | 52.9 | 56.0 | 56.1 | 64.8 | 61.4 | 63.5 | 63.8 | 63.8 | 59.5 | 59.9 | 133.9 | | |
| GASPL | 95.7 | 98.1 | 100.8 | 97.9 | 99.2 | 103.0 | 103.0 | 104.9 | 105.6 | 105.0 | 103.6 | 103.0 | 98.0 | 147.8 |
| PWL | 107.0 | 108.8 | 110.5 | 108.2 | 109.8 | 113.9 | 113.7 | 116.3 | 117.4 | 117.5 | 115.5 | 111.5 | 106.1 | |
| PWLT | 113.6 | 115.4 | 111.8 | 114.9 | 116.4 | 113.9 | 120.3 | 117.1 | 118.1 | 124.1 | 115.5 | 111.5 | 112.8 | |
| DBA | 94.4 | 95.1 | 95.4 | 95.1 | 97.2 | 100.6 | 100.2 | 102.6 | 103.9 | 104.0 | 101.5 | 96.6 | 93.5 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VERTICL = ADH214 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FCTVEL = 400. FPS
 IAPLHA = SB59 IEQA = NO PWL AREA = FULL SPHERE TAMPB F = 54.02 PAMB HG = 28.99 RELHJM = 48.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =
 FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1114.5 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1616.7 FPS AE18 = 19.9 SQ IN
 RUNPT = 83F-400-1502 TAPE = X1502C TEST PT NO = 1502 NC = AE08A. CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1502 X1502F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

50
63
80
100
125
160

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 200 | 77.3 | 78.6 | 81.6 | 75.9 | 75.8 | 77.4 | 76.0 | 77.0 | 86.0 | 83.4 | 86.4 | 89.3 | 87.2 | 124.6 |
| 315 | 77.3 | 78.6 | 81.6 | 75.9 | 76.3 | 78.5 | 83.8 | 84.3 | 81.8 | 84.7 | 87.4 | 88.1 | 87.1 | 125.1 |
| 400 | 80.7 | 81.3 | 90.1 | 77.2 | 76.1 | 78.0 | 81.8 | 79.5 | 83.5 | 86.3 | 87.6 | 86.2 | 86.4 | 126.4 |
| 500 | 77.8 | 79.4 | 80.6 | 76.9 | 79.0 | 80.5 | 80.6 | 80.8 | 82.8 | 85.8 | 87.6 | 85.0 | 88.5 | 124.9 |
| 630 | 80.3 | 81.1 | 83.1 | 77.8 | 79.6 | 79.7 | 79.0 | 81.7 | 84.2 | 86.4 | 86.0 | 84.8 | 89.6 | 125.1 |
| 800 | 79.6 | 81.4 | 82.9 | 77.3 | 81.2 | 82.4 | 81.2 | 81.8 | 85.6 | 86.9 | 85.9 | 82.2 | 89.9 | 125.6 |
| 1000 | 83.7 | 83.5 | 84.3 | 81.8 | 81.5 | 83.5 | 80.5 | 82.1 | 88.1 | 88.7 | 86.7 | 80.7 | 90.2 | 127.0 |
| 1250 | 83.9 | 83.3 | 83.5 | 80.8 | 82.1 | 83.9 | 82.5 | 85.0 | 89.6 | 89.5 | 88.1 | 83.6 | 89.5 | 127.8 |
| 1600 | 83.5 | 85.8 | 83.8 | 81.2 | 84.6 | 86.1 | 84.9 | 86.3 | 91.2 | 91.6 | 88.3 | 83.7 | 91.2 | 129.3 |
| 2000 | 86.2 | 87.3 | 87.5 | 84.5 | 86.0 | 87.5 | 86.4 | 88.3 | 91.6 | 93.2 | 88.4 | 85.2 | 91.3 | 130.7 |
| 2500 | 88.7 | 87.6 | 88.1 | 84.9 | 87.0 | 89.3 | 87.3 | 89.1 | 93.8 | 93.6 | 89.7 | 85.8 | 90.9 | 131.8 |
| 3150 | 90.3 | 89.3 | 89.7 | 86.9 | 89.1 | 91.0 | 89.8 | 90.9 | 95.4 | 93.7 | 91.4 | 86.5 | 90.4 | 133.2 |
| 4000 | 91.1 | 90.2 | 90.7 | 88.2 | 90.9 | 92.8 | 91.2 | 93.1 | 96.7 | 96.7 | 93.6 | 91.3 | 93.9 | 135.3 |
| 5000 | 91.8 | 91.3 | 92.0 | 89.5 | 92.0 | 95.0 | 94.5 | 94.9 | 98.3 | 98.0 | 95.7 | 93.5 | 96.7 | 137.2 |
| 6300 | 92.7 | 92.2 | 93.0 | 90.6 | 93.3 | 96.0 | 95.1 | 96.5 | 98.2 | 97.1 | 96.3 | 94.4 | 97.3 | 138.0 |
| 8000 | 94.0 | 94.4 | 93.6 | 91.7 | 93.7 | 95.9 | 94.5 | 96.0 | 99.2 | 97.4 | 96.7 | 95.9 | 98.3 | 138.9 |
| 10000 | 93.5 | 93.7 | 94.1 | 92.3 | 95.0 | 97.1 | 95.6 | 97.2 | 99.0 | 97.1 | 95.2 | 95.8 | 97.7 | 139.7 |
| 12500 | 96.2 | 95.9 | 96.2 | 93.6 | 94.6 | 96.8 | 95.2 | 96.7 | 98.5 | 96.3 | 94.6 | 95.2 | 96.5 | 140.5 |
| 16000 | 94.1 | 93.9 | 94.5 | 92.5 | 93.3 | 95.7 | 94.7 | 95.3 | 97.3 | 94.9 | 93.1 | 93.5 | 95.5 | 140.5 |
| 20000 | 91.9 | 93.3 | 93.2 | 91.6 | 91.5 | 93.4 | 93.4 | 93.3 | 95.7 | 92.4 | 91.6 | 91.8 | 93.0 | 140.6 |
| 31500 | 88.7 | 90.2 | 90.4 | 89.2 | 88.8 | 92.6 | 91.9 | 91.4 | 92.9 | 89.5 | 89.1 | 88.9 | 90.1 | 140.7 |
| 40000 | 85.6 | 87.2 | 87.0 | 86.2 | 85.6 | 88.6 | 87.5 | 87.7 | 90.2 | 86.0 | 85.8 | 84.6 | 85.8 | 140.3 |
| 50000 | 80.7 | 82.5 | 83.6 | 82.7 | 81.4 | 85.7 | 82.9 | 83.8 | 84.9 | 81.6 | 81.7 | 81.7 | 82.0 | 140.3 |
| 63000 | 76.6 | 78.3 | 79.1 | 78.5 | 75.2 | 80.4 | 77.8 | 78.7 | 80.4 | 75.6 | 75.7 | 75.0 | 76.1 | 139.6 |
| 80000 | 69.7 | 70.9 | 71.5 | 71.4 | 70.4 | 75.1 | 70.9 | 72.5 | 73.4 | 69.2 | 70.6 | 70.4 | 69.4 | 138.6 |
| 80000 | 61.4 | 63.2 | 61.7 | 64.2 | 60.7 | 67.8 | 63.7 | 65.1 | 63.6 | 59.4 | 60.8 | 60.6 | 59.6 | 137.1 |

ORIGINAL PAGE IS
OF POOR QUALITY

0ASPL 103.5 103.6 104.0 101.7 103.2 105.6 104.5 105.5 108.2 106.9 105.3 104.3 106.8 151.1
PWL 113.2 112.9 113.6 110.8 113.1 115.4 114.6 115.8 119.0 118.7 116.7 114.5 118.0
PNLT 113.7 112.9 115.1 110.8 113.1 115.4 115.5 116.8 119.0 118.7 116.7 114.5 118.0
DBA 184.7 186.3 186.0 187.0 184.5 190.4 186.5 187.8 187.8 183.5 184.6 184.4 183.8

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICL = ADH214 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 54.02 PAMB HG = 28.99 RELHUM = 48.1 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNLR = RPM XNH = RPM V0 = 1114.5 FPS AE0 = 4.0 SQ IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V10 = 1616.7 FPS AE10 = 19.9 SQ IN

RUNPT = 83F-400-1502 TAPE = X1502F TEST PT NO = 1502 NC = AE088 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1502 X15021

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 59.0 | 61.1 | 71.0 | 58.7 | 58.1 | 60.1 | 63.8 | 61.1 | 64.3 | 66.1 | 65.8 | 62.3 | 61.1 | 144.1 |
| 63 | 56.1 | 59.1 | 61.4 | 58.5 | 61.0 | 62.6 | 62.5 | 62.4 | 63.6 | 66.6 | 65.8 | 61.0 | 61.1 | 142.6 |
| 80 | 58.5 | 60.8 | 63.9 | 59.3 | 61.5 | 61.8 | 60.9 | 63.2 | 65.0 | 66.1 | 64.1 | 60.7 | 62.1 | 142.8 |
| 100 | 57.7 | 61.1 | 63.7 | 58.8 | 63.0 | 64.4 | 63.0 | 63.2 | 66.3 | 66.5 | 64.0 | 58.0 | 62.3 | 143.3 |
| 125 | 61.6 | 63.1 | 65.0 | 63.2 | 63.3 | 65.5 | 62.3 | 63.5 | 68.7 | 68.2 | 64.7 | 56.4 | 62.3 | 144.7 |
| 160 | 61.7 | 62.7 | 64.0 | 62.1 | 63.8 | 65.7 | 64.2 | 66.2 | 70.1 | 68.9 | 65.9 | 59.0 | 61.3 | 145.5 |
| 200 | 61.0 | 65.0 | 64.1 | 62.3 | 66.1 | 67.7 | 66.5 | 67.4 | 71.5 | 70.7 | 65.9 | 58.8 | 62.5 | 147.0 |
| 250 | 63.4 | 66.3 | 67.6 | 65.3 | 67.3 | 69.0 | 67.7 | 69.2 | 71.7 | 72.1 | 65.6 | 59.9 | 62.0 | 148.4 |
| 315 | 65.4 | 66.1 | 67.9 | 65.5 | 68.0 | 70.5 | 68.4 | 69.7 | 73.6 | 71.9 | 66.5 | 59.9 | 60.8 | 149.5 |
| 400 | 66.5 | 67.5 | 68.1 | 67.1 | 69.9 | 71.9 | 70.6 | 71.2 | 74.8 | 71.9 | 67.7 | 60.0 | 59.3 | 150.9 |
| 500 | 66.9 | 68.0 | 69.8 | 68.2 | 71.4 | 73.4 | 71.7 | 73.1 | 75.8 | 74.5 | 69.4 | 64.1 | 61.8 | 153.0 |
| 630 | 67.1 | 68.7 | 70.7 | 69.2 | 72.2 | 75.4 | 74.7 | 74.6 | 77.1 | 75.3 | 71.0 | 65.6 | 63.5 | 154.9 |
| 800 | 67.5 | 69.2 | 71.4 | 70.0 | 73.3 | 76.1 | 75.1 | 75.9 | 76.7 | 74.1 | 71.1 | 65.9 | 63.0 | 155.7 |
| 1000 | 68.4 | 71.1 | 71.9 | 70.9 | 73.5 | 75.9 | 74.3 | 75.3 | 77.5 | 74.1 | 71.1 | 66.7 | 62.9 | 156.6 |
| 1250 | 67.4 | 70.0 | 72.1 | 71.4 | 74.7 | 77.0 | 75.3 | 76.3 | 77.0 | 73.5 | 69.1 | 65.8 | 60.8 | 157.3 |
| 1600 | 69.2 | 71.6 | 73.8 | 72.4 | 74.0 | 76.4 | 74.6 | 75.5 | 76.1 | 72.1 | 67.6 | 63.8 | 57.2 | 158.2 |
| 2000 | 66.1 | 69.1 | 71.7 | 71.0 | 72.6 | 75.2 | 74.0 | 73.8 | 74.5 | 70.1 | 65.1 | 60.5 | 53.2 | 158.2 |
| 2500 | 62.1 | 67.2 | 69.6 | 69.5 | 70.2 | 72.3 | 72.1 | 71.1 | 72.1 | 66.4 | 61.8 | 56.0 | 45.8 | 158.3 |
| 3150 | 55.5 | 61.7 | 64.8 | 65.5 | 66.1 | 70.2 | 69.2 | 67.7 | 67.4 | 61.1 | 56.0 | 48.1 | 34.5 | 158.4 |
| 4000 | 46.2 | 54.0 | 57.6 | 59.2 | 59.9 | 63.4 | 61.8 | 60.7 | 60.8 | 52.8 | 46.4 | 34.9 | 15.7 | 158.0 |
| 5000 | 31.6 | 41.8 | 48.0 | 50.3 | 50.7 | 55.6 | 52.3 | 51.4 | 49.4 | 40.8 | 32.5 | 18.2 | | 157.9 |
| 6300 | 9.7 | 23.3 | 31.4 | 35.4 | 40.5 | 37.0 | 35.5 | 32.8 | 20.6 | 8.8 | | | | 157.3 |
| 8000 | | 2.5 | 8.9 | 11.5 | 17.4 | 12.0 | 10.1 | 4.4 | | | | | | 156.3 |
| 10000 | | | | | | | | | | | | | | 154.8 |
| 12500 | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 153.9 SQ CM (23.9 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.661 FREQ SHIFT = -9

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICLE = ADH214 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 54.02 PAMB HG = 28.99 RELHUM = 48.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNINI = LBS XNL = RPM XNHR = RPM V8 = 1114.5 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1616.7 FPS AE18 = 19.9 SQ IN

72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200

IDENTIFICATION - MODEL 83F-ZER-1503 X1503C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 78.4 | 79.9 | 79.2 | 77.0 | 75.1 | 80.2 | 82.3 | 85.5 | 80.2 | 79.2 | 83.1 | 87.8 | 85.7 | 123.9 |
| 63 | 81.0 | 85.0 | 89.8 | 85.9 | 81.7 | 86.8 | 90.7 | 92.6 | 89.1 | 88.4 | 85.3 | 96.0 | 95.6 | 131.9 |
| 80 | 82.3 | 85.6 | 83.1 | 82.1 | 80.5 | 85.8 | 85.0 | 85.9 | 85.6 | 86.4 | 88.5 | 89.5 | 89.5 | 127.3 |
| 100 | 81.0 | 85.7 | 81.8 | 82.0 | 83.6 | 86.3 | 84.6 | 87.8 | 86.0 | 90.3 | 91.2 | 94.6 | 77.8 | 129.5 |
| 125 | 78.6 | 81.4 | 84.2 | 83.7 | 84.8 | 86.9 | 85.3 | 86.5 | 85.9 | 89.8 | 95.1 | 97.8 | 82.2 | 131.2 |
| 150 | 77.9 | 77.2 | 83.5 | 79.0 | 81.4 | 84.5 | 89.4 | 86.8 | 88.0 | 91.3 | 95.7 | 98.4 | 87.8 | 131.8 |
| 200 | 77.8 | 79.6 | 82.3 | 79.9 | 81.7 | 85.1 | 85.7 | 88.1 | 89.3 | 91.9 | 96.8 | 100.5 | 89.9 | 133.0 |
| 250 | 78.3 | 83.1 | 82.6 | 80.9 | 82.7 | 86.1 | 87.0 | 88.9 | 91.3 | 95.9 | 99.8 | 103.0 | 93.1 | 135.6 |
| 315 | 78.8 | 82.1 | 81.7 | 84.0 | 81.7 | 87.9 | 88.5 | 90.4 | 92.1 | 96.2 | 99.6 | 102.5 | 94.7 | 135.7 |
| 400 | 79.3 | 82.8 | 83.4 | 82.4 | 84.2 | 87.4 | 93.0 | 90.9 | 91.9 | 97.7 | 100.3 | 102.0 | 94.7 | 136.1 |
| 500 | 80.6 | 83.1 | 84.6 | 82.7 | 84.5 | 88.9 | 89.5 | 91.4 | 93.1 | 98.2 | 100.1 | 101.0 | 93.7 | 135.9 |
| 630 | 80.3 | 83.6 | 84.8 | 83.6 | 85.7 | 88.6 | 89.5 | 92.1 | 93.1 | 98.4 | 99.3 | 98.5 | 91.9 | 135.2 |
| 800 | 82.6 | 84.9 | 84.4 | 86.3 | 80.4 | 91.3 | 93.9 | 95.4 | 98.2 | 100.3 | 96.8 | 96.8 | 91.9 | 135.8 |
| 1000 | 84.3 | 85.8 | 87.3 | 85.6 | 87.4 | 90.8 | 90.2 | 93.6 | 94.8 | 98.1 | 97.8 | 95.9 | 91.1 | 135.0 |
| 1250 | 82.9 | 88.2 | 87.5 | 85.9 | 87.4 | 91.2 | 91.1 | 93.8 | 95.5 | 97.5 | 97.2 | 94.6 | 91.0 | 134.9 |
| 1600 | 84.3 | 88.0 | 88.6 | 86.8 | 88.3 | 92.1 | 92.0 | 94.8 | 95.9 | 96.5 | 97.3 | 95.3 | 90.9 | 135.2 |
| 2000 | 84.8 | 88.1 | 88.5 | 87.9 | 88.7 | 92.1 | 92.1 | 95.6 | 96.7 | 97.8 | 96.8 | 94.9 | 92.4 | 135.7 |
| 2500 | 84.2 | 88.7 | 88.6 | 88.0 | 89.4 | 93.3 | 92.7 | 95.1 | 97.0 | 99.0 | 97.7 | 96.6 | 93.8 | 136.5 |
| 3150 | 84.8 | 89.9 | 89.9 | 88.7 | 90.2 | 94.3 | 94.2 | 97.4 | 99.4 | 99.8 | 98.6 | 97.7 | 95.1 | 137.8 |
| 4000 | 85.0 | 89.1 | 90.2 | 88.9 | 91.6 | 95.3 | 94.4 | 98.2 | 99.4 | 100.1 | 100.6 | 99.6 | 98.2 | 138.9 |
| 5000 | 86.0 | 90.0 | 91.7 | 89.8 | 92.3 | 95.5 | 95.9 | 99.5 | 99.5 | 102.1 | 102.7 | 103.0 | 100.7 | 140.6 |
| 6300 | 86.7 | 91.4 | 91.7 | 90.5 | 92.8 | 97.3 | 97.6 | 100.3 | 100.8 | 102.5 | 103.5 | 104.2 | 102.7 | 141.9 |
| 8000 | 85.9 | 90.8 | 91.6 | 90.8 | 93.2 | 96.7 | 96.7 | 99.8 | 99.5 | 100.9 | 103.4 | 104.5 | 103.4 | 141.9 |
| 10000 | 85.6 | 90.2 | 92.0 | 91.5 | 93.6 | 97.6 | 97.1 | 100.1 | 99.8 | 100.3 | 103.1 | 104.2 | 104.0 | 142.5 |
| 12500 | 84.6 | 88.9 | 90.8 | 90.9 | 92.9 | 97.2 | 97.0 | 98.7 | 99.1 | 99.2 | 101.3 | 103.9 | 102.7 | 142.4 |
| 16000 | 83.5 | 89.3 | 90.3 | 90.0 | 91.8 | 95.3 | 96.1 | 97.5 | 98.4 | 97.7 | 99.7 | 101.3 | 99.3 | 142.1 |
| 20000 | 82.5 | 87.5 | 89.1 | 89.1 | 90.8 | 93.3 | 94.4 | 95.1 | 95.8 | 95.5 | 96.6 | 98.5 | 97.2 | 141.5 |
| 25000 | 79.5 | 84.8 | 86.3 | 87.4 | 88.2 | 93.3 | 92.3 | 93.3 | 92.5 | 93.3 | 94.5 | 91.9 | 91.3 | 141.3 |
| 31500 | 75.5 | 80.2 | 83.3 | 84.5 | 85.0 | 89.2 | 88.9 | 89.4 | 89.3 | 89.2 | 90.0 | 90.3 | 88.2 | 140.8 |
| 40000 | 70.6 | 75.9 | 78.4 | 80.0 | 80.4 | 86.0 | 84.6 | 85.6 | 86.2 | 85.8 | 87.2 | 86.1 | 83.7 | 141.1 |
| 50000 | 64.5 | 69.2 | 72.1 | 73.8 | 74.5 | 81.1 | 79.0 | 80.5 | 80.7 | 80.8 | 81.2 | 81.1 | 77.5 | 140.1 |
| 63000 | 58.2 | 63.2 | 66.9 | 67.8 | 69.1 | 75.9 | 72.7 | 74.8 | 75.9 | 75.2 | 77.0 | 75.2 | 71.7 | 140.1 |
| 80000 | 51.7 | 55.7 | 59.0 | 59.6 | 61.1 | 69.2 | 66.4 | 68.2 | 69.2 | 68.8 | 70.6 | 68.9 | 64.7 | 140.2 |
| CASPL | 97.5 | 101.8 | 102.7 | 101.8 | 103.5 | 107.4 | 107.6 | 110.0 | 110.6 | 112.3 | 113.7 | 114.7 | 111.7 | 153.8 |
| PNL | 109.7 | 114.0 | 114.7 | 113.2 | 115.3 | 119.0 | 119.3 | 122.1 | 122.9 | 124.9 | 125.8 | 126.1 | 123.1 | |
| PNLT | 109.7 | 114.0 | 114.7 | 113.8 | 115.3 | 119.0 | 120.0 | 122.1 | 122.9 | 124.9 | 125.8 | 126.1 | 123.1 | |
| DBA | 96.2 | 100.3 | 101.0 | 99.8 | 101.8 | 105.6 | 105.5 | 108.7 | 109.4 | 111.2 | 111.9 | 111.9 | 109.6 | |

ORIGINAL PAGE IS
OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|------------------|-------------------|
| VEHICL = ADR203 | TEST DATE = 04-12-83 | LOCAT = C41 ANECH CH | CONFIG = 15 | MODEL = AX1 | FLTVEL = 0. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 46.54 | PAMB HG = 29.45 | RELHUM = 58.1 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = |
| FNIN1 = | LBS XNL | RPM | XNH | V8 = 1092.6 FPS | AE6 = 4.0 SQ IN |
| FNAMB = | LBS XNLR | RPM | XNHR | V18 = 1746.7 FPS | AE18 = 19.9 SQ IN |
| RUNPT = 83F-ZER-1503 | TAPE | TEST PT NO = 1503 | NC | CORR FAN SPEED = | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1503 X1503F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 78.4 | 79.9 | 79.2 | 77.0 | 75.1 | 80.2 | 82.3 | 85.5 | 80.2 | 79.2 | 83.1 | 87.8 | 85.7 | 123.9 |
| 63 | 81.0 | 88.0 | 89.8 | 85.9 | 81.7 | 86.8 | 90.7 | 92.6 | 89.1 | 88.4 | 85.3 | 96.0 | 95.6 | 131.9 |
| 80 | 82.3 | 85.6 | 83.1 | 82.1 | 80.5 | 85.8 | 85.0 | 85.9 | 85.6 | 86.4 | 88.5 | 89.5 | 89.5 | 127.3 |
| 100 | 81.0 | 85.7 | 81.8 | 82.0 | 83.6 | 86.3 | 84.6 | 87.8 | 86.0 | 90.3 | 91.2 | 94.6 | 77.8 | 129.5 |
| 125 | 78.6 | 81.4 | 84.2 | 83.7 | 84.8 | 86.9 | 85.3 | 86.5 | 85.9 | 89.8 | 95.1 | 97.8 | 82.2 | 131.2 |
| 160 | 77.9 | 77.2 | 83.5 | 79.0 | 81.4 | 84.5 | 89.4 | 86.8 | 88.0 | 91.3 | 95.7 | 98.4 | 87.8 | 131.8 |
| 200 | 77.8 | 79.6 | 82.3 | 79.9 | 81.7 | 85.1 | 85.7 | 88.1 | 89.3 | 91.9 | 95.8 | 100.5 | 89.9 | 133.0 |
| 250 | 78.3 | 83.1 | 82.6 | 80.9 | 82.7 | 86.1 | 87.0 | 88.9 | 91.3 | 95.9 | 99.8 | 103.0 | 93.1 | 135.6 |
| 315 | 78.8 | 82.1 | 82.1 | 81.7 | 84.0 | 87.9 | 88.5 | 90.4 | 92.1 | 96.2 | 99.6 | 102.5 | 94.7 | 135.7 |
| 400 | 78.3 | 82.8 | 83.4 | 82.4 | 84.2 | 87.4 | 93.0 | 90.9 | 91.9 | 97.7 | 100.3 | 102.0 | 94.7 | 136.1 |
| 500 | 80.5 | 83.1 | 84.5 | 82.7 | 84.5 | 88.9 | 89.5 | 91.4 | 93.1 | 98.2 | 100.1 | 101.0 | 93.7 | 135.9 |
| 630 | 80.3 | 83.6 | 84.8 | 83.6 | 85.7 | 88.6 | 89.5 | 92.1 | 93.1 | 98.4 | 99.3 | 98.5 | 91.9 | 135.2 |
| 800 | 82.6 | 84.9 | 84.9 | 84.4 | 86.3 | 90.4 | 91.3 | 93.9 | 95.4 | 98.4 | 100.3 | 96.8 | 91.9 | 135.8 |
| 1000 | 84.3 | 85.8 | 87.3 | 85.6 | 87.4 | 90.8 | 90.2 | 93.6 | 94.8 | 98.1 | 97.8 | 95.9 | 91.1 | 135.0 |
| 1250 | 82.9 | 88.2 | 87.5 | 85.9 | 87.4 | 91.2 | 91.1 | 93.8 | 95.5 | 97.5 | 97.2 | 94.6 | 91.0 | 134.9 |
| 1600 | 84.3 | 88.0 | 88.6 | 86.8 | 88.3 | 92.1 | 92.0 | 94.8 | 95.9 | 96.5 | 97.3 | 95.3 | 90.9 | 135.2 |
| 2000 | 84.8 | 88.1 | 88.5 | 87.9 | 88.7 | 92.1 | 92.1 | 95.6 | 96.7 | 97.8 | 96.8 | 94.9 | 92.4 | 135.7 |
| 2500 | 84.2 | 88.7 | 88.6 | 88.0 | 89.4 | 93.3 | 92.7 | 96.1 | 97.0 | 99.0 | 97.7 | 96.6 | 93.8 | 136.5 |
| 3150 | 84.8 | 89.9 | 89.9 | 88.7 | 90.2 | 94.3 | 94.2 | 97.4 | 99.0 | 99.8 | 98.6 | 97.7 | 95.1 | 137.8 |
| 4000 | 85.0 | 89.1 | 90.2 | 88.9 | 91.6 | 95.3 | 94.4 | 98.2 | 98.4 | 100.1 | 100.6 | 99.6 | 98.2 | 138.9 |
| 5000 | 86.0 | 90.0 | 91.7 | 89.8 | 92.3 | 95.5 | 95.9 | 99.5 | 99.5 | 102.1 | 102.7 | 103.0 | 100.7 | 140.6 |
| 6300 | 86.7 | 91.4 | 91.7 | 90.5 | 92.8 | 97.3 | 97.6 | 100.3 | 100.8 | 102.5 | 103.5 | 104.2 | 102.7 | 141.9 |
| 8000 | 85.9 | 90.8 | 91.6 | 90.8 | 93.2 | 96.7 | 96.7 | 99.8 | 99.5 | 100.9 | 103.4 | 104.5 | 103.4 | 141.9 |
| 10000 | 85.6 | 90.2 | 92.0 | 91.5 | 93.6 | 97.6 | 97.1 | 100.1 | 99.8 | 100.3 | 103.1 | 104.2 | 104.0 | 142.5 |
| 12500 | 84.6 | 88.9 | 90.8 | 90.9 | 92.9 | 97.2 | 97.0 | 98.7 | 99.1 | 99.2 | 101.3 | 103.9 | 102.7 | 142.4 |
| 16000 | 83.5 | 89.3 | 90.3 | 90.0 | 91.8 | 95.3 | 96.1 | 97.5 | 98.4 | 97.7 | 99.7 | 101.3 | 99.3 | 142.1 |
| 20000 | 82.5 | 87.5 | 89.1 | 89.1 | 90.8 | 93.3 | 94.4 | 95.1 | 95.8 | 95.5 | 96.6 | 98.5 | 97.2 | 141.5 |
| 25000 | 79.5 | 84.8 | 86.3 | 87.4 | 88.2 | 93.3 | 92.7 | 92.3 | 93.3 | 93.3 | 94.5 | 91.9 | 91.3 | 141.3 |
| 31500 | 75.5 | 80.2 | 83.3 | 84.5 | 85.0 | 89.2 | 88.9 | 89.4 | 89.3 | 89.2 | 90.0 | 90.3 | 88.2 | 140.8 |
| 40000 | 70.6 | 75.9 | 78.4 | 80.0 | 80.4 | 86.0 | 84.6 | 85.6 | 86.2 | 85.8 | 87.2 | 86.1 | 83.7 | 141.1 |
| 50000 | 64.5 | 69.2 | 72.1 | 73.8 | 74.5 | 81.1 | 79.0 | 80.5 | 80.7 | 80.8 | 81.2 | 81.1 | 77.5 | 140.1 |
| 63000 | 58.2 | 63.2 | 66.9 | 67.8 | 69.1 | 75.9 | 72.7 | 74.8 | 75.9 | 75.2 | 77.0 | 75.2 | 71.7 | 140.1 |
| 80000 | 51.7 | 55.7 | 59.0 | 59.6 | 61.1 | 69.2 | 66.4 | 68.2 | 69.2 | 68.8 | 70.6 | 68.9 | 64.7 | 140.2 |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GASPL | 97.5 | 101.8 | 102.7 | 101.6 | 103.5 | 107.4 | 107.6 | 110.0 | 110.6 | 112.3 | 113.7 | 114.7 | 111.7 | 153.8 |
| PNL | 109.7 | 114.0 | 114.7 | 113.2 | 115.3 | 119.0 | 119.3 | 122.1 | 122.9 | 124.9 | 125.8 | 126.1 | 123.1 | |
| PNLT | 109.7 | 114.0 | 114.7 | 113.8 | 115.3 | 119.0 | 120.0 | 122.1 | 122.9 | 124.9 | 125.8 | 126.1 | 123.1 | |
| DBA | 174.1 | 178.6 | 181.9 | 182.8 | 184.0 | 191.5 | 188.7 | 190.5 | 191.4 | 191.0 | 192.7 | 191.1 | 187.2 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

| | | | | | |
|-----------------|----------------------|------------------------|---------------------|-----------------|-------------------|
| VEHICL = ADH203 | TEST DATE = 04-12-83 | LOCAT = C41 ANECH CH | CONFIG = 15 | MODEL = AX | FLTVEL = 0. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 46.54 | PAMB HG = 29.45 | RELHUM = 58.1 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT. | MIKE HT = | NBFR = |
| FNINI = | LBS XNL | RPM | XNH | RPM | V8 = 1092.6 FPS |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V18 = 1746.7 FPS |
| | | | | | AE9 = 4.0 SQ IN |
| | | | | | AE18 = 19.9 SQ IN |

PT 83F-ZER-1503 E X1503F TEL 150 RPM

IDENTIFICATION - 83F-ZER-1503 X15031

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 57.6 | 62.6 | 64.2 | 64.0 | 66.2 | 69.5 | 75.0 | 72.5 | 72.7 | 77.5 | 78.6 | 78.0 | 67.4 | 153.8 |
| 63 | 58.8 | 62.9 | 65.5 | 64.2 | 66.5 | 71.0 | 71.5 | 73.0 | 74.0 | 78.0 | 78.3 | 77.0 | 66.3 | 153.5 |
| 80 | 58.4 | 63.3 | 65.6 | 65.1 | 67.6 | 70.6 | 71.4 | 73.6 | 73.9 | 78.1 | 77.5 | 74.4 | 64.4 | 152.8 |
| 100 | 60.7 | 64.5 | 65.6 | 65.9 | 68.1 | 72.4 | 73.1 | 75.4 | 76.1 | 77.9 | 78.4 | 72.6 | 64.3 | 153.5 |
| 125 | 62.2 | 65.3 | 68.0 | 67.0 | 69.2 | 72.7 | 72.0 | 75.0 | 75.5 | 77.7 | 75.7 | 71.6 | 63.3 | 152.7 |
| 160 | 60.7 | 67.6 | 68.0 | 67.1 | 69.0 | 73.0 | 72.8 | 75.0 | 76.0 | 76.9 | 74.9 | 70.0 | 62.8 | 152.6 |
| 200 | 61.9 | 67.2 | 69.0 | 67.9 | 69.8 | 73.8 | 73.5 | 75.9 | 76.2 | 75.7 | 74.9 | 70.4 | 62.2 | 152.9 |
| 250 | 62.0 | 67.0 | 68.6 | 68.8 | 70.0 | 73.5 | 73.4 | 76.5 | 76.8 | 76.7 | 74.0 | 69.6 | 63.1 | 153.4 |
| 315 | 61.0 | 67.3 | 68.3 | 68.6 | 70.5 | 74.5 | 73.8 | 76.7 | 76.7 | 77.6 | 74.5 | 70.7 | 63.7 | 154.2 |
| 400 | 61.1 | 68.0 | 69.3 | 68.9 | 71.0 | 75.2 | 75.0 | 77.7 | 78.4 | 78.0 | 74.9 | 71.2 | 64.0 | 155.5 |
| 500 | 60.8 | 66.9 | 69.4 | 68.9 | 72.1 | 75.9 | 74.9 | 78.2 | 78.5 | 77.9 | 76.4 | 72.5 | 66.1 | 156.5 |
| 630 | 61.3 | 67.4 | 70.4 | 69.5 | 72.5 | 75.9 | 76.1 | 79.2 | 78.3 | 79.5 | 78.0 | 75.1 | 67.5 | 158.3 |
| 800 | 61.5 | 68.4 | 70.2 | 69.9 | 72.8 | 77.4 | 77.5 | 79.7 | 79.3 | 79.5 | 78.3 | 75.7 | 68.4 | 159.6 |
| 1000 | 60.3 | 67.5 | 69.9 | 70.0 | 73.0 | 76.7 | 76.5 | 79.0 | 77.8 | 77.6 | 77.7 | 75.3 | 67.9 | 159.5 |
| 1250 | 59.4 | 65.6 | 70.0 | 70.6 | 73.3 | 77.5 | 76.8 | 79.2 | 77.8 | 76.7 | 77.0 | 74.2 | 67.1 | 160.2 |
| 1600 | 57.6 | 64.7 | 68.3 | 69.6 | 72.3 | 76.8 | 76.4 | 77.5 | 76.7 | 75.0 | 74.3 | 72.5 | 63.4 | 160.0 |
| 2000 | 55.5 | 64.5 | 67.5 | 68.5 | 71.1 | 74.8 | 75.4 | 76.0 | 75.6 | 72.8 | 71.7 | 68.3 | 57.0 | 159.8 |
| 2500 | 52.7 | 61.4 | 65.4 | 66.9 | 69.5 | 72.3 | 73.1 | 72.9 | 72.1 | 69.4 | 66.9 | 62.7 | 50.0 | 159.2 |
| 3150 | 46.4 | 55.3 | 60.7 | 63.7 | 65.5 | 70.9 | 70.0 | 68.6 | 67.7 | 64.0 | 60.2 | 53.7 | 36.3 | 159.0 |
| 4000 | 36.2 | 47.0 | 53.9 | 57.5 | 59.4 | 63.9 | 63.2 | 62.5 | 59.9 | 56.0 | 50.6 | 40.5 | 18.2 | 158.5 |
| 5000 | 21.5 | 35.1 | 42.8 | 47.6 | 49.7 | 55.9 | 53.9 | 53.2 | 50.6 | 45.0 | 38.1 | 22.7 | 158.8 | |
| 6300 | 14.2 | 24.4 | 30.6 | 33.7 | 41.1 | 38.2 | 37.3 | 33.1 | 25.8 | 14.3 | | | 157.8 | |
| 8000 | | 5.3 | 10.2 | 18.1 | 13.8 | 12.3 | 5.9 | | | | | | 157.8 | |

| | | | | | | | | | | | | | | |
|-------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 153.9 SQ CM (23.9 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.661 FREQ SHIFT = -9

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICL = ADH203 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CCONFIG = 15 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO MPH = PWL AREA = FULL SPHERE TAMB F = 46.54 PAMB HG = 29.45 RELHUM = 58.1 PCT
 WIND DIR = DEG WIND VEL = EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNHR = V8 = 1092.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = V18 = 1746.7 FPS AE18 = 19.9 SQ IN
 RUNPT = 83F-ZER-1503 TAPE = X15031 TEST PT NO = 1503 NC = AE088 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1504 X1504C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------------|
| 50 | 81.9 | 84.9 | 86.2 | 81.7 | 76.6 | 80.4 | 84.3 | 87.7 | 83.2 | 81.0 | 85.4 | 89.6 | 90.0 126.8 |
| 63 | 83.8 | 92.8 | 97.3 | 90.6 | 85.0 | 88.6 | 91.5 | 94.9 | 89.6 | 87.4 | 87.5 | 95.7 | 95.9 134.3 |
| 80 | 81.8 | 84.8 | 83.3 | 81.9 | 81.0 | 85.6 | 84.7 | 85.9 | 87.3 | 87.2 | 86.8 | 89.2 | 86.6 127.4 |
| 100 | 78.5 | 83.7 | 80.8 | 79.8 | 81.4 | 84.5 | 82.6 | 85.3 | 84.3 | 86.8 | 88.0 | 92.1 | 87.3 127.2 |
| 125 | 77.4 | 78.9 | 82.2 | 80.5 | 81.8 | 83.7 | 84.6 | 83.5 | 84.2 | 86.3 | 90.6 | 94.3 | 88.2 128.1 |
| 160 | 74.9 | 77.7 | 85.7 | 78.0 | 79.4 | 81.2 | 84.9 | 84.5 | 83.5 | 89.1 | 92.7 | 95.1 | 89.3 131.8 |
| 200 | 75.3 | 79.1 | 84.1 | 77.6 | 77.0 | 80.3 | 85.0 | 84.6 | 86.6 | 86.6 | 91.3 | 95.7 | 89.4 128.8 |
| 250 | 74.8 | 76.6 | 79.1 | 76.4 | 78.2 | 80.3 | 81.7 | 83.4 | 85.6 | 89.4 | 93.5 | 96.0 | 89.4 129.3 |
| 315 | 75.6 | 80.9 | 84.6 | 79.7 | 78.5 | 82.4 | 86.5 | 87.2 | 92.1 | 89.5 | 93.1 | 95.8 | 90.2 130.6 |
| 400 | 74.3 | 76.8 | 78.1 | 76.7 | 78.0 | 81.1 | 85.5 | 84.2 | 87.4 | 91.2 | 94.1 | 93.8 | 88.2 129.3 |
| 500 | 75.1 | 76.9 | 80.4 | 76.9 | 79.3 | 82.9 | 84.0 | 84.9 | 87.9 | 92.2 | 93.8 | 91.5 | 86.7 129.2 |
| 630 | 75.5 | 77.3 | 80.1 | 77.4 | 80.2 | 82.3 | 82.7 | 85.1 | 87.1 | 92.9 | 93.3 | 88.5 | 86.9 128.8 |
| 800 | 79.1 | 79.9 | 80.6 | 79.9 | 81.8 | 85.1 | 87.5 | 89.2 | 91.1 | 93.2 | 93.3 | 86.3 | 84.9 130.2 |
| 1000 | 79.3 | 79.3 | 80.1 | 79.8 | 82.2 | 85.1 | 84.2 | 87.6 | 90.1 | 92.9 | 91.0 | 84.7 | 83.4 129.0 |
| 1250 | 78.4 | 81.7 | 81.0 | 80.4 | 82.1 | 85.2 | 85.1 | 88.5 | 91.5 | 93.0 | 90.4 | 82.1 | 84.3 129.4 |
| 1600 | 81.6 | 82.0 | 83.9 | 82.5 | 84.3 | 87.4 | 86.7 | 90.0 | 92.9 | 92.5 | 90.1 | 82.8 | 82.4 130.3 |
| 2000 | 84.0 | 82.8 | 84.2 | 83.1 | 85.5 | 88.6 | 87.8 | 91.4 | 93.5 | 93.5 | 90.3 | 82.1 | 80.4 131.2 |
| 2500 | 84.2 | 84.0 | 84.8 | 84.3 | 86.2 | 89.5 | 89.0 | 92.1 | 94.2 | 95.0 | 89.7 | 82.8 | 80.6 132.0 |
| 3150 | 85.1 | 85.4 | 86.6 | 85.4 | 87.5 | 91.3 | 90.4 | 94.2 | 95.7 | 96.1 | 90.8 | 83.7 | 79.6 133.6 |
| 4000 | 85.8 | 85.9 | 87.2 | 86.1 | 89.1 | 93.0 | 92.4 | 96.0 | 96.6 | 96.4 | 93.1 | 84.6 | 81.2 134.9 |
| 5000 | 87.5 | 86.8 | 87.8 | 87.8 | 90.1 | 93.8 | 93.7 | 96.5 | 98.0 | 98.4 | 94.9 | 87.5 | 82.2 136.4 |
| 6300 | 88.2 | 89.1 | 89.9 | 88.8 | 91.1 | 95.3 | 94.8 | 97.8 | 99.0 | 99.2 | 96.5 | 89.7 | 84.4 137.8 |
| 8000 | 87.9 | 89.0 | 90.4 | 89.3 | 91.7 | 95.2 | 94.2 | 97.5 | 98.8 | 98.7 | 97.1 | 91.3 | 86.1 138.0 |
| 10000 | 88.9 | 90.0 | 90.6 | 90.6 | 92.4 | 96.2 | 95.7 | 98.2 | 98.4 | 98.6 | 97.4 | 92.0 | 87.3 139.0 |
| 12500 | 88.2 | 89.9 | 90.2 | 92.3 | 95.8 | 95.3 | 96.8 | 98.0 | 97.1 | 95.4 | 92.2 | 86.8 | 83.6 139.0 |
| 15000 | 87.4 | 88.8 | 89.7 | 89.7 | 91.3 | 94.7 | 94.6 | 96.2 | 97.4 | 95.4 | 93.9 | 91.0 | 85.0 139.4 |
| 20000 | 86.0 | 88.3 | 88.5 | 86.4 | 90.1 | 92.4 | 93.2 | 94.4 | 95.4 | 92.6 | 91.3 | 88.6 | 83.3 139.3 |
| 25000 | 83.7 | 85.3 | 86.1 | 87.1 | 87.7 | 92.5 | 91.7 | 91.8 | 93.3 | 90.1 | 88.1 | 85.8 | 79.4 139.8 |
| 31500 | 78.9 | 81.5 | 83.0 | 84.7 | 84.7 | 89.1 | 88.3 | 88.4 | 89.5 | 86.3 | 85.7 | 81.9 | 75.9 139.5 |
| 40000 | 74.2 | 77.1 | 78.8 | 79.9 | 80.5 | 85.4 | 83.9 | 85.7 | 87.1 | 83.1 | 82.4 | 78.4 | 71.8 140.0 |
| 50000 | 68.0 | 70.6 | 72.5 | 73.9 | 74.3 | 80.6 | 78.5 | 80.1 | 80.6 | 77.6 | 77.3 | 73.3 | 66.4 138.8 |
| 63000 | 61.8 | 64.8 | 67.5 | 68.2 | 69.2 | 75.0 | 72.1 | 74.7 | 75.7 | 71.5 | 71.0 | 67.1 | 59.8 138.5 |
| 80000 | 53.9 | 57.2 | 59.3 | 59.3 | 60.7 | 67.8 | 64.9 | 67.1 | 68.0 | 64.0 | 64.0 | 60.1 | 52.4 137.8 |
| GASPL | 98.5 | 100.3 | 102.3 | 100.3 | 101.7 | 105.3 | 105.5 | 107.5 | 108.8 | 108.7 | 107.4 | 106.0 | 102.0 150.9 |
| PNL | 109.8 | 110.8 | 112.1 | 110.6 | 112.5 | 116.3 | 116.4 | 119.1 | 120.5 | 121.0 | 119.1 | 114.4 | 110.2 |
| PNLT | 109.8 | 111.5 | 113.2 | 111.1 | 112.5 | 116.3 | 118.1 | 119.6 | 121.9 | 121.0 | 119.1 | 114.4 | 110.2 |
| DBA | 96.3 | 96.8 | 98.0 | 97.0 | 99.2 | 102.9 | 102.5 | 105.5 | 107.0 | 107.4 | 105.0 | 99.8 | 95.9 |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICLE = ADR213 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 400. FPS
 1APLHA = SB59 1EGA = NO PWL AREA = FULL SPHERE TAMB F = 53.89 PAMB HG = 28.96 RELHUM = 47.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =
 FNIN1 = LBS XNL RPM XNH RPM V8 = 11137.6 FPS AE8 = 4.0 SO IN
 FNRAMB = LBS XNLR RPM XNHR RPM V16 = 1808.1 FPS AE16 = 19.9 SO IN
 RUNPT = 83F-400-1504 TAPE = X1504C TEST PT NO = 1504 NC = AEORR. CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1504 X1504F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|-------|-------|-------|------|-------|-------|
| 250 | 61.1 | 81.9 | 83.2 | 79.2 | 79.6 | 80.3 | 79.8 | 79.8 | 90.1 | 86.9 | 90.3 | 93.7 | 90.1 | 128.3 |
| 315 | 81.1 | 81.9 | 83.2 | 79.2 | 80.4 | 82.6 | 85.8 | 85.5 | 85.2 | 88.5 | 91.4 | 92.2 | 89.4 | 128.3 |
| 400 | 85.2 | 88.6 | 90.4 | 83.4 | 79.8 | 81.4 | 84.5 | 82.1 | 85.7 | 89.6 | 91.3 | 90.6 | 89.5 | 129.3 |
| 500 | 81.4 | 82.9 | 82.8 | 79.9 | 81.2 | 83.2 | 83.0 | 82.8 | 85.7 | 91.2 | 91.9 | 89.1 | 92.1 | 128.5 |
| 630 | 82.8 | 83.3 | 85.4 | 80.4 | 82.2 | 82.7 | 82.0 | 83.4 | 90.4 | 92.3 | 92.9 | 88.5 | 93.2 | 129.7 |
| 800 | 83.2 | 83.7 | 85.1 | 80.9 | 83.8 | 86.7 | 87.3 | 87.9 | 90.1 | 92.6 | 91.1 | 87.9 | 93.5 | 130.2 |
| 1000 | 86.8 | 86.3 | 85.7 | 83.5 | 84.3 | 85.7 | 84.3 | 86.8 | 92.0 | 92.9 | 90.3 | 84.8 | 93.3 | 130.4 |
| 1250 | 86.9 | 85.8 | 85.2 | 83.5 | 84.3 | 86.0 | 85.4 | 88.2 | 93.8 | 93.3 | 91.6 | 87.5 | 94.4 | 131.3 |
| 1600 | 85.8 | 88.0 | 86.0 | 84.0 | 86.7 | 88.4 | 87.2 | 89.8 | 93.7 | 93.5 | 91.0 | 86.4 | 92.4 | 131.7 |
| 2000 | 89.2 | 88.5 | 89.1 | 86.4 | 88.1 | 89.9 | 88.4 | 90.8 | 94.7 | 95.2 | 90.7 | 87.3 | 93.0 | 133.0 |
| 2500 | 91.4 | 89.2 | 89.5 | 87.1 | 89.1 | 89.9 | 91.8 | 94.1 | 96.0 | 91.2 | 87.2 | 87.2 | 90.2 | 133.9 |
| 3150 | 91.8 | 90.6 | 90.2 | 88.5 | 90.8 | 93.3 | 91.4 | 93.8 | 97.8 | 96.9 | 94.0 | 88.5 | 92.0 | 135.5 |
| 4000 | 92.6 | 92.0 | 92.2 | 89.8 | 93.3 | 95.6 | 94.0 | 96.3 | 99.1 | 98.9 | 95.8 | 91.3 | 93.0 | 137.5 |
| 5000 | 96.1 | 94.9 | 94.7 | 92.0 | 94.1 | 96.8 | 95.5 | 96.9 | 100.5 | 100.2 | 97.9 | 94.4 | 96.7 | 139.3 |
| 6300 | 95.0 | 93.5 | 94.5 | 92.6 | 95.7 | 98.3 | 96.8 | 98.4 | 101.0 | 100.6 | 99.7 | 97.4 | 99.8 | 140.5 |
| 8000 | 98.3 | 98.0 | 97.3 | 94.6 | 95.7 | 98.2 | 96.4 | 98.6 | 101.3 | 101.4 | 100.9 | 98.9 | 101.5 | 141.9 |
| 10000 | 95.0 | 95.4 | 95.9 | 93.8 | 96.5 | 99.2 | 98.0 | 99.6 | 101.7 | 100.7 | 99.7 | 99.8 | 101.4 | 142.3 |
| 12500 | 95.7 | 96.1 | 96.0 | 94.8 | 96.9 | 98.8 | 97.7 | 98.6 | 101.6 | 99.5 | 98.7 | 99.2 | 100.3 | 142.8 |
| 16000 | 97.3 | 95.9 | 96.3 | 95.1 | 95.3 | 97.7 | 97.0 | 97.9 | 100.3 | 97.5 | 96.7 | 97.2 | 98.9 | 143.1 |
| 20000 | 93.3 | 94.0 | 94.0 | 93.0 | 94.2 | 95.4 | 95.7 | 96.3 | 99.0 | 96.0 | 94.7 | 95.8 | 96.6 | 143.1 |
| 25000 | 91.4 | 92.9 | 92.2 | 91.1 | 92.3 | 95.5 | 94.2 | 93.7 | 96.0 | 92.9 | 93.1 | 92.7 | 93.9 | 143.5 |
| 31500 | 91.0 | 91.4 | 90.7 | 90.2 | 89.3 | 92.1 | 90.8 | 90.3 | 93.8 | 89.8 | 89.9 | 89.5 | 90.5 | 144.1 |
| 40000 | 85.4 | 86.7 | 86.8 | 86.9 | 85.1 | 88.4 | 86.3 | 87.4 | 88.1 | 85.1 | 85.7 | 85.1 | 85.7 | 143.7 |
| 50000 | 80.3 | 81.9 | 82.2 | 81.7 | 78.9 | 83.6 | 80.9 | 81.9 | 83.7 | 79.4 | 79.8 | 79.5 | 79.9 | 143.0 |
| 63000 | 73.1 | 74.5 | 74.9 | 74.8 | 73.8 | 78.0 | 74.4 | 76.3 | 77.6 | 74.5 | 74.2 | 74.1 | 74.2 | 142.2 |
| 80000 | 65.5 | 67.2 | 68.5 | 67.6 | 65.3 | 70.8 | 67.3 | 68.8 | 67.8 | 63.8 | 64.7 | 64.4 | 64.3 | 141.0 |

ORIGINAL PAGE IS
OF POOR QUALITY

GASPL 106.0 105.7 105.7 103.8 105.4 107.8 106.7 108.0 110.9 110.1 108.8 107.6 109.6 154.1
PNL 116.5 115.7 115.8 113.1 115.4 117.8 116.5 118.2 121.5 121.5 119.9 117.3 120.0
PNLT 117.2 116.8 117.0 113.7 115.4 117.8 117.9 118.9 121.5 121.5 119.9 117.3 120.0
DBA 188.5 190.1 191.0 190.4 188.4 193.3 190.0 191.5 191.7 187.8 188.6 188.3 188.3

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICL = ADH213 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 53.89 PAMB HG = 28.96 RELHUM = 47.5 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNHR = RPM V8 = 1113.6 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1808.1 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1504 TAPE = X1504F TEST PT NO = 1504 NC = AE088 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1504 X15041

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 63.5 | 68.4 | 71.2 | 65.0 | 61.8 | 63.5 | 66.5 | 63.7 | 66.6 | 69.4 | 69.6 | 66.7 | 62.2 | 146.9 |
| 63 | 59.6 | 62.6 | 63.7 | 61.5 | 63.1 | 65.3 | 65.0 | 64.3 | 66.6 | 71.0 | 70.1 | 65.1 | 64.7 | 146.2 |
| 80 | 60.9 | 63.0 | 65.2 | 61.9 | 64.1 | 64.8 | 63.9 | 64.9 | 71.2 | 72.0 | 71.0 | 64.5 | 65.8 | 147.4 |
| 100 | 61.3 | 63.4 | 65.8 | 62.4 | 65.7 | 68.7 | 69.2 | 69.3 | 70.9 | 72.3 | 69.2 | 63.7 | 65.9 | 147.9 |
| 125 | 64.7 | 65.9 | 66.4 | 64.9 | 66.2 | 67.6 | 66.1 | 68.2 | 72.6 | 72.4 | 68.3 | 60.5 | 66.0 | 148.1 |
| 160 | 64.7 | 65.2 | 65.7 | 64.8 | 66.0 | 67.8 | 67.1 | 69.4 | 74.3 | 72.7 | 69.3 | 63.0 | 66.2 | 149.0 |
| 200 | 63.3 | 67.2 | 66.4 | 65.1 | 68.3 | 70.1 | 68.7 | 70.9 | 74.1 | 72.7 | 68.5 | 61.5 | 63.7 | 149.4 |
| 250 | 66.4 | 67.4 | 69.2 | 67.3 | 69.4 | 71.3 | 69.7 | 71.7 | 74.8 | 74.1 | 67.9 | 62.0 | 63.7 | 150.7 |
| 315 | 68.2 | 67.8 | 69.3 | 67.7 | 70.2 | 72.3 | 70.9 | 72.4 | 75.9 | 74.6 | 68.0 | 61.3 | 60.0 | 151.6 |
| 400 | 68.1 | 68.8 | 69.7 | 68.7 | 71.5 | 74.3 | 72.2 | 74.1 | 77.2 | 75.1 | 70.2 | 62.0 | 60.9 | 153.2 |
| 500 | 68.4 | 69.8 | 71.3 | 69.8 | 73.8 | 76.3 | 74.5 | 76.3 | 78.2 | 76.7 | 71.6 | 64.1 | 60.8 | 155.2 |
| 630 | 71.4 | 72.2 | 73.5 | 71.7 | 74.3 | 77.2 | 75.7 | 76.6 | 79.3 | 77.6 | 73.2 | 66.6 | 63.6 | 157.0 |
| 800 | 69.8 | 70.5 | 73.0 | 72.1 | 75.6 | 78.4 | 76.8 | 77.8 | 79.5 | 77.6 | 74.5 | 68.8 | 65.5 | 158.2 |
| 1000 | 72.7 | 74.7 | 75.6 | 73.9 | 75.5 | 78.2 | 76.3 | 77.9 | 79.6 | 78.1 | 75.3 | 69.7 | 66.0 | 159.6 |
| 1250 | 68.9 | 71.8 | 73.9 | 72.9 | 75.1 | 79.0 | 77.7 | 78.7 | 79.7 | 77.1 | 73.5 | 69.8 | 64.5 | 160.0 |
| 1600 | 68.7 | 71.9 | 73.6 | 73.6 | 76.3 | 78.4 | 77.1 | 77.3 | 79.2 | 75.3 | 71.7 | 67.8 | 61.1 | 160.4 |
| 2000 | 69.4 | 71.1 | 73.5 | 73.6 | 74.5 | 77.2 | 76.2 | 76.5 | 77.5 | 72.7 | 68.7 | 64.2 | 56.6 | 160.8 |
| 2500 | 63.6 | 68.0 | 70.4 | 70.9 | 72.9 | 74.3 | 74.4 | 74.1 | 75.4 | 69.9 | 65.0 | 60.0 | 49.5 | 160.8 |
| 3150 | 58.2 | 64.4 | 66.6 | 67.4 | 69.6 | 73.2 | 71.5 | 70.0 | 70.4 | 64.4 | 60.0 | 51.9 | 38.3 | 161.2 |
| 4000 | 51.7 | 58.2 | 61.4 | 63.2 | 63.6 | 66.8 | 65.1 | 63.4 | 64.5 | 56.6 | 50.5 | 39.8 | 20.5 | 161.8 |
| 5000 | 36.3 | 46.0 | 51.2 | 54.5 | 54.4 | 58.2 | 55.6 | 54.9 | 52.5 | 44.4 | 36.6 | 21.7 | 161.4 | |
| 6300 | 13.4 | 26.9 | 34.6 | 38.5 | 38.1 | 43.6 | 40.2 | 38.7 | 36.0 | 24.4 | 12.9 | | 160.7 | |
| 8000 | | | 5.9 | 12.3 | 15.0 | 20.3 | 15.5 | 13.8 | 8.6 | | | | 159.8 | |
| 10000 | | | | | | | | | | | | | 158.7 | |
| 12500 | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

1111-00

MODEL AREA = 153.9 SQ CM (23.9 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.661 FREQ SHIFT = -9

NASA DUAL FLOW THERMAL SHIELD/OFTAS-15/NAS3-22137

VEHICLE = ADH213 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 53.89 PAMB HG = 28.96 RELHUM = 47.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT. EXT CONFIG = SL MIKE HT = 19.9 SQ IN
 FNIN1 = LBS XNL = RPM XNH = RPM V0 = 1113.6 FPS AE0 = 4.0 SQ IN
 FNRAMB = LBS XNL = RPM XNHR = RPM V10 = 1808.1 FPS AE10 = 19.9 SQ IN

TELETYPE NO. 15041

IDENTIFICATION - MODEL 83F-ZER-1505 X1505C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|---|------|------|------|------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 80.4 | 81.2 | 80.9 | 80.2 | 78.1 | 82.2 | 78.6 | 86.5 | 82.7 | 82.7 | 88.4 | 92.3 | 83.7 | 126.4 |
| 63 | 84.8 | 88.5 | 91.6 | 83.6 | 83.7 | 89.1 | 87.7 | 93.9 | 91.1 | 92.1 | 92.0 | 99.5 | 92.1 | 133.5 |
| 80 | 84.8 | 89.1 | 86.3 | 85.4 | 83.7 | 88.6 | 87.7 | 88.9 | 87.8 | 89.2 | 92.0 | 93.0 | 77.4 | 130.4 |
| 100 | 83.2 | 88.7 | 85.0 | 85.3 | 86.1 | 90.0 | 87.4 | 90.8 | 89.0 | 93.1 | 93.7 | 97.4 | 80.6 | 132.3 |
| 125 | 80.9 | 84.7 | 86.9 | 86.0 | 87.3 | 89.9 | 88.3 | 89.5 | 89.2 | 92.5 | 97.9 | 100.6 | 85.0 | 134.1 |
| 160 | 79.9 | 79.7 | 84.7 | 82.0 | 83.6 | 87.0 | 89.6 | 88.3 | 89.2 | 93.1 | 97.9 | 101.1 | 90.3 | 134.0 |
| 200 | 81.3 | 82.3 | 85.3 | 82.9 | 84.7 | 88.3 | 89.0 | 90.4 | 92.3 | 95.1 | 100.3 | 104.2 | 93.1 | 136.4 |
| 250 | 81.3 | 85.1 | 85.8 | 83.9 | 85.2 | 89.1 | 90.0 | 91.9 | 93.8 | 99.4 | 103.8 | 107.0 | 96.1 | 139.3 |
| 315 | 81.8 | 85.1 | 84.9 | 84.7 | 87.5 | 90.9 | 91.3 | 93.7 | 95.4 | 99.5 | 104.3 | 107.3 | 98.7 | 139.9 |
| 400 | 82.6 | 85.1 | 86.6 | 84.9 | 87.2 | 90.4 | 94.7 | 94.2 | 95.1 | 101.7 | 105.1 | 107.5 | 98.9 | 140.6 |
| 500 | 83.3 | 86.1 | 87.9 | 85.9 | 88.0 | 91.6 | 92.5 | 94.4 | 96.4 | 101.7 | 104.8 | 105.8 | 98.2 | 140.0 |
| 630 | 83.8 | 86.3 | 87.8 | 86.1 | 88.7 | 91.8 | 92.2 | 95.1 | 96.1 | 102.2 | 103.5 | 103.5 | 97.6 | 139.1 |
| 800 | 85.3 | 87.1 | 88.1 | 89.9 | 90.8 | 93.1 | 93.5 | 96.2 | 97.6 | 101.5 | 104.1 | 102.3 | 96.7 | 139.3 |
| 1000 | 87.5 | 89.3 | 90.1 | 88.3 | 91.2 | 93.8 | 93.4 | 96.6 | 98.1 | 101.1 | 102.0 | 100.2 | 95.6 | 138.5 |
| 1250 | 85.7 | 91.0 | 90.5 | 88.9 | 90.9 | 94.0 | 93.9 | 96.8 | 99.2 | 101.3 | 101.4 | 98.4 | 95.0 | 138.5 |
| 1600 | 87.3 | 90.7 | 91.4 | 90.3 | 91.5 | 95.4 | 95.2 | 97.8 | 99.9 | 100.0 | 101.6 | 98.0 | 94.7 | 138.7 |
| 2000 | 88.0 | 90.6 | 91.7 | 90.4 | 91.7 | 95.6 | 95.6 | 98.9 | 100.0 | 100.8 | 101.3 | 97.6 | 94.9 | 139.0 |
| 2500 | 86.7 | 91.5 | 91.3 | 92.2 | 95.8 | 96.0 | 99.1 | 100.0 | 102.0 | 101.3 | 99.1 | 96.3 | 93.9 | 139.5 |
| 3150 | 87.8 | 92.6 | 92.6 | 91.2 | 93.0 | 96.8 | 96.5 | 99.7 | 101.0 | 102.1 | 101.8 | 99.7 | 97.2 | 140.2 |
| 4000 | 88.0 | 92.1 | 93.0 | 92.4 | 94.1 | 97.5 | 97.2 | 101.3 | 102.1 | 102.1 | 103.3 | 101.4 | 99.7 | 141.4 |
| 5000 | 88.8 | 92.5 | 93.9 | 92.8 | 94.6 | 97.8 | 98.7 | 101.5 | 102.3 | 104.2 | 104.7 | 104.5 | 102.2 | 142.7 |
| 6300 | 89.7 | 93.4 | 94.0 | 93.3 | 95.3 | 99.3 | 99.8 | 103.0 | 103.6 | 105.0 | 106.0 | 106.0 | 104.0 | 144.2 |
| 8000 | 88.9 | 93.5 | 94.4 | 94.3 | 95.9 | 99.5 | 99.2 | 102.3 | 102.8 | 104.0 | 106.1 | 106.1 | 104.6 | 144.4 |
| 10000 | 89.3 | 94.5 | 95.5 | 95.0 | 96.7 | 99.9 | 99.9 | 103.1 | 102.6 | 103.1 | 106.4 | 105.8 | 105.3 | 145.1 |
| 12500 | 90.9 | 94.7 | 96.5 | 95.9 | 97.0 | 100.0 | 99.5 | 100.5 | 101.1 | 102.0 | 104.1 | 104.4 | 103.2 | 144.6 |
| 15000 | 90.8 | 96.1 | 97.1 | 97.3 | 97.6 | 99.6 | 98.7 | 99.8 | 100.7 | 100.0 | 102.5 | 102.6 | 99.8 | 145.1 |
| 20000 | 87.3 | 92.5 | 94.7 | 95.6 | 96.6 | 98.4 | 97.7 | 97.9 | 97.6 | 97.5 | 100.2 | 99.6 | 96.8 | 144.7 |
| 25000 | 83.8 | 88.6 | 90.8 | 92.7 | 93.8 | 97.6 | 96.3 | 95.1 | 95.1 | 94.6 | 96.9 | 96.8 | 93.2 | 144.6 |
| 31500 | 80.3 | 85.3 | 87.6 | 89.3 | 89.6 | 93.2 | 92.7 | 92.2 | 91.8 | 91.0 | 93.8 | 92.3 | 88.5 | 144.1 |
| 40000 | 76.7 | 80.9 | 83.2 | 85.3 | 84.9 | 89.8 | 88.1 | 88.4 | 89.2 | 88.1 | 90.8 | 88.1 | 84.0 | 144.4 |
| 50000 | 68.6 | 74.8 | 77.4 | 78.8 | 79.3 | 85.1 | 83.0 | 83.5 | 83.3 | 83.1 | 85.8 | 83.6 | 78.8 | 143.7 |
| 63000 | 63.2 | 68.7 | 72.0 | 73.3 | 74.9 | 80.4 | 76.7 | 78.3 | 78.9 | 80.6 | 80.6 | 78.0 | 72.8 | 143.8 |
| 80000 | 56.0 | 61.3 | 65.3 | 66.2 | 67.4 | 74.5 | 70.4 | 71.8 | 72.3 | 72.4 | 75.9 | 72.2 | 66.0 | 144.6 |
| GASPL 101.2 105.3 106.3 105.8 107.1 110.3 110.2 112.6 113.4 115.1 117.1 117.6 113.4 156.9 | | | | | | | | | | | | | | |
| PNL 112.7 116.7 117.3 116.4 118.1 121.6 121.8 124.8 125.8 127.5 128.9 128.9 128.7 125.0 | | | | | | | | | | | | | | |
| PNLT 112.7 116.7 117.3 116.4 118.1 121.6 121.8 124.8 125.8 127.5 128.9 128.9 128.7 125.0 | | | | | | | | | | | | | | |
| DBA 99.2 103.1 103.8 103.0 104.6 108.1 108.3 111.4 112.3 114.0 115.2 114.6 111.5 | | | | | | | | | | | | | | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|----------------------|
| VEHICLE = ADH204 | TEST DATE = 04-12-83 | LOCAT = C41 ANECH CH | CONFIG = 15 | MODEL = AX | FLTVEL = 0. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 47.91 | PAMB HG = 29.46 | RELHUM = 54.8 PCT |
| WIND DIR = | DEG WIND VEL = | EXT DIST = 40.0 FT. | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNINT = | LBS XNL | RPM | XNH | V8 = 1277.4 FPS | AE8 = 4.0 SQ IN |
| FNRAMB = | LBS XNLR | RPM | XNHR | V18 = 1953.7 FPS | AE18 = 19.9 SQ IN |
| RUNPT = 83F-ZER-1505 | TAPE = | TEST PT NO = 1505 | NC = | AE088 | CORR FAN SPEED = RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1505 X1505F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 80.4 | 81.2 | 80.9 | 80.2 | 78.1 | 82.2 | 78.6 | 86.5 | 82.7 | 82.7 | 88.4 | 92.3 | 83.7 | 126.4 |
| 63 | 84.8 | 88.5 | 91.6 | 83.6 | 83.7 | 89.1 | 87.7 | 93.9 | 91.1 | 92.1 | 92.0 | 99.5 | 92.1 | 133.5 |
| 80 | 84.8 | 89.1 | 85.3 | 85.4 | 83.7 | 88.6 | 87.7 | 88.9 | 87.8 | 89.2 | 92.0 | 93.0 | 77.4 | 130.4 |
| 100 | 83.2 | 86.7 | 85.0 | 85.3 | 86.1 | 90.0 | 87.4 | 90.8 | 89.0 | 93.1 | 93.7 | 97.4 | 80.6 | 132.3 |
| 125 | 80.9 | 84.7 | 86.0 | 86.0 | 87.3 | 89.9 | 88.3 | 89.5 | 89.2 | 92.5 | 97.9 | 100.8 | 85.0 | 134.1 |
| 160 | 79.9 | 79.7 | 84.7 | 82.0 | 83.6 | 87.0 | 89.6 | 88.3 | 89.2 | 93.1 | 97.9 | 101.1 | 90.3 | 134.0 |
| 200 | 81.3 | 82.3 | 85.3 | 82.9 | 84.7 | 88.3 | 89.0 | 90.4 | 92.3 | 95.1 | 100.3 | 104.2 | 93.1 | 136.4 |
| 250 | 81.3 | 85.1 | 85.8 | 83.9 | 85.2 | 89.1 | 90.0 | 91.9 | 93.8 | 99.4 | 103.8 | 107.0 | 96.1 | 139.3 |
| 315 | 81.8 | 85.1 | 84.9 | 84.7 | 87.5 | 90.9 | 91.3 | 93.7 | 95.4 | 99.5 | 104.3 | 107.3 | 98.7 | 139.9 |
| 400 | 82.6 | 85.1 | 86.6 | 84.9 | 87.2 | 90.4 | 94.7 | 94.2 | 95.1 | 101.7 | 105.1 | 107.5 | 98.9 | 140.6 |
| 500 | 83.3 | 85.1 | 87.9 | 85.9 | 88.0 | 91.6 | 92.5 | 94.4 | 96.4 | 101.7 | 104.8 | 105.8 | 98.2 | 140.0 |
| 630 | 83.8 | 86.3 | 87.8 | 86.1 | 88.7 | 91.8 | 92.2 | 95.1 | 96.1 | 102.2 | 103.5 | 103.5 | 97.6 | 139.1 |
| 800 | 85.3 | 87.1 | 88.1 | 89.9 | 90.8 | 93.1 | 93.5 | 96.2 | 97.6 | 101.5 | 104.1 | 102.3 | 96.7 | 139.3 |
| 1000 | 87.5 | 89.3 | 90.1 | 88.3 | 91.2 | 93.8 | 93.4 | 96.6 | 98.1 | 101.1 | 102.0 | 100.2 | 95.6 | 138.5 |
| 1250 | 85.7 | 91.0 | 90.5 | 88.9 | 90.9 | 94.0 | 93.9 | 96.8 | 99.2 | 101.3 | 101.4 | 98.4 | 95.0 | 138.5 |
| 1600 | 87.3 | 90.7 | 91.4 | 90.3 | 91.5 | 95.4 | 95.2 | 97.8 | 99.9 | 100.0 | 101.6 | 98.0 | 94.7 | 138.7 |
| 2000 | 86.0 | 90.6 | 91.7 | 90.4 | 91.7 | 95.6 | 95.6 | 98.9 | 100.0 | 100.8 | 101.3 | 97.6 | 94.9 | 139.0 |
| 2500 | 86.7 | 91.5 | 91.3 | 92.2 | 92.2 | 95.8 | 96.0 | 99.1 | 100.0 | 102.0 | 101.3 | 99.1 | 96.3 | 139.5 |
| 3150 | 87.8 | 92.5 | 92.5 | 91.2 | 93.0 | 96.8 | 96.5 | 99.7 | 101.0 | 102.1 | 101.8 | 99.7 | 97.2 | 140.2 |
| 4000 | 88.0 | 92.1 | 93.0 | 92.4 | 94.1 | 97.5 | 97.2 | 101.3 | 102.1 | 102.1 | 103.3 | 101.4 | 99.7 | 141.4 |
| 5000 | 88.8 | 92.5 | 93.9 | 92.8 | 94.6 | 97.8 | 98.7 | 101.5 | 102.3 | 104.2 | 104.7 | 104.5 | 102.2 | 142.7 |
| 6300 | 89.7 | 93.4 | 94.0 | 93.3 | 95.3 | 99.3 | 99.8 | 103.0 | 103.6 | 105.0 | 106.0 | 106.0 | 104.0 | 144.2 |
| 8000 | 88.9 | 93.5 | 94.4 | 94.3 | 95.9 | 99.5 | 99.2 | 102.3 | 102.8 | 104.0 | 106.1 | 106.1 | 104.6 | 144.4 |
| 10000 | 89.3 | 94.5 | 95.5 | 95.0 | 96.7 | 99.9 | 99.9 | 103.1 | 102.6 | 103.1 | 106.4 | 105.8 | 105.3 | 145.1 |
| 12500 | 90.9 | 94.7 | 96.5 | 95.9 | 97.0 | 100.0 | 99.5 | 100.5 | 101.1 | 102.0 | 104.1 | 104.4 | 103.2 | 144.6 |
| 16000 | 90.8 | 96.1 | 97.1 | 97.3 | 97.6 | 99.6 | 98.7 | 99.8 | 100.7 | 100.0 | 102.5 | 102.6 | 99.8 | 145.1 |
| 20000 | 87.3 | 92.5 | 94.7 | 95.6 | 96.6 | 98.4 | 97.7 | 97.9 | 97.6 | 97.5 | 100.2 | 99.6 | 96.8 | 144.7 |
| 25000 | 83.8 | 88.6 | 90.8 | 92.7 | 93.8 | 97.6 | 96.3 | 95.1 | 95.1 | 94.6 | 96.9 | 96.8 | 93.2 | 144.6 |
| 31500 | 80.3 | 85.3 | 87.6 | 89.3 | 89.6 | 93.2 | 92.7 | 92.2 | 91.8 | 91.0 | 93.8 | 92.3 | 88.5 | 144.1 |
| 40000 | 75.7 | 80.9 | 83.2 | 84.9 | 84.9 | 89.8 | 88.1 | 88.4 | 89.2 | 88.1 | 90.8 | 88.1 | 84.0 | 144.4 |
| 50000 | 69.6 | 74.8 | 77.4 | 78.8 | 79.3 | 85.1 | 83.0 | 83.5 | 83.3 | 83.1 | 85.8 | 83.6 | 78.8 | 143.7 |
| 63000 | 63.2 | 68.7 | 72.0 | 73.3 | 74.9 | 80.4 | 76.7 | 78.3 | 78.9 | 78.0 | 80.6 | 78.0 | 72.8 | 143.8 |
| 80000 | 56.0 | 61.3 | 65.3 | 66.2 | 67.4 | 74.5 | 70.4 | 71.8 | 72.3 | 72.4 | 75.9 | 72.2 | 66.0 | 144.6 |

GASPL 101.2 106.3 106.3 105.8 107.1 110.3 110.2 112.6 113.4 115.1 117.1 117.6 113.4 156.9
 PNL 112.7 116.7 117.3 116.4 118.1 121.6 121.8 124.8 125.8 127.5 128.9 128.7 125.0
 PNL 112.7 116.7 117.3 116.4 118.1 121.6 121.8 124.8 125.8 127.5 128.9 128.7 125.0
 DBA 178.7 184.1 187.6 188.8 189.9 196.4 192.7 194.0 194.4 194.2 197.4 194.1 188.4

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS9-22137

VEHICL = ADH204 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 47.91 PAMB HG = 29.46 RELHJM = 54.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1277.4 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1953.7 FPS AE18 = 19.9 SQ IN

IDENTIFICATION - 83F-ZER-1505 X15051

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 60.8 | 64.9 | 67.5 | 66.5 | 69.2 | 72.5 | 76.7 | 75.7 | 76.0 | 81.5 | 83.3 | 83.5 | 71.6 | 158.3 |
| 63 | 61.6 | 65.9 | 68.7 | 67.5 | 70.0 | 73.7 | 74.5 | 76.0 | 77.2 | 81.5 | 83.1 | 81.8 | 70.8 | 157.7 |
| 80 | 61.9 | 66.0 | 68.6 | 67.6 | 70.6 | 73.9 | 74.1 | 76.6 | 76.9 | 81.9 | 81.7 | 79.4 | 70.2 | 156.8 |
| 100 | 63.4 | 66.8 | 68.9 | 71.4 | 72.6 | 75.1 | 75.4 | 77.6 | 78.4 | 81.1 | 82.2 | 78.1 | 69.1 | 157.0 |
| 125 | 65.5 | 68.8 | 70.7 | 69.7 | 73.0 | 75.7 | 75.2 | 78.0 | 78.7 | 80.7 | 80.0 | 75.9 | 67.8 | 156.2 |
| 160 | 63.4 | 70.3 | 71.0 | 70.1 | 72.5 | 75.8 | 75.8 | 78.0 | 79.7 | 80.7 | 79.2 | 73.8 | 66.8 | 156.2 |
| 200 | 64.9 | 69.9 | 71.7 | 71.4 | 73.1 | 77.1 | 76.8 | 78.9 | 80.2 | 79.2 | 79.1 | 73.1 | 66.0 | 156.4 |
| 250 | 65.2 | 69.5 | 71.8 | 71.3 | 73.0 | 77.1 | 76.9 | 79.8 | 80.1 | 79.7 | 78.5 | 72.3 | 65.6 | 156.7 |
| 315 | 63.5 | 70.1 | 71.1 | 71.9 | 73.2 | 77.0 | 77.0 | 79.7 | 79.8 | 80.6 | 78.0 | 73.2 | 66.2 | 157.2 |
| 400 | 64.1 | 70.8 | 72.1 | 71.5 | 73.8 | 77.7 | 77.2 | 80.0 | 80.4 | 80.3 | 78.1 | 73.2 | 66.0 | 157.9 |
| 500 | 63.8 | 69.9 | 72.1 | 72.4 | 74.6 | 78.2 | 77.7 | 81.2 | 81.3 | 79.9 | 79.1 | 74.2 | 67.6 | 159.0 |
| 630 | 64.1 | 69.9 | 72.7 | 72.5 | 74.8 | 78.2 | 78.9 | 81.2 | 81.1 | 81.5 | 80.0 | 76.6 | 69.0 | 160.4 |
| 800 | 64.5 | 70.4 | 72.4 | 72.7 | 75.3 | 79.4 | 79.8 | 82.5 | 82.0 | 82.0 | 80.8 | 77.4 | 69.6 | 161.9 |
| 1000 | 63.3 | 70.3 | 72.6 | 73.6 | 75.8 | 79.5 | 79.0 | 81.6 | 81.1 | 80.7 | 80.5 | 76.8 | 69.2 | 162.0 |
| 1250 | 63.2 | 70.9 | 73.5 | 74.1 | 76.3 | 79.8 | 79.6 | 82.2 | 80.6 | 79.4 | 80.3 | 75.7 | 68.4 | 162.8 |
| 1600 | 63.9 | 70.5 | 74.1 | 74.7 | 76.4 | 79.6 | 78.9 | 79.3 | 78.7 | 77.8 | 77.1 | 73.1 | 63.9 | 162.3 |
| 2000 | 62.8 | 71.3 | 74.3 | 75.8 | 76.9 | 79.1 | 77.9 | 78.3 | 77.9 | 75.2 | 74.5 | 69.6 | 57.5 | 162.8 |
| 2500 | 57.5 | 66.5 | 71.0 | 73.5 | 75.3 | 77.3 | 76.4 | 75.7 | 73.9 | 71.5 | 70.4 | 63.7 | 49.6 | 162.4 |
| 3150 | 50.7 | 60.1 | 65.3 | 69.0 | 71.1 | 75.2 | 73.6 | 71.4 | 69.6 | 66.1 | 63.7 | 56.0 | 37.6 | 162.3 |
| 4000 | 41.0 | 52.1 | 58.2 | 62.3 | 63.9 | 68.0 | 67.0 | 65.3 | 62.5 | 67.8 | 54.4 | 42.6 | 18.5 | 161.8 |
| 5000 | 26.6 | 40.1 | 47.6 | 52.9 | 54.2 | 59.7 | 57.4 | 56.0 | 53.6 | 47.3 | 41.6 | 24.7 | | 162.1 |
| 6300 | 2.7 | 19.8 | 29.7 | 35.7 | 38.5 | 45.1 | 42.2 | 40.4 | 35.6 | 28.2 | 18.9 | | | 161.3 |
| 8000 | | | 3.0 | 10.9 | 16.0 | 22.7 | 17.8 | 15.9 | 9.9 | | | | | 161.5 |
| 10000 | | | | | | | | | | | | | | 162.3 |
| 12500 | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS OF POOR QUALITY

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|-------|-------|-------|-------|------|------|------|------|-------|
| OASPL | 76.1 | 82.0 | 84.4 | 84.9 | 86.9 | 90.2 | 90.1 | 92.1 | 92.1 | 92.8 | 92.6 | 89.6 | 80.5 | 174.3 |
| PNL | 83.5 | 91.1 | 94.1 | 95.4 | 97.1 | 100.1 | 99.5 | 100.4 | 100.0 | 99.0 | 98.2 | 93.7 | 84.5 | |
| PNLT | 84.6 | 91.1 | 94.1 | 95.4 | 97.1 | 100.1 | 100.0 | 100.4 | 101.0 | 99.0 | 99.3 | 93.7 | 84.5 | |
| DBA | 72.7 | 79.7 | 82.6 | 83.6 | 85.5 | 88.7 | 88.2 | 89.9 | 89.3 | 88.6 | 87.9 | 83.8 | 76.0 | |

MODEL AREA = 153.9 SQ CM (23.9 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.661 FREQ SHIFT = -9

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICLE = ADH204 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 47.91 PAMB HG = 29.46 RELHUM = 54.8 PCT
 WIND DIR = DEG WIND VEL = MPH MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1277.4 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1953.7 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1505 TAPE = X15051 TEST PT NO = 1505 NC = AE088 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1506 X1506C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 85.6 | 88.2 | 84.4 | 84.5 | 79.6 | 82.9 | 82.6 | 86.5 | 84.2 | 85.5 | 86.6 | 90.3 | 91.5 | 127.9 |
| 63 | 88.5 | 95.0 | 96.1 | 90.9 | 88.0 | 89.3 | 93.0 | 92.1 | 91.1 | 89.6 | 87.0 | 97.0 | 96.1 | 134.6 |
| 80 | 84.0 | 87.6 | 85.3 | 84.1 | 83.2 | 88.1 | 87.0 | 88.1 | 88.2 | 88.2 | 89.0 | 91.2 | 88.6 | 129.5 |
| 100 | 82.5 | 87.0 | 83.5 | 82.6 | 84.1 | 86.6 | 85.4 | 88.5 | 87.5 | 89.6 | 91.2 | 95.4 | 89.1 | 130.2 |
| 125 | 79.6 | 82.2 | 84.4 | 83.0 | 84.3 | 86.9 | 86.8 | 86.5 | 86.7 | 89.3 | 94.4 | 98.1 | 90.2 | 131.3 |
| 160 | 78.2 | 79.2 | 84.0 | 79.5 | 81.4 | 83.7 | 82.9 | 86.6 | 80.5 | 91.6 | 95.9 | 98.6 | 91.3 | 132.7 |
| 200 | 78.0 | 80.6 | 84.3 | 79.6 | 79.5 | 83.1 | 86.5 | 86.6 | 90.1 | 89.6 | 94.5 | 99.5 | 93.6 | 132.0 |
| 250 | 76.5 | 79.1 | 81.1 | 79.1 | 80.7 | 83.6 | 84.5 | 86.1 | 89.8 | 93.2 | 98.0 | 101.0 | 94.4 | 133.7 |
| 315 | 78.1 | 82.4 | 84.6 | 81.7 | 81.3 | 84.6 | 87.5 | 88.7 | 91.4 | 94.2 | 98.1 | 100.5 | 94.2 | 134.0 |
| 400 | 77.8 | 79.6 | 80.9 | 79.4 | 81.0 | 83.9 | 87.5 | 87.4 | 90.1 | 95.9 | 98.8 | 99.3 | 91.2 | 133.8 |
| 500 | 78.3 | 80.6 | 82.1 | 79.7 | 81.8 | 85.4 | 85.5 | 88.2 | 91.4 | 96.5 | 98.3 | 97.0 | 88.4 | 133.3 |
| 630 | 78.3 | 80.8 | 82.1 | 80.1 | 82.7 | 86.0 | 89.1 | 91.1 | 97.2 | 97.5 | 94.5 | 88.1 | 132.9 | |
| 800 | 86.3 | 87.6 | 86.1 | 84.9 | 87.5 | 88.9 | 87.8 | 91.2 | 93.1 | 97.2 | 96.8 | 91.8 | 88.4 | 133.6 |
| 1000 | 81.8 | 83.0 | 83.1 | 82.6 | 84.4 | 88.3 | 87.7 | 90.8 | 94.1 | 96.9 | 95.5 | 88.7 | 85.9 | 132.8 |
| 1250 | 81.2 | 85.7 | 83.7 | 82.9 | 85.1 | 88.2 | 88.4 | 91.5 | 95.5 | 97.0 | 94.4 | 85.9 | 88.0 | 133.1 |
| 1600 | 83.6 | 84.7 | 85.4 | 84.3 | 86.5 | 90.1 | 89.7 | 93.8 | 96.4 | 96.0 | 94.1 | 85.5 | 84.7 | 133.6 |
| 2000 | 85.5 | 85.1 | 86.2 | 85.6 | 87.5 | 91.6 | 91.3 | 95.1 | 97.2 | 97.5 | 93.8 | 85.4 | 86.4 | 134.7 |
| 2500 | 86.2 | 86.2 | 86.3 | 86.3 | 88.4 | 92.3 | 92.5 | 94.8 | 97.2 | 98.0 | 94.2 | 86.1 | 83.8 | 135.0 |
| 3150 | 86.5 | 87.1 | 87.9 | 87.2 | 89.5 | 94.1 | 93.7 | 96.4 | 98.7 | 98.8 | 93.8 | 86.2 | 83.4 | 136.2 |
| 4000 | 87.5 | 87.9 | 89.2 | 88.1 | 91.8 | 94.8 | 94.9 | 98.5 | 99.1 | 98.6 | 95.1 | 87.4 | 83.2 | 137.2 |
| 5000 | 88.8 | 89.8 | 89.8 | 91.8 | 95.6 | 99.8 | 99.0 | 100.0 | 100.9 | 96.9 | 89.7 | 84.7 | 138.5 | |
| 6300 | 89.9 | 91.1 | 91.7 | 90.5 | 93.0 | 97.0 | 97.5 | 100.2 | 101.3 | 101.9 | 99.2 | 92.7 | 87.2 | 140.1 |
| 8000 | 90.6 | 92.0 | 92.1 | 91.7 | 93.4 | 96.9 | 97.9 | 100.3 | 101.3 | 101.9 | 100.3 | 94.5 | 88.8 | 140.8 |
| 10000 | 94.1 | 93.7 | 93.7 | 93.3 | 94.6 | 98.1 | 98.4 | 100.9 | 101.6 | 101.8 | 101.1 | 96.2 | 91.3 | 142.0 |
| 12500 | 95.9 | 95.5 | 95.0 | 94.2 | 94.5 | 98.5 | 99.3 | 100.9 | 101.3 | 99.3 | 96.9 | 92.0 | 142.5 | |
| 16000 | 95.1 | 95.8 | 96.7 | 95.4 | 95.5 | 97.9 | 98.0 | 98.7 | 100.6 | 99.1 | 98.3 | 95.7 | 89.7 | 143.5 |
| 20000 | 91.0 | 93.8 | 94.5 | 95.4 | 95.7 | 96.9 | 97.5 | 96.9 | 98.1 | 96.9 | 96.0 | 93.3 | 88.0 | 143.6 |
| 25000 | 88.0 | 90.1 | 89.9 | 92.5 | 93.0 | 97.1 | 96.3 | 94.6 | 96.4 | 94.0 | 92.2 | 90.3 | 84.7 | 143.9 |
| 31500 | 84.6 | 86.9 | 88.0 | 89.4 | 89.9 | 93.7 | 93.2 | 92.8 | 92.7 | 90.8 | 89.9 | 86.8 | 80.5 | 144.0 |
| 40000 | 79.5 | 82.6 | 83.9 | 85.6 | 85.5 | 90.1 | 89.2 | 89.5 | 90.7 | 88.2 | 87.2 | 83.2 | 76.8 | 144.6 |
| 50000 | 73.6 | 76.3 | 77.6 | 79.5 | 79.6 | 85.7 | 84.1 | 84.4 | 85.3 | 82.3 | 81.2 | 77.9 | 71.5 | 143.7 |
| 63000 | 67.7 | 71.2 | 72.7 | 73.9 | 74.1 | 80.7 | 78.0 | 79.2 | 79.9 | 77.0 | 75.7 | 72.0 | 65.0 | 143.6 |
| 80000 | 62.1 | 64.5 | 65.5 | 66.0 | 66.4 | 74.0 | 71.4 | 72.1 | 73.0 | 69.8 | 69.3 | 65.3 | 57.6 | 143.5 |
| GASPL | 102.9 | 104.4 | 104.6 | 104.0 | 104.7 | 108.1 | 108.4 | 110.0 | 111.4 | 112.0 | 111.1 | 110.0 | 104.7 | 154.8 |
| PNL | 112.0 | 113.3 | 113.8 | 112.8 | 115.0 | 118.4 | 119.0 | 121.6 | 123.0 | 124.0 | 122.3 | 117.9 | 113.1 | |
| PNLT | 114.1 | 115.2 | 115.0 | 114.0 | 116.3 | 118.4 | 120.0 | 121.6 | 123.0 | 124.0 | 122.3 | 117.9 | 113.1 | |
| DBA | 98.8 | 99.5 | 99.9 | 99.2 | 101.4 | 105.1 | 105.3 | 108.2 | 109.7 | 110.5 | 108.4 | 104.0 | 99.1 | |

NASA DUAL FLOW THERMAL SHIELD/OFTAS-15/NAS3-22137

VEHICLE = ADH212 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 54.25 PAMB HG = 28.92 RELHUM = 49.2 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNTNT = LBS XNL = RPM XNH = RPM V8 = 1225.4 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2011.6 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1506 TAPE = X1506C TEST PT NO = 1506 NC = AE08° RPM = 700

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1506 X1506F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

50

60

80

100

125

160

200

250

315

400

500

630

800

1000

1250

1600

2000

2500

3150

4000

5000

6300

8000

10000

12500

16000

20000

25000

31500

40000

50000

63000

80000

ORIGINAL PAGE IS
OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICL = ADH212 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 400. FPS
I/APLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 54.25 PAMB HG = 28.92 RELHUM = 49.2 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1225.4 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2011.6 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-T506 TAPE = X1506F TEST PT NO = T506 NC = AE086 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1506 X15061

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 62.1 | 67.2 | 69.5 | 66.0 | 64.7 | 66.2 | 68.5 | 66.8 | 69.8 | 73.3 | 73.8 | 71.9 | 63.8 | 149.5 |
| 63 | 62.8 | 65.2 | 66.3 | 64.1 | 65.6 | 67.8 | 66.4 | 67.4 | 69.9 | 74.5 | 73.6 | 70.5 | 65.6 | 149.4 |
| 80 | 63.8 | 66.5 | 67.8 | 64.6 | 66.6 | 67.8 | 66.9 | 68.4 | 72.9 | 75.7 | 74.3 | 69.7 | 69.0 | 150.6 |
| 100 | 64.0 | 66.9 | 67.8 | 65.1 | 70.9 | 71.4 | 69.0 | 70.9 | 74.2 | 75.9 | 73.6 | 68.0 | 68.0 | 151.2 |
| 125 | 69.5 | 71.5 | 70.2 | 68.8 | 68.4 | 70.9 | 69.2 | 70.8 | 76.5 | 76.4 | 72.4 | 64.5 | 70.0 | 152.1 |
| 160 | 67.2 | 68.9 | 68.7 | 67.5 | 69.0 | 70.8 | 70.3 | 72.3 | 77.0 | 75.3 | 72.6 | 65.1 | 68.1 | 151.8 |
| 200 | 65.5 | 70.8 | 68.9 | 67.5 | 70.5 | 72.8 | 71.6 | 74.1 | 78.5 | 77.5 | 72.9 | 65.4 | 70.0 | 153.4 |
| 250 | 68.4 | 70.2 | 70.7 | 69.0 | 71.5 | 74.3 | 73.4 | 75.9 | 77.7 | 77.0 | 72.2 | 65.1 | 66.7 | 153.7 |
| 315 | 70.0 | 70.2 | 71.4 | 70.2 | 72.4 | 75.1 | 74.4 | 75.0 | 78.9 | 77.3 | 70.9 | 63.8 | 63.7 | 154.4 |
| 400 | 70.1 | 71.0 | 71.2 | 70.7 | 74.1 | 77.0 | 75.4 | 76.3 | 79.7 | 77.3 | 72.2 | 64.7 | 62.9 | 155.6 |
| 500 | 72.7 | 73.8 | 74.3 | 72.7 | 76.5 | 78.0 | 76.9 | 78.8 | 80.2 | 79.2 | 73.6 | 66.3 | 63.3 | 157.7 |
| 630 | 73.1 | 74.2 | 75.5 | 73.6 | 76.6 | 79.1 | 77.9 | 79.1 | 81.6 | 80.4 | 76.1 | 69.8 | 66.7 | 159.4 |
| 800 | 73.8 | 74.8 | 75.9 | 75.2 | 77.6 | 80.1 | 79.6 | 80.4 | 81.8 | 80.6 | 77.5 | 71.8 | 68.0 | 160.9 |
| 1000 | 74.4 | 76.6 | 77.3 | 75.6 | 77.3 | 79.9 | 79.9 | 80.4 | 82.7 | 81.2 | 78.9 | 73.7 | 69.8 | 162.4 |
| 1250 | 71.6 | 74.8 | 75.6 | 75.4 | 78.3 | 81.0 | 80.4 | 81.4 | 82.6 | 80.9 | 76.7 | 73.3 | 68.3 | 162.9 |
| 1600 | 73.9 | 75.6 | 76.5 | 76.3 | 77.8 | 81.3 | 80.4 | 79.8 | 82.4 | 79.0 | 76.0 | 72.1 | 65.2 | 163.8 |
| 2000 | 73.2 | 75.5 | 76.5 | 76.1 | 78.6 | 80.4 | 79.7 | 79.0 | 80.2 | 76.7 | 72.9 | 68.0 | 60.2 | 164.2 |
| 2500 | 70.0 | 75.0 | 76.7 | 77.2 | 78.4 | 78.8 | 78.6 | 76.7 | 77.3 | 72.4 | 67.3 | 62.3 | 52.0 | 165.0 |
| 3150 | 63.3 | 70.0 | 72.6 | 74.4 | 74.9 | 77.7 | 75.5 | 71.9 | 73.3 | 68.5 | 63.6 | 55.9 | 41.7 | 165.6 |
| 4000 | 56.0 | 63.0 | 65.2 | 68.5 | 68.8 | 71.5 | 69.8 | 67.5 | 68.3 | 62.0 | 55.7 | 44.8 | 25.5 | 166.4 |
| 5000 | 42.0 | 51.4 | 56.2 | 59.2 | 59.4 | 63.0 | 60.9 | 58.9 | 57.4 | 49.5 | 40.9 | 26.6 | | 166.3 |
| 6300 | 18.6 | 32.5 | 39.6 | 44.3 | 43.5 | 48.7 | 45.8 | 43.2 | 40.7 | 30.5 | 18.3 | | | 165.9 |
| 8000 | 0.4 | 11.1 | 17.9 | 19.9 | 25.9 | 21.5 | 18.5 | 13.7 | | | | | | 165.3 |
| 10000 | | | | | | | | | | | | | | 164.5 |
| 12500 | | | | | | | | | | | | | | |
| 15000 | | | | | | | | | | | | | | |
| 17500 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|-------|-------|------|-------|------|------|------|------|-------|
| GASPL | 83.4 | 85.5 | 86.4 | 85.8 | 87.9 | 90.2 | 89.4 | 89.8 | 92.0 | 90.5 | 87.1 | 82.0 | 79.6 | 175.9 |
| PNL | 92.7 | 96.1 | 97.5 | 97.6 | 99.2 | 100.8 | 100.1 | 99.4 | 101.2 | 98.6 | 94.8 | 89.5 | 84.6 | |
| PNLT | 93.8 | 96.8 | 98.2 | 98.2 | 99.7 | 100.8 | 100.6 | 99.9 | 101.8 | 98.6 | 94.8 | 89.5 | 84.6 | |
| DBA | 82.3 | 84.7 | 85.8 | 85.6 | 87.5 | 89.8 | 89.0 | 89.0 | 90.8 | 88.6 | 85.0 | 80.1 | 75.5 | |

MODEL AREA = 153.9 SQ CM (23.9 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.661 FREQ SHIFT = -9

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICLE = ADH212 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 54.25 PAMB HG = 28.92 RELHUM = 49.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR

FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1225.4 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2011.6 FPS AE18 = 19.9 SQ IN

T = -400 36 400 XT 506 TEST FNC 506 CONK FAN SPEED = RPM

UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-ZER-1507 X1507C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 82.4 | 84.4 | 80.9 | 82.0 | 79.3 | 81.9 | 78.8 | 83.5 | 112.7 | 79.7 | 89.1 | 92.1 | 84.2 | 144.1 |
| 63 | 86.3 | 91.8 | 87.6 | 90.4 | 84.7 | 88.8 | 89.0 | 90.6 | 113.3 | 84.9 | 93.0 | 99.7 | 94.1 | 144.9 |
| 80 | 86.8 | 90.3 | 87.6 | 86.9 | 86.0 | 91.1 | 90.0 | 90.6 | 109.1 | 91.2 | 93.8 | 94.7 | 79.9 | 141.0 |
| 100 | 86.0 | 91.5 | 87.3 | 87.5 | 88.9 | 92.0 | 90.4 | 93.8 | 105.3 | 95.6 | 96.0 | 99.6 | 83.8 | 138.7 |
| 125 | 82.6 | 86.4 | 89.2 | 88.5 | 89.8 | 92.4 | 90.6 | 91.2 | 99.7 | 95.5 | 101.1 | 103.3 | 88.5 | 137.6 |
| 160 | 81.7 | 82.0 | 85.7 | 83.3 | 85.1 | 89.0 | 91.6 | 90.0 | 99.0 | 94.8 | 99.9 | 103.1 | 93.5 | 136.8 |
| 200 | 83.0 | 83.8 | 86.3 | 84.4 | 86.7 | 90.6 | 91.0 | 92.9 | 97.8 | 97.6 | 102.5 | 107.0 | 96.1 | 139.2 |
| 250 | 83.3 | 87.1 | 87.6 | 86.1 | 87.7 | 91.6 | 92.2 | 94.4 | 97.1 | 101.9 | 106.5 | 110.0 | 98.4 | 142.2 |
| 315 | 84.3 | 87.1 | 86.9 | 86.7 | 89.3 | 92.9 | 93.5 | 95.9 | 97.9 | 102.5 | 107.1 | 110.3 | 101.4 | 142.7 |
| 400 | 85.3 | 87.1 | 88.6 | 86.9 | 89.0 | 92.4 | 97.2 | 98.4 | 104.4 | 108.3 | 111.0 | 103.2 | 143.8 | |
| 500 | 85.6 | 87.9 | 89.9 | 87.9 | 89.8 | 93.9 | 94.3 | 96.9 | 99.4 | 105.0 | 108.3 | 110.8 | 103.4 | 143.9 |
| 630 | 86.3 | 88.6 | 89.8 | 88.4 | 90.7 | 93.8 | 94.7 | 97.6 | 99.8 | 105.4 | 106.5 | 108.2 | 103.1 | 142.7 |
| 800 | 87.8 | 91.6 | 91.4 | 90.2 | 92.8 | 95.1 | 95.5 | 98.7 | 100.9 | 104.7 | 106.3 | 106.0 | 101.7 | 142.2 |
| 1000 | 90.8 | 91.8 | 93.1 | 90.6 | 92.7 | 96.1 | 95.7 | 98.8 | 101.3 | 104.4 | 106.3 | 105.2 | 101.1 | 141.8 |
| 1250 | 88.9 | 93.2 | 93.5 | 91.4 | 92.9 | 96.0 | 96.4 | 99.3 | 102.5 | 104.0 | 102.6 | 102.6 | 100.3 | 141.4 |
| 1600 | 89.6 | 92.2 | 93.6 | 92.0 | 94.3 | 97.1 | 97.5 | 100.5 | 102.6 | 102.5 | 104.6 | 102.8 | 99.4 | 141.5 |
| 2000 | 90.8 | 92.8 | 93.7 | 92.4 | 94.0 | 98.1 | 97.6 | 101.4 | 103.0 | 103.5 | 104.5 | 102.1 | 98.9 | 141.9 |
| 2500 | 88.4 | 93.7 | 94.1 | 92.8 | 93.9 | 97.8 | 98.0 | 101.1 | 103.0 | 104.5 | 104.0 | 102.3 | 100.3 | 142.1 |
| 3150 | 90.3 | 93.6 | 94.6 | 92.9 | 95.3 | 99.1 | 99.0 | 102.4 | 104.3 | 104.3 | 103.2 | 101.2 | 142.8 | |
| 4000 | 91.0 | 94.4 | 95.2 | 93.7 | 95.8 | 99.5 | 99.4 | 103.3 | 104.4 | 104.6 | 105.3 | 104.1 | 103.0 | 143.6 |
| 5000 | 91.5 | 94.5 | 96.2 | 94.3 | 96.6 | 99.3 | 99.7 | 103.8 | 104.8 | 106.4 | 107.4 | 107.5 | 105.0 | 145.1 |
| 6300 | 92.7 | 95.6 | 97.0 | 95.3 | 97.3 | 101.0 | 101.1 | 104.5 | 105.1 | 106.7 | 108.2 | 108.7 | 105.2 | 146.3 |
| 8000 | 93.1 | 98.0 | 98.4 | 97.0 | 97.9 | 100.7 | 100.7 | 103.8 | 105.6 | 106.2 | 108.4 | 108.3 | 106.1 | 146.5 |
| 10000 | 96.3 | 100.7 | 101.5 | 100.0 | 99.7 | 102.1 | 101.2 | 104.4 | 106.1 | 105.3 | 107.9 | 107.5 | 105.8 | 147.4 |
| 12500 | 96.2 | 99.5 | 101.5 | 100.9 | 102.0 | 103.5 | 102.0 | 102.3 | 104.6 | 103.8 | 105.1 | 106.2 | 103.5 | 147.3 |
| 16000 | 93.8 | 97.9 | 100.8 | 100.8 | 101.9 | 103.3 | 101.7 | 102.1 | 104.5 | 101.5 | 103.7 | 104.1 | 100.6 | 147.8 |
| 20000 | 90.5 | 95.5 | 96.9 | 98.1 | 99.9 | 101.4 | 100.2 | 99.9 | 102.8 | 99.0 | 100.7 | 101.8 | 98.0 | 147.3 |
| 25000 | 87.8 | 92.6 | 94.1 | 95.2 | 95.8 | 99.9 | 98.3 | 98.1 | 95.8 | 97.6 | 97.6 | 93.7 | 146.7 | |
| 31500 | 83.9 | 88.5 | 91.3 | 92.1 | 92.6 | 96.0 | 94.2 | 94.0 | 94.1 | 92.8 | 94.3 | 94.3 | 89.6 | 146.3 |
| 40000 | 79.2 | 84.7 | 87.4 | 88.0 | 87.9 | 92.6 | 90.4 | 90.9 | 91.5 | 89.6 | 91.8 | 90.4 | 85.0 | 146.8 |
| 50000 | 73.3 | 78.3 | 81.6 | 82.6 | 82.3 | 87.6 | 84.8 | 85.3 | 85.8 | 84.4 | 86.5 | 85.6 | 79.3 | 145.8 |
| 63000 | 67.0 | 72.5 | 76.3 | 77.3 | 77.6 | 82.2 | 79.2 | 80.3 | 81.5 | 79.6 | 81.1 | 79.3 | 73.8 | 145.9 |
| 80000 | 58.7 | 66.3 | 70.3 | 70.7 | 70.9 | 77.3 | 73.7 | 74.3 | 75.3 | 73.4 | 76.2 | 73.7 | 66.7 | 147.0 |
| GASPL | 104.7 | 108.5 | 109.7 | 108.9 | 110.0 | 112.7 | 114.6 | 119.8 | 117.6 | 119.6 | 120.7 | 115.9 | 159.7 | |
| PWL | 115.7 | 119.1 | 119.8 | 118.3 | 120.0 | 123.5 | 123.6 | 126.9 | 129.5 | 129.8 | 131.4 | 131.8 | 128.0 | |
| PWLT | 115.7 | 119.6 | 119.8 | 118.8 | 120.0 | 123.5 | 124.1 | 126.9 | 129.5 | 129.8 | 131.9 | 131.8 | 128.0 | |
| DBA | 102.5 | 105.0 | 105.2 | 106.8 | 110.1 | 113.4 | 115.2 | 116.5 | 117.8 | 117.9 | 117.9 | 117.5 | | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|-------------------|
| VEHICLE = ADH205 | TEST DATE = 04-12-83 | LOCAT = C41 ANECH CH | CONFIG = 15 | MODEL = AX | FLVEL = 0. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 47.77 | PAMB HG = 29.44 | RELHUM = 55.3 PCT |
| WIND DIR = | DEG WIND VEL = | MPH EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNINT = | LBS XNL = | RPM XNH = | V8 = 1242.7 FPS | AE8 = | 4.0 SQ IN |
| FNRAMB = | LBS XNLR = | RPM XNHR = | V18 = 2158.7 FPS | AE18 = | 19.9 SQ IN |
| RUNPT = 83F-ZER-1507 | TAPE = | TEST PT NO = 1507 | NC = AE088 | CORR FAN SPEED = | RPM |

IDENTIFICATION - 83F-ZER-1507 X1507F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 82.4 | 84.4 | 80.9 | 82.0 | 79.3 | 81.9 | 78.8 | 83.5 | 112.7 | 79.7 | 89.1 | 92.1 | 84.2 | 144.1 |
| 63 | 86.3 | 91.8 | 87.8 | 90.4 | 84.7 | 88.8 | 89.0 | 90.6 | 113.3 | 84.9 | 93.0 | 99.7 | 94.1 | 144.9 |
| 80 | 86.8 | 90.3 | 87.6 | 86.9 | 86.0 | 91.1 | 90.0 | 90.6 | 109.1 | 91.2 | 93.8 | 94.7 | 79.9 | 141.0 |
| 100 | 86.0 | 91.5 | 87.3 | 87.5 | 88.9 | 92.0 | 90.4 | 93.8 | 105.3 | 95.6 | 96.0 | 99.6 | 83.8 | 138.7 |
| 125 | 82.6 | 86.4 | 89.2 | 88.5 | 89.8 | 92.4 | 90.6 | 91.2 | 99.7 | 95.5 | 101.1 | 103.3 | 88.5 | 137.6 |
| 160 | 81.7 | 82.0 | 85.7 | 83.3 | 85.1 | 89.0 | 91.6 | 90.0 | 99.0 | 94.8 | 99.9 | 103.1 | 93.5 | 136.8 |
| 200 | 83.0 | 83.8 | 86.3 | 84.4 | 86.7 | 90.6 | 91.0 | 92.9 | 97.8 | 97.6 | 102.5 | 107.0 | 96.1 | 139.2 |
| 250 | 83.3 | 87.1 | 87.6 | 86.1 | 87.7 | 91.6 | 92.2 | 94.4 | 97.1 | 101.9 | 106.5 | 110.0 | 99.4 | 142.2 |
| 315 | 84.3 | 87.1 | 86.9 | 86.7 | 89.3 | 92.9 | 93.5 | 95.9 | 97.9 | 102.5 | 107.1 | 110.3 | 101.4 | 142.7 |
| 400 | 85.3 | 87.1 | 88.6 | 86.9 | 89.0 | 92.4 | 97.2 | 96.2 | 98.4 | 104.4 | 108.3 | 111.0 | 103.2 | 143.8 |
| 500 | 85.6 | 87.9 | 89.9 | 87.9 | 89.8 | 93.9 | 94.3 | 96.9 | 99.4 | 105.0 | 108.3 | 110.8 | 103.4 | 143.9 |
| 630 | 86.3 | 88.6 | 89.8 | 88.4 | 90.7 | 93.8 | 94.7 | 97.6 | 99.8 | 105.4 | 106.5 | 108.2 | 103.1 | 142.7 |
| 800 | 87.8 | 91.6 | 91.4 | 90.2 | 92.8 | 95.1 | 95.5 | 98.7 | 100.9 | 104.7 | 106.3 | 106.0 | 101.7 | 142.2 |
| 1000 | 90.8 | 91.6 | 93.1 | 90.6 | 92.7 | 96.1 | 95.7 | 98.8 | 101.3 | 104.4 | 105.3 | 105.2 | 101.1 | 141.8 |
| 1250 | 88.9 | 93.2 | 93.5 | 91.4 | 92.9 | 96.0 | 96.4 | 99.3 | 102.5 | 104.0 | 104.2 | 102.6 | 100.3 | 141.4 |
| 1600 | 89.6 | 92.2 | 93.6 | 92.0 | 94.3 | 97.1 | 97.5 | 100.5 | 102.6 | 102.5 | 104.6 | 102.8 | 99.4 | 141.5 |
| 2000 | 90.8 | 92.8 | 93.7 | 92.4 | 94.0 | 98.1 | 97.6 | 101.4 | 103.0 | 103.5 | 104.5 | 102.1 | 98.9 | 141.9 |
| 2500 | 89.4 | 93.7 | 94.1 | 92.8 | 93.9 | 97.8 | 98.0 | 101.1 | 103.0 | 104.5 | 104.0 | 102.3 | 100.3 | 142.1 |
| 3150 | 90.3 | 93.6 | 94.6 | 92.9 | 95.3 | 99.1 | 99.0 | 102.4 | 104.0 | 104.3 | 104.3 | 103.2 | 101.2 | 142.8 |
| 4000 | 91.0 | 94.4 | 95.2 | 93.7 | 95.8 | 99.5 | 99.4 | 103.3 | 104.4 | 104.6 | 105.3 | 104.1 | 103.0 | 143.6 |
| 5000 | 91.5 | 94.5 | 96.0 | 94.3 | 96.6 | 99.3 | 99.7 | 103.8 | 104.8 | 106.4 | 107.4 | 107.5 | 105.0 | 145.1 |
| 6300 | 92.7 | 96.6 | 97.0 | 95.3 | 97.3 | 101.0 | 101.1 | 104.5 | 106.1 | 106.7 | 108.2 | 108.7 | 106.2 | 146.3 |
| 8000 | 93.1 | 98.0 | 98.4 | 97.0 | 97.9 | 100.7 | 100.7 | 103.8 | 105.6 | 106.2 | 108.4 | 108.3 | 106.1 | 146.5 |
| 10000 | 96.3 | 100.7 | 101.5 | 100.0 | 99.7 | 102.1 | 101.2 | 104.4 | 106.1 | 105.3 | 107.9 | 107.5 | 105.8 | 147.4 |
| 12500 | 96.2 | 99.5 | 101.5 | 100.9 | 102.0 | 103.5 | 102.0 | 102.3 | 104.6 | 103.8 | 105.1 | 106.2 | 103.5 | 147.3 |
| 16000 | 93.8 | 97.9 | 100.8 | 100.8 | 101.9 | 103.3 | 101.7 | 102.1 | 104.5 | 101.5 | 103.7 | 104.1 | 100.6 | 147.8 |
| 20000 | 90.5 | 95.5 | 96.9 | 98.1 | 99.9 | 101.4 | 100.2 | 99.9 | 102.8 | 99.0 | 100.7 | 101.8 | 98.0 | 147.3 |
| 25000 | 87.8 | 92.6 | 94.1 | 95.2 | 95.8 | 99.9 | 98.3 | 97.3 | 98.1 | 95.8 | 97.6 | 97.8 | 93.7 | 146.7 |
| 31500 | 83.9 | 88.5 | 91.3 | 92.1 | 92.6 | 96.0 | 94.2 | 94.0 | 94.1 | 92.8 | 94.3 | 94.3 | 89.6 | 146.3 |
| 40000 | 79.2 | 84.7 | 87.4 | 88.0 | 87.9 | 92.6 | 90.4 | 90.9 | 91.5 | 89.6 | 91.8 | 90.4 | 85.0 | 146.8 |
| 50000 | 73.3 | 78.3 | 81.6 | 82.6 | 82.3 | 87.6 | 84.8 | 85.3 | 85.8 | 84.4 | 86.5 | 85.6 | 79.3 | 145.8 |
| 63000 | 67.0 | 72.5 | 76.3 | 77.3 | 77.6 | 82.2 | 79.2 | 80.3 | 81.5 | 79.6 | 81.1 | 79.3 | 73.8 | 145.9 |
| 80000 | 59.7 | 66.3 | 70.3 | 70.7 | 70.9 | 77.2 | 73.7 | 74.3 | 75.3 | 73.4 | 76.2 | 73.7 | 66.7 | 147.0 |
| 8ASPL | 104.7 | 108.5 | 109.7 | 108.9 | 110.0 | 112.7 | 112.2 | 114.6 | 119.6 | 117.6 | 119.6 | 120.7 | 115.9 | 159.7 |
| PNL | 115.7 | 119.1 | 119.8 | 118.3 | 120.0 | 123.5 | 123.6 | 126.9 | 129.5 | 129.8 | 131.4 | 131.8 | 128.0 | |
| PNLT | 115.7 | 119.6 | 119.8 | 118.8 | 120.0 | 123.5 | 124.1 | 126.9 | 129.5 | 129.8 | 131.9 | 131.8 | 128.0 | |
| DBA | 182.5 | 188.5 | 192.4 | 193.0 | 193.2 | 198.9 | 195.6 | 196.3 | 197.3 | 195.4 | 197.8 | 195.7 | 189.3 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICLE = ADH205 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PNL AREA = FULL SPHERE TAMB F = 47.77 PAMB HG = 29.44 RELHUM = 55.3 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FNIN1 = LBS XNL = RPM XNHR = RPM V8 = 1242.7 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V16 = 2158.7 FPS AE16 = 19.9 SQ IN

PT F-ZI 507E X F 150 ST AEO: PEEL RPM

IDENTIFICATION - 83F-ZER-1507 X15071

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 63.6 | 66.9 | 69.5 | 68.5 | 71.0 | 74.5 | 79.2 | 77.7 | 79.2 | 84.2 | 86.6 | 87.0 | 75.9 | 161.5 |
| 63 | 63.8 | 67.6 | 70.7 | 69.5 | 71.7 | 76.0 | 76.2 | 78.5 | 80.2 | 84.7 | 86.6 | 86.8 | 76.1 | 161.6 |
| 80 | 64.4 | 68.3 | 70.6 | 69.9 | 72.6 | 75.9 | 76.6 | 79.1 | 80.6 | 85.1 | 84.7 | 84.2 | 75.7 | 160.4 |
| 100 | 65.9 | 71.3 | 72.1 | 71.6 | 74.6 | 77.1 | 77.4 | 80.1 | 81.6 | 84.4 | 84.4 | 81.9 | 74.1 | 159.9 |
| 125 | 68.7 | 71.3 | 73.7 | 72.0 | 74.5 | 78.0 | 77.5 | 80.2 | 82.0 | 83.9 | 83.2 | 80.9 | 73.3 | 159.5 |
| 160 | 66.7 | 72.6 | 74.0 | 72.6 | 74.5 | 77.8 | 78.0 | 80.5 | 83.0 | 83.4 | 82.0 | 78.0 | 72.1 | 159.1 |
| 200 | 67.1 | 71.4 | 74.0 | 73.1 | 75.8 | 78.8 | 79.0 | 81.6 | 83.0 | 81.7 | 82.1 | 77.9 | 70.7 | 159.2 |
| 250 | 68.0 | 71.7 | 73.8 | 73.3 | 75.3 | 79.6 | 78.9 | 82.3 | 83.1 | 82.4 | 81.8 | 76.8 | 69.6 | 159.6 |
| 315 | 66.2 | 72.3 | 73.9 | 73.4 | 75.0 | 79.0 | 81.7 | 82.8 | 83.1 | 80.8 | 80.8 | 76.5 | 70.2 | 159.8 |
| 400 | 66.6 | 71.8 | 74.1 | 73.2 | 76.0 | 80.0 | 79.7 | 82.7 | 83.4 | 82.5 | 80.6 | 76.7 | 70.0 | 160.5 |
| 500 | 66.8 | 72.2 | 74.4 | 73.6 | 76.3 | 80.2 | 79.9 | 83.2 | 83.5 | 82.4 | 81.1 | 77.0 | 70.9 | 161.3 |
| 630 | 67.8 | 71.9 | 74.9 | 74.0 | 76.8 | 79.7 | 79.9 | 83.5 | 83.8 | 82.8 | 79.6 | 71.8 | 162.8 | |
| 800 | 67.5 | 73.6 | 75.4 | 74.7 | 77.3 | 81.2 | 81.1 | 84.0 | 84.5 | 83.0 | 80.2 | 71.9 | 164.0 | |
| 1000 | 67.5 | 74.8 | 76.6 | 76.3 | 77.8 | 80.7 | 80.5 | 83.1 | 83.8 | 82.9 | 82.8 | 79.1 | 70.7 | 164.2 |
| 1250 | 70.2 | 77.1 | 79.5 | 79.1 | 79.3 | 82.0 | 80.8 | 83.5 | 84.1 | 81.7 | 81.8 | 77.5 | 68.9 | 165.0 |
| 1600 | 69.2 | 75.2 | 79.1 | 79.7 | 81.3 | 83.1 | 81.4 | 81.0 | 82.2 | 79.5 | 78.1 | 74.8 | 64.2 | 165.0 |
| 2000 | 65.8 | 73.1 | 78.0 | 79.3 | 81.1 | 82.8 | 80.9 | 80.6 | 81.7 | 76.6 | 71.1 | 58.3 | 165.5 | |
| 2500 | 60.8 | 69.5 | 73.2 | 76.0 | 78.5 | 80.3 | 78.9 | 77.7 | 79.1 | 73.0 | 70.9 | 66.0 | 50.8 | 165.0 |
| 3150 | 54.7 | 64.1 | 68.6 | 71.5 | 73.1 | 77.8 | 75.6 | 73.6 | 72.6 | 67.3 | 64.5 | 57.0 | 38.1 | 164.4 |
| 4000 | 44.5 | 55.3 | 62.0 | 65.1 | 66.9 | 70.7 | 68.5 | 67.0 | 64.7 | 59.6 | 54.9 | 44.6 | 19.5 | 163.9 |
| 5000 | 30.1 | 43.9 | 51.8 | 55.6 | 57.2 | 62.4 | 59.7 | 58.5 | 55.9 | 48.9 | 42.7 | 27.0 | | 164.5 |
| 6300 | 6.4 | 23.3 | 34.0 | 39.4 | 41.6 | 47.7 | 44.0 | 42.1 | 38.1 | 29.4 | 19.6 | | | 163.5 |
| 8000 | | | 7.3 | 14.9 | 18.8 | 24.4 | 20.4 | 17.9 | 12.5 | | | | | 163.6 |
| 10000 | | | | | | | | | | | | | | 164.7 |
| 12500 | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|
| OASPL | 79.5 | 85.1 | 87.8 | 87.8 | 89.7 | 92.6 | 92.1 | 94.2 | 95.1 | 95.4 | 95.3 | 93.5 | 84.6 | 176.8 |
| PWL | 87.4 | 93.8 | 97.6 | 98.4 | 100.3 | 103.0 | 101.7 | 102.5 | 103.4 | 101.2 | 100.1 | 96.5 | 87.2 | |
| PWLT | 88.4 | 94.8 | 97.6 | 98.4 | 100.3 | 103.0 | 101.7 | 102.5 | 103.4 | 101.2 | 101.3 | 96.5 | 87.2 | |
| DBA | 76.9 | 83.5 | 86.6 | 87.1 | 88.8 | 91.3 | 90.2 | 91.7 | 92.4 | 90.7 | 89.9 | 86.3 | 78.0 | |

MODEL AREA = 153.9 SQ CM (23.9 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.661 FREQ SHIFT = -9

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICL = ADH205 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 47.77 PAMB HG = 29.44 RELHUM = 55.3 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNHR = RPM V8 = 1242.7 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2158.7 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1507 TAPE = X15071 TEST PT NO = 1507 NC = AEO88 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1508 X1508C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.6 | 87.2 | 86.9 | 83.5 | 79.8 | 81.7 | 83.1 | 87.7 | 88.9 | 89.0 | 91.4 | 93.6 | 93.7 | 130.0 |
| 63 | 89.0 | 93.0 | 97.8 | 93.4 | 87.5 | 88.6 | 93.0 | 94.6 | 95.1 | 95.9 | 92.8 | 99.2 | 96.9 | 136.4 |
| 80 | 86.3 | 89.6 | 86.4 | 85.7 | 80.3 | 89.2 | 89.6 | 90.3 | 90.4 | 92.0 | 93.5 | 90.9 | 90.9 | 131.6 |
| 100 | 84.5 | 89.2 | 85.5 | 84.5 | 85.6 | 89.5 | 88.1 | 91.0 | 89.8 | 91.8 | 93.5 | 97.4 | 92.6 | 132.5 |
| 125 | 82.4 | 84.9 | 86.7 | 86.2 | 87.8 | 89.9 | 89.1 | 89.7 | 89.2 | 92.0 | 97.4 | 101.1 | 94.5 | 134.3 |
| 160 | 79.7 | 79.7 | 85.0 | 81.8 | 82.6 | 85.0 | 90.4 | 86.8 | 90.0 | 91.8 | 97.4 | 100.9 | 93.8 | 133.7 |
| 200 | 79.8 | 81.8 | 85.1 | 81.1 | 81.7 | 85.6 | 87.7 | 88.9 | 92.3 | 91.9 | 98.0 | 103.2 | 94.9 | 135.1 |
| 250 | 79.0 | 81.8 | 82.6 | 81.6 | 83.0 | 86.3 | 87.0 | 88.9 | 92.1 | 96.7 | 101.8 | 105.2 | 96.1 | 137.4 |
| 315 | 80.1 | 83.6 | 85.4 | 83.2 | 83.3 | 87.1 | 89.3 | 90.7 | 94.1 | 97.0 | 101.8 | 105.3 | 97.2 | 137.7 |
| 400 | 79.6 | 81.3 | 82.6 | 81.4 | 83.3 | 86.6 | 91.0 | 90.2 | 92.6 | 98.4 | 102.8 | 104.0 | 95.9 | 137.6 |
| 500 | 79.6 | 81.6 | 84.1 | 81.9 | 84.0 | 88.1 | 88.3 | 90.9 | 93.9 | 99.5 | 102.6 | 102.3 | 93.4 | 137.2 |
| 630 | 80.3 | 82.1 | 84.1 | 82.6 | 85.0 | 87.8 | 88.2 | 91.6 | 93.6 | 100.2 | 101.0 | 99.0 | 92.4 | 136.2 |
| 800 | 85.1 | 86.4 | 87.9 | 87.4 | 89.5 | 91.6 | 90.8 | 93.9 | 102.9 | 104.2 | 102.8 | 99.3 | 92.7 | 139.9 |
| 1000 | 83.5 | 83.5 | 85.6 | 84.8 | 87.2 | 90.6 | 90.4 | 93.8 | 96.8 | 99.9 | 99.3 | 92.7 | 88.1 | 135.8 |
| 1250 | 83.4 | 86.2 | 86.2 | 85.1 | 86.9 | 90.7 | 90.9 | 94.0 | 98.5 | 99.5 | 98.7 | 90.1 | 88.5 | 135.9 |
| 1600 | 85.6 | 85.7 | 87.9 | 86.8 | 88.5 | 92.4 | 92.5 | 96.0 | 99.1 | 99.2 | 98.3 | 89.3 | 86.7 | 136.5 |
| 2000 | 87.0 | 86.3 | 88.5 | 87.9 | 89.7 | 93.8 | 93.1 | 96.6 | 100.2 | 100.3 | 98.3 | 88.4 | 86.9 | 137.3 |
| 2500 | 87.7 | 88.0 | 89.1 | 88.5 | 90.4 | 93.8 | 94.0 | 97.3 | 99.7 | 101.2 | 97.5 | 88.8 | 86.6 | 137.6 |
| 3150 | 88.3 | 88.4 | 90.6 | 89.4 | 91.5 | 95.8 | 95.4 | 98.9 | 100.7 | 101.1 | 97.6 | 89.0 | 85.4 | 138.5 |
| 4000 | 89.0 | 89.9 | 91.2 | 90.1 | 93.3 | 96.5 | 96.7 | 99.7 | 100.9 | 100.9 | 98.3 | 89.4 | 85.7 | 139.1 |
| 5000 | 90.0 | 90.3 | 92.7 | 91.0 | 93.8 | 97.0 | 97.7 | 100.7 | 102.0 | 103.1 | 99.9 | 92.2 | 87.0 | 140.6 |
| 6300 | 92.7 | 93.1 | 93.9 | 92.3 | 94.6 | 98.8 | 99.1 | 101.5 | 103.8 | 104.2 | 102.0 | 94.7 | 89.4 | 142.2 |
| 8000 | 95.9 | 95.8 | 95.9 | 93.8 | 94.9 | 99.2 | 98.9 | 101.8 | 103.8 | 105.2 | 103.6 | 97.5 | 92.6 | 143.4 |
| 10000 | 100.8 | 100.7 | 100.3 | 98.0 | 97.2 | 100.2 | 99.7 | 103.1 | 105.4 | 105.1 | 104.9 | 99.3 | 95.1 | 145.5 |
| 12500 | 99.4 | 100.5 | 101.8 | 101.0 | 100.0 | 101.5 | 100.0 | 101.3 | 103.9 | 104.3 | 103.1 | 99.7 | 94.5 | 146.0 |
| 16000 | 95.4 | 99.3 | 100.9 | 101.2 | 100.7 | 102.2 | 100.5 | 100.9 | 103.3 | 102.3 | 102.1 | 99.0 | 92.9 | 146.9 |
| 20000 | 93.7 | 95.5 | 97.4 | 97.8 | 99.3 | 100.8 | 100.4 | 99.6 | 100.8 | 99.3 | 99.4 | 96.5 | 91.2 | 146.5 |
| 25000 | 90.8 | 92.9 | 94.7 | 95.2 | 95.3 | 99.9 | 98.8 | 97.9 | 98.9 | 96.7 | 96.2 | 93.6 | 87.5 | 146.7 |
| 31500 | 86.8 | 89.3 | 91.3 | 92.3 | 92.0 | 96.1 | 95.1 | 95.2 | 96.1 | 93.3 | 93.5 | 89.7 | 83.2 | 146.6 |
| 40000 | 81.5 | 85.1 | 87.3 | 88.6 | 87.7 | 92.6 | 90.7 | 92.0 | 93.1 | 90.6 | 89.9 | 86.2 | 79.3 | 147.0 |
| 50000 | 75.7 | 79.1 | 80.9 | 82.3 | 82.2 | 87.8 | 85.7 | 86.5 | 86.6 | 84.8 | 80.8 | 74.2 | 145.8 | |
| 63000 | 69.5 | 72.9 | 75.9 | 77.2 | 77.9 | 83.2 | 79.0 | 80.9 | 82.4 | 80.1 | 78.9 | 74.5 | 67.5 | 146.0 |
| 80000 | 62.8 | 66.1 | 69.6 | 69.1 | 70.1 | 76.9 | 73.1 | 74.5 | 74.8 | 72.8 | 71.7 | 67.6 | 60.1 | 146.0 |
| GASPL | 106.3 | 107.4 | 108.6 | 107.7 | 107.9 | 110.7 | 110.2 | 112.1 | 114.4 | 115.1 | 114.8 | 113.8 | 107.4 | 157.6 |
| PWL | 116.3 | 116.7 | 116.5 | 114.8 | 116.8 | 120.3 | 120.6 | 123.4 | 125.7 | 126.7 | 125.6 | 121.2 | 115.7 | |
| PWLT | 116.4 | 116.9 | 117.5 | 116.0 | 118.0 | 120.3 | 120.6 | 123.4 | 128.2 | 128.1 | 125.6 | 122.4 | 115.7 | |
| DBA | 102.5 | 102.6 | 103.3 | 101.7 | 103.3 | 107.0 | 107.0 | 110.1 | 112.6 | 113.5 | 112.2 | 108.2 | 102.1 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VERTICL = ADH211 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX' FLTVEL = 400. FPS
 IAPLHA = SB59 LEGA = NO PWL AREA = FULL SPHERE TAMB F = 51.73 PAMB HG = 28.93 RELHUM = 50.3 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINT = LBS XNL = RPM XNH = RPM V8 = 1337.5 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2179.7 FPS AE18 = 19.9 SQ IN

RIUMPT = 82F-400-1508 TAPE = X1509C TEST PT # = 1500 RPM PER = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1508 X1508F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

50
63

100
125
160

200

250 86.4 87.9 87.3 84.8 84.5 86.3 85.1 85.3 92.0 94.3 98.8 102.9 96.7 135.5

315 86.4 87.9 87.3 84.8 84.9 87.3 88.4 88.9 90.6 97.0 100.3 102.6 97.2 136.0

400 86.6 89.2 89.8 86.2 85.1 86.9 90.1 88.3 91.8 97.0 100.2 101.5 96.3 135.9

500 87.2 87.7 87.6 84.8 85.9 88.5 87.3 88.8 91.9 98.1 99.3 99.3 97.4 135.3

630 87.3 86.0 89.1 85.4 86.9 88.2 87.3 89.6 101.1 102.1 101.2 100.4 100.1 138.6

800 88.0 88.5 89.1 86.1 91.6 92.2 89.8 91.7 95.8 98.8 98.7 98.6 98.6 136.1

1000 92.8 92.8 93.0 91.0 89.3 91.2 89.7 92.0 97.9 98.9 98.7 93.6 99.4 136.8

1250 91.2 90.0 90.7 88.5 89.1 91.5 90.7 92.6 98.6 98.4 98.2 92.6 97.6 136.3

1600 91.1 92.7 91.4 88.8 91.0 93.4 92.5 94.7 99.9 99.7 98.3 91.8 98.1 137.5

2000 93.2 92.3 93.1 90.7 92.4 95.1 93.4 95.6 99.7 100.9 97.8 92.5 98.0 138.1

2500 94.7 92.9 93.8 91.9 93.3 95.4 94.6 96.6 101.0 100.9 97.9 92.4 95.8 138.7

3150 95.3 94.6 94.5 92.7 94.8 97.8 96.3 98.5 101.9 101.3 99.1 93.1 96.4 139.9

4000 95.9 95.0 96.2 93.8 97.6 99.1 98.2 100.0 103.0 103.6 100.7 96.0 97.6 141.6

5000 99.3 97.9 98.7 96.0 97.9 100.0 99.4 101.0 105.1 105.1 103.3 99.3 101.6 143.6

6300 97.9 98.5 95.9 98.6 101.8 101.0 102.0 105.6 106.8 105.8 103.2 105.8 145.2

8000 100.0 99.7 99.6 97.0 98.9 102.2 101.0 102.5 108.0 107.6 108.0 105.8 108.8 147.2

10000 102.2 101.7 101.0 98.1 100.7 103.2 101.9 104.4 107.4 107.6 106.9 106.7 108.5 148.1

12500 105.9 105.2 104.1 101.3 103.8 104.5 102.4 102.9 107.5 106.4 106.6 106.6 107.6 149.5

16000 104.3 105.1 105.8 104.2 104.7 105.2 102.9 102.7 105.0 103.2 103.5 103.4 104.8 150.2

20000 102.3 104.4 105.2 104.5 103.3 103.8 102.5 100.9 103.9 101.6 101.5 101.9 102.5 150.9

25000 99.0 100.1 101.1 100.5 99.9 102.9 100.9 99.3 102.5 99.8 100.7 100.3 100.8 150.8

31500 98.1 99.0 99.3 98.3 98.3 96.6 99.1 97.6 97.1 100.0 97.6 97.3 97.8 151.4

40000 93.2 94.5 95.1 94.5 92.3 95.6 93.1 93.7 94.2 92.5 93.3 92.5 93.0 151.0

50000 87.6 89.9 90.7 90.5 86.8 90.8 88.2 88.5 90.5 88.3 88.0 87.2 87.8 150.7

63000 80.9 83.0 83.4 83.2 82.5 86.2 81.4 82.6 84.7 82.9 82.7 82.1 82.1 150.1

80000 73.2 75.3 76.9 76.6 74.7 79.9 75.6 76.3 74.9 73.1 72.8 72.3 72.3 149.5

GASPL 112.1 112.3 112.6 110.8 111.6 113.2 111.8 112.5 116.4 116.2 115.9 114.8 116.1 161.0

PNL 120.1 119.2 119.8 117.2 119.4 121.7 120.9 122.3 126.5 127.2 126.4 123.7 125.8

PNLT 121.1 120.4 120.8 118.4 120.6 121.7 120.9 122.3 128.9 128.5 126.4 123.7 125.8

DBA 196.2 198.3 199.4 199.1 197.4 201.9 197.7 198.5 198.8 196.9 196.7 196.1 196.2

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICL = ADH211 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 400. FPS

IAPLHA = SB59 IEGA = NO MPH = 40.0 FT EXT DIST = 40.0 FT TAMB F = 51.73 PAMB HG = 28.93 RELHJM = 50.3 PCT

WIND DIR = DEG WIND VEL = WIND DIR = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1337.5 FPS AE8 = 4.0 SQ IN

FNRAMB = LBS XNLR = RPM XNHR = RPM V16 = 2179.7 FPS AE16 = 19.9 SQ IN

RUNPT = 83F-400-1508 TAPE = X1508F TEST PT NO = 1508 NC = AEO86 CORR FAN SPEED = RPM

ORIGINAL PAGE IS
OF POOR QUALITY

1188-02

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1508 X15081

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 64.8 | 69.0 | 70.6 | 67.8 | 67.1 | 69.0 | 72.1 | 69.9 | 72.7 | 76.7 | 78.4 | 77.5 | 69.0 | 153.6 |
| 63 | 65.5 | 67.5 | 68.4 | 66.4 | 67.9 | 70.6 | 69.3 | 70.4 | 72.7 | 77.8 | 77.5 | 75.3 | 70.1 | 153.0 |
| 80 | 65.4 | 67.7 | 69.9 | 66.9 | 68.9 | 70.3 | 69.3 | 71.1 | 81.9 | 81.8 | 79.3 | 76.4 | 72.7 | 156.2 |
| 100 | 66.1 | 68.1 | 69.8 | 67.6 | 73.5 | 74.2 | 71.7 | 73.2 | 76.6 | 78.4 | 76.9 | 71.6 | 71.0 | 153.8 |
| 125 | 70.7 | 72.4 | 73.6 | 72.4 | 71.1 | 73.1 | 71.6 | 73.4 | 78.6 | 78.4 | 76.7 | 69.3 | 71.6 | 154.5 |
| 160 | 69.0 | 69.4 | 71.2 | 69.8 | 70.8 | 73.3 | 72.3 | 73.8 | 79.1 | 77.8 | 75.9 | 68.0 | 69.4 | 154.0 |
| 200 | 68.6 | 71.9 | 71.7 | 69.9 | 72.5 | 75.1 | 74.1 | 75.8 | 80.3 | 78.9 | 75.8 | 67.0 | 69.4 | 155.2 |
| 250 | 70.4 | 71.2 | 73.2 | 71.5 | 73.7 | 76.6 | 74.7 | 76.5 | 79.8 | 79.9 | 75.0 | 67.2 | 68.7 | 155.8 |
| 315 | 71.5 | 71.5 | 73.6 | 72.5 | 74.4 | 76.6 | 75.7 | 77.2 | 80.8 | 79.5 | 74.6 | 66.5 | 65.7 | 156.4 |
| 400 | 71.6 | 72.8 | 73.9 | 73.0 | 75.5 | 78.7 | 77.1 | 78.8 | 81.3 | 79.5 | 75.4 | 66.6 | 65.3 | 157.6 |
| 500 | 71.7 | 72.8 | 75.3 | 73.8 | 78.1 | 79.8 | 78.7 | 80.0 | 82.1 | 81.4 | 76.5 | 68.8 | 65.5 | 159.3 |
| 630 | 74.7 | 75.2 | 77.5 | 75.6 | 78.1 | 80.4 | 79.6 | 80.7 | 83.9 | 82.5 | 78.6 | 71.4 | 68.4 | 161.3 |
| 800 | 72.3 | 74.0 | 77.0 | 75.3 | 78.6 | 81.9 | 81.0 | 81.4 | 84.1 | 83.8 | 80.6 | 74.7 | 71.4 | 162.9 |
| 1000 | 74.4 | 76.4 | 77.9 | 76.2 | 78.7 | 82.2 | 80.8 | 81.8 | 86.3 | 84.3 | 82.4 | 76.5 | 73.3 | 164.9 |
| 1250 | 76.1 | 78.0 | 79.0 | 77.2 | 80.3 | 83.0 | 81.6 | 83.5 | 85.4 | 83.9 | 80.8 | 76.6 | 71.6 | 165.8 |
| 1600 | 78.9 | 81.0 | 81.7 | 80.0 | 83.2 | 84.1 | 81.8 | 81.7 | 85.1 | 82.1 | 79.6 | 75.2 | 68.3 | 167.2 |
| 2000 | 76.3 | 80.3 | 83.1 | 82.8 | 84.0 | 84.6 | 82.2 | 81.2 | 82.2 | 78.3 | 75.5 | 70.3 | 62.6 | 167.9 |
| 2500 | 72.5 | 78.4 | 81.6 | 82.3 | 82.0 | 82.7 | 81.2 | 78.8 | 80.3 | 75.6 | 71.8 | 66.0 | 55.3 | 168.6 |
| 3150 | 65.9 | 71.6 | 75.5 | 76.8 | 77.2 | 80.5 | 78.2 | 75.6 | 76.9 | 71.3 | 67.6 | 59.4 | 45.3 | 168.5 |
| 4000 | 58.8 | 65.8 | 70.0 | 71.3 | 70.9 | 73.9 | 71.9 | 70.2 | 70.6 | 64.3 | 58.2 | 47.6 | 27.8 | 169.1 |
| 5000 | 44.1 | 53.7 | 59.5 | 62.1 | 61.7 | 65.5 | 62.4 | 61.3 | 58.6 | 51.8 | 44.1 | 29.1 | 1.1 | 168.7 |
| 6300 | 20.7 | 34.9 | 43.0 | 47.3 | 46.1 | 50.8 | 47.4 | 45.3 | 42.9 | 33.3 | 21.1 | | | 168.4 |
| 8000 | 3.2 | 14.4 | 20.8 | 23.6 | 28.4 | 22.5 | 20.2 | 15.7 | 3.1 | | | | | 167.8 |
| 10000 | | | | | | | | | | | | | | 167.2 |
| 12500 | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

OASPL 85.5 87.9 89.9 89.1 90.9 92.8 91.2 91.6 94.7 93.4 90.6 85.7 82.2 178.7
 PNL 95.6 98.8 101.5 101.6 102.4 104.0 102.3 101.5 103.9 101.5 98.4 92.7 87.4
 PNLT 96.1 99.5 102.2 102.2 104.0 102.8 104.0 102.0 104.5 102.1 98.4 92.7 88.4
 DBA 84.9 87.8 89.9 89.4 91.0 92.6 90.8 90.9 93.5 91.4 88.4 83.1 78.6

MODEL AREA = 153.9 SQ CM (23.9 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.661 FREQ SHIFT = -9

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICLE = ADH211 TEST DATE = 04-12-63 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 51.73 PAMB HG = 28.93 RELHUM = 50.3 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT. EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1337.5 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNL = RPM XNHR = RPM V18 = 2179.7 FPS AE18 = 19.9 SQ IN

T = -40 E = X = T NL = 150 RPM

IDENTIFICATION - MODEL 83F-ZER-1509 X1509C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.9 | 85.4 | 85.9 | 83.2 | 81.8 | 83.2 | 80.8 | 88.2 | 89.4 | 88.7 | 91.4 | 92.1 | 89.2 | 129.3 |
| 63 | 87.0 | 92.0 | 92.6 | 88.1 | 87.0 | 90.6 | 89.2 | 95.1 | 96.3 | 96.1 | 94.8 | 92.5 | 98.4 | 135.2 |
| 80 | 88.8 | 93.3 | 89.8 | 89.4 | 88.5 | 93.6 | 92.2 | 93.1 | 93.1 | 93.9 | 96.3 | 97.2 | 82.6 | 134.8 |
| 100 | 88.0 | 94.0 | 90.0 | 89.8 | 91.1 | 94.5 | 92.9 | 95.8 | 94.5 | 97.1 | 98.0 | 102.1 | 85.8 | 137.0 |
| 125 | 84.1 | 88.7 | 90.9 | 90.2 | 91.8 | 94.7 | 92.8 | 94.0 | 93.4 | 97.0 | 102.9 | 105.8 | 90.0 | 138.9 |
| 180 | 83.4 | 84.0 | 87.7 | 85.3 | 86.6 | 90.7 | 93.4 | 92.3 | 93.7 | 97.6 | 103.2 | 106.1 | 95.5 | 138.8 |
| 200 | 85.8 | 85.6 | 87.8 | 86.1 | 88.7 | 93.1 | 93.2 | 94.9 | 97.6 | 99.9 | 105.8 | 110.0 | 99.1 | 141.9 |
| 250 | 85.8 | 88.8 | 90.1 | 88.4 | 90.5 | 93.3 | 94.7 | 96.9 | 99.1 | 105.2 | 110.0 | 113.0 | 102.6 | 145.3 |
| 315 | 86.1 | 88.6 | 88.6 | 88.4 | 91.0 | 95.6 | 95.8 | 97.9 | 100.4 | 105.7 | 110.3 | 113.3 | 104.7 | 145.8 |
| 400 | 87.3 | 89.6 | 90.6 | 88.7 | 91.0 | 94.4 | 100.0 | 98.4 | 100.9 | 107.9 | 112.3 | 113.8 | 105.9 | 147.0 |
| 500 | 87.8 | 90.6 | 91.9 | 90.4 | 92.8 | 96.4 | 96.3 | 99.2 | 102.4 | 108.2 | 112.1 | 114.3 | 107.2 | 147.3 |
| 630 | 89.0 | 90.3 | 92.1 | 91.1 | 93.2 | 96.1 | 96.7 | 99.9 | 102.3 | 108.9 | 110.8 | 113.2 | 108.1 | 146.8 |
| 800 | 92.0 | 93.9 | 94.6 | 93.7 | 95.3 | 97.9 | 97.3 | 101.2 | 105.1 | 108.5 | 110.3 | 111.3 | 108.2 | 146.4 |
| 1000 | 94.0 | 95.0 | 95.6 | 93.6 | 95.2 | 98.6 | 98.2 | 101.6 | 104.3 | 107.6 | 108.8 | 110.7 | 107.6 | 145.7 |
| 1250 | 92.2 | 96.2 | 96.2 | 94.6 | 96.4 | 99.0 | 99.1 | 101.8 | 105.5 | 107.0 | 108.2 | 109.1 | 107.5 | 145.3 |
| 1600 | 92.8 | 94.2 | 95.4 | 94.0 | 96.3 | 99.6 | 100.0 | 103.3 | 106.1 | 106.2 | 107.3 | 108.8 | 106.7 | 145.2 |
| 2000 | 94.0 | 95.3 | 95.7 | 94.6 | 96.5 | 100.1 | 100.1 | 104.1 | 106.5 | 107.0 | 107.0 | 107.9 | 104.9 | 145.3 |
| 2500 | 92.2 | 96.0 | 96.3 | 95.0 | 96.7 | 100.0 | 100.5 | 103.6 | 105.9 | 107.7 | 106.7 | 108.1 | 105.3 | 145.3 |
| 3150 | 92.8 | 96.1 | 96.9 | 95.2 | 97.0 | 100.8 | 101.2 | 104.4 | 107.0 | 107.6 | 106.8 | 107.0 | 104.1 | 145.6 |
| 4000 | 93.0 | 95.9 | 97.2 | 95.4 | 97.8 | 101.5 | 101.4 | 105.7 | 106.6 | 107.1 | 108.1 | 106.9 | 104.2 | 146.0 |
| 5000 | 92.8 | 96.8 | 98.4 | 96.8 | 98.1 | 101.3 | 101.7 | 105.7 | 106.7 | 108.6 | 109.7 | 108.7 | 104.7 | 147.0 |
| 6300 | 94.2 | 99.9 | 100.2 | 98.3 | 99.1 | 102.8 | 102.8 | 105.3 | 108.3 | 109.0 | 110.5 | 109.4 | 105.7 | 148.1 |
| 8000 | 96.4 | 101.8 | 102.6 | 100.5 | 101.2 | 103.0 | 102.4 | 105.8 | 107.5 | 107.9 | 109.8 | 108.8 | 105.6 | 148.3 |
| 10000 | 98.8 | 103.5 | 105.2 | 103.8 | 103.6 | 106.1 | 106.1 | 107.1 | 107.3 | 108.6 | 108.2 | 104.5 | 148.2 | |
| 12500 | 96.9 | 100.2 | 103.5 | 104.2 | 104.9 | 107.0 | 104.0 | 104.3 | 105.4 | 105.5 | 106.0 | 107.2 | 102.7 | 149.2 |
| 16000 | 94.8 | 98.9 | 101.9 | 102.4 | 103.9 | 105.9 | 103.7 | 103.6 | 104.8 | 103.0 | 105.2 | 105.4 | 99.8 | 149.3 |
| 20000 | 92.4 | 97.4 | 99.0 | 99.7 | 101.2 | 103.0 | 102.3 | 101.5 | 101.7 | 101.2 | 102.1 | 102.9 | 96.9 | 148.6 |
| 25000 | 90.0 | 94.5 | 96.3 | 97.4 | 97.7 | 101.8 | 100.5 | 99.0 | 99.8 | 98.3 | 99.1 | 98.8 | 93.6 | 148.6 |
| 31500 | 85.9 | 90.4 | 93.7 | 94.6 | 94.1 | 97.5 | 96.2 | 96.1 | 96.7 | 95.4 | 96.1 | 94.9 | 89.3 | 148.2 |
| 40000 | 82.1 | 86.9 | 89.4 | 90.4 | 90.3 | 94.5 | 92.3 | 92.8 | 93.9 | 93.1 | 93.7 | 91.0 | 85.7 | 148.9 |
| 50000 | 75.8 | 81.3 | 83.9 | 84.9 | 85.5 | 89.9 | 86.7 | 87.6 | 88.6 | 88.0 | 86.6 | 86.6 | 80.3 | 148.2 |
| 63000 | 69.8 | 75.6 | 79.6 | 79.7 | 80.7 | 85.2 | 81.0 | 82.9 | 84.1 | 82.8 | 83.7 | 80.8 | 73.6 | 148.6 |
| 80000 | 63.5 | 69.2 | 74.0 | 73.6 | 73.8 | 79.6 | 76.3 | 76.9 | 78.5 | 77.7 | 79.1 | 74.5 | 68.0 | 149.8 |
| CLASPL | 106.9 | 110.8 | 112.2 | 111.5 | 112.5 | 115.1 | 114.4 | 116.7 | 118.6 | 120.4 | 122.4 | 123.8 | 118.7 | 161.8 |
| PNL | 118.0 | 121.8 | 122.5 | 120.8 | 122.3 | 125.7 | 125.7 | 129.2 | 131.0 | 132.5 | 134.0 | 134.3 | 130.1 | |
| PNLT | 118.0 | 121.8 | 122.5 | 120.8 | 122.3 | 125.7 | 126.4 | 129.2 | 131.0 | 132.5 | 134.0 | 134.3 | 130.1 | |
| DBA | 105.1 | 108.7 | 109.7 | 108.1 | 109.3 | 112.3 | 112.3 | 115.7 | 117.8 | 119.4 | 120.7 | 121.5 | 117.7 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|-----------------|----------------------|
| VERTICAL = ADR206 | TEST DATE = 04-12-83 | LOCAT = C41 ANECH CH | CONFIG = 15 | MODEL = AX | FLTVEL = 0. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 49.96 | PAMB HG = 29.44 | RELHUM = 59.8 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = |
| FNTINT = | LBS XNL | RPM | V8 = | V6 = | 4.0 SQ IN |
| FNRAMB = | LBS XNLR | RPM | XNHR = | V18 = | 19.9 SQ IN |
| RUNPT = 83F-ZER-1509 | TAPE | = X1509C | TEST PT NO = 1509 | NC = AE088 | CORR FAN SPEED = RPM |

IDENTIFICATION - 83F-ZER-1509 X1509F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.9 | 85.4 | 85.9 | 83.2 | 81.8 | 83.2 | 80.8 | 88.2 | 89.4 | 88.7 | 91.4 | 92.1 | 89.2 | 129.3 |
| 53 | 87.0 | 92.0 | 92.6 | 88.1 | 87.0 | 90.6 | 89.2 | 95.1 | 96.3 | 96.1 | 94.8 | 92.5 | 98.4 | 135.2 |
| 60 | 88.8 | 93.3 | 89.8 | 89.4 | 88.5 | 93.6 | 92.2 | 93.1 | 93.1 | 93.9 | 96.3 | 97.2 | 82.6 | 134.8 |
| 100 | 88.0 | 94.0 | 90.0 | 89.8 | 91.1 | 94.5 | 92.9 | 95.8 | 94.5 | 97.1 | 98.0 | 102.1 | 85.8 | 137.0 |
| 125 | 84.1 | 88.7 | 90.9 | 90.2 | 91.8 | 94.7 | 92.8 | 94.0 | 93.4 | 97.0 | 102.9 | 105.8 | 90.0 | 138.9 |
| 160 | 83.4 | 84.0 | 87.7 | 85.3 | 86.6 | 90.7 | 93.4 | 92.3 | 93.7 | 97.6 | 103.2 | 106.1 | 95.5 | 138.8 |
| 200 | 85.8 | 85.6 | 87.8 | 86.1 | 88.7 | 93.1 | 93.2 | 94.9 | 97.6 | 99.9 | 105.8 | 110.0 | 99.1 | 141.9 |
| 250 | 85.8 | 88.8 | 90.1 | 88.4 | 90.5 | 93.3 | 94.7 | 96.9 | 99.1 | 105.2 | 110.0 | 113.0 | 102.6 | 145.3 |
| 315 | 86.1 | 88.6 | 88.6 | 88.4 | 91.0 | 95.6 | 95.8 | 97.9 | 100.4 | 105.4 | 110.3 | 113.3 | 104.7 | 145.8 |
| 400 | 87.3 | 89.6 | 90.6 | 88.7 | 91.0 | 94.4 | 100.0 | 98.4 | 100.9 | 107.9 | 112.3 | 113.8 | 105.9 | 147.0 |
| 500 | 87.8 | 90.6 | 91.9 | 90.4 | 92.8 | 96.4 | 96.3 | 99.2 | 102.4 | 108.2 | 112.1 | 114.3 | 107.2 | 147.3 |
| 630 | 89.0 | 90.3 | 92.1 | 91.1 | 93.2 | 96.1 | 96.7 | 99.9 | 102.3 | 108.9 | 110.6 | 113.2 | 108.1 | 146.8 |
| 800 | 92.6 | 93.9 | 94.6 | 93.7 | 95.3 | 97.9 | 97.3 | 101.2 | 105.1 | 108.5 | 110.3 | 111.3 | 108.2 | 146.4 |
| 1000 | 94.0 | 95.0 | 95.6 | 93.6 | 95.2 | 98.6 | 98.2 | 101.6 | 104.3 | 107.6 | 108.8 | 110.7 | 107.6 | 145.7 |
| 1250 | 92.2 | 96.2 | 96.2 | 94.6 | 96.4 | 99.0 | 99.1 | 101.8 | 105.5 | 107.0 | 108.2 | 109.1 | 107.5 | 145.3 |
| 1600 | 92.8 | 94.2 | 95.4 | 94.0 | 96.3 | 99.6 | 100.0 | 103.3 | 106.1 | 106.2 | 107.3 | 108.8 | 106.7 | 145.2 |
| 2000 | 94.0 | 95.3 | 95.7 | 94.6 | 96.5 | 100.1 | 100.1 | 104.1 | 106.5 | 107.0 | 107.0 | 107.9 | 104.9 | 145.3 |
| 2500 | 92.2 | 96.0 | 96.3 | 95.0 | 96.7 | 100.0 | 100.5 | 103.6 | 105.9 | 107.7 | 106.7 | 108.1 | 105.3 | 145.3 |
| 3150 | 92.8 | 95.1 | 96.9 | 95.2 | 97.0 | 100.8 | 101.2 | 104.4 | 107.0 | 107.6 | 106.8 | 107.0 | 104.1 | 145.6 |
| 4000 | 93.0 | 95.9 | 97.2 | 95.4 | 97.8 | 101.5 | 101.4 | 105.7 | 106.6 | 107.1 | 108.1 | 106.9 | 104.2 | 146.0 |
| 5000 | 92.8 | 96.8 | 98.4 | 96.8 | 98.1 | 101.3 | 101.7 | 105.7 | 106.7 | 108.6 | 109.7 | 108.7 | 104.7 | 147.0 |
| 6300 | 94.2 | 99.9 | 100.2 | 98.3 | 99.1 | 102.8 | 102.8 | 106.3 | 108.3 | 109.0 | 110.5 | 109.4 | 105.7 | 148.1 |
| 8000 | 96.4 | 101.8 | 102.6 | 100.5 | 101.2 | 103.0 | 102.4 | 105.8 | 107.5 | 107.9 | 109.8 | 108.8 | 105.6 | 148.3 |
| 10000 | 98.8 | 103.5 | 105.2 | 103.8 | 103.6 | 105.1 | 103.6 | 106.1 | 107.1 | 107.3 | 108.6 | 108.2 | 104.5 | 149.2 |
| 12500 | 96.9 | 100.2 | 103.5 | 104.2 | 104.9 | 107.0 | 104.0 | 104.3 | 105.4 | 105.5 | 106.0 | 107.2 | 102.7 | 149.2 |
| 16000 | 94.8 | 98.9 | 101.9 | 102.4 | 103.9 | 105.9 | 103.7 | 103.6 | 104.8 | 103.0 | 105.2 | 105.4 | 99.8 | 149.3 |
| 20000 | 92.4 | 97.4 | 99.0 | 99.7 | 101.2 | 103.0 | 102.3 | 101.5 | 101.7 | 101.2 | 102.1 | 102.9 | 96.9 | 148.6 |
| 25000 | 90.0 | 94.5 | 96.3 | 97.4 | 97.7 | 101.8 | 100.5 | 99.0 | 99.8 | 98.3 | 99.1 | 98.8 | 93.6 | 148.6 |
| 31500 | 86.9 | 90.4 | 93.7 | 94.6 | 94.1 | 97.5 | 96.2 | 96.1 | 96.7 | 95.4 | 96.1 | 94.9 | 89.3 | 148.2 |
| 40000 | 82.1 | 86.9 | 89.4 | 90.4 | 90.3 | 94.5 | 92.3 | 92.8 | 93.9 | 93.1 | 93.7 | 91.0 | 85.7 | 148.9 |
| 50000 | 75.8 | 81.3 | 83.9 | 84.9 | 85.5 | 89.9 | 86.7 | 87.6 | 88.6 | 88.0 | 88.6 | 86.6 | 80.0 | 148.2 |
| 63000 | 68.8 | 75.6 | 79.6 | 79.7 | 80.7 | 85.2 | 81.0 | 82.9 | 84.1 | 82.8 | 83.7 | 80.8 | 73.6 | 148.6 |
| 80000 | 63.5 | 69.2 | 74.0 | 73.6 | 73.8 | 79.6 | 76.3 | 76.9 | 78.5 | 77.7 | 79.1 | 74.5 | 68.0 | 149.8 |

| QASPL | 106.9 | 110.8 | 112.2 | 111.5 | 112.5 | 115.1 | 114.4 | 116.7 | 118.6 | 120.4 | 122.4 | 123.8 | 118.7 | 161.8 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PNL | 118.0 | 121.8 | 122.5 | 120.8 | 122.3 | 125.7 | 125.7 | 129.2 | 131.0 | 132.5 | 134.0 | 134.3 | 130.1 | |
| PNLT | 118.0 | 121.8 | 122.5 | 120.8 | 122.3 | 125.7 | 126.4 | 129.2 | 131.0 | 132.5 | 134.0 | 134.3 | 130.1 | |
| DBA | 185.8 | 191.5 | 195.8 | 195.6 | 196.1 | 201.4 | 197.9 | 198.9 | 200.2 | 199.3 | 200.6 | 196.7 | 190.1 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICL = ADH206 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 49.96 PAMB HG = 29.44 RELHUM = 53.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FN1N1 = LBS XNL RPM XNH RPM XNHR XNH RPM V8 = 1521.8 FPS AE8 = 4.0 SQ IN
 FN1RMB = LBS XNLR RPM XNHR RPM V18 = 2327.6 FPS AE18 = 19.9 SQ IN
 NPT. 509 E = 3F 1500 RPM SPEED

IDENTIFICATION - 83F-ZER-1509 X15091

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------------|
| 50 | 65.6 | 69.4 | 71.5 | 70.2 | 73.0 | 76.5 | 82.0 | 80.0 | 81.7 | 87.7 | 90.6 | 89.8 | 88.6 | 78.6 164.7 |
| 63 | 66.1 | 70.4 | 72.0 | 72.0 | 74.7 | 78.5 | 80.7 | 80.7 | 83.2 | 88.0 | 90.3 | 90.3 | 89.2 | 79.8 165.0 |
| 80 | 67.2 | 70.0 | 72.9 | 72.6 | 75.1 | 78.1 | 81.4 | 81.4 | 83.1 | 88.6 | 89.0 | 89.2 | 88.0 | 80.7 164.5 |
| 100 | 70.7 | 73.5 | 75.4 | 75.1 | 77.1 | 79.9 | 79.1 | 82.6 | 85.9 | 88.1 | 88.4 | 87.1 | 86.4 | 80.6 164.1 |
| 125 | 72.0 | 74.6 | 76.2 | 75.0 | 77.0 | 80.5 | 80.0 | 83.0 | 85.0 | 87.2 | 86.7 | 86.4 | 85.8 | 79.8 163.4 |
| 160 | 69.9 | 75.6 | 76.7 | 75.9 | 78.0 | 80.8 | 80.8 | 83.0 | 86.0 | 86.4 | 86.0 | 84.5 | 84.5 | 79.3 163.0 |
| 200 | 70.4 | 73.4 | 75.7 | 75.1 | 77.8 | 81.3 | 81.5 | 84.4 | 86.5 | 85.4 | 84.9 | 83.9 | 83.9 | 78.0 162.9 |
| 250 | 71.2 | 74.2 | 75.8 | 75.5 | 77.8 | 81.5 | 81.4 | 85.0 | 86.6 | 85.9 | 84.3 | 82.6 | 82.6 | 75.6 162.9 |
| 315 | 69.0 | 74.6 | 76.1 | 75.6 | 77.7 | 81.2 | 81.5 | 84.2 | 85.7 | 86.3 | 83.5 | 82.2 | 82.2 | 75.2 163.0 |
| 400 | 69.1 | 74.3 | 76.3 | 75.4 | 77.8 | 81.7 | 82.0 | 84.7 | 86.4 | 85.8 | 83.1 | 80.5 | 80.5 | 73.0 163.2 |
| 500 | 68.8 | 73.6 | 76.3 | 75.4 | 78.3 | 82.2 | 81.9 | 85.7 | 85.7 | 84.9 | 83.9 | 79.7 | 72.1 | 163.6 |
| 630 | 68.1 | 74.2 | 77.2 | 76.5 | 78.3 | 81.6 | 81.9 | 85.4 | 85.5 | 86.0 | 85.0 | 80.9 | 80.9 | 71.5 164.7 |
| 800 | 69.0 | 76.9 | 78.7 | 77.7 | 79.0 | 82.9 | 82.8 | 85.7 | 86.8 | 86.0 | 85.3 | 80.9 | 71.4 | 165.8 |
| 1000 | 70.8 | 78.5 | 80.8 | 79.8 | 81.0 | 83.0 | 82.2 | 85.0 | 85.8 | 84.6 | 84.2 | 79.6 | 70.1 | 165.9 |
| 1250 | 72.7 | 79.8 | 83.2 | 82.8 | 83.3 | 85.0 | 83.3 | 85.2 | 85.1 | 83.7 | 82.5 | 78.2 | 67.6 | 166.9 |
| 1600 | 69.9 | 76.0 | 81.1 | 82.9 | 84.3 | 86.6 | 83.4 | 83.0 | 83.0 | 81.3 | 79.1 | 75.8 | 63.4 | 166.9 |
| 2000 | 66.8 | 74.1 | 79.1 | 80.9 | 83.1 | 85.3 | 82.9 | 82.1 | 82.0 | 78.2 | 77.3 | 72.4 | 57.6 | 167.0 |
| 2500 | 62.6 | 71.4 | 75.4 | 77.6 | 79.9 | 81.9 | 81.0 | 79.3 | 78.0 | 75.1 | 72.3 | 67.1 | 49.7 | 166.3 |
| 3150 | 56.9 | 66.1 | 70.8 | 73.7 | 75.0 | 79.4 | 77.8 | 75.3 | 74.3 | 69.8 | 66.0 | 58.0 | 38.0 | 166.3 |
| 4000 | 46.5 | 57.2 | 64.3 | 67.6 | 68.5 | 72.2 | 70.6 | 69.1 | 67.3 | 62.2 | 56.8 | 45.1 | 19.2 | 165.9 |
| 5000 | 33.0 | 46.1 | 53.8 | 58.0 | 59.6 | 64.3 | 61.6 | 60.4 | 58.3 | 52.4 | 44.6 | 27.6 | | 166.6 |
| 6300 | 8.9 | 26.3 | 36.3 | 41.7 | 44.8 | 49.9 | 46.0 | 44.4 | 40.9 | 33.0 | 21.7 | | | 165.9 |
| 8000 | | 10.6 | 17.2 | 21.8 | 27.5 | 22.1 | 20.5 | 15.1 | 3.0 | | | | | 166.3 |
| 10000 | | | | | | | | | | | | | | 167.5 |
| 12500 | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

P118-1-9

MODEL AREA = 153.9 SQ CM (23.9 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.661 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICLE = ADH206 TEST DATE = 04-12-83
IAPLHA = SB59 IEGA = NO
WIND DIR = DEG WIND VEL = MPH

LOCAT = C41 ANECH CH CONFIG = 15
PWL AREA = FULL SPHERE TAMB F = 49.96
EXT DIST = 2400.0-FT EXT CONFIG = SL

MODEL = AX FLTVEL = 0. FPS
PAMB HG = 29.44 RELHUM = 53.8 PCT
MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1521.8 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2327.6 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1509 TAPE = X15091 TEST PT NO = 1509 NC = AE088 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1510 X1510C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 87.9 | 89.4 | 87.2 | 85.7 | 80.8 | 83.4 | 82.6 | 88.5 | 85.4 | 87.0 | 92.1 | 92.6 | 93.5 | 130.0 |
| 63 | 88.5 | 95.3 | 95.6 | 93.4 | 87.7 | 90.3 | 92.0 | 97.1 | 91.8 | 91.9 | 94.0 | 97.0 | 96.6 | 135.8 |
| 80 | 88.5 | 92.3 | 89.1 | 88.6 | 88.0 | 92.3 | 91.0 | 91.4 | 92.6 | 92.2 | 94.0 | 95.5 | 90.6 | 133.6 |
| 100 | 86.5 | 91.5 | 87.8 | 87.0 | 88.4 | 92.0 | 90.6 | 94.0 | 91.8 | 93.8 | 95.5 | 100.1 | 90.6 | 134.7 |
| 125 | 84.9 | 87.2 | 89.2 | 89.0 | 90.3 | 92.9 | 91.3 | 92.0 | 90.9 | 94.5 | 100.1 | 104.1 | 93.7 | 136.9 |
| 160 | 81.9 | 82.2 | 85.2 | 83.3 | 84.1 | 87.2 | 91.4 | 88.3 | 90.7 | 94.1 | 99.9 | 103.6 | 95.0 | 136.0 |
| 200 | 82.3 | 83.6 | 85.6 | 82.6 | 83.7 | 87.6 | 89.2 | 91.4 | 94.3 | 94.9 | 100.5 | 105.7 | 96.6 | 137.5 |
| 250 | 80.5 | 84.1 | 84.3 | 83.6 | 85.2 | 88.3 | 89.5 | 91.6 | 94.3 | 99.7 | 105.3 | 108.2 | 98.6 | 140.4 |
| 315 | 81.6 | 83.8 | 86.4 | 84.2 | 85.3 | 89.6 | 91.3 | 92.9 | 96.1 | 100.5 | 105.3 | 108.8 | 99.4 | 141.0 |
| 400 | 81.8 | 83.8 | 85.1 | 83.4 | 85.3 | 88.9 | 92.8 | 92.2 | 95.9 | 101.9 | 106.3 | 108.3 | 98.7 | 141.2 |
| 500 | 82.1 | 84.6 | 85.9 | 83.9 | 86.5 | 90.4 | 90.8 | 93.4 | 96.4 | 103.0 | 106.3 | 107.3 | 96.7 | 141.0 |
| 630 | 82.8 | 84.3 | 86.1 | 84.6 | 87.2 | 90.3 | 91.0 | 94.6 | 96.8 | 103.4 | 105.3 | 104.7 | 94.4 | 140.1 |
| 800 | 90.1 | 92.4 | 91.1 | 91.2 | 90.8 | 92.4 | 92.8 | 96.2 | 98.6 | 103.0 | 104.8 | 102.0 | 93.7 | 140.0 |
| 1000 | 86.3 | 87.3 | 88.1 | 86.8 | 89.2 | 93.1 | 92.4 | 96.3 | 99.8 | 102.9 | 102.8 | 97.4 | 90.4 | 138.9 |
| 1250 | 85.4 | 89.2 | 88.5 | 87.4 | 89.6 | 92.7 | 93.4 | 96.8 | 101.0 | 102.5 | 101.7 | 94.4 | 89.3 | 138.7 |
| 1600 | 87.3 | 87.7 | 89.9 | 88.3 | 90.3 | 94.1 | 94.7 | 98.8 | 101.9 | 102.2 | 101.6 | 92.8 | 89.2 | 139.2 |
| 2000 | 88.0 | 87.8 | 89.7 | 89.6 | 91.7 | 95.3 | 95.8 | 99.6 | 103.0 | 103.3 | 101.0 | 91.6 | 88.4 | 140.0 |
| 2500 | 88.2 | 89.0 | 90.3 | 90.0 | 92.2 | 95.8 | 96.0 | 100.1 | 102.7 | 104.7 | 100.5 | 92.3 | 88.6 | 140.5 |
| 3150 | 89.3 | 89.9 | 91.4 | 90.7 | 93.0 | 97.6 | 97.2 | 100.9 | 103.2 | 104.3 | 100.1 | 91.7 | 87.9 | 140.9 |
| 4000 | 90.8 | 91.1 | 92.5 | 91.9 | 94.3 | 97.8 | 97.9 | 102.7 | 103.6 | 103.8 | 100.3 | 92.1 | 88.0 | 141.5 |
| 5000 | 93.8 | 94.1 | 92.5 | 92.5 | 95.1 | 98.8 | 99.2 | 103.5 | 104.5 | 106.1 | 101.9 | 94.7 | 89.7 | 143.0 |
| 6300 | 97.2 | 97.1 | 96.7 | 94.8 | 96.3 | 100.3 | 100.6 | 104.5 | 106.3 | 107.2 | 104.0 | 96.9 | 92.2 | 144.7 |
| 8000 | 100.9 | 101.0 | 100.1 | 97.3 | 97.7 | 100.5 | 100.4 | 103.8 | 106.5 | 107.4 | 105.8 | 99.5 | 94.9 | 145.9 |
| 10000 | 103.3 | 104.0 | 105.2 | 101.8 | 100.9 | 102.4 | 101.4 | 104.6 | 107.1 | 107.8 | 106.6 | 101.7 | 96.3 | 148.0 |
| 12500 | 99.4 | 100.7 | 104.1 | 103.7 | 104.0 | 104.7 | 102.3 | 103.8 | 105.9 | 106.8 | 105.3 | 101.5 | 95.7 | 148.4 |
| 15000 | 97.6 | 99.2 | 100.9 | 101.4 | 103.5 | 105.2 | 103.0 | 103.4 | 105.1 | 104.6 | 104.0 | 100.5 | 93.1 | 148.8 |
| 20000 | 95.0 | 97.8 | 98.6 | 98.6 | 99.6 | 102.3 | 102.4 | 101.6 | 102.8 | 101.8 | 100.9 | 98.0 | 92.2 | 148.2 |
| 25000 | 92.4 | 94.7 | 96.0 | 96.5 | 96.9 | 101.2 | 100.1 | 99.4 | 101.2 | 99.5 | 98.2 | 95.2 | 88.5 | 148.4 |
| 31500 | 88.6 | 90.9 | 92.9 | 93.8 | 93.9 | 97.5 | 96.2 | 97.0 | 97.4 | 95.4 | 91.6 | 84.8 | 84.8 | 148.2 |
| 40000 | 84.4 | 87.2 | 89.2 | 90.3 | 89.4 | 94.5 | 92.8 | 93.6 | 95.0 | 92.5 | 92.3 | 87.6 | 80.9 | 148.9 |
| 50000 | 77.9 | 81.0 | 82.8 | 84.5 | 84.2 | 89.7 | 87.4 | 88.9 | 88.7 | 81.9 | 87.0 | 81.9 | 78.6 | 147.9 |
| 63000 | 71.4 | 75.6 | 78.1 | 79.1 | 79.4 | 84.6 | 81.5 | 83.6 | 84.6 | 82.3 | 81.2 | 76.2 | 69.2 | 148.1 |
| 80000 | 65.0 | 69.6 | 72.1 | 72.4 | 72.1 | 78.9 | 75.6 | 77.0 | 78.1 | 75.6 | 74.4 | 69.8 | 62.0 | 148.6 |
| 80000 | 108.5 | 109.7 | 110.8 | 109.6 | 110.3 | 112.8 | 112.0 | 114.4 | 116.4 | 117.7 | 117.5 | 117.0 | 108.8 | 159.7 |
| PNL | 118.1 | 118.7 | 119.6 | 117.4 | 118.4 | 122.0 | 122.3 | 126.0 | 128.0 | 129.5 | 128.1 | 124.6 | 117.7 | |
| PNLT | 119.9 | 120.9 | 121.0 | 119.2 | 119.1 | 122.6 | 122.3 | 126.0 | 128.0 | 129.5 | 128.1 | 124.6 | 117.7 | |
| DBA | 106.7 | 106.1 | 106.6 | 104.4 | 105.4 | 108.6 | 108.7 | 112.6 | 114.8 | 116.2 | 114.9 | 111.9 | 104.2 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICL = ADH2TO TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 52.05 PAMB HG = 28.91 RELHUM = 50.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINT = LBS XNL RPM XNHR = RPM V8 = 1526.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNL RPM XNHR = RPM V18 = 2343.7 FPS AE18 = 19.9 SQ IN
 RUNPT = 83F-400-1510 TAPE = X1510C TFST PT NO = 1510 NO = AEO3 CORR F SPEED RPM

IDENTIFICATION - 83F-400-1510 X1510F

ANGLES MEASURED FROM INLET, DEGREES

| | | | | | | | | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|-----|
| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
| 50 | | | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | |
| 125 | | | | | | | | | | | | | | |
| 160 | | | | | | | | | | | | | | |
| 200 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 88.1 | 90.3 | 89.1 | 86.8 | 86.8 | 88.3 | 87.6 | 88.0 | 94.1 | 97.9 | 102.5 | 106.6 | 99.3 | 138.9 |
| 315 | 88.1 | 90.3 | 89.1 | 86.8 | 87.1 | 89.8 | 90.4 | 91.1 | 93.9 | 99.5 | 103.8 | 106.6 | 100.0 | 139.6 |
| 400 | 89.2 | 91.0 | 91.3 | 87.6 | 87.1 | 89.1 | 91.9 | 90.3 | 94.4 | 100.6 | 104.1 | 106.6 | 99.6 | 139.8 |
| 500 | 89.3 | 90.1 | 90.0 | 86.8 | 88.4 | 90.7 | 89.9 | 91.4 | 95.0 | 101.3 | 103.4 | 105.0 | 99.4 | 139.2 |
| 630 | 89.8 | 91.0 | 90.9 | 87.4 | 89.2 | 90.7 | 90.1 | 92.6 | 97.4 | 101.5 | 103.9 | 101.6 | 101.6 | 139.5 |
| 800 | 90.5 | 90.7 | 91.1 | 88.1 | 92.3 | 92.9 | 92.0 | 94.3 | 98.7 | 101.6 | 102.2 | 100.3 | 100.7 | 138.9 |
| 1000 | 95.5 | 96.9 | 94.6 | 93.7 | 91.3 | 93.7 | 91.7 | 94.4 | 99.8 | 101.1 | 100.8 | 97.0 | 99.4 | 139.0 |
| 1250 | 93.9 | 93.8 | 93.2 | 90.5 | 91.9 | 93.5 | 92.7 | 94.8 | 101.0 | 101.1 | 101.0 | 95.7 | 99.7 | 138.9 |
| 1600 | 93.0 | 95.6 | 93.6 | 91.1 | 92.7 | 95.2 | 94.5 | 97.2 | 102.2 | 102.0 | 100.2 | 93.8 | 97.6 | 139.5 |
| 2000 | 95.0 | 94.3 | 95.1 | 92.2 | 94.4 | 96.6 | 95.8 | 98.2 | 102.3 | 103.9 | 100.1 | 95.0 | 98.3 | 140.4 |
| 2500 | 95.7 | 94.4 | 95.1 | 93.6 | 95.1 | 97.4 | 96.2 | 98.9 | 103.4 | 104.1 | 100.3 | 95.1 | 98.3 | 141.1 |
| 3150 | 95.8 | 95.6 | 95.7 | 94.2 | 96.8 | 99.6 | 98.0 | 100.4 | 104.6 | 104.3 | 101.1 | 95.9 | 98.6 | 142.1 |
| 4000 | 97.8 | 98.8 | 98.2 | 96.2 | 99.0 | 100.4 | 99.4 | 102.9 | 105.4 | 106.6 | 102.7 | 98.4 | 100.4 | 144.0 |
| 5000 | 98.3 | 97.8 | 98.2 | 96.6 | 99.1 | 101.8 | 100.9 | 103.8 | 107.5 | 107.9 | 105.1 | 101.2 | 103.9 | 145.6 |
| 6300 | 101.2 | 99.5 | 100.0 | 97.4 | 100.2 | 103.3 | 102.4 | 104.9 | 108.2 | 108.8 | 107.9 | 105.0 | 107.8 | 147.4 |
| 8000 | 103.5 | 103.0 | 101.9 | 99.2 | 101.2 | 103.5 | 102.4 | 104.4 | 109.3 | 109.8 | 109.3 | 107.9 | 109.8 | 149.0 |
| 10000 | 106.2 | 105.7 | 104.2 | 100.8 | 104.4 | 105.4 | 103.5 | 105.6 | 109.1 | 109.9 | 109.0 | 108.5 | 110.0 | 150.3 |
| 12500 | 108.3 | 108.3 | 109.0 | 105.0 | 108.0 | 107.7 | 104.6 | 105.3 | 109.1 | 108.4 | 108.6 | 108.4 | 108.4 | 152.2 |
| 16000 | 105.7 | 106.3 | 108.8 | 107.4 | 107.5 | 108.2 | 105.4 | 105.0 | 107.7 | 106.5 | 106.0 | 106.1 | 107.2 | 152.8 |
| 20000 | 103.5 | 104.4 | 105.2 | 104.7 | 103.9 | 105.3 | 104.9 | 103.5 | 106.8 | 105.1 | 104.5 | 104.8 | 105.3 | 152.5 |
| 25000 | 100.3 | 102.3 | 101.3 | 101.5 | 104.2 | 102.6 | 101.3 | 103.6 | 101.9 | 102.3 | 101.9 | 102.3 | 101.9 | 152.3 |
| 31500 | 99.7 | 100.8 | 100.6 | 99.6 | 98.5 | 100.5 | 98.7 | 98.9 | 101.8 | 99.2 | 99.8 | 98.6 | 99.5 | 152.9 |
| 40000 | 95.1 | 96.1 | 96.7 | 96.1 | 94.0 | 97.5 | 95.2 | 95.3 | 96.2 | 94.5 | 95.3 | 93.7 | 94.7 | 152.8 |
| 50000 | 90.5 | 92.1 | 92.6 | 92.1 | 88.8 | 92.7 | 89.8 | 90.8 | 92.3 | 89.9 | 89.5 | 88.2 | 89.0 | 152.5 |
| 63000 | 83.0 | 84.9 | 85.3 | 85.4 | 84.0 | 87.6 | 83.7 | 85.0 | 87.3 | 84.7 | 83.3 | 83.3 | 83.3 | 152.0 |
| 80000 | 75.1 | 78.0 | 79.1 | 78.5 | 76.7 | 81.9 | 77.8 | 78.3 | 77.4 | 74.9 | 74.5 | 73.5 | 73.5 | 151.6 |

ORIGINAL PAGE IS OF POOR QUALITY

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GASPL | 114.3 | 114.5 | 115.0 | 112.9 | 114.0 | 115.3 | 113.6 | 114.7 | 118.4 | 118.7 | 118.1 | 117.6 | 117.7 | 163.0 |
| PWL | 121.9 | 121.3 | 118.8 | 120.8 | 123.4 | 122.5 | 124.9 | 128.7 | 129.7 | 128.6 | 126.2 | 127.6 | | |
| PWLT | 123.0 | 123.0 | 121.3 | 120.3 | 120.8 | 123.4 | 122.5 | 124.9 | 128.7 | 129.7 | 128.6 | 126.2 | 127.6 | |
| DBA | 198.3 | 200.6 | 201.4 | 201.0 | 199.1 | 203.8 | 199.9 | 200.7 | 201.2 | 198.7 | 198.4 | 197.3 | 197.5 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICL = ADH210 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 52.05 PAMB HG = 28.91 RELHUM = 50.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNINI = LBS XNL RPM XNH = RPM V8 = 1526.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V10 = 2343.7 FPS AE10 = 19.9 SQ IN

RUNPT = 83F-400-1510 TAPE = X1510F TEST PT NO = 1510 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1510 X15101

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------------|
| 50 | 67.4 | 70.7 | 72.2 | 69.1 | 69.0 | 71.2 | 73.8 | 71.8 | 75.3 | 80.4 | 82.3 | 82.6 | 82.6 | 72.3 157.5 |
| 63 | 67.5 | 69.9 | 70.8 | 68.3 | 70.4 | 72.8 | 71.8 | 73.0 | 75.9 | 81.0 | 81.6 | 81.0 | 81.0 | 72.0 156.9 |
| 80 | 67.9 | 70.7 | 71.7 | 68.9 | 71.1 | 72.8 | 72.0 | 74.1 | 78.2 | 81.2 | 82.1 | 79.8 | 74.2 | 157.2 |
| 100 | 68.6 | 70.4 | 71.8 | 69.6 | 74.1 | 74.9 | 73.9 | 75.8 | 79.4 | 81.3 | 80.3 | 76.2 | 73.1 | 156.5 |
| 125 | 73.5 | 76.4 | 75.3 | 75.0 | 73.1 | 75.6 | 73.5 | 75.8 | 80.4 | 80.7 | 78.8 | 72.6 | 71.6 | 156.6 |
| 160 | 71.7 | 73.2 | 73.7 | 71.8 | 73.6 | 75.3 | 74.4 | 76.1 | 81.6 | 80.5 | 78.8 | 71.1 | 71.4 | 156.6 |
| 200 | 70.5 | 74.8 | 73.9 | 72.2 | 74.3 | 76.8 | 76.1 | 78.3 | 82.6 | 81.2 | 77.7 | 68.9 | 68.9 | 157.2 |
| 250 | 72.2 | 73.2 | 75.2 | 73.0 | 75.7 | 78.1 | 77.1 | 79.0 | 82.4 | 82.8 | 77.3 | 69.6 | 68.9 | 158.1 |
| 315 | 72.5 | 73.0 | 74.9 | 74.2 | 76.2 | 78.6 | 77.3 | 79.6 | 83.2 | 82.7 | 77.1 | 69.2 | 68.1 | 158.8 |
| 400 | 72.1 | 73.8 | 75.2 | 74.5 | 77.6 | 80.5 | 78.8 | 80.7 | 84.1 | 82.5 | 77.4 | 69.3 | 67.5 | 159.8 |
| 500 | 75.5 | 76.6 | 77.8 | 76.2 | 78.5 | 81.0 | 79.9 | 82.9 | 84.6 | 84.3 | 78.5 | 71.3 | 68.2 | 161.7 |
| 630 | 73.6 | 75.2 | 77.0 | 76.3 | 79.3 | 82.1 | 81.1 | 83.4 | 86.2 | 85.3 | 80.4 | 73.4 | 70.7 | 163.2 |
| 800 | 76.0 | 76.5 | 78.4 | 76.8 | 80.2 | 83.4 | 82.4 | 85.7 | 86.7 | 85.8 | 82.7 | 76.5 | 73.5 | 165.1 |
| 1000 | 77.9 | 79.7 | 80.2 | 78.4 | 81.0 | 83.5 | 82.2 | 83.6 | 87.6 | 86.6 | 83.7 | 78.7 | 74.3 | 166.7 |
| 1250 | 80.1 | 82.1 | 82.2 | 79.8 | 84.1 | 85.3 | 83.2 | 84.6 | 87.2 | 86.2 | 82.9 | 78.5 | 73.1 | 168.0 |
| 1600 | 81.3 | 84.1 | 86.6 | 83.7 | 87.4 | 87.4 | 84.0 | 84.0 | 86.6 | 84.2 | 81.6 | 77.0 | 69.1 | 169.9 |
| 2000 | 77.8 | 81.5 | 86.0 | 85.9 | 86.7 | 87.6 | 84.6 | 83.5 | 84.9 | 81.7 | 78.1 | 73.1 | 64.9 | 170.5 |
| 2500 | 73.8 | 78.4 | 81.6 | 82.5 | 84.3 | 83.6 | 81.3 | 83.1 | 79.0 | 74.8 | 69.0 | 58.1 | 170.1 | |
| 3150 | 67.2 | 73.9 | 76.8 | 77.6 | 78.5 | 81.8 | 79.9 | 77.6 | 78.1 | 73.4 | 69.2 | 61.1 | 46.8 | 170.0 |
| 4000 | 60.3 | 67.6 | 71.3 | 72.6 | 72.8 | 75.2 | 73.0 | 71.9 | 72.4 | 66.0 | 60.5 | 48.9 | 29.4 | 170.6 |
| 5000 | 46.0 | 55.3 | 61.1 | 63.7 | 63.3 | 67.4 | 64.6 | 62.9 | 60.6 | 53.7 | 46.2 | 30.3 | 2.8 | 170.4 |
| 6300 | 23.5 | 37.1 | 44.9 | 48.9 | 48.0 | 52.7 | 49.0 | 47.6 | 44.6 | 34.9 | 22.6 | 0.7 | | |
| 8000 | 5.1 | 16.3 | 22.9 | 25.1 | 29.9 | 24.8 | 22.6 | 18.2 | 4.9 | | | | | 169.7 |

| | | | | | | | | | | | | | | |
|-------|--|--|--|--|--|--|--|--|--|--|--|--|--|-------|
| 10000 | | | | | | | | | | | | | | 169.2 |
| 12500 | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 153.9 SQ CM (23.9 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.661 FREQ SHIFT = -9

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICLE = ADH210 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 52.05 PAMB HG = 28.91 RELHUM = 50.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNLR = RPM XNHR = RPM V8 = 1526.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2343.7 FPS AE18 = 19.9 SQ IN

PT. STOR PE = J T = 15 PT = 15 CORR = SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1511 X1511C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.9 | 86.7 | 84.4 | 82.5 | 82.6 | 88.2 | 87.8 | 88.0 | 91.9 | 90.5 | 92.9 | 98.6 | 89.7 | 132.1 |
| 63 | 91.0 | 92.8 | 93.6 | 88.1 | 90.2 | 96.8 | 96.7 | 92.1 | 96.6 | 96.9 | 94.8 | 103.7 | 92.1 | 137.8 |
| 80 | 91.5 | 95.6 | 91.6 | 91.4 | 92.0 | 96.3 | 94.5 | 94.9 | 95.8 | 95.9 | 98.5 | 99.7 | 84.1 | 137.2 |
| 100 | 91.0 | 96.5 | 92.3 | 92.0 | 93.4 | 96.8 | 95.4 | 98.3 | 96.5 | 100.1 | 100.0 | 104.6 | 89.1 | 139.5 |
| 125 | 87.1 | 90.7 | 93.2 | 92.5 | 95.1 | 97.2 | 95.1 | 96.0 | 96.9 | 99.8 | 105.4 | 108.6 | 94.2 | 141.9 |
| 160 | 86.7 | 86.5 | 90.0 | 88.5 | 89.4 | 93.0 | 95.4 | 94.5 | 96.5 | 101.3 | 106.7 | 109.4 | 99.3 | 142.0 |
| 200 | 88.5 | 87.8 | 90.3 | 88.9 | 91.7 | 95.1 | 95.0 | 96.9 | 100.8 | 102.9 | 108.8 | 113.2 | 102.4 | 144.9 |
| 250 | 88.3 | 91.1 | 92.3 | 91.1 | 92.5 | 95.1 | 96.2 | 98.9 | 101.6 | 107.4 | 112.8 | 116.0 | 105.9 | 148.1 |
| 315 | 88.8 | 90.9 | 90.4 | 90.2 | 93.0 | 96.9 | 98.0 | 99.4 | 103.4 | 109.0 | 113.8 | 117.0 | 108.2 | 149.2 |
| 400 | 90.8 | 92.1 | 92.9 | 91.4 | 93.0 | 96.1 | 102.3 | 100.2 | 103.6 | 110.9 | 115.8 | 117.8 | 109.7 | 150.6 |
| 500 | 90.6 | 93.1 | 93.9 | 92.2 | 94.3 | 98.1 | 98.3 | 101.4 | 105.1 | 112.0 | 116.1 | 118.5 | 111.2 | 151.2 |
| 630 | 92.5 | 93.3 | 94.6 | 92.9 | 95.5 | 98.6 | 98.7 | 102.1 | 104.8 | 112.4 | 115.8 | 118.2 | 113.1 | 151.3 |
| 800 | 94.8 | 95.6 | 95.1 | 95.4 | 96.8 | 101.1 | 101.3 | 103.9 | 107.4 | 111.2 | 114.6 | 118.3 | 113.7 | 151.1 |
| 1000 | 99.5 | 101.0 | 99.8 | 96.6 | 97.9 | 100.6 | 100.2 | 103.8 | 107.6 | 111.6 | 113.5 | 117.9 | 114.6 | 151.0 |
| 1250 | 96.2 | 99.7 | 100.7 | 99.4 | 99.9 | 102.7 | 101.9 | 104.3 | 108.2 | 111.0 | 112.4 | 116.1 | 114.3 | 150.2 |
| 1600 | 96.3 | 97.2 | 98.4 | 96.8 | 98.8 | 102.1 | 102.5 | 105.5 | 108.7 | 109.5 | 112.9 | 116.3 | 112.7 | 150.0 |
| 2000 | 98.0 | 98.8 | 97.4 | 98.5 | 102.1 | 102.3 | 106.4 | 109.0 | 110.8 | 112.5 | 114.9 | 110.9 | 149.6 | |
| 2500 | 95.9 | 98.0 | 98.8 | 97.5 | 98.9 | 102.5 | 102.5 | 105.8 | 108.7 | 111.2 | 112.5 | 113.3 | 109.6 | 149.2 |
| 3150 | 96.1 | 98.9 | 98.9 | 97.2 | 99.3 | 103.3 | 103.5 | 106.4 | 109.3 | 110.6 | 111.3 | 107.3 | 148.7 | |
| 4000 | 95.3 | 99.1 | 100.0 | 98.4 | 99.8 | 102.8 | 103.2 | 107.5 | 109.1 | 109.6 | 111.6 | 109.1 | 106.2 | 148.4 |
| 5000 | 96.5 | 101.5 | 103.2 | 100.1 | 100.6 | 103.5 | 103.7 | 107.5 | 109.0 | 110.9 | 112.0 | 110.5 | 106.2 | 149.3 |
| 6300 | 97.2 | 104.1 | 104.7 | 101.8 | 102.6 | 104.8 | 104.6 | 108.3 | 109.8 | 110.7 | 111.2 | 110.0 | 105.7 | 149.8 |
| 8000 | 97.4 | 104.6 | 105.9 | 104.6 | 105.0 | 106.7 | 104.5 | 106.6 | 108.8 | 109.5 | 110.4 | 108.8 | 106.4 | 149.9 |
| 10000 | 98.1 | 102.6 | 106.0 | 106.6 | 107.2 | 108.7 | 105.7 | 107.6 | 108.4 | 109.4 | 108.4 | 105.6 | 150.8 | |
| 12500 | 96.7 | 100.5 | 103.3 | 104.2 | 106.7 | 109.3 | 106.8 | 106.3 | 106.7 | 106.8 | 107.1 | 106.7 | 103.8 | 150.6 |
| 16000 | 95.1 | 100.5 | 102.4 | 102.6 | 104.2 | 107.2 | 105.7 | 105.6 | 106.3 | 105.1 | 105.5 | 105.2 | 101.1 | 150.5 |
| 20000 | 92.9 | 97.9 | 99.8 | 100.5 | 102.0 | 104.2 | 104.1 | 102.7 | 103.4 | 102.2 | 103.3 | 102.7 | 98.9 | 149.7 |
| 25000 | 89.9 | 95.2 | 96.8 | 97.8 | 98.9 | 103.3 | 101.7 | 100.0 | 101.3 | 99.8 | 100.0 | 98.7 | 94.1 | 149.7 |
| 31500 | 86.6 | 91.5 | 94.3 | 95.3 | 95.3 | 98.2 | 97.9 | 97.2 | 97.3 | 96.8 | 97.3 | 95.0 | 90.0 | 149.4 |
| 40000 | 81.9 | 87.7 | 90.0 | 91.0 | 90.7 | 96.1 | 93.1 | 93.4 | 95.0 | 94.2 | 94.6 | 91.6 | 86.5 | 149.9 |
| 50000 | 76.4 | 81.9 | 84.5 | 85.7 | 85.9 | 91.4 | 88.6 | 88.1 | 89.4 | 89.0 | 87.4 | 80.6 | 149.2 | |
| 63000 | 70.8 | 76.4 | 80.1 | 80.4 | 81.5 | 86.5 | 82.3 | 83.7 | 85.3 | 84.7 | 84.4 | 80.3 | 74.9 | 149.6 |
| 80000 | 64.3 | 70.0 | 74.2 | 73.8 | 74.5 | 81.6 | 77.0 | 78.2 | 79.4 | 79.1 | 79.8 | 75.0 | 68.3 | 151.0 |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|-------------------|
| VEHICLE = ADH208 | TEST DATE = 04-12-83 | LOCAT = C41 ANECH'CH | CONFIG = 15 | MODEL = AX | FLTVEL = 0. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 50.41 | PAMB HG = 29.42 | RELHUM = 51.0 PCT |
| WIND DIR = | DEG WIND VEL = | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNTNT = | LBS XNLR = | RPM XNHR = | V8 = 1520.2 FPS | AE8 = | 4.0 SQ IN |
| FNRAMB = | LBS XNLR = | RPM XNHR = | V18 = 2496.5 FPS | AE18 = | 19.9 SQ IN |
| RUNPT = 83F-ZER-1511 | TAPE = X1511C | TEST PT NO = 1511 | NC = AE088 | CORR FAN SPEED = | RPM |

IDENTIFICATION - 83F-ZER-1511 X1511F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.9 | 86.7 | 84.4 | 82.5 | 82.6 | 88.2 | 87.8 | 88.0 | 91.9 | 90.5 | 92.9 | 98.6 | 89.7 | 132.1 |
| 63 | 91.0 | 92.8 | 93.6 | 88.1 | 90.2 | 96.8 | 96.7 | 92.1 | 96.6 | 96.9 | 94.8 | 103.7 | 92.1 | 137.8 |
| 80 | 91.5 | 95.6 | 91.6 | 91.4 | 92.0 | 96.3 | 94.5 | 94.9 | 95.8 | 95.9 | 98.5 | 99.7 | 84.1 | 137.2 |
| 100 | 91.0 | 96.5 | 92.3 | 92.0 | 93.4 | 96.8 | 95.4 | 98.3 | 96.5 | 100.0 | 100.0 | 104.6 | 89.1 | 139.5 |
| 125 | 87.1 | 90.7 | 93.2 | 92.5 | 95.1 | 97.2 | 95.1 | 96.0 | 96.9 | 99.8 | 106.4 | 108.8 | 94.2 | 141.9 |
| 160 | 86.7 | 86.5 | 90.0 | 88.5 | 89.4 | 93.0 | 95.4 | 94.5 | 96.5 | 101.3 | 106.7 | 109.4 | 99.3 | 142.0 |
| 200 | 88.5 | 87.8 | 90.3 | 88.9 | 91.7 | 95.1 | 95.0 | 96.9 | 100.8 | 102.9 | 108.8 | 113.2 | 102.4 | 144.9 |
| 250 | 88.3 | 91.1 | 92.3 | 91.1 | 92.5 | 95.1 | 96.2 | 98.9 | 101.6 | 107.4 | 112.8 | 116.0 | 105.9 | 148.1 |
| 315 | 88.8 | 90.9 | 90.4 | 90.2 | 93.0 | 96.9 | 98.0 | 99.4 | 103.4 | 109.0 | 113.8 | 117.0 | 108.2 | 149.2 |
| 400 | 90.8 | 92.1 | 92.9 | 91.4 | 93.0 | 96.1 | 102.3 | 100.2 | 103.6 | 110.9 | 115.8 | 117.8 | 109.7 | 150.6 |
| 500 | 90.6 | 93.1 | 93.9 | 92.2 | 94.3 | 98.1 | 98.3 | 101.4 | 105.1 | 112.0 | 116.1 | 118.5 | 111.2 | 151.2 |
| 630 | 92.5 | 93.3 | 94.6 | 92.9 | 95.5 | 98.6 | 98.7 | 102.1 | 104.8 | 112.4 | 115.8 | 118.2 | 113.1 | 151.3 |
| 800 | 94.8 | 95.6 | 95.1 | 95.4 | 96.8 | 101.1 | 101.3 | 103.9 | 107.4 | 111.2 | 114.6 | 118.3 | 113.7 | 151.1 |
| 1000 | 99.5 | 101.0 | 99.8 | 96.6 | 97.9 | 100.6 | 100.2 | 103.8 | 107.6 | 111.6 | 113.5 | 117.9 | 114.6 | 151.0 |
| 1250 | 96.2 | 99.7 | 100.7 | 99.4 | 99.9 | 102.7 | 101.9 | 104.3 | 108.2 | 111.0 | 112.4 | 116.1 | 114.3 | 150.2 |
| 1600 | 96.3 | 97.2 | 98.4 | 96.8 | 98.8 | 102.1 | 102.5 | 105.5 | 108.7 | 109.5 | 112.9 | 116.3 | 112.7 | 150.0 |
| 2000 | 98.0 | 98.8 | 98.8 | 97.4 | 98.5 | 102.1 | 102.3 | 106.4 | 109.0 | 110.8 | 112.5 | 114.9 | 110.9 | 149.6 |
| 2500 | 95.9 | 98.0 | 98.8 | 97.5 | 98.9 | 102.5 | 102.5 | 105.8 | 108.7 | 111.2 | 112.5 | 113.3 | 109.6 | 149.2 |
| 3150 | 96.1 | 98.9 | 98.9 | 97.2 | 99.3 | 103.3 | 103.5 | 106.4 | 109.3 | 110.6 | 111.6 | 111.3 | 107.7 | 148.7 |
| 4000 | 95.3 | 99.1 | 100.0 | 98.4 | 99.8 | 102.8 | 103.2 | 107.5 | 109.1 | 109.6 | 111.6 | 109.1 | 106.2 | 148.4 |
| 5000 | 96.5 | 101.5 | 103.2 | 100.1 | 100.6 | 103.5 | 103.7 | 107.5 | 109.0 | 110.9 | 112.0 | 110.5 | 106.2 | 149.3 |
| 6300 | 97.2 | 104.1 | 104.7 | 101.8 | 102.6 | 104.6 | 104.6 | 108.3 | 109.8 | 110.7 | 111.2 | 110.0 | 105.7 | 149.8 |
| 8000 | 97.4 | 104.6 | 105.9 | 104.6 | 105.0 | 106.7 | 104.5 | 106.6 | 108.8 | 109.5 | 110.4 | 108.8 | 106.4 | 149.9 |
| 10000 | 98.1 | 102.8 | 106.0 | 106.6 | 107.2 | 108.7 | 105.7 | 107.7 | 108.4 | 108.4 | 109.4 | 108.0 | 105.6 | 150.8 |
| 12500 | 96.7 | 100.5 | 103.3 | 104.2 | 106.7 | 109.3 | 106.8 | 106.3 | 106.7 | 106.8 | 107.1 | 106.7 | 103.8 | 150.6 |
| 16000 | 95.1 | 100.5 | 102.4 | 102.6 | 104.2 | 107.2 | 105.7 | 105.6 | 106.3 | 105.1 | 105.5 | 105.2 | 101.1 | 150.5 |
| 20000 | 92.9 | 97.9 | 99.8 | 100.5 | 102.0 | 104.2 | 104.1 | 102.7 | 103.4 | 102.2 | 103.3 | 102.7 | 98.9 | 149.7 |
| 25000 | 89.9 | 96.2 | 96.8 | 97.8 | 98.9 | 103.3 | 101.7 | 100.0 | 101.3 | 99.8 | 100.0 | 98.7 | 94.1 | 149.7 |
| 31500 | 86.6 | 91.5 | 94.3 | 95.3 | 95.3 | 99.2 | 97.9 | 97.2 | 97.3 | 96.8 | 97.3 | 95.0 | 90.0 | 149.4 |
| 40000 | 81.9 | 87.7 | 90.0 | 91.0 | 90.7 | 96.1 | 93.1 | 93.4 | 95.0 | 94.2 | 94.6 | 91.6 | 86.5 | 149.9 |
| 50000 | 76.4 | 81.9 | 84.5 | 85.7 | 85.9 | 91.4 | 88.6 | 88.1 | 89.4 | 89.0 | 89.4 | 87.4 | 80.6 | 149.2 |
| 63000 | 70.8 | 76.4 | 80.1 | 80.4 | 81.5 | 86.5 | 82.3 | 83.7 | 85.3 | 84.7 | 84.4 | 80.3 | 74.9 | 149.6 |
| 80000 | 64.3 | 70.0 | 74.2 | 73.8 | 74.5 | 81.6 | 77.0 | 78.2 | 79.4 | 79.1 | 79.8 | 75.0 | 68.3 | 151.0 |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| QASPL | 108.2 | 113.1 | 114.3 | 113.5 | 114.8 | 117.5 | 116.5 | 118.6 | 120.7 | 123.3 | 125.9 | 128.2 | 123.1 | 164.3 |
| PNL | 121.0 | 125.2 | 125.9 | 123.9 | 125.0 | 127.9 | 127.9 | 131.1 | 133.3 | 135.4 | 137.3 | 138.6 | 133.9 | |
| PNLT | 122.3 | 126.3 | 125.9 | 123.9 | 125.6 | 127.9 | 128.6 | 131.1 | 133.3 | 135.4 | 137.9 | 138.6 | 133.9 | |
| DBA | 186.6 | 192.2 | 196.1 | 196.1 | 196.8 | 203.2 | 198.9 | 199.9 | 201.3 | 200.9 | 201.3 | 197.0 | 190.6 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICLE = ADH208 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 50.41 PAMB HG = 29.42 RELHUM = 51.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FNIN1 = LBS XNL RPM XNHR = RPM V8 = 1520.2 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 2496.5 FPS AE18 = 19.9 SQ IN

PT = Z-1 STT = E F = 154.0 FT CORR PAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1511 X15111

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| 50 | 69.1 | 71.9 | 73.7 | 73.0 | 75.0 | 78.2 | 84.2 | 81.7 | 84.5 | 90.7 | 94.1 | 93.8 | 82.4 | 168.3 |
| 63 | 68.8 | 72.9 | 74.7 | 73.7 | 76.2 | 80.2 | 83.0 | 86.0 | 91.7 | 94.3 | 94.3 | 94.5 | 83.8 | 168.9 |
| 80 | 70.7 | 73.0 | 75.4 | 74.4 | 77.4 | 80.6 | 83.6 | 85.6 | 92.1 | 94.0 | 94.2 | 94.2 | 85.7 | 168.9 |
| 100 | 72.9 | 75.3 | 75.9 | 76.9 | 78.6 | 83.1 | 83.1 | 85.4 | 88.1 | 90.9 | 92.7 | 94.1 | 86.1 | 168.8 |
| 125 | 77.5 | 80.6 | 80.5 | 78.0 | 79.7 | 82.5 | 82.0 | 85.2 | 88.2 | 91.2 | 91.5 | 93.6 | 86.8 | 168.7 |
| 160 | 73.9 | 79.1 | 81.2 | 80.6 | 81.5 | 84.5 | 83.5 | 85.5 | 88.7 | 90.4 | 90.2 | 91.5 | 86.1 | 167.9 |
| 200 | 73.9 | 75.4 | 78.7 | 77.9 | 80.3 | 83.8 | 84.0 | 86.6 | 89.0 | 88.7 | 90.4 | 91.4 | 84.0 | 167.6 |
| 250 | 75.2 | 77.8 | 78.9 | 78.3 | 79.8 | 83.6 | 83.6 | 87.3 | 89.1 | 89.7 | 89.8 | 89.6 | 81.6 | 167.3 |
| 315 | 72.7 | 75.6 | 78.6 | 78.1 | 80.0 | 83.7 | 83.5 | 86.4 | 88.5 | 89.8 | 89.3 | 87.5 | 79.4 | 166.9 |
| 400 | 72.3 | 77.0 | 78.3 | 77.5 | 80.0 | 84.2 | 84.2 | 86.7 | 88.7 | 88.8 | 87.9 | 84.7 | 76.5 | 166.4 |
| 500 | 71.1 | 75.9 | 79.1 | 78.4 | 80.3 | 83.4 | 83.7 | 87.5 | 88.3 | 87.4 | 87.4 | 82.0 | 74.1 | 166.1 |
| 630 | 71.8 | 78.9 | 82.0 | 79.8 | 80.8 | 83.9 | 83.9 | 87.2 | 87.8 | 88.3 | 87.3 | 82.6 | 73.0 | 166.9 |
| 800 | 72.0 | 81.2 | 83.2 | 81.2 | 82.6 | 84.9 | 84.6 | 87.7 | 88.3 | 87.8 | 86.1 | 81.4 | 71.4 | 167.5 |
| 1000 | 71.8 | 81.3 | 84.1 | 83.8 | 84.8 | 86.8 | 84.3 | 85.8 | 87.1 | 86.2 | 84.8 | 79.6 | 70.3 | 167.6 |
| 1250 | 72.0 | 79.1 | 84.1 | 85.7 | 86.9 | 88.5 | 85.4 | 86.8 | 86.4 | 84.7 | 83.3 | 78.0 | 68.7 | 168.4 |
| 1600 | 69.7 | 76.3 | 80.9 | 83.0 | 86.1 | 88.9 | 86.2 | 85.1 | 84.3 | 82.6 | 80.1 | 75.3 | 64.5 | 168.3 |
| 2000 | 67.1 | 75.7 | 79.6 | 81.2 | 83.4 | 86.6 | 85.0 | 84.2 | 83.5 | 80.2 | 77.6 | 72.2 | 58.9 | 168.2 |
| 2500 | 63.1 | 71.9 | 76.1 | 78.3 | 80.7 | 83.2 | 82.8 | 80.6 | 79.8 | 76.1 | 73.6 | 66.8 | 51.7 | 167.4 |
| 3150 | 56.8 | 66.8 | 71.2 | 74.1 | 76.2 | 80.9 | 79.0 | 76.3 | 75.7 | 71.3 | 66.9 | 57.9 | 38.5 | 167.4 |
| 4000 | 47.2 | 58.3 | 64.9 | 68.3 | 69.6 | 73.9 | 72.2 | 70.2 | 67.9 | 63.6 | 57.9 | 45.3 | 19.9 | 167.0 |
| 5000 | 32.8 | 46.9 | 54.4 | 58.6 | 60.0 | 65.9 | 62.4 | 61.0 | 59.4 | 53.4 | 45.4 | 28.2 | 167.5 | 167.5 |
| 6300 | 9.4 | 26.9 | 36.8 | 42.5 | 45.1 | 51.4 | 47.8 | 44.9 | 41.7 | 34.0 | 22.4 | 166.9 | 166.9 | 166.9 |
| 8000 | 11.1 | 18.0 | 22.6 | 28.7 | 23.4 | 21.2 | 16.3 | 4.9 | | | | 167.3 | 167.3 | 168.6 |

MODEL AREA = 153.9 SQ CM (23.9 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.661 FREQ SHIFT = -9

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICL = ADH208 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 50.41 PAMB HG = 29.42 RELHUM = 51.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR

FNIN1 = LBS XNL RPM XNHR = 1520.2 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNL RPM XNHR = 2496.5 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1511 TAPE = X15111 TEST PT NO = T511 NC = AE088 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1512 X1512C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 89.9 | 88.9 | 83.9 | 85.2 | 83.1 | 84.9 | 83.6 | 92.2 | 91.4 | 90.7 | 93.9 | 95.8 | 91.7 | 132.0 |
| 63 | 90.8 | 92.8 | 90.9 | 90.9 | 87.7 | 91.8 | 91.7 | 96.6 | 96.6 | 97.1 | 95.5 | 98.5 | 96.4 | 136.4 |
| 80 | 90.8 | 95.1 | 91.3 | 91.4 | 92.0 | 95.3 | 93.7 | 93.9 | 94.6 | 94.4 | 97.0 | 97.7 | 90.6 | 136.2 |
| 100 | 89.5 | 94.7 | 90.8 | 89.8 | 91.4 | 94.8 | 93.9 | 95.8 | 94.3 | 96.1 | 97.5 | 102.4 | 91.6 | 137.2 |
| 125 | 87.4 | 88.9 | 91.4 | 91.2 | 93.1 | 95.4 | 93.5 | 93.7 | 96.3 | 102.6 | 106.3 | 94.2 | 139.2 | |
| 160 | 84.2 | 82.5 | 87.2 | 84.8 | 85.9 | 90.0 | 93.4 | 91.0 | 92.7 | 96.8 | 102.9 | 106.6 | 97.5 | 138.8 |
| 200 | 85.3 | 84.3 | 85.8 | 83.9 | 86.5 | 90.1 | 91.5 | 92.6 | 96.1 | 97.4 | 103.5 | 109.0 | 100.1 | 140.4 |
| 250 | 83.3 | 85.8 | 86.1 | 85.9 | 87.7 | 90.8 | 91.7 | 94.4 | 96.8 | 102.7 | 108.0 | 112.0 | 102.1 | 143.7 |
| 315 | 83.8 | 85.4 | 84.9 | 85.2 | 87.5 | 91.9 | 93.0 | 94.7 | 98.1 | 103.7 | 108.6 | 112.5 | 103.7 | 144.4 |
| 400 | 84.6 | 85.8 | 86.6 | 85.7 | 88.0 | 91.1 | 95.5 | 94.9 | 98.1 | 105.4 | 110.8 | 113.0 | 102.7 | 145.5 |
| 500 | 85.1 | 86.4 | 87.9 | 86.7 | 89.0 | 92.6 | 93.0 | 95.4 | 99.6 | 106.5 | 110.8 | 112.3 | 100.9 | 145.4 |
| 630 | 85.5 | 87.1 | 88.3 | 86.6 | 89.7 | 93.1 | 93.7 | 96.6 | 99.6 | 107.4 | 109.0 | 110.0 | 98.6 | 144.2 |
| 800 | 91.1 | 93.1 | 92.4 | 88.4 | 90.8 | 93.4 | 94.5 | 99.4 | 103.4 | 107.5 | 108.6 | 107.5 | 96.7 | 143.9 |
| 1000 | 89.0 | 89.3 | 90.6 | 89.1 | 91.9 | 94.8 | 94.9 | 98.6 | 103.1 | 106.9 | 107.8 | 104.2 | 94.1 | 142.9 |
| 1250 | 88.4 | 91.2 | 91.0 | 89.6 | 92.1 | 95.5 | 96.1 | 99.8 | 103.5 | 105.8 | 105.7 | 100.1 | 92.5 | 142.0 |
| 1600 | 89.8 | 90.2 | 91.9 | 90.5 | 93.3 | 96.4 | 97.2 | 100.8 | 105.2 | 105.2 | 105.9 | 97.3 | 91.2 | 142.4 |
| 2000 | 90.8 | 90.1 | 92.0 | 90.9 | 93.5 | 97.3 | 97.8 | 101.9 | 105.3 | 106.3 | 104.8 | 96.4 | 90.6 | 142.7 |
| 2500 | 90.9 | 91.7 | 92.8 | 91.8 | 93.9 | 98.0 | 98.2 | 102.1 | 104.7 | 106.7 | 103.3 | 95.6 | 91.8 | 142.6 |
| 3150 | 93.3 | 93.1 | 94.2 | 92.4 | 95.0 | 99.3 | 99.2 | 103.7 | 105.8 | 106.1 | 102.8 | 95.3 | 90.2 | 143.2 |
| 4000 | 95.8 | 94.9 | 96.0 | 92.9 | 95.8 | 100.0 | 99.9 | 105.0 | 106.2 | 105.6 | 103.3 | 95.6 | 92.0 | 143.8 |
| 5000 | 99.3 | 98.6 | 98.7 | 95.3 | 96.8 | 100.0 | 100.9 | 105.5 | 106.5 | 107.9 | 104.7 | 97.5 | 93.0 | 145.2 |
| 6300 | 103.0 | 102.9 | 102.5 | 98.5 | 98.9 | 101.8 | 102.1 | 106.3 | 108.3 | 108.5 | 106.0 | 99.5 | 94.5 | 147.0 |
| 8000 | 102.2 | 104.3 | 105.4 | 102.3 | 102.0 | 103.0 | 102.0 | 106.1 | 108.3 | 108.5 | 106.4 | 100.6 | 95.4 | 148.0 |
| 10000 | 100.9 | 102.3 | 106.1 | 105.1 | 105.2 | 105.9 | 103.7 | 107.2 | 108.4 | 108.9 | 107.2 | 102.3 | 96.4 | 149.5 |
| 12500 | 100.7 | 100.8 | 102.4 | 102.7 | 105.8 | 107.8 | 105.1 | 105.8 | 107.5 | 107.5 | 105.4 | 102.0 | 96.0 | 149.7 |
| 15000 | 101.3 | 102.5 | 101.4 | 102.7 | 106.4 | 105.3 | 105.7 | 107.1 | 106.4 | 104.3 | 100.7 | 93.7 | 93.7 | 150.2 |
| 20000 | 96.4 | 98.5 | 99.9 | 99.8 | 101.3 | 103.3 | 104.1 | 103.8 | 104.8 | 103.8 | 101.6 | 98.7 | 91.9 | 149.7 |
| 25000 | 93.3 | 95.6 | 97.4 | 97.4 | 98.3 | 102.3 | 102.0 | 101.1 | 102.9 | 100.1 | 98.6 | 95.6 | 88.7 | 149.7 |
| 31500 | 89.9 | 92.1 | 94.4 | 94.9 | 95.2 | 98.5 | 98.0 | 98.3 | 99.2 | 97.2 | 95.6 | 92.1 | 85.1 | 149.5 |
| 40000 | 85.6 | 88.4 | 90.6 | 90.4 | 90.8 | 95.2 | 94.2 | 95.3 | 96.2 | 94.6 | 93.2 | 88.5 | 81.4 | 150.1 |
| 50000 | 79.3 | 82.6 | 84.7 | 85.1 | 85.5 | 90.3 | 88.2 | 90.0 | 90.6 | 88.7 | 87.3 | 83.1 | 76.0 | 149.0 |
| 63000 | 73.0 | 77.1 | 80.1 | 79.9 | 80.7 | 85.4 | 82.5 | 84.6 | 85.8 | 83.2 | 82.2 | 76.8 | 69.8 | 149.2 |
| 80000 | 65.8 | 70.8 | 74.0 | 73.1 | 73.6 | 80.1 | 77.3 | 78.4 | 79.5 | 77.7 | 75.6 | 70.8 | 62.1 | 150.0 |
| GASPL | 110.2 | 111.3 | 112.5 | 111.1 | 112.3 | 114.9 | 114.1 | 116.6 | 118.5 | 119.9 | 120.4 | 120.8 | 111.5 | 161.5 |
| PWL | 121.9 | 122.2 | 122.6 | 120.1 | 121.1 | 124.1 | 124.2 | 128.3 | 130.2 | 131.7 | 130.8 | 128.5 | 120.3 | |
| PWL T | 123.1 | 123.9 | 122.6 | 120.8 | 121.8 | 124.6 | 124.2 | 128.3 | 130.2 | 131.7 | 130.8 | 128.5 | 120.3 | |
| DBA | 108.1 | 108.7 | 109.8 | 107.5 | 108.3 | 110.9 | 110.7 | 114.8 | 117.1 | 118.6 | 118.1 | 116.3 | 107.2 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICLE = ADH209 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FCTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 51.69 PAMB HG = 28.95 RELHUM = 48.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNINT = LBS XNL RPM XNH RPM V8 = 1539.7 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2509.4 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1512 TAPE = X1512C TEST PT N# = 1512 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1512 X1512F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 91.2 | 92.3 | 91.0 | 89.2 | 89.3 | 90.8 | 89.8 | 90.8 | 96.0 | 100.9 | 105.5 | 110.0 | 103.1 | 142.0 |
| 315 | 91.2 | 92.3 | 91.0 | 89.2 | 89.3 | 92.1 | 92.2 | 92.9 | 96.2 | 103.0 | 108.4 | 111.6 | 104.0 | 143.8 |
| 400 | 91.5 | 91.8 | 89.8 | 88.6 | 89.6 | 91.4 | 94.7 | 93.1 | 97.8 | 104.2 | 108.7 | 111.7 | 103.9 | 144.2 |
| 500 | 92.2 | 92.2 | 91.5 | 89.1 | 90.9 | 93.0 | 92.2 | 93.5 | 98.0 | 105.5 | 107.4 | 110.4 | 103.8 | 143.5 |
| 630 | 92.8 | 92.8 | 92.9 | 90.1 | 91.7 | 93.5 | 92.9 | 94.7 | 102.1 | 105.7 | 107.6 | 109.3 | 104.6 | 143.6 |
| 800 | 93.2 | 93.5 | 93.4 | 90.1 | 92.3 | 93.9 | 93.7 | 97.5 | 102.1 | 105.7 | 107.3 | 107.2 | 104.5 | 143.2 |
| 1000 | 97.1 | 98.0 | 96.1 | 91.0 | 94.1 | 95.4 | 94.2 | 96.7 | 102.4 | 104.5 | 105.0 | 102.9 | 102.9 | 142.0 |
| 1250 | 95.5 | 95.7 | 95.7 | 92.7 | 94.4 | 95.3 | 95.5 | 97.9 | 104.0 | 103.8 | 104.9 | 99.6 | 100.9 | 141.8 |
| 1600 | 96.1 | 97.7 | 96.1 | 93.4 | 95.7 | 97.4 | 96.8 | 99.0 | 104.3 | 105.0 | 103.9 | 98.5 | 99.8 | 142.2 |
| 2000 | 97.5 | 96.8 | 97.2 | 94.4 | 96.1 | 98.6 | 97.6 | 100.3 | 104.5 | 106.2 | 103.2 | 98.9 | 102.8 | 142.9 |
| 2500 | 98.4 | 96.7 | 97.3 | 94.9 | 96.8 | 99.6 | 98.7 | 101.1 | 105.9 | 105.9 | 103.0 | 98.6 | 100.5 | 143.3 |
| 3150 | 98.5 | 98.3 | 98.3 | 96.0 | 98.3 | 101.3 | 100.0 | 103.1 | 107.6 | 106.7 | 105.0 | 100.7 | 104.9 | 145.0 |
| 4000 | 100.9 | 99.8 | 99.7 | 96.8 | 99.5 | 102.6 | 101.8 | 105.6 | 107.7 | 108.6 | 105.9 | 101.9 | 104.9 | 146.3 |
| 5000 | 103.3 | 101.6 | 101.7 | 97.6 | 100.3 | 103.0 | 102.9 | 106.0 | 109.8 | 109.6 | 107.2 | 104.5 | 107.2 | 147.8 |
| 6300 | 103.9 | 103.0 | 102.8 | 99.0 | 102.4 | 104.8 | 104.2 | 106.9 | 110.2 | 110.0 | 108.5 | 106.1 | 108.6 | 149.0 |
| 8000 | 108.8 | 108.1 | 105.9 | 102.3 | 105.5 | 106.0 | 104.1 | 106.8 | 110.8 | 111.1 | 110.0 | 108.6 | 110.2 | 151.1 |
| 10000 | 106.6 | 108.5 | 109.2 | 105.7 | 109.2 | 108.9 | 106.0 | 108.3 | 111.1 | 111.4 | 109.6 | 109.6 | 110.8 | 152.7 |
| 12500 | 107.7 | 108.4 | 111.3 | 109.3 | 110.4 | 110.8 | 107.5 | 111.0 | 110.2 | 108.9 | 108.8 | 109.3 | 154.1 | |
| 16000 | 109.8 | 108.7 | 108.8 | 107.6 | 106.8 | 109.4 | 107.7 | 107.3 | 109.4 | 108.4 | 107.0 | 107.5 | 108.0 | 154.1 |
| 20000 | 105.1 | 106.5 | 106.8 | 104.8 | 105.3 | 106.5 | 106.6 | 108.4 | 105.8 | 105.1 | 105.5 | 106.0 | 153.8 | |
| 25000 | 101.8 | 103.1 | 103.6 | 102.5 | 102.9 | 105.3 | 104.5 | 103.0 | 105.2 | 103.3 | 102.5 | 102.6 | 103.0 | 153.5 |
| 31500 | 100.6 | 101.7 | 102.0 | 100.5 | 99.2 | 101.5 | 100.4 | 100.1 | 102.5 | 100.8 | 100.2 | 99.2 | 99.8 | 154.0 |
| 40000 | 93.6 | 95.1 | 96.5 | 96.0 | 95.4 | 98.2 | 96.6 | 96.7 | 97.6 | 95.7 | 95.1 | 94.5 | 95.1 | 153.3 |
| 50000 | 91.7 | 93.2 | 94.0 | 92.3 | 90.1 | 93.3 | 90.6 | 91.7 | 93.2 | 90.4 | 90.0 | 88.2 | 89.1 | 153.4 |
| 63000 | 84.4 | 86.5 | 87.1 | 86.0 | 85.3 | 88.4 | 84.7 | 85.8 | 88.0 | 85.8 | 84.3 | 82.8 | 81.7 | 152.9 |
| 80000 | 76.7 | 79.5 | 81.1 | 79.3 | 78.2 | 83.1 | 79.3 | 79.4 | 78.2 | 76.0 | 74.4 | 73.0 | 71.9 | 152.8 |

BASPL 116.5 117.1 117.1 114.8 116.1 117.4 115.8 117.0 120.4 120.6 120.2 120.6 119.3 164.5
 PNL 125.3 124.8 124.1 120.6 123.4 125.3 124.4 127.4 131.1 131.8 130.7 128.9 129.7
 PNLT 125.9 125.9 124.1 120.6 123.4 125.3 124.4 127.4 131.1 131.8 130.7 128.9 129.7
 DBA 199.7 202.0 203.2 201.7 200.6 204.9 201.2 201.6 202.0 199.8 198.4 196.9 196.3

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS) = 400.00, DIAM (IN) = 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS3-22137

VEHICL = ADH209 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO MPH = 40.0 FT EXT DIST = 40.0 FT TAMB F = 51.69 PAMB HG = 28.95 MIKE HT = RELHUM = 48.6 PCT
 WIND DIR = DEG WIND VEL =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1539.7 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2509.4 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1512 TAPE = X1512F TEST PT NO = 1512 NC = AE088 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1512 X15121

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 68.8 | 71.5 | 70.7 | 70.1 | 71.8 | 73.5 | 76.6 | 74.6 | 78.7 | 84.0 | 87.0 | 87.7 | 76.6 | 161.8 |
| 63 | 70.4 | 72.0 | 72.4 | 70.6 | 72.9 | 75.1 | 74.1 | 75.1 | 78.8 | 85.6 | 85.6 | 86.4 | 76.4 | 161.2 |
| 80 | 70.9 | 72.5 | 73.7 | 71.7 | 73.6 | 75.6 | 74.8 | 76.2 | 82.9 | 85.6 | 85.7 | 85.3 | 77.1 | 161.3 |
| 100 | 71.3 | 73.1 | 74.1 | 71.6 | 74.2 | 75.9 | 75.6 | 79.0 | 82.8 | 85.4 | 85.4 | 83.1 | 76.9 | 160.8 |
| 125 | 75.0 | 77.5 | 76.7 | 72.4 | 75.9 | 77.4 | 76.0 | 78.1 | 83.1 | 84.1 | 83.0 | 78.6 | 75.0 | 159.6 |
| 160 | 74.4 | 75.1 | 76.2 | 74.0 | 76.1 | 78.1 | 77.2 | 79.1 | 84.6 | 83.1 | 82.7 | 75.0 | 72.7 | 159.5 |
| 200 | 73.6 | 75.9 | 76.5 | 74.4 | 77.3 | 79.1 | 78.3 | 80.1 | 84.7 | 84.2 | 81.4 | 73.6 | 71.1 | 159.9 |
| 250 | 74.7 | 75.7 | 77.3 | 75.3 | 77.5 | 80.1 | 78.9 | 81.2 | 84.6 | 85.1 | 80.5 | 73.6 | 73.4 | 160.6 |
| 315 | 75.2 | 75.2 | 77.1 | 75.5 | 77.9 | 80.9 | 79.7 | 81.7 | 85.7 | 84.5 | 79.8 | 72.7 | 70.4 | 161.0 |
| 400 | 74.8 | 76.5 | 77.7 | 76.2 | 79.0 | 82.3 | 80.8 | 83.4 | 87.1 | 84.9 | 81.3 | 74.2 | 73.7 | 162.7 |
| 500 | 76.7 | 77.6 | 78.8 | 76.8 | 80.0 | 83.3 | 82.3 | 85.6 | 86.8 | 86.4 | 81.7 | 74.7 | 72.8 | 164.0 |
| 630 | 78.6 | 79.0 | 80.5 | 77.3 | 80.5 | 83.4 | 83.1 | 85.7 | 88.6 | 87.0 | 82.9 | 76.6 | 74.0 | 165.5 |
| 800 | 78.8 | 80.0 | 81.3 | 78.5 | 82.3 | 84.9 | 84.1 | 86.4 | 88.6 | 87.0 | 83.3 | 77.6 | 74.3 | 166.7 |
| 1000 | 83.2 | 84.8 | 85.1 | 81.5 | 85.3 | 86.0 | 83.9 | 86.1 | 89.1 | 87.8 | 84.4 | 79.4 | 74.7 | 168.8 |
| 1250 | 80.4 | 84.9 | 87.3 | 84.8 | 88.9 | 88.8 | 85.6 | 87.4 | 89.1 | 87.8 | 83.5 | 79.6 | 73.9 | 170.4 |
| 1600 | 80.7 | 84.2 | 88.9 | 88.1 | 89.8 | 90.4 | 86.9 | 86.3 | 88.6 | 86.0 | 81.9 | 77.5 | 70.0 | 171.8 |
| 2000 | 81.9 | 83.8 | 86.0 | 86.1 | 86.0 | 88.9 | 86.9 | 86.8 | 86.6 | 83.5 | 79.0 | 74.5 | 65.7 | 171.8 |
| 2500 | 75.3 | 80.4 | 83.1 | 82.6 | 84.0 | 85.5 | 85.2 | 83.4 | 84.8 | 79.8 | 75.4 | 69.7 | 58.8 | 171.4 |
| 3150 | 68.7 | 74.6 | 78.0 | 78.8 | 80.2 | 83.0 | 81.8 | 79.3 | 79.7 | 74.8 | 69.4 | 61.8 | 47.4 | 171.2 |
| 4000 | 61.2 | 68.5 | 72.6 | 73.5 | 73.5 | 76.3 | 74.8 | 73.1 | 73.2 | 67.6 | 60.9 | 49.4 | 29.7 | 171.7 |
| 5000 | 44.5 | 54.3 | 60.9 | 63.6 | 64.7 | 68.1 | 65.9 | 64.3 | 62.0 | 55.0 | 46.0 | 31.1 | 3.1 | 171.0 |
| 6300 | 24.8 | 38.2 | 46.3 | 49.1 | 49.4 | 53.4 | 49.8 | 48.5 | 45.5 | 35.4 | 23.1 | 0.7 | | 171.1 |
| 8000 | 6.7 | 18.1 | 23.5 | 25.4 | 30.7 | 25.8 | 23.4 | 19.0 | 6.0 | | | | | 170.6 |
| 10000 | | | | | | | | | | | | | | 170.5 |
| 12500 | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

DASPL 90.2 92.5 94.8 93.4 95.6 97.1 95.2 95.2 98.8 98.0 95.8 93.4 86.5 182.1
 PNL 100.2 102.7 105.3 104.3 106.2 107.9 106.3 106.1 107.9 105.8 102.2 97.3 90.8
 PNL 101.5 103.6 106.1 105.0 106.2 107.9 106.3 106.6 108.5 106.4 102.2 98.6 90.8
 DBA 89.6 92.3 94.9 93.7 95.8 97.1 95.0 95.3 97.4 95.4 91.4 86.4 81.5

MODEL AREA = 153.9 SQ CM (23.9 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 7.661 FREQ SHIFT = -9

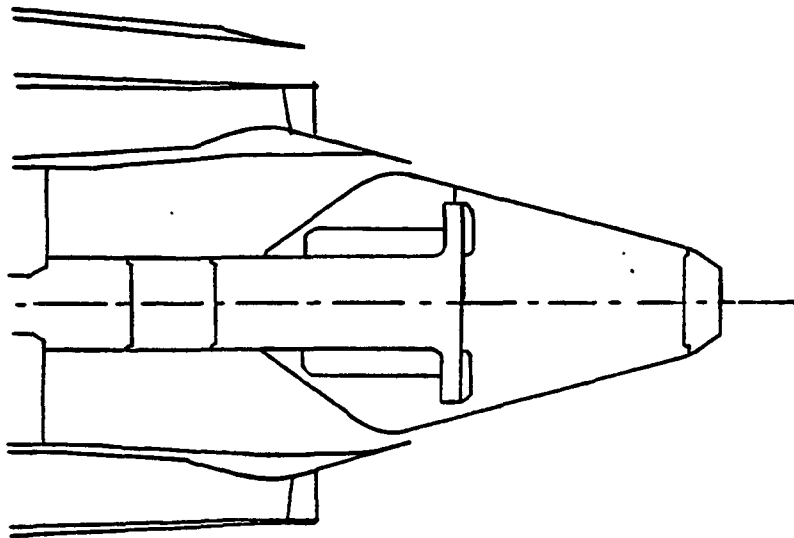
NASA DUAL FLOW THERMAL SHIELD/DFTAS-15/NAS9-22137

VEHICL = ADH209 TEST DATE = 04-12-83 LOCAT = C41 ANECH CH CONFIG = 15 MODEL = AX FLTVEL = 400. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 51.69 PAMB HQ = 28.95 RELHUM = 48.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNJN1 = LBS XNL = RPM XNH = RPM V6 = 1539.7 FPS AE9 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2509.4 FPS AE18 = 19.9 SQ IN

NPT 1F-2 517 2E 2T 15 PT 15 AEL SPEED CORR SPEED RPI

4.3.2 Acoustic Data of Suppressed Coannular Plug Nozzle with
180° Thermal Acoustic Shield (TAS-16, -17, and -18).



TAS-16 (Shield to Outer Stream Velocity Ratio at
Takeoff is 0.64).

IDENTIFICATION - 83F-ZER-1603 XT16031

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 57.7 | 62.0 | 62.8 | 63.1 | 66.9 | 70.4 | 71.6 | 72.5 | 73.1 | 77.4 | 80.2 | 80.7 | 71.0 | 155.3 |
| 63 | 58.4 | 62.0 | 62.7 | 63.1 | 66.8 | 69.8 | 71.7 | 73.3 | 74.6 | 79.1 | 81.2 | 81.4 | 71.7 | 156.2 |
| 80 | 59.4 | 63.2 | 63.6 | 63.6 | 67.3 | 70.8 | 72.5 | 74.0 | 75.1 | 79.1 | 80.1 | 80.3 | 70.9 | 155.6 |
| 100 | 59.0 | 63.9 | 64.2 | 64.2 | 68.7 | 71.7 | 73.2 | 74.4 | 75.2 | 79.7 | 80.0 | 77.9 | 68.9 | 155.1 |
| 125 | 60.9 | 63.1 | 63.8 | 64.2 | 70.5 | 72.2 | 73.8 | 75.2 | 76.2 | 79.4 | 78.9 | 75.8 | 68.2 | 154.6 |
| 160 | 62.9 | 64.1 | 64.6 | 64.7 | 69.5 | 73.0 | 74.6 | 75.9 | 77.0 | 78.9 | 78.2 | 74.3 | 66.3 | 154.4 |
| 200 | 61.3 | 65.3 | 65.5 | 65.3 | 69.0 | 72.5 | 74.2 | 75.6 | 76.7 | 78.1 | 76.1 | 72.8 | 64.9 | 153.7 |
| 250 | 61.4 | 65.5 | 66.2 | 66.5 | 69.7 | 73.7 | 74.9 | 75.8 | 76.4 | 77.0 | 76.4 | 72.9 | 64.7 | 154.0 |
| 315 | 61.9 | 65.0 | 65.7 | 66.1 | 69.1 | 72.6 | 74.2 | 75.5 | 76.4 | 76.9 | 74.9 | 71.7 | 64.1 | 153.8 |
| 400 | 60.8 | 65.7 | 65.9 | 65.6 | 69.7 | 72.8 | 73.9 | 74.7 | 75.2 | 77.5 | 73.3 | 70.7 | 63.0 | 153.8 |
| 500 | 61.4 | 64.9 | 65.5 | 65.7 | 69.0 | 73.0 | 74.4 | 75.6 | 76.4 | 76.1 | 72.2 | 68.9 | 60.8 | 153.9 |
| 630 | 60.0 | 65.2 | 65.5 | 65.3 | 69.7 | 72.4 | 73.5 | 74.2 | 74.6 | 74.4 | 71.6 | 68.7 | 58.7 | 153.4 |
| 800 | 59.2 | 64.1 | 65.0 | 65.3 | 69.1 | 73.0 | 73.7 | 74.1 | 74.1 | 74.1 | 71.1 | 67.1 | 58.0 | 153.7 |
| 1000 | 59.0 | 63.7 | 65.0 | 65.7 | 70.3 | 73.4 | 74.0 | 74.2 | 74.0 | 73.1 | 70.3 | 67.2 | 56.9 | 154.1 |
| 1250 | 57.0 | 62.9 | 64.4 | 65.3 | 69.3 | 72.8 | 73.1 | 72.9 | 72.3 | 71.8 | 68.2 | 64.5 | 54.7 | 153.6 |
| 1600 | 55.5 | 63.4 | 64.8 | 65.5 | 69.2 | 72.9 | 72.9 | 72.4 | 71.4 | 69.5 | 65.8 | 63.1 | 52.0 | 154.1 |
| 2000 | 54.4 | 61.3 | 63.1 | 64.1 | 68.4 | 71.6 | 71.3 | 70.6 | 69.3 | 66.3 | 62.2 | 58.9 | 46.4 | 153.7 |
| 2500 | 50.7 | 58.3 | 61.2 | 63.1 | 66.0 | 69.2 | 68.8 | 67.9 | 66.3 | 61.9 | 58.4 | 54.2 | 38.3 | 153.5 |
| 3150 | 46.3 | 54.0 | 57.1 | 59.1 | 62.1 | 65.9 | 65.4 | 64.2 | 62.2 | 57.3 | 52.0 | 49.1 | 25.3 | 153.5 |
| 4000 | 36.9 | 46.5 | 50.6 | 53.3 | 56.6 | 61.4 | 60.1 | 57.9 | 54.6 | 48.6 | 41.9 | 32.5 | 7.1 | 153.9 |
| 5000 | 22.9 | 33.4 | 40.0 | 44.7 | 47.9 | 52.3 | 51.0 | 48.5 | 44.6 | 36.8 | 28.5 | 14.2 | | 153.8 |
| 6300 | 0.3 | 15.8 | 24.0 | 29.3 | 34.3 | 38.9 | 37.4 | 34.2 | 29.0 | 19.3 | 7.0 | | | 154.6 |
| 8000 | | | 4.2 | 9.4 | 15.8 | 13.7 | 9.1 | 1.5 | | | | | | 154.0 |
| 10000 | | | | | | | | | | | | | | 153.9 |
| 12500 | | | | | | | | | | | | | | 154.4 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS
OF POOR QUALITY

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH269 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 58.55 PAMB HG = 29.57 RELHUM = 48.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1088.3 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1785.4 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1603 TAPE = XT16031 TEST PT NO = 1603 NC = AE100 CORR FAN SPEED = RPM

327

IDENTIFICATION - MODEL 83F-400-1604 X1604C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 81.9 | 83.5 | 81.6 | 78.8 | 77.8 | 78.1 | 77.3 | 79.4 | 79.7 | 85.7 | 87.2 | 87.2 | 123.0 | |
| 63 | 87.8 | 89.8 | 89.8 | 89.8 | 84.9 | 84.3 | 84.5 | 87.3 | 87.1 | 89.1 | 89.1 | 89.1 | 128.7 | |
| 80 | 83.9 | 87.8 | 84.8 | 81.9 | 83.0 | 87.1 | 87.7 | 88.2 | 86.2 | 89.0 | 90.9 | 90.9 | 128.8 | |
| 100 | 82.4 | 87.1 | 84.6 | 81.6 | 84.7 | 87.4 | 87.0 | 86.8 | 89.7 | 91.0 | 95.1 | 95.1 | 130.0 | |
| 125 | 80.6 | 82.7 | 82.6 | 82.5 | 85.1 | 87.9 | 87.4 | 87.1 | 86.8 | 90.3 | 94.3 | 98.0 | 131.3 | |
| 160 | 79.1 | 79.5 | 79.4 | 79.4 | 81.1 | 83.9 | 84.8 | 85.3 | 90.1 | 94.6 | 98.3 | 99.4 | 130.7 | |
| 200 | 82.4 | 81.1 | 79.1 | 79.6 | 83.4 | 82.9 | 86.8 | 88.5 | 89.6 | 93.5 | 99.9 | 91.4 | 131.7 | |
| 250 | 76.4 | 82.1 | 79.7 | 77.1 | 80.8 | 83.9 | 84.8 | 86.7 | 88.3 | 93.6 | 97.5 | 101.2 | 92.4 | 133.6 |
| 315 | | 77.5 | | | 80.1 | 84.7 | 84.0 | 86.8 | 88.5 | 94.1 | 97.6 | 100.8 | 93.0 | 133.4 |
| 400 | 77.5 | 80.3 | 79.1 | 77.5 | 81.4 | 84.4 | 84.4 | 88.5 | 90.6 | 95.4 | 97.3 | 100.0 | 91.5 | 133.4 |
| 500 | 78.9 | 81.3 | 79.8 | 78.2 | 82.6 | 85.5 | 86.7 | 89.0 | 90.9 | 95.7 | 97.6 | 97.5 | 89.3 | 133.0 |
| 630 | 79.1 | 81.5 | 80.2 | 78.7 | 83.3 | 86.2 | 87.7 | 89.3 | 90.8 | 96.1 | 97.3 | 94.2 | 85.8 | 132.5 |
| 800 | 80.5 | 81.3 | 80.4 | 79.4 | 87.0 | 87.1 | 88.7 | 90.4 | 92.1 | 96.4 | 95.8 | 90.7 | 84.6 | 132.4 |
| 1000 | 82.4 | 82.2 | 81.3 | 80.4 | 85.1 | 87.8 | 89.5 | 91.3 | 93.1 | 95.0 | 88.1 | 82.9 | 132.3 | |
| 1250 | 80.9 | 82.7 | 82.7 | 82.2 | 86.0 | 89.1 | 90.9 | 92.6 | 94.4 | 95.2 | 93.8 | 85.8 | 81.0 | 132.6 |
| 1600 | 83.7 | 84.0 | 83.3 | 82.5 | 85.6 | 89.0 | 90.8 | 92.5 | 94.2 | 95.5 | 92.8 | 84.6 | 82.8 | 132.5 |
| 2000 | 84.4 | 84.2 | 83.7 | 83.2 | 86.8 | 90.0 | 91.3 | 92.6 | 93.9 | 95.9 | 92.0 | 84.5 | 82.0 | 132.7 |
| 3150 | 85.5 | 84.6 | 84.3 | 83.8 | 87.4 | 90.7 | 92.0 | 93.4 | 94.7 | 95.5 | 91.8 | 84.0 | 81.1 | 133.2 |
| 4000 | 86.5 | 86.3 | 85.5 | 84.7 | 88.7 | 91.7 | 92.5 | 93.2 | 94.0 | 94.4 | 91.7 | 85.5 | 80.6 | 133.3 |
| 5000 | 86.7 | 85.9 | 85.7 | 85.4 | 89.2 | 92.4 | 93.0 | 93.7 | 94.4 | 95.7 | 91.8 | 85.6 | 81.4 | 134.0 |
| 6300 | 87.3 | 87.2 | 87.1 | 87.1 | 90.4 | 93.1 | 93.5 | 93.9 | 94.4 | 94.4 | 92.8 | 87.3 | 81.6 | 134.5 |
| 8000 | 86.4 | 87.0 | 86.9 | 86.8 | 90.2 | 93.2 | 93.3 | 93.4 | 93.5 | 93.6 | 91.9 | 87.8 | 82.6 | 134.4 |
| 10000 | 86.6 | 87.2 | 87.6 | 88.0 | 91.4 | 93.9 | 93.9 | 94.0 | 94.1 | 93.9 | 90.8 | 88.7 | 83.5 | 135.5 |
| 12500 | 86.2 | 87.0 | 87.1 | 87.1 | 90.7 | 93.9 | 93.5 | 93.1 | 92.6 | 91.3 | 88.2 | 86.9 | 83.7 | 135.4 |
| 16000 | 85.8 | 85.8 | 86.4 | 87.0 | 89.0 | 92.8 | 92.6 | 92.4 | 92.2 | 89.1 | 86.9 | 86.0 | 81.2 | 135.8 |
| 20000 | 84.4 | 85.2 | 85.3 | 85.5 | 87.4 | 91.2 | 90.7 | 90.2 | 89.7 | 87.2 | 83.8 | 83.3 | 78.5 | 135.7 |
| 25000 | 81.5 | 83.4 | 83.9 | 84.5 | 86.5 | 90.3 | 89.7 | 89.1 | 88.5 | 85.0 | 81.4 | 80.9 | 75.9 | 136.8 |
| 31500 | 78.1 | 79.7 | 81.2 | 82.8 | 84.0 | 87.8 | 87.2 | 86.6 | 86.0 | 82.9 | 78.8 | 78.5 | 72.3 | 137.5 |
| 40000 | 75.0 | 77.8 | 78.5 | 79.4 | 80.8 | 85.5 | 84.7 | 84.0 | 83.3 | 80.6 | 77.5 | 76.0 | 69.5 | 138.9 |
| 50000 | 69.8 | 71.7 | 72.7 | 73.9 | 76.0 | 81.2 | 80.5 | 79.7 | 79.0 | 76.4 | 73.1 | 71.2 | 64.7 | 138.8 |
| 63000 | 67.0 | 68.1 | 67.6 | 68.6 | 70.1 | 76.4 | 75.7 | 75.0 | 74.4 | 71.2 | 68.5 | 66.1 | 58.7 | 139.3 |
| 80000 | 64.9 | 65.7 | 66.1 | 66.6 | 62.9 | 69.7 | 69.1 | 68.6 | 68.2 | 65.2 | 62.0 | 59.3 | 50.9 | 139.7 |
| 0ASPL | 97.8 | 99.2 | 99.0 | 98.6 | 101.2 | 104.4 | 104.7 | 105.5 | 106.4 | 108.1 | 109.0 | 101.1 | 149.9 | |
| PNL | 109.4 | 110.5 | 110.0 | 109.2 | 112.7 | 115.8 | 116.2 | 117.7 | 118.9 | 120.4 | 118.8 | 116.3 | 108.9 | |
| PNLT | 116.1 | 117.2 | 110.0 | 115.8 | 112.7 | 115.8 | 122.9 | 117.7 | 118.9 | 120.4 | 118.8 | 116.3 | 115.5 | |
| DBA | 96.1 | 95.3 | 95.9 | 95.4 | 99.2 | 102.1 | 103.0 | 104.2 | 105.3 | 107.0 | 105.5 | 102.9 | 96.2 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH278 TEST DATE = 05-17-83 LGCAT = C4T ANECH CH CONFIG = 16 MODEL = SL FTLVEL = 400. FPS
 IAPLHA = SB59 TEST DATE = 05-17-83 PWL AREA = FULL SPHERE TAMB F = 64.38 PAMB HG = 29.36 RELHUM = 46.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC
 FNINI = LBS XNL RPM XNHR = RPM V8 = 1107.0 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 1805.8 FPS AE18 = 19.9 SQ IN
 RUNPT = 83F-400-1604 TARE = X1000C TEST PT NO = 160. RPM = 10000 R F SPEED = 10000 RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1604 X16041

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 60.8 | 66.4 | 63.2 | 59.5 | 61.4 | 64.6 | 62.8 | 64.2 | 67.1 | 70.3 | 70.7 | 72.2 | 63.1 | 147.5 |
| 63 | 59.6 | 64.4 | 60.6 | 59.6 | 62.8 | 64.4 | 64.1 | 65.8 | 67.2 | 70.5 | 71.0 | 70.3 | 62.4 | 146.9 |
| 80 | 60.5 | 63.8 | 62.3 | 59.9 | 64.0 | 65.5 | 65.3 | 66.1 | 67.0 | 70.8 | 70.6 | 67.5 | 60.6 | 146.4 |
| 100 | 61.9 | 64.7 | 63.0 | 60.7 | 64.8 | 66.3 | 66.2 | 66.0 | 68.7 | 71.6 | 69.9 | 65.4 | 62.0 | 146.7 |
| 125 | 62.4 | 65.1 | 63.5 | 61.2 | 69.0 | 67.1 | 67.2 | 67.2 | 70.1 | 71.8 | 69.8 | 64.1 | 62.8 | 147.5 |
| 160 | 66.4 | 67.0 | 65.3 | 63.0 | 66.5 | 67.8 | 68.1 | 68.1 | 71.4 | 72.4 | 68.9 | 63.5 | 65.1 | 148.4 |
| 200 | 65.1 | 65.4 | 64.3 | 62.7 | 65.7 | 68.0 | 68.9 | 69.3 | 71.8 | 71.1 | 68.6 | 61.6 | 60.8 | 147.9 |
| 250 | 63.3 | 65.7 | 64.7 | 63.2 | 67.4 | 69.2 | 69.9 | 69.8 | 72.2 | 72.1 | 68.4 | 61.3 | 63.0 | 148.8 |
| 315 | 64.1 | 65.9 | 65.3 | 64.3 | 67.0 | 69.1 | 70.0 | 70.1 | 71.9 | 72.5 | 67.4 | 60.9 | 61.9 | 149.2 |
| 400 | 65.2 | 66.3 | 65.6 | 64.4 | 68.1 | 70.1 | 70.5 | 70.2 | 72.8 | 72.2 | 67.3 | 60.3 | 60.8 | 149.9 |
| 500 | 65.4 | 66.1 | 65.8 | 64.9 | 68.6 | 70.9 | 71.4 | 71.2 | 72.8 | 71.6 | 67.6 | 61.9 | 60.0 | 150.6 |
| 630 | 65.9 | 66.3 | 66.2 | 65.3 | 70.1 | 72.1 | 72.2 | 71.5 | 72.8 | 72.5 | 67.2 | 61.5 | 59.8 | 151.7 |
| 800 | 66.2 | 67.4 | 67.2 | 66.2 | 71.1 | 72.9 | 72.7 | 71.8 | 72.9 | 71.3 | 68.2 | 62.9 | 59.1 | 152.6 |
| 1000 | 68.5 | 68.9 | 68.7 | 67.9 | 71.5 | 73.4 | 72.9 | 71.9 | 72.5 | 71.0 | 67.7 | 63.3 | 58.9 | 153.6 |
| 1250 | 65.5 | 67.2 | 67.9 | 67.9 | 71.5 | 73.2 | 72.6 | 71.4 | 72.9 | 71.0 | 65.9 | 62.8 | 57.5 | 153.9 |
| 1600 | 66.2 | 68.3 | 68.5 | 68.0 | 72.2 | 73.3 | 72.6 | 71.5 | 68.4 | 64.8 | 59.3 | 56.6 | 52.4 | 153.9 |
| 2000 | 64.6 | 67.0 | 68.1 | 68.2 | 70.8 | 72.7 | 70.4 | 67.8 | 67.6 | 62.0 | 57.0 | 54.1 | 47.0 | 154.2 |
| 2500 | 61.4 | 64.7 | 65.7 | 65.7 | 68.2 | 70.6 | 68.6 | 66.1 | 64.2 | 58.9 | 52.1 | 48.6 | 39.4 | 154.3 |
| 3150 | 56.4 | 60.1 | 62.2 | 63.0 | 64.1 | 67.1 | 64.7 | 61.7 | 61.1 | 54.3 | 46.4 | 41.1 | 28.3 | 154.5 |
| 4000 | 44.8 | 51.0 | 54.2 | 55.7 | 59.9 | 62.6 | 59.9 | 56.6 | 55.5 | 48.5 | 38.8 | 31.2 | 11.5 | 155.2 |
| 5000 | 33.3 | 42.4 | 46.6 | 48.8 | 51.6 | 54.4 | 51.8 | 48.2 | 47.0 | 39.2 | 28.4 | 15.7 | | 156.7 |
| 6300 | 11.0 | 23.2 | 30.6 | 35.1 | 37.9 | 41.7 | 38.9 | 34.7 | 30.7 | 21.0 | 6.6 | | | 157.6 |
| 8000 | | 5.9 | 11.1 | 14.0 | 18.8 | 15.6 | 10.3 | 5.2 | | | | | | 158.2 |
| 10000 | | | | | | | | | | | | | | 158.2 |
| 12500 | | | | | | | | | | | | | | 158.1 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

P1187-02

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH278 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 64.38 PAMB HG = 29.36 RELHUM = 46.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT- EXT CONFIG = SL MIKE HT = NBFR

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1107.0 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1805.8 FPS AE18 = 19.9 SQ IN

TEST = 401 04 X16041 TEST 1 INB = 1604 NC = -AETOU CORR FAN SPEED = RPM

DATPROC - FLTRAN UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-ZER-1605 X1605C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 82.1 | 83.2 | 82.6 | 82.0 | 81.3 | 82.2 | 82.6 | 83.0 | 83.4 | 83.2 | 89.4 | 90.1 | 83.2 | 126.3 |
| 63 | 85.3 | 90.5 | 90.8 | 91.1 | 89.2 | 89.8 | 90.1 | 90.3 | 90.6 | 91.1 | 93.8 | 93.7 | 94.1 | 133.0 |
| 80 | 87.5 | 91.1 | 88.5 | 85.9 | 86.5 | 90.8 | 90.9 | 91.0 | 91.0 | 91.1 | 91.7 | 93.8 | 95.2 | 80.6 |
| 100 | 87.0 | 91.7 | 89.5 | 87.3 | 89.9 | 92.5 | 92.3 | 92.2 | 92.0 | 95.6 | 96.2 | 99.6 | 85.1 | 135.0 |
| 125 | 84.1 | 86.9 | 87.5 | 88.0 | 90.8 | 92.9 | 92.8 | 92.6 | 92.4 | 96.3 | 101.1 | 103.1 | 89.7 | 137.0 |
| 160 | 83.7 | 83.0 | 83.3 | 83.5 | 86.4 | 89.5 | 90.5 | 91.5 | 92.5 | 97.1 | 101.7 | 104.4 | 94.8 | 137.3 |
| 200 | 83.8 | 84.3 | 84.2 | 84.1 | 87.5 | 90.6 | 92.3 | 94.1 | 95.8 | 97.9 | 103.0 | 106.5 | 97.9 | 139.1 |
| 250 | 83.5 | 87.3 | 86.6 | 85.9 | 88.5 | 91.6 | 93.4 | 95.3 | 97.1 | 102.9 | 107.5 | 110.0 | 100.9 | 142.7 |
| 315 | 84.3 | 86.6 | 86.4 | 86.2 | 89.8 | 92.9 | 94.6 | 96.2 | 97.9 | 103.2 | 107.6 | 110.3 | 103.7 | 143.1 |
| 400 | 85.8 | 87.4 | 86.8 | 86.2 | 89.8 | 92.4 | 94.7 | 97.0 | 99.4 | 105.9 | 109.1 | 111.3 | 104.4 | 144.4 |
| 500 | 86.3 | 88.4 | 87.7 | 86.9 | 90.5 | 93.6 | 95.7 | 97.8 | 99.9 | 106.0 | 108.9 | 111.0 | 105.2 | 144.5 |
| 630 | 86.5 | 88.8 | 88.6 | 88.4 | 91.5 | 94.8 | 96.8 | 98.7 | 100.6 | 106.2 | 108.0 | 109.2 | 104.6 | 143.8 |
| 800 | 88.1 | 88.9 | 88.4 | 87.9 | 93.8 | 95.4 | 97.5 | 99.6 | 101.6 | 106.5 | 106.8 | 107.0 | 104.2 | 143.2 |
| 1000 | 91.5 | 90.5 | 89.8 | 89.1 | 93.2 | 96.3 | 98.4 | 100.5 | 102.6 | 105.9 | 105.5 | 104.9 | 102.4 | 142.7 |
| 1250 | 89.4 | 92.0 | 91.0 | 90.1 | 93.1 | 96.0 | 98.1 | 100.1 | 102.2 | 104.8 | 104.7 | 103.6 | 101.5 | 141.9 |
| 1600 | 90.1 | 91.5 | 91.0 | 90.5 | 94.0 | 97.1 | 99.1 | 101.0 | 102.9 | 104.5 | 105.1 | 104.1 | 101.2 | 142.3 |
| 2000 | 91.0 | 91.8 | 91.2 | 90.6 | 93.5 | 96.6 | 98.6 | 100.7 | 102.7 | 104.8 | 104.5 | 102.2 | 100.9 | 142.0 |
| 2500 | 90.7 | 92.5 | 91.5 | 90.5 | 94.1 | 97.0 | 98.7 | 100.5 | 102.2 | 105.0 | 103.7 | 101.6 | 100.6 | 141.8 |
| 3150 | 91.0 | 92.1 | 91.4 | 90.6 | 94.0 | 97.5 | 99.3 | 101.0 | 102.7 | 104.6 | 102.3 | 100.6 | 99.1 | 141.7 |
| 4000 | 90.5 | 91.3 | 91.1 | 90.8 | 94.5 | 97.2 | 98.7 | 100.1 | 101.6 | 102.8 | 102.0 | 99.5 | 97.9 | 140.9 |
| 5000 | 90.2 | 91.7 | 91.2 | 90.7 | 94.5 | 98.2 | 99.3 | 100.3 | 101.4 | 103.5 | 101.4 | 98.5 | 96.6 | 141.1 |
| 6300 | 90.3 | 91.5 | 91.7 | 91.9 | 95.5 | 98.7 | 99.4 | 100.2 | 100.9 | 102.3 | 100.8 | 98.1 | 96.3 | 141.1 |
| 8000 | 89.5 | 91.9 | 91.6 | 91.4 | 94.5 | 98.3 | 98.8 | 99.4 | 99.9 | 101.2 | 99.4 | 97.4 | 96.0 | 140.6 |
| 10000 | 90.4 | 94.0 | 93.3 | 92.6 | 95.5 | 98.2 | 98.7 | 99.2 | 99.7 | 99.8 | 97.9 | 96.8 | 95.1 | 140.9 |
| 12500 | 92.5 | 95.6 | 94.3 | 93.0 | 95.6 | 98.8 | 98.5 | 98.3 | 98.0 | 98.5 | 96.6 | 94.8 | 93.1 | 141.3 |
| 16000 | 91.8 | 94.4 | 94.9 | 95.4 | 95.9 | 97.9 | 97.5 | 97.1 | 96.8 | 95.3 | 94.5 | 94.4 | 90.8 | 141.7 |
| 20000 | 89.4 | 91.7 | 92.6 | 93.5 | 95.0 | 97.5 | 96.5 | 95.5 | 94.5 | 93.2 | 92.1 | 90.6 | 87.1 | 141.9 |
| 25000 | 86.1 | 89.0 | 89.7 | 90.3 | 92.6 | 96.4 | 95.0 | 93.5 | 92.1 | 89.7 | 88.8 | 87.3 | 83.2 | 142.2 |
| 31500 | 83.0 | 84.7 | 86.2 | 87.6 | 89.3 | 92.7 | 91.6 | 90.6 | 89.5 | 87.2 | 85.9 | 84.1 | 79.2 | 142.1 |
| 40000 | 78.8 | 82.2 | 83.2 | 84.3 | 85.1 | 90.0 | 88.8 | 87.5 | 86.5 | 84.4 | 83.4 | 80.0 | 75.3 | 143.1 |
| 50000 | 73.2 | 76.0 | 77.8 | 79.5 | 80.9 | 85.4 | 84.3 | 83.3 | 82.2 | 79.5 | 77.4 | 75.9 | 69.9 | 142.8 |
| 63000 | 67.2 | 71.0 | 72.2 | 73.3 | 75.9 | 79.9 | 79.0 | 78.1 | 77.2 | 74.8 | 73.0 | 70.0 | 63.9 | 142.8 |
| 80000 | 59.8 | 64.8 | 65.0 | 67.1 | 69.2 | 75.0 | 73.9 | 72.8 | 71.8 | 69.7 | 66.8 | 63.8 | 56.2 | 144.2 |
| GASPL | 103.4 | 105.5 | 105.0 | 104.7 | 107.4 | 110.4 | 111.4 | 112.6 | 114.0 | 117.1 | 118.3 | 119.4 | 114.3 | 156.9 |
| PNL | 115.3 | 116.8 | 116.2 | 115.7 | 119.1 | 122.1 | 123.7 | 125.2 | 126.8 | 129.2 | 129.0 | 128.2 | 125.1 | |
| PNLT | 115.3 | 116.8 | 116.2 | 115.7 | 119.1 | 122.1 | 123.7 | 125.2 | 126.8 | 129.2 | 129.0 | 128.2 | 125.1 | |
| DBA | 101.7 | 103.1 | 102.6 | 102.0 | 105.6 | 108.7 | 110.2 | 111.8 | 113.5 | 116.2 | 116.3 | 115.3 | 112.7 | |

ORIGINAL PAGE IS OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/OFTAS-16/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|-------------------|
| VEHICLE = ADH270 | TEST DATE = 05-17-83 | LOCAT = C41 ANECH CR | CONFIG = 16 | MODEL = SL | FLTVEL = 0. FPS |
| IAPLHA = SB59 | LEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 59.94 | PAMB HG = 29.57 | RELHUM = 48.0 PCT |
| WIND DIR = SB | DEG WIND VEL = MPH | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNINT = | LBS XNL = | RPM XNH = | RPM V8 = | V8 = 1215.4 FPS | AE8 = 4.0 SQ IN |
| FNRAMB = | LBS XNLR = | RPM XNHR = | RPM V18 = | V18 = 1988.1 FPS | AE18 = 19.9 SQ IN |
| RUNPT = 83F-ZER-1605 | TAPE = | TEST PT NO = 1605 | NC = | CORR FAN SPEED = | RPM = |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1605 X1605F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 82.1 | 83.2 | 82.6 | 82.0 | 81.3 | 82.2 | 82.6 | 83.0 | 83.4 | 83.2 | 89.4 | 90.1 | 83.2 | 126.3 |
| 63 | 86.3 | 90.5 | 90.8 | 91.1 | 89.2 | 89.8 | 90.1 | 90.3 | 90.6 | 91.1 | 93.8 | 93.7 | 94.1 | 133.0 |
| 80 | 87.5 | 91.1 | 88.5 | 85.9 | 86.5 | 90.8 | 90.9 | 91.0 | 91.1 | 91.7 | 93.8 | 95.2 | 80.6 | 132.7 |
| 100 | 87.0 | 91.7 | 89.5 | 87.3 | 89.9 | 92.5 | 92.3 | 92.2 | 92.0 | 95.6 | 96.2 | 99.6 | 85.1 | 135.0 |
| 125 | 84.1 | 86.9 | 87.5 | 88.0 | 90.8 | 92.9 | 92.8 | 92.6 | 92.4 | 96.3 | 101.1 | 103.1 | 89.7 | 137.0 |
| 160 | 83.7 | 83.0 | 83.3 | 83.5 | 86.4 | 89.5 | 90.5 | 91.5 | 92.5 | 97.1 | 101.7 | 104.4 | 94.8 | 137.3 |
| 200 | 83.8 | 84.3 | 84.2 | 84.1 | 87.5 | 90.6 | 92.3 | 94.1 | 95.8 | 97.9 | 103.0 | 106.5 | 97.9 | 139.1 |
| 250 | 83.5 | 87.3 | 86.6 | 85.9 | 88.5 | 91.6 | 93.4 | 95.3 | 97.1 | 102.9 | 107.5 | 110.0 | 100.9 | 142.7 |
| 315 | 84.3 | 86.6 | 86.4 | 86.2 | 89.8 | 92.9 | 94.6 | 96.2 | 97.9 | 103.2 | 107.6 | 110.3 | 103.7 | 143.1 |
| 400 | 85.8 | 87.4 | 86.8 | 86.2 | 89.8 | 92.4 | 94.7 | 97.0 | 99.4 | 105.9 | 109.1 | 111.3 | 104.4 | 144.4 |
| 500 | 86.3 | 88.4 | 87.7 | 86.9 | 90.5 | 93.6 | 95.7 | 97.8 | 99.9 | 106.0 | 108.9 | 111.0 | 105.2 | 144.5 |
| 630 | 86.5 | 88.8 | 88.6 | 88.4 | 91.5 | 94.8 | 96.8 | 98.7 | 100.6 | 106.2 | 108.0 | 109.2 | 104.6 | 143.8 |
| 800 | 88.1 | 88.9 | 88.4 | 87.9 | 93.8 | 95.4 | 97.5 | 99.6 | 101.6 | 106.5 | 106.8 | 107.0 | 104.2 | 143.2 |
| 1000 | 91.5 | 90.5 | 89.8 | 89.1 | 93.2 | 96.3 | 98.4 | 100.5 | 102.6 | 105.9 | 105.4 | 104.9 | 102.4 | 142.7 |
| 1250 | 89.4 | 92.0 | 91.0 | 90.1 | 93.1 | 96.0 | 98.1 | 100.1 | 102.2 | 104.8 | 104.7 | 103.6 | 101.5 | 141.9 |
| 1600 | 90.1 | 91.5 | 91.0 | 90.5 | 94.0 | 97.1 | 99.1 | 101.0 | 102.9 | 104.5 | 105.1 | 104.1 | 101.2 | 142.3 |
| 2000 | 91.0 | 91.8 | 91.2 | 90.6 | 93.5 | 96.6 | 98.6 | 100.7 | 102.7 | 104.8 | 104.5 | 102.2 | 100.9 | 142.0 |
| 2500 | 90.7 | 92.5 | 91.5 | 90.5 | 94.1 | 97.0 | 98.7 | 100.5 | 102.2 | 105.0 | 103.7 | 101.6 | 100.6 | 141.8 |
| 3150 | 91.0 | 92.1 | 91.4 | 90.6 | 94.0 | 97.5 | 99.3 | 101.0 | 102.7 | 104.6 | 102.3 | 100.6 | 99.1 | 141.7 |
| 4000 | 90.5 | 91.3 | 91.1 | 90.8 | 94.5 | 97.2 | 98.7 | 100.1 | 101.6 | 102.8 | 102.0 | 99.5 | 97.9 | 140.9 |
| 5000 | 90.2 | 91.7 | 91.2 | 90.7 | 94.5 | 98.2 | 99.3 | 100.3 | 101.4 | 103.5 | 101.4 | 98.5 | 96.6 | 141.1 |
| 6300 | 90.3 | 91.5 | 91.7 | 91.9 | 95.5 | 98.7 | 99.4 | 100.2 | 100.9 | 102.3 | 100.8 | 98.1 | 96.3 | 141.1 |
| 8000 | 89.5 | 91.9 | 91.6 | 91.4 | 94.5 | 98.3 | 98.8 | 99.4 | 99.9 | 101.2 | 99.4 | 97.4 | 96.0 | 140.6 |
| 10000 | 90.4 | 94.0 | 93.3 | 92.6 | 95.5 | 98.2 | 98.7 | 99.2 | 99.7 | 99.8 | 97.9 | 96.8 | 95.1 | 140.9 |
| 12500 | 92.5 | 95.6 | 94.3 | 93.0 | 95.6 | 98.8 | 98.5 | 98.3 | 98.0 | 98.5 | 96.6 | 93.1 | 141.3 | |
| 16000 | 91.8 | 94.4 | 94.9 | 95.4 | 95.9 | 97.9 | 97.5 | 97.1 | 96.8 | 95.3 | 94.5 | 94.4 | 90.8 | 141.7 |
| 20000 | 89.4 | 91.7 | 92.6 | 93.5 | 95.0 | 97.5 | 96.5 | 95.5 | 94.5 | 93.2 | 92.1 | 90.6 | 87.1 | 141.9 |
| 25000 | 86.1 | 89.0 | 89.7 | 90.3 | 92.6 | 96.4 | 95.0 | 93.5 | 92.1 | 89.7 | 88.8 | 87.3 | 83.2 | 142.2 |
| 31500 | 83.0 | 84.7 | 86.2 | 87.6 | 89.3 | 92.7 | 91.6 | 90.6 | 89.5 | 87.2 | 85.9 | 84.1 | 79.2 | 142.1 |
| 40000 | 78.8 | 82.2 | 84.3 | 84.3 | 86.1 | 90.0 | 88.6 | 87.6 | 86.5 | 84.4 | 83.4 | 80.0 | 75.3 | 143.1 |
| 50000 | 73.2 | 76.0 | 77.8 | 79.5 | 80.9 | 85.4 | 84.3 | 83.3 | 82.2 | 79.5 | 77.4 | 75.9 | 69.9 | 142.8 |
| 63000 | 67.2 | 71.0 | 72.2 | 73.3 | 75.5 | 79.9 | 79.0 | 78.1 | 77.2 | 74.8 | 73.0 | 70.0 | 63.9 | 142.8 |
| 80000 | 59.8 | 64.8 | 66.0 | 67.1 | 69.2 | 75.0 | 73.9 | 72.8 | 71.8 | 69.7 | 66.8 | 63.8 | 56.2 | 144.2 |

| QASPL | 103.4 | 105.5 | 105.0 | 104.7 | 107.4 | 110.4 | 111.4 | 112.6 | 114.0 | 117.1 | 118.3 | 119.4 | 114.3 | 166.9 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PWL | 115.3 | 116.8 | 116.2 | 115.7 | 119.1 | 122.1 | 123.7 | 125.2 | 126.8 | 129.2 | 129.0 | 128.2 | 126.1 | |
| PWLT | 115.3 | 116.8 | 116.2 | 115.7 | 119.1 | 122.1 | 123.7 | 125.2 | 126.8 | 129.2 | 129.0 | 128.2 | 126.1 | |
| DBA | 182.5 | 186.9 | 188.1 | 189.3 | 191.3 | 196.6 | 195.6 | 194.6 | 193.5 | 191.3 | 188.8 | 185.9 | 179.1 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH270 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 59.94 PAMB HG = 29.57 RELHUM = 48.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT. EXT CONFIG = ARC MIKE HT = NBFR

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1215.4 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V10 = 1968.1 FPS AE10 = 19.9 SQ IN

TEL NO 1605 TEL NO 1605 WORK FAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1605 X16051

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 60.2 | 64.0 | 64.9 | 65.4 | 69.4 | 72.6 | 74.2 | 75.4 | 76.4 | 80.6 | 83.5 | 84.0 | 74.0 | 158.4 |
| 63 | 61.7 | 64.7 | 65.2 | 65.3 | 69.3 | 72.1 | 74.3 | 76.2 | 77.8 | 83.3 | 84.9 | 84.9 | 74.7 | 159.8 |
| 80 | 62.1 | 65.7 | 66.1 | 66.1 | 70.1 | 73.3 | 75.3 | 77.0 | 78.3 | 83.3 | 84.6 | 84.6 | 75.4 | 159.8 |
| 100 | 62.3 | 66.1 | 66.1 | 67.5 | 71.0 | 74.5 | 76.3 | 77.8 | 79.0 | 83.4 | 83.8 | 82.7 | 74.7 | 159.1 |
| 125 | 63.7 | 66.1 | 66.7 | 66.9 | 73.2 | 75.0 | 76.9 | 78.6 | 79.9 | 83.6 | 82.4 | 80.3 | 74.0 | 158.6 |
| 160 | 66.9 | 67.6 | 68.0 | 68.0 | 72.5 | 75.8 | 77.7 | 79.4 | 80.7 | 82.9 | 80.9 | 78.0 | 71.8 | 158.0 |
| 200 | 64.5 | 68.8 | 69.0 | 68.8 | 72.2 | 75.3 | 77.2 | 78.9 | 80.2 | 81.6 | 79.8 | 76.3 | 70.4 | 157.3 |
| 250 | 64.9 | 68.0 | 68.7 | 69.0 | 73.0 | 76.2 | 78.0 | 79.5 | 80.6 | 81.0 | 79.9 | 76.4 | 69.5 | 157.7 |
| 315 | 65.4 | 68.0 | 68.6 | 68.8 | 72.1 | 75.4 | 77.3 | 78.9 | 80.1 | 80.9 | 78.9 | 73.9 | 68.3 | 157.3 |
| 400 | 64.5 | 68.2 | 68.5 | 68.4 | 72.5 | 75.5 | 77.1 | 78.3 | 79.2 | 80.7 | 77.6 | 72.7 | 67.0 | 157.2 |
| 500 | 64.4 | 67.4 | 68.0 | 68.2 | 72.0 | 75.7 | 77.3 | 78.5 | 79.4 | 79.9 | 75.7 | 70.9 | 64.5 | 157.0 |
| 630 | 63.3 | 66.2 | 67.4 | 68.0 | 72.2 | 75.1 | 76.4 | 77.3 | 77.9 | 77.7 | 74.8 | 69.2 | 62.2 | 156.2 |
| 800 | 62.4 | 66.1 | 67.1 | 67.5 | 71.9 | 75.7 | 76.6 | 77.2 | 77.3 | 78.0 | 73.6 | 67.3 | 59.7 | 156.5 |
| 1000 | 62.0 | 65.5 | 67.2 | 68.4 | 72.5 | 75.9 | 76.5 | 76.7 | 76.4 | 76.3 | 72.5 | 66.1 | 58.1 | 156.4 |
| 1250 | 60.5 | 65.3 | 66.7 | 67.6 | 71.3 | 75.3 | 75.6 | 75.5 | 75.0 | 74.7 | 70.4 | 64.5 | 56.2 | 156.0 |
| 1600 | 60.2 | 66.6 | 67.7 | 68.2 | 71.7 | 74.6 | 74.9 | 74.7 | 74.1 | 72.4 | 67.8 | 62.3 | 52.7 | 156.2 |
| 2000 | 60.8 | 67.0 | 67.8 | 67.8 | 71.1 | 74.6 | 74.0 | 73.1 | 71.5 | 70.0 | 64.9 | 58.1 | 47.1 | 156.6 |
| 2500 | 57.9 | 64.3 | 67.1 | 69.1 | 70.5 | 72.7 | 72.1 | 70.9 | 69.0 | 65.1 | 60.6 | 54.4 | 39.5 | 157.0 |
| 3150 | 51.5 | 58.5 | 62.3 | 65.1 | 67.6 | 70.4 | 69.0 | 67.0 | 64.2 | 60.0 | 54.2 | 45.1 | 26.8 | 157.2 |
| 4000 | 41.2 | 50.3 | 54.8 | 57.8 | 61.4 | 65.7 | 63.8 | 61.0 | 57.2 | 51.0 | 43.9 | 32.0 | 7.7 | 157.5 |
| 5000 | 27.5 | 37.6 | 44.2 | 48.8 | 52.3 | 56.2 | 54.6 | 51.8 | 47.6 | 40.1 | 30.4 | 14.3 | | 157.4 |
| 6300 | 5.1 | 20.4 | 28.8 | 34.4 | 38.6 | 43.2 | 41.3 | 37.7 | 32.1 | 22.7 | 9.8 | | | 158.4 |
| 8000 | | 1.1 | 9.4 | 14.3 | 20.0 | 17.8 | 13.1 | 5.5 | | | | | | 158.1 |
| 10000 | | | | | | | | | | | | | | 158.1 |
| 12500 | | | | | | | | | | | | | | 159.5 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH270 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 59.94 PAMB HG = 29.57 RELHUM = 48.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1215.4 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1988.1 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1605 TAPE = X16051 TEST PT NO = 1605 NC = AE100 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1606 X1606C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 85.6 | 90.2 | 85.8 | 81.5 | 78.8 | 82.2 | 82.5 | 82.8 | 83.2 | 85.7 | 88.6 | 90.8 | 88.7 | 127.8 |
| 53 | 87.0 | 92.8 | 91.6 | 90.1 | 85.5 | 87.8 | 88.3 | 88.8 | 89.3 | 90.9 | 88.8 | 91.0 | 94.4 | 131.9 |
| 60 | 87.3 | 92.3 | 89.0 | 85.6 | 86.2 | 90.1 | 90.3 | 90.4 | 90.6 | 90.9 | 92.0 | 94.5 | 86.9 | 132.2 |
| 100 | 86.2 | 91.0 | 88.3 | 85.5 | 87.9 | 90.3 | 90.2 | 90.1 | 90.0 | 92.3 | 94.7 | 98.6 | 88.6 | 133.3 |
| 125 | 83.9 | 87.2 | 86.6 | 86.0 | 88.6 | 90.7 | 90.5 | 90.4 | 90.2 | 93.8 | 97.6 | 101.1 | 90.5 | 134.6 |
| 150 | 81.9 | 84.2 | 83.4 | 82.5 | 84.6 | 87.0 | 87.6 | 88.2 | 88.7 | 94.1 | 98.4 | 102.4 | 93.5 | 134.8 |
| 200 | 81.8 | 83.8 | 82.6 | 81.4 | 84.0 | 86.6 | 88.4 | 90.2 | 92.1 | 93.4 | 97.8 | 104.0 | 95.4 | 135.7 |
| 250 | 80.3 | 83.6 | 82.5 | 81.4 | 84.7 | 87.1 | 88.7 | 90.3 | 91.8 | 97.9 | 101.5 | 106.0 | 96.9 | 137.9 |
| 315 | 80.6 | 84.1 | 83.3 | 82.4 | 85.0 | 88.4 | 89.8 | 91.2 | 92.6 | 98.5 | 102.1 | 106.0 | 97.7 | 138.3 |
| 400 | 81.1 | 84.1 | 82.9 | 81.7 | 85.0 | 87.4 | 89.8 | 92.2 | 94.6 | 100.4 | 103.1 | 105.5 | 95.9 | 138.7 |
| 500 | 81.8 | 84.6 | 83.3 | 81.9 | 85.8 | 88.4 | 90.6 | 92.7 | 94.9 | 100.7 | 102.1 | 103.5 | 93.2 | 137.8 |
| 600 | 81.8 | 84.6 | 83.7 | 82.9 | 86.2 | 89.3 | 91.4 | 93.5 | 95.6 | 101.7 | 102.6 | 100.2 | 89.9 | 137.7 |
| 800 | 83.6 | 86.6 | 84.7 | 82.7 | 89.3 | 90.6 | 92.6 | 94.5 | 96.4 | 101.0 | 100.3 | 96.3 | 88.2 | 136.7 |
| 1000 | 85.0 | 91.8 | 87.8 | 83.9 | 88.2 | 90.8 | 93.1 | 95.3 | 97.6 | 100.9 | 99.5 | 94.2 | 86.1 | 136.9 |
| 1250 | 83.7 | 86.7 | 85.7 | 84.6 | 87.4 | 91.0 | 93.1 | 95.1 | 97.2 | 100.5 | 97.9 | 92.1 | 85.8 | 136.2 |
| 1600 | 85.1 | 87.2 | 86.5 | 85.8 | 88.5 | 92.4 | 94.3 | 96.2 | 98.1 | 100.2 | 98.3 | 91.4 | 85.4 | 136.7 |
| 2000 | 86.3 | 87.8 | 86.5 | 85.1 | 88.7 | 92.1 | 94.2 | 96.3 | 98.5 | 100.5 | 97.0 | 90.2 | 85.4 | 136.7 |
| 2500 | 87.2 | 87.5 | 85.8 | 85.8 | 89.9 | 93.0 | 94.7 | 96.5 | 98.2 | 100.5 | 96.0 | 89.3 | 85.3 | 136.7 |
| 3150 | 87.5 | 87.6 | 87.1 | 86.6 | 89.7 | 93.8 | 95.7 | 97.6 | 99.5 | 100.0 | 95.5 | 89.6 | 84.1 | 137.2 |
| 4000 | 88.2 | 87.8 | 87.4 | 87.1 | 91.3 | 94.5 | 95.7 | 96.9 | 98.1 | 98.8 | 95.0 | 89.3 | 84.9 | 136.7 |
| 5000 | 88.2 | 88.7 | 87.9 | 87.2 | 91.2 | 95.2 | 96.2 | 97.2 | 98.1 | 100.0 | 95.1 | 90.0 | 84.9 | 137.4 |
| 6300 | 88.8 | 90.0 | 89.3 | 88.5 | 92.4 | 95.6 | 96.6 | 97.5 | 98.6 | 99.0 | 96.1 | 91.3 | 84.8 | 137.9 |
| 8000 | 89.9 | 90.0 | 89.2 | 88.3 | 91.9 | 96.0 | 96.4 | 96.7 | 97.1 | 98.4 | 95.6 | 91.6 | 86.2 | 137.8 |
| 10000 | 91.6 | 91.4 | 90.7 | 90.0 | 92.9 | 96.7 | 96.8 | 96.8 | 96.8 | 98.7 | 95.4 | 93.3 | 87.8 | 138.7 |
| 12500 | 92.9 | 93.7 | 92.6 | 91.4 | 93.5 | 97.0 | 96.8 | 96.6 | 96.4 | 96.9 | 93.8 | 92.7 | 88.5 | 139.5 |
| 16000 | 92.2 | 93.9 | 93.7 | 93.5 | 93.6 | 95.8 | 95.6 | 95.4 | 95.2 | 93.7 | 91.9 | 92.0 | 85.8 | 140.0 |
| 20000 | 89.1 | 91.2 | 91.5 | 91.7 | 92.7 | 96.5 | 95.3 | 94.1 | 93.0 | 91.5 | 89.6 | 89.3 | 83.6 | 140.5 |
| 25000 | 85.7 | 88.2 | 88.7 | 89.2 | 91.3 | 95.8 | 94.5 | 93.1 | 91.7 | 88.8 | 85.7 | 86.1 | 80.6 | 141.4 |
| 31500 | 82.9 | 85.4 | 86.2 | 87.0 | 88.0 | 92.8 | 91.8 | 90.7 | 89.7 | 86.4 | 83.6 | 83.2 | 77.0 | 141.9 |
| 40000 | 79.4 | 84.2 | 83.9 | 83.6 | 84.8 | 89.9 | 89.0 | 88.1 | 87.2 | 83.8 | 81.7 | 79.7 | 74.0 | 143.2 |
| 50000 | 73.2 | 80.4 | 79.6 | 78.9 | 79.6 | 85.4 | 84.6 | 83.7 | 82.9 | 80.1 | 76.5 | 75.6 | 68.8 | 143.1 |
| 63000 | 68.2 | 78.3 | 75.4 | 72.5 | 74.8 | 80.0 | 79.6 | 79.2 | 78.8 | 75.0 | 72.7 | 70.5 | 63.9 | 143.7 |
| 80000 | 64.1 | 75.6 | 70.6 | 65.6 | 67.5 | 74.0 | 73.4 | 72.8 | 72.1 | 69.0 | 66.0 | 63.6 | 56.0 | 144.9 |
| CASPL | 101.8 | 104.0 | 102.9 | 102.0 | 104.2 | 107.7 | 108.3 | 109.2 | 110.3 | 112.6 | 112.5 | 113.6 | 105.5 | 154.2 |
| PNL | 112.6 | 113.8 | 112.8 | 111.9 | 115.5 | 118.7 | 120.0 | 121.6 | 123.2 | 125.1 | 122.8 | 121.3 | 113.7 | |
| PNLT | 112.6 | 115.5 | 112.8 | 111.9 | 115.5 | 118.7 | 120.0 | 121.6 | 123.2 | 125.1 | 122.8 | 121.3 | 113.7 | |
| DBA | 98.6 | 100.1 | 98.9 | 97.9 | 101.6 | 105.0 | 106.4 | 107.9 | 109.5 | 111.8 | 110.0 | 108.2 | 100.0 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|------------------|--------------------|
| VERTICAL = ADR277 | TEST DATE = 05-17-83 | LOCAT = C41 ANECH CH | CONFIG = 16 | MODEL = SL | FLTVEL = 400.0 FPS |
| IAPLHA = SB59 | DEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 64.06 | PAMB HG = 29.36 | RELHUM = 46.0 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = |
| FMTNT = | LBS XNL | RPM | KNH | V8 = 1229.5 FPS | AE8 = 4.0 SQ IN |
| FNRAMB = | LBS XNLR | RPM | KNHR | V18 = 2020.7 FPS | AE18 = 19.9 SQ IN |
| RUNPT = 83F-400-1606 | TAPE = X1606C | TEST PT NO = 1606 | NC = AE100 | CORR FAN SPEED = | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1606 X1606F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

50
63
80
100
125
160

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|-------|------|------|-------|-------|-------|-------|-------|-------|
| 250 | 87.2 | 89.3 | 87.0 | 84.4 | 86.2 | 87.1 | 86.8 | 86.6 | 90.5 | 95.7 | 99.1 | 103.6 | 97.2 | 136.1 |
| 315 | 87.2 | 89.3 | 87.0 | 84.4 | 86.8 | 88.6 | 89.0 | 89.4 | 92.5 | 97.9 | 100.5 | 104.0 | 97.2 | 137.0 |
| 400 | 88.3 | 90.5 | 88.2 | 85.8 | 86.7 | 87.6 | 88.9 | 90.2 | 92.8 | 98.2 | 99.7 | 102.7 | 96.0 | 136.5 |
| 500 | 87.8 | 89.8 | 87.4 | 84.8 | 87.6 | 88.7 | 89.6 | 90.6 | 93.4 | 98.9 | 100.0 | 99.8 | 94.4 | 136.0 |
| 630 | 88.9 | 90.6 | 88.0 | 85.2 | 88.2 | 89.8 | 90.4 | 91.2 | 94.6 | 98.8 | 98.6 | 97.3 | 95.5 | 135.6 |
| 800 | 89.5 | 91.0 | 88.8 | 86.4 | 91.3 | 91.2 | 91.6 | 92.2 | 96.1 | 99.2 | 98.4 | 96.5 | 95.9 | 136.1 |
| 1000 | 91.3 | 93.1 | 89.7 | 86.3 | 89.8 | 91.5 | 92.2 | 93.2 | 96.0 | 99.0 | 96.9 | 94.5 | 95.7 | 135.9 |
| 1250 | 90.5 | 96.3 | 91.4 | 86.4 | 89.6 | 91.8 | 92.4 | 93.1 | 97.2 | 99.0 | 97.6 | 94.0 | 95.7 | 136.6 |
| 1600 | 91.3 | 93.2 | 90.8 | 88.4 | 91.0 | 93.4 | 94.1 | 94.6 | 98.0 | 99.7 | 96.7 | 93.3 | 96.1 | 136.9 |
| 2000 | 92.7 | 93.8 | 91.8 | 89.6 | 91.4 | 93.4 | 94.4 | 95.2 | 98.3 | 100.3 | 96.4 | 97.0 | 97.0 | 137.4 |
| 2500 | 93.8 | 94.3 | 91.8 | 89.1 | 92.8 | 94.6 | 95.5 | 95.9 | 99.7 | 99.9 | 95.8 | 92.9 | 94.5 | 137.8 |
| 3150 | 94.8 | 94.1 | 92.1 | 89.9 | 93.0 | 95.8 | 96.6 | 97.1 | 100.0 | 100.4 | 97.3 | 95.1 | 98.6 | 138.8 |
| 4000 | 95.1 | 94.2 | 92.7 | 91.0 | 95.5 | 97.0 | 97.7 | 97.9 | 99.9 | 101.4 | 97.0 | 95.4 | 98.1 | 139.5 |
| 5000 | 96.5 | 96.8 | 94.9 | 92.9 | 95.8 | 98.2 | 98.3 | 98.1 | 100.8 | 100.9 | 98.6 | 97.4 | 98.7 | 140.6 |
| 6300 | 98.4 | 97.7 | 95.5 | 93.2 | 97.0 | 98.6 | 98.9 | 98.8 | 100.0 | 101.2 | 99.1 | 98.7 | 100.4 | 141.2 |
| 8000 | 98.9 | 98.8 | 96.7 | 94.4 | 96.3 | 99.0 | 98.8 | 98.3 | 100.3 | 102.1 | 99.1 | 100.1 | 101.6 | 142.1 |
| 10000 | 98.9 | 98.7 | 96.4 | 94.0 | 96.9 | 99.7 | 99.2 | 98.6 | 97.8 | 97.8 | 95.0 | 97.0 | 99.7 | 141.6 |
| 12500 | 98.5 | 97.6 | 96.0 | 94.3 | 97.5 | 100.0 | 98.2 | 96.6 | 97.1 | 95.1 | 93.7 | 96.8 | 97.5 | 141.7 |
| 16000 | 99.2 | 99.3 | 97.3 | 95.2 | 97.6 | 98.8 | 97.0 | 95.4 | 95.3 | 93.3 | 91.8 | 94.5 | 95.7 | 142.7 |
| 20000 | 97.7 | 98.7 | 97.8 | 96.7 | 96.8 | 99.5 | 96.7 | 94.1 | 94.7 | 91.3 | 88.5 | 91.9 | 93.4 | 144.0 |
| 25000 | 94.4 | 95.8 | 95.2 | 94.5 | 95.9 | 98.8 | 95.9 | 93.1 | 93.4 | 89.6 | 87.1 | 89.8 | 90.6 | 144.8 |
| 31500 | 93.0 | 94.3 | 93.3 | 92.3 | 92.6 | 95.8 | 93.2 | 90.7 | 91.8 | 87.9 | 86.1 | 87.1 | 88.3 | 145.6 |
| 40000 | 89.4 | 90.6 | 90.0 | 89.2 | 89.4 | 92.9 | 90.4 | 88.1 | 88.4 | 85.5 | 82.5 | 84.7 | 84.8 | 146.5 |
| 50000 | 85.5 | 89.0 | 87.3 | 85.4 | 84.2 | 88.4 | 86.1 | 84.0 | 86.3 | 82.9 | 81.5 | 82.7 | 83.1 | 147.4 |
| 63000 | 78.4 | 84.3 | 82.1 | 79.7 | 79.4 | 83.0 | 81.5 | 80.1 | 81.3 | 78.6 | 76.8 | 78.1 | 77.8 | 147.7 |
| 80000 | 71.7 | 80.6 | 76.3 | 71.8 | 71.1 | 77.0 | 75.3 | 73.8 | 71.5 | 68.8 | 67.0 | 68.3 | 68.0 | 148.2 |

ORIGINAL PAGE IS
OF POOR QUALITY

QASPL 108.8 109.1 107.2 107.6 109.8 109.2 108.7 110.8 112.2 110.8 111.6 110.6 156.7
 PNL 119.5 119.1 116.9 114.7 117.9 119.8 120.2 120.5 122.9 124.6 122.0 121.2 122.1
 PNLT 119.5 120.2 116.9 114.7 117.9 119.8 120.2 120.5 122.9 124.6 122.0 121.2 122.1
 DBA 194.2 201.8 198.1 194.6 194.0 199.0 197.3 195.8 195.2 192.3 190.6 191.9 191.7

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH277 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 400. FPS
 IAPLHA = SB59 IEQA = NO PWL AREA = FULL SPHERE TAMB F = 64.06 PAMB H9 = 29.36 RELHUM = 46.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FNIN1 = LBS XNL RPM V8 = 1229.5 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM V18 = 2020.7 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1606 TAPE = X1606F TEST PT NO = 1606 NC = AE100 CORR FAN SPEED = RPM

IDENTIFICATION - 89F-400-1606 X16061

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 63.1 | 66.8 | 65.4 | 63.6 | 66.4 | 68.3 | 68.6 | 68.6 | 71.0 | 75.3 | 76.3 | 77.7 | 67.5 | 152.4 |
| 63 | 64.1 | 67.9 | 66.7 | 65.0 | 66.3 | 67.3 | 68.5 | 69.4 | 71.3 | 75.6 | 75.6 | 76.4 | 66.3 | 151.8 |
| 80 | 63.6 | 67.2 | 65.8 | 64.0 | 67.2 | 68.4 | 69.2 | 69.8 | 71.8 | 76.3 | 75.8 | 73.4 | 64.6 | 151.3 |
| 100 | 64.6 | 67.9 | 66.4 | 64.3 | 67.4 | 69.4 | 69.9 | 70.3 | 73.0 | 76.1 | 74.3 | 70.8 | 65.6 | 150.9 |
| 125 | 65.1 | 68.2 | 67.0 | 65.4 | 70.8 | 70.7 | 71.1 | 71.2 | 74.4 | 76.3 | 74.0 | 69.8 | 65.7 | 151.5 |
| 160 | 66.7 | 70.1 | 67.9 | 65.1 | 69.1 | 70.9 | 71.5 | 72.0 | 74.1 | 76.0 | 72.3 | 67.5 | 65.1 | 151.3 |
| 200 | 65.6 | 73.2 | 69.3 | 65.1 | 68.8 | 71.1 | 71.5 | 71.9 | 75.2 | 75.8 | 72.8 | 66.8 | 64.6 | 151.9 |
| 250 | 66.1 | 69.7 | 68.5 | 66.8 | 69.9 | 72.5 | 73.1 | 73.1 | 75.7 | 76.2 | 71.5 | 65.6 | 64.4 | 152.2 |
| 315 | 67.1 | 69.9 | 69.2 | 67.9 | 70.0 | 72.2 | 73.1 | 73.4 | 75.7 | 76.5 | 70.8 | 65.0 | 64.5 | 152.7 |
| 400 | 67.7 | 70.1 | 68.8 | 67.0 | 71.2 | 73.1 | 73.8 | 73.7 | 76.7 | 75.7 | 69.7 | 64.0 | 61.0 | 153.2 |
| 500 | 68.1 | 69.4 | 68.7 | 67.5 | 71.0 | 74.0 | 74.6 | 74.7 | 76.7 | 75.7 | 70.7 | 65.5 | 64.0 | 154.1 |
| 630 | 67.9 | 69.1 | 69.0 | 68.2 | 73.2 | 74.9 | 75.4 | 75.0 | 76.1 | 76.3 | 69.8 | 65.0 | 62.4 | 154.8 |
| 800 | 70.8 | 71.2 | 70.8 | 69.7 | 73.2 | 75.7 | 75.7 | 74.9 | 76.7 | 75.3 | 70.8 | 66.3 | 61.8 | 155.9 |
| 1000 | 70.0 | 71.6 | 71.0 | 69.7 | 74.1 | 75.9 | 76.0 | 75.3 | 75.5 | 75.2 | 70.8 | 66.8 | 62.2 | 156.6 |
| 1250 | 69.9 | 72.3 | 71.8 | 70.6 | 73.1 | 76.0 | 75.5 | 74.4 | 75.4 | 75.4 | 70.1 | 67.2 | 61.8 | 157.4 |
| 1600 | 68.7 | 71.3 | 70.8 | 69.5 | 73.2 | 76.1 | 75.4 | 74.2 | 72.2 | 70.4 | 64.8 | 62.4 | 57.2 | 156.9 |
| 2000 | 66.8 | 69.0 | 69.5 | 69.1 | 73.0 | 75.7 | 73.7 | 71.4 | 70.6 | 66.6 | 62.0 | 60.1 | 51.5 | 157.0 |
| 2500 | 65.4 | 69.1 | 69.5 | 68.9 | 72.1 | 73.6 | 71.6 | 69.1 | 67.5 | 63.2 | 57.9 | 54.6 | 44.4 | 158.0 |
| 3150 | 65.8 | 65.5 | 67.5 | 68.3 | 69.3 | 72.4 | 69.3 | 65.7 | 64.4 | 58.1 | 50.6 | 46.4 | 33.0 | 159.4 |
| 4000 | 49.6 | 57.0 | 60.3 | 62.0 | 64.7 | 68.1 | 64.7 | 60.6 | 58.5 | 50.9 | 42.3 | 34.6 | 15.0 | 160.1 |
| 5000 | 37.6 | 47.1 | 51.4 | 53.5 | 55.5 | 59.3 | 56.2 | 52.0 | 49.9 | 40.8 | 30.6 | 17.3 | | 160.9 |
| 6300 | 15.7 | 28.9 | 35.6 | 39.3 | 41.9 | 46.2 | 42.9 | 38.2 | 34.0 | 23.8 | 8.9 | | | 161.8 |
| 8000 | 1.6 | 10.6 | 15.3 | 17.7 | 23.0 | 19.5 | 13.9 | 9.6 | | | | | | 162.7 |
| 10000 | | | | | | | | | | | | | | 163.0 |
| 12500 | | | | | | | | | | | | | | 163.5 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

P118-03

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH277 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 64.06 PAMB HG = 29.36 RELHUM = 46.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1229.5 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2020.7 FPS AE18 = 19.9 SQ IN
 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1607 X1607C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.6 | 86.2 | 84.9 | 83.7 | 81.6 | 84.2 | 84.6 | 85.0 | 85.4 | 89.7 | 90.9 | 92.1 | 88.5 | 128.8 |
| 63 | 88.0 | 92.8 | 91.3 | 89.9 | 87.5 | 91.3 | 91.4 | 91.5 | 91.6 | 95.9 | 95.0 | 95.0 | 95.0 | 93.6 |
| 80 | 89.3 | 93.6 | 90.5 | 87.4 | 88.7 | 93.6 | 93.2 | 92.8 | 92.3 | 93.7 | 95.8 | 97.5 | 82.4 | 134.8 |
| 100 | 89.0 | 94.2 | 91.8 | 89.3 | 92.1 | 94.5 | 94.3 | 94.2 | 94.0 | 97.1 | 98.7 | 102.1 | 87.3 | 137.2 |
| 125 | 85.9 | 88.9 | 89.6 | 90.2 | 93.3 | 95.7 | 95.4 | 95.2 | 94.9 | 97.5 | 103.1 | 106.1 | 92.2 | 139.4 |
| 160 | 85.4 | 84.7 | 85.1 | 85.5 | 88.9 | 91.7 | 92.5 | 93.2 | 94.0 | 98.6 | 103.9 | 106.9 | 97.3 | 139.5 |
| 200 | 86.0 | 85.3 | 85.3 | 85.4 | 89.5 | 93.3 | 94.8 | 96.3 | 97.8 | 99.6 | 104.8 | 109.5 | 101.1 | 141.6 |
| 250 | 86.0 | 88.3 | 87.8 | 87.4 | 90.2 | 93.3 | 95.1 | 96.8 | 98.6 | 104.7 | 109.0 | 112.2 | 103.6 | 144.6 |
| 315 | 86.3 | 88.6 | 88.0 | 87.4 | 91.3 | 94.4 | 96.6 | 97.9 | 99.1 | 105.7 | 110.3 | 113.5 | 106.7 | 145.9 |
| 400 | 86.3 | 89.4 | 88.8 | 88.2 | 91.5 | 94.6 | 96.9 | 99.1 | 101.4 | 108.4 | 112.3 | 114.5 | 108.2 | 147.5 |
| 500 | 86.1 | 90.1 | 89.4 | 88.7 | 92.0 | 95.4 | 97.5 | 99.6 | 101.6 | 108.5 | 112.4 | 115.0 | 108.9 | 147.8 |
| 630 | 86.3 | 91.1 | 90.6 | 90.1 | 93.2 | 96.6 | 98.6 | 102.6 | 102.6 | 108.9 | 111.8 | 113.5 | 109.4 | 147.3 |
| 800 | 91.1 | 90.8 | 90.4 | 90.4 | 95.8 | 97.4 | 99.3 | 101.2 | 103.1 | 108.5 | 110.6 | 111.5 | 109.2 | 146.4 |
| 1000 | 94.3 | 93.8 | 92.8 | 91.9 | 95.4 | 98.6 | 100.6 | 102.6 | 104.6 | 107.6 | 109.8 | 110.7 | 108.6 | 146.1 |
| 1250 | 91.9 | 94.0 | 93.4 | 92.9 | 95.4 | 99.0 | 100.6 | 102.1 | 103.7 | 106.8 | 107.9 | 109.4 | 107.8 | 145.1 |
| 1600 | 92.8 | 94.0 | 93.6 | 93.3 | 96.0 | 99.6 | 101.4 | 103.1 | 104.9 | 107.0 | 108.6 | 108.9 | 106.9 | 145.5 |
| 2000 | 93.8 | 94.6 | 93.7 | 92.9 | 95.5 | 98.6 | 100.6 | 102.7 | 104.7 | 107.3 | 108.0 | 107.5 | 106.9 | 145.0 |
| 2500 | 93.2 | 94.7 | 93.7 | 92.8 | 96.4 | 99.5 | 101.2 | 103.0 | 104.7 | 107.5 | 107.2 | 106.8 | 105.6 | 144.9 |
| 3150 | 93.0 | 94.3 | 93.6 | 92.9 | 96.2 | 99.8 | 101.6 | 103.4 | 105.2 | 106.8 | 106.6 | 105.1 | 102.9 | 144.5 |
| 4000 | 92.2 | 94.1 | 93.3 | 92.6 | 96.8 | 100.0 | 101.3 | 102.7 | 104.1 | 105.0 | 104.8 | 104.3 | 101.7 | 143.7 |
| 5000 | 91.9 | 94.2 | 93.4 | 92.7 | 96.5 | 99.7 | 101.2 | 102.7 | 104.2 | 105.8 | 104.8 | 103.0 | 100.4 | 143.7 |
| 6300 | 92.8 | 95.0 | 94.3 | 93.6 | 97.4 | 99.9 | 101.2 | 102.6 | 103.9 | 104.1 | 104.3 | 102.6 | 98.8 | 143.5 |
| 8000 | 94.0 | 96.3 | 95.1 | 93.9 | 96.3 | 99.8 | 100.7 | 101.5 | 102.4 | 102.5 | 102.7 | 100.4 | 98.0 | 142.9 |
| 10000 | 95.9 | 99.7 | 98.0 | 96.3 | 98.0 | 100.2 | 100.6 | 101.0 | 101.4 | 101.3 | 100.2 | 99.6 | 97.4 | 143.3 |
| 12500 | 96.0 | 99.0 | 98.8 | 98.5 | 99.5 | 100.8 | 100.7 | 100.6 | 100.4 | 99.2 | 97.8 | 97.5 | 95.8 | 143.9 |
| 16000 | 93.8 | 95.9 | 98.0 | 99.1 | 99.9 | 101.1 | 100.4 | 99.7 | 99.0 | 96.5 | 96.2 | 96.3 | 92.1 | 144.5 |
| 20000 | 91.6 | 94.2 | 95.0 | 95.7 | 97.7 | 100.0 | 98.8 | 97.6 | 96.4 | 94.7 | 93.1 | 92.8 | 89.1 | 144.2 |
| 25000 | 88.6 | 92.1 | 92.6 | 93.1 | 95.2 | 98.2 | 97.0 | 95.8 | 94.6 | 91.5 | 90.3 | 89.8 | 84.3 | 144.4 |
| 31500 | 85.6 | 88.3 | 89.8 | 91.2 | 91.7 | 95.3 | 94.1 | 93.0 | 91.9 | 89.1 | 87.3 | 86.7 | 80.5 | 144.7 |
| 40000 | 82.0 | 86.4 | 87.0 | 87.5 | 89.0 | 92.9 | 91.7 | 90.4 | 89.2 | 86.7 | 84.7 | 82.7 | 77.0 | 145.0 |
| 50000 | 76.0 | 80.5 | 81.8 | 83.1 | 84.1 | 88.4 | 87.4 | 86.3 | 85.3 | 82.4 | 79.7 | 78.2 | 71.2 | 145.9 |
| 63000 | 71.0 | 75.7 | 76.7 | 77.7 | 79.3 | 83.6 | 82.7 | 81.8 | 80.9 | 77.3 | 75.9 | 73.1 | 66.0 | 146.5 |
| 80000 | 65.2 | 70.3 | 71.0 | 71.6 | 72.9 | 78.4 | 77.4 | 76.5 | 75.5 | 71.0 | 69.3 | 66.5 | 59.1 | 147.8 |
| 0ASPL | 106.1 | 108.5 | 107.9 | 107.5 | 109.9 | 112.6 | 113.6 | 114.8 | 116.1 | 119.3 | 121.5 | 123.2 | 118.7 | 159.8 |
| PNL | 117.7 | 119.4 | 118.6 | 117.8 | 121.2 | 124.4 | 125.9 | 127.4 | 129.0 | 131.4 | 132.4 | 132.6 | 129.5 | |
| PNLT | 117.7 | 119.4 | 118.6 | 117.8 | 121.2 | 124.4 | 125.9 | 127.4 | 129.0 | 131.4 | 132.4 | 132.6 | 129.5 | |
| DBA | 104.4 | 106.1 | 105.2 | 104.4 | 107.7 | 110.8 | 112.4 | 114.0 | 115.7 | 118.4 | 119.9 | 120.7 | 117.7 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADR271 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = T6 MODEL = SL FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 60.88 PAMB HG = 29.54 RELHUM = 48.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNLR = RPM XNHR = RPM V8 = 1308.7 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V10 = 2148.3 FPS AE10 = 19.9 SQ IN

RUNPT = 83F-ZER-1607 TAPE = X1607C TEST PT NO = 1607 NC = AE100 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1607 X1607F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.6 | 86.2 | 84.9 | 83.7 | 81.6 | 84.2 | 84.6 | 85.0 | 85.4 | 89.7 | 90.9 | 92.1 | 88.5 | 128.8 |
| 63 | 88.0 | 92.6 | 91.3 | 89.9 | 87.5 | 91.3 | 91.4 | 91.5 | 91.6 | 95.9 | 95.0 | 95.0 | 93.6 | 134.3 |
| 80 | 89.3 | 93.6 | 90.5 | 87.4 | 88.7 | 93.6 | 93.2 | 92.8 | 92.3 | 93.7 | 95.8 | 97.5 | 82.4 | 134.8 |
| 100 | 89.0 | 94.2 | 91.8 | 89.3 | 92.1 | 94.5 | 94.3 | 94.2 | 94.0 | 97.1 | 98.7 | 102.1 | 87.3 | 137.2 |
| 125 | 85.9 | 88.9 | 89.6 | 90.2 | 93.3 | 95.4 | 95.4 | 95.2 | 94.9 | 97.5 | 103.1 | 106.1 | 92.2 | 139.4 |
| 160 | 85.4 | 84.7 | 85.1 | 85.5 | 88.9 | 91.7 | 92.5 | 93.2 | 94.0 | 98.6 | 103.9 | 106.9 | 97.3 | 139.5 |
| 200 | 86.0 | 85.3 | 85.3 | 85.4 | 89.5 | 93.3 | 94.8 | 96.3 | 97.8 | 99.6 | 104.8 | 109.5 | 101.1 | 141.6 |
| 250 | 86.0 | 88.3 | 87.8 | 87.4 | 90.2 | 93.3 | 95.1 | 96.8 | 98.6 | 104.7 | 109.0 | 112.2 | 103.6 | 144.6 |
| 315 | 86.3 | 88.6 | 88.0 | 87.4 | 91.3 | 95.4 | 96.6 | 97.9 | 99.1 | 105.7 | 110.3 | 113.5 | 106.7 | 145.9 |
| 400 | 88.3 | 89.4 | 88.8 | 88.2 | 91.5 | 94.6 | 96.9 | 99.1 | 101.4 | 108.4 | 112.3 | 114.5 | 108.2 | 147.5 |
| 500 | 88.1 | 90.1 | 89.4 | 88.7 | 92.0 | 95.4 | 97.5 | 99.6 | 101.6 | 108.5 | 112.4 | 115.0 | 108.9 | 147.8 |
| 630 | 88.3 | 91.1 | 90.6 | 90.1 | 93.2 | 96.6 | 98.6 | 100.6 | 102.6 | 108.9 | 111.8 | 113.5 | 109.4 | 147.3 |
| 800 | 91.1 | 91.1 | 90.8 | 90.4 | 95.8 | 97.4 | 99.3 | 101.2 | 103.1 | 108.5 | 110.6 | 111.5 | 109.2 | 146.4 |
| 1000 | 94.3 | 93.8 | 92.8 | 91.9 | 95.4 | 98.6 | 100.6 | 102.6 | 104.6 | 107.6 | 109.8 | 110.7 | 108.6 | 146.1 |
| 1250 | 91.9 | 94.0 | 93.4 | 92.9 | 95.4 | 99.0 | 100.6 | 102.1 | 103.7 | 106.8 | 107.9 | 109.4 | 107.8 | 145.1 |
| 1600 | 92.8 | 94.0 | 93.6 | 93.3 | 96.0 | 99.6 | 101.4 | 103.1 | 104.9 | 107.0 | 108.8 | 108.6 | 106.9 | 145.5 |
| 2000 | 93.8 | 94.6 | 93.7 | 92.9 | 95.5 | 98.6 | 100.6 | 102.7 | 104.7 | 107.3 | 108.0 | 107.5 | 106.9 | 145.0 |
| 2500 | 93.2 | 94.7 | 93.7 | 92.8 | 96.4 | 99.5 | 101.2 | 103.0 | 104.7 | 107.5 | 107.2 | 106.8 | 105.6 | 144.9 |
| 3150 | 94.3 | 93.6 | 92.9 | 92.9 | 95.2 | 99.8 | 101.6 | 103.4 | 105.2 | 106.8 | 106.6 | 105.1 | 102.9 | 144.5 |
| 4000 | 92.2 | 94.1 | 93.3 | 92.6 | 96.8 | 100.0 | 101.3 | 102.7 | 104.1 | 105.0 | 105.8 | 104.3 | 101.7 | 143.7 |
| 5000 | 91.9 | 94.2 | 93.4 | 92.7 | 96.5 | 99.7 | 101.2 | 102.7 | 104.2 | 105.8 | 104.8 | 103.0 | 100.4 | 143.7 |
| 6300 | 92.8 | 95.0 | 94.3 | 93.6 | 97.4 | 99.9 | 101.2 | 102.6 | 103.9 | 104.1 | 104.3 | 102.6 | 98.8 | 143.5 |
| 8000 | 94.0 | 96.3 | 95.1 | 93.9 | 95.3 | 99.8 | 100.7 | 101.5 | 102.4 | 102.5 | 102.7 | 100.4 | 98.0 | 142.9 |
| 10000 | 95.9 | 99.7 | 98.0 | 96.3 | 98.0 | 100.2 | 100.6 | 101.0 | 101.4 | 101.3 | 100.2 | 99.6 | 97.4 | 143.3 |
| 12500 | 96.0 | 99.0 | 98.8 | 98.5 | 99.5 | 100.8 | 100.7 | 100.6 | 100.4 | 99.2 | 97.8 | 97.5 | 95.8 | 143.9 |
| 16000 | 93.8 | 96.9 | 98.0 | 98.1 | 99.9 | 101.1 | 100.4 | 99.7 | 99.0 | 96.5 | 96.2 | 96.3 | 92.1 | 144.5 |
| 20000 | 91.6 | 94.2 | 95.0 | 95.7 | 97.7 | 100.0 | 98.8 | 97.6 | 96.4 | 94.7 | 93.1 | 92.8 | 89.1 | 144.2 |
| 25000 | 88.6 | 92.1 | 92.6 | 93.1 | 95.2 | 98.2 | 97.0 | 95.8 | 94.6 | 91.5 | 90.3 | 89.8 | 84.3 | 144.4 |
| 31500 | 85.6 | 88.3 | 89.8 | 91.2 | 91.7 | 95.3 | 94.1 | 93.0 | 91.9 | 89.1 | 87.3 | 86.7 | 80.5 | 144.7 |
| 40000 | 82.0 | 86.4 | 87.0 | 87.5 | 89.0 | 92.9 | 91.7 | 90.4 | 89.2 | 86.7 | 84.7 | 82.7 | 77.0 | 146.0 |
| 50000 | 76.0 | 80.5 | 81.8 | 83.1 | 84.1 | 88.4 | 87.4 | 86.3 | 85.3 | 82.4 | 79.7 | 78.2 | 71.2 | 145.9 |
| 63000 | 71.0 | 75.7 | 76.7 | 77.7 | 79.3 | 83.6 | 82.7 | 81.8 | 80.9 | 77.3 | 75.9 | 73.1 | 66.0 | 146.5 |
| 80000 | 65.2 | 70.3 | 71.0 | 71.6 | 72.9 | 78.4 | 77.4 | 76.5 | 75.5 | 71.0 | 69.3 | 66.5 | 59.1 | 147.8 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH271 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 60.88 PAMB HG = 29.54 RELHUM = 48.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT. EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNLR = RPM XNHR = RPM V8 = 1308.7 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V10 = 2148.3 FPS AE10 = 19.9 SQ IN
 CORR FAN SPEED = RPM

8-1-83

IDENTIFICATION - 83F-ZER-1607 X16071

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 62.2 | 66.0 | 66.5 | 66.6 | 70.9 | 75.1 | 76.2 | 77.1 | 77.6 | 83.1 | 86.2 | 87.2 | 87.0 | 161.3 |
| 63 | 64.2 | 66.7 | 67.2 | 67.3 | 71.1 | 74.3 | 76.5 | 78.3 | 79.8 | 85.8 | 88.2 | 88.1 | 88.1 | 162.8 |
| 80 | 63.9 | 67.5 | 67.8 | 67.8 | 71.6 | 75.1 | 77.0 | 78.7 | 80.1 | 85.8 | 88.1 | 88.6 | 88.6 | 163.1 |
| 100 | 64.0 | 68.4 | 69.0 | 69.2 | 72.7 | 76.2 | 78.1 | 79.7 | 81.0 | 86.2 | 87.5 | 86.9 | 86.9 | 162.6 |
| 125 | 66.7 | 68.3 | 69.1 | 69.4 | 75.2 | 77.0 | 78.7 | 80.2 | 81.4 | 85.6 | 86.2 | 84.8 | 84.8 | 161.8 |
| 160 | 69.7 | 70.8 | 71.0 | 70.7 | 74.8 | 78.0 | 79.9 | 81.4 | 82.7 | 84.7 | 85.2 | 83.8 | 83.8 | 161.4 |
| 200 | 67.1 | 70.8 | 71.4 | 71.6 | 74.5 | 78.3 | 79.7 | 80.9 | 81.7 | 83.6 | 83.1 | 82.1 | 82.1 | 160.4 |
| 250 | 67.7 | 70.5 | 71.3 | 71.8 | 75.0 | 78.7 | 80.3 | 81.6 | 82.6 | 83.5 | 83.7 | 80.9 | 80.9 | 160.8 |
| 315 | 68.2 | 70.7 | 71.1 | 71.1 | 74.1 | 77.4 | 79.3 | 80.9 | 82.1 | 83.4 | 82.4 | 79.2 | 74.3 | 160.4 |
| 400 | 67.0 | 70.5 | 70.8 | 70.6 | 74.7 | 78.0 | 79.6 | 80.8 | 81.7 | 83.2 | 81.1 | 77.9 | 72.0 | 160.2 |
| 500 | 66.4 | 69.7 | 70.3 | 70.4 | 74.2 | 78.0 | 79.6 | 80.9 | 81.9 | 82.1 | 79.9 | 75.4 | 68.3 | 159.8 |
| 630 | 65.0 | 68.9 | 69.6 | 69.8 | 74.5 | 77.8 | 79.0 | 79.9 | 80.4 | 79.9 | 78.6 | 73.9 | 66.0 | 159.1 |
| 800 | 64.1 | 68.6 | 69.3 | 69.5 | 73.9 | 77.2 | 78.5 | 79.5 | 80.0 | 80.2 | 77.1 | 71.8 | 63.4 | 159.0 |
| 1000 | 64.5 | 68.9 | 69.8 | 70.1 | 74.5 | 77.2 | 78.3 | 79.1 | 79.4 | 78.0 | 76.0 | 70.6 | 60.6 | 158.9 |
| 1250 | 64.9 | 69.8 | 70.2 | 70.0 | 73.0 | 76.8 | 77.4 | 77.7 | 77.5 | 75.9 | 73.6 | 67.4 | 58.1 | 158.2 |
| 1600 | 65.7 | 72.3 | 72.4 | 71.9 | 74.2 | 76.6 | 76.8 | 76.5 | 75.8 | 73.9 | 70.0 | 65.0 | 54.9 | 158.6 |
| 2000 | 64.3 | 70.5 | 72.3 | 73.3 | 75.1 | 76.5 | 76.2 | 75.4 | 74.0 | 70.7 | 66.1 | 60.8 | 49.8 | 159.2 |
| 2500 | 59.9 | 66.7 | 70.2 | 72.8 | 74.4 | 75.9 | 74.9 | 73.4 | 71.2 | 66.3 | 62.3 | 56.4 | 40.8 | 159.9 |
| 3150 | 53.8 | 61.0 | 64.7 | 67.3 | 70.3 | 72.9 | 71.4 | 69.2 | 66.2 | 61.5 | 55.2 | 47.3 | 28.8 | 159.5 |
| 4000 | 43.8 | 53.3 | 57.7 | 60.6 | 64.0 | 67.5 | 65.8 | 63.3 | 59.7 | 52.7 | 45.5 | 34.5 | 8.7 | 159.7 |
| 5000 | 30.1 | 41.2 | 47.8 | 52.5 | 54.7 | 58.8 | 57.1 | 54.3 | 49.9 | 41.9 | 31.8 | 16.9 | | 160.0 |
| 6300 | 8.3 | 24.7 | 32.6 | 37.6 | 41.5 | 46.2 | 44.2 | 40.5 | 34.8 | 25.0 | 11.0 | | | 161.3 |
| 8000 | | 5.1 | 13.0 | 17.6 | 23.0 | 20.8 | 16.2 | 8.6 | | | | | | 161.2 |
| 10000 | | | | | | | | | | | | | | 161.8 |
| 12500 | | | | | | | | | | | | | | 163.1 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS OF POOR QUALITY

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH271 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 60.88 PAMB HG = 29.54 RELHUM = 48.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1308.7 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2148.3 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1607 TAPE = X16071 TEST PT NO = 1607 NC = AE100 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1608 XT1608C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 91.4 | 86.4 | 84.1 | 81.7 | 81.6 | 83.4 | 84.2 | 84.9 | 85.7 | 86.5 | 90.9 | 93.1 | 89.5 | 129.1 |
| 63 | 90.3 | 91.5 | 91.2 | 90.9 | 88.2 | 89.8 | 90.2 | 90.6 | 91.1 | 90.4 | 91.5 | 95.2 | 95.6 | 133.3 |
| 80 | 91.3 | 93.6 | 90.7 | 87.9 | 89.0 | 92.8 | 92.6 | 92.3 | 92.1 | 92.4 | 94.3 | 96.7 | 92.4 | 134.4 |
| 100 | 90.2 | 92.5 | 90.0 | 87.5 | 90.1 | 92.8 | 92.5 | 92.3 | 92.0 | 94.6 | 96.2 | 100.9 | 91.6 | 135.5 |
| 125 | 87.9 | 87.7 | 88.3 | 89.0 | 91.6 | 93.7 | 93.2 | 92.7 | 92.2 | 95.5 | 100.4 | 104.1 | 94.2 | 137.3 |
| 160 | 85.4 | 83.0 | 83.5 | 84.0 | 85.9 | 88.7 | 89.2 | 89.6 | 90.0 | 95.1 | 100.7 | 105.1 | 95.5 | 137.1 |
| 200 | 84.5 | 84.3 | 83.7 | 83.1 | 85.7 | 88.8 | 90.7 | 92.5 | 94.3 | 96.1 | 100.8 | 107.0 | 98.6 | 138.5 |
| 250 | 83.0 | 85.3 | 84.3 | 83.4 | 86.5 | 89.3 | 91.1 | 92.8 | 94.6 | 100.7 | 104.8 | 109.2 | 100.1 | 141.0 |
| 315 | 83.1 | 85.1 | 84.7 | 84.2 | 87.0 | 89.9 | 91.5 | 93.1 | 94.6 | 101.7 | 105.8 | 109.3 | 101.2 | 141.5 |
| 400 | 84.6 | 85.1 | 84.3 | 83.4 | 87.5 | 90.7 | 92.2 | 94.3 | 96.4 | 103.4 | 105.6 | 109.0 | 99.9 | 141.9 |
| 500 | 85.1 | 86.1 | 85.2 | 84.2 | 87.8 | 91.1 | 93.2 | 95.3 | 97.4 | 104.2 | 106.4 | 108.0 | 97.7 | 141.7 |
| 630 | 84.5 | 85.8 | 85.5 | 85.1 | 88.5 | 91.8 | 93.8 | 95.7 | 97.6 | 104.4 | 106.1 | 105.5 | 94.4 | 141.0 |
| 800 | 85.8 | 86.1 | 85.9 | 85.7 | 91.5 | 92.6 | 94.7 | 96.8 | 98.9 | 103.7 | 104.1 | 101.5 | 91.7 | 139.8 |
| 1000 | 89.3 | 86.8 | 86.4 | 86.1 | 90.4 | 93.6 | 95.7 | 97.9 | 100.1 | 103.9 | 103.3 | 97.9 | 90.9 | 139.7 |
| 1250 | 86.9 | 88.0 | 87.3 | 86.6 | 89.9 | 93.5 | 95.6 | 97.8 | 100.0 | 102.8 | 101.7 | 95.1 | 88.8 | 138.9 |
| 1600 | 88.1 | 88.0 | 87.9 | 87.8 | 91.3 | 95.1 | 97.0 | 98.8 | 100.6 | 103.2 | 101.8 | 93.9 | 89.4 | 139.5 |
| 2000 | 89.8 | 88.1 | 87.7 | 87.4 | 91.2 | 94.3 | 96.5 | 98.8 | 101.0 | 103.3 | 100.8 | 93.0 | 88.4 | 139.3 |
| 2500 | 89.4 | 88.7 | 88.2 | 87.8 | 92.6 | 95.3 | 97.0 | 98.7 | 100.4 | 103.7 | 100.0 | 92.3 | 88.5 | 139.4 |
| 3150 | 89.5 | 88.8 | 88.8 | 88.9 | 92.5 | 95.8 | 97.7 | 99.6 | 101.4 | 102.8 | 98.3 | 92.1 | 87.1 | 139.6 |
| 4000 | 89.5 | 89.5 | 89.2 | 88.8 | 93.0 | 96.2 | 97.5 | 98.8 | 100.1 | 101.3 | 98.2 | 92.5 | 86.9 | 138.8 |
| 5000 | 90.4 | 90.6 | 89.9 | 89.2 | 93.0 | 96.7 | 98.0 | 99.3 | 100.6 | 102.0 | 98.3 | 92.4 | 86.6 | 139.5 |
| 6300 | 92.3 | 91.7 | 91.1 | 90.6 | 94.4 | 96.9 | 97.9 | 99.0 | 100.1 | 101.0 | 98.5 | 93.0 | 87.5 | 139.6 |
| 8000 | 94.1 | 93.7 | 92.5 | 91.3 | 93.7 | 97.0 | 97.7 | 98.3 | 99.0 | 100.9 | 98.1 | 94.3 | 89.1 | 139.8 |
| 10000 | 96.3 | 97.9 | 96.1 | 94.2 | 95.8 | 97.8 | 98.4 | 99.0 | 99.5 | 100.2 | 97.6 | 96.2 | 91.3 | 141.4 |
| 12500 | 97.9 | 98.9 | 98.0 | 97.1 | 97.9 | 99.4 | 98.9 | 98.5 | 98.1 | 98.6 | 96.7 | 94.7 | 90.9 | 142.5 |
| 16000 | 94.4 | 96.3 | 97.1 | 96.0 | 98.5 | 100.0 | 98.9 | 97.9 | 96.8 | 96.3 | 94.8 | 94.0 | 88.7 | 143.3 |
| 20000 | 92.1 | 93.6 | 94.1 | 94.7 | 96.7 | 99.4 | 98.1 | 96.7 | 95.4 | 93.9 | 92.0 | 92.0 | 85.8 | 143.4 |
| 25000 | 89.5 | 91.2 | 91.6 | 92.0 | 93.8 | 98.1 | 96.7 | 95.3 | 94.0 | 91.1 | 88.9 | 88.6 | 82.6 | 143.8 |
| 31500 | 86.0 | 88.3 | 89.4 | 90.4 | 91.1 | 94.9 | 93.9 | 92.9 | 91.8 | 89.3 | 86.7 | 85.6 | 79.7 | 144.4 |
| 40000 | 83.3 | 85.4 | 86.2 | 86.9 | 88.2 | 92.8 | 91.8 | 90.9 | 89.9 | 87.8 | 84.4 | 83.3 | 75.6 | 146.0 |
| 50000 | 77.6 | 80.1 | 81.1 | 82.0 | 84.5 | 88.5 | 87.8 | 87.1 | 86.4 | 83.2 | 80.7 | 79.5 | 72.0 | 146.3 |
| 63000 | 74.2 | 76.2 | 76.8 | 77.3 | 79.3 | 83.8 | 83.2 | 82.7 | 82.2 | 79.1 | 77.1 | 74.8 | 66.4 | 147.1 |
| 80000 | 71.0 | 70.4 | 70.7 | 70.9 | 73.1 | 79.1 | 78.0 | 76.9 | 75.9 | 73.5 | 71.0 | 68.9 | 59.7 | 148.4 |
| GASPL | 105.7 | 106.2 | 105.6 | 105.2 | 107.2 | 109.9 | 110.5 | 111.3 | 112.5 | 115.5 | 115.9 | 117.2 | 108.8 | 157.2 |
| PNL | 115.5 | 115.2 | 114.5 | 114.0 | 117.6 | 120.6 | 122.1 | 123.7 | 125.3 | 127.7 | 126.2 | 124.6 | 117.0 | |
| PNLT | 115.5 | 115.2 | 114.5 | 114.5 | 118.2 | 120.6 | 122.1 | 123.7 | 125.3 | 127.7 | 126.2 | 124.6 | 117.0 | |
| DBA | 102.2 | 101.8 | 101.0 | 100.3 | 103.9 | 106.9 | 108.4 | 110.1 | 111.7 | 114.5 | 113.6 | 112.0 | 103.6 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VERTIC = ADH276 TEST DATE = 05-17-83 LOCAT = C4T ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 400. FPS
 IAPLHA = SB59 IEQA = NO PWL AREA = FULL SPHERE TAMB F = 63.97 PAMB HG = 26.51 RELHUM = 48.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNTNT = LBS XNL RPM XNHR = RPM V8 = 1423.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 2253.5 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1608 TAPE = X1608C TEST PT NO = 1600 AE1000 MOTOR FAN SPEED = 9PM

IDENTIFICATION - 83F-400-1608 X1608F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 89.8 | 91.0 | 88.7 | 86.3 | 87.9 | 89.3 | 89.2 | 89.2 | 92.5 | 99.0 | 102.8 | 106.9 | 100.7 | 139.3 |
| 315 | 89.8 | 91.0 | 88.7 | 86.3 | 88.8 | 90.1 | 90.6 | 91.2 | 94.5 | 101.1 | 104.1 | 107.6 | 101.2 | 140.3 |
| 400 | 90.7 | 91.5 | 89.6 | 87.6 | 89.3 | 90.4 | 91.4 | 92.5 | 95.5 | 101.9 | 104.1 | 107.4 | 100.6 | 140.5 |
| 500 | 91.6 | 91.1 | 89.0 | 86.7 | 89.6 | 91.5 | 92.3 | 93.4 | 95.7 | 102.1 | 104.0 | 105.6 | 99.3 | 139.9 |
| 630 | 92.3 | 92.2 | 89.9 | 87.5 | 90.4 | 92.3 | 92.8 | 93.5 | 97.3 | 101.8 | 102.7 | 103.0 | 99.4 | 139.1 |
| 800 | 92.2 | 92.3 | 90.5 | 88.6 | 93.6 | 93.2 | 93.9 | 94.7 | 98.9 | 102.5 | 102.6 | 100.8 | 101.1 | 139.5 |
| 1000 | 93.5 | 92.6 | 91.0 | 89.3 | 93.2 | 94.2 | 95.0 | 95.9 | 98.8 | 101.3 | 100.8 | 97.6 | 98.8 | 138.6 |
| 1250 | 99.7 | 95.5 | 93.3 | 90.9 | 92.1 | 94.3 | 95.0 | 95.8 | 99.8 | 102.1 | 101.3 | 95.8 | 100.0 | 139.6 |
| 1600 | 94.6 | 94.4 | 92.4 | 90.4 | 93.7 | 96.2 | 96.8 | 97.2 | 100.3 | 102.3 | 100.3 | 95.8 | 98.8 | 139.5 |
| 2000 | 95.7 | 94.5 | 93.1 | 91.6 | 94.4 | 95.6 | 96.6 | 97.4 | 100.3 | 103.2 | 100.1 | 95.9 | 99.7 | 139.9 |
| 2500 | 100.2 | 96.9 | 94.8 | 92.5 | 96.1 | 96.9 | 97.5 | 97.8 | 101.8 | 102.7 | 99.7 | 99.7 | 98.2 | 140.7 |
| 3150 | 99.8 | 97.6 | 95.4 | 93.1 | 95.7 | 97.8 | 98.6 | 99.1 | 101.7 | 102.5 | 100.1 | 97.8 | 100.0 | 141.1 |
| 4000 | 97.1 | 95.5 | 94.4 | 93.3 | 97.3 | 98.8 | 99.4 | 99.5 | 102.0 | 102.9 | 99.7 | 97.1 | 98.9 | 141.3 |
| 5000 | 99.8 | 98.5 | 96.6 | 94.6 | 97.5 | 99.7 | 100.0 | 99.9 | 102.2 | 102.8 | 101.0 | 99.0 | 101.2 | 142.3 |
| 6300 | 100.6 | 99.6 | 97.5 | 95.1 | 98.4 | 99.9 | 100.2 | 100.1 | 101.8 | 103.5 | 101.4 | 101.0 | 103.0 | 143.1 |
| 8000 | 99.6 | 98.2 | 96.8 | 95.3 | 97.6 | 100.0 | 100.0 | 99.8 | 102.6 | 102.8 | 100.3 | 101.7 | 103.5 | 143.2 |
| 10000 | 100.4 | 99.6 | 97.6 | 95.6 | 99.3 | 100.8 | 100.6 | 100.5 | 99.5 | 99.5 | 97.9 | 98.9 | 102.1 | 143.2 |
| 12500 | 103.1 | 102.2 | 99.8 | 97.4 | 101.6 | 102.4 | 100.4 | 98.5 | 98.8 | 97.8 | 96.6 | 98.7 | 100.4 | 144.8 |
| 16000 | 102.2 | 103.0 | 101.7 | 100.2 | 102.5 | 103.0 | 100.3 | 97.9 | 97.7 | 95.8 | 94.2 | 97.2 | 97.9 | 146.4 |
| 20000 | 100.3 | 101.5 | 101.4 | 101.3 | 100.7 | 102.4 | 99.5 | 96.7 | 96.9 | 93.5 | 91.7 | 94.4 | 95.4 | 147.2 |
| 25000 | 97.4 | 98.2 | 97.8 | 97.4 | 98.4 | 101.1 | 98.1 | 95.3 | 95.6 | 90.3 | 92.2 | 93.2 | 93.2 | 147.3 |
| 31500 | 96.8 | 97.3 | 96.2 | 95.0 | 95.7 | 97.9 | 95.3 | 92.9 | 95.1 | 92.8 | 89.9 | 91.9 | 92.0 | 148.5 |
| 40000 | 92.5 | 93.5 | 93.1 | 92.6 | 92.8 | 95.8 | 93.4 | 91.2 | 92.5 | 89.4 | 87.7 | 89.7 | 89.0 | 149.7 |
| 50000 | 89.4 | 90.2 | 89.6 | 88.8 | 89.1 | 91.5 | 89.5 | 87.7 | 90.3 | 87.6 | 86.7 | 88.1 | 87.0 | 150.8 |
| 63000 | 82.7 | 84.0 | 83.5 | 82.9 | 83.9 | 86.6 | 85.3 | 84.1 | 84.7 | 82.7 | 81.3 | 82.7 | 80.7 | 150.9 |
| 80000 | 77.8 | 78.6 | 77.7 | 76.7 | 77.7 | 82.1 | 79.8 | 77.8 | 74.9 | 72.8 | 71.4 | 72.9 | 70.9 | 151.4 |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 80000 | 77.8 | 78.6 | 77.7 | 76.7 | 77.7 | 82.1 | 79.8 | 77.8 | 74.9 | 72.8 | 71.4 | 72.9 | 70.9 | 151.4 |
| 80000 | 77.8 | 78.6 | 77.7 | 76.7 | 77.7 | 82.1 | 79.8 | 77.8 | 74.9 | 72.8 | 71.4 | 72.9 | 70.9 | 151.4 |
| 80000 | 77.8 | 78.6 | 77.7 | 76.7 | 77.7 | 82.1 | 79.8 | 77.8 | 74.9 | 72.8 | 71.4 | 72.9 | 70.9 | 151.4 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH276 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 400. FPS
 IAPLHA = SB59 TEST WIND IEGA = NO PWL AREA = FULL SPHERE TAMB F = 63.97 PAMB HG = 26.51 RELHUM = 48.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = 0

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1423.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2253.5 FPS AE18 = 19.9 SQ IN
 RUNPT = 83F-400-1608 TAPE = XT608F TEST PT NO = 1608 NC = AET00 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1608 XT16081

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 65.6 | 68.4 | 67.2 | 65.5 | 68.4 | 69.8 | 70.2 | 70.4 | 72.9 | 78.5 | 80.0 | 81.3 | 71.6 | 155.7 |
| 63 | 66.6 | 68.9 | 68.0 | 66.7 | 68.9 | 70.1 | 71.0 | 71.6 | 74.0 | 79.3 | 80.0 | 81.0 | 70.9 | 155.8 |
| 80 | 67.4 | 68.4 | 67.4 | 65.8 | 69.2 | 71.2 | 71.9 | 72.5 | 74.1 | 79.5 | 79.8 | 79.2 | 69.5 | 155.2 |
| 100 | 68.0 | 69.5 | 68.3 | 66.6 | 70.0 | 71.9 | 72.3 | 72.6 | 75.7 | 79.1 | 78.4 | 76.4 | 69.4 | 154.4 |
| 125 | 67.8 | 69.4 | 68.8 | 67.7 | 73.0 | 72.7 | 73.3 | 73.7 | 77.2 | 79.7 | 78.2 | 74.1 | 70.9 | 154.8 |
| 160 | 68.9 | 69.6 | 69.1 | 68.1 | 72.5 | 73.6 | 74.3 | 74.8 | 76.9 | 78.3 | 76.2 | 70.7 | 68.3 | 154.0 |
| 200 | 74.9 | 72.3 | 71.2 | 69.6 | 71.3 | 73.6 | 74.1 | 74.6 | 77.8 | 78.9 | 76.5 | 69.5 | 68.9 | 155.0 |
| 250 | 69.4 | 71.0 | 70.2 | 68.8 | 72.7 | 75.2 | 75.7 | 75.7 | 78.0 | 78.8 | 75.1 | 69.1 | 67.1 | 154.8 |
| 315 | 70.1 | 70.7 | 70.5 | 69.9 | 73.1 | 74.4 | 75.2 | 75.6 | 77.7 | 79.4 | 74.5 | 67.6 | 67.2 | 155.2 |
| 400 | 74.1 | 72.7 | 71.8 | 70.4 | 74.5 | 75.4 | 75.8 | 75.7 | 78.8 | 78.5 | 73.6 | 66.8 | 64.7 | 156.0 |
| 500 | 73.2 | 72.9 | 72.0 | 70.6 | 73.7 | 76.0 | 76.6 | 76.7 | 78.3 | 77.8 | 73.4 | 68.2 | 65.4 | 156.5 |
| 630 | 69.9 | 70.4 | 70.7 | 70.4 | 75.0 | 76.6 | 77.1 | 76.7 | 78.2 | 77.8 | 72.5 | 66.7 | 63.2 | 156.6 |
| 800 | 72.0 | 72.9 | 72.5 | 71.5 | 74.9 | 77.2 | 77.3 | 76.7 | 78.1 | 77.2 | 73.2 | 67.9 | 64.2 | 157.6 |
| 1000 | 72.3 | 73.6 | 73.0 | 71.7 | 75.5 | 77.1 | 77.3 | 76.6 | 77.3 | 77.5 | 73.0 | 69.0 | 64.8 | 158.4 |
| 1250 | 70.5 | 71.7 | 71.9 | 71.4 | 74.4 | 76.9 | 76.8 | 76.0 | 77.7 | 76.2 | 71.2 | 68.7 | 63.7 | 158.6 |
| 1600 | 70.2 | 72.2 | 72.1 | 71.1 | 75.6 | 77.3 | 76.9 | 76.1 | 73.9 | 72.1 | 67.7 | 64.3 | 59.7 | 158.6 |
| 2000 | 71.5 | 73.6 | 73.3 | 72.2 | 77.1 | 78.1 | 75.9 | 73.3 | 72.3 | 69.2 | 64.9 | 62.0 | 54.4 | 160.1 |
| 2500 | 68.3 | 72.8 | 73.9 | 73.9 | 77.1 | 77.8 | 74.9 | 71.6 | 69.9 | 65.6 | 60.3 | 57.3 | 46.6 | 161.7 |
| 3150 | 62.5 | 68.3 | 71.1 | 72.8 | 73.3 | 75.3 | 72.1 | 68.3 | 66.6 | 60.3 | 53.9 | 48.9 | 35.0 | 162.5 |
| 4000 | 52.5 | 59.5 | 63.0 | 64.9 | 67.2 | 70.3 | 67.0 | 62.8 | 60.7 | 53.9 | 45.4 | 36.9 | 17.6 | 162.6 |
| 5000 | 41.3 | 50.1 | 54.3 | 56.3 | 58.7 | 61.5 | 58.3 | 54.1 | 53.1 | 45.7 | 34.5 | 22.1 | | 163.8 |
| 6300 | 18.8 | 31.8 | 38.7 | 42.7 | 45.3 | 49.0 | 45.9 | 41.2 | 38.1 | 27.6 | 14.0 | | | 165.0 |
| 8000 | 2.7 | 12.9 | 18.6 | 22.6 | 26.1 | 23.0 | 17.6 | 13.6 | 0.1 | | | | | 166.1 |
| 10000 | | | | | | | | | | | | | | 166.2 |
| 12500 | | | | | | | | | | | | | | 166.8 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|-------|------|------|------|------|------|------|------|-------|
| WASPL | 83.4 | 84.2 | 83.9 | 83.2 | 86.7 | 88.3 | 88.0 | 87.5 | 89.2 | 90.4 | 88.5 | 86.9 | 80.0 | 175.0 |
| PNL | 91.9 | 94.4 | 95.0 | 94.8 | 98.1 | 99.4 | 97.8 | 96.0 | 96.1 | 95.2 | 91.2 | 87.3 | 81.9 | |
| PNLT | 93.1 | 95.4 | 95.6 | 95.4 | 98.6 | 100.0 | 98.4 | 96.6 | 96.6 | 96.3 | 92.2 | 87.3 | 81.9 | |
| DBA | 80.7 | 82.4 | 82.5 | 82.1 | 85.6 | 87.2 | 86.2 | 85.1 | 85.8 | 85.1 | 80.6 | 76.2 | 72.3 | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.637 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH276 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 63.97 PAMB HG = 26.51 RELHUM = 48.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V6 = 1423.6 FPS AE6 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2253.5 FPS AE18 = 19.9 SQ IN
 NPT 3F-1600 TYPE = 8T PT = 16 AEV = 1000 RPM SPEED = 1000 RPM

IDENTIFICATION - MODEL 83F-ZER-1609 X1609C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.4 | 86.2 | 84.1 | 82.0 | 82.8 | 84.7 | 86.3 | 87.8 | 89.4 | 88.0 | 92.4 | 98.1 | 90.7 | 131.2 |
| 63 | 89.8 | 93.5 | 91.8 | 90.1 | 89.7 | 93.6 | 94.5 | 95.4 | 96.3 | 94.4 | 95.3 | 103.0 | 97.9 | 137.2 |
| 80 | 92.0 | 96.1 | 93.1 | 90.1 | 92.0 | 95.8 | 95.5 | 95.2 | 94.8 | 95.9 | 99.0 | 100.2 | 85.4 | 137.4 |
| 100 | 91.2 | 97.2 | 94.3 | 91.3 | 94.4 | 97.3 | 96.8 | 96.3 | 95.8 | 98.8 | 100.7 | 104.4 | 90.3 | 139.4 |
| 125 | 87.6 | 90.7 | 91.5 | 92.2 | 95.1 | 97.4 | 97.1 | 96.8 | 96.4 | 99.8 | 106.1 | 108.1 | 95.0 | 141.6 |
| 150 | 86.4 | 86.5 | 87.1 | 87.8 | 89.9 | 93.5 | 94.0 | 94.5 | 95.0 | 101.6 | 106.4 | 109.1 | 99.8 | 141.8 |
| 200 | 89.0 | 86.6 | 86.8 | 87.1 | 92.0 | 94.8 | 96.6 | 98.3 | 100.1 | 102.4 | 107.5 | 112.5 | 103.9 | 144.3 |
| 250 | 88.3 | 89.6 | 89.7 | 89.9 | 93.5 | 94.8 | 96.8 | 98.8 | 100.8 | 107.4 | 112.0 | 115.2 | 106.4 | 147.5 |
| 315 | 88.3 | 90.1 | 89.5 | 88.9 | 93.5 | 97.1 | 98.7 | 100.3 | 101.9 | 109.0 | 113.8 | 116.5 | 109.4 | 149.0 |
| 400 | 90.6 | 91.1 | 90.5 | 89.9 | 93.8 | 96.1 | 98.6 | 101.1 | 103.6 | 111.4 | 115.6 | 117.3 | 110.4 | 150.4 |
| 500 | 91.1 | 92.9 | 92.2 | 91.4 | 94.8 | 97.1 | 99.6 | 102.0 | 104.4 | 112.0 | 116.4 | 117.8 | 112.2 | 151.1 |
| 630 | 90.8 | 92.8 | 92.5 | 92.1 | 95.2 | 98.6 | 100.8 | 102.9 | 105.1 | 112.4 | 116.8 | 117.2 | 113.4 | 151.3 |
| 800 | 94.1 | 93.6 | 93.0 | 92.4 | 97.8 | 99.6 | 101.9 | 104.1 | 106.4 | 111.7 | 115.1 | 116.5 | 113.7 | 150.6 |
| 1000 | 98.0 | 98.0 | 96.6 | 95.1 | 97.7 | 100.1 | 102.5 | 104.9 | 107.3 | 111.4 | 114.8 | 115.7 | 113.9 | 150.4 |
| 1250 | 96.4 | 98.7 | 98.3 | 97.9 | 99.6 | 101.7 | 103.6 | 105.6 | 107.5 | 111.0 | 113.2 | 115.1 | 112.8 | 149.8 |
| 1600 | 95.6 | 97.0 | 96.1 | 95.3 | 98.3 | 101.9 | 104.1 | 106.2 | 108.4 | 110.5 | 113.6 | 114.1 | 111.2 | 149.5 |
| 2000 | 97.0 | 97.1 | 96.0 | 94.9 | 97.7 | 101.1 | 103.5 | 105.8 | 108.2 | 110.5 | 112.3 | 112.5 | 110.1 | 148.7 |
| 2500 | 95.4 | 97.2 | 96.0 | 94.8 | 98.4 | 101.5 | 103.6 | 105.6 | 107.7 | 110.7 | 111.5 | 110.6 | 107.8 | 148.1 |
| 3150 | 95.8 | 96.3 | 95.6 | 94.9 | 98.2 | 101.5 | 103.8 | 106.1 | 108.5 | 109.8 | 110.5 | 108.3 | 105.4 | 147.5 |
| 4000 | 94.2 | 95.9 | 95.3 | 94.8 | 98.3 | 101.5 | 103.3 | 105.2 | 107.1 | 108.5 | 109.3 | 106.0 | 103.4 | 146.5 |
| 5000 | 94.2 | 95.9 | 95.3 | 94.7 | 97.7 | 101.2 | 103.1 | 105.0 | 106.9 | 108.5 | 108.3 | 103.7 | 101.9 | 146.1 |
| 6300 | 95.3 | 97.2 | 96.2 | 95.1 | 98.2 | 101.9 | 103.4 | 104.9 | 106.4 | 107.3 | 107.8 | 103.1 | 100.8 | 146.0 |
| 8000 | 97.0 | 100.1 | 98.3 | 96.6 | 98.2 | 101.0 | 102.4 | 103.7 | 105.1 | 105.7 | 105.4 | 101.9 | 99.2 | 145.3 |
| 10000 | 97.9 | 101.5 | 100.4 | 99.3 | 100.2 | 101.9 | 102.8 | 103.7 | 104.6 | 104.3 | 103.4 | 100.8 | 98.4 | 145.8 |
| 12500 | 96.7 | 99.8 | 100.4 | 101.0 | 102.3 | 103.2 | 103.0 | 102.7 | 102.4 | 102.0 | 101.8 | 98.5 | 96.5 | 146.1 |
| 16000 | 95.0 | 97.1 | 98.7 | 100.3 | 101.3 | 102.8 | 102.0 | 101.2 | 100.5 | 99.2 | 99.4 | 97.1 | 93.3 | 146.1 |
| 20000 | 92.6 | 95.2 | 95.8 | 96.5 | 98.5 | 101.2 | 100.3 | 99.4 | 98.4 | 96.5 | 96.3 | 93.6 | 90.3 | 145.5 |
| 25000 | 89.9 | 92.8 | 93.6 | 94.4 | 95.7 | 99.5 | 98.4 | 97.4 | 96.4 | 93.7 | 93.1 | 90.3 | 85.3 | 145.7 |
| 31500 | 86.7 | 89.4 | 91.0 | 92.5 | 92.7 | 96.3 | 95.4 | 94.4 | 93.4 | 90.9 | 90.3 | 87.0 | 81.6 | 146.0 |
| 40000 | 82.8 | 85.8 | 87.7 | 88.6 | 89.7 | 93.5 | 92.6 | 91.7 | 90.8 | 88.8 | 87.8 | 83.1 | 77.9 | 147.1 |
| 50000 | 77.4 | 81.2 | 82.7 | 84.3 | 85.3 | 89.1 | 88.3 | 87.5 | 86.7 | 85.1 | 83.1 | 79.3 | 72.3 | 147.1 |
| 63000 | 72.2 | 76.7 | 78.1 | 79.4 | 80.6 | 84.5 | 83.8 | 83.1 | 82.4 | 80.3 | 79.4 | 73.1 | 66.7 | 147.9 |
| 80000 | 66.5 | 70.6 | 72.0 | 73.4 | 74.1 | 79.2 | 78.4 | 77.6 | 76.8 | 75.4 | 73.3 | 66.8 | 59.4 | 149.1 |
| CASPL | 108.5 | 110.6 | 110.0 | 109.6 | 111.9 | 114.5 | 115.7 | 117.3 | 119.1 | 122.6 | 125.6 | 126.7 | 122.4 | 162.6 |
| PNL | 120.4 | 121.7 | 120.8 | 120.0 | 123.1 | 126.1 | 128.1 | 130.1 | 132.1 | 134.5 | 136.3 | 136.1 | 132.4 | |
| PNLT | 120.4 | 122.3 | 120.8 | 120.0 | 123.1 | 126.1 | 128.1 | 130.1 | 132.1 | 134.5 | 136.3 | 136.1 | 132.4 | |
| DBA | 107.3 | 108.8 | 107.9 | 106.9 | 109.8 | 112.7 | 114.7 | 116.7 | 118.8 | 121.8 | 124.2 | 124.8 | 121.6 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|------------------|-------------------|
| VEHICLE = ADH272 | TEST DATE = 05-17-83 | LOCAT = CAT ANECH CH | CONFTG = 16 | MODEL = SL | FLTVEL = 0. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 61.42 | PAMB HG = 29.51 | RELHUM = 48.0 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = |
| FNIN1 = | LBS XNL = | RPM | XNH = | RPM | V8 = 1508.6 FPS |
| FNFRMB = | LBS XNLR = | RPM | XNHR = | RPM | V18 = 2306.5 FPS |
| RUNPT = 83F-ZER-1609 | TAPE = X1609C | TEST PT NO = 1609 | NC = AE100 | CORR FAN SPEED = | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1609 X1609F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|-------|
| 50 | 86.4 | 86.2 | 84.1 | 82.0 | 82.8 | 84.7 | 86.3 | 87.8 | 89.4 | 88.0 | 92.4 | 98.1 | 90.7 | 131.2 |
| 63 | 89.8 | 93.5 | 91.8 | 90.1 | 89.7 | 93.6 | 94.5 | 95.4 | 96.3 | 94.4 | 95.3 | 103.0 | 97.9 | 137.2 |
| 80 | 92.0 | 96.1 | 93.1 | 90.1 | 92.0 | 95.8 | 95.5 | 95.2 | 94.8 | 95.9 | 99.0 | 100.2 | 85.4 | 137.4 |
| 100 | 91.2 | 97.2 | 94.3 | 91.3 | 94.4 | 97.3 | 96.8 | 96.3 | 95.8 | 98.8 | 100.7 | 104.4 | 90.3 | 139.4 |
| 125 | 87.6 | 90.7 | 91.5 | 92.2 | 95.1 | 97.4 | 97.1 | 96.8 | 96.4 | 99.8 | 106.1 | 108.1 | 95.0 | 141.6 |
| 160 | 86.4 | 86.5 | 87.1 | 87.8 | 89.9 | 93.5 | 94.0 | 94.5 | 95.0 | 101.6 | 106.4 | 109.1 | 99.8 | 141.8 |
| 200 | 89.0 | 86.6 | 85.8 | 87.1 | 92.0 | 94.8 | 96.6 | 98.3 | 100.1 | 102.4 | 107.5 | 112.5 | 103.9 | 144.3 |
| 250 | 88.3 | 89.6 | 89.7 | 89.9 | 93.5 | 94.8 | 96.8 | 98.8 | 100.8 | 107.4 | 112.0 | 115.2 | 106.4 | 147.5 |
| 315 | 88.3 | 90.1 | 89.5 | 88.9 | 93.5 | 97.1 | 98.7 | 100.3 | 101.9 | 109.0 | 113.8 | 116.5 | 109.4 | 149.0 |
| 400 | 90.6 | 91.1 | 90.5 | 89.9 | 93.8 | 96.1 | 98.6 | 101.1 | 103.6 | 111.4 | 115.6 | 117.3 | 110.4 | 150.4 |
| 500 | 91.1 | 92.9 | 92.2 | 91.4 | 94.8 | 97.1 | 99.6 | 102.0 | 104.4 | 112.0 | 116.4 | 117.8 | 112.2 | 151.1 |
| 630 | 90.8 | 92.8 | 92.5 | 92.1 | 95.2 | 98.6 | 100.8 | 102.9 | 105.1 | 112.4 | 116.8 | 117.2 | 113.4 | 151.3 |
| 800 | 94.1 | 93.6 | 93.0 | 92.4 | 97.8 | 99.6 | 101.9 | 104.1 | 106.4 | 111.7 | 115.1 | 116.5 | 113.7 | 150.6 |
| 1000 | 98.0 | 98.0 | 96.6 | 95.1 | 97.7 | 100.1 | 102.5 | 104.9 | 107.3 | 111.4 | 114.8 | 115.7 | 113.9 | 150.4 |
| 1250 | 96.4 | 98.7 | 98.3 | 97.9 | 99.6 | 101.7 | 103.6 | 105.6 | 107.5 | 111.0 | 113.2 | 115.1 | 112.8 | 149.8 |
| 1600 | 95.6 | 97.0 | 96.1 | 95.3 | 98.8 | 101.9 | 104.1 | 106.2 | 108.4 | 110.5 | 113.6 | 114.1 | 111.2 | 149.5 |
| 2000 | 97.0 | 97.1 | 96.0 | 94.9 | 97.7 | 101.1 | 103.5 | 105.8 | 108.2 | 112.5 | 112.3 | 110.1 | 148.7 | |
| 2500 | 95.4 | 97.2 | 96.0 | 94.8 | 98.4 | 101.5 | 103.6 | 105.6 | 107.7 | 110.7 | 111.5 | 110.6 | 107.8 | 148.1 |
| 3150 | 95.8 | 96.3 | 95.6 | 94.9 | 98.2 | 101.5 | 103.8 | 106.1 | 108.5 | 109.8 | 110.5 | 108.3 | 105.4 | 147.5 |
| 4000 | 94.5 | 95.8 | 95.3 | 94.8 | 98.3 | 101.5 | 103.3 | 105.2 | 107.1 | 108.5 | 109.3 | 106.0 | 103.4 | 146.5 |
| 5000 | 94.2 | 95.9 | 95.3 | 94.7 | 97.7 | 101.2 | 103.1 | 105.0 | 106.9 | 108.5 | 108.3 | 103.7 | 101.9 | 146.1 |
| 6300 | 95.3 | 97.2 | 96.2 | 95.1 | 98.2 | 101.9 | 103.4 | 104.9 | 106.4 | 107.3 | 107.8 | 103.1 | 100.8 | 146.0 |
| 8000 | 97.0 | 100.1 | 98.3 | 96.6 | 98.2 | 101.0 | 102.4 | 103.7 | 105.1 | 105.7 | 105.4 | 101.9 | 99.2 | 145.3 |
| 10000 | 97.9 | 101.5 | 100.4 | 99.3 | 100.2 | 101.9 | 102.8 | 103.7 | 104.6 | 104.3 | 103.4 | 100.6 | 98.4 | 145.8 |
| 12500 | 96.7 | 99.8 | 100.4 | 101.0 | 102.3 | 103.2 | 103.0 | 102.7 | 102.4 | 102.0 | 101.8 | 98.5 | 96.5 | 146.1 |
| 16000 | 95.0 | 97.1 | 98.7 | 100.3 | 101.3 | 102.8 | 102.0 | 101.2 | 100.5 | 99.2 | 99.4 | 97.1 | 93.3 | 146.1 |
| 20000 | 92.6 | 95.2 | 95.8 | 96.5 | 98.5 | 101.2 | 100.3 | 99.4 | 98.4 | 96.5 | 96.3 | 93.6 | 90.3 | 145.5 |
| 25000 | 89.9 | 92.8 | 93.6 | 94.4 | 95.7 | 99.5 | 98.4 | 97.4 | 96.4 | 93.7 | 93.1 | 90.3 | 85.3 | 145.7 |
| 31500 | 86.7 | 89.4 | 91.0 | 92.5 | 92.7 | 96.3 | 95.4 | 94.4 | 93.4 | 90.9 | 90.3 | 87.0 | 81.6 | 146.0 |
| 40000 | 82.8 | 86.8 | 87.7 | 88.6 | 89.7 | 93.5 | 92.6 | 91.7 | 90.8 | 88.8 | 87.8 | 83.1 | 77.9 | 147.1 |
| 50000 | 77.4 | 81.2 | 82.7 | 84.3 | 85.3 | 89.1 | 88.3 | 87.5 | 86.7 | 85.1 | 83.1 | 79.3 | 72.3 | 147.1 |
| 63000 | 72.2 | 76.7 | 78.1 | 79.4 | 80.6 | 84.5 | 83.8 | 83.1 | 82.4 | 80.3 | 79.4 | 73.1 | 66.7 | 147.9 |
| 80000 | 66.5 | 70.6 | 72.0 | 73.4 | 74.1 | 79.2 | 78.4 | 77.6 | 76.8 | 75.4 | 73.3 | 66.8 | 59.4 | 149.1 |
| 100000 | 60.5 | 64.6 | 66.0 | 67.4 | 68.8 | 73.9 | 73.1 | 72.3 | 71.5 | 70.1 | 68.6 | 62.4 | 54.4 | 150.6 |
| 125000 | 55.0 | 59.1 | 60.5 | 61.9 | 63.3 | 68.4 | 67.6 | 66.8 | 66.0 | 64.6 | 63.1 | 56.9 | 48.9 | 152.1 |
| 160000 | 50.0 | 54.1 | 55.5 | 56.9 | 58.3 | 63.4 | 62.6 | 61.8 | 61.0 | 59.6 | 58.1 | 51.9 | 44.0 | 153.6 |
| 200000 | 45.0 | 49.1 | 50.5 | 51.9 | 53.3 | 58.4 | 57.6 | 56.8 | 56.0 | 54.6 | 53.1 | 46.9 | 39.0 | 155.1 |
| 250000 | 40.0 | 44.1 | 45.5 | 46.9 | 48.3 | 53.4 | 52.6 | 51.8 | 51.0 | 49.6 | 48.1 | 41.9 | 34.0 | 156.6 |
| 315000 | 35.0 | 39.1 | 40.5 | 41.9 | 43.3 | 48.4 | 47.6 | 46.8 | 46.0 | 44.6 | 43.1 | 36.9 | 29.0 | 158.1 |
| 400000 | 30.0 | 34.1 | 35.5 | 36.9 | 38.3 | 43.4 | 42.6 | 41.8 | 41.0 | 39.6 | 38.1 | 31.9 | 24.0 | 159.6 |
| 500000 | 25.0 | 29.1 | 30.5 | 31.9 | 33.3 | 38.4 | 37.6 | 36.8 | 36.0 | 34.6 | 33.1 | 26.9 | 19.0 | 161.1 |
| 630000 | 20.0 | 24.1 | 25.5 | 26.9 | 28.3 | 33.4 | 32.6 | 31.8 | 31.0 | 29.6 | 28.1 | 21.9 | 14.0 | 162.6 |
| 800000 | 15.0 | 19.1 | 20.5 | 21.9 | 23.3 | 28.4 | 27.6 | 26.8 | 26.0 | 24.6 | 23.1 | 16.9 | 9.0 | 164.1 |
| 1000000 | 10.0 | 14.1 | 15.5 | 16.9 | 18.3 | 23.4 | 22.6 | 21.8 | 21.0 | 19.6 | 18.1 | 11.9 | 4.0 | 165.6 |
| 1250000 | 5.0 | 9.1 | 10.5 | 11.9 | 13.3 | 18.4 | 17.6 | 16.8 | 16.0 | 14.6 | 13.1 | 6.9 | 0.0 | 167.1 |
| 1600000 | 0.0 | 4.1 | 5.5 | 6.9 | 8.3 | 13.4 | 12.6 | 11.8 | 11.0 | 9.6 | 8.1 | 1.9 | 0.0 | 168.6 |
| 2000000 | -5.0 | -1.1 | 0.5 | 1.9 | 3.3 | 8.4 | 7.6 | 6.8 | 6.0 | 4.6 | 3.1 | 0.9 | 0.0 | 170.1 |
| 2500000 | -10.0 | -6.1 | -4.5 | -3.1 | -1.7 | 3.4 | 2.6 | 1.8 | 1.0 | 0.6 | 0.3 | 0.3 | 0.0 | 171.6 |
| 3150000 | -15.0 | -11.1 | -9.5 | -8.1 | -6.7 | -1.8 | -1.0 | -0.2 | 0.6 | 1.2 | 1.8 | 2.4 | 3.0 | 173.1 |
| 4000000 | -20.0 | -16.1 | -14.5 | -13.1 | -11.7 | -6.8 | -6.0 | -5.2 | -4.4 | -3.6 | -2.8 | -2.0 | -1.2 | 174.6 |
| 5000000 | -25.0 | -21.1 | -19.5 | -18.1 | -16.7 | -11.8 | -11.0 | -10.2 | -9.4 | -8.6 | -7.8 | -7.0 | -6.2 | 176.1 |
| 6300000 | -30.0 | -26.1 | -24.5 | -23.1 | -21.7 | -16.8 | -16.0 | -15.2 | -14.4 | -13.6 | -12.8 | -12.0 | -11.2 | 177.6 |
| 8000000 | -35.0 | -31.1 | -29.5 | -28.1 | -26.7 | -21.8 | -21.0 | -20.2 | -19.4 | -18.6 | -17.8 | -17.0 | -16.2 | 179.1 |
| 10000000 | -40.0 | -36.1 | -34.5 | -33.1 | -31.7 | -26.8 | -26.0 | -25.2 | -24.4 | -23.6 | -22.8 | -22.0 | -21.2 | 180.6 |
| 12500000 | -45.0 | -41.1 | -39.5 | -38.1 | -36.7 | -31.8 | -31.0 | -30.2 | -29.4 | -28.6 | -27.8 | -27.0 | -26.2 | 182.1 |
| 16000000 | -50.0 | -46.1 | -44.5 | -43.1 | -41.7 | -36.8 | -36.0 | -35.2 | -34.4 | -33.6 | -32.8 | -32.0 | -31.2 | 183.6 |
| 20000000 | -55.0 | -51.1 | -49.5 | -48.1 | -46.7 | -41.8 | -41.0 | -40.2 | -39.4 | -38.6 | -37.8 | -37.0 | -36.2 | 185.1 |
| 25000000 | -60.0 | -56.1 | -54.5 | -53.1 | -51.7 | -46.8 | -46.0 | -45.2 | -44.4 | -43.6 | -42.8 | -42.0 | -41.2 | 186.6 |
| 31500000 | -65.0 | -61.1 | -59.5 | -58.1 | -56.7 | -51.8 | -51.0 | -50.2 | -49.4 | -48.6 | -47.8 | -47.0 | -46.2 | 188.1 |
| 40000000 | -70.0 | -66.1 | -64.5 | -63.1 | -61.7 | -56.8 | -56.0 | -55.2 | -54.4 | -53.6 | -52.8 | -52.0 | -51.2 | 189.6 |
| 50000000 | -75.0 | -71.1 | -69.5 | -68.1 | -66.7 | -61.8 | -61.0 | -60.2 | -59.4 | -58.6 | -57.8 | -57.0 | -56.2 | 191.1 |
| 63000000 | -80.0 | -76.1 | -74.5 | -73.1 | -71.7 | -66.8 | -66.0 | -65.2 | -64.4 | -63.6 | -62.8 | -62.0 | -61.2 | 192.6 |
| 80000000 | -85.0 | -81.1 | -79.5 | -78.1 | -76.7 | -71.8 | -71.0 | -70.2 | -69.4 | -68.6 | -67.8 | -67.0 | -66.2 | 194.1 |
| 100000000 | -90.0 | -86.1 | -84.5 | -83.1 | -81.7 | -76.8 | -76.0 | -75.2 | -74.4 | -73.6 | -72.8 | -72.0 | -71.2 | 195.6 |
| 125000000 | -95.0 | -91.1 | -89.5 | -88.1 | -86.7 | -81.8 | -81.0 | -80.2 | -79.4 | -78.6 | -77.8 | -77.0 | -76.2 | 197.1 |
| 160000000 | -100.0 | -96.1 | -94.5 | -93.1 | -91.7 | -86.8 | -86.0 | -85.2 | -84.4 | -83.6 | -82.8 | -82.0 | -81.2 | 198.6 |
| 200000000 | -105.0 | -101.1 | -99.5 | -98.1 | -96.7 | -91.8 | -91.0 | -90.2 | -89.4 | -88.6 | -87.8 | -87.0 | -86.2 | 200.1 |
| 250000000 | -110.0 | -106.1 | -104.5 | -103.1 | -101.7 | -96.8 | -96.0 | -95.2 | -94.4 | -93.6 | -92.8 | -92.0 | -91.2 | 201.6 |
| 315000000 | -115.0 | -111.1 | -109.5 | -108.1 | -106.7 | -101.8 | -101.0 | -100.2 | -99.4 | -98.6 | -97.8 | -97.0 | -96.2 | 203.1 |
| 400000000 | -120.0 | -116.1 | -114.5 | -113.1 | -111.7 | -106.8 | -106.0 | -105.2 | -104.4 | -103.6 | -102.8 | -102.0 | -101.2 | 204.6 |
| 500000000 | -125.0 | -121.1 | -119.5 | -118.1 | -116.7 | -111.8 | -111.0 | -110.2 | -109.4 | -108.6 | -107.8 | -107.0 | -106.2 | 206.1 |
| 630000000 | -130.0 | -126.1 | -124.5 | -123.1 | -121.7 | -116.8 | -116.0 | -115.2 | -114.4 | -113.6 | -112.8 | -112.0 | -111.2 | 207.6 |
| 800000000 | -135.0 | -131.1 | -129.5 | -128.1 | -126.7 | -121.8 | -121.0 | -120.2 | -119.4 | -118.6 | -117.8 | -117.0 | -116.2 | 209.1 |
| 1000000000 | -140.0 | -136.1 | -134.5 | -133.1 | -131.7 | -126.8 | -126.0 | -125.2 | -124.4 | -123.6 | -122.8 | -122.0 | -121.2 | 210.6 |
| 1250000000 | -145.0 | -141.1 | -139.5 | -138.1 | -136.7 | -131.8 | -131.0 | -130.2 | -129.4 | -128.6 | -127.8 | -127.0 | -126.2 | 212.1 |
| 1600000000 | -150.0 | -146.1 | -144.5 | -143.1 | -141.7 | -136.8 | -136.0 | -135.2 | -134.4 | -133.6 | -132.8 | -132.0 | -131.2 | 213.6 |
| 2000000000 | -155.0 | -151.1 | -149.5 | -148.1 | -146.7 | -141.8 | -141.0 | -140.2 | -139.4 | -138.6 | -137.8 | -137.0 | -136.2 | 215.1 |
| 2500000000 | -160.0 | -156.1 | -154.5 | -153.1 | -151.7 | -146.8 | -146.0 | -145.2 | -144.4 | -143.6 | -142.8 | -142.0 | -141.2 | 216.6 |
| 3150000000 | -165.0 | -161.1 | -159.5 | -158.1 | -156.7 | -151.8 | -151.0 | -150.2 | -149.4 | -148.6 | -147.8 | -147.0 | -146.2 | 218.1 |
| 4000000000 | -170.0 | -166.1 | -164.5 | -163.1 | -161.7 | -156.8 | -156.0 | -155.2 | -154.4 | -153.6 | -152.8 | -152.0 | -151.2 | 219.6 |
| 5000000000 | -175.0 | -171.1 | -169.5 | -168.1 | -166.7 | -161.8 | -161.0 | -160.2 | -159.4 | -158.6 | -157.8 | -157.0 | -156.2 | 221.1 |
| 6300000000 | -180.0 | -176.1 | -174.5 | -173.1 | -171.7 | -1 | | | | | | | | |

IDENTIFICATION - 83F-ZER-1609 XT16091

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 64.2 | 67.5 | 68.0 | 68.1 | 73.1 | 76.9 | 78.3 | 79.5 | 80.4 | 86.4 | 89.7 | 90.2 | 79.8 | 164.4 |
| 63 | 66.4 | 68.5 | 69.0 | 69.1 | 73.3 | 75.8 | 78.2 | 80.3 | 82.1 | 88.8 | 91.4 | 90.9 | 80.7 | 165.7 |
| 80 | 66.9 | 70.2 | 70.6 | 70.6 | 74.3 | 76.8 | 79.1 | 81.1 | 82.8 | 89.3 | 92.1 | 91.3 | 82.4 | 166.4 |
| 100 | 66.5 | 70.1 | 70.8 | 71.2 | 74.7 | 78.2 | 80.3 | 82.0 | 83.5 | 89.7 | 92.5 | 90.7 | 83.4 | 166.6 |
| 125 | 69.7 | 70.8 | 71.3 | 71.4 | 77.2 | 79.2 | 81.3 | 83.2 | 84.7 | 88.9 | 90.7 | 89.8 | 83.5 | 165.9 |
| 160 | 73.4 | 75.1 | 74.7 | 74.0 | 77.0 | 79.5 | 81.8 | 83.8 | 85.5 | 88.4 | 90.2 | 88.8 | 83.3 | 165.7 |
| 200 | 71.6 | 75.5 | 76.2 | 76.6 | 78.7 | 81.0 | 82.8 | 84.3 | 85.4 | 87.9 | 88.3 | 87.8 | 81.7 | 165.2 |
| 250 | 70.4 | 73.5 | 73.8 | 73.8 | 77.7 | 81.0 | 83.0 | 84.7 | 86.1 | 87.0 | 88.4 | 86.4 | 79.5 | 164.9 |
| 315 | 71.4 | 73.2 | 73.4 | 73.1 | 76.4 | 79.9 | 82.1 | 84.1 | 85.6 | 86.7 | 86.7 | 84.2 | 77.6 | 164.0 |
| 400 | 69.3 | 73.0 | 73.0 | 72.6 | 76.7 | 80.0 | 81.9 | 83.5 | 84.7 | 86.5 | 85.3 | 81.6 | 74.2 | 163.4 |
| 500 | 69.1 | 71.7 | 72.3 | 72.4 | 76.2 | 79.7 | 81.9 | 83.7 | 85.1 | 85.1 | 83.9 | 78.7 | 70.8 | 162.9 |
| 630 | 67.3 | 70.7 | 71.6 | 72.0 | 76.0 | 79.3 | 81.0 | 82.4 | 83.3 | 83.4 | 82.1 | 75.7 | 67.7 | 161.8 |
| 800 | 66.4 | 70.3 | 71.2 | 71.5 | 75.1 | 78.7 | 80.5 | 81.8 | 82.8 | 82.9 | 80.6 | 72.6 | 64.9 | 161.5 |
| 1000 | 67.0 | 71.2 | 71.7 | 71.6 | 75.3 | 79.2 | 80.5 | 81.4 | 81.9 | 81.3 | 79.5 | 71.1 | 62.6 | 161.3 |
| 1250 | 67.9 | 73.5 | 73.4 | 72.8 | 75.0 | 78.0 | 79.2 | 79.9 | 80.2 | 79.2 | 76.4 | 68.9 | 59.4 | 160.6 |
| 1600 | 67.7 | 74.1 | 74.9 | 74.9 | 76.4 | 78.4 | 79.0 | 79.3 | 79.0 | 76.9 | 73.2 | 66.2 | 55.9 | 161.1 |
| 2000 | 65.0 | 71.2 | 73.9 | 75.8 | 77.8 | 79.0 | 78.5 | 77.5 | 75.9 | 73.4 | 70.1 | 61.8 | 50.5 | 161.4 |
| 2500 | 61.1 | 67.0 | 70.9 | 74.0 | 75.9 | 77.6 | 76.6 | 75.0 | 72.7 | 69.0 | 65.6 | 57.1 | 42.0 | 161.4 |
| 3150 | 54.8 | 62.0 | 65.5 | 68.0 | 71.0 | 74.1 | 72.9 | 70.9 | 68.2 | 63.3 | 58.5 | 48.0 | 30.0 | 160.9 |
| 4000 | 45.0 | 54.1 | 58.7 | 61.9 | 64.5 | 68.7 | 67.3 | 64.9 | 61.5 | 55.0 | 48.2 | 35.1 | 9.7 | 161.1 |
| 5000 | 31.2 | 42.3 | 49.0 | 53.8 | 55.7 | 59.9 | 58.4 | 55.6 | 51.5 | 43.8 | 34.9 | 17.2 | | 161.3 |
| 6300 | 9.2 | 25.0 | 33.3 | 38.7 | 42.2 | 46.8 | 45.1 | 41.8 | 36.4 | 27.1 | 14.1 | | | 162.4 |
| 8000 | 6.1 | 14.1 | 18.7 | 23.7 | 27.7 | 31.7 | 30.0 | 27.4 | 20.0 | | | | | 162.4 |
| 10000 | | | | | | | | | | | | | | 163.2 |
| 12500 | | | | | | | | | | | | | | 164.4 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

115510

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH272 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 61.42 PAMB HG = 29.51 RELHJM = 48.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1508.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2306.5 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1609 TAPE = XT16091 TEST PT NO = 1609 NC = AET00 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1610 X1610C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.4 | 87.4 | 85.9 | 84.5 | 82.6 | 84.2 | 84.9 | 85.7 | 86.4 | 91.0 | 92.9 | 94.1 | 86.5 | 130.1 |
| 63 | 90.3 | 92.3 | 92.1 | 91.9 | 89.2 | 91.8 | 92.0 | 92.1 | 92.3 | 97.4 | 96.3 | 97.0 | 94.9 | 135.4 |
| 80 | 91.5 | 95.6 | 92.7 | 89.9 | 91.7 | 95.8 | 95.3 | 94.8 | 94.3 | 94.7 | 97.0 | 98.5 | 86.4 | 136.6 |
| 100 | 90.7 | 94.5 | 91.9 | 89.3 | 92.1 | 95.3 | 95.0 | 94.8 | 94.5 | 95.6 | 98.0 | 102.6 | 90.1 | 137.3 |
| 125 | 88.1 | 89.4 | 90.1 | 90.7 | 93.6 | 95.9 | 95.3 | 94.6 | 93.9 | 97.3 | 103.1 | 106.6 | 94.5 | 139.6 |
| 160 | 85.9 | 83.5 | 84.6 | 85.8 | 88.4 | 91.0 | 91.3 | 91.7 | 92.0 | 98.3 | 104.2 | 107.4 | 98.5 | 139.6 |
| 200 | 85.5 | 85.6 | 85.0 | 84.4 | 88.2 | 90.8 | 92.8 | 94.8 | 96.8 | 97.9 | 103.5 | 109.2 | 101.4 | 140.8 |
| 250 | 83.8 | 86.6 | 86.0 | 85.4 | 89.2 | 91.8 | 93.6 | 95.3 | 97.1 | 102.9 | 108.8 | 111.7 | 103.1 | 143.9 |
| 315 | 84.3 | 86.4 | 86.2 | 85.9 | 89.3 | 92.6 | 94.1 | 95.6 | 97.1 | 104.2 | 109.8 | 112.5 | 104.7 | 144.9 |
| 400 | 85.6 | 87.1 | 86.5 | 85.9 | 89.5 | 92.1 | 94.5 | 95.8 | 99.1 | 105.2 | 110.8 | 113.0 | 103.7 | 145.7 |
| 500 | 86.3 | 87.9 | 87.0 | 86.2 | 90.0 | 93.1 | 95.2 | 97.3 | 99.4 | 107.5 | 111.4 | 112.3 | 101.4 | 145.8 |
| 630 | 86.0 | 87.8 | 87.5 | 87.1 | 91.2 | 94.1 | 96.3 | 98.4 | 100.6 | 107.9 | 111.3 | 110.0 | 98.1 | 145.2 |
| 800 | 88.1 | 87.6 | 87.4 | 87.2 | 93.3 | 95.1 | 97.3 | 99.5 | 101.6 | 107.5 | 109.6 | 106.3 | 95.7 | 143.9 |
| 1000 | 90.3 | 89.0 | 88.7 | 88.4 | 92.9 | 95.1 | 98.3 | 100.6 | 102.8 | 107.6 | 108.3 | 103.7 | 93.4 | 143.5 |
| 1250 | 88.9 | 91.0 | 90.3 | 89.6 | 92.6 | 96.2 | 98.6 | 100.9 | 103.2 | 107.3 | 106.9 | 100.4 | 92.8 | 143.0 |
| 1600 | 89.3 | 90.0 | 89.9 | 89.8 | 93.5 | 97.1 | 99.5 | 101.8 | 104.1 | 106.5 | 106.8 | 98.1 | 90.9 | 143.0 |
| 2000 | 90.3 | 89.3 | 89.4 | 89.4 | 93.2 | 96.8 | 99.2 | 101.6 | 104.0 | 106.8 | 105.8 | 96.7 | 91.4 | 142.7 |
| 2500 | 90.2 | 90.0 | 89.7 | 89.5 | 94.1 | 97.0 | 99.1 | 101.1 | 103.2 | 106.7 | 105.0 | 96.3 | 91.3 | 142.4 |
| 3150 | 90.8 | 90.1 | 90.2 | 90.4 | 94.0 | 97.8 | 99.9 | 102.1 | 104.2 | 106.3 | 103.5 | 96.1 | 90.4 | 142.5 |
| 4000 | 91.2 | 90.3 | 90.4 | 90.6 | 94.0 | 98.0 | 99.7 | 101.5 | 103.3 | 104.5 | 103.3 | 95.8 | 90.4 | 141.8 |
| 5000 | 92.9 | 91.9 | 91.0 | 90.2 | 94.5 | 97.9 | 99.7 | 101.4 | 103.1 | 105.0 | 102.1 | 95.5 | 90.3 | 141.9 |
| 6300 | 95.3 | 93.9 | 93.1 | 92.3 | 95.7 | 98.4 | 99.9 | 101.5 | 103.1 | 104.0 | 102.5 | 95.8 | 91.0 | 142.3 |
| 8000 | 97.7 | 97.8 | 95.9 | 94.0 | 95.7 | 98.6 | 99.8 | 100.8 | 101.8 | 103.4 | 101.6 | 96.6 | 91.9 | 142.4 |
| 10000 | 99.8 | 100.2 | 99.1 | 98.0 | 98.9 | 99.9 | 100.8 | 101.6 | 102.5 | 103.0 | 101.3 | 97.7 | 92.8 | 144.1 |
| 12500 | 96.2 | 97.7 | 96.4 | 99.1 | 101.2 | 101.3 | 101.3 | 101.0 | 100.6 | 100.9 | 99.7 | 96.4 | 92.0 | 144.5 |
| 16000 | 95.4 | 95.5 | 96.6 | 97.7 | 100.3 | 101.7 | 100.9 | 100.0 | 99.1 | 98.1 | 97.6 | 95.7 | 90.0 | 144.7 |
| 20000 | 92.8 | 93.9 | 94.3 | 94.7 | 96.9 | 100.2 | 99.2 | 98.3 | 97.4 | 95.2 | 95.0 | 92.8 | 87.3 | 144.3 |
| 25000 | 89.4 | 91.4 | 92.4 | 93.4 | 95.7 | 99.3 | 98.2 | 97.2 | 96.2 | 93.3 | 91.9 | 89.8 | 83.8 | 145.4 |
| 31500 | 86.6 | 88.1 | 89.8 | 91.5 | 92.7 | 96.3 | 95.6 | 94.8 | 94.1 | 90.6 | 89.3 | 86.9 | 80.3 | 145.9 |
| 40000 | 82.9 | 85.5 | 86.6 | 87.8 | 89.5 | 93.4 | 92.7 | 92.0 | 91.2 | 87.6 | 86.7 | 84.0 | 77.2 | 145.9 |
| 50000 | 77.0 | 79.4 | 81.3 | 83.1 | 84.7 | 89.4 | 88.6 | 87.8 | 86.9 | 83.9 | 82.3 | 79.9 | 72.1 | 147.0 |
| 63000 | 71.5 | 75.1 | 76.5 | 77.6 | 79.9 | 84.8 | 84.3 | 83.7 | 83.1 | 79.4 | 78.0 | 74.6 | 67.0 | 147.9 |
| 80000 | 65.9 | 69.3 | 70.0 | 70.7 | 73.9 | 79.7 | 78.8 | 77.9 | 77.0 | 73.2 | 71.7 | 69.0 | 59.9 | 149.0 |
| GASPL | 106.7 | 107.4 | 106.9 | 106.8 | 109.2 | 111.8 | 112.6 | 113.8 | 115.3 | 118.7 | 120.4 | 120.6 | 111.6 | 159.2 |
| PNL | 117.5 | 117.4 | 116.5 | 115.9 | 119.2 | 122.5 | 124.3 | 126.2 | 128.1 | 130.9 | 130.7 | 128.2 | 119.9 | |
| PNLT | 117.5 | 117.4 | 116.5 | 116.4 | 119.8 | 122.5 | 124.3 | 126.2 | 128.1 | 130.9 | 130.7 | 128.2 | 119.9 | |
| DBA | 104.1 | 104.0 | 103.2 | 102.5 | 105.8 | 108.8 | 110.7 | 112.7 | 114.7 | 117.9 | 118.4 | 116.0 | 107.0 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADR275 TEST DATE = 05-17-83 LOCAT = C4T ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 63.39 PAMB HG = 29.31 RELHUM = 48.0 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNTNT = LBS XNL RPM XNHR V8 = 1506.4 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR RPM XNHR V18 = 2340.4 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1610 TAPE = X1610C TEST PT NO = 1610 NC = AE100. CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1610 X1610F

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

FREQ
50
63

80
100
125
160

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 4000 | 5000 | 6300 | 8000 | 10000 | 12500 | 16000 | 20000 | 25000 | 31500 | 40000 | 50000 | 63000 | 80000 | | | | |
| 91.7 | 93.0 | 90.9 | 88.7 | 90.8 | 91.8 | 91.7 | 91.7 | 91.7 | 95.0 | 101.5 | 106.8 | 110.1 | 104.2 | 142.5 | 315 | 91.7 | 93.0 | 90.9 | 88.7 | 90.8 | 91.8 | 91.7 | 91.7 | 91.7 | 95.0 | 101.5 | 106.8 | 110.1 | 104.2 | 142.5 |
| 91.7 | 93.0 | 90.9 | 88.7 | 91.1 | 92.8 | 93.8 | 93.8 | 93.8 | 97.3 | 103.9 | 108.4 | 111.7 | 105.0 | 144.1 | 400 | 92.0 | 93.3 | 91.4 | 89.3 | 91.4 | 92.4 | 93.3 | 93.3 | 93.3 | 97.5 | 105.1 | 109.1 | 111.6 | 104.4 | 144.4 |
| 93.2 | 93.5 | 91.5 | 89.3 | 91.9 | 93.5 | 94.3 | 95.3 | 95.3 | 98.7 | 105.6 | 109.3 | 110.1 | 103.1 | 144.0 | 500 | 94.0 | 94.3 | 92.0 | 89.7 | 93.2 | 94.5 | 95.3 | 96.3 | 96.3 | 100.1 | 105.6 | 108.2 | 107.7 | 103.4 | 143.3 |
| 94.0 | 94.3 | 92.0 | 89.7 | 93.2 | 94.5 | 95.3 | 96.3 | 96.3 | 100.1 | 105.6 | 108.2 | 107.7 | 103.4 | 143.3 | 600 | 93.7 | 94.3 | 92.5 | 90.6 | 95.7 | 96.4 | 97.4 | 97.4 | 101.6 | 106.2 | 107.5 | 106.4 | 103.5 | 143.2 | |
| 98.6 | 96.3 | 94.2 | 91.9 | 95.7 | 96.7 | 97.5 | 98.5 | 98.5 | 102.0 | 105.8 | 106.0 | 102.9 | 102.8 | 142.7 | 1000 | 97.8 | 97.8 | 95.5 | 93.1 | 97.0 | 97.9 | 98.9 | 98.9 | 103.0 | 104.9 | 105.7 | 100.2 | 100.3 | 142.5 | |
| 96.6 | 97.4 | 95.4 | 93.4 | 96.0 | 96.2 | 96.4 | 96.4 | 96.4 | 99.0 | 100.0 | 103.1 | 105.5 | 105.0 | 142.6 | 1600 | 97.0 | 96.5 | 95.1 | 93.6 | 96.4 | 98.1 | 99.0 | 100.0 | 102.8 | 106.0 | 104.7 | 99.4 | 101.8 | 142.6 | |
| 100.7 | 98.2 | 96.4 | 94.5 | 97.1 | 98.6 | 99.2 | 99.9 | 99.2 | 104.3 | 106.1 | 103.8 | 99.6 | 101.2 | 143.2 | 2000 | 97.8 | 97.8 | 95.2 | 93.7 | 97.8 | 99.8 | 100.7 | 101.5 | 104.5 | 105.3 | 104.5 | 100.4 | 102.7 | 143.4 | |
| 101.5 | 99.3 | 97.5 | 95.9 | 98.3 | 100.5 | 101.4 | 101.8 | 104.5 | 105.9 | 103.5 | 100.3 | 102.9 | 144.0 | 3000 | 101.5 | 99.3 | 97.9 | 96.4 | 99.1 | 100.9 | 101.7 | 102.0 | 104.9 | 105.5 | 104.6 | 101.4 | 104.2 | 144.5 | | |
| 103.1 | 100.9 | 98.6 | 96.2 | 99.1 | 100.9 | 101.4 | 102.1 | 102.4 | 104.4 | 105.8 | 104.7 | 103.0 | 105.6 | 145.2 | 6300 | 102.5 | 100.5 | 98.8 | 97.0 | 99.2 | 101.8 | 102.1 | 102.4 | 104.4 | 105.8 | 104.7 | 103.0 | 105.6 | 145.2 | |
| 102.5 | 100.5 | 98.8 | 97.0 | 99.2 | 101.8 | 102.1 | 102.1 | 105.9 | 106.2 | 105.1 | 104.7 | 106.8 | 146.1 | 8000 | 102.1 | 102.0 | 101.0 | 99.5 | 102.4 | 103.2 | 103.4 | 103.5 | 103.5 | 102.5 | 102.1 | 104.4 | 146.1 | | | |
| 103.9 | 104.0 | 102.6 | 101.1 | 105.2 | 104.7 | 103.2 | 102.0 | 101.0 | 99.5 | 99.4 | 100.5 | 101.7 | 147.3 | 12500 | 103.9 | 104.0 | 102.6 | 101.1 | 105.2 | 104.7 | 103.2 | 102.0 | 101.0 | 99.5 | 99.4 | 100.5 | 101.7 | 147.3 | | |
| 102.5 | 103.3 | 103.1 | 102.9 | 104.3 | 104.7 | 102.3 | 100.0 | 99.7 | 97.0 | 97.2 | 98.0 | 99.4 | 148.0 | 16000 | 102.5 | 103.3 | 103.1 | 102.9 | 104.3 | 104.7 | 102.3 | 100.0 | 99.7 | 97.0 | 97.2 | 98.0 | 99.4 | 148.0 | | |
| 101.4 | 100.7 | 100.9 | 101.0 | 101.5 | 103.2 | 100.7 | 98.3 | 99.1 | 95.7 | 94.6 | 95.6 | 96.6 | 147.8 | 20000 | 101.4 | 100.7 | 100.9 | 101.0 | 101.5 | 103.2 | 100.7 | 98.3 | 99.1 | 95.7 | 94.6 | 95.6 | 96.6 | 147.8 | | |
| 100.9 | 100.7 | 99.7 | 98.5 | 100.3 | 102.3 | 99.7 | 97.2 | 98.9 | 95.4 | 94.8 | 95.5 | 95.7 | 149.3 | 25000 | 100.9 | 100.7 | 99.7 | 98.5 | 100.3 | 102.3 | 99.7 | 97.2 | 98.9 | 95.4 | 94.8 | 95.5 | 95.7 | 149.3 | | |
| 96.7 | 97.4 | 97.0 | 96.5 | 97.3 | 99.3 | 97.2 | 95.4 | 96.9 | 93.3 | 93.6 | 93.7 | 149.7 | 31500 | 96.7 | 97.4 | 97.0 | 96.5 | 97.3 | 99.3 | 97.2 | 95.4 | 96.9 | 93.3 | 93.6 | 93.7 | 149.7 | | | | |
| 93.1 | 93.3 | 93.6 | 93.7 | 94.1 | 96.4 | 94.4 | 92.6 | 93.3 | 90.4 | 89.7 | 90.7 | 89.9 | 150.5 | 40000 | 93.1 | 93.3 | 93.6 | 93.7 | 94.1 | 96.4 | 94.4 | 92.6 | 93.3 | 90.4 | 89.7 | 90.7 | 89.9 | 150.5 | | |
| 89.0 | 90.3 | 90.0 | 89.6 | 89.3 | 92.4 | 90.4 | 88.5 | 91.0 | 87.7 | 87.5 | 87.8 | 87.5 | 151.3 | 50000 | 89.0 | 90.3 | 90.0 | 89.6 | 89.3 | 92.4 | 90.4 | 88.5 | 91.0 | 87.7 | 87.5 | 87.8 | 87.5 | 151.3 | | |
| 82.1 | 83.3 | 83.7 | 84.0 | 84.5 | 87.8 | 86.2 | 84.9 | 85.8 | 82.3 | 82.0 | 83.0 | 81.1 | 151.5 | 63000 | 82.1 | 83.3 | 83.7 | 84.0 | 84.5 | 87.8 | 86.2 | 84.9 | 85.8 | 82.3 | 82.0 | 83.0 | 81.1 | 151.5 | | |
| 75.2 | 77.4 | 77.2 | 78.5 | 82.7 | 80.6 | 78.7 | 76.0 | 72.5 | 72.2 | 73.2 | 71.3 | 151.8 | 80000 | 75.2 | 77.4 | 77.2 | 78.5 | 82.7 | 80.6 | 78.7 | 76.0 | 72.5 | 72.2 | 73.2 | 71.3 | 151.8 | | | | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH275 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 63.39 PAMB HQ = 29.31 RELHUM = 48.0 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNINI = LBS XNL RPM = RPM V8 = 1506.4 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR RPM = RPM V18 = 2340.4 FPS AE16 = 19.9 SQ IN

RUNPT = 83F-400-1610 TAPE = XT1610F TEST PT NO = 1610 NC = AE100 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1610 X16101

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------------|
| 50 | 67.6 | 70.4 | 69.4 | 67.9 | 70.7 | 72.6 | 72.9 | 73.0 | 75.8 | 81.3 | 84.3 | 85.3 | 85.3 | 75.4 159.4 |
| 63 | 67.9 | 70.1 | 69.6 | 68.5 | 70.9 | 72.1 | 73.2 | 74.2 | 75.9 | 82.5 | 85.0 | 85.2 | 85.2 | 74.7 159.8 |
| 80 | 69.0 | 70.8 | 69.9 | 68.5 | 71.5 | 73.2 | 73.9 | 74.5 | 77.1 | 83.0 | 85.1 | 83.7 | 83.7 | 73.2 159.4 |
| 100 | 69.7 | 71.6 | 70.4 | 68.7 | 72.7 | 74.1 | 74.8 | 75.4 | 78.4 | 82.9 | 83.9 | 81.2 | 81.2 | 73.4 159.6 |
| 125 | 69.3 | 71.4 | 70.8 | 69.7 | 75.3 | 75.2 | 75.9 | 76.4 | 79.9 | 83.4 | 83.1 | 79.7 | 73.3 | 158.5 |
| 160 | 74.0 | 73.4 | 72.3 | 70.8 | 75.0 | 76.1 | 76.8 | 77.4 | 80.2 | 82.8 | 81.4 | 75.9 | 72.3 | 158.0 |
| 200 | 75.9 | 74.6 | 73.5 | 71.9 | 74.0 | 76.3 | 77.0 | 77.6 | 80.9 | 81.7 | 80.9 | 72.9 | 69.2 | 157.8 |
| 250 | 71.4 | 74.0 | 73.2 | 71.8 | 74.9 | 77.2 | 77.9 | 78.5 | 80.9 | 82.1 | 79.9 | 71.5 | 69.5 | 157.9 |
| 315 | 71.4 | 72.7 | 72.5 | 71.9 | 75.1 | 76.9 | 77.7 | 78.3 | 80.2 | 82.1 | 79.1 | 71.1 | 69.3 | 158.0 |
| 400 | 74.6 | 73.9 | 73.4 | 72.4 | 75.4 | 77.1 | 77.5 | 77.8 | 81.4 | 81.8 | 77.7 | 70.6 | 67.7 | 158.5 |
| 500 | 71.1 | 71.9 | 71.8 | 71.2 | 75.8 | 78.0 | 78.7 | 79.0 | 81.1 | 80.6 | 77.9 | 70.8 | 68.1 | 158.7 |
| 630 | 73.9 | 73.9 | 73.8 | 73.1 | 76.0 | 78.4 | 79.1 | 79.0 | 80.7 | 80.8 | 76.3 | 69.9 | 67.2 | 159.3 |
| 800 | 73.7 | 73.7 | 73.8 | 73.2 | 76.4 | 78.5 | 79.0 | 78.8 | 80.8 | 79.9 | 76.3 | 67.3 | 67.3 | 159.8 |
| 1000 | 74.8 | 74.9 | 74.1 | 72.7 | 76.8 | 78.6 | 79.2 | 78.9 | 79.9 | 79.8 | 76.3 | 71.0 | 67.4 | 160.5 |
| 1250 | 73.6 | 74.0 | 73.9 | 73.2 | 76.0 | 78.7 | 78.8 | 78.3 | 81.0 | 79.6 | 76.1 | 71.8 | 67.0 | 161.4 |
| 1600 | 71.9 | 74.6 | 74.2 | 73.1 | 78.6 | 79.3 | 79.4 | 78.9 | 77.9 | 76.1 | 72.4 | 67.5 | 61.9 | 161.4 |
| 2000 | 72.2 | 75.5 | 76.1 | 75.9 | 80.7 | 80.4 | 78.7 | 76.8 | 74.5 | 71.0 | 67.7 | 63.8 | 55.7 | 162.6 |
| 2500 | 68.6 | 73.1 | 75.3 | 76.6 | 78.9 | 79.6 | 76.9 | 73.7 | 71.9 | 66.8 | 63.3 | 58.0 | 48.1 | 163.3 |
| 3150 | 63.5 | 67.5 | 70.7 | 72.6 | 74.1 | 76.1 | 73.2 | 69.9 | 68.8 | 62.5 | 56.8 | 50.1 | 36.2 | 163.2 |
| 4000 | 56.1 | 62.0 | 64.8 | 66.0 | 69.1 | 71.5 | 68.5 | 64.7 | 64.0 | 56.7 | 49.9 | 40.3 | 20.1 | 164.6 |
| 5000 | 41.3 | 50.3 | 55.1 | 57.7 | 60.2 | 62.8 | 60.2 | 56.7 | 55.0 | 46.2 | 37.7 | 23.8 | | 165.1 |
| 6300 | 19.4 | 31.6 | 39.2 | 43.8 | 46.6 | 49.7 | 46.9 | 42.6 | 38.9 | 28.7 | 16.1 | | | 165.9 |
| 8000 | 2.8 | 13.3 | 19.5 | 22.7 | 27.0 | 23.8 | 18.4 | 14.3 | 0.2 | | | | | 166.6 |
| 10000 | | | | | | | | | | | | | | 166.8 |
| 12500 | | | | | | | | | | | | | | 167.1 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

1188-13

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.637 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH275 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 63.39 PAMB HG = 29.31 RELHUM = 48.0 PCT
 WIND DIR = DEG WIND VEL = MPH MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL RPM = RPM XNH RPM = RPM V8 = 1506.4 FPS AEB = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM = RPM XNHR RPM = RPM V18 = 2340.4 FPS AE18 = 19.9 SQ IN

TO = -40' E = X1 . T N 161' ETO. R F SPEED RPM

IDENTIFICATION - MODEL 83F-ZER-1611 X1611C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.1 | 87.7 | 86.4 | 85.2 | 84.3 | 89.2 | 89.7 | 90.2 | 90.7 | 88.7 | 88.6 | 98.8 | 94.5 | 133.9 |
| 63 | 92.0 | 94.3 | 94.0 | 93.6 | 92.5 | 97.1 | 96.7 | 96.4 | 96.1 | 93.6 | 103.8 | 102.7 | 101.6 | 139.6 |
| 80 | 94.8 | 99.1 | 96.1 | 93.1 | 94.7 | 99.1 | 98.6 | 98.1 | 97.6 | 98.7 | 101.3 | 102.7 | 90.4 | 140.2 |
| 100 | 94.0 | 99.7 | 97.0 | 94.3 | 96.9 | 99.0 | 98.5 | 98.0 | 97.5 | 100.8 | 102.7 | 106.6 | 93.3 | 141.5 |
| 125 | 90.6 | 92.9 | 94.0 | 95.0 | 97.6 | 100.2 | 99.5 | 99.5 | 99.2 | 103.0 | 108.1 | 110.8 | 98.2 | 144.2 |
| 150 | 89.2 | 89.7 | 90.1 | 90.5 | 92.9 | 95.2 | 96.2 | 97.1 | 98.0 | 104.1 | 109.2 | 112.9 | 103.3 | 145.0 |
| 200 | 91.5 | 89.6 | 89.5 | 89.4 | 94.0 | 97.6 | 99.3 | 101.1 | 102.8 | 104.6 | 109.8 | 115.5 | 106.9 | 147.1 |
| 250 | 91.3 | 92.6 | 92.6 | 92.6 | 95.7 | 97.8 | 99.9 | 102.0 | 104.1 | 109.9 | 115.5 | 118.2 | 109.6 | 150.6 |
| 315 | 91.6 | 92.4 | 92.3 | 92.2 | 96.0 | 98.9 | 100.9 | 102.9 | 104.9 | 112.2 | 117.1 | 119.5 | 112.9 | 152.2 |
| 400 | 93.3 | 93.6 | 93.0 | 92.4 | 95.5 | 98.6 | 101.5 | 104.5 | 107.4 | 114.4 | 119.1 | 121.0 | 113.9 | 153.9 |
| 500 | 93.6 | 95.4 | 94.7 | 93.9 | 97.0 | 100.6 | 103.1 | 105.6 | 108.2 | 115.2 | 120.1 | 122.0 | 115.2 | 154.9 |
| 630 | 94.0 | 95.8 | 95.2 | 94.6 | 97.7 | 101.1 | 103.6 | 106.1 | 108.6 | 115.9 | 120.6 | 121.5 | 116.4 | 155.1 |
| 800 | 97.1 | 96.6 | 96.2 | 95.7 | 100.5 | 102.6 | 105.1 | 107.5 | 109.9 | 115.5 | 120.1 | 121.0 | 117.2 | 154.9 |
| 1000 | 102.0 | 102.8 | 100.2 | 97.6 | 100.2 | 103.6 | 106.1 | 108.6 | 111.7 | 114.6 | 119.8 | 121.2 | 116.6 | 154.9 |
| 1250 | 100.2 | 102.5 | 101.9 | 101.4 | 103.4 | 105.2 | 107.4 | 109.6 | 111.7 | 114.0 | 118.7 | 120.6 | 116.3 | 154.4 |
| 1600 | 99.3 | 99.7 | 99.4 | 99.0 | 102.3 | 105.4 | 107.8 | 110.2 | 112.6 | 114.7 | 119.3 | 119.1 | 114.2 | 154.3 |
| 2000 | 101.0 | 100.1 | 99.1 | 98.1 | 101.0 | 104.1 | 106.7 | 109.3 | 112.0 | 115.3 | 118.3 | 116.2 | 112.6 | 153.2 |
| 2500 | 99.7 | 101.0 | 99.7 | 98.5 | 101.6 | 104.8 | 107.1 | 109.4 | 111.7 | 116.0 | 116.7 | 114.8 | 110.6 | 152.6 |
| 3150 | 99.8 | 100.3 | 99.5 | 98.6 | 101.0 | 104.8 | 107.4 | 110.1 | 112.7 | 115.3 | 115.3 | 112.3 | 109.4 | 152.0 |
| 4000 | 98.5 | 99.8 | 98.9 | 98.1 | 101.8 | 105.0 | 107.2 | 109.4 | 111.6 | 113.3 | 113.8 | 111.0 | 107.2 | 150.8 |
| 5000 | 100.4 | 101.2 | 99.8 | 98.4 | 101.5 | 104.7 | 106.7 | 108.7 | 110.6 | 113.5 | 111.8 | 108.7 | 106.4 | 150.3 |
| 6300 | 100.6 | 103.0 | 101.3 | 99.6 | 102.7 | 104.9 | 106.5 | 108.2 | 109.9 | 111.3 | 110.8 | 107.6 | 104.5 | 149.6 |
| 8000 | 99.4 | 103.0 | 102.2 | 101.3 | 102.2 | 104.8 | 105.8 | 106.6 | 107.8 | 109.4 | 108.6 | 105.8 | 102.4 | 148.7 |
| 10000 | 98.4 | 101.4 | 102.6 | 103.8 | 104.9 | 106.2 | 106.7 | 107.3 | 107.8 | 108.7 | 107.4 | 105.5 | 101.8 | 149.5 |
| 12500 | 97.4 | 99.7 | 100.7 | 101.7 | 104.7 | 106.4 | 106.2 | 105.9 | 106.2 | 105.9 | 106.2 | 102.5 | 100.3 | 149.0 |
| 15000 | 95.7 | 98.1 | 98.9 | 99.8 | 102.6 | 105.0 | 104.7 | 104.5 | 104.2 | 103.7 | 102.6 | 101.5 | 97.0 | 148.5 |
| 20000 | 94.1 | 96.4 | 97.0 | 97.7 | 99.4 | 102.9 | 102.5 | 102.1 | 101.7 | 101.4 | 100.0 | 97.8 | 94.1 | 147.9 |
| 25000 | 91.9 | 94.8 | 95.5 | 96.1 | 97.7 | 101.5 | 100.9 | 100.3 | 99.6 | 97.5 | 96.9 | 94.8 | 89.6 | 148.3 |
| 31500 | 88.8 | 91.5 | 92.8 | 94.1 | 94.3 | 98.4 | 98.0 | 97.5 | 97.0 | 95.0 | 94.7 | 91.6 | 85.2 | 148.6 |
| 40000 | 85.3 | 89.0 | 90.2 | 91.3 | 91.8 | 95.7 | 95.2 | 94.7 | 94.3 | 92.8 | 92.5 | 88.3 | 81.8 | 149.9 |
| 50000 | 80.4 | 83.8 | 85.2 | 86.6 | 87.3 | 92.1 | 91.5 | 90.9 | 90.3 | 88.7 | 87.9 | 83.8 | 76.3 | 150.2 |
| 63000 | 75.1 | 79.9 | 80.9 | 81.6 | 83.2 | 87.9 | 87.6 | 87.2 | 86.8 | 84.6 | 84.8 | 78.2 | 72.1 | 151.6 |
| 80000 | 68.9 | 74.4 | 75.3 | 76.1 | 77.6 | 82.6 | 82.0 | 81.5 | 80.9 | 80.2 | 78.6 | 73.5 | 62.8 | 152.9 |
| CASPL | 111.8 | 113.5 | 112.8 | 112.4 | 114.8 | 117.6 | 119.1 | 120.9 | 122.8 | 126.5 | 130.0 | 130.9 | 125.6 | 166.4 |
| PWL | 124.2 | 125.5 | 124.4 | 123.6 | 126.4 | 129.4 | 131.5 | 133.7 | 135.9 | 139.1 | 140.9 | 140.3 | 135.5 | |
| PWL | 125.3 | 126.5 | 124.4 | 124.6 | 126.4 | 129.9 | 131.5 | 133.7 | 135.9 | 139.1 | 140.9 | 140.3 | 135.5 | |
| DBA | 111.2 | 112.4 | 111.5 | 110.7 | 113.3 | 116.1 | 118.2 | 120.4 | 122.7 | 126.0 | 129.1 | 129.4 | 124.7 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|-------------------|
| VEHICLE = ADH273 | TEST DATE = 05-17-83 | LOCAT = C41 ANECH CH | CONFIG = 16 | MODEL = SL | FLTVEL = 0. FPS |
| WIND DIR = SB59 | DEG WIND VEL = NO | PWL AREA = FULL SPHERE | TAMB F = 62.36 | PAMB HG = 29.48 | RELHUM = 48.0 PCT |
| FNIN1 = | LBS XNL = | RPM XNHR = | V8 = 1515.3 FPS | AE8 = | 4.0 SQ IN |
| FNRAMB = | LBS XNLR = | RPM XNHR = | V18 = 2495.2 FPS | AE18 = | 19.9 SQ IN |
| RUNPT = 83F-ZER-1611 | TAPE = X1611C | TEST PT NO = 1611 | NC = | CORR FAN SPEED = | RPM |

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1611 X16111

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 67.5 | 69.8 | 70.8 | 71.4 | 75.6 | 78.6 | 80.5 | 82.1 | 83.4 | 89.6 | 93.0 | 93.2 | 83.3 | 167.5 |
| 63 | 69.2 | 71.0 | 71.5 | 71.6 | 75.1 | 78.3 | 81.1 | 83.6 | 85.8 | 91.8 | 94.9 | 94.6 | 84.2 | 169.2 |
| 80 | 69.4 | 72.7 | 73.1 | 73.1 | 76.6 | 80.3 | 82.7 | 84.8 | 86.6 | 92.6 | 95.9 | 95.6 | 85.4 | 170.2 |
| 100 | 69.8 | 73.1 | 73.6 | 73.7 | 77.2 | 80.7 | 83.1 | 85.2 | 87.0 | 93.2 | 96.3 | 94.9 | 86.4 | 170.4 |
| 125 | 72.7 | 73.8 | 74.4 | 74.7 | 80.0 | 82.2 | 84.5 | 86.5 | 88.2 | 92.6 | 95.7 | 94.3 | 87.0 | 170.2 |
| 160 | 77.4 | 79.8 | 78.3 | 76.5 | 79.5 | 83.0 | 85.4 | 87.4 | 89.2 | 91.7 | 95.2 | 94.3 | 86.0 | 170.2 |
| 200 | 75.3 | 79.3 | 79.9 | 80.1 | 82.5 | 84.5 | 86.5 | 88.3 | 89.7 | 90.9 | 93.8 | 93.3 | 85.2 | 169.8 |
| 250 | 74.2 | 76.3 | 77.1 | 77.5 | 81.2 | 84.5 | 86.7 | 88.7 | 90.4 | 91.3 | 94.2 | 91.4 | 82.5 | 169.6 |
| 315 | 75.4 | 76.2 | 76.5 | 76.3 | 79.6 | 82.9 | 85.4 | 87.6 | 89.4 | 91.4 | 92.7 | 87.9 | 80.1 | 168.5 |
| 400 | 73.5 | 76.7 | 76.8 | 76.4 | 80.0 | 83.2 | 85.4 | 87.2 | 88.7 | 91.7 | 90.6 | 85.9 | 77.0 | 167.9 |
| 500 | 73.1 | 75.6 | 76.1 | 76.1 | 79.0 | 83.0 | 85.4 | 87.6 | 89.4 | 90.6 | 88.6 | 82.7 | 74.8 | 167.3 |
| 630 | 71.3 | 74.7 | 75.2 | 75.3 | 79.5 | 82.8 | 84.9 | 86.6 | 87.8 | 88.1 | 86.6 | 80.6 | 71.5 | 166.2 |
| 800 | 72.6 | 75.6 | 75.7 | 75.3 | 78.8 | 82.2 | 84.0 | 85.5 | 86.5 | 87.9 | 84.0 | 77.6 | 69.4 | 165.6 |
| 1000 | 72.2 | 76.9 | 76.8 | 76.1 | 79.7 | 82.1 | 83.6 | 84.7 | 85.4 | 85.2 | 82.4 | 75.6 | 66.3 | 164.9 |
| 1250 | 70.4 | 76.5 | 77.3 | 77.5 | 79.0 | 81.7 | 82.6 | 83.0 | 82.9 | 82.9 | 79.6 | 72.9 | 62.6 | 164.0 |
| 1600 | 68.2 | 74.0 | 77.0 | 79.3 | 81.1 | 82.6 | 82.6 | 82.8 | 82.2 | 81.3 | 77.2 | 71.0 | 59.4 | 164.8 |
| 2000 | 65.8 | 71.2 | 74.2 | 76.5 | 80.2 | 82.5 | 82.0 | 81.0 | 79.4 | 77.6 | 73.3 | 65.7 | 54.3 | 164.4 |
| 2500 | 61.8 | 67.9 | 71.2 | 73.5 | 77.1 | 79.9 | 79.3 | 78.2 | 76.4 | 73.5 | 68.8 | 61.6 | 45.7 | 163.8 |
| 3150 | 56.2 | 63.2 | 66.8 | 69.3 | 72.0 | 75.8 | 75.1 | 73.7 | 71.4 | 68.2 | 62.2 | 52.3 | 33.7 | 163.2 |
| 4000 | 47.0 | 56.1 | 60.6 | 63.6 | 66.5 | 70.7 | 69.7 | 67.8 | 64.8 | 58.8 | 52.0 | 39.6 | 14.0 | 163.6 |
| 515000 | 33.3 | 44.4 | 50.9 | 55.4 | 57.3 | 62.0 | 60.9 | 58.7 | 55.1 | 47.9 | 39.2 | 21.8 | | 163.9 |
| 63000 | 11.6 | 27.2 | 35.8 | 41.4 | 44.3 | 49.0 | 47.7 | 44.8 | 39.9 | 31.1 | 18.8 | | | 165.2 |
| 80000 | | 8.5 | 16.4 | 20.8 | 26.7 | 24.9 | 20.8 | 13.6 | 1.2 | | | | | 165.6 |
| 10000 | | | | | | | | | | | | | | 166.9 |
| 12500 | | | | | | | | | | | | | | 168.2 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

CASPL 85.0 85.1 88.5 88.8 92.0 94.9 96.7 98.3 99.8 102.6 104.8 103.4 94.6 181.5

PNL 90.0 94.7 96.6 98.0 101.7 103.9 104.5 104.8 105.3 106.9 106.9 103.9 95.0

PNLT 90.6 95.2 97.3 98.6 101.7 104.4 105.0 105.4 106.0 107.6 106.9 103.9 95.0

DBA 80.1 84.3 85.4 86.3 89.2 91.9 92.9 93.8 94.6 95.5 94.6 90.8 82.3

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH273 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 0. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 62.36 PAMB HQ = 29.48 RELHUM = 48.0 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1515.3 FPS AE8 = 4.0 SQ IN
FNFRMB = LBS XNLR = RPM XNHR = RPM V18 = 2495.2 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1611 TAPE = X16111 TEST PT NO = 1611 NC = AE100 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1612 X1612C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 91.1 | 89.9 | 87.2 | 84.5 | 83.6 | 85.7 | 87.3 | 88.8 | 90.4 | 91.7 | 95.9 | 96.3 | 91.7 | 132.5 |
| 63 | 93.0 | 94.5 | 93.3 | 92.1 | 91.7 | 93.8 | 94.5 | 95.1 | 95.8 | 96.6 | 97.8 | 98.0 | 94.9 | 136.9 |
| 80 | 94.0 | 98.1 | 95.1 | 92.1 | 94.0 | 97.3 | 97.1 | 96.8 | 96.2 | 99.0 | 100.7 | 91.1 | 138.7 | |
| 100 | 93.7 | 98.2 | 95.1 | 92.0 | 95.1 | 98.5 | 97.9 | 97.3 | 96.8 | 98.3 | 100.7 | 105.6 | 94.1 | 140.3 |
| 125 | 90.6 | 92.7 | 93.5 | 94.2 | 97.1 | 98.7 | 98.1 | 97.5 | 96.9 | 100.0 | 106.4 | 110.1 | 98.5 | 142.9 |
| 160 | 88.9 | 85.2 | 87.0 | 86.8 | 90.6 | 93.5 | 94.1 | 94.7 | 95.2 | 101.1 | 107.2 | 110.4 | 102.0 | 142.6 |
| 200 | 88.5 | 87.8 | 87.1 | 86.4 | 90.5 | 93.8 | 95.7 | 97.7 | 99.6 | 100.6 | 106.3 | 113.0 | 104.6 | 144.2 |
| 250 | 86.0 | 89.1 | 88.7 | 88.4 | 92.0 | 94.1 | 96.0 | 97.9 | 99.8 | 105.9 | 111.5 | 115.5 | 107.1 | 147.3 |
| 315 | 87.1 | 88.6 | 88.4 | 88.2 | 91.8 | 94.9 | 96.7 | 98.6 | 100.4 | 107.7 | 113.1 | 116.3 | 108.7 | 148.4 |
| 400 | 88.6 | 89.4 | 88.6 | 87.9 | 91.8 | 94.6 | 97.2 | 99.8 | 102.4 | 109.7 | 114.6 | 116.8 | 108.4 | 149.4 |
| 500 | 89.3 | 90.1 | 89.8 | 89.4 | 92.5 | 95.6 | 98.1 | 100.5 | 102.9 | 111.0 | 115.6 | 116.8 | 106.9 | 149.9 |
| 630 | 89.0 | 90.8 | 90.4 | 89.9 | 93.5 | 96.6 | 99.0 | 101.4 | 103.9 | 111.7 | 115.8 | 116.0 | 104.6 | 149.9 |
| 800 | 91.3 | 90.4 | 90.5 | 90.7 | 96.0 | 97.9 | 100.3 | 102.7 | 105.1 | 111.2 | 114.9 | 113.0 | 102.7 | 148.7 |
| 1000 | 93.5 | 92.8 | 92.3 | 91.9 | 95.7 | 98.3 | 101.0 | 103.6 | 106.3 | 110.6 | 113.8 | 110.9 | 99.6 | 147.9 |
| 1250 | 92.2 | 94.0 | 93.5 | 93.1 | 96.1 | 98.7 | 101.4 | 104.1 | 106.7 | 110.8 | 112.2 | 108.1 | 98.3 | 147.2 |
| 1600 | 93.3 | 93.5 | 93.8 | 94.0 | 97.0 | 99.9 | 102.3 | 104.7 | 107.1 | 110.7 | 112.6 | 105.9 | 96.9 | 147.3 |
| 2000 | 95.5 | 93.6 | 93.2 | 92.9 | 96.0 | 99.3 | 102.0 | 104.8 | 107.5 | 111.0 | 111.3 | 103.5 | 97.1 | 146.9 |
| 2500 | 95.2 | 95.5 | 94.5 | 93.5 | 97.4 | 100.3 | 102.5 | 104.7 | 106.9 | 111.0 | 110.2 | 103.3 | 97.5 | 146.7 |
| 3150 | 95.5 | 94.6 | 94.7 | 94.9 | 97.5 | 100.5 | 103.2 | 105.8 | 108.4 | 110.8 | 109.5 | 102.6 | 95.6 | 147.0 |
| 4000 | 97.0 | 95.3 | 94.8 | 94.3 | 98.0 | 101.2 | 103.2 | 105.3 | 107.3 | 108.8 | 108.0 | 102.0 | 95.4 | 146.0 |
| 5000 | 99.1 | 97.9 | 96.5 | 95.2 | 97.4 | 100.9 | 102.7 | 104.5 | 106.4 | 109.2 | 106.8 | 100.9 | 95.1 | 145.8 |
| 6300 | 101.0 | 100.7 | 98.9 | 97.1 | 99.4 | 101.6 | 103.3 | 104.9 | 106.5 | 108.0 | 106.0 | 100.5 | 94.8 | 146.1 |
| 8000 | 99.4 | 100.7 | 100.1 | 99.5 | 100.7 | 101.7 | 103.0 | 104.2 | 105.5 | 106.6 | 104.8 | 99.8 | 93.9 | 145.9 |
| 10000 | 98.3 | 99.6 | 100.4 | 101.2 | 103.1 | 103.6 | 104.1 | 104.7 | 105.2 | 105.4 | 103.3 | 99.2 | 93.5 | 146.6 |
| 12500 | 98.4 | 99.1 | 99.1 | 99.1 | 102.6 | 104.9 | 104.4 | 104.0 | 103.5 | 103.6 | 101.2 | 97.6 | 92.4 | 146.8 |
| 16000 | 96.4 | 97.2 | 98.2 | 99.2 | 100.5 | 103.2 | 102.8 | 102.4 | 102.1 | 100.8 | 99.3 | 96.7 | 90.4 | 146.5 |
| 20000 | 94.5 | 95.3 | 96.1 | 96.9 | 98.9 | 102.1 | 101.4 | 100.6 | 99.8 | 98.1 | 96.7 | 93.7 | 87.7 | 146.4 |
| 25000 | 91.4 | 93.1 | 94.0 | 94.9 | 97.2 | 101.3 | 100.3 | 99.4 | 98.4 | 96.0 | 93.6 | 91.1 | 84.6 | 147.3 |
| 31500 | 88.2 | 89.7 | 91.4 | 93.1 | 94.5 | 98.1 | 97.3 | 96.5 | 95.7 | 93.0 | 90.6 | 88.5 | 81.3 | 147.6 |
| 40000 | 85.2 | 87.7 | 88.9 | 90.0 | 91.5 | 95.4 | 94.7 | 94.1 | 93.5 | 90.9 | 88.4 | 85.9 | 78.9 | 149.0 |
| 50000 | 79.4 | 81.8 | 83.7 | 85.5 | 87.5 | 91.6 | 90.7 | 89.9 | 89.1 | 86.6 | 83.9 | 81.5 | 74.2 | 149.2 |
| 63000 | 74.3 | 77.5 | 78.9 | 80.4 | 82.2 | 87.1 | 86.7 | 86.3 | 86.0 | 82.6 | 80.1 | 76.1 | 68.7 | 150.4 |
| 80000 | 68.3 | 71.6 | 72.5 | 73.4 | 76.6 | 81.6 | 81.0 | 80.4 | 79.8 | 77.1 | 73.9 | 69.9 | 62.0 | 151.4 |
| GASPL | 109.5 | 110.1 | 109.6 | 109.5 | 111.9 | 114.4 | 115.5 | 116.9 | 118.7 | 122.4 | 124.8 | 125.0 | 116.1 | 162.4 |
| PNL | 121.9 | 121.9 | 120.8 | 119.9 | 122.7 | 125.5 | 127.4 | 129.6 | 131.8 | 134.9 | 135.4 | 132.8 | 124.6 | |
| PNLT | 121.9 | 121.9 | 120.8 | 120.5 | 123.4 | 125.5 | 127.4 | 129.6 | 131.8 | 134.9 | 135.4 | 132.8 | 124.6 | |
| DBA | 107.9 | 107.7 | 107.1 | 106.6 | 109.3 | 111.8 | 113.8 | 116.0 | 118.2 | 121.8 | 123.3 | 121.3 | 112.2 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH274 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 64.73 PAMB HG = 29.31 RELHUM = 48.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNTRM = LBS XNLR = RPM XNHR = RPM V8 = 1528.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2500.5 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1612 TAPE = X1612C TEST PT NO = 1612 NC = AE100 CABR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1612 X1612F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 93.9 | 95.5 | 93.7 | 91.7 | 93.6 | 94.1 | 94.1 | 94.3 | 98.2 | 104.8 | 109.9 | 113.6 | 107.9 | 145.8 |
| 315 | 93.9 | 95.5 | 93.6 | 91.7 | 93.6 | 95.1 | 95.9 | 96.7 | 100.5 | 107.3 | 112.0 | 115.2 | 109.5 | 147.6 |
| 400 | 94.8 | 95.0 | 93.3 | 91.6 | 93.6 | 94.9 | 96.4 | 98.0 | 101.2 | 108.9 | 113.6 | 116.3 | 110.0 | 148.8 |
| 500 | 96.0 | 95.6 | 93.5 | 91.3 | 94.4 | 96.0 | 97.3 | 98.7 | 102.3 | 109.9 | 114.3 | 116.5 | 109.8 | 149.3 |
| 630 | 97.0 | 96.5 | 94.8 | 92.9 | 95.4 | 97.0 | 98.2 | 99.6 | 104.1 | 110.0 | 114.1 | 115.0 | 110.7 | 149.0 |
| 800 | 96.7 | 97.3 | 95.4 | 93.4 | 98.6 | 98.4 | 99.6 | 101.0 | 105.6 | 109.8 | 113.7 | 114.3 | 110.2 | 148.7 |
| 1000 | 101.8 | 99.3 | 97.3 | 95.4 | 97.8 | 99.0 | 100.4 | 102.0 | 105.9 | 109.8 | 111.9 | 111.3 | 108.9 | 147.6 |
| 1250 | 100.6 | 98.9 | 97.2 | 95.4 | 98.4 | 99.5 | 100.9 | 102.3 | 106.3 | 109.6 | 112.1 | 108.9 | 107.5 | 147.2 |
| 1600 | 99.8 | 100.4 | 98.7 | 96.9 | 98.5 | 100.9 | 101.9 | 103.1 | 106.9 | 110.1 | 111.1 | 106.7 | 107.9 | 147.2 |
| 2000 | 101.0 | 100.0 | 99.0 | 97.9 | 98.5 | 100.6 | 101.9 | 103.3 | 106.8 | 110.7 | 110.7 | 107.3 | 109.1 | 147.4 |
| 2500 | 102.2 | 99.5 | 98.2 | 96.6 | 100.3 | 101.9 | 102.7 | 103.7 | 108.6 | 110.6 | 110.0 | 106.4 | 106.9 | 147.5 |
| 3150 | 102.8 | 102.1 | 99.9 | 97.7 | 100.7 | 102.5 | 103.8 | 105.1 | 108.4 | 109.5 | 109.3 | 106.7 | 107.7 | 147.6 |
| 4000 | 103.1 | 101.2 | 100.3 | 99.3 | 102.3 | 103.8 | 104.7 | 105.4 | 107.5 | 110.1 | 108.2 | 105.7 | 107.4 | 147.7 |
| 5000 | 107.3 | 104.3 | 102.3 | 100.1 | 101.2 | 103.9 | 104.5 | 104.9 | 108.3 | 109.4 | 108.0 | 106.0 | 107.8 | 148.2 |
| 6300 | 104.8 | 103.3 | 101.5 | 99.4 | 102.9 | 104.6 | 105.4 | 105.7 | 107.7 | 108.5 | 107.4 | 105.8 | 107.4 | 148.1 |
| 8000 | 105.6 | 105.0 | 102.9 | 100.7 | 104.5 | 104.7 | 105.2 | 105.3 | 108.4 | 108.4 | 107.0 | 106.4 | 108.0 | 148.9 |
| 10000 | 105.3 | 106.3 | 105.1 | 103.7 | 107.1 | 106.6 | 106.5 | 106.3 | 107.5 | 107.6 | 105.8 | 105.4 | 107.1 | 150.0 |
| 12500 | 105.1 | 105.7 | 105.6 | 105.5 | 106.7 | 107.9 | 106.8 | 105.8 | 106.3 | 105.1 | 104.1 | 104.5 | 105.2 | 150.5 |
| 16000 | 104.7 | 104.7 | 103.8 | 102.8 | 104.5 | 106.2 | 105.0 | 104.0 | 103.6 | 101.9 | 101.1 | 101.2 | 102.0 | 149.8 |
| 20000 | 102.3 | 102.4 | 102.5 | 102.5 | 103.5 | 105.1 | 103.2 | 101.5 | 102.2 | 99.9 | 98.2 | 98.8 | 99.2 | 150.0 |
| 25000 | 102.6 | 102.2 | 101.5 | 100.7 | 101.8 | 104.3 | 101.9 | 99.8 | 100.8 | 98.2 | 96.7 | 97.9 | 97.6 | 151.2 |
| 31500 | 98.7 | 99.2 | 98.6 | 98.0 | 99.1 | 101.1 | 99.1 | 97.3 | 99.9 | 97.5 | 96.1 | 97.0 | 97.1 | 151.9 |
| 40000 | 94.7 | 94.9 | 95.2 | 95.3 | 96.1 | 98.4 | 96.7 | 95.2 | 95.6 | 93.3 | 91.7 | 92.6 | 92.4 | 152.6 |
| 50000 | 91.3 | 92.5 | 92.3 | 91.9 | 92.1 | 94.6 | 92.5 | 90.8 | 93.8 | 90.6 | 89.1 | 88.8 | 89.0 | 153.6 |
| 63000 | 84.5 | 85.7 | 86.1 | 86.4 | 86.8 | 90.1 | 88.8 | 87.7 | 89.0 | 86.4 | 84.2 | 83.8 | 83.6 | 154.0 |
| 80000 | 77.9 | 79.9 | 79.9 | 79.8 | 81.2 | 84.6 | 83.1 | 81.6 | 79.2 | 76.6 | 74.4 | 74.0 | 73.8 | 154.2 |

ORIGINAL PAGE IS
OF POOR QUALITY

GASPL 115.9 115.3 114.1 112.9 115.2 116.4 116.3 116.5 119.3 121.8 123.7 124.3 121.2 164.2
PWL 127.6 125.8 124.0 122.2 125.0 126.4 127.3 128.1 131.3 133.7 134.1 132.7 132.2
PNLT 128.7 125.8 124.0 122.2 125.0 126.4 127.3 128.1 131.3 133.7 134.1 132.7 132.2
DBA 200.3 202.0 202.0 203.0 203.0 206.3 204.8 203.4 202.8 200.1 198.0 197.7 197.5

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH274 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = NO MPH = 40.0 FT EXT DIST = 40.0 FT EXT CONFIG = ARC TAMB F = 64.73 PAMB HG = 29.31 RELHUM = 48.0 PCT
WIND DIR = DEG WIND VEL = RPM XNH XNHR = RPM V8 = 1528.6 FPS AE8 = 4.0 SQ IN
= RPM V18 = 2500.5 FPS AE18 = 19.9 SQ IN

FNINI = LBS XNL = RPM XNHL = RPM TEST PT NO = 1612 NC = AE100 CORR FAN SPEED = RPM
FNRAMB = LBS XNLR = RPM XNLR = RPM

RUNPT = 83F-400-1612 TAPE = XT612F

DATPROC - FLTRAN FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1612 X16121

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 69.8 | 72.9 | 72.1 | 70.9 | 73.2 | 74.8 | 75.5 | 75.9 | 79.0 | 84.7 | 87.9 | 88.9 | 79.8 | 163.0 |
| 63 | 70.6 | 72.4 | 71.8 | 70.7 | 73.2 | 74.6 | 76.0 | 77.2 | 79.7 | 86.3 | 89.5 | 89.9 | 80.2 | 164.2 |
| 80 | 71.8 | 72.9 | 71.9 | 70.4 | 74.0 | 75.7 | 76.8 | 77.9 | 80.8 | 87.2 | 90.1 | 90.1 | 80.0 | 164.6 |
| 100 | 72.7 | 73.8 | 73.1 | 72.0 | 75.0 | 76.6 | 77.7 | 78.7 | 82.5 | 87.2 | 89.8 | 88.5 | 80.8 | 164.3 |
| 125 | 72.3 | 74.4 | 73.7 | 72.4 | 78.1 | 78.0 | 79.1 | 80.0 | 83.9 | 87.0 | 89.3 | 87.6 | 80.0 | 164.0 |
| 160 | 77.2 | 76.1 | 75.4 | 74.3 | 77.1 | 78.4 | 79.7 | 80.8 | 84.0 | 86.9 | 87.3 | 84.4 | 78.3 | 162.9 |
| 200 | 75.8 | 75.7 | 75.2 | 74.1 | 77.5 | 78.8 | 80.0 | 81.1 | 84.2 | 86.4 | 87.3 | 81.6 | 76.4 | 162.6 |
| 250 | 74.6 | 77.0 | 76.4 | 75.3 | 78.4 | 80.0 | 80.8 | 81.5 | 84.6 | 86.7 | 85.9 | 79.0 | 76.2 | 162.5 |
| 315 | 75.4 | 76.2 | 76.4 | 76.1 | 77.2 | 79.4 | 80.6 | 81.6 | 84.2 | 86.9 | 85.1 | 79.1 | 76.5 | 162.7 |
| 400 | 76.1 | 75.3 | 75.2 | 74.5 | 78.7 | 80.4 | 81.1 | 81.6 | 85.6 | 86.4 | 83.8 | 77.4 | 73.4 | 162.8 |
| 500 | 77.4 | 76.6 | 75.2 | 75.2 | 78.7 | 80.7 | 81.8 | 82.6 | 85.0 | 84.8 | 82.7 | 77.1 | 73.1 | 162.9 |
| 630 | 79.9 | 76.1 | 76.6 | 76.4 | 80.0 | 81.6 | 82.4 | 82.6 | 83.8 | 84.9 | 81.0 | 79.4 | 71.7 | 163.0 |
| 800 | 79.5 | 78.7 | 78.1 | 77.0 | 78.6 | 81.4 | 81.9 | 81.7 | 84.2 | 83.8 | 80.2 | 74.8 | 70.9 | 163.5 |
| 1000 | 76.5 | 77.0 | 76.0 | 76.0 | 80.0 | 81.9 | 82.4 | 82.2 | 83.2 | 82.5 | 79.0 | 73.9 | 69.2 | 163.4 |
| 1250 | 76.5 | 78.5 | 78.0 | 76.8 | 81.3 | 81.7 | 82.0 | 81.4 | 83.5 | 81.9 | 78.0 | 73.4 | 68.2 | 164.2 |
| 1600 | 75.1 | 78.9 | 79.5 | 79.3 | 83.3 | 83.0 | 82.7 | 81.8 | 81.9 | 80.2 | 75.6 | 70.8 | 64.6 | 165.3 |
| 2000 | 73.5 | 77.2 | 79.2 | 80.3 | 82.2 | 83.6 | 82.3 | 80.6 | 79.8 | 76.5 | 72.4 | 67.8 | 59.2 | 165.8 |
| 2500 | 70.8 | 74.5 | 76.0 | 76.5 | 79.1 | 81.0 | 79.6 | 77.7 | 75.9 | 71.8 | 67.3 | 61.2 | 50.7 | 165.2 |
| 3150 | 64.5 | 69.2 | 72.2 | 74.1 | 76.0 | 78.0 | 79.7 | 73.0 | 72.0 | 66.7 | 60.4 | 53.3 | 38.8 | 165.3 |
| 4000 | 57.8 | 63.4 | 66.6 | 68.2 | 70.6 | 73.5 | 70.8 | 67.3 | 65.9 | 59.5 | 51.9 | 42.6 | 22.1 | 166.6 |
| 5000 | 43.3 | 52.1 | 56.7 | 59.2 | 62.1 | 64.6 | 62.1 | 58.5 | 58.0 | 50.4 | 40.6 | 27.2 | 167.2 | |
| 6300 | 21.0 | 33.2 | 40.8 | 45.3 | 48.6 | 51.6 | 49.2 | 45.3 | 41.2 | 31.6 | 18.0 | | 167.9 | |
| 8000 | 5.1 | 15.6 | 21.7 | 25.6 | 29.1 | 26.0 | 20.7 | 17.1 | 3.1 | | | | 168.9 | |
| 10000 | | | | | | | | | | | | | 169.4 | |
| 12500 | | | | | | | | | | | | | 169.6 | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

1118-0

| | | | | | | | | | | | | | | |
|--------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|
| OR SPL | 87.7 | 88.9 | 88.9 | 88.5 | 91.6 | 93.0 | 93.3 | 93.4 | 95.7 | 97.7 | 98.4 | 96.9 | 89.1 | 179.5 |
| PNL | 95.4 | 98.0 | 99.1 | 99.5 | 102.1 | 103.7 | 103.1 | 102.1 | 102.9 | 102.7 | 100.9 | 97.2 | 90.6 | |
| PNLT | 96.5 | 98.5 | 99.6 | 100.0 | 102.7 | 104.2 | 103.6 | 102.8 | 102.9 | 102.7 | 102.1 | 97.2 | 90.6 | |
| DBA | 85.3 | 87.0 | 87.5 | 87.5 | 90.6 | 91.8 | 91.5 | 90.9 | 92.2 | 91.8 | 89.0 | 84.0 | 79.3 | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.637 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH274 TEST DATE = 05-17-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = SL FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = N0 PWL AREA = FULL SPHERE TAMB F = 64.73 PAMB HG = 29.31 RELHUM = 48.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT. EXT CONFIG = SL MIKE HT =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1528.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2500.5 FPS AE18 = 19.9 SQ IN

T = 400 J2 XT = 162.1 RPM FA. SPEED = 162.1 RPM

UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-ZER-1633 X1633C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 80.6 | 81.7 | 80.9 | 78.7 | 77.1 | 80.4 | 81.3 | 82.2 | 82.2 | 80.2 | 84.9 | 87.3 | 81.5 | 123.8 |
| 63 | 83.5 | 87.5 | 90.6 | 86.9 | 84.7 | 88.8 | 89.5 | 87.6 | 88.1 | 86.1 | 87.5 | 91.0 | 90.4 | 130.2 |
| 80 | 85.5 | 89.8 | 86.1 | 83.4 | 84.5 | 89.3 | 88.7 | 88.1 | 89.3 | 89.7 | 92.0 | 92.5 | 77.6 | 130.6 |
| 100 | 84.2 | 89.7 | 85.3 | 84.8 | 87.6 | 90.5 | 89.1 | 91.0 | 90.0 | 92.8 | 94.7 | 96.6 | 82.6 | 132.6 |
| 125 | 81.6 | 85.4 | 87.7 | 85.5 | 88.1 | 90.4 | 89.6 | 89.2 | 89.9 | 93.0 | 98.9 | 100.8 | 87.0 | 134.5 |
| 160 | 80.4 | 81.2 | 85.7 | 81.5 | 83.9 | 87.2 | 92.9 | 89.0 | 90.0 | 93.8 | 98.2 | 100.6 | 91.8 | 134.3 |
| 200 | 81.5 | 83.1 | 86.6 | 83.4 | 85.5 | 89.1 | 91.5 | 91.4 | 94.8 | 95.6 | 99.8 | 104.5 | 95.4 | 136.9 |
| 250 | 81.3 | 85.3 | 85.3 | 83.6 | 86.2 | 89.8 | 90.5 | 92.9 | 94.8 | 99.9 | 103.5 | 106.7 | 97.9 | 139.4 |
| 315 | 82.6 | 85.6 | 86.9 | 84.7 | 87.8 | 91.4 | 92.8 | 94.2 | 96.1 | 100.0 | 103.8 | 106.5 | 100.4 | 139.8 |
| 400 | 83.3 | 86.1 | 86.9 | 84.9 | 87.5 | 91.1 | 96.0 | 94.9 | 98.1 | 102.2 | 104.6 | 107.0 | 100.7 | 140.7 |
| 500 | 84.1 | 86.6 | 87.1 | 84.7 | 88.3 | 92.1 | 92.8 | 95.4 | 97.6 | 101.7 | 104.3 | 105.8 | 100.4 | 140.1 |
| 630 | 83.5 | 86.6 | 87.1 | 85.6 | 89.5 | 92.6 | 94.5 | 95.9 | 98.3 | 102.4 | 104.3 | 104.2 | 99.4 | 140.0 |
| 800 | 85.1 | 86.9 | 88.1 | 85.9 | 89.3 | 93.6 | 94.0 | 96.9 | 99.1 | 102.2 | 103.3 | 102.5 | 99.2 | 139.6 |
| 1000 | 88.0 | 88.8 | 89.1 | 86.4 | 90.4 | 94.3 | 94.9 | 98.1 | 99.6 | 101.6 | 102.0 | 100.7 | 97.6 | 139.2 |
| 1250 | 85.7 | 90.0 | 89.5 | 86.9 | 90.4 | 93.7 | 94.4 | 97.5 | 99.5 | 101.0 | 100.9 | 100.4 | 97.5 | 138.7 |
| 1600 | 86.3 | 89.0 | 89.9 | 87.8 | 91.3 | 94.9 | 95.7 | 97.8 | 100.2 | 101.4 | 99.8 | 96.9 | 96.9 | 138.9 |
| 2000 | 87.5 | 89.1 | 89.5 | 87.9 | 90.5 | 94.3 | 95.3 | 98.1 | 99.8 | 100.0 | 100.6 | 98.4 | 96.4 | 138.5 |
| 2500 | 85.2 | 89.7 | 90.1 | 87.3 | 91.4 | 94.5 | 94.7 | 98.1 | 98.5 | 99.7 | 98.8 | 97.1 | 95.6 | 137.8 |
| 3150 | 86.8 | 89.9 | 90.2 | 87.9 | 90.5 | 94.8 | 96.0 | 97.7 | 99.0 | 98.6 | 97.1 | 95.0 | 93.2 | 137.5 |
| 4000 | 86.8 | 89.9 | 90.3 | 87.7 | 91.3 | 94.3 | 94.7 | 97.3 | 96.9 | 95.9 | 95.6 | 93.4 | 91.2 | 136.3 |
| 5000 | 86.5 | 90.1 | 89.9 | 87.8 | 91.1 | 94.8 | 95.2 | 96.8 | 96.0 | 95.4 | 93.7 | 91.7 | 89.5 | 136.0 |
| 6300 | 87.2 | 89.4 | 90.2 | 88.8 | 92.1 | 95.3 | 95.6 | 97.3 | 95.3 | 92.8 | 93.3 | 91.5 | 88.0 | 135.2 |
| 8000 | 85.7 | 88.8 | 90.2 | 88.6 | 91.5 | 95.0 | 95.0 | 95.6 | 93.6 | 90.5 | 89.4 | 88.1 | 85.7 | 135.4 |
| 10000 | 85.4 | 88.8 | 90.3 | 89.4 | 92.0 | 95.0 | 94.7 | 95.5 | 93.9 | 89.2 | 87.0 | 85.6 | 84.4 | 135.9 |
| 12500 | 84.3 | 88.4 | 89.4 | 88.8 | 91.6 | 95.6 | 94.6 | 94.6 | 91.8 | 86.9 | 83.9 | 83.1 | 81.6 | 136.1 |
| 16000 | 82.7 | 87.6 | 88.3 | 88.3 | 90.3 | 93.8 | 93.6 | 93.8 | 90.5 | 83.7 | 81.4 | 79.6 | 78.0 | 136.2 |
| 20000 | 81.6 | 86.1 | 87.5 | 86.5 | 88.2 | 91.9 | 92.0 | 91.0 | 87.9 | 81.2 | 78.3 | 76.6 | 74.3 | 135.9 |
| 25000 | 79.2 | 84.1 | 85.6 | 85.4 | 87.0 | 91.3 | 90.5 | 88.8 | 86.4 | 78.9 | 75.3 | 71.4 | 71.4 | 136.9 |
| 31500 | 75.4 | 79.4 | 81.5 | 82.7 | 83.4 | 87.5 | 86.8 | 86.4 | 83.0 | 76.3 | 72.2 | 69.9 | 66.8 | 136.6 |
| 40000 | 71.4 | 76.2 | 77.5 | 78.3 | 79.9 | 84.8 | 83.1 | 82.9 | 79.3 | 73.0 | 69.3 | 66.3 | 62.4 | 137.1 |
| 50000 | 65.1 | 69.7 | 71.3 | 72.5 | 73.9 | 80.0 | 77.6 | 76.9 | 74.5 | 68.2 | 64.2 | 60.9 | 57.3 | 136.1 |
| 63000 | 58.6 | 63.3 | 65.8 | 65.8 | 67.8 | 73.8 | 71.4 | 71.3 | 69.3 | 62.8 | 60.4 | 55.4 | 50.7 | 135.5 |
| 80000 | 51.7 | 56.8 | 58.3 | 58.5 | 60.7 | 67.3 | 64.2 | 64.6 | 62.5 | 55.7 | 53.1 | 48.4 | 42.7 | 135.4 |
| CASPL | 99.3 | 102.4 | 103.0 | 101.1 | 104.0 | 107.6 | 108.2 | 109.7 | 110.6 | 112.4 | 114.1 | 115.3 | 109.7 | 152.4 |
| PNL | 111.6 | 114.6 | 115.1 | 112.9 | 116.1 | 119.6 | 120.5 | 122.2 | 123.2 | 123.7 | 124.1 | 123.6 | 120.0 | |
| PNLT | 111.6 | 114.6 | 115.1 | 112.9 | 116.1 | 119.6 | 121.0 | 122.2 | 123.2 | 123.7 | 124.1 | 123.6 | 120.0 | |
| DBA | 98.0 | 100.8 | 101.3 | 99.2 | 102.5 | 106.0 | 106.7 | 108.9 | 110.0 | 111.2 | 112.0 | 111.7 | 107.8 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|-----------------|-------------------|
| VERTICL = ADR254 | TEST DATE = 05-05-83 | LOCAT = C41 ANECH CH | CONFIG = 16 | MODEL = CO | FLIVEL = 0.7 FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 55.23 | PAMB HG = 29.08 | RELHUM = 49.7 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = |
| FNIN1 = | LBS XNL = | RPM | XNHR = | RPM | V8 = 1075.3 FPS |
| FNRAMB = | LBS XNLR = | RPM | XNHR = | RPM | V18 = 1790.2 FPS |
| RUNPT = 83F-ZER-1633 | TAPE = | TEST PT NO = 1633 | NC = | AE096 | CORR FAN SPEED = |
| | | | | | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1633 X1633F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|
| 50 | 80.6 | 81.7 | 80.9 | 78.7 | 77.1 | 80.4 | 81.3 | 82.2 | 82.2 | 80.2 | 84.9 | 87.3 | 81.5 | 123.8 |
| 63 | 83.5 | 87.5 | 90.6 | 86.9 | 84.7 | 88.8 | 89.5 | 87.6 | 88.1 | 86.1 | 87.5 | 91.0 | 90.4 | 130.2 |
| 80 | 85.5 | 89.8 | 86.1 | 83.4 | 84.5 | 89.3 | 88.7 | 88.1 | 89.3 | 89.7 | 92.0 | 92.5 | 77.6 | 130.6 |
| 100 | 84.2 | 89.7 | 85.3 | 84.8 | 87.6 | 90.5 | 89.1 | 91.0 | 90.0 | 92.8 | 94.7 | 96.6 | 82.6 | 132.6 |
| 125 | 81.6 | 85.4 | 87.7 | 85.5 | 88.1 | 90.4 | 89.6 | 89.2 | 89.9 | 93.0 | 98.9 | 100.8 | 87.0 | 134.5 |
| 160 | 80.4 | 81.2 | 85.7 | 81.5 | 83.9 | 87.2 | 92.9 | 89.0 | 90.0 | 93.8 | 98.2 | 100.6 | 91.8 | 134.3 |
| 200 | 81.5 | 83.1 | 86.6 | 83.4 | 85.5 | 89.1 | 91.5 | 91.4 | 94.8 | 95.6 | 99.8 | 104.5 | 95.4 | 136.9 |
| 250 | 81.3 | 85.3 | 85.3 | 83.6 | 86.2 | 89.8 | 90.5 | 92.9 | 94.8 | 99.9 | 103.5 | 106.7 | 97.9 | 139.4 |
| 315 | 82.6 | 85.6 | 86.9 | 84.7 | 87.8 | 91.4 | 92.8 | 94.2 | 96.1 | 100.0 | 103.8 | 106.5 | 100.4 | 139.8 |
| 400 | 83.3 | 86.1 | 86.9 | 84.9 | 87.5 | 91.1 | 96.0 | 94.9 | 98.1 | 102.2 | 104.6 | 107.0 | 100.7 | 140.7 |
| 500 | 84.1 | 86.6 | 87.1 | 84.7 | 88.3 | 92.1 | 92.8 | 95.4 | 97.6 | 101.7 | 104.3 | 105.8 | 100.4 | 140.1 |
| 630 | 83.5 | 86.6 | 87.1 | 85.6 | 89.5 | 92.6 | 94.5 | 95.9 | 98.3 | 102.4 | 104.3 | 104.2 | 99.4 | 140.0 |
| 800 | 85.1 | 86.9 | 88.1 | 85.9 | 89.3 | 93.6 | 94.0 | 96.9 | 99.1 | 102.2 | 103.3 | 102.5 | 99.2 | 139.6 |
| 1000 | 88.0 | 88.8 | 89.1 | 86.4 | 89.4 | 94.3 | 94.9 | 98.1 | 99.6 | 101.6 | 102.0 | 100.7 | 97.6 | 139.2 |
| 1250 | 85.7 | 90.0 | 89.5 | 86.9 | 90.4 | 93.7 | 94.4 | 97.5 | 99.5 | 101.0 | 100.9 | 100.4 | 97.5 | 138.7 |
| 1600 | 86.3 | 89.0 | 89.9 | 87.8 | 91.3 | 94.9 | 95.7 | 97.8 | 100.2 | 101.4 | 99.8 | 99.8 | 96.9 | 138.9 |
| 2000 | 87.5 | 89.1 | 89.5 | 87.9 | 90.5 | 94.3 | 95.3 | 98.1 | 99.8 | 100.0 | 100.6 | 98.4 | 96.4 | 138.5 |
| 2500 | 86.2 | 89.7 | 90.1 | 87.3 | 91.4 | 94.5 | 94.7 | 98.1 | 98.5 | 99.7 | 98.8 | 97.1 | 95.6 | 137.8 |
| 3150 | 86.3 | 89.6 | 90.2 | 87.9 | 90.5 | 94.8 | 95.0 | 97.7 | 99.0 | 98.6 | 97.1 | 95.0 | 93.2 | 137.5 |
| 4000 | 86.8 | 89.9 | 90.3 | 87.7 | 91.3 | 94.3 | 94.7 | 97.3 | 96.9 | 95.6 | 93.4 | 91.2 | 136.3 | |
| 5000 | 86.5 | 90.1 | 89.9 | 87.8 | 91.1 | 94.8 | 95.2 | 96.8 | 96.0 | 95.4 | 93.7 | 91.7 | 89.5 | 136.0 |
| 6300 | 87.2 | 89.4 | 90.2 | 88.8 | 92.1 | 95.3 | 95.6 | 97.3 | 95.8 | 92.8 | 93.3 | 91.5 | 88.0 | 136.2 |
| 8000 | 85.7 | 88.8 | 90.2 | 88.6 | 91.5 | 95.0 | 95.0 | 95.6 | 93.6 | 90.5 | 89.4 | 88.1 | 85.7 | 135.4 |
| 10000 | 85.4 | 88.8 | 90.3 | 89.4 | 92.0 | 95.5 | 94.7 | 95.5 | 93.9 | 89.2 | 87.0 | 85.6 | 84.4 | 135.9 |
| 12500 | 84.3 | 88.4 | 89.4 | 88.8 | 91.6 | 95.6 | 94.6 | 94.6 | 91.8 | 86.9 | 83.9 | 83.1 | 81.6 | 136.1 |
| 16000 | 82.7 | 87.6 | 88.3 | 88.3 | 90.3 | 93.8 | 93.6 | 93.8 | 90.5 | 83.7 | 81.4 | 79.6 | 78.0 | 136.2 |
| 20000 | 81.5 | 86.1 | 87.5 | 86.5 | 88.2 | 91.9 | 92.0 | 91.0 | 87.9 | 81.2 | 78.3 | 76.6 | 74.3 | 135.9 |
| 25000 | 79.2 | 84.1 | 85.6 | 85.4 | 87.0 | 91.3 | 90.5 | 88.8 | 86.4 | 78.9 | 75.3 | 74.3 | 71.4 | 136.9 |
| 31500 | 75.4 | 79.4 | 81.5 | 82.7 | 83.4 | 87.5 | 86.8 | 86.4 | 83.0 | 76.3 | 72.2 | 69.9 | 66.8 | 136.6 |
| 40000 | 71.4 | 76.2 | 77.5 | 78.3 | 79.9 | 84.8 | 83.1 | 82.9 | 79.3 | 73.0 | 69.3 | 66.3 | 62.4 | 137.1 |
| 50000 | 65.1 | 69.7 | 71.3 | 72.5 | 73.9 | 80.0 | 77.6 | 76.9 | 74.5 | 68.2 | 64.2 | 60.9 | 57.3 | 136.1 |
| 63000 | 58.6 | 63.3 | 65.8 | 65.8 | 67.8 | 73.8 | 71.4 | 71.3 | 69.3 | 62.8 | 60.4 | 55.4 | 50.7 | 135.5 |
| 80000 | 51.7 | 56.8 | 58.3 | 58.5 | 60.7 | 67.3 | 64.2 | 64.6 | 62.5 | 55.7 | 53.1 | 48.4 | 42.7 | 135.4 |

GASPL 99.3 102.4 103.0 101.1 104.0 107.6 108.2 109.7 110.6 112.4 114.1 115.3 109.7 152.4

PWL 111.6 114.6 115.1 112.9 116.1 119.6 120.5 122.2 123.2 123.7 124.1 123.6 120.0

PNLT 111.6 114.6 115.1 112.9 116.1 119.6 121.0 122.2 123.2 123.7 124.1 123.6 120.0

DBA 174.4 179.2 181.0 181.3 183.3 189.6 186.9 187.0 184.8 178.2 175.4 170.9 165.8

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH254 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = CO FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 55.23 PAMB HG = 29.08 RELHUM = 43.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT. EXT CONFIG = ARC MIKE HT =

FNIN1 = LBS XNL RPM = RPM V8 = 1075.3 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM = RPM V18 = 1790.2 FPS AE18 = 19.9 SQ IN

PT F-ZE 333 E C = X. F T N 163 AEOI RR F SPEED RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1633 X16331

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 58.5 | 63.0 | 65.4 | 63.9 | 67.4 | 71.1 | 72.4 | 73.4 | 74.6 | 77.4 | 79.7 | 80.2 | 70.8 | 155.1 |
| 63 | 59.2 | 63.5 | 65.3 | 64.1 | 67.1 | 70.8 | 75.6 | 74.1 | 76.6 | 79.6 | 80.4 | 80.6 | 70.9 | 156.1 |
| 80 | 59.9 | 64.0 | 65.6 | 63.8 | 67.8 | 71.8 | 72.3 | 74.6 | 76.1 | 79.1 | 80.1 | 79.3 | 70.6 | 155.4 |
| 100 | 59.3 | 63.9 | 65.5 | 64.7 | 69.0 | 72.2 | 74.0 | 75.0 | 76.7 | 79.7 | 80.0 | 77.7 | 69.4 | 155.3 |
| 125 | 60.7 | 64.1 | 66.4 | 64.9 | 68.7 | 73.2 | 73.5 | 75.9 | 77.4 | 79.4 | 78.9 | 75.8 | 69.0 | 154.9 |
| 160 | 63.4 | 65.8 | 67.2 | 65.2 | 69.8 | 73.8 | 74.3 | 77.0 | 77.7 | 78.7 | 77.4 | 73.8 | 67.0 | 154.5 |
| 200 | 60.8 | 65.8 | 67.4 | 65.6 | 69.5 | 73.0 | 73.5 | 76.2 | 77.4 | 77.9 | 76.1 | 73.1 | 66.5 | 154.0 |
| 250 | 61.2 | 65.5 | 67.6 | 66.3 | 70.2 | 74.0 | 74.7 | 76.3 | 77.9 | 76.8 | 76.2 | 72.1 | 65.2 | 154.2 |
| 315 | 61.9 | 65.3 | 66.9 | 66.1 | 69.1 | 73.1 | 74.0 | 76.3 | 77.2 | 76.2 | 74.9 | 70.1 | 63.8 | 153.8 |
| 400 | 60.0 | 65.5 | 67.1 | 65.1 | 69.8 | 73.0 | 73.1 | 75.9 | 75.5 | 72.6 | 68.1 | 62.0 | 62.0 | 153.1 |
| 500 | 59.7 | 65.0 | 66.8 | 65.5 | 69.5 | 73.0 | 74.0 | 75.2 | 75.7 | 73.9 | 70.4 | 65.4 | 58.6 | 152.8 |
| 630 | 59.6 | 64.8 | 66.5 | 64.9 | 69.0 | 72.2 | 72.4 | 74.5 | 73.2 | 70.8 | 68.4 | 63.0 | 55.5 | 151.6 |
| 800 | 58.8 | 64.5 | 65.8 | 64.7 | 68.5 | 72.3 | 72.6 | 73.6 | 71.9 | 69.8 | 65.9 | 60.6 | 52.6 | 151.4 |
| 1000 | 58.9 | 63.4 | 65.7 | 65.3 | 69.2 | 72.6 | 72.7 | 73.8 | 70.8 | 66.7 | 64.9 | 59.5 | 49.4 | 151.6 |
| 1250 | 56.7 | 62.3 | 65.3 | 64.8 | 68.2 | 72.0 | 71.7 | 71.8 | 68.7 | 64.0 | 60.4 | 55.2 | 45.8 | 150.7 |
| 1600 | 55.2 | 61.4 | 64.7 | 64.9 | 68.2 | 71.9 | 70.9 | 71.0 | 68.3 | 61.8 | 56.8 | 51.0 | 41.9 | 151.3 |
| 2000 | 52.6 | 59.8 | 62.9 | 63.6 | 67.1 | 71.3 | 70.2 | 69.4 | 65.3 | 58.3 | 52.2 | 46.3 | 35.6 | 151.4 |
| 2500 | 48.9 | 57.5 | 60.5 | 62.0 | 64.9 | 68.6 | 68.2 | 67.5 | 62.7 | 53.6 | 47.6 | 39.6 | 26.7 | 151.5 |
| 3150 | 43.7 | 52.9 | 57.3 | 58.0 | 60.8 | 64.8 | 64.6 | 62.5 | 57.7 | 48.0 | 40.5 | 31.1 | 14.0 | 151.3 |
| 4000 | 34.4 | 45.4 | 50.7 | 52.9 | 55.8 | 60.5 | 59.3 | 56.3 | 51.5 | 40.2 | 30.5 | 19.0 | | 152.2 |
| 5000 | 19.9 | 32.3 | 39.5 | 43.9 | 46.4 | 51.1 | 49.8 | 47.6 | 41.0 | 29.2 | 16.7 | 0.1 | | 151.9 |
| 6300 | 14.5 | 23.1 | 28.3 | 32.4 | 38.0 | 35.6 | 32.9 | 24.9 | 11.3 | | | | | 152.4 |
| 8000 | | | 2.3 | 7.3 | 14.5 | 11.0 | 6.8 | | | | | | | 151.4 |
| 10000 | | | | | | | | | | | | | | 150.8 |
| 12500 | | | | | | | | | | | | | | 150.8 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH254 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = CO FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 55.23 PAMB HG = 29.08 RELNUM = 43.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1075.3 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1790.2 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1633 TAPE = X16331 TEST PT NO = 1633 NC = AE096 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1634 XT634C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 83.1 | 83.2 | 80.7 | 77.5 | 76.8 | 79.7 | 80.3 | 82.2 | 81.4 | 78.7 | 86.6 | 88.6 | 88.7 | 124.8 |
| 63 | 83.5 | 88.0 | 90.3 | 84.4 | 82.7 | 86.3 | 89.2 | 88.1 | 88.1 | 83.6 | 87.3 | 90.7 | 93.6 | 129.9 |
| 80 | 85.0 | 88.3 | 84.3 | 81.4 | 84.5 | 88.6 | 88.7 | 87.6 | 89.3 | 89.8 | 91.0 | 91.0 | 89.4 | 129.8 |
| 100 | 82.5 | 87.0 | 83.3 | 82.0 | 84.6 | 88.0 | 87.1 | 87.8 | 87.5 | 86.6 | 91.0 | 93.6 | 88.8 | 129.6 |
| 125 | 81.1 | 83.7 | 84.9 | 82.7 | 85.3 | 87.2 | 87.3 | 86.5 | 87.2 | 86.8 | 94.6 | 97.3 | 89.5 | 131.1 |
| 160 | 78.4 | 83.7 | 84.2 | 80.0 | 81.4 | 83.7 | 90.1 | 85.8 | 87.0 | 88.1 | 95.7 | 97.4 | 91.3 | 131.3 |
| 200 | 79.0 | 80.6 | 85.6 | 79.9 | 81.2 | 83.6 | 88.0 | 88.1 | 88.8 | 87.4 | 94.5 | 99.7 | 93.1 | 132.1 |
| 250 | 77.5 | 79.6 | 80.6 | 77.9 | 81.2 | 84.1 | 84.2 | 86.6 | 88.6 | 90.9 | 98.0 | 100.5 | 92.9 | 133.2 |
| 315 | 78.3 | 81.6 | 83.6 | 80.2 | 82.3 | 85.1 | 87.3 | 88.2 | 89.4 | 91.5 | 98.8 | 99.8 | 93.2 | 133.5 |
| 400 | 78.6 | 80.9 | 81.6 | 79.2 | 81.8 | 85.1 | 89.3 | 88.2 | 90.9 | 92.9 | 98.8 | 99.3 | 91.2 | 133.5 |
| 500 | 79.1 | 80.4 | 81.4 | 78.7 | 83.0 | 85.9 | 86.5 | 88.4 | 91.1 | 93.2 | 98.6 | 96.3 | 89.2 | 132.7 |
| 630 | 78.3 | 80.8 | 81.6 | 79.9 | 83.5 | 86.6 | 87.2 | 89.4 | 91.8 | 93.7 | 98.8 | 94.2 | 88.6 | 132.7 |
| 800 | 80.3 | 81.1 | 82.1 | 79.9 | 85.7 | 87.4 | 87.8 | 90.4 | 92.9 | 93.7 | 97.1 | 90.5 | 86.4 | 132.2 |
| 1000 | 82.3 | 82.3 | 82.8 | 80.9 | 85.7 | 88.3 | 88.4 | 91.6 | 93.5 | 93.9 | 95.5 | 87.9 | 84.5 | 132.3 |
| 1250 | 81.2 | 83.5 | 83.0 | 81.4 | 84.4 | 86.2 | 88.4 | 91.3 | 93.7 | 93.3 | 94.7 | 86.1 | 83.5 | 131.7 |
| 1600 | 82.1 | 84.2 | 84.7 | 82.8 | 86.0 | 89.4 | 90.0 | 91.5 | 94.9 | 93.2 | 95.1 | 85.5 | 81.9 | 132.4 |
| 2000 | 84.3 | 83.8 | 84.5 | 82.9 | 85.7 | 89.8 | 90.1 | 92.6 | 94.5 | 93.3 | 93.6 | 84.6 | 82.6 | 132.3 |
| 2500 | 84.4 | 85.3 | 85.6 | 83.0 | 87.2 | 89.8 | 89.7 | 92.3 | 93.7 | 93.0 | 92.5 | 83.6 | 81.3 | 132.0 |
| 3150 | 85.8 | 85.2 | 86.2 | 84.2 | 87.0 | 90.6 | 90.7 | 92.2 | 94.3 | 92.6 | 91.6 | 83.5 | 80.7 | 132.3 |
| 4000 | 86.1 | 86.7 | 87.7 | 85.4 | 88.4 | 92.3 | 91.2 | 92.8 | 92.9 | 90.9 | 90.4 | 83.9 | 80.3 | 132.2 |
| 5000 | 86.3 | 86.6 | 87.7 | 85.4 | 88.4 | 92.3 | 91.2 | 92.8 | 93.1 | 91.0 | 90.5 | 83.8 | 80.5 | 132.6 |
| 6300 | 86.5 | 87.2 | 88.5 | 86.9 | 90.2 | 92.6 | 91.9 | 92.6 | 92.1 | 89.3 | 90.1 | 84.8 | 80.3 | 133.0 |
| 8000 | 86.3 | 87.2 | 89.0 | 87.2 | 89.8 | 92.3 | 91.3 | 91.4 | 90.4 | 87.1 | 87.5 | 83.2 | 80.2 | 132.6 |
| 10000 | 86.5 | 86.2 | 89.4 | 88.2 | 90.6 | 93.1 | 92.6 | 92.3 | 91.3 | 85.8 | 85.6 | 82.9 | 80.2 | 133.8 |
| 12500 | 86.6 | 87.2 | 89.3 | 88.2 | 90.9 | 93.7 | 92.0 | 91.0 | 89.7 | 84.3 | 83.0 | 80.9 | 78.9 | 134.2 |
| 16000 | 86.1 | 88.0 | 88.0 | 88.4 | 89.5 | 92.7 | 91.3 | 90.4 | 88.9 | 81.7 | 81.3 | 79.0 | 76.4 | 134.7 |
| 20000 | 84.7 | 86.0 | 86.9 | 85.8 | 87.8 | 90.8 | 89.7 | 88.3 | 87.3 | 79.6 | 78.7 | 76.5 | 73.9 | 134.7 |
| 25000 | 81.6 | 83.7 | 85.0 | 84.8 | 86.3 | 90.4 | 89.1 | 86.9 | 85.7 | 77.3 | 77.2 | 75.1 | 71.5 | 135.9 |
| 31500 | 77.7 | 79.8 | 81.1 | 82.2 | 83.3 | 87.4 | 85.9 | 84.7 | 82.6 | 74.6 | 74.5 | 72.0 | 67.4 | 136.0 |
| 40000 | 73.2 | 75.0 | 77.5 | 78.1 | 79.7 | 84.6 | 82.4 | 80.9 | 79.3 | 71.6 | 72.6 | 68.9 | 64.0 | 136.6 |
| 50000 | 67.1 | 70.0 | 71.6 | 72.5 | 73.4 | 79.2 | 76.6 | 75.4 | 74.3 | 67.3 | 68.0 | 63.7 | 58.8 | 135.5 |
| 63000 | 60.9 | 63.8 | 65.6 | 65.6 | 67.8 | 73.1 | 70.4 | 69.8 | 70.0 | 62.3 | 63.4 | 58.7 | 53.2 | 135.0 |
| 80000 | 52.7 | 56.5 | 58.3 | 57.3 | 60.0 | 66.8 | 63.2 | 63.2 | 62.5 | 55.5 | 56.8 | 52.7 | 45.5 | 134.8 |
| 0ASPL | 98.2 | 99.7 | 100.5 | 98.6 | 101.2 | 104.2 | 104.1 | 104.8 | 105.8 | 105.0 | 108.8 | 108.2 | 102.6 | 148.4 |
| PNL | 110.1 | 111.0 | 111.7 | 109.5 | 112.7 | 115.8 | 115.9 | 117.1 | 118.5 | 117.3 | 118.8 | 115.3 | 110.1 | |
| PNLT | 110.1 | 111.0 | 112.3 | 109.5 | 112.7 | 115.8 | 115.9 | 117.1 | 118.5 | 117.3 | 118.8 | 115.3 | 110.1 | |
| DBA | 96.0 | 96.7 | 97.6 | 95.7 | 98.9 | 102.0 | 101.9 | 103.5 | 105.0 | 104.1 | 106.2 | 102.0 | 95.5 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VERTICAL = ADH268 TEST DATE = 05-05-83 LOCAT = CAT ANECH CH CONFTG = 16 MODEL = CO FLVEL = 400. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMF F = 58.28 PAMB HG = 28.99 RELHUM = 37.9 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNTNT = LBS XNL RPM XNH RPM V8 = 1111.7 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNL RPM XNHR RPM V18 = 1801.8 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1634 TAPE = X1634C TEST PT No = 1634 AIR FLOW = PEE 3PM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1634 X1634F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 4000 | 5000 | 6000 | 8000 | 10000 | 12500 | 16000 | 20000 | 25000 | 31500 | 40000 | 50000 | 63000 | 80000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 84.5 | 85.4 | 85.1 | 80.9 | 82.7 | 84.1 | 82.3 | 83.0 | 87.3 | 88.9 | 96.0 | 97.7 | 93.1 | 131.4 | 84.9 | 87.2 | 88.1 | 83.2 | 83.5 | 85.4 | 88.3 | 86.2 | 89.0 | 90.6 | 96.1 | 95.4 | 92.0 | 131.7 | 85.4 | 86.7 | 86.2 | 85.5 | 86.3 | 90.0 | 91.5 | 96.9 | 94.5 | 93.7 | 131.9 | 86.8 | 86.6 | 82.1 | 85.4 | 87.0 | 86.3 | 87.3 | 91.6 | 92.2 | 96.1 | 92.3 | 94.4 | 131.9 | 86.0 | 87.2 | 86.6 | 83.4 | 87.6 | 87.9 | 87.0 | 88.5 | 92.9 | 93.1 | 96.4 | 91.3 | 95.3 | 132.6 | 88.0 | 87.6 | 87.2 | 83.5 | 87.9 | 89.0 | 88.1 | 90.0 | 93.5 | 92.9 | 95.0 | 89.9 | 94.6 | 132.6 | 89.9 | 88.8 | 87.9 | 84.5 | 86.6 | 89.0 | 88.4 | 90.1 | 94.4 | 92.5 | 95.0 | 89.0 | 93.0 | 132.7 | 90.0 | 89.8 | 90.8 | 89.9 | 86.7 | 88.4 | 91.1 | 90.7 | 92.3 | 94.6 | 93.7 | 94.0 | 88.6 | 94.0 | 133.7 | 91.9 | 90.4 | 89.9 | 86.9 | 90.1 | 90.7 | 92.3 | 95.8 | 94.1 | 93.9 | 89.4 | 94.3 | 134.2 | 92.1 | 91.9 | 91.0 | 87.2 | 90.3 | 92.6 | 92.7 | 95.9 | 93.8 | 94.1 | 91.0 | 94.7 | 134.8 | 93.4 | 91.8 | 91.7 | 88.6 | 92.1 | 94.1 | 93.4 | 94.1 | 96.3 | 94.3 | 94.6 | 91.3 | 95.3 | 135.8 | 93.6 | 93.4 | 93.3 | 93.5 | 90.2 | 94.2 | 95.6 | 94.2 | 94.3 | 91.4 | 87.6 | 88.3 | 87.0 | 91.0 | 135.7 | 93.8 | 93.8 | 94.2 | 91.5 | 93.8 | 95.3 | 92.7 | 91.4 | 92.4 | 86.4 | 86.5 | 86.9 | 91.1 | 135.8 | 93.4 | 93.4 | 94.3 | 94.7 | 95.0 | 96.1 | 94.0 | 92.3 | 91.1 | 85.2 | 84.3 | 85.2 | 90.1 | 136.6 | 93.0 | 93.0 | 92.8 | 94.7 | 95.4 | 92.7 | 94.0 | 91.8 | 94.2 | 136.1 | 93.0 | 93.0 | 92.8 | 94.0 | 91.9 | 93.5 | 95.7 | 92.7 | 90.4 | 89.6 | 81.4 | 80.9 | 81.7 | 86.1 | 137.9 | 92.0 | 92.0 | 93.2 | 91.7 | 91.9 | 93.8 | 91.1 | 88.3 | 88.7 | 79.7 | 80.0 | 80.9 | 84.2 | 138.4 | 90.0 | 90.6 | 90.6 | 88.5 | 90.9 | 93.4 | 90.5 | 86.9 | 86.3 | 77.8 | 78.1 | 78.5 | 80.9 | 139.3 | 31500 | 88.9 | 89.8 | 87.8 | 87.8 | 87.9 | 90.4 | 87.3 | 84.7 | 83.9 | 77.0 | 76.3 | 78.3 | 140.3 | 84.2 | 85.0 | 84.9 | 84.5 | 84.3 | 87.6 | 83.8 | 80.9 | 79.2 | 71.7 | 72.8 | 71.5 | 73.6 | 140.5 | 79.3 | 80.9 | 80.9 | 79.9 | 78.0 | 82.2 | 78.0 | 75.4 | 75.9 | 67.7 | 69.1 | 67.4 | 68.9 | 140.0 | 72.3 | 73.9 | 74.1 | 73.4 | 72.4 | 76.1 | 71.9 | 69.8 | 69.9 | 62.4 | 64.0 | 62.9 | 62.7 | 138.9 | 64.6 | 66.2 | 66.6 | 65.0 | 64.6 | 69.8 | 64.7 | 63.1 | 60.1 | 52.6 | 54.2 | 53.1 | 52.8 | 138.4 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH268 TEST DATE = 05-05-83 LGCAT = C41 ANECH CH CONFIG = 16 MODEL = C0 FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 58.28 PAMB HG = 28.99 RELHUM = 37.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNIN1 = LBS XNLR = RPM XNHR = RPM V8 = 1111.7 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1801.8 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1634 TAPE = X1634F TEST PT NO = 1634 NC = AE096 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1634 X16341

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 60.3 | 62.8 | 63.6 | 60.1 | 63.5 | 65.1 | 65.0 | 65.6 | 67.2 | 67.7 | 72.0 | 71.4 | 62.8 | 147.3 |
| 63 | 60.7 | 64.6 | 66.5 | 62.4 | 63.1 | 65.1 | 67.9 | 65.3 | 67.4 | 68.0 | 71.9 | 69.0 | 62.3 | 147.0 |
| 80 | 61.2 | 64.0 | 64.6 | 61.5 | 64.5 | 65.9 | 65.1 | 65.4 | 68.5 | 68.9 | 72.7 | 68.1 | 63.8 | 147.2 |
| 100 | 62.5 | 64.1 | 64.8 | 61.2 | 64.9 | 66.6 | 65.8 | 66.4 | 70.0 | 69.5 | 71.8 | 65.8 | 64.4 | 147.3 |
| 125 | 61.6 | 64.4 | 64.9 | 62.4 | 67.0 | 67.5 | 66.4 | 67.5 | 71.2 | 70.2 | 72.0 | 64.6 | 65.1 | 147.9 |
| 160 | 63.4 | 64.6 | 65.3 | 62.4 | 67.2 | 68.4 | 67.4 | 68.9 | 71.6 | 69.9 | 70.4 | 62.9 | 64.0 | 147.9 |
| 200 | 65.1 | 65.6 | 65.9 | 63.2 | 65.8 | 68.3 | 67.5 | 68.9 | 72.4 | 69.3 | 70.2 | 61.7 | 61.9 | 148.0 |
| 250 | 63.7 | 66.5 | 65.9 | 63.6 | 67.4 | 69.5 | 69.0 | 68.8 | 72.8 | 70.2 | 69.5 | 61.6 | 63.1 | 148.8 |
| 315 | 64.1 | 66.9 | 67.3 | 64.9 | 67.1 | 69.9 | 69.4 | 70.5 | 72.0 | 69.9 | 68.4 | 60.4 | 61.4 | 149.0 |
| 400 | 65.8 | 66.2 | 66.9 | 64.8 | 68.4 | 69.9 | 69.0 | 70.2 | 72.8 | 69.8 | 67.7 | 60.4 | 60.7 | 149.6 |
| 500 | 65.4 | 67.2 | 67.7 | 64.8 | 68.3 | 70.8 | 70.2 | 70.3 | 72.5 | 69.1 | 67.4 | 61.4 | 60.2 | 150.2 |
| 630 | 66.2 | 66.7 | 68.0 | 65.8 | 69.8 | 72.0 | 71.1 | 71.3 | 72.6 | 69.1 | 67.4 | 60.9 | 59.6 | 151.1 |
| 800 | 65.8 | 67.8 | 68.7 | 66.2 | 69.8 | 72.9 | 71.0 | 71.5 | 71.3 | 66.2 | 60.7 | 57.3 | 51.4 | 151.4 |
| 1000 | 65.4 | 67.3 | 69.1 | 66.7 | 71.3 | 72.9 | 71.3 | 70.8 | 66.9 | 61.5 | 59.9 | 55.0 | 52.8 | 151.0 |
| 1250 | 64.8 | 67.2 | 69.3 | 67.7 | 70.6 | 72.3 | 69.5 | 67.6 | 67.5 | 59.9 | 57.5 | 54.0 | 51.3 | 151.1 |
| 1600 | 63.2 | 66.2 | 68.9 | 67.3 | 70.8 | 72.5 | 70.2 | 67.9 | 65.5 | 57.8 | 54.1 | 50.6 | 47.7 | 151.9 |
| 2000 | 61.7 | 65.8 | 68.2 | 67.3 | 70.5 | 72.4 | 68.9 | 65.8 | 64.3 | 54.6 | 51.4 | 47.0 | 42.1 | 152.8 |
| 2500 | 59.1 | 62.7 | 66.2 | 65.6 | 68.0 | 70.5 | 67.2 | 64.1 | 61.9 | 51.3 | 47.0 | 41.7 | 34.7 | 153.2 |
| 3150 | 54.2 | 60.0 | 62.0 | 63.3 | 64.4 | 66.7 | 63.7 | 59.9 | 46.5 | 42.1 | 35.4 | 23.9 | 153.7 | |
| 4000 | 45.2 | 51.9 | 55.7 | 56.1 | 59.7 | 62.6 | 59.3 | 54.4 | 51.4 | 39.1 | 33.2 | 23.3 | 5.3 | 154.6 |
| 5000 | 33.4 | 42.7 | 47.7 | 49.1 | 50.8 | 53.9 | 50.3 | 45.9 | 42.0 | 28.5 | 21.5 | 6.5 | 155.6 | |
| 6300 | 10.6 | 23.3 | 30.5 | 34.5 | 36.8 | 40.8 | 36.3 | 31.0 | 24.8 | 10.0 | | | 155.8 | |
| 8000 | | 4.2 | 9.8 | 11.4 | 16.8 | 11.5 | 5.3 | | | | | | 155.3 | |
| 10000 | | | | | | | | | | | | | 154.3 | |
| 12500 | | | | | | | | | | | | | 153.7 | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| QASPL | 76.4 | 78.5 | 79.7 | 77.6 | 81.0 | 83.0 | 81.5 | 81.3 | 82.9 | 80.5 | 81.5 | 76.7 | 73.7 | 165.9 |
| PNL | 83.6 | 86.9 | 89.0 | 87.8 | 90.9 | 93.0 | 90.6 | 88.8 | 88.7 | 84.4 | 83.2 | 76.8 | 75.0 | |
| PNLT | 84.9 | 88.1 | 90.0 | 88.3 | 91.5 | 93.6 | 91.2 | 89.3 | 88.7 | 84.4 | 83.2 | 76.8 | 75.0 | |
| DBA | 73.6 | 76.0 | 77.9 | 76.4 | 79.7 | 81.7 | 79.5 | 78.5 | 78.4 | 74.1 | 72.7 | 66.5 | 65.2 | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH268 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = CO FLTVEL = 400. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 58.28 PAMB HG = 29.99 RELHUM = 37.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNL RPM XNH = RPM V8 = 1111.7 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 1801.8 FPS AE18 = 19.9 SQ IN

T = 40.34 X16341 TEL T NL 16341 RPM

IDENTIFICATION - MODEL 83F-ZER-1635 X1635C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 83.1 | 83.7 | 82.2 | 81.2 | 79.3 | 82.4 | 82.3 | 83.5 | 84.4 | 81.5 | 87.4 | 90.1 | 82.5 | 125.9 |
| 63 | 85.5 | 88.5 | 91.8 | 90.4 | 86.2 | 89.8 | 89.5 | 89.9 | 90.3 | 87.9 | 90.0 | 92.2 | 89.6 | 131.7 |
| 80 | 88.0 | 92.1 | 88.3 | 86.6 | 87.2 | 92.3 | 90.7 | 90.4 | 91.8 | 91.7 | 94.8 | 94.7 | 80.6 | 133.1 |
| 100 | 87.5 | 92.7 | 88.5 | 87.8 | 90.4 | 93.3 | 92.1 | 94.0 | 93.3 | 96.3 | 97.2 | 99.6 | 85.6 | 135.6 |
| 125 | 84.1 | 87.9 | 90.2 | 88.2 | 90.6 | 92.7 | 91.8 | 92.2 | 93.2 | 96.5 | 101.4 | 103.3 | 89.5 | 137.2 |
| 160 | 83.2 | 83.2 | 87.7 | 84.5 | 85.9 | 89.7 | 94.1 | 91.8 | 93.0 | 97.6 | 101.4 | 103.9 | 95.0 | 137.4 |
| 200 | 83.8 | 85.1 | 88.3 | 85.4 | 87.5 | 91.1 | 93.0 | 94.4 | 97.6 | 98.9 | 102.8 | 107.7 | 98.1 | 139.9 |
| 250 | 84.0 | 87.8 | 87.6 | 85.6 | 88.5 | 92.1 | 93.0 | 95.4 | 97.6 | 103.2 | 106.8 | 110.0 | 100.9 | 142.5 |
| 315 | 85.3 | 87.6 | 88.9 | 87.2 | 90.0 | 93.6 | 95.3 | 96.2 | 99.6 | 104.5 | 107.6 | 110.5 | 104.2 | 143.5 |
| 400 | 86.3 | 88.6 | 89.4 | 86.9 | 90.3 | 93.4 | 97.3 | 97.4 | 101.4 | 106.2 | 109.1 | 111.5 | 105.2 | 144.8 |
| 500 | 87.1 | 88.9 | 89.6 | 87.4 | 91.3 | 94.4 | 95.3 | 97.9 | 101.6 | 106.5 | 108.6 | 110.3 | 105.4 | 144.4 |
| 630 | 86.8 | 89.6 | 90.1 | 88.6 | 92.2 | 95.8 | 96.5 | 98.9 | 101.8 | 106.7 | 108.5 | 109.2 | 105.4 | 144.2 |
| 800 | 88.3 | 89.1 | 90.9 | 88.4 | 92.3 | 96.4 | 96.8 | 99.7 | 103.1 | 106.5 | 107.3 | 108.0 | 104.9 | 143.8 |
| 1000 | 91.0 | 91.5 | 92.1 | 89.4 | 93.9 | 97.1 | 96.9 | 101.1 | 103.3 | 105.6 | 106.5 | 106.7 | 104.1 | 143.3 |
| 1250 | 88.7 | 92.5 | 92.2 | 90.1 | 93.1 | 96.5 | 97.1 | 100.3 | 103.5 | 105.1 | 104.9 | 105.6 | 103.5 | 142.6 |
| 1600 | 89.3 | 91.7 | 91.9 | 90.3 | 94.3 | 98.1 | 98.2 | 101.0 | 104.4 | 104.5 | 105.4 | 105.5 | 102.7 | 142.9 |
| 2000 | 89.3 | 91.1 | 92.3 | 90.6 | 93.5 | 97.1 | 98.1 | 101.1 | 103.3 | 104.8 | 104.6 | 104.4 | 101.6 | 142.4 |
| 2500 | 88.7 | 92.7 | 93.1 | 91.0 | 94.2 | 97.5 | 97.7 | 100.6 | 102.7 | 105.0 | 102.8 | 102.8 | 100.1 | 141.9 |
| 3150 | 88.3 | 91.1 | 92.7 | 90.4 | 93.8 | 97.6 | 98.0 | 100.4 | 103.0 | 103.4 | 101.6 | 101.8 | 97.7 | 141.3 |
| 4000 | 87.8 | 90.9 | 92.3 | 90.4 | 94.4 | 97.6 | 97.7 | 100.3 | 101.7 | 100.9 | 99.4 | 98.4 | 95.0 | 140.0 |
| 5000 | 87.5 | 91.6 | 92.2 | 90.1 | 94.1 | 97.3 | 97.2 | 99.3 | 100.1 | 100.7 | 97.5 | 95.7 | 92.2 | 139.3 |
| 6300 | 87.3 | 90.9 | 92.5 | 90.8 | 94.4 | 97.8 | 97.9 | 99.8 | 99.1 | 98.3 | 95.5 | 94.0 | 89.5 | 139.1 |
| 8000 | 86.5 | 90.9 | 91.7 | 90.6 | 94.0 | 96.8 | 97.5 | 98.4 | 97.1 | 96.1 | 93.2 | 90.9 | 87.7 | 138.1 |
| 10000 | 87.7 | 92.6 | 93.6 | 91.7 | 94.8 | 97.5 | 97.5 | 98.3 | 96.5 | 94.7 | 90.8 | 88.9 | 86.4 | 138.8 |
| 12500 | 89.3 | 94.2 | 94.7 | 93.1 | 95.4 | 98.1 | 96.4 | 96.9 | 95.1 | 91.4 | 87.2 | 86.9 | 83.9 | 139.2 |
| 16000 | 89.3 | 95.2 | 96.1 | 95.1 | 96.1 | 98.1 | 96.4 | 96.3 | 94.3 | 88.8 | 85.2 | 83.6 | 80.8 | 140.8 |
| 20000 | 86.1 | 91.4 | 92.8 | 92.7 | 94.7 | 97.0 | 95.8 | 94.0 | 91.9 | 86.5 | 82.1 | 80.6 | 77.1 | 140.6 |
| 25000 | 83.0 | 87.8 | 89.9 | 89.6 | 92.2 | 96.3 | 95.7 | 92.5 | 90.9 | 84.2 | 79.6 | 78.5 | 74.6 | 141.6 |
| 31500 | 79.4 | 84.2 | 85.5 | 87.1 | 88.6 | 92.5 | 91.5 | 90.6 | 88.5 | 81.7 | 77.4 | 75.1 | 70.8 | 141.3 |
| 40000 | 75.6 | 80.2 | 82.2 | 82.5 | 84.8 | 89.2 | 88.0 | 86.3 | 84.7 | 79.7 | 75.2 | 71.5 | 67.4 | 141.7 |
| 50000 | 69.3 | 73.9 | 76.0 | 77.6 | 79.1 | 84.1 | 82.0 | 81.1 | 80.1 | 74.6 | 70.1 | 66.8 | 62.2 | 140.7 |
| 63000 | 62.5 | 67.9 | 70.7 | 70.4 | 73.0 | 79.0 | 75.6 | 75.4 | 74.6 | 69.1 | 65.5 | 61.3 | 55.8 | 140.3 |
| 80000 | 54.3 | 60.6 | 63.9 | 63.6 | 65.6 | 72.9 | 68.6 | 69.0 | 68.1 | 62.3 | 58.4 | 54.1 | 48.1 | 140.5 |
| GASPL | 101.9 | 105.4 | 106.1 | 104.5 | 107.2 | 110.5 | 110.6 | 112.5 | 114.4 | 116.7 | 118.0 | 119.7 | 114.6 | 156.3 |
| PNL | 113.5 | 116.7 | 117.5 | 115.5 | 118.9 | 122.3 | 122.7 | 125.0 | 127.0 | 128.5 | 127.9 | 128.5 | 124.4 | |
| PNLT | 113.5 | 116.7 | 117.5 | 115.5 | 118.9 | 122.3 | 122.7 | 125.0 | 127.0 | 128.5 | 127.9 | 128.5 | 124.4 | |
| DBA | 100.1 | 103.0 | 103.8 | 101.8 | 105.4 | 108.8 | 109.2 | 111.7 | 113.9 | 115.7 | 116.1 | 116.8 | 113.2 | |

ORIGINAL PAGE IS
OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/MAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|-------------------|
| VERTICL = ADH256 | TEST DATE = 05-05-83 | LOCAT = CAT ANECH CH | CONFTG = 16 | MODEL = CO | FLVEL = 0. FFS |
| IAPLHA = SB59 | IEGA = N0 | PWL AREA = FULL SPHERE | TAMB F = 55.95 | PAMB HG = 29.18 | RELHUM = 41.8 PCT |
| WIND DIR = | DEG WIND VEL = MPH | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNTNT = | LBS XNL = | RPM XNH = | V8 = 1224.6 FPS | AE8 = | 4.0 SQ IN |
| FNRAMB = | LBS XNLR = | RPM XNHR = | V18 = 1992.4 FPS | AE18 = | 19.9 SQ IN |
| RUNPT = 83F-ZER-1635 | TAPE = | TEST PT NO = 1635 | NC = AEO96 | CORR FAN SPEED = | RPM |

IDENTIFICATION - 83F-ZER-1635 X1635F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 83.1 | 83.7 | 82.2 | 81.2 | 79.3 | 82.4 | 82.3 | 83.5 | 84.4 | 81.5 | 87.4 | 90.1 | 82.5 | 125.9 |
| 63 | 85.5 | 88.5 | 91.8 | 90.4 | 86.2 | 89.8 | 89.5 | 89.9 | 90.3 | 87.9 | 90.0 | 92.2 | 89.6 | 131.7 |
| 80 | 88.0 | 92.1 | 88.3 | 86.6 | 87.2 | 92.3 | 90.7 | 90.4 | 91.8 | 91.7 | 94.8 | 94.7 | 80.6 | 133.1 |
| 100 | 87.5 | 92.7 | 88.5 | 87.8 | 90.4 | 93.3 | 92.1 | 94.0 | 93.3 | 96.3 | 97.2 | 99.6 | 85.6 | 135.6 |
| 125 | 84.1 | 87.9 | 90.2 | 88.2 | 90.6 | 92.7 | 91.8 | 92.2 | 93.2 | 96.5 | 101.4 | 103.3 | 89.5 | 137.2 |
| 160 | 83.2 | 83.2 | 87.7 | 84.5 | 85.9 | 89.7 | 94.1 | 91.8 | 93.0 | 97.6 | 101.4 | 103.9 | 95.0 | 137.4 |
| 200 | 83.8 | 85.1 | 88.3 | 85.4 | 87.5 | 91.1 | 93.0 | 94.4 | 97.6 | 98.9 | 102.8 | 107.7 | 98.1 | 139.9 |
| 250 | 84.0 | 87.6 | 87.6 | 85.6 | 88.5 | 92.1 | 93.0 | 95.4 | 97.6 | 103.2 | 106.8 | 110.0 | 100.9 | 142.5 |
| 315 | 85.3 | 87.6 | 88.9 | 87.2 | 90.0 | 93.6 | 95.3 | 96.2 | 99.6 | 104.5 | 107.6 | 110.5 | 104.2 | 143.5 |
| 400 | 86.3 | 88.6 | 89.4 | 86.9 | 89.3 | 93.4 | 97.3 | 97.4 | 101.4 | 106.2 | 109.1 | 111.5 | 105.2 | 144.8 |
| 500 | 87.1 | 88.9 | 89.6 | 87.4 | 91.3 | 94.4 | 95.3 | 97.9 | 101.6 | 106.5 | 108.6 | 110.3 | 105.4 | 144.4 |
| 630 | 86.8 | 89.6 | 90.1 | 88.6 | 92.2 | 95.8 | 96.5 | 98.9 | 101.8 | 106.7 | 108.5 | 109.2 | 105.4 | 144.2 |
| 800 | 88.3 | 89.1 | 90.9 | 88.4 | 92.3 | 96.4 | 96.8 | 99.7 | 103.1 | 106.5 | 107.3 | 108.0 | 104.9 | 143.8 |
| 1000 | 91.0 | 91.5 | 92.1 | 89.4 | 93.9 | 97.1 | 96.9 | 101.1 | 103.3 | 105.6 | 106.5 | 106.7 | 104.1 | 143.3 |
| 1250 | 88.7 | 92.5 | 92.2 | 90.1 | 93.1 | 96.5 | 97.1 | 100.3 | 103.5 | 105.1 | 104.9 | 105.6 | 103.5 | 142.6 |
| 1600 | 89.3 | 91.7 | 91.9 | 90.3 | 94.3 | 98.1 | 98.2 | 101.0 | 104.4 | 104.5 | 105.4 | 105.5 | 102.7 | 142.9 |
| 2000 | 89.3 | 91.1 | 92.3 | 90.6 | 93.5 | 97.1 | 101.1 | 103.3 | 104.8 | 104.6 | 104.4 | 101.6 | 142.4 | |
| 2500 | 88.7 | 92.7 | 93.1 | 91.0 | 94.2 | 97.5 | 97.7 | 100.6 | 102.7 | 105.0 | 102.8 | 102.8 | 100.1 | 141.9 |
| 3150 | 88.3 | 91.1 | 92.7 | 90.4 | 93.8 | 97.6 | 98.0 | 100.4 | 103.0 | 103.4 | 101.6 | 101.8 | 97.7 | 141.3 |
| 4000 | 87.8 | 90.9 | 92.3 | 90.4 | 94.4 | 97.6 | 97.7 | 100.3 | 101.7 | 100.9 | 99.4 | 98.4 | 95.0 | 140.0 |
| 5000 | 91.6 | 92.5 | 90.1 | 94.1 | 94.1 | 97.3 | 99.3 | 100.1 | 100.7 | 97.5 | 95.7 | 92.2 | 139.3 | |
| 6300 | 87.3 | 90.9 | 92.5 | 90.8 | 94.4 | 97.8 | 97.9 | 99.8 | 99.1 | 98.3 | 95.5 | 94.0 | 89.5 | 139.1 |
| 8000 | 86.5 | 90.9 | 91.7 | 90.6 | 94.0 | 96.8 | 97.5 | 98.4 | 97.1 | 96.1 | 93.2 | 90.9 | 87.7 | 138.1 |
| 10000 | 87.7 | 92.6 | 93.6 | 91.7 | 94.8 | 97.5 | 97.5 | 98.3 | 96.5 | 94.7 | 90.8 | 88.9 | 86.4 | 138.8 |
| 12500 | 89.3 | 94.2 | 94.7 | 93.1 | 95.4 | 98.1 | 96.4 | 96.9 | 95.1 | 91.4 | 87.2 | 86.9 | 83.9 | 139.2 |
| 16000 | 89.3 | 95.2 | 96.1 | 95.1 | 96.1 | 98.1 | 96.4 | 96.3 | 94.3 | 88.8 | 85.2 | 83.6 | 80.8 | 140.8 |
| 20000 | 88.1 | 91.4 | 92.8 | 92.7 | 94.7 | 97.0 | 95.8 | 94.0 | 91.9 | 86.5 | 82.1 | 80.6 | 77.1 | 140.6 |
| 25000 | 83.0 | 87.8 | 89.9 | 89.6 | 92.2 | 96.3 | 95.7 | 92.5 | 90.9 | 84.2 | 79.6 | 78.5 | 74.6 | 141.6 |
| 31500 | 79.4 | 84.2 | 85.5 | 87.1 | 88.6 | 92.5 | 91.5 | 90.6 | 88.5 | 81.7 | 77.4 | 75.1 | 70.8 | 141.3 |
| 40000 | 75.6 | 80.2 | 82.2 | 82.5 | 84.8 | 89.2 | 88.0 | 86.3 | 84.7 | 79.7 | 75.2 | 71.5 | 67.4 | 141.7 |
| 50000 | 73.9 | 73.9 | 75.0 | 77.6 | 79.1 | 84.1 | 82.0 | 81.1 | 80.1 | 74.6 | 70.1 | 66.8 | 62.2 | 140.7 |
| 63000 | 62.5 | 67.9 | 70.7 | 70.4 | 73.0 | 79.0 | 75.6 | 75.4 | 74.6 | 69.1 | 65.5 | 61.3 | 55.8 | 140.3 |
| 80000 | 60.6 | 63.9 | 63.6 | 65.6 | 72.9 | 68.6 | 69.0 | 68.1 | 62.3 | 58.4 | 54.1 | 48.1 | 48.1 | 140.5 |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0ASPL | 101.9 | 105.4 | 106.1 | 104.5 | 107.2 | 110.5 | 110.6 | 112.5 | 114.4 | 116.7 | 118.0 | 119.7 | 114.6 | 156.3 |
| PNL | 113.5 | 116.7 | 117.5 | 115.5 | 118.9 | 122.3 | 122.7 | 125.0 | 127.0 | 128.5 | 127.9 | 128.5 | 124.4 | |
| PNLT | 113.5 | 116.7 | 117.5 | 115.5 | 118.9 | 122.3 | 122.7 | 125.0 | 127.0 | 128.5 | 127.9 | 128.5 | 124.4 | |
| DBA | 177.7 | 183.3 | 186.2 | 186.3 | 188.3 | 194.9 | 191.2 | 191.2 | 190.3 | 184.6 | 180.8 | 176.6 | 171.0 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH256 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = CO FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 55.95 PAMB HG = 29.18 RELHUM = 41.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT. EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNL RPM = RPM XNH RPM = RPM V8 = 1224.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM = RPM XNHR RPM = RPM V18 = 1992.4 FPS AE18 = 19.9 SQ IN

PT = ZE 335 E = X1635F Test Pt No = 1635 CORR FAN SPEED = AE096 RPM

IDENTIFICATION - 83F-ZER-1635 X16351

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 61.2 | 65.0 | 67.4 | 66.4 | 69.6 | 73.4 | 74.9 | 75.4 | 78.1 | 81.9 | 83.5 | 84.2 | 74.5 | 158.9 |
| 63 | 62.2 | 66.0 | 67.8 | 66.1 | 69.8 | 73.1 | 76.8 | 76.6 | 79.8 | 83.6 | 84.9 | 85.1 | 75.4 | 160.1 |
| 80 | 62.9 | 66.2 | 68.1 | 66.5 | 70.8 | 74.1 | 74.8 | 77.1 | 80.1 | 83.8 | 84.4 | 83.8 | 75.6 | 159.7 |
| 100 | 62.9 | 66.9 | 68.5 | 67.7 | 71.7 | 75.5 | 76.0 | 78.0 | 80.2 | 83.9 | 84.3 | 82.7 | 75.4 | 159.6 |
| 125 | 63.9 | 66.3 | 69.2 | 67.4 | 71.7 | 76.0 | 78.2 | 78.7 | 81.4 | 83.6 | 82.9 | 81.3 | 74.7 | 159.1 |
| 160 | 66.4 | 68.6 | 70.2 | 68.2 | 73.3 | 76.5 | 76.3 | 80.0 | 81.5 | 82.7 | 81.9 | 79.8 | 73.5 | 158.7 |
| 200 | 63.8 | 69.3 | 70.2 | 68.8 | 72.3 | 75.8 | 76.3 | 79.0 | 81.4 | 81.9 | 80.1 | 78.3 | 72.5 | 157.9 |
| 250 | 64.2 | 68.3 | 69.6 | 68.8 | 73.2 | 77.2 | 77.2 | 79.5 | 82.1 | 81.0 | 80.2 | 77.8 | 71.0 | 158.3 |
| 315 | 63.7 | 67.3 | 69.7 | 68.8 | 72.1 | 75.9 | 76.7 | 79.3 | 80.7 | 81.0 | 78.9 | 76.1 | 69.1 | 157.7 |
| 400 | 62.5 | 68.5 | 70.1 | 68.9 | 72.5 | 76.0 | 76.1 | 78.4 | 79.7 | 80.7 | 76.6 | 73.9 | 66.5 | 157.2 |
| 500 | 61.7 | 66.5 | 69.3 | 68.0 | 71.8 | 75.8 | 76.0 | 78.0 | 79.7 | 78.7 | 75.0 | 72.1 | 63.1 | 156.6 |
| 630 | 60.6 | 65.8 | 68.5 | 67.6 | 72.1 | 75.4 | 75.4 | 77.5 | 77.9 | 75.8 | 72.2 | 68.0 | 59.3 | 155.4 |
| 800 | 59.8 | 66.0 | 68.1 | 66.9 | 71.5 | 74.9 | 74.6 | 76.1 | 75.9 | 75.1 | 69.7 | 64.6 | 55.3 | 154.6 |
| 1000 | 58.9 | 64.9 | 68.0 | 67.3 | 71.5 | 75.1 | 75.0 | 76.3 | 74.6 | 72.3 | 67.2 | 62.1 | 51.3 | 154.4 |
| 1250 | 57.4 | 64.3 | 66.8 | 66.8 | 70.8 | 73.8 | 74.3 | 74.5 | 72.3 | 69.5 | 64.2 | 57.9 | 47.9 | 153.5 |
| 1600 | 57.5 | 65.2 | 68.0 | 67.2 | 71.0 | 73.9 | 73.7 | 73.8 | 70.9 | 67.3 | 60.6 | 54.3 | 44.0 | 154.1 |
| 2000 | 57.6 | 65.6 | 68.2 | 67.9 | 70.9 | 73.9 | 71.9 | 71.7 | 68.6 | 62.9 | 55.5 | 50.1 | 37.9 | 154.5 |
| 2500 | 55.4 | 65.0 | 68.3 | 68.8 | 70.7 | 72.9 | 71.0 | 70.1 | 66.5 | 58.6 | 51.4 | 43.7 | 29.5 | 156.1 |
| 3150 | 48.3 | 58.2 | 62.5 | 64.3 | 67.3 | 69.9 | 68.4 | 65.6 | 61.7 | 53.3 | 44.2 | 35.1 | 15.8 | 156.0 |
| 4000 | 38.1 | 49.1 | 55.0 | 57.2 | 61.0 | 65.5 | 64.5 | 60.1 | 56.0 | 45.4 | 34.7 | 23.3 | 156.9 | |
| 5000 | 23.9 | 37.0 | 43.5 | 48.4 | 51.6 | 56.0 | 54.5 | 51.8 | 46.5 | 34.6 | 21.9 | 5.3 | 156.6 | |
| 6300 | 1.9 | 18.4 | 27.8 | 32.5 | 37.3 | 42.5 | 40.5 | 36.4 | 30.3 | 18.0 | 1.6 | | 157.0 | |
| 8000 | | | 7.5 | 12.5 | 18.7 | 15.4 | 10.9 | 3.4 | | | | | 155.0 | |
| 10000 | | | | | | | | | | | | | 165.6 | |
| 12500 | | | | | | | | | | | | | 155.9 | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| GASPL | 74.6 | 79.2 | 81.4 | 80.5 | 84.3 | 87.8 | 88.0 | 89.9 | 91.5 | 93.0 | 92.6 | 91.7 | 83.7 | 171.2 |
| PNL | 80.0 | 87.5 | 90.5 | 90.4 | 93.5 | 96.6 | 95.8 | 96.1 | 96.1 | 95.6 | 93.0 | 90.4 | 82.3 | |
| PNLT | 80.0 | 87.5 | 90.5 | 90.9 | 94.1 | 97.1 | 96.4 | 96.6 | 96.7 | 95.6 | 93.0 | 90.4 | 82.3 | |
| DBA | 68.8 | 75.3 | 78.0 | 77.6 | 81.1 | 84.3 | 83.9 | 85.0 | 84.8 | 83.8 | 80.7 | 77.8 | 70.4 | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH256 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = CG FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO MPH = 2400.0 FT EXT DIST = 2400.0 FT EXT CONFIG = SL PAMB HG = 55.95 RELHUM = 41.6 PCT
 WIND DIR = DEG WIND VEL = MPH

FNINI = LBS XNL = RPM XNH = RPM V8 = 1224.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1992.4 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1635 TAPE = X16351 TEST PT NO = 1635 NC = AE096 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1636 X1636C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.4 | 85.4 | 82.2 | 79.2 | 79.6 | 82.4 | 82.3 | 84.2 | 83.9 | 80.2 | 89.4 | 91.3 | 87.7 | 127.0 |
| 63 | 85.3 | 89.0 | 91.1 | 86.4 | 85.7 | 88.6 | 91.5 | 89.6 | 89.6 | 83.1 | 90.3 | 93.0 | 91.4 | 131.4 |
| 80 | 87.8 | 91.6 | 87.3 | 85.9 | 87.0 | 90.3 | 90.2 | 89.4 | 91.1 | 87.9 | 93.3 | 94.2 | 87.9 | 132.0 |
| 100 | 86.5 | 91.0 | 86.8 | 85.5 | 88.1 | 90.8 | 90.1 | 91.3 | 90.3 | 89.3 | 95.5 | 98.6 | 88.8 | 133.4 |
| 125 | 83.6 | 86.7 | 88.2 | 87.0 | 89.3 | 91.2 | 91.3 | 90.5 | 90.4 | 90.3 | 98.9 | 101.6 | 90.7 | 135.0 |
| 160 | 81.7 | 81.5 | 86.2 | 82.3 | 84.1 | 86.2 | 90.9 | 87.3 | 89.5 | 90.6 | 98.9 | 101.6 | 94.3 | 134.5 |
| 200 | 81.5 | 82.8 | 86.6 | 81.9 | 83.7 | 86.8 | 89.5 | 90.4 | 92.3 | 90.6 | 99.0 | 104.2 | 95.9 | 136.0 |
| 250 | 80.8 | 82.8 | 82.6 | 81.1 | 84.7 | 87.6 | 88.2 | 90.1 | 93.1 | 95.2 | 103.3 | 106.0 | 96.9 | 138.2 |
| 315 | 80.8 | 83.9 | 85.4 | 82.9 | 85.3 | 88.1 | 90.5 | 91.7 | 93.6 | 96.0 | 103.8 | 105.3 | 97.7 | 138.4 |
| 400 | 81.8 | 83.6 | 84.6 | 82.2 | 85.0 | 88.1 | 93.0 | 91.7 | 95.6 | 97.7 | 104.1 | 105.0 | 95.2 | 138.6 |
| 500 | 82.3 | 83.9 | 84.4 | 82.4 | 85.5 | 89.1 | 90.3 | 92.4 | 95.6 | 97.5 | 104.1 | 102.3 | 92.7 | 137.7 |
| 630 | 82.0 | 84.1 | 84.6 | 83.4 | 87.0 | 90.8 | 91.5 | 93.9 | 95.8 | 98.2 | 103.3 | 99.7 | 90.4 | 137.2 |
| 800 | 83.8 | 83.9 | 85.6 | 83.2 | 87.0 | 90.9 | 91.5 | 94.2 | 97.4 | 97.7 | 101.8 | 96.3 | 88.2 | 136.4 |
| 1000 | 85.5 | 85.3 | 86.1 | 84.1 | 88.4 | 91.8 | 92.4 | 95.6 | 98.3 | 97.6 | 101.0 | 92.9 | 85.4 | 136.5 |
| 1250 | 84.2 | 86.7 | 86.5 | 84.6 | 87.6 | 92.0 | 92.4 | 95.5 | 98.7 | 97.6 | 99.4 | 91.1 | 85.5 | 136.1 |
| 1600 | 85.3 | 86.2 | 87.4 | 85.5 | 89.5 | 93.4 | 94.0 | 96.3 | 99.4 | 97.0 | 99.6 | 90.3 | 84.7 | 136.6 |
| 2000 | 87.0 | 86.3 | 87.3 | 85.6 | 89.0 | 92.8 | 94.1 | 97.1 | 99.0 | 97.3 | 98.8 | 89.4 | 85.1 | 136.5 |
| 2500 | 87.2 | 88.0 | 88.3 | 85.8 | 90.2 | 93.6 | 93.7 | 97.1 | 98.5 | 97.8 | 98.8 | 85.1 | 85.1 | 136.3 |
| 3150 | 87.3 | 86.9 | 87.9 | 86.9 | 90.3 | 94.1 | 95.0 | 96.4 | 99.0 | 96.6 | 96.6 | 88.5 | 83.9 | 136.4 |
| 4000 | 87.3 | 87.9 | 89.0 | 86.9 | 90.6 | 94.3 | 94.2 | 96.8 | 97.4 | 93.9 | 95.4 | 88.2 | 83.5 | 135.7 |
| 5000 | 87.3 | 88.9 | 89.7 | 87.4 | 91.1 | 94.8 | 94.5 | 95.6 | 97.1 | 94.5 | 94.8 | 87.3 | 83.5 | 135.7 |
| 6300 | 88.3 | 89.5 | 90.0 | 88.1 | 91.7 | 95.1 | 94.7 | 95.6 | 95.9 | 91.8 | 94.1 | 88.0 | 83.3 | 135.7 |
| 8000 | 87.8 | 89.4 | 90.5 | 88.4 | 91.6 | 94.9 | 94.6 | 94.4 | 94.7 | 90.6 | 92.5 | 87.4 | 83.5 | 135.4 |
| 10000 | 90.5 | 91.7 | 92.0 | 90.2 | 92.3 | 95.8 | 95.3 | 94.1 | 94.6 | 89.1 | 90.1 | 87.4 | 84.5 | 136.5 |
| 12500 | 93.4 | 93.3 | 93.6 | 91.7 | 93.7 | 96.7 | 95.0 | 94.0 | 93.7 | 87.3 | 87.8 | 86.2 | 84.0 | 137.8 |
| 16000 | 92.9 | 95.1 | 95.0 | 93.5 | 93.5 | 95.9 | 94.5 | 93.2 | 91.9 | 84.7 | 86.1 | 83.7 | 81.4 | 139.1 |
| 20000 | 88.7 | 91.6 | 92.7 | 92.1 | 92.9 | 95.4 | 93.7 | 92.1 | 90.1 | 82.7 | 82.7 | 80.5 | 78.0 | 139.3 |
| 25000 | 85.6 | 87.3 | 88.8 | 89.3 | 91.1 | 95.5 | 94.4 | 91.2 | 89.3 | 80.4 | 80.5 | 78.9 | 75.8 | 140.6 |
| 31500 | 82.1 | 84.4 | 85.4 | 86.3 | 87.3 | 92.2 | 91.2 | 89.5 | 87.7 | 78.5 | 79.1 | 75.8 | 72.2 | 140.8 |
| 40000 | 77.8 | 80.9 | 82.4 | 82.2 | 84.0 | 88.4 | 87.5 | 86.0 | 84.2 | 76.0 | 77.0 | 73.2 | 68.8 | 141.2 |
| 50000 | 71.5 | 74.6 | 76.7 | 76.9 | 78.3 | 83.8 | 81.7 | 80.6 | 79.6 | 71.7 | 72.1 | 68.6 | 63.2 | 140.3 |
| 63000 | 64.8 | 68.5 | 70.5 | 70.5 | 72.5 | 77.7 | 75.8 | 75.0 | 74.7 | 66.2 | 67.8 | 63.3 | 58.1 | 139.8 |
| 80000 | 56.6 | 61.2 | 63.2 | 62.7 | 64.9 | 71.7 | 68.1 | 67.8 | 67.1 | 59.4 | 60.7 | 56.8 | 49.8 | 139.6 |
| GASPL | 101.7 | 103.3 | 103.6 | 101.9 | 104.2 | 107.5 | 107.5 | 108.4 | 110.1 | 108.9 | 113.6 | 113.3 | 105.2 | 152.7 |
| PNL | 112.2 | 113.1 | 114.0 | 111.9 | 115.2 | 118.8 | 119.4 | 121.0 | 122.9 | 121.1 | 123.6 | 120.4 | 113.3 | |
| PNLT | 112.2 | 113.1 | 114.0 | 112.4 | 115.8 | 118.8 | 119.4 | 121.0 | 122.9 | 121.1 | 123.6 | 120.4 | 113.3 | |
| DBA | 98.3 | 99.2 | 99.9 | 98.0 | 101.5 | 105.1 | 105.4 | 107.5 | 109.5 | 108.0 | 111.1 | 107.4 | 99.8 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VERTICL = ADR267 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = C0 FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 59.40 PAMB HG = 29.04 RELHUM = 36.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FNINT = LBS XNL = RPM XNHR = RPM V8 = 1230.3 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V10 = 2017.5 FPS AE10 = 19.9 SQ IN

RUNPT = 83F-400-1636 TAPE = X1636C TFSPT PT = 1636 NC = AEC00

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1636 X1636F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|-------|------|-------|-------|------|-------|
| 50 | | | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | |
| 125 | | | | | | | | | | | | | | |
| 160 | | | | | | | | | | | | | | |
| 200 | | | | | | | | | | | | | | |
| 250 | 88.1 | 88.9 | 87.3 | 84.3 | 86.3 | 87.6 | 86.3 | 86.5 | 91.6 | 93.4 | 101.1 | 103.2 | 97.6 | 136.3 |
| 315 | 88.1 | 88.9 | 87.3 | 84.3 | 86.3 | 87.6 | 86.3 | 86.5 | 91.6 | 93.4 | 101.1 | 103.2 | 97.6 | 136.3 |
| 400 | 88.1 | 88.9 | 87.3 | 84.3 | 86.3 | 87.6 | 86.3 | 86.5 | 91.6 | 93.4 | 101.1 | 103.2 | 97.6 | 136.3 |
| 500 | 88.7 | 89.5 | 89.2 | 85.4 | 87.4 | 89.5 | 89.3 | 90.2 | 93.8 | 95.7 | 101.0 | 99.6 | 95.2 | 135.8 |
| 630 | 89.9 | 90.2 | 89.3 | 85.9 | 88.9 | 91.2 | 90.5 | 91.6 | 95.7 | 95.7 | 100.3 | 97.5 | 95.7 | 135.8 |
| 800 | 89.7 | 90.5 | 89.6 | 86.9 | 89.1 | 91.4 | 90.6 | 92.0 | 97.0 | 96.1 | 100.1 | 95.4 | 96.4 | 135.9 |
| 1000 | 91.5 | 90.3 | 90.7 | 86.8 | 90.6 | 92.5 | 91.6 | 93.5 | 97.6 | 96.1 | 98.6 | 93.7 | 95.7 | 135.9 |
| 1250 | 93.2 | 91.8 | 91.2 | 87.8 | 89.9 | 92.8 | 91.9 | 93.7 | 98.6 | 95.8 | 99.0 | 93.1 | 95.1 | 136.4 |
| 1600 | 91.8 | 93.2 | 91.6 | 88.4 | 92.0 | 94.4 | 93.9 | 94.8 | 98.8 | 96.8 | 98.9 | 93.0 | 96.5 | 137.1 |
| 2000 | 93.0 | 92.8 | 92.7 | 89.4 | 91.7 | 94.1 | 94.5 | 96.2 | 98.9 | 97.5 | 98.7 | 93.3 | 97.3 | 137.4 |
| 2500 | 94.7 | 92.9 | 92.6 | 89.7 | 93.1 | 95.2 | 94.6 | 96.7 | 100.1 | 97.5 | 98.2 | 93.8 | 97.1 | 138.0 |
| 3150 | 94.8 | 94.6 | 93.8 | 90.0 | 93.5 | 95.1 | 95.3 | 96.7 | 99.9 | 96.2 | 98.3 | 94.7 | 97.7 | 138.3 |
| 4000 | 94.9 | 93.6 | 93.5 | 91.3 | 94.3 | 96.9 | 96.3 | 98.1 | 99.8 | 97.0 | 98.1 | 94.1 | 97.9 | 138.7 |
| 5000 | 94.9 | 94.6 | 94.8 | 91.6 | 95.7 | 97.8 | 96.9 | 97.1 | 99.4 | 95.4 | 98.4 | 95.7 | 98.0 | 139.0 |
| 6300 | 97.6 | 97.8 | 97.8 | 93.3 | 95.7 | 98.1 | 97.1 | 97.5 | 97.2 | 93.0 | 95.3 | 93.1 | 95.9 | 139.3 |
| 8000 | 95.6 | 96.0 | 95.7 | 92.8 | 95.6 | 97.9 | 95.4 | 95.7 | 95.7 | 89.7 | 91.1 | 91.4 | 95.4 | 138.4 |
| 10000 | 94.9 | 95.8 | 96.0 | 93.0 | 96.4 | 98.8 | 96.8 | 94.1 | 95.1 | 88.2 | 89.0 | 90.4 | 95.2 | 139.0 |
| 12500 | 97.4 | 97.8 | 97.2 | 94.5 | 97.7 | 99.7 | 96.4 | 94.0 | 93.8 | 86.1 | 87.9 | 88.5 | 93.1 | 140.5 |
| 16000 | 99.3 | 98.6 | 98.1 | 95.3 | 97.3 | 98.9 | 96.0 | 93.2 | 92.4 | 84.5 | 84.9 | 85.7 | 90.1 | 141.9 |
| 20000 | 97.3 | 99.2 | 98.6 | 96.3 | 96.3 | 98.4 | 95.1 | 92.1 | 92.2 | 82.8 | 83.3 | 84.7 | 88.5 | 143.4 |
| 25000 | 94.1 | 96.2 | 96.4 | 94.9 | 95.7 | 98.5 | 95.8 | 91.2 | 91.4 | 81.7 | 82.7 | 82.4 | 85.8 | 144.5 |
| 31500 | 93.0 | 93.3 | 93.4 | 92.4 | 91.9 | 95.2 | 92.6 | 89.5 | 88.8 | 80.0 | 81.4 | 80.7 | 83.2 | 144.7 |
| 40000 | 88.5 | 89.6 | 89.2 | 88.6 | 88.6 | 91.4 | 88.9 | 86.0 | 84.6 | 76.1 | 76.9 | 76.4 | 77.9 | 144.9 |
| 50000 | 83.9 | 85.8 | 85.8 | 84.0 | 82.9 | 86.8 | 83.2 | 80.6 | 80.6 | 71.6 | 73.5 | 72.1 | 73.8 | 144.7 |
| 63000 | 76.7 | 78.5 | 79.2 | 77.8 | 77.1 | 80.7 | 77.2 | 74.9 | 74.5 | 66.3 | 67.9 | 67.1 | 67.0 | 143.7 |
| 80000 | 68.4 | 70.9 | 71.4 | 69.9 | 69.5 | 74.7 | 69.6 | 67.8 | 64.7 | 56.5 | 58.1 | 57.3 | 57.2 | 143.1 |
| 80000 | 68.4 | 70.9 | 71.4 | 69.9 | 69.5 | 74.7 | 69.6 | 67.8 | 64.7 | 56.5 | 58.1 | 57.3 | 57.2 | 143.1 |

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 107.9 | 108.2 | 107.8 | 105.0 | 107.3 | 109.5 | 108.0 | 107.8 | 110.2 | 107.9 | 111.4 | 110.1 | 109.1 | 109.1 | 154.9 |
| 118.3 | 118.4 | 117.9 | 114.4 | 117.5 | 119.7 | 119.2 | 120.3 | 122.6 | 120.1 | 122.4 | 119.4 | 121.3 | 121.3 | |
| 118.3 | 118.4 | 117.9 | 114.4 | 117.5 | 119.7 | 119.2 | 120.3 | 122.6 | 120.1 | 122.4 | 119.4 | 121.3 | 121.3 | |
| 191.8 | 193.9 | 194.3 | 192.8 | 192.3 | 196.8 | 192.4 | 190.3 | 188.6 | 180.3 | 181.9 | 181.0 | 181.3 | 181.3 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

| | | | | | |
|-----------------|----------------------|------------------------|--------------------|-----------------|-------------------|
| VEHICL = ADH267 | TEST DATE = 05-05-83 | LOCAT = C41 ANECH CH | CONFIG = 16 | MODEL = C6 | FLTVEL = 400. FPS |
| 1APLHA = SBS9 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 59.40 | PAMB HG = 29.04 | RELHUM = 36.7 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = |

| | | | | | | | | | | | | |
|----------|----------|---|-----|------|---|-----|-----|---|------------|------|---|------------|
| FNINI = | LBS XNL | = | RPM | XNH | = | RPM | V8 | = | 1230.3 FPS | AE8 | = | 4.0 SQ IN |
| FNRAMB = | LBS XNLR | = | RPM | XNHR | = | RPM | V18 | = | 2017.5 FPS | AE18 | = | 19.9 SQ IN |

RUNPT = 83F-400-1636 TAPE = X1636F TEST PT NO = 1636 NC = AE096 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1636 X16361

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 64.0 | 66.3 | 65.8 | 63.5 | 66.6 | 68.1 | 69.3 | 69.1 | 72.0 | 72.6 | 77.4 | 77.2 | 67.8 | 152.2 |
| 63 | 64.0 | 67.4 | 68.6 | 65.4 | 66.3 | 68.1 | 71.7 | 68.9 | 71.8 | 72.1 | 77.3 | 74.9 | 65.7 | 151.6 |
| 80 | 64.5 | 66.8 | 67.7 | 64.5 | 67.0 | 69.2 | 68.8 | 69.4 | 72.2 | 73.0 | 76.8 | 73.2 | 65.3 | 151.1 |
| 100 | 65.6 | 67.5 | 67.5 | 65.0 | 68.4 | 70.9 | 70.0 | 70.7 | 74.1 | 73.0 | 76.0 | 71.0 | 65.8 | 151.1 |
| 125 | 65.3 | 67.7 | 67.9 | 65.9 | 68.5 | 71.0 | 70.0 | 71.0 | 75.3 | 73.2 | 75.7 | 68.7 | 66.2 | 151.2 |
| 160 | 66.9 | 67.3 | 68.8 | 65.6 | 69.9 | 71.9 | 71.0 | 72.4 | 75.7 | 73.1 | 74.0 | 66.7 | 65.1 | 151.3 |
| 200 | 68.3 | 68.6 | 69.1 | 66.5 | 69.0 | 72.1 | 71.0 | 72.4 | 76.6 | 72.7 | 74.2 | 65.8 | 64.1 | 151.7 |
| 250 | 66.7 | 69.7 | 69.4 | 66.8 | 70.9 | 73.5 | 72.9 | 73.3 | 76.5 | 73.3 | 73.7 | 65.3 | 64.8 | 152.4 |
| 315 | 67.4 | 68.9 | 70.1 | 67.6 | 70.3 | 72.9 | 73.1 | 74.4 | 76.3 | 73.6 | 73.1 | 65.0 | 64.8 | 152.8 |
| 400 | 68.6 | 68.7 | 69.6 | 67.5 | 71.4 | 73.6 | 72.9 | 74.6 | 77.2 | 73.3 | 72.1 | 64.8 | 63.6 | 153.3 |
| 500 | 68.2 | 69.9 | 70.4 | 67.5 | 71.6 | 74.3 | 74.4 | 74.2 | 76.5 | 71.5 | 71.7 | 65.1 | 63.1 | 153.6 |
| 630 | 67.7 | 68.4 | 69.8 | 68.5 | 72.0 | 74.8 | 74.0 | 75.3 | 76.0 | 71.9 | 70.9 | 63.8 | 62.3 | 154.0 |
| 800 | 67.1 | 69.0 | 70.7 | 68.4 | 73.1 | 75.4 | 74.2 | 74.0 | 75.3 | 69.8 | 70.6 | 64.5 | 61.1 | 154.4 |
| 1000 | 69.2 | 71.8 | 72.8 | 69.8 | 72.8 | 75.4 | 74.2 | 74.0 | 72.7 | 67.0 | 66.9 | 61.1 | 57.7 | 154.6 |
| 1250 | 66.6 | 69.5 | 70.8 | 69.0 | 72.4 | 74.8 | 73.2 | 71.6 | 70.8 | 63.1 | 62.0 | 58.5 | 55.6 | 153.7 |
| 1600 | 64.7 | 68.4 | 70.4 | 68.5 | 72.6 | 75.2 | 73.0 | 69.6 | 69.5 | 60.8 | 58.8 | 55.9 | 52.7 | 154.3 |
| 2000 | 65.7 | 69.3 | 70.7 | 69.3 | 73.2 | 75.4 | 72.0 | 68.8 | 67.3 | 56.2 | 51.8 | 47.1 | 45.8 | 155.8 |
| 2500 | 65.4 | 68.4 | 70.3 | 69.0 | 71.9 | 73.8 | 70.5 | 66.9 | 64.7 | 54.4 | 51.0 | 45.8 | 38.8 | 157.2 |
| 3150 | 59.5 | 66.0 | 68.3 | 67.9 | 69.5 | 71.3 | 67.7 | 63.7 | 62.0 | 49.6 | 45.5 | 39.2 | 28.2 | 158.7 |
| 4000 | 49.2 | 57.5 | 61.5 | 62.4 | 64.6 | 67.7 | 64.6 | 58.7 | 56.5 | 43.0 | 37.8 | 27.1 | 10.2 | 159.8 |
| 5000 | 37.5 | 46.2 | 51.5 | 53.6 | 54.9 | 58.7 | 55.6 | 50.8 | 46.8 | 32.9 | 25.9 | 10.9 | 160.1 | 160.2 |
| 6300 | 14.9 | 27.9 | 34.8 | 38.6 | 41.1 | 44.7 | 41.4 | 36.1 | 30.2 | 14.4 | 3.2 | | 160.2 | 160.0 |
| 8000 | 9.1 | 13.9 | 16.3 | 21.4 | 16.6 | 10.4 | 3.9 | | | | | | 159.0 | 158.4 |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |
| QASPL | 79.3 | 81.4 | 82.5 | 80.4 | 83.7 | 86.1 | 85.0 | 84.9 | 87.0 | 84.0 | 85.9 | 81.9 | 76.2 | 170.1 |
| PWL | 87.8 | 90.9 | 92.6 | 91.0 | 94.1 | 96.4 | 94.1 | 92.2 | 92.9 | 87.9 | 87.8 | 81.3 | 78.1 | |
| PWLT | 89.0 | 90.9 | 93.1 | 91.6 | 94.7 | 96.9 | 94.7 | 92.8 | 93.4 | 87.9 | 89.0 | 81.3 | 78.1 | |
| DBA | 76.5 | 79.2 | 80.7 | 78.9 | 82.3 | 84.7 | 82.8 | 81.8 | 82.4 | 77.3 | 77.1 | 70.6 | 68.3 | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH267 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = C8 FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 59.40 PAMB HG = 29.04 RELHUM = 36.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT. EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1230.3 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2017.5 FPS AE18 = 19.9 SQ IN

CONR F-XN SPEED = RPM
 AE030 = 163

IDENTIFICATION - MODEL 83F-ZER-1637 X1637C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.9 | 84.9 | 83.7 | 82.0 | 81.8 | 84.7 | 83.3 | 85.2 | 88.2 | 86.7 | 90.4 | 92.1 | 85.7 | 128.3 |
| 63 | 88.3 | 89.0 | 91.1 | 89.6 | 88.7 | 91.8 | 90.7 | 89.9 | 94.1 | 92.9 | 93.8 | 95.2 | 92.4 | 133.6 |
| 80 | 89.8 | 94.1 | 90.1 | 90.0 | 94.8 | 93.5 | 93.1 | 93.6 | 94.4 | 97.0 | 97.2 | 94.6 | 84.6 | 135.4 |
| 100 | 89.5 | 95.2 | 91.0 | 90.3 | 92.4 | 95.5 | 94.9 | 96.5 | 94.5 | 97.6 | 99.2 | 102.1 | 88.8 | 137.8 |
| 125 | 86.4 | 89.9 | 91.9 | 90.2 | 93.1 | 95.4 | 94.1 | 94.7 | 94.7 | 98.3 | 104.4 | 106.8 | 92.7 | 140.0 |
| 160 | 85.2 | 86.2 | 89.2 | 86.3 | 88.6 | 92.0 | 95.6 | 94.3 | 94.5 | 99.8 | 104.7 | 107.6 | 96.3 | 140.4 |
| 200 | 86.0 | 86.8 | 89.3 | 86.9 | 90.2 | 93.8 | 95.2 | 96.4 | 99.3 | 100.9 | 105.8 | 110.7 | 100.9 | 142.6 |
| 250 | 86.0 | 89.6 | 89.6 | 88.4 | 91.5 | 94.3 | 95.2 | 97.9 | 100.1 | 105.9 | 109.8 | 113.2 | 103.9 | 145.5 |
| 315 | 87.6 | 89.4 | 90.1 | 88.9 | 92.0 | 96.1 | 97.3 | 98.7 | 101.6 | 107.0 | 111.3 | 113.5 | 106.7 | 146.5 |
| 400 | 86.8 | 90.6 | 91.4 | 88.7 | 92.3 | 95.9 | 99.3 | 99.7 | 102.9 | 109.2 | 112.3 | 114.5 | 107.9 | 147.7 |
| 500 | 89.3 | 91.9 | 91.9 | 89.7 | 93.8 | 96.9 | 97.8 | 100.2 | 103.4 | 109.5 | 113.3 | 115.0 | 109.2 | 148.4 |
| 630 | 89.3 | 91.8 | 92.3 | 91.1 | 94.2 | 98.1 | 99.0 | 101.4 | 104.3 | 109.7 | 114.2 | 109.9 | 148.2 | |
| 800 | 91.3 | 91.6 | 93.6 | 91.2 | 94.5 | 98.9 | 99.5 | 101.9 | 105.6 | 109.5 | 111.3 | 113.0 | 109.9 | 147.5 |
| 1000 | 93.8 | 94.8 | 94.8 | 92.1 | 96.4 | 99.3 | 100.2 | 103.6 | 105.8 | 109.1 | 111.0 | 112.4 | 109.6 | 147.4 |
| 1250 | 91.9 | 95.0 | 94.5 | 93.1 | 96.1 | 99.5 | 99.9 | 103.3 | 106.0 | 108.3 | 109.7 | 111.1 | 109.0 | 146.6 |
| 1600 | 91.8 | 94.2 | 94.7 | 93.3 | 96.3 | 100.4 | 101.2 | 103.8 | 106.9 | 108.2 | 109.4 | 110.5 | 108.2 | 146.6 |
| 2000 | 92.3 | 93.6 | 94.8 | 93.1 | 96.0 | 99.6 | 101.1 | 103.9 | 106.3 | 108.3 | 108.1 | 109.6 | 106.6 | 146.0 |
| 2500 | 90.7 | 94.5 | 95.3 | 92.8 | 96.9 | 99.8 | 101.0 | 104.3 | 105.5 | 108.5 | 107.5 | 106.6 | 104.1 | 145.4 |
| 3150 | 90.6 | 93.2 | 94.9 | 92.9 | 96.5 | 100.1 | 103.4 | 105.8 | 107.9 | 105.6 | 104.8 | 101.2 | 144.6 | |
| 4000 | 89.8 | 92.9 | 94.5 | 92.7 | 96.9 | 99.8 | 101.0 | 103.0 | 104.4 | 105.4 | 103.9 | 101.7 | 97.3 | 143.3 |
| 5000 | 89.6 | 93.3 | 94.2 | 92.6 | 96.1 | 100.1 | 100.5 | 102.6 | 102.3 | 105.0 | 101.5 | 98.5 | 94.8 | 142.4 |
| 6300 | 89.3 | 93.7 | 94.5 | 93.1 | 96.4 | 99.9 | 100.4 | 101.9 | 101.6 | 101.6 | 99.1 | 96.3 | 91.5 | 141.5 |
| 8000 | 89.5 | 94.4 | 95.0 | 93.4 | 96.8 | 99.1 | 100.0 | 100.7 | 99.9 | 99.1 | 96.2 | 93.4 | 90.2 | 140.7 |
| 10000 | 91.2 | 97.2 | 97.9 | 95.7 | 97.3 | 100.0 | 99.6 | 100.1 | 99.0 | 97.5 | 94.1 | 92.2 | 89.0 | 141.5 |
| 12500 | 91.6 | 96.5 | 98.5 | 97.4 | 99.7 | 100.9 | 99.7 | 98.7 | 97.6 | 94.7 | 91.2 | 89.6 | 86.7 | 142.3 |
| 16000 | 90.5 | 95.7 | 97.4 | 97.9 | 99.4 | 101.6 | 99.7 | 98.6 | 95.8 | 92.3 | 89.0 | 86.2 | 83.3 | 143.4 |
| 20000 | 88.4 | 93.5 | 95.1 | 95.3 | 97.5 | 100.5 | 99.3 | 96.8 | 94.0 | 90.0 | 86.1 | 83.7 | 79.4 | 143.6 |
| 25000 | 85.5 | 90.1 | 92.4 | 92.7 | 94.7 | 98.6 | 98.0 | 93.1 | 93.1 | 87.2 | 83.6 | 81.5 | 77.1 | 144.0 |
| 31500 | 81.4 | 86.1 | 87.9 | 90.1 | 91.4 | 95.5 | 94.5 | 93.3 | 90.7 | 84.7 | 81.1 | 78.1 | 73.3 | 144.1 |
| 40000 | 77.3 | 82.6 | 84.4 | 85.9 | 87.0 | 91.7 | 91.0 | 89.3 | 87.2 | 82.4 | 79.2 | 74.7 | 69.9 | 144.3 |
| 50000 | 71.5 | 76.6 | 78.7 | 80.3 | 81.7 | 87.1 | 85.2 | 83.8 | 82.1 | 77.3 | 74.0 | 69.5 | 64.2 | 143.4 |
| 63000 | 64.9 | 70.6 | 73.6 | 73.9 | 76.1 | 81.4 | 79.5 | 78.6 | 77.1 | 71.8 | 68.4 | 64.2 | 58.0 | 143.2 |
| 80000 | 57.0 | 63.5 | 66.8 | 66.8 | 69.5 | 76.1 | 72.8 | 72.2 | 70.2 | 64.9 | 61.6 | 57.5 | 50.5 | 143.8 |
| 0ASPL | 104.3 | 107.7 | 108.5 | 107.2 | 109.9 | 113.0 | 113.4 | 115.1 | 116.9 | 120.0 | 122.0 | 123.7 | 118.9 | 159.6 |
| PNL | 115.9 | 118.9 | 119.8 | 117.9 | 121.4 | 124.7 | 125.6 | 127.7 | 129.6 | 132.0 | 132.1 | 132.7 | 128.5 | |
| PNLT | 115.9 | 119.4 | 119.8 | 117.9 | 121.4 | 124.7 | 125.6 | 127.7 | 129.6 | 132.0 | 132.1 | 132.7 | 128.5 | |
| DBA | 102.7 | 105.5 | 106.3 | 104.4 | 107.8 | 111.2 | 112.1 | 114.5 | 116.5 | 119.2 | 120.2 | 121.5 | 117.9 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|------------------|----------------------|
| VEHICLE = ADH257 | TEST DATE = 05-05-83 | LOCAT = C41 ANECH CH | CONFIG = 16 | MODEL = C0 | FLTVEL = 0. FPS |
| IAPLHA = SB59 | IEGA = N0 | PWL AREA = FULL SPHERE | TAMB F = 56.89 | PAMB HG = 29.18 | RELHUM = 39.6 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = |
| FNTNT = | LBS XNLR = | RPM | XNH = | RPM | V8 = 1326.2 FPS |
| FNRAMB = | LBS XNLR = | RPM | XNHR = | RPM | V10 = 2168.9 FPS |
| RUNPT = 83F-ZER-1637 | TAPE = | X1637C | TEST PT N0 = 1637 | NC = | AE8 = 4.0 SQ IN |
| | | | | | AE10 = 19.9 SQ IN |
| | | | | | CORR FAN SPEED = RPM |

IDENTIFICATION - 83F-ZER-1637 X1637F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.9 | 84.9 | 83.7 | 82.0 | 81.8 | 84.7 | 83.3 | 85.2 | 88.2 | 86.7 | 90.4 | 92.1 | 85.7 | 128.3 |
| 63 | 88.3 | 89.0 | 91.1 | 89.6 | 88.7 | 91.8 | 90.7 | 89.9 | 94.1 | 92.9 | 93.8 | 95.2 | 92.4 | 133.6 |
| 80 | 89.8 | 94.1 | 90.1 | 88.1 | 90.0 | 94.8 | 93.5 | 93.1 | 93.6 | 94.4 | 97.0 | 97.2 | 84.6 | 135.4 |
| 100 | 89.5 | 95.2 | 91.0 | 90.3 | 92.4 | 95.5 | 94.9 | 96.5 | 94.5 | 97.6 | 99.2 | 102.1 | 88.8 | 137.8 |
| 125 | 86.4 | 89.9 | 91.9 | 90.2 | 93.1 | 95.4 | 94.1 | 94.7 | 94.7 | 98.3 | 104.4 | 106.8 | 92.7 | 140.0 |
| 160 | 85.2 | 86.2 | 89.2 | 86.3 | 88.6 | 92.0 | 95.6 | 94.3 | 94.5 | 99.8 | 104.7 | 107.6 | 98.3 | 140.4 |
| 200 | 85.0 | 86.8 | 89.3 | 86.9 | 90.2 | 93.8 | 95.2 | 96.4 | 99.3 | 100.9 | 105.8 | 110.7 | 100.9 | 142.6 |
| 250 | 86.0 | 89.6 | 89.6 | 88.4 | 91.5 | 94.3 | 95.2 | 97.9 | 100.1 | 105.9 | 109.8 | 113.2 | 103.9 | 145.5 |
| 315 | 87.6 | 89.4 | 90.1 | 88.9 | 92.0 | 96.1 | 97.3 | 98.7 | 101.6 | 107.0 | 111.3 | 113.5 | 106.7 | 146.5 |
| 400 | 88.8 | 90.6 | 91.4 | 88.7 | 92.3 | 95.9 | 99.3 | 99.7 | 102.9 | 109.2 | 112.3 | 114.5 | 107.9 | 147.7 |
| 500 | 89.3 | 91.9 | 89.7 | 93.8 | 96.9 | 97.8 | 100.2 | 103.4 | 109.5 | 113.3 | 115.0 | 109.2 | 148.4 | |
| 630 | 89.3 | 91.8 | 92.3 | 91.1 | 94.2 | 98.1 | 99.0 | 101.4 | 104.3 | 109.7 | 112.8 | 114.2 | 109.9 | 148.2 |
| 800 | 91.3 | 91.6 | 93.6 | 91.2 | 94.5 | 98.9 | 99.5 | 101.9 | 105.6 | 109.5 | 111.3 | 113.0 | 109.9 | 147.5 |
| 1000 | 93.8 | 94.8 | 94.8 | 92.1 | 96.4 | 99.3 | 100.2 | 103.6 | 105.8 | 109.1 | 111.0 | 112.4 | 109.6 | 147.4 |
| 1250 | 91.9 | 95.0 | 94.5 | 93.1 | 96.1 | 99.5 | 99.5 | 103.3 | 106.0 | 108.3 | 109.7 | 111.1 | 109.0 | 146.6 |
| 1600 | 91.8 | 94.2 | 94.7 | 93.3 | 96.3 | 100.4 | 101.2 | 103.8 | 106.9 | 108.2 | 109.4 | 110.5 | 108.2 | 146.6 |
| 2000 | 92.3 | 93.6 | 94.8 | 93.1 | 96.0 | 99.6 | 101.1 | 103.9 | 106.3 | 108.3 | 108.1 | 109.6 | 106.6 | 146.0 |
| 2500 | 90.7 | 94.5 | 95.3 | 92.8 | 96.9 | 99.8 | 101.0 | 104.3 | 105.5 | 108.5 | 107.5 | 106.6 | 104.1 | 145.4 |
| 3150 | 90.6 | 93.2 | 94.9 | 92.9 | 96.5 | 100.1 | 101.0 | 103.4 | 105.8 | 107.9 | 105.6 | 104.8 | 101.2 | 144.6 |
| 4000 | 89.8 | 92.9 | 94.5 | 92.7 | 96.9 | 99.8 | 101.0 | 103.0 | 104.4 | 105.4 | 103.9 | 101.7 | 97.3 | 143.3 |
| 5000 | 89.6 | 93.3 | 94.2 | 92.6 | 96.1 | 100.1 | 100.5 | 102.6 | 102.3 | 105.0 | 101.5 | 98.5 | 94.8 | 142.4 |
| 6300 | 89.3 | 93.7 | 94.5 | 93.1 | 96.4 | 99.9 | 100.4 | 101.9 | 101.6 | 101.6 | 99.1 | 96.3 | 91.5 | 141.5 |
| 8000 | 89.5 | 94.4 | 95.0 | 93.4 | 95.8 | 99.1 | 100.0 | 100.7 | 99.9 | 99.1 | 96.2 | 93.4 | 90.2 | 140.7 |
| 10000 | 91.2 | 97.2 | 97.9 | 95.7 | 97.3 | 100.0 | 99.6 | 100.1 | 99.0 | 97.5 | 94.1 | 92.2 | 89.0 | 141.5 |
| 12500 | 91.6 | 96.5 | 98.5 | 97.4 | 99.7 | 100.9 | 99.7 | 98.7 | 97.6 | 94.7 | 91.2 | 89.6 | 86.7 | 142.3 |
| 16000 | 90.5 | 95.7 | 97.4 | 97.9 | 99.4 | 101.6 | 99.7 | 98.6 | 95.8 | 92.3 | 89.0 | 86.2 | 83.3 | 143.4 |
| 20000 | 88.4 | 93.5 | 95.1 | 95.3 | 97.5 | 100.5 | 99.3 | 96.8 | 94.0 | 90.0 | 86.1 | 83.7 | 79.4 | 143.6 |
| 25000 | 85.5 | 90.1 | 92.4 | 92.7 | 94.7 | 98.6 | 98.0 | 95.1 | 93.1 | 87.2 | 83.6 | 81.5 | 77.1 | 144.0 |
| 31500 | 81.4 | 86.1 | 87.9 | 90.1 | 91.4 | 95.5 | 94.5 | 93.3 | 90.7 | 84.7 | 81.1 | 78.1 | 73.3 | 144.1 |
| 40000 | 77.3 | 82.6 | 84.4 | 85.9 | 87.0 | 91.7 | 91.0 | 89.3 | 87.2 | 82.4 | 79.2 | 74.7 | 69.9 | 144.3 |
| 50000 | 71.5 | 76.6 | 78.7 | 80.3 | 81.7 | 87.1 | 85.2 | 83.8 | 82.1 | 77.3 | 74.0 | 69.5 | 64.2 | 143.4 |
| 63000 | 64.9 | 70.6 | 73.6 | 73.9 | 76.1 | 81.4 | 79.5 | 78.6 | 77.1 | 71.8 | 68.4 | 64.2 | 58.0 | 143.2 |
| 80000 | 57.0 | 63.5 | 66.8 | 66.8 | 69.5 | 76.1 | 72.8 | 72.2 | 70.2 | 64.9 | 61.6 | 57.5 | 50.5 | 143.8 |

GRSPL 104.3 107.7 108.5 107.2 109.9 113.0 113.4 115.1 115.9 120.0 122.0 123.7 118.9 159.6
 PNL 115.9 119.9 117.9 121.4 124.7 125.6 127.7 129.6 132.0 132.1 132.7 128.5
 PNL 115.9 119.4 119.8 117.9 121.4 124.7 125.6 127.7 129.6 132.0 132.1 132.7 128.5
 DBA 180.1 186.1 189.5 191.8 197.9 195.1 194.3 192.5 187.3 183.9 179.8 173.3

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH257 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = CO FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 56.89 PAMB HG = 29.18 RELHUM = 39.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNL RPM XNH RPM V8 = 1326.2 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2168.9 FPS AE18 = 19.9 SQ IN
 NPT = 1637 PE = 1637F TEST PT = 1637 CURR PAV SPEL = AE090 RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1637 X16371

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-----------------|
| 50 | 63.5 | 66.8 | 68.6 | 68.1 | 71.6 | 75.9 | 76.9 | 77.9 | 80.1 | 84.4 | 87.2 | 87.2 | 87.2 | 77.0 161.9 |
| 63 | 64.7 | 68.0 | 67.8 | 67.8 | 71.8 | 75.6 | 78.8 | 78.8 | 81.3 | 86.6 | 88.2 | 88.1 | 88.2 | 88.1 78.2 163.1 |
| 80 | 65.1 | 69.2 | 70.3 | 68.8 | 73.3 | 76.6 | 77.3 | 79.3 | 81.8 | 86.8 | 89.1 | 88.6 | 89.1 | 88.6 79.4 163.7 |
| 100 | 65.0 | 69.1 | 70.7 | 70.2 | 73.7 | 77.7 | 78.5 | 80.5 | 82.7 | 86.9 | 88.5 | 87.7 | 88.5 | 87.7 79.9 163.5 |
| 125 | 66.9 | 68.8 | 71.9 | 70.2 | 74.0 | 78.5 | 79.0 | 80.9 | 83.9 | 86.6 | 86.9 | 86.3 | 86.3 | 86.3 79.7 162.9 |
| 160 | 69.2 | 71.8 | 73.0 | 71.0 | 75.8 | 78.8 | 79.5 | 82.5 | 84.0 | 86.2 | 86.4 | 85.5 | 85.5 | 85.5 79.0 162.7 |
| 200 | 67.1 | 71.8 | 72.4 | 71.8 | 75.3 | 78.8 | 79.0 | 82.0 | 83.9 | 85.1 | 84.8 | 83.8 | 83.8 | 83.8 78.0 161.9 |
| 250 | 66.7 | 70.8 | 72.4 | 71.8 | 75.2 | 79.5 | 80.2 | 82.3 | 84.6 | 84.8 | 84.2 | 82.8 | 82.8 | 82.8 76.5 161.9 |
| 315 | 66.7 | 69.8 | 72.2 | 71.3 | 74.6 | 78.4 | 79.7 | 82.1 | 83.7 | 84.5 | 82.4 | 81.4 | 81.4 | 81.4 74.1 161.3 |
| 400 | 64.6 | 70.2 | 72.3 | 70.7 | 75.3 | 78.3 | 79.3 | 82.2 | 82.5 | 84.3 | 81.4 | 77.6 | 77.6 | 77.6 70.5 160.7 |
| 500 | 63.9 | 68.5 | 71.6 | 70.5 | 74.5 | 78.3 | 79.0 | 81.0 | 82.4 | 83.2 | 79.0 | 75.1 | 75.1 | 75.1 66.6 159.9 |
| 630 | 62.6 | 67.8 | 70.8 | 69.9 | 74.6 | 77.7 | 78.7 | 80.2 | 80.7 | 80.3 | 76.7 | 71.3 | 71.3 | 71.3 61.6 158.6 |
| 800 | 61.8 | 67.8 | 70.1 | 69.4 | 73.5 | 77.6 | 77.8 | 79.4 | 78.2 | 79.4 | 73.7 | 67.4 | 67.4 | 67.4 57.8 157.7 |
| 1000 | 60.9 | 67.7 | 70.1 | 69.6 | 73.5 | 77.1 | 77.5 | 78.4 | 77.2 | 79.5 | 70.7 | 64.3 | 64.3 | 64.3 53.8 156.8 |
| 1250 | 60.5 | 67.9 | 70.1 | 69.6 | 72.6 | 76.0 | 76.8 | 76.8 | 75.0 | 72.6 | 67.2 | 60.5 | 60.5 | 60.5 50.4 156.1 |
| 1600 | 61.1 | 69.7 | 72.3 | 71.3 | 73.5 | 76.5 | 75.8 | 75.6 | 73.4 | 70.1 | 63.9 | 57.6 | 57.6 | 57.6 46.5 156.8 |
| 2000 | 59.9 | 67.9 | 72.0 | 72.2 | 75.2 | 76.6 | 75.2 | 73.5 | 71.1 | 66.2 | 59.6 | 52.9 | 52.9 | 52.9 40.7 157.6 |
| 2500 | 56.7 | 65.6 | 69.6 | 71.6 | 74.0 | 76.4 | 74.3 | 72.4 | 68.0 | 62.2 | 55.2 | 46.2 | 46.2 | 46.2 32.0 158.8 |
| 3150 | 50.5 | 60.2 | 64.8 | 66.8 | 70.1 | 73.4 | 71.9 | 68.3 | 63.7 | 56.8 | 48.3 | 38.1 | 38.1 | 38.1 19.0 159.0 |
| 4000 | 40.6 | 51.4 | 57.5 | 60.2 | 63.5 | 67.8 | 66.8 | 62.6 | 58.2 | 48.5 | 38.7 | 26.3 | 26.3 | 26.3 1.5 159.3 |
| 5000 | 25.9 | 39.0 | 46.0 | 51.4 | 54.4 | 59.0 | 57.5 | 54.6 | 48.7 | 37.6 | 25.6 | 8.3 | 8.3 | 8.3 159.5 |
| 6300 | 3.6 | 20.9 | 30.0 | 36.0 | 39.5 | 44.9 | 43.5 | 39.3 | 32.8 | 20.7 | 5.5 | | | 5.5 159.7 |
| 8000 | | | 2.0 | 10.2 | 15.2 | 21.6 | 18.6 | 13.6 | 5.4 | | | | | 5.4 158.8 |
| 10000 | | | | | | | | | | | | | | 158.5 |
| 12500 | | | | | | | | | | | | | | 159.1 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS OF POOR QUALITY

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH257 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = CG FLTVEL = 0. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 56.89 PAMB HG = 29.18 RELHUM = 39.6 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT. EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1326.2 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V10 = 2168.9 FPS AE10 = 19.9 SQ IN

RUNPT = 83F-ZER-1637 TAPE = X16371 TEST PT NO = 1637 NC = AE096 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1638 X1638C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 87.9 | 86.9 | 82.7 | 81.0 | 80.8 | 83.7 | 83.6 | 85.0 | 85.9 | 82.5 | 91.4 | 93.1 | 92.0 | 128.8 |
| 63 | 88.0 | 90.3 | 91.3 | 87.4 | 87.5 | 90.3 | 92.0 | 88.4 | 90.6 | 84.6 | 92.0 | 93.7 | 94.4 | 132.4 |
| 80 | 89.5 | 93.3 | 89.1 | 87.6 | 88.7 | 93.1 | 92.5 | 91.6 | 93.6 | 89.7 | 95.8 | 96.0 | 90.4 | 134.2 |
| 100 | 88.7 | 93.7 | 88.8 | 87.3 | 89.6 | 93.5 | 92.9 | 93.8 | 93.0 | 91.6 | 96.7 | 100.9 | 93.8 | 135.7 |
| 125 | 86.4 | 89.4 | 90.2 | 89.0 | 91.6 | 93.9 | 93.3 | 92.7 | 92.2 | 92.3 | 101.6 | 105.1 | 94.2 | 137.9 |
| 160 | 84.4 | 83.2 | 87.7 | 84.3 | 86.4 | 88.7 | 92.4 | 90.0 | 91.5 | 94.1 | 101.9 | 104.9 | 97.5 | 137.4 |
| 200 | 84.3 | 84.8 | 87.8 | 83.6 | 86.5 | 89.6 | 91.2 | 92.6 | 95.6 | 93.6 | 101.5 | 107.5 | 99.1 | 139.0 |
| 250 | 82.0 | 85.6 | 85.1 | 83.9 | 86.7 | 90.3 | 90.5 | 92.6 | 95.3 | 98.4 | 106.0 | 109.2 | 100.1 | 141.2 |
| 315 | 83.3 | 85.6 | 86.9 | 84.7 | 87.8 | 90.9 | 93.0 | 93.9 | 96.4 | 99.5 | 107.6 | 109.3 | 101.4 | 142.0 |
| 400 | 84.1 | 86.1 | 87.1 | 84.2 | 87.5 | 90.9 | 95.8 | 94.4 | 97.9 | 101.4 | 108.6 | 109.5 | 100.7 | 142.8 |
| 500 | 84.6 | 86.4 | 86.6 | 84.7 | 88.0 | 91.4 | 92.3 | 95.4 | 98.4 | 101.7 | 108.6 | 107.8 | 97.9 | 142.1 |
| 630 | 84.3 | 86.6 | 87.3 | 85.6 | 89.5 | 92.8 | 93.5 | 96.4 | 99.1 | 102.2 | 107.5 | 105.7 | 95.1 | 141.3 |
| 800 | 86.3 | 86.4 | 88.1 | 85.9 | 90.0 | 93.1 | 94.0 | 97.2 | 99.9 | 101.7 | 105.6 | 102.0 | 92.9 | 140.0 |
| 1000 | 87.8 | 88.0 | 88.6 | 86.6 | 91.2 | 94.3 | 94.9 | 98.5 | 101.3 | 102.1 | 105.0 | 98.2 | 90.9 | 140.1 |
| 1250 | 86.7 | 89.2 | 87.9 | 90.6 | 94.0 | 95.4 | 98.5 | 101.5 | 101.3 | 103.2 | 95.9 | 90.0 | 139.3 | |
| 1600 | 88.1 | 88.7 | 89.9 | 88.5 | 92.0 | 95.6 | 96.5 | 99.0 | 102.7 | 101.5 | 103.4 | 94.3 | 89.4 | 139.9 |
| 2000 | 88.8 | 88.6 | 89.5 | 87.9 | 91.7 | 95.3 | 96.8 | 100.4 | 102.0 | 101.8 | 102.1 | 92.9 | 88.9 | 139.8 |
| 2500 | 89.2 | 90.0 | 90.6 | 88.1 | 92.7 | 95.1 | 96.5 | 99.9 | 102.0 | 102.5 | 101.8 | 92.8 | 88.3 | 139.9 |
| 3150 | 89.1 | 89.7 | 91.4 | 89.7 | 92.3 | 96.6 | 97.0 | 99.9 | 102.8 | 100.9 | 100.9 | 93.3 | 87.4 | 139.8 |
| 4000 | 89.6 | 89.9 | 91.5 | 89.4 | 92.9 | 96.6 | 97.0 | 99.0 | 100.4 | 99.6 | 99.6 | 92.7 | 87.5 | 138.7 |
| 5000 | 90.1 | 91.1 | 92.2 | 89.6 | 92.6 | 96.8 | 96.5 | 98.8 | 100.1 | 98.7 | 98.3 | 92.3 | 86.8 | 138.6 |
| 6300 | 91.5 | 92.0 | 93.3 | 90.9 | 93.7 | 96.7 | 98.9 | 99.2 | 96.4 | 97.3 | 92.1 | 86.8 | 138.5 | |
| 8000 | 93.0 | 93.2 | 94.0 | 90.7 | 93.6 | 96.9 | 96.6 | 96.9 | 97.0 | 94.4 | 95.3 | 90.7 | 87.5 | 138.0 |
| 10000 | 97.3 | 97.4 | 97.2 | 93.7 | 94.8 | 97.6 | 96.8 | 97.1 | 96.8 | 93.3 | 93.9 | 90.7 | 88.0 | 139.7 |
| 12500 | 96.6 | 97.8 | 99.6 | 96.4 | 96.5 | 98.4 | 96.5 | 96.0 | 95.2 | 90.5 | 90.8 | 89.2 | 86.0 | 140.8 |
| 16000 | 94.1 | 97.5 | 98.5 | 97.9 | 98.0 | 99.7 | 97.3 | 96.2 | 93.9 | 87.9 | 88.8 | 86.5 | 83.1 | 142.4 |
| 20000 | 91.4 | 93.7 | 95.1 | 95.1 | 96.3 | 99.3 | 97.1 | 94.6 | 92.5 | 85.3 | 85.9 | 83.7 | 79.7 | 142.4 |
| 25000 | 88.3 | 90.6 | 92.4 | 92.2 | 93.8 | 97.6 | 96.3 | 93.3 | 91.4 | 83.5 | 83.1 | 81.8 | 77.9 | 142.9 |
| 31500 | 84.6 | 86.7 | 88.2 | 89.6 | 90.2 | 94.3 | 93.0 | 92.1 | 89.7 | 81.2 | 81.4 | 78.6 | 74.3 | 143.1 |
| 40000 | 80.0 | 82.9 | 84.9 | 85.4 | 86.3 | 90.9 | 89.5 | 88.3 | 86.2 | 78.7 | 79.2 | 76.0 | 71.1 | 143.5 |
| 50000 | 73.7 | 77.1 | 78.9 | 79.8 | 80.5 | 86.1 | 83.4 | 82.5 | 81.6 | 74.3 | 74.5 | 70.8 | 65.7 | 142.4 |
| 63000 | 67.5 | 70.9 | 73.4 | 73.4 | 74.9 | 79.9 | 77.2 | 76.6 | 76.1 | 68.3 | 70.2 | 65.2 | 59.8 | 141.8 |
| 80000 | 59.3 | 63.5 | 65.8 | 65.8 | 67.8 | 73.9 | 70.3 | 69.9 | 69.0 | 61.7 | 63.1 | 58.5 | 51.8 | 141.9 |
| GASPL | 104.8 | 106.3 | 106.9 | 105.1 | 106.8 | 109.9 | 109.8 | 111.2 | 113.0 | 113.0 | 117.3 | 117.3 | 109.0 | 155.7 |
| PNL | 114.8 | 115.6 | 116.6 | 114.4 | 117.5 | 121.0 | 121.6 | 123.9 | 126.1 | 125.5 | 127.4 | 124.6 | 117.3 | |
| PNLT | 114.8 | 115.6 | 116.6 | 115.0 | 118.1 | 121.0 | 122.1 | 123.9 | 126.1 | 125.5 | 127.4 | 124.6 | 117.3 | |
| DBA | 101.6 | 102.2 | 103.0 | 100.6 | 103.8 | 107.3 | 107.8 | 110.4 | 112.5 | 112.4 | 115.0 | 112.1 | 103.9 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VERTICAL = ADH264 TEST DATE = 05-05-83 LOCAT = CAT ANECH CH CONFIG = 16 MODEL = C0 FLTVEL = 400. FPS
I ALPHA = SB59 IEGA WIND VEL = NO MPH PWL AREA = FULL SPHERE TAMB F = 57.97 PAMB HG = 28.98 RELHUM = 37.4 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC

FNINT = LBS XNL RPM XINH RPM V8 = 1358.5 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2183.0 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1638 TARE = X1638C TEST PT NO = 1630

SPEED

2PM

IDENTIFICATION - 83F-400-1638 X1638F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | | | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | |
| 125 | | | | | | | | | | | | | | |
| 160 | | | | | | | | | | | | | | |
| 200 | | | | | | | | | | | | | | |
| 250 | 89.9 | 92.0 | 90.0 | 87.2 | 88.3 | 90.3 | 88.6 | 89.0 | 94.3 | 96.8 | 104.7 | 107.1 | 101.2 | 139.9 |
| 315 | 89.9 | 92.0 | 90.0 | 87.2 | 89.6 | 91.1 | 92.2 | 92.1 | 95.9 | 99.0 | 106.1 | 108.1 | 102.0 | 141.1 |
| 400 | 91.0 | 92.0 | 91.8 | 88.1 | 89.3 | 91.1 | 94.9 | 92.6 | 96.4 | 99.3 | 106.3 | 107.0 | 100.8 | 140.8 |
| 500 | 91.3 | 92.2 | 91.9 | 87.5 | 89.9 | 91.7 | 91.3 | 93.4 | 97.3 | 100.0 | 105.6 | 106.0 | 100.1 | 140.3 |
| 630 | 92.1 | 92.7 | 91.6 | 88.1 | 91.4 | 93.2 | 92.6 | 94.3 | 98.5 | 100.1 | 104.5 | 103.7 | 100.8 | 139.8 |
| 800 | 92.0 | 93.0 | 92.4 | 89.1 | 92.1 | 93.7 | 93.2 | 95.2 | 100.1 | 100.8 | 104.3 | 101.0 | 101.1 | 139.8 |
| 1000 | 94.0 | 92.8 | 93.2 | 89.5 | 93.4 | 95.0 | 94.2 | 96.6 | 100.4 | 100.1 | 102.6 | 98.8 | 100.4 | 139.4 |
| 1250 | 95.4 | 94.5 | 93.7 | 90.3 | 92.9 | 94.8 | 94.8 | 96.7 | 101.8 | 100.3 | 102.8 | 97.1 | 99.8 | 139.7 |
| 1600 | 94.3 | 96.2 | 94.4 | 91.6 | 94.5 | 96.7 | 96.2 | 97.4 | 101.7 | 101.1 | 102.0 | 96.3 | 100.0 | 140.1 |
| 2000 | 95.8 | 95.3 | 95.2 | 92.4 | 94.4 | 96.6 | 97.1 | 99.3 | 101.8 | 102.0 | 101.8 | 96.3 | 99.4 | 140.5 |
| 2500 | 96.4 | 95.2 | 94.9 | 91.9 | 95.6 | 97.7 | 97.0 | 99.0 | 103.4 | 101.2 | 101.9 | 97.8 | 99.8 | 140.9 |
| 3150 | 96.8 | 96.6 | 96.0 | 92.2 | 95.5 | 98.6 | 99.8 | 102.4 | 100.4 | 102.0 | 98.5 | 100.9 | 141.1 | |
| 4000 | 96.7 | 96.3 | 97.0 | 94.1 | 96.6 | 99.2 | 99.0 | 100.0 | 102.3 | 100.7 | 100.9 | 98.5 | 100.6 | 141.4 |
| 5000 | 97.1 | 96.6 | 97.3 | 94.1 | 96.7 | 99.8 | 98.8 | 100.1 | 102.1 | 99.2 | 100.9 | 99.0 | 101.0 | 141.5 |
| 6300 | 97.5 | 97.8 | 98.1 | 94.5 | 97.7 | 99.4 | 99.1 | 100.5 | 98.4 | 95.4 | 96.6 | 94.9 | 98.6 | 140.8 |
| 8000 | 98.8 | 98.6 | 99.0 | 95.6 | 97.6 | 99.9 | 98.1 | 97.2 | 97.9 | 94.0 | 94.8 | 94.7 | 98.9 | 140.9 |
| 10000 | 100.0 | 99.5 | 99.5 | 95.2 | 98.3 | 100.6 | 98.3 | 97.1 | 96.6 | 91.4 | 92.0 | 93.4 | 97.2 | 141.5 |
| 12500 | 101.9 | 101.6 | 100.9 | 96.9 | 100.2 | 101.4 | 97.9 | 96.0 | 95.8 | 89.3 | 90.6 | 91.2 | 94.9 | 143.2 |
| 16000 | 100.9 | 101.8 | 103.2 | 99.4 | 102.0 | 102.7 | 98.7 | 96.2 | 94.9 | 87.2 | 88.1 | 88.9 | 91.8 | 145.5 |
| 20000 | 100.0 | 102.7 | 102.8 | 101.2 | 100.3 | 102.3 | 98.6 | 94.5 | 94.3 | 85.9 | 85.9 | 87.6 | 90.6 | 147.1 |
| 25000 | 96.7 | 98.3 | 98.8 | 97.8 | 98.4 | 100.6 | 97.7 | 93.3 | 93.4 | 84.5 | 85.0 | 85.2 | 87.8 | 146.8 |
| 31500 | 95.6 | 96.7 | 97.0 | 95.3 | 94.7 | 97.3 | 94.4 | 92.1 | 90.7 | 82.7 | 83.6 | 83.4 | 86.5 | 147.4 |
| 40000 | 91.1 | 91.9 | 92.0 | 91.9 | 90.9 | 93.9 | 90.9 | 88.5 | 86.5 | 78.7 | 79.3 | 78.6 | 80.4 | 147.4 |
| 50000 | 86.1 | 87.7 | 88.3 | 87.3 | 85.1 | 89.1 | 84.9 | 82.5 | 82.0 | 73.7 | 75.9 | 74.0 | 75.5 | 146.9 |
| 63000 | 78.9 | 81.0 | 81.4 | 80.7 | 79.5 | 82.9 | 78.7 | 76.6 | 76.4 | 68.6 | 70.3 | 68.7 | 69.0 | 145.9 |
| 80000 | 71.1 | 73.3 | 74.3 | 72.8 | 72.4 | 76.9 | 71.7 | 69.9 | 66.6 | 58.8 | 60.5 | 58.9 | 59.1 | 145.6 |
| GASPL | 110.4 | 110.9 | 111.0 | 108.2 | 110.0 | 111.9 | 110.2 | 110.4 | 112.9 | 112.0 | 115.3 | 114.8 | 112.8 | 157.7 |
| PNL | 120.2 | 120.1 | 120.1 | 116.9 | 119.6 | 121.9 | 121.6 | 122.7 | 125.2 | 124.0 | 126.0 | 123.5 | 124.6 | |
| PNLT | 120.2 | 120.1 | 120.1 | 116.9 | 119.6 | 121.9 | 122.1 | 122.7 | 125.2 | 124.0 | 126.0 | 123.5 | 124.6 | |
| DBA | 194.2 | 196.2 | 197.0 | 195.8 | 194.9 | 199.0 | 194.3 | 192.3 | 190.4 | 182.6 | 184.3 | 182.7 | 183.2 | |

ORIGINAL PAGE IS
OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH264 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 57.97 PAMB HG = 28.98 RELHUM = 37.4 PCT
 WIND DIR = DEG WIND VEL = MPH MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1356.5 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2183.0 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1638 TAPE = X1638F TEST PT NO = 1638 NC = AE096 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1638 X16381

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 65.8 | 69.4 | 68.5 | 66.4 | 69.2 | 70.8 | 71.8 | 71.3 | 74.4 | 76.4 | 82.0 | 81.8 | 72.3 | 156.4 |
| 63 | 66.9 | 69.4 | 70.3 | 67.2 | 68.9 | 70.8 | 74.5 | 71.7 | 74.8 | 76.6 | 82.1 | 80.6 | 71.1 | 156.2 |
| 80 | 67.0 | 69.5 | 70.3 | 65.6 | 69.5 | 71.4 | 70.9 | 72.5 | 75.7 | 77.3 | 81.4 | 79.5 | 70.3 | 155.7 |
| 100 | 67.8 | 70.0 | 69.9 | 67.2 | 70.9 | 72.9 | 72.1 | 73.4 | 76.9 | 77.4 | 80.2 | 77.2 | 70.8 | 155.1 |
| 125 | 67.6 | 70.2 | 70.6 | 68.2 | 71.5 | 73.2 | 72.6 | 74.2 | 78.4 | 77.9 | 79.9 | 74.3 | 70.9 | 155.1 |
| 160 | 69.4 | 69.8 | 71.3 | 68.4 | 72.7 | 74.4 | 73.5 | 75.5 | 78.6 | 77.1 | 78.0 | 71.8 | 69.9 | 154.7 |
| 200 | 70.5 | 71.3 | 71.6 | 69.0 | 72.0 | 74.1 | 73.9 | 75.4 | 79.7 | 77.1 | 77.9 | 69.8 | 68.8 | 155.0 |
| 250 | 69.2 | 72.7 | 72.1 | 70.1 | 73.4 | 75.8 | 75.1 | 75.9 | 79.4 | 77.7 | 76.8 | 68.6 | 68.3 | 155.4 |
| 315 | 70.1 | 71.4 | 72.6 | 70.6 | 73.1 | 75.4 | 75.8 | 77.5 | 79.2 | 78.2 | 76.2 | 68.0 | 66.9 | 155.8 |
| 400 | 70.3 | 70.9 | 71.9 | 69.8 | 73.9 | 76.1 | 75.3 | 76.8 | 80.5 | 77.0 | 75.7 | 68.8 | 66.2 | 156.2 |
| 500 | 70.2 | 71.9 | 72.7 | 69.8 | 73.6 | 75.8 | 76.2 | 77.4 | 79.1 | 75.7 | 75.4 | 68.9 | 66.4 | 156.5 |
| 630 | 69.5 | 71.2 | 73.3 | 71.3 | 74.3 | 77.0 | 76.7 | 77.2 | 78.6 | 75.6 | 73.7 | 68.1 | 64.9 | 156.7 |
| 800 | 69.3 | 71.1 | 73.2 | 71.0 | 74.0 | 77.4 | 76.2 | 76.9 | 78.0 | 73.7 | 73.1 | 67.9 | 64.1 | 156.9 |
| 1000 | 69.2 | 71.8 | 73.6 | 71.0 | 74.8 | 76.6 | 76.2 | 77.1 | 73.9 | 69.4 | 68.2 | 63.0 | 60.4 | 156.1 |
| 1250 | 69.8 | 72.0 | 74.1 | 71.7 | 74.4 | 76.8 | 74.9 | 73.4 | 73.1 | 67.4 | 65.8 | 61.7 | 59.1 | 156.2 |
| 1600 | 68.8 | 72.1 | 73.9 | 70.7 | 74.5 | 77.0 | 74.5 | 72.6 | 71.0 | 64.0 | 61.8 | 58.9 | 54.7 | 156.8 |
| 2000 | 70.2 | 73.1 | 74.4 | 71.7 | 75.7 | 77.5 | 73.5 | 70.8 | 69.3 | 60.8 | 58.9 | 54.5 | 48.9 | 158.5 |
| 2500 | 67.0 | 71.6 | 75.4 | 73.2 | 76.6 | 77.5 | 73.2 | 69.9 | 67.1 | 57.0 | 54.2 | 48.9 | 40.5 | 160.9 |
| 3150 | 62.2 | 69.5 | 72.5 | 72.8 | 72.9 | 75.2 | 71.1 | 66.1 | 64.1 | 52.7 | 48.1 | 42.1 | 30.3 | 162.4 |
| 4000 | 51.9 | 59.6 | 64.0 | 65.3 | 67.2 | 69.8 | 66.5 | 60.8 | 58.6 | 45.7 | 40.1 | 29.9 | 12.2 | 162.1 |
| 5000 | 40.1 | 49.6 | 55.1 | 56.5 | 57.7 | 60.8 | 57.4 | 53.3 | 48.8 | 35.6 | 28.1 | 13.6 | | 162.7 |
| 6300 | 17.5 | 30.2 | 37.6 | 41.9 | 43.4 | 47.2 | 43.4 | 38.3 | 32.1 | 17.0 | 5.7 | | | 162.7 |
| 8000 | 0.2 | 11.6 | 17.1 | 18.5 | 23.6 | 18.3 | 12.4 | 5.3 | | | | | | 162.3 |
| 10000 | | | | | | | | | | | | | | 161.2 |
| 12500 | | | | | | | | | | | | | | 160.9 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

16000

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| DASPL | 81.7 | 84.0 | 85.4 | 83.1 | 86.2 | 88.4 | 87.3 | 87.7 | 89.8 | 88.1 | 90.0 | 87.0 | 80.4 | 172.9 |
| PNL | 90.5 | 93.6 | 96.4 | 94.7 | 97.6 | 99.3 | 96.6 | 95.0 | 95.7 | 91.9 | 91.5 | 85.9 | 81.5 | |
| PNLT | 91.7 | 94.8 | 96.4 | 95.3 | 98.2 | 99.9 | 97.2 | 95.6 | 96.3 | 91.9 | 92.7 | 89.9 | 81.5 | |
| DBA | 79.1 | 81.6 | 83.9 | 81.9 | 84.9 | 87.0 | 84.8 | 84.4 | 84.8 | 81.1 | 80.2 | 74.3 | 71.4 | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH264 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = C0 FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 57.97 PAMB HG = 28.98 RELHUM = 37.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT. EXT CONFIG = SL

FNINI = LBS XNL = RPM XNH = RPM V9 = 1356.5 FPS AE6 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2183.0 FPS AE18 = 19.9 SQ IN

PT 5-41 538 E 163. AIR FLOW SPEED RPM

UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-ZER-1639 X1639C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 53 | 86.9 | 86.7 | 84.4 | 83.0 | 82.6 | 85.7 | 84.6 | 88.7 | 89.4 | 88.0 | 95.1 | 96.1 | 85.0 | 131.0 |
| 60 | 90.0 | 91.5 | 92.3 | 90.1 | 90.2 | 93.8 | 92.2 | 93.4 | 94.6 | 93.9 | 100.8 | 100.7 | 92.6 | 136.7 |
| 80 | 92.3 | 96.1 | 91.1 | 89.9 | 92.0 | 96.6 | 95.2 | 93.6 | 95.1 | 95.4 | 98.5 | 99.2 | 85.4 | 137.0 |
| 100 | 90.5 | 97.5 | 92.3 | 91.8 | 94.1 | 97.0 | 97.1 | 97.5 | 96.0 | 99.1 | 101.0 | 103.6 | 89.8 | 139.4 |
| 125 | 88.1 | 92.2 | 94.4 | 92.5 | 95.6 | 97.9 | 96.8 | 96.5 | 97.2 | 100.0 | 105.9 | 108.1 | 95.2 | 141.7 |
| 160 | 86.2 | 87.0 | 91.0 | 87.8 | 89.6 | 93.5 | 97.4 | 95.5 | 96.0 | 101.6 | 106.4 | 109.4 | 100.3 | 142.1 |
| 200 | 88.3 | 88.3 | 90.8 | 88.6 | 92.7 | 96.1 | 97.0 | 97.4 | 101.3 | 103.1 | 107.8 | 113.0 | 103.9 | 144.8 |
| 250 | 88.3 | 91.6 | 91.6 | 90.4 | 93.7 | 95.8 | 97.0 | 99.6 | 101.8 | 107.0 | 112.3 | 115.5 | 106.4 | 147.8 |
| 315 | 89.3 | 90.9 | 91.9 | 90.7 | 94.0 | 97.4 | 98.5 | 99.9 | 103.4 | 109.0 | 113.8 | 115.8 | 109.7 | 148.8 |
| 400 | 90.6 | 93.1 | 93.4 | 90.9 | 94.3 | 97.4 | 101.0 | 101.7 | 105.1 | 111.2 | 115.1 | 117.3 | 110.9 | 150.3 |
| 500 | 91.8 | 93.9 | 94.1 | 92.2 | 95.3 | 98.9 | 99.5 | 102.9 | 105.9 | 111.7 | 115.8 | 117.5 | 112.4 | 150.9 |
| 630 | 91.5 | 94.3 | 94.8 | 93.1 | 97.0 | 100.1 | 101.0 | 103.4 | 106.1 | 112.2 | 116.8 | 117.5 | 112.9 | 151.4 |
| 800 | 94.8 | 94.9 | 95.6 | 93.4 | 97.0 | 100.9 | 101.3 | 104.4 | 107.4 | 111.7 | 115.6 | 117.3 | 114.7 | 151.2 |
| 1000 | 98.0 | 98.3 | 97.3 | 94.9 | 98.9 | 101.6 | 102.2 | 105.9 | 108.1 | 111.6 | 115.8 | 116.4 | 114.1 | 151.1 |
| 1250 | 95.7 | 99.2 | 98.0 | 96.9 | 99.1 | 103.0 | 102.9 | 106.0 | 108.5 | 112.1 | 115.4 | 117.6 | 113.8 | 151.4 |
| 1600 | 95.3 | 97.0 | 97.4 | 96.0 | 99.8 | 103.1 | 104.0 | 106.3 | 108.9 | 111.2 | 115.4 | 116.0 | 111.4 | 150.8 |
| 2000 | 95.0 | 96.3 | 97.3 | 95.1 | 98.7 | 102.3 | 104.1 | 107.4 | 108.0 | 111.5 | 113.8 | 113.4 | 109.1 | 149.6 |
| 2500 | 93.7 | 96.8 | 97.3 | 95.3 | 98.9 | 102.3 | 103.2 | 106.1 | 107.7 | 111.3 | 112.8 | 109.8 | 106.6 | 148.5 |
| 3150 | 93.3 | 95.9 | 96.9 | 95.2 | 98.5 | 102.6 | 104.0 | 106.2 | 108.0 | 110.1 | 110.1 | 107.8 | 103.4 | 147.4 |
| 4000 | 92.6 | 95.2 | 97.0 | 94.7 | 98.9 | 102.1 | 103.2 | 105.8 | 106.9 | 107.4 | 107.9 | 104.4 | 100.8 | 145.9 |
| 5000 | 91.6 | 95.9 | 96.5 | 94.6 | 97.9 | 102.1 | 102.2 | 104.8 | 105.1 | 107.0 | 105.0 | 101.8 | 98.0 | 144.8 |
| 6300 | 91.5 | 95.7 | 95.8 | 95.4 | 98.9 | 101.9 | 102.2 | 104.6 | 104.2 | 104.4 | 103.3 | 99.8 | 95.3 | 144.1 |
| 8000 | 91.3 | 96.9 | 97.8 | 95.7 | 98.1 | 101.4 | 102.1 | 102.2 | 102.2 | 102.1 | 100.5 | 97.2 | 93.0 | 143.1 |
| 10000 | 92.8 | 98.4 | 100.2 | 98.5 | 100.1 | 102.1 | 101.8 | 102.1 | 101.6 | 99.6 | 98.3 | 95.9 | 92.0 | 143.8 |
| 12500 | 92.6 | 97.7 | 100.1 | 99.2 | 101.4 | 103.4 | 101.5 | 100.5 | 98.9 | 97.8 | 95.5 | 93.2 | 90.2 | 144.3 |
| 16000 | 91.8 | 97.2 | 99.2 | 99.4 | 100.2 | 102.6 | 101.7 | 100.1 | 97.3 | 94.4 | 93.8 | 90.2 | 86.1 | 144.9 |
| 20000 | 89.4 | 94.2 | 96.1 | 96.8 | 98.2 | 101.0 | 101.1 | 98.0 | 95.2 | 92.0 | 89.8 | 87.2 | 82.1 | 144.8 |
| 25000 | 86.4 | 91.0 | 93.1 | 94.1 | 95.9 | 100.3 | 99.4 | 96.3 | 93.3 | 89.1 | 86.6 | 84.2 | 79.6 | 145.4 |
| 31500 | 82.5 | 87.6 | 89.6 | 91.3 | 92.3 | 96.2 | 95.7 | 93.7 | 90.6 | 85.6 | 83.8 | 79.8 | 75.2 | 145.0 |
| 40000 | 78.9 | 83.7 | 86.5 | 87.0 | 89.2 | 92.8 | 91.9 | 89.6 | 87.0 | 82.5 | 80.6 | 76.6 | 71.5 | 145.4 |
| 50000 | 73.1 | 78.1 | 81.0 | 81.9 | 83.3 | 87.9 | 86.3 | 84.6 | 82.4 | 77.6 | 75.4 | 71.9 | 66.0 | 144.5 |
| 63000 | 66.5 | 71.7 | 75.2 | 75.9 | 77.7 | 82.5 | 80.3 | 79.2 | 77.4 | 72.0 | 71.0 | 65.8 | 60.1 | 144.2 |
| 80000 | 60.1 | 65.3 | 69.0 | 68.9 | 70.8 | 77.1 | 74.3 | 73.0 | 71.2 | 65.2 | 63.9 | 58.8 | 52.3 | 145.0 |
| GASPL | 106.9 | 110.0 | 110.6 | 109.3 | 111.9 | 115.1 | 115.6 | 117.4 | 119.0 | 122.5 | 125.9 | 127.1 | 122.5 | 162.4 |
| PNL | 118.5 | 121.3 | 122.0 | 120.2 | 123.6 | 127.0 | 128.0 | 130.2 | 131.8 | 134.4 | 136.5 | 136.4 | 131.5 | |
| PNLT | 118.5 | 121.9 | 122.0 | 120.2 | 124.2 | 127.0 | 128.0 | 130.2 | 131.8 | 134.4 | 136.5 | 136.4 | 131.5 | |
| DBA | 105.7 | 108.2 | 108.7 | 106.9 | 110.2 | 113.6 | 114.5 | 117.1 | 118.7 | 121.9 | 124.8 | 125.5 | 121.6 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

| | | | | | | | | | | | |
|------------|--------------|----------------|----------|------------|--------------|----------|------------|-----------|-------|------------------|----------|
| VEHICL = | ADR258 | TEST DATE = | 05-05-83 | LOCAT = | C41 ANECH CH | CONFIG = | 16 | MODEL = | CG | FLTVEL = | 0. FPS |
| IAPLHA = | SB59 | IEGA = | NO | PWL AREA = | FULL SPHERE | TAMB F = | 56.94 | PAMB HG = | 29.19 | RELHUM = | 38.6 PCT |
| WIND DIR = | | DEG WIND VEL = | | MPH | EXT DIST = | 40.0 FT | | MIKE HT = | | NBFR = | |
| FNINT = | LBS XNL | RPM | XNHR | RPM | V8 | = | 1509.6 FPS | AE8 | = | 4.0 SQ IN | |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V18 | = | 2338.1 FPS | AE18 | = | 19.9 SQ IN | |
| RUNPT = | 83F-ZER-1639 | TAPE | = | X1639C | TEST PT NO = | 1639 | NC | = | AE096 | CORR FAN SPEED = | RPM |

IDENTIFICATION - 83F-ZER-1639 X1639F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.9 | 86.7 | 84.4 | 83.0 | 82.6 | 85.7 | 84.6 | 88.7 | 89.4 | 88.0 | 95.1 | 96.1 | 85.0 | 131.0 |
| 63 | 90.0 | 91.5 | 92.3 | 90.1 | 90.2 | 93.8 | 92.2 | 93.4 | 94.6 | 93.9 | 100.8 | 100.7 | 92.6 | 136.7 |
| 80 | 92.3 | 96.1 | 91.1 | 89.9 | 92.0 | 96.6 | 95.2 | 93.6 | 95.1 | 95.4 | 98.5 | 99.2 | 85.4 | 137.0 |
| 100 | 90.5 | 97.5 | 92.3 | 91.8 | 94.1 | 97.0 | 97.1 | 97.5 | 96.0 | 99.1 | 101.0 | 103.6 | 89.8 | 139.4 |
| 125 | 88.1 | 92.2 | 94.4 | 92.5 | 95.6 | 97.9 | 96.8 | 96.5 | 97.2 | 100.0 | 105.9 | 108.1 | 95.2 | 141.7 |
| 160 | 86.2 | 87.0 | 91.0 | 87.8 | 89.6 | 93.5 | 97.4 | 95.5 | 96.0 | 101.6 | 106.4 | 109.4 | 100.3 | 142.1 |
| 200 | 88.3 | 88.3 | 90.8 | 88.6 | 92.7 | 95.1 | 97.0 | 97.4 | 101.3 | 103.1 | 107.8 | 113.0 | 103.9 | 144.8 |
| 250 | 88.3 | 91.6 | 91.6 | 90.4 | 93.7 | 95.8 | 97.0 | 99.6 | 101.8 | 107.7 | 112.3 | 115.5 | 106.4 | 147.8 |
| 315 | 89.3 | 90.9 | 91.9 | 90.7 | 94.0 | 97.4 | 98.5 | 99.9 | 103.4 | 109.0 | 113.8 | 115.8 | 109.7 | 148.8 |
| 400 | 90.6 | 93.1 | 93.4 | 90.9 | 94.3 | 97.4 | 101.0 | 101.7 | 105.1 | 111.2 | 115.1 | 117.3 | 110.9 | 150.3 |
| 500 | 91.8 | 93.9 | 94.1 | 92.2 | 95.3 | 98.9 | 99.5 | 102.9 | 105.9 | 111.7 | 115.8 | 117.5 | 112.4 | 150.9 |
| 630 | 91.5 | 94.3 | 94.8 | 93.1 | 97.0 | 100.1 | 101.0 | 103.4 | 106.1 | 112.2 | 116.8 | 117.5 | 112.9 | 151.4 |
| 800 | 94.8 | 94.9 | 95.6 | 93.4 | 97.0 | 100.9 | 101.3 | 104.4 | 107.4 | 111.7 | 115.6 | 117.3 | 114.7 | 151.2 |
| 1000 | 98.0 | 98.3 | 97.3 | 94.9 | 98.9 | 101.6 | 102.2 | 105.9 | 108.1 | 111.6 | 115.8 | 116.4 | 114.1 | 151.1 |
| 1250 | 95.7 | 99.2 | 98.0 | 96.9 | 99.1 | 103.0 | 102.9 | 106.0 | 108.5 | 112.1 | 115.4 | 117.6 | 113.8 | 151.4 |
| 1600 | 95.3 | 97.0 | 97.4 | 96.0 | 99.8 | 103.1 | 104.0 | 106.3 | 108.9 | 111.2 | 115.4 | 116.0 | 111.4 | 150.8 |
| 2000 | 95.0 | 96.3 | 97.3 | 95.1 | 98.7 | 102.3 | 104.1 | 107.4 | 108.0 | 111.5 | 113.8 | 113.4 | 109.1 | 149.6 |
| 2500 | 93.7 | 96.8 | 97.3 | 95.3 | 98.9 | 102.3 | 103.2 | 106.1 | 107.7 | 111.3 | 112.8 | 109.8 | 106.6 | 148.5 |
| 3150 | 93.3 | 95.9 | 96.9 | 95.2 | 98.5 | 102.6 | 104.0 | 106.2 | 108.0 | 110.1 | 110.1 | 107.8 | 103.4 | 147.4 |
| 4000 | 92.6 | 95.2 | 97.0 | 94.7 | 98.9 | 102.1 | 103.2 | 105.8 | 106.9 | 107.4 | 107.9 | 104.4 | 100.8 | 145.9 |
| 5000 | 91.6 | 95.9 | 96.5 | 94.6 | 97.9 | 102.1 | 102.2 | 104.8 | 105.1 | 107.0 | 105.0 | 101.8 | 98.0 | 144.8 |
| 6300 | 91.5 | 95.7 | 96.8 | 95.4 | 98.9 | 101.9 | 102.2 | 104.6 | 104.2 | 104.4 | 103.3 | 99.8 | 95.3 | 144.1 |
| 8000 | 91.3 | 95.9 | 97.8 | 95.7 | 98.1 | 101.4 | 102.1 | 102.2 | 102.2 | 102.1 | 100.5 | 97.2 | 93.0 | 143.1 |
| 10000 | 92.8 | 98.4 | 100.2 | 98.5 | 100.1 | 102.1 | 101.8 | 102.1 | 101.6 | 99.6 | 98.3 | 95.9 | 92.0 | 143.8 |
| 12500 | 92.6 | 97.7 | 100.1 | 99.2 | 101.4 | 103.4 | 101.5 | 100.5 | 98.9 | 97.8 | 95.5 | 93.2 | 90.2 | 144.3 |
| 16000 | 91.8 | 97.2 | 99.2 | 99.4 | 100.2 | 102.6 | 101.7 | 100.1 | 97.3 | 94.4 | 93.8 | 90.2 | 86.1 | 144.9 |
| 20000 | 89.4 | 94.2 | 95.1 | 95.8 | 98.2 | 101.0 | 101.1 | 98.0 | 95.2 | 92.0 | 89.8 | 87.2 | 82.1 | 144.8 |
| 25000 | 86.4 | 91.0 | 93.1 | 94.1 | 95.9 | 100.3 | 99.4 | 96.3 | 93.3 | 89.1 | 86.6 | 84.2 | 79.6 | 145.4 |
| 31500 | 82.5 | 87.6 | 89.6 | 91.3 | 92.3 | 96.2 | 95.7 | 93.7 | 90.6 | 85.6 | 83.8 | 79.8 | 75.2 | 145.0 |
| 40000 | 78.9 | 83.7 | 86.5 | 87.0 | 89.2 | 92.8 | 91.9 | 89.6 | 87.0 | 82.5 | 80.6 | 76.6 | 71.5 | 145.4 |
| 50000 | 73.1 | 78.1 | 81.0 | 81.9 | 83.3 | 87.9 | 86.3 | 84.6 | 82.4 | 77.6 | 75.4 | 71.9 | 66.0 | 144.5 |
| 63000 | 66.5 | 71.7 | 75.2 | 75.9 | 77.7 | 82.5 | 80.3 | 79.2 | 77.4 | 72.0 | 71.0 | 65.8 | 60.1 | 144.2 |
| 80000 | 60.1 | 65.3 | 69.0 | 68.9 | 70.8 | 77.4 | 74.3 | 73.0 | 71.2 | 65.2 | 63.9 | 58.8 | 52.3 | 145.0 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH258 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = CO FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 56.94 PAMB HG = 29.19 RELHUM = 98.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL RPM = RPM V8 = 1509.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM = RPM V18 = 2338.1 FPS AE18 = 19.9 SQ IN

ST: FZE 39 E X 163 T N 163 CORR FIVE SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1639 XT16391

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 65.2 | 68.3 | 70.4 | 69.9 | 73.6 | 77.1 | 78.1 | 79.1 | 81.9 | 86.4 | 89.7 | 89.5 | 80.0 | 164.1 |
| 63 | 66.4 | 70.5 | 71.8 | 70.1 | 73.8 | 77.1 | 80.6 | 80.8 | 83.6 | 88.6 | 90.9 | 90.9 | 81.2 | 165.6 |
| 80 | 67.6 | 71.2 | 72.6 | 71.3 | 74.8 | 78.6 | 79.1 | 82.1 | 84.3 | 89.1 | 91.6 | 91.1 | 82.6 | 166.2 |
| 100 | 67.3 | 71.6 | 73.2 | 72.2 | 76.5 | 79.7 | 80.5 | 82.5 | 84.5 | 89.4 | 92.5 | 90.9 | 82.9 | 166.7 |
| 125 | 70.4 | 72.1 | 73.9 | 72.4 | 76.5 | 80.5 | 80.7 | 83.4 | 85.7 | 88.9 | 91.2 | 90.6 | 84.5 | 166.5 |
| 160 | 73.4 | 75.3 | 75.5 | 73.7 | 78.3 | 81.0 | 81.5 | 84.7 | 86.2 | 88.7 | 91.2 | 89.5 | 83.5 | 166.4 |
| 200 | 70.8 | 76.0 | 75.9 | 75.6 | 78.3 | 82.3 | 82.0 | 84.7 | 85.4 | 88.9 | 90.6 | 90.3 | 82.7 | 166.8 |
| 250 | 70.2 | 73.5 | 75.1 | 74.5 | 78.7 | 82.2 | 82.9 | 84.8 | 86.6 | 87.8 | 90.2 | 88.3 | 79.7 | 166.1 |
| 315 | 69.4 | 72.5 | 74.7 | 73.3 | 77.4 | 81.2 | 82.7 | 85.6 | 85.4 | 87.7 | 88.2 | 85.1 | 76.6 | 164.9 |
| 400 | 67.6 | 72.5 | 74.3 | 73.2 | 77.3 | 80.8 | 81.6 | 84.0 | 84.7 | 87.0 | 86.6 | 80.9 | 73.0 | 163.8 |
| 500 | 66.7 | 71.2 | 73.6 | 72.7 | 76.5 | 80.8 | 82.0 | 83.7 | 84.7 | 85.4 | 83.5 | 78.1 | 68.8 | 162.8 |
| 630 | 65.4 | 70.1 | 73.3 | 71.9 | 76.6 | 80.0 | 80.9 | 83.0 | 83.2 | 82.3 | 80.7 | 74.1 | 65.1 | 161.2 |
| 800 | 63.8 | 70.3 | 72.4 | 71.5 | 75.3 | 79.6 | 79.6 | 81.7 | 81.0 | 81.4 | 77.2 | 70.6 | 61.1 | 160.1 |
| 1000 | 63.2 | 69.7 | 72.3 | 71.9 | 76.0 | 79.1 | 79.2 | 81.1 | 79.9 | 78.3 | 75.0 | 67.8 | 57.1 | 159.4 |
| 1250 | 62.2 | 70.4 | 72.9 | 71.9 | 74.8 | 78.3 | 78.8 | 78.4 | 77.3 | 75.6 | 71.5 | 64.2 | 53.2 | 158.4 |
| 1600 | 62.6 | 71.0 | 74.6 | 74.0 | 76.3 | 78.5 | 78.0 | 77.6 | 76.0 | 72.1 | 68.2 | 61.4 | 49.5 | 159.1 |
| 2000 | 61.0 | 69.2 | 73.6 | 74.0 | 77.0 | 79.2 | 77.0 | 75.3 | 72.4 | 69.2 | 63.8 | 56.4 | 44.2 | 159.6 |
| 2500 | 57.9 | 67.1 | 71.4 | 73.1 | 74.7 | 77.5 | 76.3 | 73.9 | 69.5 | 64.2 | 59.9 | 50.2 | 34.8 | 160.2 |
| 3150 | 51.5 | 61.0 | 65.8 | 68.3 | 70.8 | 73.9 | 73.7 | 69.6 | 65.0 | 58.8 | 52.0 | 41.6 | 21.8 | 160.1 |
| 4000 | 41.6 | 52.3 | 58.2 | 61.6 | 64.8 | 69.5 | 68.3 | 63.8 | 58.4 | 50.4 | 41.7 | 29.0 | 4.0 | 160.7 |
| 5000 | 27.1 | 40.4 | 47.2 | 51.5 | 55.3 | 59.7 | 58.6 | 53.0 | 48.7 | 38.5 | 28.3 | 10.0 | | 160.3 |
| 6300 | 5.3 | 22.0 | 32.1 | 37.1 | 41.7 | 46.1 | 44.4 | 39.7 | 32.6 | 20.8 | 6.9 | | | 160.7 |
| 8000 | | 4.3 | 11.8 | 16.8 | 22.5 | 19.7 | 14.5 | 5.7 | | | | | | 159.8 |
| 10000 | | | | | | | | | | | | | | 159.6 |
| 12500 | | | | | | | | | | | | | | 160.4 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS OF POOR QUALITY

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|------|------|-------|
| DASPL | 80.3 | 84.4 | 86.2 | 85.5 | 89.1 | 92.5 | 93.1 | 95.0 | 96.1 | 98.8 | 100.7 | 99.5 | 91.7 | 177.3 |
| PWL | 84.6 | 91.4 | 94.7 | 95.2 | 98.1 | 101.2 | 100.9 | 100.8 | 100.7 | 101.8 | 102.1 | 99.7 | 91.3 | |
| PWLT | 84.6 | 91.4 | 95.4 | 95.8 | 98.7 | 101.8 | 101.5 | 101.4 | 101.3 | 101.8 | 102.1 | 99.7 | 91.3 | |
| DBA | 73.6 | 79.9 | 82.9 | 82.7 | 85.8 | 89.0 | 89.0 | 89.9 | 89.7 | 90.2 | 89.8 | 86.6 | 78.7 | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH258 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = C0 FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = N0 MPH = 2400.0 FT EXT DIST = 2400.0 FT TAMB F = 56.94 PAMB HG = 29.19 RELHUM = 38.6 PCT
 WIND DIR = DEG WIND VEL =

FNINI = LBS XNLR = RPM XNHR = RPM V8 = 1509.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2338.1 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1639 TAPE = XT16391 TEST PT NO = 1639 NC = AE096 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1640 X1640C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 89.9 | 89.2 | 85.2 | 82.0 | 82.1 | 84.7 | 83.6 | 87.2 | 88.4 | 88.2 | 93.9 | 94.6 | 86.7 | 130.5 |
| 63 | 90.8 | 90.5 | 92.8 | 88.1 | 88.2 | 92.1 | 90.5 | 90.4 | 92.6 | 94.1 | 95.3 | 95.7 | 92.1 | 134.1 |
| 80 | 92.3 | 96.3 | 91.6 | 90.4 | 92.2 | 96.3 | 95.0 | 94.4 | 95.6 | 94.7 | 97.5 | 98.7 | 87.4 | 136.9 |
| 100 | 91.2 | 96.2 | 91.3 | 90.0 | 92.9 | 96.0 | 95.6 | 97.0 | 95.5 | 96.8 | 98.7 | 103.4 | 91.3 | 138.3 |
| 125 | 88.9 | 91.7 | 92.7 | 91.5 | 94.6 | 96.7 | 96.1 | 95.7 | 95.7 | 98.0 | 103.9 | 107.6 | 95.2 | 140.6 |
| 150 | 85.4 | 84.5 | 90.0 | 85.0 | 88.9 | 91.2 | 94.4 | 92.5 | 93.7 | 98.8 | 104.7 | 107.4 | 99.3 | 140.1 |
| 200 | 86.3 | 86.1 | 88.6 | 84.9 | 88.5 | 91.8 | 93.5 | 95.4 | 97.8 | 98.9 | 104.8 | 111.2 | 101.9 | 142.4 |
| 250 | 84.0 | 87.3 | 87.6 | 86.1 | 89.5 | 92.3 | 93.5 | 95.6 | 98.3 | 104.2 | 109.3 | 113.0 | 103.9 | 144.9 |
| 315 | 85.1 | 87.6 | 88.4 | 86.2 | 89.5 | 93.6 | 95.3 | 96.4 | 99.4 | 105.7 | 110.8 | 113.0 | 105.2 | 145.7 |
| 400 | 86.6 | 88.1 | 89.6 | 86.9 | 90.3 | 93.4 | 95.0 | 96.9 | 100.9 | 107.7 | 112.1 | 113.5 | 103.9 | 145.7 |
| 500 | 87.3 | 88.9 | 89.1 | 87.2 | 90.8 | 94.1 | 95.3 | 97.7 | 101.1 | 108.2 | 112.1 | 112.3 | 101.7 | 146.3 |
| 630 | 86.5 | 88.6 | 89.6 | 88.4 | 92.0 | 95.3 | 96.5 | 98.9 | 102.1 | 109.2 | 112.0 | 110.2 | 98.6 | 146.0 |
| 800 | 88.1 | 88.4 | 90.4 | 88.9 | 92.5 | 95.9 | 97.9 | 99.7 | 103.4 | 109.0 | 110.3 | 107.0 | 95.9 | 144.9 |
| 1000 | 90.3 | 90.5 | 91.6 | 89.9 | 93.7 | 97.1 | 97.9 | 102.1 | 104.8 | 108.9 | 109.8 | 103.7 | 93.1 | 144.8 |
| 1250 | 88.7 | 92.2 | 92.0 | 90.6 | 93.4 | 97.5 | 98.1 | 101.8 | 104.7 | 109.1 | 108.4 | 100.9 | 92.5 | 144.3 |
| 1600 | 90.1 | 90.7 | 91.7 | 91.0 | 94.8 | 98.4 | 99.5 | 102.6 | 105.9 | 108.5 | 108.6 | 98.8 | 91.7 | 144.6 |
| 2000 | 90.3 | 90.1 | 91.3 | 90.4 | 94.0 | 97.8 | 99.6 | 103.1 | 105.5 | 108.8 | 107.1 | 98.1 | 91.9 | 144.2 |
| 2500 | 90.4 | 91.5 | 92.6 | 90.8 | 94.7 | 98.5 | 99.5 | 103.1 | 105.0 | 108.3 | 106.5 | 95.8 | 92.1 | 143.9 |
| 3150 | 91.1 | 91.4 | 91.9 | 90.9 | 95.0 | 99.1 | 100.0 | 103.2 | 105.5 | 107.6 | 105.6 | 97.8 | 91.2 | 143.8 |
| 4000 | 91.6 | 91.4 | 93.0 | 90.9 | 95.4 | 98.6 | 99.2 | 102.5 | 103.7 | 105.4 | 103.6 | 96.7 | 90.5 | 142.5 |
| 5000 | 92.8 | 92.9 | 93.5 | 91.4 | 94.6 | 98.6 | 99.2 | 101.8 | 102.6 | 105.5 | 103.0 | 95.8 | 90.5 | 142.2 |
| 6300 | 94.0 | 94.5 | 94.6 | 91.9 | 95.4 | 98.4 | 99.2 | 101.6 | 102.2 | 102.6 | 101.1 | 95.0 | 89.5 | 141.5 |
| 8000 | 97.0 | 97.2 | 96.5 | 93.9 | 96.1 | 98.1 | 99.1 | 99.9 | 100.7 | 100.9 | 99.0 | 93.9 | 90.0 | 141.3 |
| 10000 | 99.3 | 100.7 | 100.5 | 97.0 | 97.8 | 99.1 | 98.6 | 99.6 | 99.6 | 99.0 | 96.1 | 92.7 | 88.7 | 142.4 |
| 12500 | 96.9 | 98.5 | 100.3 | 98.7 | 99.9 | 101.2 | 99.2 | 98.2 | 97.7 | 97.0 | 93.8 | 90.9 | 87.4 | 143.0 |
| 16000 | 95.1 | 97.7 | 97.7 | 97.9 | 99.4 | 100.9 | 99.2 | 97.9 | 96.6 | 93.4 | 91.5 | 88.2 | 84.1 | 143.5 |
| 20000 | 92.1 | 94.7 | 95.0 | 95.0 | 97.2 | 100.2 | 98.8 | 96.8 | 94.5 | 91.0 | 88.6 | 85.7 | 81.4 | 143.6 |
| 25000 | 89.0 | 92.1 | 92.9 | 93.1 | 95.2 | 99.0 | 98.0 | 95.0 | 93.4 | 87.9 | 85.3 | 83.5 | 79.4 | 144.4 |
| 31500 | 85.8 | 88.4 | 89.4 | 91.1 | 92.1 | 95.5 | 94.5 | 93.0 | 91.2 | 85.7 | 83.6 | 79.8 | 75.3 | 144.5 |
| 40000 | 81.7 | 84.8 | 86.1 | 85.6 | 88.2 | 92.1 | 91.2 | 89.5 | 87.4 | 83.3 | 81.2 | 77.7 | 72.3 | 145.0 |
| 50000 | 75.2 | 78.8 | 79.8 | 81.5 | 82.9 | 87.5 | 85.4 | 84.5 | 82.7 | 78.5 | 76.5 | 72.2 | 66.4 | 144.2 |
| 63000 | 68.9 | 72.8 | 74.8 | 74.6 | 77.3 | 81.9 | 79.2 | 78.8 | 78.0 | 72.7 | 72.3 | 67.2 | 61.2 | 143.8 |
| 80000 | 61.5 | 66.0 | 67.5 | 66.5 | 70.2 | 75.8 | 73.0 | 71.9 | 71.4 | 66.1 | 65.3 | 60.2 | 53.7 | 144.0 |
| GASPL | 106.6 | 108.2 | 108.4 | 106.8 | 109.1 | 112.0 | 112.3 | 114.1 | 116.0 | 119.7 | 121.3 | 121.2 | 111.9 | 158.8 |
| PNL | 117.1 | 117.9 | 118.4 | 116.3 | 119.9 | 123.4 | 124.3 | 127.0 | 129.1 | 131.9 | 131.6 | 128.6 | 120.1 | |
| PNLT | 117.1 | 117.9 | 118.4 | 116.9 | 120.6 | 123.9 | 124.9 | 127.0 | 129.1 | 131.9 | 131.6 | 128.6 | 120.1 | |
| DBA | 103.9 | 104.6 | 105.0 | 103.0 | 106.2 | 109.6 | 110.5 | 113.5 | 115.7 | 119.2 | 119.5 | 116.4 | 107.2 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH263 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = CO FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = NO PML AREA = FULL SPHERE TAMB F = 57.07 PAMB HG = 28.98 RELHUM = 38.7 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINT = LBS XNL RPM XNH RPM V8 = 1516.1 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2362.4 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1640 TAPE = X1640C TEST PT N° = 1640 RPM = 17 AEO SPEED = RPM

1188-05

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1640 XT1640F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

80

100

125

160

200

250 91.9 93.8 92.5 89.4 91.1 92.3 91.6 92.0 97.3 103.1 108.0 110.9 105.1 143.6

315 91.9 93.8 92.5 89.4 91.3 93.8 94.4 94.9 98.8 105.1 109.4 112.0 105.2 144.8

400 92.8 94.0 93.3 89.6 92.1 93.6 98.1 94.9 99.1 105.7 109.7 111.5 104.6 144.9

500 94.1 94.4 94.5 90.3 92.7 94.5 94.3 95.6 100.1 106.7 109.9 110.2 103.5 144.6

630 95.0 95.3 94.1 90.6 93.9 95.7 95.5 96.7 101.7 106.9 108.8 108.3 103.5 144.1

800 94.2 95.0 94.6 91.9 94.6 96.4 96.1 97.5 103.3 107.1 108.5 105.8 102.7 143.8

1000 95.8 94.8 95.5 92.5 95.8 97.7 97.1 99.9 103.3 107.2 107.1 102.7 101.7 143.4

1250 97.9 97.0 96.7 93.5 95.5 98.3 97.4 99.7 104.7 106.8 107.4 100.6 100.3 143.6

1600 96.3 98.7 97.1 94.4 97.2 99.4 99.0 100.9 104.6 107.5 106.1 100.3 101.1 143.9

2000 97.8 97.3 96.9 94.9 96.7 99.1 99.4 101.6 104.5 107.4 106.0 99.4 101.7 143.8

2500 97.9 96.7 96.6 94.4 98.2 100.2 99.6 101.9 105.5 107.3 105.7 101.0 101.4 144.1

3150 100.9 100.4 99.7 96.1 98.8 101.1 100.6 102.4 104.7 106.0 104.7 101.0 102.4 144.3

4000 101.5 100.3 99.2 96.5 99.6 101.4 100.8 102.7 103.7 106.2 104.3 100.4 102.7 144.4

5000 101.9 100.5 96.8 98.7 101.6 101.1 102.2 104.2 104.3 103.4 100.9 103.0 104.2

6300 100.3 99.6 99.3 96.2 99.5 101.4 101.4 102.7 103.8 103.9 102.7 100.9 104.2 144.2

8000 101.3 101.0 100.2 96.5 99.7 101.1 101.5 101.6 103.4 102.8 100.3 99.9 102.8 144.2

11000 101.7 101.7 100.6 97.5 101.3 102.1 101.1 101.5 99.1 97.9 95.0 95.2 98.6 144.0

12500 104.0 105.0 104.2 100.2 104.0 104.2 100.7 98.2 98.5 94.8 93.3 93.0 95.8 146.2

16000 103.2 104.1 105.0 102.4 103.5 103.9 100.6 97.9 96.8 92.9 90.8 90.9 93.5 147.4

20000 101.0 102.9 102.0 101.2 101.3 103.2 100.3 96.8 95.3 90.4 88.1 89.3 92.1 147.7

25000 97.5 99.3 99.0 97.7 99.8 102.0 99.4 99.0 94.9 88.9 87.2 86.4 88.8 147.9

31500 96.3 98.2 97.5 96.2 96.7 98.5 95.9 93.0 91.9 87.4 85.6 85.1 86.7 148.6

40000 82.3 93.6 93.2 93.3 92.8 95.1 92.6 89.5 87.7 82.9 81.3 80.0 81.1 148.8

50000 87.8 89.7 89.5 86.5 87.5 90.5 86.8 84.4 83.9 78.1 75.9 76.9 148.6

63000 80.3 82.7 82.3 82.4 81.9 84.9 80.6 78.8 78.0 72.5 70.4 70.9 147.7

80000 72.6 75.2 75.8 74.0 74.8 78.8 74.4 71.9 69.0 63.2 62.7 60.6 61.1 147.5

OASPL 112.8 113.1 112.7 110.0 112.3 113.8 112.6 113.2 115.6 118.3 119.2 118.8 115.3 160.0

PWL 123.7 123.1 122.5 119.4 122.3 124.2 123.9 125.4 127.9 130.0 129.4 126.8 126.8

PWLT 123.7 123.1 122.5 119.4 122.3 124.2 124.5 125.4 127.9 130.0 129.4 126.8 126.8

DBA 195.7 198.1 198.2 197.2 197.3 200.9 196.6 194.3 192.7 187.0 186.5 184.4 185.0

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH263 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = C0 FLTVEL = 400. FPS

IAPLHA = SB59 IEGA = N0 MPH = 40.0 FT EXT DIST = 40.0 FT TAMB F = 57.07 PAMB HG = 28.98 RELHUM = 38.7 PCT

WIND DIR = DEG WIND VEL = MPH = 40.0 FT EXT CONFIG = ARC MIKE HT = NBRF =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1516.1 FPS AE8 = 4.0 SQ IN

FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2362.4 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1640 TAPE = XT1640F TEST PT NO = 1640 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1640 X16401

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 67.8 | 71.2 | 71.0 | 68.6 | 70.9 | 73.6 | 74.0 | 73.8 | 77.2 | 82.5 | 85.3 | 85.7 | 75.5 | 160.1 |
| 63 | 68.6 | 71.4 | 71.8 | 68.7 | 71.7 | 73.3 | 77.7 | 74.1 | 77.5 | 83.1 | 85.6 | 85.1 | 74.8 | 160.2 |
| 80 | 69.9 | 71.8 | 72.9 | 69.4 | 72.2 | 74.2 | 73.9 | 74.7 | 78.5 | 84.1 | 85.7 | 83.8 | 73.6 | 160.0 |
| 100 | 70.7 | 72.6 | 72.5 | 69.7 | 73.4 | 75.4 | 75.0 | 75.8 | 80.1 | 84.2 | 84.5 | 81.8 | 73.5 | 159.4 |
| 125 | 69.8 | 72.2 | 72.9 | 70.9 | 74.0 | 76.0 | 75.5 | 76.5 | 81.6 | 84.3 | 84.1 | 79.1 | 72.5 | 159.2 |
| 160 | 71.2 | 71.8 | 73.6 | 71.4 | 75.2 | 77.1 | 76.4 | 78.8 | 81.5 | 84.3 | 82.5 | 75.7 | 71.1 | 158.8 |
| 200 | 73.1 | 73.8 | 74.6 | 72.2 | 74.8 | 77.6 | 76.5 | 78.4 | 82.7 | 83.7 | 82.5 | 73.3 | 69.4 | 159.0 |
| 250 | 71.2 | 75.2 | 74.9 | 72.8 | 76.2 | 78.5 | 77.9 | 79.4 | 82.3 | 84.0 | 81.0 | 72.6 | 69.4 | 159.2 |
| 315 | 72.1 | 73.4 | 74.3 | 73.1 | 75.3 | 77.9 | 78.0 | 79.8 | 81.9 | 83.5 | 80.4 | 71.2 | 69.2 | 159.1 |
| 400 | 71.8 | 72.4 | 73.6 | 72.3 | 76.5 | 78.6 | 77.9 | 79.7 | 82.5 | 83.0 | 79.5 | 72.0 | 67.9 | 159.5 |
| 500 | 74.2 | 75.7 | 76.4 | 73.6 | 76.9 | 79.3 | 78.6 | 80.0 | 81.4 | 81.3 | 78.0 | 71.4 | 67.8 | 159.6 |
| 630 | 74.3 | 75.2 | 75.5 | 73.7 | 77.3 | 79.3 | 78.5 | 79.9 | 80.0 | 81.1 | 77.1 | 70.0 | 67.0 | 159.7 |
| 800 | 74.1 | 74.8 | 76.4 | 73.6 | 76.0 | 79.1 | 78.5 | 79.1 | 80.0 | 78.7 | 75.6 | 69.8 | 66.1 | 159.6 |
| 1000 | 71.9 | 73.5 | 74.8 | 72.7 | 76.5 | 78.6 | 78.5 | 79.2 | 79.3 | 77.8 | 74.3 | 68.9 | 66.0 | 159.6 |
| 1250 | 72.3 | 74.5 | 75.3 | 72.7 | 76.4 | 78.1 | 78.2 | 77.8 | 78.5 | 76.2 | 71.3 | 67.0 | 63.0 | 159.6 |
| 1600 | 71.5 | 74.3 | 75.0 | 73.1 | 77.5 | 78.5 | 77.3 | 77.1 | 73.5 | 70.5 | 64.8 | 60.6 | 56.2 | 159.3 |
| 2000 | 72.4 | 76.4 | 77.7 | 74.9 | 79.5 | 79.5 | 76.2 | 73.0 | 72.0 | 66.3 | 61.6 | 56.2 | 49.8 | 161.6 |
| 2500 | 69.3 | 73.9 | 77.2 | 76.1 | 78.0 | 78.7 | 75.2 | 71.6 | 69.0 | 62.7 | 56.9 | 50.9 | 42.2 | 162.8 |
| 3150 | 69.2 | 69.7 | 71.7 | 72.8 | 73.9 | 76.1 | 72.9 | 68.3 | 66.0 | 67.1 | 50.3 | 43.8 | 31.8 | 163.0 |
| 4000 | 52.6 | 60.6 | 64.2 | 65.2 | 68.6 | 71.3 | 68.2 | 62.5 | 60.0 | 50.2 | 42.3 | 31.1 | 13.2 | 163.2 |
| 5000 | 40.8 | 51.0 | 55.5 | 57.5 | 59.7 | 62.0 | 58.9 | 54.3 | 50.0 | 40.3 | 30.1 | 15.3 | 163.9 | |
| 6300 | 18.7 | 31.9 | 38.8 | 43.4 | 45.3 | 48.4 | 45.1 | 39.5 | 33.3 | 21.2 | 7.6 | | 164.2 | |
| 8000 | 2.2 | 12.8 | 18.3 | 21.0 | 25.1 | 20.2 | 14.3 | 7.2 | | | | | 163.9 | |
| 10000 | | | | | | | | | | | | | 163.0 | |
| 12500 | | | | | | | | | | | | | 162.8 | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH263 TEST DATE = 05-05-63 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 57.07 PAMB HG = 28.98 RELHUM = 38.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT. EXT CONFIG = SL MIKE HT = NBFR

FNINI = LBS XNL. = RPM XNH = RPM V8 = 1516.1 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2362.4 FPS AE18 = 19.9 SQ IN

TELEPHONE NO. 1640 TEL. NO. 1640

IDENTIFICATION - MODEL 83F-ZER-1641 X1641C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.9 | 88.9 | 86.7 | 84.0 | 84.6 | 87.9 | 88.1 | 90.7 | 91.4 | 90.0 | 96.6 | 97.8 | 88.5 | 132.9 |
| 63 | 92.3 | 92.5 | 93.8 | 89.9 | 92.2 | 96.3 | 94.7 | 94.1 | 95.6 | 92.9 | 101.3 | 100.7 | 93.9 | 137.6 |
| 80 | 94.8 | 99.6 | 94.8 | 93.6 | 95.0 | 99.1 | 97.5 | 96.9 | 98.1 | 98.4 | 101.5 | 102.2 | 88.4 | 140.0 |
| 100 | 93.0 | 100.7 | 96.0 | 95.3 | 97.4 | 100.3 | 100.1 | 101.0 | 99.3 | 101.8 | 103.2 | 106.6 | 93.8 | 142.4 |
| 125 | 90.9 | 94.4 | 96.4 | 94.7 | 97.6 | 100.4 | 99.1 | 99.0 | 99.4 | 102.8 | 108.4 | 111.3 | 98.2 | 144.5 |
| 160 | 88.2 | 89.5 | 92.5 | 89.5 | 91.6 | 94.7 | 98.1 | 98.0 | 98.5 | 104.6 | 108.9 | 111.9 | 104.0 | 144.6 |
| 200 | 90.8 | 90.6 | 93.1 | 90.6 | 94.5 | 98.1 | 98.7 | 99.9 | 102.8 | 105.4 | 110.0 | 115.5 | 106.9 | 147.1 |
| 250 | 90.0 | 93.3 | 93.3 | 92.1 | 95.7 | 98.1 | 99.0 | 101.9 | 104.3 | 118.2 | 115.3 | 109.9 | 150.5 | |
| 315 | 91.8 | 93.1 | 93.6 | 91.9 | 95.6 | 99.9 | 101.0 | 101.9 | 105.4 | 112.0 | 116.8 | 119.0 | 112.4 | 151.8 |
| 400 | 93.1 | 94.6 | 95.1 | 93.2 | 96.0 | 99.6 | 107.3 | 103.9 | 107.4 | 114.4 | 118.8 | 120.0 | 113.9 | 153.5 |
| 500 | 93.6 | 95.9 | 96.1 | 94.4 | 97.5 | 101.1 | 101.5 | 104.7 | 107.6 | 115.0 | 119.6 | 120.3 | 115.4 | 154.0 |
| 630 | 93.8 | 96.6 | 96.6 | 94.9 | 99.0 | 102.6 | 103.2 | 105.9 | 108.6 | 115.4 | 120.5 | 122.0 | 116.4 | 155.2 |
| 800 | 97.1 | 96.9 | 97.9 | 95.7 | 99.3 | 102.9 | 103.8 | 106.9 | 109.9 | 115.5 | 119.3 | 121.0 | 117.4 | 154.6 |
| 1000 | 98.8 | 100.3 | 100.3 | 97.9 | 101.2 | 104.6 | 104.7 | 108.1 | 111.1 | 115.1 | 119.3 | 120.4 | 116.9 | 154.5 |
| 1250 | 98.2 | 102.2 | 100.5 | 99.4 | 101.1 | 105.0 | 104.6 | 107.8 | 111.2 | 115.6 | 119.2 | 119.9 | 115.5 | 154.3 |
| 1600 | 97.8 | 99.7 | 100.4 | 98.5 | 102.0 | 105.9 | 105.7 | 108.8 | 111.7 | 115.5 | 120.1 | 118.5 | 112.9 | 154.2 |
| 2000 | 98.3 | 99.3 | 99.8 | 98.4 | 101.0 | 104.3 | 106.6 | 109.4 | 111.6 | 115.8 | 119.8 | 115.6 | 111.1 | 152.9 |
| 2500 | 96.7 | 100.0 | 100.6 | 98.3 | 101.7 | 105.3 | 105.0 | 109.6 | 110.7 | 115.8 | 116.0 | 12.6 | 109.3 | 151.9 |
| 3150 | 96.6 | 99.2 | 100.4 | 98.7 | 101.3 | 105.1 | 106.5 | 108.9 | 111.5 | 114.4 | 113.9 | 111.3 | 106.7 | 151.0 |
| 4000 | 95.6 | 98.2 | 100.0 | 98.2 | 102.4 | 105.6 | 106.0 | 109.0 | 109.9 | 111.7 | 111.9 | 108.7 | 104.5 | 149.5 |
| 5000 | 95.1 | 99.6 | 100.0 | 97.9 | 101.6 | 105.8 | 105.5 | 107.6 | 108.6 | 111.5 | 109.8 | 106.0 | 102.3 | 148.6 |
| 6300 | 95.8 | 99.5 | 100.5 | 99.1 | 102.4 | 105.1 | 105.4 | 108.1 | 107.9 | 108.9 | 108.6 | 105.3 | 100.5 | 148.1 |
| 8000 | 99.7 | 101.3 | 100.2 | 101.8 | 104.4 | 104.8 | 105.4 | 106.0 | 107.4 | 105.5 | 102.2 | 98.7 | 146.9 | |
| 10000 | 96.0 | 100.4 | 102.7 | 101.7 | 103.6 | 106.1 | 104.8 | 105.3 | 105.0 | 104.3 | 101.2 | 97.7 | 147.5 | |
| 12500 | 95.1 | 98.8 | 101.3 | 101.2 | 103.7 | 106.4 | 104.8 | 104.2 | 103.7 | 104.0 | 101.8 | 100.2 | 96.2 | 147.6 |
| 16000 | 93.6 | 97.5 | 99.5 | 100.4 | 102.5 | 105.7 | 104.3 | 103.4 | 102.1 | 100.7 | 100.1 | 97.0 | 93.1 | 147.7 |
| 20000 | 91.7 | 95.3 | 97.1 | 97.6 | 99.6 | 103.3 | 102.2 | 101.1 | 99.5 | 98.6 | 96.7 | 94.0 | 89.4 | 147.0 |
| 25000 | 88.5 | 92.4 | 94.4 | 95.5 | 97.0 | 101.6 | 100.3 | 98.1 | 96.4 | 94.0 | 91.2 | 90.3 | 85.4 | 146.9 |
| 31500 | 85.2 | 89.0 | 91.0 | 92.9 | 93.9 | 98.1 | 96.8 | 95.9 | 94.0 | 90.5 | 88.7 | 85.7 | 80.9 | 146.9 |
| 40000 | 81.1 | 85.2 | 87.7 | 88.5 | 90.3 | 94.7 | 93.3 | 91.6 | 90.0 | 86.7 | 85.5 | 82.3 | 76.9 | 147.2 |
| 50000 | 74.8 | 79.1 | 82.0 | 83.4 | 85.3 | 90.1 | 87.5 | 86.6 | 85.1 | 82.1 | 79.6 | 76.6 | 71.2 | 146.5 |
| 63000 | 69.3 | 73.9 | 76.9 | 77.2 | 79.2 | 84.2 | 81.3 | 80.9 | 80.6 | 76.4 | 75.2 | 70.8 | 66.1 | 146.1 |
| 80000 | 61.6 | 66.9 | 70.6 | 70.6 | 72.1 | 78.7 | 75.6 | 74.5 | 73.6 | 70.8 | 68.4 | 63.6 | 58.3 | 146.8 |
| GASPL | 109.4 | 112.5 | 113.0 | 111.8 | 114.5 | 117.9 | 118.2 | 120.1 | 122.0 | 126.3 | 129.6 | 130.3 | 125.2 | 165.5 |
| PNL | 121.5 | 124.2 | 125.1 | 123.3 | 126.5 | 129.9 | 130.6 | 132.9 | 135.0 | 138.5 | 140.2 | 139.4 | 134.2 | |
| PNLT | 121.5 | 124.9 | 125.1 | 123.3 | 127.1 | 129.9 | 131.6 | 133.5 | 135.0 | 138.5 | 140.2 | 139.4 | 134.2 | |
| DBA | 108.4 | 111.1 | 111.7 | 110.0 | 113.0 | 116.5 | 117.1 | 119.7 | 121.8 | 125.9 | 128.7 | 128.7 | 124.2 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|------------------|-------------------|
| VEHICL = ADH261 | TEST DATE = 05-05-83 | LOCAT = C41 ANECH CH | CONFIG = 16 | MODEL = CO | FLVEL = 0. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 58.28 | PAMB HG = 29.11 | RELHUM = 37.4 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = |
| FNIN1 = | LBS XNL | RPM | KNH | RPM | V8 = 1540.4 FPS |
| FNRAMB = | LBS XNLR | RPM | KNHR | RPM | V18 = 2512.2 FPS |
| RUNPT = 83F-ZER-1641 | TAPE | TEST PT NO = 1641 | NC | AE8 = 4.0 SQ IN | AE18 = 19.9 SQ IN |
| | | | | CORR FAN SPEED = | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1641 X1641F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.9 | 88.9 | 86.7 | 84.0 | 84.6 | 87.9 | 88.1 | 90.7 | 91.4 | 90.0 | 96.6 | 97.8 | 88.5 | 132.9 |
| 63 | 92.3 | 92.5 | 93.8 | 89.9 | 92.2 | 96.3 | 94.7 | 94.1 | 95.6 | 92.9 | 101.3 | 100.7 | 93.9 | 137.6 |
| 80 | 94.8 | 95.6 | 94.8 | 93.6 | 95.0 | 99.1 | 97.5 | 96.9 | 98.1 | 98.4 | 101.5 | 102.2 | 88.4 | 140.0 |
| 100 | 93.0 | 100.7 | 96.0 | 95.3 | 97.4 | 100.3 | 100.1 | 101.0 | 99.3 | 101.8 | 103.2 | 106.6 | 93.8 | 142.4 |
| 125 | 90.9 | 94.4 | 96.4 | 94.7 | 97.6 | 100.4 | 99.1 | 99.0 | 99.4 | 102.8 | 108.4 | 111.3 | 98.2 | 144.5 |
| 160 | 88.2 | 89.5 | 92.5 | 89.5 | 91.6 | 94.7 | 98.1 | 98.0 | 98.5 | 104.6 | 108.9 | 111.9 | 104.0 | 144.6 |
| 200 | 90.8 | 90.6 | 93.1 | 90.6 | 94.5 | 98.1 | 98.7 | 99.9 | 102.8 | 105.4 | 110.0 | 115.5 | 106.9 | 147.1 |
| 250 | 90.0 | 93.3 | 93.3 | 92.1 | 95.7 | 98.1 | 99.0 | 101.9 | 104.3 | 110.2 | 115.3 | 118.2 | 109.9 | 150.5 |
| 315 | 91.8 | 93.1 | 93.6 | 91.9 | 95.8 | 99.9 | 101.0 | 101.9 | 105.4 | 112.0 | 116.8 | 119.0 | 112.4 | 151.8 |
| 400 | 93.1 | 94.6 | 95.1 | 93.2 | 96.0 | 99.6 | 107.3 | 103.9 | 107.4 | 114.4 | 118.8 | 120.0 | 113.9 | 153.5 |
| 500 | 93.6 | 95.9 | 96.1 | 94.4 | 97.5 | 101.1 | 101.3 | 104.7 | 107.6 | 115.0 | 119.6 | 120.3 | 115.4 | 154.0 |
| 630 | 93.8 | 96.6 | 96.6 | 94.9 | 99.0 | 102.6 | 103.2 | 105.9 | 108.6 | 115.4 | 120.5 | 122.0 | 116.4 | 155.2 |
| 800 | 97.1 | 96.9 | 97.9 | 95.7 | 99.3 | 102.9 | 103.8 | 106.9 | 109.9 | 115.5 | 119.3 | 121.0 | 117.4 | 154.6 |
| 1000 | 98.8 | 100.3 | 100.3 | 97.9 | 101.2 | 104.6 | 104.7 | 108.1 | 111.1 | 115.1 | 119.3 | 120.4 | 116.9 | 154.5 |
| 1250 | 98.2 | 102.2 | 100.5 | 99.4 | 101.1 | 105.0 | 104.6 | 107.8 | 111.2 | 115.6 | 119.2 | 119.9 | 115.5 | 154.3 |
| 1600 | 97.8 | 99.7 | 100.4 | 98.5 | 102.0 | 105.9 | 105.7 | 108.8 | 111.7 | 115.5 | 120.1 | 118.5 | 112.9 | 154.2 |
| 2000 | 98.3 | 99.3 | 99.8 | 98.4 | 101.0 | 104.3 | 106.6 | 109.4 | 111.8 | 115.8 | 117.8 | 115.6 | 111.1 | 152.9 |
| 2500 | 96.7 | 100.0 | 100.6 | 98.3 | 101.7 | 105.3 | 106.0 | 109.6 | 110.7 | 115.8 | 116.0 | 112.6 | 109.3 | 151.9 |
| 3150 | 96.6 | 99.2 | 100.4 | 98.7 | 101.3 | 105.1 | 106.5 | 108.9 | 111.5 | 114.4 | 113.9 | 111.3 | 106.7 | 151.0 |
| 4000 | 95.6 | 98.2 | 100.0 | 98.2 | 102.4 | 105.6 | 106.0 | 109.0 | 109.9 | 111.7 | 111.9 | 108.7 | 104.5 | 149.5 |
| 5000 | 95.1 | 99.6 | 100.0 | 97.9 | 101.6 | 105.5 | 105.5 | 107.6 | 108.6 | 111.5 | 109.8 | 106.0 | 102.3 | 148.6 |
| 6300 | 95.8 | 99.5 | 100.6 | 99.1 | 102.4 | 105.1 | 105.4 | 108.1 | 107.9 | 108.9 | 108.6 | 105.3 | 100.5 | 148.1 |
| 8000 | 99.7 | 101.3 | 100.2 | 101.8 | 104.4 | 104.8 | 105.4 | 106.0 | 107.4 | 105.5 | 102.2 | 98.7 | 146.9 | |
| 10000 | 100.4 | 102.7 | 101.7 | 103.6 | 106.1 | 104.8 | 105.3 | 105.1 | 105.6 | 104.3 | 101.2 | 97.7 | 147.5 | |
| 12500 | 95.1 | 98.8 | 101.3 | 101.2 | 103.7 | 106.4 | 104.8 | 104.2 | 103.7 | 104.0 | 101.8 | 100.2 | 96.2 | 147.6 |
| 16000 | 93.6 | 97.5 | 99.5 | 100.4 | 102.5 | 105.7 | 104.3 | 103.4 | 102.1 | 100.7 | 100.1 | 97.0 | 93.1 | 147.7 |
| 20000 | 91.7 | 95.3 | 97.1 | 97.6 | 99.6 | 103.3 | 102.2 | 101.1 | 99.5 | 98.6 | 96.7 | 94.0 | 89.4 | 147.0 |
| 25000 | 88.5 | 92.4 | 94.4 | 95.5 | 97.0 | 101.6 | 100.3 | 98.1 | 96.4 | 94.0 | 91.2 | 90.3 | 85.4 | 146.9 |
| 31500 | 85.2 | 89.0 | 91.0 | 92.9 | 93.9 | 98.1 | 96.8 | 95.9 | 94.0 | 90.5 | 88.7 | 85.7 | 80.9 | 146.9 |
| 40000 | 81.1 | 85.2 | 87.7 | 88.5 | 90.3 | 94.7 | 93.3 | 91.6 | 90.0 | 86.7 | 85.5 | 82.3 | 76.9 | 147.2 |
| 50000 | 74.8 | 79.1 | 82.0 | 83.4 | 85.3 | 90.1 | 87.5 | 86.6 | 85.1 | 82.1 | 79.6 | 76.6 | 71.2 | 146.5 |
| 63000 | 69.3 | 73.9 | 76.9 | 77.2 | 79.2 | 84.2 | 81.3 | 80.9 | 80.6 | 76.4 | 75.2 | 70.8 | 66.1 | 146.1 |
| 80000 | 61.6 | 66.9 | 70.6 | 70.6 | 72.1 | 78.7 | 75.6 | 74.5 | 73.6 | 70.8 | 68.4 | 63.6 | 58.3 | 146.8 |

MODEL/FULL SCALE FAC = IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH261 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = C0 FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 58.28 PAMB HG = 29.11 RELHUM = 37.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL RPM = RPM XNH XNHR = RPM V8 = 1540.4 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM = RPM XNHR = RPM V18 = 2512.2 FPS AE18 = 19.9 SQ IN

PT F-7L 541 E X F T 162 ARR 164 SPEED RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1641 X16411

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 67.7 | 70.5 | 72.1 | 71.1 | 75.4 | 79.6 | 80.6 | 81.1 | 83.9 | 89.4 | 92.7 | 93.6 | 82.8 | 167.1 |
| 63 | 68.9 | 72.0 | 73.6 | 72.3 | 75.6 | 79.3 | 86.8 | 83.1 | 85.8 | 91.8 | 94.7 | 93.6 | 84.2 | 168.8 |
| 80 | 69.4 | 73.2 | 74.6 | 73.6 | 77.1 | 80.8 | 81.1 | 83.8 | 86.1 | 92.3 | 95.4 | 93.8 | 85.6 | 169.3 |
| 100 | 69.5 | 73.9 | 75.0 | 74.0 | 78.5 | 82.2 | 82.7 | 85.0 | 87.0 | 92.7 | 96.3 | 95.4 | 86.4 | 170.5 |
| 125 | 72.7 | 74.1 | 76.2 | 74.7 | 78.7 | 82.5 | 83.2 | 85.9 | 88.2 | 92.6 | 94.9 | 94.3 | 87.2 | 170.0 |
| 160 | 74.2 | 77.3 | 78.5 | 76.7 | 80.5 | 84.0 | 84.0 | 87.0 | 89.2 | 92.2 | 94.7 | 93.5 | 86.3 | 169.8 |
| 200 | 73.3 | 79.0 | 78.4 | 78.1 | 80.3 | 84.3 | 83.8 | 86.5 | 89.2 | 92.4 | 94.3 | 92.6 | 84.5 | 169.6 |
| 250 | 72.7 | 76.3 | 78.1 | 77.0 | 81.0 | 85.0 | 84.7 | 87.3 | 89.4 | 92.0 | 94.9 | 90.8 | 81.2 | 169.6 |
| 315 | 72.7 | 75.5 | 77.2 | 76.6 | 79.6 | 83.2 | 85.2 | 87.6 | 89.2 | 92.0 | 92.2 | 87.4 | 78.6 | 168.3 |
| 400 | 70.6 | 75.7 | 77.6 | 76.2 | 80.0 | 83.8 | 84.3 | 87.5 | 87.7 | 91.5 | 89.9 | 83.6 | 75.8 | 167.3 |
| 500 | 69.9 | 74.5 | 77.1 | 76.2 | 79.3 | 83.3 | 84.5 | 86.5 | 88.2 | 89.7 | 87.2 | 81.6 | 72.1 | 166.3 |
| 630 | 68.4 | 73.0 | 75.3 | 75.4 | 80.1 | 83.4 | 83.7 | 86.2 | 86.2 | 86.5 | 84.7 | 78.3 | 68.8 | 164.8 |
| 800 | 67.3 | 74.0 | 75.9 | 74.7 | 79.0 | 83.4 | 82.9 | 84.4 | 84.5 | 85.9 | 82.0 | 74.9 | 65.3 | 164.0 |
| 1000 | 67.4 | 73.4 | 76.1 | 75.6 | 79.5 | 82.4 | 82.5 | 84.6 | 83.4 | 82.8 | 80.2 | 73.3 | 62.3 | 163.4 |
| 1250 | 66.7 | 73.1 | 76.4 | 76.4 | 78.6 | 81.3 | 81.6 | 81.6 | 81.1 | 80.8 | 76.5 | 69.2 | 58.9 | 162.2 |
| 1600 | 65.8 | 73.0 | 77.1 | 77.3 | 79.8 | 82.5 | 81.1 | 80.9 | 79.5 | 78.1 | 74.2 | 66.6 | 55.3 | 162.8 |
| 2000 | 63.5 | 70.2 | 74.8 | 76.0 | 79.2 | 82.2 | 80.3 | 79.0 | 77.2 | 75.5 | 70.1 | 63.5 | 50.2 | 162.9 |
| 2500 | 59.7 | 67.4 | 71.7 | 74.2 | 77.0 | 80.5 | 78.8 | 77.2 | 74.3 | 70.5 | 66.2 | 57.0 | 41.8 | 163.0 |
| 3150 | 53.9 | 62.1 | 66.9 | 69.1 | 72.1 | 76.2 | 74.7 | 72.6 | 69.3 | 65.4 | 58.8 | 48.4 | 29.1 | 162.4 |
| 4000 | 43.7 | 53.7 | 59.6 | 63.0 | 66.9 | 70.9 | 69.1 | 65.6 | 61.6 | 55.3 | 46.3 | 35.1 | 9.9 | 162.3 |
| 5000 | 29.7 | 41.9 | 49.1 | 54.2 | 56.9 | 61.6 | 59.8 | 57.1 | 52.1 | 43.4 | 33.2 | 15.9 | | 162.3 |
| 6300 | 7.4 | 23.5 | 33.3 | 38.6 | 42.8 | 48.0 | 45.8 | 41.7 | 35.6 | 25.0 | 11.9 | | | 162.6 |
| 8000 | | 5.3 | 13.3 | 18.7 | 24.7 | 20.9 | 16.5 | 8.4 | | | | | | 161.8 |
| 10000 | | | | | | | | | | | | | | 161.4 |
| 12500 | | | | | | | | | | | | | | 162.1 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

DASPL 82.7 87.0 88.9 88.3 91.7 95.3 95.9 97.6 99.0 102.5 104.5 102.8 94.4 180.5
 PNL 87.5 93.6 96.8 97.3 100.6 104.1 103.5 103.7 104.1 106.2 106.5 102.8 93.9
 PNLT 87.5 93.6 97.5 97.8 101.1 104.7 104.1 104.3 104.7 106.2 106.5 102.8 93.9
 DBA 76.8 82.5 85.5 85.6 88.8 92.1 91.7 93.0 93.1 94.6 93.8 89.7 81.1

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH261 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = C0 FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO MPH = 0 PWL AREA = FULL SPHERE TAMB F = 58.28 PAMB HG = 29.11 RELHUM = 37.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = 0 NBFR = 0

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1540.4 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2512.2 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1641 TAPE = X16411 TEST PT NO = 1641 NC = AE096 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1642 X1642C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 91.9 | 91.4 | 86.4 | 85.0 | 84.6 | 86.7 | 86.1 | 89.5 | 91.4 | 90.7 | 95.9 | 96.3 | 92.5 | 132.7 |
| 63 | 93.3 | 92.8 | 93.6 | 90.1 | 91.5 | 94.1 | 92.5 | 91.9 | 95.8 | 94.4 | 97.5 | 97.5 | 93.4 | 136.0 |
| 80 | 94.5 | 99.1 | 93.8 | 92.9 | 95.2 | 98.8 | 97.2 | 96.1 | 97.3 | 96.9 | 100.3 | 100.7 | 91.6 | 139.2 |
| 100 | 93.7 | 98.7 | 93.8 | 92.5 | 95.4 | 99.3 | 98.9 | 99.8 | 98.0 | 99.3 | 101.0 | 105.6 | 94.1 | 140.9 |
| 125 | 91.1 | 93.2 | 94.9 | 94.0 | 97.1 | 99.2 | 98.3 | 98.5 | 97.7 | 100.0 | 105.9 | 110.1 | 98.2 | 142.9 |
| 150 | 89.4 | 86.0 | 91.5 | 88.0 | 90.9 | 94.0 | 97.1 | 95.3 | 95.5 | 101.8 | 107.9 | 110.6 | 102.3 | 143.2 |
| 200 | 88.8 | 88.3 | 90.1 | 87.1 | 91.2 | 94.1 | 95.7 | 97.6 | 99.8 | 101.1 | 106.8 | 113.5 | 105.4 | 144.7 |
| 250 | 86.8 | 90.3 | 90.1 | 88.6 | 92.0 | 94.8 | 95.7 | 97.9 | 100.6 | 106.7 | 112.0 | 116.0 | 107.1 | 147.7 |
| 315 | 87.6 | 89.4 | 89.9 | 88.7 | 92.0 | 95.4 | 97.5 | 98.9 | 101.1 | 108.0 | 113.3 | 116.5 | 108.9 | 148.7 |
| 400 | 89.1 | 90.1 | 91.1 | 88.7 | 92.5 | 95.4 | 102.0 | 99.4 | 103.4 | 110.2 | 114.8 | 116.8 | 108.2 | 149.6 |
| 500 | 89.6 | 90.9 | 91.9 | 89.9 | 93.3 | 96.6 | 97.3 | 100.2 | 103.6 | 111.5 | 115.8 | 116.8 | 105.9 | 150.1 |
| 630 | 90.3 | 91.6 | 91.6 | 90.4 | 94.2 | 97.3 | 98.7 | 101.1 | 104.6 | 112.2 | 116.3 | 115.5 | 103.6 | 150.0 |
| 800 | 91.6 | 91.4 | 92.6 | 91.2 | 95.0 | 98.4 | 99.3 | 101.9 | 106.1 | 112.2 | 115.6 | 114.0 | 101.4 | 149.5 |
| 1000 | 93.3 | 93.5 | 94.3 | 92.1 | 96.4 | 99.6 | 100.4 | 103.9 | 107.6 | 112.1 | 115.0 | 111.2 | 99.1 | 149.0 |
| 1250 | 92.7 | 95.2 | 94.7 | 93.4 | 96.1 | 100.0 | 100.4 | 104.3 | 108.0 | 113.1 | 114.4 | 108.9 | 98.0 | 148.9 |
| 1600 | 93.3 | 94.0 | 94.7 | 93.8 | 97.0 | 101.1 | 101.6 | 104.5 | 108.9 | 113.2 | 115.4 | 107.0 | 97.4 | 149.4 |
| 2000 | 94.5 | 93.8 | 94.3 | 92.9 | 97.0 | 100.8 | 102.1 | 105.6 | 108.5 | 112.5 | 113.8 | 105.6 | 97.6 | 148.6 |
| 2500 | 94.9 | 96.3 | 95.8 | 93.5 | 97.2 | 101.0 | 101.5 | 105.3 | 108.0 | 112.5 | 112.5 | 104.6 | 97.8 | 148.1 |
| 3150 | 94.8 | 94.7 | 95.9 | 93.9 | 97.3 | 101.6 | 103.0 | 105.2 | 108.8 | 111.6 | 110.9 | 104.5 | 96.9 | 147.6 |
| 4000 | 95.6 | 95.4 | 96.5 | 93.2 | 97.9 | 101.1 | 102.0 | 104.8 | 107.2 | 109.4 | 109.6 | 102.7 | 96.3 | 146.3 |
| 5000 | 97.8 | 98.1 | 98.0 | 94.1 | 97.6 | 101.3 | 101.7 | 104.3 | 106.1 | 108.5 | 107.3 | 100.8 | 94.8 | 145.5 |
| 6300 | 99.5 | 100.2 | 100.3 | 96.6 | 98.9 | 101.1 | 101.7 | 104.4 | 105.6 | 106.3 | 105.3 | 98.8 | 93.8 | 145.2 |
| 8000 | 99.8 | 100.9 | 101.5 | 97.7 | 99.3 | 101.3 | 100.6 | 102.2 | 103.2 | 104.1 | 103.0 | 96.7 | 92.0 | 144.3 |
| 10000 | 99.0 | 100.7 | 102.4 | 100.0 | 100.8 | 103.1 | 101.3 | 101.8 | 103.0 | 102.5 | 100.6 | 95.7 | 91.5 | 145.0 |
| 12500 | 98.1 | 98.7 | 101.1 | 98.9 | 101.4 | 103.4 | 101.5 | 100.5 | 100.9 | 99.8 | 97.8 | 93.7 | 89.9 | 144.9 |
| 16000 | 95.8 | 99.3 | 100.0 | 98.7 | 100.5 | 102.7 | 101.3 | 100.2 | 100.1 | 97.2 | 95.3 | 91.5 | 86.4 | 145.4 |
| 20000 | 94.7 | 96.8 | 98.2 | 96.6 | 98.3 | 101.6 | 100.4 | 98.3 | 97.3 | 93.6 | 92.2 | 88.7 | 83.9 | 145.4 |
| 25000 | 92.1 | 94.4 | 95.5 | 94.8 | 96.6 | 100.4 | 99.1 | 96.7 | 95.2 | 90.8 | 88.7 | 85.9 | 81.0 | 146.0 |
| 31500 | 88.5 | 90.6 | 91.8 | 92.3 | 93.3 | 97.4 | 95.9 | 94.7 | 92.3 | 87.9 | 86.3 | 82.5 | 77.7 | 146.2 |
| 40000 | 84.2 | 87.1 | 88.8 | 88.1 | 89.4 | 94.1 | 92.1 | 90.9 | 89.6 | 84.9 | 83.4 | 79.9 | 74.3 | 145.7 |
| 50000 | 78.4 | 82.0 | 83.4 | 83.0 | 84.7 | 89.3 | 86.6 | 86.2 | 84.8 | 80.3 | 78.5 | 75.0 | 68.9 | 146.0 |
| 63000 | 72.4 | 75.9 | 78.1 | 77.1 | 79.1 | 83.9 | 81.0 | 80.6 | 79.8 | 75.6 | 74.7 | 69.5 | 63.2 | 145.9 |
| 80000 | 64.8 | 69.1 | 71.3 | 70.1 | 71.8 | 77.9 | 74.8 | 74.2 | 73.8 | 68.8 | 68.6 | 64.2 | 56.0 | 146.3 |
| GASPL | 109.3 | 110.7 | 111.1 | 108.9 | 111.4 | 114.5 | 114.6 | 116.3 | 119.0 | 123.2 | 125.7 | 125.2 | 115.9 | 162.0 |
| PNL | 121.2 | 122.0 | 122.2 | 119.4 | 122.6 | 126.0 | 126.9 | 129.2 | 132.1 | 135.5 | 136.7 | 133.0 | 124.5 | |
| PNLT | 121.2 | 122.0 | 122.2 | 120.0 | 123.2 | 126.0 | 127.7 | 129.2 | 132.1 | 135.5 | 136.7 | 133.0 | 124.5 | |
| DBA | 107.3 | 108.1 | 108.6 | 105.9 | 109.0 | 112.3 | 113.0 | 115.8 | 118.8 | 122.9 | 124.7 | 121.6 | 111.8 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VERTICL = ADR262 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 LEGA = NO PWL AREA = FULL SPHERE TAMB F = 58.33 PAMB HG = 28.95 RELHUM = 37.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINT = LBS XNL RPM XNHR XNHR XNHR V8 = 1555.3 FPS AEB = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR XNHR V18 = 2519.6 FPS AE18 = 19.9 SQ IN

RUNFT = 83F-400-1642 TAPE = X1642C TFST PT N° = 1640 CORR F SPEED RPM

IDENTIFICATION - 83F-400-1642 X1642F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

80
100
125
160

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 200 | 94.7 | 96.8 | 95.0 | 91.9 | 93.6 | 94.8 | 93.8 | 94.3 | 99.0 | 105.1 | 110.1 | 113.9 | 108.2 | 146.1 |
| 315 | 94.7 | 96.8 | 95.0 | 91.9 | 93.6 | 95.6 | 96.7 | 97.1 | 101.6 | 107.9 | 112.4 | 115.4 | 109.5 | 148.0 |
| 400 | 95.3 | 95.8 | 94.8 | 92.1 | 94.3 | 95.6 | 101.2 | 97.7 | 101.8 | 109.2 | 113.7 | 116.1 | 108.9 | 148.9 |
| 500 | 96.4 | 96.3 | 95.0 | 92.0 | 95.2 | 97.0 | 96.4 | 98.3 | 102.8 | 110.1 | 114.5 | 115.8 | 108.7 | 149.1 |
| 600 | 97.3 | 97.3 | 96.9 | 93.4 | 96.2 | 97.7 | 97.8 | 99.1 | 104.8 | 110.7 | 114.6 | 115.8 | 109.4 | 149.4 |
| 800 | 98.0 | 98.0 | 96.6 | 93.9 | 97.1 | 98.9 | 98.5 | 100.0 | 106.5 | 110.9 | 114.5 | 114.2 | 109.5 | 149.1 |
| 1000 | 99.3 | 97.8 | 97.7 | 94.8 | 98.6 | 100.2 | 99.7 | 101.9 | 106.8 | 111.6 | 113.6 | 111.5 | 108.2 | 148.6 |
| 1250 | 100.9 | 100.0 | 99.4 | 95.8 | 98.4 | 100.8 | 99.7 | 102.3 | 107.8 | 111.8 | 114.5 | 109.4 | 107.3 | 148.8 |
| 1600 | 100.3 | 101.7 | 99.9 | 97.1 | 99.5 | 102.2 | 101.0 | 102.7 | 107.8 | 111.5 | 113.4 | 108.6 | 109.1 | 148.5 |
| 2000 | 101.0 | 100.5 | 99.9 | 97.7 | 100.2 | 102.1 | 101.9 | 102.7 | 112.0 | 112.6 | 108.1 | 109.0 | 148.5 | |
| 2500 | 105.0 | 102.7 | 101.3 | 98.0 | 100.1 | 102.7 | 101.7 | 104.3 | 109.0 | 111.6 | 111.5 | 108.7 | 108.7 | 148.7 |
| 3150 | 102.6 | 102.9 | 101.3 | 97.7 | 100.5 | 103.6 | 103.6 | 104.6 | 108.2 | 110.1 | 110.9 | 107.3 | 108.4 | 148.1 |
| 4000 | 102.4 | 101.3 | 101.5 | 98.3 | 101.6 | 103.6 | 103.2 | 104.8 | 107.2 | 109.3 | 108.6 | 105.5 | 107.0 | 147.3 |
| 5000 | 103.1 | 102.1 | 102.3 | 97.9 | 101.6 | 104.3 | 104.6 | 107.4 | 107.8 | 107.4 | 104.4 | 106.9 | 147.1 | |
| 6300 | 104.5 | 104.3 | 103.5 | 98.8 | 102.5 | 104.1 | 103.8 | 105.2 | 105.6 | 106.3 | 105.9 | 103.0 | 105.8 | 147.0 |
| 8000 | 104.5 | 105.0 | 104.7 | 100.5 | 102.9 | 104.3 | 102.8 | 103.4 | 106.7 | 106.2 | 104.9 | 103.4 | 106.3 | 147.5 |
| 10000 | 104.5 | 105.5 | 105.7 | 101.3 | 104.8 | 106.1 | 103.8 | 103.7 | 103.2 | 101.8 | 100.3 | 99.1 | 102.2 | 147.6 |
| 12500 | 105.4 | 106.5 | 107.5 | 104.1 | 105.5 | 106.4 | 103.1 | 101.0 | 102.9 | 100.0 | 98.8 | 98.1 | 99.9 | 148.8 |
| 16000 | 104.5 | 104.3 | 105.8 | 102.6 | 104.5 | 105.7 | 102.9 | 100.7 | 99.6 | 95.5 | 94.4 | 93.9 | 96.1 | 148.7 |
| 20000 | 102.8 | 104.5 | 104.3 | 102.0 | 102.4 | 104.6 | 101.8 | 98.3 | 98.2 | 93.2 | 91.5 | 91.7 | 93.7 | 149.2 |
| 25000 | 100.0 | 101.4 | 101.9 | 99.3 | 101.2 | 103.4 | 100.5 | 96.6 | 96.1 | 91.1 | 89.8 | 89.0 | 91.2 | 149.6 |
| 31500 | 98.4 | 100.5 | 100.1 | 97.8 | 97.9 | 100.4 | 97.3 | 94.7 | 94.2 | 88.9 | 87.8 | 87.3 | 88.6 | 150.6 |
| 40000 | 95.0 | 95.8 | 95.6 | 94.5 | 94.0 | 97.1 | 93.6 | 90.9 | 89.7 | 84.8 | 83.3 | 82.8 | 83.6 | 150.6 |
| 50000 | 90.3 | 91.9 | 92.2 | 89.9 | 89.3 | 92.3 | 88.1 | 86.2 | 85.7 | 81.0 | 80.4 | 78.2 | 78.9 | 150.6 |
| 63000 | 83.6 | 85.9 | 85.8 | 83.9 | 83.7 | 86.9 | 82.4 | 80.6 | 81.2 | 75.8 | 76.1 | 74.8 | 73.5 | 150.1 |
| 80000 | 76.1 | 78.3 | 79.1 | 76.5 | 76.4 | 80.9 | 76.2 | 74.2 | 71.4 | 66.0 | 66.3 | 65.0 | 63.7 | 150.0 |

ORIGINAL PAGE IS
OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137
DBA 118.4 115.6 115.5 112.2 114.4 116.2 114.9 115.4 118.8 122.1 124.4 124.2 120.4 153.0
PNL 126.5 126.0 125.0 121.6 124.6 126.7 126.4 127.6 131.1 133.9 135.0 132.8 132.1
PNLT 127.6 126.0 125.0 121.6 124.6 126.7 127.2 127.6 131.1 133.9 135.0 132.8 132.1
DBA 198.9 201.0 201.5 199.2 199.0 202.9 198.4 196.4 195.1 189.8 189.9 188.5 187.5

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH262 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = C0 FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = N0 PWL AREA = FULL SPHERE TAMB F = 58.33 PAMB HG = 28.95 RELHUM = 37.9 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1555.3 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V10 = 2519.6 FPS AE10 = 19.9 SQ IN

RUNPT = 83F-400-1642 TAPE = X1642F TEST PT NO = 1642 NC = AE096 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1642 X16421

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 70.6 | 74.2 | 73.5 | 71.1 | 73.4 | 75.3 | 76.3 | 76.3 | 80.0 | 85.3 | 88.3 | 89.1 | 79.8 | 163.3 |
| 63 | 71.1 | 73.1 | 73.3 | 71.2 | 73.9 | 75.3 | 80.8 | 76.9 | 80.2 | 86.6 | 89.5 | 89.6 | 79.2 | 164.2 |
| 80 | 72.2 | 73.7 | 74.4 | 71.2 | 74.7 | 76.7 | 76.0 | 77.4 | 81.2 | 87.4 | 90.3 | 89.3 | 78.9 | 164.4 |
| 100 | 73.0 | 74.6 | 75.3 | 72.5 | 75.7 | 77.4 | 77.3 | 78.2 | 83.2 | 88.0 | 90.3 | 89.3 | 79.4 | 164.6 |
| 125 | 73.6 | 75.2 | 74.9 | 72.9 | 76.5 | 78.5 | 77.9 | 79.0 | 84.8 | 88.1 | 90.1 | 87.5 | 79.3 | 164.5 |
| 160 | 74.7 | 74.8 | 75.8 | 73.6 | 77.9 | 79.6 | 79.0 | 80.8 | 85.0 | 88.7 | 89.0 | 84.6 | 77.6 | 163.9 |
| 200 | 76.1 | 76.8 | 77.4 | 74.5 | 77.5 | 80.1 | 78.9 | 81.0 | 85.8 | 88.6 | 89.6 | 82.2 | 76.3 | 164.1 |
| 250 | 75.2 | 78.2 | 77.6 | 75.6 | 78.4 | 81.3 | 80.0 | 81.2 | 85.5 | 88.1 | 88.2 | 80.9 | 76.4 | 163.8 |
| 315 | 75.4 | 76.7 | 77.3 | 75.9 | 78.9 | 80.9 | 80.6 | 82.4 | 85.1 | 88.2 | 87.0 | 79.9 | 76.4 | 163.9 |
| 400 | 78.8 | 78.4 | 78.3 | 75.9 | 78.4 | 81.1 | 80.0 | 82.1 | 86.0 | 87.4 | 85.4 | 79.7 | 75.1 | 164.0 |
| 500 | 75.9 | 78.2 | 77.9 | 75.2 | 78.6 | 81.8 | 81.6 | 82.1 | 84.8 | 85.4 | 84.2 | 77.7 | 73.9 | 163.4 |
| 630 | 75.2 | 76.2 | 77.8 | 75.5 | 79.3 | 81.5 | 80.9 | 82.0 | 83.5 | 84.1 | 81.4 | 75.2 | 71.3 | 162.6 |
| 800 | 75.3 | 76.5 | 78.2 | 74.7 | 78.9 | 81.9 | 80.8 | 81.4 | 83.3 | 82.2 | 79.7 | 73.2 | 70.0 | 162.4 |
| 1000 | 76.2 | 78.3 | 79.0 | 75.3 | 79.6 | 81.4 | 80.9 | 81.7 | 81.1 | 80.3 | 77.5 | 71.0 | 67.6 | 162.4 |
| 1250 | 75.5 | 78.5 | 79.8 | 76.6 | 79.7 | 81.3 | 79.6 | 79.6 | 81.8 | 79.7 | 75.9 | 70.4 | 66.5 | 162.8 |
| 1600 | 74.3 | 78.1 | 80.1 | 76.9 | 81.0 | 82.5 | 80.0 | 79.2 | 77.6 | 74.4 | 70.1 | 64.5 | 59.7 | 162.9 |
| 2000 | 73.8 | 78.0 | 81.0 | 78.9 | 81.0 | 82.2 | 78.6 | 75.7 | 76.4 | 71.4 | 67.2 | 61.3 | 53.9 | 164.1 |
| 2500 | 70.6 | 74.2 | 78.0 | 76.4 | 79.0 | 80.5 | 77.4 | 74.4 | 71.9 | 65.3 | 60.5 | 54.0 | 44.7 | 164.0 |
| 3150 | 64.9 | 71.3 | 74.0 | 73.6 | 74.9 | 77.5 | 74.4 | 69.9 | 67.9 | 60.0 | 53.7 | 46.1 | 33.4 | 164.5 |
| 4000 | 55.2 | 62.7 | 67.0 | 66.8 | 70.0 | 72.6 | 69.3 | 64.2 | 61.2 | 52.4 | 45.0 | 33.8 | 15.6 | 164.9 |
| 5000 | 43.9 | 53.4 | 58.2 | 59.1 | 60.8 | 63.9 | 60.3 | 55.9 | 52.2 | 41.6 | 32.3 | 17.5 | | 165.9 |
| 6300 | 21.3 | 34.1 | 41.2 | 44.5 | 46.5 | 50.4 | 46.1 | 41.0 | 35.3 | 23.0 | 9.6 | | | 166.0 |
| 8000 | 4.4 | 15.6 | 19.8 | 22.7 | 26.8 | 21.5 | 16.1 | 9.0 | | | | | | 165.9 |
| 10000 | | | | | | | | | | | | | | 165.4 |
| 12500 | | | | | | | | | | | | | | 165.3 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|
| GASPL | 87.4 | 89.3 | 90.4 | 87.9 | 91.1 | 93.2 | 92.2 | 92.7 | 95.8 | 98.4 | 93.3 | 95.9 | 88.5 | 178.2 |
| PWL | 95.2 | 98.6 | 100.7 | 98.6 | 101.4 | 103.3 | 101.2 | 100.1 | 101.6 | 102.3 | 101.4 | 96.8 | 89.9 | |
| PNT | 96.5 | 99.7 | 100.7 | 99.2 | 101.9 | 103.8 | 101.7 | 100.6 | 102.1 | 102.3 | 102.5 | 96.8 | 89.9 | |
| DBA | 84.5 | 87.1 | 88.9 | 86.4 | 89.5 | 91.4 | 89.6 | 89.5 | 90.9 | 91.1 | 89.5 | 83.6 | 78.9 | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH262 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = C6 FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 58.33 PAMB HG = 28.95 RELHUM = 37.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1555.3 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2519.6 FPS AE18 = 19.9 SQ IN

UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-ZER-1645 X1645C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 87.4 | 87.7 | 85.2 | 83.5 | 83.1 | 86.9 | 85.1 | 88.2 | 89.4 | 86.7 | 95.1 | 95.6 | 83.2 | 131.0 |
| 63 | 90.3 | 92.0 | 92.3 | 91.1 | 90.7 | 95.3 | 93.5 | 93.4 | 95.6 | 92.9 | 101.3 | 101.7 | 88.9 | 137.3 |
| 80 | 92.0 | 97.1 | 92.8 | 90.9 | 92.2 | 96.8 | 96.0 | 95.1 | 95.6 | 96.2 | 99.5 | 99.7 | 85.9 | 137.8 |
| 100 | 91.5 | 98.2 | 93.8 | 92.8 | 95.4 | 98.0 | 98.1 | 98.6 | 96.5 | 100.3 | 101.7 | 104.6 | 90.8 | 140.4 |
| 125 | 88.6 | 92.7 | 95.4 | 93.2 | 96.6 | 98.7 | 97.6 | 97.5 | 97.9 | 101.5 | 107.1 | 109.6 | 96.2 | 142.9 |
| 150 | 86.9 | 87.7 | 91.2 | 88.3 | 90.4 | 93.5 | 97.1 | 96.0 | 97.0 | 102.8 | 106.9 | 109.9 | 101.5 | 142.7 |
| 200 | 89.0 | 89.1 | 91.6 | 89.4 | 93.2 | 96.1 | 97.5 | 98.9 | 102.3 | 104.1 | 108.8 | 114.2 | 105.6 | 145.9 |
| 250 | 88.5 | 92.3 | 91.8 | 90.9 | 94.2 | 96.6 | 97.7 | 100.6 | 103.1 | 109.2 | 113.5 | 117.0 | 108.4 | 149.2 |
| 315 | 90.6 | 91.9 | 92.4 | 90.9 | 94.8 | 97.9 | 99.8 | 101.4 | 104.6 | 110.5 | 114.6 | 117.3 | 110.7 | 150.0 |
| 400 | 91.3 | 93.9 | 93.4 | 91.4 | 94.5 | 97.4 | 104.8 | 102.2 | 106.6 | 113.2 | 116.3 | 118.8 | 111.9 | 151.8 |
| 500 | 92.6 | 94.6 | 94.6 | 92.4 | 95.8 | 99.6 | 100.3 | 103.9 | 107.1 | 114.2 | 117.8 | 119.3 | 113.7 | 152.7 |
| 630 | 92.8 | 94.8 | 95.1 | 93.6 | 96.7 | 100.6 | 101.7 | 104.6 | 107.6 | 114.9 | 118.3 | 119.5 | 115.1 | 153.3 |
| 800 | 95.8 | 95.1 | 96.1 | 93.9 | 97.5 | 101.4 | 102.0 | 105.7 | 108.9 | 114.2 | 118.1 | 119.8 | 116.2 | 153.4 |
| 1000 | 98.5 | 99.0 | 98.8 | 96.1 | 99.7 | 102.8 | 103.2 | 107.4 | 109.8 | 113.6 | 117.5 | 119.4 | 115.1 | 153.1 |
| 1250 | 96.9 | 100.2 | 98.2 | 97.4 | 99.6 | 103.2 | 103.4 | 106.6 | 109.7 | 112.3 | 116.4 | 118.1 | 115.0 | 152.2 |
| 1600 | 96.1 | 97.7 | 98.4 | 96.5 | 99.5 | 103.4 | 104.2 | 107.5 | 110.2 | 112.0 | 116.6 | 116.5 | 112.9 | 151.7 |
| 2000 | 95.5 | 97.1 | 97.5 | 95.6 | 98.7 | 102.6 | 103.8 | 107.6 | 109.8 | 112.3 | 114.1 | 114.1 | 110.1 | 150.2 |
| 2500 | 94.2 | 95.8 | 97.6 | 95.3 | 98.9 | 102.5 | 103.2 | 107.3 | 108.7 | 111.8 | 112.5 | 110.3 | 107.3 | 148.9 |
| 3150 | 93.8 | 95.9 | 96.9 | 95.4 | 98.3 | 102.6 | 104.0 | 106.7 | 109.3 | 109.9 | 109.6 | 108.0 | 104.9 | 147.6 |
| 4000 | 91.8 | 94.7 | 97.0 | 94.9 | 98.9 | 102.3 | 102.7 | 106.3 | 107.7 | 107.7 | 107.4 | 105.7 | 102.5 | 146.2 |
| 5000 | 91.8 | 95.9 | 96.7 | 94.9 | 98.4 | 101.8 | 102.2 | 105.3 | 106.1 | 107.0 | 105.0 | 102.3 | 99.3 | 145.1 |
| 6300 | 91.3 | 96.2 | 97.0 | 95.1 | 98.7 | 101.9 | 101.9 | 104.9 | 105.1 | 104.3 | 103.3 | 100.3 | 96.0 | 144.3 |
| 8000 | 91.8 | 96.7 | 97.8 | 95.7 | 98.3 | 101.6 | 101.1 | 102.7 | 103.0 | 101.9 | 100.5 | 97.7 | 94.5 | 143.2 |
| 10000 | 93.3 | 96.2 | 99.7 | 98.0 | 99.8 | 102.3 | 101.3 | 102.3 | 102.3 | 100.3 | 97.8 | 95.9 | 92.7 | 143.8 |
| 12500 | 93.1 | 97.7 | 100.1 | 99.2 | 100.9 | 103.9 | 101.2 | 101.0 | 100.7 | 97.8 | 95.5 | 93.7 | 91.2 | 144.5 |
| 16000 | 92.1 | 97.5 | 98.7 | 98.9 | 100.4 | 102.7 | 101.2 | 100.4 | 98.6 | 94.7 | 93.3 | 89.4 | 87.1 | 144.9 |
| 20000 | 90.2 | 94.8 | 96.6 | 96.3 | 98.5 | 101.5 | 100.1 | 98.3 | 96.8 | 92.3 | 91.4 | 87.2 | 83.2 | 144.9 |
| 25000 | 86.8 | 91.7 | 93.9 | 94.0 | 95.8 | 100.4 | 98.8 | 96.4 | 94.4 | 89.7 | 85.9 | 84.3 | 80.4 | 145.4 |
| 31500 | 84.2 | 88.2 | 90.3 | 91.7 | 92.5 | 97.1 | 94.8 | 93.9 | 92.3 | 87.1 | 83.2 | 80.4 | 76.9 | 145.3 |
| 40000 | 79.9 | 84.5 | 87.2 | 88.0 | 88.9 | 93.5 | 91.8 | 90.6 | 88.8 | 84.8 | 80.5 | 77.3 | 73.2 | 146.0 |
| 50000 | 73.8 | 78.9 | 81.3 | 82.7 | 83.3 | 88.6 | 86.0 | 85.4 | 83.9 | 80.1 | 75.1 | 72.4 | 67.5 | 145.1 |
| 63000 | 67.5 | 73.5 | 76.0 | 76.2 | 78.2 | 83.5 | 79.8 | 79.5 | 79.4 | 74.4 | 71.3 | 66.8 | 61.8 | 145.0 |
| 80000 | 60.9 | 66.4 | 69.4 | 69.7 | 71.9 | 77.9 | 73.6 | 73.5 | 72.8 | 68.1 | 63.7 | 60.1 | 53.6 | 145.7 |
| OASPL | 107.5 | 110.4 | 110.9 | 109.4 | 112.1 | 115.5 | 115.8 | 118.2 | 120.3 | 123.9 | 127.2 | 128.7 | 123.9 | 163.5 |
| PNL | 119.0 | 121.6 | 122.3 | 120.5 | 123.7 | 127.2 | 128.2 | 130.9 | 133.0 | 135.2 | 137.0 | 137.3 | 132.9 | |
| PNLT | 119.0 | 122.1 | 122.3 | 120.5 | 124.3 | 127.2 | 129.0 | 130.9 | 133.0 | 135.2 | 137.0 | 137.3 | 132.9 | |
| DBA | 106.3 | 108.5 | 109.1 | 107.2 | 110.3 | 113.9 | 114.5 | 117.9 | 120.0 | 123.0 | 125.0 | 127.1 | 123.0 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

| | | | | | | | | | | | |
|------------|--------------|----------------|----------|--------------|--------------|----------|------------|------------------|------------|----------|----------|
| VERTICL = | ADR259 | TEST DATE = | 05-05-83 | LOCAT = | C41 ANECH CH | CONFIG = | 15 | MODEL = | CO | FLTVEL = | 400. FPS |
| IAPLHA = | SB59 | IEGA = | NO | PWL AREA = | FULL SPHERE | TAMB F = | 56.10 | PAMB HG = | 29.15 | RELHUM = | 37.9 PCT |
| WIND DIR = | | DEG WIND VEL = | | MPH | EXT DIST = | 40.0 FT | | MIKE HT = | | NBFR = | |
| FNINI = | LBS XNL | RPM | | KNH | RPM | V8 = | 1911.4 FPS | AEB = | 4.0 SQ IN | | |
| FNRAMB = | LBS XNLR | RPM | | KNHR | RPM | V10 = | 2350.3 FPS | AE10 = | 19.9 SQ IN | | |
| RUNPT = | 83F-ZER-1645 | TAPE | | TEST PT NO = | 1645 | NC | | CORR FAN SPEED = | RPM | | |

IDENTIFICATION - 83F-ZER-1645 X16451

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 72.3 | 76.2 | 75.2 | 73.4 | 76.2 | 77.8 | 78.5 | 78.8 | 83.2 | 88.0 | 89.4 | 90.5 | 82.9 | 165.1 |
| 63 | 74.1 | 75.6 | 75.8 | 73.5 | 75.8 | 77.3 | 83.6 | 79.6 | 83.6 | 88.8 | 90.7 | 91.1 | 85.4 | 166.2 |
| 80 | 73.6 | 76.7 | 76.2 | 73.6 | 77.2 | 79.7 | 79.1 | 81.2 | 83.4 | 89.0 | 90.7 | 91.4 | 88.1 | 166.9 |
| 100 | 75.8 | 78.2 | 77.9 | 75.0 | 78.2 | 80.6 | 80.1 | 81.2 | 85.1 | 88.8 | 91.3 | 93.1 | 91.8 | 168.9 |
| 125 | 76.1 | 78.4 | 78.4 | 76.2 | 79.0 | 81.5 | 80.4 | 82.3 | 86.4 | 88.7 | 91.4 | 94.0 | 93.2 | 169.9 |
| 160 | 78.5 | 78.3 | 79.2 | 76.3 | 80.9 | 82.9 | 81.6 | 83.9 | 86.4 | 87.4 | 90.3 | 92.7 | 92.9 | 169.6 |
| 200 | 79.4 | 80.9 | 80.9 | 77.8 | 80.9 | 83.3 | 81.8 | 83.4 | 86.9 | 87.2 | 90.5 | 91.1 | 90.7 | 168.7 |
| 250 | 78.4 | 82.6 | 80.7 | 79.3 | 80.9 | 83.5 | 82.7 | 84.2 | 86.6 | 87.5 | 88.0 | 88.6 | 87.6 | 167.2 |
| 315 | 78.1 | 80.4 | 81.1 | 78.6 | 80.1 | 82.7 | 82.3 | 84.3 | 85.6 | 87.0 | 86.4 | 84.7 | 84.4 | 165.7 |
| 400 | 77.1 | 79.4 | 79.9 | 77.5 | 80.2 | 82.6 | 81.7 | 84.0 | 86.3 | 85.2 | 83.5 | 82.3 | 81.6 | 164.7 |
| 500 | 75.2 | 78.7 | 79.7 | 77.0 | 80.1 | 82.8 | 82.6 | 83.5 | 85.0 | 83.2 | 81.2 | 79.6 | 78.4 | 163.7 |
| 630 | 77.0 | 79.7 | 80.5 | 78.2 | 80.8 | 82.8 | 81.6 | 83.3 | 83.3 | 82.3 | 78.5 | 75.6 | 74.2 | 163.0 |
| 800 | 74.4 | 78.1 | 80.4 | 77.6 | 80.3 | 82.4 | 81.1 | 82.3 | 84.2 | 81.5 | 78.4 | 74.9 | 71.6 | 163.0 |
| 1000 | 73.7 | 78.6 | 79.8 | 77.3 | 80.3 | 82.1 | 81.5 | 83.2 | 79.4 | 76.3 | 72.9 | 69.5 | 67.0 | 162.0 |
| 1250 | 72.3 | 78.5 | 79.6 | 77.1 | 79.7 | 81.6 | 79.3 | 78.8 | 78.5 | 74.4 | 69.8 | 67.0 | 63.8 | 161.3 |
| 1600 | 71.5 | 77.9 | 79.4 | 76.9 | 80.1 | 81.7 | 79.0 | 77.9 | 76.5 | 71.3 | 66.6 | 63.4 | 59.9 | 161.9 |
| 2000 | 68.4 | 75.8 | 78.4 | 77.0 | 81.1 | 82.7 | 78.2 | 75.8 | 74.0 | 67.6 | 63.4 | 57.5 | 52.9 | 162.8 |
| 2500 | 68.4 | 75.5 | 78.7 | 77.8 | 79.6 | 80.5 | 77.2 | 74.1 | 71.3 | 64.0 | 59.7 | 52.5 | 44.0 | 164.3 |
| 3150 | 63.0 | 71.8 | 74.5 | 74.9 | 75.7 | 77.4 | 74.2 | 69.9 | 67.1 | 59.0 | 50.9 | 44.6 | 32.9 | 164.7 |
| 4000 | 53.4 | 62.9 | 67.2 | 67.7 | 69.2 | 72.6 | 69.0 | 63.9 | 61.1 | 51.6 | 41.9 | 31.7 | 14.8 | 164.8 |
| 5000 | 38.6 | 50.6 | 56.6 | 58.3 | 60.0 | 63.6 | 59.2 | 55.1 | 51.4 | 41.7 | 29.5 | 15.0 | | 164.5 |
| 6300 | 17.0 | 31.7 | 39.7 | 44.0 | 46.0 | 49.8 | 45.7 | 40.7 | 34.5 | 22.9 | 6.3 | | | 164.8 |
| 8000 | 1.8 | 13.9 | 19.7 | 21.4 | 25.2 | 20.9 | 15.2 | 8.6 | | | | | | 164.6 |
| 10000 | | | | | | | | | | | | | | 164.1 |
| 12500 | | | | | | | | | | | | | | 164.3 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 60000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS OF POOR QUALITY

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/OFTAS-16/NAS3-22137

VEHICLE = ADH259 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = CO FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = NO MPH = PWL AREA = FULL SPHERE TAMB F = 58.10 PAMB HG = 29.15 RELHUM = 37.9 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNIN1 = LBS XNLR = RPM XNHR = RPM V8 = 1911.4 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2350.3 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1645 TAPE = X16451 TEST PT NO = 1645 NC = AE096 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1651 X1651F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 200 | 95.4 | 96.5 | 95.8 | 92.4 | 94.3 | 95.3 | 94.8 | 95.5 | 100.5 | 106.2 | 110.0 | 112.8 | 108.4 | 145.9 |
| 315 | 95.4 | 96.5 | 95.8 | 92.4 | 94.6 | 96.8 | 97.4 | 97.6 | 102.6 | 108.3 | 112.5 | 115.0 | 111.3 | 148.1 |
| 400 | 96.0 | 96.5 | 96.1 | 93.1 | 94.8 | 97.1 | 102.5 | 98.6 | 102.6 | 108.1 | 112.0 | 115.3 | 112.8 | 148.5 |
| 500 | 97.3 | 98.0 | 97.2 | 93.2 | 95.9 | 98.0 | 97.5 | 99.4 | 102.5 | 108.6 | 112.2 | 115.4 | 115.1 | 148.9 |
| 630 | 98.0 | 99.1 | 98.0 | 94.6 | 97.4 | 99.2 | 98.6 | 100.3 | 104.5 | 109.0 | 112.3 | 116.4 | 118.6 | 150.5 |
| 800 | 99.0 | 100.2 | 98.6 | 95.4 | 98.3 | 100.2 | 99.0 | 101.2 | 105.9 | 109.5 | 112.5 | 117.0 | 120.9 | 151.7 |
| 1000 | 100.8 | 100.1 | 100.2 | 96.3 | 99.4 | 101.0 | 100.1 | 102.8 | 106.0 | 108.9 | 111.6 | 117.4 | 120.8 | 151.7 |
| 1250 | 101.7 | 101.9 | 100.9 | 97.4 | 99.6 | 101.5 | 100.4 | 102.6 | 107.2 | 108.8 | 112.6 | 117.1 | 120.0 | 151.6 |
| 1600 | 100.9 | 103.6 | 101.3 | 98.6 | 100.5 | 102.4 | 102.0 | 103.2 | 106.9 | 109.5 | 111.9 | 115.3 | 117.8 | 150.4 |
| 2000 | 101.8 | 102.5 | 101.7 | 98.9 | 99.9 | 102.4 | 102.9 | 104.3 | 106.5 | 109.9 | 110.5 | 112.4 | 116.0 | 149.2 |
| 2500 | 101.9 | 101.9 | 101.6 | 98.4 | 100.6 | 103.2 | 102.4 | 104.4 | 108.0 | 109.3 | 109.7 | 110.7 | 113.4 | 148.4 |
| 3150 | 100.8 | 102.1 | 102.0 | 98.7 | 101.1 | 103.4 | 103.8 | 104.9 | 108.5 | 109.3 | 109.2 | 111.4 | 114.1 | 148.1 |
| 4000 | 103.2 | 103.3 | 103.2 | 100.0 | 102.1 | 103.9 | 104.1 | 106.5 | 107.5 | 109.2 | 108.0 | 107.3 | 110.2 | 148.0 |
| 5000 | 101.9 | 103.7 | 103.5 | 100.3 | 102.0 | 104.1 | 104.2 | 105.7 | 106.4 | 107.2 | 106.4 | 105.0 | 108.4 | 147.3 |
| 6300 | 101.8 | 104.1 | 104.0 | 100.1 | 101.7 | 103.9 | 103.9 | 105.7 | 103.5 | 103.4 | 103.3 | 101.8 | 105.7 | 146.2 |
| 8000 | 99.3 | 102.3 | 102.5 | 99.6 | 101.4 | 103.6 | 102.5 | 103.1 | 102.4 | 101.2 | 99.5 | 100.7 | 104.6 | 145.1 |
| 10000 | 99.9 | 102.3 | 103.3 | 100.2 | 103.4 | 104.3 | 102.3 | 101.6 | 100.6 | 98.9 | 97.8 | 99.2 | 103.1 | 145.5 |
| 12500 | 101.6 | 105.3 | 105.7 | 103.0 | 104.7 | 105.4 | 102.2 | 100.0 | 99.8 | 96.3 | 95.6 | 96.2 | 99.8 | 147.3 |
| 16000 | 100.7 | 103.3 | 105.0 | 103.4 | 104.0 | 105.1 | 102.2 | 99.6 | 96.8 | 94.1 | 91.8 | 93.6 | 96.3 | 147.9 |
| 20000 | 98.7 | 102.4 | 103.5 | 102.7 | 102.1 | 103.3 | 101.0 | 96.8 | 95.6 | 91.1 | 89.4 | 91.6 | 93.9 | 148.1 |
| 25000 | 96.0 | 99.1 | 100.0 | 99.0 | 99.3 | 101.6 | 99.4 | 94.5 | 93.4 | 88.4 | 87.7 | 87.9 | 90.3 | 147.8 |
| 31500 | 94.1 | 97.4 | 98.0 | 97.2 | 96.0 | 98.2 | 95.4 | 92.5 | 90.7 | 85.9 | 85.6 | 84.9 | 87.7 | 148.3 |
| 40000 | 89.1 | 92.6 | 93.7 | 93.6 | 92.3 | 94.4 | 91.4 | 87.7 | 85.7 | 80.3 | 79.8 | 82.1 | 84.2 | 148.2 |
| 50000 | 84.9 | 88.7 | 89.5 | 88.5 | 86.6 | 89.3 | 86.1 | 82.2 | 81.7 | 77.1 | 76.3 | 74.9 | 76.9 | 147.7 |
| 63000 | 77.8 | 81.4 | 83.1 | 82.7 | 80.9 | 83.6 | 79.6 | 77.1 | 75.8 | 71.3 | 71.5 | 69.7 | 70.1 | 146.9 |
| 80000 | 70.8 | 73.7 | 76.0 | 75.0 | 74.3 | 78.0 | 72.6 | 69.8 | 66.0 | 61.5 | 61.7 | 59.8 | 60.3 | 146.8 |

ORIGINAL PAGE IS OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICL = ADH260 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 57.38 PAMB HG = 29.19 RELHUM = 38.5 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1225.2 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2338.7 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1651 TAPE = X1651F TEST PT NO = 1651 NC = AE096 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1651 X16511

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 71.3 | 73.9 | 74.2 | 71.6 | 74.2 | 76.6 | 77.0 | 76.8 | 81.1 | 85.7 | 88.3 | 88.7 | 81.6 | 163.5 |
| 63 | 71.9 | 73.9 | 74.5 | 72.2 | 74.4 | 76.8 | 82.1 | 77.8 | 81.1 | 85.5 | 87.8 | 89.0 | 83.1 | 163.8 |
| 80 | 73.1 | 75.3 | 75.6 | 72.4 | 75.3 | 77.7 | 77.1 | 78.6 | 80.9 | 86.0 | 88.0 | 88.9 | 85.3 | 164.3 |
| 100 | 73.8 | 76.4 | 76.4 | 73.7 | 76.9 | 78.9 | 78.1 | 79.4 | 82.9 | 86.3 | 88.0 | 89.9 | 88.6 | 165.8 |
| 125 | 74.6 | 77.4 | 76.9 | 74.4 | 77.8 | 79.7 | 78.4 | 80.3 | 84.2 | 86.7 | 88.1 | 90.3 | 90.7 | 167.1 |
| 160 | 76.2 | 77.1 | 78.3 | 75.1 | 78.7 | 80.4 | 79.4 | 81.7 | 84.1 | 85.9 | 87.0 | 90.4 | 90.2 | 167.1 |
| 200 | 76.8 | 78.7 | 78.8 | 76.1 | 78.8 | 80.8 | 79.5 | 81.4 | 85.2 | 85.7 | 87.8 | 89.8 | 88.9 | 166.9 |
| 250 | 75.7 | 80.1 | 79.0 | 77.0 | 79.4 | 81.5 | 80.9 | 81.7 | 84.6 | 86.0 | 86.7 | 87.6 | 86.1 | 165.7 |
| 315 | 76.1 | 78.7 | 79.1 | 77.1 | 78.6 | 81.2 | 81.5 | 82.5 | 83.9 | 86.0 | 84.9 | 84.2 | 83.4 | 164.5 |
| 400 | 75.8 | 77.7 | 78.6 | 76.3 | 78.9 | 81.6 | 80.7 | 82.2 | 85.0 | 85.0 | 83.5 | 81.8 | 79.9 | 163.7 |
| 500 | 74.2 | 77.4 | 78.7 | 76.3 | 79.1 | 81.5 | 81.8 | 82.5 | 85.2 | 84.3 | 82.7 | 79.6 | 76.8 | 163.4 |
| 630 | 76.0 | 78.2 | 79.5 | 77.2 | 79.8 | 81.8 | 81.8 | 83.7 | 83.7 | 84.1 | 80.8 | 76.9 | 74.5 | 163.4 |
| 800 | 74.1 | 78.1 | 79.4 | 77.1 | 79.4 | 81.6 | 81.5 | 82.5 | 82.8 | 81.6 | 78.6 | 73.9 | 71.4 | 162.6 |
| 1000 | 73.4 | 78.1 | 79.5 | 76.6 | 78.8 | 81.1 | 80.9 | 82.2 | 79.1 | 77.4 | 74.9 | 69.8 | 67.5 | 161.5 |
| 1250 | 70.3 | 75.8 | 75.7 | 75.7 | 78.1 | 80.6 | 79.3 | 79.2 | 77.5 | 74.6 | 70.5 | 67.7 | 64.8 | 160.4 |
| 1600 | 69.7 | 74.9 | 77.7 | 75.8 | 79.6 | 80.7 | 78.5 | 77.1 | 75.0 | 71.5 | 67.6 | 64.6 | 60.7 | 160.8 |
| 2000 | 69.9 | 76.8 | 79.2 | 77.8 | 80.3 | 81.2 | 77.7 | 74.8 | 73.3 | 67.8 | 63.9 | 59.5 | 53.8 | 162.6 |
| 2500 | 66.8 | 73.2 | 77.2 | 77.1 | 78.5 | 80.0 | 76.7 | 73.4 | 69.1 | 64.0 | 57.9 | 53.7 | 44.9 | 163.2 |
| 3150 | 60.9 | 69.2 | 73.2 | 74.3 | 74.6 | 76.2 | 73.6 | 68.3 | 65.3 | 65.3 | 51.5 | 46.0 | 33.6 | 163.4 |
| 4000 | 51.1 | 60.3 | 65.2 | 66.5 | 68.2 | 70.8 | 68.2 | 62.1 | 58.5 | 49.7 | 42.8 | 32.7 | 14.7 | 163.1 |
| 5000 | 38.6 | 50.3 | 56.1 | 58.5 | 59.0 | 61.8 | 58.4 | 53.8 | 48.8 | 38.8 | 30.1 | 15.1 | | 163.6 |
| 6300 | 15.4 | 30.9 | 39.3 | 43.6 | 44.8 | 47.7 | 43.9 | 37.8 | 31.3 | 20.0 | 6.6 | | | 163.5 |
| 8000 | 1.2 | 12.8 | 18.4 | 20.0 | 23.8 | 19.5 | 12.1 | 5.0 | | | | | | 163.0 |
| 10000 | | | | | | | | | | | | | | 162.2 |
| 12500 | | | | | | | | | | | | | | 162.1 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

118-10

| | | | | | | | | | | | | | | |
|-------|------|------|-------|------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|
| OASPL | 86.6 | 89.7 | 90.7 | 88.6 | 91.1 | 93.1 | 92.6 | 93.2 | 95.1 | 96.7 | 97.6 | 98.8 | 97.2 | 178.0 |
| PWL | 92.8 | 98.0 | 100.0 | 99.0 | 101.0 | 102.8 | 100.9 | 99.7 | 100.4 | 100.1 | 99.5 | 99.7 | 97.8 | |
| PWLT | 94.0 | 99.0 | 100.6 | 99.6 | 101.6 | 103.4 | 101.4 | 100.2 | 100.4 | 100.1 | 100.7 | 99.7 | 97.8 | |
| DBA | 82.1 | 86.4 | 88.3 | 86.6 | 89.0 | 90.8 | 89.5 | 89.7 | 89.8 | 89.3 | 87.7 | 86.8 | 85.5 | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-16/NAS3-22137

VEHICLE = ADH260 TEST DATE = 05-05-83 LOCAT = C41 ANECH CH CONFIG = 16 MODEL = C0 FLTVEL = 400. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 57.38 PAMB HG = 29.19 RELHUM = 38.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT. EXT CONFIG = SL MIKE HT =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1225.2 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2338.7 FPS AE18 = 19.9 SQ IN

PT = F-ZL-35T E = X-100-1 TEL. PT No. 165, CORR FAN SPEED RPM

TAS-17 (Shield to Outer Stream Velocity Ratio at
Takeoff is 0.83).

IDENTIFICATION - MODEL 83F-ZER-1703 X1703C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 81.6 | 85.2 | 85.4 | 82.0 | 78.8 | 81.9 | 84.3 | 86.0 | 82.4 | 83.5 | 86.4 | 89.3 | 87.7 | 126.5 |
| 63 | 85.0 | 92.5 | 97.1 | 91.9 | 87.5 | 86.6 | 95.2 | 94.6 | 88.1 | 88.9 | 88.3 | 93.5 | 96.4 | 134.7 |
| 80 | 86.0 | 90.6 | 86.6 | 84.9 | 85.7 | 90.1 | 89.5 | 89.1 | 89.3 | 90.9 | 93.6 | 93.0 | 81.1 | 131.5 |
| 100 | 85.7 | 90.7 | 86.5 | 86.5 | 88.9 | 91.3 | 90.4 | 92.3 | 90.3 | 93.6 | 95.7 | 97.1 | 85.3 | 133.5 |
| 125 | 83.1 | 86.7 | 88.4 | 87.0 | 89.3 | 91.9 | 90.8 | 90.2 | 90.7 | 93.5 | 99.4 | 101.1 | 88.7 | 135.2 |
| 160 | 81.9 | 82.0 | 85.7 | 82.5 | 85.1 | 87.7 | 90.4 | 89.8 | 89.5 | 94.6 | 99.7 | 102.1 | 93.8 | 135.3 |
| 200 | 82.5 | 83.3 | 86.8 | 83.1 | 86.5 | 89.8 | 91.0 | 92.4 | 94.3 | 96.1 | 100.8 | 105.2 | 97.1 | 137.6 |
| 250 | 82.8 | 86.3 | 85.8 | 85.1 | 87.7 | 90.6 | 91.5 | 93.9 | 95.1 | 100.7 | 105.5 | 108.5 | 100.1 | 141.0 |
| 315 | 84.3 | 86.1 | 87.9 | 85.9 | 89.0 | 92.4 | 93.8 | 94.7 | 96.1 | 100.7 | 105.1 | 107.8 | 102.9 | 140.9 |
| 400 | 84.5 | 87.1 | 87.1 | 85.9 | 89.3 | 92.1 | 94.5 | 95.7 | 97.4 | 102.4 | 106.3 | 108.5 | 103.4 | 141.9 |
| 500 | 85.6 | 87.4 | 88.2 | 86.9 | 90.0 | 93.6 | 94.0 | 96.4 | 97.4 | 102.5 | 106.1 | 107.5 | 103.7 | 141.6 |
| 630 | 84.8 | 88.1 | 88.4 | 87.9 | 91.5 | 94.6 | 95.0 | 97.4 | 97.4 | 102.9 | 106.3 | 106.5 | 102.9 | 141.5 |
| 800 | 86.8 | 89.7 | 89.4 | 87.9 | 91.8 | 95.1 | 95.5 | 97.9 | 98.7 | 102.5 | 105.4 | 104.5 | 102.2 | 140.9 |
| 1000 | 89.0 | 89.3 | 90.5 | 89.1 | 92.7 | 95.8 | 95.0 | 98.9 | 99.3 | 102.7 | 104.5 | 102.7 | 100.6 | 140.6 |
| 1250 | 86.9 | 90.5 | 90.5 | 89.1 | 92.1 | 96.0 | 95.9 | 98.8 | 99.5 | 101.8 | 103.2 | 102.1 | 100.3 | 140.1 |
| 1600 | 87.1 | 89.8 | 90.7 | 89.8 | 93.1 | 96.4 | 97.0 | 99.1 | 100.2 | 101.0 | 103.9 | 101.1 | 99.7 | 140.2 |
| 2000 | 87.4 | 89.2 | 90.3 | 89.7 | 92.3 | 96.2 | 96.9 | 99.7 | 99.8 | 101.6 | 101.9 | 100.2 | 99.0 | 139.8 |
| 2500 | 85.5 | 90.4 | 91.0 | 89.9 | 93.0 | 95.4 | 95.6 | 99.5 | 99.1 | 100.7 | 101.1 | 97.9 | 97.2 | 139.2 |
| 3150 | 86.2 | 89.3 | 90.6 | 89.6 | 92.7 | 96.5 | 97.4 | 99.1 | 99.2 | 99.8 | 99.3 | 96.2 | 95.1 | 138.7 |
| 4000 | 85.6 | 89.7 | 90.8 | 90.0 | 93.6 | 96.3 | 97.2 | 98.8 | 97.2 | 97.2 | 97.9 | 94.2 | 92.7 | 137.8 |
| 5000 | 85.4 | 89.7 | 90.6 | 90.0 | 93.5 | 97.2 | 96.6 | 98.2 | 96.5 | 96.9 | 96.4 | 92.1 | 90.6 | 137.5 |
| 6300 | 85.2 | 90.2 | 91.0 | 91.0 | 94.5 | 97.3 | 97.1 | 98.0 | 95.5 | 94.6 | 95.0 | 91.7 | 89.9 | 137.5 |
| 8000 | 84.2 | 90.2 | 91.0 | 91.4 | 94.3 | 97.5 | 97.6 | 96.9 | 94.5 | 93.2 | 93.5 | 90.4 | 88.9 | 137.5 |
| 10000 | 83.6 | 90.1 | 91.6 | 92.4 | 95.0 | 98.4 | 97.7 | 97.2 | 94.2 | 92.5 | 91.5 | 89.3 | 88.6 | 138.3 |
| 12500 | 83.8 | 88.9 | 91.0 | 91.6 | 94.6 | 97.6 | 97.1 | 95.6 | 92.8 | 89.5 | 89.2 | 87.6 | 85.6 | 138.1 |
| 16000 | 82.8 | 89.5 | 90.4 | 91.4 | 92.9 | 96.1 | 95.2 | 94.4 | 91.0 | 86.8 | 87.3 | 84.2 | 82.1 | 138.2 |
| 20000 | 81.7 | 87.4 | 88.5 | 89.3 | 90.8 | 95.0 | 94.9 | 93.0 | 89.4 | 85.1 | 84.1 | 81.7 | 78.4 | 138.4 |
| 25000 | 79.8 | 84.6 | 86.9 | 87.3 | 89.7 | 94.1 | 93.2 | 90.2 | 87.9 | 82.5 | 80.2 | 78.5 | 75.7 | 139.2 |
| 31500 | 76.2 | 80.9 | 82.9 | 85.0 | 86.1 | 90.5 | 89.7 | 87.4 | 84.9 | 79.4 | 77.7 | 74.4 | 71.1 | 139.0 |
| 40000 | 72.2 | 77.3 | 79.1 | 80.8 | 82.3 | 87.0 | 86.2 | 83.7 | 81.4 | 76.3 | 74.7 | 71.1 | 67.3 | 139.3 |
| 50000 | 65.8 | 71.4 | 73.5 | 75.4 | 76.7 | 81.8 | 80.4 | 78.1 | 75.9 | 70.5 | 69.5 | 65.3 | 61.8 | 138.2 |
| 63000 | 60.1 | 65.7 | 67.4 | 68.5 | 70.4 | 76.4 | 73.7 | 72.2 | 70.6 | 64.7 | 63.8 | 59.3 | 54.9 | 137.6 |
| 80000 | 52.2 | 58.2 | 60.7 | 60.7 | 63.3 | 69.0 | 67.1 | 65.1 | 63.6 | 57.7 | 57.4 | 52.4 | 46.5 | 137.3 |
| GASPL | 99.6 | 103.4 | 104.6 | 103.5 | 106.2 | 109.5 | 109.8 | 111.0 | 110.7 | 113.2 | 116.0 | 116.8 | 112.5 | 154.0 |
| PNL | 111.5 | 115.0 | 116.0 | 115.0 | 118.2 | 121.4 | 121.9 | 123.6 | 123.3 | 124.8 | 126.2 | 125.1 | 122.3 | |
| PNLT | 111.5 | 115.0 | 116.0 | 115.0 | 118.2 | 121.4 | 121.9 | 123.6 | 123.3 | 124.8 | 126.2 | 125.1 | 122.3 | |
| DBA | 98.1 | 101.2 | 102.1 | 101.4 | 104.6 | 108.0 | 108.3 | 110.2 | 110.1 | 112.1 | 114.1 | 113.4 | 110.5 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VERTCL = ADR241 TEST DATE = 04-25-83 LOCAT = C41 ANECH CR CONFIG = 17 MODEL = CO FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 61.02 PAMB HG = 29.11 RELHUM = 21.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNINT = LBS XNL = RPM XNH = RPM V8 = 113.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1819.0 FPS AE18 = 19.9 SQ IN

PRINT = 83F-ZER-1703 PAGE = X1703C TEST CT NO = 1703C NO. = E09 R/F = SPEED IPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1703 XT1703F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 81.6 | 85.2 | 85.4 | 82.0 | 78.8 | 81.9 | 84.3 | 86.0 | 82.4 | 83.5 | 86.4 | 89.3 | 87.7 | 126.5 |
| 63 | 85.0 | 92.5 | 97.1 | 91.9 | 87.5 | 88.6 | 95.2 | 94.6 | 88.1 | 88.9 | 88.3 | 93.5 | 96.4 | 134.7 |
| 80 | 86.0 | 90.6 | 86.6 | 84.9 | 85.7 | 90.1 | 89.5 | 89.1 | 89.3 | 90.9 | 93.6 | 93.0 | 81.1 | 131.5 |
| 100 | 85.7 | 90.7 | 86.3 | 86.5 | 88.9 | 91.3 | 90.3 | 92.3 | 90.3 | 93.6 | 95.7 | 97.1 | 85.3 | 133.5 |
| 125 | 83.1 | 86.7 | 88.4 | 87.0 | 89.3 | 91.9 | 90.8 | 90.2 | 90.7 | 93.5 | 99.4 | 101.1 | 88.7 | 135.2 |
| 160 | 81.9 | 82.0 | 85.7 | 82.5 | 85.1 | 87.7 | 90.4 | 89.8 | 89.5 | 94.6 | 99.7 | 102.1 | 93.8 | 135.3 |
| 200 | 82.5 | 83.3 | 85.8 | 83.1 | 85.5 | 89.8 | 91.0 | 92.4 | 94.3 | 95.1 | 100.8 | 105.2 | 97.1 | 137.6 |
| 250 | 82.8 | 86.3 | 85.8 | 85.1 | 87.7 | 90.6 | 91.5 | 93.9 | 95.1 | 100.7 | 105.5 | 108.5 | 100.1 | 141.0 |
| 315 | 84.3 | 86.1 | 87.9 | 85.9 | 89.0 | 92.4 | 93.8 | 94.7 | 96.1 | 100.7 | 105.1 | 107.8 | 102.9 | 140.9 |
| 400 | 84.6 | 87.1 | 87.1 | 85.9 | 89.3 | 92.1 | 94.5 | 95.7 | 97.4 | 102.4 | 106.3 | 108.5 | 103.4 | 141.9 |
| 500 | 85.3 | 87.4 | 88.2 | 86.9 | 90.0 | 93.6 | 94.0 | 95.4 | 97.4 | 102.5 | 106.1 | 107.5 | 103.7 | 141.6 |
| 630 | 84.8 | 88.1 | 88.4 | 87.9 | 91.5 | 94.6 | 95.0 | 97.4 | 97.4 | 102.9 | 106.3 | 106.5 | 102.9 | 141.5 |
| 800 | 86.8 | 87.9 | 89.4 | 87.9 | 91.8 | 95.1 | 95.5 | 97.9 | 98.7 | 102.5 | 105.4 | 104.5 | 102.2 | 140.9 |
| 1000 | 89.0 | 89.3 | 90.6 | 89.1 | 92.7 | 95.8 | 96.0 | 98.9 | 99.3 | 102.7 | 104.5 | 102.7 | 100.6 | 140.6 |
| 1250 | 86.9 | 90.5 | 89.1 | 89.1 | 92.1 | 95.0 | 95.9 | 98.8 | 99.5 | 101.8 | 103.2 | 102.1 | 100.3 | 140.1 |
| 1600 | 87.1 | 89.8 | 90.7 | 89.8 | 93.1 | 96.4 | 97.0 | 99.1 | 100.2 | 101.0 | 103.9 | 101.1 | 98.7 | 140.2 |
| 2000 | 87.4 | 89.2 | 90.3 | 89.7 | 92.3 | 96.2 | 96.9 | 99.8 | 101.6 | 101.9 | 100.2 | 99.0 | 99.0 | 139.8 |
| 2500 | 86.5 | 90.4 | 91.0 | 89.9 | 93.0 | 96.4 | 96.6 | 99.5 | 99.1 | 100.7 | 101.1 | 97.9 | 97.2 | 139.2 |
| 3150 | 86.2 | 89.3 | 90.6 | 89.6 | 92.7 | 96.5 | 97.4 | 99.1 | 99.2 | 99.8 | 99.3 | 96.2 | 95.1 | 138.7 |
| 4000 | 85.6 | 89.7 | 90.8 | 90.0 | 93.6 | 96.3 | 97.2 | 98.8 | 97.2 | 97.9 | 94.2 | 92.7 | 92.7 | 137.8 |
| 5000 | 85.4 | 89.7 | 90.6 | 90.0 | 93.5 | 97.2 | 96.6 | 98.2 | 96.5 | 96.9 | 96.4 | 92.1 | 90.6 | 137.5 |
| 6300 | 85.2 | 90.2 | 91.0 | 91.0 | 94.6 | 97.3 | 97.1 | 98.0 | 95.6 | 94.6 | 95.0 | 91.7 | 89.9 | 137.5 |
| 8000 | 84.2 | 90.2 | 91.0 | 91.4 | 94.3 | 97.5 | 97.8 | 96.9 | 94.5 | 93.2 | 93.5 | 90.4 | 88.9 | 137.5 |
| 10000 | 83.6 | 90.1 | 91.6 | 92.4 | 95.0 | 98.4 | 97.7 | 97.2 | 94.2 | 92.5 | 91.5 | 89.3 | 88.6 | 138.3 |
| 12500 | 83.8 | 88.9 | 91.0 | 91.6 | 94.6 | 97.6 | 97.1 | 95.6 | 92.8 | 89.5 | 89.2 | 87.6 | 85.6 | 138.1 |
| 16000 | 82.8 | 89.5 | 90.4 | 91.4 | 92.9 | 96.1 | 96.2 | 94.4 | 91.0 | 86.8 | 87.3 | 84.2 | 82.1 | 138.2 |
| 20000 | 81.7 | 87.4 | 88.5 | 89.3 | 90.8 | 95.0 | 94.9 | 93.0 | 89.4 | 85.1 | 84.1 | 81.7 | 78.4 | 138.4 |
| 25000 | 79.8 | 84.6 | 86.9 | 87.3 | 89.7 | 94.1 | 93.2 | 90.2 | 87.9 | 82.5 | 80.2 | 78.5 | 75.7 | 139.2 |
| 31500 | 76.2 | 80.9 | 82.9 | 85.0 | 86.1 | 90.5 | 89.7 | 87.4 | 84.9 | 79.4 | 77.7 | 74.4 | 71.1 | 139.0 |
| 40000 | 72.2 | 77.3 | 79.1 | 80.8 | 82.3 | 87.0 | 86.2 | 83.7 | 81.4 | 76.3 | 74.7 | 71.1 | 67.3 | 139.3 |
| 50000 | 65.8 | 71.4 | 73.5 | 75.4 | 76.7 | 81.8 | 80.4 | 78.1 | 75.9 | 70.5 | 69.5 | 65.3 | 61.8 | 138.2 |
| 63000 | 60.1 | 65.7 | 67.4 | 68.5 | 70.4 | 76.4 | 73.7 | 72.2 | 70.6 | 64.7 | 63.8 | 59.3 | 54.9 | 137.6 |
| 80000 | 52.2 | 58.2 | 60.7 | 60.7 | 63.3 | 69.0 | 67.1 | 65.1 | 63.6 | 57.7 | 57.4 | 52.4 | 46.5 | 137.3 |
| 0ASPL | 99.6 | 103.4 | 104.6 | 103.5 | 106.2 | 109.5 | 109.8 | 111.0 | 110.7 | 113.2 | 116.0 | 116.8 | 112.5 | 154.0 |
| PNL | 111.5 | 115.0 | 116.0 | 115.0 | 118.2 | 121.4 | 121.9 | 123.6 | 123.3 | 124.8 | 126.2 | 125.1 | 122.3 | |
| PNLT | 111.5 | 115.0 | 116.0 | 115.0 | 118.2 | 121.4 | 121.9 | 123.6 | 123.3 | 124.8 | 126.2 | 125.1 | 122.3 | |
| DBA | 175.2 | 180.9 | 183.1 | 183.8 | 185.9 | 191.6 | 189.6 | 187.7 | 186.1 | 180.2 | 179.6 | 174.9 | 169.9 | |

ORIGINAL PAGE IS OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NA53-22137

VEHICL = ADH241 TEST DATE = 04-25-83 LOCAT = C41 ANECH CH CONFIG = 17 MODEL = C6 FLTVEL = 0. FPS
IAPLHA = SB59 IEGA = NO MPH = 40.0 FT- EXT DIST = 40.0 FT- EXT CONFIG = ARC TAMB F = 61.02 PAMB HG = 29.11 RELHUM = 21.2 PCT
WIND DIR = DEG WIND VEL = RPM XNHR = 40.0 FT- EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1113.6 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1819.0 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1703 TAPE = XT1703F TEST PT NO = 1703 NC = AE094 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1703 X17031

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 60.2 | 63.5 | 66.4 | 65.1 | 68.6 | 72.1 | 73.4 | 73.9 | 74.6 | 78.1 | 81.0 | 81.5 | 73.3 | 156.3 |
| 63 | 60.4 | 64.5 | 65.6 | 65.1 | 68.8 | 71.8 | 74.1 | 74.8 | 75.8 | 79.8 | 82.2 | 82.1 | 73.7 | 157.2 |
| 80 | 61.1 | 64.7 | 66.6 | 66.1 | 69.6 | 73.3 | 73.6 | 75.6 | 75.8 | 79.8 | 81.9 | 81.1 | 73.9 | 156.9 |
| 100 | 60.5 | 65.4 | 66.7 | 67.0 | 71.0 | 74.2 | 74.5 | 76.5 | 75.7 | 80.2 | 82.0 | 79.9 | 72.9 | 156.9 |
| 125 | 62.4 | 65.1 | 67.7 | 67.0 | 71.2 | 74.7 | 75.0 | 77.0 | 76.9 | 79.7 | 81.0 | 77.8 | 72.0 | 156.2 |
| 160 | 64.4 | 66.3 | 68.7 | 68.0 | 72.0 | 75.3 | 75.3 | 77.8 | 77.5 | 79.7 | 79.9 | 75.8 | 70.0 | 155.9 |
| 200 | 62.1 | 67.3 | 68.5 | 67.9 | 71.3 | 75.3 | 75.0 | 77.5 | 77.5 | 78.6 | 78.4 | 74.9 | 69.2 | 155.4 |
| 250 | 62.0 | 66.3 | 68.4 | 68.3 | 72.0 | 75.5 | 75.0 | 77.6 | 77.9 | 77.6 | 78.7 | 73.4 | 68.0 | 155.6 |
| 315 | 61.7 | 65.3 | 67.7 | 67.9 | 71.0 | 75.0 | 75.6 | 77.9 | 77.2 | 77.8 | 76.3 | 71.9 | 66.4 | 155.1 |
| 400 | 60.4 | 66.1 | 68.0 | 67.8 | 71.4 | 74.9 | 74.9 | 77.3 | 76.1 | 76.4 | 75.0 | 69.0 | 63.6 | 154.5 |
| 500 | 59.6 | 64.7 | 67.3 | 67.1 | 70.7 | 74.7 | 75.4 | 76.6 | 75.9 | 75.2 | 72.7 | 66.6 | 60.5 | 154.0 |
| 630 | 58.4 | 64.6 | 67.1 | 67.1 | 71.3 | 74.2 | 74.9 | 76.0 | 73.5 | 72.1 | 70.7 | 63.8 | 57.1 | 153.2 |
| 800 | 57.6 | 64.1 | 66.5 | 66.8 | 70.8 | 74.7 | 73.9 | 75.0 | 72.3 | 71.3 | 68.6 | 60.9 | 53.6 | 152.8 |
| 1000 | 56.8 | 64.2 | 66.5 | 67.6 | 71.7 | 74.5 | 74.2 | 74.6 | 71.1 | 68.6 | 66.7 | 59.7 | 51.7 | 152.9 |
| 1250 | 55.1 | 63.6 | 66.1 | 67.6 | 71.0 | 74.5 | 74.5 | 73.1 | 69.6 | 66.6 | 64.5 | 57.4 | 49.1 | 152.9 |
| 1600 | 53.4 | 62.7 | 66.0 | 67.9 | 71.2 | 74.9 | 73.9 | 72.8 | 68.6 | 65.1 | 61.3 | 54.7 | 46.1 | 153.6 |
| 2000 | 52.1 | 60.4 | 64.5 | 66.4 | 70.1 | 73.3 | 72.7 | 70.4 | 66.3 | 60.9 | 57.5 | 50.8 | 39.6 | 153.4 |
| 2500 | 49.0 | 59.3 | 62.6 | 65.1 | 67.5 | 71.0 | 70.8 | 68.1 | 63.3 | 56.6 | 53.4 | 44.2 | 30.8 | 153.6 |
| 3150 | 43.9 | 54.2 | 58.2 | 60.8 | 63.3 | 67.9 | 67.4 | 64.6 | 59.1 | 51.9 | 46.2 | 36.2 | 16.1 | 153.8 |
| 4000 | 34.9 | 45.9 | 52.1 | 54.8 | 58.5 | 63.3 | 62.0 | 57.7 | 53.1 | 43.8 | 35.4 | 23.3 | 0.1 | 154.5 |
| 5000 | 20.7 | 33.7 | 41.0 | 46.2 | 49.1 | 54.0 | 52.7 | 48.7 | 43.0 | 32.3 | 22.2 | 4.6 | | 154.3 |
| 6300 | 15.6 | 24.7 | 30.9 | 34.8 | 40.2 | 38.7 | 33.7 | 27.0 | 14.5 | 1.1 | | | | 154.7 |
| 8000 | | | | | | | | | | | | | | 153.5 |
| 10000 | | | | | | | | | | | | | | 152.9 |
| 12500 | | | | | | | | | | | | | | 152.6 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 0ASPL | 72.6 | 77.3 | 79.5 | 79.7 | 83.4 | 85.9 | 87.1 | 88.3 | 87.6 | 89.3 | 90.4 | 88.5 | 81.4 | 168.7 |
| PNL | 76.5 | 83.8 | 86.9 | 88.4 | 91.8 | 95.4 | 95.1 | 94.6 | 92.3 | 92.0 | 91.5 | 87.1 | 79.5 | |
| PNLT | 76.5 | 83.8 | 86.9 | 88.9 | 92.3 | 95.9 | 95.7 | 95.2 | 92.3 | 92.0 | 91.5 | 87.1 | 79.5 | |
| DBA | 66.1 | 72.9 | 75.6 | 76.7 | 80.3 | 83.8 | 83.5 | 81.2 | 80.3 | 80.3 | 79.0 | 73.9 | 67.8 | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICLE = ADH241 TEST DATE = 04-25-63 LOCAT = C41 ANECH CH CONFIG = 17 MODEL = CG FLTVEL = 0. FPS
 IAPLHA = SB59 IEQA = NO PWL AREA = FULL SPHERE TAMB F = 61.02 PAMB HG = 29.11 RELHUM = 21.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR

FNINI = LBS XNL = RPM XNH = RPM V8 = 1113.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1819.0 FPS AE18 = 19.9 SQ IN

IDENTIFICATION - MODEL 83F-400-1704 X1704C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 83.0 | 85.5 | 86.2 | 81.9 | 81.4 | 84.2 | 86.3 | 81.7 | 82.3 | 87.4 | 91.8 | 91.8 | 126.8 | |
| 63 | 91.0 | 96.9 | 90.3 | 88.5 | 93.3 | 93.6 | 89.3 | 89.3 | 89.9 | 88.4 | 98.1 | 95.3 | 134.4 | |
| 80 | 85.5 | 89.6 | 84.9 | 84.0 | 84.7 | 89.0 | 87.6 | 87.2 | 89.8 | 87.1 | 91.4 | 92.0 | 130.0 | |
| 100 | 83.5 | 88.1 | 84.2 | 82.8 | 85.3 | 88.6 | 87.3 | 88.3 | 88.6 | 89.9 | 92.5 | 95.6 | 130.8 | |
| 125 | 82.5 | 84.0 | 86.0 | 84.7 | 86.7 | 88.4 | 88.1 | 87.8 | 87.5 | 90.0 | 96.9 | 99.3 | 132.7 | |
| 160 | 78.2 | 84.1 | 79.7 | 81.7 | 83.7 | 89.0 | 85.8 | 88.2 | 90.1 | 96.2 | 98.8 | 89.4 | 132.0 | |
| 200 | 79.0 | 85.6 | 79.4 | 80.6 | 83.7 | 86.8 | 88.2 | 91.8 | 90.9 | 96.8 | 101.4 | 91.4 | 133.6 | |
| 250 | 77.3 | 80.2 | 81.3 | 79.4 | 82.4 | 84.9 | 85.3 | 88.0 | 91.0 | 94.8 | 100.3 | 102.7 | 93.0 | 135.4 |
| 315 | 79.5 | 84.2 | 80.1 | 81.2 | 86.0 | 87.1 | 89.6 | 91.3 | 95.6 | 100.3 | 102.0 | 94.1 | 135.4 | |
| 400 | 76.6 | 80.3 | 81.4 | 80.0 | 82.7 | 85.5 | 88.5 | 89.6 | 92.1 | 96.9 | 100.8 | 101.5 | 91.7 | 135.6 |
| 500 | 80.0 | 81.5 | 82.8 | 80.4 | 83.6 | 86.5 | 87.1 | 89.6 | 92.1 | 97.4 | 100.3 | 99.3 | 88.2 | 134.9 |
| 630 | 78.6 | 81.7 | 82.7 | 81.1 | 84.6 | 87.8 | 88.1 | 91.1 | 92.8 | 98.1 | 100.8 | 96.5 | 86.5 | 135.0 |
| 800 | 80.7 | 81.8 | 82.3 | 81.3 | 84.4 | 88.3 | 89.0 | 91.9 | 93.9 | 98.2 | 99.6 | 93.3 | 85.8 | 134.5 |
| 1000 | 82.7 | 83.3 | 83.8 | 82.5 | 86.1 | 89.3 | 89.7 | 93.3 | 95.1 | 98.4 | 98.8 | 90.4 | 83.8 | 134.6 |
| 1250 | 81.4 | 85.0 | 84.0 | 83.6 | 85.6 | 89.5 | 89.8 | 93.0 | 95.3 | 97.8 | 97.2 | 88.6 | 83.7 | 134.1 |
| 1600 | 84.4 | 85.5 | 85.7 | 84.3 | 87.3 | 90.7 | 91.0 | 93.8 | 95.9 | 97.5 | 97.6 | 88.3 | 82.9 | 134.6 |
| 2000 | 85.1 | 84.4 | 85.1 | 84.4 | 87.2 | 90.4 | 91.4 | 94.7 | 95.8 | 97.9 | 96.4 | 87.2 | 81.7 | 134.5 |
| 2500 | 85.8 | 85.6 | 86.4 | 84.8 | 88.0 | 91.1 | 91.3 | 94.4 | 95.1 | 97.1 | 94.9 | 85.9 | 81.9 | 134.1 |
| 3150 | 87.5 | 86.3 | 87.8 | 86.5 | 88.9 | 92.5 | 92.1 | 94.6 | 95.7 | 96.5 | 85.1 | 81.3 | 134.4 | |
| 4000 | 88.0 | 87.9 | 88.8 | 87.1 | 89.8 | 93.3 | 92.9 | 95.0 | 94.7 | 94.1 | 92.3 | 84.6 | 81.0 | 134.2 |
| 5000 | 88.1 | 88.7 | 89.5 | 88.1 | 90.6 | 93.6 | 93.5 | 95.1 | 93.9 | 94.2 | 91.8 | 84.5 | 81.0 | 134.5 |
| 6300 | 89.1 | 89.6 | 90.4 | 89.7 | 92.5 | 94.9 | 93.7 | 95.2 | 93.2 | 92.1 | 90.9 | 84.5 | 81.2 | 135.0 |
| 8000 | 89.0 | 90.0 | 91.6 | 91.0 | 93.3 | 95.9 | 94.6 | 94.7 | 92.8 | 91.1 | 89.0 | 83.9 | 81.6 | 135.7 |
| 10000 | 89.6 | 90.1 | 91.4 | 91.1 | 93.5 | 96.2 | 95.2 | 95.5 | 92.5 | 90.6 | 87.4 | 84.3 | 81.3 | 136.5 |
| 12500 | 88.7 | 88.6 | 90.4 | 90.5 | 92.5 | 96.5 | 94.3 | 94.3 | 92.0 | 88.7 | 86.1 | 83.0 | 80.0 | 136.6 |
| 16000 | 87.5 | 89.5 | 90.0 | 89.7 | 92.0 | 95.0 | 94.3 | 94.0 | 91.1 | 86.4 | 84.8 | 81.0 | 77.7 | 137.3 |
| 20000 | 86.5 | 87.6 | 88.2 | 88.8 | 89.8 | 93.6 | 93.2 | 91.3 | 89.4 | 84.9 | 82.0 | 79.0 | 75.7 | 137.4 |
| 25000 | 83.0 | 85.1 | 86.3 | 87.3 | 87.9 | 92.6 | 91.9 | 90.2 | 88.1 | 83.1 | 79.1 | 77.5 | 72.9 | 138.3 |
| 31500 | 79.9 | 81.2 | 82.3 | 84.4 | 84.3 | 88.7 | 88.4 | 87.6 | 86.0 | 80.9 | 77.0 | 73.8 | 69.1 | 138.2 |
| 40000 | 74.8 | 77.2 | 78.9 | 80.0 | 80.9 | 85.6 | 84.4 | 83.6 | 82.2 | 77.5 | 74.3 | 71.0 | 65.2 | 138.5 |
| 50000 | 68.7 | 71.5 | 72.7 | 74.5 | 75.1 | 80.7 | 78.3 | 78.2 | 76.9 | 72.7 | 69.8 | 66.2 | 60.2 | 137.4 |
| 63000 | 61.9 | 64.9 | 66.1 | 67.8 | 69.2 | 74.5 | 72.0 | 72.3 | 71.9 | 66.8 | 60.4 | 53.9 | 136.7 | |
| 80000 | 52.9 | 57.4 | 59.6 | 61.2 | 68.0 | 64.8 | 65.4 | 64.8 | 59.0 | 57.7 | 53.2 | 46.3 | 136.3 | |
| GASPL | 99.6 | 101.2 | 102.8 | 101.1 | 102.9 | 106.2 | 105.9 | 107.1 | 107.2 | 109.1 | 110.7 | 110.5 | 101.8 | 150.6 |
| PNL | 111.0 | 112.3 | 113.3 | 111.9 | 114.2 | 117.4 | 117.4 | 119.4 | 119.9 | 121.2 | 120.8 | 117.4 | 109.3 | |
| PNLT | 117.7 | 112.3 | 113.3 | 112.4 | 114.7 | 117.4 | 117.4 | 119.4 | 119.9 | 121.2 | 120.8 | 117.4 | 115.9 | |
| DBA | 97.8 | 98.3 | 99.2 | 98.1 | 100.8 | 103.8 | 103.5 | 105.7 | 106.3 | 108.2 | 108.4 | 104.3 | 96.4 | |

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NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

| | | | | | | | | | | | | |
|------------|--------------|----------------|----------|--------------|--------------|--------------|-------|-----------|-------|------------------|------|------|
| VERTCL = | ADR228 | TEST DATE = | 04-25-83 | LOCAT = | C4T ANECH CH | CONFIG = | 17 | MODEL = | CO | FLTVEL = | 400 | FPS |
| IAPLHA = | SB59 | IEGA = | NO | PWL AREA = | FULL SPHERE | TAMB F = | 50.78 | PAMB HG = | 29.00 | RELHUM = | 29.3 | PCT |
| WIND DIR = | | DEG WIND VEL = | | EXT DIST = | 40.0 FT | EXT CONFIG = | ARC | MIKE HT = | | NBFR = | | |
| FNTRY = | LBS XNL | RPM | XNH | RPM | V8 | V8 | V18 | V18 | V18 | AE8 | AE8 | AE8 |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V18 | V18 | V18 | V18 | V18 | AE18 | AE18 | AE18 |
| RUNPT = | 83F-400-1704 | TAPE = | X1704C | TEST PT NO = | 1704 | NC | | | | CORR FAN SPEED = | | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1704 X1704F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 250 | 85.1 | 86.6 | 86.2 | 82.7 | 84.0 | 84.9 | 83.4 | 84.4 | 89.1 | 92.8 | 97.4 | 99.8 | 94.0 | 133.2 |
| 315 | 85.1 | 86.6 | 86.2 | 82.6 | 83.0 | 86.2 | 86.1 | 87.6 | 89.7 | 94.0 | 97.9 | 99.8 | 92.9 | 133.6 |
| 400 | 85.6 | 85.9 | 89.2 | 83.4 | 84.6 | 85.7 | 87.5 | 87.4 | 89.7 | 94.5 | 97.4 | 98.0 | 90.7 | 133.2 |
| 500 | 86.3 | 86.7 | 86.4 | 83.4 | 85.5 | 86.9 | 86.0 | 87.2 | 90.5 | 95.3 | 98.0 | 95.8 | 90.7 | 133.1 |
| 630 | 87.4 | 87.8 | 87.7 | 83.8 | 86.6 | 88.2 | 87.1 | 88.7 | 92.0 | 95.9 | 97.7 | 94.1 | 92.9 | 133.4 |
| 800 | 86.3 | 88.2 | 87.8 | 84.6 | 86.5 | 88.9 | 88.0 | 89.6 | 93.6 | 96.5 | 97.5 | 92.4 | 93.4 | 133.7 |
| 1000 | 88.4 | 88.3 | 87.4 | 84.8 | 88.3 | 89.9 | 88.8 | 91.1 | 94.0 | 96.2 | 96.1 | 90.9 | 93.6 | 133.7 |
| 1250 | 90.4 | 89.7 | 88.9 | 86.1 | 87.9 | 90.3 | 89.2 | 91.0 | 94.8 | 96.0 | 95.6 | 90.5 | 92.5 | 134.0 |
| 1600 | 89.1 | 91.4 | 89.1 | 87.3 | 89.7 | 91.7 | 90.5 | 92.0 | 96.6 | 95.5 | 89.3 | 91.0 | 134.4 | |
| 2000 | 92.0 | 92.0 | 90.9 | 88.1 | 89.9 | 91.7 | 91.3 | 93.2 | 95.1 | 96.8 | 95.1 | 89.5 | 93.2 | 134.9 |
| 2500 | 92.7 | 91.0 | 90.4 | 88.4 | 90.9 | 92.7 | 92.0 | 93.7 | 96.2 | 96.7 | 94.2 | 92.9 | 92.9 | 135.2 |
| 3150 | 93.4 | 92.2 | 91.9 | 89.0 | 92.1 | 94.5 | 93.1 | 94.4 | 96.9 | 96.1 | 95.1 | 90.9 | 95.2 | 136.1 |
| 4000 | 95.0 | 93.0 | 93.4 | 90.9 | 93.5 | 95.8 | 94.9 | 96.1 | 96.6 | 96.9 | 95.2 | 91.5 | 95.8 | 137.2 |
| 5000 | 95.5 | 94.6 | 94.5 | 91.8 | 94.7 | 96.6 | 95.8 | 96.6 | 96.5 | 95.6 | 95.2 | 92.2 | 95.9 | 137.8 |
| 6300 | 95.5 | 95.4 | 95.4 | 93.0 | 96.5 | 97.9 | 95.9 | 96.8 | 93.7 | 91.5 | 89.8 | 87.7 | 92.4 | 137.9 |
| 8000 | 96.4 | 96.1 | 94.4 | 94.4 | 97.4 | 98.9 | 96.0 | 94.7 | 93.6 | 91.2 | 88.4 | 88.2 | 92.2 | 138.6 |
| 10000 | 96.2 | 96.4 | 97.1 | 95.5 | 97.5 | 99.2 | 96.6 | 95.5 | 93.4 | 89.6 | 87.3 | 87.2 | 91.2 | 139.5 |
| 12500 | 96.5 | 96.2 | 96.6 | 95.4 | 97.1 | 99.5 | 95.8 | 94.3 | 93.0 | 87.9 | 86.6 | 85.8 | 89.4 | 140.0 |
| 16000 | 97.9 | 96.4 | 96.8 | 95.4 | 96.1 | 98.0 | 95.8 | 94.0 | 91.7 | 86.8 | 84.2 | 84.2 | 87.8 | 141.0 |
| 20000 | 93.4 | 94.7 | 94.3 | 93.0 | 93.8 | 96.6 | 94.6 | 91.3 | 91.0 | 85.5 | 81.9 | 83.3 | 85.7 | 140.6 |
| 25000 | 91.8 | 92.2 | 91.9 | 91.5 | 92.5 | 95.6 | 93.4 | 90.2 | 89.7 | 84.1 | 80.6 | 80.4 | 82.6 | 141.5 |
| 31500 | 90.4 | 91.1 | 91.0 | 90.4 | 88.9 | 91.7 | 89.8 | 87.6 | 86.8 | 81.6 | 78.7 | 78.4 | 80.6 | 142.1 |
| 40000 | 86.4 | 86.5 | 86.1 | 86.6 | 85.8 | 88.6 | 85.8 | 83.5 | 81.9 | 77.1 | 74.6 | 74.0 | 74.9 | 142.2 |
| 50000 | 80.9 | 82.0 | 82.3 | 81.8 | 79.7 | 83.7 | 79.7 | 78.2 | 78.9 | 74.0 | 73.3 | 72.8 | 73.7 | 141.7 |
| 63000 | 73.9 | 75.4 | 75.1 | 75.4 | 73.8 | 77.5 | 73.7 | 72.8 | 72.7 | 66.8 | 66.4 | 65.6 | 65.8 | 140.7 |
| 80000 | 65.5 | 67.3 | 67.1 | 67.2 | 65.8 | 71.0 | 66.3 | 65.6 | 62.9 | 57.0 | 56.6 | 55.8 | 56.0 | 139.8 |

GASPL 106.5 106.3 104.4 106.4 106.4 108.4 106.4 107.1 107.7 108.2 106.6 105.8 152.6
 PNL 117.4 116.6 116.5 113.9 116.8 118.5 117.3 118.4 119.5 119.9 119.2 116.0 118.4
 PNL 117.4 116.6 116.5 113.9 116.8 118.5 117.3 118.4 119.5 119.9 119.2 116.0 118.4
 DBA 188.9 190.4 190.3 190.3 188.8 193.3 189.1 188.1 186.8 181.1 180.6 179.8 180.2

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICLE = ADH228 TEST DATE = 04-25-83 LOCAT = C41 ANECH CH CONFIG = 17 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 50.78 PAMB HG = 29.00 RELHUM = 29.3 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT. EXT CONFIG = ARC MIKE HT = NBFR

FNINI = LBS XNL = RPM XNH = RPM V8 = 1112.5 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1775.5 FPS AE18 = 19.9 SQ IN
 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1704 X17041

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 61.0 | 64.0 | 64.7 | 61.8 | 62.6 | 65.9 | 65.7 | 66.8 | 68.2 | 71.4 | 73.8 | 73.4 | 63.2 | 149.0 |
| 63 | 61.5 | 63.3 | 67.6 | 62.6 | 64.2 | 65.4 | 67.1 | 66.5 | 68.1 | 71.9 | 73.3 | 71.6 | 61.0 | 148.5 |
| 80 | 62.1 | 64.1 | 64.8 | 62.6 | 65.1 | 66.6 | 65.6 | 66.4 | 68.9 | 72.6 | 73.8 | 69.4 | 60.9 | 148.4 |
| 100 | 63.1 | 65.1 | 66.1 | 62.9 | 66.1 | 67.8 | 66.6 | 67.8 | 70.4 | 73.2 | 73.4 | 67.6 | 63.0 | 148.7 |
| 125 | 61.9 | 65.3 | 66.0 | 63.6 | 65.9 | 68.4 | 67.4 | 68.6 | 71.9 | 73.7 | 73.1 | 65.8 | 63.2 | 149.0 |
| 160 | 63.8 | 65.3 | 65.3 | 63.7 | 67.6 | 69.4 | 68.1 | 70.0 | 72.1 | 73.2 | 71.5 | 64.0 | 63.0 | 149.0 |
| 200 | 65.5 | 66.5 | 66.8 | 64.9 | 67.0 | 69.5 | 68.3 | 69.7 | 72.8 | 72.8 | 71.8 | 63.2 | 61.4 | 149.3 |
| 250 | 63.9 | 68.0 | 66.8 | 65.8 | 68.7 | 70.8 | 69.5 | 70.5 | 72.7 | 73.1 | 70.3 | 61.6 | 59.2 | 149.7 |
| 315 | 66.4 | 68.2 | 68.3 | 66.3 | 68.6 | 70.5 | 69.9 | 71.4 | 72.5 | 72.9 | 69.4 | 61.2 | 60.7 | 150.2 |
| 400 | 66.6 | 66.7 | 67.4 | 66.3 | 69.2 | 71.2 | 70.3 | 71.6 | 73.2 | 72.5 | 68.1 | 60.2 | 59.4 | 150.5 |
| 500 | 66.7 | 67.5 | 68.5 | 66.5 | 70.1 | 72.7 | 71.2 | 71.9 | 73.6 | 71.4 | 68.4 | 61.3 | 60.6 | 151.4 |
| 630 | 67.8 | 67.8 | 69.7 | 68.1 | 71.2 | 73.7 | 72.6 | 73.3 | 72.8 | 71.7 | 68.0 | 61.1 | 60.1 | 152.5 |
| 800 | 67.8 | 69.0 | 70.4 | 68.6 | 72.0 | 74.1 | 73.2 | 73.4 | 72.4 | 70.0 | 67.4 | 61.0 | 58.9 | 153.1 |
| 1000 | 67.2 | 69.3 | 70.9 | 69.5 | 73.6 | 75.2 | 73.0 | 73.3 | 69.2 | 65.5 | 61.5 | 55.8 | 54.2 | 153.2 |
| 1250 | 67.3 | 69.6 | 71.2 | 70.5 | 74.1 | 75.8 | 72.8 | 70.9 | 68.7 | 64.7 | 59.4 | 55.3 | 52.4 | 153.9 |
| 1600 | 66.0 | 69.0 | 71.5 | 71.1 | 73.7 | 75.6 | 72.9 | 71.0 | 67.8 | 62.2 | 57.1 | 52.7 | 48.7 | 154.8 |
| 2000 | 64.8 | 67.7 | 70.1 | 70.2 | 72.7 | 75.3 | 71.3 | 69.1 | 66.5 | 59.3 | 54.9 | 49.1 | 43.4 | 155.3 |
| 2500 | 64.0 | 66.3 | 69.0 | 69.1 | 70.6 | 72.8 | 70.3 | 67.7 | 63.9 | 56.6 | 50.3 | 44.2 | 36.5 | 156.3 |
| 3150 | 55.5 | 61.5 | 64.0 | 64.6 | 66.4 | 69.5 | 67.2 | 62.8 | 60.8 | 52.3 | 44.1 | 37.8 | 25.3 | 156.0 |
| 4000 | 47.0 | 53.5 | 57.1 | 59.0 | 61.4 | 64.8 | 62.2 | 57.7 | 54.9 | 45.4 | 35.7 | 25.1 | 7.0 | 156.8 |
| 5000 | 34.9 | 44.0 | 49.0 | 51.6 | 51.9 | 55.2 | 52.8 | 48.8 | 44.8 | 34.4 | 23.3 | 8.6 | 157.4 | 157.4 |
| 6300 | 12.7 | 24.7 | 31.6 | 36.7 | 38.0 | 41.9 | 38.3 | 33.6 | 27.5 | 15.4 | 0.9 | | 157.5 | 157.5 |
| 8000 | | 5.6 | 11.7 | 13.1 | 18.2 | 13.1 | 8.1 | 2.2 | | | | | 157.1 | 157.1 |
| 10000 | | | | | | | | | | | | | 156.0 | 156.0 |
| 12500 | | | | | | | | | | | | | 155.1 | 155.1 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS
OF POOR QUALITY

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICLE = ADH228 TEST DATE = 04-25-83 LOCAT = C41 ANECH CH CONFIG = 17 MODEL = C8 FLTVEL = 400. FPS
IAPLHA = SBS9 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 50.78 PAMB HG = 29.00 RELHUM = 29.3 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT. EXT CONFIG = SL MIKE HT =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1112.5 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1775.5 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1704 TAPE = X17041 TEST PT NO = 1704 NC = AE094 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1705 X1705C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.1 | 86.9 | 87.2 | 83.5 | 81.1 | 85.2 | 86.6 | 88.0 | 88.7 | 83.2 | 90.1 | 92.3 | 87.5 | 129.1 |
| 63 | 88.0 | 94.5 | 97.8 | 90.6 | 90.0 | 92.1 | 94.7 | 94.4 | 94.3 | 91.1 | 94.3 | 95.5 | 96.1 | 135.9 |
| 80 | 88.3 | 92.6 | 88.8 | 87.4 | 88.5 | 92.3 | 91.5 | 91.6 | 93.6 | 92.7 | 95.6 | 95.5 | 83.4 | 133.9 |
| 100 | 87.7 | 93.7 | 88.8 | 89.0 | 91.1 | 93.8 | 93.4 | 94.5 | 94.0 | 96.1 | 98.2 | 100.4 | 87.1 | 136.3 |
| 125 | 85.6 | 88.9 | 90.7 | 90.0 | 92.6 | 94.7 | 94.1 | 94.0 | 94.9 | 97.8 | 103.2 | 105.1 | 91.7 | 138.9 |
| 160 | 83.7 | 84.2 | 88.0 | 85.5 | 87.9 | 90.2 | 93.1 | 93.0 | 93.7 | 98.1 | 103.7 | 105.1 | 96.5 | 138.6 |
| 200 | 85.3 | 85.1 | 87.8 | 86.1 | 89.7 | 92.1 | 93.2 | 94.9 | 97.8 | 99.1 | 104.5 | 108.7 | 100.1 | 140.9 |
| 250 | 85.3 | 87.8 | 88.1 | 87.9 | 90.7 | 92.8 | 94.2 | 96.1 | 99.1 | 103.7 | 108.8 | 111.2 | 103.4 | 143.9 |
| 315 | 86.8 | 88.1 | 89.6 | 88.4 | 91.3 | 94.9 | 96.3 | 97.9 | 100.1 | 105.0 | 109.6 | 111.8 | 106.4 | 144.9 |
| 400 | 87.6 | 89.6 | 90.1 | 88.4 | 92.0 | 94.1 | 97.3 | 98.4 | 101.6 | 106.4 | 110.6 | 112.8 | 107.7 | 146.0 |
| 500 | 88.1 | 90.1 | 90.9 | 89.2 | 92.5 | 95.4 | 96.5 | 98.9 | 103.2 | 107.0 | 111.1 | 112.3 | 108.4 | 146.2 |
| 630 | 87.8 | 90.6 | 91.1 | 90.4 | 93.7 | 96.6 | 97.7 | 99.9 | 102.6 | 107.2 | 110.8 | 111.7 | 108.9 | 146.1 |
| 800 | 89.6 | 90.6 | 92.2 | 90.4 | 93.5 | 96.7 | 98.3 | 100.7 | 103.9 | 106.7 | 109.6 | 110.0 | 108.7 | 145.4 |
| 1000 | 91.8 | 92.8 | 93.6 | 91.9 | 95.0 | 98.3 | 98.7 | 101.6 | 104.3 | 106.7 | 108.5 | 108.2 | 107.4 | 144.9 |
| 1250 | 89.9 | 93.7 | 93.3 | 92.4 | 94.9 | 97.8 | 98.6 | 101.8 | 104.5 | 105.6 | 107.7 | 107.4 | 106.8 | 144.3 |
| 1600 | 90.4 | 92.8 | 94.2 | 92.8 | 95.6 | 99.2 | 99.8 | 102.1 | 105.2 | 105.6 | 108.2 | 107.1 | 106.0 | 144.6 |
| 2000 | 90.4 | 92.2 | 93.6 | 92.7 | 95.3 | 98.4 | 99.9 | 102.2 | 104.4 | 105.6 | 107.1 | 105.7 | 105.7 | 144.0 |
| 2500 | 89.8 | 93.4 | 93.7 | 92.7 | 95.1 | 98.9 | 99.6 | 102.0 | 103.9 | 105.4 | 105.2 | 103.7 | 103.4 | 143.2 |
| 3150 | 89.5 | 92.6 | 93.6 | 93.4 | 95.5 | 99.3 | 100.7 | 101.9 | 104.2 | 104.4 | 103.8 | 101.9 | 101.6 | 142.8 |
| 4000 | 88.8 | 92.2 | 93.8 | 92.2 | 95.9 | 99.1 | 99.7 | 101.3 | 102.7 | 101.7 | 102.2 | 99.7 | 99.5 | 141.5 |
| 5000 | 88.9 | 93.0 | 93.9 | 92.5 | 95.5 | 99.4 | 99.8 | 101.2 | 102.2 | 101.4 | 100.1 | 97.4 | 96.8 | 141.2 |
| 6300 | 88.2 | 93.0 | 94.3 | 93.1 | 95.1 | 99.3 | 99.8 | 101.1 | 101.6 | 98.9 | 98.8 | 97.0 | 96.9 | 140.9 |
| 8000 | 87.7 | 92.4 | 94.0 | 93.7 | 95.8 | 99.1 | 99.5 | 99.0 | 97.2 | 96.5 | 95.6 | 95.2 | 140.1 | |
| 10000 | 88.9 | 93.8 | 95.9 | 94.6 | 96.9 | 100.2 | 99.7 | 99.5 | 99.2 | 96.5 | 96.0 | 95.3 | 95.6 | 141.1 |
| 12500 | 89.3 | 93.4 | 95.5 | 94.8 | 96.8 | 100.3 | 99.1 | 98.9 | 97.6 | 94.7 | 93.7 | 94.1 | 93.8 | 141.3 |
| 16000 | 88.3 | 94.4 | 95.3 | 95.6 | 95.1 | 98.9 | 97.9 | 97.3 | 96.0 | 92.2 | 91.5 | 90.6 | 90.3 | 141.5 |
| 20000 | 86.9 | 91.3 | 93.4 | 93.4 | 94.2 | 97.5 | 96.6 | 94.7 | 93.6 | 89.8 | 88.2 | 87.4 | 85.6 | 141.3 |
| 25000 | 83.9 | 88.6 | 90.8 | 91.2 | 92.1 | 96.5 | 95.6 | 92.4 | 86.7 | 84.4 | 84.0 | 82.4 | 82.0 | 142.0 |
| 31500 | 80.3 | 84.8 | 86.8 | 88.4 | 88.8 | 93.1 | 91.9 | 90.3 | 88.6 | 83.5 | 81.6 | 79.8 | 77.5 | 141.8 |
| 40000 | 76.1 | 80.7 | 83.2 | 83.7 | 84.7 | 88.9 | 88.1 | 86.3 | 85.0 | 80.2 | 78.6 | 76.2 | 73.4 | 141.8 |
| 50000 | 70.5 | 74.6 | 77.1 | 78.5 | 78.8 | 83.9 | 82.0 | 80.7 | 79.8 | 75.1 | 73.1 | 70.2 | 67.2 | 140.7 |
| 63000 | 63.7 | 68.6 | 71.8 | 72.1 | 72.7 | 78.3 | 75.6 | 75.1 | 74.0 | 69.1 | 67.7 | 64.2 | 60.3 | 140.2 |
| 80000 | 55.4 | 62.3 | 64.3 | 63.9 | 65.2 | 71.6 | 68.7 | 67.7 | 67.3 | 62.0 | 60.7 | 57.0 | 51.2 | 139.9 |
| 0ASPL | 102.8 | 106.4 | 107.5 | 106.3 | 108.5 | 111.8 | 112.3 | 113.6 | 115.6 | 117.4 | 120.3 | 121.2 | 117.9 | 157.7 |
| PNL | 114.7 | 117.8 | 118.9 | 117.9 | 120.5 | 123.8 | 124.8 | 126.3 | 128.3 | 129.1 | 130.4 | 129.9 | 128.1 | |
| PNLT | 114.7 | 117.8 | 118.9 | 117.9 | 121.1 | 123.8 | 124.8 | 126.3 | 128.3 | 129.1 | 130.4 | 129.9 | 128.1 | |
| DBA | 101.2 | 104.2 | 105.2 | 104.1 | 107.0 | 110.3 | 111.1 | 112.9 | 115.1 | 116.4 | 118.4 | 118.5 | 116.6 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

| | | | | | | | | | | | |
|------------|--------------|----------------|----------|--------------|--------------|--------------|------------|-----------|-------|------------|----------|
| VEHICLE = | ADR240 | TEST DATE = | 04-25-83 | LOCAT = | C41 ANECH CH | CONFIG = | 17 | MODEL = | CO | FLTVEL = | 0. FPS |
| IAPLHA = | SB59 | LEGA = | NO | PWL AREA = | FULL SPHERE | TAMB F = | 61.11 | PAMB HG = | 29.12 | RELHUM = | 20.7 PCT |
| WIND DIR = | | DEG WIND VEL = | | EXT DIST = | 40.0 FT | EXT CONFIG = | ARC | MIKE HT = | | NBFR = | |
| FNINT = | LBS XNL | RPM | RPM | XNH | RPM | V8 | 1226.5 FPS | AE8 | | 4.0 SQ IN | |
| FNRAMB = | LBS XNL | RPM | RPM | XNHR | RPM | V18 | 2026.7 FPS | AE18 | | 19.9 SQ IN | |
| RINPT = | ARF-ZEP-1705 | TAPE | | TFST PT NO = | 1705 | | | | | | |
| | | | | | | | | | | | |

IDENTIFICATION - 83F-ZER-1705, X1705F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.1 | 86.9 | 87.2 | 83.5 | 81.1 | 85.2 | 86.6 | 88.0 | 88.7 | 83.2 | 90.1 | 92.3 | 87.5 | 129.1 |
| 63 | 88.0 | 94.5 | 97.8 | 90.6 | 90.0 | 92.1 | 94.7 | 94.4 | 94.3 | 91.1 | 94.3 | 95.5 | 96.1 | 135.9 |
| 80 | 88.3 | 92.6 | 88.8 | 87.4 | 88.5 | 92.3 | 91.5 | 91.6 | 93.6 | 92.7 | 95.6 | 95.5 | 83.4 | 133.9 |
| 100 | 87.7 | 93.7 | 88.8 | 89.0 | 91.1 | 93.8 | 93.4 | 94.5 | 94.0 | 96.1 | 98.2 | 100.4 | 87.1 | 136.3 |
| 125 | 85.6 | 88.9 | 90.7 | 90.0 | 92.6 | 94.7 | 94.1 | 94.0 | 94.9 | 97.8 | 103.2 | 105.1 | 91.7 | 138.9 |
| 160 | 83.7 | 84.2 | 88.0 | 85.5 | 87.9 | 90.2 | 93.1 | 93.0 | 93.7 | 98.1 | 103.7 | 105.1 | 96.5 | 138.6 |
| 200 | 85.3 | 85.1 | 87.8 | 86.1 | 89.7 | 92.1 | 93.2 | 94.9 | 97.8 | 99.1 | 104.5 | 108.7 | 100.1 | 140.9 |
| 250 | 85.3 | 87.8 | 88.1 | 87.9 | 90.7 | 92.8 | 94.2 | 96.1 | 99.1 | 103.7 | 108.8 | 111.2 | 103.4 | 143.9 |
| 315 | 86.8 | 88.1 | 89.6 | 88.4 | 91.3 | 94.9 | 96.3 | 97.9 | 100.1 | 105.0 | 109.6 | 111.8 | 106.4 | 144.9 |
| 400 | 87.6 | 89.6 | 90.1 | 88.4 | 92.0 | 94.1 | 97.3 | 98.4 | 101.6 | 106.4 | 112.8 | 107.7 | 146.0 | |
| 500 | 86.1 | 90.1 | 90.9 | 89.2 | 92.5 | 95.4 | 96.5 | 98.9 | 103.2 | 107.0 | 111.1 | 112.3 | 108.4 | 146.2 |
| 630 | 87.8 | 90.6 | 91.1 | 90.4 | 93.7 | 96.6 | 97.7 | 99.9 | 102.6 | 107.2 | 110.8 | 111.7 | 108.9 | 146.1 |
| 800 | 89.6 | 90.6 | 92.2 | 90.4 | 93.5 | 96.7 | 98.3 | 100.7 | 103.9 | 106.7 | 109.6 | 110.0 | 108.7 | 145.4 |
| 1000 | 91.8 | 92.8 | 93.6 | 91.9 | 95.0 | 98.3 | 98.7 | 101.6 | 104.3 | 106.7 | 108.5 | 108.2 | 107.4 | 144.9 |
| 1250 | 89.9 | 93.7 | 93.3 | 92.4 | 94.9 | 97.8 | 98.6 | 101.8 | 104.5 | 105.6 | 107.7 | 107.4 | 106.3 | 144.3 |
| 1600 | 90.4 | 92.8 | 94.2 | 92.8 | 95.6 | 99.2 | 99.8 | 102.1 | 105.2 | 105.6 | 108.2 | 107.1 | 106.0 | 144.6 |
| 2000 | 90.4 | 92.2 | 93.6 | 92.7 | 95.3 | 98.4 | 99.9 | 102.2 | 104.4 | 105.6 | 107.1 | 105.7 | 105.7 | 144.0 |
| 2500 | 89.8 | 93.4 | 93.7 | 92.7 | 96.1 | 98.9 | 99.6 | 102.0 | 103.9 | 105.4 | 105.2 | 103.7 | 103.4 | 143.2 |
| 3150 | 89.5 | 92.6 | 93.6 | 93.4 | 95.5 | 99.3 | 100.7 | 101.9 | 104.2 | 104.4 | 103.8 | 101.9 | 101.6 | 142.8 |
| 4000 | 88.8 | 92.2 | 93.8 | 92.2 | 95.9 | 99.1 | 99.7 | 101.3 | 102.7 | 101.7 | 102.2 | 99.7 | 99.5 | 141.5 |
| 5000 | 88.9 | 93.0 | 93.9 | 92.5 | 95.9 | 99.4 | 99.8 | 101.2 | 102.2 | 101.4 | 100.1 | 97.4 | 96.8 | 141.2 |
| 6300 | 88.2 | 93.0 | 94.3 | 93.1 | 96.1 | 99.3 | 99.8 | 101.1 | 101.6 | 98.9 | 98.8 | 97.0 | 96.9 | 140.9 |
| 8000 | 87.7 | 92.4 | 94.0 | 93.7 | 95.8 | 99.1 | 99.5 | 99.2 | 99.0 | 97.2 | 96.5 | 95.6 | 95.2 | 140.1 |
| 10000 | 88.9 | 93.8 | 95.9 | 94.6 | 96.9 | 100.2 | 99.7 | 99.5 | 99.2 | 96.5 | 96.0 | 95.3 | 95.6 | 141.1 |
| 12500 | 89.3 | 93.4 | 95.5 | 94.8 | 96.8 | 100.3 | 99.1 | 98.9 | 97.6 | 94.7 | 93.7 | 94.1 | 93.8 | 141.3 |
| 16000 | 88.3 | 94.4 | 95.3 | 95.6 | 95.1 | 98.9 | 97.9 | 97.3 | 96.0 | 92.2 | 91.5 | 90.6 | 90.3 | 141.5 |
| 20000 | 86.9 | 91.3 | 93.4 | 93.4 | 94.2 | 97.5 | 96.6 | 94.7 | 93.6 | 89.8 | 88.2 | 87.4 | 85.6 | 141.3 |
| 25000 | 83.9 | 88.6 | 90.8 | 91.2 | 92.1 | 96.5 | 95.6 | 92.4 | 92.1 | 86.7 | 84.4 | 84.0 | 82.4 | 142.0 |
| 31500 | 80.3 | 84.8 | 86.8 | 88.4 | 88.8 | 93.1 | 91.9 | 90.3 | 88.6 | 83.5 | 81.6 | 79.8 | 77.5 | 141.8 |
| 40000 | 76.1 | 80.7 | 83.2 | 83.7 | 84.7 | 88.9 | 88.1 | 86.3 | 85.0 | 80.2 | 78.6 | 76.2 | 73.4 | 141.8 |
| 50000 | 70.5 | 74.6 | 77.1 | 78.5 | 78.8 | 83.9 | 82.0 | 80.7 | 79.8 | 75.1 | 73.1 | 70.2 | 67.2 | 140.7 |
| 63000 | 63.7 | 68.6 | 71.8 | 72.1 | 72.7 | 78.3 | 75.6 | 75.1 | 74.0 | 69.1 | 67.7 | 64.2 | 60.3 | 140.2 |
| 80000 | 55.4 | 62.3 | 64.3 | 63.9 | 65.2 | 71.6 | 68.7 | 67.7 | 67.3 | 62.0 | 60.7 | 57.0 | 51.2 | 139.9 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICL = ADH240 TEST DATE = 04-25-83 LCAT = C41 ANECH CH CONFIG = 17 MODEL = CO FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 61.11 PAMB HG = 29.12 RELHUM = 20.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT. EXT CONFIG = ARC

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1226.5 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2026.7 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1705 TAPE = X1705F TEST PT NO = 1705 NC = AE094 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1705 X17051

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160.

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 62.7 | 65.5 | 68.1 | 67.6 | 70.9 | 74.6 | 75.9 | 77.1 | 78.6 | 82.4 | 85.5 | 85.5 | 76.8 | 160.3 |
| 63 | 63.4 | 67.0 | 68.6 | 67.6 | 71.6 | 73.8 | 76.8 | 77.6 | 80.1 | 83.8 | 86.4 | 86.4 | 77.9 | 161.3 |
| 80 | 63.9 | 67.5 | 69.3 | 68.3 | 72.1 | 75.1 | 76.1 | 78.1 | 81.6 | 84.3 | 86.9 | 85.9 | 78.6 | 161.6 |
| 100 | 63.5 | 67.9 | 69.5 | 69.5 | 73.2 | 76.2 | 77.2 | 79.0 | 81.0 | 84.5 | 86.5 | 85.2 | 78.9 | 161.4 |
| 125 | 65.2 | 67.8 | 70.4 | 69.5 | 73.0 | 76.2 | 77.7 | 79.7 | 82.2 | 83.9 | 85.2 | 83.3 | 78.5 | 160.7 |
| 160 | 67.2 | 69.8 | 71.7 | 70.8 | 74.3 | 77.8 | 78.0 | 80.5 | 82.5 | 83.7 | 83.9 | 81.3 | 76.8 | 160.2 |
| 200 | 65.1 | 70.6 | 71.2 | 71.1 | 74.0 | 77.0 | 77.8 | 80.5 | 82.5 | 82.4 | 82.9 | 80.1 | 75.7 | 159.6 |
| 250 | 65.2 | 69.3 | 71.9 | 71.3 | 74.5 | 78.3 | 78.7 | 80.6 | 82.9 | 82.1 | 83.0 | 79.4 | 74.3 | 159.9 |
| 315 | 64.8 | 68.4 | 71.0 | 70.9 | 74.0 | 77.2 | 78.6 | 80.4 | 81.7 | 81.8 | 81.5 | 77.4 | 73.2 | 159.3 |
| 400 | 63.7 | 69.1 | 70.7 | 70.5 | 74.4 | 77.4 | 77.9 | 79.8 | 80.9 | 81.2 | 79.0 | 74.8 | 69.9 | 158.5 |
| 500 | 62.8 | 67.9 | 70.3 | 70.9 | 73.5 | 77.4 | 78.7 | 79.4 | 80.9 | 79.7 | 77.2 | 72.3 | 67.0 | 158.1 |
| 630 | 61.6 | 67.1 | 70.1 | 69.4 | 73.6 | 77.0 | 77.4 | 78.5 | 79.0 | 76.6 | 75.0 | 69.3 | 63.8 | 156.9 |
| 800 | 61.1 | 67.4 | 69.7 | 69.3 | 72.8 | 77.0 | 77.2 | 78.0 | 78.1 | 75.8 | 72.4 | 66.2 | 59.9 | 156.5 |
| 1000 | 59.8 | 66.9 | 69.8 | 69.6 | 73.2 | 76.5 | 76.9 | 77.6 | 77.1 | 72.9 | 70.4 | 65.0 | 58.7 | 156.3 |
| 1250 | 58.7 | 65.9 | 69.1 | 69.8 | 72.5 | 76.0 | 76.3 | 75.3 | 74.1 | 70.7 | 67.5 | 62.7 | 55.3 | 155.4 |
| 1600 | 58.7 | 66.4 | 70.3 | 70.2 | 73.2 | 76.6 | 75.9 | 75.0 | 73.6 | 69.1 | 65.8 | 60.7 | 53.1 | 156.5 |
| 2000 | 57.6 | 64.9 | 69.0 | 69.6 | 72.3 | 76.1 | 74.6 | 73.7 | 71.1 | 66.2 | 62.0 | 57.3 | 47.8 | 156.7 |
| 2500 | 54.4 | 64.3 | 67.6 | 69.3 | 69.7 | 73.7 | 72.5 | 71.1 | 68.2 | 62.1 | 57.6 | 50.7 | 39.0 | 156.8 |
| 3150 | 49.0 | 58.1 | 63.2 | 65.0 | 66.8 | 70.4 | 69.1 | 65.3 | 63.3 | 55.6 | 50.4 | 41.9 | 25.3 | 156.7 |
| 4000 | 39.1 | 49.8 | 56.0 | 58.8 | 61.0 | 65.7 | 64.5 | 59.9 | 57.2 | 48.0 | 39.5 | 28.7 | 6.8 | 157.3 |
| 5000 | 24.9 | 37.7 | 44.9 | 49.6 | 51.7 | 56.7 | 54.8 | 51.6 | 46.6 | 36.4 | 26.1 | 10.0 | | 157.2 |
| 6300 | 2.4 | 19.0 | 28.8 | 33.8 | 37.2 | 42.1 | 40.6 | 36.4 | 30.6 | 18.4 | 5.0 | | | 157.2 |
| 8000 | 0.5 | 8.4 | 12.3 | 18.5 | 15.5 | 10.6 | 3.1 | | | | | | | 155.0 |
| 10000 | | | | | | | | | | | | | | 155.5 |
| 12500 | | | | | | | | | | | | | | 155.2 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| DASPL | 75.7 | 80.3 | 82.7 | 82.5 | 85.7 | 89.1 | 89.7 | 91.1 | 92.6 | 93.6 | 94.8 | 93.4 | 86.8 | 172.5 |
| PWL | 80.7 | 87.8 | 91.0 | 91.8 | 94.1 | 97.8 | 97.4 | 97.4 | 97.4 | 96.5 | 95.9 | 92.7 | 86.4 | |
| PWLT | 80.7 | 87.8 | 91.0 | 92.4 | 94.7 | 98.4 | 98.1 | 97.9 | 98.0 | 96.5 | 95.9 | 92.7 | 86.4 | |
| DBA | 69.7 | 76.2 | 79.3 | 79.6 | 82.4 | 86.0 | 86.0 | 86.2 | 86.4 | 84.7 | 83.3 | 79.4 | 74.2 | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICLE = ADH240 TEST DATE = 04-25-83 LOCAT = C41 ANECH CH CONFIG = 17 MODEL = CO FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PML AREA = FULL SPHERE TAMB F = 61.11 PAMB HG = 29.12 RELHUM = 20.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT. EXT CONFIG = SL MIKE HT =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1226.5 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2026.7 FPS AE18 = 19.9 SQ IN

PT F-ZL-705 E = Xroot = Xroot T=PT No 1705 AEO94 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1706 X1706C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.4 | 86.9 | 86.9 | 83.2 | 80.8 | 82.7 | 84.3 | 87.0 | 84.9 | 85.5 | 90.1 | 92.6 | 90.2 | 128.7 |
| 63 | 88.8 | 94.0 | 97.3 | 91.9 | 86.7 | 89.1 | 95.2 | 96.4 | 90.3 | 91.6 | 91.3 | 97.7 | 96.9 | 135.9 |
| 80 | 89.0 | 92.6 | 88.1 | 87.1 | 87.7 | 91.3 | 91.5 | 90.6 | 92.6 | 91.7 | 93.8 | 95.0 | 87.1 | 133.2 |
| 100 | 87.2 | 91.7 | 87.8 | 87.0 | 88.9 | 92.0 | 91.4 | 93.0 | 91.3 | 93.1 | 96.0 | 99.4 | 89.1 | 134.5 |
| 125 | 84.9 | 87.2 | 89.4 | 88.2 | 90.6 | 91.9 | 91.3 | 91.2 | 90.9 | 93.5 | 99.7 | 102.8 | 90.7 | 136.1 |
| 160 | 82.2 | 81.2 | 86.5 | 82.8 | 84.6 | 87.2 | 91.4 | 88.5 | 90.5 | 94.1 | 99.9 | 102.6 | 93.8 | 135.5 |
| 200 | 82.8 | 83.1 | 86.3 | 82.4 | 84.5 | 87.8 | 89.7 | 91.1 | 94.1 | 94.9 | 100.5 | 105.2 | 95.9 | 137.2 |
| 250 | 81.0 | 83.8 | 84.6 | 83.1 | 85.2 | 88.3 | 88.7 | 90.9 | 94.1 | 99.2 | 104.3 | 107.0 | 97.9 | 139.5 |
| 315 | 82.1 | 84.4 | 85.9 | 84.4 | 86.3 | 89.4 | 91.3 | 92.4 | 95.4 | 100.0 | 105.1 | 106.5 | 98.4 | 139.8 |
| 400 | 82.6 | 84.1 | 84.9 | 83.4 | 85.8 | 89.4 | 93.3 | 92.9 | 96.1 | 101.7 | 105.8 | 106.8 | 96.9 | 140.5 |
| 500 | 83.6 | 84.9 | 85.6 | 84.2 | 86.8 | 90.4 | 90.5 | 92.9 | 96.1 | 102.0 | 105.4 | 104.8 | 94.7 | 139.7 |
| 630 | 83.0 | 84.8 | 85.6 | 84.9 | 88.0 | 91.1 | 91.5 | 94.1 | 96.6 | 103.2 | 105.3 | 102.7 | 92.1 | 139.6 |
| 800 | 84.6 | 84.4 | 85.9 | 84.9 | 88.3 | 92.2 | 92.3 | 95.4 | 97.9 | 102.5 | 104.1 | 98.8 | 89.9 | 138.8 |
| 1000 | 87.0 | 86.6 | 86.8 | 85.9 | 89.7 | 93.1 | 93.0 | 96.4 | 98.8 | 102.7 | 103.3 | 96.0 | 88.4 | 138.7 |
| 1250 | 85.5 | 88.2 | 87.3 | 87.2 | 89.6 | 93.3 | 93.4 | 96.6 | 99.3 | 102.3 | 101.5 | 93.9 | 87.3 | 138.2 |
| 1600 | 86.9 | 88.1 | 88.2 | 87.6 | 91.1 | 94.7 | 94.8 | 97.4 | 99.5 | 102.1 | 102.4 | 92.8 | 87.2 | 138.7 |
| 2000 | 88.6 | 87.7 | 88.1 | 88.0 | 91.1 | 94.2 | 95.2 | 98.2 | 99.6 | 102.7 | 101.4 | 92.2 | 86.7 | 138.8 |
| 2500 | 88.6 | 89.2 | 89.5 | 88.2 | 91.8 | 94.9 | 94.9 | 98.0 | 98.9 | 102.2 | 100.2 | 90.7 | 86.5 | 138.4 |
| 3150 | 89.0 | 89.4 | 89.9 | 89.2 | 92.0 | 95.5 | 96.4 | 98.2 | 99.5 | 100.9 | 98.8 | 90.5 | 85.6 | 138.3 |
| 4000 | 89.8 | 89.7 | 90.9 | 90.0 | 93.1 | 96.6 | 96.2 | 98.1 | 98.3 | 98.8 | 97.7 | 89.7 | 85.3 | 137.8 |
| 5000 | 90.4 | 91.3 | 91.4 | 90.7 | 93.2 | 96.9 | 96.3 | 97.9 | 97.5 | 99.4 | 96.6 | 88.6 | 84.8 | 138.0 |
| 6300 | 90.7 | 91.9 | 92.2 | 91.5 | 94.3 | 97.0 | 96.6 | 98.3 | 96.8 | 96.6 | 95.7 | 88.9 | 84.9 | 137.9 |
| 8000 | 91.1 | 91.8 | 92.4 | 92.5 | 94.6 | 97.7 | 96.4 | 96.8 | 95.3 | 95.5 | 94.4 | 88.5 | 84.3 | 137.9 |
| 10000 | 93.1 | 94.3 | 94.9 | 94.9 | 96.7 | 99.4 | 97.7 | 96.7 | 95.2 | 93.0 | 88.8 | 85.6 | 139.6 | |
| 12500 | 93.7 | 94.2 | 94.5 | 94.7 | 96.5 | 99.2 | 97.5 | 96.7 | 95.1 | 93.5 | 91.5 | 88.2 | 85.2 | 140.1 |
| 16000 | 92.3 | 94.8 | 94.8 | 94.8 | 94.9 | 97.6 | 96.9 | 95.5 | 93.4 | 90.1 | 89.7 | 86.1 | 82.3 | 140.4 |
| 20000 | 89.8 | 92.1 | 92.5 | 93.0 | 94.1 | 96.8 | 95.9 | 93.3 | 91.6 | 88.2 | 87.0 | 83.8 | 80.0 | 140.7 |
| 25000 | 87.5 | 89.2 | 90.3 | 91.2 | 92.4 | 96.0 | 95.2 | 91.9 | 90.3 | 85.5 | 83.6 | 82.0 | 77.7 | 141.6 |
| 31500 | 83.6 | 85.3 | 86.4 | 88.0 | 88.7 | 93.1 | 91.5 | 90.0 | 88.1 | 83.3 | 81.2 | 78.5 | 73.3 | 141.7 |
| 40000 | 79.2 | 81.0 | 82.5 | 83.8 | 85.3 | 89.3 | 88.0 | 86.2 | 84.8 | 80.3 | 78.7 | 75.6 | 70.1 | 142.0 |
| 50000 | 72.3 | 75.3 | 76.6 | 77.8 | 79.7 | 84.8 | 82.4 | 80.5 | 80.0 | 75.2 | 73.6 | 70.1 | 64.1 | 141.1 |
| 63000 | 65.6 | 69.0 | 70.5 | 71.6 | 73.3 | 78.1 | 75.7 | 75.1 | 74.5 | 69.6 | 69.2 | 65.0 | 58.4 | 140.2 |
| 80000 | 57.2 | 62.2 | 64.0 | 64.1 | 65.8 | 72.1 | 69.0 | 68.0 | 67.2 | 62.8 | 61.7 | 58.1 | 50.5 | 140.3 |
| GASPL | 103.1 | 104.7 | 105.3 | 104.4 | 106.2 | 109.3 | 109.0 | 110.0 | 110.7 | 113.6 | 115.3 | 114.9 | 106.4 | 154.2 |
| PNL | 114.2 | 115.0 | 115.6 | 114.6 | 117.4 | 120.6 | 120.7 | 122.5 | 123.5 | 125.8 | 125.6 | 122.2 | 114.5 | |
| PNLT | 114.2 | 115.0 | 115.6 | 115.2 | 118.0 | 120.6 | 120.7 | 122.5 | 123.5 | 125.8 | 125.6 | 122.2 | 114.5 | |
| DBA | 100.4 | 101.1 | 101.5 | 101.0 | 103.7 | 107.0 | 106.8 | 108.9 | 110.0 | 112.9 | 113.1 | 109.4 | 101.1 | |

ORIGINAL PAGE IS
OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

| | | | | | | | | | | | |
|------------|--------------|----------------|----------|--------------|--------------|--------------|------------|------------------|-------|------------|----------|
| VEHICLE = | ADR229 | TEST DATE = | 04-25-83 | LOCAT = | C41 ANECH CH | CONFTG = | 17 | MODEL = | CO | FLTVEL = | 400. FPS |
| I ALPHA = | SB59 | IEGA = | NO | PWL AREA = | FULL SPHERE | TAMB F = | 52.63 | PAMB HG = | 29.00 | RELHUM = | 24.4 PCT |
| WIND DIR = | | DEG WIND VEL = | | EXT DIST = | 40.0 FT | EXT CONFIG = | ARC | MIKE HT = | | NBFR = | |
| FNINT = | | LBS XNL = | | RPM = | RPM | V5 = | 1226.6 FPS | AE5 = | | 4.0 SQ IN | |
| FNRAMB = | | LBS XNLR = | | RPM = | RPM | V16 = | 1988.4 FPS | AE16 = | | 19.9 SQ IN | |
| RUNPT = | 83F-400-1706 | TAPE = | X1706C | TEST PT NO = | 1706 | NC = | AE094 | CORR FAN SPEED = | | RPM | |

IDENTIFICATION - 83F-400-1706 X1706F

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

FREQ
50
63

80
100
125
160
200

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 88.4 | 89.9 | 89.3 | 86.3 | 86.8 | 88.3 | 86.8 | 87.3 | 93.1 | 97.1 | 102.1 | 104.3 | 98.3 | 137.5 |
| 315 | 88.4 | 89.9 | 89.3 | 86.3 | 88.1 | 89.6 | 90.3 | 90.4 | 93.8 | 98.9 | 103.0 | 105.1 | 98.1 | 138.5 |
| 400 | 89.8 | 90.8 | 87.8 | 87.6 | 89.6 | 89.6 | 92.2 | 90.8 | 93.9 | 99.3 | 102.8 | 103.8 | 97.4 | 138.2 |
| 500 | 90.1 | 90.4 | 89.8 | 86.8 | 88.7 | 90.7 | 89.5 | 90.7 | 94.4 | 100.6 | 102.9 | 102.5 | 96.8 | 138.1 |
| 630 | 91.3 | 90.6 | 87.6 | 89.9 | 91.5 | 90.5 | 91.8 | 96.1 | 100.3 | 102.3 | 99.8 | 97.3 | 137.7 | |
| 800 | 90.7 | 91.3 | 90.6 | 88.4 | 90.3 | 92.7 | 91.3 | 93.2 | 97.4 | 100.9 | 102.2 | 98.2 | 138.0 | |
| 1000 | 92.3 | 90.8 | 91.0 | 88.5 | 91.9 | 93.7 | 92.1 | 94.2 | 97.9 | 100.7 | 100.3 | 96.0 | 96.9 | 137.6 |
| 1250 | 94.7 | 93.0 | 91.9 | 89.3 | 91.9 | 94.1 | 92.7 | 94.5 | 98.4 | 100.6 | 101.4 | 95.1 | 96.9 | 138.1 |
| 1600 | 93.1 | 94.7 | 92.4 | 90.9 | 93.6 | 95.7 | 94.3 | 95.5 | 98.7 | 101.4 | 100.5 | 94.4 | 96.0 | 138.6 |
| 2000 | 94.6 | 94.6 | 93.5 | 91.5 | 93.7 | 95.5 | 95.0 | 96.7 | 98.5 | 101.4 | 99.8 | 93.6 | 96.6 | 138.7 |
| 2500 | 96.3 | 94.3 | 93.5 | 92.0 | 94.7 | 96.5 | 95.1 | 96.9 | 100.0 | 101.1 | 99.6 | 94.7 | 97.6 | 139.2 |
| 3150 | 96.2 | 95.8 | 94.9 | 92.4 | 95.2 | 97.6 | 97.5 | 97.9 | 100.2 | 100.4 | 100.0 | 95.5 | 98.9 | 139.8 |
| 4000 | 96.6 | 96.0 | 95.5 | 93.5 | 96.8 | 99.2 | 98.2 | 99.1 | 99.4 | 101.1 | 98.9 | 94.4 | 98.5 | 140.3 |
| 5000 | 97.4 | 96.5 | 96.6 | 94.7 | 97.3 | 99.9 | 98.5 | 99.0 | 100.0 | 99.7 | 99.7 | 96.4 | 99.7 | 140.9 |
| 6300 | 97.8 | 98.0 | 97.2 | 95.6 | 98.3 | 100.0 | 99.0 | 100.0 | 99.3 | 98.8 | 98.8 | 96.2 | 99.0 | 141.3 |
| 8000 | 98.0 | 98.5 | 97.9 | 96.2 | 98.7 | 100.7 | 98.8 | 98.7 | 96.8 | 95.9 | 93.9 | 92.8 | 95.5 | 141.0 |
| 10000 | 98.2 | 98.2 | 97.9 | 97.0 | 100.8 | 102.4 | 99.1 | 96.7 | 96.5 | 94.4 | 92.7 | 92.4 | 96.4 | 142.1 |
| 12500 | 100.0 | 100.5 | 100.1 | 99.1 | 100.5 | 102.2 | 98.9 | 96.7 | 95.3 | 91.5 | 91.4 | 90.9 | 94.1 | 143.3 |
| 16000 | 100.0 | 99.8 | 99.3 | 98.4 | 98.9 | 100.6 | 98.3 | 95.5 | 93.9 | 90.0 | 89.2 | 89.0 | 92.2 | 143.6 |
| 20000 | 98.2 | 100.0 | 99.1 | 98.1 | 99.8 | 97.3 | 93.3 | 93.2 | 87.9 | 86.3 | 87.8 | 90.4 | 144.8 | |
| 25000 | 95.1 | 96.7 | 96.2 | 94.7 | 97.0 | 99.0 | 96.6 | 91.9 | 91.8 | 86.5 | 84.7 | 85.0 | 86.8 | 145.1 |
| 31500 | 94.8 | 95.3 | 94.9 | 94.3 | 93.3 | 96.1 | 93.0 | 90.0 | 89.3 | 84.4 | 83.1 | 83.0 | 84.5 | 146.0 |
| 40000 | 90.0 | 90.6 | 90.2 | 90.3 | 89.9 | 92.3 | 89.4 | 86.2 | 85.0 | 79.7 | 78.4 | 77.9 | 78.8 | 145.9 |
| 50000 | 85.3 | 85.8 | 85.9 | 85.7 | 84.3 | 87.8 | 83.8 | 80.5 | 80.4 | 75.0 | 74.9 | 73.8 | 74.1 | 145.5 |
| 63000 | 77.5 | 79.2 | 79.1 | 78.7 | 77.9 | 81.1 | 77.1 | 75.1 | 74.5 | 69.7 | 68.9 | 68.3 | 67.7 | 144.1 |
| 80000 | 69.2 | 71.4 | 71.5 | 71.0 | 70.4 | 75.1 | 70.4 | 68.0 | 64.7 | 59.9 | 59.1 | 58.5 | 57.9 | 143.7 |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| DASPL | 109.4 | 109.6 | 109.0 | 107.7 | 109.5 | 111.4 | 109.5 | 109.2 | 110.6 | 112.3 | 113.1 | 111.9 | 110.3 | 156.2 |
| PWL | 119.7 | 119.3 | 118.8 | 116.8 | 119.6 | 121.7 | 120.7 | 121.4 | 123.0 | 124.4 | 124.1 | 120.8 | 122.4 | |
| PWLT | 119.7 | 119.3 | 118.8 | 116.8 | 119.6 | 121.7 | 120.7 | 121.4 | 123.0 | 124.4 | 124.1 | 120.8 | 122.4 | |
| DBA | 192.7 | 194.4 | 194.4 | 194.0 | 193.2 | 197.3 | 192.9 | 190.5 | 188.6 | 183.7 | 183.0 | 182.3 | 182.0 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICL = ADH229 TEST DATE = 04-25-83 LGCAT = C41 ANECH CH CONFIG = 17 MODEL = CO FLTVEL = 400. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 52.63 PAMB HG = 29.00 RELHUM = 24.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1226.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1988.4 FPS AE18 = 19.9 SQ IN

PUMPT = 83F-400-1706 XT TES NO 706 FA EED

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1706 X17061

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| 50 | 64.3 | 67.3 | 67.8 | 65.5 | 67.2 | 69.3 | 69.9 | 69.6 | 72.3 | 76.3 | 78.9 | 78.8 | 68.4 | 153.8 |
| 63 | 65.6 | 68.1 | 69.3 | 67.0 | 67.2 | 69.3 | 71.8 | 70.0 | 72.4 | 76.7 | 78.6 | 77.4 | 67.7 | 153.5 |
| 80 | 65.9 | 67.8 | 68.2 | 65.9 | 68.2 | 70.4 | 69.1 | 69.9 | 72.9 | 77.9 | 78.7 | 76.1 | 67.0 | 153.4 |
| 100 | 67.0 | 68.6 | 69.0 | 66.7 | 69.5 | 71.1 | 70.0 | 70.9 | 74.5 | 77.6 | 78.0 | 73.3 | 67.3 | 153.0 |
| 125 | 66.3 | 68.4 | 68.9 | 67.4 | 69.8 | 72.2 | 70.8 | 72.2 | 75.7 | 78.1 | 77.8 | 71.6 | 68.0 | 153.3 |
| 160 | 67.7 | 67.9 | 69.1 | 67.4 | 71.2 | 73.2 | 71.4 | 73.1 | 76.1 | 77.7 | 75.7 | 69.1 | 66.3 | 152.9 |
| 200 | 69.8 | 69.8 | 69.9 | 68.2 | 71.1 | 73.3 | 71.8 | 73.2 | 76.3 | 77.4 | 76.6 | 67.8 | 65.9 | 153.5 |
| 250 | 67.9 | 71.3 | 70.1 | 69.4 | 72.5 | 74.8 | 73.3 | 74.0 | 76.4 | 77.9 | 75.3 | 66.7 | 64.3 | 153.9 |
| 315 | 68.9 | 70.8 | 70.9 | 69.7 | 72.4 | 74.3 | 73.6 | 74.9 | 75.9 | 77.6 | 74.2 | 65.3 | 64.1 | 154.0 |
| 400 | 70.1 | 70.0 | 70.5 | 69.9 | 73.1 | 75.0 | 73.5 | 74.7 | 77.0 | 76.8 | 73.5 | 65.7 | 64.0 | 154.5 |
| 500 | 69.5 | 71.1 | 71.6 | 69.9 | 73.3 | 75.7 | 75.6 | 75.5 | 76.9 | 75.7 | 73.3 | 65.9 | 64.3 | 155.1 |
| 630 | 69.4 | 70.9 | 71.8 | 70.7 | 74.5 | 77.0 | 75.9 | 76.3 | 75.7 | 76.0 | 71.7 | 64.1 | 62.9 | 155.7 |
| 800 | 69.6 | 70.9 | 72.5 | 71.5 | 74.6 | 77.5 | 75.9 | 75.8 | 75.9 | 74.1 | 71.9 | 65.2 | 62.8 | 156.2 |
| 1000 | 69.5 | 71.9 | 72.7 | 72.1 | 75.4 | 77.3 | 76.1 | 76.5 | 74.5 | 73.3 | 70.5 | 64.2 | 60.8 | 156.6 |
| 1250 | 68.9 | 71.9 | 73.0 | 72.4 | 75.4 | 77.6 | 75.6 | 74.8 | 71.9 | 69.3 | 64.9 | 59.8 | 56.7 | 156.3 |
| 1600 | 68.0 | 70.8 | 72.3 | 72.6 | 77.0 | 78.9 | 75.4 | 72.3 | 70.9 | 67.0 | 62.6 | 57.9 | 54.0 | 157.4 |
| 2000 | 68.3 | 71.9 | 73.6 | 73.9 | 76.0 | 77.9 | 74.5 | 71.5 | 68.8 | 63.0 | 59.7 | 54.2 | 48.1 | 158.6 |
| 2500 | 66.1 | 69.7 | 71.5 | 72.1 | 73.5 | 75.4 | 72.9 | 69.3 | 66.2 | 59.9 | 55.3 | 49.0 | 40.8 | 158.9 |
| 3150 | 60.4 | 66.8 | 69.7 | 70.7 | 72.7 | 72.7 | 69.9 | 64.8 | 62.9 | 54.7 | 48.5 | 42.3 | 30.1 | 159.9 |
| 4000 | 50.2 | 58.0 | 61.3 | 63.2 | 65.8 | 68.2 | 65.4 | 59.4 | 57.0 | 47.8 | 39.9 | 29.8 | 11.2 | 160.5 |
| 5000 | 39.3 | 48.2 | 52.9 | 55.5 | 56.3 | 59.6 | 56.0 | 51.2 | 47.4 | 37.2 | 27.6 | 13.3 | 161.4 | |
| 6300 | 16.4 | 28.9 | 35.8 | 40.3 | 42.4 | 45.5 | 41.9 | 36.2 | 30.6 | 17.9 | 4.8 | 161.2 | 161.2 | |
| 8000 | 9.2 | 15.5 | 17.7 | 22.4 | 17.2 | 10.4 | 3.7 | | | | | | 160.8 | |
| 10000 | | | | | | | | | | | | | 159.4 | |
| 12500 | | | | | | | | | | | | | 159.0 | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

GASPL 80.8 82.9 83.8 83.1 86.0 88.1 86.4 86.2 87.2 88.4 87.7 83.9 77.3 171.5
 PNL 89.2 92.4 93.8 93.8 96.2 98.4 95.9 94.0 93.3 92.5 89.8 83.0 79.2
 PNLT 90.6 93.4 94.3 94.4 96.8 98.9 96.5 94.6 93.9 92.5 91.0 83.0 79.2
 DBA 78.2 80.9 82.2 82.0 84.9 87.0 84.7 83.7 83.0 81.9 78.9 72.0 69.5

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8
 NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICL = ADH229 TEST DATE = 04-25-83 LOCAT = C41 ANECH CH CONFIG = 17 MODEL = CO FLTVEL = 400. FPS
 1APLHA = SB59 IEGA = NO MPH PNL AREA = FULL SPHERE TAMB F = 52.63 PAMB HQ = 29.00 RELHUM = 24.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1226.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1988.4 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1706 TAPE = X17061 TEST PT NO = 1706 NC = AE094 CORR FAN SPEED = RPM

403

IDENTIFICATION - MODEL 83F-ZER-1707 X1707C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 85.9 | 87.4 | 87.2 | 87.0 | 82.6 | 86.9 | 86.8 | 89.5 | 88.9 | 87.0 | 92.4 | 95.6 | 90.7 | 130.9 |
| 63 | 89.3 | 94.3 | 97.6 | 95.4 | 91.0 | 94.6 | 95.7 | 94.4 | 95.3 | 92.6 | 95.0 | 102.5 | 98.1 | 137.8 |
| 80 | 91.3 | 95.3 | 90.3 | 89.6 | 90.7 | 95.3 | 93.7 | 93.4 | 95.6 | 95.2 | 98.1 | 98.2 | 85.4 | 136.3 |
| 100 | 90.0 | 96.5 | 91.5 | 91.8 | 93.6 | 96.3 | 95.4 | 97.3 | 96.0 | 98.3 | 100.7 | 102.9 | 89.6 | 138.7 |
| 125 | 87.4 | 90.2 | 92.9 | 92.2 | 94.8 | 96.9 | 95.8 | 95.5 | 96.9 | 99.3 | 106.2 | 107.1 | 94.2 | 141.1 |
| 160 | 85.9 | 85.0 | 90.2 | 88.0 | 89.6 | 92.0 | 94.1 | 95.0 | 96.2 | 100.1 | 105.5 | 107.4 | 98.8 | 140.6 |
| 200 | 87.3 | 86.8 | 89.3 | 87.9 | 91.2 | 94.8 | 94.7 | 96.9 | 100.3 | 101.1 | 106.5 | 111.2 | 102.9 | 143.2 |
| 250 | 87.8 | 90.3 | 90.3 | 90.4 | 93.0 | 95.1 | 95.7 | 98.6 | 101.8 | 106.4 | 111.5 | 114.2 | 105.4 | 146.7 |
| 315 | 88.8 | 90.4 | 91.1 | 90.7 | 93.5 | 96.6 | 97.3 | 99.4 | 102.9 | 107.7 | 112.6 | 115.0 | 108.7 | 147.8 |
| 400 | 89.8 | 92.1 | 92.1 | 90.7 | 93.5 | 96.4 | 99.5 | 100.4 | 104.9 | 109.4 | 113.8 | 115.0 | 109.4 | 149.0 |
| 500 | 90.3 | 92.9 | 93.2 | 91.9 | 94.3 | 97.6 | 98.0 | 100.9 | 105.2 | 109.7 | 113.9 | 115.8 | 110.9 | 149.1 |
| 630 | 90.5 | 93.1 | 93.6 | 92.9 | 96.2 | 99.1 | 99.2 | 102.4 | 105.4 | 110.7 | 114.3 | 115.7 | 112.1 | 149.6 |
| 800 | 92.9 | 93.4 | 94.4 | 93.4 | 96.3 | 99.4 | 99.5 | 102.9 | 106.4 | 110.2 | 113.1 | 115.0 | 112.9 | 149.2 |
| 1000 | 95.0 | 95.3 | 94.4 | 94.4 | 97.7 | 100.6 | 101.2 | 104.6 | 109.7 | 112.5 | 114.0 | 112.1 | 148.8 | |
| 1250 | 93.0 | 96.5 | 95.8 | 94.9 | 97.1 | 101.0 | 101.1 | 104.3 | 107.5 | 108.9 | 111.5 | 113.6 | 111.6 | 148.3 |
| 1600 | 93.4 | 95.1 | 96.0 | 95.6 | 98.3 | 102.0 | 102.3 | 105.1 | 108.5 | 108.8 | 112.2 | 113.1 | 110.0 | 148.5 |
| 2000 | 92.9 | 94.5 | 95.6 | 95.0 | 97.8 | 101.2 | 102.2 | 105.7 | 108.1 | 108.9 | 111.7 | 111.5 | 108.5 | 147.9 |
| 2500 | 92.6 | 94.9 | 95.5 | 94.7 | 98.1 | 101.5 | 101.9 | 105.0 | 106.9 | 108.7 | 109.9 | 108.2 | 107.2 | 146.7 |
| 3150 | 92.0 | 94.2 | 95.7 | 94.9 | 97.8 | 101.3 | 102.2 | 104.7 | 108.0 | 107.9 | 109.1 | 106.7 | 104.4 | 146.3 |
| 4000 | 91.1 | 94.0 | 95.7 | 94.5 | 98.7 | 101.6 | 101.3 | 104.6 | 106.3 | 104.8 | 106.7 | 104.5 | 102.1 | 144.8 |
| 5000 | 90.0 | 94.8 | 95.7 | 94.5 | 97.8 | 100.7 | 100.6 | 104.0 | 105.3 | 105.0 | 105.7 | 102.2 | 100.9 | 144.2 |
| 6300 | 90.2 | 94.8 | 95.6 | 94.9 | 98.4 | 101.6 | 101.1 | 103.4 | 104.7 | 103.0 | 104.1 | 100.8 | 99.0 | 143.7 |
| 8000 | 89.7 | 95.0 | 95.8 | 95.2 | 97.8 | 100.8 | 100.5 | 101.4 | 102.7 | 101.2 | 102.5 | 99.1 | 97.2 | 142.8 |
| 10000 | 90.8 | 95.8 | 97.6 | 96.6 | 98.1 | 101.4 | 100.4 | 100.9 | 102.2 | 99.7 | 100.9 | 99.0 | 97.5 | 143.1 |
| 12500 | 91.6 | 96.2 | 97.8 | 97.7 | 99.2 | 102.2 | 99.2 | 99.0 | 100.4 | 97.5 | 98.8 | 97.9 | 95.9 | 143.3 |
| 16000 | 91.1 | 95.9 | 97.6 | 98.6 | 98.9 | 101.9 | 99.9 | 98.8 | 99.0 | 95.4 | 96.2 | 94.4 | 92.6 | 144.2 |
| 20000 | 89.1 | 93.2 | 95.6 | 95.6 | 97.4 | 99.9 | 98.2 | 96.1 | 96.5 | 91.6 | 92.4 | 90.8 | 88.8 | 143.6 |
| 25000 | 86.1 | 90.1 | 92.6 | 92.8 | 94.5 | 99.1 | 96.7 | 94.0 | 94.1 | 88.7 | 88.4 | 88.1 | 84.7 | 144.0 |
| 31500 | 82.9 | 86.5 | 88.3 | 90.4 | 91.0 | 95.2 | 92.9 | 91.1 | 91.3 | 85.5 | 84.8 | 83.3 | 79.4 | 143.6 |
| 40000 | 78.3 | 82.9 | 84.4 | 85.5 | 86.9 | 91.1 | 89.1 | 87.1 | 87.2 | 81.8 | 81.3 | 79.0 | 75.5 | 143.6 |
| 50000 | 72.0 | 77.0 | 79.5 | 80.5 | 81.6 | 85.9 | 83.5 | 81.7 | 82.4 | 76.9 | 76.0 | 72.9 | 69.4 | 142.7 |
| 63000 | 65.4 | 71.0 | 73.7 | 74.0 | 75.7 | 80.5 | 77.6 | 76.0 | 76.7 | 71.1 | 70.6 | 66.9 | 62.6 | 142.3 |
| 80000 | 58.1 | 64.2 | 66.4 | 67.1 | 68.4 | 74.3 | 70.4 | 69.4 | 69.4 | 64.1 | 63.4 | 59.5 | 53.9 | 142.3 |
| GASPL | 105.3 | 108.4 | 109.3 | 108.7 | 110.9 | 114.1 | 113.9 | 116.2 | 118.7 | 120.5 | 123.8 | 125.3 | 121.2 | 160.7 |
| PNL | 117.1 | 119.7 | 120.7 | 119.9 | 123.0 | 126.1 | 126.4 | 128.9 | 131.6 | 132.4 | 134.6 | 134.6 | 131.4 | |
| PNLT | 117.1 | 120.4 | 120.7 | 119.9 | 123.5 | 126.1 | 126.4 | 128.9 | 131.6 | 132.4 | 135.1 | 134.6 | 131.4 | |
| DBA | 103.8 | 106.4 | 107.1 | 106.3 | 109.3 | 112.6 | 112.9 | 115.8 | 118.4 | 119.7 | 122.4 | 123.3 | 120.4 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VERTICAL = ADH239 TEST DATE = 04-25-83 LOCAT = C41 ANECH CH CONFIG = 17 MODEL = CO FLTVEL = 0. FPS
 ALPHA = SB59 LEGA = NO PWL AREA = FULL SPHERE TAMB F = 60.84 PAMB HG = 29.10 RELHUM = 16.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINT = LBS XNL = RPM XNH = RPM V8 = 1332.7 FPS AE8 = 4.0 SQ IN
 FNFRMB = LBS XNLR = RPM XNHR = RPM V10 = 2179.1 FPS AE10 = 19.9 SQ IN
 RINPT = 83F-ZER-1707 TARE = X1707C TEST PT NA = 1707 NC = AEOG RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1707 XT1707F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 85.9 | 87.4 | 87.2 | 87.0 | 82.6 | 86.9 | 86.8 | 89.5 | 88.9 | 87.0 | 92.4 | 95.6 | 90.7 | 130.9 |
| 63 | 89.3 | 94.3 | 97.6 | 95.4 | 91.0 | 94.6 | 95.7 | 94.4 | 95.3 | 92.6 | 95.0 | 102.5 | 98.1 | 137.8 |
| 80 | 91.3 | 95.3 | 90.3 | 89.6 | 90.7 | 95.3 | 93.7 | 93.4 | 95.6 | 95.2 | 98.1 | 98.2 | 85.4 | 136.3 |
| 100 | 90.0 | 96.5 | 91.5 | 91.8 | 93.6 | 96.3 | 95.4 | 97.3 | 96.0 | 98.3 | 100.7 | 102.9 | 89.6 | 138.7 |
| 125 | 87.4 | 90.2 | 92.9 | 92.2 | 94.8 | 96.9 | 95.8 | 95.5 | 96.9 | 99.3 | 106.2 | 107.1 | 94.2 | 141.1 |
| 160 | 85.9 | 86.0 | 90.2 | 88.0 | 89.6 | 92.0 | 94.1 | 95.0 | 96.2 | 100.1 | 105.5 | 107.4 | 98.8 | 140.6 |
| 200 | 87.3 | 86.8 | 89.3 | 87.9 | 91.2 | 94.8 | 94.7 | 96.9 | 100.3 | 101.1 | 106.5 | 111.2 | 102.9 | 143.2 |
| 250 | 87.8 | 90.3 | 90.3 | 90.4 | 93.0 | 95.1 | 95.7 | 98.6 | 101.8 | 106.4 | 111.5 | 114.2 | 105.4 | 146.7 |
| 315 | 88.8 | 90.4 | 91.1 | 90.7 | 93.5 | 96.6 | 97.3 | 99.4 | 102.9 | 107.7 | 112.6 | 115.0 | 108.7 | 147.8 |
| 400 | 89.8 | 92.1 | 92.1 | 90.7 | 93.5 | 96.4 | 99.5 | 100.4 | 104.9 | 109.4 | 113.8 | 116.0 | 109.4 | 149.0 |
| 500 | 90.3 | 92.9 | 93.2 | 91.9 | 94.3 | 97.6 | 98.0 | 100.9 | 105.2 | 109.7 | 113.9 | 115.8 | 110.9 | 149.1 |
| 630 | 90.5 | 93.1 | 93.6 | 92.9 | 96.2 | 99.1 | 99.2 | 102.4 | 105.4 | 110.7 | 114.3 | 115.7 | 112.1 | 149.6 |
| 800 | 92.9 | 93.4 | 94.4 | 93.4 | 96.3 | 99.4 | 99.5 | 102.9 | 106.4 | 110.2 | 113.1 | 115.0 | 112.9 | 149.2 |
| 1000 | 95.0 | 95.3 | 95.3 | 94.4 | 97.7 | 100.6 | 101.2 | 104.6 | 107.6 | 109.7 | 112.5 | 114.0 | 112.1 | 148.8 |
| 1250 | 93.0 | 96.5 | 95.8 | 94.9 | 97.1 | 101.0 | 101.1 | 104.3 | 107.5 | 108.9 | 111.5 | 113.6 | 111.6 | 148.3 |
| 1600 | 93.4 | 95.1 | 96.0 | 95.6 | 98.3 | 102.0 | 102.3 | 105.1 | 108.5 | 108.8 | 112.2 | 113.1 | 110.0 | 148.5 |
| 2000 | 92.9 | 94.5 | 95.6 | 95.0 | 97.8 | 101.2 | 102.2 | 105.7 | 108.1 | 108.9 | 111.7 | 111.5 | 108.5 | 147.9 |
| 2500 | 92.6 | 94.9 | 95.5 | 94.7 | 98.1 | 101.5 | 101.9 | 105.0 | 106.9 | 108.7 | 109.9 | 108.2 | 107.2 | 146.7 |
| 3150 | 92.0 | 94.2 | 95.7 | 94.9 | 97.8 | 101.3 | 102.2 | 104.7 | 108.0 | 107.9 | 109.1 | 106.7 | 104.4 | 146.3 |
| 4000 | 91.1 | 94.0 | 95.7 | 94.5 | 98.7 | 101.6 | 101.3 | 104.6 | 106.3 | 104.8 | 106.7 | 104.5 | 102.1 | 144.8 |
| 5000 | 90.0 | 94.8 | 95.7 | 94.5 | 97.8 | 100.7 | 100.6 | 104.0 | 105.3 | 105.0 | 105.7 | 102.2 | 100.9 | 144.2 |
| 6300 | 90.2 | 94.8 | 95.6 | 94.9 | 98.4 | 101.6 | 101.1 | 103.4 | 104.7 | 103.0 | 104.1 | 100.8 | 99.0 | 143.7 |
| 8000 | 89.7 | 95.0 | 95.8 | 95.2 | 97.8 | 100.8 | 100.5 | 101.4 | 102.7 | 101.2 | 102.5 | 99.1 | 97.2 | 142.8 |
| 10000 | 90.8 | 96.6 | 97.6 | 96.6 | 98.1 | 101.4 | 100.4 | 100.9 | 102.2 | 99.7 | 100.9 | 99.0 | 97.5 | 143.1 |
| 12500 | 91.6 | 96.2 | 97.8 | 97.7 | 99.2 | 102.2 | 99.2 | 99.0 | 100.4 | 97.5 | 98.8 | 97.9 | 95.9 | 143.3 |
| 16000 | 91.1 | 95.9 | 97.6 | 98.6 | 98.9 | 101.9 | 99.9 | 98.8 | 99.0 | 95.4 | 96.2 | 94.4 | 92.6 | 144.2 |
| 20000 | 89.1 | 93.2 | 95.6 | 95.6 | 97.4 | 99.9 | 98.2 | 96.1 | 96.5 | 91.8 | 92.4 | 90.8 | 88.8 | 143.6 |
| 25000 | 86.1 | 90.1 | 92.6 | 92.8 | 94.5 | 99.1 | 96.7 | 94.0 | 94.1 | 88.7 | 88.4 | 88.1 | 84.7 | 144.0 |
| 31500 | 82.9 | 86.5 | 88.3 | 90.4 | 91.0 | 95.2 | 92.9 | 91.1 | 91.3 | 85.5 | 84.8 | 83.3 | 79.4 | 143.6 |
| 40000 | 78.3 | 82.9 | 84.4 | 85.5 | 86.9 | 91.1 | 89.1 | 87.1 | 87.2 | 81.8 | 81.3 | 79.0 | 75.5 | 143.6 |
| 50000 | 72.0 | 77.0 | 79.5 | 80.5 | 81.6 | 85.9 | 83.5 | 81.7 | 82.4 | 76.9 | 76.0 | 72.9 | 69.4 | 142.7 |
| 63000 | 65.4 | 71.0 | 73.7 | 74.0 | 75.7 | 80.5 | 77.6 | 76.0 | 76.7 | 71.1 | 70.6 | 66.9 | 62.6 | 142.3 |
| 80000 | 58.1 | 64.2 | 66.4 | 67.1 | 68.4 | 74.3 | 70.4 | 69.4 | 69.4 | 64.1 | 63.4 | 59.5 | 53.9 | 142.3 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICL = ADH239 TEST DATE = 04-25-83 LOCAT = C41 ANECH CH CONFIG = 17 MODEL = C0 FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PML AREA = FULL SPHERE TAMB F = 60.84 PAMB HG = 29.10 RELHUM = 18.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1332.7 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2179.1 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1707 TAPE = XT1707F TEST PT NO = 1707 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1707 X17071

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|--------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 64.7 | 67.8 | 69.6 | 69.9 | 73.1 | 76.4 | 76.9 | 78.6 | 81.4 | 85.1 | 88.5 | 88.7 | 79.0 | 163.2 |
| 63 | 65.7 | 69.5 | 70.6 | 69.8 | 73.1 | 76.1 | 79.1 | 79.6 | 83.3 | 86.8 | 89.7 | 89.6 | 79.7 | 164.3 |
| 80 | 66.1 | 70.2 | 71.6 | 71.1 | 73.8 | 77.3 | 77.6 | 80.1 | 83.6 | 87.1 | 89.6 | 89.4 | 81.1 | 164.4 |
| 100 | 66.3 | 70.4 | 72.0 | 72.0 | 75.7 | 78.7 | 81.5 | 83.7 | 88.0 | 90.0 | 89.2 | 82.2 | 164.9 | |
| 125 | 68.5 | 70.6 | 72.7 | 72.5 | 75.7 | 79.0 | 79.0 | 82.0 | 84.7 | 87.4 | 88.7 | 88.4 | 82.7 | 164.5 |
| 160 | 70.4 | 72.3 | 73.5 | 73.3 | 77.0 | 80.0 | 80.5 | 83.5 | 85.7 | 86.7 | 87.9 | 87.0 | 81.5 | 164.2 |
| 200 | 68.1 | 73.3 | 73.7 | 73.6 | 76.3 | 80.3 | 80.3 | 83.0 | 85.5 | 85.7 | 85.6 | 85.4 | 80.5 | 163.7 |
| 250 | 68.2 | 71.6 | 73.7 | 74.1 | 77.3 | 81.0 | 81.2 | 83.6 | 86.2 | 85.4 | 87.0 | 85.4 | 78.3 | 163.8 |
| 315 | 67.3 | 70.6 | 73.0 | 73.2 | 76.5 | 80.0 | 80.8 | 84.0 | 85.5 | 85.1 | 83.2 | 75.9 | 163.2 | |
| 400 | 66.5 | 70.7 | 72.5 | 72.6 | 76.4 | 79.9 | 80.2 | 82.9 | 83.9 | 84.5 | 83.8 | 79.3 | 162.0 | |
| 500 | 65.4 | 69.5 | 72.3 | 72.5 | 75.8 | 79.5 | 80.2 | 82.2 | 84.7 | 83.2 | 82.5 | 77.1 | 161.6 | |
| 630 | 63.9 | 68.9 | 71.9 | 71.7 | 76.4 | 79.5 | 79.0 | 81.8 | 82.6 | 79.7 | 79.5 | 74.1 | 160.1 | |
| 800 | 62.2 | 69.2 | 71.6 | 71.4 | 75.2 | 78.3 | 78.0 | 80.8 | 81.2 | 79.4 | 77.9 | 71.0 | 159.5 | |
| 1000 | 61.9 | 68.7 | 71.1 | 71.4 | 75.5 | 78.8 | 78.2 | 79.9 | 80.2 | 76.9 | 75.7 | 68.8 | 159.1 | |
| 1250 | 60.7 | 68.4 | 70.9 | 71.3 | 74.5 | 77.8 | 77.3 | 77.6 | 77.8 | 74.7 | 73.5 | 66.2 | 158.1 | |
| 1600 | 60.6 | 68.4 | 72.0 | 72.1 | 74.4 | 77.8 | 76.6 | 76.5 | 76.6 | 72.3 | 70.8 | 64.4 | 158.5 | |
| 2000 | 59.9 | 67.7 | 71.3 | 72.5 | 74.7 | 77.9 | 74.8 | 73.8 | 73.9 | 69.0 | 67.1 | 61.2 | 158.6 | |
| 2500 | 57.2 | 65.7 | 69.8 | 72.3 | 73.4 | 76.7 | 74.5 | 72.6 | 71.2 | 65.3 | 62.3 | 54.5 | 159.5 | |
| 3150 | 51.2 | 60.0 | 65.3 | 67.2 | 70.0 | 72.8 | 70.8 | 67.7 | 66.2 | 58.6 | 54.5 | 48.3 | 159.0 | |
| 4000 | 41.2 | 51.4 | 57.8 | 60.3 | 63.3 | 68.3 | 65.6 | 61.5 | 59.3 | 50.0 | 43.6 | 32.8 | 159.3 | |
| 5000 | 27.4 | 39.4 | 46.3 | 51.7 | 54.0 | 58.7 | 55.9 | 52.4 | 49.3 | 38.3 | 29.3 | 13.5 | 159.0 | |
| 6300 | 4.7 | 21.2 | 30.0 | 35.5 | 39.4 | 44.4 | 41.6 | 37.1 | 32.8 | 20.0 | 7.7 | | 158.9 | |
| 8000 | | 2.9 | 10.4 | 15.0 | 20.5 | 26.9 | 11.6 | 5.8 | | | | | 158.0 | |
| 00000 | | | | | | | | | | | | | 157.6 | |
| 002500 | | | | | | | | | | | | | 157.6 | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

GASPL 76.4 82.6 84.6 84.6 88.1 91.5 91.5 93.7 95.7 96.8 98.4 97.6 90.2 175.6
 PNL 83.2 89.7 93.1 94.4 96.8 100.3 99.1 99.4 100.7 99.8 100.1 97.5 90.3
 PNLT 83.2 89.7 93.7 94.9 97.4 100.8 99.7 100.0 101.3 99.8 100.1 97.5 90.3
 DBA 72.0 78.2 81.1 81.8 84.8 88.1 87.3 88.7 89.7 88.1 88.0 84.6 77.9

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICLE = ADH239 TEST DATE = 04-25-83 LOCAT = C41 ANECH CH CONFIG = 17 MODEL = CO FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PNL AREA = FULL SPHERE TAMB F = 60.84 PAMB HG = 29.10 RELHUM = 18.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNINI = LBS XNL RPM XNH RPM V6 = 1332.7 FPS AE6 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2179.1 FPS AE18 = 19.9 SQ IN

PT F-ZL 707 E X T TL 170 AEOI ARR T-AN SPEED RPM

IDENTIFICATION - MODEL 83F-400-1708 X1708C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.6 | 89.2 | 87.4 | 83.0 | 81.8 | 84.4 | 86.8 | 88.0 | 87.2 | 86.2 | 92.9 | 95.1 | 90.5 | 130.5 |
| 63 | 89.5 | 94.5 | 95.8 | 91.4 | 89.0 | 92.1 | 96.2 | 95.9 | 92.3 | 92.6 | 95.0 | 99.5 | 97.4 | 136.5 |
| 80 | 91.0 | 94.1 | 89.8 | 89.9 | 90.7 | 94.8 | 93.0 | 92.4 | 94.1 | 94.2 | 97.0 | 96.7 | 87.9 | 135.4 |
| 100 | 89.7 | 95.0 | 89.8 | 89.3 | 91.4 | 94.8 | 93.9 | 95.3 | 93.5 | 94.8 | 97.5 | 101.4 | 90.1 | 136.7 |
| 125 | 87.1 | 89.7 | 91.4 | 91.0 | 93.3 | 95.4 | 94.3 | 93.7 | 93.7 | 97.0 | 103.2 | 105.3 | 93.2 | 139.0 |
| 160 | 84.7 | 83.5 | 87.2 | 84.8 | 87.4 | 89.7 | 93.1 | 90.3 | 92.2 | 97.8 | 103.2 | 105.4 | 96.5 | 138.4 |
| 200 | 85.3 | 84.8 | 87.3 | 83.9 | 86.7 | 90.3 | 91.5 | 93.6 | 96.3 | 97.6 | 103.8 | 108.7 | 99.4 | 140.4 |
| 250 | 83.5 | 86.1 | 86.1 | 85.4 | 88.0 | 91.3 | 91.7 | 94.4 | 96.6 | 101.9 | 107.8 | 110.5 | 100.6 | 142.8 |
| 315 | 84.3 | 86.4 | 87.1 | 86.2 | 88.8 | 92.4 | 93.8 | 95.4 | 97.4 | 103.5 | 108.8 | 110.3 | 101.7 | 143.4 |
| 400 | 85.1 | 86.1 | 87.4 | 85.4 | 88.8 | 92.1 | 95.5 | 96.2 | 98.9 | 105.2 | 109.6 | 110.5 | 100.9 | 144.0 |
| 500 | 85.6 | 86.9 | 87.9 | 86.2 | 89.5 | 93.1 | 93.0 | 95.9 | 99.1 | 106.0 | 109.8 | 109.0 | 98.9 | 143.8 |
| 630 | 85.3 | 87.1 | 88.1 | 87.1 | 90.7 | 94.6 | 95.0 | 97.4 | 99.8 | 106.7 | 109.8 | 107.5 | 95.6 | 143.7 |
| 800 | 87.3 | 87.1 | 88.7 | 87.7 | 90.8 | 94.6 | 95.5 | 98.2 | 100.9 | 106.2 | 108.4 | 104.0 | 93.2 | 142.6 |
| 1000 | 89.0 | 88.8 | 89.3 | 88.6 | 92.2 | 95.3 | 96.2 | 99.9 | 102.6 | 105.9 | 107.3 | 100.5 | 90.9 | 142.3 |
| 1250 | 87.9 | 90.5 | 90.3 | 89.4 | 92.1 | 95.7 | 96.4 | 100.0 | 102.8 | 105.6 | 105.5 | 97.6 | 89.8 | 141.6 |
| 1600 | 89.4 | 89.8 | 91.0 | 90.1 | 93.6 | 97.4 | 97.8 | 101.1 | 103.7 | 105.5 | 105.9 | 96.3 | 89.2 | 142.2 |
| 2000 | 90.1 | 88.9 | 90.6 | 90.0 | 93.8 | 97.2 | 98.1 | 101.5 | 103.1 | 106.1 | 105.1 | 95.4 | 90.2 | 142.1 |
| 2500 | 90.3 | 90.6 | 91.4 | 90.4 | 94.0 | 97.6 | 97.8 | 101.2 | 102.8 | 105.9 | 104.4 | 93.9 | 89.7 | 141.9 |
| 3150 | 91.2 | 90.8 | 91.8 | 91.3 | 94.2 | 98.0 | 99.1 | 101.6 | 103.7 | 104.6 | 103.3 | 94.2 | 88.8 | 141.8 |
| 4000 | 91.5 | 90.9 | 92.0 | 91.7 | 95.1 | 98.3 | 98.7 | 101.8 | 101.9 | 102.7 | 102.1 | 93.4 | 87.7 | 141.0 |
| 5000 | 91.8 | 92.7 | 92.8 | 91.6 | 94.9 | 98.1 | 98.5 | 100.3 | 101.1 | 102.8 | 100.0 | 92.8 | 87.5 | 140.6 |
| 6300 | 92.6 | 93.6 | 93.7 | 93.2 | 96.0 | 98.7 | 98.5 | 100.7 | 100.5 | 101.0 | 99.2 | 91.9 | 87.6 | 140.5 |
| 8000 | 94.1 | 93.8 | 94.4 | 93.0 | 95.6 | 98.4 | 98.1 | 99.5 | 99.3 | 99.5 | 97.6 | 91.5 | 88.0 | 140.2 |
| 10000 | 96.7 | 97.4 | 96.7 | 95.5 | 96.8 | 99.3 | 98.6 | 99.6 | 99.1 | 99.3 | 96.8 | 92.2 | 88.7 | 141.4 |
| 12500 | 96.9 | 97.5 | 98.1 | 97.7 | 98.2 | 100.9 | 99.0 | 99.0 | 97.9 | 97.8 | 95.5 | 91.7 | 88.4 | 142.5 |
| 16000 | 95.7 | 97.3 | 98.0 | 98.2 | 98.3 | 100.5 | 99.1 | 98.5 | 96.6 | 94.8 | 93.3 | 89.5 | 85.7 | 143.4 |
| 20000 | 92.8 | 94.7 | 95.6 | 95.6 | 96.6 | 99.1 | 98.0 | 96.3 | 94.7 | 92.4 | 90.6 | 87.1 | 83.0 | 143.3 |
| 25000 | 89.9 | 91.7 | 92.7 | 93.4 | 94.8 | 98.2 | 96.6 | 94.6 | 92.7 | 89.8 | 87.3 | 85.4 | 80.5 | 143.8 |
| 31500 | 86.5 | 87.7 | 89.2 | 90.8 | 90.9 | 95.1 | 93.5 | 92.0 | 90.2 | 87.0 | 84.0 | 81.4 | 76.5 | 143.9 |
| 40000 | 81.8 | 84.4 | 85.4 | 86.4 | 87.1 | 91.1 | 89.8 | 88.8 | 85.9 | 83.6 | 81.1 | 78.4 | 72.9 | 144.1 |
| 50000 | 75.1 | 78.2 | 79.3 | 81.0 | 82.0 | 86.4 | 84.0 | 83.7 | 82.0 | 79.0 | 76.0 | 72.9 | 67.1 | 143.3 |
| 63000 | 68.9 | 72.0 | 74.3 | 74.8 | 76.2 | 81.0 | 78.0 | 78.3 | 77.7 | 73.7 | 71.7 | 67.1 | 61.2 | 143.2 |
| 80000 | 61.1 | 65.2 | 67.2 | 67.1 | 68.9 | 74.8 | 71.7 | 71.4 | 70.2 | 67.0 | 64.9 | 61.5 | 53.3 | 143.2 |
| OASPL | 105.7 | 106.9 | 107.2 | 106.5 | 108.2 | 111.3 | 111.2 | 112.9 | 114.2 | 117.2 | 119.2 | 118.5 | 109.3 | 157.2 |
| PWL | 116.2 | 116.7 | 117.2 | 116.3 | 119.4 | 122.6 | 123.3 | 125.7 | 127.2 | 129.4 | 129.6 | 125.8 | 117.6 | |
| PWLT | 116.2 | 117.2 | 117.0 | 120.0 | 123.2 | 123.2 | 123.3 | 125.7 | 127.2 | 129.4 | 129.6 | 125.8 | 117.6 | |
| DBA | 102.6 | 103.0 | 103.4 | 102.6 | 105.6 | 108.9 | 109.3 | 112.1 | 113.7 | 116.4 | 117.2 | 113.5 | 104.4 | |

ORIGINAL PAGE IS
OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|-------------------|
| VERTICAL = ADR230 | TEST DATE = 04-25-83 | LOCAT = C41 ANECH CH | CONFIG = 17 | MODEL = C0 | FLTVEL = 400. FPS |
| IAPLHA = SB59 | IEGA = N0 | PWL AREA = FULL SPHERE | TAMB F = 54.52 | PAMB HG = 29.01 | RELHUM = 27.3 PCT |
| WIND DIR = | DEG WIND VEL = | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNTM1 = | LBS XNL = | RPM XNHR = | RPM V8 = | V8 = 1319.8 FPS | AE8 = 4.0 SQ IN |
| FNRMB = | LBS XNLR = | RPM XNHR = | RPM V10 = | V10 = 2168.9 FPS | AE10 = 19.9 SQ IN |
| RUNPT = 83F-400-1708 | TAPE = | TEST PT N0 = 1708 | NC = AE094 | CORR FAN SPEED = | RPM |

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1708 X17081

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 67.3 | 69.9 | 69.5 | 67.9 | 70.2 | 72.3 | 72.4 | 72.6 | 75.1 | 79.9 | 82.7 | 82.6 | 72.5 | 157.4 |
| 63 | 67.9 | 70.1 | 70.5 | 68.7 | 70.2 | 72.1 | 74.1 | 73.3 | 75.4 | 80.7 | 83.1 | 81.7 | 72.0 | 157.5 |
| 80 | 68.5 | 69.8 | 70.8 | 68.0 | 71.0 | 73.2 | 71.6 | 72.9 | 76.2 | 81.5 | 83.3 | 80.9 | 70.5 | 157.4 |
| 100 | 69.0 | 70.6 | 71.3 | 68.7 | 72.2 | 74.6 | 73.5 | 74.2 | 77.5 | 81.4 | 82.4 | 78.6 | 70.6 | 157.0 |
| 125 | 68.6 | 70.7 | 71.4 | 69.7 | 72.3 | 74.7 | 74.0 | 75.0 | 79.4 | 81.3 | 81.6 | 75.9 | 70.3 | 156.7 |
| 160 | 70.4 | 70.6 | 71.9 | 70.1 | 73.7 | 75.4 | 74.7 | 76.6 | 79.5 | 80.8 | 79.5 | 72.5 | 68.4 | 156.1 |
| 200 | 71.8 | 72.1 | 72.4 | 71.0 | 73.6 | 75.8 | 74.8 | 76.7 | 80.4 | 80.7 | 79.8 | 70.9 | 67.0 | 156.6 |
| 250 | 70.4 | 73.5 | 73.1 | 71.6 | 75.0 | 77.5 | 76.2 | 77.7 | 79.9 | 81.3 | 79.0 | 69.9 | 67.8 | 157.1 |
| 315 | 71.4 | 72.5 | 73.6 | 72.2 | 75.1 | 77.2 | 76.6 | 78.1 | 79.7 | 81.1 | 78.3 | 68.3 | 66.8 | 157.3 |
| 400 | 71.6 | 71.2 | 72.9 | 71.8 | 75.3 | 77.7 | 76.3 | 77.8 | 80.8 | 80.0 | 77.3 | 68.5 | 65.5 | 157.5 |
| 500 | 71.2 | 72.5 | 73.5 | 72.1 | 75.4 | 78.2 | 77.9 | 78.5 | 79.5 | 78.5 | 76.3 | 67.6 | 64.2 | 157.6 |
| 630 | 71.6 | 72.3 | 73.7 | 72.9 | 77.0 | 78.7 | 77.9 | 79.1 | 78.7 | 78.6 | 74.2 | 67.0 | 64.0 | 158.0 |
| 800 | 74.0 | 74.3 | 75.4 | 74.3 | 76.3 | 78.6 | 77.8 | 77.8 | 77.5 | 74.2 | 67.1 | 64.8 | 158.6 | |
| 1000 | 70.9 | 73.3 | 74.1 | 73.0 | 77.1 | 78.9 | 77.9 | 78.5 | 78.0 | 76.6 | 73.1 | 66.8 | 64.4 | 158.8 |
| 1250 | 70.9 | 73.6 | 74.5 | 74.1 | 76.4 | 78.4 | 77.3 | 77.4 | 78.0 | 76.5 | 72.1 | 66.6 | 63.2 | 159.3 |
| 1600 | 71.0 | 72.8 | 74.3 | 73.1 | 76.9 | 78.7 | 77.2 | 77.1 | 73.7 | 71.3 | 66.6 | 61.4 | 57.2 | 159.1 |
| 2000 | 70.6 | 74.1 | 74.8 | 74.1 | 77.8 | 79.7 | 75.9 | 72.8 | 72.0 | 67.8 | 63.4 | 57.6 | 51.5 | 160.4 |
| 2500 | 69.3 | 72.9 | 75.0 | 75.1 | 76.9 | 78.3 | 75.1 | 72.2 | 69.3 | 64.1 | 58.9 | 52.3 | 43.8 | 162.0 |
| 3150 | 63.8 | 69.3 | 72.0 | 73.1 | 73.2 | 75.0 | 72.0 | 67.9 | 65.4 | 59.1 | 52.2 | 45.6 | 33.0 | 162.7 |
| 4000 | 53.3 | 60.6 | 64.4 | 65.8 | 68.2 | 70.4 | 66.8 | 62.1 | 59.1 | 51.5 | 42.7 | 32.8 | 14.4 | 162.9 |
| 5000 | 41.7 | 50.7 | 55.4 | 57.7 | 58.5 | 61.6 | 57.9 | 53.2 | 49.6 | 40.5 | 30.0 | 16.0 | | 163.6 |
| 6300 | 19.3 | 31.2 | 38.6 | 43.1 | 44.2 | 47.3 | 43.7 | 38.8 | 32.5 | 21.8 | 7.2 | | | 163.5 |
| 8000 | 1.8 | 12.1 | 18.1 | 20.1 | 23.9 | 18.8 | 13.8 | 7.7 | | | | | | 163.4 |
| 10000 | | | | | | | | | | | | | | 162.4 |
| 12500 | | | | | | | | | | | | | | 162.1 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|--------|------|------|------|------|------|-------|------|------|------|------|------|------|------|-------|
| DB SPL | 83.3 | 85.0 | 86.0 | 85.0 | 87.9 | 90.0 | 88.7 | 89.2 | 90.7 | 91.9 | 91.6 | 89.1 | 80.3 | 174.2 |
| PNL | 92.0 | 94.9 | 96.6 | 96.3 | 98.6 | 100.5 | 98.2 | 97.1 | 96.8 | 96.1 | 93.7 | 87.3 | 81.6 | |
| PNLT | 93.2 | 96.0 | 97.1 | 96.9 | 99.2 | 101.0 | 98.8 | 97.7 | 96.8 | 96.1 | 94.8 | 87.3 | 81.6 | |
| DBA | 80.8 | 83.0 | 84.3 | 83.8 | 86.6 | 88.5 | 86.7 | 86.4 | 86.5 | 85.5 | 82.3 | 75.2 | 72.0 | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICL = ADH230 TEST DATE = 04-25-83 LGCAT = C41 ANECH CH CCONFIG = 17 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PNL AREA = FULL SPHERE TAMB F = 54.52 PAMB HG = 29.01 RELHUM = 27.3 PCT
 WIND DIR = DEG WIND VEL = MPH MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1319.8 FPS AEB = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2168.9 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1708 TAPE = X17081 TEST PT NO = 1708 NC = AE094 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1709 X1709C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 87.9 | 88.9 | 87.9 | 88.0 | 84.6 | 87.7 | 88.3 | 90.2 | 90.2 | 89.0 | 94.1 | 97.8 | 89.2 | 132.4 |
| 63 | 91.3 | 95.3 | 97.8 | 97.4 | 92.2 | 95.6 | 96.7 | 95.4 | 96.3 | 94.1 | 95.8 | 101.5 | 96.4 | 138.3 |
| 80 | 92.8 | 97.3 | 92.8 | 91.9 | 93.2 | 97.1 | 96.0 | 95.4 | 96.6 | 96.4 | 100.1 | 100.2 | 88.9 | 138.2 |
| 100 | 91.7 | 99.2 | 94.0 | 94.0 | 96.4 | 98.5 | 98.4 | 99.8 | 98.8 | 100.3 | 103.0 | 105.4 | 92.3 | 141.2 |
| 125 | 89.6 | 92.7 | 94.9 | 94.7 | 97.1 | 99.4 | 97.8 | 98.2 | 99.2 | 101.0 | 107.9 | 109.8 | 97.5 | 143.4 |
| 160 | 87.2 | 88.5 | 92.0 | 89.5 | 91.4 | 93.5 | 96.1 | 96.8 | 98.2 | 101.8 | 108.0 | 110.1 | 101.8 | 143.1 |
| 200 | 89.5 | 89.1 | 91.6 | 89.9 | 93.2 | 96.8 | 97.2 | 99.1 | 102.6 | 103.4 | 108.8 | 114.0 | 105.6 | 145.8 |
| 250 | 89.8 | 91.3 | 92.1 | 91.9 | 95.2 | 97.1 | 97.7 | 100.9 | 104.1 | 108.4 | 113.5 | 117.0 | 107.9 | 149.1 |
| 315 | 90.3 | 92.1 | 93.1 | 91.9 | 95.5 | 99.1 | 99.8 | 101.7 | 105.1 | 109.7 | 114.8 | 116.8 | 110.9 | 149.9 |
| 400 | 92.1 | 93.6 | 93.9 | 92.7 | 96.0 | 98.4 | 102.5 | 102.7 | 106.9 | 111.9 | 116.1 | 118.0 | 112.2 | 151.2 |
| 500 | 92.8 | 94.6 | 94.4 | 93.4 | 96.8 | 100.1 | 100.8 | 103.9 | 107.6 | 112.5 | 117.1 | 118.3 | 114.2 | 152.0 |
| 630 | 92.8 | 95.3 | 95.6 | 94.9 | 98.0 | 101.3 | 102.5 | 104.9 | 108.6 | 113.4 | 118.1 | 119.2 | 115.4 | 153.0 |
| 800 | 95.6 | 95.1 | 96.2 | 95.2 | 98.8 | 102.1 | 103.0 | 105.9 | 109.7 | 112.7 | 116.9 | 119.0 | 116.7 | 152.7 |
| 1000 | 97.5 | 98.3 | 98.1 | 96.6 | 100.5 | 103.8 | 104.0 | 107.9 | 110.6 | 113.2 | 117.3 | 118.5 | 115.9 | 152.9 |
| 1250 | 96.2 | 99.5 | 98.3 | 97.6 | 100.1 | 103.5 | 104.1 | 107.5 | 110.8 | 112.1 | 116.5 | 118.1 | 114.8 | 152.3 |
| 1600 | 96.1 | 98.0 | 98.0 | 97.6 | 100.8 | 104.7 | 105.8 | 108.1 | 111.7 | 112.3 | 116.9 | 116.6 | 113.2 | 152.1 |
| 2000 | 96.4 | 97.2 | 97.8 | 96.7 | 100.0 | 103.7 | 104.9 | 108.5 | 110.6 | 112.1 | 115.9 | 114.7 | 111.2 | 151.1 |
| 2500 | 94.8 | 98.1 | 98.2 | 95.9 | 100.5 | 104.4 | 104.8 | 108.2 | 110.6 | 112.4 | 114.4 | 111.2 | 110.2 | 150.3 |
| 3150 | 94.5 | 97.1 | 98.1 | 97.1 | 99.7 | 104.5 | 105.9 | 107.8 | 110.9 | 111.3 | 112.5 | 110.2 | 107.3 | 149.5 |
| 4000 | 93.8 | 96.7 | 97.8 | 96.7 | 100.3 | 104.0 | 104.9 | 107.5 | 109.7 | 109.4 | 110.6 | 108.1 | 107.2 | 148.3 |
| 5000 | 93.1 | 97.4 | 98.3 | 96.7 | 100.2 | 103.9 | 104.5 | 106.1 | 109.2 | 109.1 | 109.8 | 106.1 | 105.5 | 147.8 |
| 6300 | 93.4 | 97.7 | 98.2 | 96.8 | 100.5 | 103.7 | 104.3 | 106.3 | 107.8 | 106.8 | 108.0 | 105.7 | 104.4 | 147.0 |
| 8000 | 93.2 | 97.4 | 98.7 | 97.1 | 100.0 | 103.3 | 104.0 | 104.4 | 105.9 | 105.6 | 106.0 | 103.8 | 103.4 | 146.1 |
| 10000 | 94.6 | 99.3 | 101.1 | 98.9 | 100.9 | 103.4 | 103.4 | 104.0 | 105.2 | 104.8 | 105.0 | 104.3 | 102.8 | 146.5 |
| 12500 | 94.3 | 98.5 | 101.5 | 99.9 | 101.9 | 104.1 | 102.7 | 102.2 | 103.9 | 102.5 | 103.0 | 102.1 | 100.4 | 146.5 |
| 16000 | 92.9 | 98.1 | 100.0 | 100.0 | 103.5 | 102.8 | 101.5 | 102.1 | 102.9 | 100.6 | 99.3 | 97.7 | 146.7 | |
| 20000 | 90.8 | 95.3 | 97.4 | 96.4 | 98.9 | 102.1 | 101.0 | 99.1 | 99.0 | 97.0 | 97.4 | 96.1 | 93.8 | 146.2 |
| 25000 | 87.9 | 92.3 | 94.4 | 94.5 | 96.4 | 100.5 | 99.4 | 96.4 | 96.4 | 93.7 | 92.9 | 93.0 | 90.3 | 146.2 |
| 31500 | 84.3 | 88.3 | 90.6 | 92.2 | 92.8 | 96.7 | 95.4 | 93.6 | 93.1 | 89.7 | 88.9 | 88.5 | 85.3 | 145.8 |
| 40000 | 79.9 | 85.1 | 87.3 | 88.1 | 88.8 | 92.9 | 92.2 | 89.4 | 88.9 | 86.3 | 85.5 | 84.5 | 81.2 | 146.0 |
| 50000 | 73.8 | 79.4 | 81.8 | 82.4 | 83.4 | 88.0 | 85.9 | 84.1 | 83.9 | 80.6 | 79.7 | 78.0 | 74.2 | 144.9 |
| 63000 | 67.8 | 73.2 | 76.2 | 76.2 | 77.8 | 82.9 | 79.9 | 78.5 | 78.7 | 74.5 | 74.4 | 72.0 | 68.1 | 144.7 |
| 80000 | 60.0 | 66.2 | 69.7 | 69.3 | 70.1 | 76.2 | 73.3 | 72.4 | 71.9 | 68.5 | 67.4 | 65.6 | 59.3 | 144.8 |
| GASPL | 107.9 | 111.0 | 111.6 | 113.2 | 116.5 | 119.0 | 119.0 | 121.7 | 123.6 | 127.4 | 128.4 | 124.6 | 163.8 | |
| PWL | 119.7 | 122.4 | 123.1 | 122.0 | 125.0 | 128.7 | 129.7 | 131.8 | 134.6 | 135.7 | 138.5 | 137.9 | 134.7 | |
| PWLT | 119.7 | 123.1 | 123.1 | 122.0 | 125.6 | 129.3 | 129.7 | 131.8 | 134.6 | 135.7 | 138.5 | 137.9 | 134.7 | |
| DBA | 106.5 | 109.2 | 109.6 | 108.4 | 111.5 | 115.3 | 116.1 | 118.7 | 121.5 | 123.0 | 126.5 | 126.9 | 123.8 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICLE = ADR237 TEST DATE = 04-25-83 LOCAT = C41 ANECH CH CONFIG = 17 MODEL = C5 FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PNL AREA = FULL SPHERE TAMB F = 60.79 PAMB HG = 29.09 RELHUM = 22.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNINI = LBS XNL RPM XNH RPM V8 = 1508.7 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2358.3 FPS AE18 = 19.9 SQ IN

0101PT = 005-ZER-1709 PARE = X TASC = TEST N = 170 AEOI = R F PEE RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1709 X1709F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 87.9 | 88.9 | 87.9 | 88.0 | 84.6 | 87.7 | 88.3 | 90.2 | 90.2 | 89.0 | 94.1 | 97.6 | 89.2 | 132.4 |
| 63 | 91.3 | 95.3 | 97.8 | 97.4 | 92.2 | 95.6 | 96.7 | 95.4 | 96.3 | 94.1 | 95.8 | 101.5 | 96.4 | 138.3 |
| 80 | 92.8 | 97.3 | 92.8 | 91.9 | 93.2 | 97.1 | 96.0 | 95.4 | 96.6 | 96.4 | 100.1 | 100.2 | 88.9 | 138.2 |
| 100 | 91.7 | 99.2 | 94.0 | 94.0 | 96.4 | 98.5 | 98.4 | 99.8 | 98.8 | 100.3 | 103.0 | 105.4 | 92.3 | 141.2 |
| 125 | 89.6 | 92.7 | 94.9 | 94.7 | 97.1 | 99.4 | 97.8 | 99.2 | 99.2 | 101.0 | 107.9 | 109.8 | 97.5 | 143.4 |
| 160 | 87.2 | 88.5 | 92.0 | 89.5 | 91.4 | 93.5 | 96.1 | 96.8 | 98.2 | 101.8 | 108.0 | 110.1 | 101.8 | 143.1 |
| 200 | 89.5 | 89.1 | 91.6 | 89.9 | 93.2 | 96.8 | 97.2 | 99.1 | 102.6 | 103.4 | 108.8 | 114.0 | 105.6 | 145.8 |
| 250 | 89.8 | 91.3 | 92.1 | 91.9 | 95.2 | 97.1 | 97.7 | 100.9 | 104.1 | 108.4 | 113.5 | 117.0 | 107.9 | 149.1 |
| 315 | 90.3 | 92.1 | 93.1 | 91.9 | 95.5 | 99.1 | 99.8 | 101.7 | 105.1 | 109.7 | 114.8 | 116.8 | 110.9 | 149.9 |
| 400 | 92.1 | 93.6 | 93.9 | 92.7 | 96.0 | 98.4 | 102.5 | 102.7 | 106.9 | 111.9 | 116.1 | 118.0 | 112.2 | 151.2 |
| 500 | 92.8 | 94.6 | 94.4 | 93.4 | 96.8 | 100.1 | 100.8 | 103.9 | 107.6 | 112.5 | 117.1 | 118.3 | 114.2 | 152.0 |
| 630 | 92.8 | 95.3 | 95.6 | 94.9 | 98.0 | 101.3 | 102.5 | 104.9 | 108.6 | 113.4 | 118.1 | 119.2 | 115.4 | 153.0 |
| 800 | 95.6 | 95.1 | 96.2 | 95.2 | 98.8 | 102.1 | 103.0 | 105.9 | 109.7 | 112.7 | 116.9 | 119.0 | 116.7 | 152.7 |
| 1000 | 97.5 | 98.3 | 98.1 | 96.6 | 100.5 | 103.8 | 104.0 | 107.9 | 110.6 | 113.2 | 117.3 | 118.5 | 115.5 | 152.9 |
| 1250 | 96.2 | 99.5 | 98.3 | 97.5 | 100.1 | 103.5 | 104.1 | 107.5 | 110.8 | 112.1 | 116.5 | 118.1 | 114.3 | 152.3 |
| 1600 | 96.1 | 98.0 | 98.0 | 97.6 | 100.8 | 104.7 | 105.8 | 108.5 | 111.7 | 112.3 | 116.9 | 116.6 | 113.2 | 152.1 |
| 2000 | 96.4 | 97.2 | 97.8 | 96.7 | 100.0 | 103.7 | 104.9 | 108.5 | 110.6 | 112.1 | 115.9 | 114.7 | 111.2 | 151.1 |
| 2500 | 94.8 | 98.1 | 98.2 | 96.9 | 100.5 | 104.4 | 104.8 | 108.2 | 110.6 | 112.4 | 114.4 | 111.2 | 110.2 | 150.3 |
| 3150 | 94.9 | 97.1 | 98.1 | 97.1 | 99.7 | 104.5 | 105.9 | 107.8 | 110.9 | 111.3 | 112.5 | 110.2 | 107.3 | 149.5 |
| 4000 | 93.8 | 96.7 | 97.8 | 96.7 | 100.3 | 104.0 | 104.9 | 107.5 | 109.7 | 109.4 | 110.6 | 108.1 | 107.2 | 148.3 |
| 5000 | 93.1 | 97.4 | 98.3 | 96.7 | 100.2 | 103.9 | 104.5 | 106.1 | 109.2 | 109.1 | 109.8 | 106.1 | 105.5 | 147.8 |
| 6300 | 93.4 | 97.7 | 98.2 | 96.8 | 100.5 | 103.7 | 104.3 | 106.3 | 107.8 | 106.8 | 108.0 | 105.7 | 104.4 | 147.0 |
| 8000 | 93.2 | 97.4 | 98.7 | 97.1 | 100.0 | 103.3 | 104.0 | 104.4 | 105.9 | 105.6 | 106.0 | 103.8 | 103.4 | 146.1 |
| 10000 | 94.6 | 99.3 | 101.1 | 98.9 | 100.9 | 103.4 | 103.4 | 104.0 | 105.2 | 104.8 | 105.0 | 104.3 | 102.8 | 146.5 |
| 12500 | 94.3 | 98.5 | 101.5 | 99.9 | 101.9 | 104.1 | 102.7 | 102.2 | 103.9 | 102.5 | 103.0 | 102.1 | 100.4 | 146.5 |
| 16000 | 92.9 | 98.1 | 100.0 | 100.0 | 101.0 | 103.5 | 102.8 | 101.5 | 102.1 | 99.9 | 100.6 | 99.3 | 97.7 | 146.7 |
| 20000 | 90.8 | 95.3 | 97.4 | 96.4 | 98.9 | 102.1 | 101.0 | 99.1 | 99.0 | 97.0 | 97.4 | 93.8 | 146.2 | |
| 25000 | 87.9 | 92.3 | 94.4 | 94.5 | 96.4 | 100.5 | 99.4 | 96.4 | 96.4 | 93.7 | 92.9 | 93.0 | 90.3 | 146.2 |
| 31500 | 84.3 | 88.3 | 90.6 | 92.2 | 92.8 | 96.7 | 95.4 | 93.6 | 93.1 | 89.7 | 88.9 | 88.5 | 85.3 | 145.8 |
| 40000 | 79.9 | 85.1 | 87.3 | 88.1 | 88.8 | 92.9 | 92.2 | 89.4 | 88.9 | 86.3 | 85.5 | 84.5 | 81.2 | 146.0 |
| 50000 | 73.8 | 79.4 | 81.8 | 82.4 | 83.4 | 88.0 | 85.9 | 84.1 | 83.9 | 80.6 | 79.7 | 78.0 | 74.2 | 144.9 |
| 63000 | 67.8 | 73.2 | 76.2 | 76.2 | 77.8 | 82.9 | 79.9 | 78.5 | 78.7 | 74.5 | 74.4 | 72.0 | 68.1 | 144.7 |
| 80000 | 60.0 | 66.2 | 69.7 | 69.3 | 70.1 | 76.2 | 73.3 | 72.4 | 71.9 | 68.5 | 67.4 | 65.6 | 59.3 | 144.8 |
| 0ASPL | 107.9 | 111.0 | 111.7 | 110.6 | 113.2 | 116.5 | 117.0 | 119.0 | 121.7 | 123.6 | 127.4 | 128.4 | 124.6 | 163.8 |
| PWL | 119.7 | 122.4 | 123.1 | 122.0 | 125.0 | 128.7 | 129.7 | 131.8 | 134.6 | 135.7 | 138.5 | 137.9 | 134.7 | |
| PWLT | 119.7 | 123.1 | 123.1 | 122.0 | 125.6 | 129.3 | 129.7 | 131.8 | 134.6 | 135.7 | 138.5 | 137.9 | 134.7 | |
| DBA | 182.9 | 188.8 | 192.0 | 191.8 | 192.9 | 198.5 | 195.7 | 194.5 | 194.2 | 190.7 | 189.8 | 188.0 | 182.9 | |

ORIGINAL PAGE 13
OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICL = ADH237 TEST DATE = 04-25-83 LOCAT = C41 ANECH CH CONFIG = 17 MODEL = CO FLTVEL = 0. FPS
IAPLHA = SB59 IEGA = NO PWT AREA = FULL SPHERE TAMB F = 60.79 PAMB HG = 29.09 RELHUM = 22.4 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT. EXT CONFIG = ARC MIKE HT = NBFR

FNINI = LBS XNL RPM XNHR = 1508.7 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNL RPM XNHR = 2358.3 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1709 TAPE = X1709F TEST PT NO = 1709 NC = AE094 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1709 X17091

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| 50 | 66.2 | 69.5 | 71.6 | 71.1 | 75.1 | 78.9 | 79.4 | 80.9 | 83.6 | 87.1 | 90.7 | 90.5 | 81.3 | 165.2 |
| 63 | 67.9 | 71.0 | 72.3 | 71.8 | 75.6 | 78.1 | 82.1 | 81.8 | 85.3 | 89.3 | 91.9 | 91.6 | 82.4 | 166.6 |
| 80 | 68.6 | 72.0 | 72.8 | 72.6 | 76.3 | 79.8 | 80.3 | 83.1 | 86.1 | 89.8 | 92.9 | 91.8 | 84.4 | 167.3 |
| 100 | 68.5 | 72.6 | 74.0 | 74.0 | 77.5 | 81.0 | 82.0 | 84.0 | 87.0 | 90.7 | 93.8 | 92.7 | 85.4 | 168.3 |
| 125 | 71.2 | 72.3 | 74.4 | 74.2 | 78.2 | 81.7 | 82.5 | 85.0 | 87.9 | 89.9 | 92.5 | 92.3 | 86.5 | 168.0 |
| 160 | 72.9 | 75.3 | 76.2 | 75.5 | 79.8 | 83.3 | 83.3 | 86.7 | 88.7 | 90.2 | 92.7 | 91.5 | 85.3 | 168.2 |
| 200 | 71.3 | 76.3 | 76.2 | 76.4 | 79.3 | 82.8 | 83.3 | 86.3 | 88.7 | 88.9 | 91.6 | 90.9 | 83.7 | 167.6 |
| 250 | 71.0 | 74.6 | 75.7 | 76.1 | 79.8 | 83.8 | 84.7 | 86.6 | 89.4 | 88.8 | 91.7 | 88.9 | 81.5 | 167.5 |
| 315 | 70.7 | 73.3 | 75.2 | 74.9 | 78.7 | 82.5 | 83.6 | 86.7 | 88.0 | 88.3 | 90.3 | 86.4 | 78.7 | 166.5 |
| 400 | 68.6 | 73.9 | 75.2 | 74.8 | 78.9 | 82.9 | 83.2 | 86.1 | 87.6 | 88.1 | 88.2 | 82.2 | 76.6 | 165.6 |
| 500 | 67.8 | 72.4 | 74.7 | 74.6 | 77.7 | 82.7 | 83.9 | 85.4 | 87.6 | 86.6 | 85.9 | 80.5 | 72.7 | 164.8 |
| 630 | 66.6 | 71.5 | 74.1 | 73.9 | 78.0 | 81.9 | 82.6 | 84.7 | 86.0 | 84.3 | 83.4 | 77.8 | 71.5 | 163.7 |
| 800 | 65.3 | 71.9 | 74.2 | 73.5 | 77.5 | 81.4 | 81.9 | 83.0 | 85.0 | 83.5 | 82.1 | 74.9 | 68.6 | 163.1 |
| 1000 | 65.0 | 71.6 | 73.7 | 73.3 | 77.6 | 81.0 | 81.4 | 82.8 | 83.3 | 80.8 | 79.6 | 66.2 | 62.3 | 162.3 |
| 1250 | 64.1 | 70.9 | 73.8 | 73.3 | 76.7 | 80.2 | 80.7 | 80.5 | 81.0 | 79.1 | 76.9 | 70.9 | 63.6 | 161.5 |
| 1600 | 64.4 | 71.9 | 75.5 | 74.4 | 77.2 | 79.9 | 79.7 | 79.5 | 79.6 | 77.4 | 74.8 | 69.7 | 60.4 | 161.9 |
| 2000 | 62.6 | 69.9 | 75.0 | 74.7 | 77.4 | 79.9 | 78.2 | 77.0 | 77.4 | 74.0 | 71.3 | 65.4 | 54.4 | 161.8 |
| 2500 | 59.0 | 67.9 | 72.2 | 73.7 | 75.6 | 78.3 | 77.4 | 75.2 | 74.4 | 69.7 | 66.7 | 59.3 | 46.4 | 162.1 |
| 3150 | 53.0 | 62.1 | 67.1 | 67.9 | 71.5 | 75.0 | 73.6 | 70.7 | 68.8 | 63.8 | 59.6 | 50.5 | 33.5 | 161.5 |
| 4000 | 43.1 | 53.6 | 59.5 | 62.0 | 65.2 | 69.7 | 68.2 | 63.9 | 61.5 | 55.0 | 48.0 | 37.7 | 14.8 | 161.5 |
| 5000 | 28.9 | 41.2 | 48.7 | 53.4 | 55.8 | 60.2 | 58.4 | 54.9 | 51.2 | 42.5 | 33.4 | 18.8 | 161.1 | |
| 6300 | 6.2 | 23.4 | 32.9 | 38.1 | 41.3 | 46.2 | 44.7 | 39.5 | 34.5 | 24.6 | 11.8 | 161.3 | | |
| 8000 | | 5.1 | 12.3 | 16.9 | 22.6 | 19.3 | 14.0 | 7.2 | | | | | | 160.2 |
| 10000 | | | | | | | | | | | | | | 160.0 |
| 12500 | | | | | | | | | | | | | | 160.1 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

412

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICLE = ADH237 TEST DATE = 04-25-83 LOCAT = C41 ANECH CH CONFIG = 17 MODEL = CO FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PML AREA = FULL SPHERE TAMB F = 60.79 PAMB HG = 29.09 RELHUM = 22.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT. EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1508.7 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2358.3 FPS AE18 = 19.9 SQ IN

TEST No. 1705

IDENTIFICATION - MODEL 83F-400-1710 X1710C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 90.9 | 90.4 | 87.4 | 84.7 | 83.6 | 86.7 | 87.6 | 89.7 | 89.4 | 89.2 | 95.1 | 96.1 | 94.0 | 132.3 |
| 63 | 91.3 | 95.5 | 98.6 | 93.9 | 91.5 | 93.3 | 95.2 | 94.6 | 93.8 | 96.9 | 96.3 | 98.5 | 96.9 | 137.4 |
| 80 | 93.8 | 97.3 | 92.3 | 92.6 | 93.5 | 96.8 | 95.5 | 94.9 | 96.8 | 95.7 | 98.8 | 99.5 | 90.9 | 137.9 |
| 100 | 92.5 | 97.5 | 92.8 | 91.5 | 94.1 | 97.5 | 96.9 | 98.3 | 96.5 | 97.6 | 99.7 | 104.1 | 92.8 | 139.4 |
| 125 | 89.9 | 91.9 | 93.9 | 93.0 | 95.6 | 97.4 | 96.6 | 96.5 | 96.2 | 98.0 | 105.2 | 108.3 | 96.5 | 141.4 |
| 160 | 87.7 | 85.0 | 89.2 | 87.3 | 89.9 | 92.7 | 94.4 | 93.5 | 94.0 | 99.6 | 105.9 | 108.6 | 99.5 | 141.2 |
| 200 | 87.3 | 86.8 | 88.8 | 86.4 | 89.7 | 93.3 | 93.5 | 96.1 | 98.6 | 99.4 | 105.8 | 111.5 | 102.1 | 142.9 |
| 250 | 85.5 | 88.3 | 88.6 | 88.1 | 90.5 | 93.6 | 94.5 | 96.9 | 98.8 | 104.9 | 111.0 | 114.0 | 104.1 | 146.1 |
| 315 | 86.3 | 88.1 | 88.1 | 88.2 | 90.8 | 93.9 | 95.3 | 97.4 | 99.4 | 106.0 | 112.1 | 113.8 | 105.9 | 146.6 |
| 400 | 87.6 | 88.6 | 89.6 | 87.7 | 91.0 | 93.9 | 97.3 | 98.2 | 101.9 | 108.2 | 113.1 | 114.5 | 104.9 | 147.6 |
| 500 | 88.3 | 89.9 | 90.6 | 88.9 | 91.8 | 95.4 | 95.5 | 98.7 | 102.1 | 109.0 | 113.6 | 113.5 | 102.9 | 147.5 |
| 630 | 87.5 | 88.8 | 90.6 | 89.6 | 93.2 | 96.3 | 96.5 | 99.9 | 102.6 | 109.9 | 114.1 | 113.0 | 100.6 | 147.8 |
| 800 | 89.3 | 88.9 | 90.7 | 89.9 | 93.8 | 96.9 | 97.5 | 100.9 | 103.9 | 109.7 | 112.9 | 110.0 | 98.2 | 146.7 |
| 1000 | 91.5 | 91.3 | 92.1 | 91.4 | 95.2 | 98.3 | 99.0 | 101.9 | 105.1 | 109.7 | 111.5 | 106.7 | 95.9 | 146.0 |
| 1250 | 90.7 | 92.7 | 92.5 | 92.1 | 94.6 | 98.5 | 98.6 | 102.5 | 105.5 | 109.6 | 110.5 | 103.6 | 94.8 | 145.5 |
| 1600 | 91.4 | 91.8 | 92.9 | 92.6 | 96.3 | 99.9 | 100.5 | 103.1 | 106.2 | 109.5 | 110.9 | 102.6 | 94.0 | 145.9 |
| 2000 | 91.8 | 91.2 | 92.6 | 92.7 | 96.0 | 99.4 | 100.9 | 104.2 | 106.6 | 109.9 | 109.1 | 100.9 | 93.7 | 145.6 |
| 2500 | 91.8 | 92.6 | 93.4 | 92.1 | 96.8 | 99.4 | 100.6 | 103.9 | 105.6 | 109.4 | 108.4 | 99.2 | 94.4 | 145.1 |
| 3150 | 93.2 | 92.3 | 93.6 | 93.1 | 96.4 | 100.0 | 101.4 | 104.3 | 106.4 | 108.3 | 107.0 | 99.2 | 93.5 | 144.9 |
| 4000 | 93.8 | 92.6 | 94.3 | 93.1 | 96.8 | 100.0 | 100.7 | 103.5 | 104.9 | 106.2 | 105.6 | 98.4 | 93.2 | 143.7 |
| 5000 | 94.6 | 94.4 | 95.0 | 93.4 | 96.9 | 99.9 | 101.0 | 103.3 | 104.4 | 106.6 | 104.5 | 97.0 | 92.5 | 143.7 |
| 6300 | 95.9 | 95.4 | 96.2 | 94.7 | 98.0 | 100.2 | 100.7 | 103.5 | 104.0 | 104.5 | 103.9 | 96.9 | 91.1 | 143.5 |
| 8000 | 97.1 | 97.1 | 96.9 | 95.0 | 97.9 | 100.0 | 100.2 | 101.5 | 101.9 | 103.1 | 102.1 | 95.8 | 91.1 | 142.8 |
| 10000 | 99.8 | 100.0 | 100.3 | 98.0 | 99.1 | 100.9 | 100.4 | 101.6 | 102.1 | 101.9 | 100.6 | 96.0 | 91.5 | 144.0 |
| 12500 | 97.7 | 98.3 | 100.2 | 99.0 | 100.5 | 101.8 | 100.1 | 100.3 | 101.0 | 100.6 | 99.4 | 96.0 | 91.3 | 144.4 |
| 16000 | 95.3 | 97.4 | 98.1 | 98.9 | 100.4 | 102.1 | 100.4 | 100.1 | 99.8 | 97.8 | 98.0 | 94.4 | 89.3 | 145.0 |
| 20000 | 93.2 | 95.1 | 95.7 | 96.2 | 98.0 | 100.8 | 99.6 | 98.0 | 97.6 | 95.6 | 95.1 | 92.0 | 86.2 | 144.9 |
| 25000 | 90.8 | 92.4 | 94.2 | 94.1 | 96.0 | 99.3 | 98.0 | 96.0 | 95.5 | 92.6 | 91.2 | 89.3 | 84.2 | 145.3 |
| 31500 | 87.2 | 88.9 | 90.0 | 92.0 | 92.6 | 96.3 | 95.2 | 93.5 | 92.7 | 89.0 | 87.7 | 84.9 | 79.9 | 145.4 |
| 40000 | 83.2 | 85.4 | 86.7 | 87.9 | 88.9 | 92.8 | 91.3 | 90.0 | 89.2 | 85.9 | 84.3 | 81.6 | 75.8 | 145.8 |
| 50000 | 77.4 | 79.5 | 81.1 | 82.2 | 83.8 | 88.4 | 85.5 | 84.9 | 84.2 | 80.6 | 79.1 | 75.9 | 69.9 | 145.0 |
| 63000 | 70.4 | 73.1 | 75.3 | 76.1 | 77.9 | 82.5 | 79.5 | 79.1 | 79.5 | 75.1 | 73.9 | 70.1 | 63.7 | 144.6 |
| 80000 | 62.3 | 66.3 | 68.6 | 68.9 | 70.4 | 76.3 | 72.9 | 73.0 | 72.5 | 68.8 | 67.0 | 63.7 | 55.6 | 144.8 |
| GASPL | 107.7 | 108.7 | 109.2 | 108.2 | 110.5 | 113.1 | 113.2 | 115.2 | 117.0 | 120.6 | 123.0 | 122.5 | 113.1 | 160.0 |
| PNL | 118.6 | 118.7 | 119.4 | 118.3 | 121.5 | 124.5 | 125.5 | 128.1 | 130.0 | 132.8 | 133.5 | 130.1 | 121.6 | |
| PNLT | 118.6 | 118.7 | 119.4 | 118.9 | 122.1 | 124.5 | 125.5 | 128.1 | 130.0 | 132.8 | 133.5 | 130.1 | 121.6 | |
| DBA | 105.1 | 105.1 | 105.9 | 104.7 | 107.9 | 110.9 | 111.7 | 114.5 | 116.5 | 120.1 | 121.4 | 118.3 | 108.7 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|-------------------|
| VEHICLE = ADH231 | TEST DATE = 04-25-83 | LOCAT = CAT ANECH CH | CONFIG = 17 | MODEL = CO | FLTVEL = 400. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 56.94 | PAMB HG = 28.95 | RELHUM = 25.7 PCT |
| WIND DIR = | DEG WIND VEL = MPH | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNTRNT = | LBS XNL | RPM | XNH | RPM | V8 = 1523.5 FPS |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V18 = 2345.7 FPS |
| RUNPT = 83F-400-1710 | TAPE = X1710C | TEST PT NO = 1710 | NC = AE094 | CORR FAN SPEED = | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1710 X1710F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 93.4 | 94.8 | 93.5 | 91.4 | 92.1 | 93.6 | 92.6 | 93.3 | 97.3 | 103.4 | 109.3 | 111.7 | 105.8 | 144.4 |
| 315 | 93.4 | 94.8 | 93.5 | 91.4 | 92.6 | 94.1 | 94.4 | 95.6 | 99.8 | 105.7 | 110.5 | 113.0 | 106.2 | 145.8 |
| 400 | 94.0 | 94.5 | 93.1 | 91.6 | 92.8 | 94.1 | 96.3 | 96.2 | 100.1 | 106.5 | 111.2 | 112.7 | 105.8 | 146.0 |
| 500 | 95.0 | 94.8 | 94.5 | 91.0 | 93.7 | 95.7 | 94.6 | 96.6 | 100.7 | 107.7 | 112.1 | 113.2 | 105.6 | 146.7 |
| 600 | 96.0 | 96.3 | 95.6 | 92.4 | 95.2 | 96.7 | 95.6 | 97.8 | 102.4 | 107.9 | 111.6 | 111.6 | 106.0 | 146.3 |
| 800 | 95.2 | 95.3 | 95.6 | 93.1 | 95.8 | 97.4 | 96.7 | 98.9 | 103.9 | 108.2 | 110.8 | 109.4 | 106.1 | 145.7 |
| 1000 | 97.0 | 95.3 | 95.7 | 93.5 | 97.4 | 99.0 | 98.2 | 99.8 | 104.3 | 109.5 | 106.1 | 104.8 | 145.0 | |
| 1250 | 99.2 | 97.8 | 97.2 | 95.0 | 96.9 | 99.3 | 98.0 | 100.6 | 105.1 | 108.1 | 109.9 | 104.9 | 103.8 | 145.3 |
| 1600 | 98.4 | 99.2 | 97.7 | 95.9 | 99.3 | 101.0 | 100.1 | 101.3 | 105.7 | 108.6 | 108.3 | 103.3 | 103.3 | 145.3 |
| 2000 | 101.8 | 100.6 | 99.9 | 97.6 | 98.7 | 100.7 | 102.6 | 105.2 | 108.7 | 108.2 | 102.4 | 105.2 | 145.6 | |
| 2500 | 99.5 | 97.7 | 97.9 | 96.7 | 99.7 | 101.0 | 100.7 | 102.8 | 106.6 | 108.1 | 107.4 | 102.9 | 104.8 | 145.4 |
| 3150 | 99.4 | 99.2 | 98.9 | 96.3 | 99.7 | 102.0 | 102.0 | 103.6 | 106.2 | 107.1 | 107.1 | 102.3 | 105.7 | 145.5 |
| 4000 | 100.8 | 99.0 | 99.2 | 97.5 | 100.5 | 102.6 | 102.3 | 103.9 | 105.7 | 107.5 | 106.1 | 102.0 | 105.1 | 145.6 |
| 5000 | 101.3 | 99.4 | 100.0 | 97.8 | 100.9 | 102.9 | 103.0 | 103.9 | 105.7 | 105.9 | 102.3 | 104.2 | 145.6 | |
| 6300 | 102.0 | 101.1 | 100.9 | 98.2 | 102.0 | 103.2 | 102.9 | 104.3 | 104.3 | 105.3 | 105.1 | 102.2 | 104.9 | 145.8 |
| 8000 | 103.2 | 101.9 | 101.9 | 99.4 | 101.9 | 103.0 | 102.5 | 102.8 | 105.6 | 105.3 | 104.7 | 103.3 | 106.0 | 146.4 |
| 10000 | 103.6 | 103.1 | 102.2 | 99.4 | 102.8 | 103.9 | 102.8 | 103.4 | 104.7 | 104.1 | 103.1 | 102.6 | 104.7 | 146.8 |
| 12500 | 104.3 | 104.4 | 104.2 | 101.5 | 104.6 | 104.8 | 102.4 | 102.5 | 100.2 | 100.8 | 100.1 | 101.9 | 147.5 | |
| 16000 | 104.0 | 103.9 | 104.9 | 102.7 | 104.4 | 105.1 | 102.1 | 100.5 | 100.2 | 97.8 | 97.7 | 97.5 | 98.7 | 148.5 |
| 20000 | 101.2 | 102.6 | 102.4 | 102.2 | 102.1 | 103.8 | 101.1 | 98.1 | 98.4 | 95.0 | 94.0 | 95.1 | 97.0 | 148.5 |
| 25000 | 98.5 | 99.7 | 99.4 | 99.0 | 100.6 | 102.3 | 99.4 | 96.0 | 96.4 | 92.2 | 91.3 | 91.5 | 93.4 | 148.6 |
| 31500 | 98.1 | 98.5 | 98.8 | 97.2 | 97.2 | 99.3 | 96.7 | 93.5 | 93.8 | 89.9 | 88.7 | 89.0 | 90.2 | 149.6 |
| 40000 | 93.7 | 94.2 | 93.7 | 94.3 | 93.5 | 95.8 | 92.7 | 90.0 | 89.2 | 85.1 | 83.9 | 83.7 | 84.6 | 149.6 |
| 50000 | 89.3 | 90.3 | 90.1 | 89.7 | 88.4 | 91.4 | 86.9 | 84.9 | 86.2 | 81.8 | 81.6 | 81.0 | 81.6 | 149.6 |
| 63000 | 82.5 | 83.4 | 83.6 | 83.1 | 82.5 | 85.5 | 81.2 | 79.5 | 80.7 | 77.1 | 76.2 | 76.4 | 75.3 | 148.8 |
| 80000 | 74.1 | 75.5 | 76.3 | 75.5 | 75.0 | 79.3 | 74.5 | 73.4 | 70.9 | 67.3 | 66.4 | 66.6 | 65.5 | 148.3 |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0ASPL | 113.8 | 113.4 | 113.3 | 111.3 | 113.5 | 114.9 | 113.8 | 114.5 | 117.0 | 119.5 | 121.4 | 120.9 | 117.8 | 161.2 |
| PNL | 124.1 | 123.0 | 122.8 | 120.8 | 123.6 | 125.4 | 125.1 | 126.6 | 129.2 | 131.3 | 131.9 | 129.2 | 129.5 | |
| PNLT | 124.1 | 123.0 | 122.8 | 120.8 | 123.6 | 125.4 | 125.1 | 126.6 | 129.2 | 131.3 | 131.9 | 129.2 | 129.5 | |
| DBA | 197.4 | 198.5 | 198.9 | 198.3 | 197.8 | 201.4 | 196.9 | 195.4 | 194.7 | 190.9 | 190.1 | 190.2 | 189.5 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICLE = ADH231 TEST DATE = 04-25-83 LOCAT = C41 ANECH CH CONFIG = 17 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 56.94 PAMB HG = 28.95 RELHUM = 25.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT. EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1523.5 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V10 = 2345.7 FPS AE10 = 19.9 SQ IN

TO = 40.0 FT. TEST NO. 1713. CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1710 XT17101

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 69.3 | 72.2 | 72.0 | 70.6 | 72.2 | 73.8 | 74.0 | 74.8 | 78.3 | 83.1 | 86.4 | 86.7 | 76.5 | 161.1 |
| 63 | 69.9 | 71.9 | 71.5 | 70.7 | 72.4 | 73.8 | 75.9 | 75.4 | 78.6 | 83.9 | 87.1 | 86.4 | 76.1 | 161.3 |
| 80 | 70.8 | 72.2 | 72.9 | 70.2 | 73.2 | 75.4 | 74.1 | 75.8 | 79.2 | 85.0 | 87.9 | 86.7 | 75.8 | 162.0 |
| 100 | 71.7 | 73.6 | 74.0 | 71.5 | 74.7 | 76.4 | 75.1 | 76.9 | 80.8 | 85.2 | 87.3 | 85.1 | 75.0 | 161.6 |
| 125 | 70.8 | 72.4 | 73.9 | 72.2 | 75.3 | 77.0 | 76.1 | 77.9 | 82.2 | 85.4 | 86.4 | 82.8 | 75.9 | 161.1 |
| 160 | 72.4 | 72.3 | 73.9 | 72.4 | 76.7 | 78.4 | 77.5 | 78.7 | 82.4 | 85.1 | 84.9 | 79.1 | 74.2 | 160.3 |
| 200 | 74.3 | 74.6 | 75.1 | 73.7 | 76.1 | 78.6 | 77.1 | 79.3 | 83.1 | 84.9 | 85.1 | 77.6 | 72.7 | 160.6 |
| 250 | 73.2 | 75.8 | 75.4 | 74.4 | 78.3 | 80.0 | 79.0 | 79.8 | 83.4 | 85.2 | 83.1 | 75.6 | 71.6 | 160.6 |
| 315 | 76.2 | 76.8 | 77.3 | 75.8 | 77.4 | 79.5 | 79.3 | 80.8 | 82.6 | 84.9 | 82.6 | 74.1 | 72.6 | 161.0 |
| 400 | 73.4 | 73.5 | 74.9 | 74.6 | 78.0 | 79.5 | 79.1 | 80.7 | 83.6 | 83.9 | 81.3 | 74.0 | 71.3 | 160.7 |
| 500 | 72.7 | 74.5 | 75.5 | 73.8 | 77.7 | 80.2 | 80.0 | 81.2 | 82.8 | 82.4 | 80.5 | 73.7 | 71.1 | 160.8 |
| 630 | 73.6 | 73.8 | 75.4 | 74.7 | 78.2 | 80.5 | 80.0 | 81.0 | 82.0 | 82.4 | 78.9 | 71.6 | 69.4 | 160.9 |
| 800 | 73.5 | 73.8 | 75.9 | 74.7 | 78.3 | 80.4 | 80.4 | 80.8 | 81.6 | 80.3 | 78.1 | 71.1 | 67.3 | 160.9 |
| 1000 | 73.7 | 75.1 | 76.4 | 74.7 | 79.1 | 80.5 | 80.5 | 80.8 | 79.8 | 79.3 | 76.7 | 70.2 | 68.7 | 161.1 |
| 1250 | 74.1 | 75.4 | 77.0 | 75.6 | 78.6 | 79.9 | 79.2 | 79.0 | 80.7 | 78.8 | 75.7 | 70.4 | 66.1 | 161.7 |
| 1600 | 73.4 | 75.7 | 76.6 | 75.0 | 79.0 | 80.3 | 79.0 | 79.1 | 76.7 | 73.0 | 68.0 | 62.2 | 62.2 | 162.2 |
| 2000 | 72.7 | 75.8 | 77.7 | 76.3 | 80.1 | 80.5 | 77.9 | 76.8 | 76.0 | 71.7 | 69.1 | 63.4 | 55.9 | 162.9 |
| 2500 | 70.2 | 73.8 | 77.1 | 76.5 | 79.0 | 79.9 | 76.6 | 74.3 | 72.5 | 67.7 | 63.8 | 57.6 | 47.3 | 163.8 |
| 3150 | 63.4 | 69.4 | 72.1 | 73.7 | 74.6 | 76.7 | 73.7 | 69.7 | 68.1 | 61.8 | 56.2 | 49.6 | 36.6 | 163.8 |
| 4000 | 53.7 | 61.0 | 64.6 | 66.5 | 69.4 | 71.6 | 68.2 | 63.5 | 61.6 | 53.5 | 46.4 | 36.2 | 17.9 | 163.9 |
| 5000 | 42.6 | 51.4 | 56.9 | 58.4 | 60.2 | 62.8 | 59.6 | 54.7 | 51.8 | 42.8 | 33.2 | 19.3 | | 164.9 |
| 6300 | 20.0 | 32.4 | 39.3 | 44.3 | 46.0 | 49.1 | 45.2 | 40.1 | 34.8 | 23.3 | 10.2 | | | 164.9 |
| 8000 | 2.8 | 13.4 | 19.6 | 21.8 | 25.9 | 20.3 | 14.8 | 9.5 | | | | | | 164.9 |
| 10000 | | | | | | | | | | | | | | 164.1 |
| 12500 | | | | | | | | | | | | | | 163.6 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

11281

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICL = ADH231 TEST DATE = 04-25-83 LGCAT = C41 ANECH CH CONFIG = 17 MODEL = C0 FLTVEL = 400. FPS
 IALPHA = SB59 IEGA = NO MPH = 0 PNL AREA = FULL SPHERE TAMB F = 56.94 PAMB HG = 28.95 RELHUM = 25.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FN1N1 = LBS XNL = RPM XNH = RPM V8 = 1523.5 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2345.7 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1710 TAPE = XT17101 TEST PT NO = 1710 NC = AED94 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1711 X1711F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 69.6 | 69.7 | 68.4 | 68.0 | 67.6 | 69.2 | 69.6 | 93.7 | 92.4 | 91.2 | 98.4 | 98.1 | 90.7 | 134.4 |
| 63 | 94.3 | 94.6 | 97.3 | 95.6 | 95.5 | 98.1 | 95.5 | 98.6 | 98.3 | 95.4 | 102.8 | 100.2 | 95.9 | 139.7 |
| 80 | 95.8 | 100.1 | 95.1 | 94.6 | 96.0 | 100.3 | 98.7 | 97.6 | 99.3 | 99.2 | 102.8 | 103.0 | 90.4 | 140.9 |
| 100 | 94.5 | 101.2 | 96.5 | 96.3 | 98.1 | 100.8 | 100.4 | 102.0 | 100.3 | 102.8 | 105.2 | 107.9 | 94.6 | 143.4 |
| 125 | 91.9 | 95.2 | 97.7 | 97.2 | 99.6 | 101.9 | 100.6 | 100.7 | 101.4 | 103.5 | 109.9 | 112.3 | 99.2 | 145.8 |
| 160 | 89.4 | 91.0 | 92.2 | 91.5 | 93.1 | 96.2 | 99.1 | 99.5 | 101.5 | 105.1 | 110.7 | 113.1 | 104.8 | 146.0 |
| 200 | 92.0 | 90.8 | 93.6 | 91.4 | 95.0 | 99.1 | 100.2 | 101.9 | 104.8 | 106.1 | 111.8 | 116.5 | 107.9 | 148.4 |
| 250 | 91.3 | 93.8 | 94.1 | 93.9 | 96.7 | 99.6 | 100.0 | 103.1 | 106.6 | 111.4 | 116.5 | 119.5 | 110.9 | 151.8 |
| 315 | 92.3 | 93.6 | 93.6 | 93.9 | 97.0 | 100.4 | 101.3 | 103.9 | 107.6 | 113.0 | 118.1 | 119.8 | 113.7 | 152.9 |
| 400 | 94.3 | 95.6 | 96.6 | 94.4 | 97.0 | 100.1 | 104.3 | 104.7 | 109.4 | 115.2 | 119.8 | 121.3 | 115.2 | 154.5 |
| 500 | 95.3 | 96.6 | 97.1 | 95.2 | 98.3 | 101.9 | 102.0 | 105.7 | 110.1 | 116.0 | 121.4 | 121.8 | 116.9 | 155.5 |
| 630 | 95.8 | 97.6 | 97.3 | 96.6 | 99.2 | 103.1 | 103.7 | 106.6 | 110.8 | 117.2 | 122.6 | 122.7 | 117.9 | 156.6 |
| 800 | 98.6 | 97.9 | 98.7 | 99.8 | 103.9 | 104.3 | 108.2 | 112.4 | 117.0 | 122.6 | 122.5 | 118.4 | 156.7 | |
| 1000 | 100.5 | 101.1 | 100.1 | 99.4 | 103.0 | 104.8 | 105.7 | 109.4 | 113.3 | 116.9 | 122.8 | 122.0 | 117.4 | 156.7 |
| 1250 | 100.4 | 103.2 | 101.5 | 100.6 | 102.9 | 105.5 | 105.9 | 109.5 | 114.3 | 117.1 | 122.0 | 120.9 | 116.0 | 156.2 |
| 1600 | 101.4 | 102.8 | 101.2 | 100.6 | 103.3 | 106.7 | 106.8 | 109.8 | 114.2 | 116.5 | 122.1 | 119.1 | 114.0 | 155.8 |
| 2000 | 103.1 | 102.7 | 102.3 | 100.5 | 102.3 | 105.9 | 106.9 | 110.7 | 113.8 | 117.2 | 122.6 | 117.2 | 112.7 | 155.0 |
| 2500 | 101.0 | 103.1 | 102.9 | 101.4 | 103.8 | 106.1 | 106.8 | 110.2 | 113.6 | 117.6 | 119.1 | 114.9 | 112.2 | 154.2 |
| 3150 | 100.5 | 101.6 | 102.3 | 101.3 | 103.4 | 106.7 | 107.9 | 109.8 | 114.4 | 116.1 | 117.5 | 113.4 | 110.3 | 153.4 |
| 4000 | 99.5 | 101.9 | 102.3 | 100.2 | 103.8 | 106.8 | 107.4 | 110.0 | 112.7 | 114.2 | 116.8 | 112.4 | 109.4 | 152.4 |
| 5000 | 99.3 | 101.9 | 102.3 | 100.9 | 102.9 | 106.9 | 107.3 | 109.3 | 111.6 | 113.8 | 114.8 | 111.0 | 108.5 | 151.6 |
| 6300 | 99.4 | 101.6 | 102.9 | 101.5 | 103.5 | 106.7 | 107.0 | 109.5 | 111.3 | 112.0 | 113.7 | 111.1 | 107.3 | 151.2 |
| 8000 | 98.4 | 101.4 | 102.9 | 102.1 | 103.4 | 105.7 | 106.4 | 109.1 | 110.6 | 112.4 | 108.5 | 107.1 | 150.2 | |
| 10000 | 98.3 | 101.8 | 104.3 | 103.8 | 104.4 | 106.4 | 106.6 | 107.4 | 109.2 | 109.5 | 110.4 | 106.2 | 106.8 | 150.5 |
| 12500 | 97.5 | 99.4 | 102.2 | 102.6 | 104.6 | 106.6 | 105.4 | 105.1 | 107.3 | 107.7 | 109.2 | 106.8 | 104.8 | 149.9 |
| 16000 | 95.4 | 98.7 | 100.7 | 101.4 | 102.7 | 105.4 | 104.5 | 104.2 | 105.6 | 104.8 | 106.6 | 104.5 | 101.9 | 149.5 |
| 20000 | 93.5 | 96.2 | 98.6 | 99.3 | 100.3 | 103.6 | 102.9 | 101.3 | 102.7 | 102.9 | 103.4 | 100.8 | 98.5 | 148.9 |
| 25000 | 90.4 | 93.8 | 96.1 | 96.4 | 98.1 | 101.9 | 100.8 | 98.8 | 99.8 | 99.4 | 98.3 | 98.4 | 94.1 | 148.6 |
| 31500 | 86.3 | 90.5 | 92.1 | 93.9 | 94.2 | 98.1 | 97.3 | 95.8 | 96.3 | 95.4 | 95.3 | 93.5 | 89.8 | 148.2 |
| 40000 | 82.6 | 87.0 | 89.0 | 89.5 | 90.5 | 94.4 | 93.4 | 91.9 | 92.8 | 91.8 | 91.9 | 90.5 | 84.9 | 148.4 |
| 50000 | 76.5 | 81.1 | 83.2 | 84.6 | 84.4 | 89.7 | 87.1 | 85.5 | 87.4 | 87.0 | 86.7 | 84.0 | 78.7 | 147.3 |
| 63000 | 70.3 | 74.9 | 77.7 | 78.4 | 79.3 | 83.9 | 80.9 | 80.4 | 82.6 | 81.5 | 81.6 | 78.7 | 73.1 | 147.1 |
| 80000 | 62.2 | 68.9 | 71.7 | 71.2 | 73.0 | 77.9 | 74.8 | 74.6 | 75.9 | 75.7 | 74.8 | 71.3 | 66.0 | 147.7 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICL = ADH235 TEST DATE = 04-25-83 LOCAT = C41 ANECH CH CONFIG = 17 MODEL = CO FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 58.46 PAMB HG = 29.05 RELHUM = 24.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC

FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1529.8 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2481.9 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1711 TAPE = X1711F TEST PT NO = 1711 NC = AE094 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1712 X1712C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 93.6 | 92.4 | 89.9 | 88.7 | 86.1 | 88.7 | 91.1 | 93.0 | 92.9 | 91.5 | 98.6 | 97.1 | 91.0 | 134.7 |
| 63 | 94.3 | 95.0 | 98.1 | 95.9 | 93.2 | 95.1 | 97.2 | 95.9 | 96.1 | 92.4 | 103.0 | 99.7 | 95.9 | 139.2 |
| 80 | 95.8 | 99.8 | 94.6 | 95.1 | 96.5 | 98.1 | 97.7 | 97.4 | 99.6 | 97.4 | 101.3 | 101.7 | 89.4 | 140.2 |
| 100 | 95.0 | 100.2 | 95.5 | 94.8 | 97.6 | 100.0 | 99.9 | 100.8 | 100.0 | 102.2 | 106.9 | 95.3 | 95.3 | 142.2 |
| 125 | 92.4 | 94.9 | 96.4 | 96.2 | 99.1 | 100.9 | 100.1 | 100.2 | 99.9 | 101.3 | 107.9 | 111.6 | 99.7 | 144.6 |
| 160 | 90.9 | 87.2 | 91.5 | 90.0 | 91.9 | 95.0 | 96.9 | 96.0 | 97.5 | 102.6 | 108.7 | 111.1 | 103.0 | 143.8 |
| 200 | 80.5 | 89.3 | 90.8 | 88.6 | 92.2 | 95.3 | 96.2 | 98.1 | 102.1 | 102.4 | 109.0 | 114.7 | 106.1 | 146.1 |
| 250 | 88.0 | 91.1 | 90.8 | 90.6 | 92.7 | 95.8 | 96.5 | 99.4 | 102.8 | 107.2 | 114.0 | 117.2 | 108.6 | 149.2 |
| 315 | 89.3 | 90.4 | 90.9 | 90.4 | 93.0 | 95.9 | 97.5 | 99.4 | 103.1 | 109.2 | 115.6 | 117.5 | 110.2 | 150.1 |
| 400 | 90.8 | 91.4 | 92.1 | 89.9 | 93.0 | 95.6 | 99.3 | 100.4 | 105.4 | 111.4 | 117.3 | 118.5 | 109.7 | 151.5 |
| 500 | 91.6 | 92.6 | 93.4 | 91.7 | 94.3 | 96.9 | 97.5 | 101.4 | 105.9 | 112.7 | 118.6 | 118.3 | 108.7 | 152.1 |
| 630 | 91.8 | 92.8 | 93.6 | 92.4 | 94.7 | 98.6 | 99.7 | 102.6 | 107.1 | 113.9 | 119.6 | 117.7 | 106.4 | 152.6 |
| 800 | 92.8 | 92.4 | 93.7 | 92.7 | 96.3 | 99.2 | 100.0 | 103.4 | 107.9 | 113.5 | 119.1 | 116.0 | 104.2 | 152.0 |
| 1000 | 95.0 | 95.3 | 95.6 | 94.1 | 97.5 | 100.1 | 101.2 | 105.6 | 109.6 | 114.2 | 119.0 | 113.5 | 102.1 | 151.9 |
| 1250 | 95.7 | 97.8 | 96.8 | 95.9 | 97.9 | 100.8 | 101.9 | 105.6 | 110.3 | 114.3 | 118.5 | 111.6 | 101.6 | 151.6 |
| 1600 | 99.4 | 99.6 | 98.0 | 96.9 | 98.8 | 102.2 | 103.5 | 106.6 | 110.7 | 113.8 | 119.2 | 109.8 | 100.7 | 151.9 |
| 2000 | 98.6 | 98.7 | 99.9 | 98.5 | 98.8 | 102.2 | 103.7 | 107.2 | 111.1 | 114.4 | 117.7 | 108.2 | 100.7 | 151.4 |
| 2500 | 98.3 | 98.9 | 99.0 | 97.9 | 101.6 | 103.2 | 103.6 | 107.5 | 110.4 | 114.9 | 116.4 | 105.7 | 101.2 | 151.0 |
| 3150 | 98.0 | 98.1 | 99.4 | 97.7 | 99.5 | 104.0 | 104.7 | 107.7 | 111.5 | 113.9 | 114.6 | 105.5 | 98.9 | 150.3 |
| 4000 | 98.4 | 98.8 | 99.4 | 97.5 | 99.9 | 103.1 | 104.3 | 107.6 | 110.3 | 111.8 | 113.2 | 105.2 | 98.5 | 149.2 |
| 5000 | 99.4 | 99.8 | 100.2 | 98.0 | 100.0 | 103.5 | 103.9 | 107.5 | 109.8 | 111.7 | 113.7 | 103.4 | 97.6 | 148.8 |
| 6300 | 100.2 | 101.7 | 101.3 | 99.3 | 101.1 | 103.3 | 104.4 | 107.6 | 109.4 | 109.7 | 110.1 | 102.7 | 96.9 | 148.4 |
| 8000 | 98.7 | 101.7 | 102.2 | 99.6 | 100.5 | 102.8 | 104.0 | 106.1 | 108.2 | 108.2 | 108.0 | 101.3 | 96.1 | 147.6 |
| 10000 | 99.5 | 101.5 | 103.0 | 101.8 | 102.6 | 103.8 | 103.6 | 106.4 | 108.4 | 106.9 | 101.7 | 96.0 | 94.0 | 148.1 |
| 12500 | 97.9 | 100.0 | 101.0 | 100.6 | 101.7 | 103.9 | 102.7 | 104.2 | 106.4 | 105.2 | 104.7 | 100.9 | 94.9 | 147.5 |
| 16000 | 96.5 | 98.6 | 100.1 | 99.8 | 100.4 | 102.6 | 102.4 | 103.3 | 105.0 | 102.7 | 102.4 | 98.9 | 93.3 | 147.5 |
| 20000 | 94.1 | 96.7 | 98.1 | 97.6 | 98.9 | 101.6 | 101.5 | 100.8 | 102.0 | 99.6 | 99.9 | 96.1 | 90.3 | 147.2 |
| 25000 | 90.8 | 93.6 | 95.4 | 95.1 | 96.2 | 100.1 | 99.2 | 97.7 | 99.4 | 95.9 | 95.4 | 93.1 | 87.7 | 146.9 |
| 31500 | 87.4 | 90.0 | 91.0 | 92.2 | 92.6 | 96.7 | 95.7 | 95.4 | 96.3 | 92.2 | 92.1 | 88.8 | 82.9 | 146.7 |
| 40000 | 83.4 | 85.4 | 87.9 | 88.2 | 88.5 | 92.6 | 91.9 | 91.8 | 92.2 | 88.3 | 88.4 | 84.8 | 79.5 | 146.9 |
| 50000 | 77.2 | 80.5 | 81.8 | 82.7 | 83.3 | 87.9 | 85.8 | 85.7 | 87.0 | 83.0 | 82.6 | 78.4 | 73.0 | 145.7 |
| 63000 | 70.7 | 74.2 | 76.5 | 76.8 | 77.5 | 82.6 | 79.8 | 80.8 | 82.2 | 77.4 | 77.6 | 72.7 | 67.1 | 145.7 |
| 80000 | 62.9 | 67.5 | 69.7 | 69.1 | 70.4 | 76.3 | 72.9 | 73.4 | 75.7 | 71.6 | 70.9 | 66.0 | 58.2 | 145.8 |
| GASPL | 110.8 | 112.2 | 112.5 | 111.3 | 112.8 | 115.5 | 116.1 | 118.6 | 121.8 | 125.0 | 129.1 | 126.9 | 117.8 | 164.1 |
| PWL | 122.9 | 124.0 | 124.0 | 122.5 | 124.7 | 127.8 | 128.6 | 131.5 | 134.9 | 137.6 | 140.3 | 135.0 | 127.0 | |
| PWLT | 122.9 | 124.0 | 124.0 | 123.1 | 125.5 | 128.4 | 128.6 | 131.5 | 134.9 | 137.6 | 140.3 | 135.0 | 127.0 | |
| DBA | 109.5 | 110.4 | 110.7 | 109.1 | 111.1 | 113.9 | 114.8 | 118.1 | 121.5 | 124.8 | 128.4 | 123.7 | 114.3 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|-----------------|-------------------|
| VEHICLE = ADR233 | TEST DATE = 04-25-83 | LOCAT = C41 ANECH CH | CONFIG = 17 | MODEL = CO | FLTVL = 400. FPS |
| JAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 58.95 | PAMB HG = 29.04 | RELHUM = 20.3 PCT |
| WIND DIR = | DEG WIND VEL = | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNTNI = | LBS XNL = | RPM | XNH = | RPM | V8 = 1542.2 FPS |
| FNRAMB = | LBS XNLR = | RPM | XNHR = | RPM | V18 = 2515.5 FPS |
| RUNPT = 83F-400-1712 | TAPE = | TEST PT NO = 1712 | NC = | AE094 | CORR FAN SPEED = |
| | | | | | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1712 X1712F

ANGLES MEASURED FROM INLET, DEGREES

FREQ PWL
50
63
80
100
125
160
200

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160.

PWL

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 95.9 | 97.5 | 95.6 | 93.9 | 94.3 | 95.6 | 94.6 | 95.8 | 101.0 | 106.5 | 112.6 | 115.2 | 109.8 | 147.8 |
| 315 | 95.9 | 97.5 | 95.8 | 93.9 | 94.8 | 96.1 | 96.7 | 97.6 | 103.4 | 109.0 | 114.9 | 117.1 | 111.0 | 149.8 |
| 400 | 97.0 | 96.8 | 95.8 | 93.8 | 94.6 | 95.9 | 98.4 | 98.6 | 104.0 | 110.4 | 116.4 | 117.6 | 111.6 | 150.8 |
| 500 | 96.9 | 96.5 | 96.3 | 92.9 | 96.0 | 97.2 | 96.6 | 99.5 | 109.3 | 111.8 | 117.7 | 118.0 | 111.4 | 151.6 |
| 630 | 98.1 | 98.2 | 97.9 | 94.8 | 96.7 | 99.0 | 98.8 | 100.6 | 106.5 | 111.9 | 118.0 | 117.8 | 112.1 | 151.8 |
| 800 | 99.5 | 99.3 | 98.6 | 95.9 | 98.3 | 99.7 | 99.2 | 101.5 | 108.5 | 112.9 | 118.4 | 116.3 | 112.5 | 151.9 |
| 1000 | 100.5 | 98.8 | 98.7 | 96.3 | 99.5 | 100.7 | 100.5 | 103.7 | 109.2 | 113.1 | 117.8 | 114.5 | 111.9 | 151.5 |
| 1250 | 101.9 | 101.3 | 100.4 | 97.6 | 100.0 | 101.6 | 101.3 | 103.7 | 109.7 | 112.5 | 118.5 | 112.6 | 111.0 | 151.6 |
| 1600 | 102.0 | 103.3 | 101.3 | 99.2 | 100.8 | 103.2 | 103.1 | 104.9 | 110.4 | 113.5 | 117.3 | 111.3 | 111.3 | 151.3 |
| 2000 | 104.3 | 103.9 | 101.5 | 99.6 | 101.2 | 103.5 | 103.5 | 105.8 | 110.1 | 114.5 | 116.6 | 110.4 | 112.5 | 151.4 |
| 2500 | 104.5 | 104.0 | 104.3 | 101.9 | 104.5 | 104.8 | 103.8 | 106.4 | 110.6 | 113.7 | 115.0 | 109.2 | 110.1 | 151.0 |
| 3150 | 106.0 | 105.5 | 104.4 | 102.1 | 102.7 | 106.1 | 105.3 | 107.0 | 111.2 | 112.4 | 114.3 | 109.7 | 110.5 | 150.8 |
| 4000 | 105.6 | 104.8 | 105.0 | 102.1 | 103.6 | 105.7 | 105.5 | 107.6 | 110.6 | 112.2 | 112.6 | 107.6 | 109.3 | 150.3 |
| 5000 | 105.9 | 105.5 | 105.1 | 102.2 | 104.1 | 106.5 | 105.3 | 107.5 | 110.7 | 110.6 | 111.6 | 107.7 | 109.5 | 150.1 |
| 6300 | 106.9 | 106.5 | 106.0 | 102.9 | 105.0 | 106.3 | 106.2 | 108.0 | 110.1 | 109.8 | 110.2 | 107.0 | 109.4 | 150.2 |
| 8000 | 106.4 | 107.5 | 106.5 | 103.7 | 104.3 | 105.8 | 106.1 | 106.9 | 110.9 | 109.2 | 109.8 | 108.1 | 109.8 | 150.6 |
| 10000 | 105.4 | 107.1 | 107.1 | 103.7 | 106.7 | 106.8 | 105.9 | 106.5 | 109.7 | 108.4 | 108.6 | 108.1 | 109.3 | 150.9 |
| 12500 | 106.4 | 107.6 | 108.3 | 106.0 | 105.7 | 106.9 | 105.1 | 105.7 | 109.3 | 106.9 | 107.3 | 107.0 | 108.5 | 151.5 |
| 16000 | 104.2 | 105.6 | 105.7 | 104.4 | 104.4 | 105.6 | 104.9 | 105.1 | 106.9 | 104.5 | 105.3 | 104.6 | 105.7 | 151.1 |
| 20000 | 102.5 | 103.8 | 104.4 | 103.1 | 102.9 | 104.5 | 103.9 | 102.8 | 103.3 | 99.7 | 99.5 | 100.1 | 101.6 | 150.6 |
| 25000 | 99.4 | 101.3 | 101.7 | 100.3 | 100.8 | 103.1 | 100.9 | 98.3 | 102.2 | 98.3 | 98.8 | 98.7 | 99.7 | 150.7 |
| 31500 | 98.1 | 99.7 | 100.0 | 98.1 | 97.2 | 99.7 | 97.8 | 96.8 | 98.7 | 94.8 | 95.5 | 94.9 | 96.5 | 151.1 |
| 40000 | 93.9 | 95.2 | 94.8 | 94.4 | 93.0 | 95.6 | 93.9 | 93.0 | 94.2 | 90.4 | 90.8 | 90.0 | 91.5 | 150.8 |
| 50000 | 89.4 | 91.3 | 91.3 | 90.0 | 87.9 | 90.9 | 87.9 | 87.2 | 90.7 | 85.2 | 87.4 | 85.0 | 87.7 | 150.8 |
| 63000 | 82.4 | 84.4 | 84.3 | 83.6 | 82.1 | 85.6 | 82.2 | 82.6 | 84.7 | 80.5 | 80.5 | 79.2 | 79.2 | 149.9 |
| 80000 | 74.4 | 76.7 | 77.4 | 76.2 | 75.0 | 79.3 | 75.0 | 74.6 | 74.9 | 70.7 | 70.7 | 69.4 | 69.4 | 149.1 |

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MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

| | | | | | | | | | | | | |
|------------|--------------|----------------|----------|------------|--------------|----------|--------------|-----------|------------|----------|------------------|-----|
| VEHICL = | ADH233 | TEST DATE = | 04-25-83 | LOCAT = | C41 ANECH CH | CONFIG = | 17 | MODEL = | CO | FLTVEL = | 400. FPS | |
| IAPLHA = | SB59 | IEGA = | NO | PWL AREA = | FULL SPHERE | TAMB F = | 58.95 | PAMB HG = | 29.04 | RELHUM = | 20.3 PCT | |
| WIND DIR = | | DEG WIND VEL = | | MPH | EXT DIST = | 40.0 FT | EXT CONFIG = | ARC | MIKE HT = | | NBFR = | |
| FNINI = | | LBS XNL = | | RPM | XNH = | | RPM | V8 = | 1542.2 FPS | AE8 = | 4.0 SQ IN | |
| FNRMB = | | LBS XNLR = | | RPM | XNHR = | | RPM | V18 = | 2515.5 FPS | AE18 = | 19.9 SQ IN | |
| TRUNFT = | 63F-400-1712 | TAPE | | | TEST PT NO = | 1712 | NC | | | | CURR FAN SPEED = | RPM |

AE094

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

DATPR0C - FLTRAN

IDENTIFICATION - 83F-400-1712 X17121

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 71.8 | 74.9 | 74.2 | 73.1 | 74.4 | 75.6 | 76.3 | 76.8 | 81.9 | 86.5 | 90.7 | 90.8 | 81.3 | 165.1 |
| 63 | 72.9 | 74.1 | 74.3 | 73.0 | 74.2 | 75.6 | 76.0 | 77.8 | 82.5 | 87.8 | 92.2 | 91.3 | 81.9 | 166.1 |
| 80 | 72.7 | 74.0 | 74.8 | 72.0 | 75.6 | 76.9 | 76.2 | 78.5 | 83.7 | 89.1 | 93.5 | 91.6 | 81.6 | 166.9 |
| 100 | 73.8 | 75.5 | 76.2 | 73.9 | 76.2 | 78.6 | 78.3 | 79.7 | 84.9 | 89.2 | 93.7 | 91.2 | 82.1 | 167.2 |
| 125 | 75.1 | 76.4 | 76.9 | 74.9 | 77.8 | 79.2 | 78.7 | 80.5 | 86.7 | 90.0 | 94.0 | 89.6 | 82.2 | 167.3 |
| 160 | 75.9 | 75.9 | 76.9 | 75.2 | 78.8 | 80.2 | 79.8 | 82.5 | 87.3 | 90.1 | 93.2 | 87.5 | 81.3 | 166.8 |
| 200 | 77.1 | 78.1 | 78.3 | 76.3 | 79.1 | 80.8 | 80.4 | 82.4 | 87.7 | 89.4 | 93.7 | 85.3 | 80.0 | 166.9 |
| 250 | 76.8 | 79.8 | 79.0 | 77.7 | 79.7 | 82.3 | 82.1 | 83.4 | 88.2 | 90.0 | 92.1 | 83.6 | 79.6 | 166.6 |
| 315 | 78.7 | 80.0 | 78.9 | 77.8 | 79.9 | 82.3 | 82.2 | 84.0 | 87.5 | 90.6 | 91.0 | 82.1 | 79.9 | 166.7 |
| 400 | 78.3 | 79.7 | 81.3 | 79.8 | 82.8 | 83.3 | 82.2 | 84.3 | 88.6 | 89.5 | 88.8 | 80.2 | 76.5 | 166.3 |
| 500 | 79.3 | 80.8 | 81.1 | 79.7 | 80.8 | 84.3 | 83.3 | 84.5 | 87.8 | 87.7 | 87.7 | 80.0 | 75.9 | 166.1 |
| 630 | 78.4 | 79.7 | 81.3 | 79.2 | 81.3 | 83.6 | 83.2 | 84.8 | 86.9 | 87.1 | 85.4 | 77.3 | 73.6 | 165.6 |
| 800 | 78.1 | 79.9 | 81.0 | 79.0 | 81.4 | 84.0 | 82.7 | 84.4 | 86.6 | 85.1 | 83.8 | 76.5 | 72.5 | 165.5 |
| 1000 | 78.5 | 80.5 | 81.5 | 79.4 | 82.1 | 83.6 | 83.3 | 84.5 | 85.6 | 83.7 | 81.9 | 75.1 | 71.2 | 165.6 |
| 1250 | 77.3 | 81.0 | 81.6 | 79.9 | 81.1 | 82.7 | 82.9 | 83.1 | 85.0 | 82.5 | 80.8 | 75.1 | 70.0 | 166.0 |
| 1600 | 75.2 | 79.7 | 81.5 | 79.3 | 82.9 | 83.3 | 82.1 | 82.1 | 84.1 | 81.0 | 78.4 | 73.5 | 66.9 | 166.2 |
| 2000 | 74.7 | 79.1 | 81.8 | 80.8 | 81.2 | 82.6 | 80.6 | 80.5 | 82.8 | 78.4 | 75.6 | 70.2 | 62.5 | 166.8 |
| 2500 | 70.3 | 75.4 | 78.0 | 78.0 | 79.0 | 80.4 | 79.4 | 78.9 | 74.3 | 71.4 | 64.6 | 54.4 | 166.4 | |
| 3150 | 64.6 | 70.6 | 74.1 | 74.7 | 75.5 | 77.5 | 76.5 | 74.3 | 73.1 | 65.5 | 61.7 | 54.5 | 41.2 | 165.9 |
| 4000 | 54.5 | 62.5 | 66.9 | 67.8 | 69.7 | 72.3 | 69.7 | 65.8 | 67.4 | 59.6 | 54.0 | 43.5 | 24.1 | 166.0 |
| 5000 | 42.7 | 52.6 | 58.1 | 59.4 | 60.1 | 63.2 | 60.8 | 58.1 | 56.8 | 47.7 | 40.0 | 25.2 | | 166.5 |
| 6300 | 20.2 | 33.5 | 40.4 | 44.5 | 45.5 | 48.9 | 46.4 | 43.1 | 39.8 | 28.7 | 17.2 | | | 166.2 |
| 8000 | 3.8 | 14.6 | 19.9 | 21.4 | 25.5 | 21.4 | 17.0 | 14.1 | | | | | | 165.1 |
| 10000 | | | | | | | | | | | | | | 165.3 |
| 12500 | | | | | | | | | | | | | | 164.5 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

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GASPL 89.1 91.2 92.2 90.6 92.7 94.5 93.8 95.1 98.6 100.3 102.9 99.0 91.3 180.2

PNL 96.5 100.0 101.9 100.8 102.2 103.9 102.9 103.1 105.7 105.1 105.8 99.7 93.4

PNLT 97.7 101.0 101.9 101.4 102.8 104.4 103.5 103.7 105.7 105.1 105.8 98.7 93.4

DBA 86.3 89.1 90.6 89.2 91.0 92.6 91.8 92.5 94.9 93.9 93.6 86.5 81.8

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICL = ADH233 TEST DATE = 04-25-83 LOCAT = C41 ANECH CH CONFIG = 17 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PML AREA = FULL SPHERE TAMB F = 58.95 PAMB HG = 29.04 RELHUM = 20.3 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1542.2 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2515.5 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1712 TAPE = X17121 TEST PT NO = 1712 NC = AEO94 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1715 X1715C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 87.1 | 88.4 | 87.7 | 86.7 | 83.8 | 87.7 | 87.1 | 88.7 | 89.9 | 87.2 | 93.6 | 96.3 | 90.7 | 131.5 |
| 63 | 91.8 | 95.3 | 98.3 | 95.1 | 91.5 | 95.8 | 96.5 | 96.4 | 95.3 | 94.1 | 95.8 | 101.5 | 95.9 | 138.2 |
| 80 | 92.5 | 96.8 | 92.6 | 91.9 | 93.0 | 96.8 | 95.7 | 95.6 | 96.8 | 96.7 | 99.8 | 99.7 | 86.9 | 138.0 |
| 100 | 91.0 | 98.2 | 93.5 | 93.8 | 95.6 | 97.8 | 96.6 | 98.5 | 98.0 | 99.8 | 102.0 | 104.4 | 91.8 | 140.3 |
| 125 | 89.1 | 92.4 | 94.7 | 94.0 | 96.6 | 98.7 | 98.1 | 97.7 | 98.4 | 100.5 | 107.7 | 109.3 | 96.7 | 143.0 |
| 160 | 86.4 | 87.7 | 91.7 | 89.0 | 91.1 | 93.2 | 95.4 | 96.3 | 97.5 | 101.6 | 107.7 | 109.6 | 101.5 | 142.7 |
| 200 | 89.3 | 88.1 | 91.3 | 89.4 | 93.2 | 96.1 | 97.0 | 98.6 | 102.1 | 103.1 | 108.5 | 113.7 | 105.1 | 145.5 |
| 250 | 89.3 | 91.6 | 92.9 | 91.7 | 95.0 | 98.6 | 97.7 | 100.4 | 103.6 | 108.2 | 113.3 | 116.2 | 107.6 | 148.6 |
| 315 | 89.8 | 91.6 | 92.9 | 91.7 | 95.0 | 98.6 | 97.7 | 100.4 | 103.6 | 108.2 | 113.3 | 116.2 | 107.6 | 148.6 |
| 400 | 91.6 | 93.9 | 93.9 | 92.2 | 95.0 | 97.6 | 101.5 | 102.2 | 106.6 | 111.7 | 116.1 | 118.0 | 112.2 | 151.1 |
| 500 | 91.8 | 94.4 | 94.6 | 93.2 | 96.3 | 99.1 | 99.8 | 102.9 | 107.1 | 112.2 | 117.4 | 118.0 | 113.7 | 151.8 |
| 630 | 91.8 | 94.8 | 95.6 | 94.1 | 97.5 | 100.8 | 102.0 | 104.6 | 108.1 | 112.9 | 117.8 | 119.2 | 115.1 | 152.7 |
| 800 | 94.6 | 94.6 | 96.2 | 94.4 | 98.0 | 101.6 | 102.3 | 105.4 | 109.2 | 115.6 | 116.4 | 118.3 | 115.4 | 152.1 |
| 1000 | 96.3 | 97.3 | 97.3 | 96.1 | 99.5 | 102.8 | 102.5 | 106.6 | 110.3 | 112.4 | 116.0 | 117.7 | 115.4 | 152.0 |
| 1250 | 94.9 | 98.2 | 98.0 | 96.9 | 99.1 | 102.2 | 103.1 | 106.5 | 110.0 | 111.3 | 114.9 | 117.4 | 114.8 | 151.4 |
| 1600 | 94.9 | 97.3 | 97.9 | 97.3 | 100.6 | 103.7 | 104.5 | 107.3 | 110.9 | 112.0 | 116.4 | 116.8 | 113.5 | 151.8 |
| 2000 | 95.3 | 96.4 | 97.6 | 96.4 | 99.3 | 103.1 | 104.6 | 107.9 | 110.6 | 111.9 | 115.2 | 111.7 | 151.2 | |
| 2500 | 94.8 | 97.3 | 98.4 | 96.6 | 100.5 | 103.6 | 104.1 | 107.4 | 110.3 | 111.9 | 114.3 | 112.1 | 110.4 | 150.1 |
| 3150 | 94.4 | 96.3 | 97.8 | 97.3 | 99.9 | 104.2 | 105.6 | 108.1 | 111.1 | 111.5 | 113.2 | 110.9 | 108.5 | 149.8 |
| 4000 | 93.7 | 96.3 | 98.0 | 96.9 | 100.3 | 103.5 | 104.1 | 107.5 | 109.4 | 109.1 | 112.0 | 109.1 | 107.4 | 148.5 |
| 5000 | 93.8 | 96.9 | 98.0 | 97.1 | 100.1 | 103.3 | 104.0 | 106.8 | 108.8 | 109.5 | 110.7 | 108.0 | 107.0 | 148.1 |
| 6300 | 94.3 | 96.6 | 97.9 | 97.2 | 100.7 | 103.4 | 103.7 | 106.4 | 107.5 | 107.0 | 109.9 | 108.1 | 105.8 | 147.5 |
| 8000 | 94.6 | 97.1 | 98.4 | 98.0 | 100.1 | 102.7 | 103.4 | 105.0 | 106.3 | 105.8 | 107.9 | 106.0 | 104.6 | 146.7 |
| 10000 | 96.6 | 97.1 | 101.3 | 99.8 | 101.7 | 103.6 | 103.4 | 104.7 | 105.7 | 104.7 | 107.0 | 106.0 | 104.5 | 147.2 |
| 12500 | 96.6 | 98.0 | 101.3 | 101.2 | 102.2 | 103.7 | 102.2 | 103.2 | 104.2 | 102.8 | 104.8 | 103.9 | 103.2 | 147.0 |
| 16000 | 94.1 | 96.8 | 99.2 | 101.2 | 101.7 | 103.1 | 102.2 | 102.2 | 102.8 | 100.6 | 103.0 | 101.9 | 99.1 | 147.2 |
| 20000 | 91.6 | 94.3 | 96.7 | 97.7 | 98.7 | 101.7 | 100.5 | 99.7 | 99.9 | 99.5 | 99.1 | 95.3 | 146.5 | |
| 25000 | 88.3 | 91.8 | 94.6 | 95.4 | 96.8 | 100.4 | 99.0 | 96.8 | 97.1 | 93.8 | 94.1 | 94.8 | 92.0 | 146.4 |
| 31500 | 85.1 | 87.9 | 90.4 | 92.7 | 93.5 | 96.4 | 95.4 | 94.4 | 93.7 | 91.1 | 90.7 | 89.8 | 86.3 | 146.1 |
| 40000 | 81.7 | 84.7 | 87.7 | 88.9 | 88.8 | 92.7 | 91.5 | 90.3 | 90.0 | 86.8 | 87.1 | 85.8 | 83.0 | 146.3 |
| 50000 | 74.4 | 78.9 | 82.0 | 83.3 | 84.1 | 85.5 | 84.5 | 84.5 | 85.1 | 81.6 | 81.4 | 80.4 | 76.3 | 145.3 |
| 63000 | 68.4 | 72.7 | 76.5 | 77.7 | 77.8 | 82.6 | 78.9 | 79.2 | 79.7 | 74.9 | 75.8 | 74.9 | 70.3 | 144.8 |
| 80000 | 60.4 | 65.8 | 69.3 | 69.5 | 71.0 | 76.1 | 72.5 | 72.8 | 72.7 | 69.4 | 69.4 | 68.8 | 61.4 | 145.0 |
| 0ASPL | 107.8 | 110.3 | 111.5 | 110.9 | 113.1 | 115.9 | 116.3 | 118.7 | 121.4 | 123.3 | 127.3 | 128.3 | 124.4 | 163.7 |
| PNL | 119.6 | 121.8 | 122.9 | 122.0 | 124.8 | 128.2 | 129.2 | 131.7 | 134.5 | 135.6 | 138.6 | 138.3 | 134.9 | |
| PNLT | 119.6 | 122.4 | 122.9 | 122.0 | 125.4 | 128.7 | 129.2 | 131.7 | 134.5 | 135.6 | 138.6 | 138.3 | 134.9 | |
| DBA | 106.2 | 108.4 | 109.5 | 108.4 | 111.4 | 114.6 | 115.4 | 118.4 | 121.2 | 122.7 | 126.3 | 126.7 | 123.6 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|-----------------|-------------------|
| VERTICAL = ADR236 | TEST DATE = 04-25-83 | LOCAT = CAT ANECH CH | CONFIG = 17 | MODEL = CO | FLTVEL = 0. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 60.79 | PAMB HG = 29.09 | RELHUM = 26.1 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = |
| FNTRNT = | LBS XNL | RPM | FNTRNT = | AE8 | 4.0 SQ IN |
| FNRAMB = | LBS XNL | RPM | FNRAMB = | AE18 | 4.0 SQ IN |
| RUNPT = 83F-ZER-1715 | TAPE = X | IC = | PT = 17 | NO = | CORR FAN SPEED = |

DATPROC - FLTRAN
 FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1715 X1715F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 87.1 | 88.4 | 87.7 | 86.7 | 83.8 | 67.7 | 87.1 | 88.7 | 89.9 | 87.2 | 93.6 | 96.3 | 90.7 | 131.5 |
| 63 | 91.8 | 95.3 | 98.3 | 95.1 | 91.5 | 95.8 | 96.5 | 96.4 | 95.3 | 94.1 | 95.8 | 101.5 | 96.9 | 138.2 |
| 80 | 92.5 | 96.8 | 92.6 | 91.9 | 93.0 | 96.8 | 95.7 | 95.6 | 96.8 | 96.7 | 99.8 | 99.7 | 86.9 | 138.0 |
| 100 | 91.0 | 98.2 | 93.5 | 93.8 | 95.6 | 97.8 | 96.6 | 98.5 | 98.0 | 99.8 | 102.0 | 104.4 | 91.8 | 140.3 |
| 125 | 89.1 | 92.4 | 94.7 | 94.0 | 96.6 | 98.7 | 98.1 | 97.7 | 98.4 | 100.5 | 107.7 | 109.3 | 96.7 | 143.0 |
| 160 | 86.4 | 87.7 | 91.7 | 89.0 | 91.1 | 93.2 | 95.4 | 96.3 | 97.5 | 101.6 | 107.7 | 109.6 | 101.5 | 142.7 |
| 200 | 89.3 | 88.1 | 91.3 | 89.4 | 93.2 | 96.1 | 97.0 | 98.6 | 102.1 | 103.1 | 108.5 | 113.7 | 105.1 | 145.5 |
| 250 | 89.3 | 91.3 | 91.6 | 91.6 | 95.0 | 96.6 | 97.7 | 100.4 | 103.6 | 108.2 | 113.3 | 116.2 | 107.6 | 148.6 |
| 315 | 89.8 | 91.6 | 92.9 | 91.7 | 95.0 | 97.8 | 101.7 | 104.4 | 109.5 | 114.8 | 116.5 | 110.4 | 149.6 | |
| 400 | 91.6 | 93.9 | 93.9 | 92.2 | 95.0 | 97.6 | 101.5 | 102.2 | 106.6 | 111.7 | 116.1 | 118.0 | 112.2 | 151.1 |
| 500 | 91.8 | 94.4 | 94.6 | 93.2 | 96.3 | 99.1 | 99.8 | 102.9 | 107.1 | 112.2 | 117.4 | 118.0 | 113.7 | 151.8 |
| 630 | 91.8 | 94.8 | 95.6 | 94.1 | 97.5 | 100.8 | 102.0 | 104.6 | 108.1 | 112.9 | 117.8 | 119.2 | 115.1 | 152.7 |
| 800 | 94.6 | 94.6 | 96.2 | 94.4 | 98.0 | 101.6 | 102.3 | 105.4 | 109.2 | 112.5 | 116.4 | 118.3 | 115.4 | 152.1 |
| 1000 | 96.3 | 97.3 | 97.3 | 96.1 | 99.5 | 102.8 | 102.5 | 106.6 | 110.3 | 112.4 | 116.0 | 117.7 | 115.4 | 152.0 |
| 1250 | 94.9 | 98.2 | 98.0 | 96.9 | 99.1 | 102.7 | 103.1 | 106.5 | 110.0 | 111.3 | 114.9 | 117.4 | 114.8 | 151.4 |
| 1600 | 94.9 | 97.3 | 97.9 | 97.3 | 100.6 | 103.7 | 104.5 | 107.3 | 110.9 | 112.0 | 116.4 | 116.8 | 113.5 | 151.8 |
| 2000 | 95.3 | 96.4 | 97.6 | 96.4 | 99.3 | 103.1 | 104.6 | 107.9 | 110.8 | 111.9 | 116.1 | 115.2 | 111.7 | 151.2 |
| 2500 | 94.8 | 97.3 | 98.4 | 96.6 | 100.5 | 103.6 | 104.1 | 107.4 | 110.3 | 111.9 | 114.3 | 112.1 | 110.4 | 150.1 |
| 3150 | 94.4 | 96.3 | 97.8 | 97.3 | 99.9 | 103.2 | 105.6 | 108.1 | 111.1 | 111.5 | 113.2 | 110.9 | 108.5 | 149.8 |
| 4000 | 93.7 | 96.3 | 98.0 | 96.9 | 100.3 | 103.5 | 104.1 | 107.5 | 109.4 | 109.1 | 112.0 | 109.1 | 107.4 | 148.5 |
| 5000 | 93.8 | 96.9 | 98.0 | 97.1 | 100.1 | 103.3 | 104.0 | 106.8 | 108.8 | 109.5 | 110.7 | 108.0 | 107.0 | 148.1 |
| 6300 | 94.3 | 96.6 | 97.9 | 97.2 | 100.7 | 103.4 | 103.7 | 106.4 | 107.5 | 107.9 | 109.9 | 108.1 | 105.8 | 147.5 |
| 8000 | 94.5 | 97.1 | 98.4 | 98.0 | 100.1 | 102.7 | 103.4 | 105.0 | 105.3 | 105.8 | 107.9 | 106.0 | 104.6 | 146.7 |
| 10000 | 96.6 | 99.1 | 101.3 | 99.8 | 101.7 | 103.6 | 103.4 | 104.7 | 105.7 | 104.7 | 107.0 | 106.0 | 104.5 | 147.2 |
| 12500 | 96.6 | 98.0 | 101.3 | 101.2 | 102.2 | 103.7 | 102.2 | 103.2 | 104.2 | 102.8 | 104.8 | 103.9 | 103.2 | 147.0 |
| 16000 | 94.1 | 96.8 | 99.2 | 101.2 | 101.7 | 103.1 | 102.2 | 102.2 | 102.8 | 100.6 | 103.0 | 101.9 | 99.1 | 147.2 |
| 20000 | 91.6 | 94.3 | 96.7 | 97.7 | 98.7 | 101.7 | 100.5 | 99.7 | 99.9 | 97.9 | 99.5 | 99.1 | 95.3 | 146.5 |
| 25000 | 88.3 | 91.8 | 94.6 | 95.4 | 96.8 | 100.4 | 99.0 | 96.8 | 97.1 | 93.8 | 94.1 | 94.8 | 92.0 | 146.4 |
| 31500 | 85.1 | 87.9 | 90.4 | 92.7 | 93.5 | 96.4 | 95.4 | 94.4 | 93.7 | 91.1 | 90.7 | 89.8 | 86.3 | 146.1 |
| 40000 | 81.7 | 84.7 | 87.7 | 88.9 | 88.8 | 92.7 | 91.5 | 90.3 | 90.0 | 86.8 | 87.1 | 85.8 | 83.0 | 146.3 |
| 50000 | 74.4 | 78.9 | 82.0 | 83.3 | 84.1 | 88.1 | 85.5 | 84.5 | 85.1 | 81.6 | 81.4 | 80.4 | 75.3 | 145.3 |
| 63000 | 68.4 | 72.7 | 76.5 | 77.7 | 77.8 | 82.6 | 78.9 | 79.2 | 79.7 | 74.9 | 75.8 | 74.9 | 70.3 | 144.8 |
| 80000 | 60.4 | 65.8 | 69.3 | 69.5 | 71.0 | 76.1 | 72.5 | 72.8 | 72.7 | 69.4 | 69.4 | 68.8 | 61.4 | 145.0 |

| MODEL/FULL SCALE FAC | IN=1.000 | CALC=1.000 | FREE JET VEL (FPS)= | 0. | DIAM (IN)= | 48.00 | REFR CORR YES, | TURB CORR YES |
|---|----------------------|------------------------|---------------------|------------------|-------------------|--------------|----------------|---------------|
| NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137 | | | | | | | | |
| VEHICL = ADH236 | TEST DATE = 04-25-83 | LOGCAT = C41 ANECH CH | CONFIG = 17 | MODEL = C0 | FLTVEL = 0. FPS | | | |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 60.79 | PAMB HG = 29.09 | RELHUM = 25.1 PCT | | | |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | | | |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 | = 1268.0 FPS | AE8 | = 4.0 SQ IN |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V18 | = 2349.1 FPS | AE18 | = 19.9 SQ IN |
| RUNPT = 83F-ZER-1715 | TAPE | | | | | | | |

TEST PT NO = 1715

UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-ZER-1721 X1721C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.1 | 88.4 | 87.4 | 88.7 | 85.3 | 87.7 | 90.6 | 89.0 | 90.4 | 89.7 | 96.4 | 96.1 | 92.5 | 132.7 |
| 63 | 92.8 | 93.8 | 97.8 | 96.9 | 93.5 | 96.1 | 97.7 | 97.1 | 98.1 | 94.1 | 101.5 | 99.0 | 99.4 | 139.2 |
| 80 | 93.8 | 98.3 | 92.9 | 94.2 | 97.6 | 96.7 | 95.9 | 97.8 | 98.2 | 101.3 | 101.0 | 90.9 | 139.2 | |
| 100 | 92.2 | 99.5 | 94.8 | 94.5 | 96.9 | 99.0 | 98.4 | 100.0 | 99.5 | 101.3 | 103.0 | 106.1 | 94.3 | 141.7 |
| 125 | 89.9 | 93.4 | 95.9 | 94.7 | 97.8 | 99.9 | 98.6 | 99.2 | 99.9 | 102.3 | 108.4 | 110.3 | 98.0 | 144.0 |
| 160 | 87.7 | 88.5 | 91.0 | 90.0 | 91.6 | 94.0 | 96.1 | 97.5 | 98.7 | 103.3 | 108.7 | 111.1 | 102.8 | 143.9 |
| 200 | 90.0 | 89.1 | 92.1 | 90.1 | 93.7 | 96.8 | 98.0 | 99.6 | 103.1 | 104.1 | 110.0 | 115.0 | 105.6 | 146.7 |
| 250 | 90.3 | 91.8 | 93.6 | 92.4 | 95.5 | 97.1 | 98.0 | 101.4 | 104.8 | 109.9 | 115.5 | 117.7 | 108.6 | 150.3 |
| 315 | 91.3 | 91.9 | 92.4 | 92.4 | 95.5 | 99.4 | 100.5 | 102.2 | 105.9 | 111.5 | 116.3 | 118.3 | 111.9 | 151.3 |
| 400 | 93.1 | 94.1 | 94.9 | 92.7 | 96.0 | 99.1 | 102.8 | 103.7 | 108.1 | 113.7 | 118.8 | 119.8 | 112.9 | 153.2 |
| 500 | 93.1 | 95.4 | 95.4 | 93.9 | 97.3 | 100.6 | 101.3 | 104.4 | 108.4 | 114.7 | 119.1 | 120.0 | 114.4 | 153.6 |
| 630 | 93.5 | 96.1 | 96.1 | 95.4 | 98.2 | 101.6 | 102.7 | 105.4 | 109.3 | 115.4 | 121.3 | 121.0 | 116.4 | 155.1 |
| 800 | 96.6 | 96.1 | 96.7 | 95.7 | 99.3 | 102.4 | 103.3 | 106.7 | 110.2 | 115.0 | 120.6 | 121.3 | 117.7 | 155.1 |
| 1000 | 99.0 | 100.1 | 99.1 | 97.6 | 101.2 | 103.8 | 104.5 | 107.9 | 111.4 | 114.4 | 120.3 | 120.2 | 116.4 | 154.6 |
| 1250 | 97.4 | 100.5 | 99.8 | 98.6 | 101.4 | 104.2 | 104.6 | 108.0 | 111.3 | 113.6 | 118.5 | 119.4 | 115.8 | 153.6 |
| 1600 | 97.1 | 98.5 | 98.7 | 98.3 | 101.1 | 104.7 | 105.5 | 108.6 | 111.7 | 113.5 | 119.6 | 118.1 | 113.7 | 153.7 |
| 2000 | 97.1 | 97.9 | 98.3 | 97.7 | 100.8 | 103.9 | 105.4 | 109.7 | 111.3 | 113.9 | 118.1 | 115.7 | 111.4 | 152.6 |
| 2500 | 96.5 | 98.4 | 98.7 | 97.6 | 100.5 | 104.4 | 104.8 | 108.9 | 110.3 | 113.6 | 115.9 | 112.7 | 109.9 | 151.1 |
| 3150 | 95.2 | 97.1 | 98.6 | 97.6 | 100.4 | 104.5 | 105.4 | 108.8 | 111.4 | 112.3 | 114.3 | 111.4 | 108.3 | 150.4 |
| 4000 | 93.8 | 96.9 | 98.8 | 97.2 | 100.6 | 103.5 | 105.2 | 108.3 | 109.7 | 109.9 | 113.1 | 109.1 | 105.9 | 149.1 |
| 5000 | 93.1 | 97.2 | 98.3 | 97.2 | 100.2 | 103.9 | 104.0 | 107.4 | 108.9 | 110.1 | 111.8 | 108.0 | 104.8 | 148.5 |
| 6300 | 93.4 | 97.1 | 98.4 | 96.0 | 100.8 | 104.0 | 103.8 | 107.0 | 107.8 | 110.2 | 107.1 | 103.9 | 104.7 | |
| 8000 | 92.6 | 97.1 | 98.4 | 96.1 | 100.5 | 103.5 | 103.5 | 104.8 | 106.1 | 106.1 | 108.2 | 104.8 | 102.6 | 146.7 |
| 10000 | 94.8 | 98.6 | 100.8 | 100.1 | 101.4 | 104.2 | 104.4 | 105.7 | 104.5 | 106.2 | 104.5 | 102.1 | 104.7 | 0 |
| 12500 | 94.8 | 98.2 | 100.0 | 100.9 | 102.4 | 104.4 | 102.7 | 102.9 | 104.1 | 103.5 | 104.5 | 102.4 | 101.1 | 146.9 |
| 16000 | 92.9 | 97.6 | 99.8 | 101.0 | 101.8 | 104.2 | 102.1 | 102.0 | 102.7 | 100.4 | 102.9 | 100.0 | 98.5 | 147.3 |
| 20000 | 90.6 | 94.6 | 96.9 | 98.2 | 99.4 | 102.4 | 101.0 | 99.4 | 99.6 | 98.0 | 99.0 | 97.1 | 94.1 | 146.6 |
| 25000 | 88.0 | 91.9 | 94.2 | 95.8 | 96.7 | 100.8 | 99.4 | 96.7 | 97.4 | 94.6 | 93.5 | 93.8 | 90.1 | 146.6 |
| 31500 | 84.9 | 88.7 | 90.9 | 92.8 | 93.6 | 97.2 | 95.5 | 94.5 | 94.4 | 90.5 | 89.2 | 88.4 | 85.4 | 146.3 |
| 40000 | 80.7 | 84.9 | 87.9 | 88.9 | 89.3 | 93.8 | 92.0 | 90.2 | 90.5 | 87.2 | 86.3 | 84.6 | 81.0 | 146.6 |
| 50000 | 74.6 | 79.3 | 82.1 | 83.7 | 84.3 | 89.4 | 86.0 | 84.9 | 85.5 | 81.7 | 80.3 | 78.9 | 74.3 | 145.8 |
| 63000 | 68.6 | 73.3 | 76.8 | 77.8 | 78.9 | 83.8 | 79.5 | 79.6 | 81.0 | 75.9 | 75.5 | 73.6 | 68.7 | 145.6 |
| 80000 | 61.1 | 66.8 | 70.1 | 71.4 | 72.4 | 77.8 | 73.2 | 74.5 | 69.9 | 68.7 | 67.5 | 60.1 | 146.1 | |
| 0ASPL | 108.6 | 111.2 | 111.9 | 111.4 | 113.7 | 116.8 | 117.0 | 119.7 | 122.1 | 125.1 | 129.9 | 130.0 | 125.2 | |
| PNL | 120.5 | 123.6 | 123.6 | 122.6 | 125.4 | 128.8 | 129.6 | 132.6 | 135.0 | 137.0 | 140.5 | 139.3 | 134.8 | |
| PNLT | 120.5 | 123.3 | 124.1 | 122.6 | 126.0 | 129.4 | 129.6 | 132.6 | 135.0 | 137.0 | 140.5 | 139.3 | 134.8 | |
| DBA | 107.5 | 109.6 | 110.1 | 109.2 | 112.1 | 115.4 | 116.1 | 119.4 | 121.8 | 124.4 | 129.0 | 128.5 | 124.3 | |

ORIGINAL PAGE IS OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|-------------------|
| VEHICLE = ADH236 | TEST DATE = 04-25-83 | LOCAT = C41 ANECH CH | CONFIG = 17 | MODEL = C0 | FLTVEL = 0. FPS |
| IAPLHA = SB59 | DEG WIND VEL = NO | PWL AREA = FULL SPHERE | TAMB F = 60.07 | PAMB HG = 29.09 | RELHUM = 23.5 PCT |
| WIND DIR = | MPH | EXT DIST = 40.0-FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNIN1 = | LBS XNL | RPM | XNH | V8 = 1943.6 FPS | AEB = 4.0 SQ IN |
| FNRAMB = | LBS XNLR | RPM | XNHR | V18 = 2342.1 FPS | AE18 = 19.9 SQ IN |
| RUNPT = 83F-ZER-1721 | TAPE | TEST PT NO = 1721 | NC | CORR FAN SPEED = | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1721 X1721F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.1 | 88.4 | 87.4 | 88.7 | 85.3 | 87.7 | 90.6 | 89.0 | 90.4 | 89.7 | 96.4 | 96.1 | 92.5 | 132.7 |
| 63 | 92.8 | 93.8 | 97.8 | 96.9 | 93.5 | 96.1 | 97.7 | 97.1 | 98.1 | 94.1 | 101.5 | 99.0 | 99.4 | 139.2 |
| 80 | 93.8 | 98.3 | 93.3 | 92.9 | 94.2 | 97.6 | 96.7 | 95.9 | 97.8 | 98.2 | 101.3 | 101.0 | 90.9 | 139.2 |
| 100 | 92.2 | 99.5 | 94.8 | 94.5 | 96.9 | 99.0 | 98.4 | 100.0 | 99.5 | 101.3 | 103.0 | 106.1 | 94.3 | 141.7 |
| 125 | 89.9 | 93.4 | 95.9 | 94.7 | 97.8 | 99.9 | 98.6 | 99.2 | 99.9 | 102.3 | 108.4 | 110.3 | 96.0 | 144.0 |
| 160 | 87.7 | 88.5 | 91.0 | 90.0 | 91.6 | 94.0 | 96.1 | 97.5 | 98.7 | 103.3 | 108.7 | 111.1 | 102.8 | 143.9 |
| 200 | 90.0 | 89.1 | 92.1 | 90.1 | 93.7 | 96.8 | 98.0 | 99.6 | 103.1 | 104.1 | 110.0 | 115.0 | 105.6 | 146.7 |
| 250 | 90.3 | 91.8 | 93.6 | 92.4 | 95.5 | 97.1 | 98.0 | 101.4 | 104.8 | 109.9 | 115.5 | 117.7 | 108.6 | 150.3 |
| 315 | 91.3 | 91.9 | 92.4 | 92.4 | 95.5 | 99.4 | 100.5 | 102.2 | 105.9 | 111.5 | 116.3 | 118.3 | 111.9 | 151.3 |
| 400 | 93.1 | 94.1 | 94.9 | 92.7 | 96.0 | 99.1 | 102.8 | 103.7 | 108.1 | 113.7 | 118.8 | 119.8 | 112.9 | 153.2 |
| 500 | 93.1 | 95.4 | 95.4 | 93.9 | 97.3 | 100.6 | 101.3 | 104.4 | 108.4 | 114.7 | 119.1 | 120.0 | 114.4 | 153.6 |
| 630 | 93.5 | 96.1 | 96.1 | 95.4 | 98.2 | 101.6 | 102.7 | 105.4 | 109.3 | 115.4 | 121.3 | 121.0 | 116.4 | 155.1 |
| 800 | 96.6 | 96.1 | 96.7 | 95.7 | 99.3 | 102.4 | 103.3 | 106.7 | 110.2 | 115.0 | 120.6 | 121.3 | 117.7 | 155.1 |
| 1000 | 99.0 | 100.1 | 99.1 | 97.6 | 101.2 | 103.8 | 104.5 | 107.9 | 111.1 | 114.4 | 120.3 | 120.2 | 116.4 | 154.6 |
| 1250 | 97.4 | 100.5 | 99.8 | 98.6 | 101.4 | 104.2 | 104.6 | 108.0 | 111.3 | 113.6 | 118.5 | 119.4 | 115.8 | 153.6 |
| 1600 | 97.1 | 98.5 | 98.7 | 98.3 | 101.1 | 104.7 | 105.5 | 108.6 | 111.7 | 113.5 | 119.6 | 118.1 | 113.7 | 153.7 |
| 2000 | 97.1 | 97.9 | 98.3 | 97.7 | 100.8 | 103.9 | 105.4 | 109.7 | 111.3 | 113.9 | 118.1 | 115.7 | 111.4 | 152.6 |
| 2500 | 96.5 | 98.4 | 98.7 | 97.6 | 100.5 | 104.4 | 104.8 | 108.9 | 110.3 | 113.6 | 115.9 | 112.7 | 109.9 | 151.1 |
| 3150 | 95.2 | 97.1 | 98.6 | 97.6 | 100.4 | 104.5 | 105.4 | 108.8 | 111.4 | 112.3 | 114.3 | 111.4 | 108.3 | 150.4 |
| 4000 | 93.8 | 96.9 | 98.8 | 97.2 | 100.6 | 103.5 | 105.2 | 108.3 | 109.7 | 109.9 | 113.1 | 109.1 | 105.9 | 149.1 |
| 5000 | 93.1 | 97.2 | 98.3 | 97.2 | 100.2 | 103.9 | 104.0 | 107.4 | 108.9 | 110.1 | 111.8 | 108.0 | 104.8 | 148.5 |
| 6300 | 93.4 | 97.1 | 98.4 | 98.0 | 100.8 | 104.0 | 103.8 | 107.0 | 107.8 | 107.6 | 110.2 | 107.1 | 103.9 | 147.7 |
| 8000 | 92.6 | 97.1 | 98.4 | 96.1 | 100.5 | 103.5 | 103.5 | 104.8 | 106.1 | 106.1 | 108.2 | 104.8 | 102.6 | 146.7 |
| 10000 | 94.8 | 98.6 | 100.8 | 100.1 | 101.4 | 104.2 | 103.2 | 104.4 | 105.7 | 105.5 | 106.2 | 104.5 | 102.1 | 147.0 |
| 12500 | 94.8 | 98.6 | 100.0 | 100.9 | 102.4 | 104.4 | 102.7 | 102.9 | 104.1 | 103.5 | 104.5 | 102.4 | 101.1 | 146.9 |
| 16000 | 92.9 | 97.6 | 99.8 | 101.0 | 101.8 | 104.2 | 102.1 | 102.0 | 102.7 | 100.4 | 102.9 | 100.0 | 98.5 | 147.3 |
| 20000 | 90.6 | 94.6 | 96.9 | 98.2 | 99.4 | 102.4 | 101.0 | 99.4 | 99.8 | 98.0 | 99.0 | 97.1 | 94.1 | 145.6 |
| 25000 | 88.0 | 91.9 | 94.2 | 95.8 | 96.7 | 100.8 | 99.4 | 96.7 | 97.7 | 94.6 | 93.5 | 90.1 | 146.6 | 146.6 |
| 31500 | 84.9 | 88.7 | 90.9 | 92.8 | 93.6 | 97.2 | 95.5 | 94.5 | 94.4 | 90.5 | 89.2 | 88.4 | 85.4 | 146.3 |
| 40000 | 80.7 | 84.9 | 87.9 | 88.9 | 89.3 | 93.8 | 92.0 | 90.2 | 90.5 | 87.2 | 86.3 | 84.6 | 81.0 | 146.6 |
| 50000 | 74.6 | 79.3 | 82.1 | 83.7 | 84.3 | 89.4 | 86.0 | 84.9 | 85.5 | 81.7 | 80.3 | 78.9 | 74.3 | 145.8 |
| 63000 | 68.6 | 73.3 | 76.8 | 77.8 | 78.9 | 83.8 | 79.5 | 79.6 | 81.0 | 75.9 | 75.5 | 73.6 | 68.7 | 145.6 |
| 80000 | 61.1 | 66.8 | 70.1 | 71.4 | 72.4 | 78.8 | 72.9 | 73.2 | 74.5 | 69.9 | 68.7 | 67.5 | 60.1 | 146.1 |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| ORSLP | 108.6 | 111.2 | 111.9 | 111.4 | 113.7 | 116.8 | 117.0 | 119.7 | 122.1 | 125.1 | 129.9 | 130.0 | 125.2 | 165.2 |
| PNL | 120.5 | 122.7 | 123.6 | 122.6 | 125.4 | 128.8 | 129.6 | 132.6 | 135.0 | 137.0 | 140.5 | 139.3 | 134.8 | |
| PNLT | 120.5 | 123.3 | 124.1 | 122.6 | 126.0 | 129.4 | 129.6 | 132.6 | 135.0 | 137.0 | 140.5 | 139.3 | 134.8 | |
| DBA | 183.9 | 189.2 | 192.4 | 193.6 | 194.6 | 199.8 | 195.4 | 195.4 | 196.6 | 192.0 | 191.0 | 189.6 | 183.5 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICL = ADH236 TEST DATE = 04-25-83 LOGCAT = C41 ANECH CH CONFIG = 17 MODEL = CO FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 60.07 PAMB HG = 29.09 RELHUM = 23.5 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1943.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V10 = 2342.1 FPS AE10 = 19.9 SQ IN

IDENTIFICATION - 83F-ZER-1721 X17211

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 67.2 | 69.3 | 70.9 | 71.6 | 75.1 | 79.1 | 80.1 | 81.4 | 84.4 | 88.9 | 92.2 | 92.0 | 82.3 | 166.6 |
| 63 | 68.9 | 71.5 | 73.3 | 71.8 | 75.6 | 78.8 | 82.3 | 82.8 | 86.6 | 91.1 | 94.7 | 93.4 | 83.2 | 168.5 |
| 80 | 68.9 | 72.7 | 73.8 | 73.1 | 76.8 | 80.3 | 80.8 | 83.6 | 86.8 | 92.1 | 94.9 | 93.6 | 84.6 | 169.0 |
| 100 | 69.3 | 73.4 | 74.5 | 74.5 | 77.7 | 81.2 | 82.2 | 84.5 | 87.7 | 92.7 | 97.0 | 94.4 | 86.4 | 170.4 |
| 125 | 72.2 | 73.3 | 74.9 | 74.7 | 78.7 | 82.0 | 82.7 | 85.7 | 88.4 | 92.2 | 96.2 | 94.6 | 87.5 | 170.4 |
| 160 | 74.4 | 77.1 | 77.2 | 76.5 | 80.5 | 83.3 | 83.8 | 86.7 | 89.2 | 91.4 | 95.7 | 93.3 | 85.8 | 169.9 |
| 200 | 72.6 | 77.3 | 77.7 | 77.4 | 80.5 | 83.5 | 83.8 | 86.8 | 89.2 | 90.4 | 93.6 | 92.1 | 84.7 | 169.0 |
| 250 | 71.9 | 75.1 | 76.4 | 76.8 | 80.0 | 83.8 | 84.5 | 87.1 | 89.4 | 90.1 | 94.5 | 90.4 | 82.0 | 169.0 |
| 315 | 71.9 | 74.1 | 75.7 | 75.9 | 79.5 | 82.7 | 84.1 | 87.9 | 88.7 | 90.0 | 92.5 | 87.4 | 78.9 | 167.9 |
| 400 | 70.4 | 74.1 | 75.7 | 75.5 | 78.9 | 82.9 | 83.2 | 86.8 | 87.3 | 89.4 | 89.7 | 83.7 | 76.4 | 166.5 |
| 500 | 68.6 | 72.4 | 75.2 | 75.1 | 78.4 | 82.7 | 83.4 | 86.4 | 88.1 | 87.6 | 87.6 | 81.8 | 73.7 | 165.8 |
| 630 | 66.6 | 71.8 | 75.0 | 74.3 | 78.3 | 81.4 | 82.9 | 85.4 | 85.9 | 84.8 | 85.9 | 78.8 | 70.3 | 164.4 |
| 800 | 65.3 | 71.6 | 74.2 | 74.0 | 77.5 | 81.4 | 81.4 | 84.2 | 84.8 | 84.5 | 84.0 | 76.9 | 67.8 | 163.9 |
| 1000 | 65.0 | 71.1 | 74.0 | 74.5 | 77.8 | 81.2 | 80.8 | 83.5 | 83.3 | 81.8 | 81.8 | 75.2 | 65.6 | 163.1 |
| 1250 | 63.6 | 70.6 | 73.6 | 74.3 | 77.2 | 80.4 | 80.2 | 81.0 | 81.3 | 79.6 | 79.2 | 71.9 | 62.8 | 162.0 |
| 1600 | 64.7 | 71.2 | 75.3 | 75.7 | 77.6 | 80.6 | 79.4 | 80.0 | 80.1 | 78.1 | 76.0 | 70.0 | 59.6 | 162.3 |
| 2000 | 63.1 | 69.7 | 73.5 | 75.7 | 77.9 | 80.1 | 78.2 | 77.7 | 77.6 | 75.0 | 72.8 | 65.6 | 55.1 | 162.2 |
| 2500 | 59.0 | 67.4 | 72.0 | 74.7 | 76.3 | 79.1 | 76.6 | 75.7 | 74.9 | 70.3 | 69.0 | 60.1 | 47.1 | 162.6 |
| 3150 | 52.8 | 61.4 | 66.7 | 69.7 | 72.0 | 75.3 | 73.6 | 71.0 | 69.6 | 64.8 | 61.1 | 51.6 | 33.8 | 162.0 |
| 4000 | 43.1 | 53.2 | 59.3 | 63.3 | 66.5 | 70.0 | 68.2 | 64.2 | 62.8 | 55.9 | 48.6 | 38.5 | 14.6 | 161.9 |
| 5000 | 29.4 | 41.5 | 49.0 | 54.0 | 56.6 | 60.8 | 58.4 | 55.7 | 52.5 | 43.4 | 33.7 | 18.6 | | 161.7 |
| 6300 | 7.0 | 23.2 | 33.5 | 39.0 | 41.8 | 47.0 | 44.5 | 40.3 | 36.1 | 25.4 | 12.7 | | | 162.0 |
| 8000 | | | 5.4 | 13.6 | 17.7 | 23.9 | 19.4 | 14.8 | 8.8 | | | | | 161.2 |
| 10000 | | | | | | | | | | | | | | 161.0 |
| 12500 | | | | | | | | | | | | | | 161.4 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

GASPL 82.0 85.7 87.5 87.7 90.9 94.2 94.7 97.3 99.1 101.5 104.8 102.5 91.3 180.2

PNL 86.6 92.3 95.6 97.1 99.7 102.9 102.0 103.1 104.2 104.8 106.8 102.9 94.5

PNLT 86.6 92.3 96.3 97.7 100.2 103.4 102.6 103.7 104.8 104.8 106.8 102.9 94.5

DBA 75.4 80.8 83.9 84.7 87.5 90.7 90.4 92.4 93.1 93.0 94.3 89.7 81.7

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICL = ADH236 TEST DATE = 04-25-83 LOCAT = C41 ANECH CH CONFIG = 17 MODEL = CO FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO MPH = PNL AREA = FULL SPHERE TAMB F = 60.07 PAMB HG = 29.09 RELHUM = 23.5 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1943.6 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2342.1 FPS AE18 = 19.9 SQ IN

RUNFT = 83F-ZER-1721 TAPE = X17211 TEST PT NO = 1721 NC = AE094 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1722 XT1722C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 91.1 | 90.7 | 88.9 | 86.2 | 83.8 | 85.9 | 87.1 | 90.2 | 90.2 | 89.2 | 95.4 | 96.6 | 90.2 | 132.5 |
| 53 | 93.8 | 93.5 | 97.6 | 93.1 | 90.7 | 94.6 | 95.2 | 95.4 | 94.8 | 95.9 | 97.3 | 101.2 | 97.1 | 137.7 |
| 60 | 93.8 | 97.6 | 92.8 | 92.9 | 94.0 | 97.8 | 96.5 | 95.6 | 96.6 | 96.2 | 100.0 | 100.2 | 89.9 | 138.5 |
| 100 | 93.7 | 97.7 | 93.0 | 92.5 | 94.4 | 98.0 | 97.4 | 98.8 | 96.8 | 98.3 | 100.7 | 104.9 | 93.6 | 140.0 |
| 125 | 90.9 | 93.2 | 95.2 | 94.2 | 96.8 | 98.7 | 97.3 | 97.7 | 96.9 | 99.5 | 106.4 | 109.3 | 97.2 | 142.5 |
| 160 | 88.4 | 85.5 | 89.7 | 88.5 | 89.9 | 93.0 | 95.4 | 94.5 | 95.2 | 100.6 | 106.9 | 109.1 | 100.5 | 141.9 |
| 200 | 88.0 | 87.1 | 88.8 | 87.1 | 90.2 | 93.3 | 94.2 | 96.6 | 99.3 | 100.6 | 106.8 | 112.0 | 103.4 | 143.6 |
| 250 | 86.5 | 89.1 | 89.1 | 88.4 | 91.2 | 94.3 | 95.2 | 97.4 | 99.6 | 105.4 | 111.5 | 114.0 | 105.1 | 146.4 |
| 315 | 87.3 | 88.9 | 89.4 | 88.9 | 91.5 | 94.4 | 96.3 | 98.2 | 100.4 | 107.2 | 113.6 | 115.0 | 106.9 | 147.9 |
| 400 | 86.1 | 89.5 | 90.4 | 88.4 | 91.8 | 94.6 | 97.8 | 98.7 | 102.1 | 109.7 | 114.3 | 115.8 | 105.9 | 148.8 |
| 500 | 88.8 | 89.9 | 90.9 | 89.9 | 92.8 | 95.9 | 96.0 | 99.4 | 102.6 | 110.7 | 116.1 | 115.3 | 104.4 | 149.5 |
| 630 | 89.0 | 90.6 | 91.3 | 90.4 | 93.7 | 97.1 | 97.7 | 100.6 | 103.6 | 111.7 | 117.1 | 115.2 | 102.1 | 150.2 |
| 800 | 90.3 | 90.1 | 90.9 | 91.2 | 94.3 | 97.6 | 98.0 | 101.4 | 105.2 | 111.0 | 116.4 | 112.3 | 99.9 | 149.2 |
| 1000 | 92.8 | 93.1 | 91.9 | 95.5 | 98.8 | 99.2 | 102.9 | 105.8 | 110.7 | 114.8 | 109.0 | 98.1 | 148.0 | |
| 1250 | 91.4 | 94.0 | 93.5 | 93.1 | 95.1 | 99.0 | 99.4 | 102.8 | 106.0 | 109.6 | 113.0 | 106.1 | 96.5 | 146.7 |
| 1600 | 91.9 | 92.5 | 93.2 | 93.6 | 96.6 | 100.4 | 100.8 | 103.8 | 107.0 | 109.5 | 112.9 | 104.1 | 94.7 | 146.9 |
| 2000 | 92.1 | 91.7 | 93.1 | 93.0 | 96.0 | 99.7 | 100.9 | 104.2 | 106.3 | 109.6 | 110.6 | 102.2 | 94.7 | 146.0 |
| 2500 | 92.0 | 92.9 | 93.7 | 92.6 | 96.8 | 99.9 | 100.8 | 104.2 | 105.3 | 109.1 | 109.1 | 99.9 | 94.9 | 145.3 |
| 3150 | 92.7 | 93.1 | 94.1 | 93.6 | 96.4 | 100.0 | 101.6 | 104.3 | 106.4 | 108.8 | 107.5 | 99.4 | 93.8 | 145.1 |
| 4000 | 93.3 | 93.9 | 94.5 | 93.2 | 97.1 | 100.0 | 100.9 | 104.0 | 104.9 | 106.4 | 105.9 | 98.1 | 92.7 | 143.9 |
| 5000 | 94.1 | 94.7 | 95.5 | 93.4 | 96.2 | 100.1 | 100.5 | 103.4 | 104.9 | 106.6 | 104.6 | 97.0 | 92.5 | 143.8 |
| 6300 | 95.6 | 95.1 | 96.2 | 94.5 | 97.3 | 100.2 | 100.8 | 103.5 | 104.0 | 105.0 | 103.9 | 95.6 | 92.1 | 143.5 |
| 8000 | 96.9 | 97.1 | 97.5 | 95.1 | 97.4 | 100.0 | 100.4 | 101.6 | 102.4 | 103.1 | 101.7 | 95.8 | 91.6 | 142.9 |
| 10000 | 99.0 | 100.5 | 100.5 | 97.8 | 98.6 | 100.6 | 100.1 | 101.6 | 102.4 | 102.4 | 100.7 | 96.0 | 91.5 | 144.0 |
| 12500 | 98.0 | 99.1 | 101.2 | 98.8 | 99.8 | 101.7 | 99.8 | 100.3 | 100.8 | 100.4 | 98.6 | 95.3 | 91.0 | 144.3 |
| 16000 | 95.8 | 98.1 | 98.8 | 99.1 | 99.6 | 101.3 | 99.9 | 99.5 | 99.2 | 97.7 | 98.0 | 93.9 | 89.1 | 144.8 |
| 20000 | 93.4 | 95.8 | 97.0 | 96.0 | 98.0 | 100.2 | 99.6 | 98.2 | 97.1 | 95.8 | 94.3 | 90.9 | 86.4 | 144.6 |
| 25000 | 91.0 | 93.1 | 94.6 | 94.5 | 95.4 | 99.3 | 98.4 | 95.9 | 95.1 | 92.5 | 90.2 | 88.5 | 83.7 | 145.3 |
| 31500 | 87.6 | 89.6 | 90.9 | 91.7 | 92.1 | 96.2 | 94.9 | 93.9 | 92.1 | 89.4 | 86.9 | 85.1 | 79.6 | 145.4 |
| 40000 | 83.4 | 85.1 | 87.1 | 87.6 | 88.8 | 92.5 | 91.2 | 90.4 | 88.9 | 85.0 | 84.2 | 81.1 | 75.0 | 145.7 |
| 50000 | 76.8 | 79.9 | 81.5 | 82.4 | 83.4 | 87.8 | 85.9 | 84.8 | 83.9 | 81.0 | 79.2 | 75.3 | 69.5 | 144.9 |
| 63000 | 70.6 | 74.0 | 76.5 | 76.2 | 77.6 | 82.2 | 79.7 | 80.0 | 78.4 | 74.7 | 74.4 | 69.8 | 63.7 | 144.6 |
| 80000 | 62.0 | 66.7 | 69.0 | 69.0 | 70.3 | 76.0 | 73.1 | 73.1 | 72.2 | 68.5 | 67.1 | 63.4 | 55.8 | 144.7 |
| GASPL | 107.8 | 109.2 | 109.7 | 108.4 | 110.3 | 113.3 | 113.4 | 115.5 | 117.3 | 121.3 | 125.1 | 123.8 | 114.1 | 160.8 |
| PNL | 118.7 | 119.4 | 119.8 | 118.7 | 121.6 | 124.8 | 125.8 | 128.4 | 130.3 | 133.3 | 134.7 | 131.2 | 122.5 | |
| PNLT | 118.7 | 119.4 | 120.5 | 119.3 | 122.4 | 125.3 | 125.8 | 128.4 | 130.3 | 133.3 | 134.7 | 131.2 | 122.5 | |
| DBA | 105.1 | 105.8 | 106.3 | 105.0 | 107.9 | 111.2 | 111.9 | 114.8 | 116.9 | 120.5 | 123.6 | 120.0 | 109.9 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

VEHICLE = ADH232 TEST DATE = 04-25-83 LOCAT = C41 ANECH CH CONFID = 17 MODEL = CD FLTVEL = 400. FPS
 I ALPHA = SB59 IEGA = NO PML AREA = FULL SPHERE TAMB F = 57.07 PAMB HG = 28.97 RELHUM = 25.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNTNT = LBS XNL = RPM XNH = RPM V8 = 1929.1 FPS AE8 = 4.0 SQ IN
 FNFRMB = LBS XNLR = RPM XNHR = RPM V18 = 2342.9 FPS AE18 = 19.9 SQ IN

RJNFT = 83F-400-1722 TAPE = V1722C TEST PT NR = 1722 NC = AEC004 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1722 X1722F

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PML

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PML |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 94.4 | 95.5 | 94.0 | 91.7 | 92.8 | 94.3 | 93.3 | 93.8 | 96.2 | 104.5 | 110.7 | 112.9 | 106.8 | 145.6 |
| 63 | 94.4 | 95.5 | 94.0 | 91.7 | 93.3 | 94.6 | 95.4 | 96.3 | 100.0 | 107.1 | 111.7 | 114.3 | 107.2 | 146.9 |
| 80 | 95.0 | 95.3 | 94.3 | 92.3 | 93.6 | 94.9 | 96.8 | 96.7 | 100.5 | 108.1 | 113.6 | 114.4 | 107.3 | 147.8 |
| 100 | 95.5 | 95.9 | 95.2 | 91.8 | 94.7 | 96.2 | 95.0 | 97.3 | 101.7 | 109.3 | 115.0 | 115.3 | 107.1 | 148.9 |
| 125 | 96.5 | 96.3 | 95.9 | 93.4 | 95.7 | 97.5 | 96.8 | 98.5 | 103.6 | 109.1 | 115.0 | 113.7 | 107.6 | 148.5 |
| 160 | 96.7 | 97.0 | 96.4 | 93.9 | 96.3 | 98.2 | 97.2 | 99.3 | 104.7 | 109.3 | 111.7 | 108.4 | 147.9 | |
| 200 | 98.0 | 96.6 | 96.0 | 94.8 | 97.6 | 99.5 | 98.5 | 100.9 | 104.9 | 108.3 | 112.3 | 108.9 | 146.6 | |
| 250 | 100.4 | 99.3 | 98.2 | 95.5 | 97.4 | 99.8 | 98.8 | 100.9 | 105.9 | 108.1 | 112.0 | 106.5 | 146.4 | |
| 315 | 100.5 | 98.7 | 96.9 | 99.6 | 101.5 | 100.3 | 102.0 | 105.6 | 108.5 | 110.1 | 105.0 | 105.0 | 146.0 | |
| 400 | 102.3 | 101.3 | 100.2 | 98.6 | 98.7 | 100.9 | 100.7 | 102.7 | 105.0 | 108.6 | 109.2 | 103.4 | 106.0 | 146.0 |
| 500 | 99.7 | 98.2 | 98.4 | 97.0 | 99.7 | 101.5 | 101.0 | 103.1 | 106.5 | 108.5 | 107.9 | 103.1 | 105.0 | 145.7 |
| 630 | 99.7 | 99.5 | 99.1 | 96.8 | 99.7 | 102.0 | 102.2 | 103.6 | 106.0 | 107.2 | 107.1 | 102.7 | 104.9 | 145.5 |
| 800 | 100.3 | 99.7 | 99.7 | 98.0 | 100.6 | 102.6 | 102.5 | 104.3 | 106.2 | 107.5 | 106.0 | 101.9 | 105.0 | 145.8 |
| 1000 | 100.6 | 100.3 | 97.8 | 100.2 | 103.1 | 102.5 | 103.9 | 105.9 | 106.5 | 106.1 | 102.2 | 105.3 | 145.8 | |
| 1250 | 101.5 | 101.4 | 101.4 | 98.2 | 101.3 | 103.2 | 102.9 | 104.4 | 105.1 | 105.6 | 104.9 | 102.4 | 105.5 | 145.9 |
| 1600 | 102.9 | 102.7 | 101.9 | 99.2 | 101.4 | 103.0 | 102.8 | 103.0 | 105.7 | 105.6 | 104.5 | 103.1 | 105.9 | 146.4 |
| 2000 | 103.2 | 103.0 | 102.9 | 99.4 | 102.2 | 103.6 | 102.5 | 103.3 | 104.1 | 103.5 | 102.0 | 101.5 | 104.0 | 146.5 |
| 2500 | 103.5 | 104.8 | 104.4 | 101.2 | 103.8 | 104.7 | 101.9 | 101.7 | 102.5 | 100.8 | 101.4 | 100.2 | 147.4 | |
| 3150 | 104.0 | 104.5 | 105.7 | 102.4 | 103.7 | 104.3 | 101.7 | 100.6 | 99.4 | 97.6 | 96.4 | 96.1 | 98.5 | 148.3 |
| 4000 | 101.7 | 103.3 | 103.1 | 102.4 | 102.0 | 103.2 | 101.0 | 98.2 | 98.1 | 95.0 | 93.0 | 94.3 | 95.4 | 148.6 |
| 5000 | 98.7 | 100.4 | 100.7 | 98.7 | 99.5 | 102.3 | 99.9 | 95.9 | 95.8 | 92.6 | 90.4 | 91.7 | 93.1 | 148.7 |
| 6300 | 95.5 | 96.9 | 97.6 | 96.5 | 96.7 | 99.2 | 96.4 | 93.9 | 93.4 | 90.1 | 88.6 | 88.5 | 89.4 | 148.9 |
| 8000 | 94.1 | 94.8 | 94.7 | 93.9 | 93.4 | 95.5 | 92.7 | 90.4 | 88.9 | 85.5 | 84.0 | 83.1 | 84.3 | 149.7 |
| 10000 | 89.5 | 90.9 | 90.5 | 89.4 | 88.0 | 90.8 | 87.3 | 84.8 | 84.7 | 80.8 | 81.1 | 79.7 | 80.4 | 149.5 |
| 12500 | 82.0 | 83.8 | 84.0 | 83.3 | 82.2 | 85.2 | 81.2 | 80.2 | 80.2 | 76.5 | 76.1 | 75.7 | 75.1 | 148.7 |
| 16000 | 74.2 | 76.4 | 77.4 | 75.6 | 74.9 | 79.0 | 74.7 | 73.4 | 70.4 | 66.7 | 66.2 | 65.9 | 65.2 | 148.4 |

ORIGINAL PAGE IS OF POOR QUALITY

| GASPL | 113.7 | 114.0 | 113.8 | 111.4 | 113.2 | 114.9 | 113.8 | 114.7 | 117.3 | 120.1 | 123.4 | 122.5 | 118.7 | 161.7 |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| PNL | 124.1 | 123.7 | 123.3 | 121.2 | 123.7 | 125.6 | 125.3 | 126.9 | 129.4 | 131.6 | 132.7 | 130.3 | 129.7 | |
| PNLT | 124.1 | 123.7 | 123.3 | 121.2 | 123.7 | 125.6 | 125.3 | 126.9 | 129.4 | 131.6 | 132.7 | 130.3 | 129.7 | |
| DBA | 197.3 | 199.2 | 199.8 | 198.4 | 197.6 | 201.1 | 197.0 | 195.7 | 194.1 | 190.4 | 189.9 | 189.4 | 189.0 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|------------------|-------------------|
| VEHICL = ADH232 | TEST DATE = 04-25-83 | LOCAT = C41 ANECH CH | CONFIG = 17 | MODEL = C0 | FLTVEL = 400. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 57.07 | PAMB HG = 28.97 | RELHUM = 25.2 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = |
| FNINI = | LBS XNL | = | RPM | V8 = | 1929.1 FPS |
| FNRAMB = | LBS XNLR | = | RPM | V18 = | 2342.9 FPS |
| RUNPT = 83F-400-1722 | TAPE = X1722F | TEST PT NO = 1722 | NC = AE094 | CORR FAN SPEED = | RPM |

IDENTIFICATION - 83F-A00-1722 X17221

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 70.3 | 72.9 | 72.5 | 70.9 | 72.9 | 74.3 | 75.0 | 75.5 | 78.5 | 84.5 | 87.6 | 87.9 | 77.5 | 162.3 |
| 63 | 70.9 | 72.6 | 72.8 | 71.5 | 73.2 | 74.6 | 76.4 | 75.9 | 79.0 | 85.5 | 89.5 | 88.0 | 77.5 | 163.1 |
| 80 | 71.3 | 73.2 | 73.7 | 70.9 | 74.2 | 75.9 | 74.6 | 76.4 | 80.1 | 86.7 | 90.8 | 88.9 | 77.2 | 164.2 |
| 100 | 72.2 | 73.6 | 74.3 | 72.5 | 75.2 | 77.1 | 76.3 | 77.6 | 81.9 | 86.4 | 90.7 | 87.2 | 77.7 | 163.9 |
| 125 | 72.3 | 74.2 | 74.6 | 72.9 | 75.8 | 77.7 | 76.6 | 78.3 | 82.9 | 86.5 | 89.7 | 85.1 | 78.2 | 163.2 |
| 160 | 73.4 | 73.6 | 74.1 | 73.6 | 76.9 | 78.9 | 77.8 | 79.8 | 83.0 | 85.3 | 87.7 | 82.0 | 76.3 | 161.9 |
| 200 | 75.6 | 76.1 | 76.1 | 74.2 | 76.6 | 79.1 | 77.9 | 79.6 | 83.8 | 84.9 | 87.2 | 79.2 | 73.6 | 161.7 |
| 250 | 73.9 | 77.0 | 76.4 | 75.4 | 78.5 | 80.5 | 79.3 | 80.5 | 83.3 | 85.1 | 84.9 | 77.3 | 73.3 | 161.4 |
| 315 | 76.7 | 77.5 | 77.6 | 76.8 | 77.4 | 79.8 | 79.4 | 80.9 | 82.4 | 84.7 | 83.6 | 75.1 | 73.5 | 161.3 |
| 400 | 73.6 | 74.0 | 75.4 | 74.8 | 78.0 | 80.0 | 79.3 | 81.0 | 83.6 | 84.4 | 81.8 | 74.2 | 71.5 | 161.1 |
| 500 | 73.0 | 74.8 | 75.8 | 74.3 | 77.7 | 80.2 | 81.2 | 82.7 | 82.5 | 80.5 | 73.1 | 70.3 | 160.8 | |
| 630 | 73.1 | 74.6 | 75.9 | 75.2 | 78.5 | 80.5 | 80.2 | 81.4 | 82.5 | 82.4 | 78.8 | 71.6 | 69.3 | 161.1 |
| 800 | 73.0 | 75.0 | 76.1 | 74.7 | 77.6 | 80.7 | 79.9 | 80.7 | 81.7 | 81.0 | 78.3 | 71.1 | 68.4 | 161.1 |
| 1000 | 73.2 | 75.3 | 76.9 | 74.8 | 80.5 | 80.5 | 80.9 | 80.6 | 79.6 | 76.5 | 70.4 | 67.3 | 161.2 | |
| 1250 | 73.9 | 76.1 | 77.0 | 75.3 | 78.1 | 79.9 | 79.5 | 79.1 | 80.8 | 79.0 | 75.5 | 70.2 | 66.0 | 161.7 |
| 1600 | 73.1 | 75.6 | 77.3 | 75.0 | 78.4 | 80.0 | 78.7 | 78.9 | 78.5 | 76.1 | 71.8 | 66.9 | 61.6 | 161.8 |
| 2000 | 71.8 | 76.2 | 77.9 | 75.9 | 79.3 | 80.5 | 76.3 | 76.0 | 72.3 | 69.7 | 63.4 | 56.2 | 162.7 | |
| 2500 | 70.1 | 74.3 | 78.0 | 76.1 | 78.2 | 79.2 | 76.3 | 74.4 | 71.7 | 67.5 | 62.6 | 56.2 | 47.2 | 163.6 |
| 3150 | 63.9 | 70.1 | 72.9 | 74.0 | 74.6 | 76.1 | 73.6 | 69.8 | 67.8 | 61.7 | 55.1 | 48.8 | 36.1 | 163.9 |
| 4000 | 53.9 | 61.7 | 65.8 | 66.2 | 68.3 | 71.5 | 68.7 | 63.4 | 61.0 | 53.9 | 45.6 | 36.4 | 17.5 | 164.0 |
| 5000 | 40.1 | 49.8 | 55.6 | 57.7 | 59.7 | 62.8 | 59.3 | 55.2 | 51.5 | 43.0 | 33.2 | 18.7 | | |
| 6300 | 20.5 | 33.1 | 40.3 | 44.0 | 45.9 | 48.7 | 45.2 | 40.5 | 34.5 | 23.7 | 10.4 | | | 165.0 |
| 8000 | 3.4 | 13.8 | 19.3 | 21.5 | 25.4 | 20.8 | 14.7 | 8.0 | | | | | | 164.8 |
| 10000 | | | | | | | | | | | | | | 164.1 |
| 12500 | | | | | | | | | | | | | | 163.8 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|------|------|-------|
| DRSPL | 85.8 | 87.7 | 88.7 | 87.3 | 90.0 | 91.9 | 91.0 | 91.9 | 94.1 | 96.3 | 98.4 | 95.2 | 85.5 | 176.9 |
| PNL | 93.6 | 96.9 | 99.3 | 97.9 | 100.3 | 102.0 | 100.0 | 99.5 | 100.2 | 100.3 | 99.8 | 94.7 | 87.7 | |
| PNLT | 93.6 | 97.6 | 99.9 | 98.5 | 100.9 | 102.5 | 100.6 | 100.1 | 100.7 | 100.1 | 101.0 | 94.7 | 87.7 | |
| DBA | 82.5 | 85.1 | 86.8 | 85.3 | 88.1 | 89.9 | 88.7 | 88.9 | 89.7 | 89.2 | 87.3 | 80.8 | 76.8 | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8
 NASA DUAL FLOW THERMAL SHIELD/DFTAS-17/NAS3-22137
 VEHICL = ADH292 TEST DATE = 04-25-83 LOGCAT = C41 ANECH CH CONFIG = 17 MODEL = C0 FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO MPH = 2400.0 FTJ EXT DIST = 2400.0 FT EXT CONFIG = SL TAMB F = 57.07 PAMB HG = 28.97 RELHUM = 26.2 PCT
 WIND DIR = DEG WIND VEL = MPH
 FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1929.1 FPS AE9 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2342.9 FPS AE18 = 19.9 SQ IN

TAS-18 (Shield to Outer Stream Velocity Ratio at
Takeoff is 0.48).

IDENTIFICATION - MODEL 83F-ZER-1803 X1803C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 80.4 | 85.7 | 85.9 | 86.0 | 77.8 | 79.4 | 83.8 | 86.7 | 81.7 | 83.0 | 84.4 | 87.6 | 85.7 | 126.3 |
| 60 | 84.8 | 94.3 | 96.6 | 96.1 | 85.7 | 87.3 | 93.4 | 95.1 | 90.8 | 88.9 | 87.0 | 95.2 | 97.1 | 135.3 |
| 80 | 84.5 | 88.8 | 84.6 | 82.9 | 83.7 | 88.3 | 87.7 | 87.4 | 87.8 | 89.6 | 91.3 | 91.7 | 77.6 | 129.8 |
| 100 | 83.7 | 89.2 | 84.8 | 84.8 | 87.4 | 89.0 | 88.1 | 89.8 | 88.5 | 91.1 | 93.7 | 95.9 | 81.8 | 131.6 |
| 125 | 80.6 | 84.4 | 85.9 | 84.7 | 87.3 | 89.7 | 89.3 | 89.0 | 89.2 | 93.5 | 97.9 | 99.6 | 85.7 | 133.7 |
| 160 | 79.9 | 81.2 | 85.0 | 82.8 | 83.1 | 86.0 | 88.1 | 88.0 | 88.2 | 93.0 | 97.7 | 99.9 | 81.5 | 133.3 |
| 200 | 80.8 | 82.3 | 85.8 | 84.1 | 85.0 | 88.1 | 89.2 | 90.6 | 92.8 | 95.9 | 99.0 | 103.5 | 94.6 | 136.0 |
| 250 | 81.0 | 85.3 | 84.8 | 83.6 | 86.0 | 88.6 | 89.7 | 91.4 | 93.3 | 98.2 | 103.0 | 105.5 | 96.9 | 138.3 |
| 315 | 82.1 | 85.9 | 87.1 | 85.4 | 87.5 | 90.6 | 92.3 | 93.4 | 94.9 | 99.0 | 103.1 | 105.0 | 99.9 | 138.7 |
| 400 | 83.1 | 85.4 | 86.4 | 84.2 | 86.8 | 89.9 | 92.8 | 93.7 | 96.4 | 100.2 | 104.1 | 105.5 | 99.7 | 139.4 |
| 500 | 83.3 | 86.1 | 86.2 | 84.7 | 87.8 | 91.1 | 91.5 | 93.7 | 96.4 | 99.9 | 103.4 | 103.8 | 98.7 | 138.6 |
| 630 | 82.8 | 86.3 | 86.6 | 85.6 | 88.5 | 91.8 | 93.0 | 94.6 | 96.6 | 100.1 | 103.6 | 102.5 | 97.6 | 138.5 |
| 800 | 84.3 | 86.1 | 87.2 | 85.4 | 88.5 | 92.1 | 92.8 | 95.4 | 98.2 | 100.4 | 102.6 | 100.5 | 96.7 | 138.2 |
| 1000 | 86.5 | 87.8 | 88.3 | 86.6 | 90.2 | 93.1 | 93.7 | 96.4 | 98.8 | 100.3 | 101.8 | 99.2 | 95.9 | 138.1 |
| 1250 | 84.9 | 89.0 | 88.5 | 87.1 | 89.4 | 93.0 | 92.9 | 96.3 | 98.2 | 99.5 | 100.7 | 98.4 | 95.0 | 137.5 |
| 1600 | 84.8 | 88.5 | 89.4 | 87.3 | 90.3 | 93.6 | 94.2 | 96.5 | 98.9 | 100.0 | 101.1 | 98.0 | 95.2 | 137.9 |
| 2000 | 85.3 | 88.1 | 89.0 | 87.4 | 90.5 | 93.6 | 94.1 | 96.9 | 98.2 | 99.3 | 100.3 | 97.9 | 95.4 | 137.6 |
| 2500 | 84.4 | 88.7 | 88.8 | 87.5 | 90.1 | 93.7 | 93.7 | 96.5 | 97.7 | 98.3 | 99.0 | 96.5 | 94.5 | 136.9 |
| 3150 | 84.1 | 88.2 | 88.6 | 87.8 | 90.4 | 94.0 | 94.6 | 96.3 | 98.7 | 98.5 | 98.3 | 95.7 | 92.8 | 137.1 |
| 4000 | 84.1 | 88.2 | 88.8 | 87.3 | 90.9 | 93.7 | 94.0 | 96.1 | 97.0 | 96.8 | 96.7 | 95.0 | 91.6 | 136.2 |
| 5000 | 84.5 | 88.8 | 89.2 | 87.3 | 90.8 | 94.1 | 93.7 | 96.0 | 96.8 | 96.2 | 95.7 | 93.5 | 90.5 | 136.0 |
| 6300 | 84.9 | 88.5 | 89.3 | 87.7 | 91.2 | 94.2 | 94.5 | 96.7 | 95.9 | 95.1 | 94.3 | 91.9 | 89.1 | 136.0 |
| 8000 | 83.6 | 87.4 | 88.3 | 87.5 | 90.2 | 93.7 | 93.9 | 95.5 | 94.5 | 93.3 | 92.0 | 89.3 | 86.9 | 135.2 |
| 10000 | 83.2 | 87.7 | 88.7 | 88.1 | 91.2 | 94.2 | 93.9 | 95.2 | 94.5 | 92.1 | 89.6 | 87.3 | 85.1 | 135.6 |
| 12500 | 82.1 | 86.0 | 87.8 | 87.3 | 90.3 | 93.8 | 93.4 | 93.8 | 93.2 | 90.1 | 87.1 | 84.8 | 82.4 | 135.3 |
| 16000 | 79.9 | 85.9 | 86.3 | 86.6 | 88.5 | 92.4 | 92.5 | 92.6 | 91.7 | 87.8 | 84.0 | 80.5 | 78.2 | 135.3 |
| 20000 | 79.1 | 84.3 | 85.1 | 84.9 | 86.7 | 90.2 | 90.8 | 89.9 | 88.8 | 84.6 | 80.5 | 76.6 | 74.9 | 134.8 |
| 25000 | 77.5 | 82.0 | 83.3 | 84.1 | 85.2 | 89.3 | 88.5 | 87.0 | 86.3 | 81.6 | 76.8 | 74.8 | 71.2 | 135.3 |
| 31500 | 73.0 | 78.1 | 79.2 | 81.3 | 82.3 | 86.1 | 84.9 | 84.5 | 82.9 | 78.1 | 73.3 | 71.0 | 66.4 | 135.2 |
| 40000 | 68.6 | 73.6 | 75.4 | 77.0 | 78.4 | 83.0 | 82.1 | 80.8 | 79.7 | 75.6 | 71.6 | 67.8 | 62.9 | 135.8 |
| 50000 | 62.3 | 67.7 | 69.0 | 71.0 | 72.2 | 77.7 | 75.7 | 75.7 | 74.7 | 70.3 | 66.0 | 62.4 | 56.6 | 134.6 |
| 63000 | 56.5 | 62.9 | 63.6 | 64.5 | 66.5 | 71.9 | 69.6 | 70.0 | 70.1 | 65.9 | 61.7 | 57.4 | 50.7 | 134.3 |
| 80000 | 50.0 | 59.1 | 56.9 | 56.6 | 59.4 | 65.8 | 63.4 | 63.0 | 62.9 | 58.6 | 54.4 | 50.1 | 42.8 | 134.6 |
| 0ASPL | 97.9 | 102.1 | 102.9 | 101.9 | 103.2 | 106.4 | 107.0 | 108.7 | 109.9 | 111.4 | 113.7 | 114.0 | 108.8 | 151.5 |
| PWL | 109.9 | 113.6 | 114.4 | 112.9 | 115.5 | 118.7 | 119.2 | 121.2 | 122.7 | 123.4 | 124.3 | 123.0 | 119.2 | |
| PWLT | 109.9 | 113.6 | 114.4 | 112.9 | 115.5 | 118.7 | 119.2 | 121.2 | 122.7 | 123.4 | 124.3 | 123.0 | 119.2 | |
| DBA | 96.3 | 99.7 | 100.3 | 98.8 | 101.8 | 105.1 | 105.4 | 107.7 | 109.2 | 110.3 | 111.8 | 110.4 | 106.5 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

| | | | | | |
|----------------------|----------------------|----------------------|-------------|------------------------|-------------------|
| VERTICAL = ADH252 | TEST DATE = 04-28-83 | LOCAT = C41 ANECH CH | CONFIG = 18 | MODEL = C6 | FLTVEL = 0. FPS |
| IAPLHA = SB59 | WIND DIR = | WIND VEL = | DEG = | PWL AREA = FULL SPHERE | TAMB F = 65.86 |
| WIND DIR = | DEG = | WIND VEL = | MPH = | EXT DIST = 40.0 FT | EXT CONFIG = ARC |
| PNTNT = | LBS XNL = | RPM = | XNHR = | V8 = | V18 = |
| FNRAMB = | LBS XNLR = | RPM = | XNHR = | V8 = 1083.5 FPS | AE8 = 4.0 SQ IN |
| RUNPT = 83F-ZER-1803 | TAPE = | TEST PT NO = 1803 | NC = | AE18 = 1748.8 FPS | AE18 = 19.9 SQ IN |
| | | | | -CORR FAN SPEED = | RPM = |

IDENTIFICATION - 83F-ZER-1803 X1803F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|-------|-------|-------|------|-------|
| 50 | 80.4 | 85.7 | 85.9 | 86.0 | 77.8 | 79.4 | 83.8 | 86.7 | 81.7 | 83.0 | 84.4 | 87.6 | 85.7 | 126.3 |
| 63 | 84.8 | 94.3 | 96.6 | 96.1 | 85.7 | 87.3 | 93.4 | 95.1 | 90.8 | 88.9 | 87.0 | 95.2 | 97.1 | 135.3 |
| 80 | 84.5 | 88.8 | 84.6 | 82.9 | 83.7 | 88.3 | 87.7 | 87.4 | 87.8 | 89.6 | 91.3 | 91.7 | 77.6 | 129.8 |
| 100 | 83.7 | 89.2 | 84.8 | 84.8 | 87.4 | 89.0 | 88.1 | 89.8 | 88.5 | 91.1 | 93.7 | 95.9 | 81.8 | 131.6 |
| 125 | 80.6 | 84.4 | 85.9 | 84.7 | 87.3 | 89.7 | 89.3 | 89.0 | 89.2 | 93.5 | 97.9 | 99.6 | 85.7 | 133.7 |
| 160 | 79.9 | 81.2 | 85.0 | 82.8 | 83.1 | 86.0 | 88.1 | 88.0 | 88.2 | 93.0 | 97.7 | 99.9 | 91.5 | 133.3 |
| 200 | 80.8 | 82.3 | 85.8 | 84.1 | 85.0 | 88.1 | 89.2 | 90.6 | 92.8 | 95.9 | 99.0 | 103.5 | 94.6 | 136.0 |
| 250 | 81.0 | 85.3 | 84.8 | 83.6 | 86.0 | 88.6 | 89.7 | 91.4 | 93.3 | 98.2 | 103.0 | 105.5 | 96.9 | 138.3 |
| 315 | 82.1 | 85.9 | 87.1 | 85.4 | 87.5 | 90.6 | 92.3 | 93.4 | 94.9 | 99.0 | 103.1 | 105.0 | 99.9 | 138.7 |
| 400 | 83.1 | 85.4 | 86.4 | 84.2 | 86.8 | 89.9 | 92.8 | 93.7 | 96.4 | 100.2 | 104.1 | 105.5 | 99.7 | 139.4 |
| 500 | 83.3 | 86.1 | 86.2 | 84.7 | 87.8 | 91.1 | 91.5 | 93.7 | 96.4 | 99.9 | 103.4 | 103.8 | 98.7 | 138.6 |
| 630 | 82.8 | 86.3 | 86.6 | 85.6 | 88.5 | 91.8 | 93.0 | 94.6 | 96.6 | 100.1 | 103.6 | 102.5 | 97.6 | 138.5 |
| 800 | 84.3 | 86.1 | 87.2 | 85.4 | 88.5 | 92.1 | 92.8 | 95.4 | 98.2 | 100.4 | 102.6 | 100.5 | 96.7 | 138.2 |
| 1000 | 86.5 | 87.8 | 88.3 | 86.6 | 90.2 | 93.1 | 93.7 | 96.4 | 98.8 | 100.3 | 101.8 | 99.2 | 95.9 | 138.1 |
| 1250 | 84.9 | 89.0 | 88.5 | 87.1 | 89.4 | 93.0 | 92.9 | 96.3 | 98.2 | 99.5 | 100.7 | 98.4 | 95.0 | 137.5 |
| 1600 | 84.8 | 88.5 | 89.4 | 87.3 | 90.3 | 93.6 | 94.2 | 96.5 | 98.9 | 100.0 | 101.1 | 98.0 | 95.2 | 137.9 |
| 2000 | 85.3 | 88.1 | 89.0 | 87.4 | 90.5 | 93.6 | 94.1 | 96.9 | 98.2 | 99.3 | 100.3 | 97.9 | 95.4 | 137.6 |
| 2500 | 84.4 | 88.7 | 89.8 | 87.5 | 90.1 | 93.7 | 93.7 | 96.5 | 97.7 | 98.3 | 99.0 | 96.5 | 94.5 | 136.9 |
| 3150 | 84.7 | 88.3 | 89.6 | 87.8 | 90.4 | 94.0 | 94.6 | 96.3 | 98.7 | 98.5 | 98.3 | 95.7 | 92.8 | 137.1 |
| 4000 | 84.1 | 88.2 | 89.8 | 87.3 | 90.9 | 93.7 | 94.0 | 96.1 | 97.0 | 96.8 | 96.7 | 95.0 | 91.6 | 136.2 |
| 5000 | 84.5 | 88.8 | 89.2 | 87.3 | 90.8 | 94.1 | 93.7 | 96.0 | 96.8 | 96.2 | 95.7 | 93.5 | 90.5 | 136.0 |
| 6300 | 84.9 | 88.5 | 89.3 | 87.7 | 91.2 | 94.2 | 94.5 | 96.7 | 95.9 | 95.1 | 94.3 | 91.9 | 89.1 | 136.0 |
| 8000 | 87.4 | 88.3 | 87.5 | 87.5 | 90.2 | 93.7 | 93.9 | 95.5 | 94.5 | 93.3 | 92.0 | 89.3 | 86.9 | 135.2 |
| 10000 | 87.7 | 88.7 | 88.1 | 88.1 | 91.2 | 94.2 | 93.9 | 95.2 | 94.5 | 92.1 | 89.6 | 87.3 | 85.1 | 135.6 |
| 12500 | 82.1 | 86.0 | 87.8 | 87.3 | 90.3 | 93.8 | 93.8 | 93.8 | 93.2 | 90.1 | 87.1 | 84.8 | 82.4 | 135.3 |
| 16000 | 79.9 | 85.9 | 86.3 | 86.6 | 88.5 | 92.4 | 92.5 | 92.6 | 91.7 | 87.8 | 84.0 | 80.5 | 78.2 | 135.3 |
| 20000 | 84.3 | 85.1 | 84.9 | 86.7 | 90.2 | 90.8 | 89.9 | 88.8 | 84.6 | 80.5 | 76.6 | 74.9 | 74.9 | 134.8 |
| 25000 | 77.5 | 82.0 | 83.3 | 84.1 | 85.2 | 89.3 | 88.5 | 87.0 | 86.3 | 81.6 | 76.8 | 74.8 | 71.2 | 135.3 |
| 31500 | 73.0 | 78.1 | 79.2 | 81.3 | 82.3 | 86.1 | 84.9 | 84.5 | 82.9 | 78.1 | 73.3 | 71.0 | 66.4 | 135.2 |
| 40000 | 68.6 | 73.6 | 75.4 | 77.0 | 78.4 | 83.0 | 82.1 | 80.8 | 79.7 | 75.6 | 71.6 | 67.8 | 62.9 | 135.8 |
| 50000 | 62.3 | 67.7 | 69.0 | 71.0 | 72.2 | 77.7 | 75.7 | 75.7 | 74.7 | 70.3 | 66.0 | 62.4 | 56.6 | 134.6 |
| 63000 | 56.5 | 62.9 | 63.6 | 64.5 | 66.5 | 71.9 | 69.6 | 70.0 | 70.1 | 65.9 | 61.7 | 57.4 | 50.7 | 134.3 |
| 80000 | 50.0 | 59.1 | 56.9 | 56.6 | 59.4 | 65.8 | 63.4 | 63.0 | 62.9 | 58.6 | 54.4 | 50.1 | 42.8 | 134.6 |

ORIGINAL PAGE IS OF POOR QUALITY

| MODEL/FULL SCALE FAC | IN=1.000, CALC=1.000 | FREE JET VEL (FPS)= | 0. | DIAM (IN)= | 48.00 | REFR CORR YES, | TURB CORR YES |
|---|----------------------|------------------------|-------------|------------|----------|----------------|---------------|
| NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137 | | | | | | | |
| VEHICLE = ADH252 | TEST DATE = 04-28-83 | LOCAT = C41 ANECH CH | CONFIG = 18 | MODEL = CO | FLTVEL = | 0. FPS | |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = | PAMB HG = | 29.61 | RELHUM = | 68.2 PCT |
| WIND DIR = | DEG WIND VEL = | EXT DIST = | 40.0 FT | MIKE HT = | | NBFR = | |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V10 = | 1748.8 FPS | AE10 = |
| FNIN1 = | LBS XNL | RPM | XNH | RPM | V8 = | 1083.5 FPS | AE8 = |
| FNRAMB = | | | | | | | |

IDENTIFICATION - 83F-ZER-1803 X18031

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 58.0 | 63.3 | 65.6 | 64.6 | 67.1 | 70.4 | 71.9 | 72.6 | 73.4 | 76.4 | 79.0 | 78.7 | 70.3 | 154.1 |
| 63 | 58.9 | 62.7 | 64.8 | 63.3 | 66.3 | 69.6 | 72.3 | 72.8 | 74.8 | 77.6 | 79.9 | 79.1 | 69.9 | 154.7 |
| 80 | 59.1 | 63.5 | 64.6 | 63.8 | 67.3 | 70.8 | 71.1 | 72.8 | 74.8 | 77.2 | 79.1 | 77.4 | 68.9 | 153.9 |
| 100 | 58.5 | 63.6 | 65.0 | 64.7 | 68.0 | 71.5 | 72.5 | 73.7 | 75.0 | 77.4 | 79.3 | 75.9 | 67.7 | 153.9 |
| 125 | 59.9 | 63.3 | 65.4 | 64.5 | 68.0 | 71.7 | 72.2 | 74.5 | 76.4 | 77.6 | 78.2 | 73.8 | 66.5 | 153.5 |
| 160 | 61.9 | 64.8 | 66.5 | 65.5 | 69.5 | 72.5 | 73.0 | 75.2 | 77.0 | 77.3 | 77.2 | 72.3 | 65.3 | 153.5 |
| 200 | 60.1 | 65.8 | 66.4 | 65.8 | 68.5 | 72.3 | 72.0 | 75.0 | 76.2 | 76.3 | 75.8 | 71.1 | 64.0 | 152.8 |
| 250 | 59.6 | 65.0 | 67.1 | 65.8 | 69.2 | 72.7 | 73.2 | 75.0 | 76.6 | 76.5 | 75.9 | 70.3 | 63.5 | 153.3 |
| 315 | 59.6 | 64.2 | 66.4 | 65.6 | 69.1 | 72.4 | 72.7 | 75.1 | 75.6 | 75.4 | 74.7 | 69.6 | 62.8 | 152.9 |
| 400 | 58.2 | 64.4 | 65.8 | 65.3 | 68.5 | 72.2 | 72.0 | 74.4 | 74.7 | 74.0 | 72.8 | 67.6 | 61.0 | 152.2 |
| 500 | 58.1 | 63.6 | 66.2 | 65.4 | 68.4 | 72.2 | 72.6 | 73.9 | 75.3 | 73.8 | 71.6 | 66.0 | 58.2 | 152.4 |
| 630 | 56.9 | 63.1 | 65.1 | 64.4 | 68.6 | 71.5 | 71.7 | 73.3 | 73.3 | 71.7 | 69.5 | 64.6 | 55.9 | 151.5 |
| 800 | 56.8 | 63.2 | 65.0 | 64.1 | 68.2 | 71.6 | 71.1 | 72.8 | 72.6 | 70.6 | 67.9 | 62.3 | 53.6 | 151.3 |
| 1000 | 56.5 | 62.4 | 64.8 | 64.2 | 68.3 | 71.4 | 71.6 | 73.2 | 71.4 | 69.1 | 66.0 | 59.9 | 50.9 | 151.3 |
| 1250 | 54.6 | 60.9 | 63.4 | 63.7 | 66.9 | 70.7 | 70.7 | 71.7 | 69.6 | 66.7 | 63.0 | 56.4 | 47.1 | 150.5 |
| 1600 | 53.0 | 60.3 | 63.1 | 63.6 | 67.4 | 70.6 | 70.2 | 70.7 | 69.0 | 64.7 | 59.4 | 52.8 | 42.7 | 150.9 |
| 2000 | 50.4 | 57.4 | 61.3 | 62.1 | 65.9 | 69.6 | 68.9 | 68.6 | 66.7 | 61.6 | 55.4 | 48.1 | 36.4 | 150.7 |
| 2500 | 46.0 | 55.7 | 59.5 | 60.3 | 63.0 | 67.3 | 67.1 | 66.3 | 63.9 | 57.7 | 50.1 | 40.6 | 26.9 | 150.6 |
| 3150 | 41.3 | 51.0 | 54.9 | 56.5 | 59.3 | 63.1 | 63.4 | 61.5 | 58.5 | 51.4 | 42.6 | 31.1 | 14.6 | 150.2 |
| 4000 | 32.6 | 43.3 | 48.4 | 51.6 | 54.1 | 58.6 | 57.3 | 54.5 | 51.4 | 42.8 | 31.9 | 19.6 | 150.6 | |
| 5000 | 17.5 | 31.0 | 37.2 | 42.5 | 45.2 | 49.7 | 47.8 | 45.7 | 41.0 | 31.0 | 17.8 | 1.2 | 150.5 | |
| 6300 | 11.9 | 21.0 | 27.0 | 30.9 | 36.3 | 34.6 | 35.9 | 25.3 | 13.9 | | | | 151.1 | |
| 8000 | | | 0.9 | 5.7 | 12.3 | 9.1 | 5.6 | | | | | | 149.9 | |
| 10000 | | | | | | | | | | | | | 149.6 | |
| 12500 | | | | | | | | | | | | | 149.9 | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

DBASPL 70.7 75.8 77.7 77.1 80.5 83.9 84.3 85.9 86.7 87.3 88.0 85.3 77.1 166.1

PNL 74.7 81.5 84.2 84.6 88.1 91.8 91.7 92.2 91.7 90.4 89.0 83.7 75.3

PNLT 74.7 81.5 84.2 85.2 88.7 92.4 92.4 92.8 91.7 90.4 89.0 83.7 75.3

DBA 64.8 71.0 73.4 73.3 76.9 80.4 80.2 81.4 80.8 79.1 77.2 72.0 64.4

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.637 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

VEHICL = ADH252 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CONFIG = 18 MODEL = CO FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PNL AREA = FULL SPHERE TAMB F = 65.86 PAMB HG = 29.61 RELHUM = 68.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNINI = LBS XNL RPM XNHR = RPM V8 = 1083.5 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 1748.8 FPS AE18 = 19.9 SQ IN

TIME 83F-18 TAP 3031 NC

IDENTIFICATION - MODEL 83F-400-1804 X1804C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 85.8 | 86.8 | 81.3 | 79.3 | 85.6 | 85.2 | 79.7 | 82.0 | 86.0 | 88.4 | 92.1 | 94.1 | 134.1 | 125.7 |
| 63 | 92.4 | 97.5 | 91.7 | 87.1 | 95.5 | 93.9 | 86.4 | 88.4 | 92.1 | 94.1 | 134.1 | 125.7 | 134.1 | 125.7 |
| 80 | 83.3 | 87.0 | 81.6 | 82.0 | 86.5 | 86.7 | 87.6 | 85.6 | 88.7 | 87.9 | 127.8 | 127.8 | 127.8 | 127.8 |
| 100 | 80.7 | 86.5 | 81.5 | 80.3 | 83.6 | 86.5 | 84.9 | 86.5 | 85.5 | 87.6 | 90.4 | 88.4 | 127.8 | 127.8 |
| 125 | 78.4 | 82.1 | 83.7 | 81.1 | 84.3 | 86.6 | 86.0 | 85.7 | 86.0 | 89.8 | 93.8 | 91.4 | 129.2 | 129.2 |
| 160 | 78.8 | 82.7 | 78.2 | 79.5 | 83.1 | 86.4 | 84.8 | 85.6 | 89.9 | 94.4 | 91.8 | 87.0 | 129.0 | 129.0 |
| 200 | 79.0 | 84.3 | 78.7 | 78.9 | 82.9 | 85.4 | 86.6 | 87.7 | 90.8 | 94.2 | 92.6 | 89.8 | 129.6 | 129.6 |
| 250 | 75.7 | 78.8 | 80.0 | 77.7 | 80.8 | 83.5 | 85.6 | 88.0 | 92.7 | 97.5 | 94.4 | 90.7 | 131.3 | 131.3 |
| 315 | 80.4 | 84.8 | 80.1 | 80.5 | 84.7 | 87.4 | 88.2 | 88.5 | 93.1 | 97.8 | 95.1 | 91.9 | 132.1 | 132.1 |
| 400 | 77.5 | 80.1 | 81.2 | 79.2 | 81.9 | 84.9 | 87.2 | 90.6 | 94.3 | 98.1 | 93.6 | 88.3 | 131.9 | 131.9 |
| 500 | 78.4 | 80.5 | 81.0 | 79.0 | 82.3 | 85.8 | 88.1 | 90.6 | 94.2 | 97.8 | 93.1 | 87.6 | 131.9 | 131.9 |
| 630 | 77.5 | 80.7 | 81.2 | 79.5 | 83.6 | 86.8 | 87.9 | 88.8 | 90.6 | 94.0 | 97.5 | 91.9 | 131.9 | 131.9 |
| 800 | 79.2 | 80.3 | 82.0 | 80.2 | 83.4 | 87.1 | 88.2 | 90.1 | 91.6 | 93.6 | 95.6 | 90.5 | 131.4 | 131.4 |
| 1000 | 81.7 | 82.0 | 82.5 | 81.4 | 85.1 | 88.0 | 88.4 | 91.3 | 92.6 | 93.8 | 95.0 | 89.3 | 131.7 | 131.7 |
| 1250 | 80.9 | 83.4 | 82.4 | 81.7 | 84.3 | 87.9 | 88.5 | 91.2 | 93.5 | 93.5 | 93.7 | 88.4 | 131.5 | 131.5 |
| 1600 | 82.3 | 83.4 | 83.8 | 82.9 | 85.9 | 89.6 | 89.7 | 92.3 | 94.1 | 94.2 | 94.3 | 89.1 | 132.4 | 132.4 |
| 2000 | 83.2 | 83.3 | 84.7 | 83.3 | 85.9 | 89.5 | 90.5 | 93.1 | 94.2 | 93.7 | 93.3 | 87.1 | 132.4 | 132.4 |
| 2500 | 83.6 | 84.7 | 85.2 | 83.7 | 87.1 | 90.0 | 89.9 | 92.8 | 93.6 | 93.0 | 92.4 | 87.2 | 132.1 | 132.1 |
| 3150 | 84.7 | 84.3 | 85.3 | 84.2 | 87.1 | 90.7 | 91.3 | 93.0 | 94.6 | 93.5 | 92.5 | 86.1 | 132.7 | 132.7 |
| 4000 | 84.6 | 84.7 | 86.0 | 84.4 | 88.4 | 91.6 | 91.7 | 93.6 | 93.7 | 92.8 | 92.1 | 86.1 | 132.9 | 132.9 |
| 5000 | 84.8 | 85.8 | 86.6 | 85.0 | 88.5 | 92.5 | 92.1 | 94.5 | 93.7 | 93.0 | 92.4 | 86.5 | 133.5 | 133.5 |
| 6300 | 85.4 | 85.7 | 87.5 | 86.1 | 89.2 | 92.1 | 92.2 | 93.9 | 93.1 | 92.5 | 92.1 | 86.7 | 133.5 | 133.5 |
| 8000 | 84.9 | 85.4 | 86.7 | 86.4 | 89.1 | 92.4 | 91.9 | 92.4 | 92.4 | 91.6 | 91.0 | 86.4 | 134.2 | 134.2 |
| 10000 | 84.6 | 86.9 | 87.7 | 87.5 | 89.4 | 93.2 | 92.6 | 93.1 | 92.3 | 91.1 | 90.1 | 85.9 | 134.2 | 134.2 |
| 12500 | 83.5 | 85.2 | 87.3 | 86.9 | 90.5 | 93.3 | 92.1 | 92.0 | 90.6 | 88.6 | 86.7 | 83.7 | 134.2 | 134.2 |
| 16000 | 82.6 | 85.1 | 86.2 | 86.8 | 88.1 | 92.1 | 91.7 | 91.1 | 89.6 | 87.0 | 84.6 | 81.1 | 134.5 | 134.5 |
| 20000 | 81.6 | 83.9 | 85.3 | 84.8 | 86.1 | 89.9 | 89.7 | 88.8 | 86.7 | 83.8 | 81.1 | 77.8 | 134.1 | 134.1 |
| 25000 | 79.2 | 81.2 | 83.7 | 83.5 | 84.9 | 89.0 | 88.6 | 85.7 | 84.9 | 80.8 | 76.9 | 74.1 | 134.8 | 134.8 |
| 31500 | 74.6 | 77.2 | 79.0 | 81.1 | 81.9 | 86.5 | 85.2 | 83.1 | 82.3 | 78.0 | 73.9 | 70.4 | 135.0 | 135.0 |
| 40000 | 69.9 | 73.7 | 75.4 | 77.0 | 78.5 | 82.6 | 81.7 | 80.1 | 78.7 | 75.2 | 71.7 | 67.6 | 135.5 | 135.5 |
| 50000 | 64.6 | 69.0 | 73.7 | 70.9 | 72.1 | 78.1 | 76.3 | 74.6 | 74.0 | 70.6 | 67.3 | 62.6 | 134.9 | 134.9 |
| 63000 | 62.0 | 65.9 | 74.8 | 66.6 | 66.5 | 73.0 | 71.9 | 69.8 | 69.4 | 66.6 | 63.9 | 58.1 | 136.5 | 136.5 |
| 80000 | 60.5 | 61.6 | 74.3 | 60.9 | 59.1 | 68.2 | 68.7 | 64.6 | 62.8 | 59.3 | 57.2 | 51.4 | 140.2 | 140.2 |
| 0ASPL | 96.1 | 99.3 | 101.4 | 96.8 | 100.4 | 103.9 | 104.4 | 105.4 | 105.7 | 106.3 | 108.2 | 104.4 | 100.2 | 148.6 |
| PNLT | 108.0 | 110.0 | 111.1 | 109.3 | 112.2 | 115.7 | 115.8 | 117.8 | 118.6 | 118.5 | 119.1 | 114.1 | 108.0 | |
| PNLT | 114.6 | 110.0 | 111.8 | 109.3 | 112.2 | 115.7 | 122.5 | 117.8 | 118.6 | 118.5 | 119.1 | 114.1 | 114.6 | |
| DNA | 94.9 | 95.8 | 96.7 | 95.5 | 98.6 | 102.0 | 102.1 | 104.1 | 104.9 | 105.0 | 105.8 | 100.7 | 95.1 | |

ORIGINAL PAGE IS
OF POOR QUALITY

435

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

| | | | | | |
|----------------------|----------------------|----------------------|------------------------|------------------|-------------------|
| VEHICLE = ADR242 | TEST DATE = 04-28-83 | LOCAT = C4T ANECH CH | CONFIG = 18 | MODEL = C8 | FLTVEL = 400. FPS |
| IAPLHA = SB59 | WIND DIR = NO | MPH = | PWL AREA = FULL SPHERE | TAMB F = 63.75 | PAMB HG = 29.01 |
| WIND DIR = | DEG WIND VEL = | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNTNT = | LBS XNL = | RPM XNH = | RPM V8 = | V8 = 1116.9 FPS | AE8 = |
| FNRAMB = | LBS XNLR = | RPM XNHR = | RPM V18 = | V18 = 1796.1 FPS | AE18 = |
| RUNPT = 83F-400-1804 | TAPE = | TEST PT NO = 1804 | NC = | AE095 = | CORR FAN SPEED = |

RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1804 X18041

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 59.5 | 62.7 | 63.4 | 60.2 | 61.7 | 64.6 | 65.9 | 65.2 | 66.2 | 68.1 | 70.2 | 64.8 | 59.2 | 145.1 |
| 63 | 59.1 | 63.5 | 67.7 | 62.3 | 63.4 | 64.9 | 64.9 | 63.9 | 66.5 | 68.5 | 70.6 | 65.3 | 60.2 | 145.8 |
| 80 | 61.0 | 63.8 | 64.5 | 61.8 | 63.8 | 65.8 | 64.1 | 64.8 | 66.7 | 68.6 | 70.8 | 65.1 | 59.8 | 145.7 |
| 100 | 61.8 | 64.2 | 64.3 | 61.6 | 65.0 | 66.8 | 66.3 | 65.5 | 68.5 | 69.1 | 70.1 | 65.6 | 62.4 | 146.4 |
| 125 | 60.8 | 64.3 | 64.5 | 62.0 | 64.9 | 67.1 | 66.8 | 67.1 | 69.9 | 69.8 | 70.2 | 65.7 | 62.9 | 147.0 |
| 160 | 62.3 | 63.7 | 65.2 | 62.7 | 67.6 | 68.1 | 67.2 | 68.4 | 71.2 | 70.0 | 69.2 | 65.1 | 63.0 | 147.6 |
| 200 | 64.5 | 65.3 | 65.6 | 63.8 | 65.7 | 68.0 | 67.7 | 68.7 | 72.1 | 70.8 | 70.0 | 65.9 | 63.5 | 148.4 |
| 250 | 63.3 | 66.4 | 65.3 | 64.0 | 67.3 | 69.7 | 68.9 | 69.9 | 71.9 | 69.9 | 68.4 | 63.3 | 60.1 | 148.4 |
| 315 | 64.3 | 66.1 | 66.5 | 65.0 | 67.2 | 69.6 | 69.7 | 70.5 | 72.1 | 70.1 | 68.5 | 64.1 | 61.8 | 149.2 |
| 400 | 64.7 | 65.6 | 67.0 | 65.2 | 68.3 | 70.1 | 69.2 | 70.7 | 72.7 | 70.0 | 67.8 | 62.3 | 58.9 | 149.6 |
| 500 | 64.6 | 66.6 | 67.3 | 65.4 | 68.3 | 70.9 | 70.7 | 70.8 | 72.5 | 70.1 | 68.1 | 62.7 | 59.2 | 150.3 |
| 630 | 65.1 | 65.8 | 67.1 | 65.8 | 70.3 | 72.0 | 71.5 | 71.9 | 72.6 | 70.3 | 68.4 | 62.9 | 59.2 | 151.4 |
| 800 | 67.2 | 68.1 | 69.4 | 67.0 | 70.5 | 73.1 | 71.9 | 72.8 | 71.9 | 69.8 | 67.9 | 62.6 | 58.7 | 152.4 |
| 1000 | 66.7 | 68.7 | 69.7 | 67.5 | 70.3 | 72.4 | 71.6 | 72.0 | 71.5 | 69.0 | 66.7 | 61.5 | 57.6 | 152.7 |
| 1250 | 63.6 | 66.7 | 68.3 | 67.0 | 70.5 | 72.4 | 71.1 | 70.5 | 70.4 | 67.4 | 64.3 | 59.2 | 55.0 | 152.3 |
| 1600 | 64.6 | 66.7 | 68.4 | 67.7 | 70.6 | 72.6 | 70.9 | 69.9 | 66.4 | 62.1 | 57.8 | 53.3 | 49.3 | 152.5 |
| 2000 | 62.6 | 66.8 | 68.1 | 67.7 | 70.6 | 72.0 | 69.0 | 66.8 | 65.1 | 59.9 | 54.7 | 49.2 | 43.3 | 153.2 |
| 2500 | 58.8 | 62.9 | 65.9 | 65.5 | 67.3 | 70.0 | 67.7 | 64.8 | 61.2 | 55.5 | 49.4 | 43.0 | 35.3 | 153.1 |
| 3150 | 53.5 | 59.3 | 62.0 | 62.8 | 62.7 | 65.8 | 63.7 | 60.4 | 57.6 | 50.1 | 41.8 | 34.3 | 23.7 | 153.1 |
| 4000 | 42.0 | 49.8 | 54.1 | 55.0 | 58.3 | 61.2 | 58.9 | 53.2 | 51.1 | 42.5 | 32.6 | 21.8 | 4.9 | 153.3 |
| 5000 | 31.0 | 40.1 | 46.4 | 47.8 | 49.5 | 53.0 | 49.6 | 44.3 | 41.4 | 32.1 | 20.6 | 5.2 | 154.3 | |
| 6300 | 7.4 | 20.7 | 28.4 | 33.4 | 35.6 | 38.9 | 35.7 | 30.2 | 24.5 | 13.3 | | | 154.3 | |
| 8000 | | 3.1 | 8.7 | 10.1 | 15.6 | 11.1 | 4.4 | | | | | | 154.1 | |
| 10000 | | | | | | | | | | | | | 154.3 | |
| 12500 | | | | | | | | | | | | | 156.5 | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| GASPL | 76.2 | 78.4 | 79.6 | 77.8 | 80.8 | 82.9 | 81.8 | 82.0 | 82.9 | 81.4 | 80.8 | 75.9 | 72.4 | 165.9 |
| PWL | 83.8 | 87.2 | 88.7 | 87.8 | 90.6 | 92.6 | 90.9 | 89.7 | 88.9 | 86.1 | 83.9 | 78.4 | 74.7 | |
| PWLT | 85.2 | 88.2 | 89.9 | 88.4 | 91.3 | 93.1 | 91.5 | 90.4 | 88.9 | 86.1 | 83.9 | 78.4 | 74.7 | |
| DBA | 73.9 | 76.2 | 77.7 | 76.5 | 79.4 | 81.5 | 80.1 | 79.7 | 79.4 | 76.7 | 74.5 | 69.3 | 65.7 | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

VEHICL = ADH242 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CONFIG = 18 MODEL = C8 FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 63.75 PAMB HG = 29.01 RELHUM = 73.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1116.9 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1796.1 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1804 TAPE = X18041 TEST PT NO = 1804 NC = AE095 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1805 X1805C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 81.9 | 85.2 | 85.7 | 86.0 | 80.8 | 80.9 | 85.3 | 87.2 | 81.9 | 84.4 | 86.9 | 89.8 | 88.0 | 127.3 |
| 63 | 85.3 | 93.8 | 96.6 | 95.9 | 90.2 | 89.3 | 93.2 | 95.9 | 88.8 | 89.2 | 89.5 | 90.5 | 96.4 | 135.2 |
| 80 | 87.5 | 92.3 | 88.1 | 86.1 | 86.2 | 91.3 | 90.7 | 90.4 | 90.8 | 92.6 | 94.3 | 94.7 | 81.6 | 132.8 |
| 100 | 86.5 | 92.0 | 87.5 | 87.5 | 89.9 | 92.3 | 91.4 | 92.8 | 91.3 | 94.1 | 97.0 | 98.6 | 84.3 | 134.6 |
| 125 | 82.9 | 86.9 | 89.2 | 87.5 | 90.3 | 92.7 | 92.3 | 91.7 | 92.2 | 96.7 | 101.1 | 102.3 | 89.2 | 136.7 |
| 160 | 82.9 | 83.0 | 86.7 | 84.5 | 86.4 | 88.7 | 91.1 | 90.5 | 90.7 | 96.1 | 101.4 | 103.1 | 94.5 | 136.5 |
| 200 | 83.0 | 84.1 | 87.1 | 85.1 | 87.5 | 90.8 | 91.5 | 93.4 | 96.1 | 99.0 | 102.0 | 106.5 | 97.4 | 138.9 |
| 250 | 83.5 | 88.1 | 87.6 | 86.1 | 88.5 | 91.3 | 92.5 | 94.6 | 96.6 | 101.7 | 106.8 | 109.0 | 100.6 | 141.8 |
| 315 | 85.1 | 87.4 | 88.1 | 87.2 | 90.0 | 93.4 | 94.3 | 95.9 | 97.9 | 103.2 | 107.1 | 109.0 | 103.2 | 142.4 |
| 400 | 85.3 | 88.4 | 88.4 | 86.7 | 90.0 | 93.1 | 96.3 | 96.9 | 99.6 | 103.8 | 108.1 | 109.8 | 103.9 | 143.3 |
| 500 | 85.8 | 88.6 | 89.2 | 87.4 | 90.5 | 94.1 | 94.5 | 97.2 | 99.9 | 103.9 | 107.9 | 109.0 | 104.2 | 143.1 |
| 630 | 86.0 | 89.3 | 89.6 | 88.1 | 92.2 | 95.3 | 95.7 | 98.4 | 100.4 | 104.0 | 107.6 | 108.0 | 103.9 | 142.8 |
| 800 | 87.3 | 89.1 | 90.2 | 87.9 | 92.3 | 95.9 | 96.0 | 98.9 | 101.2 | 103.8 | 106.4 | 105.8 | 103.2 | 142.1 |
| 1000 | 89.5 | 90.8 | 91.6 | 89.4 | 93.2 | 96.1 | 96.9 | 100.4 | 102.1 | 103.9 | 105.8 | 104.7 | 101.6 | 142.1 |
| 1250 | 87.9 | 92.0 | 91.5 | 89.9 | 92.9 | 96.2 | 96.6 | 100.0 | 101.7 | 103.0 | 104.2 | 104.4 | 101.0 | 141.4 |
| 1600 | 88.1 | 91.5 | 91.9 | 90.5 | 94.0 | 97.1 | 98.0 | 100.0 | 102.9 | 104.1 | 105.3 | 104.0 | 100.9 | 142.1 |
| 2000 | 88.3 | 90.8 | 91.7 | 90.6 | 93.7 | 96.6 | 97.5 | 100.6 | 102.0 | 103.1 | 104.3 | 103.1 | 100.6 | 141.5 |
| 2500 | 87.4 | 91.7 | 92.3 | 90.5 | 94.6 | 97.0 | 97.2 | 100.5 | 101.7 | 102.7 | 103.7 | 101.3 | 99.8 | 141.1 |
| 3150 | 87.0 | 90.8 | 92.1 | 90.6 | 93.7 | 97.0 | 97.9 | 100.3 | 102.2 | 101.9 | 101.7 | 100.7 | 97.8 | 140.6 |
| 4000 | 86.6 | 90.0 | 91.6 | 90.0 | 93.9 | 97.1 | 97.3 | 99.8 | 100.5 | 100.3 | 100.2 | 99.0 | 96.1 | 139.7 |
| 5000 | 86.8 | 90.8 | 91.6 | 90.6 | 93.6 | 97.1 | 97.2 | 99.3 | 99.7 | 99.3 | 98.9 | 97.5 | 94.0 | 139.1 |
| 6300 | 87.4 | 91.0 | 91.5 | 90.9 | 94.2 | 96.7 | 97.5 | 99.9 | 99.4 | 98.7 | 98.1 | 95.4 | 92.1 | 139.2 |
| 8000 | 86.1 | 89.9 | 90.7 | 90.2 | 93.4 | 96.5 | 96.9 | 98.2 | 97.7 | 96.7 | 95.8 | 92.8 | 89.9 | 138.2 |
| 10000 | 87.1 | 91.4 | 92.4 | 91.0 | 93.9 | 96.9 | 96.4 | 97.9 | 97.3 | 95.6 | 93.8 | 91.3 | 88.1 | 138.5 |
| 12500 | 88.8 | 92.7 | 93.0 | 92.2 | 94.3 | 96.8 | 95.6 | 96.3 | 95.6 | 93.1 | 90.5 | 87.6 | 85.4 | 138.5 |
| 16000 | 89.1 | 94.3 | 94.7 | 94.6 | 95.4 | 95.6 | 95.7 | 95.8 | 94.4 | 90.8 | 87.1 | 84.9 | 81.4 | 140.0 |
| 20000 | 86.6 | 90.7 | 92.1 | 92.3 | 94.4 | 97.1 | 95.5 | 93.6 | 91.7 | 87.9 | 84.1 | 80.8 | 78.6 | 140.4 |
| 25000 | 82.2 | 86.7 | 88.2 | 89.3 | 91.6 | 95.7 | 94.1 | 91.7 | 90.2 | 85.1 | 79.9 | 78.2 | 74.6 | 140.7 |
| 31500 | 79.3 | 82.7 | 84.5 | 86.4 | 87.9 | 92.2 | 91.0 | 89.8 | 87.5 | 82.5 | 77.4 | 74.8 | 70.3 | 140.8 |
| 40000 | 74.9 | 79.4 | 81.7 | 82.8 | 81.5 | 88.6 | 87.2 | 86.1 | 84.7 | 80.2 | 75.7 | 72.2 | 67.5 | 141.3 |
| 50000 | 68.4 | 73.5 | 75.6 | 77.1 | 78.8 | 84.1 | 81.8 | 81.3 | 80.2 | 75.5 | 70.8 | 67.2 | 61.7 | 140.6 |
| 63000 | 61.3 | 67.4 | 70.0 | 72.1 | 73.3 | 79.0 | 75.9 | 75.9 | 75.4 | 70.7 | 66.0 | 61.5 | 55.3 | 140.6 |
| 80000 | 54.3 | 62.7 | 63.5 | 65.0 | 67.8 | 73.0 | 70.3 | 70.1 | 68.7 | 64.1 | 59.5 | 54.5 | 47.4 | 141.4 |
| 0ASPL | 101.1 | 105.0 | 105.7 | 104.7 | 106.9 | 109.8 | 110.1 | 112.1 | 113.3 | 115.0 | 117.6 | 118.3 | 113.4 | 155.6 |
| PWL | 112.5 | 116.1 | 117.0 | 115.6 | 118.7 | 121.7 | 122.4 | 124.7 | 126.1 | 126.9 | 126.3 | 127.5 | 124.0 | |
| PWLT | 112.5 | 116.1 | 117.0 | 115.6 | 118.7 | 121.7 | 122.4 | 124.7 | 126.1 | 126.9 | 126.3 | 127.5 | 124.0 | |
| DBA | 99.1 | 102.4 | 103.1 | 101.7 | 105.2 | 108.2 | 108.7 | 111.3 | 112.8 | 114.0 | 115.7 | 115.4 | 111.8 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-10/NAS3-22137

VERTIC = ADR250 TEST DATE = 04-28-83 LOCAT = C4T ANECH CH CONFIG = T8 MODEL = C0 FLTVEL = 0. FPS
 WIND DIR = DEG WIND VEL = MPH PML AREA = FULL SPIERE TAMB F = 64.06 PAMB HG = 29.26 RELHUM = 73.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNTNT = LBS XNL RPM XNH RPM V8 = 1203.8 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 1984.7 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1805 TAPE = X1805C TEST PT NO = 1805 NC = AF095 -CORR FAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1805 X1805F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 81.9 | 85.2 | 85.7 | 86.0 | 80.8 | 80.9 | 85.3 | 87.2 | 81.9 | 84.4 | 86.9 | 89.8 | 88.0 | 127.3 |
| 63 | 85.3 | 93.8 | 96.6 | 95.9 | 90.2 | 89.3 | 93.2 | 95.9 | 88.8 | 89.2 | 89.5 | 90.5 | 96.4 | 135.2 |
| 80 | 87.5 | 92.3 | 88.1 | 86.2 | 86.2 | 91.3 | 90.7 | 90.4 | 90.8 | 92.6 | 94.3 | 94.7 | 81.6 | 132.8 |
| 100 | 86.5 | 92.0 | 87.5 | 89.9 | 92.3 | 91.4 | 92.8 | 91.3 | 94.1 | 97.0 | 98.6 | 84.3 | 134.6 | |
| 125 | 82.9 | 86.9 | 89.2 | 87.5 | 90.3 | 92.7 | 92.3 | 91.7 | 92.2 | 96.7 | 101.1 | 102.3 | 89.2 | 136.7 |
| 160 | 82.9 | 83.0 | 86.7 | 84.5 | 86.4 | 88.7 | 91.1 | 90.5 | 90.7 | 96.1 | 101.4 | 103.1 | 94.5 | 136.5 |
| 200 | 83.0 | 84.1 | 87.1 | 85.1 | 87.5 | 90.8 | 91.5 | 93.4 | 95.1 | 99.0 | 102.0 | 106.5 | 97.4 | 138.9 |
| 250 | 83.5 | 88.1 | 87.6 | 86.1 | 88.5 | 91.3 | 92.5 | 94.6 | 96.6 | 101.7 | 106.8 | 109.0 | 100.6 | 141.8 |
| 315 | 85.1 | 87.4 | 88.1 | 87.2 | 90.0 | 93.4 | 94.3 | 95.9 | 97.9 | 102.5 | 107.1 | 109.0 | 103.2 | 142.4 |
| 400 | 85.3 | 88.4 | 88.4 | 86.7 | 90.0 | 93.1 | 96.3 | 96.9 | 99.6 | 103.8 | 108.1 | 109.8 | 103.9 | 143.3 |
| 500 | 85.8 | 88.6 | 89.2 | 87.4 | 90.5 | 94.1 | 94.5 | 97.2 | 99.9 | 103.9 | 107.9 | 109.0 | 104.2 | 143.1 |
| 630 | 86.0 | 89.3 | 89.6 | 88.1 | 92.2 | 95.3 | 95.7 | 98.4 | 100.4 | 104.0 | 107.6 | 108.0 | 103.9 | 142.8 |
| 800 | 87.3 | 89.1 | 90.2 | 87.9 | 92.3 | 95.9 | 96.0 | 98.9 | 101.2 | 103.8 | 106.4 | 105.8 | 103.2 | 142.1 |
| 1000 | 89.5 | 90.8 | 91.6 | 89.4 | 93.2 | 96.1 | 96.9 | 100.4 | 102.1 | 103.9 | 105.8 | 104.7 | 101.6 | 142.1 |
| 1250 | 87.9 | 92.0 | 91.5 | 89.9 | 92.9 | 96.2 | 96.6 | 100.0 | 101.7 | 103.0 | 104.2 | 104.4 | 101.0 | 141.4 |
| 1600 | 88.1 | 91.5 | 91.9 | 90.5 | 94.0 | 97.1 | 98.0 | 100.0 | 102.9 | 104.1 | 105.3 | 104.0 | 100.9 | 142.1 |
| 2000 | 88.3 | 90.8 | 91.7 | 90.6 | 93.7 | 96.6 | 97.0 | 100.6 | 102.0 | 103.1 | 104.3 | 103.1 | 100.6 | 141.5 |
| 2500 | 87.4 | 91.7 | 92.3 | 90.5 | 94.6 | 97.0 | 97.2 | 100.5 | 101.7 | 102.7 | 103.7 | 101.3 | 99.8 | 141.1 |
| 3150 | 87.0 | 90.8 | 92.1 | 90.6 | 93.7 | 97.0 | 97.9 | 100.3 | 102.2 | 101.9 | 101.7 | 100.7 | 97.8 | 140.6 |
| 4000 | 86.6 | 90.0 | 91.6 | 90.0 | 93.9 | 97.1 | 97.3 | 99.8 | 100.5 | 100.3 | 100.2 | 99.0 | 96.1 | 139.7 |
| 5000 | 86.8 | 90.8 | 91.6 | 90.6 | 93.6 | 97.1 | 97.2 | 99.3 | 99.7 | 99.3 | 98.9 | 97.5 | 94.0 | 139.1 |
| 6300 | 87.4 | 91.0 | 91.5 | 90.9 | 94.2 | 96.7 | 97.5 | 99.9 | 99.4 | 98.7 | 98.1 | 95.4 | 92.1 | 139.2 |
| 8000 | 86.1 | 89.9 | 90.7 | 90.2 | 93.4 | 96.5 | 96.9 | 98.2 | 97.7 | 96.7 | 95.8 | 92.8 | 89.9 | 138.2 |
| 10000 | 87.1 | 91.4 | 92.4 | 91.0 | 93.9 | 96.9 | 96.4 | 97.9 | 97.3 | 95.6 | 93.8 | 91.3 | 88.1 | 138.5 |
| 12500 | 88.8 | 92.7 | 93.0 | 92.2 | 94.3 | 96.8 | 95.6 | 96.3 | 95.6 | 93.1 | 90.5 | 87.6 | 85.4 | 138.5 |
| 16000 | 89.1 | 94.3 | 94.7 | 94.6 | 95.4 | 96.6 | 95.7 | 95.8 | 94.4 | 90.8 | 87.1 | 84.9 | 81.4 | 140.0 |
| 20000 | 86.6 | 90.7 | 92.1 | 92.3 | 94.4 | 97.1 | 95.5 | 93.6 | 91.7 | 87.9 | 84.1 | 80.8 | 78.6 | 140.4 |
| 25000 | 82.2 | 86.7 | 88.2 | 89.3 | 91.6 | 95.7 | 94.1 | 91.7 | 90.2 | 85.1 | 79.9 | 74.6 | 74.6 | 140.7 |
| 31500 | 79.3 | 82.7 | 84.5 | 86.4 | 87.9 | 92.2 | 91.0 | 89.8 | 87.5 | 82.5 | 77.4 | 74.8 | 70.3 | 140.8 |
| 40000 | 74.9 | 79.4 | 81.7 | 82.8 | 84.5 | 88.6 | 87.2 | 86.1 | 84.7 | 80.2 | 75.7 | 72.2 | 67.5 | 141.3 |
| 50000 | 68.4 | 73.5 | 75.6 | 77.1 | 78.8 | 84.1 | 81.8 | 81.3 | 80.2 | 75.5 | 70.8 | 67.2 | 61.7 | 140.6 |
| 63000 | 61.3 | 67.4 | 70.0 | 72.1 | 73.3 | 79.0 | 75.9 | 75.4 | 70.7 | 66.0 | 61.5 | 55.3 | 55.3 | 140.6 |
| 80000 | 54.3 | 62.7 | 63.5 | 65.0 | 67.8 | 73.0 | 70.3 | 70.1 | 68.7 | 64.1 | 59.5 | 54.5 | 47.4 | 141.4 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES .

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

VEHICL = ADH250 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CONFIG = 18 MODEL = C8 FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 64.06 PAMB HG = 29.26 RELHUM = 73.2 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1203.8 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1984.7 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1805 TAPE = X1805F TEST PT NO = 1805 NC = AC095 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1805 X18051

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 61.0 | 64.8 | 66.6 | 66.4 | 69.6 | 73.1 | 73.9 | 75.1 | 76.4 | 79.9 | 83.0 | 82.7 | 73.5 | 157.7 |
| 63 | 61.2 | 65.7 | 66.8 | 65.8 | 69.6 | 73.8 | 75.8 | 76.3 | 78.1 | 81.2 | 83.9 | 83.4 | 74.2 | 158.6 |
| 80 | 61.6 | 66.0 | 67.6 | 66.6 | 70.1 | 73.8 | 74.1 | 76.3 | 78.3 | 81.2 | 83.6 | 82.6 | 74.4 | 158.4 |
| 100 | 61.8 | 66.6 | 68.0 | 67.2 | 71.7 | 75.0 | 75.2 | 77.5 | 78.7 | 81.2 | 83.3 | 81.4 | 73.9 | 158.2 |
| 125 | 62.9 | 66.3 | 68.4 | 67.0 | 71.7 | 75.5 | 75.5 | 78.0 | 79.4 | 80.9 | 82.0 | 79.1 | 73.0 | 157.4 |
| 160 | 64.9 | 67.8 | 69.7 | 68.2 | 72.5 | 75.5 | 76.3 | 79.2 | 80.2 | 80.9 | 81.2 | 77.8 | 71.0 | 157.4 |
| 200 | 63.1 | 68.8 | 69.4 | 68.6 | 72.0 | 75.5 | 75.8 | 78.7 | 79.7 | 79.8 | 79.3 | 77.1 | 70.0 | 156.7 |
| 250 | 62.9 | 68.0 | 69.6 | 69.0 | 73.0 | 76.2 | 76.9 | 78.5 | 80.6 | 80.7 | 80.2 | 76.3 | 69.2 | 157.5 |
| 315 | 62.6 | 67.0 | 69.1 | 68.8 | 72.4 | 75.4 | 76.2 | 78.8 | 79.4 | 79.3 | 78.7 | 74.8 | 68.1 | 156.6 |
| 400 | 61.2 | 67.4 | 69.3 | 68.3 | 73.0 | 75.5 | 75.5 | 78.4 | 78.7 | 78.4 | 77.6 | 72.3 | 66.2 | 156.4 |
| 500 | 60.3 | 66.1 | 68.7 | 68.1 | 71.7 | 75.2 | 75.9 | 77.9 | 78.8 | 77.3 | 75.1 | 71.0 | 63.2 | 156.0 |
| 630 | 59.4 | 64.8 | 67.9 | 67.2 | 71.6 | 75.0 | 75.0 | 77.0 | 76.8 | 75.2 | 73.0 | 60.6 | 60.4 | 155.0 |
| 800 | 59.0 | 65.2 | 67.5 | 67.4 | 71.0 | 74.6 | 74.6 | 76.1 | 75.6 | 73.7 | 71.2 | 66.3 | 57.1 | 154.5 |
| 1000 | 59.0 | 64.9 | 67.1 | 67.4 | 71.3 | 73.9 | 74.5 | 76.4 | 74.9 | 72.7 | 69.7 | 63.4 | 53.9 | 154.5 |
| 1250 | 57.1 | 63.4 | 65.9 | 66.4 | 70.2 | 73.4 | 73.7 | 74.4 | 72.8 | 70.2 | 66.7 | 59.8 | 50.0 | 153.5 |
| 1600 | 57.0 | 64.0 | 66.8 | 66.6 | 70.1 | 73.3 | 72.6 | 73.4 | 71.7 | 68.1 | 63.7 | 56.7 | 45.7 | 153.9 |
| 2000 | 57.1 | 64.2 | 66.5 | 67.0 | 69.8 | 72.5 | 71.1 | 71.1 | 69.1 | 64.5 | 58.8 | 50.8 | 39.4 | 153.9 |
| 2500 | 55.2 | 64.1 | 67.0 | 68.3 | 70.0 | 71.5 | 70.3 | 69.5 | 66.6 | 60.6 | 53.3 | 45.0 | 30.1 | 155.4 |
| 3150 | 48.7 | 57.5 | 61.8 | 63.9 | 66.9 | 70.0 | 68.0 | 65.2 | 61.4 | 54.7 | 46.3 | 35.3 | 18.2 | 155.8 |
| 4000 | 37.3 | 47.9 | 53.3 | 56.8 | 60.5 | 65.0 | 63.0 | 59.2 | 55.3 | 46.4 | 35.1 | 23.0 | | 156.0 |
| 5000 | 23.9 | 35.6 | 42.6 | 47.6 | 50.9 | 55.8 | 54.0 | 51.1 | 45.6 | 35.4 | 22.0 | 5.1 | | 156.1 |
| 6300 | 1.3 | 17.7 | 27.3 | 32.9 | 37.0 | 41.9 | 39.7 | 36.2 | 30.3 | 18.5 | 2.0 | | | 156.6 |
| 8000 | | | 7.0 | 12.3 | 18.6 | 15.2 | 11.2 | 3.6 | | | | | | 155.9 |
| 10000 | | | | | | | | | | | | | | 155.9 |
| 12500 | | | | | | | | | | | | | | 156.7 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 60000 | | | | | | | | | | | | | | |

P188-02

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/OFTAS-18/NAS3-22137

VEHICLE = ADH250 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CONFIG = 18 MODEL = CO FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE EXT DIST = 2400.0 FT EXT CONFIG = SL TAMB F = 64.06 PAMB HG = 29.26 RELHUM = 73.2 PCT
 WIND DIR = DEG WIND VEL = MPH MPH = 83.6 83.4 84.7 84.2 82.8 81.1 76.9 69.5

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1203.8 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1984.7 FPS AE18 = 19.9 SQ IN

ONF 83F-18051 TAPE 1051 T P = A NC = A CORI N SF = R

IDENTIFICATION - MODEL 83F-400-1806 X1806C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.9 | 86.7 | 86.2 | 82.5 | 79.8 | 82.2 | 85.1 | 86.7 | 83.4 | 86.0 | 88.6 | 89.2 | 89.7 | 127.7 |
| 63 | 85.8 | 93.5 | 96.8 | 91.9 | 86.9 | 87.6 | 94.9 | 95.4 | 91.3 | 90.3 | 89.3 | 93.1 | 96.9 | 135.0 |
| 80 | 86.8 | 90.8 | 86.8 | 85.1 | 86.5 | 89.8 | 89.5 | 89.6 | 90.6 | 91.4 | 92.3 | 89.2 | 86.1 | 131.4 |
| 100 | 84.5 | 90.2 | 85.3 | 85.0 | 87.4 | 89.5 | 89.4 | 90.0 | 88.8 | 91.5 | 94.2 | 91.1 | 88.1 | 131.5 |
| 125 | 83.4 | 85.7 | 87.2 | 85.7 | 88.3 | 90.4 | 89.6 | 89.0 | 89.2 | 93.7 | 98.1 | 93.9 | 89.7 | 133.0 |
| 150 | 80.4 | 81.0 | 84.7 | 81.3 | 84.1 | 85.5 | 90.6 | 87.3 | 88.2 | 93.3 | 98.4 | 95.4 | 92.3 | 132.7 |
| 200 | 80.8 | 82.1 | 85.6 | 80.9 | 83.5 | 86.1 | 88.5 | 89.9 | 91.3 | 94.9 | 98.5 | 96.4 | 94.4 | 133.4 |
| 250 | 79.8 | 82.3 | 82.6 | 81.4 | 84.5 | 86.6 | 87.2 | 89.6 | 91.8 | 96.8 | 101.8 | 98.3 | 94.9 | 135.3 |
| 315 | 80.3 | 84.1 | 85.4 | 82.9 | 85.3 | 88.1 | 90.0 | 91.2 | 92.9 | 97.7 | 102.6 | 99.0 | 95.4 | 136.3 |
| 400 | 80.8 | 83.6 | 84.1 | 82.4 | 84.8 | 87.9 | 92.0 | 91.4 | 94.6 | 98.8 | 103.1 | 98.1 | 93.2 | 136.7 |
| 500 | 81.8 | 83.6 | 84.4 | 82.4 | 85.8 | 88.6 | 89.5 | 92.2 | 95.2 | 98.9 | 102.6 | 96.8 | 90.9 | 136.4 |
| 630 | 81.0 | 83.6 | 84.3 | 83.1 | 86.5 | 89.6 | 90.5 | 93.1 | 95.3 | 99.1 | 102.8 | 95.6 | 88.4 | 136.5 |
| 800 | 82.8 | 83.6 | 84.6 | 83.4 | 86.5 | 90.4 | 91.5 | 93.9 | 96.4 | 98.9 | 101.4 | 94.1 | 85.9 | 136.1 |
| 1000 | 85.5 | 85.5 | 85.3 | 84.1 | 88.4 | 91.3 | 92.2 | 95.4 | 97.6 | 99.0 | 100.5 | 93.1 | 83.6 | 136.4 |
| 1250 | 83.9 | 86.2 | 85.5 | 84.9 | 88.4 | 91.5 | 92.4 | 95.0 | 97.7 | 98.2 | 98.7 | 91.6 | 84.5 | 135.7 |
| 1600 | 85.6 | 86.7 | 87.1 | 85.8 | 89.5 | 92.9 | 93.7 | 96.5 | 98.9 | 99.1 | 99.3 | 91.6 | 83.9 | 136.8 |
| 2000 | 86.8 | 86.3 | 87.7 | 85.6 | 89.2 | 92.8 | 94.3 | 96.9 | 98.7 | 98.7 | 98.8 | 91.7 | 84.6 | 136.7 |
| 2500 | 86.9 | 88.7 | 88.2 | 86.5 | 90.6 | 93.7 | 93.7 | 96.8 | 98.6 | 98.3 | 97.9 | 91.4 | 84.8 | 136.6 |
| 3150 | 87.5 | 87.5 | 88.8 | 87.3 | 90.4 | 94.2 | 94.6 | 96.8 | 99.4 | 98.3 | 97.2 | 90.5 | 83.8 | 136.9 |
| 4000 | 86.9 | 87.7 | 88.8 | 87.0 | 91.2 | 94.4 | 94.8 | 96.8 | 98.0 | 97.4 | 96.9 | 90.4 | 83.8 | 136.5 |
| 5000 | 87.0 | 88.5 | 89.1 | 87.0 | 91.1 | 95.0 | 94.9 | 97.0 | 98.2 | 97.5 | 96.7 | 90.5 | 84.2 | 136.9 |
| 6300 | 87.6 | 89.8 | 89.8 | 88.1 | 91.7 | 95.4 | 95.6 | 96.9 | 97.4 | 97.3 | 97.3 | 91.2 | 85.1 | 137.2 |
| 8000 | 87.6 | 88.7 | 90.0 | 88.5 | 90.9 | 94.9 | 94.6 | 96.0 | 95.9 | 95.6 | 95.3 | 90.2 | 85.4 | 136.5 |
| 10000 | 90.1 | 90.6 | 92.1 | 90.0 | 91.6 | 96.2 | 95.4 | 95.8 | 96.2 | 95.4 | 90.3 | 90.2 | 86.1 | 137.6 |
| 12500 | 93.0 | 92.7 | 93.5 | 90.4 | 92.5 | 95.8 | 94.6 | 94.2 | 94.1 | 93.1 | 92.2 | 89.0 | 85.8 | 137.8 |
| 15000 | 92.0 | 94.5 | 95.9 | 94.3 | 93.6 | 95.8 | 94.1 | 93.8 | 92.8 | 91.1 | 89.3 | 86.3 | 83.4 | 139.4 |
| 20000 | 98.0 | 92.7 | 92.5 | 93.3 | 95.8 | 94.4 | 92.0 | 90.4 | 87.9 | 85.5 | 82.8 | 80.0 | 139.7 | |
| 25000 | 84.3 | 87.0 | 88.8 | 88.6 | 91.0 | 95.4 | 94.0 | 90.5 | 89.3 | 85.4 | 81.6 | 78.6 | 75.7 | 140.4 |
| 31500 | 81.2 | 83.3 | 85.6 | 86.2 | 87.5 | 92.3 | 90.3 | 88.7 | 86.8 | 82.7 | 78.5 | 75.1 | 71.6 | 140.5 |
| 40000 | 77.0 | 79.9 | 81.9 | 81.8 | 83.1 | 88.7 | 87.3 | 84.9 | 84.5 | 80.5 | 76.4 | 72.5 | 68.5 | 141.0 |
| 50000 | 70.8 | 73.9 | 77.0 | 76.8 | 77.5 | 84.3 | 82.0 | 80.0 | 78.7 | 75.3 | 72.0 | 67.6 | 63.2 | 140.4 |
| 63000 | 67.2 | 70.3 | 75.6 | 72.0 | 72.0 | 79.4 | 76.8 | 75.5 | 73.8 | 70.9 | 68.1 | 62.9 | 57.7 | 141.1 |
| 80000 | 65.5 | 68.0 | 74.8 | 66.6 | 64.9 | 75.3 | 72.1 | 70.7 | 67.3 | 64.7 | 62.0 | 56.7 | 51.3 | 143.9 |
| GASPL | 101.2 | 103.2 | 104.3 | 102.2 | 104.0 | 107.4 | 107.5 | 108.7 | 110.0 | 111.0 | 113.0 | 108.0 | 104.4 | 152.9 |
| PNL | 111.9 | 113.0 | 113.8 | 112.1 | 115.4 | 118.7 | 119.3 | 121.2 | 123.1 | 123.3 | 123.9 | 118.0 | 112.4 | |
| PNLT | 111.9 | 113.0 | 113.8 | 112.1 | 115.4 | 118.7 | 119.3 | 121.2 | 123.1 | 123.3 | 123.9 | 118.0 | 112.4 | |
| DBA | 98.0 | 99.1 | 99.7 | 98.1 | 101.5 | 105.1 | 105.5 | 107.7 | 109.5 | 109.9 | 110.9 | 104.5 | 98.5 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|-------------------|
| VERTCL = ADH243 | TEST DATE = 04-28-83 | LOCAT = C41 ANECH CH | CONFIG = 18 | MODEL = C6 | FLTVEL = 400. FPS |
| IAFLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 61.15 | PAIIB HG = 29.03 | RELHUM = 81.2 PCT |
| WIND DIR = | DEG WIND VEL = | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FN1N1 = | LBS XNL = | RPM XNH = | V8 = 1243.6 FPS | AE8 = | 4.0 SQ IN |
| FN1RMB = | LBS XNLR = | RPM XNHR = | V18 = 2012.4 FPS | AE18 = | 19.9 SQ IN |
| RUNPT = 83F-400-1806 | TAPE = | TEST PT NO = 1806 | NC = AE095 | CORR FAN SPEED = | RPM |

IDENTIFICATION - 83F-400-1806 X1806F

ANGLES MEASURED FROM INLET, DEGREES

FREQ PWL
50 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160.
80
100
125
160
200

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 87.1 | 88.4 | 87.3 | 84.5 | 86.0 | 86.6 | 85.3 | 86.0 | 90.1 | 94.3 | 99.0 | 96.3 | 95.0 | 133.5 |
| 315 | 87.1 | 88.4 | 87.3 | 84.5 | 87.0 | 88.3 | 88.9 | 88.8 | 91.7 | 95.3 | 99.4 | 95.6 | 93.8 | 134.1 |
| 400 | 87.7 | 90.3 | 90.2 | 86.2 | 86.6 | 88.1 | 90.8 | 88.9 | 92.4 | 95.5 | 99.2 | 94.9 | 93.0 | 134.4 |
| 500 | 88.1 | 89.7 | 88.9 | 85.7 | 87.7 | 89.0 | 88.4 | 89.7 | 92.9 | 96.0 | 99.8 | 94.6 | 92.3 | 134.5 |
| 630 | 89.5 | 90.0 | 89.4 | 85.9 | 88.4 | 90.0 | 89.4 | 90.7 | 94.5 | 96.5 | 99.3 | 94.9 | 94.0 | 135.0 |
| 800 | 88.7 | 90.0 | 89.4 | 86.6 | 88.6 | 90.9 | 90.6 | 91.6 | 96.1 | 97.3 | 99.4 | 95.3 | 95.4 | 135.6 |
| 1000 | 90.5 | 90.1 | 89.7 | 87.0 | 90.6 | 92.0 | 91.4 | 93.2 | 96.4 | 96.6 | 97.6 | 93.9 | 94.3 | 135.4 |
| 1250 | 93.2 | 92.0 | 90.4 | 87.8 | 90.6 | 92.3 | 91.7 | 93.0 | 97.8 | 97.6 | 98.2 | 93.7 | 93.2 | 136.1 |
| 1600 | 91.6 | 92.7 | 90.6 | 88.6 | 92.0 | 93.9 | 93.4 | 94.7 | 98.2 | 97.9 | 98.5 | 94.8 | 95.4 | 136.9 |
| 2000 | 93.2 | 93.3 | 92.4 | 89.6 | 91.9 | 94.1 | 94.5 | 95.7 | 98.8 | 98.2 | 98.5 | 95.4 | 96.6 | 137.5 |
| 2500 | 94.4 | 92.9 | 93.1 | 89.6 | 93.5 | 95.3 | 94.4 | 96.2 | 100.0 | 98.6 | 98.2 | 94.9 | 96.0 | 138.1 |
| 3150 | 94.5 | 95.3 | 93.7 | 90.7 | 93.7 | 96.3 | 95.8 | 96.7 | 99.6 | 98.7 | 98.8 | 95.8 | 97.0 | 138.6 |
| 4000 | 95.1 | 94.2 | 94.4 | 91.7 | 95.4 | 97.0 | 96.7 | 97.6 | 100.2 | 99.1 | 99.0 | 96.3 | 97.9 | 139.3 |
| 5000 | 97.2 | 96.7 | 96.3 | 92.8 | 95.7 | 98.0 | 97.2 | 98.1 | 99.6 | 99.4 | 100.0 | 97.4 | 98.8 | 140.2 |
| 6300 | 97.3 | 97.5 | 96.7 | 93.0 | 96.3 | 98.4 | 97.8 | 98.1 | 99.2 | 98.8 | 99.1 | 97.4 | 99.6 | 140.5 |
| 8000 | 97.9 | 98.3 | 97.2 | 94.0 | 95.5 | 97.9 | 97.1 | 97.7 | 99.8 | 98.6 | 98.0 | 96.8 | 99.5 | 140.8 |
| 10000 | 97.5 | 97.3 | 97.2 | 94.1 | 95.7 | 99.2 | 97.8 | 97.6 | 95.5 | 94.1 | 93.5 | 93.3 | 97.0 | 140.3 |
| 12500 | 97.0 | 96.7 | 97.4 | 94.3 | 96.4 | 98.8 | 96.0 | 94.2 | 94.7 | 92.5 | 91.1 | 91.1 | 95.1 | 140.3 |
| 16000 | 98.2 | 97.5 | 97.7 | 93.8 | 97.5 | 98.8 | 95.6 | 93.7 | 92.7 | 89.8 | 87.7 | 87.9 | 92.1 | 141.6 |
| 20000 | 97.0 | 99.1 | 99.8 | 97.3 | 97.3 | 98.8 | 95.8 | 92.0 | 92.2 | 87.9 | 84.3 | 84.4 | 88.4 | 143.9 |
| 25000 | 93.3 | 95.2 | 96.4 | 95.2 | 95.6 | 98.4 | 95.4 | 90.5 | 90.5 | 85.9 | 82.0 | 81.6 | 85.1 | 144.2 |
| 31500 | 91.6 | 93.1 | 93.4 | 91.7 | 92.1 | 95.3 | 91.7 | 88.6 | 89.0 | 84.5 | 80.8 | 79.9 | 82.9 | 144.5 |
| 40000 | 87.7 | 88.5 | 89.4 | 88.4 | 87.6 | 91.7 | 88.7 | 84.9 | 83.6 | 79.8 | 76.8 | 75.4 | 77.9 | 144.6 |
| 50000 | 83.1 | 84.8 | 85.3 | 83.6 | 82.1 | 87.3 | 83.4 | 80.0 | 79.7 | 76.3 | 73.8 | 71.6 | 73.4 | 144.4 |
| 63000 | 76.0 | 77.8 | 79.5 | 77.7 | 76.6 | 82.4 | 78.2 | 75.5 | 74.7 | 71.6 | 69.3 | 66.9 | 68.5 | 144.2 |
| 80000 | 70.9 | 72.7 | 76.5 | 71.4 | 69.2 | 78.3 | 73.6 | 70.7 | 64.6 | 61.7 | 59.5 | 57.1 | 58.7 | 146.3 |
| GASPL | 108.0 | 108.3 | 108.1 | 105.3 | 107.3 | 109.5 | 108.0 | 108.1 | 110.3 | 110.0 | 111.1 | 108.0 | 109.0 | 155.2 |
| PNL | 118.8 | 118.6 | 118.0 | 114.8 | 117.9 | 119.8 | 119.3 | 120.2 | 122.8 | 122.4 | 122.9 | 120.1 | 121.1 | |
| PNLT | 118.8 | 118.6 | 118.0 | 114.8 | 117.9 | 119.8 | 119.3 | 120.2 | 122.8 | 122.4 | 122.9 | 120.1 | 121.1 | |
| DBA | 192.8 | 194.6 | 197.7 | 193.6 | 191.9 | 199.7 | 195.1 | 192.2 | 188.6 | 185.4 | 183.1 | 180.8 | 182.4 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

VEHICL = ADH243 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CONFIG = 18 MODEL = C0 FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 61.15 PAMB HQ = 29.03 RELHUM = 81.2 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNLR = RPM XNH = RPM V8 = 1243.6 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2012.4 FPS AE18 = 19.9 SQ IN

UNP 83F-1806 TAPES 106F P P = AL NC = CORR = SF = R

IDENTIFICATION - 83F-400-1806 X18061

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 63.0 | 65.8 | 65.8 | 63.7 | 66.6 | 68.1 | 68.5 | 68.0 | 70.2 | 72.7 | 75.3 | 69.3 | 64.1 | 149.4 |
| 63 | 63.5 | 67.7 | 68.7 | 65.4 | 66.1 | 67.8 | 70.4 | 68.1 | 70.9 | 72.9 | 75.1 | 68.6 | 63.3 | 149.7 |
| 80 | 63.9 | 67.1 | 67.3 | 64.9 | 67.2 | 68.7 | 67.9 | 68.8 | 71.3 | 73.4 | 75.6 | 68.2 | 62.4 | 149.8 |
| 100 | 65.2 | 67.3 | 67.8 | 65.0 | 68.0 | 69.6 | 68.9 | 69.7 | 72.9 | 73.8 | 75.1 | 68.4 | 64.0 | 150.3 |
| 125 | 64.3 | 67.2 | 67.6 | 65.7 | 68.0 | 70.5 | 70.0 | 70.6 | 74.4 | 74.5 | 75.0 | 68.6 | 65.2 | 150.9 |
| 160 | 65.9 | 67.1 | 67.8 | 65.9 | 69.9 | 71.4 | 70.7 | 72.1 | 74.6 | 73.6 | 73.0 | 66.9 | 63.7 | 150.7 |
| 200 | 68.3 | 68.8 | 68.4 | 66.5 | 69.8 | 71.6 | 70.8 | 71.7 | 75.7 | 74.4 | 73.4 | 66.4 | 62.1 | 151.5 |
| 250 | 66.4 | 69.2 | 68.4 | 67.1 | 70.9 | 73.0 | 72.3 | 73.2 | 75.9 | 74.4 | 73.3 | 67.1 | 63.7 | 152.2 |
| 315 | 67.6 | 69.4 | 69.8 | 67.8 | 70.5 | 72.9 | 73.2 | 73.9 | 76.2 | 74.4 | 72.9 | 67.1 | 64.0 | 152.8 |
| 400 | 68.3 | 68.6 | 70.1 | 67.5 | 71.9 | 73.8 | 72.7 | 74.0 | 77.1 | 74.4 | 72.0 | 66.0 | 62.5 | 153.4 |
| 500 | 67.8 | 70.6 | 70.3 | 68.2 | 71.7 | 74.4 | 73.8 | 74.2 | 76.3 | 74.1 | 72.1 | 66.1 | 62.4 | 153.9 |
| 630 | 67.9 | 69.1 | 70.6 | 68.9 | 73.1 | 74.8 | 74.4 | 74.8 | 76.5 | 74.0 | 71.8 | 65.9 | 62.2 | 154.6 |
| 800 | 69.4 | 71.1 | 72.2 | 69.6 | 73.0 | 75.6 | 74.6 | 74.9 | 75.5 | 73.8 | 72.2 | 66.2 | 61.9 | 155.5 |
| 1000 | 68.9 | 71.5 | 72.2 | 69.5 | 73.4 | 75.7 | 74.8 | 74.6 | 74.7 | 72.8 | 70.8 | 65.5 | 61.4 | 155.8 |
| 1250 | 68.9 | 71.8 | 72.3 | 70.1 | 72.2 | 74.9 | 73.8 | 73.9 | 74.9 | 72.1 | 69.0 | 63.8 | 59.6 | 156.1 |
| 1600 | 67.4 | 69.9 | 71.6 | 69.7 | 71.9 | 75.5 | 74.0 | 73.2 | 69.9 | 66.6 | 63.3 | 58.7 | 54.6 | 155.6 |
| 2000 | 65.3 | 68.2 | 70.9 | 69.0 | 71.9 | 74.5 | 71.5 | 69.0 | 68.2 | 64.0 | 59.4 | 54.4 | 49.1 | 155.6 |
| 2500 | 64.3 | 67.3 | 69.9 | 67.6 | 72.1 | 73.7 | 70.1 | 67.5 | 64.9 | 59.6 | 53.8 | 48.0 | 40.8 | 156.9 |
| 3150 | 59.2 | 65.9 | 69.5 | 68.9 | 69.9 | 71.7 | 68.4 | 63.5 | 62.0 | 54.7 | 46.5 | 38.9 | 28.1 | 159.2 |
| 4000 | 48.4 | 56.4 | 61.5 | 62.7 | 64.4 | 67.6 | 64.3 | 58.0 | 55.7 | 47.2 | 37.2 | 26.4 | 9.5 | 159.5 |
| 5000 | 36.1 | 46.0 | 51.5 | 53.0 | 55.0 | 58.9 | 54.7 | 49.9 | 47.1 | 37.4 | 25.4 | 10.1 | | 159.8 |
| 6300 | 14.0 | 26.8 | 34.9 | 38.5 | 40.1 | 44.9 | 41.2 | 34.9 | 29.2 | 18.1 | 3.1 | | | 159.9 |
| 8000 | | 8.6 | 13.5 | 15.6 | 21.9 | 16.8 | 9.9 | 3.0 | | | | | | 159.8 |
| 10000 | | | | | | | | | | | | | | 159.6 |
| 12500 | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |
| 0ASPL | 79.5 | 81.8 | 82.7 | 80.7 | 83.8 | 86.1 | 85.0 | 85.1 | 86.9 | 85.6 | 85.3 | 79.0 | 74.8 | 170.5 |
| PNL | 87.6 | 90.6 | 92.8 | 91.5 | 94.2 | 96.3 | 94.0 | 93.0 | 93.0 | 90.4 | 88.4 | 82.0 | 77.7 | |
| PNLT | 88.6 | 90.6 | 93.3 | 92.7 | 94.7 | 96.8 | 94.6 | 93.6 | 94.0 | 91.5 | 89.5 | 82.0 | 77.7 | |
| DBA | 77.2 | 79.7 | 81.2 | 79.2 | 82.2 | 84.7 | 83.1 | 82.6 | 83.2 | 80.8 | 78.7 | 73.0 | 69.0 | |

ORIGINAL PAGE IS OF POOR QUALITY

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

VEHICL = ADH243 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CONFIG = 18 MODEL = C0 FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 61.15 PAMB HG = 29.03 RELHUM = 81.2 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1243.6 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2012.4 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1806 TAPE = X18061 TEST PT NO = 1806 NC = AE095 CORR FAN SPEED = RPM

UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-ZER-1807 X1807C

BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 83.9 | 87.7 | 85.4 | 85.0 | 80.6 | 83.9 | 85.6 | 87.7 | 85.2 | 87.5 | 89.9 | 90.3 | 82.7 | 128.4 |
| 63 | 87.5 | 94.3 | 96.1 | 95.4 | 88.4 | 91.8 | 93.2 | 95.9 | 91.8 | 92.7 | 93.5 | 96.2 | 96.4 | 135.9 |
| 80 | 89.5 | 93.8 | 89.3 | 87.6 | 88.7 | 94.1 | 93.5 | 92.1 | 92.8 | 94.6 | 96.3 | 97.0 | 82.1 | 134.9 |
| 100 | 88.7 | 94.5 | 89.3 | 89.3 | 91.9 | 94.3 | 93.9 | 95.5 | 94.0 | 96.2 | 98.5 | 100.9 | 86.8 | 136.8 |
| 125 | 85.6 | 88.4 | 90.4 | 89.7 | 92.3 | 95.2 | 94.8 | 94.2 | 94.2 | 98.9 | 103.6 | 105.6 | 91.5 | 139.3 |
| 160 | 84.9 | 85.0 | 89.0 | 85.0 | 88.1 | 91.0 | 93.1 | 92.8 | 93.7 | 99.2 | 104.7 | 106.1 | 96.8 | 139.5 |
| 200 | 86.0 | 85.1 | 88.1 | 86.4 | 90.0 | 92.8 | 94.0 | 95.4 | 98.3 | 101.7 | 105.0 | 109.5 | 100.1 | 141.7 |
| 250 | 85.8 | 88.6 | 89.3 | 87.6 | 91.0 | 93.3 | 94.7 | 97.1 | 98.8 | 104.2 | 109.5 | 112.0 | 103.1 | 144.6 |
| 315 | 86.6 | 89.1 | 90.4 | 88.2 | 92.5 | 95.6 | 96.5 | 97.9 | 99.9 | 105.4 | 110.8 | 112.8 | 106.2 | 145.8 |
| 400 | 88.3 | 89.6 | 90.9 | 88.7 | 92.0 | 94.9 | 97.5 | 98.9 | 101.9 | 107.0 | 112.1 | 113.5 | 107.4 | 146.8 |
| 500 | 88.3 | 91.4 | 91.7 | 89.7 | 93.0 | 96.1 | 96.8 | 99.4 | 102.2 | 107.0 | 111.9 | 113.3 | 108.2 | 146.8 |
| 630 | 88.0 | 91.8 | 91.9 | 90.6 | 93.7 | 97.1 | 98.0 | 100.6 | 103.1 | 107.7 | 112.3 | 112.5 | 108.6 | 146.9 |
| 800 | 90.1 | 91.1 | 93.1 | 90.9 | 94.3 | 97.6 | 98.3 | 101.4 | 103.4 | 106.9 | 110.4 | 111.0 | 108.9 | 145.9 |
| 1000 | 93.0 | 94.8 | 93.8 | 92.1 | 95.9 | 98.3 | 99.4 | 102.4 | 104.3 | 106.7 | 109.0 | 109.7 | 107.4 | 145.4 |
| 1250 | 90.9 | 95.0 | 94.2 | 93.1 | 95.6 | 98.7 | 99.6 | 102.3 | 104.5 | 106.1 | 107.7 | 108.6 | 107.3 | 144.8 |
| 1600 | 90.3 | 93.3 | 93.9 | 93.3 | 96.0 | 99.6 | 100.5 | 103.0 | 105.4 | 106.7 | 108.1 | 108.0 | 105.9 | 145.1 |
| 2000 | 90.8 | 93.3 | 94.5 | 92.9 | 95.7 | 98.8 | 100.3 | 103.6 | 105.2 | 106.1 | 107.0 | 107.1 | 104.6 | 144.5 |
| 2500 | 89.6 | 94.7 | 95.0 | 93.0 | 96.6 | 99.5 | 99.9 | 103.0 | 104.1 | 105.4 | 106.7 | 105.8 | 104.0 | 144.0 |
| 3150 | 90.0 | 93.0 | 94.3 | 93.1 | 95.9 | 99.2 | 100.6 | 102.8 | 104.9 | 105.4 | 106.0 | 105.2 | 102.1 | 143.9 |
| 4000 | 89.4 | 92.5 | 94.1 | 92.7 | 96.4 | 99.1 | 99.8 | 102.6 | 103.8 | 104.2 | 103.2 | 100.3 | 142.8 | |
| 5000 | 89.5 | 93.5 | 94.1 | 92.3 | 96.1 | 99.0 | 99.7 | 102.3 | 102.7 | 102.8 | 102.9 | 101.0 | 96.7 | 142.1 |
| 6300 | 89.9 | 93.7 | 95.0 | 93.1 | 96.2 | 98.7 | 99.5 | 102.1 | 102.1 | 101.6 | 101.1 | 98.6 | 94.6 | 141.7 |
| 8000 | 90.6 | 95.2 | 95.0 | 93.7 | 96.1 | 98.9 | 98.9 | 100.2 | 100.2 | 99.7 | 99.3 | 96.0 | 91.6 | 140.9 |
| 10000 | 93.4 | 98.1 | 98.7 | 97.0 | 97.9 | 99.9 | 98.9 | 99.9 | 100.0 | 98.6 | 97.1 | 94.0 | 90.1 | 142.0 |
| 12500 | 94.3 | 97.4 | 99.8 | 98.5 | 100.1 | 100.8 | 99.4 | 98.5 | 98.4 | 96.1 | 93.8 | 90.8 | 88.4 | 142.8 |
| 16000 | 91.9 | 96.8 | 98.5 | 98.8 | 100.4 | 102.1 | 99.9 | 98.3 | 96.9 | 94.3 | 91.6 | 87.4 | 86.2 | 144.1 |
| 20000 | 89.1 | 93.9 | 95.8 | 95.6 | 98.1 | 101.1 | 99.5 | 97.1 | 94.9 | 91.8 | 88.6 | 84.8 | 84.8 | 144.2 |
| 25000 | 86.1 | 90.6 | 92.9 | 93.0 | 94.9 | 98.4 | 97.9 | 95.2 | 93.7 | 89.0 | 84.4 | 82.4 | 78.0 | 144.1 |
| 31500 | 82.1 | 86.9 | 89.2 | 90.1 | 92.1 | 95.2 | 94.2 | 93.0 | 91.7 | 87.2 | 82.6 | 79.3 | 74.0 | 144.3 |
| 40000 | 78.1 | 83.8 | 87.1 | 86.7 | 88.2 | 92.1 | 91.1 | 89.5 | 88.6 | 84.9 | 81.1 | 76.6 | 71.6 | 145.1 |
| 50000 | 72.0 | 79.1 | 85.4 | 82.2 | 83.7 | 88.4 | 86.1 | 84.4 | 83.8 | 79.9 | 75.9 | 71.1 | 65.3 | 145.2 |
| 63000 | 66.4 | 76.2 | 86.2 | 77.4 | 78.1 | 85.0 | 82.0 | 80.1 | 79.2 | 75.5 | 71.8 | 65.5 | 59.8 | 147.5 |
| 80000 | 62.8 | 72.2 | 86.0 | 71.7 | 72.7 | 81.2 | 77.7 | 76.3 | 73.9 | 70.0 | 66.2 | 59.2 | 53.9 | 151.6 |

0ASPL 104.2 108.0 108.8 107.7 109.9 112.6 112.7 114.5 115.9 118.0 121.2 122.2 117.8 159.7
 PNL 115.4 118.9 119.5 118.1 121.0 123.9 124.9 127.2 128.7 130.1 131.7 131.6 128.0
 PNL 115.4 119.5 119.5 118.1 121.0 123.9 124.9 127.2 128.7 130.1 131.7 131.6 128.0
 DBA 102.1 105.5 106.1 104.5 107.5 110.5 111.2 113.9 115.4 117.1 119.3 119.7 116.6

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

VEHICLE = ADR249 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CONFIG = 18 MODEL = C01 FLYVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 62.09 PAMB HG = 28.75 RELHUM = 77.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNTNT = LBS XNL = RPM XNH = RPM V8 = 1342.7 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2173.0 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1807 TAPE = X1807C TEST PT NO = 1807 NC = AF095 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1807 X1807F

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160.

FREQ 50 63 80 100 125 150 200 250 315 400 500 630 800 1000 1250 1600 2000 2500 3150 4000 5000 6300 8000 10000 12500 16000 20000 25000 31500 40000 50000 63000 80000

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 83.9 | 87.7 | 85.4 | 85.0 | 80.6 | 83.9 | 85.6 | 87.7 | 85.2 | 87.5 | 89.9 | 90.3 | 82.7 | 128.4 |
| 63 | 87.5 | 94.3 | 96.1 | 95.4 | 88.4 | 91.8 | 93.2 | 95.9 | 91.8 | 92.7 | 93.5 | 96.2 | 96.4 | 135.9 |
| 80 | 89.5 | 93.8 | 89.3 | 87.6 | 88.7 | 94.1 | 93.5 | 92.1 | 92.8 | 94.6 | 96.3 | 97.0 | 82.1 | 134.9 |
| 100 | 88.7 | 94.5 | 89.3 | 89.3 | 91.9 | 94.3 | 93.9 | 95.5 | 94.0 | 96.2 | 98.5 | 100.9 | 86.8 | 136.8 |
| 125 | 85.9 | 88.4 | 90.4 | 89.7 | 92.3 | 95.2 | 94.8 | 94.2 | 94.2 | 98.9 | 103.6 | 105.6 | 91.5 | 139.3 |
| 150 | 84.9 | 85.0 | 89.0 | 88.1 | 91.0 | 93.1 | 92.8 | 93.7 | 98.2 | 104.7 | 106.1 | 96.8 | 139.5 | |
| 200 | 85.0 | 85.1 | 88.1 | 86.4 | 90.0 | 92.8 | 94.0 | 95.4 | 98.3 | 101.7 | 105.0 | 109.5 | 100.1 | 141.7 |
| 250 | 85.8 | 88.6 | 89.3 | 87.6 | 91.0 | 93.3 | 94.7 | 97.1 | 98.8 | 104.2 | 109.5 | 112.0 | 103.1 | 144.6 |
| 315 | 86.6 | 89.1 | 90.4 | 88.2 | 92.5 | 95.6 | 96.5 | 97.9 | 99.9 | 105.4 | 110.8 | 112.8 | 106.2 | 145.8 |
| 400 | 88.3 | 89.6 | 90.9 | 88.7 | 92.0 | 94.9 | 97.5 | 98.9 | 101.9 | 107.0 | 113.5 | 107.4 | 146.8 | |
| 500 | 88.3 | 91.4 | 91.7 | 89.7 | 93.0 | 96.1 | 96.8 | 99.4 | 102.2 | 107.0 | 111.9 | 113.3 | 108.2 | 146.8 |
| 630 | 88.0 | 91.8 | 91.9 | 90.6 | 93.7 | 97.1 | 98.0 | 100.6 | 103.1 | 107.7 | 112.3 | 112.5 | 108.6 | 146.9 |
| 800 | 90.1 | 91.1 | 93.1 | 90.9 | 94.3 | 97.6 | 98.3 | 101.4 | 103.4 | 106.9 | 110.4 | 111.0 | 108.9 | 145.9 |
| 1000 | 93.0 | 94.8 | 93.8 | 92.1 | 95.9 | 98.3 | 99.4 | 102.4 | 104.3 | 106.7 | 109.0 | 109.7 | 107.4 | 145.4 |
| 1250 | 90.9 | 95.0 | 94.2 | 93.1 | 95.6 | 98.7 | 99.6 | 102.3 | 104.5 | 106.1 | 107.7 | 108.6 | 107.3 | 144.8 |
| 1600 | 90.3 | 93.7 | 93.9 | 93.3 | 96.0 | 99.6 | 100.5 | 103.0 | 105.4 | 106.7 | 108.1 | 108.0 | 105.9 | 145.1 |
| 2000 | 90.8 | 93.3 | 94.5 | 92.9 | 95.7 | 98.8 | 100.3 | 103.6 | 105.2 | 106.1 | 107.0 | 107.1 | 104.6 | 144.5 |
| 2500 | 89.6 | 94.7 | 95.0 | 93.0 | 96.6 | 99.5 | 99.9 | 103.0 | 104.1 | 105.4 | 106.7 | 105.8 | 104.0 | 144.0 |
| 3150 | 90.0 | 93.0 | 94.3 | 93.1 | 95.9 | 99.2 | 100.6 | 102.8 | 104.9 | 105.4 | 106.0 | 105.2 | 102.1 | 143.9 |
| 4000 | 89.4 | 92.5 | 94.1 | 92.7 | 96.4 | 99.1 | 99.8 | 102.6 | 103.5 | 103.8 | 104.2 | 103.2 | 100.3 | 142.8 |
| 5000 | 89.5 | 93.5 | 94.1 | 92.3 | 96.1 | 99.0 | 99.7 | 102.3 | 102.7 | 102.8 | 102.9 | 101.0 | 96.7 | 142.1 |
| 6300 | 89.9 | 93.7 | 95.0 | 93.1 | 96.2 | 98.7 | 99.5 | 102.1 | 102.1 | 102.1 | 101.6 | 101.1 | 98.6 | 141.7 |
| 8000 | 90.6 | 95.2 | 95.0 | 93.7 | 96.1 | 98.9 | 98.9 | 100.2 | 100.2 | 99.7 | 99.3 | 96.0 | 91.6 | 140.9 |
| 10000 | 93.4 | 98.1 | 98.7 | 97.0 | 97.9 | 99.9 | 99.9 | 99.9 | 100.0 | 98.6 | 97.1 | 94.0 | 90.1 | 142.0 |
| 12500 | 94.3 | 97.4 | 99.8 | 98.5 | 100.1 | 100.8 | 99.4 | 98.5 | 98.4 | 98.4 | 93.8 | 90.8 | 88.4 | 142.8 |
| 16000 | 91.9 | 96.8 | 98.5 | 98.8 | 100.4 | 102.1 | 99.9 | 98.3 | 96.9 | 94.3 | 91.6 | 87.4 | 86.2 | 144.1 |
| 20000 | 89.1 | 93.9 | 95.8 | 95.6 | 98.1 | 101.1 | 99.5 | 97.1 | 94.9 | 91.8 | 88.6 | 84.8 | 84.8 | 144.2 |
| 25000 | 86.1 | 90.6 | 92.9 | 93.0 | 94.9 | 98.4 | 97.9 | 95.2 | 93.7 | 89.0 | 84.4 | 82.4 | 78.0 | 144.1 |
| 31500 | 82.1 | 86.9 | 89.2 | 90.1 | 92.1 | 95.2 | 94.2 | 93.0 | 91.7 | 87.2 | 82.6 | 79.3 | 74.0 | 144.3 |
| 40000 | 78.1 | 83.8 | 87.1 | 86.7 | 88.2 | 92.1 | 91.1 | 89.5 | 88.6 | 84.9 | 81.1 | 76.6 | 71.6 | 145.1 |
| 50000 | 72.0 | 79.1 | 85.4 | 82.2 | 83.7 | 88.4 | 86.1 | 84.4 | 83.8 | 79.9 | 75.9 | 71.1 | 65.3 | 145.2 |
| 63000 | 66.4 | 76.2 | 86.2 | 77.4 | 78.1 | 85.0 | 82.0 | 80.1 | 79.2 | 75.5 | 71.8 | 65.5 | 59.8 | 147.5 |
| 80000 | 62.8 | 72.2 | 86.0 | 71.7 | 72.7 | 81.2 | 77.7 | 76.3 | 73.9 | 70.0 | 66.2 | 59.2 | 53.9 | 151.6 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

MASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

| | | | | | |
|-----------------|----------------------|------------------------|------------------|-----------------|-------------------|
| VEHICL = ADH249 | TEST DATE = 04-28-83 | LOCAT = C41 ANECH CH | CONFIG = 18 | MODEL = CO | FLTVEL = 0. FPS |
| WIND DIR = SB59 | WIND VEL = NO | PWL AREA = FULL SPHERE | TAMB F = 62.09 | PAMB HG = 26.75 | RELHUM = 77.1 PCT |
| DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |

| | | | | | | | | | | | | |
|----------|----------|---|-----|-------|---|-----|-----|---|------------|------|---|------------|
| FNIN1 = | LBS XNL | = | RPM | XNH | = | RPM | V8 | = | 1342.7 FPS | AE8 | = | 4.0 SQ IN |
| FNRAMB = | LBS XNLR | = | RPM | XNIHR | = | RPM | V18 | = | 2173.0 FPS | AE18 | = | 19.9 SQ IN |

RUNPT = 83F-ZER-1807 TAPE = XT807F TEST PT NO = 1807 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1807 X18071

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| 50 | 62.5 | 66.5 | 68.9 | 67.4 | 72.1 | 75.4 | 76.1 | 77.1 | 78.4 | 82.8 | 86.7 | 86.5 | 76.5 | 161.1 |
| 63 | 64.2 | 67.0 | 69.3 | 67.8 | 71.6 | 74.6 | 77.1 | 78.1 | 80.3 | 84.4 | 87.9 | 87.1 | 77.7 | 162.1 |
| 80 | 64.1 | 68.7 | 70.1 | 68.8 | 72.6 | 75.8 | 76.3 | 78.6 | 80.6 | 84.3 | 87.6 | 86.9 | 78.4 | 162.1 |
| 100 | 63.8 | 69.1 | 70.2 | 69.7 | 73.2 | 76.7 | 77.5 | 79.7 | 81.5 | 85.0 | 88.0 | 85.9 | 78.7 | 162.3 |
| 125 | 65.7 | 68.3 | 71.4 | 69.9 | 73.7 | 77.2 | 77.7 | 80.4 | 81.7 | 84.1 | 86.0 | 84.3 | 78.7 | 161.3 |
| 160 | 68.4 | 71.8 | 72.0 | 71.0 | 75.3 | 77.8 | 78.8 | 81.2 | 82.5 | 83.7 | 84.4 | 82.8 | 76.8 | 160.7 |
| 200 | 66.1 | 71.8 | 72.2 | 71.8 | 74.7 | 78.0 | 78.7 | 81.0 | 82.4 | 82.9 | 82.8 | 81.3 | 76.2 | 160.1 |
| 250 | 65.1 | 70.3 | 71.6 | 71.8 | 75.0 | 78.7 | 79.4 | 81.5 | 83.1 | 83.3 | 82.9 | 80.3 | 74.2 | 160.4 |
| 315 | 65.1 | 69.5 | 71.9 | 71.1 | 74.4 | 77.6 | 79.0 | 81.8 | 82.6 | 82.3 | 81.4 | 78.8 | 72.1 | 159.9 |
| 400 | 63.5 | 70.4 | 72.0 | 70.8 | 75.0 | 78.0 | 78.3 | 80.9 | 81.2 | 81.2 | 80.6 | 76.8 | 70.5 | 159.3 |
| 500 | 63.3 | 68.3 | 71.0 | 70.6 | 73.9 | 77.4 | 78.6 | 80.3 | 81.6 | 80.8 | 79.3 | 75.5 | 67.5 | 159.2 |
| 630 | 62.2 | 67.3 | 70.3 | 69.9 | 74.1 | 77.0 | 77.5 | 79.8 | 79.7 | 78.7 | 77.0 | 72.9 | 64.6 | 158.1 |
| 800 | 61.8 | 67.9 | 70.0 | 69.1 | 73.5 | 76.6 | 77.1 | 79.1 | 78.6 | 77.2 | 75.2 | 69.8 | 59.8 | 157.5 |
| 1000 | 61.5 | 67.7 | 70.5 | 69.7 | 73.3 | 75.9 | 76.5 | 78.7 | 77.6 | 75.6 | 72.7 | 66.6 | 56.4 | 157.0 |
| 1250 | 61.6 | 68.6 | 70.1 | 69.9 | 72.9 | 75.9 | 75.7 | 76.4 | 75.3 | 73.2 | 70.2 | 63.1 | 51.8 | 156.2 |
| 1600 | 63.2 | 70.7 | 73.1 | 72.6 | 74.1 | 76.3 | 75.1 | 75.4 | 74.4 | 71.1 | 66.9 | 59.5 | 47.7 | 157.3 |
| 2000 | 62.6 | 68.9 | 73.3 | 73.3 | 75.6 | 76.5 | 74.9 | 73.3 | 71.9 | 67.5 | 62.1 | 54.1 | 42.4 | 158.1 |
| 2500 | 58.0 | 66.6 | 70.7 | 72.5 | 75.0 | 77.0 | 74.5 | 72.0 | 69.1 | 64.1 | 57.8 | 47.5 | 34.8 | 159.4 |
| 3150 | 51.2 | 60.7 | 65.5 | 67.1 | 70.7 | 74.0 | 72.0 | 68.6 | 64.7 | 58.6 | 50.8 | 39.3 | 24.5 | 159.5 |
| 4000 | 41.3 | 51.9 | 58.0 | 60.5 | 63.7 | 67.7 | 66.7 | 62.7 | 58.8 | 50.3 | 39.6 | 27.2 | 2.5 | 159.5 |
| 5000 | 26.6 | 39.8 | 47.3 | 51.3 | 55.1 | 58.7 | 57.2 | 54.3 | 49.8 | 40.0 | 27.2 | 9.5 | 159.6 | |
| 6300 | 4.4 | 22.1 | 32.7 | 36.8 | 40.7 | 45.3 | 43.6 | 39.6 | 34.2 | 23.1 | 7.4 | 160.4 | | |
| 8000 | | 8.7 | 12.1 | 17.1 | 23.0 | 19.6 | 14.3 | 7.1 | | | | | 160.6 | |
| 10000 | | | | | | | | | | | | | 162.8 | |
| 12500 | | | | | | | | | | | | | 167.0 | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

OASPL 76.6 81.8 83.8 83.4 86.7 89.6 90.0 91.9 92.8 94.1 95.8 94.4 86.8 174.7

PNL 63.5 69.9 93.3 93.9 96.8 99.4 98.5 98.2 97.9 97.3 96.7 93.7 86.2

PNLT 83.5 89.9 93.8 94.4 97.3 99.4 99.0 98.8 98.6 97.3 96.7 93.7 87.5

DBA 71.8 78.4 81.2 81.3 84.1 86.6 86.1 87.2 87.0 85.9 84.6 81.1 74.1

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

VEHICLE = ADH249 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CONFIG = 18 MODEL = C0 FLTVEL = 0. FPS
 IAPLHA = SB59 IEQA = NO PWL AREA = FULL SPHERE TAMB F = 62.09 PAMB HG = 28.75 RELHUM = 77.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1342.7 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2173.0 FPS AE18 = 19.9 SQ IN

VPT 3F-Z 807 PE 71 PT 18 JRR SPE RPT

UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
59.0 DEG. F., 70 PERCENT R.H. STD DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-400-1808 X1808C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.4 | 87.7 | 86.7 | 82.5 | 81.3 | 83.2 | 85.6 | 83.0 | 84.7 | 87.5 | 90.4 | 91.6 | 92.7 | 129.2 |
| 63 | 88.0 | 92.5 | 96.6 | 93.1 | 85.9 | 89.6 | 95.4 | 95.1 | 91.1 | 91.3 | 91.5 | 94.7 | 97.9 | 135.4 |
| 80 | 89.8 | 93.6 | 89.8 | 87.6 | 88.5 | 92.6 | 92.5 | 91.1 | 92.3 | 94.1 | 95.8 | 92.7 | 89.6 | 134.1 |
| 100 | 87.5 | 93.0 | 88.0 | 87.3 | 90.4 | 93.0 | 92.1 | 93.3 | 91.5 | 94.2 | 97.0 | 94.5 | 92.1 | 134.5 |
| 125 | 85.6 | 88.4 | 89.4 | 88.2 | 91.3 | 93.2 | 92.3 | 92.0 | 91.2 | 96.5 | 101.9 | 97.8 | 93.7 | 136.3 |
| 160 | 83.4 | 82.2 | 87.0 | 83.5 | 86.4 | 88.2 | 92.4 | 89.3 | 89.7 | 95.7 | 101.7 | 99.0 | 96.3 | 135.6 |
| 200 | 83.3 | 83.1 | 86.6 | 82.6 | 85.7 | 88.6 | 90.5 | 91.9 | 94.3 | 97.6 | 101.3 | 99.6 | 97.9 | 136.2 |
| 250 | 82.0 | 84.6 | 84.8 | 83.6 | 86.7 | 90.1 | 90.2 | 92.4 | 94.6 | 100.1 | 105.5 | 102.3 | 99.1 | 138.9 |
| 315 | 82.6 | 85.9 | 80.9 | 84.7 | 87.5 | 90.6 | 92.5 | 94.2 | 95.6 | 101.0 | 106.3 | 103.3 | 100.2 | 139.9 |
| 400 | 83.6 | 85.6 | 85.9 | 83.9 | 87.8 | 91.1 | 94.5 | 94.4 | 97.1 | 102.3 | 107.6 | 102.9 | 98.2 | 140.7 |
| 500 | 84.1 | 85.6 | 86.6 | 84.9 | 88.3 | 91.4 | 92.3 | 94.4 | 97.9 | 102.5 | 107.1 | 101.4 | 95.7 | 140.3 |
| 630 | 83.5 | 85.6 | 86.3 | 85.6 | 89.2 | 92.3 | 93.7 | 96.1 | 98.8 | 102.8 | 106.8 | 100.1 | 93.4 | 140.3 |
| 800 | 85.3 | 85.4 | 87.1 | 85.4 | 89.0 | 93.1 | 94.0 | 97.2 | 99.6 | 102.4 | 105.1 | 97.8 | 90.4 | 139.5 |
| 1000 | 87.5 | 86.8 | 88.1 | 86.4 | 91.2 | 93.8 | 94.9 | 98.4 | 100.8 | 102.5 | 104.3 | 96.6 | 88.9 | 139.7 |
| 1250 | 86.4 | 88.5 | 88.0 | 87.6 | 91.1 | 94.2 | 94.6 | 98.3 | 101.2 | 101.7 | 102.2 | 94.8 | 87.5 | 139.0 |
| 1600 | 87.6 | 87.7 | 89.1 | 88.3 | 92.0 | 95.6 | 96.7 | 98.3 | 102.1 | 102.5 | 102.8 | 95.0 | 87.2 | 139.9 |
| 2000 | 89.3 | 87.6 | 88.7 | 88.6 | 91.7 | 95.6 | 96.5 | 100.4 | 102.2 | 102.3 | 102.3 | 94.9 | 87.6 | 140.0 |
| 2500 | 89.5 | 89.2 | 90.2 | 89.0 | 93.4 | 96.5 | 96.7 | 100.5 | 101.6 | 101.6 | 101.9 | 95.0 | 88.0 | 139.9 |
| 3150 | 89.5 | 88.3 | 89.8 | 89.8 | 92.7 | 96.5 | 97.1 | 100.3 | 102.6 | 101.9 | 101.2 | 93.9 | 86.6 | 140.1 |
| 4000 | 89.1 | 88.4 | 90.6 | 89.2 | 94.2 | 96.9 | 96.8 | 100.3 | 101.5 | 100.9 | 100.4 | 93.5 | 86.6 | 139.7 |
| 5000 | 90.0 | 89.8 | 90.9 | 89.5 | 93.3 | 96.5 | 97.2 | 99.5 | 101.0 | 100.7 | 100.4 | 93.6 | 86.7 | 139.5 |
| 6300 | 92.1 | 90.9 | 91.3 | 90.4 | 93.7 | 96.9 | 97.2 | 100.1 | 100.4 | 100.2 | 100.1 | 94.1 | 88.1 | 139.8 |
| 8000 | 94.6 | 93.1 | 92.5 | 91.2 | 93.4 | 96.7 | 97.1 | 98.5 | 98.9 | 99.0 | 99.0 | 94.3 | 89.6 | 139.5 |
| 10000 | 98.6 | 98.4 | 97.6 | 95.0 | 96.1 | 97.9 | 96.9 | 98.1 | 98.5 | 98.1 | 97.8 | 94.2 | 90.6 | 141.0 |
| 12500 | 97.0 | 97.6 | 98.9 | 97.9 | 99.0 | 99.0 | 97.0 | 97.0 | 97.3 | 96.2 | 95.2 | 91.6 | 88.1 | 141.9 |
| 16000 | 94.5 | 95.4 | 96.9 | 98.2 | 99.8 | 100.5 | 97.6 | 96.5 | 95.3 | 93.8 | 92.3 | 88.9 | 85.6 | 142.9 |
| 20000 | 91.9 | 92.5 | 94.1 | 94.9 | 97.5 | 100.2 | 99.1 | 95.7 | 93.3 | 91.0 | 88.7 | 85.3 | 81.9 | 143.4 |
| 25000 | 88.5 | 89.7 | 91.5 | 92.6 | 94.7 | 98.5 | 97.2 | 94.7 | 93.0 | 85.0 | 81.9 | 78.9 | 74.8 | 143.8 |
| 31500 | 84.6 | 86.2 | 87.7 | 90.1 | 90.9 | 94.7 | 94.0 | 92.1 | 90.5 | 86.4 | 82.4 | 78.6 | 74.8 | 143.6 |
| 40000 | 80.4 | 82.0 | 84.3 | 85.7 | 87.9 | 91.8 | 90.4 | 89.3 | 87.3 | 84.2 | 81.1 | 76.2 | 71.4 | 144.4 |
| 50000 | 73.9 | 76.5 | 79.9 | 80.7 | 82.4 | 87.4 | 85.1 | 83.4 | 82.5 | 79.3 | 76.1 | 70.8 | 65.6 | 143.8 |
| 63000 | 69.6 | 72.6 | 76.6 | 76.1 | 77.3 | 83.3 | 79.9 | 78.9 | 77.3 | 74.4 | 71.4 | 65.7 | 60.0 | 144.6 |
| 80000 | 66.8 | 70.6 | 74.4 | 70.2 | 71.7 | 79.7 | 74.7 | 74.5 | 71.3 | 69.0 | 66.6 | 59.9 | 53.2 | 147.1 |
| 0ASPL | 105.8 | 106.5 | 105.7 | 107.8 | 110.2 | 110.1 | 111.7 | 113.1 | 114.3 | 116.8 | 111.9 | 108.1 | 156.3 | |
| PNL | 115.2 | 115.8 | 114.6 | 118.1 | 121.1 | 121.7 | 124.4 | 126.2 | 126.7 | 127.6 | 121.6 | 116.3 | | |
| PNLT | 115.2 | 115.8 | 114.6 | 118.1 | 121.1 | 121.7 | 124.4 | 126.2 | 126.7 | 127.6 | 121.6 | 116.3 | | |
| DBA | 102.1 | 101.6 | 102.1 | 100.8 | 104.2 | 107.4 | 107.9 | 110.9 | 112.7 | 113.3 | 114.7 | 108.3 | 102.5 | |

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NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

| | | | | | | | | | | | |
|------------|--------------|----------------|----------|--------------|--------------|--------------|------------|------------------|------------|----------|----------|
| VERTCL = | ADR244 | TEST DATE = | 04-28-83 | LOCAT = | C41 ANECH CH | CONFIG = | 18 | MODEL = | C8 | FLTVEL = | 400. FPS |
| IAPLHA = | SB59 | IEGA = | NO | PWL AREA = | FULL SPHERE | TAMB F = | 59.89 | PAMB HG = | 29.00 | RELHUM = | 85.5 PCT |
| WIND DIR = | | DEG WIND VEL = | | EXT DIST = | 40.0 FT | EXT CONFIG = | ARC | MIKE HT = | | NBFR = | |
| FNTNT = | | LBS XNL = | | RPM XNHR = | | RPM V8 = | 1343.7 FPS | AE8 = | 4.0 SQ IN | | |
| FNRAMB = | | LBS XNLR = | | RPM XNHR = | | RPM V18 = | 2186.5 FPS | AE18 = | 19.9 SQ IN | | |
| RUNPT = | 83F-400-1808 | TAPE = | | TEST PT NO = | 1808 | NC = | AE095 | CORR FAN SPEED = | | RPM | |

IDENTIFICATION - 83F-400-1808 X1808F

ANGLES MEASURED FROM INLET, DEGREES

| | | | | | | | | | | | | | | |
|------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|------|-----|
| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
| 50 | | | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | |
| 125 | | | | | | | | | | | | | | |
| 160 | | | | | | | | | | | | | | |
| 200 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 89.9 | 91.0 | 89.8 | 86.9 | 88.3 | 90.1 | 88.3 | 88.8 | 93.1 | 97.9 | 103.1 | 100.8 | 99.9 | 137.4 |
| 315 | 89.9 | 91.0 | 89.8 | 86.9 | 88.3 | 90.8 | 91.5 | 92.0 | 94.4 | 99.0 | 104.2 | 100.7 | 99.0 | 138.2 |
| 400 | 90.3 | 92.3 | 91.8 | 88.1 | 89.6 | 91.4 | 93.3 | 92.0 | 95.3 | 99.3 | 103.9 | 99.8 | 98.0 | 138.2 |
| 500 | 91.2 | 92.0 | 90.8 | 87.3 | 90.2 | 91.7 | 91.1 | 92.0 | 96.5 | 100.0 | 104.1 | 99.5 | 97.7 | 138.3 |
| 630 | 91.8 | 92.0 | 91.6 | 88.4 | 91.2 | 92.8 | 92.7 | 93.7 | 97.7 | 100.0 | 103.1 | 98.5 | 97.5 | 138.3 |
| 800 | 91.2 | 92.0 | 91.4 | 89.1 | 91.1 | 93.7 | 93.1 | 94.9 | 99.4 | 100.8 | 103.1 | 98.7 | 98.6 | 138.8 |
| 1000 | 93.0 | 91.8 | 92.2 | 89.0 | 93.4 | 94.5 | 94.1 | 96.2 | 99.9 | 100.0 | 101.0 | 96.9 | 97.1 | 138.5 |
| 1250 | 95.2 | 93.3 | 93.2 | 90.0 | 93.4 | 95.0 | 93.9 | 96.2 | 100.9 | 100.9 | 101.6 | 96.9 | 96.2 | 139.1 |
| 1600 | 94.1 | 94.9 | 93.1 | 91.3 | 94.5 | 96.7 | 96.2 | 97.4 | 101.5 | 101.2 | 101.7 | 97.6 | 97.8 | 139.8 |
| 2000 | 95.2 | 94.2 | 94.4 | 92.1 | 94.9 | 96.8 | 96.6 | 99.0 | 101.6 | 101.5 | 102.2 | 98.7 | 99.5 | 140.4 |
| 2500 | 99.7 | 96.4 | 95.8 | 93.7 | 96.3 | 98.1 | 97.3 | 99.7 | 102.8 | 101.7 | 101.4 | 97.2 | 96.9 | 141.1 |
| 3150 | 97.2 | 95.8 | 95.7 | 93.2 | 96.5 | 98.5 | 97.9 | 99.7 | 102.7 | 101.7 | 101.7 | 98.1 | 98.8 | 141.2 |
| 4000 | 99.8 | 97.2 | 97.1 | 95.3 | 98.4 | 99.5 | 98.5 | 100.8 | 102.4 | 101.8 | 102.0 | 98.6 | 99.5 | 142.0 |
| 5000 | 99.5 | 97.4 | 98.0 | 95.0 | 97.9 | 99.5 | 98.3 | 100.2 | 102.4 | 102.0 | 102.5 | 100.0 | 101.6 | 142.4 |
| 6300 | 100.3 | 98.7 | 98.4 | 95.5 | 97.7 | 99.9 | 99.4 | 101.2 | 102.1 | 101.9 | 102.5 | 101.0 | 103.3 | 143.0 |
| 8000 | 99.4 | 97.5 | 96.9 | 95.1 | 97.2 | 99.7 | 99.5 | 100.2 | 100.5 | 99.6 | 99.5 | 98.7 | 102.0 | 142.1 |
| 10000 | 100.4 | 98.6 | 97.4 | 95.3 | 99.6 | 100.9 | 98.6 | 98.7 | 98.7 | 97.2 | 96.4 | 99.9 | 99.3 | 142.3 |
| 12500 | 103.5 | 102.7 | 101.4 | 98.2 | 102.9 | 102.0 | 98.5 | 97.0 | 97.2 | 95.2 | 94.1 | 93.7 | 97.3 | 144.6 |
| 16000 | 102.4 | 102.6 | 103.3 | 101.4 | 103.8 | 103.5 | 99.0 | 96.5 | 95.6 | 92.9 | 90.9 | 90.5 | 94.1 | 146.6 |
| 20000 | 100.4 | 100.6 | 101.2 | 101.5 | 102.1 | 103.2 | 100.5 | 99.7 | 95.9 | 91.4 | 87.8 | 87.7 | 91.6 | 147.4 |
| 25000 | 100.0 | 99.4 | 99.6 | 98.8 | 99.3 | 101.5 | 98.6 | 94.7 | 94.2 | 89.7 | 85.9 | 85.1 | 88.3 | 147.9 |
| 31500 | 95.8 | 95.8 | 96.1 | 95.6 | 95.5 | 97.7 | 95.4 | 92.1 | 91.9 | 88.3 | 85.4 | 83.6 | 85.7 | 147.6 |
| 40000 | 91.1 | 91.4 | 91.5 | 92.3 | 92.5 | 94.8 | 91.8 | 89.3 | 87.5 | 83.8 | 80.9 | 78.6 | 80.3 | 148.0 |
| 50000 | 86.4 | 86.9 | 87.7 | 87.5 | 87.0 | 90.4 | 86.5 | 83.3 | 83.2 | 79.8 | 77.2 | 74.5 | 75.7 | 147.7 |
| 63000 | 79.1 | 80.4 | 82.3 | 81.6 | 81.9 | 86.3 | 81.3 | 78.8 | 78.7 | 75.9 | 73.9 | 70.1 | 70.4 | 147.9 |
| 80000 | 73.3 | 75.0 | 77.6 | 75.5 | 76.3 | 82.7 | 76.2 | 74.5 | 68.9 | 66.1 | 64.0 | 60.3 | 60.5 | 149.8 |

MODEL / FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

| | | | | | | | | | | | | | | | | | |
|----------|---|---------|--------------|---|----------|----------|---|--------------|------------|-----|-------|---------|------------|-------|--------|---|------------|
| VEHICL | = | ADH244 | TEST DATE | = | 04-28-83 | LOCAT | = | C41 ANECH CH | CONFIG | = | 18 | MODEL | = | CG | FLTVEL | = | 400. FPS |
| IAPLHA | = | SB59 | IEGA | = | NO | PWL AREA | = | FULL SPHERE | TAMB F | = | 59.89 | PAMB HG | = | 29.00 | RELHUM | = | 85.5 PCT |
| WIND DIR | = | | DEG WIND VEL | = | MPH | EXT DIST | = | 40.0 FT | EXT CONFIG | = | ARC | MIKE HT | = | | NBFR | = | |
| FNIN1 | = | LBS XNL | | = | RPM | XNH | | = | RPM | V8 | | = | 1343.7 FPS | AE8 | | = | 4.0 SQ IN |
| FNINB | = | LBS XNL | | = | RPM | XNHR | | = | RPM | V18 | | = | 2186.5 FPS | AE18 | | = | 19.9 SQ IN |

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1808 X18081

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 65.8 | 68.4 | 68.2 | 66.1 | 68.9 | 70.6 | 71.1 | 71.2 | 72.9 | 76.4 | 80.1 | 74.4 | 69.4 | 153.5 |
| 63 | 66.1 | 69.6 | 70.3 | 67.2 | 69.2 | 71.1 | 72.9 | 71.2 | 73.8 | 76.7 | 79.8 | 73.5 | 68.3 | 153.5 |
| 80 | 67.0 | 69.3 | 69.3 | 66.5 | 69.7 | 71.4 | 70.7 | 71.1 | 74.9 | 77.3 | 79.9 | 73.0 | 67.8 | 153.6 |
| 100 | 67.5 | 69.3 | 70.0 | 67.5 | 70.7 | 72.4 | 72.2 | 72.8 | 76.1 | 77.3 | 78.8 | 72.0 | 67.5 | 153.6 |
| 125 | 66.8 | 69.2 | 69.6 | 68.2 | 70.5 | 73.2 | 72.5 | 73.9 | 77.7 | 78.0 | 78.7 | 72.1 | 68.4 | 154.1 |
| 160 | 68.4 | 68.8 | 70.3 | 67.9 | 72.7 | 73.9 | 73.4 | 75.1 | 78.0 | 77.0 | 76.4 | 70.0 | 66.5 | 153.8 |
| 200 | 70.3 | 70.1 | 71.1 | 68.7 | 72.5 | 74.3 | 73.1 | 74.9 | 78.9 | 77.7 | 76.8 | 69.6 | 65.2 | 154.4 |
| 250 | 68.9 | 71.5 | 70.9 | 69.8 | 73.4 | 75.7 | 75.2 | 75.9 | 79.2 | 77.7 | 76.5 | 69.9 | 66.1 | 155.2 |
| 315 | 69.6 | 70.4 | 71.8 | 70.3 | 73.6 | 75.7 | 75.2 | 77.2 | 79.0 | 77.6 | 76.6 | 70.5 | 66.9 | 155.7 |
| 400 | 73.6 | 72.1 | 72.8 | 71.6 | 74.6 | 76.6 | 75.6 | 77.6 | 79.8 | 77.4 | 75.3 | 68.2 | 63.3 | 156.5 |
| 500 | 70.6 | 71.1 | 72.3 | 70.7 | 74.5 | 76.7 | 75.9 | 77.3 | 79.4 | 77.1 | 75.0 | 68.5 | 64.3 | 156.5 |
| 630 | 72.6 | 72.1 | 73.4 | 72.5 | 76.1 | 77.3 | 76.2 | 77.9 | 78.7 | 76.7 | 74.8 | 68.3 | 63.8 | 157.4 |
| 800 | 71.7 | 71.8 | 73.9 | 71.9 | 75.3 | 77.1 | 76.6 | 77.0 | 78.3 | 76.4 | 74.7 | 68.9 | 64.7 | 157.7 |
| 1000 | 71.9 | 72.7 | 73.9 | 72.0 | 74.8 | 77.2 | 76.5 | 77.7 | 77.6 | 75.9 | 74.1 | 69.0 | 65.1 | 158.3 |
| 1250 | 70.4 | 71.0 | 72.1 | 71.2 | 74.0 | 76.6 | 76.3 | 76.3 | 75.6 | 73.1 | 70.4 | 65.8 | 62.2 | 157.5 |
| 1600 | 70.2 | 71.2 | 71.8 | 70.9 | 75.8 | 77.3 | 74.8 | 74.3 | 73.1 | 69.7 | 66.3 | 61.3 | 56.8 | 157.6 |
| 2000 | 71.9 | 74.2 | 74.9 | 73.0 | 78.4 | 77.7 | 74.0 | 71.7 | 70.7 | 66.7 | 62.4 | 57.0 | 51.3 | 159.9 |
| 2500 | 68.6 | 72.5 | 75.5 | 75.1 | 78.4 | 78.4 | 73.6 | 70.2 | 67.8 | 62.7 | 57.0 | 50.6 | 42.7 | 161.9 |
| 3150 | 62.6 | 67.4 | 70.9 | 73.1 | 74.7 | 76.1 | 73.1 | 67.2 | 65.6 | 58.2 | 49.9 | 42.2 | 31.3 | 162.7 |
| 4000 | 55.2 | 60.7 | 64.7 | 66.3 | 68.1 | 70.8 | 67.4 | 62.2 | 59.3 | 50.9 | 41.1 | 29.9 | 12.7 | 163.3 |
| 5000 | 40.3 | 48.6 | 54.2 | 56.9 | 58.5 | 61.3 | 58.4 | 53.3 | 50.0 | 41.1 | 30.0 | 13.8 | 162.9 | |
| 6300 | 17.4 | 29.7 | 37.1 | 42.4 | 45.0 | 48.1 | 44.3 | 39.3 | 33.0 | 22.0 | 7.2 | | 163.3 | |
| 8000 | | | 11.0 | 17.4 | 20.4 | 25.0 | 20.0 | 13.2 | 6.6 | | | | 163.0 | |
| 10000 | | | | | | | | | | | | | 163.2 | |
| 12500 | | | | | | | | | | | | | 165.1 | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

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MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

VEHICL = ADH244 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CONFIG = 18 MODEL = C0 FLTVEL = 400. FPS
 JAPLHA = SB59 TEST WIND VEG = NO PWL AREA = FULL SPHERE TAMB F = 59.89 PAMB HG = 29.00 RELHUM = 85.5 PCT
 WIND DIR = DEG WIND VEL = MPII EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1343.7 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2186.5 FPS AE18 = 19.9 SQ IN

TRONFT = 83F-400-1808 TAPE = XT8081 TEST PT NO = 1808 NC = AE095 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1809 X1809C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 85.6 | 88.4 | 85.7 | 85.7 | 83.1 | 84.7 | 85.3 | 88.0 | 87.7 | 89.7 | 91.6 | 94.1 | 89.2 | 130.1 |
| 63 | 90.3 | 94.8 | 96.3 | 96.1 | 91.2 | 93.1 | 93.4 | 96.1 | 93.6 | 94.8 | 96.0 | 99.0 | 99.9 | 137.2 |
| 80 | 91.3 | 96.1 | 91.6 | 89.9 | 92.0 | 95.8 | 95.0 | 93.6 | 95.1 | 96.8 | 98.5 | 98.5 | 86.1 | 136.9 |
| 100 | 90.7 | 97.2 | 92.3 | 91.8 | 94.4 | 97.3 | 96.9 | 97.5 | 95.8 | 98.2 | 100.7 | 103.4 | 90.6 | 139.2 |
| 125 | 87.6 | 90.9 | 92.7 | 91.7 | 95.1 | 97.2 | 96.8 | 96.7 | 96.2 | 101.2 | 106.1 | 108.1 | 94.7 | 141.7 |
| 160 | 85.7 | 87.2 | 90.7 | 87.8 | 89.6 | 92.5 | 95.9 | 95.3 | 95.2 | 101.0 | 106.7 | 108.9 | 100.0 | 141.8 |
| 200 | 88.0 | 87.1 | 90.3 | 88.1 | 91.5 | 95.6 | 95.5 | 97.4 | 100.3 | 103.8 | 107.3 | 112.0 | 103.6 | 144.1 |
| 250 | 87.5 | 91.1 | 90.8 | 90.1 | 93.2 | 95.6 | 96.2 | 99.1 | 100.8 | 106.4 | 112.0 | 114.5 | 106.4 | 147.0 |
| 315 | 88.1 | 90.6 | 91.1 | 90.4 | 94.0 | 97.4 | 98.5 | 99.9 | 102.6 | 108.0 | 113.3 | 115.0 | 108.9 | 148.1 |
| 400 | 90.3 | 92.1 | 92.9 | 90.9 | 94.0 | 96.9 | 99.8 | 101.2 | 104.9 | 110.0 | 115.1 | 116.5 | 110.2 | 149.8 |
| 500 | 91.1 | 93.1 | 93.2 | 91.4 | 94.8 | 97.6 | 99.0 | 101.9 | 105.4 | 110.4 | 115.4 | 116.5 | 111.9 | 150.1 |
| 630 | 91.0 | 93.8 | 94.1 | 92.6 | 96.0 | 99.1 | 100.5 | 102.9 | 106.1 | 110.8 | 115.6 | 116.2 | 112.9 | 150.3 |
| 800 | 94.1 | 94.1 | 94.9 | 92.9 | 96.5 | 99.9 | 100.8 | 103.9 | 107.4 | 110.9 | 114.4 | 116.0 | 114.2 | 150.2 |
| 1000 | 97.0 | 98.3 | 96.8 | 94.9 | 98.7 | 100.8 | 101.9 | 105.6 | 108.3 | 111.2 | 114.0 | 115.4 | 114.4 | 150.3 |
| 1250 | 95.7 | 98.7 | 98.0 | 96.4 | 98.6 | 102.0 | 102.4 | 105.8 | 108.5 | 111.3 | 114.2 | 116.4 | 114.8 | 150.7 |
| 1600 | 94.6 | 96.7 | 96.6 | 95.8 | 98.8 | 102.1 | 103.2 | 106.0 | 109.1 | 111.4 | 113.6 | 115.0 | 112.9 | 150.1 |
| 2000 | 95.3 | 97.1 | 97.7 | 95.6 | 98.4 | 101.8 | 103.0 | 106.6 | 109.2 | 111.1 | 113.0 | 113.8 | 112.1 | 149.7 |
| 2500 | 93.9 | 95.9 | 97.2 | 95.0 | 99.1 | 102.0 | 102.2 | 106.5 | 108.4 | 110.0 | 111.7 | 111.0 | 110.8 | 148.4 |
| 3150 | 94.0 | 96.0 | 96.8 | 95.6 | 98.7 | 101.5 | 103.1 | 106.1 | 109.1 | 109.7 | 110.2 | 109.7 | 107.1 | 147.8 |
| 4000 | 92.9 | 95.2 | 96.6 | 94.5 | 98.4 | 101.4 | 102.5 | 105.3 | 107.2 | 107.9 | 108.7 | 107.5 | 105.8 | 146.4 |
| 5000 | 92.8 | 97.3 | 97.6 | 95.3 | 98.6 | 101.8 | 101.9 | 105.5 | 106.7 | 107.0 | 107.2 | 104.5 | 102.5 | 145.8 |
| 6300 | 93.4 | 97.2 | 97.8 | 95.4 | 99.2 | 101.4 | 102.2 | 104.4 | 105.5 | 105.5 | 105.3 | 102.4 | 99.3 | 145.0 |
| 8000 | 94.1 | 98.9 | 99.5 | 97.5 | 99.1 | 101.2 | 101.4 | 102.5 | 104.2 | 103.5 | 102.8 | 99.5 | 96.6 | 144.1 |
| 10000 | 95.1 | 100.1 | 101.7 | 100.0 | 101.9 | 103.2 | 101.4 | 102.4 | 103.3 | 102.0 | 100.8 | 97.0 | 94.6 | 145.0 |
| 12500 | 95.0 | 98.9 | 101.0 | 100.7 | 102.8 | 104.5 | 101.8 | 101.2 | 101.6 | 99.8 | 98.0 | 94.8 | 91.1 | 145.5 |
| 16000 | 93.8 | 98.3 | 99.9 | 100.0 | 101.6 | 103.8 | 102.4 | 100.8 | 100.3 | 97.8 | 95.3 | 91.4 | 88.4 | 146.1 |
| 20000 | 92.0 | 95.6 | 98.0 | 97.5 | 99.3 | 101.8 | 101.4 | 98.8 | 98.1 | 95.3 | 92.6 | 88.8 | 86.2 | 145.9 |
| 25000 | 88.3 | 93.0 | 94.6 | 95.4 | 96.8 | 100.6 | 99.8 | 97.1 | 95.8 | 92.0 | 88.1 | 84.4 | 80.2 | 146.2 |
| 31500 | 84.5 | 89.6 | 90.8 | 92.5 | 93.7 | 97.6 | 96.1 | 95.2 | 93.6 | 89.6 | 85.5 | 80.9 | 76.6 | 146.4 |
| 40000 | 80.7 | 86.7 | 88.7 | 88.8 | 90.3 | 93.9 | 92.8 | 91.4 | 90.8 | 86.9 | 83.0 | 77.7 | 73.3 | 147.0 |
| 50000 | 75.6 | 81.9 | 85.8 | 84.6 | 85.3 | 90.1 | 87.8 | 86.8 | 85.7 | 82.0 | 78.3 | 73.0 | 67.7 | 147.0 |
| 63000 | 74.5 | 79.5 | 86.1 | 81.0 | 80.7 | 86.4 | 83.6 | 83.0 | 82.0 | 78.2 | 74.4 | 68.2 | 62.0 | 149.1 |
| 80000 | 73.4 | 77.5 | 85.5 | 77.1 | 76.1 | 83.0 | 80.8 | 78.7 | 77.0 | 73.9 | 70.7 | 62.1 | 55.8 | 153.1 |
| 0ASPL | 107.2 | 110.5 | 111.1 | 110.0 | 112.3 | 115.0 | 115.1 | 117.3 | 119.5 | 121.9 | 125.1 | 126.4 | 123.1 | 162.8 |
| PNL | 118.9 | 121.7 | 122.1 | 120.6 | 123.5 | 126.3 | 127.3 | 130.1 | 132.5 | 134.1 | 136.0 | 136.4 | 133.8 | |
| PNLT | 118.9 | 122.3 | 122.1 | 120.6 | 124.0 | 126.3 | 127.3 | 130.1 | 132.5 | 134.1 | 136.0 | 136.4 | 133.8 | |
| DBA | 105.9 | 108.6 | 109.0 | 107.2 | 110.2 | 113.0 | 113.8 | 116.9 | 119.3 | 121.4 | 123.9 | 124.9 | 122.7 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|-----------------|-------------------|
| VERTICAL = ADZ48 | TEST DATE = 04-28-83 | LOCAT = C41 ANECH CH | CANFIG = 18 | MODEL = C0 | FLTVL = 0. FPS |
| IAPLHA = SB59 | IEGA = NO | PNL AREA = FULL SPHERE | TAMB F = 61.51 | PAMB HQ = 29.23 | RELHUM = 79.8 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = |
| FNINT = | LBS XNL = | RPM | XNH = | RPM | V8 = 1486.0 FPS |
| FNRAMB = | LBS XNLR = | RPM | XNHR = | RPM | V18 = 2337.7 FPS |
| RUNPT = 83F-ZER-1809 | TAPE = | X1809C | TEST PT NO = 1809 | NC = AE095 | CORR FAN SPEED = |
| | | | | | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1809 X1809F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 85.6 | 88.4 | 85.7 | 85.7 | 83.1 | 84.7 | 85.3 | 88.0 | 87.7 | 89.7 | 91.6 | 94.1 | 89.2 | 130.1 |
| 63 | 90.3 | 94.6 | 96.3 | 96.1 | 91.2 | 93.1 | 93.4 | 96.1 | 93.6 | 94.8 | 96.0 | 99.0 | 99.9 | 137.2 |
| 80 | 91.3 | 96.1 | 91.6 | 89.9 | 92.0 | 95.8 | 95.0 | 93.6 | 95.1 | 96.8 | 98.5 | 98.5 | 86.1 | 136.9 |
| 100 | 90.7 | 97.2 | 92.3 | 91.8 | 94.4 | 97.3 | 96.9 | 97.5 | 95.8 | 98.2 | 100.7 | 103.4 | 90.6 | 139.2 |
| 125 | 87.6 | 90.9 | 92.7 | 91.7 | 95.1 | 97.2 | 96.8 | 96.7 | 96.2 | 101.2 | 106.1 | 94.7 | 141.7 | |
| 160 | 85.7 | 87.2 | 90.7 | 87.8 | 89.6 | 92.5 | 95.8 | 95.3 | 95.2 | 101.0 | 106.7 | 108.9 | 100.0 | 141.8 |
| 200 | 88.0 | 87.1 | 90.3 | 88.1 | 91.5 | 95.6 | 95.5 | 97.4 | 100.3 | 103.8 | 107.3 | 112.0 | 103.6 | 144.1 |
| 250 | 87.5 | 91.1 | 90.8 | 90.1 | 93.2 | 95.6 | 96.2 | 99.1 | 100.8 | 106.4 | 112.0 | 114.5 | 106.4 | 147.0 |
| 315 | 88.1 | 90.6 | 91.1 | 90.4 | 94.0 | 97.4 | 98.5 | 99.9 | 102.6 | 108.0 | 113.3 | 115.0 | 108.9 | 148.1 |
| 400 | 90.3 | 92.1 | 92.9 | 90.9 | 94.0 | 96.9 | 99.8 | 101.2 | 104.9 | 110.0 | 115.1 | 116.5 | 110.2 | 149.8 |
| 500 | 91.1 | 93.1 | 93.2 | 91.4 | 94.8 | 97.6 | 99.0 | 101.9 | 105.4 | 110.4 | 115.4 | 116.5 | 111.9 | 150.1 |
| 630 | 91.0 | 93.8 | 94.1 | 92.6 | 96.0 | 99.1 | 100.5 | 102.9 | 106.1 | 110.8 | 115.6 | 116.2 | 112.9 | 150.3 |
| 800 | 94.1 | 94.1 | 94.9 | 92.9 | 96.5 | 99.9 | 100.8 | 103.9 | 107.4 | 110.9 | 114.4 | 116.0 | 114.2 | 150.2 |
| 1000 | 97.0 | 98.3 | 96.8 | 94.9 | 99.7 | 100.8 | 101.9 | 105.6 | 108.3 | 111.2 | 114.0 | 115.4 | 114.4 | 150.3 |
| 1250 | 95.7 | 98.7 | 98.0 | 95.4 | 98.6 | 102.0 | 102.4 | 105.8 | 108.5 | 111.3 | 114.2 | 116.4 | 114.8 | 150.7 |
| 1600 | 94.6 | 96.7 | 96.6 | 95.8 | 98.8 | 102.1 | 103.2 | 106.0 | 109.1 | 111.4 | 113.6 | 115.0 | 112.9 | 150.1 |
| 2000 | 95.3 | 97.1 | 97.7 | 95.6 | 98.4 | 101.8 | 103.0 | 106.6 | 109.2 | 111.1 | 113.0 | 113.6 | 112.1 | 149.7 |
| 2500 | 93.9 | 96.9 | 97.2 | 95.0 | 99.1 | 102.0 | 102.2 | 106.5 | 108.4 | 110.0 | 111.7 | 111.0 | 110.8 | 148.4 |
| 3150 | 94.0 | 96.0 | 96.8 | 95.6 | 98.7 | 101.5 | 103.1 | 106.1 | 109.7 | 110.2 | 109.7 | 107.1 | 107.1 | 147.8 |
| 4000 | 92.9 | 95.2 | 96.6 | 94.5 | 98.4 | 101.4 | 102.5 | 105.3 | 107.2 | 107.9 | 108.7 | 107.5 | 105.8 | 146.4 |
| 5000 | 92.8 | 97.3 | 97.6 | 95.3 | 98.6 | 101.8 | 101.9 | 105.5 | 106.7 | 107.0 | 107.2 | 104.5 | 102.5 | 145.8 |
| 6300 | 93.4 | 97.2 | 97.8 | 96.4 | 99.2 | 101.4 | 102.2 | 104.4 | 105.6 | 105.5 | 105.3 | 102.4 | 99.3 | 145.0 |
| 8000 | 94.1 | 98.9 | 99.5 | 97.5 | 99.1 | 101.2 | 101.4 | 102.5 | 104.2 | 103.5 | 102.8 | 99.5 | 96.6 | 144.1 |
| 10000 | 95.1 | 100.1 | 101.7 | 100.0 | 101.9 | 103.2 | 101.4 | 102.4 | 103.3 | 102.0 | 100.8 | 97.0 | 94.6 | 145.0 |
| 12500 | 95.0 | 98.9 | 101.0 | 100.7 | 102.8 | 104.5 | 101.8 | 101.2 | 101.6 | 99.8 | 98.0 | 94.8 | 91.1 | 145.5 |
| 16000 | 93.8 | 98.3 | 99.9 | 100.0 | 101.6 | 103.8 | 102.4 | 100.8 | 100.3 | 97.8 | 95.3 | 91.4 | 88.4 | 146.1 |
| 20000 | 92.0 | 95.6 | 98.0 | 97.5 | 99.3 | 101.8 | 101.4 | 98.8 | 98.1 | 95.3 | 92.6 | 88.8 | 86.2 | 145.9 |
| 25000 | 88.3 | 93.0 | 94.6 | 95.4 | 96.8 | 100.6 | 99.8 | 97.1 | 95.8 | 92.0 | 88.1 | 84.4 | 80.2 | 146.2 |
| 31500 | 84.5 | 89.6 | 90.8 | 92.5 | 93.7 | 97.6 | 96.1 | 95.2 | 93.6 | 89.6 | 85.5 | 80.9 | 76.6 | 146.4 |
| 40000 | 80.7 | 86.7 | 88.7 | 88.8 | 90.3 | 93.9 | 92.8 | 91.4 | 90.8 | 86.9 | 83.0 | 77.7 | 73.3 | 147.0 |
| 50000 | 75.6 | 81.9 | 85.8 | 84.6 | 85.3 | 90.1 | 87.8 | 86.8 | 85.7 | 82.0 | 78.3 | 73.0 | 67.7 | 147.0 |
| 63000 | 74.5 | 79.5 | 86.1 | 81.0 | 80.7 | 86.4 | 83.6 | 83.0 | 82.0 | 78.2 | 74.4 | 68.2 | 62.0 | 149.1 |
| 80000 | 73.4 | 77.5 | 85.5 | 77.1 | 76.1 | 83.0 | 80.8 | 78.7 | 77.0 | 73.9 | 70.7 | 62.1 | 55.8 | 153.1 |
| BASEPL | 107.2 | 110.5 | 111.1 | 110.0 | 112.3 | 115.0 | 115.1 | 117.3 | 119.5 | 121.9 | 125.1 | 126.4 | 123.1 | 162.8 |
| PWL | 118.9 | 121.7 | 122.1 | 120.6 | 123.5 | 126.3 | 127.3 | 130.1 | 132.5 | 134.1 | 136.0 | 136.4 | 133.8 | |
| PWLT | 118.9 | 122.3 | 122.1 | 120.6 | 124.0 | 126.3 | 127.3 | 130.1 | 132.5 | 134.1 | 136.0 | 136.4 | 133.8 | |
| DBA | 194.0 | 198.3 | 206.0 | 198.3 | 197.6 | 204.1 | 201.8 | 200.0 | 198.5 | 195.2 | 191.9 | 184.0 | 178.1 | |

ORIGINAL PAGE IS OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

VEHICL = ADH246 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CONFIG = 18 MODEL = C8 FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 61.51 PAMB HG = 29.23 RELHUM = 79.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = 4.0 SQ IN

FNIN1 = LBS XNL RPM XNH RPM V8 = 1486.0 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2337.7 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1809 TAPE = X1809F TEST PT NO = 1809 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1809 X18091

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 64.0 | 68.0 | 69.6 | 73.6 | 77.1 | 78.1 | 79.1 | 81.1 | 85.4 | 89.2 | 88.7 | 79.3 | 163.5 |
| 63 | 66.2 | 69.5 | 71.3 | 73.6 | 76.6 | 79.3 | 80.3 | 83.3 | 87.4 | 90.9 | 90.1 | 80.4 | 165.1 |
| 80 | 66.9 | 70.5 | 71.6 | 74.3 | 77.3 | 78.6 | 81.1 | 83.8 | 87.7 | 91.1 | 90.1 | 82.1 | 165.4 |
| 100 | 66.8 | 71.1 | 72.5 | 75.5 | 78.7 | 80.0 | 82.0 | 84.5 | 88.1 | 91.3 | 89.7 | 82.9 | 165.6 |
| 125 | 69.7 | 71.3 | 73.2 | 75.0 | 79.5 | 80.2 | 82.9 | 85.7 | 88.1 | 89.9 | 89.3 | 84.0 | 165.5 |
| 160 | 72.4 | 75.3 | 75.0 | 73.7 | 80.3 | 81.3 | 84.5 | 86.5 | 88.2 | 89.4 | 89.5 | 83.8 | 165.6 |
| 200 | 70.8 | 75.5 | 75.9 | 77.7 | 81.3 | 81.5 | 84.5 | 86.4 | 88.1 | 89.3 | 89.1 | 83.7 | 166.0 |
| 250 | 69.4 | 73.3 | 74.4 | 74.3 | 77.7 | 81.2 | 82.2 | 84.5 | 86.9 | 87.9 | 88.4 | 81.2 | 165.4 |
| 315 | 69.6 | 73.2 | 75.1 | 73.8 | 77.1 | 80.6 | 81.7 | 84.8 | 86.6 | 87.3 | 87.4 | 85.6 | 165.0 |
| 400 | 67.7 | 72.7 | 74.3 | 72.8 | 77.5 | 80.5 | 80.5 | 84.4 | 85.4 | 85.8 | 85.6 | 82.1 | 163.8 |
| 500 | 67.3 | 71.3 | 73.4 | 73.1 | 76.7 | 79.7 | 81.1 | 83.6 | 85.8 | 85.0 | 83.6 | 80.0 | 163.1 |
| 630 | 65.7 | 70.1 | 72.8 | 71.7 | 76.1 | 79.3 | 80.2 | 82.5 | 83.5 | 82.8 | 81.5 | 77.1 | 161.8 |
| 800 | 65.0 | 71.7 | 73.5 | 72.1 | 76.0 | 79.3 | 80.3 | 82.6 | 81.4 | 79.4 | 73.3 | 65.6 | 161.1 |
| 1000 | 65.0 | 71.2 | 73.3 | 72.9 | 76.3 | 78.7 | 79.3 | 80.9 | 81.1 | 79.4 | 77.0 | 70.4 | 160.3 |
| 1250 | 65.1 | 72.4 | 74.6 | 73.6 | 75.9 | 78.1 | 78.6 | 79.3 | 76.9 | 73.7 | 66.6 | 56.8 | 159.5 |
| 1600 | 64.9 | 72.7 | 76.1 | 75.6 | 78.1 | 79.6 | 77.6 | 77.9 | 74.6 | 70.6 | 62.5 | 52.2 | 160.3 |
| 2000 | 63.3 | 70.4 | 74.5 | 75.5 | 78.3 | 80.3 | 77.3 | 76.0 | 75.1 | 71.2 | 66.3 | 58.1 | 160.9 |
| 2500 | 59.9 | 68.1 | 72.2 | 73.7 | 76.2 | 78.7 | 77.0 | 74.5 | 72.6 | 67.7 | 61.5 | 51.5 | 161.4 |
| 3150 | 54.2 | 62.4 | 67.7 | 69.1 | 71.9 | 74.7 | 74.0 | 70.3 | 67.9 | 62.1 | 54.7 | 43.2 | 161.2 |
| 4000 | 43.5 | 54.3 | 59.7 | 62.9 | 65.6 | 69.9 | 68.6 | 64.6 | 61.0 | 53.2 | 43.2 | 29.1 | 161.5 |
| 5000 | 29.0 | 42.4 | 48.9 | 53.7 | 56.7 | 61.1 | 59.1 | 56.4 | 51.7 | 42.4 | 30.1 | 11.2 | 161.7 |
| 6300 | 7.1 | 25.0 | 34.3 | 38.9 | 42.8 | 47.2 | 45.3 | 41.5 | 36.4 | 25.1 | 9.3 | 162.3 | 162.3 |
| 8000 | | 9.1 | 14.4 | 18.7 | 24.5 | 21.2 | 15.5 | 9.0 | | | | | 164.4 |
| 10000 | | | | | | | | | | | | | 168.4 |
| 12500 | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALFD AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

VEHICLE = ADH248 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CGNFIG = 18 MODEL = CO FLTVEL = 0. FPS
 TAPLHA = SB59 IEGA = NO MPII = PWL AREA = FULL SPHERE TAMB F = 61.51 PAMB HG = 29.23 RELHUM = 79.8 PCT
 WIND DIR = DEG WIND VEL = MPII = EXT DIST = 2400.0 FT EXT CNFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1486.0 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2337.7 FPS AE18 = 19.9 SQ IN

NPT SF-1 1801-10 PE 9T PT TE AE RR SPE RR RPI

IDENTIFICATION - MODEL 83F-400-1810 X1810C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.9 | 88.9 | 85.9 | 84.0 | 83.1 | 84.7 | 86.6 | 87.7 | 87.2 | 90.3 | 93.4 | 94.3 | 91.0 | 130.7 |
| 63 | 91.3 | 93.5 | 94.6 | 93.6 | 91.2 | 91.6 | 95.9 | 95.4 | 91.6 | 93.2 | 94.8 | 96.5 | 97.6 | 136.1 |
| 80 | 91.8 | 96.1 | 91.3 | 90.1 | 91.7 | 95.3 | 95.0 | 93.6 | 94.6 | 96.2 | 97.8 | 98.2 | 89.6 | 136.6 |
| 100 | 91.0 | 96.2 | 91.3 | 90.3 | 93.1 | 95.8 | 95.4 | 96.8 | 94.5 | 96.9 | 99.2 | 102.6 | 92.1 | 138.1 |
| 125 | 88.4 | 90.7 | 92.7 | 91.2 | 94.3 | 96.2 | 95.6 | 95.2 | 94.7 | 99.3 | 103.9 | 107.1 | 95.5 | 140.4 |
| 160 | 85.7 | 84.5 | 88.7 | 86.0 | 87.9 | 90.2 | 94.4 | 91.3 | 92.5 | 98.2 | 103.9 | 106.1 | 98.3 | 139.1 |
| 200 | 85.5 | 85.1 | 87.6 | 84.6 | 87.7 | 91.1 | 92.5 | 94.4 | 97.1 | 100.5 | 104.0 | 109.7 | 101.1 | 141.4 |
| 250 | 84.3 | 87.3 | 87.1 | 85.9 | 89.0 | 91.8 | 92.7 | 95.1 | 97.1 | 102.9 | 108.8 | 111.5 | 102.6 | 143.8 |
| 315 | 85.3 | 87.6 | 87.9 | 86.7 | 90.0 | 92.9 | 94.8 | 95.9 | 98.4 | 104.4 | 110.3 | 112.3 | 103.9 | 145.0 |
| 400 | 86.3 | 88.1 | 89.1 | 86.4 | 90.0 | 93.1 | 95.8 | 95.9 | 99.9 | 105.6 | 111.3 | 112.5 | 102.4 | 145.6 |
| 500 | 86.8 | 88.9 | 89.4 | 87.7 | 91.5 | 94.1 | 95.0 | 97.4 | 100.6 | 106.0 | 111.4 | 110.3 | 99.9 | 145.0 |
| 630 | 86.0 | 88.8 | 89.3 | 87.9 | 92.2 | 95.1 | 96.2 | 98.4 | 101.6 | 106.3 | 111.1 | 108.7 | 97.1 | 144.6 |
| 800 | 87.8 | 88.1 | 89.9 | 88.4 | 92.3 | 96.1 | 96.8 | 99.7 | 102.9 | 106.1 | 109.4 | 105.0 | 94.9 | 143.5 |
| 1000 | 90.3 | 90.0 | 91.3 | 89.6 | 94.2 | 96.8 | 97.4 | 101.6 | 104.3 | 106.7 | 109.0 | 101.4 | 82.6 | 143.7 |
| 1250 | 89.7 | 92.5 | 91.7 | 90.9 | 93.9 | 98.0 | 98.4 | 101.5 | 104.7 | 106.2 | 107.7 | 98.9 | 92.3 | 143.2 |
| 1600 | 90.1 | 90.5 | 91.9 | 91.5 | 94.8 | 98.4 | 99.7 | 102.0 | 105.6 | 106.6 | 107.6 | 97.5 | 90.9 | 143.6 |
| 2000 | 91.0 | 91.6 | 92.2 | 90.4 | 94.2 | 98.6 | 100.0 | 102.9 | 106.0 | 106.4 | 106.8 | 96.6 | 91.6 | 143.6 |
| 2500 | 90.6 | 92.2 | 92.7 | 91.2 | 95.1 | 98.7 | 99.7 | 103.0 | 104.9 | 105.3 | 105.7 | 96.0 | 91.5 | 143.0 |
| 3150 | 91.2 | 91.8 | 92.8 | 91.3 | 94.9 | 99.0 | 100.4 | 102.8 | 105.6 | 105.2 | 104.7 | 96.4 | 90.8 | 143.1 |
| 4000 | 91.6 | 91.9 | 93.3 | 91.5 | 95.7 | 98.6 | 100.0 | 102.8 | 104.0 | 103.8 | 103.7 | 95.2 | 89.8 | 142.3 |
| 5000 | 94.0 | 94.0 | 93.6 | 91.3 | 95.3 | 98.5 | 99.9 | 102.2 | 103.5 | 103.4 | 103.4 | 95.2 | 91.0 | 142.2 |
| 6300 | 96.3 | 95.9 | 95.3 | 93.1 | 96.2 | 98.9 | 100.2 | 102.6 | 102.9 | 103.0 | 103.1 | 96.1 | 91.6 | 142.5 |
| 8000 | 98.3 | 99.6 | 98.7 | 94.7 | 96.4 | 98.4 | 99.4 | 100.9 | 101.9 | 101.7 | 101.5 | 95.0 | 91.8 | 142.5 |
| 10000 | 98.3 | 100.6 | 102.4 | 99.7 | 99.6 | 99.9 | 99.6 | 100.8 | 101.2 | 100.4 | 99.5 | 94.7 | 91.3 | 143.7 |
| 12500 | 96.5 | 98.1 | 100.4 | 100.1 | 102.0 | 102.7 | 100.3 | 99.4 | 99.3 | 98.0 | 96.7 | 93.0 | 89.5 | 144.2 |
| 15000 | 96.2 | 98.2 | 99.1 | 98.9 | 100.5 | 102.3 | 100.8 | 98.7 | 98.0 | 96.3 | 94.5 | 90.1 | 86.8 | 144.8 |
| 20000 | 92.9 | 96.2 | 97.1 | 96.4 | 97.9 | 100.5 | 100.0 | 97.2 | 95.5 | 93.2 | 90.9 | 86.7 | 83.4 | 144.6 |
| 25000 | 89.4 | 92.4 | 94.2 | 94.5 | 96.4 | 99.7 | 99.1 | 96.4 | 94.7 | 90.6 | 86.4 | 84.2 | 80.3 | 145.5 |
| 31500 | 85.6 | 89.4 | 90.7 | 91.8 | 92.6 | 96.9 | 95.7 | 94.8 | 92.4 | 88.5 | 84.6 | 80.8 | 76.2 | 145.8 |
| 40000 | 81.8 | 86.3 | 88.3 | 88.4 | 89.2 | 93.0 | 92.4 | 88.8 | 85.5 | 82.3 | 78.1 | 72.9 | 74.6 | 146.3 |
| 50000 | 77.2 | 81.5 | 85.6 | 82.9 | 83.9 | 89.4 | 87.6 | 85.9 | 84.3 | 80.8 | 77.3 | 73.3 | 67.6 | 146.2 |
| 63000 | 76.4 | 79.0 | 85.5 | 78.4 | 78.9 | 85.6 | 83.8 | 81.9 | 80.2 | 77.1 | 74.0 | 68.6 | 61.9 | 148.3 |
| 80000 | 74.5 | 76.1 | 85.1 | 73.4 | 73.4 | 83.1 | 80.2 | 76.5 | 74.8 | 71.9 | 69.1 | 62.6 | 55.1 | 152.3 |
| GASPL | 107.0 | 108.7 | 109.3 | 107.9 | 110.0 | 112.4 | 112.8 | 114.2 | 116.1 | 117.8 | 120.7 | 119.9 | 111.1 | 159.7 |
| PNL | 118.1 | 119.0 | 119.1 | 117.0 | 120.3 | 123.4 | 124.6 | 126.9 | 129.1 | 130.0 | 131.2 | 127.5 | 119.6 | |
| PNLT | 118.1 | 119.0 | 119.1 | 117.5 | 120.9 | 123.9 | 124.6 | 126.9 | 129.1 | 130.0 | 131.2 | 127.5 | 119.6 | |
| DBA | 104.5 | 105.4 | 105.9 | 103.8 | 106.7 | 109.8 | 110.9 | 113.5 | 115.8 | 116.9 | 118.6 | 115.0 | 105.3 | |

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NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

| | | | | | | |
|----------------------|----------------------|------------------------|--------------------|------------------|-------------------|----------------------|
| VERTCL = ADH245 | TEST DATE = 04-28-83 | LOCAT = | CAT ANECH CH | CONFIG = 18 | MODEL = C01 | FLTVEL = 400. FPS |
| LAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 60.25 | PAMB HG = 29.01 | RELHUM = 86.1 PCT | |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = | |
| FNRMB = | LBS XNLR = | RPM | XNHR = | V8 = 17479.8 FPS | AE8 = 4.0 SQ IN | |
| | LBS XNLR = | RPM | XNHR = | V18 = 2364.6 FPS | AE18 = 19.9 SQ IN | |
| RUNPT = 83F-400-1810 | TAPE = | X1810C | TEST PT NO = 1810 | NC = | AE095 | CORR FAN SPEED = RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1810 X1810F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 91.9 | 93.6 | 91.9 | 89.1 | 90.5 | 91.8 | 90.8 | 91.5 | 96.3 | 101.7 | 107.5 | 110.2 | 103.8 | 142.8 |
| 315 | 91.9 | 93.6 | 91.9 | 89.1 | 91.8 | 93.1 | 93.9 | 94.1 | 97.7 | 103.0 | 108.7 | 111.0 | 103.7 | 143.8 |
| 400 | 93.0 | 94.0 | 92.8 | 90.1 | 91.8 | 93.4 | 95.6 | 94.9 | 98.5 | 103.4 | 108.8 | 109.4 | 102.7 | 143.3 |
| 500 | 93.8 | 94.4 | 94.0 | 89.8 | 93.4 | 94.5 | 94.0 | 95.3 | 99.6 | 103.9 | 108.9 | 108.7 | 102.0 | 143.3 |
| 630 | 94.5 | 95.3 | 94.4 | 91.1 | 94.2 | 95.5 | 95.3 | 96.2 | 101.2 | 104.1 | 107.8 | 106.4 | 102.5 | 142.7 |
| 800 | 93.7 | 95.3 | 94.4 | 91.4 | 94.3 | 96.7 | 95.9 | 97.5 | 102.9 | 104.9 | 107.8 | 103.6 | 102.3 | 142.8 |
| 1000 | 95.5 | 94.6 | 95.0 | 92.0 | 96.4 | 97.5 | 96.6 | 99.4 | 103.4 | 104.5 | 106.5 | 101.1 | 102.0 | 142.5 |
| 1250 | 97.9 | 95.5 | 96.4 | 93.3 | 96.1 | 98.8 | 97.7 | 99.5 | 104.4 | 105.0 | 106.3 | 99.3 | 99.7 | 142.9 |
| 1600 | 97.3 | 98.9 | 96.9 | 94.6 | 97.2 | 99.4 | 99.2 | 100.2 | 105.1 | 105.1 | 105.9 | 98.8 | 100.9 | 143.3 |
| 2000 | 97.7 | 97.0 | 97.1 | 95.4 | 96.9 | 98.8 | 99.8 | 101.3 | 104.6 | 104.7 | 105.7 | 99.3 | 102.4 | 143.3 |
| 2500 | 98.7 | 98.1 | 97.6 | 94.4 | 98.0 | 100.3 | 100.0 | 102.0 | 106.0 | 105.2 | 105.3 | 100.4 | 102.4 | 143.9 |
| 3150 | 98.2 | 98.8 | 98.2 | 95.4 | 98.7 | 101.0 | 101.4 | 102.4 | 105.2 | 104.6 | 105.0 | 99.9 | 102.2 | 143.9 |
| 4000 | 101.6 | 100.7 | 100.1 | 96.8 | 99.4 | 101.2 | 101.8 | 103.3 | 105.1 | 104.8 | 105.4 | 100.6 | 104.0 | 144.7 |
| 5000 | 99.2 | 98.7 | 99.1 | 96.2 | 99.4 | 101.5 | 102.1 | 103.1 | 105.0 | 104.9 | 105.7 | 102.1 | 105.1 | 144.8 |
| 6300 | 101.5 | 100.7 | 99.5 | 96.1 | 100.1 | 101.9 | 102.5 | 103.8 | 104.9 | 104.5 | 105.0 | 101.8 | 105.8 | 145.3 |
| 8000 | 102.6 | 101.8 | 100.5 | 97.5 | 99.9 | 101.4 | 101.8 | 102.5 | 104.9 | 103.8 | 103.3 | 101.4 | 104.8 | 145.3 |
| 10000 | 103.5 | 104.3 | 102.7 | 98.2 | 103.3 | 102.9 | 102.1 | 102.7 | 100.7 | 98.9 | 97.2 | 100.7 | 145.6 | |
| 12500 | 103.1 | 105.2 | 106.5 | 103.3 | 106.0 | 105.7 | 101.7 | 99.4 | 99.9 | 97.7 | 96.3 | 94.9 | 98.5 | 147.7 |
| 16000 | 102.8 | 103.7 | 105.1 | 103.9 | 104.6 | 105.3 | 102.3 | 98.7 | 97.8 | 95.1 | 93.1 | 91.8 | 95.5 | 148.2 |
| 20000 | 102.2 | 103.4 | 103.4 | 102.3 | 102.0 | 103.5 | 101.5 | 97.1 | 97.6 | 93.0 | 89.2 | 90.0 | 93.1 | 148.5 |
| 25000 | 98.2 | 100.8 | 100.8 | 99.1 | 101.0 | 102.7 | 100.6 | 96.4 | 96.1 | 91.7 | 88.1 | 87.4 | 89.8 | 149.1 |
| 31500 | 96.8 | 98.5 | 98.8 | 97.6 | 97.2 | 99.9 | 97.1 | 94.8 | 93.4 | 89.6 | 86.7 | 85.5 | 87.2 | 149.7 |
| 40000 | 92.0 | 94.6 | 94.4 | 94.0 | 93.8 | 96.0 | 93.8 | 91.2 | 89.2 | 85.3 | 82.1 | 81.1 | 82.3 | 149.8 |
| 50000 | 87.9 | 91.1 | 91.7 | 90.2 | 88.5 | 92.4 | 89.0 | 85.9 | 86.1 | 82.5 | 79.8 | 77.3 | 77.6 | 150.3 |
| 63000 | 82.4 | 85.4 | 88.1 | 83.8 | 83.2 | 88.6 | 85.2 | 81.9 | 82.2 | 78.8 | 76.3 | 72.9 | 72.3 | 151.2 |
| 80000 | 78.2 | 80.0 | 85.5 | 77.2 | 77.5 | 86.1 | 81.6 | 76.5 | 72.4 | 69.0 | 66.5 | 63.1 | 62.5 | 154.1 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

VEHICLE = ADH245 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CONFIG = 18 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 60.25 PAMB HG = 29.01 RELHUM = 86.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNL RPM XNHR = RPM V8 = 1479.8 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR = RPM V18 = 2364.6 FPS AE18 = 19.9 SQ IN

3F TBT APE = OF PT = T SPE = RP

FLIGHT-TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-400-1810 X18101

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 67.8 | 71.0 | 70.4 | 68.3 | 71.4 | 72.8 | 73.5 | 73.3 | 76.2 | 80.4 | 84.6 | 84.7 | 74.0 | 159.1 |
| 63 | 68.9 | 71.4 | 71.3 | 69.2 | 71.4 | 73.1 | 75.4 | 74.1 | 76.9 | 80.7 | 84.7 | 83.0 | 73.0 | 158.7 |
| 80 | 69.6 | 71.7 | 72.4 | 68.9 | 73.0 | 74.2 | 73.6 | 74.4 | 78.0 | 81.2 | 84.7 | 82.3 | 72.2 | 158.6 |
| 100 | 70.2 | 72.6 | 72.8 | 70.2 | 73.7 | 75.1 | 74.8 | 75.3 | 79.6 | 81.4 | 83.5 | 79.8 | 72.6 | 158.1 |
| 125 | 69.3 | 72.4 | 72.6 | 70.4 | 73.8 | 76.2 | 75.3 | 76.5 | 81.2 | 83.4 | 83.4 | 76.9 | 72.1 | 158.1 |
| 160 | 70.9 | 71.6 | 73.1 | 70.9 | 75.7 | 76.9 | 75.9 | 78.3 | 81.5 | 81.6 | 81.9 | 74.1 | 71.4 | 157.8 |
| 200 | 73.1 | 73.3 | 74.4 | 72.0 | 75.3 | 78.1 | 76.8 | 78.2 | 82.4 | 81.8 | 81.5 | 72.1 | 68.7 | 158.2 |
| 250 | 72.1 | 75.5 | 74.6 | 73.1 | 76.2 | 78.5 | 78.2 | 78.6 | 82.8 | 81.6 | 80.7 | 71.1 | 69.2 | 158.6 |
| 315 | 72.1 | 73.2 | 74.5 | 73.6 | 75.5 | 78.7 | 78.5 | 79.5 | 82.0 | 80.9 | 80.0 | 71.1 | 69.9 | 158.6 |
| 400 | 72.5 | 73.9 | 74.6 | 72.2 | 76.4 | 78.8 | 78.4 | 79.9 | 83.0 | 81.0 | 79.2 | 71.4 | 68.9 | 159.2 |
| 500 | 71.6 | 74.1 | 74.8 | 72.9 | 76.7 | 79.2 | 79.4 | 80.0 | 81.9 | 80.0 | 78.3 | 70.3 | 67.6 | 159.2 |
| 630 | 74.4 | 75.6 | 76.4 | 74.0 | 77.1 | 79.1 | 79.5 | 80.5 | 81.4 | 79.6 | 78.2 | 70.3 | 68.3 | 160.0 |
| 800 | 71.4 | 73.1 | 74.9 | 73.0 | 76.7 | 79.1 | 79.4 | 79.9 | 80.9 | 79.3 | 77.9 | 71.0 | 68.2 | 160.1 |
| 1000 | 73.1 | 74.7 | 75.0 | 72.6 | 77.2 | 79.2 | 79.5 | 80.3 | 80.4 | 78.5 | 76.6 | 69.8 | 67.6 | 160.6 |
| 1250 | 73.6 | 75.3 | 75.6 | 73.7 | 76.6 | 78.4 | 78.5 | 78.7 | 80.0 | 77.2 | 74.2 | 68.5 | 65.0 | 160.6 |
| 1600 | 73.4 | 76.9 | 77.1 | 73.7 | 79.5 | 79.3 | 78.3 | 78.3 | 75.1 | 71.5 | 67.7 | 58.3 | 58.3 | 160.9 |
| 2000 | 71.5 | 76.6 | 80.0 | 78.1 | 81.5 | 81.5 | 77.2 | 74.2 | 73.4 | 69.2 | 64.6 | 58.1 | 52.5 | 163.1 |
| 2500 | 68.9 | 73.5 | 77.4 | 77.6 | 79.1 | 80.1 | 76.8 | 72.4 | 70.1 | 64.9 | 59.2 | 51.9 | 44.2 | 163.6 |
| 3150 | 64.3 | 70.2 | 73.1 | 73.8 | 74.6 | 76.4 | 74.0 | 68.7 | 67.3 | 59.8 | 51.4 | 44.5 | 32.8 | 163.8 |
| 4000 | 53.4 | 62.1 | 65.9 | 66.6 | 69.8 | 72.0 | 69.4 | 63.9 | 61.3 | 53.0 | 43.3 | 32.1 | 14.2 | 164.4 |
| 5000 | 41.3 | 51.3 | 56.9 | 58.8 | 60.2 | 63.5 | 60.1 | 56.0 | 51.4 | 42.5 | 31.2 | 15.7 | | 165.0 |
| 6300 | 18.4 | 32.9 | 40.0 | 44.1 | 46.3 | 49.3 | 46.3 | 41.3 | 34.8 | 23.5 | 8.5 | | | 165.1 |
| 8000 | 3.6 | 15.0 | 20.1 | 21.9 | 27.0 | 22.5 | 15.7 | 9.4 | | | | | | 165.6 |
| 10000 | | | | | | | | | | | | | | 166.5 |
| 12500 | | | | | | | | | | | | | | 169.4 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

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MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

VEHICL = ADH245 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CONFIG = 18 MODEL = CO FLTVEL = 400. FPS
 JAPLHA = SB59 IEGA = NO PML AREA = FULL SPHERE TAMB F = 60.25 PAMB HG = 29.01 RELHUM = 86.1 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1479.8 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNIR = RPM V18 = 2364.6 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1810 TAPE = X18101 TEST PT NO = 1810 NC = AE095 CORR FAN SPEED = RPM

P118-03

IDENTIFICATION - MODEL 83F-ZER-1811 X1811C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 87.9 | 89.2 | 86.9 | 87.0 | 84.8 | 88.2 | 88.8 | 88.0 | 90.2 | 93.3 | 96.4 | 97.1 | 91.5 | 132.9 |
| 63 | 91.3 | 94.8 | 95.3 | 97.1 | 92.7 | 97.8 | 94.4 | 95.9 | 96.6 | 99.8 | 103.0 | 101.2 | 98.9 | 139.6 |
| 80 | 93.8 | 97.6 | 93.1 | 91.9 | 93.5 | 97.6 | 96.7 | 95.9 | 96.6 | 98.6 | 100.5 | 100.7 | 87.6 | 136.8 |
| 100 | 92.5 | 99.5 | 94.8 | 94.3 | 96.9 | 98.8 | 98.6 | 100.0 | 97.3 | 100.1 | 103.0 | 105.6 | 92.1 | 141.3 |
| 125 | 89.6 | 92.9 | 95.4 | 94.0 | 97.6 | 99.4 | 99.1 | 98.7 | 98.2 | 103.0 | 107.9 | 110.3 | 97.2 | 143.8 |
| 160 | 87.9 | 88.0 | 92.2 | 89.3 | 91.4 | 94.2 | 97.1 | 96.8 | 97.5 | 103.0 | 108.4 | 110.9 | 102.5 | 143.7 |
| 200 | 89.5 | 89.1 | 91.1 | 90.4 | 94.0 | 97.1 | 97.0 | 99.1 | 101.8 | 105.4 | 109.0 | 114.7 | 105.9 | 146.3 |
| 250 | 89.5 | 92.6 | 92.6 | 91.6 | 95.2 | 97.3 | 98.5 | 101.1 | 103.1 | 108.7 | 114.3 | 117.2 | 108.6 | 149.5 |
| 315 | 91.1 | 92.4 | 93.1 | 92.4 | 95.5 | 99.1 | 99.8 | 101.4 | 103.6 | 109.7 | 115.8 | 118.0 | 111.4 | 150.7 |
| 400 | 92.6 | 94.4 | 94.4 | 92.7 | 95.5 | 98.4 | 102.0 | 102.9 | 106.1 | 111.8 | 117.6 | 119.8 | 112.9 | 152.4 |
| 500 | 93.1 | 95.1 | 95.8 | 93.2 | 96.8 | 99.4 | 100.5 | 103.7 | 106.9 | 112.6 | 118.4 | 119.3 | 114.4 | 152.7 |
| 630 | 93.8 | 95.8 | 95.8 | 94.6 | 98.0 | 101.3 | 101.7 | 105.4 | 107.8 | 113.5 | 119.1 | 119.7 | 116.1 | 153.5 |
| 800 | 96.8 | 96.1 | 97.4 | 95.2 | 98.5 | 102.4 | 102.5 | 106.2 | 109.1 | 113.5 | 117.9 | 119.8 | 117.2 | 153.4 |
| 1000 | 100.5 | 101.0 | 99.8 | 97.4 | 100.7 | 103.5 | 103.9 | 107.4 | 110.8 | 114.4 | 118.0 | 119.4 | 117.4 | 153.7 |
| 1250 | 98.9 | 101.7 | 100.7 | 99.6 | 102.1 | 104.7 | 104.6 | 107.5 | 111.0 | 114.7 | 118.4 | 119.9 | 117.0 | 154.0 |
| 1600 | 98.1 | 99.2 | 99.4 | 98.0 | 101.5 | 105.1 | 105.7 | 108.3 | 111.6 | 115.4 | 119.1 | 119.0 | 115.9 | 154.1 |
| 2000 | 98.3 | 99.6 | 99.2 | 97.6 | 100.7 | 104.6 | 105.8 | 109.1 | 111.5 | 114.7 | 118.0 | 117.1 | 113.4 | 153.1 |
| 2500 | 97.1 | 100.2 | 99.5 | 97.7 | 101.1 | 104.7 | 105.4 | 108.5 | 111.4 | 114.0 | 116.7 | 114.3 | 112.3 | 152.0 |
| 3150 | 97.0 | 99.5 | 99.8 | 97.6 | 100.9 | 105.0 | 106.1 | 108.8 | 112.1 | 113.6 | 115.0 | 111.9 | 108.8 | 151.2 |
| 4000 | 96.1 | 99.2 | 99.6 | 97.5 | 101.7 | 104.6 | 105.5 | 108.3 | 110.0 | 111.8 | 113.7 | 109.7 | 106.6 | 149.9 |
| 5000 | 96.0 | 100.5 | 100.4 | 98.3 | 100.6 | 105.0 | 104.7 | 107.5 | 109.5 | 110.5 | 111.4 | 107.5 | 104.0 | 148.8 |
| 6300 | 96.4 | 100.7 | 101.5 | 99.6 | 102.0 | 104.9 | 104.7 | 107.4 | 108.4 | 109.2 | 110.1 | 105.9 | 101.6 | 148.3 |
| 8000 | 96.6 | 100.9 | 102.0 | 100.5 | 102.1 | 104.4 | 104.1 | 105.5 | 106.2 | 107.1 | 108.0 | 102.8 | 98.9 | 147.3 |
| 10000 | 97.6 | 101.4 | 103.2 | 102.0 | 104.7 | 105.9 | 105.2 | 105.1 | 105.8 | 105.9 | 106.1 | 100.8 | 96.9 | 147.9 |
| 12500 | 96.5 | 100.2 | 101.7 | 101.7 | 104.5 | 106.8 | 104.6 | 104.0 | 103.8 | 103.7 | 103.5 | 98.8 | 94.9 | 147.9 |
| 16000 | 95.3 | 99.5 | 100.7 | 101.3 | 102.9 | 105.9 | 104.9 | 103.0 | 102.1 | 102.1 | 102.1 | 96.2 | 91.1 | 148.3 |
| 20000 | 93.3 | 96.6 | 98.7 | 98.0 | 100.3 | 104.1 | 102.9 | 100.8 | 100.4 | 99.5 | 98.6 | 92.8 | 87.5 | 147.8 |
| 25000 | 89.6 | 93.6 | 95.6 | 95.9 | 98.1 | 102.4 | 101.3 | 98.6 | 97.8 | 94.4 | 90.9 | 87.9 | 82.5 | 147.7 |
| 31500 | 86.0 | 90.6 | 92.4 | 94.0 | 94.8 | 98.9 | 97.4 | 96.7 | 95.1 | 91.4 | 87.8 | 84.7 | 78.2 | 147.8 |
| 40000 | 82.7 | 87.7 | 89.4 | 90.3 | 91.8 | 96.9 | 94.8 | 92.9 | 91.5 | 88.6 | 85.7 | 81.2 | 75.0 | 148.9 |
| 50000 | 78.1 | 83.4 | 86.5 | 86.3 | 87.3 | 93.3 | 91.0 | 87.7 | 87.1 | 84.2 | 81.2 | 76.2 | 68.9 | 149.3 |
| 63000 | 76.9 | 81.4 | 86.5 | 82.2 | 82.6 | 89.6 | 86.7 | 84.4 | 83.4 | 81.0 | 78.5 | 72.1 | 63.6 | 151.2 |
| 80000 | 76.0 | 80.1 | 85.3 | 77.9 | 78.2 | 86.1 | 82.4 | 81.0 | 79.8 | 76.4 | 73.1 | 67.7 | 59.1 | 154.8 |
| 0ASPL | 109.9 | 112.8 | 113.1 | 112.0 | 114.5 | 117.6 | 117.6 | 119.6 | 121.9 | 125.1 | 128.9 | 129.7 | 125.7 | 165.6 |
| PNLT | 121.8 | 124.5 | 124.7 | 122.9 | 126.1 | 129.3 | 130.0 | 132.5 | 135.1 | 137.5 | 140.4 | 139.5 | 135.7 | |
| PNLT | 121.8 | 125.2 | 124.7 | 122.9 | 126.7 | 129.3 | 130.0 | 132.5 | 135.1 | 137.5 | 140.4 | 139.5 | 135.7 | |
| DBA | 109.0 | 111.5 | 111.5 | 109.8 | 112.8 | 116.0 | 116.5 | 119.2 | 121.9 | 124.8 | 128.2 | 128.3 | 125.2 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

| | | | | | | | | | | | |
|------------|--------------|----------------|----------|--------------|--------------|--------------|-------|------------------|--------|------------|----------|
| VERTICAL = | ADR247 | TEST DATE = | 04-28-83 | LOCAL = | C41 ANECH CH | CONFIG = | 18 | MODEL = | C01 | FLYVEL = | 0. FFS |
| IAPLHA = | SB59 | IEGA = | NO | PWL AREA = | FULL SPHERE | TAMB F = | 60.97 | PAMB HG = | 29.18 | RELHUM = | 80.3 PCT |
| WIND DIR = | | DEG WIND VEL = | | MPH = | 40.0 FT | EXT CONFIG = | ARC | MIKE HT = | | NBFR = | |
| FNTNT = | LBS XNL | = | RPM | XNHR | = | RPM | V8 = | 1526.7 FPS | AE8 = | 4.0 SQ IN | |
| FNRAMB = | LBS XNLR | = | RPM | XNHR | = | RPM | V18 = | 2472.7 FPS | AE18 = | 19.9 SQ IN | |
| RUNPT = | 83F-ZER-1811 | TAPE = | X1811C | TEST PT NO = | 1811 | NC = | AE095 | CORR FAN SPEED = | | RPM | |

IDENTIFICATION - 83F-ZER-1811 X1811F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 87.9 | 89.2 | 86.9 | 87.0 | 84.8 | 88.2 | 88.8 | 88.0 | 90.2 | 93.3 | 96.4 | 97.1 | 91.5 | 132.9 |
| 63 | 91.3 | 94.8 | 95.3 | 97.1 | 92.7 | 97.8 | 94.4 | 95.9 | 96.6 | 99.8 | 103.0 | 101.2 | 98.9 | 139.6 |
| 80 | 93.8 | 97.8 | 93.1 | 91.9 | 93.5 | 97.6 | 96.7 | 95.9 | 96.6 | 98.6 | 100.5 | 100.7 | 87.6 | 138.8 |
| 100 | 92.5 | 99.5 | 94.8 | 94.3 | 96.9 | 98.8 | 98.6 | 100.0 | 97.3 | 100.1 | 103.0 | 105.6 | 92.1 | 141.3 |
| 125 | 89.6 | 92.9 | 95.4 | 94.0 | 97.6 | 99.4 | 99.1 | 98.7 | 98.2 | 103.0 | 107.9 | 110.3 | 97.2 | 143.8 |
| 160 | 87.9 | 88.0 | 92.2 | 89.3 | 91.4 | 94.2 | 97.1 | 96.8 | 97.5 | 103.0 | 108.4 | 110.9 | 102.5 | 143.7 |
| 200 | 89.5 | 89.1 | 91.1 | 90.4 | 94.0 | 97.1 | 97.0 | 99.1 | 101.8 | 105.4 | 109.0 | 114.7 | 105.9 | 146.3 |
| 250 | 89.5 | 92.6 | 92.6 | 91.6 | 95.2 | 97.3 | 98.5 | 101.1 | 103.1 | 108.7 | 114.3 | 117.2 | 108.6 | 149.5 |
| 315 | 91.1 | 92.4 | 93.1 | 92.4 | 95.5 | 99.1 | 99.8 | 101.4 | 103.6 | 109.7 | 115.8 | 118.0 | 111.4 | 150.7 |
| 400 | 92.6 | 94.4 | 94.4 | 92.7 | 95.5 | 98.4 | 102.0 | 102.9 | 106.1 | 111.8 | 117.6 | 119.8 | 112.9 | 152.4 |
| 500 | 93.1 | 95.1 | 95.4 | 93.2 | 95.8 | 99.4 | 100.5 | 103.7 | 106.9 | 112.6 | 118.4 | 119.3 | 114.4 | 152.7 |
| 630 | 93.8 | 95.8 | 95.8 | 94.6 | 98.0 | 101.3 | 101.7 | 105.4 | 107.8 | 113.5 | 119.1 | 119.7 | 116.1 | 153.5 |
| 800 | 96.8 | 96.1 | 97.4 | 95.2 | 98.5 | 102.4 | 102.5 | 106.2 | 109.1 | 113.5 | 117.9 | 119.8 | 117.2 | 153.4 |
| 1000 | 100.5 | 101.0 | 99.8 | 97.4 | 100.7 | 103.6 | 103.9 | 107.4 | 110.8 | 114.4 | 118.0 | 119.4 | 117.4 | 153.7 |
| 1250 | 98.9 | 101.7 | 100.7 | 99.6 | 102.1 | 104.7 | 104.6 | 107.5 | 111.0 | 114.7 | 118.4 | 119.9 | 117.0 | 154.0 |
| 1600 | 98.1 | 99.2 | 99.4 | 98.0 | 101.5 | 105.1 | 105.7 | 108.3 | 111.6 | 115.4 | 119.1 | 119.0 | 115.9 | 154.1 |
| 2000 | 98.3 | 99.6 | 99.2 | 97.6 | 100.7 | 104.6 | 105.8 | 109.1 | 111.5 | 114.7 | 118.0 | 117.4 | 113.4 | 153.1 |
| 2500 | 97.1 | 100.2 | 99.5 | 97.7 | 101.1 | 104.7 | 105.4 | 108.5 | 111.4 | 114.0 | 116.7 | 114.3 | 112.3 | 152.0 |
| 3150 | 97.0 | 99.5 | 99.8 | 97.6 | 100.9 | 105.0 | 106.1 | 108.8 | 112.1 | 113.6 | 115.0 | 111.9 | 108.8 | 151.2 |
| 4000 | 96.1 | 99.2 | 99.6 | 97.5 | 101.7 | 104.6 | 105.5 | 108.3 | 110.0 | 111.8 | 113.7 | 109.7 | 106.6 | 149.9 |
| 5000 | 96.0 | 100.5 | 100.4 | 98.3 | 100.6 | 105.0 | 104.7 | 107.5 | 109.5 | 110.5 | 111.4 | 107.5 | 104.0 | 148.8 |
| 6300 | 96.4 | 100.7 | 101.5 | 99.6 | 102.0 | 104.9 | 104.7 | 107.4 | 108.4 | 109.2 | 110.1 | 105.9 | 101.6 | 148.3 |
| 8000 | 96.6 | 100.9 | 102.0 | 100.5 | 102.1 | 104.4 | 104.1 | 105.5 | 106.2 | 107.1 | 108.0 | 102.8 | 98.9 | 147.3 |
| 10000 | 97.6 | 101.4 | 103.2 | 102.0 | 104.7 | 105.9 | 105.2 | 105.1 | 105.8 | 105.9 | 106.1 | 100.8 | 96.9 | 147.9 |
| 12500 | 96.5 | 100.2 | 101.7 | 101.7 | 104.5 | 106.8 | 104.6 | 104.0 | 103.8 | 103.7 | 103.5 | 98.8 | 94.9 | 147.9 |
| 16000 | 95.3 | 99.5 | 100.7 | 101.3 | 102.9 | 105.9 | 104.9 | 103.0 | 102.1 | 102.1 | 102.1 | 96.2 | 91.1 | 148.3 |
| 20000 | 93.3 | 96.6 | 98.7 | 98.0 | 100.3 | 104.1 | 102.9 | 100.8 | 100.4 | 99.5 | 98.6 | 92.8 | 87.5 | 147.8 |
| 25000 | 89.6 | 93.6 | 95.6 | 95.9 | 98.1 | 102.4 | 101.3 | 98.6 | 97.8 | 94.4 | 90.9 | 87.9 | 82.5 | 147.7 |
| 31500 | 86.0 | 90.6 | 92.4 | 94.0 | 94.8 | 98.9 | 97.4 | 96.7 | 95.1 | 91.4 | 87.8 | 84.7 | 78.2 | 147.8 |
| 40000 | 82.7 | 87.7 | 89.4 | 90.3 | 91.8 | 96.9 | 94.8 | 92.9 | 91.5 | 88.6 | 85.7 | 81.2 | 75.0 | 148.9 |
| 50000 | 81.1 | 83.4 | 86.5 | 86.3 | 87.3 | 93.3 | 91.0 | 87.7 | 87.1 | 84.2 | 81.2 | 76.2 | 68.9 | 149.3 |
| 63000 | 76.9 | 81.4 | 86.5 | 82.2 | 82.6 | 89.6 | 86.7 | 84.4 | 83.4 | 81.0 | 78.5 | 72.1 | 63.6 | 151.2 |
| 80000 | 76.0 | 80.1 | 85.3 | 77.9 | 78.2 | 86.1 | 82.4 | 81.0 | 79.8 | 76.4 | 73.1 | 67.7 | 59.1 | 154.8 |

ORIGINAL PAGE IS
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MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

VEHICLE = ADH247 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CONFIG = 18 MODEL = C0 FLTVEL = 0. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 60.97 PAMB HG = 29.18 RELHUM = 80.3 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNLR = RPM XNHR = RPM V8 = 1526.7 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2472.7 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1811 TAPE = XT811F TEST PT NO = 1811 NC = AE095 CORR FAN SPEED = RPM

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1811 X18111

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 67.0 | 69.8 | 71.6 | 71.6 | 75.1 | 78.9 | 79.4 | 80.6 | 82.1 | 87.2 | 91.7 | 91.7 | 81.8 | 166.0 |
| 63 | 68.4 | 71.7 | 72.8 | 71.8 | 75.1 | 78.1 | 81.6 | 82.1 | 84.6 | 89.2 | 93.4 | 93.4 | 83.2 | 167.7 |
| 80 | 68.9 | 72.5 | 73.8 | 72.3 | 76.3 | 79.1 | 80.1 | 82.8 | 85.3 | 90.0 | 94.1 | 92.8 | 84.6 | 168.1 |
| 100 | 69.5 | 73.1 | 74.2 | 73.7 | 77.5 | 81.0 | 81.2 | 84.5 | 86.2 | 90.7 | 94.8 | 93.2 | 86.2 | 168.8 |
| 125 | 72.4 | 73.3 | 75.7 | 74.2 | 78.0 | 82.0 | 82.0 | 85.2 | 87.4 | 90.7 | 93.4 | 93.1 | 87.0 | 168.7 |
| 160 | 75.9 | 78.1 | 78.0 | 76.2 | 80.0 | 83.0 | 83.3 | 86.2 | 89.0 | 91.4 | 93.4 | 92.5 | 86.8 | 169.0 |
| 200 | 74.1 | 78.5 | 78.7 | 78.3 | 81.2 | 84.0 | 83.7 | 86.2 | 88.9 | 91.5 | 93.6 | 92.6 | 85.9 | 169.4 |
| 250 | 72.9 | 75.8 | 77.1 | 76.5 | 80.5 | 84.2 | 84.7 | 86.8 | 89.4 | 91.9 | 93.9 | 91.3 | 84.2 | 169.4 |
| 315 | 72.6 | 75.7 | 76.6 | 75.8 | 79.4 | 83.4 | 84.5 | 87.3 | 88.9 | 90.9 | 92.4 | 88.8 | 80.8 | 168.4 |
| 400 | 71.0 | 75.9 | 76.5 | 75.6 | 79.5 | 83.2 | 83.8 | 86.4 | 88.4 | 89.8 | 90.6 | 85.3 | 78.7 | 167.3 |
| 500 | 70.3 | 74.8 | 76.4 | 75.1 | 78.9 | 83.2 | 84.1 | 86.3 | 88.8 | 88.9 | 88.3 | 82.3 | 74.2 | 166.5 |
| 630 | 68.9 | 74.1 | 75.8 | 74.7 | 79.4 | 82.5 | 83.2 | 85.5 | 86.2 | 86.7 | 86.5 | 79.4 | 70.9 | 165.2 |
| 800 | 68.3 | 74.9 | 76.3 | 75.1 | 78.0 | 82.6 | 82.1 | 84.3 | 85.4 | 84.9 | 83.6 | 67.1 | 164.1 | |
| 1000 | 68.0 | 74.7 | 77.0 | 76.1 | 79.0 | 82.2 | 81.8 | 83.9 | 83.9 | 83.2 | 81.7 | 73.9 | 63.4 | 163.7 |
| 1250 | 67.6 | 74.4 | 77.1 | 76.6 | 78.9 | 81.4 | 80.9 | 81.6 | 81.3 | 80.6 | 79.0 | 69.8 | 59.0 | 162.6 |
| 1600 | 67.5 | 74.0 | 77.6 | 77.6 | 80.9 | 82.3 | 81.4 | 80.7 | 80.2 | 78.5 | 75.9 | 66.2 | 54.4 | 163.3 |
| 2000 | 64.9 | 71.6 | 75.2 | 76.5 | 80.1 | 82.5 | 80.1 | 78.8 | 77.3 | 75.1 | 71.8 | 62.1 | 48.9 | 163.2 |
| 2500 | 61.5 | 69.4 | 72.9 | 75.0 | 77.4 | 80.7 | 79.5 | 76.8 | 74.3 | 71.9 | 68.2 | 56.2 | 39.8 | 163.6 |
| 3150 | 55.4 | 63.4 | 68.5 | 69.6 | 72.9 | 77.0 | 75.5 | 72.3 | 70.1 | 66.3 | 60.7 | 47.2 | 27.2 | 163.1 |
| 4000 | 44.7 | 54.8 | 60.4 | 63.5 | 66.9 | 71.6 | 70.1 | 66.1 | 63.0 | 55.6 | 46.0 | 32.6 | 6.9 | 163.1 |
| 5000 | 30.5 | 43.5 | 50.4 | 55.2 | 57.7 | 62.4 | 60.3 | 57.9 | 53.2 | 44.3 | 32.3 | 14.9 | | 163.1 |
| 6300 | 9.1 | 26.0 | 35.0 | 40.4 | 44.3 | 50.2 | 47.3 | 43.0 | 37.1 | 26.9 | 12.0 | | | 164.3 |
| 8000 | | 9.8 | 16.2 | 20.7 | 27.8 | 24.4 | 17.6 | 10.4 | | | | | | 164.6 |
| 10000 | | | | | | | | | | | | | | 166.5 |
| 12500 | | | | | | | | | | | | | | 170.1 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.837 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

VEHICLE = ADH247 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CONFIG = 18 MODEL = C0 FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = N0 MPH = 0 PWL AREA = FULL SPHERE TAMB F = 60.97 PAMB HG = 29.18 RELHUM = 60.3 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = 0 NBFR = 0

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1526.7 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V10 = 2472.7 FPS AE10 = 19.9 SQ IN

JNPT 3FE TBT TAPE = TT T PT = T RRR SPE RP

IDENTIFICATION - MODEL 83F-400-1812 X1812C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 91.4 | 91.4 | 88.4 | 87.7 | 84.3 | 87.4 | 85.8 | 89.0 | 90.2 | 92.8 | 95.4 | 96.8 | 91.0 | 132.9 |
| 63 | 91.5 | 94.8 | 97.1 | 95.1 | 92.4 | 95.8 | 95.2 | 90.4 | 95.8 | 96.2 | 96.5 | 99.5 | 95.6 | 137.4 |
| 80 | 94.0 | 99.1 | 93.3 | 93.4 | 94.2 | 97.8 | 97.2 | 95.4 | 96.1 | 98.1 | 100.0 | 100.5 | 89.1 | 138.9 |
| 100 | 93.2 | 98.5 | 93.5 | 92.8 | 95.9 | 98.3 | 98.4 | 99.0 | 96.5 | 98.7 | 101.0 | 105.6 | 93.6 | 140.5 |
| 125 | 90.1 | 92.4 | 93.9 | 93.5 | 96.8 | 98.7 | 97.8 | 97.5 | 96.7 | 101.4 | 106.1 | 109.3 | 97.7 | 142.6 |
| 150 | 88.4 | 85.7 | 91.2 | 88.3 | 90.4 | 92.5 | 96.1 | 94.3 | 94.7 | 101.0 | 107.2 | 109.6 | 101.3 | 142.3 |
| 200 | 88.0 | 87.3 | 89.1 | 86.9 | 90.2 | 93.3 | 94.7 | 96.6 | 99.3 | 102.9 | 106.5 | 112.5 | 104.4 | 144.0 |
| 250 | 86.0 | 89.3 | 88.8 | 88.1 | 91.7 | 93.8 | 95.2 | 97.6 | 99.6 | 105.3 | 111.0 | 115.0 | 105.9 | 146.7 |
| 315 | 86.8 | 89.4 | 89.9 | 88.4 | 91.8 | 94.6 | 96.5 | 98.2 | 100.6 | 107.0 | 113.3 | 115.0 | 107.4 | 147.8 |
| 400 | 88.6 | 89.4 | 90.6 | 88.7 | 92.3 | 94.4 | 98.3 | 98.9 | 102.4 | 108.3 | 114.3 | 115.5 | 106.4 | 148.5 |
| 500 | 88.8 | 90.1 | 90.9 | 89.2 | 93.0 | 95.6 | 97.0 | 100.2 | 102.9 | 108.9 | 114.9 | 114.3 | 104.4 | 148.4 |
| 630 | 88.3 | 90.8 | 91.6 | 90.4 | 93.7 | 96.8 | 98.0 | 100.9 | 103.8 | 109.3 | 114.8 | 113.0 | 101.4 | 148.1 |
| 800 | 90.8 | 90.1 | 91.1 | 90.2 | 94.3 | 97.6 | 98.8 | 102.2 | 105.4 | 109.5 | 113.6 | 110.0 | 98.9 | 147.2 |
| 1000 | 92.3 | 92.8 | 92.8 | 91.6 | 95.7 | 98.8 | 99.7 | 103.9 | 106.3 | 109.5 | 112.8 | 106.9 | 96.6 | 146.8 |
| 1250 | 91.2 | 94.0 | 94.2 | 92.4 | 95.6 | 99.2 | 100.4 | 103.8 | 107.2 | 109.5 | 111.7 | 104.4 | 95.8 | 146.4 |
| 1600 | 92.1 | 93.0 | 94.1 | 92.8 | 96.8 | 100.6 | 101.5 | 105.0 | 108.4 | 110.2 | 112.1 | 102.5 | 95.2 | 147.1 |
| 2000 | 92.8 | 92.8 | 93.5 | 92.1 | 96.2 | 99.6 | 101.8 | 106.1 | 108.0 | 109.7 | 111.5 | 101.6 | 95.1 | 146.8 |
| 2500 | 93.9 | 94.2 | 94.2 | 92.7 | 96.9 | 100.2 | 101.2 | 105.8 | 107.6 | 109.0 | 110.4 | 100.8 | 95.5 | 146.3 |
| 3150 | 94.2 | 94.5 | 94.8 | 93.8 | 96.7 | 101.0 | 102.4 | 105.8 | 108.4 | 108.8 | 109.2 | 100.9 | 94.8 | 146.3 |
| 4000 | 95.6 | 95.2 | 95.6 | 93.7 | 97.2 | 100.9 | 102.0 | 105.6 | 107.5 | 107.8 | 108.2 | 100.7 | 95.3 | 145.7 |
| 5000 | 97.8 | 98.3 | 97.1 | 94.0 | 96.8 | 101.0 | 101.4 | 105.2 | 106.7 | 107.1 | 107.4 | 99.5 | 94.5 | 145.4 |
| 6300 | 99.6 | 100.2 | 99.8 | 96.6 | 98.2 | 100.9 | 102.0 | 105.4 | 106.4 | 106.3 | 106.3 | 99.1 | 93.8 | 145.6 |
| 8000 | 98.4 | 100.4 | 101.2 | 98.7 | 99.6 | 101.7 | 100.9 | 103.7 | 103.9 | 103.8 | 103.8 | 97.0 | 92.6 | 144.7 |
| 10000 | 98.9 | 100.4 | 101.9 | 101.0 | 102.1 | 103.1 | 101.9 | 103.1 | 104.0 | 102.8 | 101.6 | 96.0 | 92.6 | 145.5 |
| 12500 | 98.3 | 99.6 | 100.5 | 99.7 | 102.0 | 104.5 | 102.1 | 102.0 | 101.8 | 100.1 | 98.5 | 94.0 | 91.1 | 145.6 |
| 16000 | 97.0 | 99.7 | 99.9 | 100.0 | 101.1 | 103.6 | 102.4 | 101.3 | 100.1 | 98.1 | 96.1 | 91.1 | 87.9 | 146.2 |
| 20000 | 94.7 | 96.6 | 97.7 | 97.7 | 99.5 | 102.3 | 101.1 | 100.2 | 98.3 | 95.4 | 92.5 | 88.5 | 84.7 | 146.2 |
| 25000 | 91.5 | 93.8 | 95.3 | 95.1 | 97.0 | 101.3 | 99.8 | 98.0 | 96.8 | 92.5 | 88.3 | 85.8 | 81.2 | 146.7 |
| 31500 | 87.7 | 90.5 | 91.8 | 93.2 | 93.7 | 98.1 | 96.8 | 95.9 | 93.8 | 89.9 | 86.0 | 81.9 | 76.9 | 146.9 |
| 40000 | 83.2 | 87.4 | 88.9 | 89.3 | 90.5 | 95.4 | 93.2 | 91.9 | 90.5 | 86.8 | 83.2 | 79.5 | 73.5 | 147.7 |
| 50000 | 78.3 | 82.4 | 86.3 | 85.3 | 85.5 | 91.3 | 88.5 | 87.5 | 85.7 | 82.2 | 78.7 | 73.9 | 67.9 | 147.7 |
| 63000 | 75.5 | 80.1 | 86.8 | 81.0 | 81.0 | 86.9 | 84.1 | 83.8 | 81.8 | 78.3 | 74.9 | 69.2 | 62.7 | 149.6 |
| 80000 | 74.0 | 76.8 | 86.1 | 75.9 | 74.9 | 82.3 | 80.4 | 79.7 | 75.8 | 72.9 | 70.1 | 63.4 | 56.8 | 153.0 |
| 0ASPL | 108.8 | 110.5 | 110.7 | 109.5 | 111.5 | 114.4 | 114.5 | 116.8 | 118.7 | 120.9 | 124.3 | 123.3 | 114.4 | 161.8 |
| PNL | 120.8 | 121.6 | 119.4 | 122.1 | 125.4 | 126.5 | 129.6 | 131.8 | 133.3 | 135.2 | 131.1 | 123.0 | | |
| PNLT | 120.8 | 121.6 | 119.4 | 122.7 | 126.0 | 126.5 | 129.6 | 131.8 | 133.3 | 135.2 | 131.1 | 123.0 | | |
| DBA | 106.7 | 107.9 | 105.0 | 108.6 | 111.8 | 112.7 | 116.3 | 118.5 | 120.3 | 122.8 | 119.0 | 110.1 | | |

ORIGINAL PAGE IS
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NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|-----------------|-------------------|
| VERTICAL = ADR246 | TEST DATE = 04-28-83 | LOCAT = C41 ANECH CH | CONFIG = 18 | MODEL = C0 | FLTVEL = 400. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 61.11 | PAMB HG = 29.02 | RELHUM = 81.5 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = |
| FNTRNT = | LBS XNL | RPM | KNH | RPM | V8 = 1535.4 FPS |
| FNRAMB = | LBS XNLR | RPM | KNHR | RPM | V18 = 2482.3 FPS |
| RUNPT = 83F-400-1812 | TAPE | = X1812C | TEST PT NO = 1812 | NC | AE8 = 4.0 SQ IN |
| | | | | | AE18 = 19.9 SQ IN |
| | | | | | CORR FAN SPEED = |
| | | | | | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1812 X1812F

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

FREQ
50
63

100
125
160
200

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 93.9 | 95.8 | 93.8 | 91.4 | 93.3 | 93.8 | 93.3 | 94.0 | 98.6 | 104.4 | 110.5 | 112.9 | 107.3 | 145.6 |
| 315 | 93.9 | 95.8 | 93.8 | 91.4 | 93.6 | 94.8 | 95.7 | 96.4 | 100.4 | 105.9 | 111.8 | 114.1 | 107.7 | 146.8 |
| 400 | 94.5 | 95.8 | 94.8 | 91.8 | 94.0 | 94.6 | 97.4 | 97.0 | 100.9 | 106.5 | 112.5 | 113.5 | 107.3 | 147.0 |
| 500 | 95.8 | 95.5 | 95.4 | 92.0 | 94.9 | 96.0 | 96.1 | 98.2 | 102.0 | 107.1 | 112.9 | 113.2 | 106.4 | 147.0 |
| 630 | 96.5 | 96.5 | 95.9 | 92.6 | 95.7 | 97.3 | 97.1 | 98.8 | 103.9 | 107.7 | 112.3 | 111.6 | 106.7 | 146.7 |
| 800 | 96.0 | 97.3 | 96.6 | 93.9 | 96.3 | 98.2 | 97.9 | 100.1 | 105.1 | 109.0 | 112.0 | 109.6 | 106.8 | 146.5 |
| 1000 | 98.5 | 96.6 | 96.2 | 93.8 | 97.9 | 99.5 | 98.9 | 101.8 | 106.0 | 108.0 | 110.8 | 106.9 | 105.8 | 145.9 |
| 1250 | 99.9 | 99.3 | 97.9 | 95.3 | 97.9 | 100.0 | 99.7 | 101.8 | 107.2 | 108.7 | 111.0 | 104.7 | 104.7 | 146.3 |
| 1600 | 98.8 | 100.4 | 99.4 | 96.1 | 99.8 | 101.7 | 101.0 | 103.2 | 107.1 | 108.6 | 110.8 | 104.2 | 105.1 | 146.5 |
| 2000 | 102.5 | 101.8 | 101.1 | 97.8 | 98.9 | 100.8 | 101.6 | 104.6 | 107.3 | 108.4 | 110.4 | 106.5 | 106.5 | 146.8 |
| 2500 | 100.4 | 99.4 | 98.8 | 96.1 | 99.8 | 101.8 | 101.3 | 104.7 | 108.5 | 108.7 | 109.7 | 104.7 | 106.1 | 146.8 |
| 3150 | 101.5 | 100.8 | 99.7 | 96.9 | 99.9 | 103.0 | 103.0 | 105.1 | 108.6 | 108.6 | 109.5 | 105.5 | 107.7 | 147.3 |
| 4000 | 101.8 | 101.2 | 100.4 | 98.2 | 100.9 | 103.5 | 103.5 | 105.8 | 108.0 | 108.0 | 108.9 | 104.4 | 107.0 | 147.2 |
| 5000 | 103.2 | 101.9 | 101.3 | 98.4 | 100.7 | 104.0 | 103.3 | 105.7 | 108.0 | 107.7 | 108.2 | 104.5 | 106.8 | 147.3 |
| 6300 | 104.1 | 104.2 | 102.4 | 98.6 | 101.6 | 103.9 | 104.0 | 106.1 | 106.5 | 106.2 | 106.8 | 103.5 | 106.5 | 147.2 |
| 8000 | 104.3 | 104.7 | 103.9 | 100.3 | 103.5 | 104.7 | 103.2 | 105.0 | 107.7 | 106.5 | 105.9 | 103.6 | 107.3 | 148.0 |
| 10000 | 104.3 | 106.0 | 106.2 | 102.9 | 106.2 | 106.1 | 104.4 | 105.0 | 103.2 | 101.1 | 99.7 | 98.3 | 102.3 | 148.1 |
| 12500 | 105.7 | 106.5 | 107.1 | 105.3 | 106.1 | 107.5 | 103.5 | 102.0 | 102.0 | 99.5 | 97.8 | 95.9 | 99.6 | 149.1 |
| 16000 | 104.6 | 105.2 | 105.2 | 103.4 | 105.1 | 106.6 | 103.8 | 101.2 | 100.7 | 97.3 | 94.7 | 93.7 | 96.8 | 149.3 |
| 20000 | 103.0 | 104.9 | 104.2 | 103.3 | 103.6 | 105.3 | 102.6 | 100.2 | 99.7 | 95.0 | 91.1 | 91.6 | 93.9 | 150.0 |
| 25000 | 100.0 | 101.2 | 101.4 | 100.5 | 101.6 | 104.3 | 101.2 | 98.0 | 97.5 | 93.1 | 89.5 | 88.5 | 90.4 | 150.2 |
| 31500 | 98.9 | 99.8 | 99.9 | 98.2 | 98.3 | 101.1 | 98.2 | 95.9 | 95.0 | 90.9 | 87.6 | 86.9 | 87.8 | 150.9 |
| 40000 | 94.2 | 95.8 | 95.6 | 95.4 | 95.1 | 98.4 | 94.7 | 91.9 | 90.6 | 86.7 | 83.5 | 81.8 | 82.7 | 151.3 |
| 50000 | 89.3 | 92.3 | 92.3 | 91.1 | 90.1 | 94.3 | 89.9 | 87.5 | 87.7 | 83.7 | 80.6 | 77.9 | 78.4 | 151.6 |
| 63000 | 83.5 | 86.3 | 86.7 | 86.2 | 85.4 | 89.9 | 85.5 | 83.7 | 83.2 | 79.8 | 77.3 | 73.6 | 74.0 | 152.4 |
| 80000 | 77.7 | 81.5 | 87.1 | 80.0 | 78.8 | 85.3 | 81.8 | 79.7 | 73.4 | 70.0 | 67.5 | 63.8 | 64.2 | 154.9 |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 80000 | 114.9 | 115.4 | 115.0 | 112.7 | 114.6 | 116.4 | 114.9 | 116.1 | 118.7 | 119.8 | 122.7 | 121.6 | 118.9 | 163.2 |
| PNL | 125.3 | 125.3 | 124.1 | 121.4 | 124.2 | 126.3 | 126.2 | 128.3 | 131.2 | 131.9 | 133.7 | 130.5 | 131.0 | |
| PNLT | 125.3 | 125.3 | 124.1 | 121.4 | 124.2 | 126.3 | 126.2 | 128.3 | 131.2 | 131.9 | 133.7 | 130.5 | 131.0 | |
| DBA | 199.7 | 203.1 | 207.9 | 202.0 | 201.0 | 206.8 | 203.0 | 201.0 | 197.0 | 193.5 | 190.9 | 187.4 | 187.8 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

VEHICLE = ADH246 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CONFIG = 18 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 61.11 PAMB HG = 29.02 RELHUM = 81.5 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1535.4 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2482.3 FPS AE18 = 19.9 SQ IN

NPT F-Z BTZ FE = 2F PT = 18 AE = 18 SPEED = 18 RPN

IDENTIFICATION - 83F-400-1812 X18121

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|
| 50 | 69.8 | 73.2 | 72.2 | 70.6 | 73.2 | 74.6 | 75.3 | 75.6 | 78.9 | 83.3 | 87.7 | 87.8 | 78.1 | 162.1 |
| 63 | 70.4 | 73.1 | 73.3 | 71.0 | 73.6 | 74.3 | 77.0 | 76.2 | 79.4 | 83.9 | 88.4 | 87.2 | 77.6 | 162.3 |
| 80 | 71.6 | 72.8 | 73.8 | 71.1 | 74.5 | 75.7 | 75.7 | 77.3 | 80.4 | 84.4 | 88.6 | 86.7 | 76.5 | 162.4 |
| 100 | 72.2 | 73.8 | 74.3 | 71.7 | 75.2 | 76.9 | 76.6 | 77.9 | 82.2 | 85.0 | 88.0 | 85.0 | 76.7 | 162.0 |
| 125 | 71.6 | 74.4 | 74.9 | 72.9 | 75.8 | 77.7 | 77.4 | 79.1 | 83.4 | 85.3 | 87.6 | 82.9 | 76.6 | 161.8 |
| 160 | 73.9 | 73.6 | 74.3 | 72.6 | 77.2 | 78.9 | 78.2 | 80.7 | 84.2 | 85.0 | 86.2 | 79.9 | 75.3 | 161.2 |
| 200 | 75.1 | 76.1 | 75.9 | 74.0 | 77.0 | 79.3 | 78.8 | 80.5 | 85.2 | 85.5 | 86.2 | 77.4 | 73.6 | 161.6 |
| 250 | 73.6 | 77.0 | 77.1 | 74.6 | 78.7 | 80.7 | 79.9 | 81.7 | 84.9 | 85.1 | 85.6 | 76.5 | 73.4 | 161.8 |
| 315 | 76.9 | 77.9 | 78.5 | 76.0 | 77.5 | 79.7 | 80.3 | 82.8 | 84.7 | 84.6 | 84.8 | 75.9 | 73.9 | 162.1 |
| 400 | 74.3 | 75.1 | 75.8 | 74.0 | 78.1 | 80.3 | 79.7 | 82.5 | 85.5 | 84.4 | 83.5 | 75.8 | 72.6 | 162.1 |
| 500 | 74.8 | 76.1 | 76.3 | 74.4 | 77.9 | 81.2 | 81.0 | 82.7 | 85.3 | 83.9 | 82.9 | 75.9 | 73.1 | 162.6 |
| 630 | 74.6 | 76.1 | 76.6 | 75.4 | 78.6 | 81.3 | 81.2 | 83.0 | 84.3 | 82.9 | 81.7 | 74.1 | 71.3 | 162.5 |
| 800 | 75.4 | 76.3 | 77.2 | 75.2 | 78.1 | 81.6 | 80.7 | 82.6 | 83.9 | 82.1 | 80.5 | 73.3 | 69.9 | 162.6 |
| 1000 | 75.7 | 78.1 | 77.9 | 75.1 | 78.8 | 81.2 | 81.1 | 82.6 | 82.0 | 80.2 | 78.4 | 71.5 | 68.3 | 162.6 |
| 1250 | 75.3 | 78.2 | 79.0 | 76.5 | 80.3 | 81.6 | 80.0 | 81.2 | 82.8 | 79.9 | 76.9 | 70.7 | 67.4 | 163.3 |
| 1600 | 74.1 | 78.6 | 80.6 | 78.5 | 82.4 | 82.6 | 80.6 | 80.5 | 77.6 | 73.6 | 69.5 | 59.8 | 59.8 | 163.4 |
| 2000 | 74.0 | 78.0 | 80.6 | 80.0 | 81.6 | 83.3 | 79.0 | 76.8 | 75.5 | 71.0 | 66.2 | 59.2 | 53.6 | 164.4 |
| 2500 | 70.7 | 75.1 | 77.4 | 77.1 | 79.7 | 81.4 | 78.4 | 75.0 | 72.9 | 67.1 | 60.8 | 53.7 | 45.5 | 164.6 |
| 3150 | 65.1 | 71.7 | 73.9 | 74.9 | 76.1 | 78.2 | 75.1 | 71.8 | 69.5 | 61.8 | 53.2 | 46.1 | 33.6 | 165.3 |
| 4000 | 55.2 | 62.4 | 66.5 | 68.0 | 70.4 | 73.6 | 70.0 | 65.5 | 62.7 | 54.4 | 44.7 | 33.2 | 14.8 | 165.5 |
| 5000 | 43.4 | 52.7 | 58.0 | 59.5 | 61.3 | 64.6 | 61.2 | 57.1 | 53.1 | 43.8 | 32.1 | 17.1 | 166.2 | 166.2 |
| 6300 | 20.5 | 34.0 | 41.2 | 45.5 | 47.6 | 51.7 | 47.2 | 41.9 | 36.2 | 24.9 | 9.9 | | 166.6 | 166.6 |
| 8000 | 4.8 | 15.6 | 21.0 | 23.6 | 28.8 | 23.3 | 17.4 | 11.0 | | | | | 166.9 | 167.7 |
| 10000 | | | | | | | | | | | | | 170.2 | |
| 12500 | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS OF POOR QUALITY

MODEL AREA = 265.1 SQ CM (41.1 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.637 FREQ SHIFT = -8

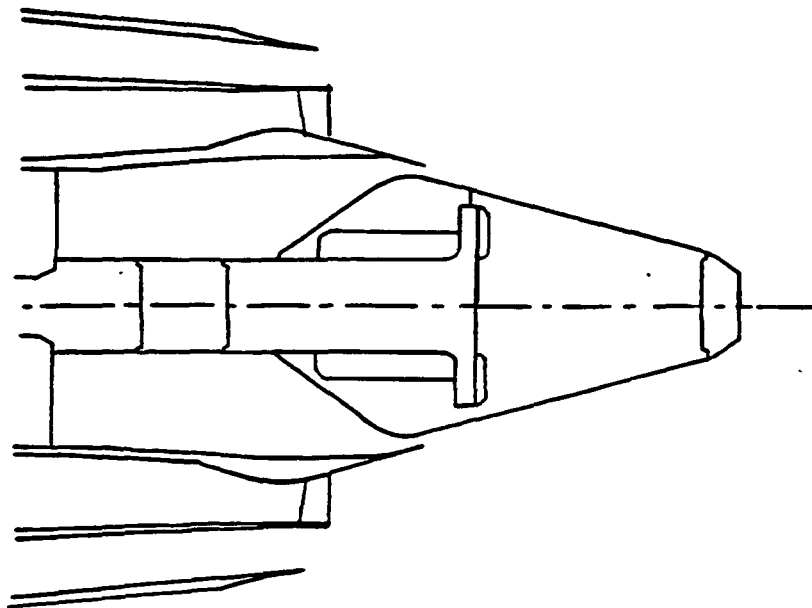
NASA DUAL FLOW THERMAL SHIELD/DFTAS-18/NAS3-22137

VEHICLE = ADH246 TEST DATE = 04-28-83 LOCAT = C41 ANECH CH CONFIG = 18 MODEL = CO FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 61.11 PAMB HQ = 29.02 RELHUM = 81.5 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1535.4 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V16 = 2482.3 FPS AE16 = 19.9 SQ IN

RUNPT = 83F-400-1812 TAPE = XT8121 TEST PT NO = 1812 NC = AE095 CORR FAN SPEED = RPM

4.3.3 Acoustic Data of Suppressed Coannular Plug Nozzle with
360° Thermal Acoustic Shield (TAS-19).



IDENTIFICATION - MODEL 83F-ZER-1903 X1903C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 82.6 | 86.7 | 87.9 | 82.7 | 79.1 | 82.2 | 85.6 | 88.7 | 84.2 | 81.5 | 87.9 | 90.1 | 87.2 | 127.8 |
| 53 | 87.8 | 93.8 | 98.1 | 91.6 | 85.5 | 89.6 | 97.0 | 99.6 | 90.6 | 85.4 | 90.0 | 92.5 | 95.6 | 136.4 |
| 80 | 86.8 | 91.1 | 86.7 | 91.6 | 90.0 | 90.9 | 91.1 | 91.7 | 94.8 | 94.2 | 80.1 | 132.7 | | |
| 100 | 85.7 | 91.0 | 87.8 | 87.8 | 88.6 | 93.0 | 90.4 | 94.0 | 91.5 | 96.6 | 96.7 | 99.4 | 84.3 | 135.1 |
| 125 | 82.9 | 87.2 | 89.7 | 89.2 | 90.3 | 92.9 | 91.3 | 92.0 | 91.9 | 95.8 | 101.6 | 103.1 | 88.2 | 137.0 |
| 160 | 81.9 | 82.7 | 87.2 | 84.3 | 85.6 | 89.7 | 93.6 | 90.8 | 92.2 | 95.3 | 100.7 | 103.4 | 93.3 | 136.6 |
| 200 | 83.5 | 84.6 | 88.1 | 85.1 | 86.5 | 91.3 | 93.0 | 93.1 | 98.1 | 98.4 | 104.0 | 106.5 | 96.1 | 139.5 |
| 250 | 83.0 | 86.6 | 87.8 | 86.1 | 87.7 | 91.1 | 92.2 | 94.4 | 98.1 | 102.9 | 107.3 | 109.5 | 99.6 | 142.3 |
| 315 | 84.1 | 86.9 | 87.4 | 86.9 | 88.0 | 93.4 | 97.0 | 95.4 | 99.1 | 103.5 | 107.8 | 109.8 | 101.7 | 143.0 |
| 400 | 85.6 | 87.1 | 88.1 | 86.4 | 88.5 | 92.6 | 104.0 | 95.9 | 98.6 | 104.9 | 109.3 | 110.5 | 103.2 | 144.5 |
| 500 | 85.3 | 87.9 | 88.9 | 87.9 | 89.5 | 94.6 | 94.0 | 96.9 | 99.1 | 105.7 | 109.3 | 110.5 | 103.9 | 144.2 |
| 630 | 85.8 | 87.6 | 88.8 | 87.9 | 90.2 | 94.1 | 94.2 | 97.4 | 98.6 | 105.4 | 108.0 | 108.2 | 103.9 | 143.1 |
| 800 | 87.6 | 88.4 | 89.4 | 88.7 | 91.0 | 94.9 | 95.3 | 98.7 | 100.6 | 105.0 | 107.3 | 106.5 | 103.7 | 142.6 |
| 1000 | 89.8 | 90.3 | 91.1 | 89.6 | 91.0 | 95.6 | 95.2 | 98.6 | 99.8 | 104.4 | 105.0 | 104.2 | 101.6 | 141.3 |
| 1250 | 87.4 | 91.5 | 90.8 | 89.9 | 90.6 | 95.2 | 94.9 | 98.3 | 99.4 | 101.3 | 100.3 | 97.1 | 95.3 | 138.8 |
| 1600 | 88.4 | 89.8 | 90.9 | 89.6 | 91.6 | 95.9 | 95.5 | 98.5 | 98.9 | 100.4 | 100.4 | 96.6 | 95.4 | 138.7 |
| 2000 | 88.8 | 90.2 | 90.6 | 90.0 | 91.5 | 95.4 | 95.6 | 99.5 | 100.1 | 102.9 | 102.6 | 99.2 | 97.7 | 139.9 |
| 2500 | 87.3 | 90.4 | 90.4 | 90.1 | 91.5 | 95.1 | 95.1 | 98.4 | 99.6 | 102.1 | 101.1 | 98.2 | 96.7 | 139.2 |
| 3150 | 87.2 | 91.6 | 91.3 | 89.3 | 91.2 | 96.0 | 95.1 | 98.3 | 99.4 | 101.3 | 100.3 | 97.1 | 95.3 | 138.8 |
| 4000 | 86.7 | 91.6 | 91.7 | 89.9 | 92.0 | 95.5 | 95.4 | 98.5 | 98.9 | 100.4 | 100.3 | 96.6 | 95.4 | 138.7 |
| 5000 | 85.8 | 90.6 | 91.2 | 90.1 | 92.1 | 95.8 | 95.4 | 98.0 | 98.5 | 101.0 | 101.0 | 97.5 | 95.9 | 139.0 |
| 6300 | 85.7 | 91.9 | 92.2 | 91.5 | 93.6 | 97.5 | 96.6 | 99.0 | 98.8 | 100.3 | 100.8 | 97.5 | 95.7 | 139.7 |
| 8000 | 84.8 | 91.0 | 92.5 | 92.2 | 93.8 | 97.9 | 96.1 | 98.2 | 97.5 | 98.2 | 99.8 | 95.5 | 94.8 | 139.2 |
| 10000 | 85.8 | 91.9 | 92.9 | 93.0 | 94.6 | 98.3 | 97.1 | 99.1 | 97.5 | 96.5 | 97.3 | 94.0 | 93.0 | 139.7 |
| 12500 | 84.8 | 90.5 | 92.1 | 92.2 | 94.0 | 98.3 | 96.8 | 97.6 | 96.2 | 95.0 | 93.8 | 91.8 | 90.6 | 139.5 |
| 16000 | 83.6 | 89.8 | 90.9 | 91.3 | 92.9 | 96.9 | 95.7 | 95.3 | 95.1 | 92.2 | 91.9 | 87.9 | 85.9 | 139.4 |
| 20000 | 82.0 | 87.7 | 88.8 | 89.7 | 91.0 | 93.8 | 94.4 | 93.7 | 92.0 | 88.7 | 88.5 | 85.5 | 83.8 | 138.7 |
| 25000 | 79.7 | 85.3 | 86.4 | 87.4 | 88.8 | 93.2 | 92.6 | 91.3 | 90.4 | 86.5 | 83.4 | 81.2 | 78.4 | 139.2 |
| 31500 | 76.5 | 81.4 | 82.7 | 84.7 | 84.8 | 89.5 | 88.7 | 88.4 | 86.9 | 83.2 | 80.3 | 76.1 | 73.0 | 138.8 |
| 40000 | 71.9 | 76.8 | 78.5 | 80.6 | 80.2 | 86.4 | 84.1 | 84.2 | 83.3 | 80.2 | 76.7 | 71.5 | 67.5 | 138.9 |
| 50000 | 65.4 | 70.2 | 72.6 | 75.1 | 74.7 | 81.6 | 78.2 | 79.1 | 77.2 | 74.8 | 71.1 | 66.9 | 60.9 | 137.9 |
| 63000 | 59.6 | 65.4 | 68.2 | 69.3 | 70.1 | 76.4 | 72.7 | 73.8 | 73.4 | 69.4 | 65.9 | 61.8 | 54.7 | 138.2 |
| 80000 | 53.7 | 58.3 | 61.5 | 61.5 | 62.9 | 70.8 | 66.4 | 67.6 | 66.0 | 62.2 | 60.3 | 56.0 | 47.5 | 138.6 |
| CASPL | 100.4 | 104.3 | 105.4 | 104.0 | 105.4 | 109.4 | 110.3 | 111.5 | 112.3 | 115.6 | 118.1 | 118.6 | 112.9 | 155.2 |
| PNLT | 112.4 | 116.2 | 116.8 | 115.3 | 117.0 | 121.1 | 121.2 | 123.6 | 124.5 | 127.0 | 127.9 | 127.0 | 122.8 | |
| DBA | 98.9 | 102.2 | 102.7 | 101.7 | 103.5 | 107.5 | 107.7 | 110.2 | 111.3 | 114.3 | 115.8 | 115.0 | 111.1 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

| | | | | | | |
|----------------------|----------------------|------------------------|--------------------|------------------|-------------------|-------------------|
| VERTCL = ADH216 | TEST DATE = 04-18-83 | LOCAT = | C41 ANECH CH | CONFTG = 19 | MODEL = AX1 | FLTVEL = 0. FPS |
| IAPLHA = SB59 | LEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 34.11 | PAMB HG = 29.18 | RELHUM = 48.7 PCT | |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNINT = | LBS XNL = | RPM | XNH = | RPM | V8 = 1095.2 FPS | AE8 = 4.0 SQ IN |
| FNRAMB = | LBS XNLR = | RPM | XNHR = | RPM | V18 = 1784.9 FPS | AE18 = 19.9 SQ IN |
| RUNPT = 63F-ZER-1903 | TAPE = | TEST PT NO = 1903 | NC = | AE089 | CORR FAN SPEED = | RPM |

DATPROC - FLTRAN
 FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1903 X1903F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 82.6 | 86.7 | 87.9 | 82.7 | 79.1 | 82.2 | 85.6 | 88.7 | 84.2 | 81.5 | 87.9 | 90.1 | 87.2 | 127.8 |
| 63 | 87.8 | 93.8 | 98.1 | 91.6 | 85.5 | 89.6 | 97.0 | 99.6 | 90.6 | 85.4 | 90.0 | 92.5 | 95.6 | 136.4 |
| 80 | 86.8 | 91.1 | 87.8 | 87.1 | 86.7 | 91.6 | 90.0 | 90.9 | 91.1 | 91.7 | 94.8 | 94.2 | 80.1 | 132.7 |
| 100 | 85.7 | 91.0 | 87.8 | 88.6 | 88.6 | 93.0 | 90.4 | 94.0 | 91.5 | 96.6 | 96.7 | 99.4 | 84.3 | 135.1 |
| 125 | 82.9 | 87.2 | 89.7 | 89.2 | 90.3 | 92.9 | 91.3 | 92.0 | 91.9 | 95.8 | 101.6 | 103.1 | 88.2 | 137.0 |
| 160 | 81.9 | 82.7 | 87.2 | 84.3 | 85.6 | 89.7 | 93.6 | 90.8 | 92.2 | 96.3 | 100.7 | 103.4 | 93.3 | 136.6 |
| 200 | 83.5 | 84.6 | 88.1 | 85.1 | 86.5 | 91.3 | 93.0 | 93.1 | 98.1 | 98.4 | 104.0 | 106.5 | 96.1 | 139.5 |
| 250 | 83.0 | 86.6 | 87.8 | 86.1 | 87.7 | 91.1 | 92.2 | 94.4 | 98.1 | 102.9 | 107.3 | 109.5 | 99.6 | 142.3 |
| 315 | 84.1 | 86.9 | 87.4 | 86.9 | 88.0 | 93.4 | 97.0 | 95.4 | 99.1 | 103.5 | 107.8 | 109.8 | 101.7 | 143.0 |
| 400 | 85.6 | 87.1 | 88.1 | 86.4 | 88.5 | 92.6 | 104.0 | 95.9 | 98.6 | 104.9 | 109.3 | 110.5 | 103.2 | 144.5 |
| 500 | 85.3 | 87.9 | 88.9 | 87.9 | 89.5 | 94.6 | 94.0 | 96.9 | 99.1 | 105.7 | 109.3 | 110.5 | 103.9 | 144.2 |
| 630 | 85.8 | 87.6 | 88.8 | 87.9 | 90.2 | 94.1 | 94.2 | 97.4 | 98.6 | 105.4 | 108.0 | 108.2 | 103.9 | 143.1 |
| 800 | 87.6 | 88.4 | 89.4 | 88.7 | 91.0 | 94.9 | 95.3 | 98.7 | 100.6 | 106.0 | 107.3 | 106.5 | 103.7 | 142.6 |
| 1000 | 89.8 | 90.3 | 91.1 | 89.6 | 91.0 | 95.6 | 95.2 | 98.6 | 99.8 | 104.4 | 105.0 | 104.2 | 101.6 | 141.3 |
| 1250 | 87.4 | 91.5 | 90.8 | 89.9 | 90.6 | 95.2 | 94.9 | 98.3 | 101.0 | 103.3 | 104.2 | 101.9 | 100.0 | 140.6 |
| 1600 | 88.4 | 89.8 | 90.9 | 89.6 | 91.6 | 95.9 | 95.5 | 99.1 | 100.9 | 102.0 | 103.9 | 101.1 | 99.2 | 140.3 |
| 2000 | 88.8 | 90.2 | 90.6 | 90.0 | 91.5 | 95.4 | 95.6 | 99.5 | 100.1 | 102.9 | 102.6 | 99.2 | 97.7 | 139.9 |
| 2500 | 87.3 | 90.4 | 90.4 | 90.1 | 91.5 | 95.1 | 95.1 | 98.4 | 99.6 | 102.1 | 101.1 | 98.2 | 96.7 | 139.2 |
| 3150 | 87.2 | 91.6 | 91.3 | 89.3 | 91.2 | 95.0 | 95.1 | 98.3 | 99.4 | 101.3 | 100.3 | 97.1 | 95.3 | 138.8 |
| 4000 | 86.7 | 91.6 | 91.7 | 89.9 | 92.0 | 95.5 | 95.4 | 98.5 | 98.9 | 100.4 | 100.3 | 96.6 | 95.7 | 138.7 |
| 5000 | 85.8 | 90.6 | 91.2 | 90.1 | 92.1 | 95.8 | 95.4 | 98.0 | 98.5 | 101.0 | 101.0 | 97.5 | 95.9 | 139.0 |
| 6300 | 85.7 | 91.9 | 92.2 | 91.5 | 93.6 | 97.5 | 96.6 | 99.0 | 98.8 | 100.3 | 100.8 | 97.5 | 95.7 | 139.7 |
| 8000 | 84.8 | 91.0 | 92.5 | 92.2 | 93.8 | 97.9 | 95.1 | 98.2 | 97.5 | 98.2 | 99.8 | 95.5 | 94.8 | 139.2 |
| 10000 | 85.8 | 91.9 | 92.9 | 93.0 | 94.6 | 98.3 | 97.1 | 99.1 | 97.5 | 96.5 | 97.3 | 94.0 | 93.0 | 139.7 |
| 12500 | 84.8 | 90.5 | 92.1 | 92.2 | 94.0 | 98.3 | 96.8 | 97.6 | 96.2 | 95.0 | 93.8 | 91.8 | 90.6 | 139.5 |
| 16000 | 83.6 | 89.8 | 90.9 | 91.3 | 92.9 | 96.9 | 95.7 | 96.3 | 95.1 | 92.2 | 91.9 | 87.9 | 86.9 | 139.4 |
| 20000 | 82.0 | 87.7 | 88.8 | 89.7 | 91.0 | 93.8 | 94.4 | 93.7 | 92.0 | 88.7 | 88.5 | 85.5 | 83.8 | 138.7 |
| 25000 | 79.7 | 85.3 | 86.4 | 87.4 | 88.8 | 93.2 | 92.6 | 91.3 | 90.4 | 86.5 | 83.4 | 81.2 | 78.4 | 139.2 |
| 31500 | 76.5 | 81.4 | 82.7 | 84.7 | 84.8 | 89.5 | 88.7 | 88.4 | 86.9 | 83.2 | 80.3 | 76.1 | 73.0 | 138.6 |
| 40000 | 71.9 | 76.8 | 78.5 | 80.6 | 80.2 | 86.4 | 84.1 | 84.2 | 83.3 | 80.2 | 76.7 | 71.5 | 67.5 | 138.9 |
| 50000 | 65.4 | 70.2 | 72.6 | 75.1 | 74.7 | 81.6 | 78.2 | 79.1 | 77.2 | 74.8 | 71.1 | 66.9 | 60.9 | 137.9 |
| 63000 | 55.6 | 65.4 | 68.2 | 69.3 | 70.1 | 76.4 | 72.7 | 73.8 | 69.4 | 65.9 | 61.8 | 54.7 | 47.5 | 138.2 |
| 80000 | 53.7 | 58.3 | 61.5 | 62.9 | 70.8 | 66.4 | 67.6 | 66.0 | 62.2 | 60.3 | 56.0 | 47.5 | 138.6 | |
| UNASPL | 100.4 | 104.3 | 105.4 | 104.0 | 105.4 | 109.4 | 110.3 | 111.5 | 112.3 | 115.6 | 118.1 | 118.6 | 112.9 | 165.2 |
| PNL | 112.4 | 116.2 | 116.8 | 115.3 | 117.0 | 121.1 | 121.2 | 123.6 | 124.5 | 127.0 | 127.9 | 127.0 | 122.8 | |
| PNLT | 112.4 | 116.2 | 116.8 | 115.9 | 117.6 | 121.1 | 123.0 | 123.6 | 124.5 | 127.0 | 127.9 | 127.0 | 122.8 | |
| DBA | 175.8 | 180.8 | 183.7 | 184.4 | 185.3 | 192.7 | 188.6 | 189.7 | 188.4 | 184.8 | 182.2 | 177.9 | 170.3 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICLE = ADH216 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 0. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 34.11 PAMB HG = 29.18 RELHUM = 48.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1095.2 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1784.9 FPS AE18 = 19.9 SQ IN

INPT : 3F- T90 : APE : 3F : PT : = 1 : AE : CORR : SPB : RF :

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1903 X19031

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 59.9 | 64.2 | 65.8 | 66.1 | 67.6 | 73.1 | 76.6 | 74.6 | 77.6 | 80.8 | 83.7 | 83.4 | 72.0 | 158.3 |
| 63 | 61.4 | 64.4 | 66.5 | 65.5 | 68.0 | 72.3 | 83.5 | 75.0 | 77.0 | 82.3 | 85.1 | 84.1 | 73.4 | 159.8 |
| 80 | 61.1 | 65.2 | 67.3 | 67.0 | 69.0 | 74.3 | 73.5 | 76.0 | 77.5 | 83.0 | 85.1 | 84.0 | 74.1 | 159.5 |
| 100 | 61.5 | 64.8 | 67.2 | 66.9 | 69.7 | 73.7 | 73.7 | 76.4 | 76.9 | 82.6 | 83.7 | 81.6 | 73.9 | 158.3 |
| 125 | 63.1 | 65.5 | 67.6 | 67.7 | 70.4 | 74.4 | 74.7 | 77.7 | 78.9 | 82.1 | 82.9 | 79.8 | 73.4 | 157.9 |
| 160 | 65.1 | 67.3 | 69.2 | 68.4 | 70.2 | 75.0 | 74.5 | 77.4 | 77.9 | 81.4 | 80.4 | 77.2 | 71.0 | 156.6 |
| 200 | 62.5 | 68.2 | 68.7 | 68.5 | 69.7 | 74.5 | 74.0 | 76.9 | 78.9 | 80.1 | 79.3 | 74.6 | 68.9 | 155.9 |
| 250 | 63.1 | 66.3 | 68.6 | 68.0 | 70.5 | 75.0 | 74.4 | 77.5 | 78.6 | 78.5 | 78.7 | 73.3 | 67.5 | 155.6 |
| 315 | 63.2 | 66.3 | 67.9 | 68.1 | 70.2 | 74.2 | 74.3 | 77.6 | 77.4 | 79.0 | 77.0 | 70.9 | 65.1 | 155.2 |
| 400 | 61.1 | 66.0 | 67.4 | 68.0 | 69.8 | 73.6 | 73.4 | 76.3 | 76.5 | 77.8 | 74.9 | 69.2 | 63.1 | 154.4 |
| 500 | 60.5 | 66.8 | 67.9 | 66.8 | 69.1 | 74.1 | 73.1 | 75.8 | 76.0 | 76.6 | 73.6 | 67.5 | 60.7 | 154.1 |
| 630 | 59.5 | 66.4 | 68.0 | 67.0 | 69.7 | 73.3 | 73.0 | 75.6 | 75.1 | 75.2 | 73.1 | 66.2 | 59.9 | 154.0 |
| 800 | 57.9 | 64.9 | 67.0 | 66.9 | 69.4 | 73.3 | 72.7 | 74.8 | 74.4 | 75.3 | 73.1 | 66.3 | 59.0 | 154.3 |
| 1000 | 57.3 | 65.8 | 67.0 | 68.0 | 70.6 | 74.7 | 73.6 | 75.5 | 74.3 | 74.2 | 72.3 | 65.4 | 57.4 | 165.0 |
| 1250 | 55.7 | 64.4 | 67.6 | 68.3 | 70.6 | 74.8 | 72.8 | 74.3 | 72.6 | 71.6 | 70.7 | 62.5 | 54.9 | 154.5 |
| 1600 | 55.6 | 64.5 | 67.3 | 68.5 | 70.8 | 74.7 | 73.3 | 74.6 | 71.9 | 69.0 | 67.1 | 59.3 | 50.5 | 155.0 |
| 2000 | 53.0 | 61.9 | 65.5 | 67.0 | 69.5 | 74.0 | 72.3 | 72.3 | 69.6 | 66.4 | 62.1 | 55.0 | 44.5 | 154.7 |
| 2500 | 49.7 | 59.6 | 63.1 | 65.0 | 67.4 | 71.6 | 70.2 | 70.0 | 67.3 | 62.0 | 57.9 | 47.9 | 35.5 | 154.7 |
| 3150 | 44.1 | 54.5 | 58.5 | 61.2 | 63.6 | 66.7 | 66.9 | 65.2 | 61.7 | 55.5 | 50.6 | 39.9 | 23.4 | 154.0 |
| 4000 | 34.8 | 46.6 | 51.4 | 54.8 | 57.6 | 62.4 | 61.3 | 58.7 | 55.4 | 47.7 | 38.5 | 25.9 | 2.8 | 154.5 |
| 5000 | 21.0 | 34.2 | 40.7 | 45.9 | 47.8 | 53.0 | 51.6 | 49.6 | 44.9 | 36.1 | 24.7 | 6.3 | | 154.1 |
| 6300 | 15.0 | 24.0 | 30.7 | 32.6 | 39.6 | 36.6 | 34.3 | 28.8 | 18.4 | 3.0 | | | | 154.2 |
| 8000 | | 4.9 | 8.1 | 16.1 | 11.6 | 8.9 | 0.5 | | | | | | | 153.2 |
| 10000 | | | | | | | | | | | | | | 153.5 |
| 12500 | | | | | | | | | | | | | | 163.9 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS
OF POOR QUALITY

MODEL AREA = 268.1 SQ CM (41.6 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.804 FREQ SHIFT = -6

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICLE = ADH216 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MDEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 34.11 PAMB HG = 29.18 RELHUM = 48.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNHR = RPM V8 = 1095.2 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1784.9 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1903 TAPE = X19031 TEST PT NO = 1903 NC = AE089 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1904 X1904C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.1 | 86.4 | 87.0 | 80.1 | 81.4 | 85.0 | 87.4 | 83.1 | 82.7 | 88.0 | 92.1 | 92.1 | 127.4 | |
| 53 | 92.1 | 97.5 | 90.1 | 87.1 | 85.2 | 88.2 | 89.5 | 88.2 | 87.5 | 90.0 | 97.4 | 93.7 | 134.7 | |
| 80 | 86.3 | 89.6 | 86.2 | 85.8 | 89.8 | 89.8 | 89.5 | 89.8 | 87.5 | 91.9 | 93.0 | 130.9 | | |
| 100 | 83.2 | 89.1 | 86.1 | 85.9 | 86.6 | 90.4 | 88.1 | 91.4 | 89.1 | 92.6 | 93.3 | 97.3 | 132.4 | |
| 125 | 81.9 | 84.8 | 87.1 | 86.6 | 87.7 | 90.6 | 89.4 | 88.6 | 88.6 | 91.3 | 98.1 | 100.6 | 134.0 | |
| 150 | 79.4 | 85.6 | 80.3 | 81.7 | 85.5 | 92.8 | 86.9 | 91.2 | 92.5 | 97.7 | 100.4 | 90.8 | 133.8 | |
| 200 | 80.4 | 85.6 | 79.9 | 80.9 | 84.8 | 90.4 | 88.7 | 93.3 | 92.5 | 98.5 | 102.9 | 92.9 | 135.2 | |
| 250 | 81.0 | 82.9 | 81.0 | 83.0 | 86.2 | 86.4 | 89.0 | 93.6 | 96.9 | 102.3 | 104.7 | 95.1 | 137.3 | |
| 315 | 81.2 | 85.1 | 81.1 | 81.1 | 81.2 | 87.3 | 91.8 | 90.4 | 93.6 | 97.9 | 102.8 | 95.2 | 137.8 | |
| 400 | 79.7 | 80.9 | 83.0 | 81.1 | 83.3 | 85.2 | 88.4 | 90.6 | 92.6 | 99.2 | 103.3 | 93.4 | 138.5 | |
| 500 | 80.0 | 81.8 | 83.6 | 82.2 | 83.9 | 88.3 | 87.4 | 91.1 | 93.4 | 99.9 | 103.1 | 91.0 | 137.5 | |
| 630 | 80.1 | 81.7 | 83.2 | 82.2 | 84.3 | 87.5 | 88.4 | 91.6 | 93.1 | 99.9 | 101.8 | 99.5 | 87.7 | 136.3 |
| 800 | 81.5 | 81.6 | 83.8 | 82.8 | 85.4 | 88.3 | 89.2 | 92.7 | 94.9 | 99.2 | 101.3 | 96.5 | 86.3 | 135.8 |
| 1000 | 82.7 | 82.5 | 84.0 | 83.3 | 85.6 | 89.8 | 89.4 | 92.8 | 94.6 | 98.9 | 99.0 | 93.2 | 85.9 | 134.9 |
| 1250 | 81.9 | 84.5 | 84.2 | 83.3 | 85.3 | 89.2 | 88.8 | 92.8 | 95.8 | 97.8 | 97.7 | 89.9 | 84.0 | 134.2 |
| 1600 | 83.4 | 84.0 | 84.9 | 84.3 | 86.0 | 90.4 | 90.2 | 94.6 | 95.7 | 97.0 | 96.6 | 88.5 | 83.5 | 134.2 |
| 2000 | 83.8 | 83.9 | 84.8 | 83.9 | 86.6 | 90.6 | 90.4 | 94.2 | 95.8 | 97.6 | 95.9 | 86.7 | 82.6 | 134.2 |
| 2500 | 84.5 | 84.9 | 85.2 | 84.6 | 88.5 | 92.1 | 90.6 | 93.9 | 94.6 | 97.6 | 94.6 | 83.9 | 83.2 | 134.1 |
| 3150 | 86.2 | 86.1 | 86.8 | 86.0 | 88.9 | 92.7 | 91.8 | 94.3 | 95.2 | 96.8 | 93.5 | 85.6 | 82.6 | 134.3 |
| 4000 | 87.8 | 87.9 | 88.3 | 86.8 | 89.0 | 93.0 | 92.4 | 94.9 | 95.9 | 94.1 | 85.6 | 82.5 | 134.6 | |
| 5000 | 86.8 | 87.6 | 89.2 | 87.8 | 89.6 | 93.3 | 92.9 | 95.0 | 94.3 | 97.0 | 94.5 | 87.2 | 82.3 | 135.0 |
| 6300 | 88.7 | 90.5 | 90.5 | 89.6 | 91.3 | 95.6 | 94.1 | 95.8 | 95.1 | 96.8 | 95.0 | 88.5 | 84.4 | 136.3 |
| 8000 | 89.1 | 90.3 | 91.1 | 90.7 | 92.4 | 96.4 | 94.4 | 94.7 | 94.5 | 95.1 | 94.1 | 89.0 | 85.0 | 136.5 |
| 10000 | 90.8 | 91.7 | 93.0 | 92.0 | 93.9 | 97.9 | 96.1 | 97.6 | 94.8 | 93.5 | 92.6 | 87.7 | 84.2 | 138.2 |
| 12500 | 89.0 | 90.0 | 91.3 | 91.2 | 93.3 | 97.6 | 95.3 | 95.1 | 91.9 | 89.1 | 85.8 | 82.8 | 137.8 | |
| 16000 | 87.6 | 90.3 | 90.7 | 90.8 | 92.6 | 96.3 | 94.2 | 94.5 | 92.1 | 89.4 | 86.6 | 82.9 | 79.1 | 136.1 |
| 20000 | 85.7 | 88.7 | 89.3 | 88.9 | 90.5 | 94.0 | 93.6 | 92.7 | 90.7 | 86.9 | 83.6 | 79.7 | 77.0 | 138.1 |
| 25000 | 83.2 | 85.8 | 86.3 | 87.3 | 88.8 | 93.7 | 92.0 | 90.2 | 89.1 | 84.7 | 80.6 | 78.4 | 73.1 | 138.9 |
| 31500 | 78.9 | 82.1 | 83.4 | 84.4 | 84.8 | 89.7 | 87.9 | 87.3 | 85.9 | 81.6 | 78.7 | 74.1 | 68.9 | 138.4 |
| 40000 | 74.3 | 77.7 | 78.9 | 79.9 | 80.1 | 85.6 | 83.6 | 83.7 | 82.7 | 78.4 | 75.2 | 71.2 | 65.0 | 138.4 |
| 50000 | 68.1 | 71.2 | 72.4 | 73.8 | 74.7 | 80.8 | 78.2 | 78.3 | 76.7 | 72.7 | 70.3 | 66.3 | 59.6 | 137.3 |
| 63000 | 62.3 | 65.3 | 67.6 | 68.5 | 69.8 | 75.9 | 71.6 | 73.3 | 71.8 | 67.5 | 65.3 | 60.5 | 54.3 | 137.4 |
| 80000 | 54.7 | 58.7 | 60.3 | 61.8 | 69.5 | 65.3 | 66.6 | 64.4 | 60.4 | 59.2 | 54.2 | 46.7 | 137.3 | |
| OASPL | 99.5 | 101.8 | 103.3 | 101.5 | 102.9 | 107.0 | 107.0 | 107.7 | 107.9 | 110.5 | 112.4 | 112.6 | 102.9 | 151.5 |
| PNL | 110.7 | 112.5 | 113.3 | 112.0 | 113.6 | 117.7 | 119.7 | 120.2 | 122.3 | 122.0 | 119.6 | 110.7 | | |
| PNLT | 117.4 | 112.5 | 113.3 | 112.6 | 114.2 | 117.8 | 119.6 | 119.7 | 120.2 | 122.8 | 122.0 | 119.6 | 117.3 | |
| DBA | 97.4 | 98.3 | 99.1 | 98.1 | 100.3 | 104.2 | 103.8 | 105.9 | 106.6 | 109.3 | 109.6 | 106.9 | 98.0 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VERTCL = ADH227 TEST DATE = 04-18-83 LOCAT = C4T ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PML AREA = FULL SPHERE TAMB F = 36.61 PAMB HG = 29.08 RELHUM = 42.3 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINT = LBS XNL RPM XNH RPM V8 = 1101.9 FPS AE8 = 4.0 SQ IN
 FNFRMB = LBS XNLR RPM XNHR RPM V10 = 1797.8 FPS AE10 = 19.9 SQ IN

RUNPT = 83F-400-1904 TAPE = X1904C TEST PT NO = 1904 NC = AE094 CORR FAN SPEED = RPM

466

1180

DATPROC - FLTRAN
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC
FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS

IDENTIFICATION - 83F-400-1904 X1904F

ANGLES MEASURED FROM INLET, DEGREES

FREQ 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|-------|------|------|------|------|-------|-------|------|-------|
| 250 | 86.1 | 87.5 | 87.8 | 84.3 | 84.6 | 86.2 | 84.5 | 85.4 | 91.2 | 94.9 | 99.7 | 102.2 | 95.0 | 135.3 |
| 315 | 86.1 | 87.5 | 87.8 | 84.3 | 83.0 | 87.5 | 90.8 | 88.3 | 90.2 | 96.3 | 100.4 | 102.5 | 94.5 | 135.9 |
| 400 | 86.4 | 87.5 | 89.9 | 84.4 | 85.1 | 86.5 | 97.3 | 88.4 | 91.0 | 97.1 | 100.4 | 101.7 | 93.7 | 136.6 |
| 500 | 87.2 | 87.1 | 87.9 | 84.5 | 85.8 | 88.6 | 86.4 | 88.9 | 90.9 | 97.2 | 99.3 | 99.1 | 92.2 | 134.7 |
| 630 | 87.6 | 88.2 | 88.5 | 85.7 | 86.3 | 87.9 | 87.4 | 89.2 | 93.1 | 97.0 | 99.6 | 97.5 | 93.7 | 134.8 |
| 800 | 87.8 | 88.2 | 88.3 | 85.7 | 87.5 | 88.9 | 88.3 | 90.4 | 93.4 | 97.5 | 98.3 | 96.0 | 96.1 | 134.7 |
| 1000 | 89.2 | 88.0 | 88.9 | 86.4 | 87.8 | 90.4 | 88.7 | 90.8 | 94.5 | 96.3 | 96.7 | 92.3 | 94.0 | 134.0 |
| 1250 | 90.4 | 89.0 | 89.1 | 86.9 | 87.6 | 90.0 | 88.2 | 90.8 | 94.9 | 95.9 | 96.1 | 91.5 | 94.0 | 134.0 |
| 1600 | 89.6 | 90.9 | 89.4 | 87.0 | 88.5 | 91.4 | 90.1 | 93.0 | 95.2 | 96.6 | 95.3 | 89.4 | 92.8 | 134.4 |
| 2000 | 91.0 | 90.5 | 90.2 | 88.1 | 89.4 | 91.9 | 90.5 | 92.9 | 94.8 | 97.5 | 95.2 | 90.0 | 95.1 | 134.9 |
| 2500 | 91.5 | 90.5 | 90.1 | 87.9 | 92.0 | 93.7 | 91.3 | 93.4 | 96.3 | 97.7 | 95.1 | 90.8 | 95.7 | 135.6 |
| 3150 | 93.7 | 92.3 | 89.9 | 92.1 | 94.7 | 93.2 | 94.6 | 96.9 | 97.5 | 96.4 | 91.5 | 96.2 | 96.2 | 136.8 |
| 4000 | 93.8 | 92.7 | 92.4 | 90.4 | 92.7 | 95.6 | 94.4 | 96.2 | 96.1 | 98.5 | 96.6 | 92.8 | 95.8 | 137.3 |
| 5000 | 95.3 | 94.6 | 94.0 | 91.5 | 93.6 | 96.3 | 95.1 | 96.0 | 97.8 | 99.4 | 98.3 | 95.2 | 98.6 | 138.6 |
| 6300 | 94.2 | 94.3 | 95.1 | 92.7 | 95.4 | 98.6 | 96.5 | 97.3 | 98.1 | 98.6 | 97.9 | 95.8 | 98.6 | 139.4 |
| 8000 | 96.0 | 97.0 | 96.2 | 94.2 | 96.4 | 99.4 | 96.8 | 96.7 | 96.4 | 94.8 | 94.3 | 92.4 | 95.8 | 139.5 |
| 10000 | 96.2 | 96.7 | 96.6 | 95.3 | 97.9 | 100.9 | 97.6 | 97.8 | 94.8 | 92.8 | 90.3 | 90.0 | 94.0 | 140.5 |
| 12500 | 97.7 | 97.8 | 98.2 | 96.2 | 97.9 | 100.6 | 96.8 | 95.1 | 94.0 | 90.8 | 88.3 | 87.7 | 90.8 | 141.1 |
| 16000 | 98.1 | 97.9 | 97.7 | 96.1 | 97.2 | 99.3 | 95.6 | 94.5 | 93.0 | 88.8 | 85.8 | 84.9 | 89.1 | 141.8 |
| 20000 | 96.3 | 97.7 | 96.7 | 95.2 | 94.5 | 97.0 | 95.0 | 92.7 | 92.0 | 87.1 | 83.4 | 84.2 | 85.8 | 142.2 |
| 25000 | 91.1 | 93.3 | 93.0 | 91.6 | 93.4 | 96.7 | 93.5 | 90.2 | 89.6 | 84.9 | 82.3 | 80.7 | 82.4 | 142.1 |
| 31500 | 90.5 | 91.9 | 90.9 | 90.4 | 89.4 | 92.7 | 89.3 | 87.3 | 88.4 | 84.3 | 83.4 | 83.6 | 83.6 | 142.6 |
| 40000 | 85.4 | 87.4 | 87.2 | 86.6 | 84.7 | 88.6 | 85.3 | 84.3 | 81.6 | 77.2 | 75.1 | 74.1 | 74.4 | 142.2 |
| 50000 | 80.4 | 82.6 | 82.3 | 81.7 | 79.3 | 83.8 | 79.6 | 78.3 | 78.0 | 73.4 | 71.9 | 70.4 | 71.2 | 141.6 |
| 63000 | 73.3 | 75.1 | 74.8 | 74.7 | 74.4 | 78.9 | 73.1 | 73.4 | 71.8 | 67.3 | 66.4 | 64.4 | 63.9 | 140.8 |
| 80000 | 65.9 | 67.8 | 68.6 | 67.9 | 66.4 | 72.5 | 66.8 | 66.6 | 61.9 | 57.5 | 56.6 | 54.6 | 54.0 | 140.7 |

GASPL 105.8 107.0 105.8 104.9 105.4 109.2 107.1 107.0 108.0 109.5 110.1 109.4 107.9 153.3
 PNL 117.2 116.7 116.3 113.9 116.2 119.0 117.5 118.7 120.0 121.6 121.3 118.6 120.4
 PNL 117.2 116.7 116.3 113.9 116.2 119.0 118.9 118.7 120.0 121.8 121.3 118.6 120.4
 DBA 188.8 190.7 191.0 190.5 189.2 194.6 189.1 188.9 185.9 181.5 180.4 178.6 178.3

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES
 NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137
 VEHICL = ADH227 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 400. FPS
 IALPHA = SB59 IEGA = NO MPH = 40.0 FT EXT DIST = 40.0 FT TAMB F = 36.61 PAMB HG = 29.08 RELHUM = 42.3 PCT
 WIND DIR = DEG WIND VEL = WIND DIR = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1101.9 FPS AE8 = 4.0 SQ IN
 FNFRMB = LBS XNLR = RPM XNHR = RPM V18 = 1797.6 FPS AE18 = 19.9 SQ IN
 RUNPT = 83F-400-1904 TAPE = X1904F TEST PT NO = 1904 NC = AE089 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1904 X19041

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 62.0 | 64.8 | 66.2 | 63.5 | 62.5 | 67.2 | 70.4 | 67.4 | 68.6 | 73.6 | 76.2 | 76.1 | 64.8 | 151.2 |
| 63 | 62.2 | 64.8 | 68.4 | 63.6 | 64.6 | 66.2 | 76.9 | 67.5 | 69.5 | 74.5 | 76.2 | 75.3 | 63.9 | 151.8 |
| 80 | 62.9 | 64.4 | 66.2 | 63.6 | 65.3 | 68.3 | 68.9 | 68.0 | 69.2 | 74.5 | 75.0 | 72.6 | 62.4 | 150.0 |
| 100 | 63.3 | 65.4 | 66.9 | 64.7 | 65.8 | 67.5 | 66.8 | 68.3 | 71.4 | 74.2 | 75.2 | 71.0 | 63.6 | 150.1 |
| 125 | 63.4 | 65.3 | 66.5 | 64.7 | 66.9 | 68.4 | 67.7 | 69.4 | 71.6 | 74.7 | 73.9 | 69.2 | 65.9 | 150.0 |
| 160 | 64.5 | 65.0 | 67.0 | 65.2 | 67.0 | 69.8 | 67.9 | 69.7 | 72.6 | 73.2 | 72.1 | 65.3 | 63.4 | 149.3 |
| 200 | 65.5 | 65.7 | 67.0 | 65.6 | 66.7 | 69.2 | 67.3 | 69.5 | 72.8 | 72.7 | 71.2 | 64.1 | 62.9 | 149.2 |
| 250 | 64.3 | 67.4 | 67.0 | 65.5 | 67.4 | 70.5 | 69.0 | 71.5 | 72.8 | 73.1 | 70.1 | 61.6 | 61.1 | 149.7 |
| 315 | 65.3 | 66.7 | 67.5 | 66.3 | 68.0 | 70.7 | 69.1 | 71.0 | 72.1 | 73.7 | 69.5 | 61.7 | 62.5 | 150.2 |
| 400 | 65.3 | 66.2 | 67.1 | 65.7 | 70.3 | 72.2 | 69.6 | 71.2 | 73.2 | 73.4 | 68.9 | 61.9 | 62.1 | 150.9 |
| 500 | 68.2 | 69.0 | 68.9 | 67.4 | 70.1 | 72.9 | 71.2 | 72.0 | 73.5 | 72.8 | 69.7 | 61.8 | 61.6 | 152.0 |
| 630 | 66.6 | 67.5 | 68.6 | 67.6 | 70.4 | 73.4 | 72.0 | 73.4 | 72.4 | 73.3 | 69.3 | 62.4 | 60.0 | 152.5 |
| 800 | 67.5 | 69.0 | 69.8 | 68.3 | 70.9 | 73.8 | 72.5 | 72.8 | 73.7 | 73.0 | 70.5 | 64.0 | 61.6 | 153.9 |
| 1000 | 65.8 | 68.2 | 70.5 | 69.1 | 72.4 | 75.8 | 73.5 | 73.8 | 73.6 | 72.5 | 69.5 | 63.8 | 60.4 | 154.7 |
| 1250 | 66.9 | 70.4 | 71.3 | 70.4 | 73.1 | 76.3 | 73.5 | 72.8 | 71.5 | 68.2 | 65.2 | 59.4 | 58.9 | 154.8 |
| 1600 | 66.0 | 69.2 | 70.9 | 70.8 | 74.1 | 77.2 | 73.8 | 73.4 | 69.2 | 65.4 | 60.1 | 55.4 | 51.5 | 155.8 |
| 2000 | 65.9 | 69.2 | 71.7 | 71.0 | 73.3 | 76.3 | 72.2 | 69.8 | 67.5 | 62.2 | 56.6 | 50.9 | 44.8 | 156.4 |
| 2500 | 64.2 | 67.7 | 69.9 | 69.8 | 71.7 | 74.1 | 70.1 | 68.2 | 65.2 | 58.5 | 51.9 | 44.9 | 37.7 | 157.1 |
| 3150 | 58.4 | 64.5 | 66.4 | 66.7 | 67.1 | 69.9 | 67.6 | 64.2 | 61.7 | 53.9 | 45.5 | 38.6 | 25.5 | 157.4 |
| 4000 | 46.2 | 54.5 | 58.1 | 59.1 | 62.2 | 65.8 | 62.2 | 57.7 | 54.7 | 46.1 | 37.4 | 25.4 | 6.8 | 157.4 |
| 5000 | 35.0 | 44.7 | 49.0 | 51.6 | 52.3 | 56.2 | 52.3 | 48.5 | 46.4 | 37.1 | 27.9 | 12.5 | | 157.9 |
| 6300 | 11.7 | 25.6 | 32.7 | 36.6 | 37.2 | 41.8 | 37.7 | 34.5 | 27.2 | 15.4 | 1.4 | | | 157.5 |
| 8000 | | 5.6 | 11.5 | 12.7 | 18.4 | 13.0 | 8.1 | 1.2 | | | | | | 156.9 |
| 10000 | | | | | | | | | | | | | | 156.1 |
| 12500 | | | | | | | | | | | | | | 156.0 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 268.1 SQ CM (41.6 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.804 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICLE = ADH227 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.61 PAMB HG = 29.08 RELHUM = 42.3 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =
 FNIN1 = LBS XNLR = RPM XNH = RPM V8 = 1101.9 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1797.8 FPS AE18 = 19.9 SQ IN
 NPT 3F-2 904 TYPE = 4T PT 19 AC AEGUSS CORR TAN SPEED RPM

IDENTIFICATION - MODEL 83F-ZER-1905 X1905C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.9 | 86.4 | 88.2 | 85.0 | 81.6 | 83.4 | 86.8 | 89.0 | 85.7 | 83.7 | 90.1 | 92.1 | 88.0 | 129.1 |
| 63 | 89.0 | 93.5 | 99.1 | 92.9 | 88.2 | 92.1 | 97.0 | 98.1 | 92.6 | 88.1 | 93.8 | 99.2 | 95.9 | 137.2 |
| 80 | 89.5 | 93.3 | 90.1 | 89.9 | 89.5 | 94.6 | 92.5 | 93.1 | 93.6 | 93.7 | 97.5 | 97.0 | 82.9 | 135.2 |
| 100 | 88.0 | 93.7 | 90.5 | 90.3 | 91.6 | 95.8 | 93.4 | 96.8 | 94.3 | 98.6 | 98.5 | 102.1 | 86.6 | 137.6 |
| 125 | 85.6 | 89.7 | 92.7 | 92.2 | 93.8 | 96.2 | 94.1 | 95.0 | 94.7 | 98.8 | 105.1 | 106.3 | 91.5 | 140.2 |
| 160 | 84.2 | 85.2 | 89.7 | 85.0 | 87.9 | 92.0 | 98.1 | 93.5 | 95.0 | 99.1 | 104.2 | 106.4 | 95.5 | 139.8 |
| 200 | 86.3 | 86.6 | 89.8 | 86.9 | 89.2 | 93.8 | 95.2 | 95.6 | 99.6 | 101.4 | 107.0 | 109.7 | 99.9 | 142.5 |
| 250 | 85.8 | 90.1 | 90.1 | 88.6 | 90.5 | 94.1 | 94.7 | 97.1 | 99.6 | 105.9 | 110.3 | 112.7 | 103.4 | 145.4 |
| 315 | 86.8 | 89.4 | 89.1 | 88.7 | 90.3 | 95.6 | 99.3 | 97.9 | 101.1 | 107.2 | 111.3 | 113.3 | 105.2 | 146.4 |
| 400 | 87.8 | 89.6 | 91.1 | 89.4 | 91.2 | 94.9 | 105.2 | 98.9 | 100.9 | 108.9 | 113.3 | 114.3 | 107.2 | 148.1 |
| 500 | 88.1 | 91.1 | 91.6 | 90.2 | 92.8 | 96.6 | 96.3 | 99.9 | 101.1 | 109.2 | 113.8 | 115.0 | 108.4 | 148.4 |
| 630 | 89.0 | 90.3 | 91.8 | 90.6 | 93.2 | 96.6 | 97.2 | 100.4 | 101.3 | 109.7 | 112.8 | 114.2 | 109.6 | 147.9 |
| 800 | 90.6 | 91.4 | 92.2 | 91.9 | 94.0 | 97.6 | 97.5 | 100.9 | 103.4 | 108.5 | 112.6 | 113.0 | 110.4 | 147.5 |
| 1000 | 94.5 | 95.6 | 94.6 | 93.4 | 94.2 | 98.1 | 97.7 | 101.1 | 103.1 | 107.7 | 109.8 | 111.7 | 109.6 | 146.2 |
| 1250 | 90.9 | 94.7 | 94.8 | 93.9 | 95.4 | 98.2 | 97.9 | 101.0 | 103.8 | 106.8 | 108.5 | 109.1 | 108.5 | 145.1 |
| 1600 | 91.9 | 92.8 | 94.0 | 93.1 | 95.1 | 99.2 | 98.5 | 101.8 | 103.7 | 105.3 | 108.2 | 109.1 | 107.2 | 144.7 |
| 2000 | 92.9 | 93.9 | 93.8 | 92.7 | 94.6 | 98.4 | 102.2 | 103.6 | 106.1 | 107.1 | 107.0 | 106.2 | 144.2 | |
| 2500 | 90.8 | 93.1 | 93.4 | 92.7 | 94.3 | 98.2 | 98.3 | 100.7 | 102.3 | 105.9 | 105.1 | 105.2 | 143.4 | |
| 3150 | 90.2 | 93.3 | 93.4 | 92.6 | 94.2 | 98.2 | 98.4 | 100.9 | 102.5 | 104.8 | 104.8 | 103.7 | 103.1 | 142.6 |
| 4000 | 88.8 | 91.9 | 92.8 | 91.7 | 94.3 | 98.0 | 97.9 | 101.0 | 102.2 | 104.4 | 104.1 | 102.1 | 101.7 | 141.9 |
| 5000 | 87.8 | 91.6 | 93.0 | 92.6 | 94.9 | 98.1 | 97.7 | 100.3 | 101.1 | 104.0 | 104.5 | 101.7 | 100.7 | 141.9 |
| 6300 | 87.2 | 92.4 | 93.8 | 93.1 | 95.6 | 98.3 | 98.1 | 101.1 | 101.4 | 102.8 | 103.8 | 100.7 | 100.2 | 142.0 |
| 8000 | 86.3 | 92.2 | 94.0 | 93.2 | 95.6 | 98.9 | 97.8 | 100.0 | 99.5 | 101.4 | 102.5 | 99.2 | 99.0 | 141.4 |
| 10000 | 87.5 | 93.9 | 94.9 | 95.0 | 96.8 | 100.3 | 99.3 | 100.6 | 99.3 | 100.0 | 101.0 | 97.9 | 97.2 | 142.0 |
| 12500 | 88.2 | 93.7 | 95.5 | 95.7 | 97.7 | 101.0 | 99.5 | 99.3 | 98.1 | 98.1 | 97.8 | 96.7 | 95.8 | 142.3 |
| 16000 | 87.5 | 93.2 | 94.6 | 95.4 | 96.8 | 99.5 | 98.1 | 97.9 | 97.0 | 95.6 | 95.7 | 93.8 | 92.0 | 142.2 |
| 20000 | 84.6 | 90.3 | 91.9 | 93.8 | 94.4 | 96.7 | 96.7 | 95.8 | 93.8 | 92.3 | 91.8 | 89.2 | 89.2 | 141.6 |
| 25000 | 81.8 | 86.9 | 88.7 | 91.2 | 91.4 | 96.8 | 94.9 | 93.9 | 92.2 | 89.8 | 88.0 | 87.5 | 84.3 | 142.1 |
| 31500 | 78.8 | 84.0 | 85.7 | 88.0 | 88.2 | 92.8 | 91.5 | 91.2 | 89.0 | 86.8 | 84.6 | 83.2 | 79.1 | 141.9 |
| 40000 | 74.0 | 79.8 | 81.3 | 83.5 | 83.5 | 89.0 | 86.7 | 85.8 | 86.1 | 83.7 | 81.3 | 78.1 | 74.1 | 141.8 |
| 50000 | 68.0 | 73.5 | 75.4 | 76.2 | 78.1 | 84.2 | 81.5 | 81.4 | 79.6 | 78.1 | 75.7 | 73.0 | 67.5 | 140.8 |
| 63000 | 62.4 | 67.7 | 70.7 | 72.6 | 73.4 | 79.5 | 75.5 | 76.4 | 75.2 | 72.4 | 70.2 | 66.6 | 61.1 | 141.0 |
| 80000 | 55.0 | 60.8 | 63.6 | 65.3 | 65.8 | 73.7 | 69.5 | 70.4 | 68.5 | 66.3 | 63.8 | 60.1 | 52.8 | 141.6 |
| GASPL | 103.5 | 106.6 | 107.7 | 106.8 | 108.3 | 111.9 | 112.6 | 113.8 | 114.9 | 119.1 | 122.2 | 123.3 | 118.9 | 158.8 |
| PNL | 115.3 | 118.3 | 118.6 | 117.9 | 119.7 | 123.4 | 123.8 | 126.0 | 127.2 | 130.4 | 132.1 | 132.2 | 129.5 | |
| PNLT | 116.5 | 118.3 | 118.8 | 118.6 | 120.3 | 123.4 | 125.4 | 126.0 | 127.2 | 130.4 | 132.7 | 132.2 | 129.5 | |
| DBA | 102.2 | 104.7 | 105.2 | 104.4 | 106.3 | 109.9 | 110.2 | 112.6 | 114.1 | 117.8 | 120.2 | 120.8 | 118.0 | |

ORIGINAL PAGE IS
OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|------------------|------------------|-------------------|
| VEHICLE = ADH27 | TEST DATE = 04-18-83 | LOCAT = C41 ANECH CH | CONFIG = 19 | MODEL = AX1 | FLTVEL = 0. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 40.0 FT | PAMB HG = 29.17 | RELHUM = 43.4 PCT |
| WIND DIR = | DEG WIND VEL = | EXT DIST = | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNINT = | LBS XNL = | RPM XNHR = | V8 = | AE8 = | 4.0 SQ IN |
| FNRAMB = | LBS XNLR = | RPM XNHR = | V18 = | AE18 = | 19.9 SQ IN |
| RUNPT = 83F-ZER-1905 | TAPE = | TEST PT NO = 1905 | NC = | CORR FAN SPEED = | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1905 X1905F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 84.9 | 86.4 | 88.2 | 85.0 | 81.6 | 83.4 | 86.8 | 89.0 | 85.7 | 83.7 | 90.1 | 92.1 | 88.0 | 129.1 |
| 63 | 89.0 | 93.5 | 99.1 | 92.9 | 88.2 | 92.1 | 97.0 | 98.1 | 92.6 | 88.1 | 93.8 | 99.2 | 95.9 | 137.2 |
| 80 | 89.5 | 93.3 | 90.1 | 89.9 | 89.5 | 94.6 | 92.5 | 93.1 | 93.6 | 93.7 | 97.5 | 97.0 | 82.9 | 135.2 |
| 100 | 88.0 | 93.7 | 90.5 | 90.3 | 91.6 | 95.6 | 93.4 | 96.8 | 94.3 | 98.6 | 98.5 | 102.1 | 86.6 | 137.6 |
| 125 | 85.6 | 89.7 | 92.2 | 93.8 | 96.2 | 94.1 | 95.0 | 94.7 | 98.8 | 105.1 | 106.3 | 91.5 | 140.2 | |
| 160 | 84.2 | 85.2 | 89.7 | 86.0 | 87.9 | 92.0 | 98.1 | 93.5 | 95.0 | 99.1 | 104.2 | 106.4 | 96.5 | 139.8 |
| 200 | 86.3 | 86.6 | 89.8 | 86.9 | 89.2 | 93.8 | 95.2 | 95.6 | 99.6 | 101.4 | 107.0 | 109.7 | 99.9 | 142.5 |
| 250 | 85.8 | 90.1 | 90.1 | 88.6 | 90.5 | 94.1 | 94.7 | 97.1 | 99.6 | 105.9 | 110.3 | 112.7 | 103.4 | 145.4 |
| 315 | 86.8 | 89.4 | 89.1 | 88.7 | 90.3 | 95.6 | 99.3 | 97.9 | 101.1 | 107.2 | 111.3 | 113.3 | 105.2 | 146.4 |
| 400 | 87.8 | 89.6 | 91.1 | 89.4 | 91.2 | 94.9 | 105.2 | 98.9 | 100.9 | 108.9 | 113.3 | 114.3 | 107.2 | 148.1 |
| 500 | 88.1 | 91.1 | 91.6 | 90.2 | 92.8 | 96.6 | 96.3 | 99.9 | 101.1 | 109.2 | 113.8 | 115.0 | 108.4 | 148.4 |
| 630 | 89.0 | 90.3 | 91.8 | 90.6 | 93.2 | 96.6 | 97.2 | 100.4 | 101.3 | 109.7 | 112.8 | 114.2 | 109.6 | 147.9 |
| 800 | 90.6 | 91.4 | 92.2 | 91.9 | 94.0 | 97.6 | 97.5 | 100.9 | 103.4 | 108.5 | 112.6 | 113.0 | 110.4 | 147.5 |
| 1000 | 94.5 | 95.6 | 94.6 | 93.4 | 94.2 | 98.1 | 97.7 | 101.1 | 103.1 | 107.7 | 109.8 | 111.7 | 109.6 | 146.2 |
| 1250 | 90.9 | 94.7 | 94.8 | 93.9 | 95.4 | 98.2 | 97.9 | 101.0 | 103.8 | 106.8 | 108.5 | 109.1 | 108.5 | 145.1 |
| 1600 | 91.9 | 92.8 | 94.0 | 93.1 | 95.1 | 99.2 | 98.5 | 101.8 | 103.7 | 105.3 | 108.2 | 109.1 | 107.2 | 144.7 |
| 2000 | 92.9 | 93.9 | 93.8 | 92.7 | 94.6 | 98.4 | 98.4 | 102.2 | 103.6 | 106.1 | 107.1 | 107.0 | 106.2 | 144.2 |
| 2500 | 90.8 | 93.1 | 93.4 | 92.7 | 94.3 | 98.2 | 98.3 | 100.7 | 102.3 | 105.9 | 106.1 | 105.9 | 105.2 | 143.4 |
| 3150 | 90.2 | 93.3 | 93.4 | 92.6 | 94.2 | 98.2 | 98.4 | 100.9 | 102.5 | 104.8 | 104.8 | 103.7 | 103.1 | 142.6 |
| 4000 | 88.8 | 91.6 | 92.8 | 91.7 | 94.3 | 98.0 | 97.9 | 101.0 | 102.2 | 103.4 | 104.1 | 102.1 | 101.7 | 141.9 |
| 5000 | 87.2 | 92.4 | 93.8 | 93.1 | 95.6 | 98.3 | 98.1 | 101.1 | 101.4 | 102.8 | 103.8 | 100.7 | 100.2 | 141.9 |
| 6300 | 85.3 | 92.2 | 94.0 | 93.2 | 95.6 | 98.9 | 97.8 | 100.0 | 99.5 | 101.4 | 102.5 | 99.2 | 99.0 | 141.4 |
| 8000 | 87.5 | 93.9 | 94.9 | 95.0 | 96.8 | 100.3 | 99.3 | 100.6 | 99.3 | 100.0 | 101.0 | 97.9 | 97.2 | 142.0 |
| 10000 | 87.5 | 93.9 | 95.7 | 95.7 | 101.0 | 99.5 | 99.3 | 98.1 | 98.1 | 97.8 | 96.7 | 95.8 | 142.3 | |
| 16000 | 87.5 | 93.2 | 94.6 | 95.4 | 96.8 | 99.5 | 98.1 | 97.9 | 97.0 | 95.6 | 95.7 | 93.8 | 92.0 | 142.2 |
| 20000 | 84.5 | 90.3 | 91.9 | 93.8 | 94.4 | 96.7 | 95.8 | 93.8 | 92.3 | 91.8 | 90.4 | 89.2 | 141.6 | |
| 25000 | 81.8 | 86.9 | 88.7 | 91.2 | 91.4 | 96.8 | 94.9 | 93.9 | 92.2 | 89.8 | 88.0 | 87.5 | 84.3 | 142.1 |
| 31500 | 78.8 | 84.0 | 85.7 | 88.0 | 88.2 | 92.8 | 91.5 | 91.2 | 89.0 | 86.8 | 84.6 | 83.2 | 79.1 | 141.9 |
| 40000 | 74.0 | 79.8 | 81.3 | 83.5 | 83.5 | 89.0 | 86.7 | 86.8 | 86.1 | 83.7 | 81.3 | 78.1 | 74.1 | 141.8 |
| 50000 | 68.0 | 73.5 | 75.4 | 78.2 | 78.1 | 84.2 | 81.5 | 81.4 | 79.8 | 78.1 | 75.7 | 73.0 | 67.5 | 140.8 |
| 63000 | 62.4 | 67.7 | 70.7 | 72.6 | 73.4 | 79.5 | 75.5 | 76.4 | 75.2 | 72.4 | 70.2 | 66.6 | 61.1 | 141.0 |
| 80000 | 60.8 | 60.8 | 63.6 | 65.3 | 65.8 | 73.7 | 69.5 | 70.4 | 68.5 | 66.3 | 63.8 | 60.1 | 52.8 | 141.6 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICLE = ADH217. TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 35.16 PAMB HQ = 29.17 RELNUM = 43.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FNINI = LBS XNLR = RPM XNH = RPM V8 = 1214.3 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1982.5 FPS AE18 = 19.9 SQ IN
 JNPT 33F 190 TAPE 35F PT = 1 AE CORR SP = RT

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT, SL

IDENTIFICATION - 83F-ZER-1905 X19051

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| 50 | 62.7 | 66.7 | 67.6 | 67.8 | 69.8 | 75.3 | 78.8 | 77.1 | 79.6 | 84.6 | 87.2 | 86.9 | 75.5 | 161.7 |
| 63 | 63.6 | 66.9 | 69.5 | 68.5 | 70.8 | 74.5 | 84.8 | 78.0 | 79.3 | 86.3 | 89.1 | 87.8 | 77.4 | 163.3 |
| 80 | 63.8 | 68.4 | 70.0 | 69.3 | 72.3 | 76.3 | 75.8 | 79.0 | 79.5 | 86.5 | 89.6 | 88.5 | 78.6 | 163.7 |
| 100 | 64.7 | 67.6 | 70.2 | 69.7 | 72.7 | 76.2 | 76.7 | 79.4 | 79.7 | 86.9 | 88.5 | 87.6 | 79.6 | 163.2 |
| 125 | 66.1 | 68.5 | 70.4 | 70.9 | 73.4 | 77.2 | 76.9 | 79.9 | 81.6 | 85.6 | 88.2 | 86.3 | 80.2 | 162.8 |
| 160 | 69.9 | 72.5 | 72.7 | 72.2 | 73.5 | 77.5 | 77.0 | 80.0 | 81.2 | 84.6 | 85.1 | 84.7 | 79.0 | 161.5 |
| 200 | 66.0 | 71.5 | 72.7 | 72.6 | 74.5 | 77.5 | 77.0 | 79.7 | 81.7 | 83.6 | 83.6 | 81.8 | 77.4 | 160.4 |
| 250 | 66.7 | 69.3 | 71.6 | 71.5 | 74.0 | 78.2 | 77.4 | 80.3 | 81.4 | 81.8 | 82.9 | 81.3 | 75.5 | 160.0 |
| 315 | 67.2 | 70.1 | 71.2 | 70.9 | 73.2 | 77.2 | 77.0 | 80.4 | 80.9 | 82.3 | 81.5 | 78.6 | 73.6 | 159.4 |
| 400 | 64.6 | 68.8 | 70.4 | 70.5 | 72.6 | 76.6 | 76.6 | 78.5 | 79.3 | 81.6 | 80.0 | 76.9 | 71.6 | 158.7 |
| 500 | 63.5 | 68.6 | 70.0 | 70.1 | 72.2 | 76.4 | 76.4 | 78.3 | 79.1 | 80.1 | 78.1 | 74.0 | 68.4 | 157.8 |
| 630 | 61.5 | 66.7 | 69.0 | 68.8 | 72.0 | 75.8 | 75.6 | 78.1 | 78.4 | 78.3 | 76.9 | 71.7 | 66.0 | 157.2 |
| 800 | 60.0 | 66.0 | 68.8 | 69.4 | 72.2 | 75.6 | 75.0 | 77.1 | 76.9 | 78.4 | 76.7 | 70.5 | 63.8 | 157.2 |
| 1000 | 58.8 | 66.4 | 69.2 | 69.5 | 72.6 | 75.5 | 75.1 | 77.5 | 76.8 | 76.8 | 75.4 | 68.7 | 61.9 | 157.2 |
| 1250 | 57.2 | 65.6 | 69.1 | 69.3 | 72.3 | 75.8 | 74.6 | 76.1 | 74.6 | 74.8 | 73.5 | 66.2 | 59.2 | 156.7 |
| 1600 | 57.3 | 66.4 | 69.3 | 70.5 | 73.0 | 76.7 | 75.5 | 76.1 | 73.6 | 72.5 | 70.8 | 63.3 | 54.7 | 157.3 |
| 2000 | 56.5 | 65.1 | 68.9 | 70.4 | 73.2 | 76.7 | 75.0 | 74.0 | 71.5 | 69.5 | 66.0 | 59.9 | 49.7 | 157.6 |
| 2500 | 53.6 | 62.9 | 66.8 | 69.1 | 71.3 | 74.3 | 72.6 | 71.6 | 69.2 | 65.4 | 61.8 | 53.8 | 40.7 | 157.5 |
| 3150 | 46.8 | 57.1 | 61.6 | 65.3 | 66.9 | 69.5 | 69.3 | 67.3 | 63.5 | 59.1 | 53.9 | 44.8 | 28.8 | 156.8 |
| 4000 | 36.9 | 48.1 | 53.8 | 58.7 | 60.2 | 63.7 | 61.3 | 57.3 | 51.0 | 43.1 | 32.3 | 8.6 | 157.4 | |
| 5000 | 23.3 | 36.8 | 43.8 | 49.2 | 51.1 | 56.3 | 54.4 | 52.4 | 47.0 | 39.6 | 29.0 | 13.4 | 157.2 | |
| 6300 | 0.3 | 18.0 | 26.8 | 33.5 | 36.0 | 42.2 | 39.2 | 36.8 | 31.6 | 21.9 | 7.6 | 157.0 | 157.0 | |
| 8000 | | | 8.0 | 11.4 | 18.7 | 14.9 | 11.2 | 3.0 | | | | 156.1 | 156.3 | |
| 10000 | | | | | | | | | | | | 156.6 | 156.8 | |
| 12500 | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 0ASPL | 76.8 | 80.9 | 82.7 | 82.9 | 85.3 | 89.0 | 90.1 | 90.9 | 91.6 | 95.2 | 96.8 | 95.6 | 87.6 | 173.6 |
| PNL | 80.8 | 87.4 | 90.5 | 91.9 | 94.3 | 98.0 | 97.2 | 97.5 | 96.6 | 98.0 | 97.9 | 95.1 | 87.9 | |
| PNLT | 81.9 | 87.4 | 90.5 | 92.5 | 94.8 | 98.5 | 97.2 | 98.1 | 97.3 | 98.0 | 97.9 | 95.1 | 87.9 | |
| DBA | 69.8 | 76.0 | 78.7 | 79.6 | 82.2 | 85.7 | 84.8 | 86.1 | 85.6 | 86.3 | 85.3 | 81.7 | 75.8 | |

MODEL AREA = 268.1 SQ CM (41.6 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.804 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICL = ADH217 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 35.16 PAMB HG = 29.17 RELHUM = 43.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR

FNINI = LBS XNLR = RPM XNH = RPM V8 = 1214.3 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1982.5 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1905 TAPE = X19051 TEST PT NO = 1905 NC = AE089 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1906 X1906C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.6 | 88.2 | 87.9 | 82.7 | 81.1 | 82.9 | 85.1 | 86.7 | 84.7 | 84.0 | 89.9 | 93.3 | 87.2 | 128.8 |
| 63 | 90.0 | 93.8 | 98.1 | 91.1 | 87.2 | 90.6 | 96.5 | 93.1 | 91.6 | 89.9 | 91.5 | 97.2 | 95.6 | 135.7 |
| 80 | 89.0 | 93.1 | 89.1 | 88.9 | 88.2 | 93.3 | 91.7 | 92.6 | 92.1 | 91.4 | 94.8 | 95.5 | 85.1 | 133.9 |
| 100 | 86.5 | 91.5 | 88.3 | 87.5 | 88.4 | 92.5 | 91.1 | 94.3 | 91.5 | 94.1 | 95.5 | 100.1 | 87.1 | 134.8 |
| 125 | 85.1 | 87.2 | 89.4 | 89.2 | 90.8 | 92.9 | 91.6 | 91.7 | 90.9 | 94.5 | 100.4 | 103.3 | 90.7 | 136.7 |
| 160 | 81.9 | 82.0 | 87.0 | 83.5 | 84.6 | 88.2 | 93.9 | 89.0 | 91.7 | 95.1 | 100.7 | 103.4 | 94.5 | 136.4 |
| 200 | 82.8 | 83.6 | 86.8 | 82.9 | 84.2 | 88.1 | 91.2 | 91.4 | 95.8 | 95.4 | 101.3 | 105.7 | 95.6 | 137.8 |
| 250 | 81.3 | 84.1 | 85.6 | 83.9 | 85.5 | 89.1 | 90.0 | 92.1 | 95.8 | 99.9 | 105.5 | 108.2 | 97.9 | 140.6 |
| 315 | 82.1 | 84.9 | 86.4 | 84.4 | 85.0 | 90.1 | 94.3 | 93.2 | 96.4 | 101.0 | 106.1 | 108.3 | 98.7 | 141.1 |
| 400 | 82.3 | 84.6 | 85.6 | 84.2 | 86.2 | 89.4 | 100.5 | 93.4 | 95.4 | 102.7 | 107.6 | 108.5 | 97.7 | 142.2 |
| 500 | 82.8 | 84.9 | 86.4 | 84.7 | 87.0 | 90.9 | 91.0 | 94.2 | 96.4 | 103.5 | 107.8 | 107.3 | 94.7 | 141.7 |
| 630 | 83.0 | 84.1 | 86.1 | 85.1 | 87.5 | 90.6 | 91.5 | 94.9 | 96.1 | 103.4 | 106.3 | 104.5 | 91.9 | 140.4 |
| 800 | 83.4 | 84.9 | 86.4 | 85.7 | 88.0 | 91.9 | 92.3 | 95.7 | 98.4 | 102.7 | 105.1 | 101.0 | 89.9 | 139.5 |
| 1000 | 85.3 | 85.8 | 87.1 | 85.4 | 88.5 | 92.3 | 92.7 | 96.1 | 97.8 | 102.7 | 103.3 | 98.0 | 88.6 | 138.6 |
| 1250 | 84.4 | 87.0 | 87.0 | 86.4 | 88.4 | 92.5 | 92.9 | 96.3 | 99.3 | 101.6 | 101.7 | 94.1 | 87.5 | 137.9 |
| 1600 | 85.9 | 86.3 | 88.2 | 86.8 | 89.3 | 93.4 | 93.8 | 97.1 | 99.2 | 100.5 | 101.2 | 92.6 | 86.5 | 137.7 |
| 2000 | 86.1 | 86.4 | 87.3 | 87.2 | 89.1 | 93.2 | 97.1 | 98.6 | 101.4 | 99.6 | 91.4 | 86.2 | 137.6 | |
| 2500 | 86.0 | 86.6 | 86.9 | 87.4 | 91.0 | 94.7 | 93.6 | 97.2 | 97.8 | 101.1 | 98.4 | 90.9 | 85.9 | 137.3 |
| 3150 | 86.2 | 87.6 | 88.6 | 87.9 | 90.9 | 94.7 | 93.6 | 97.9 | 97.9 | 100.3 | 97.0 | 89.4 | 84.3 | 137.1 |
| 4000 | 87.0 | 87.9 | 89.8 | 88.7 | 91.1 | 94.0 | 93.9 | 97.5 | 97.7 | 98.9 | 97.1 | 88.9 | 84.7 | 136.8 |
| 5000 | 88.5 | 88.4 | 91.5 | 89.4 | 91.6 | 94.3 | 94.2 | 97.6 | 97.3 | 100.0 | 97.3 | 89.5 | 84.5 | 137.4 |
| 6300 | 89.2 | 91.5 | 92.3 | 90.8 | 93.4 | 95.3 | 95.1 | 97.6 | 98.1 | 99.4 | 98.0 | 91.0 | 85.7 | 138.2 |
| 8000 | 89.6 | 91.8 | 93.3 | 92.2 | 94.4 | 97.2 | 94.9 | 97.5 | 97.3 | 98.4 | 97.3 | 91.5 | 86.5 | 138.5 |
| 10000 | 91.8 | 93.4 | 94.7 | 93.7 | 96.1 | 99.1 | 96.9 | 98.8 | 97.6 | 97.0 | 97.1 | 91.5 | 86.5 | 140.0 |
| 12500 | 93.2 | 94.2 | 96.3 | 96.0 | 97.5 | 100.8 | 97.3 | 97.6 | 95.9 | 95.2 | 94.1 | 90.3 | 86.1 | 141.1 |
| 16000 | 91.3 | 93.7 | 94.7 | 94.5 | 95.8 | 98.3 | 96.1 | 96.5 | 95.3 | 92.4 | 90.8 | 87.4 | 82.4 | 140.8 |
| 20000 | 88.0 | 90.7 | 92.1 | 92.7 | 94.5 | 96.0 | 95.1 | 95.2 | 92.2 | 88.9 | 87.4 | 84.5 | 80.0 | 140.5 |
| 25000 | 84.9 | 88.0 | 89.0 | 90.1 | 91.8 | 96.2 | 94.0 | 92.0 | 91.3 | 85.9 | 84.1 | 80.7 | 75.9 | 141.2 |
| 31500 | 81.2 | 84.3 | 85.9 | 87.4 | 88.0 | 92.2 | 90.1 | 89.8 | 88.1 | 83.9 | 81.7 | 77.6 | 71.9 | 140.9 |
| 40000 | 76.1 | 80.0 | 81.9 | 82.6 | 83.6 | 88.6 | 86.1 | 86.4 | 85.7 | 80.9 | 79.2 | 74.2 | 68.2 | 141.2 |
| 50000 | 70.4 | 74.2 | 75.5 | 76.8 | 77.5 | 83.8 | 80.7 | 80.5 | 80.2 | 75.8 | 74.6 | 69.8 | 62.4 | 140.2 |
| 63000 | 64.6 | 68.1 | 70.1 | 71.5 | 73.3 | 78.9 | 74.6 | 75.8 | 74.8 | 70.1 | 69.1 | 64.3 | 56.7 | 140.4 |
| 80000 | 56.9 | 61.0 | 64.0 | 63.7 | 65.2 | 72.3 | 68.4 | 69.6 | 67.0 | 63.2 | 62.5 | 58.5 | 50.0 | 140.4 |
| OASPL | 102.0 | 104.1 | 105.5 | 104.2 | 105.9 | 109.1 | 108.9 | 110.2 | 110.8 | 113.9 | 116.2 | 116.3 | 106.3 | 154.4 |
| PNL | 112.5 | 114.1 | 115.4 | 113.9 | 116.2 | 119.6 | 119.6 | 122.4 | 123.0 | 125.7 | 125.5 | 123.4 | 114.5 | |
| PNLT | 112.5 | 114.1 | 115.4 | 114.6 | 116.9 | 119.6 | 121.2 | 122.4 | 123.0 | 125.7 | 125.5 | 123.4 | 114.5 | |
| DBA | 98.5 | 99.8 | 101.2 | 100.2 | 102.6 | 106.0 | 105.8 | 108.7 | 109.7 | 112.7 | 113.6 | 111.1 | 101.2 | |

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472

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICLE = ADR226 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.21 PAMB HG = 29.05 RELHUM = 42.9 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNTNT = LBS XNL RPM XNH RPM V8 = 1206.3 FPS AEB = 4.0 SQ IN
FNAMB = LBS XNLR RPM XNHR RPM V18 = 1987.8 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1906 TAPE = X1906C TEST PT NO = 1906 NC = AE089 CORR FAN SPEED = RPM

DATPROC - FLTRAN
FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1906 X1906F

ANGLES MEASURED FROM INLET, DEGREES

FREQ PWL
40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160.

| | | | | | | | | | | | | | | |
|-------|------|------|-------|------|-------|-------|------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 88.9 | 90.4 | 90.4 | 87.1 | 87.0 | 89.1 | 88.4 | 88.8 | 94.1 | 98.1 | 103.1 | 106.0 | 98.5 | 138.8 |
| 315 | 88.9 | 90.3 | 90.4 | 87.1 | 86.8 | 90.3 | 93.3 | 91.2 | 93.1 | 99.9 | 104.7 | 106.8 | 98.8 | 139.9 |
| 400 | 89.7 | 91.2 | 91.3 | 87.8 | 88.1 | 89.6 | 99.5 | 91.3 | 94.1 | 100.7 | 105.2 | 106.2 | 97.4 | 140.4 |
| 500 | 89.9 | 90.9 | 90.5 | 87.5 | 88.9 | 91.2 | 90.0 | 91.9 | 94.0 | 100.9 | 104.0 | 104.4 | 96.6 | 139.0 |
| 630 | 90.5 | 91.3 | 91.4 | 88.1 | 89.4 | 91.0 | 90.5 | 92.6 | 96.6 | 100.6 | 103.4 | 102.2 | 97.4 | 138.6 |
| 800 | 90.7 | 90.5 | 91.1 | 88.6 | 90.1 | 92.4 | 91.4 | 93.5 | 96.6 | 101.2 | 102.4 | 100.6 | 98.8 | 138.3 |
| 1000 | 92.0 | 91.3 | 91.5 | 89.3 | 90.6 | 93.0 | 91.9 | 94.1 | 98.0 | 100.0 | 100.7 | 96.5 | 97.5 | 137.6 |
| 1250 | 92.9 | 92.3 | 92.2 | 90.0 | 90.7 | 93.3 | 92.2 | 94.3 | 98.1 | 99.1 | 100.3 | 95.0 | 95.4 | 137.3 |
| 1600 | 92.1 | 93.5 | 92.2 | 90.1 | 91.8 | 94.5 | 93.3 | 95.3 | 97.8 | 100.2 | 98.9 | 94.0 | 96.2 | 137.5 |
| 2000 | 93.5 | 92.8 | 93.5 | 90.7 | 91.7 | 94.5 | 93.0 | 96.2 | 97.7 | 100.7 | 98.5 | 94.5 | 97.1 | 137.8 |
| 2500 | 93.8 | 93.0 | 92.7 | 91.2 | 94.5 | 96.3 | 94.1 | 96.3 | 98.2 | 100.2 | 97.4 | 93.1 | 95.3 | 138.0 |
| 3150 | 95.5 | 94.1 | 92.7 | 94.7 | 95.8 | 94.6 | 97.4 | 99.1 | 100.0 | 98.7 | 93.9 | 97.5 | 97.5 | 138.9 |
| 4000 | 96.6 | 96.5 | 95.9 | 93.4 | 94.8 | 96.6 | 95.7 | 98.1 | 98.5 | 100.7 | 98.4 | 93.8 | 96.3 | 139.3 |
| 5000 | 94.5 | 94.6 | 95.5 | 93.3 | 95.7 | 97.3 | 96.1 | 98.0 | 100.0 | 100.9 | 100.3 | 96.7 | 99.1 | 140.0 |
| 6300 | 96.0 | 95.1 | 97.3 | 94.2 | 97.4 | 99.3 | 97.3 | 98.6 | 100.0 | 101.0 | 100.6 | 98.2 | 100.6 | 141.1 |
| 8000 | 96.5 | 98.0 | 98.0 | 95.5 | 98.4 | 100.2 | 97.2 | 98.9 | 101.3 | 100.8 | 101.6 | 99.3 | 101.4 | 142.3 |
| 10000 | 96.7 | 98.1 | 98.8 | 96.8 | 100.2 | 102.1 | 99.3 | 100.8 | 97.3 | 96.1 | 95.3 | 94.5 | 97.3 | 142.5 |
| 12500 | 98.7 | 99.6 | 99.9 | 98.0 | 101.6 | 103.8 | 98.8 | 97.6 | 94.5 | 93.4 | 92.9 | 94.8 | 94.8 | 143.8 |
| 16000 | 99.6 | 99.8 | 101.0 | 99.7 | 99.9 | 101.3 | 97.7 | 96.7 | 94.5 | 90.8 | 89.6 | 89.7 | 92.1 | 144.3 |
| 20000 | 97.2 | 98.9 | 99.0 | 97.8 | 98.5 | 99.0 | 96.5 | 95.2 | 94.2 | 88.4 | 86.9 | 86.4 | 88.6 | 144.3 |
| 25000 | 93.3 | 95.3 | 95.8 | 95.4 | 96.4 | 99.2 | 95.5 | 92.0 | 91.8 | 87.1 | 85.3 | 84.2 | 85.4 | 144.6 |
| 31500 | 92.2 | 94.1 | 93.7 | 93.1 | 92.6 | 95.2 | 91.6 | 89.8 | 91.3 | 86.6 | 86.1 | 84.9 | 86.3 | 145.2 |
| 40000 | 87.7 | 89.6 | 89.7 | 89.6 | 88.2 | 91.6 | 87.7 | 86.9 | 85.9 | 81.5 | 81.4 | 80.2 | 80.0 | 145.1 |
| 50000 | 82.2 | 84.8 | 85.3 | 84.4 | 82.0 | 86.8 | 82.2 | 80.9 | 81.2 | 76.4 | 76.3 | 74.9 | 74.5 | 144.4 |
| 63000 | 75.5 | 78.1 | 78.0 | 77.7 | 77.9 | 81.9 | 76.2 | 76.0 | 74.3 | 70.1 | 69.7 | 68.7 | 67.2 | 143.8 |
| 80000 | 68.2 | 70.6 | 71.1 | 70.9 | 69.8 | 75.3 | 69.8 | 69.6 | 64.5 | 60.3 | 59.9 | 58.9 | 57.3 | 143.6 |

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ASPL 108.3 108.9 109.2 107.4 109.2 111.1 109.0 109.5 110.6 112.7 114.0 113.7 113.6 156.0
PWL 119.0 119.1 118.9 116.5 118.5 120.5 119.2 121.0 122.6 124.3 121.8 121.8 122.3
PNLT 119.0 119.1 118.9 116.5 118.5 120.5 120.5 121.0 122.6 124.6 124.9 121.8 121.8 122.3
DBA 191.0 193.4 193.8 193.5 192.6 197.5 192.1 191.7 188.7 184.4 184.0 183.0 181.7

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICL = ADH226 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 400. FPS
IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.21 PAMB HG = 29.05 RELHUM = 42.9 PCT
WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1206.3 FPS AE8 = 4.0 SQ IN
FNRAMB = LBS XNLR = RPM XNHR = RPM V16 = 1987.6 FPS AE16 = 19.9 SQ IN

RUNPT = 83F-400-1906 TAPE = X1906F TEST PT NO = 1906 NC = AE089 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1906 X19061

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 64.8 | 67.7 | 69.8 | 66.2 | 66.4 | 70.0 | 72.9 | 70.3 | 71.5 | 77.2 | 80.6 | 80.5 | 69.1 | 155.2 |
| 63 | 65.5 | 68.6 | 69.7 | 66.9 | 67.6 | 69.3 | 79.0 | 70.4 | 72.5 | 78.0 | 81.0 | 79.8 | 67.6 | 155.7 |
| 80 | 65.6 | 68.2 | 68.9 | 66.6 | 68.4 | 70.9 | 69.5 | 71.0 | 72.4 | 78.2 | 79.8 | 77.9 | 66.8 | 154.3 |
| 100 | 66.2 | 68.5 | 69.7 | 67.2 | 68.9 | 70.6 | 69.9 | 71.7 | 75.0 | 77.8 | 79.1 | 75.6 | 67.4 | 153.8 |
| 125 | 66.3 | 67.6 | 69.3 | 67.6 | 69.5 | 71.9 | 70.7 | 72.4 | 74.8 | 78.3 | 78.0 | 73.8 | 68.5 | 153.6 |
| 160 | 67.4 | 68.3 | 69.6 | 68.1 | 69.9 | 72.4 | 71.2 | 72.9 | 76.1 | 77.0 | 76.1 | 69.5 | 66.8 | 152.8 |
| 200 | 68.0 | 69.0 | 70.1 | 68.7 | 69.8 | 72.5 | 71.3 | 73.0 | 76.0 | 75.9 | 75.4 | 67.7 | 65.3 | 152.6 |
| 250 | 66.9 | 70.0 | 69.8 | 68.6 | 70.7 | 73.5 | 72.2 | 73.7 | 75.4 | 76.7 | 73.7 | 66.3 | 64.4 | 152.8 |
| 315 | 67.9 | 68.9 | 70.8 | 68.9 | 70.3 | 73.2 | 71.6 | 74.3 | 75.0 | 76.8 | 72.8 | 66.1 | 64.5 | 153.1 |
| 400 | 67.6 | 68.7 | 69.7 | 69.0 | 72.8 | 74.7 | 72.4 | 74.1 | 75.2 | 75.9 | 71.2 | 64.1 | 61.7 | 153.3 |
| 500 | 69.8 | 70.8 | 70.7 | 70.2 | 72.7 | 74.9 | 72.5 | 74.9 | 75.7 | 75.3 | 72.0 | 64.2 | 62.9 | 154.2 |
| 630 | 69.3 | 71.3 | 72.1 | 70.5 | 72.4 | 74.4 | 73.4 | 75.2 | 74.7 | 75.5 | 71.1 | 63.4 | 60.6 | 154.6 |
| 800 | 66.7 | 69.0 | 71.3 | 70.1 | 73.0 | 74.8 | 73.4 | 74.8 | 75.9 | 75.3 | 72.4 | 65.5 | 62.2 | 155.3 |
| 1000 | 67.6 | 69.0 | 72.8 | 70.7 | 74.4 | 76.5 | 74.4 | 75.0 | 75.5 | 74.9 | 72.2 | 66.2 | 62.4 | 155.4 |
| 1250 | 67.4 | 71.4 | 73.0 | 71.6 | 75.1 | 77.1 | 73.9 | 75.1 | 76.4 | 74.2 | 72.5 | 66.3 | 61.6 | 157.6 |
| 1600 | 66.5 | 70.7 | 73.2 | 72.3 | 76.3 | 78.5 | 75.5 | 76.3 | 71.7 | 68.7 | 65.1 | 59.9 | 54.8 | 157.8 |
| 2000 | 66.9 | 71.0 | 73.4 | 72.7 | 77.0 | 79.5 | 74.2 | 72.3 | 71.1 | 65.9 | 61.7 | 56.2 | 48.8 | 159.1 |
| 2500 | 65.7 | 69.6 | 73.2 | 73.4 | 74.4 | 76.1 | 72.2 | 70.4 | 66.7 | 60.6 | 55.7 | 49.7 | 40.8 | 159.5 |
| 3150 | 59.3 | 65.7 | 68.7 | 69.3 | 71.1 | 71.9 | 69.0 | 66.7 | 63.9 | 55.1 | 49.0 | 40.8 | 28.2 | 159.6 |
| 4000 | 48.4 | 56.5 | 60.8 | 62.8 | 65.1 | 68.3 | 64.2 | 59.4 | 56.9 | 48.4 | 40.3 | 28.9 | 9.8 | 159.9 |
| 5000 | 36.7 | 46.9 | 51.7 | 54.3 | 55.6 | 58.7 | 54.5 | 51.0 | 49.3 | 39.5 | 30.6 | 15.1 | | 160.5 |
| 6300 | 14.0 | 27.8 | 35.2 | 39.6 | 40.7 | 44.8 | 40.2 | 37.0 | 31.4 | 19.8 | 7.7 | | | 160.4 |
| 8000 | | 8.6 | 14.2 | 15.4 | 21.3 | 15.6 | 10.7 | 4.5 | | | | | | 159.7 |
| 10000 | | | | | | | | | | | | | | 159.1 |
| 12500 | | | | | | | | | | | | | | 158.9 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 0ASPL | 79.8 | 82.2 | 83.9 | 82.7 | 85.4 | 87.6 | 85.1 | 86.2 | 87.1 | 88.5 | 88.4 | 85.7 | 77.4 | 171.2 |
| PNL | 89.2 | 91.7 | 94.5 | 94.1 | 96.3 | 98.6 | 95.2 | 95.1 | 94.0 | 92.7 | 90.5 | 84.5 | 79.0 | |
| PNLT | 89.4 | 92.8 | 95.0 | 94.7 | 96.9 | 99.2 | 95.7 | 95.6 | 95.2 | 93.9 | 92.0 | 85.6 | 79.0 | |
| DBA | 76.9 | 80.0 | 82.4 | 81.6 | 84.7 | 86.7 | 83.5 | 84.0 | 83.6 | 82.6 | 79.7 | 73.3 | 69.6 | |

MODEL AREA = 268.1 SQ CM (41.6 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.804 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICLE = ADH226' TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.21 PAMB HG = 29.05 RELHUM = 42.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1206.3 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 1987.8 FPS AE18 = 19.9 SQ IN

INPT 3F 1900 CAPE 1.661 PT 1.661 TS 1.661 JC AE 1.661 SPE 1.661

IDENTIFICATION - MODEL 83F-ZER-1907 X1907C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.4 | 88.7 | 88.9 | 84.0 | 82.1 | 84.7 | 86.8 | 89.5 | 88.7 | 86.5 | 92.6 | 93.1 | 89.2 | 130.4 |
| 63 | 90.3 | 94.5 | 98.1 | 93.1 | 90.2 | 93.8 | 97.0 | 97.9 | 94.6 | 95.9 | 96.0 | 97.7 | 98.6 | 137.7 |
| 80 | 91.5 | 95.6 | 92.1 | 91.4 | 91.5 | 96.8 | 94.5 | 95.4 | 95.1 | 96.2 | 100.0 | 99.2 | 84.9 | 137.4 |
| 100 | 90.0 | 96.7 | 92.8 | 93.0 | 94.1 | 98.0 | 95.9 | 99.3 | 96.3 | 101.1 | 100.7 | 104.1 | 89.3 | 139.9 |
| 125 | 87.1 | 91.2 | 93.7 | 94.0 | 95.8 | 98.4 | 96.1 | 97.2 | 96.4 | 100.5 | 107.1 | 108.6 | 94.2 | 142.3 |
| 160 | 85.7 | 87.2 | 91.2 | 88.3 | 89.6 | 94.0 | 98.6 | 96.0 | 96.7 | 101.6 | 106.4 | 108.9 | 99.0 | 142.0 |
| 200 | 89.0 | 87.6 | 90.6 | 89.1 | 91.2 | 95.6 | 96.5 | 96.9 | 101.1 | 103.6 | 109.3 | 112.0 | 102.1 | 144.6 |
| 250 | 88.0 | 90.8 | 91.4 | 92.7 | 95.8 | 96.7 | 99.1 | 101.6 | 108.4 | 113.0 | 115.0 | 105.6 | 147.8 | |
| 315 | 88.6 | 91.1 | 90.6 | 90.4 | 92.8 | 97.6 | 100.5 | 99.9 | 103.4 | 110.0 | 114.6 | 115.8 | 107.4 | 149.1 |
| 400 | 90.3 | 91.8 | 92.4 | 91.4 | 93.0 | 96.9 | 106.0 | 100.7 | 103.4 | 111.7 | 116.6 | 116.8 | 109.2 | 150.7 |
| 500 | 90.6 | 93.1 | 94.4 | 92.7 | 94.8 | 98.4 | 98.5 | 101.7 | 104.1 | 112.7 | 117.3 | 117.8 | 110.7 | 151.5 |
| 630 | 91.0 | 93.3 | 94.1 | 93.1 | 95.7 | 98.8 | 99.2 | 102.4 | 103.8 | 112.9 | 116.5 | 117.5 | 112.6 | 151.2 |
| 800 | 94.1 | 94.4 | 94.7 | 94.2 | 96.5 | 99.4 | 100.0 | 103.7 | 106.2 | 116.0 | 116.1 | 117.5 | 113.9 | 151.2 |
| 1000 | 97.5 | 98.8 | 97.6 | 95.4 | 97.2 | 100.6 | 100.2 | 103.9 | 105.8 | 111.4 | 114.3 | 117.0 | 113.6 | 150.5 |
| 1250 | 94.9 | 98.7 | 98.5 | 97.1 | 98.4 | 101.5 | 100.6 | 104.0 | 106.3 | 110.3 | 113.5 | 114.9 | 112.8 | 149.4 |
| 1600 | 95.4 | 95.5 | 96.7 | 95.6 | 97.8 | 101.2 | 101.8 | 105.1 | 106.2 | 108.8 | 112.4 | 113.8 | 111.2 | 148.5 |
| 2000 | 95.1 | 96.9 | 96.6 | 95.2 | 96.8 | 100.7 | 100.9 | 104.7 | 106.3 | 109.9 | 111.9 | 111.9 | 109.7 | 148.0 |
| 2500 | 93.3 | 95.6 | 95.2 | 95.4 | 95.8 | 100.9 | 100.8 | 104.2 | 104.8 | 109.4 | 110.9 | 110.7 | 108.2 | 147.1 |
| 3150 | 92.7 | 95.6 | 95.8 | 94.6 | 96.4 | 101.0 | 101.1 | 103.8 | 104.9 | 108.8 | 110.0 | 108.7 | 106.3 | 146.4 |
| 4000 | 90.7 | 94.1 | 95.3 | 94.4 | 96.8 | 100.8 | 100.4 | 104.2 | 104.4 | 107.2 | 108.6 | 106.8 | 104.4 | 145.3 |
| 5000 | 90.0 | 93.9 | 95.2 | 94.1 | 96.1 | 100.1 | 100.2 | 103.8 | 103.8 | 107.3 | 107.5 | 105.5 | 102.7 | 144.9 |
| 6300 | 89.7 | 95.2 | 95.8 | 94.8 | 96.9 | 100.8 | 100.4 | 103.8 | 104.1 | 106.1 | 107.3 | 104.7 | 102.0 | 144.9 |
| 8000 | 89.3 | 96.3 | 96.1 | 96.0 | 97.4 | 100.7 | 99.9 | 102.5 | 102.0 | 104.2 | 105.6 | 103.2 | 100.1 | 144.0 |
| 10000 | 90.8 | 96.7 | 97.2 | 97.0 | 98.4 | 101.4 | 100.6 | 103.1 | 102.8 | 104.1 | 101.7 | 99.5 | 144.4 | |
| 12500 | 89.8 | 94.0 | 96.8 | 97.0 | 99.3 | 102.6 | 100.9 | 101.1 | 100.2 | 101.0 | 101.6 | 101.1 | 97.8 | 144.3 |
| 16000 | 88.8 | 94.3 | 95.7 | 96.6 | 98.4 | 101.4 | 100.2 | 100.3 | 99.4 | 98.7 | 99.6 | 98.7 | 95.4 | 144.5 |
| 20000 | 86.5 | 92.2 | 93.6 | 94.2 | 96.0 | 98.6 | 98.1 | 98.0 | 96.0 | 95.5 | 96.7 | 94.8 | 92.5 | 143.6 |
| 25000 | 84.0 | 89.3 | 90.9 | 92.6 | 93.3 | 98.0 | 96.6 | 95.8 | 93.4 | 92.0 | 91.7 | 90.7 | 87.7 | 143.8 |
| 31500 | 81.2 | 85.7 | 88.2 | 89.9 | 90.1 | 94.3 | 92.9 | 92.9 | 89.9 | 89.0 | 88.3 | 86.4 | 83.0 | 143.6 |
| 40000 | 76.6 | 82.0 | 83.5 | 85.7 | 85.7 | 91.1 | 88.6 | 89.0 | 87.6 | 85.7 | 85.0 | 82.0 | 78.0 | 143.9 |
| 50000 | 70.5 | 76.3 | 78.6 | 79.9 | 80.3 | 85.9 | 83.7 | 83.6 | 81.7 | 80.3 | 79.1 | 77.4 | 72.2 | 142.9 |
| 63000 | 64.9 | 70.5 | 73.2 | 75.4 | 76.1 | 81.2 | 77.2 | 78.6 | 77.4 | 75.4 | 73.9 | 72.1 | 65.3 | 143.2 |
| 80000 | 59.2 | 63.8 | 66.8 | 67.8 | 68.5 | 75.1 | 71.5 | 72.6 | 70.3 | 68.8 | 67.5 | 66.6 | 58.8 | 143.7 |
| 0ASPL | 106.1 | 109.6 | 108.8 | 110.4 | 114.0 | 114.4 | 116.3 | 117.4 | 122.4 | 125.9 | 126.8 | 122.1 | 161.9 | |
| PNL | 117.8 | 120.7 | 121.2 | 120.1 | 121.9 | 125.8 | 126.1 | 128.8 | 129.7 | 133.9 | 136.2 | 136.2 | 132.4 | |
| PNLT | 118.8 | 121.3 | 121.2 | 120.6 | 122.6 | 126.8 | 127.2 | 128.8 | 129.7 | 133.9 | 136.8 | 136.2 | 132.4 | |
| DBA | 105.1 | 107.6 | 107.9 | 106.9 | 108.6 | 112.2 | 112.5 | 115.5 | 116.7 | 121.2 | 124.2 | 125.0 | 121.4 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

| | | | | | |
|----------------------|----------------------|------------------------|--------------------|-----------------|-------------------|
| VERTICL = ADH218 | TEST DATE = 04-18-83 | LOCAT = C41 ANECH CH | CONFIG = 19 | MODEL = AX' | FLTVEL = 0. FPS |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 36.25 | PAMB HG = 29.16 | RELHUM = 44.0 PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = |
| FNINI = | LBS XNL | RPM | XNH | RPM | V8 = 1310.2 FPS |
| FNRAMB = | LBS XNLR | RPM | XNHR | RPM | V18 = 2161.7 FPS |
| RUNPT = 83F-ZER-1907 | TAPE | TEST PT NO = 1907 | NC | AE089 | CORR FAN SPEED = |
| | | | | | RPM |

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-ZER-1907 X1907F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 86.4 | 88.7 | 88.9 | 84.0 | 82.1 | 84.7 | 86.8 | 89.5 | 88.7 | 86.5 | 92.6 | 93.1 | 89.2 | 130.4 |
| 63 | 90.3 | 94.5 | 98.1 | 93.1 | 90.2 | 93.8 | 97.0 | 97.9 | 94.6 | 95.9 | 96.0 | 97.7 | 98.6 | 137.7 |
| 80 | 91.5 | 95.6 | 92.1 | 91.4 | 91.5 | 96.8 | 94.5 | 95.4 | 95.1 | 96.2 | 100.0 | 99.2 | 84.9 | 137.4 |
| 100 | 90.0 | 96.7 | 92.8 | 93.0 | 94.1 | 98.0 | 95.9 | 99.3 | 96.3 | 101.1 | 100.7 | 104.1 | 89.3 | 139.9 |
| 125 | 87.1 | 91.2 | 93.7 | 94.0 | 95.8 | 98.4 | 96.1 | 97.2 | 96.4 | 100.5 | 107.1 | 108.6 | 94.2 | 142.3 |
| 160 | 85.7 | 87.2 | 91.2 | 88.3 | 89.6 | 94.0 | 98.6 | 96.0 | 96.7 | 101.6 | 106.4 | 108.9 | 99.0 | 142.0 |
| 200 | 89.0 | 87.6 | 90.6 | 89.1 | 91.2 | 95.6 | 96.5 | 96.9 | 101.1 | 103.6 | 109.3 | 112.0 | 102.1 | 144.6 |
| 250 | 88.0 | 90.8 | 91.6 | 91.4 | 92.7 | 95.8 | 96.7 | 98.1 | 101.6 | 108.4 | 113.0 | 115.0 | 105.6 | 147.8 |
| 315 | 88.6 | 91.1 | 90.6 | 90.4 | 92.8 | 97.6 | 100.5 | 99.9 | 103.4 | 110.0 | 114.6 | 115.8 | 107.4 | 149.1 |
| 400 | 90.3 | 91.8 | 92.4 | 91.4 | 93.0 | 96.9 | 106.0 | 100.7 | 103.4 | 111.7 | 116.6 | 116.8 | 109.2 | 150.7 |
| 500 | 90.6 | 93.1 | 94.4 | 92.7 | 94.8 | 98.4 | 98.5 | 101.7 | 104.1 | 112.7 | 117.3 | 117.8 | 110.7 | 151.5 |
| 630 | 91.0 | 93.3 | 94.1 | 93.1 | 95.7 | 98.6 | 99.2 | 102.4 | 103.8 | 112.9 | 116.5 | 117.5 | 112.6 | 151.2 |
| 800 | 94.1 | 94.4 | 94.7 | 94.2 | 96.5 | 99.4 | 100.0 | 103.7 | 105.9 | 112.0 | 116.1 | 117.5 | 113.9 | 151.2 |
| 1000 | 97.5 | 98.8 | 97.6 | 96.4 | 97.2 | 100.6 | 100.2 | 103.9 | 105.8 | 111.4 | 114.3 | 117.0 | 113.6 | 150.5 |
| 1250 | 94.9 | 98.7 | 98.5 | 97.1 | 98.4 | 101.5 | 100.6 | 104.0 | 106.3 | 110.3 | 113.5 | 114.9 | 112.8 | 149.4 |
| 1600 | 95.4 | 95.5 | 96.7 | 95.6 | 97.8 | 101.2 | 101.8 | 105.1 | 106.2 | 108.8 | 112.4 | 113.8 | 111.2 | 148.5 |
| 2000 | 95.1 | 96.9 | 96.6 | 95.2 | 96.8 | 100.7 | 100.9 | 104.7 | 106.3 | 109.9 | 111.9 | 111.9 | 108.7 | 148.0 |
| 2500 | 93.3 | 95.6 | 96.2 | 95.4 | 96.8 | 100.9 | 100.8 | 104.2 | 104.8 | 109.4 | 110.9 | 110.7 | 108.2 | 147.1 |
| 3150 | 92.7 | 95.5 | 95.8 | 94.6 | 95.4 | 101.0 | 101.1 | 103.8 | 104.9 | 108.8 | 110.0 | 108.7 | 106.3 | 146.4 |
| 4000 | 90.7 | 94.1 | 95.3 | 94.4 | 96.8 | 100.8 | 100.4 | 104.2 | 104.4 | 107.2 | 108.6 | 106.8 | 104.4 | 145.3 |
| 5000 | 90.0 | 93.9 | 95.2 | 94.1 | 96.1 | 100.1 | 100.2 | 103.8 | 103.8 | 107.3 | 107.5 | 105.5 | 102.7 | 144.9 |
| 6300 | 89.7 | 95.2 | 95.8 | 94.8 | 96.9 | 100.8 | 100.4 | 103.8 | 104.1 | 106.1 | 107.3 | 104.7 | 102.0 | 144.9 |
| 8000 | 89.3 | 95.3 | 96.1 | 95.0 | 97.4 | 100.7 | 99.9 | 102.5 | 102.0 | 104.2 | 105.6 | 103.2 | 100.1 | 144.0 |
| 10000 | 90.8 | 96.7 | 97.2 | 97.0 | 98.4 | 101.4 | 100.6 | 103.1 | 102.1 | 102.8 | 104.1 | 101.7 | 99.5 | 144.4 |
| 12500 | 89.8 | 94.0 | 96.8 | 97.0 | 99.3 | 102.6 | 100.9 | 101.1 | 100.2 | 101.0 | 101.6 | 101.1 | 97.8 | 144.3 |
| 16000 | 88.8 | 94.3 | 95.7 | 96.6 | 98.4 | 101.4 | 100.2 | 100.3 | 99.4 | 98.7 | 99.6 | 98.7 | 95.4 | 144.5 |
| 20000 | 86.5 | 92.2 | 93.6 | 94.2 | 96.0 | 98.6 | 98.1 | 98.0 | 96.0 | 95.5 | 96.7 | 94.8 | 92.5 | 143.6 |
| 25000 | 84.0 | 89.3 | 90.9 | 92.6 | 93.3 | 98.0 | 96.6 | 95.8 | 93.4 | 92.0 | 91.7 | 90.7 | 87.7 | 143.8 |
| 31500 | 81.2 | 85.7 | 88.2 | 89.9 | 90.1 | 94.3 | 92.9 | 92.9 | 89.9 | 89.0 | 88.3 | 86.4 | 83.0 | 143.6 |
| 40000 | 76.6 | 82.0 | 83.5 | 85.7 | 85.7 | 91.1 | 88.6 | 89.0 | 87.6 | 85.7 | 85.0 | 82.0 | 78.0 | 143.9 |
| 50000 | 70.5 | 76.3 | 78.6 | 79.9 | 80.3 | 85.9 | 83.7 | 83.6 | 81.7 | 80.3 | 79.1 | 77.4 | 72.2 | 142.9 |
| 63000 | 64.9 | 70.5 | 73.2 | 75.4 | 76.1 | 81.2 | 77.2 | 78.6 | 77.4 | 75.4 | 73.9 | 72.1 | 65.3 | 143.2 |
| 80000 | 59.2 | 63.8 | 66.8 | 67.8 | 68.5 | 75.1 | 71.5 | 72.6 | 70.3 | 68.8 | 67.5 | 66.6 | 58.8 | 143.7 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. , DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICLE = ADH218 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.25 PAMB HG = 29.16 RELHUM = 44.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT =

FN1N1 = LBS XNL = RPM XNH = RPM V8 = 1310.2 FPS AE8 = 4.0 SQ IN
 FN1RMB = LBS XNLR = RPM XNHR = RPM V16 = 2161.7 FPS AE16 = 19.9 SQ IN

NPT 3F-7 1907 TYPE = 7F PT = 19 C = AEL JRR SPEL RPI

476

0118-89

IDENTIFICATION - 83F-ZER-1907 X19071

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 64.4 | 68.5 | 69.1 | 69.6 | 72.3 | 77.3 | 80.1 | 79.1 | 81.8 | 87.3 | 90.4 | 89.4 | 77.7 | 164.4 |
| 63 | 66.1 | 69.2 | 70.8 | 70.5 | 72.5 | 76.5 | 85.5 | 79.8 | 81.8 | 89.0 | 92.4 | 90.3 | 79.4 | 166.0 |
| 80 | 68.3 | 70.4 | 72.8 | 71.8 | 74.3 | 78.0 | 78.0 | 80.8 | 82.5 | 90.0 | 93.1 | 91.3 | 80.8 | 166.7 |
| 100 | 66.7 | 70.6 | 72.4 | 72.2 | 75.2 | 78.4 | 78.4 | 81.4 | 82.2 | 90.1 | 92.2 | 90.9 | 82.6 | 166.5 |
| 125 | 69.6 | 71.5 | 72.9 | 73.2 | 75.9 | 78.9 | 79.4 | 82.7 | 84.1 | 89.1 | 91.7 | 90.8 | 83.7 | 166.5 |
| 160 | 72.9 | 75.8 | 75.7 | 75.2 | 76.5 | 80.0 | 79.5 | 82.7 | 83.9 | 88.4 | 89.6 | 90.0 | 83.0 | 165.8 |
| 200 | 70.0 | 75.5 | 76.4 | 75.8 | 77.5 | 80.7 | 79.7 | 82.7 | 84.2 | 87.1 | 88.6 | 87.6 | 81.7 | 164.7 |
| 250 | 70.2 | 72.0 | 74.4 | 74.0 | 76.7 | 80.2 | 80.7 | 83.5 | 83.9 | 85.3 | 87.2 | 86.1 | 79.5 | 163.8 |
| 315 | 69.4 | 73.0 | 73.9 | 73.4 | 75.4 | 79.4 | 79.5 | 82.9 | 83.7 | 86.0 | 86.2 | 83.6 | 77.1 | 163.2 |
| 400 | 67.1 | 71.3 | 73.2 | 73.2 | 75.1 | 79.3 | 79.1 | 82.0 | 81.8 | 85.1 | 84.7 | 81.7 | 74.6 | 162.4 |
| 500 | 66.0 | 70.8 | 72.4 | 72.1 | 74.4 | 79.1 | 79.1 | 81.3 | 81.5 | 84.1 | 83.3 | 79.0 | 71.7 | 161.6 |
| 630 | 63.5 | 69.0 | 71.5 | 71.5 | 74.5 | 78.6 | 78.1 | 81.4 | 80.6 | 82.0 | 81.3 | 76.4 | 68.7 | 160.6 |
| 800 | 62.2 | 68.2 | 71.1 | 70.9 | 73.4 | 77.5 | 77.5 | 80.6 | 79.7 | 81.6 | 79.7 | 74.3 | 65.7 | 160.1 |
| 1000 | 61.3 | 69.1 | 71.2 | 71.3 | 73.9 | 78.0 | 77.4 | 80.3 | 79.6 | 80.0 | 78.9 | 72.7 | 63.7 | 160.1 |
| 1250 | 60.2 | 68.7 | 71.1 | 72.1 | 74.1 | 77.6 | 76.6 | 78.6 | 77.1 | 77.6 | 76.5 | 70.3 | 62.2 | 159.3 |
| 1600 | 60.6 | 69.2 | 71.6 | 72.5 | 74.5 | 77.7 | 76.8 | 78.6 | 76.4 | 75.3 | 73.9 | 67.1 | 57.0 | 159.6 |
| 2000 | 58.0 | 65.4 | 70.3 | 71.8 | 74.8 | 78.3 | 76.3 | 78.9 | 73.6 | 72.4 | 69.9 | 64.3 | 51.8 | 159.6 |
| 2500 | 54.9 | 64.1 | 67.9 | 70.2 | 72.9 | 76.2 | 74.7 | 74.0 | 71.5 | 68.5 | 65.7 | 58.7 | 44.0 | 159.8 |
| 3150 | 48.6 | 59.0 | 63.3 | 65.7 | 68.6 | 71.4 | 70.7 | 69.5 | 65.7 | 62.3 | 58.8 | 49.2 | 32.2 | 158.9 |
| 4000 | 39.1 | 50.6 | 55.9 | 60.1 | 62.1 | 67.1 | 65.4 | 63.2 | 58.4 | 53.3 | 46.8 | 35.4 | 12.0 | 159.1 |
| 5000 | 25.7 | 38.5 | 46.2 | 51.1 | 53.0 | 57.7 | 55.9 | 54.1 | 48.0 | 41.8 | 32.7 | 16.6 | | 158.9 |
| 6300 | 2.9 | 20.2 | 29.1 | 35.7 | 38.1 | 44.4 | 41.1 | 39.0 | 33.1 | 23.9 | 11.3 | | | 159.2 |
| 8000 | | | 1.9 | 9.7 | 13.6 | 20.4 | 17.1 | 13.4 | 5.0 | | | | | 188.2 |
| 10000 | | | | | | | | | | | | | | 158.5 |
| 12500 | | | | | | | | | | | | | | 158.9 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS OF POOR QUALITY

| | | | | | | | | | | | | | | |
|------|------|------|------|------|------|-------|------|-------|------|-------|-------|------|------|-------|
| ASPL | 79.6 | 83.7 | 85.2 | 85.2 | 87.5 | 91.2 | 92.0 | 93.6 | 94.2 | 98.6 | 100.6 | 99.2 | 90.9 | 176.7 |
| PNL | 83.4 | 89.8 | 92.5 | 93.7 | 96.2 | 99.9 | 99.2 | 100.1 | 99.2 | 101.5 | 101.8 | 99.4 | 91.5 | |
| PNLT | 84.5 | 89.8 | 93.1 | 94.3 | 96.7 | 100.5 | 99.7 | 100.7 | 99.9 | 101.5 | 101.8 | 99.4 | 91.5 | |
| DBA | 72.4 | 78.4 | 80.9 | 81.5 | 84.0 | 87.7 | 86.9 | 89.0 | 88.2 | 89.8 | 89.5 | 86.4 | 79.2 | |

MODEL AREA = 268.1 SQ CM (41.6 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.804 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICL = ADH218 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.25 PAMB HG = 29.16 RELHUM = 44.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNIN1 = LBS XNL = RPM XNH = RPM V8 = 1310.2 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2161.7 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1907 TAPE = X19071 TEST PT NO = 1907 NC = AE089 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1908 X1908C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 89.4 | 89.2 | 88.2 | 83.0 | 83.3 | 84.9 | 86.3 | 89.2 | 87.7 | 90.5 | 93.4 | 93.6 | 90.2 | 130.9 |
| 63 | 91.5 | 94.5 | 96.6 | 90.1 | 88.7 | 91.3 | 93.7 | 96.4 | 93.3 | 94.2 | 95.0 | 98.2 | 95.6 | 136.2 |
| 80 | 91.5 | 95.6 | 91.6 | 91.6 | 91.2 | 95.6 | 93.5 | 94.4 | 94.8 | 96.3 | 97.8 | 98.2 | 90.6 | 136.6 |
| 100 | 89.2 | 94.2 | 91.3 | 90.3 | 91.4 | 95.5 | 94.1 | 97.3 | 94.8 | 96.6 | 98.5 | 103.1 | 92.8 | 137.8 |
| 125 | 87.6 | 89.4 | 92.2 | 92.0 | 93.6 | 96.4 | 94.6 | 94.7 | 93.7 | 98.7 | 103.6 | 106.8 | 95.2 | 140.0 |
| 160 | 84.9 | 83.7 | 88.7 | 85.5 | 87.1 | 90.5 | 96.1 | 91.8 | 94.5 | 99.2 | 103.9 | 106.9 | 97.8 | 139.7 |
| 200 | 85.0 | 85.3 | 86.6 | 84.9 | 87.2 | 91.1 | 92.7 | 94.1 | 98.6 | 101.6 | 104.5 | 109.0 | 99.9 | 141.3 |
| 250 | 83.0 | 86.1 | 87.1 | 86.4 | 88.2 | 91.1 | 92.5 | 94.6 | 99.1 | 103.9 | 108.8 | 111.7 | 102.4 | 144.1 |
| 315 | 83.8 | 86.4 | 86.6 | 86.2 | 87.8 | 92.1 | 95.5 | 94.7 | 98.9 | 104.6 | 110.3 | 112.0 | 103.2 | 144.9 |
| 400 | 85.1 | 86.1 | 87.6 | 85.2 | 88.7 | 91.9 | 101.5 | 95.7 | 98.4 | 105.0 | 111.6 | 112.5 | 102.4 | 145.7 |
| 500 | 85.1 | 86.6 | 88.6 | 87.2 | 89.5 | 93.4 | 93.5 | 96.7 | 98.9 | 105.6 | 112.3 | 112.5 | 100.4 | 145.9 |
| 630 | 86.0 | 87.1 | 88.1 | 87.6 | 89.7 | 93.6 | 94.0 | 97.4 | 99.1 | 105.4 | 111.8 | 110.0 | 97.9 | 144.9 |
| 800 | 87.1 | 86.9 | 88.4 | 88.2 | 91.0 | 94.1 | 95.0 | 98.4 | 101.2 | 105.8 | 110.4 | 107.5 | 96.4 | 143.9 |
| 1000 | 88.8 | 89.1 | 89.8 | 88.6 | 91.2 | 95.3 | 95.2 | 98.9 | 101.1 | 104.6 | 108.0 | 103.7 | 94.4 | 142.2 |
| 1250 | 87.4 | 89.7 | 90.3 | 89.4 | 91.1 | 94.5 | 95.6 | 98.8 | 102.0 | 104.1 | 106.2 | 99.1 | 92.8 | 141.2 |
| 1600 | 87.9 | 87.8 | 90.2 | 89.6 | 92.1 | 96.2 | 96.3 | 100.6 | 102.0 | 103.7 | 105.4 | 96.8 | 91.7 | 141.0 |
| 2000 | 88.4 | 88.2 | 89.6 | 89.2 | 91.5 | 95.9 | 96.1 | 100.5 | 101.8 | 103.0 | 104.1 | 94.9 | 90.4 | 140.5 |
| 2500 | 87.8 | 88.6 | 89.2 | 89.7 | 92.5 | 96.1 | 95.8 | 100.0 | 101.1 | 101.7 | 102.4 | 94.4 | 90.4 | 139.5 |
| 3150 | 88.5 | 89.6 | 90.6 | 89.6 | 92.2 | 96.7 | 96.4 | 99.8 | 101.2 | 101.2 | 101.3 | 92.7 | 86.3 | 139.5 |
| 4000 | 88.7 | 89.6 | 91.0 | 89.9 | 92.6 | 96.5 | 96.7 | 100.2 | 100.9 | 100.5 | 100.1 | 91.8 | 87.9 | 139.3 |
| 5000 | 90.3 | 90.1 | 92.2 | 90.8 | 92.3 | 96.1 | 96.4 | 99.8 | 100.1 | 99.9 | 99.7 | 92.7 | 87.2 | 139.1 |
| 6300 | 91.7 | 92.4 | 93.8 | 92.6 | 93.6 | 97.6 | 97.1 | 100.3 | 100.9 | 100.5 | 100.0 | 93.5 | 88.5 | 140.1 |
| 8000 | 92.6 | 93.3 | 94.3 | 93.5 | 94.4 | 97.9 | 96.6 | 99.2 | 99.5 | 99.6 | 99.6 | 99.5 | 89.5 | 140.0 |
| 10000 | 94.1 | 94.7 | 96.7 | 95.5 | 95.6 | 99.4 | 97.9 | 100.1 | 99.6 | 99.5 | 99.4 | 93.5 | 88.8 | 141.4 |
| 12500 | 92.8 | 93.8 | 96.8 | 96.5 | 97.0 | 100.3 | 99.1 | 98.6 | 97.9 | 97.1 | 96.4 | 92.8 | 87.6 | 141.8 |
| 16000 | 92.1 | 94.3 | 95.7 | 95.8 | 97.1 | 100.4 | 98.4 | 98.3 | 97.4 | 95.9 | 94.4 | 90.9 | 85.7 | 142.7 |
| 20000 | 89.8 | 92.2 | 93.4 | 94.0 | 95.5 | 97.3 | 97.6 | 96.2 | 94.3 | 92.5 | 90.7 | 87.8 | 83.3 | 142.2 |
| 25000 | 87.5 | 89.6 | 91.1 | 92.1 | 92.6 | 97.2 | 96.1 | 94.5 | 93.1 | 90.4 | 87.7 | 86.0 | 79.4 | 143.0 |
| 31500 | 83.5 | 85.9 | 88.4 | 89.9 | 89.1 | 93.5 | 92.4 | 92.4 | 87.5 | 84.8 | 81.9 | 75.5 | 75.5 | 143.0 |
| 40000 | 79.1 | 81.8 | 84.0 | 85.6 | 84.4 | 90.1 | 88.1 | 88.5 | 87.8 | 84.9 | 82.0 | 78.0 | 71.0 | 143.3 |
| 50000 | 73.0 | 75.8 | 78.3 | 79.1 | 79.8 | 85.6 | 83.0 | 83.3 | 82.0 | 79.3 | 76.6 | 73.2 | 66.0 | 142.4 |
| 63000 | 68.1 | 70.5 | 73.2 | 74.1 | 74.3 | 80.4 | 76.7 | 78.6 | 77.1 | 74.5 | 71.9 | 67.8 | 60.0 | 142.6 |
| 80000 | 62.0 | 63.3 | 66.3 | 66.3 | 67.0 | 74.1 | 70.5 | 71.6 | 69.3 | 67.0 | 64.8 | 61.3 | 52.3 | 142.5 |

CASPL 103.9 105.5 106.6 105.8 107.0 110.6 110.8 112.5 113.6 116.3 120.4 120.4 120.4 110.7 157.2
 PNL 114.8 115.7 116.9 115.8 117.7 121.6 121.9 124.8 126.0 127.5 129.4 127.3 118.9
 PNL 114.8 115.7 116.9 115.8 118.4 122.2 123.1 124.8 126.0 127.5 129.4 127.3 118.9
 DBA 100.9 101.6 103.0 102.1 103.9 107.8 108.0 111.2 112.6 114.7 118.0 115.8 106.1

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VERTCL = ADR225 TEST DATE = 04-18-83 LGCAT = C41 ANECH CH CONF10 = 19 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 35.88 PAMB HG = 29.08 RELHUM = 44.5 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =
 FNNTI = LBS XNL = RPM XNH = RPM V8 = 1320.4 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2160.8 FPS AE18 = 19.9 SQ IN
 RUNPT = 83F-400-1908 TAPE = X1908C TEST PT NO = 1908 NC = AE089 CORR FAN SPEED = RPM

DATPROC - FLTRAN
 FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1908 X1908F

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

FREQ
 50
 63

80

100

125

160

200

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 90.9 | 92.5 | 92.0 | 89.7 | 89.8 | 91.1 | 90.6 | 91.0 | 96.6 | 101.6 | 107.4 | 109.6 | 103.0 | 142.5 |
| 315 | 90.9 | 92.5 | 92.0 | 89.7 | 89.6 | 92.3 | 94.6 | 92.7 | 96.2 | 102.3 | 108.9 | 111.0 | 103.7 | 143.7 |
| 400 | 91.5 | 92.8 | 91.6 | 89.6 | 90.6 | 92.1 | 100.6 | 93.7 | 96.9 | 103.2 | 110.0 | 111.8 | 103.3 | 144.7 |
| 500 | 92.7 | 92.5 | 92.6 | 89.6 | 91.4 | 93.7 | 92.6 | 94.7 | 97.2 | 103.2 | 109.9 | 110.2 | 102.9 | 143.9 |
| 630 | 92.8 | 93.0 | 93.6 | 90.6 | 91.7 | 94.0 | 93.1 | 95.3 | 99.6 | 104.2 | 109.3 | 109.3 | 104.3 | 143.7 |
| 800 | 93.7 | 93.5 | 93.1 | 91.1 | 93.1 | 94.7 | 94.2 | 96.5 | 100.3 | 103.7 | 107.9 | 107.0 | 105.0 | 142.8 |
| 1000 | 94.8 | 93.3 | 93.5 | 91.8 | 93.4 | 96.0 | 94.6 | 97.2 | 101.1 | 103.0 | 105.9 | 102.3 | 103.4 | 141.4 |
| 1250 | 96.4 | 95.5 | 94.9 | 92.3 | 93.4 | 95.3 | 95.1 | 97.0 | 101.2 | 102.7 | 105.1 | 100.0 | 102.4 | 141.0 |
| 1600 | 95.1 | 96.2 | 95.4 | 93.1 | 94.5 | 97.2 | 95.9 | 99.0 | 101.2 | 102.1 | 103.9 | 98.2 | 101.3 | 140.9 |
| 2000 | 95.5 | 94.3 | 95.5 | 93.5 | 94.2 | 97.2 | 96.0 | 99.0 | 101.4 | 101.9 | 103.3 | 98.9 | 102.4 | 140.9 |
| 2500 | 96.0 | 94.7 | 94.9 | 93.2 | 96.0 | 97.8 | 96.6 | 99.4 | 101.9 | 101.7 | 102.5 | 97.4 | 100.8 | 140.8 |
| 3150 | 98.2 | 97.5 | 96.3 | 95.0 | 96.0 | 98.8 | 97.5 | 99.7 | 102.6 | 101.9 | 102.1 | 97.3 | 101.1 | 141.5 |
| 4000 | 98.8 | 98.5 | 97.9 | 95.1 | 96.8 | 99.1 | 98.6 | 101.0 | 101.9 | 101.4 | 101.8 | 98.3 | 100.5 | 141.8 |
| 5000 | 99.1 | 98.6 | 98.5 | 95.7 | 96.4 | 99.1 | 98.6 | 100.7 | 103.0 | 102.4 | 102.6 | 98.6 | 102.1 | 142.5 |
| 6300 | 97.7 | 96.8 | 98.0 | 95.7 | 97.7 | 100.6 | 99.4 | 101.5 | 102.5 | 102.4 | 103.1 | 100.3 | 103.5 | 143.1 |
| 8000 | 99.0 | 99.4 | 99.4 | 97.3 | 98.4 | 100.9 | 99.0 | 100.9 | 102.9 | 102.7 | 103.3 | 100.7 | 103.3 | 143.8 |
| 10000 | 99.7 | 99.6 | 99.8 | 98.0 | 99.7 | 102.4 | 100.3 | 101.8 | 100.8 | 99.9 | 99.5 | 98.9 | 100.5 | 144.0 |
| 12500 | 100.9 | 100.8 | 102.0 | 99.8 | 101.1 | 103.3 | 101.0 | 99.5 | 100.3 | 98.8 | 97.8 | 97.3 | 98.9 | 145.1 |
| 16000 | 99.1 | 99.4 | 101.5 | 100.2 | 101.2 | 103.4 | 100.1 | 98.9 | 96.6 | 94.3 | 92.9 | 92.9 | 95.4 | 145.5 |
| 20000 | 98.0 | 99.5 | 100.0 | 99.1 | 99.6 | 100.3 | 99.1 | 96.2 | 96.0 | 92.8 | 90.5 | 91.7 | 92.1 | 145.7 |
| 25000 | 95.1 | 96.8 | 97.1 | 96.7 | 97.2 | 100.2 | 97.5 | 94.5 | 94.4 | 91.6 | 89.5 | 89.9 | 90.4 | 146.2 |
| 31500 | 94.5 | 95.7 | 95.7 | 95.2 | 93.7 | 96.5 | 94.0 | 92.6 | 94.2 | 91.6 | 89.8 | 89.6 | 90.2 | 147.3 |
| 40000 | 90.0 | 91.1 | 92.2 | 92.1 | 89.0 | 93.1 | 90.1 | 89.7 | 88.1 | 85.6 | 84.0 | 84.0 | 84.0 | 147.2 |
| 50000 | 85.2 | 86.6 | 87.4 | 87.5 | 84.4 | 88.6 | 84.6 | 83.9 | 84.8 | 82.5 | 81.0 | 80.7 | 80.5 | 147.0 |
| 63000 | 78.1 | 79.7 | 80.8 | 80.0 | 78.9 | 83.4 | 78.6 | 79.7 | 77.5 | 74.2 | 74.3 | 72.4 | 72.4 | 146.1 |
| 80000 | 71.8 | 72.9 | 74.2 | 73.5 | 71.6 | 77.1 | 72.1 | 72.1 | 67.7 | 65.6 | 64.4 | 64.5 | 62.6 | 146.0 |

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| GASPL | 110.3 | 110.4 | 110.8 | 109.0 | 110.0 | 112.4 | 111.1 | 111.9 | 113.7 | 115.0 | 118.6 | 118.6 | 115.3 | 158.5 |
| PNL | 121.4 | 121.1 | 120.8 | 118.4 | 119.9 | 122.3 | 121.7 | 123.7 | 125.6 | 126.3 | 128.0 | 126.3 | 126.3 | |
| PNLT | 121.4 | 121.1 | 120.8 | 118.4 | 119.9 | 122.3 | 122.9 | 123.7 | 125.8 | 126.3 | 128.0 | 126.3 | 126.3 | |
| DBA | 194.2 | 195.4 | 196.6 | 196.0 | 194.2 | 199.2 | 194.4 | 194.6 | 191.9 | 189.7 | 188.4 | 188.4 | 187.0 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICL = ADH225 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 35.88 PAMB HG = 29.08 RELHUM = 44.5 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNHR = RPM V8 = 1320.4 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2160.8 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1908 TAPE = XT908F TEST PT NO = 1908 NC = AE089 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-ZER-1909 X1909C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.6 | 89.4 | 88.9 | 86.0 | 85.1 | 87.4 | 88.3 | 90.7 | 91.7 | 87.2 | 96.6 | 97.6 | 89.0 | 132.9 |
| 63 | 93.0 | 94.3 | 93.1 | 92.7 | 95.8 | 96.7 | 94.4 | 98.8 | 91.9 | 102.5 | 104.2 | 95.4 | 139.6 | |
| 80 | 93.3 | 97.8 | 93.9 | 94.5 | 98.8 | 96.7 | 96.9 | 98.1 | 97.4 | 101.8 | 101.5 | 87.1 | 139.5 | |
| 100 | 92.2 | 99.0 | 95.3 | 95.0 | 96.1 | 99.8 | 98.4 | 101.5 | 98.8 | 103.1 | 102.7 | 106.6 | 91.8 | 142.1 |
| 125 | 88.9 | 92.9 | 95.7 | 95.7 | 97.3 | 99.7 | 97.8 | 98.7 | 98.7 | 103.0 | 109.4 | 111.1 | 97.2 | 144.5 |
| 160 | 87.4 | 88.5 | 93.7 | 90.3 | 91.4 | 96.2 | 100.1 | 97.8 | 99.5 | 104.3 | 109.2 | 111.4 | 102.0 | 144.5 |
| 200 | 91.5 | 89.6 | 92.6 | 91.4 | 93.5 | 98.1 | 99.5 | 99.4 | 104.3 | 106.1 | 112.3 | 115.0 | 105.1 | 147.5 |
| 250 | 89.8 | 92.3 | 94.3 | 93.6 | 95.0 | 97.8 | 98.2 | 101.4 | 104.3 | 111.6 | 116.5 | 118.2 | 108.6 | 151.1 |
| 315 | 91.6 | 93.1 | 92.1 | 92.4 | 94.5 | 99.1 | 102.8 | 102.2 | 106.1 | 113.0 | 117.8 | 118.8 | 110.2 | 152.1 |
| 400 | 92.6 | 94.1 | 94.9 | 93.4 | 95.7 | 99.1 | 107.5 | 102.9 | 107.1 | 115.2 | 119.8 | 119.5 | 111.9 | 153.7 |
| 500 | 93.1 | 94.9 | 95.9 | 94.9 | 96.5 | 100.9 | 100.5 | 104.4 | 107.6 | 116.7 | 120.8 | 120.3 | 112.9 | 154.6 |
| 630 | 94.0 | 95.6 | 96.6 | 95.1 | 97.5 | 100.3 | 101.2 | 105.1 | 107.6 | 116.9 | 121.1 | 120.7 | 115.4 | 155.0 |
| 800 | 97.1 | 96.9 | 97.2 | 96.4 | 99.0 | 101.9 | 102.0 | 106.4 | 109.7 | 116.2 | 121.9 | 121.5 | 116.7 | 155.7 |
| 1000 | 101.5 | 103.3 | 101.1 | 99.4 | 99.7 | 103.3 | 102.7 | 106.6 | 109.8 | 114.9 | 120.5 | 121.5 | 111.6 | 155.1 |
| 1250 | 99.0 | 102.7 | 103.0 | 101.6 | 102.1 | 104.0 | 103.1 | 107.0 | 110.3 | 113.6 | 120.7 | 119.9 | 115.8 | 154.6 |
| 1600 | 98.4 | 98.8 | 99.7 | 99.4 | 100.8 | 104.2 | 104.0 | 107.9 | 110.7 | 112.8 | 119.7 | 118.8 | 114.0 | 153.7 |
| 2000 | 98.4 | 100.2 | 99.9 | 98.0 | 99.8 | 103.2 | 103.7 | 108.0 | 110.4 | 113.2 | 118.9 | 116.5 | 112.0 | 152.7 |
| 2500 | 96.3 | 98.7 | 99.2 | 98.2 | 99.8 | 102.9 | 103.6 | 107.2 | 109.6 | 113.7 | 117.7 | 114.7 | 111.2 | 151.9 |
| 3150 | 95.8 | 98.6 | 98.9 | 97.1 | 99.2 | 103.3 | 103.4 | 107.1 | 110.0 | 112.4 | 115.3 | 113.2 | 108.6 | 150.5 |
| 4000 | 94.0 | 97.2 | 98.6 | 97.2 | 99.4 | 102.8 | 103.0 | 107.5 | 109.0 | 111.0 | 114.4 | 109.9 | 106.7 | 149.4 |
| 5000 | 93.1 | 95.9 | 98.0 | 97.1 | 98.9 | 102.1 | 103.0 | 106.8 | 108.1 | 111.1 | 113.3 | 109.0 | 105.5 | 148.9 |
| 6300 | 93.0 | 97.5 | 98.3 | 97.6 | 99.4 | 103.1 | 103.1 | 107.1 | 107.9 | 109.9 | 111.8 | 107.5 | 104.2 | 148.4 |
| 8000 | 90.8 | 95.5 | 97.3 | 97.5 | 99.3 | 102.6 | 102.3 | 105.0 | 107.0 | 107.7 | 110.0 | 106.7 | 103.3 | 147.4 |
| 10000 | 91.0 | 95.3 | 97.1 | 97.7 | 99.5 | 102.8 | 102.5 | 105.3 | 106.0 | 106.2 | 109.0 | 105.6 | 102.7 | 147.2 |
| 12500 | 90.1 | 93.6 | 96.4 | 97.1 | 99.4 | 102.4 | 102.5 | 102.9 | 104.3 | 104.1 | 106.2 | 104.4 | 101.5 | 146.5 |
| 16000 | 89.6 | 94.8 | 95.0 | 95.8 | 98.4 | 101.7 | 101.0 | 102.1 | 102.6 | 102.5 | 104.2 | 101.7 | 98.2 | 146.4 |
| 20000 | 88.0 | 93.0 | 94.1 | 95.5 | 96.8 | 99.3 | 99.4 | 99.7 | 99.0 | 98.7 | 101.7 | 99.5 | 96.3 | 145.7 |
| 25000 | 85.4 | 90.5 | 92.0 | 93.3 | 94.6 | 98.2 | 97.6 | 96.5 | 96.5 | 94.4 | 95.9 | 95.9 | 90.6 | 145.2 |
| 31500 | 82.4 | 87.3 | 89.3 | 90.8 | 91.0 | 94.7 | 93.1 | 93.3 | 92.6 | 91.3 | 93.4 | 86.2 | 81.5 | 144.9 |
| 40000 | 77.8 | 83.2 | 84.6 | 85.3 | 85.1 | 90.8 | 89.1 | 89.4 | 89.4 | 88.1 | 89.4 | 86.2 | 81.5 | 144.9 |
| 50000 | 72.4 | 77.1 | 79.0 | 81.0 | 81.2 | 86.3 | 84.1 | 84.2 | 83.9 | 82.4 | 84.0 | 82.6 | 75.1 | 144.2 |
| 63000 | 66.8 | 72.1 | 75.1 | 76.0 | 77.0 | 81.8 | 77.8 | 80.0 | 80.0 | 77.2 | 79.3 | 76.0 | 69.7 | 144.8 |
| 80000 | 58.4 | 65.2 | 68.4 | 68.7 | 69.4 | 76.5 | 72.4 | 74.0 | 73.1 | 71.8 | 73.9 | 70.0 | 62.7 | 145.6 |
| OASPL | 109.0 | 111.5 | 111.9 | 111.0 | 112.5 | 115.8 | 116.4 | 119.0 | 121.4 | 126.0 | 130.9 | 130.5 | 124.8 | 165.6 |
| PNL | 120.7 | 123.4 | 123.9 | 122.6 | 124.4 | 128.0 | 128.4 | 131.8 | 134.1 | 137.5 | 141.8 | 140.1 | 135.2 | |
| PNLT | 121.9 | 124.5 | 123.9 | 123.1 | 125.0 | 128.0 | 129.7 | 132.4 | 134.1 | 137.5 | 142.4 | 140.1 | 135.2 | |
| DBA | 108.4 | 110.7 | 110.9 | 109.8 | 111.3 | 114.6 | 114.9 | 118.5 | 120.9 | 125.0 | 130.0 | 129.1 | 124.2 | |

ORIGINAL PAGE IS
OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICL = ADR219 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX1 FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.34 PAMB HG = 29.19 RELHUM = 39.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =
 FNINT = LBS XNL = RPM XNH = RPM V8 = 1509.5 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2333.8 FPS AE18 = 19.9 SQ IN
 RUNPT = 83F-ZER-1909 TAPE = X1909C TEST PT NO = 1909 NC = AE089 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-ZER-1909 X1909F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 88.6 | 89.4 | 88.9 | 86.0 | 85.1 | 87.4 | 88.3 | 90.7 | 91.7 | 87.2 | 96.6 | 97.6 | 89.0 | 132.9 |
| 63 | 93.0 | 94.3 | 99.1 | 93.1 | 92.7 | 95.8 | 96.7 | 94.4 | 98.8 | 91.9 | 102.5 | 104.2 | 95.4 | 139.6 |
| 80 | 93.3 | 97.8 | 93.8 | 93.9 | 94.5 | 98.8 | 96.7 | 96.9 | 98.1 | 97.4 | 101.8 | 101.5 | 87.1 | 139.5 |
| 100 | 92.2 | 99.0 | 95.3 | 95.0 | 96.1 | 99.8 | 98.4 | 101.5 | 98.8 | 103.1 | 102.7 | 106.6 | 91.8 | 142.1 |
| 125 | 88.9 | 92.9 | 95.7 | 97.3 | 97.3 | 99.7 | 97.8 | 98.7 | 98.7 | 103.0 | 109.4 | 111.1 | 97.2 | 144.5 |
| 160 | 87.4 | 88.5 | 93.7 | 90.3 | 91.4 | 96.2 | 100.1 | 97.8 | 99.5 | 104.3 | 109.2 | 111.4 | 102.0 | 144.5 |
| 200 | 91.5 | 89.6 | 92.6 | 91.4 | 93.5 | 98.1 | 99.5 | 99.4 | 104.3 | 106.1 | 112.3 | 115.0 | 105.1 | 147.5 |
| 250 | 89.8 | 92.3 | 94.3 | 93.6 | 95.0 | 97.8 | 98.2 | 101.4 | 104.3 | 111.6 | 116.5 | 118.2 | 108.6 | 151.1 |
| 315 | 91.6 | 93.1 | 92.1 | 92.4 | 94.5 | 99.1 | 102.8 | 102.2 | 106.1 | 113.0 | 117.8 | 118.8 | 110.2 | 152.1 |
| 400 | 92.6 | 94.1 | 94.9 | 93.4 | 95.7 | 99.1 | 107.5 | 102.9 | 107.1 | 115.2 | 119.8 | 119.5 | 111.9 | 153.7 |
| 500 | 93.1 | 94.9 | 95.9 | 94.9 | 96.5 | 100.9 | 100.5 | 104.4 | 107.6 | 116.7 | 120.8 | 120.3 | 112.9 | 154.6 |
| 630 | 94.0 | 95.6 | 96.6 | 95.1 | 97.5 | 100.3 | 101.2 | 105.1 | 107.6 | 116.9 | 121.1 | 120.7 | 115.4 | 155.0 |
| 800 | 97.1 | 96.9 | 97.2 | 96.4 | 99.0 | 101.9 | 102.0 | 106.4 | 109.7 | 116.2 | 121.9 | 121.5 | 116.7 | 155.7 |
| 1000 | 101.5 | 103.3 | 101.1 | 99.4 | 99.7 | 103.3 | 102.7 | 106.6 | 109.8 | 114.9 | 121.5 | 116.6 | 155.1 | |
| 1250 | 99.0 | 102.7 | 103.0 | 101.6 | 102.1 | 104.0 | 103.1 | 107.0 | 110.3 | 113.6 | 120.7 | 119.9 | 115.8 | 154.6 |
| 1600 | 98.4 | 98.8 | 99.7 | 99.4 | 100.8 | 104.2 | 104.0 | 107.9 | 110.7 | 112.8 | 119.7 | 118.8 | 114.0 | 153.7 |
| 2000 | 98.4 | 100.2 | 99.9 | 98.0 | 99.8 | 103.2 | 103.7 | 108.0 | 110.4 | 113.2 | 118.9 | 116.5 | 112.0 | 152.7 |
| 2500 | 96.3 | 98.7 | 98.2 | 98.2 | 99.8 | 102.9 | 103.6 | 107.2 | 109.6 | 113.7 | 114.7 | 111.2 | 151.9 | |
| 3150 | 95.8 | 98.6 | 98.9 | 97.1 | 99.2 | 103.3 | 103.4 | 107.1 | 110.0 | 112.4 | 115.3 | 113.2 | 108.6 | 150.5 |
| 4000 | 94.0 | 97.2 | 98.6 | 97.2 | 99.4 | 102.8 | 103.0 | 107.5 | 109.0 | 111.0 | 114.4 | 109.9 | 106.7 | 149.4 |
| 5000 | 93.1 | 96.9 | 98.0 | 97.1 | 98.9 | 102.1 | 103.0 | 106.8 | 108.1 | 111.1 | 113.3 | 109.0 | 105.5 | 148.9 |
| 6300 | 93.0 | 97.5 | 98.3 | 97.6 | 99.4 | 103.1 | 103.1 | 107.1 | 107.9 | 109.9 | 111.8 | 107.5 | 104.2 | 148.4 |
| 8000 | 90.8 | 95.5 | 97.3 | 97.5 | 99.3 | 102.6 | 102.3 | 105.5 | 107.0 | 110.0 | 106.7 | 103.3 | 147.4 | |
| 10000 | 91.0 | 95.3 | 97.1 | 97.7 | 99.5 | 102.8 | 102.5 | 105.3 | 106.0 | 106.2 | 109.0 | 105.6 | 102.7 | 147.2 |
| 12500 | 90.1 | 93.6 | 96.4 | 97.1 | 99.4 | 102.4 | 102.5 | 102.9 | 104.3 | 104.3 | 106.2 | 104.4 | 101.5 | 146.5 |
| 16000 | 89.6 | 94.8 | 96.0 | 96.8 | 98.4 | 101.7 | 101.0 | 102.1 | 102.6 | 102.5 | 104.2 | 101.7 | 98.2 | 146.4 |
| 20000 | 88.0 | 93.0 | 94.1 | 95.5 | 96.8 | 99.3 | 99.4 | 99.7 | 99.0 | 98.7 | 101.7 | 99.5 | 95.3 | 145.7 |
| 25000 | 85.4 | 90.5 | 92.0 | 93.3 | 94.6 | 98.2 | 97.6 | 96.5 | 96.5 | 94.4 | 95.9 | 95.9 | 90.6 | 145.2 |
| 31500 | 82.4 | 87.3 | 89.3 | 90.8 | 91.0 | 94.7 | 93.1 | 93.3 | 92.6 | 91.3 | 86.2 | 86.2 | 144.9 | |
| 40000 | 77.8 | 83.2 | 84.6 | 86.3 | 86.1 | 90.8 | 89.1 | 89.4 | 89.4 | 88.1 | 89.4 | 86.2 | 81.5 | 144.9 |
| 50000 | 72.4 | 77.1 | 79.0 | 81.0 | 81.2 | 86.3 | 84.1 | 84.2 | 83.9 | 82.4 | 84.0 | 82.6 | 75.1 | 144.2 |
| 63000 | 66.8 | 72.1 | 75.1 | 76.0 | 77.0 | 81.8 | 77.8 | 80.0 | 80.0 | 77.2 | 79.3 | 76.0 | 69.7 | 144.8 |
| 80000 | 59.4 | 65.2 | 68.4 | 68.7 | 69.4 | 76.5 | 72.4 | 74.0 | 73.1 | 71.8 | 73.9 | 70.0 | 62.7 | 145.6 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICL = ADH219 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.34 PAMB HG = 29.19 RELHUM = 39.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL RPM XNH RPM V8 = 1509.5 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNL RPM XNH RPM V18 = 2333.8 FPS AE18 = 19.9 SQ IN

NPT 3F-7 908 PIPE 9F 19 PT 19 AEC IRR SPEC RPT

IDENTIFICATION - 83F-ZER-1909 X19091

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| 50 | 67.4 | 70.5 | 70.6 | 71.6 | 74.1 | 78.8 | 82.3 | 81.3 | 84.6 | 90.3 | 93.7 | 92.4 | 80.5 | 167.4 |
| 63 | 68.4 | 71.4 | 73.3 | 72.5 | 75.3 | 78.8 | 87.0 | 82.0 | 85.5 | 92.5 | 95.6 | 93.1 | 82.1 | 169.0 |
| 80 | 68.8 | 72.2 | 74.3 | 74.0 | 76.0 | 80.5 | 80.0 | 83.5 | 86.0 | 94.0 | 96.6 | 93.8 | 83.1 | 169.9 |
| 100 | 69.7 | 72.8 | 74.9 | 74.2 | 76.9 | 79.9 | 80.7 | 84.2 | 85.9 | 94.1 | 96.7 | 94.1 | 85.4 | 170.3 |
| 125 | 72.6 | 74.0 | 75.4 | 75.4 | 78.4 | 81.4 | 81.4 | 85.4 | 87.9 | 93.4 | 97.4 | 94.8 | 86.4 | 171.0 |
| 160 | 76.9 | 80.3 | 79.2 | 78.2 | 79.0 | 82.7 | 82.0 | 85.5 | 87.9 | 91.9 | 95.9 | 94.5 | 86.0 | 170.4 |
| 200 | 74.1 | 79.5 | 80.9 | 80.3 | 81.2 | 83.2 | 82.2 | 85.7 | 88.2 | 90.4 | 95.8 | 92.6 | 84.7 | 169.8 |
| 250 | 73.2 | 76.3 | 77.4 | 77.8 | 79.7 | 83.2 | 82.9 | 86.3 | 88.4 | 89.3 | 94.4 | 91.1 | 82.2 | 168.9 |
| 315 | 72.7 | 76.3 | 77.2 | 76.1 | 78.4 | 81.9 | 82.3 | 86.1 | 87.7 | 89.3 | 93.2 | 88.2 | 79.4 | 168.0 |
| 400 | 70.1 | 74.3 | 76.2 | 76.0 | 78.1 | 81.4 | 81.9 | 85.0 | 86.6 | 89.4 | 91.5 | 85.7 | 77.6 | 167.1 |
| 500 | 69.1 | 73.9 | 75.5 | 74.6 | 77.2 | 81.4 | 81.4 | 84.6 | 86.6 | 87.6 | 88.6 | 83.5 | 74.0 | 165.8 |
| 600 | 66.8 | 72.0 | 74.8 | 74.3 | 77.0 | 80.6 | 80.6 | 84.7 | 85.2 | 85.8 | 87.1 | 79.5 | 71.0 | 164.7 |
| 800 | 65.2 | 70.3 | 73.8 | 73.9 | 76.2 | 79.6 | 80.3 | 83.6 | 83.9 | 85.4 | 85.5 | 77.8 | 68.5 | 164.2 |
| 1000 | 64.6 | 71.4 | 73.7 | 74.0 | 76.4 | 80.3 | 80.1 | 83.5 | 83.3 | 83.8 | 83.4 | 75.5 | 66.0 | 163.6 |
| 1250 | 61.7 | 68.9 | 72.4 | 73.6 | 76.1 | 79.5 | 79.1 | 81.6 | 82.1 | 81.1 | 81.0 | 73.7 | 63.4 | 162.7 |
| 1600 | 60.8 | 67.9 | 71.5 | 73.2 | 75.7 | 79.2 | 78.7 | 80.8 | 80.3 | 78.7 | 78.8 | 71.0 | 60.2 | 162.5 |
| 2000 | 58.4 | 65.0 | 69.9 | 71.8 | 74.9 | 77.7 | 77.9 | 77.7 | 75.5 | 74.5 | 67.6 | 55.4 | 55.4 | 161.7 |
| 2500 | 55.7 | 64.6 | 68.2 | 70.5 | 72.9 | 76.4 | 75.5 | 75.8 | 74.8 | 72.2 | 70.2 | 61.7 | 46.8 | 161.7 |
| 3150 | 50.2 | 59.7 | 63.8 | 67.0 | 69.3 | 72.2 | 71.9 | 71.2 | 68.7 | 65.4 | 63.8 | 53.9 | 35.9 | 161.0 |
| 4000 | 40.5 | 51.8 | 57.1 | 60.8 | 63.3 | 67.4 | 66.3 | 64.0 | 61.6 | 55.6 | 51.0 | 40.6 | 15.0 | 160.5 |
| 5000 | 26.9 | 40.2 | 47.4 | 52.0 | 54.0 | 58.2 | 56.1 | 54.5 | 50.6 | 44.2 | 37.9 | 21.5 | 160.2 | 160.2 |
| 6300 | 4.1 | 21.4 | 30.2 | 36.3 | 38.6 | 44.0 | 41.5 | 39.4 | 35.0 | 26.3 | 15.7 | 160.2 | 160.2 | 160.2 |
| 8000 | 2.2 | 10.9 | 14.6 | 20.8 | 17.5 | 14.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 7.1 | 169.5 |
| 10000 | | | | | | | | | | | | | | 160.0 |
| 12500 | | | | | | | | | | | | | | 160.8 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

MODEL AREA = 268.1 SQ CM (41.6 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.804 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/MAS3-22137

VEHICL = ADH219 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.34 PAMB HG = 29.19 RELHUM = 39.0 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNL RPM XNH RPM V8 = 1509.5 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2333.8 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1909 TAPE = X19091 TEST PT NO = 1909 NC = AE089 CORR FAN SPEED = RPM

C-6

IDENTIFICATION - MODEL 83F-400-1910 X1910C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 91.9 | 91.4 | 89.7 | 86.5 | 84.8 | 86.9 | 87.8 | 90.7 | 90.2 | 92.5 | 94.9 | 96.3 | 90.5 | 132.9 |
| 63 | 93.0 | 95.5 | 99.6 | 94.1 | 90.7 | 94.1 | 95.5 | 96.9 | 94.6 | 95.7 | 96.8 | 98.2 | 95.9 | 137.8 |
| 80 | 93.0 | 97.8 | 93.6 | 94.6 | 95.0 | 98.6 | 96.2 | 96.6 | 96.8 | 98.6 | 100.3 | 100.2 | 89.4 | 139.1 |
| 100 | 91.5 | 97.0 | 93.3 | 92.5 | 93.9 | 98.0 | 99.8 | 99.8 | 97.0 | 98.6 | 100.2 | 105.6 | 92.6 | 140.2 |
| 125 | 89.6 | 91.7 | 94.4 | 95.0 | 96.8 | 98.7 | 97.1 | 97.0 | 96.2 | 101.3 | 106.4 | 109.6 | 96.7 | 142.7 |
| 160 | 87.2 | 84.7 | 90.7 | 88.0 | 89.9 | 93.5 | 97.9 | 94.5 | 96.7 | 101.7 | 106.7 | 109.4 | 100.5 | 142.2 |
| 200 | 87.0 | 87.8 | 89.1 | 87.1 | 89.5 | 93.3 | 96.0 | 95.9 | 100.8 | 104.2 | 107.5 | 112.0 | 103.1 | 144.1 |
| 250 | 86.0 | 88.8 | 89.6 | 89.1 | 91.0 | 94.1 | 95.5 | 97.6 | 100.8 | 106.6 | 112.3 | 115.5 | 105.4 | 147.5 |
| 315 | 85.8 | 88.6 | 89.6 | 88.7 | 90.8 | 94.9 | 98.5 | 98.2 | 101.6 | 107.4 | 113.1 | 115.8 | 106.9 | 148.1 |
| 400 | 87.3 | 88.6 | 90.6 | 88.7 | 92.0 | 94.6 | 104.0 | 98.4 | 101.1 | 108.3 | 115.6 | 116.0 | 106.4 | 149.3 |
| 500 | 87.3 | 89.6 | 91.1 | 89.9 | 91.8 | 95.9 | 96.0 | 99.7 | 102.1 | 109.4 | 116.6 | 116.3 | 104.4 | 149.9 |
| 630 | 88.3 | 89.8 | 91.6 | 90.1 | 92.5 | 96.1 | 96.5 | 100.4 | 102.1 | 109.2 | 116.3 | 115.0 | 102.6 | 149.3 |
| 800 | 89.8 | 90.1 | 90.9 | 90.7 | 93.8 | 96.9 | 97.3 | 101.7 | 104.4 | 110.1 | 115.9 | 113.3 | 100.9 | 148.9 |
| 1000 | 91.5 | 92.3 | 93.3 | 92.1 | 94.0 | 97.8 | 98.2 | 101.9 | 104.1 | 108.9 | 113.8 | 110.7 | 98.9 | 147.2 |
| 1250 | 90.2 | 94.5 | 93.8 | 92.6 | 94.6 | 98.0 | 97.9 | 102.3 | 105.3 | 108.5 | 111.7 | 106.1 | 96.8 | 145.8 |
| 1600 | 91.1 | 92.3 | 93.5 | 92.8 | 94.8 | 98.7 | 99.5 | 103.3 | 105.2 | 107.9 | 110.7 | 103.8 | 95.0 | 145.2 |
| 2000 | 91.1 | 91.7 | 92.6 | 92.0 | 94.6 | 98.7 | 98.9 | 103.7 | 104.8 | 106.9 | 108.9 | 101.0 | 94.5 | 144.2 |
| 2500 | 90.5 | 91.9 | 92.7 | 91.9 | 95.0 | 98.9 | 99.1 | 103.0 | 104.6 | 106.4 | 108.1 | 100.4 | 94.9 | 143.8 |
| 3150 | 91.2 | 92.6 | 93.1 | 91.6 | 94.7 | 99.2 | 99.4 | 103.6 | 104.7 | 105.9 | 107.0 | 99.4 | 93.8 | 143.6 |
| 4000 | 91.8 | 92.9 | 93.8 | 91.9 | 95.3 | 98.5 | 98.9 | 103.5 | 104.7 | 105.4 | 106.1 | 99.4 | 93.9 | 143.3 |
| 5000 | 93.0 | 93.9 | 95.0 | 92.6 | 95.1 | 98.1 | 99.0 | 103.1 | 104.1 | 104.9 | 105.8 | 99.2 | 93.0 | 143.1 |
| 6300 | 93.7 | 96.0 | 95.3 | 94.1 | 95.4 | 99.3 | 99.4 | 103.3 | 104.4 | 105.0 | 105.5 | 98.5 | 93.2 | 143.7 |
| 8000 | 92.8 | 95.2 | 96.1 | 95.0 | 97.1 | 99.4 | 99.9 | 101.5 | 103.8 | 103.9 | 104.1 | 98.2 | 92.8 | 143.2 |
| 10000 | 93.0 | 94.9 | 96.7 | 95.7 | 97.8 | 100.3 | 99.6 | 102.1 | 103.0 | 103.4 | 103.8 | 97.2 | 92.5 | 143.8 |
| 12500 | 92.7 | 94.2 | 96.0 | 95.9 | 98.5 | 100.8 | 100.1 | 100.3 | 100.9 | 101.0 | 101.1 | 96.3 | 91.5 | 143.4 |
| 16000 | 92.5 | 95.5 | 96.1 | 95.7 | 97.8 | 100.0 | 99.4 | 100.0 | 100.3 | 99.7 | 99.1 | 95.1 | 89.6 | 144.1 |
| 20000 | 90.9 | 93.4 | 94.3 | 94.6 | 96.2 | 98.7 | 98.1 | 98.1 | 97.4 | 96.3 | 95.1 | 92.4 | 88.0 | 143.8 |
| 25000 | 88.4 | 92.0 | 92.2 | 92.8 | 94.0 | 97.9 | 96.2 | 95.9 | 94.2 | 92.9 | 91.6 | 89.9 | 83.6 | 144.1 |
| 31500 | 84.6 | 87.8 | 89.6 | 90.1 | 90.7 | 94.6 | 92.6 | 92.8 | 90.6 | 89.1 | 87.6 | 85.3 | 79.1 | 143.9 |
| 40000 | 79.8 | 83.6 | 85.4 | 86.0 | 86.1 | 91.3 | 88.5 | 89.4 | 87.7 | 86.1 | 84.6 | 81.2 | 74.9 | 144.2 |
| 50000 | 74.6 | 77.9 | 79.2 | 80.5 | 80.6 | 86.3 | 83.3 | 84.2 | 81.9 | 80.6 | 79.3 | 75.8 | 69.1 | 143.2 |
| 63000 | 69.0 | 72.6 | 74.8 | 75.0 | 76.2 | 81.8 | 77.3 | 79.5 | 78.3 | 75.9 | 73.5 | 70.0 | 62.4 | 143.8 |
| 80000 | 62.3 | 64.9 | 67.7 | 67.4 | 68.6 | 75.3 | 71.1 | 72.5 | 70.9 | 69.2 | 67.4 | 63.5 | 54.9 | 143.7 |
| GASPL | 105.5 | 107.8 | 108.5 | 107.3 | 109.3 | 112.4 | 113.0 | 115.2 | 116.8 | 120.1 | 124.9 | 124.4 | 114.3 | 160.3 |
| PNL | 117.0 | 118.8 | 119.5 | 117.8 | 120.4 | 124.0 | 124.5 | 127.9 | 129.3 | 131.6 | 134.3 | 131.8 | 122.8 | |
| PNLT | 117.0 | 118.8 | 119.5 | 118.6 | 121.2 | 124.0 | 125.7 | 127.9 | 129.3 | 131.6 | 134.3 | 131.8 | 122.8 | |
| DBA | 103.1 | 104.7 | 105.5 | 104.2 | 106.7 | 110.1 | 110.7 | 114.3 | 115.0 | 118.9 | 123.0 | 120.5 | 110.3 | |

NASA DUAL FLOW THERMAL SHIELD/OFTAS-19/NAS3-22137

| | | | | | | |
|----------------------|----------------------|------------------------|--------------------|-----------------|------------------|------|
| VERTICL = ADR223 | TEST DATE = 04-18-83 | LOCAT = C41 ANECH'CH | CONFIG = 19 | MODEL = AX | FLTVEL = 400 | FPS |
| IAPLHA = SB59 | IEGA = NG | PWL AREA = FULL SPHERE | TAMB F = 35.66 | PAMB HG = 29.07 | RELHUM = 43.4 | PCT |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | MIKE HT = | NBFR = | |
| FNTNT = | LBS XNLR = | RPM | XNH = | V8 = 1503.2 | FPS AE8 = | 4.0 |
| FNRAMB = | LBS XNLR = | RPM | XNHR = | V18 = 2335.4 | FPS AE18 = | 19.9 |
| RUNPT = 83F-400-1910 | TAPE = X1910C | TEST PT NO = 1910 | NC = | AE089 | CORR FAN SPEED = | RPM |

DATPROC - FLTRAN

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1910 X1910F

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

FREQ

50

53

60

100

125

160

200

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 250 | 93.9 | 95.3 | 94.5 | 92.4 | 92.6 | 94.1 | 93.6 | 94.0 | 99.6 | 104.8 | 110.3 | 113.6 | 106.8 | 145.9 |
| 315 | 93.9 | 95.3 | 94.5 | 92.4 | 92.6 | 95.1 | 97.7 | 96.4 | 99.0 | 105.7 | 112.9 | 114.5 | 107.7 | 147.3 |
| 400 | 93.5 | 95.0 | 94.6 | 92.1 | 93.8 | 94.9 | 103.1 | 96.4 | 100.1 | 106.9 | 114.2 | 115.5 | 107.3 | 148.5 |
| 500 | 95.0 | 95.6 | 95.6 | 92.1 | 93.7 | 96.2 | 95.1 | 97.6 | 100.4 | 107.1 | 114.5 | 115.3 | 107.7 | 148.5 |
| 630 | 95.0 | 96.0 | 96.1 | 93.4 | 94.4 | 96.5 | 95.6 | 98.4 | 103.1 | 108.6 | 114.8 | 115.1 | 108.9 | 148.8 |
| 800 | 96.0 | 96.2 | 96.6 | 93.6 | 95.8 | 97.4 | 96.5 | 99.8 | 103.4 | 108.2 | 113.7 | 114.1 | 109.5 | 148.1 |
| 1000 | 97.5 | 96.6 | 96.0 | 94.3 | 96.1 | 98.5 | 97.6 | 100.2 | 104.4 | 107.4 | 111.4 | 109.3 | 107.4 | 146.1 |
| 1250 | 99.2 | 98.8 | 98.4 | 95.8 | 96.9 | 98.8 | 97.3 | 100.5 | 104.4 | 106.9 | 110.3 | 106.9 | 106.6 | 145.3 |
| 1600 | 97.9 | 101.0 | 98.9 | 96.4 | 97.3 | 99.7 | 99.1 | 101.7 | 104.3 | 106.1 | 108.8 | 104.4 | 105.4 | 144.8 |
| 2000 | 98.8 | 98.8 | 98.7 | 96.7 | 97.2 | 100.0 | 98.8 | 102.4 | 104.6 | 106.3 | 108.8 | 104.6 | 105.6 | 145.0 |
| 2500 | 98.8 | 98.2 | 97.9 | 96.0 | 98.0 | 100.5 | 99.4 | 102.1 | 105.1 | 106.1 | 108.1 | 104.0 | 106.0 | 144.8 |
| 3150 | 98.2 | 98.5 | 98.1 | 96.1 | 98.5 | 101.3 | 100.1 | 103.1 | 106.0 | 106.5 | 107.8 | 104.5 | 106.6 | 145.3 |
| 4000 | 101.6 | 101.5 | 100.4 | 97.1 | 99.0 | 101.1 | 100.5 | 103.8 | 105.4 | 105.9 | 107.4 | 104.3 | 105.5 | 145.4 |
| 5000 | 99.3 | 99.6 | 99.5 | 96.6 | 99.1 | 101.1 | 100.7 | 103.5 | 105.9 | 106.3 | 107.5 | 103.9 | 106.1 | 145.5 |
| 6300 | 100.5 | 100.6 | 100.8 | 97.4 | 100.4 | 102.3 | 101.4 | 103.9 | 105.8 | 105.7 | 106.6 | 104.2 | 106.1 | 145.9 |
| 8000 | 101.0 | 102.5 | 102.0 | 98.8 | 101.2 | 102.4 | 101.0 | 102.4 | 105.5 | 105.7 | 106.8 | 103.6 | 106.2 | 146.4 |
| 10000 | 99.9 | 101.6 | 101.6 | 99.5 | 101.9 | 103.3 | 101.9 | 103.2 | 104.6 | 104.5 | 105.1 | 103.3 | 105.6 | 146.6 |
| 12500 | 99.9 | 101.0 | 101.9 | 100.0 | 103.1 | 103.8 | 102.5 | 102.1 | 104.7 | 104.0 | 104.0 | 103.2 | 104.7 | 147.3 |
| 16000 | 101.8 | 102.1 | 102.4 | 100.8 | 101.9 | 103.0 | 101.8 | 101.8 | 100.1 | 98.5 | 97.7 | 98.0 | 100.4 | 147.2 |
| 20000 | 98.5 | 100.7 | 100.4 | 99.0 | 100.2 | 101.7 | 99.6 | 98.3 | 97.2 | 95.4 | 94.4 | 95.6 | 95.3 | 146.7 |
| 25000 | 96.3 | 98.0 | 98.0 | 97.3 | 98.6 | 100.9 | 97.7 | 95.9 | 94.3 | 92.3 | 91.2 | 91.9 | 92.6 | 147.1 |
| 31500 | 95.7 | 98.1 | 96.9 | 95.8 | 95.3 | 97.6 | 94.0 | 92.7 | 93.6 | 92.2 | 91.4 | 91.0 | 91.7 | 148.3 |
| 40000 | 91.1 | 93.0 | 93.4 | 92.3 | 90.7 | 94.3 | 90.3 | 90.2 | 87.8 | 86.5 | 85.9 | 85.5 | 85.7 | 148.2 |
| 50000 | 85.9 | 88.8 | 87.9 | 85.2 | 85.3 | 85.0 | 84.7 | 85.0 | 84.1 | 82.9 | 83.1 | 82.9 | 82.9 | 148.0 |
| 63000 | 79.7 | 81.8 | 81.7 | 81.4 | 80.8 | 84.8 | 79.3 | 80.6 | 80.1 | 78.7 | 78.2 | 77.9 | 76.7 | 147.8 |
| 80000 | 72.7 | 75.0 | 75.8 | 74.4 | 73.2 | 78.3 | 73.0 | 73.6 | 70.2 | 68.9 | 68.4 | 68.1 | 66.9 | 147.4 |

| | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 80000 | 112.0 | 112.6 | 110.3 | 112.1 | 113.9 | 113.1 | 114.5 | 116.9 | 119.0 | 123.4 | 123.4 | 119.5 | 161.1 |
| PNL | 123.7 | 124.0 | 123.4 | 120.5 | 122.4 | 124.5 | 123.9 | 126.5 | 129.0 | 130.5 | 133.1 | 131.1 | 130.7 |
| PNLT | 123.7 | 124.0 | 123.4 | 120.5 | 122.4 | 124.5 | 123.9 | 126.5 | 129.0 | 130.5 | 133.1 | 131.1 | 130.7 |
| DBA | 195.3 | 197.5 | 198.0 | 197.0 | 195.8 | 200.4 | 195.2 | 195.8 | 194.1 | 192.6 | 192.0 | 191.8 | 190.8 |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICL = ADH223 TEST DATE = 04-16-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 35.66 PAMB HG = 29.07 RELHUM = 43.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FNIN1 = LBS XNL RPM XNH RPM V6 = 1503.2 FPS AEB = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM XNHR RPM V18 = 2335.4 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1910 TAPE = X1910F TEST PT NO = 1910 NC = AE089 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1910 X19101

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|-------|
| 50 | 69.8 | 72.6 | 72.9 | 71.6 | 72.1 | 74.8 | 77.2 | 75.5 | 77.4 | 83.1 | 88.1 | 88.1 | 78.0 | 162.6 |
| 63 | 69.3 | 72.3 | 73.0 | 71.2 | 73.4 | 74.5 | 82.6 | 75.5 | 78.5 | 84.2 | 90.0 | 89.1 | 77.5 | 163.8 |
| 80 | 70.7 | 72.3 | 74.0 | 71.2 | 73.2 | 75.9 | 74.6 | 76.7 | 78.7 | 84.4 | 90.3 | 88.8 | 77.8 | 163.7 |
| 100 | 70.7 | 73.3 | 74.4 | 72.4 | 73.9 | 76.1 | 75.1 | 77.4 | 81.4 | 85.8 | 90.5 | 88.5 | 78.8 | 164.1 |
| 125 | 71.5 | 73.4 | 74.8 | 72.6 | 75.2 | 76.9 | 75.9 | 78.7 | 81.6 | 85.3 | 89.3 | 87.3 | 79.3 | 163.4 |
| 160 | 72.9 | 73.5 | 74.1 | 73.1 | 75.4 | 77.9 | 76.9 | 79.0 | 82.5 | 84.4 | 86.7 | 82.3 | 76.8 | 161.3 |
| 200 | 74.3 | 75.5 | 76.3 | 74.4 | 76.0 | 78.0 | 76.4 | 79.2 | 82.3 | 83.6 | 85.4 | 79.6 | 74.5 | 160.6 |
| 250 | 72.6 | 77.5 | 76.6 | 74.8 | 75.2 | 78.8 | 78.0 | 80.1 | 82.0 | 82.6 | 83.6 | 76.6 | 73.7 | 160.1 |
| 315 | 73.1 | 74.9 | 76.1 | 74.9 | 75.8 | 78.7 | 77.4 | 80.5 | 82.0 | 82.4 | 83.1 | 76.3 | 74.1 | 160.3 |
| 400 | 72.6 | 73.9 | 74.9 | 73.8 | 76.3 | 79.0 | 77.7 | 79.9 | 82.1 | 81.8 | 81.9 | 75.0 | 72.4 | 160.1 |
| 500 | 71.5 | 73.8 | 74.7 | 73.6 | 76.5 | 79.4 | 78.0 | 80.6 | 82.6 | 81.7 | 81.1 | 74.8 | 71.9 | 160.5 |
| 630 | 74.4 | 76.3 | 76.6 | 74.3 | 76.7 | 78.9 | 78.1 | 81.0 | 81.6 | 80.7 | 80.1 | 73.9 | 69.8 | 160.7 |
| 800 | 71.5 | 74.0 | 75.3 | 73.4 | 76.5 | 78.6 | 78.1 | 80.2 | 81.8 | 80.6 | 79.6 | 72.7 | 69.1 | 160.8 |
| 1000 | 72.1 | 74.5 | 76.3 | 73.9 | 77.4 | 79.5 | 78.4 | 80.4 | 81.3 | 79.7 | 78.2 | 72.1 | 67.8 | 161.2 |
| 1250 | 71.9 | 75.9 | 77.0 | 74.9 | 77.9 | 79.3 | 77.7 | 78.5 | 80.6 | 79.1 | 77.7 | 70.6 | 66.4 | 161.7 |
| 1600 | 69.7 | 74.2 | 75.9 | 75.0 | 78.0 | 79.7 | 78.0 | 78.7 | 79.0 | 77.1 | 74.9 | 68.7 | 63.1 | 161.9 |
| 2000 | 68.2 | 72.5 | 75.4 | 74.7 | 78.6 | 79.5 | 78.0 | 78.2 | 75.4 | 72.3 | 66.4 | 58.7 | 56.7 | 162.6 |
| 2500 | 67.9 | 71.9 | 74.6 | 74.5 | 76.4 | 77.8 | 76.3 | 75.9 | 72.3 | 68.3 | 63.8 | 58.0 | 49.0 | 162.4 |
| 3150 | 60.5 | 67.4 | 70.1 | 70.6 | 72.8 | 74.6 | 72.1 | 69.8 | 66.9 | 62.1 | 56.5 | 50.1 | 35.9 | 162.0 |
| 4000 | 51.4 | 59.2 | 63.0 | 64.8 | 67.4 | 70.0 | 66.4 | 63.4 | 59.4 | 53.6 | 46.3 | 36.6 | 17.0 | 162.3 |
| 5000 | 40.2 | 50.9 | 54.9 | 57.0 | 58.3 | 61.1 | 56.9 | 53.9 | 51.6 | 45.0 | 35.9 | 21.2 | | 163.6 |
| 6300 | 17.4 | 31.3 | 38.9 | 42.3 | 43.1 | 47.5 | 42.7 | 40.2 | 33.3 | 24.7 | 12.2 | | | 163.4 |
| 8000 | 0.9 | 12.0 | 17.7 | 18.6 | 23.8 | 18.4 | 14.6 | 9.3 | | | | | | 163.3 |
| 10000 | | | | | | | | | | | | | | 163.0 |
| 12500 | | | | | | | | | | | | | | 162.7 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | |
|-------|------|------|------|------|------|-------|-------|-------|-------|-------|-------|-------|------|-------|
| GASPL | 84.3 | 85.9 | 88.0 | 86.4 | 88.9 | 90.9 | 90.5 | 91.5 | 93.4 | 95.0 | 98.3 | 96.0 | 87.2 | 176.2 |
| PWL | 91.6 | 95.3 | 97.3 | 96.6 | 99.0 | 100.8 | 99.6 | 100.4 | 99.6 | 100.4 | 99.5 | 100.0 | 95.9 | 88.7 |
| PWLT | 92.9 | 96.5 | 97.9 | 97.2 | 99.5 | 101.3 | 100.0 | 100.2 | 101.6 | 100.8 | 101.4 | 95.9 | 88.7 | |
| DBA | 80.7 | 83.9 | 85.5 | 84.2 | 87.1 | 88.9 | 87.5 | 88.6 | 89.7 | 88.5 | 88.0 | 82.1 | 77.6 | |

MODEL AREA = 268.1 SQ CM (41.6 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.804 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICL = ADH223 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 35.66 PAMB HG = 29.07 RELHUM = 43.4 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNLR = RPM XNH = RPM V8 = 1503.2 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2335.4 FPS AE18 = 19.9 SQ IN

IDENTIFICATION - MODEL 83F-ZER-1911 X1911C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 90.9 | 91.4 | 90.9 | 86.7 | 86.8 | 89.4 | 92.8 | 92.0 | 93.2 | 90.5 | 97.4 | 97.6 | 93.2 | 134.4 |
| 63 | 95.0 | 96.3 | 99.6 | 94.6 | 95.2 | 98.8 | 100.0 | 95.9 | 98.8 | 97.1 | 102.8 | 101.2 | 96.6 | 140.4 |
| 80 | 95.8 | 100.6 | 96.1 | 96.4 | 97.0 | 101.1 | 99.0 | 98.9 | 99.6 | 99.9 | 104.3 | 103.7 | 92.6 | 141.8 |
| 100 | 94.5 | 102.0 | 97.8 | 97.8 | 98.4 | 102.5 | 100.6 | 103.5 | 101.0 | 105.1 | 105.5 | 109.4 | 96.1 | 144.6 |
| 125 | 92.4 | 94.9 | 98.7 | 98.2 | 100.1 | 102.4 | 101.8 | 101.7 | 101.7 | 105.5 | 111.9 | 114.1 | 100.7 | 147.3 |
| 160 | 89.2 | 91.0 | 95.7 | 92.0 | 93.4 | 98.2 | 105.9 | 100.8 | 103.2 | 107.3 | 112.2 | 114.4 | 105.3 | 147.7 |
| 200 | 93.8 | 91.8 | 94.8 | 93.9 | 96.0 | 100.1 | 103.5 | 101.6 | 106.6 | 108.9 | 114.0 | 117.2 | 107.9 | 149.7 |
| 250 | 92.3 | 94.5 | 96.1 | 95.9 | 97.2 | 99.8 | 100.7 | 103.4 | 106.6 | 114.4 | 118.5 | 120.2 | 111.1 | 153.2 |
| 315 | 93.3 | 94.9 | 94.9 | 94.4 | 96.5 | 101.4 | 105.3 | 104.7 | 108.9 | 116.7 | 120.3 | 120.8 | 112.7 | 154.7 |
| 400 | 95.1 | 95.3 | 95.6 | 95.4 | 97.5 | 101.4 | 110.0 | 105.2 | 109.4 | 118.4 | 122.1 | 121.3 | 114.2 | 156.0 |
| 500 | 96.1 | 97.1 | 98.1 | 96.7 | 98.3 | 103.4 | 103.0 | 106.4 | 110.1 | 120.0 | 123.6 | 122.8 | 115.9 | 157.4 |
| 630 | 97.0 | 97.8 | 98.6 | 97.4 | 99.5 | 103.1 | 103.7 | 106.9 | 110.3 | 120.4 | 124.3 | 122.7 | 117.6 | 157.9 |
| 800 | 100.1 | 99.4 | 99.4 | 98.4 | 101.0 | 104.1 | 104.5 | 108.7 | 112.4 | 119.7 | 125.9 | 123.3 | 118.4 | 158.8 |
| 1000 | 102.0 | 104.1 | 102.3 | 100.9 | 101.7 | 105.6 | 104.7 | 105.1 | 112.6 | 118.9 | 125.8 | 122.7 | 118.1 | 158.6 |
| 1250 | 100.9 | 105.2 | 104.5 | 102.9 | 103.9 | 106.2 | 105.6 | 109.5 | 113.5 | 118.1 | 125.0 | 120.6 | 116.3 | 157.7 |
| 1600 | 101.6 | 102.3 | 103.2 | 101.6 | 102.8 | 106.7 | 106.5 | 110.6 | 113.7 | 117.3 | 124.7 | 118.6 | 114.2 | 157.1 |
| 2000 | 102.4 | 103.2 | 102.9 | 101.5 | 102.6 | 106.4 | 106.4 | 110.7 | 113.4 | 118.1 | 122.9 | 116.2 | 113.2 | 156.0 |
| 2500 | 99.8 | 102.4 | 102.5 | 101.7 | 102.8 | 105.4 | 106.4 | 110.2 | 112.6 | 118.2 | 121.1 | 115.2 | 111.9 | 155.0 |
| 3150 | 98.7 | 101.6 | 102.4 | 100.6 | 102.7 | 107.3 | 106.4 | 110.4 | 113.0 | 117.6 | 119.3 | 113.2 | 109.3 | 154.0 |
| 4000 | 97.0 | 100.2 | 101.5 | 99.9 | 102.6 | 106.3 | 105.9 | 110.5 | 112.2 | 115.7 | 117.9 | 111.4 | 108.2 | 152.8 |
| 5000 | 95.6 | 98.9 | 101.0 | 100.4 | 102.1 | 105.8 | 105.7 | 109.8 | 111.4 | 115.8 | 117.0 | 110.8 | 106.7 | 152.5 |
| 6300 | 94.1 | 99.5 | 101.0 | 100.1 | 102.1 | 106.3 | 106.1 | 110.1 | 111.6 | 114.4 | 115.3 | 109.5 | 106.0 | 151.9 |
| 8000 | 94.1 | 98.5 | 100.3 | 100.2 | 101.9 | 105.7 | 105.4 | 108.5 | 110.0 | 112.4 | 113.8 | 107.7 | 105.8 | 150.8 |
| 10000 | 94.3 | 98.2 | 100.2 | 100.5 | 102.1 | 106.1 | 105.1 | 109.1 | 109.5 | 111.0 | 113.1 | 107.2 | 105.5 | 150.8 |
| 12500 | 92.7 | 96.5 | 98.5 | 99.4 | 101.5 | 105.8 | 104.6 | 106.0 | 107.6 | 109.2 | 110.3 | 106.0 | 104.0 | 149.8 |
| 16000 | 91.8 | 96.7 | 98.1 | 98.5 | 100.3 | 104.3 | 103.4 | 104.5 | 106.5 | 107.4 | 108.5 | 103.8 | 100.6 | 149.6 |
| 20000 | 89.9 | 94.6 | 96.0 | 97.4 | 98.9 | 102.0 | 101.8 | 102.1 | 102.9 | 104.6 | 105.6 | 101.2 | 97.7 | 148.8 |
| 25000 | 87.3 | 92.0 | 93.5 | 95.0 | 95.5 | 100.6 | 99.5 | 98.4 | 99.5 | 99.4 | 98.8 | 97.1 | 92.0 | 147.6 |
| 31500 | 83.9 | 88.3 | 90.5 | 92.3 | 92.2 | 96.4 | 95.6 | 95.5 | 95.5 | 95.6 | 96.1 | 93.5 | 87.4 | 147.3 |
| 40000 | 79.5 | 84.4 | 86.6 | 87.8 | 87.8 | 93.3 | 90.8 | 91.6 | 92.4 | 94.0 | 93.1 | 89.1 | 83.6 | 147.7 |
| 50000 | 74.3 | 78.9 | 80.7 | 82.7 | 82.4 | 88.5 | 85.6 | 86.2 | 86.8 | 88.9 | 88.0 | 84.5 | 78.1 | 146.9 |
| 63000 | 68.0 | 73.5 | 76.3 | 77.2 | 78.4 | 84.3 | 79.8 | 81.5 | 83.0 | 83.3 | 83.0 | 79.4 | 72.4 | 147.4 |
| 80000 | 60.8 | 66.9 | 70.2 | 70.1 | 71.6 | 79.0 | 74.3 | 75.5 | 76.9 | 78.4 | 76.9 | 73.4 | 66.4 | 148.5 |
| 0ASPL | 111.5 | 114.0 | 114.3 | 113.4 | 114.9 | 118.7 | 119.2 | 121.8 | 124.3 | 130.0 | 134.6 | 132.0 | 126.5 | 168.6 |
| PNL | 123.7 | 126.8 | 126.8 | 125.5 | 127.2 | 131.3 | 131.3 | 134.6 | 137.1 | 141.9 | 145.3 | 141.1 | 136.5 | |
| PNLT | 124.2 | 126.8 | 126.8 | 126.0 | 127.9 | 131.3 | 132.6 | 135.1 | 137.1 | 141.9 | 145.8 | 141.1 | 136.5 | |
| DBA | 111.0 | 113.3 | 113.5 | 112.3 | 113.9 | 117.6 | 117.6 | 121.3 | 124.0 | 129.3 | 134.1 | 130.3 | 125.6 | |

ORIGINAL PAGE IS
OF POOR QUALITY

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

| | | | | | | | | | | | | | |
|------------|--------------|----------------|----------|--------------|--------------|--------------|-------|-----------|-------|----------|------|------|-------|
| VEHICLE = | ADR220 | TEST DATE = | 04-18-83 | LOCAT = | CAT ANECH CH | CONFIG = | 19 | MODEL = | AX | FLTVL = | 0.7 | FPS | |
| IAPLHA = | SB59 | IEGA = | NO | PWL AREA = | FULL SPHERE | TAMB F = | 36.84 | PAMB HG = | 29.14 | RELHUM = | 40.7 | PCT | |
| WIND DIR = | | DEG WIND VEL = | | EXT DIST = | 40.0 FT | EXT CONFIG = | ARC | MIKE HT = | | NBR | | | |
| FNINT = | LBS XNL | RPM | | KNH | RPM | V8 | | AE9 | | | | 4.0 | SQ IN |
| FNRAMB = | LBS XNLR | RPM | | XNHR | RPM | V18 | | AE18 | | | | 19.9 | SQ IN |
| RUNPT = | 83F-ZER-1911 | TAPE | | TEST PT NO = | 1911 | NC | | AE089 | | | | | RPM |

IDENTIFICATION - 83F-ZER-1911 X1911F

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 90.9 | 91.4 | 90.9 | 86.7 | 86.8 | 89.4 | 92.8 | 92.0 | 93.2 | 90.5 | 97.4 | 97.6 | 93.2 | 134.4 |
| 63 | 95.0 | 96.3 | 99.6 | 94.6 | 95.2 | 98.8 | 100.0 | 95.9 | 98.8 | 97.1 | 102.8 | 101.2 | 96.6 | 140.4 |
| 80 | 95.8 | 100.6 | 96.1 | 96.4 | 97.0 | 101.1 | 99.0 | 98.9 | 99.6 | 99.9 | 104.3 | 103.7 | 92.6 | 141.8 |
| 100 | 94.5 | 102.0 | 97.8 | 97.8 | 98.4 | 102.5 | 100.6 | 103.5 | 101.0 | 105.1 | 105.5 | 109.4 | 96.1 | 144.6 |
| 125 | 92.4 | 94.9 | 98.7 | 98.2 | 100.1 | 102.4 | 101.8 | 101.7 | 101.7 | 105.5 | 111.9 | 114.1 | 100.7 | 147.3 |
| 160 | 89.2 | 91.0 | 95.7 | 92.0 | 93.4 | 98.2 | 105.9 | 100.8 | 103.2 | 107.3 | 112.2 | 114.4 | 105.3 | 147.7 |
| 200 | 93.8 | 91.8 | 94.8 | 93.9 | 96.0 | 100.1 | 103.5 | 101.6 | 106.6 | 108.9 | 114.0 | 117.2 | 107.9 | 149.7 |
| 250 | 92.3 | 94.6 | 96.1 | 95.9 | 97.2 | 99.8 | 100.7 | 103.4 | 106.6 | 114.4 | 118.5 | 120.2 | 111.1 | 153.2 |
| 315 | 93.3 | 94.9 | 94.9 | 94.4 | 96.5 | 101.4 | 105.3 | 104.7 | 108.9 | 116.7 | 120.3 | 120.8 | 112.7 | 154.7 |
| 400 | 95.1 | 96.3 | 96.6 | 95.4 | 97.5 | 101.4 | 110.0 | 105.2 | 109.4 | 118.4 | 122.1 | 121.3 | 114.2 | 156.0 |
| 500 | 96.1 | 97.1 | 98.1 | 96.7 | 98.3 | 103.4 | 103.0 | 106.4 | 110.1 | 120.0 | 123.6 | 122.8 | 115.9 | 157.4 |
| 630 | 97.0 | 97.8 | 98.6 | 97.4 | 99.5 | 103.1 | 103.7 | 106.9 | 110.3 | 120.4 | 124.3 | 122.7 | 117.6 | 157.9 |
| 800 | 100.1 | 99.4 | 98.4 | 98.4 | 101.0 | 104.1 | 104.5 | 108.7 | 112.4 | 119.7 | 125.9 | 123.3 | 118.4 | 158.8 |
| 1000 | 102.0 | 104.1 | 102.3 | 100.9 | 101.7 | 105.6 | 104.7 | 109.1 | 112.6 | 118.9 | 125.8 | 122.7 | 116.1 | 158.6 |
| 1250 | 100.9 | 105.2 | 104.5 | 102.9 | 103.9 | 106.2 | 105.6 | 109.5 | 113.5 | 118.1 | 125.0 | 120.6 | 116.3 | 157.7 |
| 1600 | 101.6 | 102.3 | 103.2 | 101.6 | 102.8 | 106.7 | 106.5 | 110.6 | 113.7 | 117.3 | 124.7 | 118.6 | 114.2 | 157.1 |
| 2000 | 102.4 | 103.2 | 102.9 | 101.5 | 102.6 | 106.4 | 106.4 | 110.7 | 113.4 | 118.1 | 122.9 | 116.2 | 113.2 | 156.0 |
| 2500 | 99.8 | 102.4 | 102.5 | 101.7 | 102.8 | 106.4 | 106.4 | 110.2 | 112.6 | 118.2 | 121.1 | 115.2 | 111.9 | 155.0 |
| 3150 | 98.7 | 101.6 | 102.4 | 100.6 | 102.7 | 107.3 | 106.4 | 110.4 | 113.0 | 117.6 | 119.3 | 113.2 | 109.3 | 154.0 |
| 4000 | 97.0 | 100.2 | 101.5 | 99.9 | 102.6 | 106.3 | 105.9 | 110.5 | 112.2 | 115.7 | 117.9 | 111.4 | 108.2 | 152.8 |
| 5000 | 95.6 | 98.9 | 101.0 | 100.4 | 102.1 | 105.8 | 105.7 | 109.8 | 111.4 | 115.8 | 117.0 | 110.8 | 106.7 | 152.5 |
| 6300 | 94.7 | 99.5 | 101.0 | 100.1 | 102.1 | 106.3 | 106.1 | 110.1 | 111.6 | 114.4 | 115.3 | 109.5 | 106.0 | 151.9 |
| 8000 | 94.1 | 98.5 | 100.3 | 100.2 | 101.9 | 105.7 | 105.4 | 108.5 | 110.0 | 112.4 | 113.8 | 107.7 | 105.8 | 150.8 |
| 10000 | 94.3 | 98.2 | 100.2 | 100.5 | 102.1 | 106.1 | 105.1 | 109.5 | 111.0 | 113.1 | 107.2 | 105.5 | 150.8 | |
| 12500 | 92.7 | 96.5 | 98.5 | 99.4 | 101.5 | 105.8 | 104.6 | 106.0 | 107.6 | 109.2 | 110.3 | 106.0 | 104.0 | 149.8 |
| 16000 | 91.8 | 96.7 | 98.1 | 98.5 | 100.3 | 104.3 | 103.4 | 104.5 | 106.5 | 107.4 | 108.5 | 103.8 | 100.6 | 149.6 |
| 20000 | 89.9 | 94.6 | 96.0 | 97.4 | 98.9 | 102.0 | 101.8 | 102.1 | 102.9 | 104.6 | 105.6 | 101.2 | 97.7 | 148.8 |
| 25000 | 87.3 | 92.0 | 93.5 | 95.0 | 95.5 | 100.6 | 99.5 | 98.4 | 99.5 | 99.4 | 98.8 | 97.1 | 92.0 | 147.6 |
| 31500 | 83.9 | 88.3 | 90.5 | 92.3 | 92.2 | 96.4 | 95.6 | 95.5 | 95.5 | 96.6 | 96.1 | 93.5 | 87.4 | 147.3 |
| 40000 | 79.5 | 84.4 | 86.6 | 87.8 | 87.8 | 93.3 | 90.8 | 91.6 | 92.4 | 94.0 | 93.1 | 89.1 | 83.6 | 147.7 |
| 50000 | 74.3 | 78.9 | 80.7 | 82.7 | 82.4 | 88.5 | 85.6 | 86.2 | 86.8 | 88.9 | 88.0 | 84.5 | 78.1 | 146.9 |
| 63000 | 68.0 | 73.5 | 76.3 | 77.2 | 78.4 | 84.3 | 79.8 | 81.5 | 83.0 | 83.3 | 83.0 | 79.4 | 72.4 | 147.4 |
| 80000 | 60.8 | 66.9 | 70.2 | 70.1 | 71.6 | 79.0 | 74.3 | 75.5 | 76.9 | 78.4 | 76.9 | 73.4 | 66.4 | 148.5 |
| 0ASPL | 111.5 | 114.0 | 114.3 | 113.4 | 114.9 | 118.7 | 119.2 | 121.8 | 124.3 | 130.0 | 134.6 | 132.0 | 126.5 | 168.6 |
| PWL | 123.7 | 126.1 | 126.8 | 125.5 | 127.2 | 131.3 | 131.3 | 134.6 | 137.1 | 141.9 | 145.3 | 141.1 | 136.5 | |
| PWLT | 124.2 | 126.8 | 126.8 | 126.0 | 127.9 | 131.3 | 132.6 | 135.1 | 137.1 | 141.9 | 145.8 | 141.1 | 136.5 | |
| DBA | 183.5 | 189.2 | 192.1 | 192.6 | 193.8 | 200.6 | 196.2 | 197.4 | 198.8 | 200.0 | 198.9 | 195.4 | 188.5 | |

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 0. DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICLE = ADH220 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.84 PAMB HG = 29.14 RELHUM = 40.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNIN1 = LBS XNL RPM = RPM V8 = 1517.9 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR RPM = RPM V18 = 2489.6 FPS AE18 = 19.9 SQ IN

PT F-ZL 3110 E = XLF TPTN 1911 AEO CORR F SPEED RPM

IDENTIFICATION - 83F-ZER-1911 X19111

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| 50 | 69.2 | 72.2 | 73.3 | 73.6 | 76.1 | 81.1 | 84.8 | 83.8 | 87.3 | 94.1 | 96.2 | 94.4 | 83.0 | 169.9 |
| 63 | 70.9 | 73.7 | 75.0 | 74.5 | 77.0 | 81.0 | 89.5 | 84.3 | 87.8 | 95.8 | 97.9 | 94.8 | 84.4 | 171.3 |
| 80 | 71.8 | 74.4 | 76.5 | 75.8 | 77.8 | 83.0 | 82.5 | 85.5 | 88.5 | 97.3 | 99.3 | 96.3 | 86.1 | 172.7 |
| 100 | 72.7 | 75.1 | 76.9 | 76.4 | 78.9 | 82.7 | 83.2 | 85.9 | 88.7 | 97.6 | 100.0 | 96.1 | 87.6 | 173.2 |
| 125 | 75.6 | 76.5 | 77.6 | 77.4 | 80.4 | 83.7 | 83.9 | 87.7 | 90.6 | 96.9 | 101.4 | 96.5 | 88.2 | 174.1 |
| 160 | 77.4 | 81.0 | 80.4 | 79.7 | 81.0 | 85.0 | 84.0 | 88.0 | 90.7 | 95.9 | 101.1 | 95.7 | 87.5 | 173.8 |
| 200 | 76.0 | 82.0 | 82.4 | 81.6 | 83.0 | 85.5 | 84.7 | 88.2 | 91.4 | 94.9 | 100.1 | 93.3 | 85.2 | 172.9 |
| 250 | 76.4 | 78.8 | 80.9 | 80.0 | 81.7 | 85.7 | 85.4 | 89.0 | 91.4 | 93.8 | 99.4 | 90.8 | 82.5 | 172.4 |
| 315 | 76.7 | 79.3 | 80.2 | 79.5 | 81.2 | 85.2 | 85.0 | 88.9 | 90.7 | 94.3 | 97.2 | 87.9 | 80.6 | 171.3 |
| 400 | 73.6 | 78.1 | 79.4 | 79.5 | 81.1 | 84.9 | 84.6 | 88.0 | 89.6 | 93.9 | 95.0 | 86.2 | 78.3 | 170.3 |
| 500 | 72.0 | 76.9 | 79.0 | 78.1 | 80.7 | 85.4 | 84.4 | 87.8 | 89.6 | 92.9 | 92.6 | 83.5 | 74.7 | 169.3 |
| 630 | 69.8 | 75.0 | 77.8 | 77.1 | 80.2 | 84.1 | 83.6 | 87.7 | 88.4 | 90.5 | 90.6 | 81.0 | 72.5 | 168.1 |
| 800 | 67.7 | 73.2 | 76.8 | 77.2 | 79.4 | 83.3 | 83.0 | 86.6 | 87.2 | 90.2 | 89.2 | 79.6 | 69.8 | 167.7 |
| 1000 | 66.3 | 73.4 | 76.5 | 76.5 | 79.2 | 83.5 | 83.2 | 86.5 | 87.1 | 88.3 | 86.9 | 77.5 | 67.7 | 167.1 |
| 1250 | 65.0 | 71.9 | 75.4 | 76.4 | 78.6 | 82.6 | 82.1 | 84.6 | 85.1 | 85.9 | 84.7 | 74.7 | 65.9 | 166.1 |
| 1600 | 64.1 | 70.7 | 74.5 | 76.0 | 78.3 | 82.5 | 81.3 | 84.6 | 83.9 | 83.5 | 82.9 | 72.6 | 63.0 | 166.1 |
| 2000 | 61.0 | 67.9 | 72.0 | 74.2 | 77.0 | 81.5 | 80.0 | 80.8 | 81.1 | 80.6 | 78.6 | 69.2 | 58.0 | 165.1 |
| 2500 | 57.8 | 66.5 | 70.3 | 72.1 | 74.8 | 79.1 | 77.9 | 78.1 | 78.7 | 77.2 | 74.6 | 63.9 | 49.2 | 164.9 |
| 3150 | 52.0 | 61.4 | 65.7 | 68.9 | 71.5 | 74.8 | 74.3 | 73.6 | 72.6 | 71.4 | 67.7 | 55.6 | 37.3 | 164.1 |
| 4000 | 42.4 | 53.2 | 58.6 | 62.5 | 64.2 | 69.8 | 68.2 | 65.9 | 64.6 | 60.6 | 53.9 | 41.8 | 16.4 | 162.8 |
| 5000 | 28.3 | 41.1 | 48.6 | 53.5 | 55.1 | 59.9 | 58.5 | 56.7 | 53.6 | 49.4 | 40.6 | 23.7 | | 162.5 |
| 6300 | 5.8 | 22.6 | 32.1 | 37.8 | 40.3 | 45.5 | 43.2 | 41.6 | 37.9 | 32.3 | 19.4 | | | 163.0 |
| 8000 | | 3.9 | 12.6 | 15.8 | 23.0 | 19.0 | 16.0 | 10.1 | 1.4 | | | | | 162.2 |
| 10000 | | | | | | | | | | | | | | 162.7 |
| 12500 | | | | | | | | | | | | | | 163.8 |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

ORIGINAL PAGE IS OF POOR QUALITY

118-10

MODEL AREA = 268.1 SQ CM (41.6 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.804 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICL = ADH220 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.84 PAMB HG = 29.14 RELHUM = 40.7 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FN1N1 = LBS XNL = RPM XNH = RPM V8 = 1517.9 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2489.6 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1911 TAPE = X19111 TEST PT NO = 1911 NC = AE089 CORR FAN SPEED = RPM

UNTRANSFORMED MODEL SOUND PRESSURE LEVELS CORRECTED FOR BACKGROUND NOISE
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - MODEL 83F-400-1912 X1912C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 93.9 | 93.2 | 89.7 | 87.0 | 86.6 | 88.4 | 87.8 | 92.5 | 92.2 | 92.0 | 99.1 | 98.6 | 90.5 | 134.9 |
| 63 | 95.3 | 95.6 | 98.1 | 92.9 | 92.7 | 95.3 | 96.0 | 99.4 | 96.6 | 93.6 | 102.8 | 99.5 | 93.9 | 139.2 |
| 80 | 95.8 | 100.3 | 96.1 | 96.9 | 97.0 | 100.8 | 98.7 | 98.6 | 98.3 | 97.9 | 103.0 | 102.5 | 91.4 | 141.1 |
| 100 | 94.5 | 99.5 | 95.5 | 94.8 | 96.9 | 100.8 | 99.4 | 102.0 | 98.8 | 101.6 | 102.5 | 107.6 | 94.8 | 142.5 |
| 125 | 92.9 | 94.2 | 96.9 | 97.2 | 99.3 | 101.2 | 99.3 | 99.7 | 98.4 | 101.8 | 108.4 | 112.1 | 99.2 | 144.9 |
| 160 | 90.2 | 86.7 | 93.2 | 90.0 | 92.1 | 95.7 | 99.6 | 96.8 | 98.7 | 103.3 | 108.4 | 111.6 | 103.3 | 144.3 |
| 200 | 89.8 | 90.1 | 90.8 | 89.1 | 91.7 | 95.6 | 98.2 | 98.4 | 103.1 | 103.1 | 114.7 | 105.6 | 146.5 | |
| 250 | 88.0 | 90.3 | 91.6 | 91.4 | 93.0 | 95.6 | 97.2 | 99.9 | 102.8 | 109.1 | 114.5 | 117.2 | 108.6 | 149.5 |
| 315 | 89.1 | 90.4 | 90.4 | 90.2 | 92.0 | 96.6 | 100.0 | 99.9 | 104.1 | 111.2 | 118.3 | 109.7 | 150.9 | |
| 400 | 90.1 | 91.3 | 92.6 | 90.9 | 93.2 | 96.1 | 105.2 | 100.2 | 104.6 | 112.9 | 118.3 | 118.8 | 109.9 | 152.3 |
| 500 | 89.8 | 91.6 | 93.6 | 91.9 | 94.3 | 97.4 | 98.0 | 101.7 | 105.1 | 114.7 | 119.8 | 119.0 | 108.4 | 153.2 |
| 630 | 91.0 | 91.8 | 93.8 | 92.4 | 94.5 | 97.6 | 102.4 | 105.6 | 114.7 | 120.0 | 118.0 | 107.4 | 153.0 | |
| 800 | 92.8 | 92.9 | 93.7 | 93.2 | 96.0 | 98.4 | 99.3 | 103.7 | 107.4 | 114.0 | 120.1 | 116.5 | 105.7 | 152.7 |
| 1000 | 94.8 | 95.8 | 96.3 | 95.1 | 96.2 | 99.8 | 100.2 | 104.4 | 106.8 | 113.9 | 118.3 | 114.5 | 103.4 | 151.4 |
| 1250 | 93.9 | 97.0 | 96.8 | 95.6 | 97.1 | 100.2 | 100.4 | 104.5 | 108.8 | 113.1 | 116.7 | 110.1 | 101.3 | 150.1 |
| 1600 | 96.1 | 95.8 | 97.2 | 95.8 | 97.8 | 101.2 | 101.8 | 106.1 | 108.7 | 112.5 | 115.7 | 108.1 | 99.7 | 149.5 |
| 2000 | 96.6 | 96.4 | 97.1 | 96.5 | 97.3 | 100.7 | 101.7 | 106.2 | 108.6 | 113.4 | 114.4 | 106.0 | 99.2 | 149.2 |
| 2500 | 96.3 | 97.6 | 97.2 | 96.7 | 98.5 | 101.7 | 101.6 | 106.0 | 107.9 | 113.4 | 113.4 | 106.2 | 99.4 | 148.8 |
| 3150 | 95.5 | 97.6 | 97.9 | 97.6 | 97.9 | 102.2 | 101.6 | 106.6 | 108.5 | 112.6 | 113.0 | 104.9 | 98.3 | 148.6 |
| 4000 | 95.3 | 96.7 | 97.8 | 96.7 | 98.6 | 102.0 | 102.2 | 106.5 | 108.7 | 111.4 | 111.4 | 103.6 | 97.7 | 147.9 |
| 5000 | 95.3 | 96.4 | 98.2 | 97.1 | 98.6 | 102.1 | 102.2 | 106.3 | 107.8 | 112.3 | 110.5 | 103.5 | 96.7 | 148.0 |
| 6300 | 96.7 | 98.5 | 99.3 | 98.1 | 99.4 | 102.8 | 102.9 | 106.3 | 108.6 | 111.4 | 109.0 | 102.0 | 97.0 | 147.9 |
| 8000 | 96.3 | 98.2 | 99.3 | 97.7 | 99.4 | 102.4 | 102.1 | 105.5 | 107.3 | 109.7 | 108.3 | 101.2 | 96.0 | 147.2 |
| 10000 | 96.5 | 97.2 | 99.4 | 98.5 | 99.6 | 103.3 | 102.6 | 106.1 | 107.3 | 108.5 | 107.3 | 101.0 | 95.8 | 147.6 |
| 12500 | 95.5 | 96.2 | 99.0 | 98.4 | 99.5 | 103.0 | 102.0 | 103.8 | 105.6 | 106.9 | 105.3 | 101.0 | 95.8 | 147.1 |
| 16000 | 95.3 | 97.2 | 98.6 | 98.0 | 99.1 | 102.3 | 100.9 | 102.5 | 104.8 | 104.9 | 103.3 | 99.6 | 92.8 | 147.2 |
| 20000 | 92.4 | 95.4 | 96.0 | 96.9 | 97.9 | 100.7 | 99.8 | 100.1 | 101.1 | 101.6 | 99.6 | 96.2 | 91.2 | 146.5 |
| 25000 | 90.1 | 93.0 | 93.7 | 94.8 | 95.2 | 100.1 | 98.0 | 97.4 | 98.5 | 96.6 | 95.8 | 94.1 | 87.3 | 146.4 |
| 31500 | 86.1 | 88.8 | 90.8 | 92.3 | 92.0 | 96.1 | 94.1 | 94.5 | 94.5 | 92.6 | 92.4 | 89.3 | 82.9 | 146.0 |
| 40000 | 81.9 | 84.9 | 86.9 | 87.5 | 87.3 | 92.5 | 90.0 | 90.4 | 91.4 | 89.3 | 88.6 | 84.9 | 78.1 | 146.1 |
| 50000 | 76.1 | 79.1 | 80.4 | 82.2 | 81.9 | 87.5 | 85.1 | 85.9 | 85.6 | 83.7 | 83.2 | 80.0 | 72.3 | 145.2 |
| 63000 | 69.8 | 74.3 | 76.3 | 76.7 | 77.7 | 82.8 | 78.3 | 81.2 | 81.2 | 78.3 | 77.5 | 73.7 | 66.1 | 145.5 |
| 80000 | 62.3 | 66.2 | 69.2 | 69.7 | 69.8 | 77.2 | 73.3 | 74.0 | 74.4 | 72.9 | 71.4 | 66.9 | 58.4 | 146.0 |
| OASPL | 108.8 | 110.5 | 111.1 | 110.2 | 111.6 | 114.9 | 115.2 | 118.0 | 120.3 | 125.2 | 128.7 | 127.2 | 117.8 | 163.7 |
| PWL | 120.6 | 122.1 | 122.7 | 121.9 | 123.3 | 126.7 | 127.1 | 130.7 | 132.9 | 137.3 | 139.0 | 135.0 | 126.5 | |
| PWL | 120.6 | 122.1 | 122.7 | 122.7 | 124.1 | 126.7 | 128.2 | 130.7 | 132.9 | 137.3 | 139.0 | 135.0 | 126.5 | |
| DBA | 107.0 | 108.2 | 109.0 | 108.0 | 109.5 | 112.9 | 113.3 | 117.2 | 119.6 | 124.5 | 127.3 | 123.8 | 114.3 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICLE = ADH224 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 400. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.25 PAMB HG = 29.06 RELHUM = 41.6 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR =

FN1N1 = LBS XNL RPM XNH RPM = 1526.2 FPS AE8 = 4.0 SO IN
 FNRAMB = LBS XNLR RPM XNHR RPM = 2474.5 FPS AE16 = 19.9 SO IN
 RUNPT = 83F-400-1912 TAPE = X1912C TEST PT NO = 1912 NC = AE089 CORR FAN SPEED = RPM

490

80-8814

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
 59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1912 X1912F

ANGLES MEASURED FROM INLET, DEGREES

FREQ PWL
 40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160.

80
 100
 125
 160

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 4000 | 5000 | 6300 | 8000 | 10000 | 12500 | 16000 | 20000 | 25000 | 31500 | 40000 | 50000 | 63000 | 80000 | | | | | | | | | | | | | | | | |
| 95.9 | 96.8 | 96.5 | 94.7 | 94.6 | 95.6 | 95.6 | 95.3 | 96.3 | 102.0 | 108.5 | 113.2 | 116.1 | 109.6 | 148.6 | 95.9 | 96.8 | 96.8 | 99.1 | 98.0 | 102.5 | 110.3 | 115.7 | 117.2 | 111.2 | 150.3 | 96.8 | 96.8 | 95.0 | 93.6 | 95.0 | 96.4 | 104.3 | 98.2 | 103.0 | 112.1 | 117.4 | 118.2 | 111.3 | 151.6 | | | |
| 97.1 | 97.3 | 97.3 | 94.2 | 96.2 | 97.7 | 97.0 | 99.6 | 103.8 | 112.5 | 118.2 | 118.3 | 112.4 | 152.0 | 97.5 | 98.0 | 98.6 | 95.4 | 96.4 | 98.4 | 98.0 | 97.8 | 100.3 | 106.1 | 112.4 | 119.1 | 118.3 | 152.6 | 98.3 | 98.3 | 95.9 | 98.1 | 98.5 | 101.8 | 106.1 | 113.1 | 118.2 | 117.8 | 114.0 | 152.2 | | | |
| 100.5 | 99.3 | 98.7 | 96.8 | 98.2 | 100.5 | 99.6 | 102.7 | 107.8 | 112.0 | 116.3 | 113.2 | 111.9 | 150.3 | 101.1 | 101.3 | 100.8 | 98.4 | 99.3 | 101.1 | 99.8 | 102.8 | 107.9 | 111.5 | 115.3 | 111.2 | 110.4 | 149.5 | 103.0 | 103.4 | 102.1 | 102.3 | 102.2 | 101.4 | 104.5 | 108.0 | 112.5 | 114.1 | 109.1 | 110.0 | 149.4 | | |
| 103.4 | 102.2 | 101.9 | 100.1 | 101.5 | 103.3 | 101.8 | 105.0 | 108.7 | 112.6 | 113.8 | 109.1 | 110.1 | 149.6 | 103.1 | 103.4 | 102.8 | 101.6 | 102.2 | 101.4 | 104.5 | 108.0 | 112.5 | 114.1 | 109.1 | 110.0 | 149.4 | 103.4 | 103.4 | 102.3 | 102.3 | 102.3 | 102.3 | 102.3 | 102.3 | 102.3 | 102.3 | 102.3 | 102.3 | 102.3 | 102.3 | 102.3 | |
| 104.2 | 103.4 | 103.5 | 101.3 | 102.7 | 105.1 | 103.7 | 106.5 | 109.7 | 112.0 | 110.2 | 106.5 | 108.9 | 149.3 | 102.7 | 103.5 | 104.1 | 104.7 | 106.8 | 108.7 | 109.8 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 |
| 104.1 | 102.0 | 103.4 | 105.8 | 104.4 | 106.5 | 108.6 | 110.7 | 109.9 | 106.2 | 108.5 | 149.2 | 104.0 | 103.7 | 102.2 | 101.9 | 103.4 | 101.4 | 100.9 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 |
| 105.0 | 105.0 | 105.0 | 102.8 | 103.4 | 105.4 | 103.8 | 105.8 | 109.3 | 110.2 | 109.7 | 106.8 | 109.1 | 149.9 | 104.6 | 104.6 | 102.3 | 103.6 | 104.7 | 106.8 | 108.7 | 109.8 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 |
| 104.8 | 104.6 | 104.7 | 102.7 | 103.5 | 106.0 | 104.4 | 105.1 | 108.2 | 108.0 | 107.1 | 106.9 | 107.5 | 150.2 | 103.8 | 104.7 | 105.1 | 106.8 | 108.7 | 109.8 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 | 108.6 |
| 103.7 | 102.2 | 103.1 | 105.3 | 103.1 | 103.7 | 105.9 | 106.2 | 104.7 | 104.4 | 106.4 | 150.0 | 102.4 | 102.9 | 101.3 | 102.0 | 103.7 | 102.2 | 101.9 | 103.4 | 101.4 | 100.9 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 | 102.1 |
| 100.0 | 97.8 | 100.0 | 99.7 | 99.6 | 103.1 | 100.0 | 98.7 | 100.6 | 98.7 | 99.0 | 99.3 | 150.0 | 97.4 | 99.0 | 98.4 | 97.8 | 96.6 | 99.1 | 96.3 | 96.1 | 98.7 | 96.7 | 96.8 | 96.5 | 97.0 | 150.7 | 94.0 | 94.0 | 94.0 | 94.0 | 94.0 | 94.0 | 94.0 | 94.0 | 94.0 | 94.0 | 94.0 | 94.0 | 94.0 | 94.0 | 94.0 | 94.0 |
| 92.6 | 94.0 | 94.6 | 94.5 | 91.9 | 95.5 | 92.5 | 92.3 | 93.4 | 91.6 | 92.0 | 92.1 | 150.4 | 87.5 | 89.7 | 90.3 | 89.3 | 86.5 | 90.5 | 87.5 | 87.9 | 89.6 | 86.8 | 87.0 | 86.7 | 85.6 | 150.1 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | 83.0 | |
| 81.2 | 83.0 | 82.9 | 83.1 | 82.3 | 85.8 | 80.7 | 83.0 | 82.4 | 81.9 | 81.0 | 80.7 | 149.7 | 73.4 | 76.7 | 77.3 | 76.1 | 74.4 | 80.2 | 75.6 | 75.5 | 74.0 | 72.6 | 72.0 | 71.2 | 70.3 | 149.4 | 76.7 | 76.7 | 76.7 | 76.7 | 76.7 | 76.7 | 76.7 | 76.7 | 76.7 | 76.7 | 76.7 | 76.7 | 76.7 | 76.7 | 76.7 | |

ORIGINAL PAGE IS OF POOR QUALITY

MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 FREE JET VEL (FPS)= 400.00, DIAM (IN)= 48.00 REFR CORR YES, TURB CORR YES

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICL = ADH224 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 400. FPS
 IAPLHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.25 PAMB HG = 29.06 RELHUM = 41.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 40.0 FT EXT CONFIG = ARC MIKE HT = NBFR

FNINI = LBS XNL = RPM XNH = RPM V8 = 1526.2 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2474.5 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1912 TAPE = X1912F TEST PT NO = 1912 NC = AE089 CORR FAN SPEED = RPM

IDENTIFICATION - 83F-400-1912 X19121

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
| 50 | 71.8 | 74.1 | 74.9 | 73.8 | 73.4 | 76.5 | 78.7 | 77.2 | 80.9 | 87.7 | 91.5 | 90.9 | 81.5 | 165.5 |
| 63 | 72.6 | 74.1 | 73.7 | 72.7 | 74.6 | 76.0 | 83.9 | 77.3 | 81.4 | 89.5 | 93.2 | 91.8 | 81.5 | 166.9 |
| 80 | 72.8 | 74.6 | 75.7 | 73.3 | 75.7 | 77.4 | 76.6 | 78.6 | 82.2 | 89.8 | 93.9 | 91.8 | 82.5 | 167.3 |
| 100 | 73.2 | 75.3 | 76.9 | 74.4 | 75.9 | 77.6 | 77.3 | 79.4 | 84.4 | 89.7 | 94.7 | 91.7 | 83.6 | 167.9 |
| 125 | 74.3 | 75.4 | 77.1 | 74.9 | 77.5 | 78.4 | 77.9 | 80.7 | 84.3 | 90.2 | 93.7 | 91.0 | 83.7 | 167.5 |
| 160 | 75.8 | 76.3 | 76.8 | 75.6 | 77.4 | 79.9 | 78.9 | 81.5 | 85.9 | 89.0 | 91.7 | 86.2 | 81.2 | 165.6 |
| 200 | 76.2 | 78.1 | 78.7 | 77.0 | 78.4 | 80.3 | 78.9 | 81.4 | 85.8 | 88.3 | 90.4 | 83.9 | 79.3 | 164.8 |
| 250 | 75.6 | 79.5 | 79.3 | 77.6 | 79.1 | 81.3 | 80.3 | 82.9 | 85.6 | 89.0 | 88.9 | 81.4 | 78.2 | 164.6 |
| 315 | 77.7 | 78.2 | 79.6 | 77.8 | 78.4 | 80.7 | 80.1 | 82.9 | 85.1 | 89.2 | 88.1 | 81.8 | 78.3 | 164.9 |
| 400 | 76.9 | 77.9 | 78.9 | 77.9 | 79.8 | 81.7 | 80.1 | 82.8 | 85.7 | 88.3 | 87.6 | 80.1 | 76.5 | 164.9 |
| 500 | 77.2 | 79.5 | 79.2 | 78.3 | 79.2 | 82.4 | 80.2 | 83.5 | 86.2 | 87.3 | 85.8 | 78.4 | 75.1 | 164.7 |
| 630 | 75.8 | 79.1 | 79.7 | 79.1 | 79.9 | 82.4 | 81.0 | 83.6 | 84.9 | 87.5 | 84.2 | 77.2 | 72.5 | 164.7 |
| 800 | 75.0 | 77.7 | 79.4 | 78.1 | 80.0 | 82.6 | 81.0 | 83.2 | 85.5 | 86.4 | 82.4 | 75.3 | 72.0 | 164.6 |
| 1000 | 74.3 | 77.0 | 79.5 | 78.4 | 80.4 | 83.0 | 81.4 | 82.9 | 84.1 | 84.6 | 81.5 | 74.2 | 70.3 | 164.5 |
| 1250 | 74.9 | 78.4 | 80.0 | 78.9 | 80.1 | 82.3 | 80.5 | 81.9 | 84.4 | 83.6 | 80.6 | 73.8 | 69.2 | 165.0 |
| 1600 | 73.2 | 77.2 | 79.2 | 77.8 | 79.8 | 82.7 | 80.9 | 82.4 | 83.0 | 82.3 | 78.6 | 73.2 | 67.4 | 165.5 |
| 2000 | 71.7 | 75.2 | 78.1 | 77.5 | 79.0 | 81.7 | 79.8 | 79.9 | 81.6 | 79.4 | 75.4 | 70.1 | 61.5 | 165.4 |
| 2500 | 67.9 | 71.6 | 75.9 | 75.8 | 77.6 | 80.1 | 77.7 | 77.4 | 78.1 | 76.0 | 70.8 | 64.4 | 55.0 | 165.3 |
| 3150 | 53.3 | 59.1 | 72.6 | 72.8 | 74.5 | 76.6 | 74.8 | 73.5 | 73.0 | 68.1 | 63.1 | 56.5 | 41.7 | 165.1 |
| 4000 | 52.8 | 61.2 | 64.8 | 67.0 | 68.6 | 72.3 | 69.8 | 66.2 | 65.7 | 59.9 | 54.1 | 43.6 | 23.7 | 165.2 |
| 5000 | 41.9 | 51.9 | 56.4 | 59.0 | 59.5 | 62.6 | 59.2 | 57.3 | 56.7 | 49.5 | 41.3 | 26.7 | 166.0 | |
| 6300 | 18.9 | 32.2 | 40.1 | 44.5 | 44.4 | 48.5 | 44.9 | 42.3 | 38.9 | 29.8 | 18.3 | 165.7 | 165.3 | |
| 8000 | 2.2 | 13.5 | 19.2 | 19.9 | 25.0 | 20.9 | 17.8 | 12.9 | | | | | 165.0 | |
| 10000 | | | | | | | | | | | | | 164.7 | |
| 12500 | | | | | | | | | | | | | | |
| 16000 | | | | | | | | | | | | | | |
| 20000 | | | | | | | | | | | | | | |
| 25000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 60000 | | | | | | | | | | | | | | |

MODEL AREA = 268.1 SQ CM (41.6 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.804 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICLE = ADH224 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 400. FPS
 IALPHA = SB59 IEGA = NO PWL AREA = FULL SPHERE TAMB F = 36.25 PAMB HG = 29.06 RELHUM = 41.8 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT = NBFR =

FNINI = LBS XNL = RPM XNH = RPM V8 = 1526.2 FPS AE8 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2474.5 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-400-1912 TARE = X19121 TEST PT NO = 1917 AIR FLOW METER = 1917 RPM

IDENTIFICATION - MODEL 83F-ZER-1921 X1921C
BACKGROUND

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 89.6 | 90.7 | 89.4 | 85.5 | 85.6 | 88.4 | 88.3 | 90.5 | 91.9 | 88.5 | 96.9 | 96.3 | 91.5 | 133.1 |
| 63 | 94.0 | 96.5 | 99.8 | 94.4 | 93.7 | 96.8 | 94.5 | 97.1 | 97.8 | 96.1 | 102.5 | 100.7 | 97.6 | 139.6 |
| 80 | 94.3 | 98.1 | 93.8 | 94.9 | 95.2 | 99.6 | 96.7 | 97.1 | 98.1 | 97.7 | 102.3 | 102.0 | 89.1 | 139.9 |
| 100 | 92.7 | 100.0 | 96.0 | 95.8 | 97.1 | 100.5 | 98.9 | 102.3 | 99.8 | 104.1 | 103.5 | 107.9 | 93.8 | 143.1 |
| 125 | 90.6 | 93.2 | 96.4 | 96.7 | 98.6 | 101.2 | 98.8 | 99.7 | 99.9 | 104.0 | 110.6 | 112.1 | 98.2 | 145.6 |
| 160 | 88.2 | 89.7 | 94.2 | 91.0 | 92.1 | 96.5 | 102.4 | 98.5 | 101.2 | 105.6 | 110.4 | 112.9 | 103.8 | 145.9 |
| 200 | 92.0 | 90.1 | 93.3 | 91.9 | 94.2 | 98.1 | 101.0 | 99.9 | 105.1 | 107.4 | 113.3 | 116.2 | 106.1 | 148.6 |
| 250 | 91.0 | 92.8 | 94.6 | 94.1 | 95.7 | 98.1 | 99.0 | 102.4 | 105.3 | 112.4 | 117.3 | 118.7 | 109.4 | 151.7 |
| 315 | 91.8 | 93.6 | 93.4 | 92.7 | 95.0 | 99.6 | 103.0 | 102.7 | 106.9 | 115.5 | 118.8 | 120.0 | 111.2 | 153.4 |
| 400 | 93.6 | 94.6 | 95.4 | 93.7 | 95.7 | 99.6 | 109.5 | 103.9 | 107.6 | 117.4 | 121.6 | 120.8 | 112.7 | 155.4 |
| 500 | 94.3 | 95.9 | 97.1 | 95.4 | 97.0 | 101.6 | 101.8 | 105.2 | 108.1 | 119.0 | 122.8 | 121.5 | 113.7 | 156.4 |
| 630 | 94.8 | 96.3 | 97.3 | 95.6 | 97.7 | 101.8 | 102.0 | 105.9 | 108.6 | 119.9 | 123.5 | 121.2 | 115.9 | 157.0 |
| 800 | 98.1 | 96.1 | 97.6 | 97.2 | 99.6 | 102.6 | 103.3 | 107.2 | 110.9 | 119.5 | 124.8 | 122.5 | 117.2 | 157.9 |
| 1000 | 100.5 | 102.1 | 101.6 | 99.6 | 100.7 | 104.3 | 104.0 | 107.6 | 110.6 | 118.1 | 124.5 | 122.5 | 116.6 | 157.6 |
| 1250 | 99.2 | 103.7 | 102.5 | 100.9 | 101.9 | 105.0 | 103.9 | 107.8 | 111.8 | 116.8 | 123.7 | 120.1 | 115.5 | 156.5 |
| 1600 | 99.6 | 101.0 | 101.2 | 100.1 | 101.6 | 105.2 | 104.8 | 108.8 | 111.4 | 115.5 | 122.9 | 119.3 | 114.0 | 155.7 |
| 2000 | 101.3 | 101.9 | 101.1 | 99.5 | 100.3 | 104.7 | 104.4 | 108.7 | 111.6 | 116.9 | 112.9 | 116.9 | 112.9 | 154.8 |
| 2500 | 99.3 | 100.6 | 100.9 | 100.1 | 100.5 | 104.1 | 104.3 | 107.9 | 110.3 | 115.1 | 120.6 | 115.9 | 111.4 | 153.8 |
| 3150 | 96.7 | 99.6 | 100.3 | 98.6 | 101.2 | 104.7 | 104.1 | 108.6 | 110.2 | 114.3 | 118.5 | 113.6 | 108.8 | 152.4 |
| 4000 | 95.0 | 98.1 | 99.5 | 98.6 | 101.0 | 104.5 | 103.9 | 107.7 | 110.1 | 112.4 | 116.8 | 111.3 | 107.4 | 151.0 |
| 5000 | 94.0 | 97.1 | 99.7 | 98.6 | 99.8 | 103.5 | 103.7 | 107.5 | 108.8 | 112.5 | 116.0 | 110.5 | 105.7 | 150.5 |
| 6300 | 93.0 | 98.4 | 99.5 | 98.6 | 100.4 | 104.1 | 103.9 | 108.1 | 108.6 | 111.1 | 114.5 | 108.7 | 104.4 | 149.9 |
| 8000 | 91.8 | 97.0 | 98.8 | 98.5 | 100.4 | 103.4 | 102.9 | 106.3 | 107.0 | 109.0 | 113.3 | 107.5 | 103.3 | 148.9 |
| 10000 | 91.6 | 96.2 | 98.3 | 98.0 | 100.2 | 104.1 | 103.2 | 106.4 | 106.9 | 107.6 | 112.1 | 106.3 | 103.1 | 148.8 |
| 12500 | 90.6 | 94.8 | 97.2 | 97.8 | 100.1 | 103.9 | 103.2 | 103.9 | 104.5 | 105.8 | 109.4 | 105.6 | 102.1 | 147.9 |
| 16000 | 90.4 | 95.4 | 97.1 | 97.6 | 99.0 | 103.0 | 102.0 | 102.4 | 103.5 | 103.3 | 107.0 | 103.8 | 99.0 | 147.6 |
| 20000 | 88.6 | 93.9 | 95.5 | 95.8 | 97.4 | 100.4 | 100.2 | 100.1 | 99.9 | 100.6 | 103.8 | 100.4 | 96.1 | 146.8 |
| 25000 | 86.1 | 91.0 | 92.5 | 94.0 | 94.7 | 99.3 | 97.7 | 97.2 | 97.2 | 94.9 | 97.8 | 96.3 | 91.3 | 146.0 |
| 31500 | 83.4 | 88.1 | 89.8 | 91.3 | 91.7 | 95.4 | 94.1 | 94.3 | 93.1 | 92.2 | 94.7 | 91.8 | 86.1 | 145.7 |
| 40000 | 78.5 | 83.7 | 85.7 | 87.1 | 86.8 | 92.3 | 89.8 | 89.9 | 90.5 | 88.4 | 91.4 | 87.4 | 81.9 | 145.9 |
| 50000 | 72.6 | 77.7 | 80.3 | 81.5 | 81.7 | 87.8 | 84.4 | 85.0 | 84.2 | 82.8 | 86.5 | 83.1 | 75.1 | 145.1 |
| 63000 | 67.0 | 72.4 | 75.4 | 76.8 | 77.7 | 83.3 | 78.8 | 80.0 | 80.3 | 78.1 | 81.6 | 77.0 | 70.9 | 145.7 |
| 80000 | 60.3 | 65.7 | 69.0 | 69.7 | 70.6 | 77.5 | 73.1 | 74.5 | 73.9 | 72.7 | 75.2 | 71.5 | 63.4 | 146.5 |
| 0ASPL | 109.9 | 112.4 | 112.8 | 111.8 | 113.3 | 116.9 | 117.4 | 119.9 | 122.2 | 128.5 | 133.6 | 131.3 | 125.2 | 167.4 |
| PNL | 122.3 | 124.4 | 125.0 | 123.9 | 125.6 | 129.2 | 129.2 | 132.7 | 134.7 | 139.4 | 144.5 | 141.0 | 135.5 | |
| PNLT | 122.3 | 125.1 | 125.0 | 124.4 | 126.2 | 129.2 | 130.7 | 133.3 | 134.7 | 140.0 | 145.1 | 141.0 | 135.5 | |
| DBA | 109.5 | 111.7 | 111.8 | 110.6 | 112.1 | 115.7 | 115.8 | 119.3 | 121.8 | 127.5 | 133.0 | 129.9 | 124.5 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

| | | | | | |
|------------------|----------------------|----------------------|-------------|-------------------|-------------------|
| VEHICLE = ADR221 | TEST DATE = 04-18-83 | LOCAT = C41 ANECH CH | CONFIG = 19 | MODEL = AX1 | FLTVEL = 0. FPS |
| IAPLHA = SB59 | WIND DIR = | WIND VEL = | DEG = | MPH = | TEST PT NO = 1921 |
| WIND DIR = | DEG = | WIND VEL = | MPH = | TEST PT NO = 1921 | VE8 = 1916.4 FPS |
| VE8 = | VE9 = | VE10 = | VE11 = | VE12 = | VE13 = |
| VE14 = | VE15 = | VE16 = | VE17 = | VE18 = | VE19 = |
| VE20 = | VE21 = | VE22 = | VE23 = | VE24 = | VE25 = |
| VE26 = | VE27 = | VE28 = | VE29 = | VE30 = | VE31 = |
| VE32 = | VE33 = | VE34 = | VE35 = | VE36 = | VE37 = |
| VE38 = | VE39 = | VE40 = | VE41 = | VE42 = | VE43 = |
| VE44 = | VE45 = | VE46 = | VE47 = | VE48 = | VE49 = |
| VE50 = | VE51 = | VE52 = | VE53 = | VE54 = | VE55 = |
| VE56 = | VE57 = | VE58 = | VE59 = | VE60 = | VE61 = |
| VE62 = | VE63 = | VE64 = | VE65 = | VE66 = | VE67 = |
| VE68 = | VE69 = | VE70 = | VE71 = | VE72 = | VE73 = |
| VE74 = | VE75 = | VE76 = | VE77 = | VE78 = | VE79 = |
| VE80 = | VE81 = | VE82 = | VE83 = | VE84 = | VE85 = |
| VE86 = | VE87 = | VE88 = | VE89 = | VE90 = | VE91 = |
| VE92 = | VE93 = | VE94 = | VE95 = | VE96 = | VE97 = |
| VE98 = | VE99 = | VE100 = | VE101 = | VE102 = | VE103 = |
| VE104 = | VE105 = | VE106 = | VE107 = | VE108 = | VE109 = |
| VE110 = | VE111 = | VE112 = | VE113 = | VE114 = | VE115 = |
| VE116 = | VE117 = | VE118 = | VE119 = | VE120 = | VE121 = |
| VE122 = | VE123 = | VE124 = | VE125 = | VE126 = | VE127 = |
| VE128 = | VE129 = | VE130 = | VE131 = | VE132 = | VE133 = |
| VE134 = | VE135 = | VE136 = | VE137 = | VE138 = | VE139 = |
| VE140 = | VE141 = | VE142 = | VE143 = | VE144 = | VE145 = |
| VE146 = | VE147 = | VE148 = | VE149 = | VE150 = | VE151 = |
| VE152 = | VE153 = | VE154 = | VE155 = | VE156 = | VE157 = |
| VE158 = | VE159 = | VE160 = | VE161 = | VE162 = | VE163 = |
| VE164 = | VE165 = | VE166 = | VE167 = | VE168 = | VE169 = |
| VE170 = | VE171 = | VE172 = | VE173 = | VE174 = | VE175 = |
| VE176 = | VE177 = | VE178 = | VE179 = | VE180 = | VE181 = |
| VE182 = | VE183 = | VE184 = | VE185 = | VE186 = | VE187 = |
| VE188 = | VE189 = | VE190 = | VE191 = | VE192 = | VE193 = |
| VE194 = | VE195 = | VE196 = | VE197 = | VE198 = | VE199 = |
| VE200 = | VE201 = | VE202 = | VE203 = | VE204 = | VE205 = |
| VE206 = | VE207 = | VE208 = | VE209 = | VE210 = | VE211 = |
| VE212 = | VE213 = | VE214 = | VE215 = | VE216 = | VE217 = |
| VE218 = | VE219 = | VE220 = | VE221 = | VE222 = | VE223 = |
| VE224 = | VE225 = | VE226 = | VE227 = | VE228 = | VE229 = |
| VE230 = | VE231 = | VE232 = | VE233 = | VE234 = | VE235 = |
| VE236 = | VE237 = | VE238 = | VE239 = | VE240 = | VE241 = |
| VE242 = | VE243 = | VE244 = | VE245 = | VE246 = | VE247 = |
| VE248 = | VE249 = | VE250 = | VE251 = | VE252 = | VE253 = |
| VE254 = | VE255 = | VE256 = | VE257 = | VE258 = | VE259 = |
| VE260 = | VE261 = | VE262 = | VE263 = | VE264 = | VE265 = |
| VE266 = | VE267 = | VE268 = | VE269 = | VE270 = | VE271 = |
| VE272 = | VE273 = | VE274 = | VE275 = | VE276 = | VE277 = |
| VE278 = | VE279 = | VE280 = | VE281 = | VE282 = | VE283 = |
| VE284 = | VE285 = | VE286 = | VE287 = | VE288 = | VE289 = |
| VE290 = | VE291 = | VE292 = | VE293 = | VE294 = | VE295 = |
| VE296 = | VE297 = | VE298 = | VE299 = | VE300 = | VE301 = |
| VE302 = | VE303 = | VE304 = | VE305 = | VE306 = | VE307 = |
| VE308 = | VE309 = | VE310 = | VE311 = | VE312 = | VE313 = |
| VE314 = | VE315 = | VE316 = | VE317 = | VE318 = | VE319 = |
| VE320 = | VE321 = | VE322 = | VE323 = | VE324 = | VE325 = |
| VE326 = | VE327 = | VE328 = | VE329 = | VE330 = | VE331 = |
| VE332 = | VE333 = | VE334 = | VE335 = | VE336 = | VE337 = |
| VE338 = | VE339 = | VE340 = | VE341 = | VE342 = | VE343 = |
| VE344 = | VE345 = | VE346 = | VE347 = | VE348 = | VE349 = |
| VE350 = | VE351 = | VE352 = | VE353 = | VE354 = | VE355 = |
| VE356 = | VE357 = | VE358 = | VE359 = | VE360 = | VE361 = |
| VE362 = | VE363 = | VE364 = | VE365 = | VE366 = | VE367 = |
| VE368 = | VE369 = | VE370 = | VE371 = | VE372 = | VE373 = |
| VE374 = | VE375 = | VE376 = | VE377 = | VE378 = | VE379 = |
| VE380 = | VE381 = | VE382 = | VE383 = | VE384 = | VE385 = |
| VE386 = | VE387 = | VE388 = | VE389 = | VE390 = | VE391 = |
| VE392 = | VE393 = | VE394 = | VE395 = | VE396 = | VE397 = |
| VE398 = | VE399 = | VE400 = | VE401 = | VE402 = | VE403 = |
| VE404 = | VE405 = | VE406 = | VE407 = | VE408 = | VE409 = |
| VE410 = | VE411 = | VE412 = | VE413 = | VE414 = | VE415 = |
| VE416 = | VE417 = | VE418 = | VE419 = | VE420 = | VE421 = |
| VE422 = | VE423 = | VE424 = | VE425 = | VE426 = | VE427 = |
| VE428 = | VE429 = | VE430 = | VE431 = | VE432 = | VE433 = |
| VE434 = | VE435 = | VE436 = | VE437 = | VE438 = | VE439 = |
| VE440 = | VE441 = | VE442 = | VE443 = | VE444 = | VE445 = |
| VE446 = | VE447 = | VE448 = | VE449 = | VE450 = | VE451 = |
| VE452 = | VE453 = | VE454 = | VE455 = | VE456 = | VE457 = |
| VE458 = | VE459 = | VE460 = | VE461 = | VE462 = | VE463 = |
| VE464 = | VE465 = | VE4 | | | |

FLIGHT TRANSFORMED, SCALED, AND EXTRAPOLATED SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 2400.0 FT. SL

IDENTIFICATION - 83F-ZER-1921 X19211

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|------|------|------|------|------|------|------|------|------|------|-------|------|------|-------|
| 50 | 67.7 | 71.0 | 71.8 | 74.6 | 79.3 | 82.6 | 81.8 | 85.3 | 92.8 | 94.7 | 93.7 | 93.7 | 81.5 | 168.7 |
| 63 | 69.4 | 71.9 | 73.8 | 75.3 | 79.3 | 89.0 | 83.0 | 86.0 | 94.8 | 97.4 | 94.3 | 94.3 | 82.9 | 170.6 |
| 80 | 70.1 | 73.2 | 75.5 | 74.5 | 81.3 | 81.3 | 84.3 | 86.5 | 96.3 | 98.6 | 95.0 | 95.0 | 83.8 | 171.7 |
| 100 | 70.5 | 73.6 | 75.7 | 74.7 | 77.2 | 81.4 | 81.4 | 84.9 | 86.9 | 97.1 | 99.2 | 94.6 | 85.9 | 172.2 |
| 125 | 73.6 | 75.3 | 75.9 | 76.2 | 79.2 | 82.2 | 82.7 | 86.2 | 89.1 | 96.6 | 100.4 | 95.8 | 86.9 | 173.2 |
| 160 | 75.9 | 79.0 | 79.7 | 78.4 | 80.0 | 83.7 | 83.2 | 86.4 | 88.7 | 95.1 | 99.9 | 95.5 | 86.0 | 172.8 |
| 200 | 74.3 | 80.5 | 80.4 | 79.5 | 81.0 | 84.2 | 83.0 | 86.4 | 89.7 | 93.6 | 98.8 | 92.8 | 84.4 | 171.8 |
| 250 | 74.4 | 77.5 | 78.9 | 78.5 | 80.5 | 84.2 | 83.7 | 87.3 | 89.1 | 92.0 | 97.7 | 91.6 | 82.2 | 171.0 |
| 315 | 75.7 | 78.0 | 78.4 | 77.6 | 78.9 | 83.4 | 83.0 | 86.9 | 88.9 | 91.7 | 96.2 | 88.6 | 80.4 | 170.1 |
| 400 | 73.1 | 76.3 | 77.9 | 77.9 | 78.8 | 82.6 | 82.6 | 85.7 | 87.3 | 90.8 | 94.4 | 86.9 | 77.8 | 169.1 |
| 500 | 70.0 | 74.8 | 75.9 | 75.1 | 79.1 | 82.8 | 82.1 | 85.1 | 86.8 | 89.6 | 91.8 | 84.0 | 74.2 | 167.6 |
| 630 | 67.7 | 72.9 | 75.7 | 75.8 | 78.7 | 82.3 | 81.5 | 84.9 | 86.4 | 87.2 | 89.6 | 80.9 | 71.7 | 166.3 |
| 800 | 66.2 | 71.4 | 75.5 | 75.4 | 77.2 | 81.0 | 81.0 | 84.3 | 84.6 | 86.8 | 88.1 | 79.3 | 68.7 | 165.8 |
| 1000 | 64.6 | 72.4 | 75.0 | 75.0 | 77.4 | 81.3 | 80.9 | 84.5 | 84.1 | 85.0 | 86.1 | 76.7 | 66.2 | 165.2 |
| 1250 | 62.7 | 70.4 | 73.9 | 74.6 | 77.1 | 80.3 | 79.5 | 82.4 | 82.1 | 82.4 | 84.3 | 74.5 | 63.4 | 164.2 |
| 1600 | 61.4 | 68.8 | 72.6 | 73.6 | 76.3 | 80.5 | 79.3 | 81.9 | 81.2 | 80.1 | 81.9 | 71.6 | 60.6 | 164.1 |
| 2000 | 58.9 | 66.2 | 70.6 | 72.6 | 75.6 | 79.6 | 78.6 | 78.7 | 78.0 | 77.2 | 77.7 | 68.8 | 56.1 | 163.2 |
| 2500 | 56.5 | 65.2 | 69.2 | 71.3 | 73.5 | 77.7 | 76.5 | 76.1 | 75.6 | 73.1 | 73.1 | 63.8 | 47.6 | 162.9 |
| 3150 | 50.7 | 60.6 | 65.2 | 67.3 | 69.9 | 73.3 | 72.8 | 71.6 | 69.6 | 67.4 | 65.9 | 54.8 | 35.8 | 162.1 |
| 4000 | 41.2 | 52.2 | 57.6 | 61.5 | 63.5 | 68.5 | 66.5 | 64.6 | 62.3 | 56.2 | 52.9 | 41.0 | 15.6 | 161.2 |
| 5000 | 27.8 | 40.9 | 47.9 | 52.5 | 54.7 | 58.9 | 57.0 | 55.5 | 51.1 | 45.0 | 39.1 | 21.9 | | 160.9 |
| 6300 | 4.8 | 21.9 | 31.2 | 37.1 | 39.3 | 45.5 | 42.2 | 39.9 | 36.0 | 26.6 | 17.7 | | | 161.2 |
| 8000 | | | 3.5 | 11.4 | 15.0 | 22.3 | 17.7 | 14.8 | 7.4 | | | | | 160.4 |
| 10000 | | | | | | | | | | | | | | 161.0 |
| 16000 | | | | | | | | | | | | | | 161.8 |
| 20000 | | | | | | | | | | | | | | |
| 31500 | | | | | | | | | | | | | | |
| 40000 | | | | | | | | | | | | | | |
| 50000 | | | | | | | | | | | | | | |
| 63000 | | | | | | | | | | | | | | |
| 80000 | | | | | | | | | | | | | | |

OASPL 83.7 87.5 88.9 88.6 90.6 94.5 95.2 97.3 99.1 105.0 108.4 103.7 94.0 182.4

PWL 88.0 92.7 95.0 96.0 98.2 102.3 101.6 103.5 104.2 107.2 110.6 104.4 94.5

PnLT 89.0 92.7 95.6 96.5 98.2 102.8 102.3 104.1 105.0 107.2 110.6 104.4 94.5

DBA 76.4 81.5 84.0 84.4 86.7 90.5 89.9 92.7 93.2 95.3 98.5 91.4 82.2

MODEL AREA = 268.1 SQ CM (41.6 SQ IN) SCALED AREA = 9032.2 SQ CM (1400.0 SQ IN) DIAMETER RATIO = 5.804 FREQ SHIFT = -8

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

VEHICLE = ADH221 TEST DATE = 04-18-83 LOCAT = C41 ANECH CH CONFIG = 19 MODEL = AX FLTVEL = 0. FPS
 IAPLHA = SB59 IEGA = NO MPH = 0 PWL AREA = FULL SPHERE TAMB F = 36.29 PAMB HG = 29.18 RELHUM = 45.9 PCT
 WIND DIR = DEG WIND VEL = MPH EXT DIST = 2400.0 FT EXT CONFIG = SL MIKE HT =

FNIN1 = LBS XNLR = RPM XNHR = RPM V9 = 1916.4 FPS AE9 = 4.0 SQ IN
 FNRAMB = LBS XNLR = RPM XNHR = RPM V18 = 2347.8 FPS AE18 = 19.9 SQ IN

RUNPT = 83F-ZER-1921 TAPE = X19211 TEST PT NO = 1921 NC = AE089 CORR FAN SPEED = RPM

IDENTIFICATION - MODEL 83F-400-1922 X1922C
BACKGROUND 82F-400-0100 X01000

ANGLES MEASURED FROM INLET, DEGREES

| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 50 | 91.9 | 91.7 | 89.2 | 86.2 | 84.8 | 86.4 | 87.6 | 90.0 | 90.4 | 89.5 | 95.6 | 95.8 | 93.5 | 132.8 |
| 63 | 94.0 | 95.5 | 98.6 | 94.6 | 90.7 | 93.8 | 97.2 | 96.1 | 95.1 | 92.9 | 97.8 | 99.7 | 98.1 | 138.0 |
| 80 | 93.5 | 98.1 | 93.8 | 94.1 | 94.2 | 98.1 | 96.2 | 96.4 | 96.6 | 96.2 | 100.3 | 100.2 | 92.1 | 138.8 |
| 100 | 92.2 | 97.5 | 93.8 | 92.8 | 94.1 | 98.8 | 97.4 | 100.0 | 97.3 | 99.8 | 100.2 | 105.4 | 94.6 | 140.5 |
| 125 | 90.9 | 92.2 | 94.9 | 95.5 | 96.8 | 98.7 | 97.1 | 98.0 | 96.4 | 100.0 | 106.4 | 109.8 | 97.7 | 142.8 |
| 160 | 88.2 | 85.2 | 91.2 | 88.0 | 89.6 | 93.5 | 98.1 | 95.3 | 96.7 | 101.3 | 107.2 | 110.1 | 101.5 | 142.7 |
| 200 | 88.0 | 88.3 | 89.3 | 89.3 | 89.7 | 94.1 | 96.7 | 96.6 | 101.1 | 101.4 | 107.5 | 112.5 | 103.6 | 144.2 |
| 250 | 86.3 | 88.8 | 90.1 | 89.1 | 91.0 | 94.1 | 95.5 | 98.1 | 101.3 | 107.1 | 112.3 | 115.7 | 106.1 | 147.7 |
| 315 | 87.1 | 89.4 | 89.4 | 88.7 | 90.3 | 94.9 | 98.5 | 97.9 | 102.1 | 108.7 | 114.1 | 116.0 | 107.4 | 148.7 |
| 400 | 88.3 | 89.6 | 91.1 | 89.2 | 91.5 | 94.6 | 104.2 | 98.2 | 102.1 | 110.9 | 116.1 | 117.0 | 107.4 | 150.3 |
| 500 | 88.6 | 90.4 | 92.1 | 90.2 | 92.0 | 96.4 | 96.5 | 99.2 | 102.9 | 113.0 | 117.8 | 117.0 | 105.9 | 151.2 |
| 630 | 89.5 | 90.3 | 91.8 | 90.6 | 93.0 | 96.1 | 96.7 | 100.4 | 103.3 | 113.4 | 118.0 | 115.7 | 103.6 | 151.1 |
| 800 | 91.6 | 90.9 | 91.7 | 91.4 | 94.3 | 97.1 | 97.5 | 101.7 | 105.4 | 112.7 | 119.1 | 115.0 | 102.9 | 151.5 |
| 1000 | 94.0 | 94.8 | 94.8 | 93.6 | 94.7 | 97.8 | 98.0 | 102.6 | 105.3 | 112.2 | 117.5 | 113.0 | 101.6 | 150.2 |
| 1250 | 92.4 | 95.7 | 95.3 | 93.9 | 95.4 | 98.5 | 98.6 | 102.3 | 105.8 | 111.1 | 116.0 | 109.1 | 99.8 | 148.7 |
| 1600 | 94.6 | 94.1 | 95.0 | 94.1 | 95.8 | 99.5 | 100.0 | 103.3 | 106.2 | 110.3 | 114.2 | 107.1 | 98.2 | 147.7 |
| 2000 | 94.6 | 94.7 | 95.1 | 94.0 | 95.3 | 98.9 | 99.2 | 103.5 | 106.4 | 110.4 | 111.9 | 104.0 | 97.2 | 146.6 |
| 2500 | 92.6 | 93.1 | 94.7 | 94.7 | 95.3 | 99.2 | 99.4 | 103.0 | 105.1 | 110.2 | 110.2 | 103.5 | 96.5 | 145.8 |
| 3150 | 92.5 | 94.1 | 94.4 | 93.6 | 96.0 | 99.5 | 99.9 | 103.4 | 105.5 | 109.1 | 108.3 | 101.4 | 95.3 | 145.0 |
| 4000 | 93.0 | 94.2 | 94.5 | 93.2 | 95.6 | 99.6 | 99.0 | 103.5 | 104.9 | 108.0 | 107.4 | 100.4 | 95.0 | 144.4 |
| 5000 | 94.1 | 94.9 | 95.5 | 94.1 | 95.4 | 99.1 | 99.7 | 103.1 | 104.4 | 108.1 | 107.5 | 99.5 | 93.7 | 144.5 |
| 6300 | 94.2 | 96.7 | 97.3 | 95.1 | 95.1 | 99.8 | 99.4 | 103.3 | 104.6 | 106.6 | 105.8 | 99.3 | 94.0 | 144.2 |
| 8000 | 94.1 | 96.7 | 97.3 | 96.0 | 96.9 | 99.9 | 99.9 | 102.2 | 103.3 | 105.4 | 103.8 | 97.7 | 93.3 | 143.6 |
| 10000 | 94.2 | 95.9 | 97.1 | 97.2 | 97.6 | 101.0 | 99.8 | 102.5 | 103.2 | 104.2 | 103.3 | 96.9 | 92.2 | 144.1 |
| 12500 | 93.2 | 95.1 | 96.2 | 95.9 | 98.2 | 101.7 | 99.7 | 100.2 | 100.8 | 101.6 | 100.7 | 96.4 | 91.7 | 143.6 |
| 16000 | 93.9 | 95.8 | 95.5 | 95.4 | 97.5 | 101.0 | 99.3 | 99.6 | 100.2 | 99.2 | 98.7 | 94.8 | 89.5 | 144.2 |
| 20000 | 91.8 | 94.8 | 95.1 | 95.3 | 96.3 | 98.9 | 98.4 | 97.3 | 97.0 | 95.5 | 95.5 | 92.3 | 87.3 | 143.9 |
| 25000 | 89.0 | 92.3 | 92.6 | 93.6 | 93.6 | 98.0 | 96.4 | 95.0 | 93.6 | 92.0 | 90.7 | 89.0 | 83.4 | 144.0 |
| 31500 | 85.0 | 88.4 | 90.2 | 90.9 | 90.3 | 94.0 | 92.4 | 92.4 | 90.2 | 88.4 | 87.5 | 84.9 | 78.7 | 143.7 |
| 40000 | 80.9 | 84.5 | 85.7 | 85.9 | 85.2 | 91.1 | 88.6 | 89.0 | 87.5 | 84.4 | 84.0 | 80.5 | 74.8 | 144.1 |
| 50000 | 74.4 | 79.0 | 79.5 | 80.6 | 80.5 | 86.1 | 82.9 | 83.3 | 81.2 | 78.3 | 78.3 | 75.1 | 68.7 | 142.9 |
| 63000 | 68.6 | 72.9 | 75.1 | 75.6 | 76.6 | 81.2 | 76.9 | 78.1 | 76.8 | 73.8 | 73.1 | 69.8 | 62.8 | 143.2 |
| 80000 | 61.2 | 65.3 | 67.8 | 67.5 | 68.5 | 74.9 | 70.7 | 71.4 | 69.7 | 66.7 | 66.3 | 62.8 | 54.8 | 143.1 |
| OASPL | 106.9 | 108.7 | 109.1 | 108.2 | 109.4 | 112.9 | 113.2 | 115.3 | 117.4 | 122.7 | 126.9 | 125.2 | 115.4 | 161.5 |
| PNL | 118.4 | 119.8 | 120.2 | 119.1 | 120.9 | 124.4 | 124.4 | 127.9 | 130.0 | 134.3 | 136.1 | 132.9 | 124.1 | |
| PNLT | 118.4 | 119.8 | 120.2 | 120.0 | 121.7 | 124.4 | 126.0 | 127.9 | 130.0 | 134.3 | 136.1 | 132.9 | 124.1 | |
| DBA | 104.9 | 106.1 | 106.6 | 105.6 | 107.2 | 110.6 | 111.0 | 114.4 | 116.7 | 121.9 | 125.5 | 121.9 | 111.8 | |

NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137

| | | | | | | |
|----------------------|----------------------|------------------------|--------------------|------------------|-------------------|-------------------|
| VEHTEL = ADH222 | TEST DATE = 04-18-83 | LOCAT = | C41 ANECH'CH | CONFIG = 19 | MODEL = AX1 | FLTVEL = 400. FPS |
| IAPLHA = SB59 | LEGA = NO | PWL AREA = FULL SPHERE | TAMB F = | PAMB HG = 36.57 | RELHUM = 39.2 PCT | |
| WIND DIR = | DEG WIND VEL = | MPH = | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | NBFR = |
| FNINT = | LBS XNL = | RPM = | FNH = | V8 = | V10 = | NC = |
| FNRAMB = | LBS XNLR = | RPM = | XNHR = | RPM = | V10 = | AE10 = |
| RUNPT = 83F-400-1922 | TAPE = | TEST PT NR = 1922 | AE10 = | AE10 = | AE10 = | AE10 = |
| | | | | | | |

RPM

4.0 SQ IN

19.9 SQ IN

CARR FAN SPEED =

AE090

1933.4 FPS

2341.9 FPS

AE8

AE10

AE10

AE10

AE10

AE10

AE10

AE10

AE10

AE10

FLIGHT TRANSFORMED MODEL SOUND PRESSURE LEVELS
59.0 DEG. F., 70 PERCENT R.H. STD. DAY, SB 40.0 FT. ARC

IDENTIFICATION - 83F-400-1922 X1922F

ANGLES MEASURED FROM INLET, DEGREES

40. 50. 60. 70. 80. 90. 100. 110. 120. 130. 140. 150. 160. PWL

| | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| FREQ | 40. | 50. | 60. | 70. | 80. | 90. | 100. | 110. | 120. | 130. | 140. | 150. | 160. | PWL |
| 50 | | | | | | | | | | | | | | |
| 63 | | | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | | | |
| 100 | | | | | | | | | | | | | | |
| 125 | | | | | | | | | | | | | | |
| 160 | | | | | | | | | | | | | | |
| 200 | | | | | | | | | | | | | | |
| 250 | 94.2 | 95.3 | 95.0 | 92.4 | 92.6 | 94.1 | 93.6 | 94.5 | 100.0 | 106.0 | 111.2 | 113.9 | 107.3 | 146.4 |
| 315 | 94.2 | 95.3 | 95.0 | 92.4 | 92.6 | 94.1 | 93.6 | 94.5 | 100.0 | 106.0 | 111.2 | 113.9 | 107.3 | 146.4 |
| 400 | 94.8 | 95.8 | 94.3 | 92.1 | 92.1 | 95.1 | 93.3 | 94.9 | 103.6 | 108.3 | 113.4 | 115.5 | 108.7 | 148.3 |
| 500 | 95.5 | 95.7 | 95.9 | 92.5 | 93.9 | 96.7 | 95.5 | 97.0 | 101.4 | 111.0 | 115.9 | 115.8 | 108.5 | 149.7 |
| 630 | 96.3 | 96.8 | 97.1 | 93.6 | 94.9 | 96.5 | 95.8 | 98.2 | 103.9 | 110.9 | 117.8 | 116.6 | 110.7 | 151.0 |
| 800 | 97.2 | 96.8 | 96.9 | 94.1 | 96.3 | 97.7 | 96.7 | 99.6 | 104.5 | 111.2 | 117.3 | 116.1 | 112.2 | 150.8 |
| 1000 | 97.3 | 97.3 | 96.7 | 95.0 | 96.5 | 98.5 | 97.3 | 100.8 | 104.6 | 110.0 | 115.6 | 112.2 | 110.4 | 149.0 |
| 1250 | 99.5 | 99.6 | 98.7 | 95.5 | 97.5 | 99.3 | 98.1 | 100.5 | 105.5 | 109.4 | 114.0 | 110.4 | 109.0 | 147.9 |
| 1600 | 98.9 | 101.4 | 99.9 | 97.3 | 98.2 | 100.5 | 99.7 | 101.8 | 105.8 | 109.7 | 111.9 | 107.4 | 108.2 | 147.1 |
| 2000 | 101.7 | 100.2 | 100.0 | 97.8 | 97.8 | 100.2 | 99.1 | 102.1 | 105.0 | 109.9 | 110.6 | 107.4 | 108.0 | 146.8 |
| 2500 | 101.1 | 100.5 | 99.9 | 97.7 | 99.2 | 100.8 | 99.6 | 102.0 | 105.8 | 109.3 | 109.2 | 105.9 | 107.4 | 146.3 |
| 3150 | 100.2 | 99.8 | 100.2 | 98.9 | 99.2 | 101.5 | 100.5 | 102.8 | 106.0 | 108.7 | 108.8 | 105.2 | 107.3 | 146.2 |
| 4000 | 100.1 | 100.8 | 100.0 | 98.0 | 99.3 | 102.1 | 100.2 | 103.6 | 105.3 | 108.6 | 108.6 | 103.9 | 105.6 | 146.1 |
| 5000 | 100.6 | 100.9 | 100.3 | 97.9 | 99.4 | 102.1 | 101.2 | 103.2 | 106.1 | 107.6 | 107.6 | 104.5 | 106.7 | 146.1 |
| 6300 | 101.5 | 101.6 | 101.3 | 99.0 | 100.2 | 102.8 | 101.2 | 103.8 | 105.3 | 107.2 | 106.3 | 103.6 | 106.6 | 146.2 |
| 8000 | 101.5 | 103.3 | 102.0 | 99.8 | 100.9 | 102.9 | 101.0 | 103.1 | 105.7 | 106.5 | 106.2 | 103.3 | 106.0 | 146.6 |
| 10000 | 101.2 | 103.1 | 102.8 | 100.5 | 101.6 | 104.0 | 102.1 | 103.7 | 104.6 | 105.2 | 104.7 | 103.4 | 105.6 | 147.0 |
| 12500 | 101.1 | 102.0 | 102.4 | 101.4 | 102.8 | 104.7 | 102.2 | 102.1 | 104.7 | 103.6 | 102.7 | 104.3 | 104.7 | 147.5 |
| 16000 | 102.3 | 103.0 | 102.6 | 100.7 | 101.5 | 104.0 | 101.7 | 101.6 | 99.8 | 97.9 | 98.2 | 97.9 | 99.9 | 147.3 |
| 20000 | 99.9 | 101.0 | 100.8 | 99.7 | 100.4 | 101.9 | 100.0 | 97.5 | 96.5 | 94.4 | 93.5 | 94.8 | 96.2 | 146.9 |
| 25000 | 97.2 | 99.3 | 98.8 | 98.0 | 98.2 | 101.0 | 97.8 | 95.0 | 93.9 | 91.6 | 91.5 | 92.3 | 147.3 | |
| 31500 | 96.3 | 98.4 | 97.2 | 96.7 | 94.4 | 97.0 | 93.9 | 92.3 | 92.1 | 88.5 | 88.3 | 87.9 | 89.1 | 148.0 |
| 40000 | 88.7 | 91.3 | 92.2 | 92.0 | 90.8 | 94.1 | 90.1 | 89.0 | 85.1 | 83.2 | 83.1 | 83.0 | 83.5 | 147.3 |
| 50000 | 87.0 | 89.3 | 89.1 | 88.7 | 85.1 | 89.1 | 84.4 | 83.3 | 83.2 | 80.0 | 79.9 | 79.6 | 79.5 | 147.8 |
| 63000 | 79.6 | 82.9 | 82.0 | 81.5 | 81.2 | 84.2 | 78.4 | 78.3 | 77.1 | 73.6 | 73.0 | 72.0 | 72.0 | 147.1 |
| 80000 | 72.3 | 75.3 | 76.1 | 75.0 | 73.1 | 77.9 | 72.1 | 71.4 | 67.3 | 63.8 | 63.7 | 63.2 | 62.2 | 147.0 |

| | | | | | | |
|---|----------------------|------------------------|--------------------|-------------------|-------------------|----------------------|
| MODEL/FULL SCALE FAC - IN=1.000, CALC=1.000 | FREE JET VEL (FPS)= | 400.00 | DIAM (IN)= | 48.00 | REFR CORR YES, | TURB CORR YES |
| NASA DUAL FLOW THERMAL SHIELD/DFTAS-19/NAS3-22137 | | | | | | |
| VEHICLE = ADH222 | TEST DATE = 04-18-83 | LOCAT = C41 ANECH CH | CONFIG = 19 | MODEL = AX | FLTVEL = 400. FPS | |
| IAPLHA = SB59 | IEGA = NO | PWL AREA = FULL SPHERE | TAMB F = 36.57 | PAMB HG = 29.04 | RELHUM = 38.2 PCT | |
| WIND DIR = | DEG WIND VEL = | MPH | EXT DIST = 40.0 FT | EXT CONFIG = ARC | MIKE HT = | |
| FNIN1 = | LBS XNL | = | RPM | V8 = | 1933.4 FPS | AE8 = 4.0 SQ IN |
| FNRAMB = | LBS XNLR | = | RPM | V18 = | 2341.9 FPS | AE18 = 19.9 SQ IN |
| RUNPT = 83F-400-1922 | TAPE | = | X1922F | TEST PT NO = 1922 | NC | = AE089 |
| | | | | | | CORR FAN SPEED = RPM |

83F-400-1922

