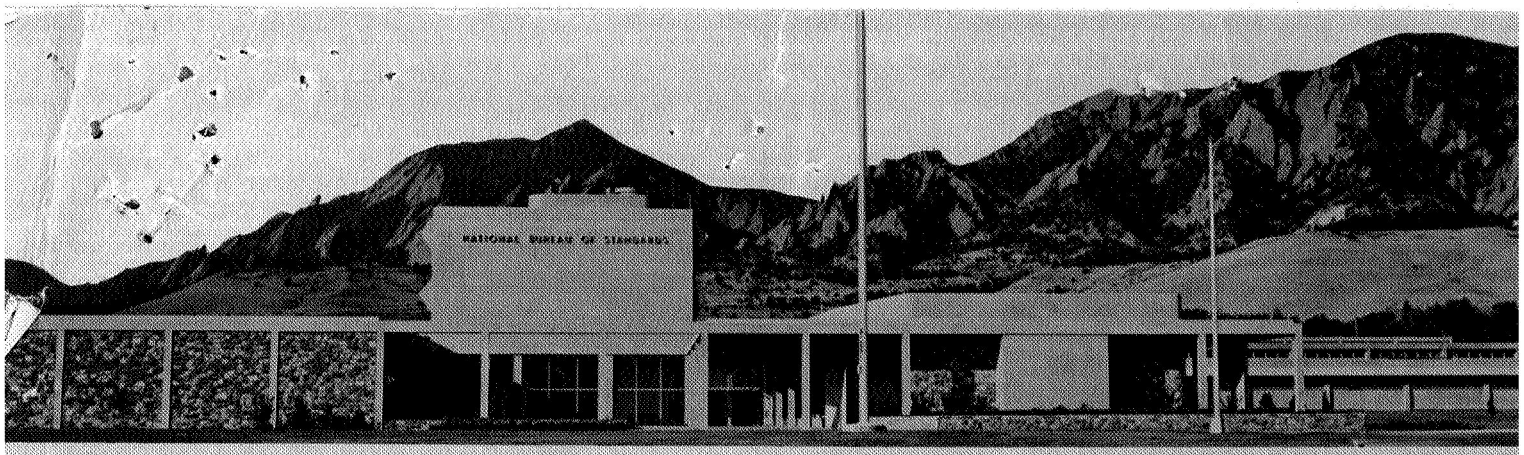

NBS REPORT

9703

CRYOGENIC PROPELLANT VENTING UNDER LOW PRESSURE CONDITIONS

Final Report
to
National Aeronautics and Space Administration

Prepared Under Contract R-45
February 2, 1968

by

M. C. Jones, Patricia J. Giarratano, and A. U. Simpson

NBS

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS
BOULDER LABORATORIES
Boulder, Colorado

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Cryogenics Division
Institute for Materials Research
National Bureau of Standards
Boulder, Colorado

U.S. DEPARTMENT OF COMMERCE

NATIONAL BUREAU OF STANDARDS

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ABSTRACT

Data are presented for wall temperatures and heat transfer coefficients for solid-vapor mixtures of parahydrogen and nitrogen flowing in an electrically heated straight tube of length 40 times its diameter. These are interpreted by the application of flat plate, constant property boundary layer theory to models in which the solid particle geometrical distribution takes on simple limiting forms. The observed enhancement of the heat transfer coefficient over that for gas alone traveling at the same velocity is qualitatively predicted as a function of a dimensionless heat flux, the Sterman parameter $q_w/\rho_v U\lambda$. This parameter is also shown to be an index of particle-wall interaction and is used to correlate observed limiting wall heat fluxes above which free flow may be guaranteed.

1. INTRODUCTION

The study described below was conducted in order to obtain information on the flow and heat transfer characteristics of single component, solid-vapor mixtures flowing through rocket engine propellant supply lines and propellant tank vent lines. The mixtures are formed when cryogenic liquid fuels are introduced into lines open to space atmospheres and thus at pressures below 10^{-6} torr. This is well below the triple point pressures of most liquid fuels. Triple point pressures of some common liquids are listed in Table 1. Such circumstances are most commonly encountered during the idle period or restart of an engine and during the accidental venting of liquid from a supply tank and can lead to lines plugged with solid.

Table 1.

Summary of Triple Point Temperatures and Pressures

	Triple Point Temperatures (°K)	Triple Point Pressure (torr)
Parahydrogen	13.8	52.8
Nitrogen	63.2	94.1
Fluorine	53.5	1.92
Oxygen	54.4	1.14
Water	273.16	4.58
Carbon Dioxide	216.6	3885.2

In order to obtain basic information on this phenomenon, liquids were expanded through orifices at the entrance of a simple straight tube and then discharged into a chamber under vacuum. Fine suspensions of solids in their own vapor were formed and, under certain heating conditions of the tube, were seen through windows in the vacuum chamber to discharge freely from the tube in a fairly homogeneous column. Under conditions of insufficient heat input, discharge became unsteady and even ceased with the tube temporarily blocked with solid.

The goals of the study were to establish heating conditions which would permit free discharge of the solid-vapor mixtures and to measure heat transfer coefficients for heat input through the tube wall. The latter are, in fact, unique two-phase, forced convection heat transfer results, but are quite related to more familiar studies of inert solid-in-gas suspensions [1-5].

Previous studies of flow and heat transfer to gas-inert solids mixtures were motivated by the desire to improve the heat transfer coefficient of a gas stream. Experimental data of various workers including the authors themselves were compared by Farbar and Depew [1] for various solids (glass spheres, catalysts, etc.) suspended in air streams. In summary, their work showed that the pure gas heat transfer coefficient could be enhanced, enchancement increasing with the proportion of solids present and decreasing with particle size. Particles greater than 200 microns did not appear to affect the heat transfer while 30 micron particles gave up to a four-fold enhancement for solids-to-gas mass flow ratios up to 10. For the smaller particles, however, at mass flow ratios less than 4, a decrease in heat transfer coefficient below the pure gas value was noted. Similar observations were reported by Tien and Quan [2]. They worked at mass flow ratios <3.5 with 30 micron and 200 micron particles in both glass and lead. Only for the 30 micron glass particles was significant enhancement noted; significantly, glass has a volumetric heat capacity about 30% higher than that of lead.

Abel, et al. [3] conducted experiments with micronized graphite (particles in the size range $1 < D_p < 10$ microns) suspended in helium and nitrogen gas at mass flow ratios up to about 3. Only marginal enhancement of heat transfer was obtained, but the meaning of the results is obscured by the occurrance of deposition of graphite on the walls of the test section.

Theoretical expressions for heat transfer coefficients for gas-inert solid flow have been derived. In a simplified treatment of heat transfer in fully developed turbulent flow, with uniform distribution of very small particles and an unperturbed velocity profile, Tien[4] showed that the enhancement was proportional to the factor

$$\left(1 + \frac{\rho_p C_{p,p}}{\rho_v C_{p,v}}\right)$$

In a laminar boundary layer analysis Edelman[5] derived the enhancement factor

$$\left(1 + \frac{\rho_p C_{p,p}}{\rho_v C_{p,v}}\right)^{1/3} \left(1 + \frac{\rho_p}{\rho_v}\right)^{1/6}$$

Again, uniform particle distribution was assumed.

From this work the major effect of the presence of inert particles is clear: particles act as heat sinks for the vapor and, insofar as they do not constitute a hydrodynamic disturbance, they prolong the entrance region and consequently enhance heat transfer.

For subliming solid-vapor mixtures, only the previous work of Jones, et al.[6] is available. Preliminary studies were made of heat transfer to solid-vapor mixtures of parahydrogen below its triple point pressure flowing through a short (length = 13 diameters) uniformly heated tube. Enhancement was again observed and a dependence upon heat flux noted. A correlation was suggested in which a dimensionless heat flux, the Sterman parameter, was used. This is discussed more fully below. In that work only hydrogen data were reported since it was found impossible to obtain free flow of solid-vapor mixtures of nitrogen in the same apparatus.

In the present study a tube of 40 diameters length was used and was investigated for both parahydrogen and nitrogen. Free flow was achieved by concentrating heat in the vicinity of the entrance orifice. Heat transfer data for the two fluids permit a test of the correlation, suggested in the earlier study, here interpreted in the light of an analysis presented below. This analysis permits some interpretation of the form of the experimental correlation in terms of the distribution of solid particles over the cross section of the tube.

Under one approximation the analysis suggests that particle size would be an important factor in predicting heat transfer coefficients. An attempt was therefore made at photographing the solid particles discharging from the tube. Although quite clear photographs were obtained, it is not possible to pick representative particle diameters due to the wide range of particle sizes observed. However knowledge of this range was found to be of use and some additional qualitative information was obtained on the distribution of particles over the tube cross section.

2. EXPERIMENTAL

2.1. Flow System

The solid-vapor mixtures were investigated in a continuous flow system in which a cryogenic liquid, nitrogen or parahydrogen, was expanded through an orifice into a straight, heated tube and then discharged into a vacuum chamber. Figure 1 illustrates the flow system used.

The test liquid at a suitable pressure flowed from the supply dewar (A) through a precooler (B) into the plenum chamber (C) in which the thermocouple reference junctions were embedded and which also served as a reservoir for measuring temperature and pressure of the liquid before it entered the test section. The liquid then expanded through an orifice into the test section (D) where the pressure was well below the triple point of the fluid being tested.

The use of the precooler assured that subcooled or saturated liquid was maintained in the plenum chamber. The discharge pressure was maintained by one or two reciprocating vacuum pumps (E) each having a capacity of 310 liters/sec at 10 torr and was controlled by an absolute pressure sensor (F), vacuum pump butterfly valve (G), and pneumatic proportional controller (H).

2.2. Test Section

The details of the test section are shown in figure 2 and 2A. It was an "Inconel" tube of 1.37 cm internal diameter (9/16" O.D., 0.012" wall) having a length-to-diameter ratio of approximately 40 between the inlet orifice and the end of the tube.

Ten calibrated chromel-constantan thermocouples, located as indicated in figure 2 were used to measure wall temperatures; four heaters in the apparatus were used as follows:

1. Cartridge heater (P) upstream of discharge orifice for varying the quality of the stream.
2. Heater (N) adjacent to discharge orifice to prevent caking of solid on the tube wall adjacent to the orifice.
3. Main test-section heater (L) (wound uniformly and noninductively) along the length of the tube to supply heat to the solid-vapor mixture flowing in the test section. This heater could also be electrically wired so that upper and lower sections of the tube were independently heated.
4. Auxiliary heater (M) at the lower end of the test section to prevent heat loss from the bottom of the warm tube wall to the cold vacuum insulating jacket. An eleventh difference thermocouple (Q) located between the tube wall and the insulating jacket flange provided an error signal for a temperature

controller which supplied power to the auxiliary heater (M) and continuously compensated for this heat loss.

Pressure taps H1 and H2 located at the top and bottom of the test section were used for measuring static pressure drop along the tube during free flow of the solid-vapor mixture.

2.3 Instrumentation

A data acquisition system consisting of a digital voltmeter, amplifier, scanner, and printer was used for measuring and recording all voltages and currents. These included heater voltages and currents, thermocouple emfs and the voltage drop and current through a germanium resistance thermometer located inside the plenum chamber, C.

Flow rates were measured by means of a calibrated flow orifice, the pressure drop being read on a water manometer. For nitrogen runs, the flow rate was varied by changing the test discharge orifice size, while for hydrogen different flow rates were obtained more conveniently by varying the pressure upstream of the orifice. The flow orifice was submerged in the precooler to assure single-phase liquid flow.

Discharge chamber pressure was measured by an absolute pressure mercury manometer, and a specially designed mercury U-tube manometer capable of indicating small pressure drops was used to measure the pressure drop along the test section.

Photographs of the emerging solid-vapor stream were taken using a commercially available microflash unit, which had a flash duration of 0.3×10^{-6} sec, and a specially constructed camera consisting of a lens, a 1 meter expansion bellows and film holder. Because it was impractical to locate the camera close to the discharging stream inside the vacuum chamber, the special camera arrangement was necessary to obtain sufficient

resolution of solid particles. A traveling microscope was used to measure particle sizes in the photographs.

2.4. Experimental Procedure

The discharge chamber was evacuated to a pressure well below the triple point of the test fluid; liquid was then transferred from the supply dewar to the precooler accomplishing cooldown of the transfer line and filling the precooler.

Cooldown of the system between the precooler and test section was accomplished by venting the plenum (C) to the discharge chamber. Venting was discontinued when the germanium resistance thermometer located in the plenum chamber indicated the presence of subcooled or saturated liquid. At the first sight of solid emerging from the test section (viewed through windows in the discharge chamber), power was applied to the orifice and main heaters until free flow of solid and vapor was obtained. The automatic temperature controller governing the auxiliary heater was then placed in operation.

Heat transfer data and photographs of the emerging solid-vapor stream were taken for a set discharge pressure and flow rate (dictated by the size of the test discharge orifice and/or upstream driving pressure) with variable heat flux to the test section.

Previous work [6] indicated that at low heat fluxes flow was impeded due to adherence of solid to the tube wall adjacent to the discharge orifice. In order to qualitatively examine the heating conditions necessary for free flow in a region of parallel flow (in contrast to the region near the discharge orifice where the flow has a considerable radial component), the heat flux to the lower 8 cm of the tube (farthest section from the orifice) was reduced while the upper section heat flux was held constant. Heat transfer data were also taken during these runs.

In order to investigate the effect of varying the quality of the mixture, power into the cartridge heater was varied while discharge pressure, flow rate and heat flux into the test section were maintained constant. The power into the cartridge heater was increased until flow of solid-vapor stopped, indicating the liquid upstream of the discharge orifice had been vaporized. A significant variation of quality was not accomplished.

3. RESULTS

Typical photographs of the solid-vapor mixture discharging from the end of the test section are shown in figures 3 and 4 for hydrogen. The absence of visible solid particles in the vicinity of the wall is clearly evident in figure 4 where the heat flux was three times that for figure 3. Photographs also indicated that a wide distribution of particle sizes existed in the solid vapor stream ranging from 10 to approximately 500 microns. The limits on particle size are wide since is was not possible in all cases to determine whether some of the particles being measured were individual or optically superimposed particles. Particles less than 10 microns could not be seen clearly with the photographic resolution available.

Selected temperature difference ($T_w - T_s$) profiles are given in figures 5 and 6 for hydrogen and figures 7 and 8 for nitrogen. The inside wall temperature, T_w, was calculated by correcting measured outside wall temperatures for temperature drop through the tube wall. The bulk fluid temperature at a given station was taken as the saturation temperature, T_s, corresponding to the pressure in the tube at that point, there being no means to actually measure it.

The heat flux to the fluid was calculated from the measured electrical power input, taking into account axial conduction along the tube (based on measured wall temperatures) and radiation losses.

The heat flux uncertainties were ± 1/2 percent and uncertainties in the temperature difference were less than ± 5 percent for approximately 90 percent of the runs, the worst uncertainties being ± 25 percent to ± 150 percent at low heat fluxes (<0.02 W/cm^2) for hydrogen data points. The uncertainties in temperature difference were almost entirely due to a tendency of the wall temperatures to drift randomly during a run. The arithmetic average of all the measured values (5 readings per datum point taken over a 2-1/2 minute interval) were used in the reported results.

In general, for a given heat flux, flow rate and discharge pressure, the trend was an increase in $(T_w - T_s)$ with axial distance along the tube. At a given heat flux and flow rate, discharge pressure did not appear to significantly affect the temperature profile for hydrogen while for nitrogen the general trend was a decrease in temperature profile with increased discharge pressure.

The temperature profile dependence on flow rate is also illustrated in figures 5 through 8. For hydrogen with a constant heat flux, an increase in flow rate decreased the temperature difference (increased the heat-transfer coefficient) at all stations. However, for nitrogen, between stations 5 and 7 only, the opposite is shown to be true as evidenced by the generally steeper rise of the curves in figure 8 compared to those in figure 7.

Attention is also drawn to the fact that wall temperatures remained close to saturation temperature for greater values of x/D in the case of nitrogen than with hydrogen.

In the discussion below it has been convenient to illustrate the results by a plot of the enhancement factor, f, vs Sterman parameter, N_{Sr}. The estimated uncertainties in these quantities are ± 10 percent and ± 1 percent respectively for most of the runs, worst values for f being ± 30 percent to ± 155 percent at $N_{Sr} < 0.0003$ due to large uncertainties in $(T_w - T_s)$ at low heat fluxes.

While it was possible to obtain a plugged tube when the entire main test section heater power was sufficiently reduced, this was not so when only the power to the lower 8 cm of the test section was reduced. Although the flow oscillated, plugging was not obtained for any measurable or reproducible length of time. Heat transfer data taken during these runs substantiated the trends of f vs N_{Sr} shown in figures 10 and 11. Since plugging did not occur in these runs it was possible to attain lower Sterman parameters for N_2 and results indicated a dipping down of the curve at low Sterman parameters. Because of the nonuniformity of the heat flux applied to the entire test section (power to the bottom 8 cm of the section was reduced while power to the remaining upper portion was held constant), these results are not included in the data shown in figures 5 through 11, where uniform heat flux was applied to the entire length of the test section. However, figure 12 illustrates conservative heating conditions necessary for free flow for the range of variables encountered in this study.

4. HEAT TRANSFER THEORY

A complete theoretical description of heat transfer coefficient for the subliming, solid-vapor mixtures investigated in this work would treat momentum and energy transport for the two phases—particle and vapor — in the presence of turbulence, particle transport, vaporization, compressibility effects, and temperature dependent transport properties. Such a

general treatment is not yet available and the interpretation of the experimental results must proceed from simplified analyses. Such analyses at this stage of knowledge have the advantage of separating out dominant effects and permitting some insight into the total process. An alternative procedure is to formulate the governing differential equations and boundary conditions and produce a purely numerical solution, but here insight is not improved without very extensive calculations because the functional form of the result is not known. It is further found that solutions are often not possible because of lack of knowledge of details of processes.

For the present treatment it was decided to use a boundary layer technique for laminar, incompressible, constant property flow over a flat plate with constant heat flux and investigate perturbations of the well known single phase results by the presence of vaporizing solid particles. It was considered that, being an entrance region with free stream turbulence enhanced by that from the orifice, the flat plate laminar boundary layer assumptions would be particularly appropriate up to the point of boundary layer transition. Some slight deviation from the flat plate result would be expected towards the end of the tube where the boundary layer is estimated to be between 10 and 20 percent of the tube diameter.

Essential for this analysis is a description of the size distribution, geometrical distribution and velocity distribution of the solid particles. A single size particle was chosen representing an average particle. For the geometrical distribution, two extreme cases were considered. In the first, a uniform density of particles was assumed throughout. In the second, it was assumed that particles exist only outside the thermal boundary layer. The first case corresponds physically to a high degree of mixing or a low heat flux, while the second represents the case of no mixing and immediate vaporization of particles entering the boundary layer. The true physical picture lies obviously between these extremes. The two

cases are referred to below as the "uniform particle density" and "vapor film" cases respectively. For the velocity distribution of the particles it was decided to treat only the case where no relative velocity exists between the phases, as would be the case for sufficiently small particles.

The details of the analysis are given in Appendix A. The procedure, the von Kármán approximate integral method [7], may be outlined as follows. Integral equations are written for mass, momentum and energy conservation for both particle and gas phases separately and for the combined phases for total conservation in a volume element which includes the boundary layer. Fourth order velocity and temperature profiles are chosen to satisfy all important boundary conditions. These are substituted into the integral equations, and after carrying out the integration, a first order differential equation results for both momentum and thermal boundary layer thicknesses. The momentum equation may be integrated immediately and the result substituted into the differential equation for the thermal boundary layer. The resulting differential equation is seen to resemble the usual single phase equation except for terms due to the presence of particles. The differential equations are soluble when a simple perturbation technique is applied. This leads to an explicit expression for the thermal boundary layer thickness as a function of x. For the case of uniform particle density, a second simple asymptotic solution is possible when the presence of solid dominates. In this case the usual single phase terms may be neglected and the solution is identical to that which would be obtained if the solid-vapor mixture were stagnant, as shown by Simpson [8].

Finally, heat transfer coefficients, h, are evaluated and enhancement factor, f, calculated. This is defined as

$$f = h/h^{\circ}$$

where h° is the heat transfer coefficient for the vapor alone, traveling at

the free stream velocity of the mixture. The results may be summarized as follows:

Case 1 - Uniform Density Model.

(a) Perturbation Solution:

$$\delta_t = \delta_t^1 \left[1 - \epsilon \right]^{1/3} \tag{1}$$

where

$$\frac{\delta_t^1}{x} = 4.44\, N_{Pr}^{-1/3}\, N_{Re,D}^{-1/2} \left(x/D \right)^{-1/2} \left(1 + \rho_p/\rho_v \right)^{1/3}$$

and

$$\epsilon = \left(\delta_t'/\Sigma \right)^2 \left[\frac{1}{5} \frac{\lambda}{\lambda^*} - 0.186\, N_{Pr}^{1/3} \left(H \rho_p/\rho_v \right)^{-1/3} \right]$$

with

$$\Sigma^2 = \frac{D_p^{\,2}}{3 N_{Nu,p} S} \frac{\lambda}{\lambda^*} \frac{\tilde{\rho}_p}{\rho_p}$$

$$f = \left(1 + \rho_p/\rho_v \right)^{1/6} \left[1/(1 - \epsilon)^{1/3} + \frac{1}{6} \left(\delta_t^1/\Sigma \right)^2 \right] \tag{2}$$

(b) Asymptotic Solution:

$$\delta_t = \left(\frac{10}{3} \right)^{1/2} \left[\frac{\tilde{\rho}_p}{\rho_p} / N_{Nu,p} S \right]^{1/2} D_p \tag{3}$$

$$f = \left(\frac{5}{6} \right)^{1/2} \left[\frac{\rho_p}{\rho_p} \cdot N_{Nu,p} \cdot S \right]^{1/2} \frac{\lambda^*}{\lambda} \frac{\delta_t^o}{D_p} . \tag{4}$$

Case 2 - Vapor Film Model:

$$\delta_v = \delta_t^o \left[\frac{1 - 2(q_v/q_w)}{1 + 4(q_v/q_w)} \right]^{1/3} \tag{5}$$

where

$$\frac{\delta_t^o}{x} = 4.44\, N_{Pr}^{-1/3}\, N_{Re,D}^{-1/2} \left(x/D\right)^{-1/2}$$

and

$$q_v/q_w = N_{Sr}^{-1}\, \Pi \left(\delta_t^o/2x\right)\left(\rho_p/\rho_v\right)$$

Π is a function of N_{Pr} only and is defined in Appendix A.

$$f = \frac{\left(1 + 4\, q_v/q_w\right)^{1/3}}{\left(1 + q_v/q_w\right)\left(1 - 2\, q_v/q_w\right)^{1/3}} \tag{6}$$

5. DISCUSSION

5. 1. Heat Transfer

In this discussion an attempt will be made to interpret the broad features of the experimental results with reference to the theory presented. In the region close to the discharge orifice, the fluid mechanical situation of the stream impinging on the tube wall with a non-equilibrium condition existing between the phases does not lend itself to analysis. The rather complex behavior noted above in figures 5, 6, 7, and 8 in which the two fluids appear to behave differently is evidence of this. However, it is supposed that adjacent to the wall a laminar boundary layer does begin to develop in some manner in the region of the orifice. It is further expected that the development of the boundary layer becomes less dependent on this orifice condition the farther one proceeds down the tube, so that the wall temperatures or heat transfer coefficients here should be amenable to analysis.

The temperature difference profiles of figures 5, 6, 7, and 8 show typical single-phase behavior away from the orifice except for erratic behavior near the end of the tube. (This amounts to a small percentage since here the temperature differences are high.) Theory predicts, however, that the heat transfer coefficient should be enhanced by the presence of vaporizing solid. Unfortunately, it was not possible in these experiments to measure heat transfer coefficients for the single phase, pure gas case under comparable conditions, and therefore recourse must be had to calculation.

It was suggested in a previous paper [6] by a dimensional analysis that, for a given value of x/D, a correlation should exist between the enhancement factor, $f = h/h^\circ$, and the Sterman parameter N_{Sr}. While the present theory qualifies this somewhat, the plot is still convenient in that one can say something about the trend to be expected, namely: at large values of N_{Sr}, f should decrease to an

asymptotic value of 1.0 for all values of x/D. This is the prediction according to equation (6) and, in words, means simply that for high heat flux the tube wall becomes blanketed by a thick layer of gas which, in the limit, becomes pure gas flow as all the solid is vaporized.

If fully developed turbulent flow existed toward the end of the tube, the Sieder-Tate correlation [9]

$$h_{S-T} = 0.026\,(k/D)\,N_{Re}^{0.8}\,N_{Pr}^{0.33}\,(\mu_s/\mu_w^{0.14}) = h^{\circ}$$

could be used to calculate the heat transfer coefficient, h°, for the pure gas traveling at the same velocity as the mixture. The enhancement factor so calculated is shown in figure 9 plotted against N_{Sr} for x/D = 39. Also shown are the data from [6] for x/D = 13. Apparently the Sieder-Tate correlation overpredicts the equivalent pure gas heat transfer coefficient since the enhancement factor for x/D = 39 approaches a value of 0.5-0.6. The data for x/D = 13 approach 1.0 as was noted in [6], but it now seems likely that part of the enhancement here when compared to fully developed turbulent flow is due to this station's being higher in the entrance region.

In the theory presented in this paper it is suggested that laminar boundary layer theory could be used to describe the developing wall temperatures. In figure 10, the enhancement factor presented was calculated for x/D = 39 using for h° the value obtained from equation (11b) of Appendix A for pure vapor traveling at the same free stream velocity as the mixture. Transport properties were calculated at $T = (T_w + T_s)/2$. The enhancement factor calculated in this way is now compatible with the stated requirement at large values of N_{Sr} for x/D = 39. For all other values of x/D, f is greater than 1.0 also and shows the correct trend of decreasing as N_{Sr} increases. It is noted also in this figure that the data for hydrogen and nitrogen correlate well.

According to Schlichting [7], the transition of a laminar to a turbulent boundary layer takes place over a flat plate at a Reynolds number, based on

length, of the order of 3×10^5. In the present experiments this value is often exceeded toward the end of the tube and, indeed, some of the erratic behavior of the temperature difference profiles, particularly at high heat fluxes, could be explained by this; the possibility should not be excluded that at low heat flux the unvaporized particles in the boundary layer damp out turbulent fluctuations and therefore stabilize the flow. In either case it is clear from figures 9 and 10 that fully developed turbulence was not attained in these experiments, and the laminar boundary layer calculation of h° is reasonable.

It is now also clear that, except at high values of N_{Sr}, heat transfer is enhanced by the presence of subliming particles; indeed, according to figure 10, up to a tenfold enhancement was realized.

Theoretical values of f are also shown on figure 10. At high values of N_{Sr}, f was calculated for $x/D = 39$ and the range of N_{Re} encountered experimentally using equation (6) for the vapor film model. Unfortunately, the range of validity of the calculation does not encompass the experimental data, but it appears that this model could represent the correct asymptotic behavior for large values of N_{Sr}. If anything, the theoretical curve is too far to the right. The uniform particle density model was applied using the extreme values of particle sizes observed. For the 500 micron particles, the perturbation calculation of equation (2) is valid and the result is the lower shaded area at the left of the figure. For 10 micron particles, the perturbation term, c, is too large for equation (2) to be valid. However, this case may be handled by the asymptotic solution, equation (4). This is represented by the upper shaded area at the left of the figure. These two results have been plotted at low N_{Sr} because this is precisely where uniform density is expected, i.e., low heat flux and, consequently, no vapor film.

The result obtained for the enhancement factor from the asymptotic solution is in good order of magnitude agreement with experiment, and the predicted independence of N_{Sr} actually follows the data for small N_{Sr}. The perturbation solution is either inapplicable (small particles) or predicts too low an enhancement (large particles). It is evident that particle size data are crucial if the enhancement factor is to be accurately predicted, but it is felt that these results using a wide range of particle size are at least encouraging.

A further point of interest is the dependence of the enhancement factor on position along the tube. This is illustrated in figure 11 for hydrogen data at x/D = 8, 19, and 39. Also presented for comparison are the data for x/D = 13 from [6]. The two sources of data seem to be reasonably compatible. Although h° itself contains a dependence on x/D, it is seen that this is not sufficient to compensate for the experimental dependence of h; the data for different x/D do not merge together, That this is expected can be shown by calculating f for the vapor film model for different x/D. In doing this, equation (6) has been used again, but in order to obtain better agreement with the data, the density, ρ_p, of particles in the free stream has been reduced to obtain a fit with the data for x/D = 39. This is not without reason when one remembers that in the vapor film model all solid is assumed to exist as very small particles which vaporize in a negligible time. This is obviously not the case in the experiments and only a fraction of the particles will be effective in this way. Having thus obtained a fit for x/D = 39, the curve for x/D = 8 was calculated with the same value of ρ_p and for the same range of N_{Re}. The shift is seen to be reasonable when compared with the data.

The preceding discussion leads to the following interpretation of the observed trend of f with N_{Sr}. At low heat flux and hence low N_{Sr}, the distribution of particles is unperturbed by vaporization and is independent of N_{Sr} as predicted by the uniform density model. Increasing N_{Sr} vaporizes particles from the region adjacent to the wall, forming some sort of film as particle concentration is depleted. Although the discontinuous concentration profile used in the vapor film model is not realistic, it is felt nevertheless that the same interpretation can be given to the role of N_{Sr} as is indicated theoretically, namely, N_{Sr} is an index of the departure of particle concentration profile from uniform. A striking confirmation of this interpretation is obtained from the photographs, figures 3 and 4, of the solid vapor stream emerging from the end of the heated tube. In figure 4, N_{Sr} is 2.3 times the value in figure 3; all other conditions are comparable.

5.2. Heating Configuration for Free Flow

The preceeding interpretation of N_{Sr} can be put in another way. Since uniformity of particle distribution is approached with decreasing N_{Sr}, it must also be an index of particle-wall interaction. That this is explicitly the case is shown in Appendix B in a dimensional analysis of the forces acting as a particle. The Sterman parameter plays much the same role here as Kutateladze's parameter in boiling systems [9]. The latter indicates a change in liquid-wall interaction as nucleate boiling transforms into film boiling.

In figure 12 an estimate is made based on operating experience of the lowest safe value of N_{Sr} as a function of x/D above which free discharge can be guaranteed. Below the value indicated, the flow may become erratic or even stop altogether with solid plugging the tube.

Also shown are the corresponding heat fluxes for the two fluids at several flow rates. One can immediately see that higher heat fluxes are required to maintain free flow of nitrogen than are required for hydrogen, a consequence primarily of the higher molar heat of sublimation of nitrogen At the right-hand end of the figure are curves which indicate the results obtained when the heat flux was lowered in the lower 8 cm of the tube while being held constant over the main section. For these results the main section was not at its lowest safe heat flux.

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7. NOMENCLATURE

c	Coefficient of η^2 in dimensionless temperature profile	
C_p	Constant pressure specific heat of vapor	J/g°K
D	Inside tube diameter	cm
D_p	Average spherical particle diameter	cm
f	Enhancement factor--defined in text.	
F	Force on particle	dynes
G	Rate of vaporization per unit volume	g/cc sec
h	Local heat transfer coefficient	$W/cm^2°K$
h_p	Particle heat transfer coefficient	$W/cm^2°K$
k	Vapor thermal conductivity	W/cm°K
K	Critical value of N_{Sr}	
m	Mass of particle	g
N_{Nu}	Nussett number, hD/k	
$N_{Nu,p}$	Particle Nussett number, $h_p D_p/k$	
N_{Pr}	Prandtl number, $\mu C_p/k$	
N_{Re}	Reynolds number, $(\rho_p + \rho_v) UD/\mu$	
$N_{Re,v}$	Reynolds number, $\rho_v UD/\mu$	
N_{Sr}	Sterman parameter $q_w/\rho_v U\lambda$	
q_v	Heat flux at vapor film boundary	W/cm^2
q_w	Heat flux through tube wall	W/cm^2
S	Shape factor (surface area of particle/πD_p^2)	

T	Local mean temperature of vapor	°K
T_w	Local wall temperature	°K
T_s	Local saturation temperature	°K
U	Free stream velocity for flat plate analysis	cm/sec
v	Radial velocity component	cm/sec
x	Axial distance along flat plate	cm
y	Perpendicular distance from wall	cm
α	Proportionality constant-defined in text	dynes/cm
Γ	Temperature difference $T_w - T_s$	°K
$\Gamma_1 =$	$(q_w - q_v)\,\delta_v/2k$	°K
$\Gamma_2 =$	$q_v \delta_v/k$	°K
δ_m	Momentum boundary layer thickness	cm
δ_t	Thermal boundary layer thickness	cm
δ_v	Vapor film thickness	cm
$\Delta =$	δ_t/δ_m or δ_v/δ_m	
ϵ	Perturbation constant--defined in text	
η	Dimensionless coordinate (y/δ_t)	
θ	Temperature difference $T-T_s$	°K
λ	Latent heat of sublimation	J/g
μ	Vapor viscosity	g/sec cm
ξ	Dimensionless coordinate (y/δ_m)	
Π	Dimensionless function of Prandtl number--defined in text	
ρ_p	Average solid particle phase density	g/cc

$\tilde{\rho}$	Specific density of solid	g/cc
ρ_t	Total density ($\rho_{pt}\rho_v$)	g/cc
ρ_v	Density of vapor	g/cc
$\Sigma =$	$\left[\left(D_p/3N_{Nu,p}\cdot S\right)\left(\lambda/\lambda^*\right)\tilde{\rho}_p/\rho_p\right)\right]^{1/2}$	
$\omega =$	$(\alpha/M)^{1/2}$	sec^{-1}

Subscripts

m	Momentum
p	Particle
s	Saturation conditions
t	Thermal
v	Vapor or vapor film
w	Wall conditions

Superscripts

°	Unperturbed pure vapor phase
1	Two-phase without vaporization

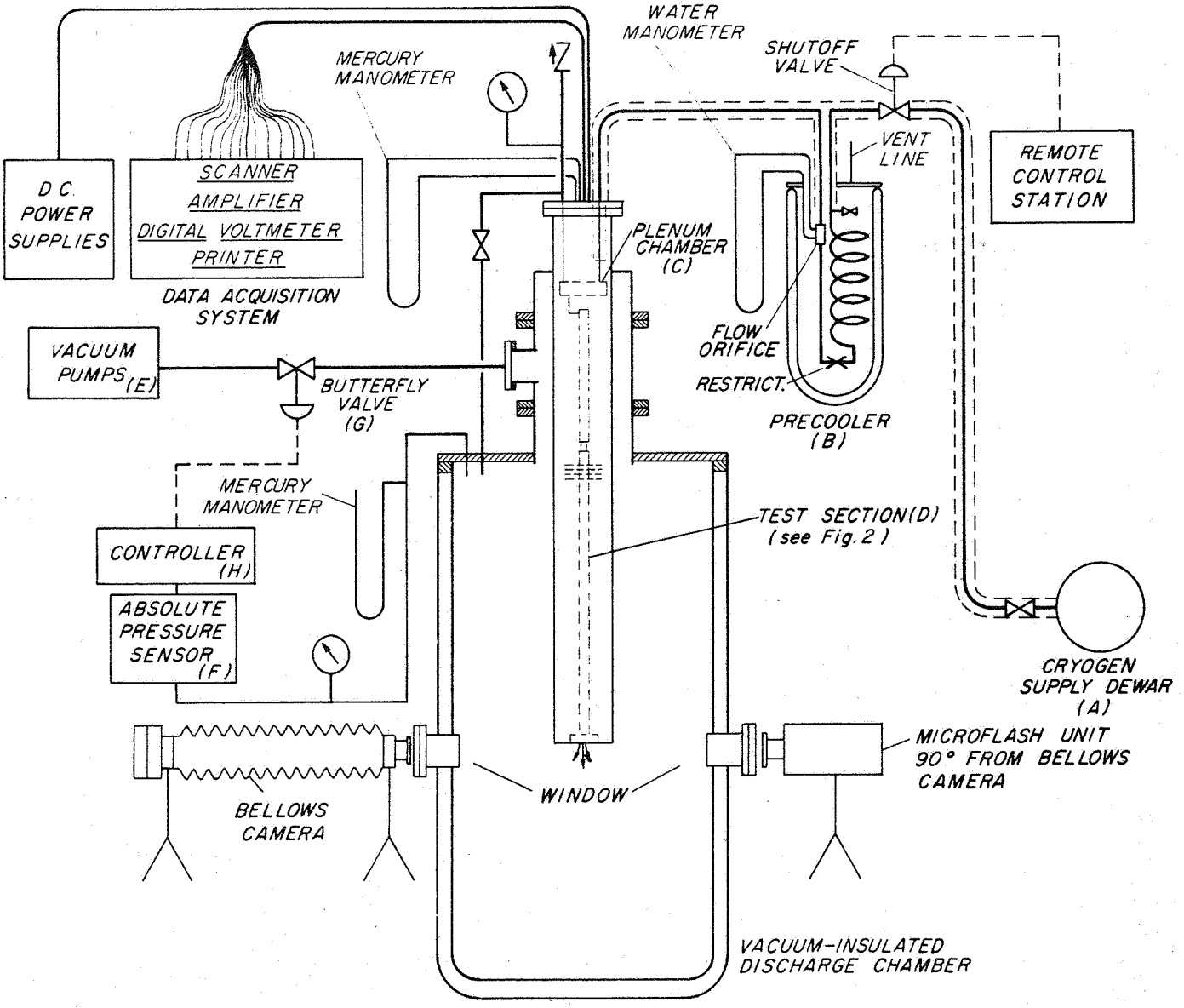

Fig. 1. Schematic arrangement of experimental system.

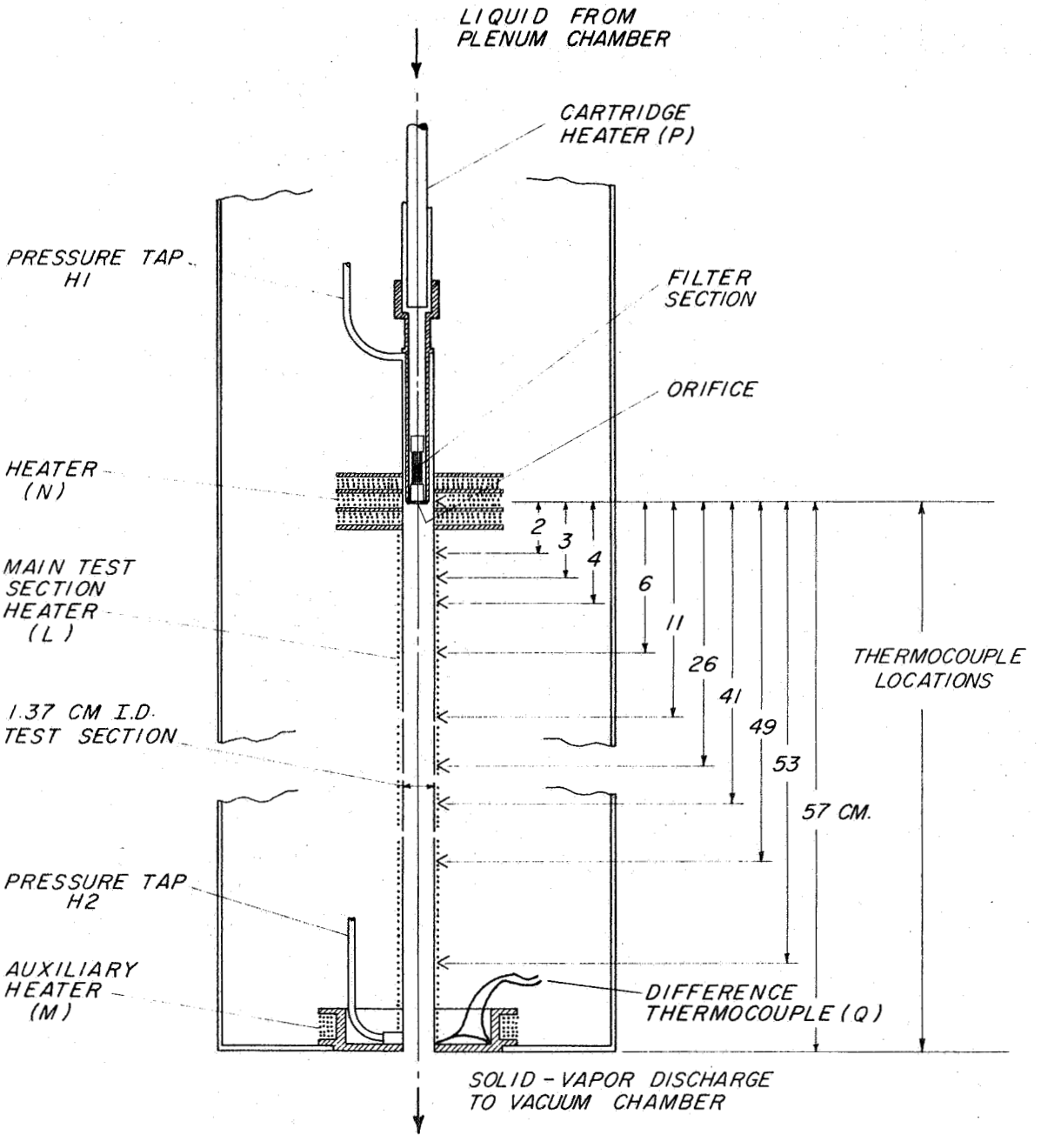

Fig. 2. Test section, showing heaters and locations of thermocouples.

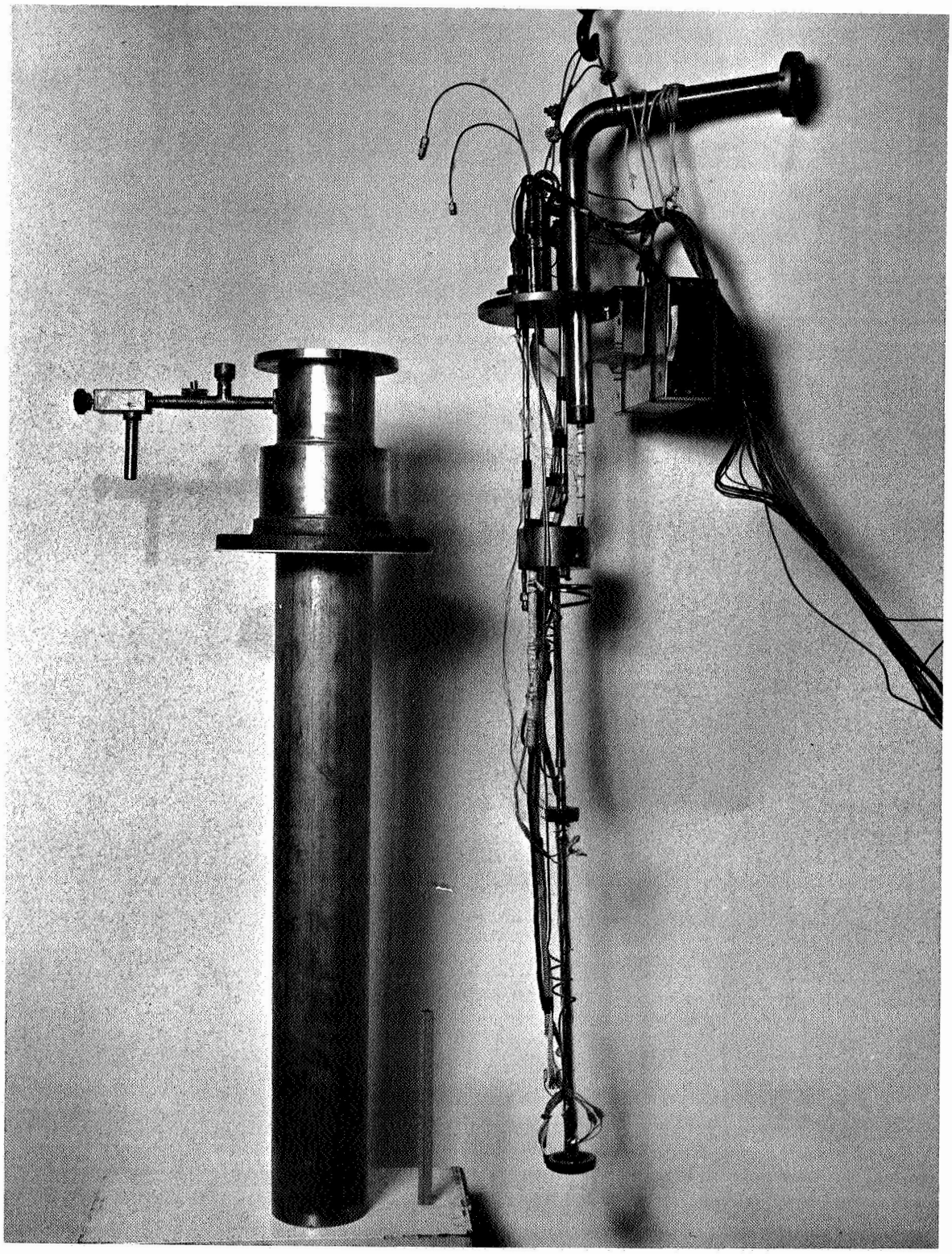

Fig. 2A. Photograph of test section and insulating vacuum jacket.

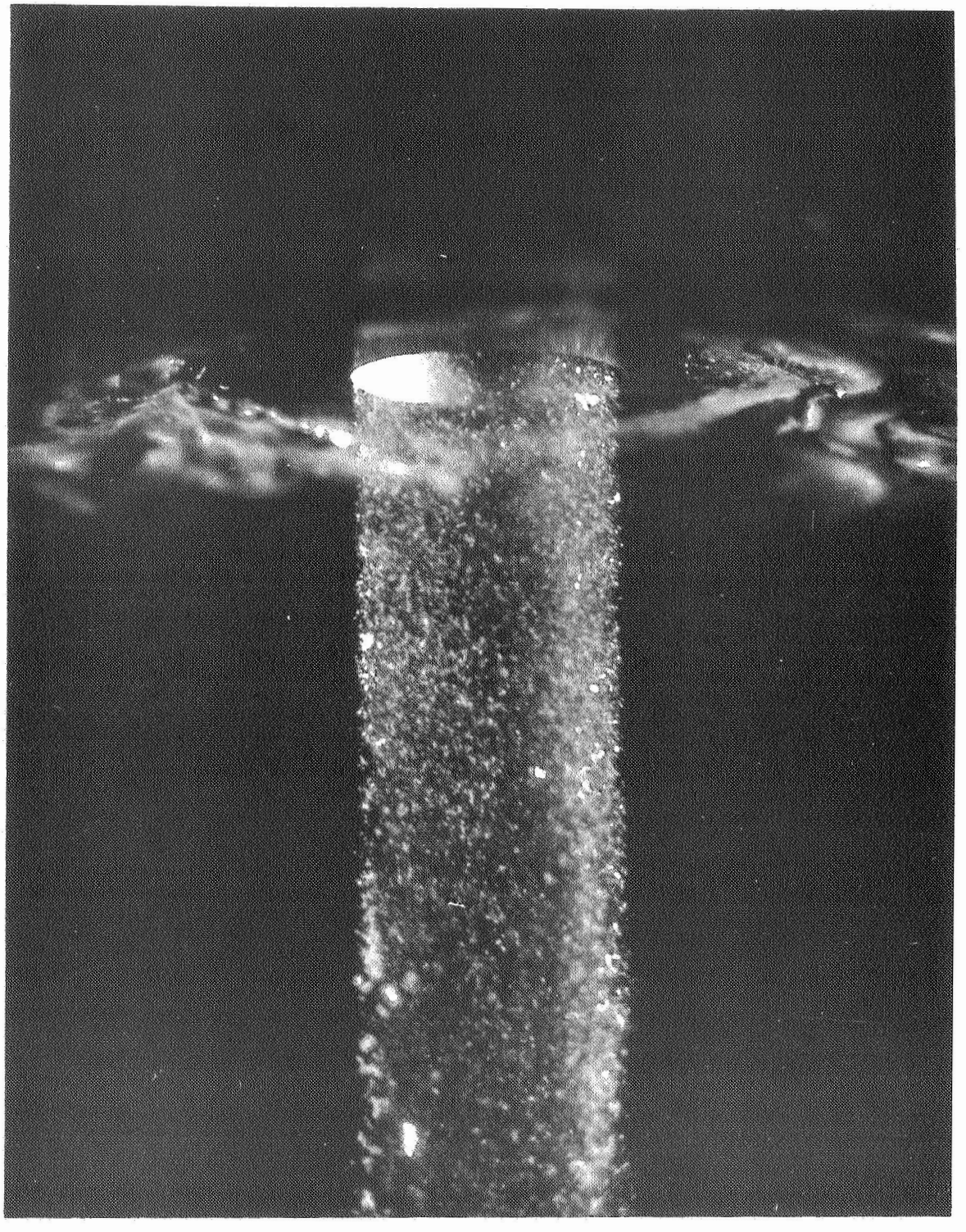

Fig. 3. Discharge of solid-vapor mixture of hydrogen

(q_w = 0.093 W/cm^2, N_{Sr} = 0.0035)

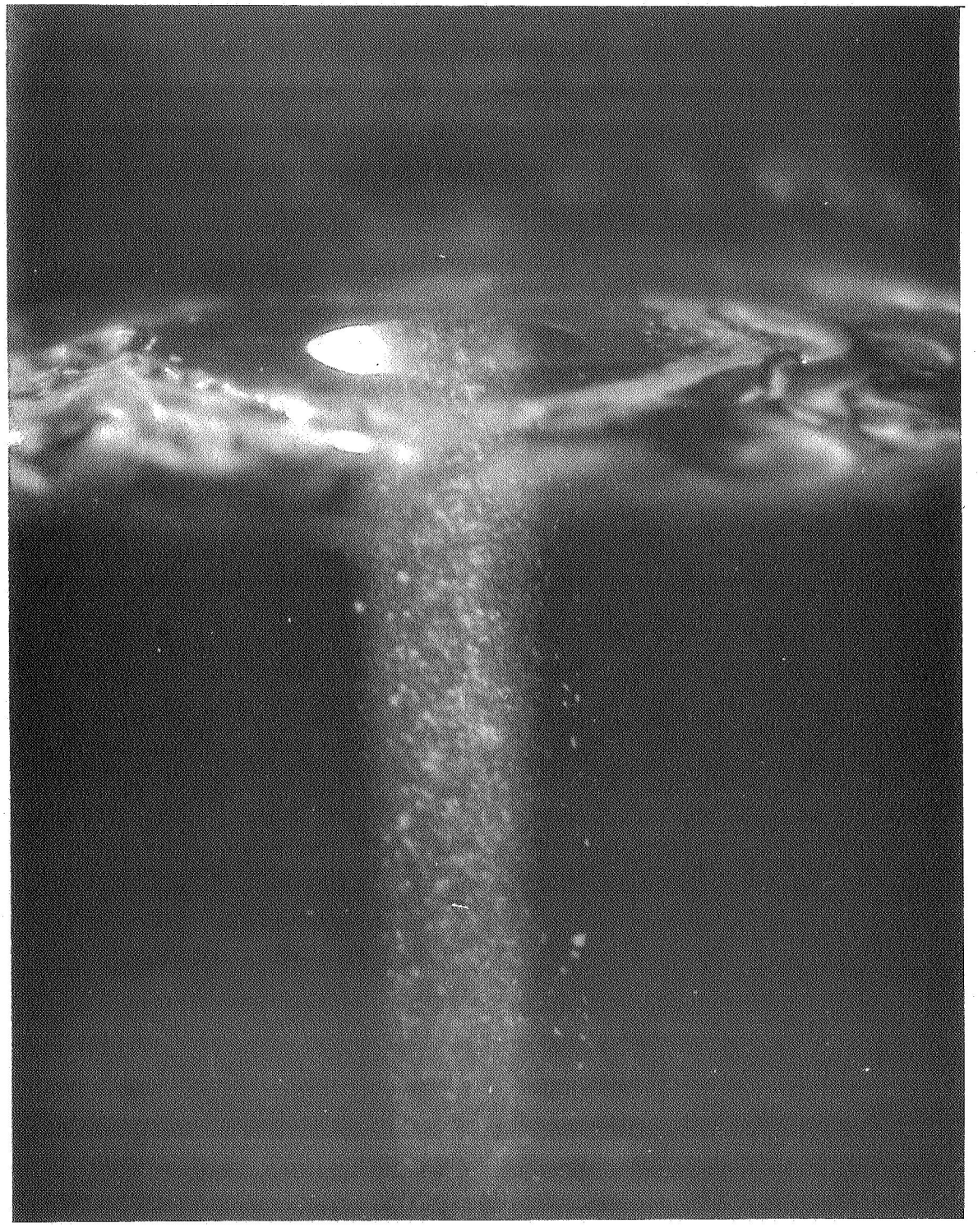

Fig. 4. Discharge of solid-vapor mixture of hydrogen

($q_w = 0.29$ W/cm^2, $N_{Sr} = 0.0015$)

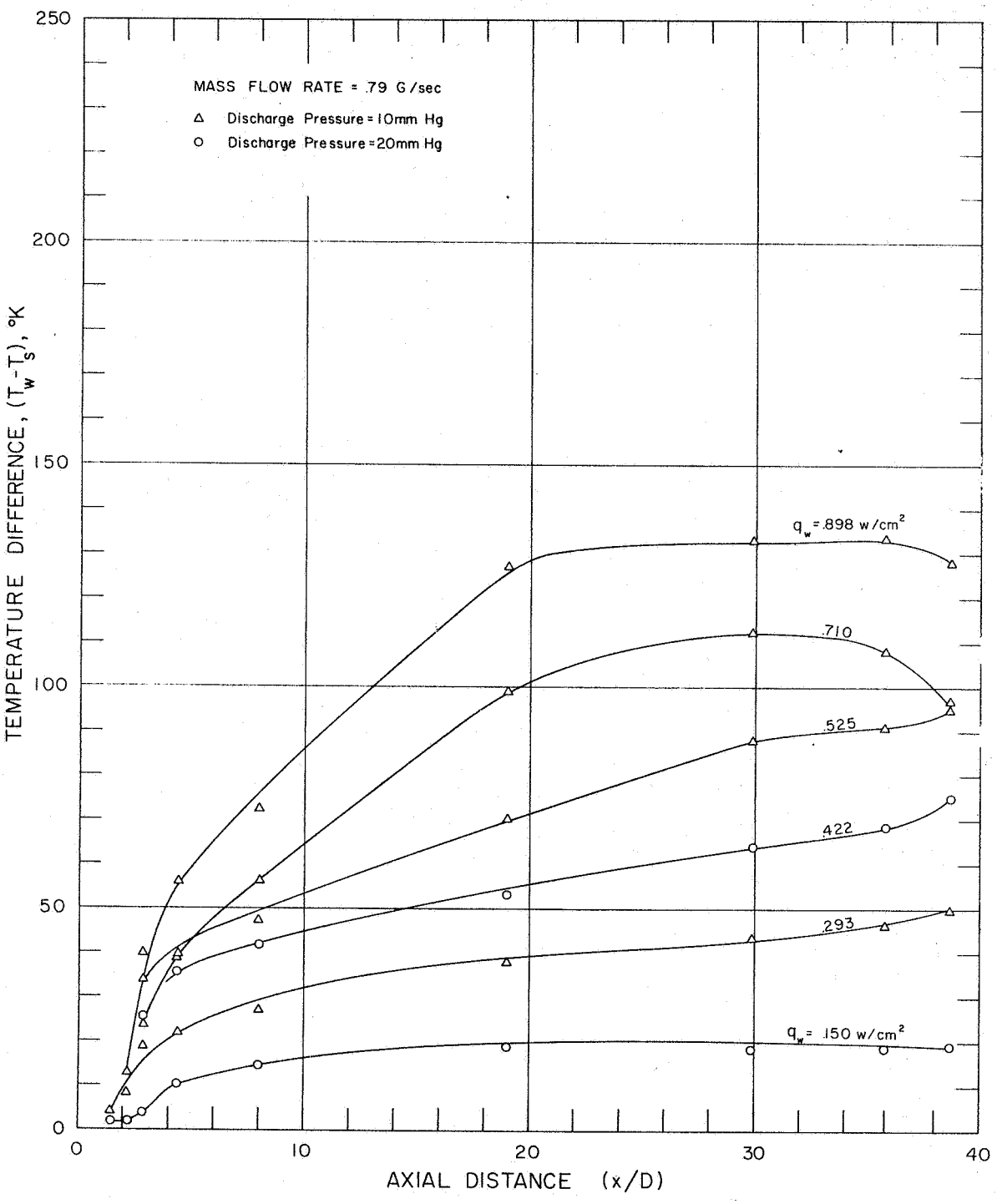

Fig. 5. Experimental temperature difference profiles for hydrogen with q_w as parameter--low flow rate

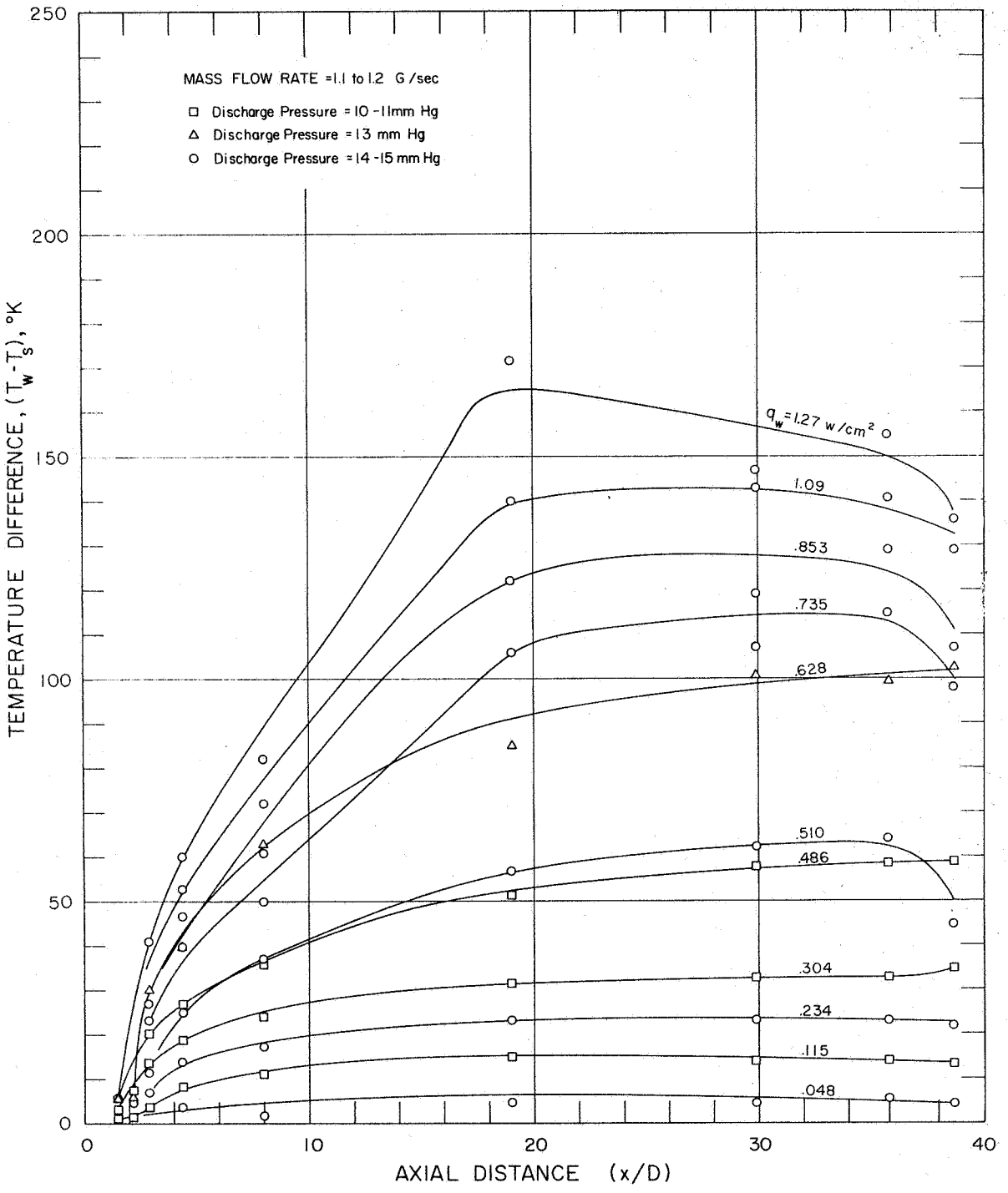

Fig. 6. Experimental temperature difference profiles for hydrogen with q_w as parameter--high flow rate

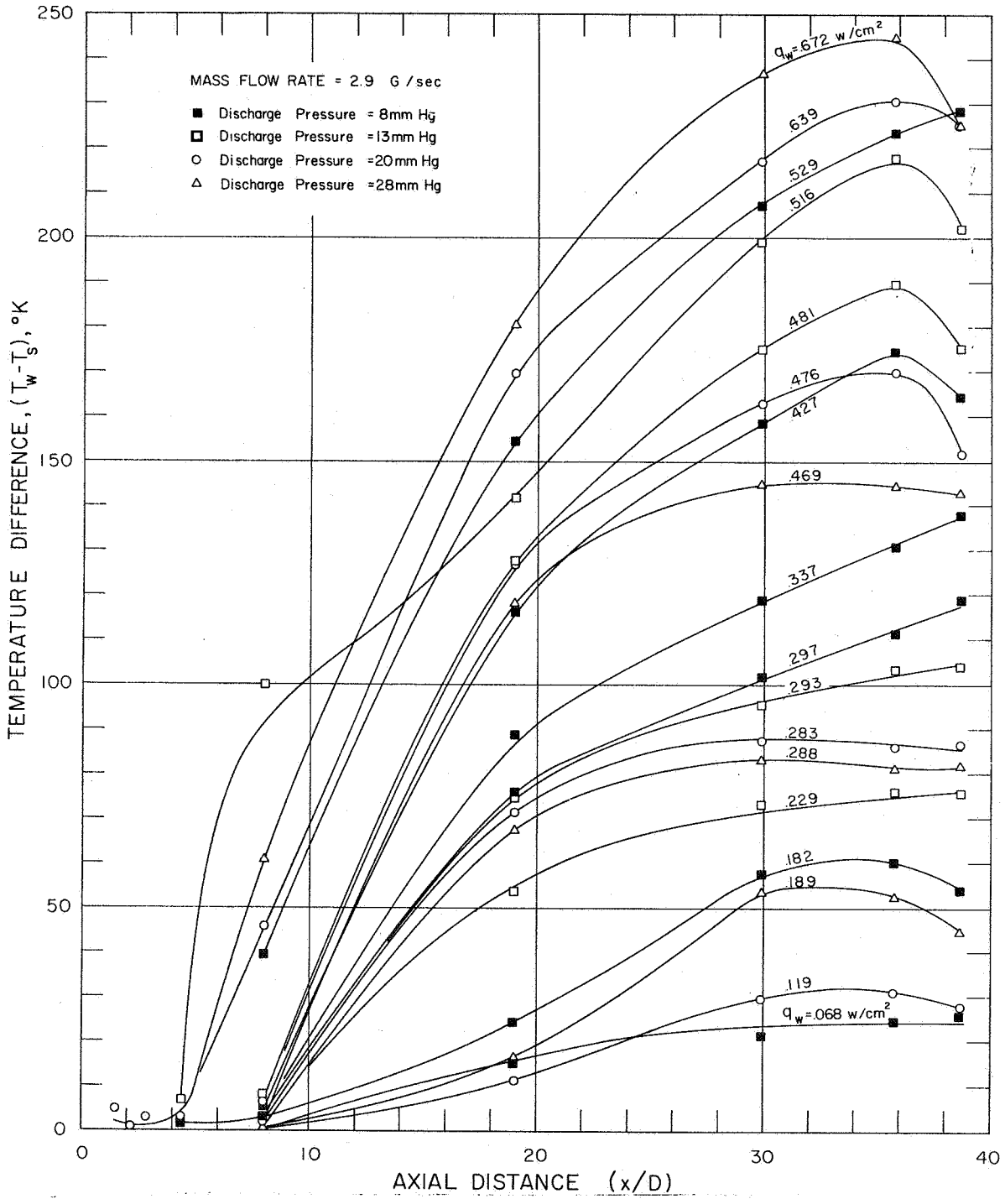

Fig. 7. Experimental temperature difference profiles for nitrogen with q_w as parameter--low flow rate

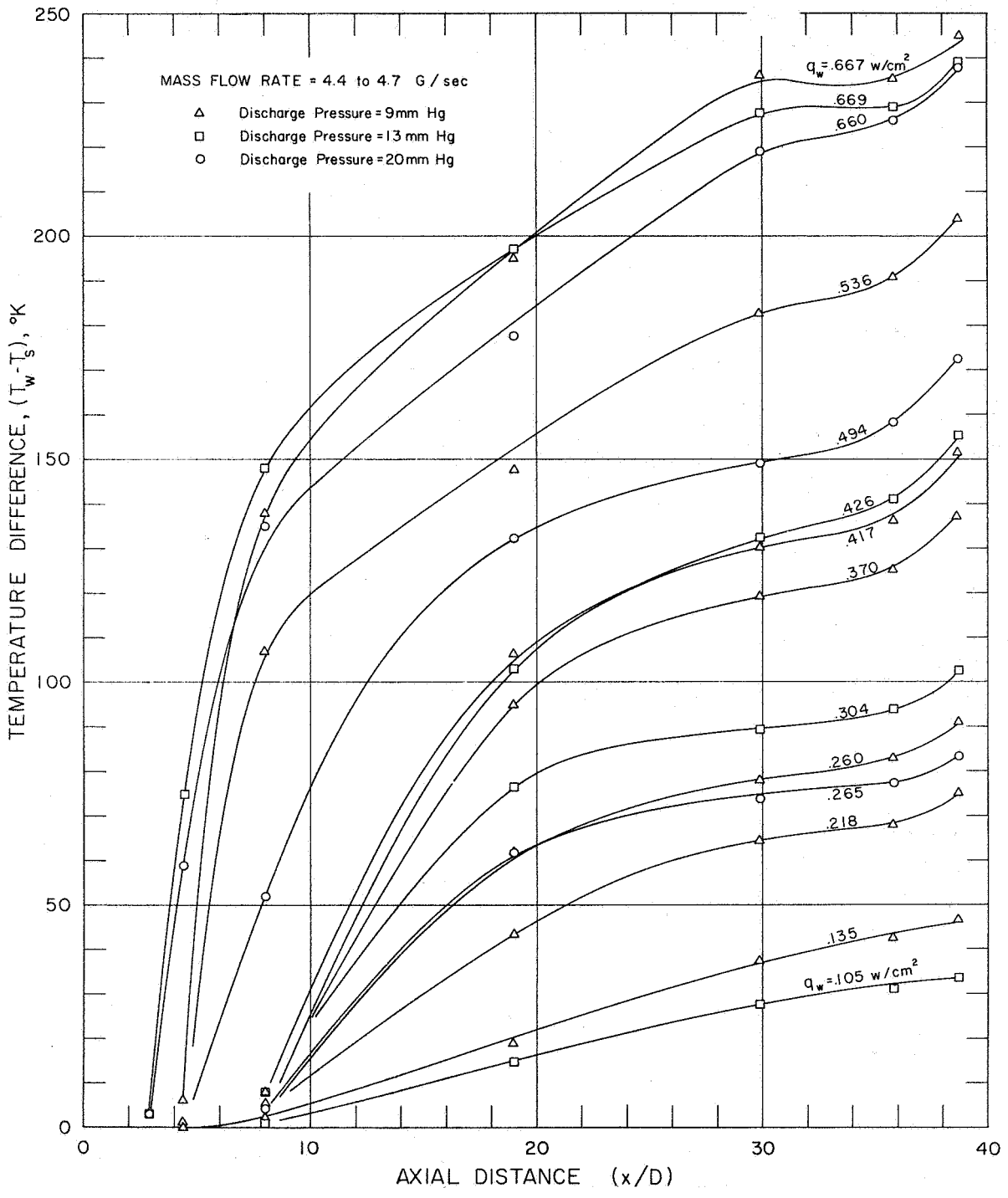

Fig. 8. Experimental temperature difference profiles for nitrogen with q_w as parameter--high flow rate

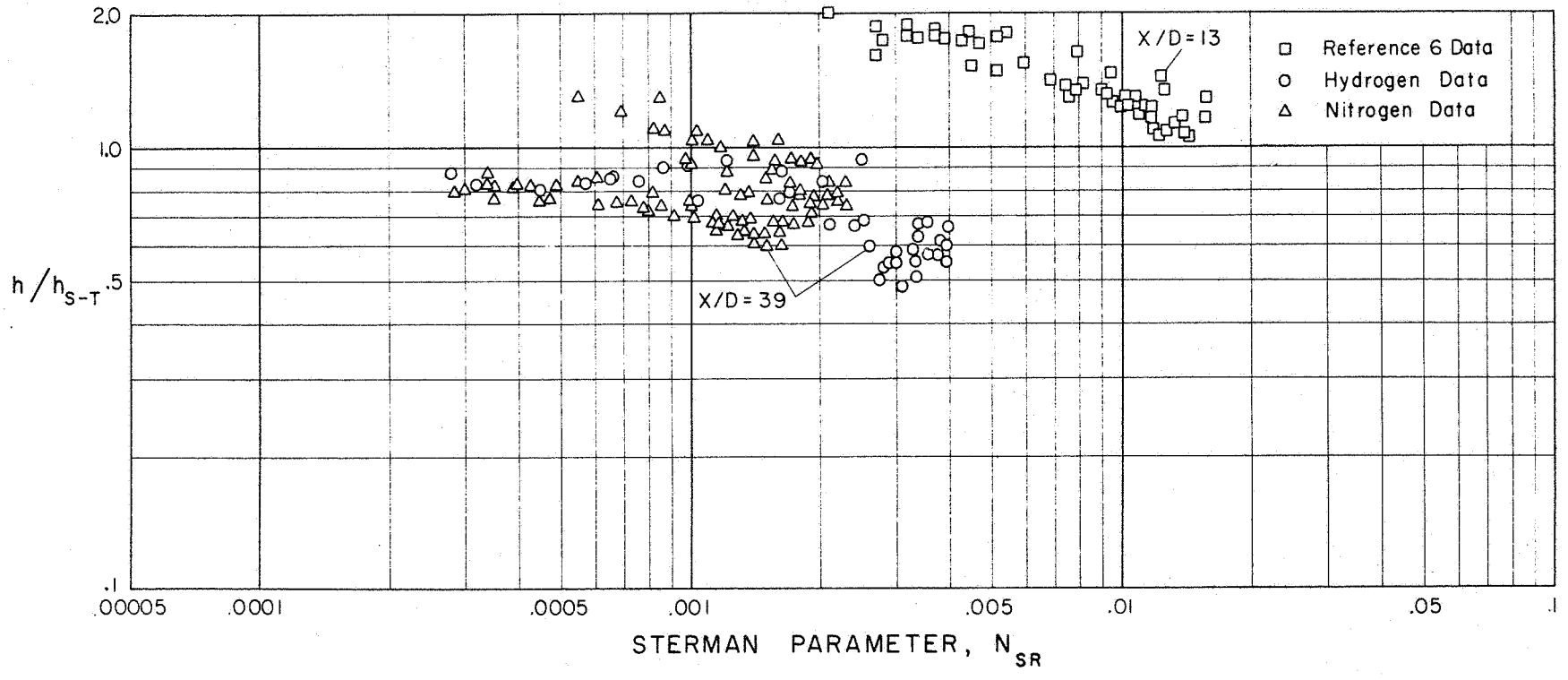

Fig. 9. Enhancement factor based on Sieder-Tate equation for hydrogen with x/D as parameter

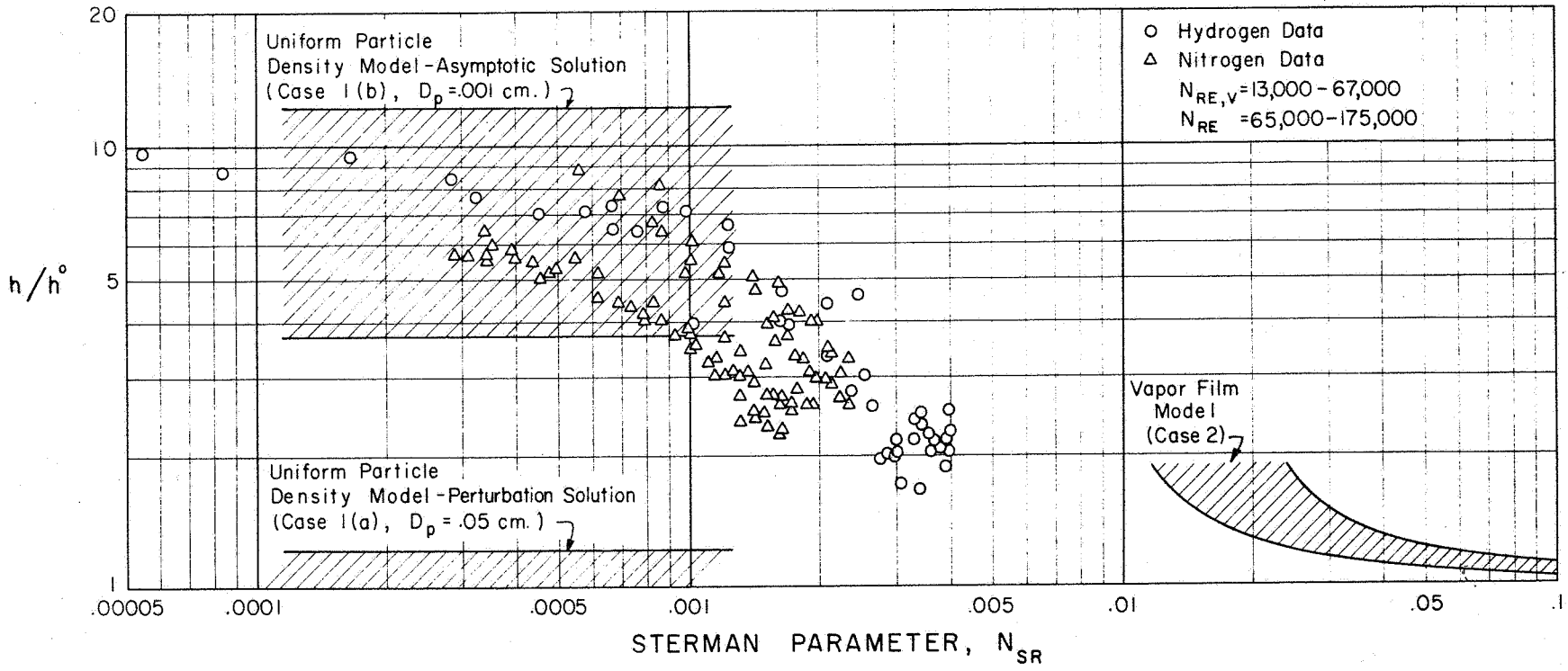

Fig. 10. Comparison of theoretical and experimental enhancement factors for x/D = 39--hydrogen and nitrogen

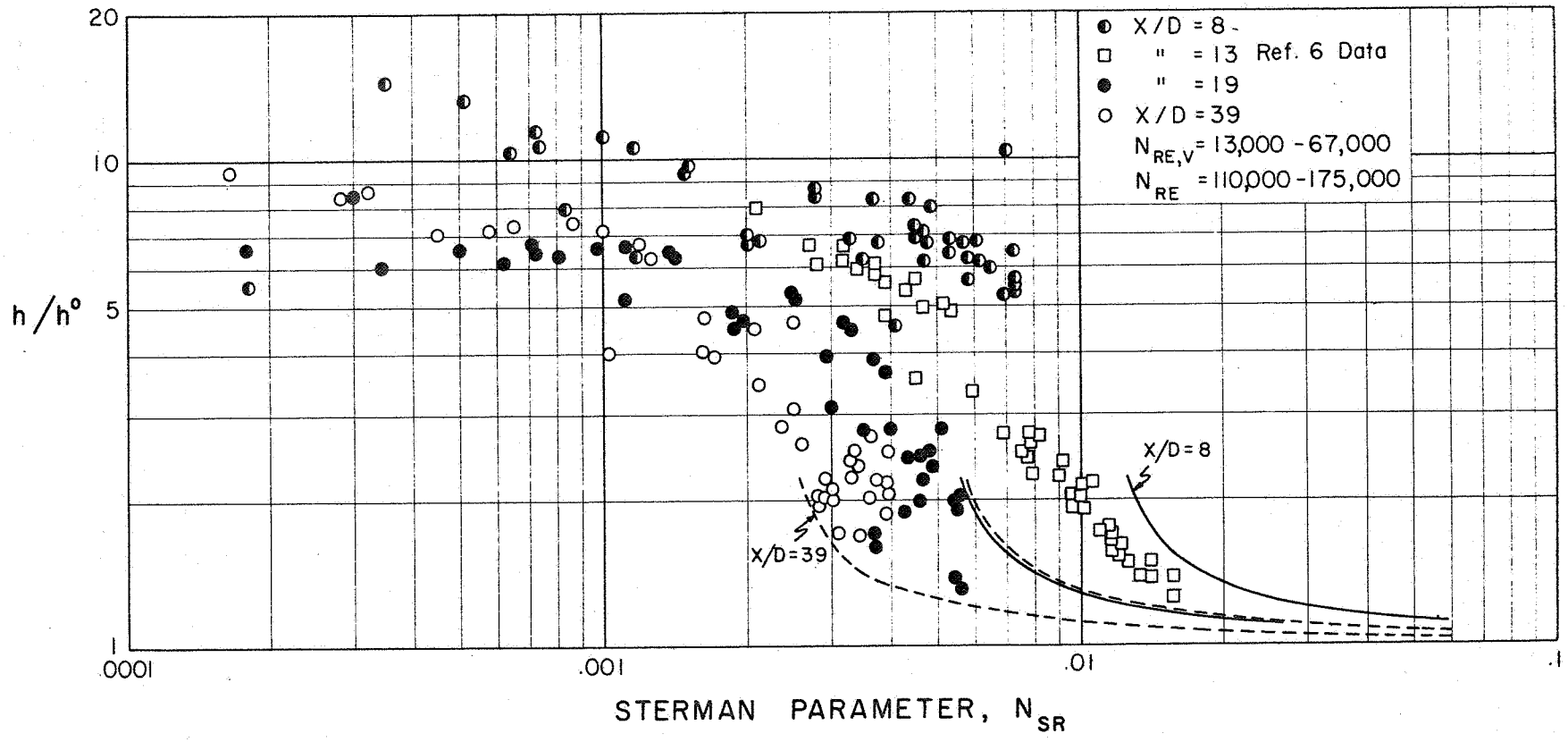

Fig. 11. Comparison of theoretical and experimental enhancement factors for variations in x/D, (vapor film model)--hydrogen

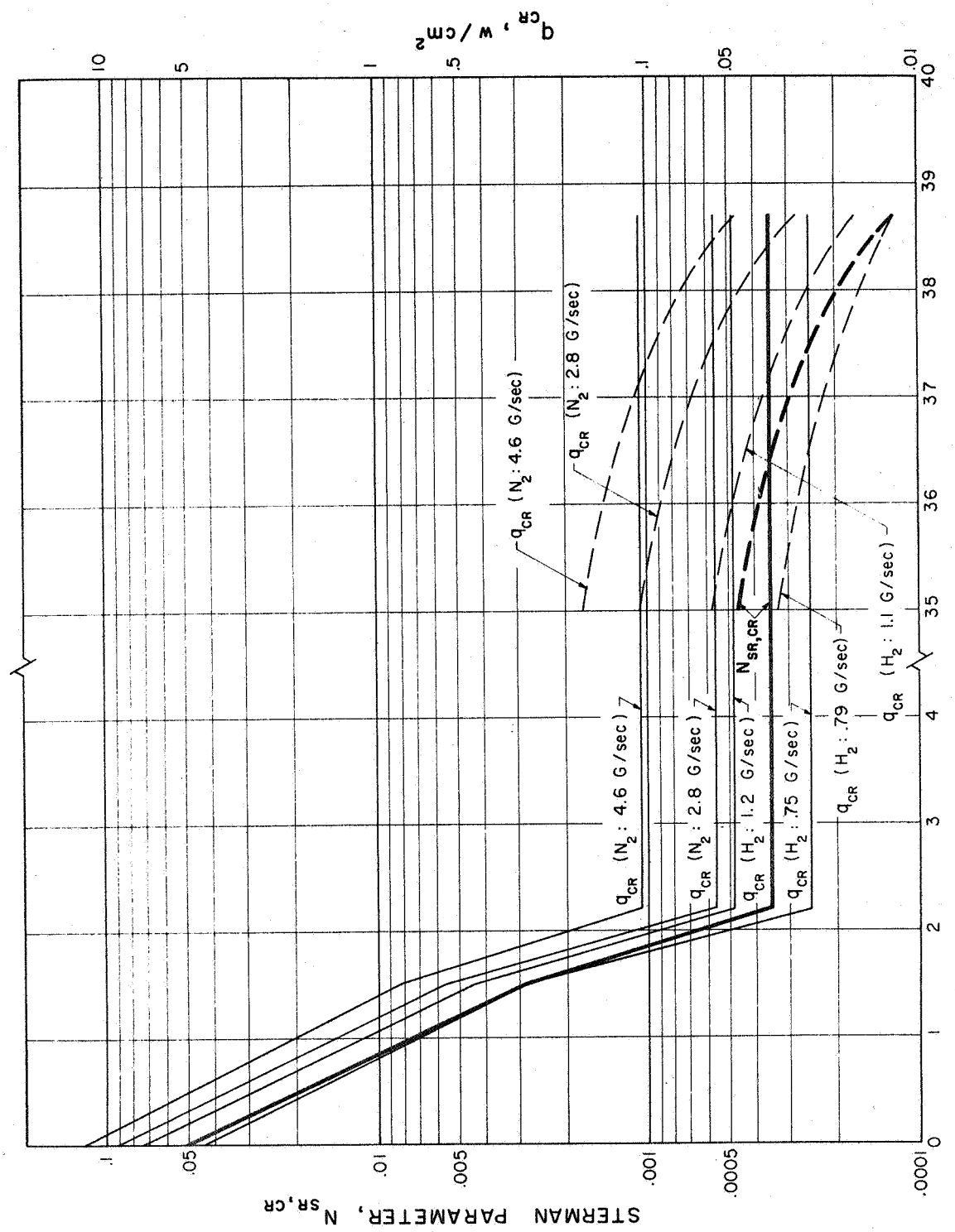

Fig. 12. Minimum adequate heating conditions for free discharge of solid-vapor mixtures

Appendix A

Heat Transfer Theory

Treating the particle phase as a continuum, Simpson [8] derived the basic continuity, momentum, and energy equations for the two phases separately and the mixture. In these equations the average solid phase density is described by a function ρ_p while the specific density of the solid is a constant, $\tilde{\rho}_p$. The major difference between the conservation equations for a vapor in the presence of the particle phase and a pure vapor or gas is that the former contains an energy sink and a mass source. The mass source — the rate of vaporization per unit volume and time — denoted by G is given by

$$G = \frac{6S}{D_p} \frac{\rho_p}{\tilde{\rho}_p} \frac{h_p}{\lambda} (T - T_s) \qquad (A\text{-}1)$$

where it is assumed that the particles, represented by an average spherical diameter D_p and a shape factor S, vaporize at a rate proportional to the local mean driving temperature $(T - T_s)$, and the heat transfer coefficient h_p is based on the surface area of a particle, $\pi D_p^2 S$. The energy sink is simply $G[\lambda + C_p(T - T_s)]$.

By making the usual boundary layer approximations and integrating the resulting equations across the boundary layer, or, by making mass, momentum and energy balances across an element of volume extending into the free stream, the following integral equations may be written for the conservation of momentum and energy at a point x along the flat plate.

Mixture Momentum:

$$\mu \frac{\partial u}{\partial y}\bigg|_{y=0} = \frac{d}{dx} \int_o^{\delta_m} \rho_t U^2 \frac{u}{U}\left(1 - \frac{u}{U}\right) dy \qquad (A\text{-}2)$$

Vapor Energy:

$$q_w = \frac{d}{dx} \int_o^{\delta_t} \rho_v C_p u (T - T_s) \, dy + \int_o^{\delta_t} G \lambda \, dy. \qquad (A-3)$$

The mixture momentum integral equation differs from the usual single phase equation [7] by the appearance of the total density ρ_t instead of vapor density ρ_v as might be expected for the case of zero relative velocity. The vapor energy integral equation differs by the appearance of the second integral term. In writing this equation the result has been anticipated that the thermal boundary layer thickness is less than the momentum boundary layer thickness. This will be confirmed below. These are the basic equations which will now be applied to the two extreme cases of particle geometrical distribution.

Case 1. — Uniform Particle Phase Density (ρ_p = const). Exactly as for the single phase case treated in standard texts [7], a fourth order polynomial velocity profile is chosen to satisfy the important boundary conditions which remain unchanged if particle-wall interactions are neglected. Thus

$$\frac{u}{U} = 2\xi - 2\xi^3 + \xi^4, \qquad \xi = y/\delta_m. \qquad (A-4)$$

Satisfying boundary conditions

$$y = 0, \; u = 0, \; v = 0, \; \frac{\partial^2 u}{\partial y^2} = 0$$

$$y = \delta_m, \; u = U, \; \frac{\partial u}{\partial y} = 0, \; \frac{\partial^2 u}{\partial y^2} = 0. \qquad (A-5)$$

Inserting $\frac{u}{U}$ from equation (4) into equation (2) results, after evaluating the integral, in

$$\frac{2\mu U}{\delta_m} = \frac{37}{315}\frac{d}{dx}(\rho_t U^2 \delta_m),$$

which on integrating gives

$$\delta_m = \left[34\, x \left(\frac{\mu}{\rho_t U}\right)\right]^{1/2}. \qquad \text{(A-6)}$$

Again, as to be expected, this differs from the single phase case only in the appearance of ρ_t instead of ρ_v.

A fourth order polynomial is now chosen to represent the temperature profile of the vapor.

$$\frac{T - T_s}{T_w - T_s} = \frac{\theta}{\Gamma} = a + b\eta + c\eta^2 + d\eta^3 + e\eta^4, \quad \eta = y/\delta_t \qquad \text{(A-7)}$$

The coefficients a, b, c, d, and e are to be determined. The boundary conditions to be satisfied are

$$y = 0,\ T = T_w,\ \frac{dT}{dy} = \frac{-q_w}{k},\ \frac{d^2T}{dy^2} = \frac{G_w}{k}(\lambda + C_p\Gamma) \qquad \text{(A-8)}$$

$$y = \delta_t,\ T = T_s,\ \frac{dT}{dy} = 0,\quad \frac{d^2T}{dy^2} = 0.$$

These boundary conditions differ from the single phase case only in the one for $\frac{d^2T}{dy^2}$ at y = 0. This condition should be considered carefully. It will be recalled that $k\nabla^2 T$ is the heat sink per unit volume and time. In the vicinity of the wall the rate of vaporization is given by equation (1) as

$$G_w = \frac{6S}{D_p}\frac{\rho_p}{\rho_p}\frac{h_p}{\lambda}(T_w - T_s)$$

and since vapor must be heated up to T_w after leaving the solid boundary, the energy removed from the gas phase is

$$k(\nabla^2 T)_w = G_w[\lambda + C_p(T_w - T_s)]$$

or

$$k(\nabla^2 T)_w = G_w(\lambda + C_p \Gamma).$$

Furthermore, since $\frac{d^2T}{dx^2} \ll \frac{d^2T}{dy^2}$ under the usual boundary layer approximation, the boundary condition follows.

Applying the boundary condition (8) to equation (7) gives the following values for the coefficients:

$$a = 1,\ b = -\left(\frac{c}{3} + 2\right),\ d = 2 - c,\ e = \frac{c}{3} - 1$$

where

$$c = \frac{G_w}{2k\Gamma}(\lambda + C_p \Gamma)\delta_t^2.$$

The temperature profile thus contains a coefficient which is a function of x through its dependence on δ_t and Γ and, in contrast to the single phase result, temperature profiles are non-similar. This is a direct consequence of the presence of heat sinks and, hence, the boundary condition on $\frac{d^2T}{dy^2}$ discussed above.

Inserting the temperature profile (7) into equation (3) and carrying out the integration results in the following differential equation:

$$q_w = \frac{d}{dx}\left[\rho_v C_p U \Gamma \delta_t \left\{\Delta\left(\frac{2}{15} + \frac{17}{90}c\right) - \Delta^3\left(\frac{3}{140} - \frac{3}{1260}c\right)\right.\right.$$

$$\left.\left. + \Delta^4\left(\frac{1}{180} - \frac{98}{27,216}c\right)\right\}\right] + G_w \lambda \delta_t\left(\frac{3}{10} - \frac{c}{60}\right) \qquad \text{(A-9)}$$

where $\Delta = \delta_t/\delta_m$.

If the approximation is made that the variation of $(\lambda + \Gamma C_p)$ with x is negligible compared to λ, it may be readily shown that $c = \frac{\delta_t^2}{\Sigma^2}$ where $\Sigma^2 = \frac{D_p^2}{3N_{Nu,p}S} \frac{\lambda}{\lambda^*} \frac{\tilde{\rho}_p}{\rho_p}$ and $\lambda^* = (\lambda + \Gamma C_p)$.

Furthermore, $\Gamma = q_w \delta_t / k(2 + \frac{c}{3})$. Making the substitution for Γ in equation (9) results in equation (10)

$$1 = \frac{d}{dx}\left[\frac{\rho_v C_p U}{k(2+\frac{c}{3})}\delta_t^2\left\{\Delta\left(\frac{2}{15}+\frac{17}{90}c\right) - \Delta^3\left(\frac{3}{140}-\frac{3}{1260}c\right)\right.\right.$$

$$\left.\left. + \Delta^4\left(\frac{1}{180}-\frac{98}{27,216}c\right)\right\}\right] + \frac{2c}{(2+c/3)}\frac{\lambda}{\lambda^*}\left(\frac{3}{10}-\frac{c}{60}\right) \qquad \text{(A-10)}$$

It will be noticed that if c is put to zero in equation (10) and ρ_p to zero in equation (6), i.e., $\rho_t = \rho_v$, then the equations reduce to the single phase case and by integration the familiar results are derived:

$$\delta_m^o = 5.83\, x^{1/2}\left(\frac{\mu}{\rho_v U}\right)^{1/2} \qquad \text{(A-11a)}$$

$$\delta_t^o = 4.44\, x^{1/2} N_{Pr}^{-1/3}\left(\frac{\mu}{\rho_v U}\right)^{1/2} \qquad \text{(A-11b)}$$

and $$\Delta^o = 0.761\, N_{Pr}^{-1/3}. \qquad \text{(A-11c)}$$

If c is put to zero but ρ_p is not put to zero, the results are:

$$\delta_m^{\,1} = \left(1+\frac{\rho_p}{\rho_v}\right)^{-1/2}\delta_m^{\,o} \qquad \text{(A-12a)}$$

$$\delta_t^{\,1} = \left(1+\frac{\rho_p}{\rho_v}\right)^{-1/6}\delta_t^{\,o} \qquad \text{(A-12b)}$$

$$\Delta^1 = \left(1 + \frac{\rho_p}{\rho_v}\right)^{1/3} \Delta^o . \qquad \text{(A-12c)}$$

Finally, the terms in c may be regarded as a small perturbation and, considering only terms of first order of smallness, equation (10) becomes

$$1 = \frac{d}{dx}\left[\frac{\rho_v C_p U}{2k}\,\delta_t^2\,\Delta\left(\frac{2}{15} + \frac{17}{90}\,c\right)\right] + \frac{3}{10}\,\frac{\lambda}{\lambda^*}\,c \qquad \text{(A-13)}$$

Integrating, and substituting for x from equation (12) results in

$$\delta_t = \delta_t^1\left[1 - \frac{1}{x}\int_o^x \frac{3}{10}\,\frac{\lambda}{\lambda^*}\,c\,dx - \frac{17}{90}\left(\frac{15}{34}\right)^{2/3}\frac{34}{2}\,N_{Pr}^{1/3}\left(1 + \frac{\rho_p}{\rho_v}\right)^{-1/3} c\right]^{1/3} .$$

Since c is regarded as a small perturbation, we may substitute $c = (\delta_t^1/\Sigma)^2$. Then

$$\delta_t = \delta_t^1\left[1 - (\delta_t^1/\Sigma)^2\left(\frac{1}{5}\,\frac{\lambda}{\lambda^*} - 0.186\,N_{Pr}^{1/3}\left(1 + \frac{\rho_p}{\rho_v}\right)^{-1/3}\right)\right]^{1/3} \qquad \text{(A-14)}$$

or $$\delta_t = \delta_t^1\left[1 - \epsilon\right]^{1/3} .$$

The requirement $\delta_t < \delta_m$ is now seen to be satisfied since $\delta_t^1/\delta_m < 1$ for $p_p/p_v < 1$. The local heat transfer coefficient is

$$h = \frac{2k}{\delta_t} + \frac{kc}{3\delta_t} \approx \frac{2k}{\delta_t} + \frac{k\delta_t^{1\,2}}{3\delta_t\Sigma^2} . \qquad \text{(A-15)}$$

Whereas for the single phase case we have

$$h^o = \frac{2k}{\delta_t^o}.$$

Then the enhancement factor, f, defined as h/h^o is

$$f = \frac{\delta_t^o}{\delta_t} + \frac{\delta_t^o}{6\delta_t}\left(\frac{\delta_t^1}{\Sigma}\right)^2 \approx \frac{\delta_t^o}{\delta_t} + \frac{\delta_t^o \delta_t^1}{6\Sigma^2}$$

or

$$f = (1 + \rho_p/\rho_v)^{1/6}\left[1/(1 - \epsilon)^{1/3} + \frac{1}{6}(\delta_t^1/\Sigma)^2\right] \qquad \text{(A-16)}$$

where

$$\epsilon = (\delta_t^1/\Sigma)^2\left[\frac{1}{5}\frac{\lambda}{\lambda^*} - 0.186\, N_{Pr}^{1/3}(1 + \rho_p/\rho_v)^{-1/3}\right]$$

and δ_t^1 is given by equation (12).

A simple solution may be obtained for $c \gg 1$ if it is assumed that heat transfer from gas to solid is so effective that negligible heat goes toward raising the temperature of the vapor. This has already been considered by Simpson[8] using third order polynomials to represent velocity and temperature; a very similar result is obtained in the present case. The approximation implies that the derivative in equation (3) is zero. Thus,

$$q_w = \int_o^{\delta_t} G\lambda\, dy. \qquad \text{(A-17)}$$

This may be evaluated immediately from equation (10) by again neglecting the derivative, whence

$$1 = \frac{2c}{2 + c/3}\frac{\lambda}{\lambda^*}\left(\frac{3}{10} - \frac{c}{60}\right) \qquad \text{(A-18)}$$

or since $c \gg 1$,

$$\delta_t = \left(\frac{10\lambda}{\lambda^*}\right)^{1/2} \Sigma$$

$$\delta_t = \left(\frac{10}{3}\right)^{1/2} \left(\frac{\tilde{\rho}_p}{\rho_p} / N_{Nu,p} S\right)^{1/2} Dp \,. \qquad \text{(A-19)}$$

Then, from equation (15) neglecting the first term

$$h = \left(\frac{10}{3}\right)^{1/2} \left[\frac{\rho_p}{\tilde{\rho}_p} N_{Nu,p} S\right]^{1/2} \frac{\lambda^*}{\lambda} \frac{k}{D_p} \qquad \text{(A-20)}$$

and

$$f = \left(\frac{5}{6}\right)^{1/2} \left[\frac{\rho_p}{\tilde{\rho}_p} N_{Nu,p} S\right]^{1/2} \frac{\lambda^*}{\lambda} \frac{\delta_t^o}{D_p} \,. \qquad \text{(A-21)}$$

Case 2. - Vapor Film ($\rho_p = 0, y < \delta_t$; $\rho_p = \text{const}, y \geq \delta_t$)

In order to make this case tractable it is assumed from the outset that the velocity profile and momentum boundary layer thickness are still given by equations (4) and (11a) respectively.

Since now, however, all vaporization is concentrated at the edge of the thermal boundary layer, the second integral in equation (3) is zero and in its place appears q_v, the heat flux at the edge of the thermal boundary layer. Thus

$$q_w - q_v = \frac{d}{dx} \int_o^{\delta_v} \rho_v C_p U (T - T_s) dy \qquad \text{(A-22)}$$

where δ_v is the new thermal boundary layer thickness or vapor film thickness.

The following temperature profile is now introduced:

$$\frac{\theta}{\Gamma_1} = 1 - 2\eta + 2\eta^3 - \eta^4 + \Gamma_2/\Gamma_1 (1 - \eta), \qquad \eta = y/\delta_v \qquad \text{(A-23)}$$

where

$$\Gamma_1 = (q_w - q_v)\,\delta_v/2k$$

$$\Gamma_2 = q_v\delta_v/k.$$

This profile reduces to the usual single phase case when $q_v = 0$. It will be seen that this temperature profile satisfies all important boundary conditions although q_v remains as yet an undetermined function of x.

$$\text{At } \eta = 0, \quad \theta = \Gamma_1 + \Gamma_2, \quad \frac{-k}{\delta_v}\frac{\partial\theta}{\partial\eta} = q_w, \quad \frac{\partial^2\theta}{\partial\eta^2} = 0.$$

$$\text{At } \eta = 1, \quad \theta = 0, \qquad \frac{-k}{\delta_v}\frac{\partial\theta}{\partial\eta} = q_v, \quad \frac{\partial^2\theta}{\partial\eta^2} = 0.$$

Substituting the temperature profile of equation (23) and the velocity profile equation (4) into equation (22) and integrating yields equation (24).

$$q_w - q_v = \frac{\rho_v C_p U}{k}\frac{d}{dx}\left[\frac{\delta_v^2(q_w - q_v)}{2}\left(\frac{2\Delta}{15} - \frac{3\Delta^3}{140} + \frac{\Delta^4}{180}\right) + q_v\delta_v^2 \cdot \left(\frac{\Delta}{3} - \frac{\Delta^3}{10} + \frac{\Delta^4}{30}\right)\right] \qquad \text{(A-24)}$$

Integrating and dividing through by x

$$q_w - \frac{1}{x}\int_0^x q_v\,dx = \frac{\rho_v C_p U}{kx}\left[\delta_v^2\frac{(q_w - q_v)}{2}\left(\frac{2\Delta}{15} - \frac{3\Delta^3}{140} + \frac{\Delta^4}{180}\right) + q_v\delta_v^2 \cdot \left(\frac{\Delta}{3} - \frac{\Delta^3}{10} + \frac{\Delta^4}{30}\right)\right]. \qquad \text{(A-25)}$$

An approximate solution of (25) for δ_v may be obtained by neglecting all but the terms in Δ. Then, if equation (11a) is used to eliminate x,

$$1 - \frac{1}{x}\int^{x} \frac{q_v}{q_w}\, dx = 34\, N_{Pr} \left[\frac{1}{15} + \frac{4}{15}\, \frac{q_v}{q_w} \right] \Delta^3. \qquad \text{(A-26)}$$

Now

$$q_v = u \Big|_{y = \delta_v} \rho_p \lambda \frac{d\delta_v}{dx} = U \rho_p \lambda (2\Delta - 2\Delta^3 + \Delta^4) \frac{d\delta_v}{dx} \qquad \text{(A-27)}$$

and if q_v/q_w is regarded as a small perturbation, it may be evaluated from equation (27) using δ_t^o and Δ^o from equations (11). The result is

$$q_v/q_w = \frac{U\rho_p \lambda}{q_w} (2\Delta^o - 2\Delta^{o3} + \Delta^{o4}) \delta_t^o / 2x \qquad \text{(A-28)}$$

and

$$\frac{1}{x}\int_o^x \frac{q_v}{q_w}\, dx = 2q_v/q_w. \qquad \text{(A-29)}$$

From (26) and (29)

$$\Delta = \left(\frac{15}{34}\right)^{1/3} N_{Pr}^{-1/3} \left[\frac{1 - 2q_v/q_w}{1 + 4q_v/q_w} \right]^{1/3}$$

and finally,

$$\delta_v = \delta_t^o \left[\frac{1 - 2q_v/q_w}{1 + 4q_v/q_w} \right]^{1/3}. \qquad \text{(A-30)}$$

Again the assumption that $\delta_v < \delta_m$ is confirmed. Introducing the Sterman parameter, $N_{Sr} = \frac{q_w}{\rho_v U \lambda}$, and writing $\Pi = (2\Delta^o - 2\Delta^{o3} + \Delta^{o4})$, noting that this is a function of the Prandtl number only, the perturbation term may be written

$$q_v/q_w = N_{Sr}^{-1}\,\Pi\,(\delta_t^o/2x)\,(\rho_p/\rho_v) \qquad \text{(A-31)}$$

The local heat transfer coefficient is given by

$$h = \frac{q_w}{\Gamma_1 + \Gamma_2} = \left(\frac{2k}{\delta_v}\right)\Big/\left(1 + q_v/q_w\right)$$

and the corresponding single phase heat transfer coefficient is again

$$h_o = 2k/\delta_t^o .$$

Hence, the enhancement factor is

$$f = \left(\frac{\delta_t^o}{\delta_v}\right)\Big/\left(1 + q_v/q_w\right)$$

or

$$f = \left[1 + q_v/q_w\right]^{-1}\left[\left(1 - 2q_v/q_w\right)\Big/\left(1 + 4q_v/q_w\right)\right]^{-1/3} . \qquad \text{(A-32)}$$

The resulting enhancement factors, equations (16, (21), and (32), for the cases considered have been derived for a distance x from the commencement of the boundary layer for flow over a flat plate. The equations will also apply for some distance in the entrance region of a straight tube. For this case the more familiar Reynolds number form may be used for δ_t^o by introducing the tube diameter, D, thus,

$$\delta_t^o/x = 4.44\,N_{Pr}^{-1/3}(x/D)^{-1/2}(N_{Re,v})^{-1/2}. \qquad \text{(A-33)}$$

Appendix B

A Similarity Criterion for Particle-Wall Interaction

Consider a particle diameter D_p and mass m, which has entered the boundary layer due to a radial velocity component v. The reactive force F, acting on the particle due to vaporization over the hemisphere away from the wall is given by

$$F_1 \approx \left(\frac{dm}{dt}\right)_1 V_1$$

where V_1 is the relative velocity of the evolved vapor at the surface of the particle in the y direction. But V_1 may be expressed as

$$V_1 = \left(\frac{dm}{dt}\right)_1 \frac{4}{\rho_v \pi D_p^2}$$

and

$$\left(\frac{dm}{dt}\right)_1 \approx \frac{h_p}{\lambda} \frac{\pi D_p^2}{2} \left(T - T_s\right)\Big|_{y + D_p/4}$$

whence

$$F_1 \approx \left(\frac{h_p}{\lambda}\right)^2 \frac{\pi D_p^2}{\rho_v} \left(T - T_s\right)^2\Big|_{y + D_p/4}.$$

Similarly, the reactive force due to vaporization over the hemisphere facing the wall is

$$F_2 \approx \left(\frac{h_p}{\lambda}\right)^2 \frac{\pi D_p^2}{\rho_v} \left(T - T_s\right)^2\Big|_{y - D_p/4}$$

and the net reactive force in the y direction is

$$F_y = \left(F_2 - F_1\right) \approx -\left(\frac{h_p}{\lambda}\right)^2 \frac{\pi D_p}{2\rho_v} \frac{d}{dy}\left(T - T_s\right)^2 . \qquad \text{(B-1)}$$

Now if it is assumed as is reasonable that the particle heat transfer coefficient is given by a constant Nusselt number $\frac{h_p D_p}{k} \approx 2$, we may substitute for h_p and arrive at

$$F_y \approx \frac{4\pi D_p}{\rho_v}\left(\frac{k}{\lambda}\right)^2 \frac{dT}{dy}\left(T - T_s\right),$$

and for an assumed linear temperature profile, approximations now being understood,

$$F_y = \frac{4\pi D_p}{\rho_v}\left(\frac{k}{\lambda}\frac{dt}{dy}\right)^2 \left(\delta_t - y\right)$$

or

$$F_y = \frac{4\pi D_p}{\rho_v}\left(\frac{q_w}{\lambda}\right)^2 \left(\delta_t - y\right).$$

Let $s = (\delta_t - y)$; then the force in the s direction may be written

$$F_s = -\alpha s$$

or

$$\frac{d^2 s}{dt^2} = -\frac{\alpha}{m} s$$

whence

$$s = \delta_t \sin\left(\frac{\alpha}{m}\right)^{1/2} t, \qquad 0 < \left(\frac{\alpha}{m}\right)^{1/2} t < \pi$$

and

$$F_s = -\alpha \delta_t \sin\left(\frac{\alpha}{m}\right)^{1/2} t$$

or

$$F_s = -\alpha \delta_t \sin \omega t, \qquad 0 < \omega t < \pi. \qquad \text{(B-2)}$$

If a particle has just sufficient momentum to rebound before striking the wall, the reactive impulse experienced up to the time it stops is, neglecting gravity,

$$I = \int_0^{\pi/2} \frac{F_s}{\omega} \, d(\omega t)$$

$$= \frac{\alpha}{\omega} \cdot \delta_t$$

$$= (\alpha m)^{1/2} \delta_t. \qquad \text{(B-3)}$$

But this is equal to the -y momentum the particle had at the point of entering the boundary layer. Therefore, we have

$$mv = (\alpha m)^{1/2} \delta_t. \qquad \text{(B-4)}$$

Thus, the criterion for a particle to have just sufficient momentum to strike the wall and no more is

$$1 = \left(\frac{\alpha}{m}\right)^{1/2} \frac{\delta_t}{v}$$

$$1 = \left(\frac{24 \rho_v}{\tilde{\rho}_p}\right)^{1/2} \frac{\delta_t}{D_p} \left(\frac{q_w}{\rho_v v \lambda}\right). \qquad \text{(B-5)}$$

Now particle-wall interaction may only occur at low heat fluxes and in this case the uniform particle density model, Case 1, would be expected to apply. Then, an upper limit to the value of δ_t/D_p may be set by taking the assymptotic solution which would represent the behavior of small particles.

Substituting for δ_t from equation (19), Appendix A,

$$K = \left(\frac{10 \times 24}{3}\right)^{1/2} \left(\frac{\rho_v}{\rho_p}\right)^{1/2} \left(\frac{1}{N_{Nu,p} S}\right)^{1/2} \frac{q_w}{\rho_v v \lambda} \qquad \text{(B-6)}$$

where K is a constant > 1.

Again, assuming the constancy of the particle Nusselt number, $N_{Nu,p}$ and the shape factor $, and scaling the radial velocity component v with the free stream velocity U, we may write the criterion as

$$K = \left(\frac{\rho_v}{\rho_p}\right)^{1/2} N_{Sr} \qquad \text{(B-7)}$$

where the constant terms have been incorporated into K. Now (ρ_v/ρ_p) is a function of the quality, and at low heat flux remains fairly constant along the tube. Furthermore, in expanding a near-saturated liquid to a sub-triple point pressure, one nearly always arrives at about the same quality for isenthalpic expansion (25-30%), the precise value being relatively insensitive to discharge pressure. Finally, then, the similarity criterion for particle-wall interation may be written

$$N_{Sr} = K \qquad \text{(B-8)}$$

where K is a constant to be determined empirically.

Appendix C

Tabular Results

Explanation

MIXTURE SAT TEMP K	Saturation Temperature based on static pressure (°K)
QUALITY VAP/MIX	Mass rate of flow of vapor per unit mass rate of flow of mixture
REYNOLDS NUMBER	N_{Re} (see Nomenclature)
EXP/FPSP H-T COEF	Enhancement factor based on Sieder-Tate, single phase heat transfer coefficient

Experimental runs numbered 101-367 are for nitrogen. Experimental runs numbered 500-654 are for hydrogen. Runs numbered 173-182 and 621-654 are for non-uniform heat input (heat input to lower 8 cm. reduced while upper section held at constant heat input). All other runs are for uniform heat input to whole tube.

STA NO -	TURE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 101	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 82.5 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	350.9	58.3	32.2	0.000686	0.361	54.51	63619	0.05556	9.337	0.03191	*******	14.065
2	61.7	58.2	31.1	0.000563	0.426	70.30	63741	0.00409	0.812	0.23183	*******	72.197
3	58.5	58.1	30.5	0.000548	0.430	71.22	63801	0.00213	0.428	1.00234	*******	308.058
4	59.4	58.1	30.0	0.000536	0.433	71.84	63861	0.00204	0.413	0.31010	*******	95.010
5	58.8	57.9	29.0	0.000512	0.439	73.05	63993	0.00205	0.419	0.44668	*******	135.462
6	80.2	57.6	26.8	0.000462	0.453	76.09	64292	0.00197	0.416	0.01840	*******	5.675
7	166.3	57.1	23.7	0.000378	0.493	85.20	64731	0.00180	0.413	0.00378	5.594	1.210
8	184.5	56.8	21.8	0.000324	0.531	94.25	65048	0.00167	0.414	0.00324	4.434	0.990
9	187.1	56.6	20.9	0.000300	0.552	99.04	65209	0.00161	0.414	0.00317	4.301	0.945
10	191.2	56.5	20.4	0.000289	0.562	101.40	65290	0.00156	0.410	0.00304	4.056	0.896
RUN NO 102	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 82.1 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	346.0	58.5	33.3	0.000718	0.356	53.53	63496	0.05566	9.225	0.03208	*******	14.252
2	62.5	58.3	32.0	0.000584	0.422	69.34	63641	0.00472	0.928	0.22335	*******	70.192
3	58.9	58.2	31.3	0.000567	0.427	70.44	63713	0.00280	0.557	0.78890	*******	244.129
4	60.4	58.1	30.7	0.000551	0.430	71.25	63784	0.00268	0.538	0.24203	*******	74.638
5	60.3	58.	29.5	0.000522	0.438	72.83	63923	0.00266	0.543	0.23376	*******	71.207
6	68.9	57.6	27.1	0.000464	0.456	76.82	64250	0.00256	0.544	0.04805	*******	14.444
7	202.5	57.1	23.8	0.000370	0.507	88.77	64715	0.00227	0.538	0.00370	5.144	1.184
8	244.8	56.8	21.8	0.000310	0.557	100.57	65039	0.00206	0.538	0.00286	3.449	0.870
9	256.5	56.6	20.9	0.000284	0.584	106.80	65206	0.00197	0.537	0.00269	3.129	0.793
10	261.9	56.5	20.4	0.000272	0.597	109.88	65289	0.00191	0.532	0.00259	2.967	0.753
RUN NO 103	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 82.0 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	345.1	58.5	33.8	0.000731	0.354	53.26	63443	0.05562	9.179	0.03203	*******	14.266
2	63.0	58.3	32.3	0.000592	0.420	69.08	63601	0.00503	0.985	0.21147	*******	66.662
3	59.1	58.3	31.6	0.000573	0.426	70.28	63679	0.00313	0.620	0.71184	*******	220.657
4	61.0	58.2	30.9	0.000556	0.430	71.18	63757	0.00298	0.598	0.20817	*******	64.316
5	61.2	58.1	29.6	0.000523	0.438	72.95	63906	0.00299	0.610	0.19338	*******	58.951
6	103.7	57.6	27.2	0.000463	0.458	77.41	64238	0.00282	0.602	0.01309	*******	4.150
7	226.9	57.1	23.9	0.000364	0.515	90.68	64711	0.00249	0.598	0.00352	4.583	1.127
8	274.0	56.8	21.8	0.000303	0.570	103.79	65039	0.00224	0.596	0.00274	3.099	0.829
9	287.4	56.6	20.9	0.000277	0.599	110.69	65207	0.00212	0.593	0.00257	2.802	0.752
10	291.6	56.5	20.4	0.000265	0.614	114.11	65290	0.00208	0.597	0.00265	2.935	0.760
RUN NO 104	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 82.0 K	LIQ PRESS 3.04 ATM	CART HTR PWR 0.000 W							
1	345.3	58.6	34.4	0.000745	0.354	53.21	63373	0.05543	9.129	0.03184	*******	14.193
2	63.4	58.4	32.8	0.000601	0.420	69.02	63549	0.00526	1.028	0.20721	*******	65.400
3	59.3	58.3	32.0	0.000580	0.425	70.28	63636	0.00335	0.663	0.65506	*******	203.147
4	61.3	58.2	31.3	0.000561	0.430	71.24	63723	0.00320	0.640	0.20957	*******	64.746
5	61.4	58.0	29.8	0.000526	0.439	73.15	63886	0.00324	0.662	0.19454	*******	59.247
6	150.7	57.7	27.3	0.000462	0.460	77.95	64225	0.00298	0.639	0.00687	*******	2.280
7	235.5	57.1	23.9	0.000361	0.521	92.12	64707	0.00263	0.641	0.00359	4.585	1.144
8	295.9	56.8	21.8	0.000298	0.580	106.15	65040	0.00235	0.636	0.00266	2.863	0.800
9	305.8	56.6	20.9	0.000271	0.611	113.50	65209	0.00221	0.632	0.00254	2.662	0.735
10	287.1	56.5	20.4	0.000259	0.626	117.19	65291	0.00221	0.647	0.00281	3.090	0.793
RUN NO 105	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 82.0 K	LIQ PRESS 3.04 ATM	CART HTR PWR 0.000 W							
1	342.1	58.4	32.6	0.000708	0.355	53.11	63568	0.05496	9.080	0.03201	*******	14.255
2	61.8	58.2	31.5	0.000579	0.419	68.57	63700	0.00439	0.857	0.23894	*******	75.436
3	59.0	58.2	30.9	0.000563	0.423	69.57	63765	0.00248	0.490	0.56634	*******	176.442
4	60.4	58.1	30.3	0.000549	0.427	70.28	63830	0.00237	0.472	0.20693	*******	64.279
5	58.9	57.9	29.2	0.000522	0.433	71.67	63965	0.00237	0.478	0.52772	*******	161.693
6	64.2	57.6	27.0	0.000468	0.449	75.17	64276	0.00228	0.479	0.07255	*******	21.882
7	183.9	57.1	23.8	0.000378	0.495	85.68	64727	0.00205	0.474	0.00374	5.372	1.206
8	219.7	56.8	21.8	0.000320	0.539	96.08	65046	0.00188	0.474	0.00291	3.652	0.897
9	228.6	56.6	20.9	0.000295	0.562	101.55	65210	0.00179	0.470	0.00277	3.395	0.829
10	208.2	56.5	20.4	0.000283	0.574	104.29	65292	0.00180	0.483	0.00319	4.170	0.932
RUN NO 107	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 82.0 K	LIQ PRESS 3.04 ATM	CART HTR PWR 0.000 W							
1	341.7	58.2	31.4	0.000682	0.355	53.07	63703	0.05501	9.110	0.03214	*******	14.310
2	60.6	58.1	30.5	0.000563	0.419	68.39	63810	0.00378	0.738	0.29272	*******	92.314
3	59.0	58.1	30.0	0.000550	0.423	69.21	63863	0.00183	0.361	0.36884	*******	115.214
4	59.2	58.0	29.5	0.000538	0.425	69.73	63915	0.00178	0.354	0.29266	*******	91.071
5	58.3	57.9	28.6	0.000517	0.430	70.76	64042	0.00177	0.356	0.77375	*******	238.461
6	60.2	57.6	26.6	0.000470	0.442	73.35	64324	0.00173	0.357	0.13440	*******	40.776
7	148.8	57.1	23.6	0.000390	0.476	81.14	64747	0.00159	0.353	0.00385	6.151	1.249
8	169.6	56.8	21.7	0.000338	0.510	88.87	65059	0.00148	0.354	0.00313	4.547	0.981
9	170.4	56.6	20.9	0.000314	0.527	92.95	65217	0.00143	0.354	0.00311	4.497	0.949
10	168.0	56.5	20.4	0.000303	0.536	94.99	65296	0.00142	0.356	0.00319	4.669	0.961

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 108	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 82.1 K	LIQ PRESS 3.04 ATM	CART HTR PWR 0.000 W							
1	342.8	58.2	30.8	0.000667	0.357	53.28	63776	0.05521	9.179	0.03225	*******	14.329
2	60.1	58.1	30.0	0.000552	0.420	68.60	63869	0.00342	0.670	0.32163	*******	101.156
3	58.8	58.0	29.6	0.000541	0.423	69.31	63915	0.00146	0.288	0.36786	*******	114.747
4	58.8	57.9	29.1	0.000531	0.425	69.73	63972	0.00143	0.283	0.32831	*******	102.083
5	58.0	57.8	28.3	0.000513	0.429	70.55	64084	0.00142	0.284	1.87985	*******	579.875
6	59.4	57.5	26.4	0.000470	0.439	72.60	64351	0.00139	0.285	0.15489	*******	47.177
7	128.6	57.1	23.6	0.000397	0.467	78.79	64759	0.00130	0.283	0.00395	6.775	1.277
8	144.4	56.8	21.7	0.000348	0.494	84.94	65066	0.00123	0.283	0.00323	5.047	1.016
9	143.9	56.6	20.8	0.000326	0.508	88.20	65221	0.00119	0.283	0.00324	5.091	0.999
10	143.2	56.5	20.4	0.000315	0.515	89.82	65298	0.00118	0.283	0.00327	5.149	0.996
RUN NO 109	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 82.1 K	LIQ PRESS 3.04 ATM	CART HTR PWR 0.000 W							
1	345.4	58.1	30.4	0.000657	0.357	53.38	63821	0.05545	9.240	0.03216	*******	14.285
2	59.8	58.1	29.6	0.000545	0.421	68.74	63906	0.00322	0.631	0.35523	*******	111.519
3	58.5	58.0	29.3	0.000535	0.424	69.39	63955	0.00123	0.243	0.41394	*******	128.981
4	58.5	57.9	28.9	0.000527	0.426	69.74	64007	0.00120	0.239	0.38832	*******	120.665
5	57.7	57.8	28.2	0.000510	0.429	70.43	64110	0.00120	0.240	*******	*******	*******
6	59.0	57.5	26.3	0.000470	0.437	72.14	64367	0.00118	0.240	0.16202	*******	49.480
7	115.3	57.1	23.5	0.000401	0.461	77.34	64766	0.00111	0.238	0.00409	7.412	1.318
8	130.1	56.8	21.7	0.000355	0.484	82.51	65071	0.00106	0.239	0.00325	5.353	1.027
9	129.2	56.6	20.8	0.000333	0.496	85.25	65223	0.00103	0.239	0.00329	5.454	1.020
10	128.6	56.5	20.4	0.000323	0.502	86.60	65300	0.00102	0.239	0.00331	5.517	1.017
RUN NO 110	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 82.1 K	LIQ PRESS 3.04 ATM	CART HTR PWR 0.000 W							
1	347.1	58.1	30.2	0.000652	0.358	53.43	63848	0.05554	9.265	0.03205	*******	14.236
2	59.4	58.0	29.4	0.000542	0.421	68.77	63930	0.00302	0.593	0.42124	*******	132.106
3	58.4	57.9	29.1	0.000532	0.424	69.35	63979	0.00101	0.200	0.47709	*******	148.640
4	58.2	57.9	28.8	0.000525	0.425	69.64	64027	0.00099	0.197	0.62447	*******	194.064
5	57.5	57.8	28.0	0.000509	0.428	70.20	64125	0.00099	0.198	*******	*******	*******
6	58.5	57.5	26.3	0.000471	0.435	71.60	64376	0.00098	0.198	0.19240	*******	58.943
7	96.1	57.1	23.5	0.000406	0.455	75.86	64770	0.00093	0.197	0.00505	10.227	1.604
8	116.5	56.7	21.7	0.000362	0.474	80.10	65073	0.00089	0.197	0.00329	5.749	1.042
9	115.7	56.6	20.8	0.000341	0.484	82.34	65224	0.00087	0.197	0.00333	5.847	1.036
10	112.5	56.5	20.4	0.000332	0.489	83.46	65300	0.00087	0.199	0.00355	6.380	1.092
RUN NO 111	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 82.1 K	LIQ PRESS 3.04 ATM	CART HTR PWR 0.000 W							
1	347.8	58.0	29.8	0.000642	0.359	53.51	63893	0.05578	9.322	0.03217	*******	14.277
2	59.1	57.9	29.1	0.000535	0.422	68.87	63975	0.00279	0.548	0.45831	*******	143.544
3	58.1	57.9	28.8	0.000527	0.424	69.39	64019	0.00078	0.154	0.62728	*******	195.294
4	58.0	57.8	28.5	0.000520	0.425	69.60	64062	0.00076	0.150	0.84749	*******	263.353
5	57.2	57.7	27.9	0.000507	0.428	70.03	64151	0.00076	0.151	*******	*******	*******
6	58.1	57.5	26.1	0.000472	0.433	71.07	64392	0.00075	0.151	0.23116	*******	71.045
7	76.9	57.1	23.4	0.000411	0.448	74.28	64776	0.00072	0.151	0.00761	17.384	2.362
8	100.1	56.7	21.6	0.000370	0.463	77.48	65077	0.00069	0.150	0.00346	6.515	1.093
9	99.6	56.6	20.8	0.000351	0.471	79.17	65226	0.00068	0.150	0.00348	6.584	1.085
10	95.4	56.5	20.4	0.000341	0.475	80.01	65301	0.00069	0.153	0.00392	7.681	1.209
RUN NO 112	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 82.3 K	LIQ PRESS 3.04 ATM	CART HTR PWR 0.000 W							
1	354.4	58.3	29.6	0.000634	0.362	54.25	63911	0.05683	9.583	0.03233	*******	14.279
2	59.0	57.9	29.0	0.000527	0.426	69.99	63994	0.00265	0.528	0.46810	*******	145.327
3	58.0	57.9	28.7	0.000520	0.429	70.46	64035	0.00061	0.121	0.75646	*******	233.527
4	57.8	57.8	28.4	0.000513	0.430	70.63	64076	0.00059	0.118	*******	*******	*******
5	57.0	57.7	27.8	0.000501	0.431	70.96	64162	0.00059	0.119	*******	*******	*******
6	57.8	57.5	26.1	0.000468	0.436	71.76	64399	0.00058	0.118	0.31649	*******	96.711
7	68.5	57.1	23.4	0.000411	0.448	74.24	64779	0.00057	0.118	0.01033	24.669	3.162
8	86.5	56.7	21.6	0.000372	0.460	76.72	65079	0.00055	0.118	0.00396	8.030	1.231
9	87.6	56.6	20.8	0.000354	0.466	78.03	65227	0.00054	0.118	0.00380	7.652	1.173
10	84.6	56.5	20.4	0.000345	0.469	78.68	65302	0.00055	0.120	0.00426	8.797	1.301
RUN NO 113	ORIF DIA 0.0567 CM	FLOW RATE 2.85 G/S	LIQ TEMP 82.1 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	355.1	58.6	34.6	0.000749	0.354	53.38	64275	0.05555	9.295	0.03135	*******	13.835
2	61.3	58.6	34.5	0.000635	0.417	68.61	64288	0.00303	0.597	0.21890	*******	68.281
3	59.6	58.6	34.5	0.000630	0.419	69.20	64294	0.00098	0.193	0.19499	*******	60.338
4	59.2	58.6	34.4	0.000627	0.420	69.49	64300	0.00095	0.189	0.32596	*******	100.560
5	58.3	58.6	34.2	0.000621	0.423	70.05	64320	0.00095	0.190	*******	*******	*******
6	59.5	58.4	33.1	0.000592	0.429	71.43	64449	0.00093	0.189	0.17598	*******	53.501
7	74.7	58.2	31.8	0.000534	0.448	75.59	64691	0.00089	0.189	0.01145	27.091	3.465
8	111.6	58.0	29.4	0.000489	0.466	79.74	64872	0.00085	0.188	0.00351	6.160	1.092
9	110.4	57.9	28.7	0.000468	0.476	81.94	64972	0.00083	0.188	0.00357	6.333	1.094
10	102.6	57.8	28.3	0.000458	0.480	83.05	65023	0.00085	0.193	0.00430	8.078	1.295

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 114	ORIF DIA 0.0567 CM	FLOW RATE 2.85 G/S	LIQ TEMP 82.1 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	346.6	58.6	34.7	0.000751	0.354	53.30	64266	0.05522	9.229	0.03206	*******	14.121
2	60.5	58.6	34.6	0.000637	0.416	68.49	64279	0.00324	0.637	0.33191	*******	103.476
3	59.4	58.6	34.5	0.000632	0.419	69.15	64286	0.00125	0.246	0.30007	*******	92.867
4	59.3	58.6	34.5	0.000629	0.420	69.51	64292	0.00122	0.242	0.33141	*******	102.257
5	58.7	58.6	34.3	0.000621	0.424	70.23	64312	0.00122	0.243	2.99604	*******	918.012
6	59.9	58.4	33.1	0.000590	0.432	72.02	64443	0.00120	0.244	0.17191	*******	52.066
7	108.7	58.2	31.0	0.000525	0.455	77.39	64687	0.00113	0.242	0.00480	8.905	1.515
8	127.9	58.0	29.4	0.000476	0.478	82.73	64870	0.00107	0.242	0.00346	5.649	1.075
9	125.8	57.9	28.7	0.000454	0.490	85.57	64972	0.00105	0.243	0.00357	5.910	1.085
10	124.7	57.8	28.3	0.000443	0.497	86.99	65022	0.00103	0.242	0.00362	6.043	1.090
RUN NO 115	ORIF DIA 0.0567 CM	FLOW RATE 2.85 G/S	LIQ TEMP 82.1 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	347.1	58.7	35.5	0.000769	0.353	53.30	64177	0.05551	9.260	0.03212	*******	14.157
2	60.9	58.7	35.3	0.000650	0.416	68.61	64196	0.00347	0.682	0.31132	*******	97.052
3	59.6	58.7	35.3	0.000644	0.419	69.34	64205	0.00149	0.294	0.34794	*******	107.566
4	60.0	58.7	35.2	0.000639	0.421	69.77	64215	0.00144	0.286	0.22863	*******	70.496
5	58.8	58.7	34.9	0.000630	0.425	70.62	64241	0.00144	0.289	1.60848	*******	491.609
6	60.2	58.5	33.6	0.000594	0.434	72.75	64390	0.00141	0.290	0.16781	*******	50.587
7	125.7	58.2	31.2	0.000522	0.462	79.13	64658	0.00131	0.287	0.00425	7.210	1.352
8	141.3	58.0	29.5	0.000467	0.489	85.47	64853	0.00124	0.287	0.00345	5.328	1.065
9	139.3	57.9	28.8	0.000443	0.504	88.85	64963	0.00121	0.288	0.00354	5.533	1.067
10	139.9	57.8	28.4	0.000431	0.511	90.53	65018	0.00118	0.286	0.00349	5.432	1.040
RUN NO 116	ORIF DIA 0.0567 CM	FLOW RATE 2.85 G/S	LIQ TEMP 82.0 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	345.0	58.8	35.9	0.000779	0.352	53.08	64132	0.05540	9.210	0.03218	*******	14.209
2	61.5	58.8	35.7	0.000658	0.415	68.40	64155	0.00379	0.742	0.27091	*******	84.695
3	59.3	58.8	35.6	0.000650	0.418	69.23	64167	0.00184	0.363	0.62367	*******	192.909
4	60.0	58.7	35.5	0.000645	0.421	69.76	64178	0.00177	0.351	0.28351	*******	87.437
5	59.1	58.7	35.2	0.000634	0.425	70.81	64208	0.00176	0.354	0.82173	*******	250.952
6	60.7	58.5	33.8	0.000594	0.437	73.42	64365	0.00172	0.355	0.16433	*******	49.333
7	144.2	58.2	31.4	0.000514	0.471	81.26	64644	0.00158	0.352	0.00409	6.390	1.304
8	161.6	58.0	29.6	0.000455	0.504	89.04	64846	0.00148	0.352	0.00340	4.895	1.043
9	158.8	57.9	28.8	0.000428	0.522	93.19	64959	0.00143	0.353	0.00350	5.100	1.043
10	159.5	57.8	28.4	0.000416	0.530	95.26	65016	0.00140	0.350	0.00344	5.005	1.014
RUN NO 117	ORIF DIA 0.0567 CM	FLOW RATE 2.85 G/S	LIQ TEMP 81.9 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	344.8	58.8	36.4	0.000791	0.351	52.95	64079	0.05552	9.204	0.03218	*******	14.230
2	61.9	58.8	36.1	0.000666	0.414	68.36	64107	0.00412	0.805	0.25770	*******	80.671
3	59.2	58.8	36.0	0.000658	0.418	69.28	64120	0.00218	0.431	1.02410	*******	316.605
4	60.2	58.8	35.9	0.000651	0.421	69.91	64134	0.00209	0.416	0.28808	*******	88.794
5	59.4	58.7	35.6	0.000638	0.426	71.16	64169	0.00208	0.420	0.65557	*******	199.791
6	61.3	58.6	34.1	0.000594	0.440	74.26	64334	0.00203	0.421	0.15611	*******	46.625
7	161.8	58.2	31.5	0.000506	0.480	83.55	64628	0.00184	0.417	0.00403	5.903	1.281
8	183.2	58.0	29.7	0.000442	0.519	92.78	64838	0.00170	0.417	0.00333	4.454	1.013
9	180.3	57.9	28.8	0.000414	0.540	97.69	64954	0.00164	0.418	0.00341	4.615	1.004
10	176.3	57.8	28.4	0.000401	0.550	100.14	65014	0.00160	0.417	0.00352	4.851	1.019
RUN NO 118	ORIF DIA 0.0567 CM	FLOW RATE 2.85 G/S	LIQ TEMP 81.9 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	345.5	58.9	36.6	0.000798	0.350	52.80	64052	0.05516	9.123	0.03183	*******	14.098
2	62.3	58.8	36.4	0.000671	0.414	68.16	64082	0.00439	0.858	0.24544	*******	77.014
3	59.3	58.8	36.2	0.000662	0.418	69.16	64097	0.00245	0.483	1.01406	*******	313.859
4	60.2	58.8	36.1	0.000655	0.421	69.87	64112	0.00236	0.468	0.33570	*******	103.503
5	59.6	58.8	35.8	0.000641	0.427	71.27	64149	0.00234	0.471	0.55676	*******	169.608
6	61.7	58.6	34.2	0.000594	0.442	74.76	64319	0.00227	0.473	0.15140	*******	45.091
7	176.8	58.3	31.6	0.000500	0.487	85.22	64619	0.00204	0.469	0.00395	5.611	1.257
8	203.0	58.0	29.7	0.000433	0.531	95.58	64834	0.00187	0.469	0.00323	4.133	0.978
9	202.0	57.9	28.8	0.000404	0.554	101.10	64952	0.00179	0.469	0.00326	4.179	0.952
10	200.9	57.8	28.4	0.000390	0.565	103.85	65013	0.00175	0.467	0.00327	4.211	0.939
RUN NO 119	ORIF DIA 0.0567 CM	FLOW RATE 2.85 G/S	LIQ TEMP 81.8 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	345.6	58.9	37.0	0.000807	0.350	52.68	64008	0.05537	9.136	0.03187	*******	14.136
2	62.8	58.9	36.7	0.000678	0.413	68.16	64042	0.00471	0.919	0.23407	*******	73.520
3	59.4	58.9	36.6	0.000668	0.418	69.26	64059	0.00278	0.548	1.04475	*******	323.201
4	60.4	58.9	36.4	0.000660	0.421	70.06	64076	0.00267	0.531	0.33669	*******	103.709
5	60.0	58.8	36.1	0.000643	0.428	71.65	64116	0.00264	0.534	0.46754	*******	142.120
6	62.7	58.6	34.5	0.000593	0.445	75.61	64294	0.00255	0.536	0.13032	*******	38.644
7	192.9	58.3	31.7	0.000493	0.496	87.46	64606	0.00226	0.531	0.00394	5.349	1.247
8	227.7	58.0	29.8	0.000422	0.545	99.20	64827	0.00206	0.530	0.00313	3.751	0.937
9	228.8	57.9	28.9	0.000392	0.571	105.43	64948	0.00196	0.529	0.00310	3.706	0.896
10	220.6	57.8	28.4	0.000378	0.585	108.54	65011	0.00192	0.532	0.00327	4.020	0.925

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 120	ORIF DIA 0.0567 CM		FLOW RATE 2.85 G/S		LIQ TEMP 81.8 K		LIQ PRESS 3.05 ATM		CART HTR PWR 0.000 W			
1	349.2	59.0	37.8	0.000823	0.350	52.82	63923	0.05602	9.242	0.03185	*******	14.130
2	63.7	59.0	37.8	0.000688	0.414	68.59	63961	0.00512	1.002	0.21326	*******	46.877
3	59.7	59.0	37.3	0.000677	0.420	69.81	63982	0.00316	0.626	0.87440	*******	269.538
4	60.4	58.9	37.1	0.000667	0.423	70.73	64002	0.00305	0.609	0.40250	*******	123.366
5	60.3	58.9	36.7	0.000648	0.431	72.55	64050	0.00301	0.612	0.43206	*******	130.544
6	66.3	58.7	34.9	0.000593	0.451	77.09	64244	0.00288	0.614	0.08054	*******	23.783
7	216.9	58.3	32.0	0.000484	0.509	90.65	64578	0.00252	0.607	0.00383	4.999	1.203
8	260.6	58.0	29.9	0.000409	0.565	104.07	64813	0.00427	0.606	0.00299	3.403	0.884
9	269.7	57.9	28.9	0.000377	0.595	111.18	64939	0.00215	0.604	0.00285	3.162	0.813
10	260.9	57.8	28.4	0.000362	0.610	114.74	65007	0.00411	0.610	0.00300	3.412	0.837
RUN NO 121	ORIF DIA 0.0567 CM		FLOW RATE 2.85 G/S		LIQ TEMP 81.9 K		LIQ PRESS 3.05 ATM		CART HTR PWR 0.000 W			
1	347.3	59.1	38.3	0.000834	0.349	52.85	63880	0.05543	9.139	0.03170	*******	14.054
2	64.4	59.0	37.9	0.000696	0.414	68.55	63918	0.00544	1.062	0.19604	*******	61.588
3	60.0	59.0	37.7	0.000684	0.420	69.87	63937	0.00352	0.696	0.71038	*******	219.031
4	61.9	59.0	37.5	0.000673	0.424	70.89	63959	0.00336	0.671	0.23004	*******	70.621
5	61.2	58.9	37.0	0.000652	0.433	72.91	64011	0.00337	0.688	0.29919	*******	90.311
6	120.1	58.7	35.2	0.000592	0.455	77.97	64214	0.00315	0.675	0.01100	*******	3.503
7	239.0	58.3	32.1	0.000477	0.518	92.94	64562	0.00275	0.672	0.00372	4.616	1.165
8	294.5	58.1	30.0	0.000399	0.580	107.78	64805	0.00244	0.669	0.00283	3.002	0.829
9	302.6	57.9	29.0	0.000366	0.613	115.62	64934	0.00229	0.664	0.00271	2.825	0.765
10	282.3	57.8	28.5	0.000351	0.629	119.55	65004	0.00429	0.681	0.00303	3.324	0.831
RUN NO 123	ORIF DIA 0.0567 CM		FLOW RATE 2.85 G/S		LIQ TEMP 81.8 K		LIQ PRESS 3.05 ATM		CART HTR PWR 0.000 W			
1	343.3	58.9	37.1	0.000812	0.348	52.37	63999	0.05501	9.042	0.03180	*******	14.134
2	63.3	58.9	36.8	0.000682	0.411	67.71	64034	0.00472	0.917	0.20652	*******	65.167
3	59.6	58.9	36.7	0.000672	0.416	68.80	64051	0.00282	0.553	0.75993	*******	236.031
4	61.0	58.9	36.5	0.000664	0.419	69.61	64068	0.00269	0.533	0.25055	*******	77.528
5	60.2	58.8	36.1	0.000647	0.426	71.21	64110	0.00267	0.537	0.38980	*******	118.945
6	62.9	58.6	34.5	0.000596	0.444	75.20	64289	0.00258	0.540	0.12468	*******	37.100
7	195.1	58.3	31.7	0.000495	0.495	87.12	64603	0.00228	0.534	0.00390	5.345	1.240
8	231.2	58.0	29.8	0.000423	0.544	98.93	64825	0.00207	0.534	0.00308	3.721	0.927
9	234.5	57.9	28.9	0.000393	0.571	105.20	64947	0.00197	0.532	0.00301	3.598	0.875
10	223.9	57.8	28.4	0.000378	0.584	108.34	65011	0.00195	0.539	0.00324	4.016	0.921
RUN NO 125	ORIF DIA 0.0567 CM		FLOW RATE 2.90 G/S		LIQ TEMP 82.1 K		LIQ PRESS 3.10 ATM		CART HTR PWR 0.000 W			
1	340.8	58.2	30.9	0.000670	0.356	53.17	65846	0.05428	9.305	0.03292	*******	14.262
2	60.9	57.8	28.0	0.000518	0.420	68.28	66230	0.00394	0.798	0.25049	*******	77.075
3	57.9	57.5	26.5	0.000487	0.425	69.10	66439	0.00210	0.430	1.09515	*******	332.863
4	58.3	57.3	25.1	0.000459	0.428	69.63	66650	0.00203	0.418	0.41544	*******	126.858
5	58.4	56.9	22.5	0.000409	0.434	70.63	67047	0.00200	0.420	0.27582	*******	82.937
6	64.6	56.4	19.6	0.000349	0.448	73.32	67578	0.00194	0.421	0.05097	*******	15.199
7	165.9	55.7	16.4	0.000273	0.486	81.64	68238	0.00178	0.417	0.00379	5.954	1.210
8	201.9	55.2	14.4	0.000225	0.521	89.71	68727	0.00165	0.417	0.00285	3.856	0.885
9	214.1	55.0	13.6	0.000206	0.539	93.93	68916	0.00159	0.415	0.00261	3.387	0.797
10	209.5	54.9	13.3	0.000199	0.548	96.05	69010	0.00159	0.422	0.00273	3.594	0.820
RUN NO 126	ORIF DIA 0.0567 CM		FLOW RATE 2.90 G/S		LIQ TEMP 82.1 K		LIQ PRESS 3.10 ATM		CART HTR PWR 0.000 W			
1	337.0	58.2	31.0	0.000672	0.356	53.10	65835	0.05439	9.315	0.03341	*******	14.467
2	61.4	57.8	28.0	0.000519	0.420	68.31	66220	0.00421	0.853	0.23436	*******	72.161
3	58.1	57.5	26.6	0.000488	0.425	69.22	66430	0.00241	0.494	0.82045	*******	249.381
4	58.4	57.3	25.1	0.000459	0.429	69.84	66642	0.00233	0.482	0.43615	*******	131.951
5	58.9	56.9	22.5	0.000408	0.436	71.02	67040	0.00230	0.483	0.24724	*******	74.204
6	64.2	56.4	19.6	0.000346	0.452	74.16	67573	0.00222	0.485	0.06225	*******	18.435
7	183.2	55.7	16.4	0.000268	0.495	83.82	68234	0.00201	0.480	0.00377	5.629	1.200
8	230.0	55.2	14.4	0.000219	0.535	93.17	68725	0.00185	0.479	0.00274	3.454	0.847
9	244.9	55.0	13.6	0.000200	0.556	98.04	68914	0.00177	0.476	0.00251	3.010	0.758
10	235.4	54.9	13.3	0.000192	0.566	100.48	69009	0.00177	0.485	0.00269	3.328	0.798
RUN NO 127	ORIF DIA 0.0567 CM		FLOW RATE 2.90 G/S		LIQ TEMP 81.8 K		LIQ PRESS 3.10 ATM		CART HTR PWR 0.000 W			
1	343.2	58.3	31.9	0.000695	0.353	52.63	65734	0.05508	9.362	0.03285	*******	14.323
2	62.0	57.9	28.7	0.000533	0.419	68.03	66118	0.00461	0.928	0.22364	*******	69.093
3	58.3	57.6	27.2	0.000500	0.424	69.05	66340	0.00274	0.560	0.81431	*******	247.816
4	58.8	57.4	25.7	0.000469	0.428	69.76	66564	0.00265	0.546	0.38221	*******	115.791
5	59.3	57.0	22.9	0.000414	0.436	71.16	66971	0.00268	0.565	0.24771	*******	74.317
6	147.5	56.4	19.9	0.000348	0.454	74.80	67530	0.00247	0.542	0.00595	*******	1.962
7	206.9	55.7	16.6	0.000266	0.502	85.76	68204	0.00224	0.546	0.00361	5.046	1.152
8	261.5	55.2	14.4	0.000214	0.548	96.40	68715	0.00204	0.543	0.00263	3.085	0.864
9	276.8	55.0	13.6	0.000195	0.571	101.94	68910	0.00195	0.539	0.00243	2.732	0.728
10	267.0	54.9	13.3	0.000187	0.583	104.70	69006	0.00194	0.548	0.00258	2.981	0.759

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 128	ORIF DIA 0.0567 CM	FLOW RATE 2.90 G/S	LIQ TEMP 81.9 K	LIQ PRESS 3.10 ATM	CART HTR PWR 0.000 W							
1	345.0	58.4	32.5	0.000708	0.354	52.80	65659	0.05495	9.343	0.03259	*******	14.198
2	62.6	58.0	29.3	0.000541	0.419	68.26	66044	0.00485	0.980	0.20892	*******	64.508
3	58.8	57.7	27.7	0.000506	0.425	69.35	66275	0.00300	0.614	0.58754	*******	178.542
4	60.6	57.5	26.0	0.000474	0.429	70.14	66507	0.00288	0.596	0.18887	*******	57.252
5	65.2	57.0	23.2	0.000417	0.438	71.69	66926	0.00491	0.615	0.07515	*******	22.709
6	168.4	56.4	20.0	0.000348	0.458	75.67	67498	0.00266	0.589	0.00526	*******	1.752
7	223.4	55.8	16.7	0.000263	0.510	87.63	68181	0.00241	0.594	0.00354	4.758	1.127
8	289.0	55.2	14.5	0.000210	0.559	99.21	68707	0.00217	0.589	0.00252	2.788	0.769
9	302.6	55.0	13.7	0.000191	0.585	105.22	68905	0.00206	0.584	0.00236	2.524	0.700
10	286.2	54.9	13.3	0.000182	0.597	108.22	69003	0.00207	0.598	0.00259	2.887	0.752
RUN NO 129	ORIF DIA 0.0567 CM	FLOW RATE 2.90 G/S	LIQ TEMP 81.9 K	LIQ PRESS 3.10 ATM	CART HTR PWR 0.000 W							
1	337.9	58.3	32.0	0.000699	0.352	52.37	65723	0.05401	9.151	0.03273	*******	14.280
2	62.0	57.9	28.8	0.000537	0.416	67.41	66107	0.00445	0.891	0.21809	*******	67.706
3	58.6	57.7	27.3	0.000504	0.421	68.37	66331	0.00263	0.634	0.55144	*******	168.796
4	60.0	57.4	25.7	0.000473	0.425	69.05	66556	0.00254	0.520	0.20097	*******	61.356
5	63.9	57.0	22.9	0.000418	0.433	70.37	66963	0.00257	0.536	0.07817	*******	23.796
6	156.6	56.4	19.9	0.000352	0.450	73.81	67525	0.00236	0.513	0.00512	*******	1.714
7	197.5	55.7	16.6	0.000269	0.496	84.18	68199	0.00216	0.518	0.00366	5.333	1.172
8	254.6	55.2	14.5	0.000218	0.539	94.27	68713	0.00197	0.515	0.00258	3.112	0.802
9	273.1	55.0	13.7	0.000198	0.562	99.51	68907	0.00187	0.510	0.00234	2.669	0.709
10	257.1	54.9	13.3	0.000190	0.573	102.14	69004	0.00189	0.525	0.00260	3.110	0.772
RUN NO 130	ORIF DIA 0.0567 CM	FLOW RATE 2.90 G/S	LIQ TEMP 82.2 K	LIQ PRESS 3.10 ATM	CART HTR PWR 0.000 W							
1	340.3	58.3	31.9	0.000691	0.355	53.11	65731	0.05387	9.208	0.03266	*******	14.160
2	61.9	57.9	28.7	0.000532	0.419	68.19	66116	0.00427	0.863	0.21675	*******	66.864
3	58.6	57.6	27.2	0.000500	0.424	69.11	66338	0.00245	0.500	0.55009	*******	167.405
4	59.6	57.4	25.7	0.000469	0.428	69.74	66562	0.00238	0.491	0.22228	*******	67.456
5	66.6	57.0	22.9	0.000415	0.435	70.97	66969	0.00238	0.501	0.05234	*******	15.940
6	152.0	56.4	19.9	0.000350	0.452	74.15	67528	0.00220	0.480	0.00503	*******	1.672
7	187.5	55.7	16.6	0.000270	0.495	83.82	68201	0.00203	0.485	0.00368	5.468	1.177
8	231.2	55.2	14.4	0.000220	0.535	93.25	68713	0.00187	0.484	0.00275	3.482	0.849
9	248.6	55.0	13.6	0.000200	0.556	98.16	68907	0.00178	0.480	0.00248	2.972	0.750
10	239.5	54.9	13.3	0.000192	0.566	100.61	69003	0.00179	0.490	0.00265	3.277	0.789
RUN NO 131	ORIF DIA 0.0567 CM	FLOW RATE 2.90 G/S	LIQ TEMP 82.1 K	LIQ PRESS 3.10 ATM	CART HTR PWR 0.000 W							
1	340.5	58.1	30.1	0.000655	0.356	52.85	65935	0.05386	9.218	0.03264	*******	14.175
2	60.8	57.7	27.3	0.000509	0.419	67.77	66319	0.00376	0.758	0.24073	*******	74.350
3	58.6	57.5	26.0	0.000480	0.423	68.52	66517	0.00189	0.386	0.34121	*******	104.310
4	59.0	57.2	24.6	0.000453	0.426	68.99	66717	0.00183	0.376	0.21257	*******	64.805
5	58.3	56.8	22.2	0.000406	0.432	69.88	67106	0.00185	0.385	0.26552	*******	80.269
6	93.9	56.3	19.4	0.000348	0.444	72.29	67613	0.00175	0.377	0.01003	*******	3.175
7	156.9	55.7	16.3	0.000275	0.478	79.71	68261	0.00163	0.376	0.00372	6.023	1.195
8	184.5	55.2	14.4	0.000229	0.510	86.97	68732	0.00153	0.377	0.00292	4.187	0.912
9	211.2	55.0	13.6	0.000211	0.526	90.76	68916	0.00145	0.370	0.00237	3.069	0.737
10	193.2	54.9	13.3	0.000204	0.534	92.66	69009	0.00149	0.385	0.00279	3.864	0.847
RUN NO 132	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 81.9 K	LIQ PRESS 3.50 ATM	CART HTR PWR 0.000 W							
1	336.9	57.9	28.8	0.000627	0.356	52.70	65545	0.05423	9.216	0.03303	*******	14.440
2	59.9	57.5	26.3	0.000490	0.419	67.59	65904	0.00334	0.668	0.27925	*******	86.804
3	58.4	57.3	25.0	0.000464	0.422	68.23	66083	0.00148	0.298	0.26677	*******	82.275
4	58.5	57.1	23.8	0.000440	0.425	68.57	66262	0.00144	0.292	0.20901	*******	64.303
5	57.9	56.7	21.6	0.000398	0.430	69.23	66634	0.00143	0.293	0.25736	*******	78.661
6	59.2	56.3	19.1	0.000346	0.440	71.04	67096	0.00140	0.295	0.09920	*******	29.979
7	130.3	55.6	16.1	0.000279	0.466	76.77	67719	0.00130	0.292	0.00391	7.050	1.261
8	150.8	55.2	14.3	0.000237	0.491	82.39	68156	0.00124	0.292	0.00306	4.924	0.969
9	158.4	55.0	13.6	0.000220	0.504	85.34	68330	0.00121	0.292	0.00282	4.383	0.883
10	158.6	54.9	13.3	0.000213	0.511	86.83	68419	0.00121	0.297	0.00286	4.440	0.887
RUN NO 133	ORIF DIA 0.0567 CM	FLOW RATE 2.90 G/S	LIQ TEMP 81.8 K	LIQ PRESS 3.10 ATM	CART HTR PWR 0.000 W							
1	338.2	57.8	28.1	0.000617	0.354	52.19	66206	0.05408	9.233	0.03292	*******	14.362
2	59.2	57.4	25.7	0.000484	0.416	66.89	66550	0.00303	0.607	0.34310	*******	106.356
3	58.1	57.2	24.6	0.000460	0.420	67.42	66721	0.00115	0.232	0.27332	*******	84.183
4	58.1	57.1	23.4	0.000437	0.421	67.66	66893	0.00112	0.228	0.21083	*******	64.818
5	57.4	56.7	21.3	0.000397	0.425	68.13	67263	0.00111	0.229	0.30792	*******	94.164
6	58.4	56.2	18.9	0.000348	0.434	69.46	67709	0.00110	0.230	0.10429	*******	31.622
7	109.4	55.6	16.0	0.000285	0.454	73.77	68328	0.00104	0.228	0.00424	8.211	1.355
8	128.4	55.2	14.3	0.000245	0.474	78.00	68754	0.00099	0.228	0.00311	5.313	0.988
9	131.3	55.0	13.6	0.000229	0.483	80.24	68926	0.00097	0.228	0.00299	5.017	0.937
10	130.7	54.9	13.3	0.000222	0.488	81.36	69014	0.00097	0.230	0.00303	5.111	0.944

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/EPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 134	ORIF DIA 0.0567 CM		FLOW RATE 2.89 G/S		LIQ TEMP 81.8 K		LIQ PRESS 3.08 ATM		CART HTR PWR 0.000 W			
1	335.7	57.9	28.8	0.000631	0.354	52.19	65895	0.05413	9.194	0.03310	*******	14.470
2	59.6	57.3	25.1	0.000471	0.417	66.91	66434	0.00334	0.670	0.28959	*******	90.061
3	57.5	57.0	23.2	0.000435	0.421	67.48	66702	0.00152	0.308	0.63454	*******	195.623
4	58.6	56.7	21.4	0.000400	0.424	67.75	67029	0.00145	0.295	0.15841	*******	48.822
5	57.7	56.1	18.2	0.000339	0.429	68.16	67626	0.00144	0.299	0.17989	*******	55.147
6	59.0	55.4	15.2	0.000281	0.438	69.62	68317	0.00142	0.300	0.08260	*******	25.127
7	130.5	54.5	11.9	0.000211	0.462	74.42	69234	0.00133	0.297	0.00391	7.149	1.280
8	155.8	53.8	9.7	0.000168	0.483	78.51	69961	0.00127	0.297	0.00292	4.643	0.949
9	165.0	53.4	8.8	0.000150	0.494	80.28	70341	0.00124	0.298	0.00267	4.083	0.864
10	172.4	53.3	8.4	0.000142	0.498	81.06	70509	0.00121	0.294	0.00247	3.652	0.799
RUN NO 135	ORIF DIA 0.0567 CM		FLOW RATE 2.89 G/S		LIQ TEMP 81.7 K		LIQ PRESS 3.09 ATM		CART HTR PWR 0.000 W			
1	333.5	57.9	28.7	0.000630	0.354	52.17	65899	0.05470	9.290	0.03371	*******	14.731
2	59.9	57.3	25.0	0.000469	0.418	67.08	66436	0.00351	0.705	0.27140	*******	84.342
3	57.5	57.0	23.2	0.000433	0.422	67.71	66703	0.00172	0.349	0.68185	*******	209.865
4	58.6	56.7	21.3	0.000398	0.425	68.03	67030	0.00164	0.335	0.17418	*******	53.572
5	58.0	56.1	18.1	0.000337	0.431	68.56	67625	0.00163	0.339	0.17777	*******	54.365
6	59.4	55.4	15.1	0.000278	0.441	70.29	68315	0.00160	0.340	0.08578	*******	25.982
7	143.4	54.5	11.8	0.000208	0.468	75.91	69230	0.00149	0.337	0.00379	6.564	1.243
8	172.7	53.8	9.7	0.000165	0.492	80.75	69956	0.00141	0.337	0.00284	4.277	0.921
9	184.3	53.4	8.8	0.000146	0.504	82.88	70334	0.00138	0.337	0.00258	3.703	0.831
10	191.4	53.3	8.4	0.000139	0.509	83.83	70502	0.00134	0.333	0.00241	3.365	0.776
RUN NO 136	ORIF DIA 0.0567 CM		FLOW RATE 2.89 G/S		LIQ TEMP 81.8 K		LIQ PRESS 3.09 ATM		CART HTR PWR 0.000 W			
1	336.8	58.0	29.8	0.000654	0.353	52.23	65747	0.05432	9.205	0.03302	*******	14.444
2	60.4	57.4	25.9	0.000485	0.417	67.11	66310	0.00377	0.756	0.25562	*******	79.501
3	57.7	57.1	23.9	0.000446	0.422	67.82	66594	0.00195	0.395	0.70908	*******	218.143
4	58.5	56.8	22.0	0.000408	0.425	68.21	66918	0.00187	0.382	0.21930	*******	67.360
5	58.4	56.2	18.5	0.000343	0.432	68.87	67550	0.00185	0.384	0.16984	*******	51.864
6	59.9	55.5	15.5	0.000282	0.444	70.95	68240	0.00180	0.386	0.08709	*******	26.276
7	156.4	54.5	12.0	0.000208	0.475	77.52	69176	0.00167	0.382	0.00375	6.210	1.230
8	192.3	53.8	9.8	0.000162	0.502	83.19	69928	0.00157	0.382	0.00276	3.912	0.894
9	204.6	53.5	8.8	0.000144	0.515	85.70	70321	0.00153	0.382	0.00253	3.420	0.811
10	211.1	53.3	8.4	0.000136	0.521	86.81	70496	0.00149	0.377	0.00239	3.153	0.763
RUN NO 137	ORIF DIA 0.0567 CM		FLOW RATE 2.89 G/S		LIQ TEMP 82.1 K		LIQ PRESS 3.09 ATM		CART HTR PWR 0.000 W			
1	337.0	58.1	30.5	0.000662	0.355	52.87	65673	0.05398	9.202	0.03299	*******	14.351
2	61.0	57.5	26.2	0.000487	0.420	67.86	66265	0.00416	0.839	0.23548	*******	72.900
3	58.0	57.2	24.1	0.000445	0.425	68.68	66572	0.00234	0.478	0.55833	*******	170.737
4	58.4	56.8	21.9	0.000404	0.429	69.18	66919	0.00226	0.467	0.29573	*******	90.134
5	58.8	56.1	18.2	0.000335	0.437	70.03	67600	0.00223	0.469	0.17249	*******	52.258
6	72.1	55.4	15.2	0.000273	0.451	72.66	68306	0.00216	0.469	0.02812	*******	8.565
7	183.2	54.4	11.6	0.000197	0.488	80.71	69290	0.00197	0.465	0.00361	5.543	1.182
8	228.9	53.6	9.3	0.000150	0.521	87.45	70116	0.00184	0.464	0.00265	3.437	0.852
9	243.4	53.3	8.3	0.000131	0.536	90.35	70520	0.00178	0.464	0.00244	3.025	0.776
10	251.3	53.1	7.9	0.000123	0.542	91.58	70699	0.00173	0.456	0.00230	2.783	0.729
RUN NO 138	ORIF DIA 0.0567 CM		FLOW RATE 2.89 G/S		LIQ TEMP 81.8 K		LIQ PRESS 3.09 ATM		CART HTR PWR 0.000 W			
1	337.9	58.2	31.2	0.000681	0.353	52.44	65590	0.05439	9.209	0.03293	*******	14.391
2	61.6	57.6	26.7	0.000498	0.418	67.55	66184	0.00451	0.906	0.22367	*******	69.490
3	58.3	57.2	24.5	0.000454	0.424	68.47	66502	0.00268	0.545	0.50749	*******	155.526
4	58.6	56.9	22.3	0.000412	0.428	69.08	66847	0.00259	0.534	0.30062	*******	91.754
5	59.2	56.2	18.5	0.000339	0.437	70.14	67552	0.00257	0.541	0.17775	*******	53.849
6	95.1	55.4	15.4	0.000275	0.453	73.27	68258	0.00244	0.534	0.01346	*******	4.252
7	204.1	54.5	11.8	0.000195	0.496	82.68	69254	0.00222	0.532	0.00355	5.156	1.162
8	260.9	53.7	9.3	0.000147	0.533	90.60	70098	0.00205	0.529	0.00255	3.079	0.817
9	277.0	53.3	8.3	0.000128	0.550	94.03	70511	0.00197	0.528	0.00236	2.724	0.744
10	281.6	53.1	7.9	0.000120	0.558	95.50	70694	0.00192	0.521	0.00228	2.601	0.714
RUN NO 140	ORIF DIA 0.0567 CM		FLOW RATE 2.89 G/S		LIQ TEMP 81.8 K		LIQ PRESS 3.09 ATM		CART HTR PWR 0.000 W			
1	336.3	58.3	32.2	0.000705	0.352	52.37	65467	0.05413	9.132	0.03286	*******	14.372
2	63.0	57.7	27.5	0.000513	0.418	67.58	66064	0.00518	1.040	0.19439	*******	60.548
3	59.2	57.3	25.2	0.000465	0.424	68.71	66399	0.00339	0.692	0.37726	*******	115.609
4	61.4	57.0	22.9	0.000420	0.429	69.53	66740	0.00326	0.674	0.15286	*******	46.748
5	67.4	56.2	18.9	0.000343	0.440	71.02	67480	0.00328	0.694	0.06215	*******	18.994
6	183.5	55.5	15.7	0.000275	0.460	75.17	68185	0.00299	0.665	0.00519	*******	1.761
7	252.1	54.5	11.9	0.000191	0.515	87.33	69200	0.00269	0.669	0.00339	4.312	1.101
8	326.9	53.7	9.4	0.000140	0.562	97.66	70069	0.00243	0.661	0.00242	2.536	0.761
9	337.5	53.3	8.4	0.000121	0.583	102.13	70495	0.00232	0.658	0.00231	2.368	0.711
10	323.5	53.1	7.9	0.000113	0.592	104.09	70685	0.00230	0.665	0.00246	2.599	0.745

STA NO -	TURE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 141	ORIF DIA 0.0567 CM	FLOW RATE 2.89 G/S	LIQ TEMP 81.8 K	LIQ PRESS 3.09 ATM	CART HTR PWR 0.000 W							
1	336.3	58.3	31.8	0.000697	0.352	52.27	65512	0.05387	9.087	0.03269	*******	14.308
2	62.9	57.6	27.2	0.000508	0.417	67.34	66108	0.00498	0.997	0.19447	*******	60.653
3	59.1	57.3	25.0	0.000462	0.423	68.41	66437	0.00318	0.647	0.36612	*******	112.435
4	61.0	56.9	22.7	0.000418	0.428	69.16	66780	0.00306	0.630	0.15533	*******	47.602
5	65.9	56.2	18.7	0.000342	0.438	70.52	67506	0.00308	0.650	0.06668	*******	20.402
6	177.6	55.5	15.5	0.000275	0.457	74.36	68212	0.00282	0.622	0.00509	*******	1.730
7	236.5	54.5	11.9	0.000192	0.508	85.65	69219	0.00255	0.627	0.00344	4.602	1.124
8	308.2	53.7	9.4	0.000142	0.552	95.25	70078	0.00232	0.621	0.00244	2.668	0.772
9	323.3	53.3	8.4	0.000123	0.572	99.41	70500	0.00221	0.615	0.00228	2.406	0.708
10	307.8	53.1	7.9	0.000115	0.581	101.24	70687	0.00221	0.627	0.00246	2.699	0.753
RUN NO 142	ORIF DIA 0.0567 CM	FLOW RATE 2.89 G/S	LIQ TEMP 81.4 K	LIQ PRESS 3.09 ATM	CART HTR PWR 0.000 W							
1	162.8	58.0	29.3	0.000643	0.353	52.14	65803	0.05654	9.582	0.09138	*******	36.854
2	60.6	57.4	25.3	0.000474	0.418	67.26	66385	0.00271	0.546	0.16570	*******	51.500
3	58.4	57.0	23.3	0.000435	0.422	67.83	66675	0.00215	0.436	0.31218	*******	96.176
4	59.1	56.7	21.3	0.000397	0.426	68.27	67026	0.00207	0.425	0.17377	*******	53.410
5	58.5	56.0	17.8	0.000331	0.433	69.00	67668	0.00205	0.427	0.17504	*******	53.406
6	60.9	55.3	14.9	0.000271	0.446	71.32	68375	0.00200	0.429	0.07641	*******	23.043
7	170.8	54.4	11.5	0.000198	0.480	78.56	69338	0.00183	0.425	0.00365	5.873	1.201
8	212.1	53.6	9.2	0.000152	0.510	84.62	70138	0.00172	0.425	0.00268	3.655	0.869
9	228.0	53.3	8.3	0.000134	0.523	87.22	70527	0.00165	0.421	0.00241	3.119	0.775
10	217.6	53.1	7.9	0.000126	0.529	88.37	70700	0.00168	0.432	0.00263	3.523	0.834
RUN NO 143	ORIF DIA 0.0567 CM	FLOW RATE 2.89 G/S	LIQ TEMP 82.0 K	LIQ PRESS 3.09 ATM	CART HTR PWR 0.000 W							
1	339.4	57.8	28.1	0.000612	0.357	52.78	65983	0.05379	9.214	0.03271	*******	14.238
2	59.2	57.2	24.5	0.000458	0.420	67.43	66500	0.00303	0.612	0.31709	*******	98.138
3	58.2	57.0	22.8	0.000424	0.423	67.90	66765	0.00115	0.233	0.19327	*******	59.472
4	58.0	56.6	21.0	0.000391	0.426	68.06	67086	0.00112	0.230	0.17269	*******	53.034
5	57.3	56.0	17.9	0.000334	0.430	68.28	67659	0.00111	0.231	0.18393	*******	56.293
6	58.6	55.3	15.0	0.000278	0.437	69.23	68349	0.00110	0.231	0.07075	*******	21.569
7	111.5	54.5	11.7	0.000213	0.455	72.62	69253	0.00104	0.230	0.00402	8.176	1.307
8	136.9	53.8	9.7	0.000171	0.471	75.44	69963	0.00101	0.230	0.00298	5.331	0.968
9	137.3	53.4	8.8	0.000154	0.479	76.59	70333	0.00098	0.229	0.00273	4.707	0.885
10	136.3	53.3	8.4	0.000146	0.482	77.10	70497	0.00101	0.236	0.00285	4.945	0.918
RUN NO 144	ORIF DIA 0.0567 CM	FLOW RATE 2.89 G/S	LIQ TEMP 82.3 K	LIQ PRESS 3.09 ATM	CART HTR PWR 0.000 W							
1	330.6	57.3	24.7	0.000536	0.362	53.29	66472	0.05332	9.269	0.03391	*******	14.635
2	58.8	56.8	21.7	0.000405	0.424	67.82	66954	0.00268	0.547	0.26963	*******	83.112
3	57.9	56.5	20.2	0.000377	0.427	68.18	67224	0.00090	0.184	0.13226	*******	40.571
4	57.7	56.2	18.8	0.000350	0.429	68.23	67495	0.00088	0.181	0.11785	*******	36.116
5	57.2	55.6	16.2	0.000302	0.432	68.24	68059	0.00087	0.182	0.11639	*******	35.635
6	58.1	55.0	13.6	0.000254	0.437	68.71	68689	0.00086	0.182	0.05842	*******	17.869
7	79.0	54.2	10.8	0.000198	0.450	70.86	69566	0.00083	0.182	0.00730	17.816	2.287
8	111.3	53.5	9.0	0.000163	0.462	72.52	70255	0.00081	0.181	0.00312	5.868	1.013
9	113.6	53.2	8.2	0.000148	0.467	73.10	70581	0.00079	0.180	0.00298	5.522	0.964
10	107.2	53.1	7.8	0.000141	0.469	73.34	70725	0.00082	0.187	0.00346	6.727	1.108
RUN NO 243	ORIF DIA 0.0831 CM	FLOW RATE 4.58 G/S	LIQ TEMP 80.3 K	LIQ PRESS 1.71 ATM	CART HTR PWR 0.000 W							
1	326.8	59.5	42.9	0.000991	0.327	47.91	102008	0.04951	12.251	0.04584	*******	14.519
2	63.8	59.2	39.3	0.000787	0.379	60.28	102526	0.00295	0.850	0.18532	*******	42.602
3	59.2	59.0	37.6	0.000748	0.383	60.84	102785	0.00178	0.518	2.70546	*******	613.392
4	59.9	58.8	35.8	0.000710	0.385	61.22	103102	0.00171	0.499	0.45529	*******	102.952
5	59.8	58.4	32.6	0.000642	0.391	61.96	103674	0.00172	0.511	0.35507	*******	79.685
6	110.2	57.9	29.0	0.000559	0.402	63.96	104368	0.00163	0.499	0.00954	*******	2.287
7	189.5	57.2	24.6	0.000449	0.431	70.14	105362	0.00152	0.499	0.00377	4.203	0.921
8	205.7	56.8	21.9	0.000379	0.458	76.21	106042	0.00143	0.499	0.00335	3.516	0.791
9	215.0	56.6	20.9	0.000351	0.472	79.41	106353	0.00139	0.501	0.00316	3.208	0.733
10	228.8	56.5	20.4	0.000339	0.479	80.95	106485	0.00130	0.473	0.00274	2.660	0.634
RUN NO 244	ORIF DIA 0.0831 CM	FLOW RATE 4.58 G/S	LIQ TEMP 80.8 K	LIQ PRESS 1.71 ATM	CART HTR PWR 0.000 W							
1	325.6	59.7	44.7	0.001031	0.326	48.04	101755	0.04998	12.344	0.04642	*******	14.691
2	64.1	59.3	40.8	0.000813	0.380	60.56	102322	0.00316	0.909	0.18830	*******	43.226
3	59.6	59.1	38.8	0.000769	0.383	61.18	102604	0.00199	0.579	1.34505	*******	304.371
4	60.3	58.9	36.9	0.000727	0.386	61.62	102912	0.00193	0.565	0.40374	*******	91.103
5	63.8	58.5	33.4	0.000653	0.392	62.47	103537	0.00194	0.578	0.10892	*******	24.530
6	146.2	58.1	29.4	0.000563	0.405	64.75	104264	0.00181	0.558	0.00633	*******	1.562
7	207.5	57.3	24.9	0.000446	0.437	71.73	105305	0.00168	0.560	0.00373	3.951	0.910
8	231.4	56.8	22.0	0.000373	0.467	78.57	106019	0.00157	0.560	0.00321	3.138	0.754
9	238.5	56.6	20.9	0.000343	0.483	82.17	106343	0.00153	0.562	0.00309	2.958	0.712
10	256.1	56.5	20.4	0.000331	0.491	83.90	106480	0.00141	0.526	0.00264	2.390	0.605

STA NO -	TURF WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 245	ORIF DIA 0.0831 CM	FLOW RATE 4.58 G/S	LIQ TEMP 80.8 K	LIQ PRESS 1.71 ATM	CART HTR PWR 0.000 W							
1	322.9	59.8	45.5	0.001051	0.325	47.89	101643	0.04963	12.215	0.04643	*******	14.707
2	64.5	59.4	41.4	0.000827	0.378	60.35	102231	0.00334	0.959	0.18813	*******	43.301
3	59.8	59.2	39.4	0.000781	0.382	61.01	102524	0.00219	0.636	1.09680	*******	248.673
4	60.9	59.0	37.3	0.000738	0.386	61.51	102827	0.00214	0.627	0.32556	*******	73.626
5	71.7	58.5	33.7	0.000660	0.392	62.47	103477	0.00213	0.634	0.04806	*******	10.976
6	173.5	58.0	29.6	0.000566	0.406	65.00	104221	0.00198	0.610	0.00529	*******	1.330
7	215.8	57.3	25.0	0.000444	0.441	72.70	105279	0.00183	0.616	0.00388	4.057	0.945
8	252.7	56.8	22.1	0.000368	0.474	80.24	106009	0.00170	0.614	0.00313	2.906	0.735
9	259.3	56.6	20.9	0.000338	0.491	84.20	106338	0.00164	0.616	0.00304	2.766	0.697
10	275.7	56.5	20.4	0.000325	0.500	86.10	106478	0.00151	0.577	0.00263	2.289	0.600
RUN NO 246	ORIF DIA 0.0831 CM	FLOW RATE 4.58 G/S	LIQ TEMP 80.9 K	LIQ PRESS 1.70 ATM	CART HTR PWR 0.000 W							
1	320.0	59.9	46.1	0.001062	0.325	48.03	101560	0.04923	12.124	0.04661	*******	14.734
2	65.7	59.4	41.9	0.000835	0.379	60.44	102164	0.00351	1.006	0.16061	*******	37.019
3	60.1	59.2	39.8	0.000788	0.383	61.16	102465	0.00240	0.696	0.82007	*******	185.825
4	61.7	59.0	37.7	0.000743	0.386	61.73	102767	0.00251	0.734	0.26947	*******	60.930
5	117.4	58.5	34.0	0.000662	0.393	62.82	103432	0.00222	0.662	0.01126	*******	2.750
6	193.2	58.0	29.8	0.000565	0.408	65.53	104194	0.00215	0.667	0.00493	*******	1.252
7	235.0	57.3	25.1	0.000441	0.446	73.97	105261	0.00197	0.670	0.00377	3.741	0.918
8	275.9	56.8	22.1	0.000362	0.482	82.21	106002	0.00182	0.667	0.00305	2.678	0.712
9	283.0	56.6	20.9	0.000332	0.501	86.52	106335	0.00175	0.669	0.00296	2.553	0.674
10	295.0	56.5	20.5	0.000319	0.510	88.60	106477	0.00162	0.629	0.00264	2.207	0.595
RUN NO 247	ORIF DIA 0.0831 CM	FLOW RATE 4.58 G/S	LIQ TEMP 80.8 K	LIQ PRESS 1.70 ATM	CART HTR PWR 0.000 W							
1	324.8	59.7	44.1	0.001020	0.326	47.82	101840	0.04943	12.188	0.04597	*******	14.571
2	64.8	59.3	40.3	0.000806	0.378	60.19	102391	0.00318	0.911	0.16351	*******	37.700
3	59.8	59.1	38.4	0.000764	0.382	60.81	102664	0.00204	0.592	0.86961	*******	197.460
4	62.3	58.9	36.5	0.000723	0.385	61.28	102976	0.00210	0.613	0.17760	*******	40.336
5	105.8	58.4	33.1	0.000651	0.391	62.17	103584	0.00189	0.561	0.01185	*******	2.869
6	173.7	58.0	29.3	0.000562	0.404	64.42	104299	0.00183	0.562	0.00486	*******	1.229
7	205.8	57.3	24.8	0.000446	0.436	71.48	105325	0.00171	0.566	0.00381	4.094	0.931
8	233.5	56.8	22.0	0.000373	0.467	78.40	106027	0.00159	0.565	0.00320	3.131	0.754
9	251.3	56.6	20.9	0.000344	0.483	82.03	106347	0.00153	0.563	0.00289	2.677	0.670
10	253.7	56.5	20.4	0.000331	0.490	83.79	106483	0.00144	0.539	0.00273	2.513	0.627
RUN NO 248	ORIF DIA 0.0831 CM	FLOW RATE 4.58 G/S	LIQ TEMP 80.7 K	LIQ PRESS 1.70 ATM	CART HTR PWR 0.000 W							
1	328.9	59.3	40.6	0.000939	0.327	47.77	102347	0.04966	12.322	0.04571	*******	14.495
2	66.4	59.0	37.5	0.000752	0.379	59.97	102806	0.00214	0.615	0.08288	*******	19.189
3	61.0	58.8	35.9	0.000719	0.382	60.30	103081	0.00097	0.280	0.12922	*******	29.512
4	59.8	58.6	34.4	0.000687	0.383	60.47	103357	0.00092	0.267	0.21377	*******	48.617
5	58.2	58.3	31.6	0.000630	0.387	60.78	103858	0.00091	0.267	*******	*******	*******
6	61.8	57.8	28.4	0.000560	0.393	61.71	104508	0.00089	0.267	0.06646	*******	14.984
7	118.4	57.2	24.3	0.000466	0.409	64.79	105439	0.00085	0.265	0.00433	6.424	1.040
8	130.4	56.8	21.8	0.000408	0.424	67.84	106074	0.00082	0.266	0.00361	4.967	0.857
9	134.1	56.6	20.8	0.000383	0.431	69.46	106368	0.00081	0.266	0.00344	4.633	0.809
10	139.8	56.5	20.4	0.000373	0.435	70.26	106493	0.00078	0.259	0.00311	4.045	0.730
RUN NO 249	ORIF DIA 0.0831 CM	FLOW RATE 4.58 G/S	LIQ TEMP 80.8 K	LIQ PRESS 1.70 ATM	CART HTR PWR 0.000 W							
1	333.3	59.2	39.8	0.000921	0.328	47.75	102461	0.04902	12.180	0.04443	*******	14.106
2	64.0	58.9	36.8	0.000742	0.379	59.78	102916	0.00205	0.588	0.11559	*******	26.680
3	59.3	58.7	35.4	0.000710	0.381	60.09	103177	0.00084	0.242	0.42501	*******	96.909
4	59.1	58.5	33.9	0.000680	0.383	60.23	103439	0.00078	0.227	0.41187	*******	93.713
5	58.0	58.2	31.3	0.000626	0.386	60.47	103914	0.00078	0.228	*******	*******	*******
6	59.8	57.8	28.2	0.000559	0.391	61.23	104550	0.00077	0.229	0.11126	*******	25.088
7	105.6	57.2	24.2	0.000469	0.405	63.79	105461	0.00074	0.227	0.00469	7.278	1.117
8	118.8	56.8	21.8	0.000413	0.418	66.36	106081	0.00071	0.227	0.00366	5.201	0.869
9	120.9	56.6	20.8	0.000389	0.424	67.71	106371	0.00070	0.228	0.00355	4.973	0.834
10	125.4	56.5	20.4	0.000379	0.428	68.38	106494	0.00068	0.220	0.00320	4.355	0.752
RUN NO 251	ORIF DIA 0.0831 CM	FLOW RATE 4.65 G/S	LIQ TEMP 79.5 K	LIQ PRESS 1.65 ATM	CART HTR PWR 0.000 W							
1	336.0	59.6	43.6	0.001051	0.312	44.51	103349	0.04824	11.570	0.04186	*******	13.622
2	64.4	59.1	38.7	0.000803	0.362	56.01	104130	0.00302	0.841	0.15827	*******	37.398
3	59.4	58.8	35.6	0.000744	0.366	56.50	104585	0.00175	0.494	0.81254	*******	189.123
4	59.8	58.4	33.0	0.000686	0.370	56.81	105065	0.00181	0.516	0.37033	*******	85.925
5	95.3	57.8	28.4	0.000587	0.375	57.34	105976	0.00164	0.474	0.01267	*******	3.110
6	162.5	57.1	23.8	0.000485	0.385	58.86	107048	0.00158	0.471	0.00447	*******	1.161
7	191.4	56.2	18.8	0.000385	0.411	63.83	108473	0.00149	0.475	0.00352	4.326	0.892
8	208.4	55.5	15.6	0.000292	0.433	68.30	109607	0.00142	0.475	0.00310	3.586	0.769
9	216.5	55.2	14.2	0.000261	0.443	70.37	110149	0.00139	0.477	0.00299	3.389	0.733
10	229.8	55.1	13.6	0.000248	0.447	71.30	110390	0.00134	0.483	0.00265	2.850	0.649

STA NO -	TURE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 252	ORIF DIA 0.0831 CM		FLOW RATE 4.65 G/S		LIQ TEMP 79.6 K		LIQ PRESS 1.65 ATM		CART HTR PWR	0.000 W		
1	343.7	59.7	44.8	0.001072	0.314	45.07	103179	0.05016	12.091	0.04257	*******	13,813
2	65.7	59.2	39.2	0.000811	0.367	57.13	103997	0.00326	0.919	0.14033	*******	32,910
3	59.4	58.9	36.4	0.000750	0.371	57.69	104444	0.00198	0.566	0.97135	*******	223,810
4	60.2	58.5	33.6	0.000690	0.374	58.08	104948	0.00209	0.604	0.35262	*******	80,996
5	113.6	57.9	28.8	0.000587	0.381	58.73	105881	0.00181	0.531	0.00954	*******	2,370
6	178.1	57.2	24.1	0.000483	0.392	60.52	106973	0.00178	0.538	0.00445	*******	1,152
7	214.4	56.2	19.0	0.000360	0.421	66.32	108420	0.00166	0.541	0.00342	3,915	0,863
8	235.4	55.5	15.7	0.000284	0.446	71.51	109581	0.00156	0.540	0.00300	3,210	0,736
9	238.1	55.2	14.2	0.000253	0.457	73.92	110138	0.00153	0.543	0.00297	3,150	0,717
10	252.9	55.0	13.6	0.000240	0.462	75.01	110384	0.00147	0.527	0.00266	2,698	0,642
RUN NO 253	ORIF DIA 0.0831 CM		FLOW RATE 4.65 G/S		LIQ TEMP 79.6 K		LIQ PRESS 1.65 ATM		CART HTR PWR	0.000 W		
1	347.7	59.8	45.2	0.001077	0.315	45.37	103123	0.05085	12.295	0.04269	*******	13,827
2	66.2	59.2	39.5	0.000812	0.369	57.71	103953	0.00355	1.006	0.14399	*******	33,627
3	59.8	58.9	36.7	0.000750	0.373	58.34	104398	0.00225	0.646	0.73533	*******	168,588
4	60.6	58.5	33.9	0.000689	0.377	58.80	104909	0.00237	0.689	0.33112	*******	75,642
5	118.8	57.9	28.9	0.000584	0.384	59.59	105850	0.00206	0.610	0.01002	*******	2,486
6	191.6	57.2	24.2	0.000479	0.397	61.73	106948	0.00201	0.617	0.00459	*******	1,187
7	233.9	56.2	19.0	0.000354	0.430	68.51	108403	0.00186	0.620	0.00349	3,801	0,874
8	263.7	55.5	15.7	0.000277	0.458	74.60	109573	0.00174	0.618	0.00297	2,954	0,721
9	264.4	55.2	14.2	0.000246	0.471	77.44	110134	0.00170	0.621	0.00297	2,950	0,707
10	277.6	55.0	13.6	0.000233	0.477	78.73	110383	0.00163	0.603	0.00271	2,600	0.644
RUN NO 254	ORIF DIA 0.0831 CM		FLOW RATE 4.65 G/S		LIQ TEMP 79.6 K		LIQ PRESS 1.65 ATM		CART HTR PWR	0.000 W		
1	347.5	59.9	46.3	0.001106	0.314	45.31	102954	0.05074	12.230	0.04252	*******	13,785
2	65.9	59.3	40.4	0.000831	0.368	57.65	103820	0.00375	1.061	0.15976	*******	37,321
3	60.2	59.0	37.4	0.000765	0.372	58.34	104258	0.00244	0.699	0.57276	*******	131,480
4	61.3	58.6	34.5	0.000702	0.377	58.85	104792	0.00262	0.759	0.28320	*******	64,767
5	132.8	58.0	29.3	0.000591	0.384	59.75	105754	0.00222	0.657	0.00878	*******	2,208
6	205.4	57.2	24.5	0.000483	0.398	62.13	106873	0.00218	0.671	0.00453	*******	1,176
7	253.4	56.3	19.2	0.000353	0.434	69.60	108349	0.00200	0.673	0.00341	3,541	0,855
8	283.2	55.5	15.7	0.000274	0.465	76.30	109546	0.00186	0.671	0.00295	2,817	0,712
9	283.9	55.2	14.3	0.000242	0.479	79.41	110122	0.00181	0.673	0.00294	2,811	0,697
10	294.4	55.0	13.6	0.000229	0.486	80.83	110378	0.00174	0.656	0.00274	2,546	0,645
RUN NO 255	ORIF DIA 0.0831 CM		FLOW RATE 4.65 G/S		LIQ TEMP 79.5 K		LIQ PRESS 1.65 ATM		CART HTR PWR	0.000 W		
1	345.9	59.7	44.3	0.001062	0.314	44.91	103254	0.04989	12.015	0.04198	*******	13,646
2	64.4	59.1	38.6	0.000802	0.366	56.83	104082	0.00302	0.850	0.15903	*******	37,304
3	59.9	58.8	35.8	0.000740	0.370	57.32	104555	0.00171	0.487	0.43679	*******	101,035
4	61.9	58.4	33.0	0.000681	0.373	57.61	105065	0.00170	0.487	0.14062	*******	32,526
5	84.3	57.8	28.1	0.000577	0.379	58.07	106038	0.00162	0.472	0.01779	*******	4,259
6	159.3	57.1	23.5	0.000476	0.388	59.54	107114	0.00154	0.461	0.00450	*******	1,159
7	182.1	56.1	18.4	0.000357	0.413	64.26	108583	0.00146	0.465	0.00369	4,704	0,928
8	202.6	55.4	15.1	0.000283	0.434	68.41	109788	0.00138	0.465	0.00316	3,715	0,779
9	221.5	55.0	13.7	0.000253	0.443	70.26	110340	0.00135	0.463	0.00278	3,062	0,684
10	223.5	54.9	13.1	0.000240	0.447	71.08	110631	0.00132	0.459	0.00272	2,978	0,666
RUN NO 256	ORIF DIA 0.0831 CM		FLOW RATE 4.65 G/S		LIQ TEMP 79.5 K		LIQ PRESS 1.65 ATM		CART HTR PWR	0.000 W		
1	343.7	59.5	43.0	0.001033	0.314	44.78	103438	0.04969	11.977	0.04215	*******	13,703
2	65.0	59.0	37.8	0.000787	0.365	56.63	104202	0.00287	0.807	0.13409	*******	31,540
3	59.8	58.7	35.2	0.000730	0.369	57.08	104662	0.00158	0.449	0.42666	*******	98,850
4	60.8	58.4	32.7	0.000675	0.372	57.33	105132	0.00149	0.426	0.17477	*******	40,436
5	59.8	57.8	28.1	0.000579	0.377	57.74	106037	0.00153	0.445	0.22260	*******	51,121
6	136.8	57.1	23.6	0.000480	0.386	59.08	107095	0.00142	0.424	0.00532	*******	1,348
7	169.3	56.2	18.7	0.000365	0.409	63.42	108507	0.00135	0.428	0.00378	5,019	0,949
8	188.0	55.5	15.5	0.000293	0.429	67.32	109629	0.00129	0.428	0.00323	3,965	0,796
9	196.1	55.2	14.2	0.000264	0.438	69.11	110162	0.00127	0.429	0.00305	3,625	0,745
10	210.4	55.0	13.6	0.000251	0.442	69.93	110397	0.00122	0.419	0.00270	3,041	0,661
RUN NO 257	ORIF DIA 0.0831 CM		FLOW RATE 4.65 G/S		LIQ TEMP 79.5 K		LIQ PRESS 1.65 ATM		CART HTR PWR	0.000 W		
1	341.2	59.5	42.4	0.001021	0.313	44.62	103525	0.04941	11.898	0.04224	*******	13,741
2	63.7	59.0	37.3	0.000780	0.364	56.35	104284	0.00273	0.765	0.16202	*******	38,103
3	59.7	58.7	34.8	0.000724	0.368	56.76	104741	0.00142	0.402	0.37698	*******	87,540
4	60.2	58.3	32.3	0.000670	0.371	56.96	105202	0.00135	0.386	0.20535	*******	47,598
5	58.8	57.7	27.8	0.000577	0.376	57.30	106102	0.00138	0.401	0.36117	*******	83,104
6	120.2	57.1	23.4	0.000479	0.384	58.46	107143	0.00130	0.385	0.00609	*******	1,525
7	157.3	56.2	18.6	0.000367	0.405	62.29	108542	0.00124	0.387	0.00383	5,249	0,960
8	172.9	55.5	15.5	0.000297	0.422	65.72	109654	0.00118	0.387	0.00330	4,222	0,814
9	179.6	55.1	14.1	0.000268	0.430	67.29	110174	0.00117	0.389	0.00313	3,894	0,766
10	193.2	55.0	13.5	0.000255	0.434	68.00	110404	0.00113	0.380	0.00275	3,236	0.676

STA NO -	TURE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 258	ORIF DIA 0.0831 CM	FLOW RATE 4.65 G/S	LIQ TEMP 79.5 K	LIQ PRESS 1.65 ATM	CART HTR PWR 0.000 W							
1	343.2	59.5	42.2	0.001015	0.314	44.77	103554	0.04963	11.979	0.04222	*******	13.719
2	64.6	58.9	37.2	0.000775	0.365	56.54	104313	0.00259	0.729	0.12809	*******	30.121
3	59.8	58.6	34.7	0.000720	0.369	56.91	104767	0.00129	0.366	0.30464	*******	70.672
4	59.9	58.3	32.2	0.000667	0.371	57.09	105225	0.00122	0.349	0.21701	*******	50.217
5	58.6	57.7	27.7	0.000574	0.376	57.36	106123	0.00125	0.361	0.40480	*******	93.056
6	110.9	57.0	23.3	0.000479	0.383	58.34	107159	0.00117	0.348	0.00645	*******	1.601
7	147.1	56.2	18.5	0.000368	0.402	61.68	108554	0.00112	0.350	0.00385	5.433	0.961
8	160.0	55.5	15.5	0.000299	0.418	64.66	109661	0.00108	0.350	0.00335	4.460	0.826
9	165.4	55.1	14.1	0.000271	0.425	66.02	110178	0.00107	0.351	0.00319	4.147	0.781
10	178.1	55.0	13.5	0.000258	0.428	66.63	110406	0.00103	0.344	0.00279	3.437	0.688
RUN NO 259	ORIF DIA 0.0831 CM	FLOW RATE 4.65 G/S	LIQ TEMP 79.4 K	LIQ PRESS 1.65 ATM	CART HTR PWR 0.000 W							
1	343.4	59.4	41.4	0.000994	0.315	44.87	103669	0.05046	12.216	0.04302	*******	13.959
2	63.6	58.9	36.5	0.000759	0.367	56.85	104429	0.00259	0.732	0.15461	*******	36.176
3	59.7	58.6	34.1	0.000706	0.370	57.22	104871	0.00128	0.364	0.32414	*******	74.949
4	59.9	58.3	31.7	0.000655	0.373	57.39	105316	0.00121	0.349	0.21834	*******	50.371
5	58.4	57.7	27.4	0.000565	0.377	57.65	106209	0.00123	0.359	0.46800	*******	107.261
6	97.0	57.0	23.0	0.000472	0.385	58.62	107221	0.00117	0.349	0.00873	*******	2.124
7	146.2	56.1	18.4	0.000364	0.404	61.96	108599	0.00112	0.350	0.00388	5.487	0.968
8	159.4	55.4	15.4	0.000297	0.419	64.94	109692	0.00108	0.350	0.00337	4.476	0.829
9	164.5	55.1	14.1	0.000269	0.426	66.30	110192	0.00106	0.352	0.00322	4.183	0.786
10	177.0	55.0	13.5	0.000257	0.429	66.93	110413	0.00103	0.344	0.00282	3.468	0.692
RUN NO 260	ORIF DIA 0.0831 CM	FLOW RATE 4.65 G/S	LIQ TEMP 79.4 K	LIQ PRESS 1.65 ATM	CART HTR PWR 0.000 W							
1	344.2	59.4	41.2	0.000989	0.315	44.96	103697	0.05073	12.301	0.04318	*******	14.002
2	63.0	58.8	36.4	0.000755	0.368	56.97	104458	0.00243	0.689	0.16458	*******	38.425
3	59.6	58.5	34.0	0.000702	0.371	57.30	104897	0.00111	0.316	0.30877	*******	71.324
4	59.6	58.2	31.5	0.000652	0.373	57.43	105339	0.00105	0.303	0.22648	*******	52.202
5	58.3	57.7	27.3	0.000563	0.377	57.60	106230	0.00105	0.306	0.45812	*******	105.021
6	64.8	57.0	23.0	0.000472	0.384	58.35	107238	0.00103	0.306	0.03923	*******	9.037
7	132.6	56.1	18.3	0.000367	0.400	61.12	108610	0.00098	0.303	0.00397	5.926	0.983
8	144.7	55.4	15.4	0.000301	0.413	63.54	109700	0.00095	0.304	0.00341	4.756	0.837
9	148.9	55.1	14.1	0.000273	0.419	64.64	110196	0.00094	0.306	0.00326	4.461	0.797
10	159.7	55.0	13.5	0.000262	0.422	65.14	110415	0.00092	0.300	0.00286	3.724	0.704
RUN NO 261	ORIF DIA 0.0831 CM	FLOW RATE 4.65 G/S	LIQ TEMP 79.4 K	LIQ PRESS 1.65 ATM	CART HTR PWR 0.000 W							
1	344.9	59.3	40.6	0.000976	0.315	44.79	103783	0.05028	12.180	0.04264	*******	13.850
2	65.6	58.8	35.9	0.000747	0.367	56.63	104545	0.00223	0.630	0.09315	*******	21.909
3	59.4	58.5	33.5	0.000696	0.370	56.92	104975	0.00095	0.271	0.31132	*******	72.115
4	59.0	58.2	31.2	0.000647	0.372	57.00	105407	0.00088	0.252	0.32013	*******	73.969
5	58.0	57.6	27.0	0.000561	0.375	57.07	106294	0.00088	0.254	0.67137	*******	154.494
6	67.0	57.1	22.8	0.000472	0.381	57.59	107296	0.00086	0.253	0.02510	*******	5.842
7	118.0	56.1	18.2	0.000370	0.395	59.69	108644	0.00082	0.251	0.00406	6.449	1.002
8	128.8	55.4	15.3	0.000306	0.405	61.51	109722	0.00080	0.252	0.00343	5.099	0.844
9	131.9	55.1	14.0	0.000279	0.410	62.31	110207	0.00079	0.253	0.00329	4.816	0.808
10	140.2	55.0	13.5	0.000268	0.412	62.67	110422	0.00078	0.249	0.00292	4.064	0.721
RUN NO 262	ORIF DIA 0.0831 CM	FLOW RATE 4.65 G/S	LIQ TEMP 79.4 K	LIQ PRESS 1.65 ATM	CART HTR PWR 0.000 W							
1	344.8	59.3	40.6	0.000977	0.315	44.76	103783	0.05026	12.169	0.04266	*******	13.859
2	65.6	58.8	35.9	0.000748	0.366	56.53	104545	0.00202	0.568	0.08285	*******	19.508
3	59.1	58.5	33.5	0.000698	0.369	56.76	104975	0.00074	0.211	0.33710	*******	78.160
4	58.7	58.2	31.2	0.000649	0.371	56.79	105407	0.00067	0.191	0.36175	*******	83.698
5	57.7	57.6	27.0	0.000563	0.374	56.75	106294	0.00067	0.193	2.06462	*******	476.154
6	61.5	57.1	22.8	0.000475	0.379	57.01	107296	0.00066	0.192	0.04197	*******	9.719
7	96.8	56.1	18.2	0.000375	0.389	58.34	108644	0.00063	0.191	0.00470	8.298	1.143
8	110.2	55.4	15.3	0.000312	0.397	59.44	109722	0.00062	0.191	0.00349	5.590	0.856
9	113.0	55.1	14.0	0.000286	0.400	59.87	110207	0.00062	0.192	0.00332	5.227	0.814
10	118.6	55.0	13.5	0.000275	0.402	60.06	110422	0.00061	0.190	0.00299	4.527	0.736
RUN NO 263	ORIF DIA 0.0831 CM	FLOW RATE 4.65 G/S	LIQ TEMP 79.3 K	LIQ PRESS 1.65 ATM	CART HTR PWR 0.000 W							
1	344.2	59.2	40.1	0.000965	0.314	44.54	103870	0.05010	12.110	0.04250	*******	13.834
2	63.4	58.7	35.4	0.000741	0.365	56.21	104633	0.00185	0.520	0.11136	*******	26.183
3	58.8	58.4	33.1	0.000692	0.368	56.39	105053	0.00054	0.152	0.42730	*******	99.317
4	58.6	58.2	30.8	0.000644	0.369	56.36	105476	0.00048	0.137	0.32861	*******	76.280
5	57.4	57.6	26.7	0.000560	0.372	56.23	106359	0.00048	0.139	*******	*******	*******
6	58.5	56.9	22.6	0.000474	0.376	56.25	107354	0.00048	0.139	0.08967	*******	20.777
7	76.9	56.1	18.1	0.000378	0.383	56.91	108678	0.00047	0.138	0.00605	11.768	1.444
8	93.1	55.4	15.2	0.000318	0.389	57.38	109746	0.00046	0.138	0.00366	6.323	0.892
9	96.4	55.1	14.0	0.000293	0.391	57.51	110218	0.00046	0.138	0.00335	5.645	0.819
10	100.0	55.0	13.5	0.000282	0.391	57.55	110429	0.00045	0.137	0.00304	4.996	0.749

STA NO -	TURE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 264	ORIF DIA 0.0831 CM	FLOW RATE 4.65 G/S	LIQ TEMP 79.4 K	LIQ PRESS 1.65 ATM	CART HTR PWR 0.000 W							
1	345.2	59.2	39.9	0.000960	0.315	44.64	103899	0.04996	12.096	0.04230	*******	13,758
2	63.8	58.7	35.2	0.000737	0.366	56.26	104662	0.00173	0.488	0.09599	*******	22.572
3	58.7	58.4	33.0	0.000689	0.368	56.40	105079	0.00043	0.121	0.47683	*******	110.778
4	58.4	58.1	30.7	0.000641	0.369	56.35	105499	0.00037	0.105	0.40708	*******	94.467
5	57.1	57.6	26.6	0.000559	0.372	56.16	106380	0.00037	0.106	*******	*******	*******
6	58.2	56.9	22.5	0.000474	0.375	56.03	107374	0.00036	0.106	0.08330	*******	19,325
7	71.0	56.1	18.1	0.000380	0.381	56.27	108689	0.00036	0.105	0.00707	14,301	1.673
8	83.0	55.4	15.2	0.000321	0.384	56.35	109753	0.00035	0.105	0.00381	6,924	0.921
9	86.3	55.1	14.0	0.000296	0.386	56.28	110222	0.00035	0.105	0.00339	5,992	0.823
10	88.5	55.0	13.5	0.000285	0.386	56.23	110431	0.00035	0.105	0.00313	5,432	0.763
RUN NO 265	ORIF DIA 0.0831 CM	FLOW RATE 4.40 G/S	LIQ TEMP 79.5 K	LIQ PRESS 1.53 ATM	CART HTR PWR 0.000 W							
1	346.6	59.4	41.4	0.000982	0.319	45.75	98278	0.05276	12.246	0.04264	*******	14.324
2	62.1	58.7	35.5	0.000724	0.375	58.48	99170	0.00296	0.808	0.24251	*******	58.184
3	58.6	58.4	32.6	0.000662	0.379	58.92	99674	0.00157	0.435	2.33305	*******	553.162
4	60.2	58.0	29.7	0.000602	0.382	59.12	100183	0.00148	0.414	0.19372	*******	45.938
5	58.6	57.2	24.6	0.000499	0.387	59.37	101292	0.00148	0.420	0.30114	*******	70.964
6	63.2	56.5	20.4	0.000410	0.396	60.57	102362	0.00145	0.421	0.06300	*******	14.807
7	161.6	55.5	15.6	0.000304	0.417	64.51	103880	0.00136	0.417	0.00393	5,501	1.014
8	185.6	54.7	12.5	0.000236	0.433	67.44	105170	0.00131	0.417	0.00319	4,030	0.818
9	193.1	54.3	11.1	0.000209	0.440	68.49	105804	0.00130	0.419	0.00302	3,709	0.774
10	209.2	54.1	10.5	0.000198	0.442	68.85	106085	0.00125	0.407	0.00262	3,026	0.676
RUN NO 266	ORIF DIA 0.0831 CM	FLOW RATE 4.40 G/S	LIQ TEMP 79.5 K	LIQ PRESS 1.53 ATM	CART HTR PWR 0.000 W							
1	341.8	59.4	41.7	0.000991	0.318	45.71	98226	0.05299	12.285	0.04351	*******	14.605
2	62.3	58.7	35.4	0.000723	0.374	58.46	99182	0.00292	0.799	0.22070	*******	52.986
3	58.9	58.3	32.3	0.000656	0.379	58.88	99724	0.00157	0.433	0.72195	*******	171.337
4	60.0	57.9	29.2	0.000592	0.382	59.06	100288	0.00149	0.416	0.20119	*******	47.716
5	58.7	57.1	23.7	0.000483	0.387	59.23	101484	0.00149	0.421	0.25838	*******	60.962
6	64.6	56.4	19.6	0.000395	0.396	60.35	102587	0.00145	0.421	0.05139	*******	12.128
7	161.7	55.3	14.8	0.000289	0.416	63.98	104200	0.00136	0.417	0.00392	5,497	1.017
8	184.7	54.4	11.5	0.000220	0.430	66.24	105637	0.00132	0.418	0.00321	4,076	0.830
9	190.3	54.0	10.1	0.000194	0.434	66.76	106293	0.00131	0.420	0.00308	3,835	0.798
10	205.0	53.7	9.5	0.000183	0.436	66.76	106660	0.00127	0.408	0.00270	3,170	0.704
RUN NO 267	ORIF DIA 0.0831 CM	FLOW RATE 4.40 G/S	LIQ TEMP 79.5 K	LIQ PRESS 1.53 ATM	CART HTR PWR 0.000 W							
1	349.7	59.5	42.7	0.001018	0.317	45.45	98091	0.05192	11.974	0.04126	*******	13.925
2	65.2	58.8	36.2	0.000742	0.372	57.97	99051	0.00318	0.863	0.13548	*******	32.849
3	59.0	58.4	32.9	0.000673	0.376	58.45	99612	0.00181	0.497	0.87468	*******	208.428
4	59.6	58.0	29.7	0.000605	0.380	58.70	100178	0.00170	0.473	0.29074	*******	69.131
5	59.0	57.2	24.1	0.000491	0.386	59.01	101406	0.00175	0.495	0.27322	*******	64.620
6	152.9	56.4	19.9	0.000400	0.396	60.43	102511	0.00162	0.469	0.00486	*******	1.288
7	186.6	55.3	14.9	0.000289	0.419	64.78	104145	0.00154	0.474	0.00361	4,671	0.947
8	210.6	54.4	11.5	0.000219	0.436	67.68	105609	0.00147	0.473	0.00303	3,580	0.788
9	216.1	54.0	10.2	0.000192	0.441	68.47	106277	0.00146	0.476	0.00293	3,405	0.761
10	230.5	53.7	9.6	0.000180	0.444	68.57	106652	0.00141	0.461	0.00261	2,884	0.680
RUN NO 268	ORIF DIA 0.0831 CM	FLOW RATE 4.40 G/S	LIQ TEMP 79.5 K	LIQ PRESS 1.53 ATM	CART HTR PWR 0.000 W							
1	344.0	59.5	42.7	0.001016	0.317	45.58	98091	0.05274	12.182	0.04282	*******	14.409
2	63.7	58.8	36.2	0.000739	0.373	58.36	99051	0.00337	0.918	0.18781	*******	45.260
3	59.2	58.4	32.9	0.000669	0.378	58.90	99612	0.00200	0.553	0.73018	*******	173.393
4	59.6	58.0	29.7	0.000602	0.382	59.19	100178	0.00192	0.536	0.33012	*******	78.160
5	59.3	57.2	24.1	0.000488	0.388	59.62	101406	0.00196	0.556	0.25695	*******	60.504
6	151.5	56.4	19.9	0.000397	0.399	61.32	102511	0.00182	0.532	0.00559	*******	1.470
7	203.9	55.3	14.9	0.000285	0.426	66.45	104145	0.00171	0.535	0.00360	4,471	0.942
8	236.4	54.4	11.5	0.000214	0.445	70.00	105609	0.00163	0.534	0.00293	3,268	0.761
9	241.2	54.0	10.2	0.000187	0.452	71.08	106277	0.00161	0.536	0.00286	3,145	0.739
10	254.1	53.7	9.6	0.000176	0.455	71.29	106652	0.00155	0.522	0.00261	2,750	0.674
RUN NO 269	ORIF DIA 0.0831 CM	FLOW RATE 4.40 G/S	LIQ TEMP 79.5 K	LIQ PRESS 1.53 ATM	CART HTR PWR 0.000 W							
1	344.8	59.5	42.3	0.001006	0.318	45.64	98145	0.05267	12.186	0.04272	*******	14.365
2	63.5	58.8	35.9	0.000732	0.374	58.44	99103	0.00348	0.950	0.20193	*******	48.598
3	59.2	58.4	32.7	0.000663	0.379	59.01	99657	0.00211	0.585	0.75646	*******	179.428
4	60.3	58.0	29.5	0.000597	0.383	59.33	100218	0.00202	0.564	0.24387	*******	57.737
5	59.4	57.1	23.9	0.000484	0.389	59.81	101437	0.00206	0.586	0.25809	*******	60.883
6	151.6	56.4	19.8	0.000393	0.401	61.63	102542	0.00191	0.562	0.00590	*******	1.546
7	207.7	55.3	14.9	0.000282	0.429	67.14	104167	0.00179	0.565	0.00371	4,559	0.967
8	239.9	54.4	11.5	0.000212	0.449	71.02	105620	0.00170	0.564	0.00304	3,362	0.783
9	247.7	54.0	10.2	0.000185	0.456	72.24	106283	0.00168	0.566	0.00292	3,156	0.749
10	261.6	53.7	9.6	0.000174	0.460	72.53	106655	0.00162	0.551	0.00265	2,745	0.681

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 270	ORIF DIA 0.0831 CM	FLOW RATE 4.40 G/S	LIQ TEMP 79.5 K	LIQ PRESS 1.53 ATM	CART HTR PWR 0.000 W							
1	345.4	59.6	43.9	0.001043	0.317	45.68	97928	0.05266	12.150	0.04252	*******	14.307
2	64.3	58.9	37.1	0.000756	0.373	58.51	98895	0.00363	0.989	0.18587	*******	44.795
3	59.4	58.5	33.7	0.000683	0.378	59.12	99477	0.00226	0.623	0.69658	*******	165.220
4	59.8	58.1	30.3	0.000613	0.383	59.49	100065	0.00217	0.606	0.36667	*******	86.632
5	59.7	57.2	24.5	0.000494	0.390	60.06	101314	0.00221	0.630	0.25642	*******	60.201
6	171.0	56.5	20.2	0.000400	0.402	62.10	102420	0.00203	0.599	0.00523	*******	1.387
7	225.2	55.4	15.1	0.000283	0.433	68.15	104078	0.00190	0.604	0.00356	4.177	0.929
8	261.4	54.4	11.6	0.000211	0.455	72.42	105576	0.00180	0.602	0.00291	3.053	0.749
9	265.8	54.0	10.2	0.000183	0.463	73.79	106257	0.00177	0.605	0.00285	2.962	0.730
10	278.7	53.7	9.6	0.000172	0.466	74.11	106642	0.00171	0.588	0.00261	2.619	0.669
RUN NO 271	ORIF DIA 0.0831 CM	FLOW RATE 4.40 G/S	LIQ TEMP 79.6 K	LIQ PRESS 1.53 ATM	CART HTR PWR 0.000 W							
1	344.5	59.7	44.3	0.001050	0.317	45.86	97875	0.05265	12.165	0.04271	*******	14.345
2	64.9	59.0	37.4	0.000760	0.374	58.77	98843	0.00387	1.055	0.17934	*******	43.178
3	59.5	58.5	34.0	0.000686	0.380	59.45	99432	0.00251	0.696	0.72898	*******	172.472
4	60.4	58.1	30.6	0.000615	0.384	59.89	100027	0.00241	0.677	0.29679	*******	69.981
5	63.5	57.3	24.6	0.000494	0.392	60.58	101283	0.00245	0.702	0.11292	*******	26.585
6	194.2	56.5	20.3	0.000399	0.405	62.95	102390	0.00224	0.666	0.00484	*******	1.293
7	250.5	55.4	15.2	0.000280	0.439	69.87	104056	0.00208	0.672	0.00344	3.777	0.899
8	290.6	54.4	11.6	0.000207	0.465	74.86	105564	0.00195	0.669	0.00283	2.782	0.725
9	289.4	54.0	10.2	0.000179	0.474	76.51	106250	0.00192	0.672	0.00285	2.816	0.723
10	298.7	53.8	9.6	0.000168	0.477	76.95	106639	0.00186	0.655	0.00267	2.579	0.677
RUN NO 272	ORIF DIA 0.0831 CM	FLOW RATE 4.40 G/S	LIQ TEMP 79.5 K	LIQ PRESS 1.53 ATM	CART HTR PWR 0.000 W							
1	345.4	59.5	42.5	0.001007	0.319	45.93	98118	0.05343	12.403	0.04339	*******	14.551
2	63.7	58.8	36.0	0.000731	0.376	58.93	99077	0.00338	0.926	0.18994	*******	45.540
3	59.5	58.4	32.8	0.000663	0.381	59.47	99634	0.00201	0.557	0.50195	*******	118.678
4	60.3	58.0	29.6	0.000596	0.384	59.77	100197	0.00193	0.543	0.23672	*******	55.838
5	63.3	57.2	24.0	0.000483	0.390	60.19	101422	0.00196	0.561	0.09087	*******	21.456
6	163.5	56.4	19.8	0.000393	0.402	61.90	102526	0.00182	0.535	0.00499	*******	1.318
7	202.8	55.3	14.9	0.000282	0.428	67.06	104156	0.00172	0.540	0.00366	4.576	0.952
8	236.9	54.4	11.5	0.000213	0.448	70.62	105615	0.00163	0.538	0.00295	3.291	0.762
9	244.7	54.0	10.2	0.000186	0.454	71.70	106280	0.00161	0.540	0.00283	3.085	0.728
10	257.6	53.7	9.6	0.000175	0.457	71.92	106653	0.00156	0.526	0.00258	2.702	0.665
RUN NO 273	ORIF DIA 0.0831 CM	FLOW RATE 4.40 G/S	LIQ TEMP 79.5 K	LIQ PRESS 1.53 ATM	CART HTR PWR 0.000 W							
1	348.3	59.4	41.7	0.000989	0.319	45.91	98226	0.05352	12.440	0.04305	*******	14.450
2	62.9	58.7	35.4	0.000720	0.376	58.78	99182	0.00278	0.763	0.18459	*******	44.238
3	59.3	58.3	32.3	0.000654	0.380	59.15	99724	0.00138	0.383	0.38385	*******	90.951
4	59.8	57.9	29.2	0.000591	0.383	59.29	100288	0.00132	0.369	0.20134	*******	47.636
5	59.1	57.1	23.7	0.000482	0.387	59.37	101484	0.00131	0.371	0.18397	*******	43.391
6	61.7	56.4	19.6	0.000396	0.395	60.26	102587	0.00128	0.372	0.06978	*******	16.393
7	150.2	55.3	14.8	0.000291	0.413	63.25	104200	0.00122	0.369	0.00389	5.788	1.004
8	168.9	54.4	11.5	0.000223	0.425	64.95	105637	0.00118	0.370	0.00323	4.424	0.836
9	179.3	54.0	10.1	0.000197	0.428	65.22	106293	0.00118	0.371	0.00296	3.881	0.770
10	191.6	53.7	9.5	0.000186	0.430	65.11	106660	0.00115	0.366	0.00265	3.307	0.695
RUN NO 274	ORIF DIA 0.0831 CM	FLOW RATE 4.40 G/S	LIQ TEMP 79.5 K	LIQ PRESS 1.53 ATM	CART HTR PWR 0.000 W							
1	339.8	59.4	41.4	0.000986	0.317	45.41	98281	0.05192	11.999	0.04280	*******	14.398
2	61.7	58.7	35.1	0.000722	0.372	57.77	99234	0.00254	0.689	0.22794	*******	54.984
3	59.3	58.3	32.0	0.000657	0.375	58.08	99769	0.00116	0.318	0.30665	*******	73.331
4	59.5	57.9	28.9	0.000594	0.378	58.16	100335	0.00112	0.308	0.19470	*******	46.486
5	58.4	57.1	23.6	0.000485	0.382	58.14	101515	0.00111	0.311	0.23310	*******	55.477
6	59.9	56.3	19.5	0.000400	0.389	58.76	102617	0.00109	0.311	0.08869	*******	21.021
7	130.4	55.3	14.7	0.000296	0.404	61.00	104222	0.00104	0.309	0.00411	6.542	1.063
8	147.9	54.4	11.4	0.000229	0.413	62.07	10564R	0.00102	0.309	0.00331	4.765	0.860
9	154.1	54.0	10.1	0.000203	0.415	62.08	106300	0.00101	0.311	0.00310	4.349	0.812
10	164.6	53.7	9.5	0.000191	0.417	61.87	106663	0.00099	0.305	0.00275	3.677	0.726
RUN NO 275	ORIF DIA 0.0831 CM	FLOW RATE 4.40 G/S	LIQ TEMP 79.5 K	LIQ PRESS 1.53 ATM	CART HTR PWR 0.000 W							
1	338.6	59.3	40.8	0.000972	0.317	45.34	98362	0.05181	11.979	0.04289	*******	14.430
2	61.3	58.6	34.7	0.000714	0.372	57.62	99313	0.00235	0.638	0.24203	*******	58.397
3	59.2	58.3	31.6	0.000650	0.375	57.89	99837	0.00097	0.267	0.27777	*******	66.511
4	59.1	57.9	28.6	0.000589	0.377	57.91	100405	0.00094	0.260	0.21553	*******	51.520
5	58.2	57.1	23.4	0.000483	0.381	57.80	101561	0.00094	0.261	0.23602	*******	56.303
6	59.5	56.3	19.4	0.000399	0.387	58.18	102663	0.00092	0.262	0.08228	*******	19.582
7	116.3	55.3	14.6	0.000298	0.399	59.78	104256	0.00089	0.260	0.00426	7.230	1.095
8	132.6	54.4	11.4	0.000232	0.406	60.32	105665	0.00087	0.260	0.00333	5.102	0.867
9	137.2	54.0	10.1	0.000207	0.407	60.10	106310	0.00087	0.262	0.00314	4.692	0.823
10	145.9	53.7	9.5	0.000195	0.408	59.79	10666R	0.00085	0.258	0.00280	3.972	0.739

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 276	ORIF DIA 0.0831 CM	FLOW RATE 4.40 G/S	LIQ TEMP 79.5 K	LIQ PRESS 1.53 ATM	CART HTR PWR 0.000 W							
1	341.7	59.3	40.4	0.000959	0.319	45.65	98417	0.05277	12.259	0.04341	*******	14.570
2	61.0	58.6	34.3	0.000704	0.374	58.17	99365	0.00220	0.602	0.24531	*******	58.873
3	59.0	58.2	31.4	0.000642	0.377	58.39	99882	0.00081	0.224	0.28951	*******	68.984
4	58.8	57.8	28.4	0.000582	0.379	58.37	100451	0.00078	0.217	0.21502	*******	51.172
5	57.8	57.0	23.2	0.000478	0.383	58.16	101592	0.00078	0.219	0.27462	*******	65.262
6	59.0	56.3	19.3	0.000396	0.388	58.34	102693	0.00077	0.219	0.07951	*******	18.882
7	98.7	55.2	14.6	0.000298	0.397	59.35	104278	0.00075	0.218	0.00501	9.272	1.266
8	118.6	54.4	11.4	0.000234	0.402	59.39	105676	0.00073	0.218	0.00339	5.445	0.876
9	122.3	54.0	10.1	0.000209	0.403	58.93	106316	0.00074	0.219	0.00320	5.034	0.834
10	129.1	53.7	9.5	0.000198	0.403	58.53	106671	0.00072	0.216	0.00287	4.316	0.753
RUN NO 277	ORIF DIA 0.0831 CM	FLOW RATE 4.40 G/S	LIQ TEMP 79.5 K	LIQ PRESS 1.53 ATM	CART HTR PWR 0.000 W							
1	337.6	59.1	38.6	0.000922	0.318	45.28	98662	0.05161	11.976	0.04300	*******	14.455
2	60.5	58.4	33.0	0.000682	0.372	57.41	99601	0.00188	0.512	0.25146	*******	60.647
3	58.6	58.1	30.2	0.000624	0.375	57.54	100086	0.00051	0.140	0.27426	*******	65.750
4	58.4	57.7	27.5	0.000568	0.376	57.43	100662	0.00049	0.134	0.19964	*******	47.838
5	57.3	56.9	22.6	0.000471	0.379	57.07	101752	0.00049	0.136	0.40002	*******	95.822
6	58.4	56.2	18.8	0.000392	0.382	56.85	102830	0.00048	0.135	0.06184	*******	14.850
7	74.0	55.2	14.3	0.000300	0.387	56.78	104377	0.00047	0.135	0.00718	15.450	1.773
8	91.5	54.3	11.3	0.000240	0.388	55.94	105726	0.00047	0.135	0.00362	6.709	0.930
9	96.5	53.9	10.0	0.000216	0.387	55.11	106346	0.00047	0.135	0.00318	5.665	0.827
10	100.2	53.7	9.5	0.000205	0.387	54.55	106685	0.00047	0.135	0.00291	5.053	0.765
RUN NO 351	ORIF DIA 0.0635 CM	FLOW RATE 2.83 G/S	LIQ TEMP 82.9 K	LIQ PRESS 1.98 ATM	CART HTR PWR 0.000 W							
1	393.0	57.9	28.7	0.000609	0.365	54.88	64502	0.05410	9.274	0.02768	*******	12.205
2	59.7	57.5	26.0	0.000472	0.431	70.50	64870	0.00460	0.931	0.42102	*******	129.602
3	59.1	57.3	24.8	0.000446	0.436	71.46	65053	0.00224	0.460	0.25044	*******	76.456
4	62.0	57.1	23.5	0.000421	0.439	72.03	65237	0.00214	0.442	0.08975	*******	27.435
5	61.8	56.7	21.2	0.000376	0.446	73.15	65631	0.00222	0.467	0.09055	*******	27.439
6	153.2	56.2	18.6	0.000322	0.461	76.14	66099	0.00204	0.443	0.00456	*******	1.528
7	201.7	55.5	15.6	0.000253	0.501	85.18	66739	0.00189	0.447	0.00306	4.491	0.997
8	249.7	55.1	13.8	0.000209	0.539	94.02	67176	0.00175	0.445	0.00229	2.858	0.723
9	264.7	54.9	13.1	0.000192	0.559	98.65	67375	0.00169	0.446	0.00212	2.539	0.658
10	278.3	54.8	12.8	0.000184	0.569	100.92	67467	0.00162	0.436	0.00195	2.250	0.601
RUN NO 352	ORIF DIA 0.0635 CM	FLOW RATE 2.83 G/S	LIQ TEMP 82.7 K	LIQ PRESS 1.98 ATM	CART HTR PWR 0.000 W							
1	393.4	57.7	27.6	0.000591	0.364	54.41	64648	0.05376	9.193	0.02738	*******	12.124
2	59.5	57.3	25.2	0.000461	0.429	69.82	64988	0.00437	0.881	0.40353	*******	124.829
3	58.8	57.2	24.0	0.000436	0.433	70.69	65157	0.00200	0.407	0.24985	*******	76.666
4	61.0	57.0	22.8	0.000413	0.436	71.19	65332	0.00193	0.396	0.09722	*******	29.849
5	64.2	56.6	20.7	0.000372	0.443	72.17	65711	0.00198	0.413	0.05420	*******	16.615
6	145.5	56.1	18.3	0.000322	0.456	74.78	66149	0.00182	0.392	0.00439	*******	1.473
7	185.0	55.5	15.5	0.000255	0.491	82.74	66773	0.00171	0.396	0.00306	4.674	1.003
8	221.7	55.1	13.8	0.000214	0.525	90.56	67187	0.00159	0.395	0.00237	3.158	0.756
9	233.8	54.9	13.1	0.000197	0.543	94.66	67382	0.00154	0.396	0.00221	2.834	0.693
10	246.8	54.8	12.8	0.000190	0.551	96.69	67470	0.00149	0.388	0.00202	2.485	0.630
RUN NO 353	ORIF DIA 0.0635 CM	FLOW RATE 2.83 G/S	LIQ TEMP 82.6 K	LIQ PRESS 1.98 ATM	CART HTR PWR 0.000 W							
1	395.0	57.7	27.4	0.000588	0.363	54.09	64682	0.05394	9.197	0.02726	*******	12.108
2	59.3	57.3	25.0	0.000459	0.427	69.42	65016	0.00412	0.828	0.41639	*******	129.139
3	58.8	57.1	23.9	0.000435	0.431	70.21	65181	0.00171	0.347	0.20868	*******	64.268
4	60.0	56.9	22.7	0.000412	0.434	70.63	65358	0.00167	0.342	0.11217	*******	34.515
5	63.0	56.6	20.6	0.000373	0.440	71.44	65729	0.00170	0.353	0.05507	*******	16.933
6	127.6	56.1	18.2	0.000324	0.451	73.64	66160	0.00158	0.337	0.00471	*******	1.571
7	165.6	55.5	15.5	0.000260	0.482	80.40	66781	0.00150	0.340	0.00309	4.878	1.015
8	192.2	55.1	13.7	0.000219	0.511	87.06	67190	0.00141	0.340	0.00248	3.497	0.794
9	202.7	54.9	13.1	0.000203	0.526	90.54	67383	0.00135	0.337	0.00228	3.088	0.720
10	192.1	54.8	12.8	0.000196	0.534	92.30	67471	0.00138	0.347	0.00253	3.579	0.786
RUN NO 354	ORIF DIA 0.0635 CM	FLOW RATE 2.83 G/S	LIQ TEMP 82.5 K	LIQ PRESS 1.98 ATM	CART HTR PWR 0.000 W							
1	394.5	57.6	27.2	0.000588	0.361	53.65	64702	0.05347	9.074	0.02694	*******	12.010
2	59.3	57.3	25.0	0.000462	0.424	68.72	65014	0.00388	0.774	0.39262	*******	122.415
3	58.8	57.1	24.0	0.000440	0.428	69.44	65169	0.00144	0.291	0.17790	*******	55.107
4	59.2	57.0	22.9	0.000419	0.431	69.78	65329	0.00141	0.286	0.12733	*******	39.375
5	59.1	56.6	20.9	0.000381	0.435	70.45	65676	0.00145	0.297	0.12143	*******	37.339
6	109.3	56.2	18.7	0.000335	0.445	72.29	66086	0.00136	0.285	0.00535	*******	1.765
7	147.1	55.6	15.9	0.000273	0.472	77.97	66677	0.00129	0.286	0.00313	5.410	1.030
8	166.7	55.2	14.2	0.000234	0.496	83.61	67073	0.00122	0.287	0.00262	4.169	0.842
9	176.2	55.0	13.6	0.000217	0.509	86.59	67235	0.00120	0.288	0.00238	3.606	0.758
10	192.8	54.9	13.3	0.000210	0.516	88.07	67320	0.00116	0.282	0.00205	2.894	0.653

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 355	ORIF DIA 0.0635 CM		FLOW RATE 2.83 G/S		LIQ TEMP 82.4 K		LIQ PRESS 1.98 ATM		CART HTR PWR 0.000 W			
1	394.8	57.4	25.8	0.000558	0.362	53.48	64905	0.05386	9.158	0.02715	*******	12.117
2	59.8	57.1	23.9	0.000442	0.425	68.58	65177	0.00358	0.716	0.26399	*******	82.494
3	58.3	57.0	23.0	0.000423	0.428	69.21	65312	0.00118	0.239	0.18894	*******	58.569
4	58.8	56.8	22.0	0.000405	0.430	69.48	65479	0.00114	0.230	0.11339	*******	35.116
5	58.7	56.5	20.3	0.000372	0.434	69.98	65781	0.00115	0.236	0.10757	*******	33.166
6	83.0	56.1	18.3	0.000331	0.442	71.41	66150	0.00111	0.231	0.00861	*******	2.745
7	128.5	55.5	15.7	0.000275	0.463	75.91	66720	0.00105	0.231	0.00316	5.878	1.038
8	140.1	55.2	14.2	0.000239	0.483	80.40	67086	0.00101	0.231	0.00272	4.724	0.877
9	144.6	55.0	13.5	0.000224	0.494	82.77	67240	0.00100	0.232	0.00259	4.388	0.826
10	154.0	54.9	13.3	0.000217	0.499	83.97	67323	0.00099	0.234	0.00237	3.823	0.754
RUN NO 356	ORIF DIA 0.0635 CM		FLOW RATE 2.83 G/S		LIQ TEMP 82.3 K		LIQ PRESS 1.98 ATM		CART HTR PWR 0.000 W			
1	397.1	57.5	26.0	0.000564	0.361	53.40	64871	0.05382	9.137	0.02690	*******	12.024
2	59.9	57.2	24.1	0.000446	0.424	68.39	65151	0.00336	0.670	0.24442	*******	76.493
3	58.1	57.0	23.1	0.000426	0.427	68.96	65289	0.00094	0.189	0.17516	*******	54.388
4	58.5	56.8	22.1	0.000408	0.429	69.15	65457	0.00089	0.180	0.10948	*******	33.964
5	57.9	56.5	20.4	0.000375	0.432	69.50	65768	0.00090	0.184	0.12874	*******	39.781
6	69.8	56.1	18.3	0.000335	0.439	70.55	66143	0.00088	0.182	0.01334	*******	4.179
7	111.3	55.5	15.7	0.000280	0.455	73.98	66716	0.00084	0.181	0.00325	6.596	1.061
8	120.8	55.2	14.2	0.000245	0.471	77.41	67086	0.00081	0.181	0.00276	5.269	0.892
9	124.1	55.0	13.5	0.000231	0.479	79.22	67241	0.00080	0.182	0.00264	4.920	0.843
10	130.5	54.9	13.3	0.000224	0.483	80.15	67323	0.00082	0.187	0.00248	4.437	0.792
RUN NO 357	ORIF DIA 0.0635 CM		FLOW RATE 2.83 G/S		LIQ TEMP 82.4 K		LIQ PRESS 1.98 ATM		CART HTR PWR 0.000 W			
1	392.2	57.3	24.7	0.000534	0.363	53.47	65065	0.05367	9.151	0.02732	*******	12.181
2	68.4	57.0	23.1	0.000428	0.424	68.31	65296	0.00284	0.567	0.04982	*******	15.844
3	57.7	56.9	22.3	0.000412	0.427	68.77	65436	0.00072	0.145	0.16718	*******	51.937
4	57.9	56.7	21.5	0.000397	0.428	68.88	65578	0.00054	0.109	0.09389	*******	29.148
5	57.1	56.4	20.0	0.000370	0.431	69.04	65838	0.00055	0.111	0.15769	*******	48.813
6	58.3	56.1	18.1	0.000334	0.435	69.58	66183	0.00054	0.111	0.05016	*******	15.496
7	80.9	55.5	15.7	0.000285	0.445	71.48	66735	0.00052	0.110	0.00434	10.814	1.380
8	92.3	55.2	14.2	0.000254	0.455	73.42	67084	0.00051	0.110	0.00297	6.721	0.950
9	97.1	55.0	13.5	0.000241	0.460	74.44	67236	0.00051	0.111	0.00263	5.731	0.841
10	100.9	54.9	13.3	0.000235	0.462	74.97	67321	0.00055	0.119	0.00259	5.476	0.830
RUN NO 358	ORIF DIA 0.0635 CM		FLOW RATE 2.83 G/S		LIQ TEMP 82.3 K		LIQ PRESS 1.98 ATM		CART HTR PWR 0.000 W			
1	393.0	57.1	24.0	0.000519	0.363	53.33	65168	0.05361	9.144	0.02723	*******	12.156
2	67.4	56.9	22.5	0.000419	0.424	68.10	65390	0.00267	0.533	0.05074	*******	16.134
3	57.5	56.8	21.8	0.000405	0.427	68.51	65516	0.00052	0.105	0.15112	*******	47.012
4	57.6	56.6	21.1	0.000392	0.428	68.57	65642	0.00036	0.072	0.07341	*******	22.832
5	57.0	56.4	19.8	0.000368	0.429	68.63	65875	0.00036	0.073	0.12608	*******	39.135
6	57.5	56.1	18.0	0.000334	0.432	68.90	66203	0.00036	0.073	0.05182	*******	16.065
7	74.2	55.5	15.6	0.000288	0.439	70.00	66744	0.00035	0.073	0.00390	10.086	1.236
8	81.3	55.2	14.2	0.000259	0.446	71.14	67084	0.00035	0.073	0.00280	6.789	0.891
9	85.5	55.0	13.6	0.000247	0.449	71.74	67234	0.00034	0.073	0.00240	5.611	0.766
10	87.8	54.9	13.3	0.000241	0.451	72.07	67319	0.00039	0.082	0.00251	5.768	0.804
RUN NO 359	ORIF DIA 0.0635 CM		FLOW RATE 2.83 G/S		LIQ TEMP 82.2 K		LIQ PRESS 1.98 ATM		CART HTR PWR 0.000 W			
1	389.4	57.2	24.3	0.000529	0.360	52.87	65122	0.05340	9.055	0.02726	*******	12.211
2	64.3	57.0	22.8	0.000426	0.421	67.51	65347	0.00266	0.527	0.07228	*******	22.960
3	57.5	56.8	22.0	0.000411	0.424	67.90	65480	0.00044	0.088	0.12035	*******	37.624
4	57.7	56.7	21.3	0.000397	0.425	67.94	65614	0.00033	0.065	0.06292	*******	19.668
5	57.1	56.4	19.9	0.000372	0.426	67.98	65858	0.00033	0.067	0.10372	*******	32.362
6	57.7	56.1	18.1	0.000337	0.429	68.19	66194	0.00033	0.067	0.04177	*******	13.024
7	73.5	55.5	15.6	0.000290	0.436	69.15	66740	0.00032	0.066	0.00368	9.381	1.173
8	79.1	55.2	14.2	0.000262	0.442	70.15	67084	0.00032	0.066	0.00277	6.715	0.886
9	82.5	55.0	13.6	0.000249	0.445	70.68	67235	0.00032	0.066	0.00241	5.669	0.773
10	84.3	54.9	13.3	0.000243	0.446	70.96	67320	0.00035	0.074	0.00253	5.862	0.812
RUN NO 360	ORIF DIA 0.0635 CM		FLOW RATE 2.83 G/S		LIQ TEMP 82.2 K		LIQ PRESS 1.98 ATM		CART HTR PWR 0.000 W			
1	394.5	57.1	23.7	0.000517	0.361	52.85	65202	0.05297	8.992	0.02665	*******	11.955
2	65.6	56.9	22.3	0.000419	0.421	67.39	65422	0.00268	0.531	0.06056	*******	19.303
3	57.5	56.7	21.7	0.000405	0.424	67.78	65542	0.00045	0.089	0.12070	*******	37.761
4	57.5	56.6	21.0	0.000392	0.425	67.83	65664	0.00031	0.063	0.06744	*******	21.090
5	56.9	56.4	19.8	0.000369	0.426	67.87	65887	0.00032	0.064	0.13274	*******	41.435
6	57.1	56.1	18.0	0.000336	0.429	68.07	66210	0.00031	0.064	0.06064	*******	18.902
7	71.4	55.5	15.6	0.000290	0.435	68.96	66747	0.00031	0.063	0.00398	10.171	1.267
8	76.7	55.2	14.2	0.000262	0.441	69.91	67083	0.00030	0.063	0.00294	7.159	0.939
9	79.6	55.0	13.6	0.000250	0.443	70.41	67233	0.00030	0.063	0.00258	6.112	0.824
10	81.0	54.9	13.3	0.000244	0.445	70.68	67319	0.00034	0.071	0.00271	6.336	0.865

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 362	ORIF DIA 0.0635 CM	FLOW RATE 2.83 G/S	LIQ TEMP 82.2 K	LIQ PRESS 1.98 ATM	CART HTR PWR 0.000 W							
1	402.6	57.2	24.4	0.000531	0.360	52.75	65110	0.05287	8.950	0.02591	*******	11.659
2	72.5	57.0	22.8	0.000428	0.421	67.33	65337	0.00302	0.598	0.03847	*******	12.414
3	57.7	56.8	22.1	0.000412	0.424	67.84	65471	0.00090	0.180	0.19903	*******	62.272
4	57.8	56.7	21.3	0.000397	0.425	68.00	65607	0.00066	0.131	0.11476	*******	35.865
5	57.6	56.4	19.9	0.000371	0.427	68.23	65854	0.00067	0.134	0.11123	*******	34.678
6	71.5	56.1	18.1	0.000335	0.432	68.94	66192	0.00065	0.132	0.00852	*******	2.710
7	95.8	55.5	15.6	0.000285	0.445	71.31	66739	0.00063	0.132	0.00327	6,803	1.066
8	101.6	55.2	14.2	0.000253	0.456	73.71	67084	0.00061	0.132	0.00283	5,653	0.917
9	102.1	55.0	13.6	0.000240	0.462	74.98	67235	0.00061	0.132	0.00281	5,594	0.902
10	105.4	54.9	13.3	0.000233	0.465	75.61	67320	0.00061	0.134	0.00265	5,136	0.849
RUN NO 361	ORIF DIA 0.0635 CM	FLOW RATE 2.83 G/S	LIQ TEMP 82.1 K	LIQ PRESS 1.98 ATM	CART HTR PWR 0.000 W							
1	404.2	57.2	24.1	0.000528	0.359	52.49	65145	0.05290	8.935	0.02574	*******	11.614
2	63.5	56.9	22.6	0.000426	0.420	67.04	65369	0.00302	0.596	0.09073	*******	28.886
3	57.7	56.8	21.9	0.000410	0.422	67.51	65498	0.00061	0.121	0.12999	*******	40.771
4	57.8	56.7	21.2	0.000397	0.423	67.60	65628	0.00051	0.102	0.09085	*******	28.475
5	57.2	56.4	19.9	0.000372	0.426	67.75	65867	0.00052	0.104	0.12712	*******	39.745
6	63.2	56.1	18.0	0.000336	0.430	68.24	66199	0.00051	0.102	0.01440	*******	4.536
7	85.8	55.5	15.6	0.000288	0.439	69.98	66742	0.00049	0.102	0.00337	7,546	1.092
8	91.7	55.2	14.2	0.000258	0.448	71.76	67084	0.00048	0.102	0.00279	5,962	0.903
9	93.9	55.0	13.6	0.000244	0.453	72.69	67235	0.00048	0.102	0.00264	5,536	0.849
10	96.3	54.9	13.3	0.000238	0.455	73.17	67320	0.00049	0.105	0.00254	5,244	0.821
RUN NO 363	ORIF DIA 0.0635 CM	FLOW RATE 2.83 G/S	LIQ TEMP 81.9 K	LIQ PRESS 1.98 ATM	CART HTR PWR 0.000 W							
1	404.8	57.2	24.5	0.000538	0.358	52.23	65088	0.05311	8.933	0.02570	*******	11.626
2	61.0	57.0	22.9	0.000432	0.418	66.78	65316	0.00300	0.590	0.14553	*******	46.216
3	57.6	56.8	22.2	0.000416	0.421	67.22	65454	0.00050	0.100	0.12772	*******	40.144
4	57.8	56.7	21.4	0.000402	0.422	67.29	65593	0.00044	0.087	0.08212	*******	25.802
5	57.1	56.4	20.0	0.000375	0.424	67.39	65846	0.00045	0.089	0.12394	*******	38.851
6	59.6	56.1	18.1	0.000339	0.428	67.77	66187	0.00044	0.089	0.02505	*******	7.865
7	80.8	55.5	15.7	0.000290	0.436	69.21	66737	0.00043	0.088	0.00348	8,069	1.125
8	86.6	55.2	14.2	0.000260	0.444	70.68	67084	0.00042	0.088	0.00280	6,180	0.905
9	89.0	55.0	13.6	0.000247	0.448	71.46	67236	0.00042	0.088	0.00260	5,618	0.838
10	91.0	54.9	13.3	0.000241	0.450	71.86	67320	0.00043	0.092	0.00254	5,413	0.821
RUN NO 364	ORIF DIA 0.0635 CM	FLOW RATE 2.83 G/S	LIQ TEMP 82.0 K	LIQ PRESS 1.98 ATM	CART HTR PWR 0.000 W							
1	404.6	57.2	24.4	0.000536	0.358	52.34	65099	0.05297	8.923	0.02569	*******	11.607
2	61.3	57.0	22.9	0.000431	0.419	66.85	65326	0.00294	0.580	0.13559	*******	43.052
3	57.6	56.8	22.1	0.000415	0.421	67.28	65463	0.00046	0.092	0.11481	*******	36.070
4	57.8	56.7	21.3	0.000401	0.422	67.34	65600	0.00039	0.078	0.06796	*******	21.347
5	57.1	56.4	20.0	0.000375	0.424	67.41	65850	0.00040	0.080	0.11902	*******	37.300
6	58.4	56.1	18.1	0.000339	0.427	67.73	66189	0.00040	0.080	0.03394	*******	10.636
7	77.8	55.5	15.7	0.000291	0.435	68.97	66738	0.00039	0.079	0.00356	8,380	1.145
8	83.3	55.2	14.2	0.000261	0.442	70.26	67084	0.00038	0.079	0.00282	6,320	0.908
9	85.7	55.0	13.6	0.000248	0.446	70.94	67236	0.00038	0.080	0.00259	5,689	0.833
10	87.4	54.9	13.3	0.000242	0.447	71.28	67320	0.00039	0.083	0.00255	5,527	0.821
RUN NO 365	ORIF DIA 0.0635 CM	FLOW RATE 2.83 G/S	LIQ TEMP 81.9 K	LIQ PRESS 1.98 ATM	CART HTR PWR 0.000 W							
1	406.3	57.2	24.2	0.000532	0.357	52.12	65133	0.05316	8.937	0.02560	*******	11.594
2	61.8	56.9	22.7	0.000428	0.418	66.64	65358	0.00290	0.570	0.11671	*******	37.157
3	57.5	56.8	22.0	0.000413	0.420	67.06	65489	0.00041	0.082	0.12171	*******	38.289
4	57.6	56.7	21.2	0.000399	0.421	67.10	65621	0.00034	0.067	0.06841	*******	21.520
5	57.0	56.4	19.9	0.000374	0.423	67.14	65863	0.00034	0.068	0.12078	*******	37.918
6	57.2	56.1	18.0	0.000339	0.426	67.38	66196	0.00034	0.068	0.05872	*******	18.407
7	73.5	55.5	15.6	0.000292	0.433	68.37	66741	0.00033	0.067	0.00375	9,070	1.200
8	79.1	55.2	14.2	0.000263	0.439	69.41	67084	0.00033	0.068	0.00282	6,508	0.908
9	81.7	55.0	13.6	0.000251	0.442	69.95	67235	0.00032	0.068	0.00253	5,709	0.816
10	83.0	54.9	13.3	0.000245	0.443	70.23	67320	0.00034	0.071	0.00253	5,643	0.816
RUN NO 366	ORIF DIA 0.0635 CM	FLOW RATE 2.83 G/S	LIQ TEMP 81.8 K	LIQ PRESS 1.98 ATM	CART HTR PWR 0.000 W							
1	407.7	57.2	24.5	0.000540	0.357	51.98	65088	0.05349	8.972	0.02560	*******	11.615
2	60.8	57.0	22.9	0.000433	0.417	66.56	65316	0.00289	0.568	0.14749	*******	46.900
3	57.4	56.8	22.2	0.000417	0.420	66.97	65454	0.00036	0.072	0.12839	*******	40.417
4	57.5	56.7	21.4	0.000403	0.421	66.99	65593	0.00030	0.059	0.07105	*******	22.366
5	57.0	56.4	20.0	0.000376	0.422	67.01	65846	0.00030	0.060	0.10863	*******	34.142
6	57.1	56.1	18.1	0.000341	0.425	67.19	66187	0.00030	0.061	0.05907	*******	18.540
7	71.1	55.5	15.7	0.000294	0.431	68.01	66737	0.00030	0.060	0.00386	9,484	1.235
8	76.6	55.2	14.2	0.000265	0.437	68.89	67084	0.00029	0.060	0.00280	6,556	0.901
9	79.4	55.0	13.6	0.000252	0.439	69.35	67236	0.00029	0.060	0.00247	5,627	0.794
10	80.4	54.9	13.3	0.000246	0.441	69.59	67320	0.00031	0.064	0.00249	5,640	0.803

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 367	ORIF DIA 0.0635 CM	FLOW RATE 2.83 G/S	LIQ TEMP 81.8 K	LIQ PRESS 1.98 ATM	CART HTR PWR 0.000 W							
1	407.8	57.2	24.5	0.000540	0.356	51.96	65088	0.05351	8.972	0.02559	*******	11.615
2	60.0	57.0	22.9	0.000433	0.417	66.53	65316	0.00288	0.566	0.18650	*******	59.226
3	57.4	56.8	22.2	0.000417	0.420	66.93	65454	0.00032	0.064	0.11805	*******	37.172
4	57.4	56.7	21.4	0.000403	0.421	66.94	65593	0.00028	0.055	0.07571	*******	23.833
5	56.9	56.4	20.0	0.000377	0.422	66.95	65846	0.00028	0.056	0.12096	*******	38.028
6	57.0	56.1	18.1	0.000341	0.425	67.09	66187	0.00028	0.056	0.06222	*******	19.536
7	69.5	55.5	15.7	0.000294	0.430	67.81	66737	0.00027	0.055	0.00395	9.796	1.263
8	75.0	55.2	14.2	0.000265	0.435	68.59	67084	0.00027	0.055	0.00279	6.581	0.896
9	77.8	55.0	13.6	0.000253	0.438	68.99	67236	0.00027	0.055	0.00242	5.568	0.780
10	78.7	54.9	13.3	0.000247	0.439	69.21	67320	0.00028	0.059	0.00247	5.638	0.795
RUN NO 173	ORIF DIA 0.0567 CM	FLOW RATE 2.94 G/S	LIQ TEMP 82.9 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	332.8	58.1	29.7	0.000635	0.362	54.41	66886	0.05271	9.316	0.03390	*******	14.321
2	58.8	57.6	27.0	0.000497	0.424	68.88	67275	0.00244	0.504	0.41431	*******	125.002
3	57.7	57.4	25.7	0.000472	0.426	69.26	67470	0.00067	0.140	0.49675	*******	149.094
4	58.1	57.2	24.4	0.000447	0.428	69.36	67667	0.00064	0.133	0.14616	*******	43.871
5	57.5	56.8	22.0	0.000404	0.430	69.53	68058	0.00064	0.135	0.19221	*******	57.540
6	58.1	56.3	19.3	0.000353	0.436	70.15	68559	0.00063	0.135	0.07642	*******	22.789
7	66.7	55.7	16.3	0.000293	0.448	72.38	69210	0.00061	0.135	0.01218	33.568	3.633
8	88.4	55.2	14.3	0.000254	0.460	74.58	69679	0.00060	0.135	0.00406	9.160	1.239
9	97.0	55.0	13.6	0.000239	0.465	75.74	69863	0.00058	0.132	0.00314	6.620	0.966
10	101.8	54.9	13.3	0.000232	0.468	76.32	69956	0.00058	0.134	0.00287	5.818	0.884
RUN NO 174	ORIF DIA 0.0567 CM	FLOW RATE 2.94 G/S	LIQ TEMP 82.8 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	334.2	58.0	29.7	0.000636	0.362	54.31	66886	0.05287	9.334	0.03380	*******	14.298
2	58.6	57.6	27.0	0.000498	0.423	68.81	67275	0.00245	0.507	0.51729	*******	156.088
3	57.6	57.4	25.7	0.000472	0.426	69.19	67470	0.00067	0.140	0.78899	*******	236.884
4	57.9	57.2	24.4	0.000448	0.427	69.29	67667	0.00064	0.134	0.18737	*******	56.247
5	57.3	56.8	22.0	0.000404	0.430	69.46	68058	0.00064	0.136	0.28262	*******	84.610
6	57.9	56.3	19.3	0.000353	0.436	70.08	68559	0.00063	0.135	0.08302	*******	24.763
7	66.8	55.7	16.3	0.000293	0.448	72.32	69210	0.00062	0.135	0.01215	32.444	3.626
8	88.6	55.2	14.3	0.000254	0.459	74.53	69679	0.00060	0.135	0.00404	8.838	1.236
9	94.1	55.0	13.6	0.000239	0.465	75.66	69863	0.00056	0.127	0.00324	6.772	0.992
10	96.9	54.9	13.3	0.000233	0.467	76.19	69956	0.00052	0.120	0.00286	5.843	0.876
RUN NO 175	ORIF DIA 0.0567 CM	FLOW RATE 2.94 G/S	LIQ TEMP 82.7 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	335.6	58.0	29.7	0.000637	0.361	54.15	66886	0.05334	9.401	0.03387	*******	14.354
2	58.5	57.6	27.0	0.000498	0.423	68.76	67275	0.00247	0.511	0.56435	*******	170.323
3	57.5	57.4	25.7	0.000472	0.426	69.15	67470	0.00067	0.140	1.08361	*******	325.415
4	57.8	57.2	24.4	0.000448	0.427	69.25	67667	0.00065	0.135	0.22902	*******	68.756
5	57.3	56.8	22.0	0.000404	0.430	69.43	68058	0.00065	0.137	0.25729	*******	77.058
6	57.8	56.3	19.3	0.000354	0.436	70.05	68559	0.00064	0.136	0.09253	*******	27.597
7	66.9	55.7	16.3	0.000293	0.448	72.32	69210	0.00062	0.136	0.01216	31.711	3.629
8	88.7	55.2	14.3	0.000254	0.459	74.55	69679	0.00060	0.136	0.00405	8.647	1.239
9	91.9	55.0	13.6	0.000239	0.465	75.66	69863	0.00054	0.123	0.00334	6.960	1.020
10	92.8	54.9	13.3	0.000233	0.467	76.15	69956	0.00048	0.109	0.00289	5.970	0.879
RUN NO 176	ORIF DIA 0.0567 CM	FLOW RATE 2.94 G/S	LIQ TEMP 82.6 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	336.7	58.0	29.7	0.000637	0.361	54.10	66886	0.05342	9.409	0.03376	*******	14.321
2	58.6	57.6	27.0	0.000498	0.423	68.73	67275	0.00248	0.513	0.54543	*******	164.675
3	57.5	57.4	25.7	0.000472	0.426	69.11	67470	0.00068	0.141	2.07863	*******	624.331
4	57.8	57.2	24.4	0.000448	0.427	69.22	67667	0.00065	0.135	0.24212	*******	72.705
5	57.4	56.8	22.0	0.000404	0.430	69.39	68058	0.00065	0.136	0.24717	*******	74.051
6	57.7	56.3	19.3	0.000354	0.435	70.01	68559	0.00064	0.136	0.09540	*******	28.457
7	66.8	55.7	16.3	0.000293	0.448	72.28	69210	0.00062	0.136	0.01220	31.155	3.641
8	88.6	55.2	14.3	0.000254	0.459	74.51	69679	0.00060	0.136	0.00406	8.501	1.243
9	88.8	55.0	13.6	0.000239	0.464	75.58	69863	0.00051	0.116	0.00345	7.207	1.046
10	87.2	54.9	13.3	0.000233	0.467	76.01	69956	0.00041	0.093	0.00288	6.113	0.870
RUN NO 177	ORIF DIA 0.0567 CM	FLOW RATE 2.94 G/S	LIQ TEMP 82.5 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	340.1	58.0	29.7	0.000638	0.361	54.01	66886	0.05394	9.491	0.03365	*******	14.299
2	58.6	57.6	27.0	0.000498	0.423	68.77	67275	0.00252	0.520	0.55300	*******	166.904
3	57.5	57.4	25.7	0.000472	0.426	69.16	67470	0.00068	0.142	1.09945	*******	330.142
4	57.8	57.2	24.4	0.000448	0.427	69.27	67667	0.00065	0.136	0.21396	*******	64.234
5	57.4	56.8	22.0	0.000404	0.430	69.44	68058	0.00065	0.138	0.24810	*******	74.298
6	57.8	56.3	19.3	0.000353	0.436	70.08	68559	0.00064	0.138	0.09048	*******	26.982
7	67.8	55.7	16.3	0.000293	0.448	72.37	69210	0.00063	0.138	0.01136	28.159	3.393
8	89.3	55.2	14.3	0.000254	0.460	74.62	69679	0.00061	0.137	0.00401	8.167	1.226
9	87.2	55.0	13.6	0.000239	0.465	75.68	69863	0.00050	0.114	0.00354	7.352	1.070
10	84.0	54.9	13.3	0.000233	0.467	76.08	69956	0.00037	0.084	0.00290	6.195	0.870

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 178	ORIF DIA 0.0567 CM	FLOW RATE 2.94 G/S	LIQ TEMP 82.5 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	331.1	58.0	29.7	0.000642	0.358	53.45	66886	0.05229	9.143	0.03348	*******	14.259
2	58.5	57.6	27.0	0.000503	0.419	67.67	67275	0.00245	0.502	0.56096	*******	170.739
3	57.5	57.4	25.7	0.000477	0.421	68.05	67470	0.00068	0.140	1.64349	*******	497.704
4	57.8	57.2	24.4	0.000452	0.423	68.16	67667	0.00065	0.134	0.22348	*******	67.663
5	57.3	56.8	22.0	0.000408	0.426	68.33	68058	0.00065	0.136	0.27641	*******	83.470
6	57.8	56.3	19.3	0.000357	0.431	68.96	68559	0.00064	0.136	0.09242	*******	27.789
7	67.4	55.7	16.3	0.000296	0.444	71.22	69210	0.00062	0.136	0.01151	28.070	3.467
8	88.9	55.2	14.3	0.000257	0.455	73.44	69679	0.00060	0.135	0.00400	8.010	1.232
9	84.1	55.0	13.6	0.000242	0.460	74.45	69863	0.00046	0.104	0.00358	7.498	1.088
10	78.4	54.9	13.3	0.000235	0.462	74.76	69956	0.00028	0.064	0.00273	6.012	0.817
RUN NO 179	ORIF DIA 0.0567 CM	FLOW RATE 2.94 G/S	LIQ TEMP 82.5 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	331.5	58.0	29.7	0.000640	0.359	53.68	66886	0.05305	9.299	0.03401	*******	14.457
2	58.4	57.6	27.0	0.000501	0.420	68.13	67275	0.00246	0.505	0.63872	*******	193.671
3	57.4	57.4	25.7	0.000475	0.423	68.52	67470	0.00069	0.142	6.22850	*******	1879.220
4	57.8	57.2	24.4	0.000450	0.425	68.62	67667	0.00066	0.136	0.24336	*******	73.412
5	57.2	56.8	22.0	0.000407	0.428	68.80	68058	0.00066	0.138	0.32841	*******	98.805
6	57.8	56.3	19.3	0.000356	0.433	69.44	68559	0.00065	0.138	0.09285	*******	27.818
7	67.9	55.7	16.3	0.000294	0.446	71.74	69210	0.00063	0.138	0.01129	26.908	3.390
8	89.5	55.2	14.3	0.000255	0.457	74.00	69679	0.00061	0.137	0.00399	7.817	1.227
9	82.5	55.0	13.6	0.000240	0.462	75.00	69863	0.00045	0.101	0.00368	7.668	1.110
10	75.3	54.9	13.3	0.000234	0.464	75.28	69956	0.00024	0.054	0.00264	5.883	0.783
RUN NO 180	ORIF DIA 0.0567 CM	FLOW RATE 2.94 G/S	LIQ TEMP 82.5 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	335.3	58.0	29.7	0.000640	0.359	53.74	66886	0.05339	9.367	0.03378	*******	14.367
2	58.5	57.6	27.0	0.000500	0.421	68.31	67275	0.00249	0.513	0.61138	*******	185.149
3	57.5	57.4	25.7	0.000474	0.424	68.70	67470	0.00069	0.143	1.91563	*******	577.223
4	57.8	57.2	24.4	0.000450	0.425	68.80	67667	0.00066	0.137	0.24655	*******	74.270
5	57.1	56.8	22.0	0.000406	0.428	68.98	68058	0.00066	0.139	0.41996	*******	126.147
6	57.8	56.3	19.3	0.000355	0.434	69.63	68559	0.00065	0.139	0.09116	*******	27.275
7	68.1	55.7	16.3	0.000294	0.447	71.95	69210	0.00063	0.139	0.01115	26.081	3.342
8	89.8	55.2	14.3	0.000255	0.458	74.24	69679	0.00061	0.138	0.00398	7.651	1.222
9	81.2	55.0	13.6	0.000240	0.463	75.23	69863	0.00043	0.099	0.00376	7.810	1.131
10	72.9	54.9	13.3	0.000234	0.464	75.47	69956	0.00020	0.046	0.00254	5.709	0.750
RUN NO 181	ORIF DIA 0.0567 CM	FLOW RATE 2.94 G/S	LIQ TEMP 82.5 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	337.7	58.0	29.7	0.000640	0.359	53.66	66886	0.05350	9.376	0.03352	*******	14.280
2	58.4	57.6	27.0	0.000500	0.421	68.25	67275	0.00252	0.518	0.62573	*******	189.571
3	57.5	57.4	25.7	0.000474	0.424	68.64	67471	0.00069	0.144	3.62387	*******	1092.324
4	57.7	57.2	24.4	0.000450	0.425	68.75	67668	0.00066	0.138	0.26638	*******	80.267
5	57.2	56.8	22.0	0.000406	0.428	68.93	68058	0.00067	0.140	0.34364	*******	103.278
6	57.7	56.3	19.3	0.000355	0.434	69.58	68560	0.00066	0.139	0.09759	*******	29.205
7	68.3	55.7	16.3	0.000294	0.447	71.92	69211	0.00064	0.139	0.01106	25.479	3.318
8	90.0	55.2	14.3	0.000255	0.458	74.21	69679	0.00062	0.138	0.00397	7.513	1.220
9	79.1	55.0	13.6	0.000240	0.463	75.18	69863	0.00041	0.094	0.00389	8.112	1.164
10	69.3	54.9	13.3	0.000234	0.464	75.38	69956	0.00014	0.033	0.00228	5.241	0.670
RUN NO 182	ORIF DIA 0.0567 CM	FLOW RATE 2.94 G/S	LIQ TEMP 82.5 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	335.7	58.0	29.7	0.000641	0.359	53.54	66886	0.05299	9.274	0.03340	*******	14.234
2	58.4	57.6	27.0	0.000502	0.420	67.97	67275	0.00251	0.514	0.67168	*******	203.907
3	57.4	57.4	25.7	0.000476	0.422	68.37	67471	0.00070	0.144	5.94231	*******	1794.960
4	57.8	57.2	24.4	0.000451	0.424	68.47	67668	0.00067	0.138	0.23401	*******	70.676
5	57.2	56.8	22.0	0.000407	0.427	68.66	68058	0.00067	0.140	0.32672	*******	98.406
6	57.7	56.3	19.3	0.000356	0.432	69.31	68560	0.00066	0.139	0.09950	*******	29.836
7	68.2	55.7	16.3	0.000295	0.445	71.65	69211	0.00064	0.139	0.01112	25.430	3.343
8	89.9	55.2	14.3	0.000256	0.457	73.94	69679	0.00062	0.138	0.00398	7.474	1.225
9	78.4	55.0	13.6	0.000241	0.462	74.90	69863	0.00041	0.092	0.00394	8.198	1.179
10	68.1	54.9	13.3	0.000235	0.463	75.08	69956	0.00012	0.028	0.00215	4.950	0.631
RUN NO 201	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 83.9 K	LIQ PRESS 3.05 ATM	CART HTR PWR 0.000 W							
1	321.8	58.4	32.8	0.000680	0.371	57.14	63548	0.05364	9.270	0.03520	*******	15.023
2	61.4	58.3	31.6	0.000559	0.436	72.74	63683	0.00369	0.749	0.24167	*******	73.845
3	58.4	58.2	31.0	0.000544	0.440	73.60	63749	0.00204	0.418	1.71011	*******	516.184
4	59.4	58.1	30.4	0.000531	0.443	74.20	63816	0.00196	0.404	0.30916	*******	93.076
5	59.6	58.0	29.3	0.000506	0.448	75.37	63952	0.00194	0.406	0.24477	*******	73.077
6	60.9	57.6	27.0	0.000455	0.462	78.33	64267	0.00189	0.408	0.12501	*******	36.635
7	154.3	57.1	23.8	0.000373	0.501	87.23	64721	0.00173	0.404	0.00416	6.461	1.300
8	179.4	56.8	21.8	0.000320	0.539	96.06	65042	0.00161	0.404	0.00330	4.584	0.994
9	183.4	56.6	20.9	0.000297	0.559	100.74	65206	0.00155	0.406	0.00320	4.380	0.942
10	192.5	56.5	20.4	0.000286	0.569	103.04	65289	0.00150	0.399	0.00293	3.865	0.856

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 202	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 84.2 K	LIQ PRESS 3.05 ATM	CART HTR PWR 1.769 W							
1	321.7	58.4	33.1	0.000680	0.374	57.91	63512	0.05351	9.318	0.03540	*******	15.008
2	61.4	58.3	31.8	0.000559	0.439	73.58	63654	0.00367	0.751	0.24243	*******	73.614
3	58.4	58.2	31.2	0.000544	0.443	74.45	63724	0.00204	0.421	2.62816	*******	788.261
4	59.8	58.1	30.6	0.000530	0.446	75.05	63794	0.00194	0.404	0.24668	*******	73.856
5	59.5	58.0	29.4	0.000504	0.452	76.23	63932	0.00194	0.408	0.27031	*******	80.186
6	60.8	57.6	27.1	0.000453	0.466	79.19	64254	0.00189	0.409	0.13103	*******	38.157
7	154.7	57.1	23.8	0.000371	0.505	88.12	64716	0.00172	0.406	0.00416	6.399	1.292
8	178.7	56.8	21.8	0.000318	0.543	96.98	65038	0.00160	0.406	0.00333	4.611	0.998
9	182.2	56.6	20.9	0.000295	0.563	101.67	65204	0.00155	0.408	0.00325	4.430	0.948
10	191.3	56.5	20.4	0.000284	0.573	103.98	65288	0.00149	0.400	0.00297	3.903	0.861
RUN NO 203	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 84.9 K	LIQ PRESS 3.05 ATM	CART HTR PWR 6.662 W							
1	315.8	58.5	33.5	0.000676	0.381	59.65	63468	0.05334	9.458	0.03675	*******	15.322
2	61.3	58.3	32.2	0.000554	0.447	75.53	63619	0.00358	0.746	0.24697	*******	73.922
3	58.4	58.2	31.5	0.000539	0.451	76.39	63694	0.00202	0.425	2.33481	*******	698.484
4	59.4	58.2	30.8	0.000525	0.454	77.00	63769	0.00194	0.410	0.32170	*******	94.901
5	59.3	58.0	29.6	0.000498	0.460	78.19	63911	0.00193	0.413	0.30815	*******	90.105
6	60.9	57.6	27.2	0.000447	0.474	81.18	64242	0.00188	0.415	0.12688	*******	36.452
7	153.2	57.1	23.9	0.000365	0.513	90.22	64711	0.00172	0.411	0.00428	6.569	1.310
8	178.1	56.8	21.8	0.000313	0.552	99.18	65037	0.00160	0.411	0.00339	4.657	1.002
9	181.7	56.6	20.9	0.000290	0.572	103.92	65204	0.00154	0.413	0.00330	4.469	0.951
10	190.3	56.5	20.4	0.000279	0.582	106.26	65288	0.00149	0.406	0.00303	3.965	0.868
RUN NO 204	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 86.3 K	LIQ PRESS 3.05 ATM	CART HTR PWR 14.954 W							
1	304.1	58.5	33.8	0.000661	0.392	62.43	63441	0.05160	9.417	0.03834	*******	15.553
2	61.3	58.3	32.3	0.000544	0.458	78.20	63599	0.00338	0.719	0.24158	*******	70.923
3	58.4	58.3	31.6	0.000528	0.462	79.04	63677	0.00195	0.420	3.07418	*******	892.033
4	59.5	58.2	30.9	0.000514	0.464	79.63	63755	0.00187	0.405	0.31623	*******	91.559
5	59.3	58.0	29.6	0.000488	0.470	80.80	63903	0.00186	0.407	0.31271	*******	89.771
6	60.9	57.6	27.2	0.000438	0.484	83.74	64236	0.00181	0.409	0.12707	*******	35.869
7	146.4	57.1	23.9	0.000359	0.523	92.65	64709	0.00166	0.406	0.00455	7.105	1.363
8	173.5	56.8	21.8	0.000308	0.561	101.47	65037	0.00155	0.406	0.00348	4.803	1.011
9	177.7	56.6	20.9	0.000286	0.581	106.14	65204	0.00150	0.407	0.00336	4.557	0.954
10	182.8	56.5	20.4	0.000275	0.591	108.44	65288	0.00146	0.403	0.00319	4.237	0.897
RUN NO 205	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 88.2 K	LIQ PRESS 3.05 ATM	CART HTR PWR 26.457 W							
1	293.5	58.6	34.0	0.000640	0.407	66.19	63415	0.04898	9.285	0.03952	*******	15.485
2	61.3	58.4	32.5	0.000530	0.472	81.71	63579	0.00316	0.695	0.23448	*******	67.164
3	58.4	58.3	31.8	0.000515	0.476	82.52	63660	0.00186	0.412	2.59939	*******	736.225
4	59.4	58.2	31.1	0.000501	0.479	83.10	63742	0.00179	0.398	0.32335	*******	91.391
5	59.6	58.0	29.7	0.000475	0.484	84.24	63896	0.00177	0.400	0.25193	*******	70.479
6	60.8	57.7	27.3	0.000427	0.498	87.12	64231	0.00173	0.402	0.12886	*******	35.561
7	139.7	57.1	23.9	0.000350	0.536	95.84	64707	0.00159	0.399	0.00483	7.685	1.412
8	167.8	56.8	21.8	0.000301	0.573	104.49	65037	0.00149	0.399	0.00359	4.996	1.022
9	172.5	56.6	20.9	0.000280	0.593	109.07	65205	0.00144	0.400	0.00345	4.706	0.961
10	180.2	56.5	20.4	0.000270	0.602	111.32	65288	0.00140	0.395	0.00319	4.208	0.882
RUN NO 206	ORIF DIA 0.0567 CM	FLOW RATE 2.81 G/S	LIQ TEMP 86.4 K	LIQ PRESS 3.05 ATM	CART HTR PWR 15.134 W							
1	305.9	58.5	33.3	0.000652	0.392	62.42	63494	0.05101	9.317	0.03765	*******	15.280
2	61.2	58.3	32.0	0.000539	0.457	78.03	63639	0.00339	0.721	0.24497	*******	71.992
3	58.3	58.2	31.3	0.000524	0.461	78.87	63711	0.00195	0.418	4.59645	*******	1335.049
4	59.4	58.1	30.7	0.000511	0.464	79.46	63783	0.00186	0.403	0.31024	*******	89.929
5	59.2	58.0	29.5	0.000486	0.470	80.63	63921	0.00185	0.406	0.33641	*******	96.667
6	60.7	57.6	27.1	0.000437	0.483	83.56	64248	0.00181	0.407	0.13349	*******	37.717
7	150.2	57.1	23.8	0.000359	0.522	92.43	64713	0.00166	0.404	0.00434	6.647	1.307
8	173.9	56.8	21.8	0.000309	0.560	101.21	65037	0.00154	0.404	0.00345	4.748	1.004
9	176.8	56.6	20.9	0.000286	0.580	105.87	65204	0.00150	0.406	0.00338	4.593	0.960
10	187.0	56.5	20.4	0.000276	0.590	108.16	65287	0.00144	0.398	0.00305	3.975	0.861
RUN NO 207	ORIF DIA 0.0567 CM	FLOW RATE 2.70 G/S	LIQ TEMP 83.8 K	LIQ PRESS 3.04 ATM	CART HTR PWR 0.000 W							
1	319.0	58.2	31.3	0.000646	0.373	57.43	61331	0.05504	9.216	0.03534	*******	15.487
2	60.0	58.1	30.4	0.000534	0.439	73.33	61431	0.00310	0.610	0.32851	*******	102.739
3	58.1	58.0	29.9	0.000523	0.442	74.01	61480	0.00140	0.278	7.58319	*******	2350.795
4	59.2	58.0	29.4	0.000513	0.444	74.42	61531	0.00133	0.265	0.21439	*******	66.405
5	58.2	57.8	28.6	0.000495	0.448	75.22	61650	0.00134	0.269	0.69354	*******	213.159
6	59.5	57.5	26.6	0.000453	0.458	77.23	61918	0.00131	0.269	0.13750	*******	41.763
7	107.7	57.1	23.6	0.000383	0.485	83.31	62321	0.00123	0.268	0.00530	10.591	1.674
8	133.7	56.8	21.7	0.000336	0.512	89.37	62620	0.00116	0.268	0.00348	5.857	1.087
9	134.9	56.6	20.9	0.000315	0.526	92.58	62771	0.00114	0.269	0.00344	5.750	1.054
10	142.1	56.5	20.4	0.000305	0.533	94.17	62847	0.00112	0.268	0.00313	5.016	0.956

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 208	ORIF DIA 0.0567 CM	FLOW RATE 2.70 G/S	LIQ TEMP 84.1 K	LIQ PRESS 3.04 ATM	CART HTR PWR 1.760 W							
1	320.9	58.2	31.4	0.000642	0.377	58.25	61323	0.05545	9.367	0.03566	*******	15.527
2	59.9	58.1	30.4	0.000530	0.443	74.40	61424	0.00309	0.614	0.33732	*******	104.652
3	58.1	58.1	30.0	0.000519	0.447	75.09	61473	0.00138	0.277	3.03033	*******	932.099
4	58.9	58.0	29.5	0.000509	0.449	75.49	61525	0.00133	0.267	0.29985	*******	92.085
5	58.2	57.9	28.6	0.000490	0.453	76.30	61645	0.00133	0.269	0.68764	*******	209.697
6	59.4	57.5	26.6	0.000449	0.462	78.31	61915	0.00130	0.270	0.14220	*******	42.855
7	106.7	57.1	23.6	0.000379	0.490	84.41	62320	0.00122	0.269	0.00542	10.720	1.696
8	133.5	56.8	21.7	0.000333	0.516	90.47	62620	0.00115	0.268	0.00350	5.794	1.084
9	134.1	56.6	20.9	0.000312	0.530	93.69	62771	0.00113	0.270	0.00348	5.754	1.059
10	140.9	56.5	20.4	0.000302	0.537	95.28	62847	0.00110	0.267	0.00317	5.027	0.960
RUN NO 209	ORIF DIA 0.0567 CM	FLOW RATE 2.70 G/S	LIQ TEMP 84.9 K	LIQ PRESS 3.04 ATM	CART HTR PWR 6.745 W							
1	315.5	58.2	31.4	0.000632	0.384	60.03	61314	0.05433	9.354	0.03636	*******	15.561
2	60.0	58.1	30.5	0.000523	0.451	76.14	61417	0.00299	0.603	0.32671	*******	100.088
3	58.1	58.1	30.0	0.000512	0.454	76.81	61467	0.00136	0.276	6.50379	*******	1975.418
4	59.0	58.0	29.5	0.000502	0.456	77.22	61518	0.00130	0.265	0.27241	*******	82.638
5	58.2	57.9	28.6	0.000484	0.460	78.02	61640	0.00130	0.268	0.69647	*******	209.791
6	59.5	57.6	26.6	0.000443	0.469	80.01	61912	0.00127	0.268	0.13760	*******	40.980
7	91.4	57.1	23.6	0.000374	0.496	86.07	62319	0.00120	0.268	0.00780	16.974	2.363
8	132.0	56.8	21.7	0.000329	0.523	92.10	62619	0.00113	0.267	0.00354	5.787	1.086
9	132.5	56.6	20.9	0.000308	0.537	95.30	62771	0.00111	0.269	0.00354	5.768	1.064
10	139.0	56.5	20.4	0.000298	0.544	96.87	62847	0.00108	0.264	0.00320	5.024	0.960
RUN NO 211	ORIF DIA 0.0567 CM	FLOW RATE 2.70 G/S	LIQ TEMP 88.2 K	LIQ PRESS 3.04 ATM	CART HTR PWR 26.468 W							
1	300.3	58.3	31.9	0.000595	0.413	67.29	61262	0.05073	9.399	0.03883	*******	15.581
2	60.2	58.2	30.9	0.000497	0.480	83.41	61375	0.00268	0.576	0.29017	*******	84.495
3	58.1	58.1	30.4	0.000486	0.483	84.06	61430	0.00128	0.277	14.62759	*******	4223.805
4	58.9	58.0	29.8	0.000476	0.485	84.46	61486	0.00122	0.266	0.29756	*******	85.824
5	58.2	57.9	28.9	0.000458	0.489	85.25	61611	0.00122	0.269	1.03093	*******	295.362
6	59.4	57.6	26.8	0.000418	0.499	87.23	61893	0.00120	0.268	0.14632	*******	41.495
7	78.2	57.1	23.7	0.000354	0.526	93.26	62311	0.00114	0.269	0.01276	29.867	3.605
8	128.8	56.8	21.8	0.000312	0.552	99.27	62614	0.00107	0.267	0.00371	5.922	1.084
9	129.3	56.6	20.9	0.000293	0.566	102.44	62768	0.00106	0.269	0.00370	5.900	1.063
10	135.7	56.5	20.4	0.000283	0.573	104.01	62846	0.00102	0.264	0.00333	5.110	0.955
RUN NO 212	ORIF DIA 0.0567 CM	FLOW RATE 2.70 G/S	LIQ TEMP 88.2 K	LIQ PRESS 3.04 ATM	CART HTR PWR 33.670 W							
1	293.5	58.3	32.2	0.000584	0.424	69.94	61237	0.04960	9.427	0.04008	*******	15.714
2	60.4	58.2	31.1	0.000489	0.491	86.09	61354	0.00257	0.566	0.25534	*******	73.059
3	58.1	58.1	30.5	0.000478	0.494	86.73	61412	0.00126	0.279	*******	*******	*******
4	59.0	58.1	30.0	0.000468	0.496	87.13	61469	0.00119	0.266	0.28330	*******	80.282
5	58.1	57.9	29.0	0.000449	0.500	87.91	61596	0.00120	0.269	1.37422	*******	386.802
6	59.3	57.6	26.8	0.000411	0.510	89.89	61884	0.00117	0.269	0.15402	*******	42.927
7	76.0	57.1	23.7	0.000348	0.536	95.92	62307	0.00112	0.269	0.01427	33.637	3.948
8	127.3	56.8	21.8	0.000306	0.563	101.92	62612	0.00106	0.267	0.00379	6.029	1.089
9	127.8	56.6	20.9	0.000287	0.577	105.09	62767	0.00104	0.269	0.00378	6.001	1.068
10	134.3	56.5	20.4	0.000278	0.583	106.65	62845	0.00101	0.264	0.00340	5.187	0.959
RUN NO 213	ORIF DIA 0.0567 CM	FLOW RATE 2.82 G/S	LIQ TEMP 83.4 K	LIQ PRESS 3.13 ATM	CART HTR PWR 0.000 W							
1	320.8	58.1	30.4	0.000636	0.369	56.22	64051	0.05388	9.303	0.03542	*******	15.173
2	59.2	58.0	29.6	0.000531	0.432	71.46	64136	0.00261	0.527	0.43051	*******	131.839
3	58.3	58.0	29.3	0.000522	0.434	71.98	64185	0.00090	0.184	0.59558	*******	181.323
4	58.4	57.9	28.9	0.000514	0.436	72.24	64237	0.00088	0.180	0.38373	*******	116.622
5	57.8	57.8	28.2	0.000499	0.438	72.75	64341	0.00088	0.181	3.50774	*******	1060.928
6	58.7	57.5	26.3	0.000462	0.445	74.00	64598	0.00087	0.180	0.15260	*******	45.808
7	69.1	57.1	23.5	0.000400	0.463	77.85	64999	0.00083	0.181	0.01508	37.638	4.489
8	104.6	56.8	21.7	0.000357	0.480	81.69	65305	0.00080	0.180	0.00375	6.907	1.153
9	106.4	56.6	20.8	0.000338	0.490	83.72	65458	0.00079	0.181	0.00363	6.605	1.104
10	110.8	56.5	20.4	0.000328	0.494	84.72	65535	0.00077	0.178	0.00327	5.779	0.995
RUN NO 219	ORIF DIA 0.0567 CM	FLOW RATE 2.66 G/S	LIQ TEMP 83.7 K	LIQ PRESS 3.11 ATM	CART HTR PWR 0.000 W							
1	313.7	58.5	33.4	0.000689	0.372	57.59	60122	0.05611	9.215	0.03610	*******	15.992
2	62.0	58.3	32.1	0.000560	0.441	74.14	60263	0.00435	0.846	0.22671	*******	71.697
3	58.7	58.2	31.4	0.000544	0.446	75.22	60333	0.00271	0.533	1.23901	*******	386.154
4	59.9	58.2	30.8	0.000528	0.450	76.04	60403	0.00260	0.517	0.28942	*******	89.879
5	61.3	58.0	29.5	0.000500	0.457	77.64	60537	0.00256	0.517	0.15897	*******	48.916
6	61.7	57.6	27.2	0.000445	0.476	81.67	60849	0.00248	0.521	0.12733	*******	38.133
7	183.8	57.1	23.8	0.000355	0.528	93.78	61292	0.00221	0.516	0.00407	5.968	1.302
8	226.8	56.8	21.8	0.000299	0.578	105.76	61600	0.00201	0.515	0.00303	3.793	0.926
9	239.5	56.6	20.9	0.000274	0.605	112.10	61758	0.00193	0.517	0.00283	3.395	0.840
10	254.8	56.5	20.4	0.000263	0.618	115.20	61838	0.00183	0.501	0.00253	2.894	0.743

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 220	ORIF DIA 0.0567 CM	FLOW RATE 2.66 G/S	LIQ TEMP 84.2 K	LIQ PRESS 3.11 ATM	CART HTR PWR 1.822 W							
1	316.6	58.6	34.3	0.000698	0.377	58.82	60030	0.05605	9.310	0.03608	*******	15.833
2	62.1	58.4	32.8	0.000564	0.446	75.54	60194	0.00435	0.855	0.23404	*******	73.263
3	58.7	58.3	32.0	0.000546	0.451	76.63	60275	0.00270	0.537	1.38568	*******	427.503
4	60.1	58.2	31.2	0.000529	0.455	77.45	60357	0.00261	0.525	0.27756	*******	85.351
5	65.4	58.0	29.8	0.000498	0.463	79.08	60510	0.00258	0.527	0.07176	*******	22.024
6	102.7	57.7	27.3	0.000442	0.482	83.15	60830	0.00245	0.522	0.01158	*******	3.685
7	188.1	57.1	23.9	0.000352	0.534	95.32	61285	0.00220	0.521	0.00397	5.751	1.262
8	226.7	56.8	21.8	0.000295	0.585	107.39	61600	0.00201	0.520	0.00306	3.850	0.926
9	240.4	56.6	20.9	0.000271	0.612	113.78	61760	0.00192	0.521	0.00284	3.418	0.836
10	257.4	56.5	20.4	0.000260	0.625	116.91	61838	0.00183	0.506	0.00252	2.881	0.736
RUN NO 221	ORIF DIA 0.0567 CM	FLOW RATE 2.66 G/S	LIQ TEMP 84.9 K	LIQ PRESS 3.11 ATM	CART HTR PWR 6.891 W							
1	310.0	58.5	33.9	0.000680	0.383	60.17	60071	0.05543	9.351	0.03719	*******	16.091
2	62.1	58.4	32.5	0.000552	0.452	76.94	60225	0.00424	0.846	0.22626	*******	70.110
3	58.7	58.3	31.7	0.000535	0.457	78.03	60301	0.00268	0.540	1.21615	*******	371.454
4	60.2	58.2	31.0	0.000519	0.461	78.85	60377	0.00257	0.524	0.25923	*******	78.937
5	62.8	58.0	29.7	0.000490	0.469	80.47	60521	0.00253	0.523	0.10966	*******	33.171
6	61.8	57.6	27.2	0.000436	0.487	84.54	60838	0.00245	0.527	0.12712	*******	37.343
7	143.3	57.1	23.9	0.000348	0.540	96.79	61288	0.00219	0.522	0.00414	6.120	1.300
8	224.6	56.8	21.8	0.000292	0.591	108.91	61600	0.00199	0.522	0.00311	3.947	0.933
9	240.7	56.6	20.9	0.000268	0.618	115.32	61759	0.00191	0.524	0.00284	3.426	0.831
10	258.8	56.5	20.4	0.000257	0.632	118.46	61837	0.00182	0.509	0.00252	2.867	0.729
RUN NO 222	ORIF DIA 0.0567 CM	FLOW RATE 2.66 G/S	LIQ TEMP 86.0 K	LIQ PRESS 3.11 ATM	CART HTR PWR 14.956 W							
1	114.5	58.6	34.0	0.000659	0.395	63.32	60063	0.05668	9.883	0.17664	*******	66.146
2	62.2	58.4	32.5	0.000536	0.467	80.54	60219	0.00283	0.584	0.15314	*******	46.260
3	58.8	58.3	31.8	0.000520	0.471	81.42	60296	0.00261	0.543	1.14398	*******	341.181
4	60.2	58.2	31.1	0.000505	0.475	82.25	60373	0.00251	0.527	0.25785	*******	76.678
5	62.2	58.0	29.7	0.000476	0.483	83.88	60519	0.00247	0.527	0.12547	*******	37.038
6	61.8	57.7	27.3	0.000424	0.501	87.97	60836	0.00240	0.531	0.12700	*******	36.475
7	179.6	57.1	23.9	0.000339	0.554	100.28	61287	0.00215	0.526	0.00430	6.361	1.318
8	220.6	56.8	21.8	0.000285	0.606	112.46	61600	0.00196	0.526	0.00321	4.068	0.942
9	238.0	56.6	20.9	0.000262	0.633	118.90	61759	0.00188	0.527	0.00291	3.483	0.833
10	256.8	56.5	20.4	0.000251	0.646	122.06	61837	0.00179	0.512	0.00256	2.891	0.727
RUN NO 223	ORIF DIA 0.0567 CM	FLOW RATE 2.66 G/S	LIQ TEMP 88.1 K	LIQ PRESS 3.11 ATM	CART HTR PWR 26.981 W							
1	113.1	58.7	34.8	0.000643	0.414	68.09	59979	0.05487	10.023	0.18408	*******	66.235
2	62.4	58.4	33.1	0.000522	0.487	85.54	60156	0.00274	0.589	0.15004	*******	43.810
3	58.8	58.3	32.3	0.000506	0.491	86.43	60243	0.00254	0.551	1.28812	*******	371.329
4	60.2	58.2	31.5	0.000490	0.495	87.26	60331	0.00244	0.534	0.26512	*******	76.225
5	61.6	58.0	29.9	0.000460	0.503	88.90	60495	0.00241	0.535	0.15219	*******	43.398
6	61.9	57.7	27.4	0.000409	0.522	93.03	60819	0.00233	0.538	0.12680	*******	35.261
7	176.0	57.1	23.9	0.000327	0.575	105.49	61281	0.00210	0.533	0.00449	6.591	1.333
8	215.4	56.8	21.8	0.000275	0.627	117.81	61600	0.00192	0.533	0.00336	4.239	0.957
9	232.6	56.6	20.9	0.000253	0.655	124.33	61761	0.00184	0.535	0.00304	3.618	0.845
10	252.3	56.5	20.4	0.000243	0.668	127.53	61838	0.00176	0.520	0.00266	2.971	0.733
RUN NO 224	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 83.2 K	LIQ PRESS 3.06 ATM	CART HTR PWR 0.000 W							
1	323.8	58.4	32.9	0.000693	0.365	55.55	65154	0.05365	9.338	0.03518	*******	14.939
2	62.1	58.2	31.5	0.000567	0.429	70.96	65310	0.00402	0.822	0.21324	*******	64.818
3	58.7	58.2	30.8	0.000550	0.433	71.90	65388	0.00238	0.492	0.83864	*******	251.440
4	60.5	58.1	30.1	0.000534	0.436	72.59	65465	0.00228	0.474	0.19625	*******	58.730
5	62.0	57.9	28.9	0.000506	0.443	73.93	65631	0.00225	0.476	0.11563	*******	34.354
6	61.7	57.5	26.5	0.000452	0.458	77.31	65966	0.00218	0.479	0.11418	*******	33.090
7	175.3	57.0	23.3	0.000365	0.502	87.49	66439	0.00197	0.474	0.00401	6.077	1.246
8	211.5	56.7	21.3	0.000309	0.546	97.57	66787	0.00181	0.475	0.00307	4.034	0.915
9	229.6	56.5	20.4	0.000285	0.568	102.90	66955	0.00174	0.475	0.00274	3.396	0.802
10	244.6	56.4	19.9	0.000274	0.579	105.51	67039	0.00167	0.465	0.00247	2.916	0.717
RUN NO 225	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 83.4 K	LIQ PRESS 3.06 ATM	CART HTR PWR 1.801 W							
1	321.9	58.5	33.5	0.000705	0.365	55.83	65079	0.05323	9.281	0.03523	*******	14.916
2	62.0	58.3	32.2	0.000577	0.429	71.15	65234	0.00398	0.816	0.21960	*******	66.658
3	58.7	58.2	31.5	0.000561	0.433	72.09	65310	0.00236	0.489	1.07710	*******	322.495
4	60.3	58.2	30.8	0.000545	0.436	72.77	65387	0.00226	0.472	0.22301	*******	66.625
5	62.2	58.0	29.6	0.000517	0.443	74.11	65533	0.00223	0.472	0.11189	*******	33.213
6	61.7	57.6	27.2	0.000462	0.458	77.47	65872	0.00217	0.476	0.11781	*******	34.098
7	173.8	57.1	23.9	0.000373	0.502	87.61	66353	0.00196	0.471	0.00404	6.092	1.252
8	209.7	56.8	21.8	0.000317	0.545	97.64	66687	0.00180	0.471	0.00308	4.034	0.918
9	223.0	56.6	20.9	0.000292	0.568	102.94	66859	0.00174	0.473	0.00284	3.553	0.827
10	239.0	56.5	20.4	0.000281	0.579	105.55	66945	0.00166	0.461	0.00253	3.003	0.731

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 226	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 84.1 K	LIQ PRESS 3.06 ATM	CART HTR PWR 6.935 W							
1	315.3	58.5	33.5	0.000693	0.372	57.40	65079	0.05240	9.296	0.03620	*******	15.084
2	61.9	58.3	32.2	0.000569	0.435	72.72	65234	0.00387	0.804	0.22499	*******	67.469
3	58.7	58.2	31.5	0.000552	0.440	73.65	65310	0.00232	0.488	1.11789	*******	330.807
4	60.2	58.2	30.8	0.000537	0.443	74.33	65387	0.00223	0.471	0.23465	*******	69.281
5	61.7	58.0	29.6	0.000509	0.449	75.66	65533	0.00220	0.472	0.12649	*******	37.088
6	61.6	57.6	27.2	0.000456	0.465	79.02	65872	0.00214	0.476	0.11972	*******	34.268
7	172.6	57.1	23.9	0.000369	0.509	89.15	66353	0.00193	0.471	0.00408	6.131	1.251
8	207.9	56.8	21.8	0.000313	0.551	99.17	66687	0.00178	0.471	0.00312	4.072	0.920
9	220.6	56.6	20.9	0.000289	0.574	104.47	66859	0.00172	0.473	0.00288	3.602	0.830
10	236.7	56.5	20.4	0.000278	0.585	107.07	66945	0.00164	0.461	0.00256	3.038	0.733
RUN NO 227	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 85.4 K	LIQ PRESS 3.06 ATM	CART HTR PWR 14.901 W							
1	307.9	58.6	34.J	0.000682	0.383	60.19	65024	0.05138	9.385	0.03764	*******	15.273
2	61.9	58.4	32.5	0.000560	0.447	75.62	65193	0.00372	0.794	0.22811	*******	66.945
3	58.7	58.3	31.8	0.000543	0.451	76.54	65276	0.00228	0.491	1.18074	*******	342.075
4	60.3	58.2	31.1	0.000527	0.455	77.23	65360	0.00219	0.475	0.22772	*******	65.843
5	62.0	58.0	29.7	0.000498	0.461	78.56	65518	0.00216	0.475	0.12033	*******	34.570
6	61.7	57.7	27.3	0.000445	0.477	81.94	65861	0.00210	0.479	0.11870	*******	33.301
7	170.2	57.1	23.9	0.000360	0.521	92.11	66349	0.00190	0.474	0.00420	6.248	1.261
8	204.9	56.8	21.8	0.000307	0.564	102.18	66688	0.00176	0.474	0.00320	4.143	0.927
9	220.2	56.6	20.9	0.000283	0.586	107.51	66860	0.00169	0.476	0.00291	3.567	0.824
10	237.0	56.5	20.4	0.000272	0.598	110.11	66945	0.00161	0.462	0.00256	2.971	0.721
RUN NO 228	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 87.3 K	LIQ PRESS 3.06 ATM	CART HTR PWR 26.621 W							
1	297.1	58.6	34.3	0.000660	0.398	64.09	64988	0.04936	9.386	0.03935	*******	15.396
2	61.9	58.4	32.8	0.000545	0.463	79.49	65166	0.00350	0.774	0.22344	*******	63.775
3	58.7	58.3	32.0	0.000528	0.467	80.39	65253	0.00219	0.489	1.11789	*******	315.135
4	60.1	58.2	31.2	0.000512	0.470	81.07	65342	0.00211	0.473	0.24480	*******	68.868
5	62.0	58.0	29.8	0.000484	0.477	82.40	65507	0.00208	0.473	0.11948	*******	33.422
6	61.7	57.7	27.3	0.000432	0.492	85.74	65854	0.00203	0.477	0.11903	*******	32.545
7	165.0	57.1	23.9	0.000350	0.536	95.85	66347	0.00184	0.473	0.00438	6.551	1.283
8	198.5	56.8	21.8	0.000299	0.579	105.87	66688	0.00170	0.473	0.00334	4.336	0.942
9	210.8	56.6	20.9	0.000276	0.601	111.16	66861	0.00165	0.475	0.00308	3.822	0.850
10	227.0	56.5	20.4	0.000265	0.612	113.76	66946	0.00158	0.463	0.00272	3.192	0.746
RUN NO 229	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 88.3 K	LIQ PRESS 3.06 ATM	CART HTR PWR 33.602 W							
1	291.4	58.6	34.5	0.000647	0.408	66.50	64970	0.04812	9.372	0.04026	*******	15.416
2	61.9	58.4	32.9	0.000535	0.472	81.86	65152	0.00339	0.764	0.22131	*******	62.130
3	58.7	58.3	32.1	0.000519	0.476	82.75	65242	0.00214	0.488	1.40242	*******	388.876
4	60.1	58.2	31.3	0.000503	0.480	83.42	65332	0.00206	0.472	0.25064	*******	69.373
5	61.5	58.0	29.8	0.000475	0.486	84.74	65502	0.00203	0.472	0.13630	*******	37.490
6	61.5	57.7	27.3	0.000424	0.502	88.07	65850	0.00198	0.475	0.12516	*******	33.689
7	161.7	57.1	23.9	0.000345	0.545	98.14	66345	0.00181	0.471	0.00451	6.711	1.298
8	194.0	56.8	21.8	0.000294	0.588	108.10	66688	0.00167	0.472	0.00344	4.460	0.956
9	205.1	56.6	20.9	0.000272	0.610	113.37	66861	0.00162	0.473	0.00318	3.961	0.866
10	217.0	56.5	20.4	0.000261	0.621	115.97	66946	0.00156	0.465	0.00290	3.455	0.782
RUN NO 230	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 88.3 K	LIQ PRESS 3.06 ATM	CART HTR PWR 37.101 W							
1	284.2	58.6	34.4	0.000639	0.412	67.54	64979	0.04760	9.369	0.04152	*******	15.725
2	61.8	58.4	32.8	0.000530	0.476	82.88	65159	0.00331	0.752	0.21963	*******	61.222
3	58.6	58.3	32.0	0.000514	0.481	83.76	65248	0.00212	0.486	1.45118	*******	399.614
4	60.1	58.2	31.3	0.000498	0.484	84.43	65337	0.00203	0.470	0.25452	*******	69.962
5	61.4	58.0	29.8	0.000470	0.490	85.74	65505	0.00201	0.471	0.13980	*******	38.186
6	61.5	57.7	27.3	0.000421	0.506	89.06	65852	0.00196	0.474	0.12495	*******	33.417
7	160.1	57.1	23.9	0.000342	0.549	99.08	66346	0.00179	0.470	0.00457	6.811	1.305
8	192.0	56.8	21.8	0.000292	0.592	109.01	66688	0.00166	0.470	0.00348	4.524	0.961
9	202.5	56.6	20.9	0.000270	0.614	114.26	66861	0.00160	0.472	0.00324	4.042	0.875
10	218.0	56.5	20.4	0.000260	0.625	116.84	66946	0.00154	0.461	0.00285	3.376	0.768
RUN NO 231	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 85.3 K	LIQ PRESS 3.06 ATM	CART HTR PWR 15.136 W							
1	304.7	58.6	34.1	0.000686	0.381	59.71	65017	0.05094	9.255	0.03760	*******	15.303
2	61.7	58.4	32.4	0.000561	0.444	74.93	65208	0.00370	0.789	0.23654	*******	69.749
3	58.5	58.2	31.6	0.000543	0.448	75.84	65302	0.00227	0.487	1.87670	*******	546.292
4	60.0	58.1	30.7	0.000525	0.452	76.51	65397	0.00219	0.472	0.24938	*******	72.447
5	62.9	57.9	29.2	0.000494	0.458	77.83	65583	0.00215	0.471	0.09570	*******	27.686
6	61.5	57.6	26.7	0.000440	0.474	81.16	65938	0.00210	0.475	0.12004	*******	33.849
7	171.4	57.1	23.3	0.000355	0.518	91.23	66429	0.00190	0.471	0.00412	6.093	1.245
8	205.4	56.7	21.3	0.000301	0.560	101.20	66788	0.00175	0.471	0.00317	4.083	0.922
9	216.3	56.5	20.4	0.000278	0.583	106.46	66958	0.00169	0.472	0.00296	3.671	0.840
10	230.7	56.4	19.9	0.000267	0.594	109.05	67040	0.00162	0.461	0.00264	3.131	0.747

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 232	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 82.7 K	LIQ PRESS 3.06 ATM	CART HTR PWR 0.000 W							
1	327.4	58.3	31.6	0.000676	0.360	54.29	65298	0.05385	9.268	0.03444	*******	14.797
2	60.5	58.1	30.6	0.000559	0.423	69.40	65411	0.00344	0.694	0.29506	*******	90.476
3	58.4	58.1	30.1	0.000547	0.426	70.15	65466	0.00171	0.348	1.09012	*******	330.958
4	59.4	58.2	29.6	0.000536	0.429	70.63	65522	0.00164	0.335	0.24331	*******	73.734
5	58.6	57.9	28.7	0.000514	0.433	71.58	65653	0.00163	0.339	0.44916	*******	134.928
6	60.1	57.6	26.7	0.000468	0.445	73.97	65946	0.00160	0.340	0.13190	*******	39.042
7	138.1	57.1	23.6	0.000390	0.476	81.17	66384	0.00148	0.337	0.00416	6.931	1.308
8	157.8	56.8	21.7	0.000339	0.507	88.32	66705	0.00139	0.337	0.00334	5.041	1.019
9	166.6	56.6	20.9	0.000316	0.524	92.11	66867	0.00135	0.339	0.00326	4.857	0.973
10	170.0	56.5	20.4	0.000305	0.532	93.98	66949	0.00131	0.334	0.00294	4.206	0.875
RUN NO 233	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 82.9 K	LIQ PRESS 3.06 ATM	CART HTR PWR 1.774 W							
1	326.4	58.3	31.7	0.000674	0.362	54.81	65289	0.05351	9.263	0.03454	*******	14.769
2	60.4	58.1	30.7	0.000558	0.425	69.91	65403	0.00341	0.692	0.29994	*******	91.602
3	58.4	58.1	30.2	0.000545	0.428	70.66	65460	0.00169	0.347	1.07891	*******	326.244
4	59.4	58.0	29.7	0.000534	0.431	71.14	65516	0.00162	0.334	0.23820	*******	71.909
5	58.7	57.9	28.7	0.000512	0.435	72.09	65648	0.00162	0.338	0.41854	*******	125.265
6	60.2	57.6	26.7	0.000466	0.447	74.46	65943	0.00159	0.339	0.12953	*******	38.202
7	137.4	57.1	23.7	0.000389	0.478	81.64	66383	0.00147	0.336	0.00418	6.923	1.311
8	157.1	56.8	21.8	0.000338	0.509	88.77	66704	0.00138	0.336	0.00335	5.018	1.019
9	166.4	56.6	20.9	0.000315	0.525	92.54	66867	0.00134	0.338	0.00329	4.872	0.978
10	168.6	56.5	20.4	0.000304	0.534	94.40	66948	0.00130	0.332	0.00296	4.207	0.877
RUN NO 234	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 83.7 K	LIQ PRESS 3.06 ATM	CART HTR PWR 6.907 W							
1	319.8	58.2	31.4	0.000654	0.370	56.57	65325	0.05294	9.352	0.03575	*******	15.012
2	60.5	58.1	30.4	0.000543	0.433	71.78	65433	0.00330	0.682	0.28954	*******	87.176
3	58.4	58.1	30.0	0.000532	0.436	72.52	65486	0.00168	0.349	1.06855	*******	318.606
4	59.4	58.0	29.5	0.000521	0.438	73.01	65540	0.00161	0.337	0.24360	*******	72.508
5	58.7	57.9	28.6	0.000501	0.443	73.96	65669	0.00160	0.340	0.39322	*******	116.069
6	60.2	57.5	26.6	0.000457	0.454	76.35	65956	0.00157	0.341	0.13037	*******	37.928
7	135.7	57.1	23.6	0.000382	0.486	83.57	66388	0.00145	0.338	0.00430	7.091	1.328
8	156.1	56.8	21.7	0.000333	0.517	90.74	66707	0.00137	0.338	0.00341	5.055	1.022
9	165.3	56.6	20.9	0.000310	0.534	94.53	66868	0.00133	0.340	0.00335	4.920	0.983
10	167.0	56.5	20.4	0.000299	0.542	96.40	66949	0.00129	0.334	0.00302	4.267	0.883
RUN NO 235	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 85.4 K	LIQ PRESS 3.06 ATM	CART HTR PWR 15.248 W							
1	318.0	58.3	32.2	0.000646	0.383	60.00	65234	0.05124	9.378	0.03757	*******	15.256
2	60.4	58.2	31.1	0.000537	0.446	75.22	65358	0.00310	0.661	0.29966	*******	87.940
3	58.4	58.1	30.5	0.000525	0.450	75.94	65420	0.00162	0.349	1.29761	*******	377.300
4	59.3	58.1	30.0	0.000513	0.452	76.42	65482	0.00156	0.337	0.27878	*******	80.912
5	58.7	57.9	29.0	0.000492	0.457	77.37	65617	0.00156	0.340	0.41769	*******	120.274
6	60.2	57.6	26.8	0.000447	0.468	79.75	65924	0.00152	0.341	0.13172	*******	37.411
7	131.2	57.1	23.7	0.000373	0.500	86.94	66374	0.00141	0.338	0.00456	7.585	1.373
8	153.7	56.8	21.8	0.000325	0.531	94.09	66699	0.00133	0.338	0.00349	5.138	1.024
9	156.1	56.6	20.9	0.000303	0.547	97.88	66864	0.00130	0.340	0.00342	4.979	0.982
10	164.7	56.5	20.4	0.000292	0.555	99.74	66947	0.00125	0.334	0.00309	4.321	0.883
RUN NO 236	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 87.0 K	LIQ PRESS 3.06 ATM	CART HTR PWR 26.573 W							
1	297.8	58.4	32.7	0.000634	0.397	63.40	65169	0.04980	9.434	0.03941	*******	15.502
2	60.5	58.2	31.5	0.000528	0.460	78.67	65306	0.00292	0.643	0.28375	*******	81.243
3	58.4	58.2	30.9	0.000515	0.463	79.38	65373	0.00157	0.348	1.39139	*******	394.766
4	59.3	58.1	30.3	0.000504	0.466	79.86	65441	0.00151	0.336	0.28023	*******	79.372
5	58.6	58.0	29.2	0.000481	0.470	80.80	65580	0.00151	0.339	0.50083	*******	140.741
6	60.1	57.6	27.0	0.000436	0.482	83.16	65901	0.00148	0.341	0.13640	*******	37.835
7	131.4	57.1	23.8	0.000364	0.514	90.32	66365	0.00137	0.338	0.00455	7.390	1.339
8	150.9	56.8	21.8	0.000317	0.544	97.44	66693	0.00130	0.338	0.00359	5.249	1.031
9	152.6	56.6	20.9	0.000296	0.561	101.21	66861	0.00126	0.340	0.00354	5.131	0.994
10	161.0	56.5	20.4	0.000285	0.569	103.06	66945	0.00122	0.333	0.00319	4.442	0.892
RUN NO 237	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 88.1 K	LIQ PRESS 3.06 ATM	CART HTR PWR 33.504 W							
1	291.9	58.4	33.0	0.000624	0.406	65.75	65142	0.04899	9.501	0.04070	*******	15.675
2	60.6	58.3	31.7	0.000520	0.470	81.11	65284	0.00283	0.635	0.27314	*******	76.891
3	58.4	58.2	31.1	0.000507	0.473	81.81	65354	0.00155	0.350	1.46790	*******	409.479
4	59.3	58.1	30.5	0.000495	0.476	82.29	65424	0.00149	0.338	0.28179	*******	78.482
5	58.6	58.0	29.3	0.000473	0.480	83.23	65564	0.00149	0.341	0.54201	*******	149.778
6	60.1	57.6	27.0	0.000429	0.492	85.59	65891	0.00145	0.342	0.13919	*******	37.980
7	129.3	57.1	23.8	0.000357	0.524	92.78	66361	0.00135	0.339	0.00470	7.672	1.360
8	150.0	56.8	21.8	0.000311	0.555	99.91	66690	0.00128	0.340	0.00364	5.294	1.029
9	161.9	56.6	20.9	0.000290	0.571	103.69	66860	0.00125	0.341	0.00358	5.159	0.991
10	166.4	56.5	20.4	0.000281	0.579	105.55	66945	0.00121	0.335	0.00322	4.462	0.889

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 238	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 88.3 K	LIQ PRESS 3.06 ATM	CART HTR PWR 37.011 W							
1	291.1	58.5	33.3	0.000623	0.410	66.86	65105	0.04826	9.458	0.04066	*******	15.517
2	60.6	58.3	32.0	0.000520	0.474	82.14	65253	0.00279	0.631	0.27330	*******	76.390
3	58.4	58.2	31.3	0.000506	0.477	82.84	65327	0.00152	0.348	2.12040	*******	587.278
4	59.3	58.1	30.7	0.000494	0.480	83.31	65400	0.00146	0.335	0.29681	*******	82.080
5	58.6	58.0	29.5	0.000471	0.484	84.24	65543	0.00146	0.338	0.53900	*******	147.928
6	60.0	57.6	27.1	0.000427	0.496	86.58	65877	0.00143	0.339	0.14104	*******	38.232
7	128.4	57.1	23.8	0.000355	0.527	93.70	66354	0.00133	0.337	0.00472	7.709	1.357
8	148.7	56.8	21.8	0.000310	0.558	100.77	66686	0.00126	0.337	0.00367	5.334	1.029
9	150.6	56.6	20.9	0.000289	0.574	104.51	66857	0.00123	0.339	0.00360	5.195	0.991
10	159.1	56.5	20.4	0.000279	0.582	106.35	66943	0.00119	0.332	0.00324	4.487	0.888
RUN NO 239	ORIF DIA 0.0567 CM	FLOW RATE 2.88 G/S	LIQ TEMP 83.5 K	LIQ PRESS 3.06 ATM	CART HTR PWR 7.012 W							
1	317.9	58.3	32.0	0.000669	0.368	56.35	65251	0.05365	9.441	0.03637	*******	15.299
2	60.4	58.2	30.9	0.000553	0.432	71.70	65372	0.00329	0.680	0.30468	*******	91.789
3	58.4	58.1	30.4	0.000540	0.435	72.44	65432	0.00168	0.350	1.36375	*******	406.901
4	59.3	58.0	29.9	0.000528	0.438	72.92	65492	0.00162	0.338	0.27316	*******	81.347
5	58.7	57.9	28.9	0.000506	0.442	73.88	65626	0.00161	0.341	0.43027	*******	127.074
6	60.1	57.6	26.8	0.000460	0.454	76.28	65929	0.00158	0.343	0.13588	*******	39.547
7	137.7	57.1	23.7	0.000383	0.486	83.53	66376	0.00146	0.340	0.00421	6.829	1.304
8	156.9	56.8	21.8	0.000333	0.517	90.72	66699	0.00137	0.340	0.00339	4.990	1.019
9	158.2	56.6	20.9	0.000310	0.534	94.54	66864	0.00134	0.342	0.00336	4.919	0.988
10	167.1	56.5	20.4	0.000300	0.542	96.41	66946	0.00129	0.334	0.00302	4.247	0.884
RUN NO 290	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 80.2 K	LIQ PRESS 1.58 ATM	CART HTR PWR 0.000 W							
1	347.7	59.5	42.7	0.001003	0.321	46.57	100515	0.05029	12.057	0.04183	*******	13.680
2	65.5	59.0	37.4	0.000759	0.375	58.95	101279	0.00331	0.928	0.14229	*******	33.580
3	59.1	58.6	34.8	0.000702	0.379	59.53	101740	0.00199	0.566	1.22426	*******	283.742
4	59.4	58.3	32.2	0.000647	0.383	59.89	102206	0.00190	0.544	0.52816	*******	121.956
5	59.6	57.7	27.6	0.000551	0.389	60.52	103123	0.00193	0.564	0.30062	*******	68.972
6	155.2	57.0	23.1	0.000454	0.400	62.42	104142	0.00179	0.538	0.00548	*******	1.406
7	193.2	56.1	18.2	0.000339	0.430	68.34	105541	0.00168	0.543	0.00396	4.887	0.994
8	216.7	55.4	15.0	0.000268	0.455	73.66	106675	0.00158	0.542	0.00336	3.813	0.823
9	226.5	55.0	13.7	0.000239	0.467	76.11	107193	0.00155	0.544	0.00317	3.485	0.768
10	242.1	54.9	13.1	0.000227	0.472	77.22	107470	0.00149	0.531	0.00283	2.959	0.686
RUN NO 291	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 80.3 K	LIQ PRESS 1.58 ATM	CART HTR PWR 1.687 W							
1	341.9	59.8	45.2	0.001057	0.321	46.83	100170	0.05045	12.074	0.04279	*******	13.949
2	64.2	59.2	39.5	0.000798	0.375	59.25	100976	0.00328	0.920	0.18505	*******	43.474
3	59.3	58.9	36.7	0.000737	0.379	59.83	101408	0.00198	0.561	1.22328	*******	283.123
4	60.0	58.6	33.9	0.000679	0.383	60.21	101905	0.00191	0.546	0.36850	*******	85.025
5	64.0	57.9	28.9	0.000576	0.389	60.87	102818	0.00192	0.560	0.09261	*******	21.369
6	154.4	57.2	24.2	0.000474	0.401	62.81	103885	0.00179	0.537	0.00553	*******	1.411
7	193.9	56.2	19.0	0.000352	0.431	68.84	105298	0.00167	0.542	0.00394	4.860	0.985
8	218.1	55.5	15.7	0.000278	0.457	74.28	106434	0.00157	0.541	0.00333	3.769	0.812
9	229.0	55.2	14.2	0.000247	0.469	76.81	106980	0.00154	0.543	0.00312	3.411	0.753
10	244.2	55.0	13.6	0.000234	0.474	77.97	107222	0.00148	0.530	0.00280	2.916	0.675
RUN NO 292	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 80.9 K	LIQ PRESS 1.58 ATM	CART HTR PWR 6.848 W							
1	335.0	59.6	44.0	0.001013	0.327	48.08	100335	0.04955	12.078	0.04387	*******	14.082
2	74.2	59.1	38.6	0.000770	0.380	60.45	101106	0.00308	0.876	0.05806	*******	13.731
3	59.1	58.8	35.9	0.000713	0.385	61.02	101545	0.00207	0.594	2.01259	*******	460.712
4	60.2	58.5	33.2	0.000657	0.388	61.40	102019	0.00189	0.548	0.31051	*******	70.932
5	68.7	57.8	28.5	0.000561	0.394	62.05	102912	0.00188	0.555	0.05115	*******	11.784
6	152.7	57.1	23.9	0.000462	0.406	63.95	103959	0.00176	0.536	0.00561	*******	1.417
7	189.7	56.2	18.8	0.000346	0.435	69.92	105350	0.00165	0.540	0.00405	5.037	1.002
8	213.0	55.5	15.6	0.000274	0.461	75.31	106461	0.00155	0.540	0.00343	3.915	0.827
9	224.9	55.2	14.2	0.000244	0.473	77.83	106992	0.00152	0.541	0.00319	3.500	0.762
10	240.7	55.0	13.6	0.000232	0.478	78.98	107228	0.00147	0.529	0.00285	2.972	0.681
RUN NO 293	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 81.1 K	LIQ PRESS 1.58 ATM	CART HTR PWR 15.387 W							
1	323.2	59.7	45.0	0.001013	0.334	49.89	100199	0.04890	12.167	0.04618	*******	14.513
2	65.5	59.2	39.3	0.000769	0.388	62.35	100999	0.00304	0.881	0.13893	*******	31.859
3	59.2	58.9	36.5	0.000711	0.392	62.91	101433	0.00193	0.566	1.49127	*******	336.171
4	60.1	58.5	33.8	0.000655	0.395	63.27	101925	0.00186	0.549	0.34768	*******	78.189
5	67.1	57.9	28.9	0.000557	0.402	63.91	102836	0.00186	0.559	0.06101	*******	13.804
6	155.4	57.2	24.1	0.000459	0.413	65.81	103899	0.00173	0.537	0.00547	*******	1.365
7	185.1	56.2	19.0	0.000342	0.443	71.76	105309	0.00163	0.542	0.00421	5.269	1.025
8	206.4	55.5	15.7	0.000271	0.468	77.11	106441	0.00154	0.542	0.00359	4.145	0.853
9	219.2	55.2	14.2	0.000241	0.480	79.58	106984	0.00150	0.543	0.00331	3.656	0.779
10	234.8	55.0	13.6	0.000229	0.485	80.71	107225	0.00145	0.532	0.00296	3.105	0.697

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 294	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 80.0 K	LIQ PRESS 1.58 ATM	CART HTR PWR 0.000 W							
1	350.7	59.5	42.6	0.001005	0.320	46.20	100533	0.05066	12.092	0.04153	*******	13.641
2	63.5	59.0	37.5	0.000764	0.373	58.57	101270	0.00310	0.864	0.19166	*******	45.220
3	59.4	58.7	34.9	0.000709	0.377	59.08	101717	0.00172	0.485	0.70531	*******	164.184
4	60.0	58.4	32.4	0.000655	0.381	59.38	102167	0.00167	0.475	0.29423	*******	68.322
5	66.0	57.8	27.9	0.000563	0.386	59.90	103043	0.00166	0.481	0.05847	*******	13.648
6	134.1	57.1	23.4	0.000466	0.396	61.48	104060	0.00157	0.466	0.00605	*******	1.534
7	174.5	56.2	18.6	0.000352	0.422	66.55	105423	0.00148	0.469	0.00396	5.179	0.995
8	196.3	55.5	15.5	0.000282	0.444	71.14	106506	0.00140	0.468	0.00333	3.983	0.819
9	203.9	55.1	14.1	0.000253	0.455	73.29	107016	0.00137	0.469	0.00315	3.672	0.769
10	213.6	55.0	13.6	0.000241	0.459	74.28	107241	0.00134	0.463	0.00292	3.284	0.711
RUN NO 295	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 80.2 K	LIQ PRESS 1.58 ATM	CART HTR PWR 1.870 W							
1	349.2	59.7	44.2	0.001036	0.321	46.67	100311	0.05034	12.050	0.04162	*******	13.611
2	63.3	59.1	38.7	0.000785	0.374	59.01	101088	0.00307	0.860	0.20643	*******	48.514
3	59.3	58.8	36.0	0.000727	0.378	59.52	101526	0.00171	0.483	0.93888	*******	217.810
4	60.1	58.5	33.3	0.000671	0.382	59.82	102003	0.00165	0.471	0.29494	*******	68.267
5	65.1	57.9	28.6	0.000573	0.387	60.34	102900	0.00165	0.479	0.06590	*******	15.303
6	132.5	57.1	23.9	0.000473	0.398	61.92	103950	0.00155	0.464	0.00616	*******	1.554
7	173.8	56.2	18.9	0.000356	0.423	66.97	105345	0.00147	0.467	0.00397	5.232	0.994
8	195.5	55.5	15.6	0.000284	0.446	71.52	106460	0.00139	0.466	0.00333	4.023	0.818
9	203.0	55.2	14.2	0.000254	0.456	73.62	106994	0.00136	0.469	0.00317	3.765	0.771
10	220.8	55.0	13.6	0.000241	0.460	74.57	107230	0.00132	0.457	0.00276	3.040	0.672
RUN NO 296	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 80.7 K	LIQ PRESS 1.58 ATM	CART HTR PWR 7.162 W							
1	334.4	59.6	43.8	0.001012	0.326	47.80	100367	0.04984	12.110	0.04407	*******	14.181
2	64.0	59.1	38.4	0.000770	0.379	60.16	101132	0.00293	0.831	0.17056	*******	39.733
3	59.3	58.8	35.8	0.000713	0.383	60.65	101572	0.00170	0.487	0.89510	*******	205.614
4	60.8	58.4	33.1	0.000658	0.386	60.95	102042	0.00162	0.469	0.19999	*******	45.906
5	64.7	57.8	28.4	0.000563	0.392	61.46	102931	0.00163	0.479	0.07013	*******	16.120
6	129.9	57.1	23.8	0.000466	0.402	63.03	103976	0.00154	0.464	0.00638	*******	1.591
7	171.0	56.2	18.8	0.000351	0.428	68.05	105363	0.00145	0.467	0.00407	5.349	1.008
8	191.8	55.5	15.6	0.000281	0.450	72.56	106469	0.00138	0.467	0.00342	4.133	0.832
9	198.6	55.2	14.2	0.000251	0.460	74.65	106999	0.00135	0.469	0.00327	3.849	0.787
10	214.7	55.0	13.6	0.000239	0.465	75.60	107233	0.00131	0.458	0.00287	3.181	0.692
RUN NO 297	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 81.1 K	LIQ PRESS 1.58 ATM	CART HTR PWR 15.882 W							
1	323.6	59.5	42.2	0.000957	0.333	49.35	100589	0.04894	12.160	0.04604	*******	14.530
2	63.1	58.9	37.2	0.000732	0.386	61.71	101327	0.00282	0.813	0.19495	*******	44.729
3	59.5	58.6	34.7	0.000680	0.390	62.19	101768	0.00164	0.480	0.56166	*******	127.345
4	59.6	58.3	32.2	0.000630	0.393	62.47	102212	0.00160	0.471	0.35753	*******	80.821
5	63.2	57.7	27.7	0.000541	0.399	62.95	103085	0.00157	0.469	0.08602	*******	19.474
6	77.7	57.0	23.3	0.000449	0.408	64.47	104091	0.00153	0.469	0.02269	*******	5.204
7	165.9	56.2	18.5	0.000341	0.434	69.46	105446	0.00143	0.466	0.00425	5.602	1.038
8	187.0	55.5	15.5	0.000275	0.456	73.93	106522	0.00136	0.467	0.00355	4.282	0.852
9	193.4	55.1	14.1	0.000247	0.466	76.03	107023	0.00134	0.469	0.00339	3.992	0.806
10	209.0	55.0	13.5	0.000235	0.470	76.99	107245	0.00129	0.457	0.00297	3.295	0.708
RUN NO 298	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 81.1 K	LIQ PRESS 1.58 ATM	CART HTR PWR 20.244 W							
1	315.1	59.5	42.6	0.000950	0.339	50.77	100534	0.04800	12.128	0.04744	*******	14.727
2	63.5	59.0	37.5	0.000728	0.392	63.08	101271	0.00271	0.795	0.17566	*******	39.875
3	59.3	58.7	34.9	0.000676	0.396	63.55	101717	0.00162	0.480	0.71152	*******	159.476
4	59.6	58.4	32.4	0.000626	0.399	63.83	102168	0.00157	0.468	0.36200	*******	80.927
5	62.5	57.8	27.9	0.000538	0.404	64.30	103044	0.00155	0.468	0.09950	*******	22.252
6	82.1	57.1	23.4	0.000446	0.414	65.79	104060	0.00150	0.467	0.01863	*******	4.265
7	164.5	56.2	18.6	0.000339	0.439	70.72	105424	0.00141	0.464	0.00429	5.651	1.037
8	185.6	55.5	15.5	0.000272	0.460	75.13	106507	0.00134	0.465	0.00357	4.306	0.849
9	192.1	55.1	14.1	0.000245	0.470	77.17	107016	0.00131	0.465	0.00340	3.991	0.800
10	197.3	55.0	13.6	0.000233	0.475	78.11	107242	0.00129	0.463	0.00326	3.750	0.765
RUN NO 299	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 79.9 K	LIQ PRESS 1.58 ATM	CART HTR PWR 0.000 W							
1	348.0	59.5	42.4	0.001004	0.319	45.93	100562	0.05031	11.971	0.04148	*******	13.653
2	62.0	59.0	37.3	0.000764	0.372	58.14	101299	0.00296	0.823	0.27379	*******	64.641
3	59.7	58.7	34.8	0.000709	0.376	58.61	101743	0.00156	0.439	0.41766	*******	97.678
4	60.7	58.3	32.3	0.000657	0.379	58.87	102190	0.00150	0.426	0.18013	*******	42.047
5	60.0	57.7	27.8	0.000564	0.384	59.30	103065	0.00150	0.431	0.19268	*******	44.710
6	69.5	57.1	23.4	0.000468	0.393	60.69	104076	0.00146	0.430	0.03462	*******	8.069
7	160.7	56.2	18.6	0.000356	0.417	65.27	105435	0.00136	0.427	0.00408	5.595	1.027
8	180.7	55.5	15.5	0.000287	0.437	69.37	106515	0.00130	0.428	0.00342	4.296	0.844
9	186.2	55.1	14.1	0.000258	0.446	71.29	107020	0.00128	0.430	0.00328	4.039	0.803
10	203.1	55.0	13.5	0.000245	0.451	72.17	107244	0.00123	0.419	0.00283	3.297	0.656

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 300	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 80.0 K	LIQ PRESS 1.58 ATM	CART HTR PWR 1.755 W							
1	343.7	59.5	42.6	0.001004	0.320	46.27	100535	0.05034	12.026	0.04231	*******	13.862
2	61.9	59.0	37.5	0.000764	0.373	58.52	101272	0.00293	0.816	0.27527	*******	64.784
3	59.5	58.7	34.9	0.000709	0.377	58.99	101718	0.00156	0.441	0.51556	*******	120.142
4	60.6	58.4	32.4	0.000656	0.380	59.25	102169	0.00150	0.426	0.19315	*******	44.952
5	58.9	57.8	27.9	0.000564	0.385	59.68	103045	0.00150	0.432	0.39060	*******	90.129
6	68.0	57.1	23.4	0.000468	0.395	61.08	104061	0.00146	0.432	0.03952	*******	9.158
7	160.4	56.2	18.6	0.000355	0.418	65.66	105425	0.00136	0.428	0.00411	5.612	1.030
8	180.7	55.5	15.5	0.000286	0.439	69.77	106508	0.00130	0.429	0.00343	4.286	0.844
9	185.9	55.1	14.1	0.000257	0.448	71.68	107017	0.00128	0.431	0.00330	4.045	0.805
10	201.7	55.0	13.6	0.000245	0.452	72.56	107243	0.00123	0.421	0.00287	3.301	0.702
RUN NO 301	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 80.5 K	LIQ PRESS 1.58 ATM	CART HTR PWR 6.699 W							
1	336.8	59.5	42.6	0.000991	0.324	47.31	100535	0.05003	12.109	0.04367	*******	14.125
2	62.6	59.0	37.5	0.000755	0.378	59.63	101272	0.00285	0.803	0.22239	*******	51.901
3	59.5	58.7	34.9	0.000701	0.382	60.09	101719	0.00156	0.445	0.50801	*******	117.272
4	60.5	58.4	32.4	0.000649	0.384	60.35	102169	0.00149	0.428	0.20224	*******	46.619
5	58.8	57.8	27.9	0.000557	0.390	60.77	103045	0.00149	0.435	0.40667	*******	92.972
6	70.5	57.1	23.4	0.000462	0.399	62.16	104062	0.00145	0.433	0.03222	*******	7.434
7	159.3	56.2	18.6	0.000352	0.423	66.74	105425	0.00135	0.430	0.00417	5.683	1.036
8	179.1	55.5	15.5	0.000283	0.443	70.84	106508	0.00129	0.431	0.00349	4.358	0.851
9	184.1	55.1	14.1	0.000255	0.452	72.74	107018	0.00127	0.433	0.00336	4.118	0.812
10	199.7	55.0	13.6	0.000242	0.457	73.62	107243	0.00123	0.423	0.00292	3.366	0.710
RUN NO 302	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 81.1 K	LIQ PRESS 1.58 ATM	CART HTR PWR 15.047 W							
1	321.4	58.7	35.5	0.000809	0.336	49.09	101611	0.04854	12.193	0.04643	*******	14.631
2	62.4	58.3	31.7	0.000628	0.389	61.34	102292	0.00266	0.775	0.18807	*******	43.137
3	59.5	58.0	29.8	0.000589	0.392	61.75	102631	0.00151	0.443	0.29772	*******	67.632
4	60.2	57.8	28.0	0.000551	0.395	61.98	103039	0.00145	0.429	0.17554	*******	39.839
5	59.0	57.2	24.6	0.000484	0.399	62.35	103796	0.00145	0.434	0.24305	*******	54.838
6	65.6	56.6	21.1	0.000410	0.407	63.62	104717	0.00142	0.434	0.04848	*******	10.951
7	156.9	55.9	17.2	0.000322	0.430	68.08	105857	0.00133	0.430	0.00426	5.729	1.045
8	176.6	55.3	14.8	0.000267	0.449	72.18	106776	0.00127	0.431	0.00355	4.384	0.858
9	181.7	55.1	13.8	0.000245	0.459	74.25	107145	0.00125	0.433	0.00342	4.132	0.817
10	197.7	55.0	13.4	0.000236	0.463	75.25	107318	0.00120	0.420	0.00295	3.335	0.706
RUN NO 303	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 81.1 K	LIQ PRESS 1.58 ATM	CART HTR PWR 22.020 W							
1	316.2	59.5	43.0	0.000956	0.339	51.00	100480	0.04843	12.261	0.04776	*******	14.802
2	62.4	59.0	37.8	0.000732	0.393	63.41	101222	0.00262	0.768	0.22731	*******	51.355
3	59.5	58.7	35.2	0.000679	0.397	63.85	101669	0.00150	0.446	0.53137	*******	118.857
4	60.6	58.4	32.7	0.000629	0.400	64.10	102125	0.00144	0.430	0.19669	*******	43.955
5	59.1	57.8	28.1	0.000540	0.405	64.50	103004	0.00144	0.436	0.33986	*******	75.390
6	64.6	57.1	23.6	0.000448	0.414	65.85	104031	0.00140	0.436	0.05833	*******	12.929
7	155.6	56.2	18.7	0.000341	0.437	70.37	105404	0.00131	0.432	0.00435	5.861	1.047
8	175.7	55.5	15.5	0.000275	0.457	74.38	106494	0.00126	0.433	0.00360	4.446	0.856
9	181.0	55.2	14.2	0.000247	0.466	76.22	107011	0.00124	0.435	0.00346	4.181	0.815
10	197.2	55.0	13.6	0.000235	0.470	77.05	107240	0.00119	0.423	0.00298	3.367	0.705
RUN NO 304	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 79.9 K	LIQ PRESS 1.58 ATM	CART HTR PWR 0.000 W							
1	348.6	59.4	41.6	0.000985	0.319	46.00	100674	0.05062	12.073	0.04175	*******	13.727
2	61.6	58.9	36.7	0.000750	0.373	58.26	101412	0.00281	0.782	0.28995	*******	68.326
3	59.4	58.6	34.2	0.000697	0.376	58.69	101844	0.00141	0.396	0.47699	*******	111.390
4	60.1	58.3	31.8	0.000646	0.379	58.90	102280	0.00135	0.383	0.20891	*******	48.711
5	58.7	57.7	27.5	0.000557	0.384	59.25	103148	0.00135	0.388	0.39009	*******	90.305
6	62.9	57.0	23.1	0.000464	0.392	60.43	104137	0.00132	0.388	0.06580	*******	15.190
7	148.7	56.1	18.4	0.000356	0.414	64.44	105480	0.00124	0.385	0.00416	5.904	1.042
8	167.1	55.4	15.4	0.000289	0.432	68.02	106545	0.00119	0.385	0.00345	4.510	0.854
9	171.4	55.1	14.1	0.000261	0.440	69.70	107035	0.00117	0.388	0.00333	4.279	0.817
10	185.8	55.0	13.5	0.000249	0.444	70.47	107251	0.00113	0.379	0.00290	3.697	0.713
RUN NO 305	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 80.0 K	LIQ PRESS 1.58 ATM	CART HTR PWR 1.777 W							
1	347.7	59.5	42.2	0.000996	0.320	46.24	100590	0.05029	12.017	0.04169	*******	13.675
2	61.5	58.9	37.2	0.000759	0.373	58.44	101328	0.00279	0.779	0.29873	*******	70.292
3	59.3	58.6	34.7	0.000705	0.377	58.87	101769	0.00140	0.395	0.58951	*******	137.442
4	60.2	58.3	32.2	0.000653	0.379	59.09	102213	0.00134	0.381	0.20450	*******	47.621
5	58.7	57.7	27.7	0.000562	0.384	59.43	103086	0.00134	0.386	0.38298	*******	88.534
6	62.6	57.0	23.3	0.000467	0.393	60.61	104092	0.00131	0.386	0.07005	*******	16.139
7	148.0	56.2	18.5	0.000358	0.414	64.60	105447	0.00123	0.383	0.00417	5.921	1.043
8	166.2	55.5	15.5	0.000290	0.432	68.15	106523	0.00118	0.384	0.00346	4.525	0.855
9	170.3	55.1	14.1	0.000261	0.440	69.80	107025	0.00116	0.386	0.00335	4.307	0.820
10	184.4	55.0	13.5	0.000249	0.444	70.56	107246	0.00113	0.377	0.00292	3.527	0.717

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 306	ORIF DIA 0.0831 CM		FLOW RATE 4.51 G/S		LIQ TEMP 80.6 K		LIQ PRESS 1.58 ATM		CART HTR PWR 6.530 W			
1	337.5	59.3	40.3	0.000939	0.326	47.47	100841	0.04973	12.114	0.04354	*******	14.051
2	62.6	58.8	35.7	0.000719	0.379	59.72	101581	0.00267	0.758	0.19669	*******	45.835
3	59.3	58.5	33.4	0.000670	0.383	60.13	101995	0.00139	0.399	0.51292	*******	118.224
4	60.1	58.2	31.1	0.000622	0.385	60.33	102413	0.00133	0.383	0.20260	*******	46.646
5	58.6	57.6	26.9	0.000538	0.390	60.66	103273	0.00133	0.388	0.40462	*******	92.523
6	65.6	56.9	22.7	0.000450	0.398	61.81	104244	0.00130	0.387	0.04497	*******	10.314
7	146.9	56.1	18.2	0.000347	0.419	65.76	105546	0.00122	0.384	0.00423	5.977	1.048
8	166.4	55.4	15.3	0.000283	0.437	69.31	106590	0.00117	0.385	0.00353	4.603	0.864
9	168.1	55.1	14.0	0.000257	0.445	70.99	107056	0.00115	0.387	0.00343	4.399	0.830
10	182.2	55.0	13.5	0.000246	0.449	71.77	107264	0.00112	0.379	0.00298	3.592	0.724
RUN NO 307	ORIF DIA 0.0831 CM		FLOW RATE 4.51 G/S		LIQ TEMP 81.1 K		LIQ PRESS 1.58 ATM		CART HTR PWR 15.338 W			
1	323.0	59.4	41.4	0.000938	0.334	49.52	100700	0.04859	12.116	0.04596	*******	14.472
2	63.5	58.9	36.5	0.000720	0.387	61.74	101439	0.00251	0.727	0.15607	*******	35.817
3	59.2	58.6	34.1	0.000669	0.391	62.14	101868	0.00137	0.399	0.60441	*******	136.989
4	59.7	58.3	31.7	0.000621	0.393	62.34	102301	0.00130	0.382	0.27072	*******	61.255
5	58.6	57.7	27.4	0.000536	0.398	62.66	103168	0.00129	0.386	0.43227	*******	97.233
6	64.6	57.0	23.0	0.000447	0.406	63.79	104151	0.00127	0.386	0.05070	*******	11.424
7	144.4	56.1	18.4	0.000344	0.427	67.68	105489	0.00119	0.383	0.00434	6.122	1.056
8	161.3	55.4	15.4	0.000280	0.444	71.14	106551	0.00115	0.383	0.00362	4.724	0.872
9	164.7	55.1	14.1	0.000254	0.452	72.75	107037	0.00113	0.386	0.00352	4.529	0.840
10	178.7	55.0	13.5	0.000242	0.456	73.49	107252	0.00110	0.378	0.00305	3.694	0.732
RUN NO 308	ORIF DIA 0.0831 CM		FLOW RATE 4.51 G/S		LIQ TEMP 81.1 K		LIQ PRESS 1.58 ATM		CART HTR PWR 23.305 W			
1	312.8	59.4	42.0	0.000931	0.341	51.29	100617	0.04790	12.191	0.04813	*******	14.849
2	62.6	58.9	37.0	0.000715	0.394	63.57	101355	0.00242	0.712	0.19154	*******	43.224
3	59.2	58.6	34.5	0.000665	0.398	63.96	101792	0.00134	0.399	0.65164	*******	145.502
4	60.3	58.3	32.0	0.000616	0.400	64.16	102234	0.00127	0.381	0.19461	*******	43.435
5	58.8	57.7	27.7	0.000531	0.405	64.47	103106	0.00127	0.386	0.36494	*******	80.925
6	62.7	57.0	23.2	0.000443	0.413	65.58	104106	0.00125	0.387	0.06797	*******	15.046
7	143.2	56.1	18.5	0.000341	0.434	69.45	105456	0.00118	0.384	0.00441	6.189	1.058
8	159.9	55.5	15.4	0.000277	0.451	72.86	106529	0.00113	0.384	0.00368	4.777	0.874
9	162.8	55.1	14.1	0.000250	0.459	74.43	107027	0.00112	0.387	0.00359	4.602	0.845
10	176.7	55.0	13.5	0.000239	0.463	75.14	107246	0.00108	0.378	0.00311	3.749	0.736
RUN NO 309	ORIF DIA 0.0831 CM		FLOW RATE 4.51 G/S		LIQ TEMP 79.8 K		LIQ PRESS 1.58 ATM		CART HTR PWR 0.000 W			
1	351.2	59.1	39.1	0.000925	0.321	45.90	101036	0.05087	12.180	0.04170	*******	13.721
2	177.5	58.6	34.6	0.000710	0.373	57.96	101778	0.00178	0.496	0.00417	*******	1.132
3	129.8	58.4	32.4	0.000663	0.376	58.32	102171	0.00192	0.541	0.00757	*******	1.968
4	128.9	58.1	30.2	0.000616	0.379	58.58	102567	0.00126	0.356	0.00503	*******	1.302
5	130.0	57.5	26.3	0.000535	0.383	58.86	103417	0.00123	0.354	0.00488	*******	1.261
6	140.5	56.9	22.3	0.000450	0.391	59.86	104374	0.00120	0.351	0.00420	*******	1.086
7	145.8	56.0	17.9	0.000350	0.410	63.39	105621	0.00114	0.352	0.00392	5.527	0.989
8	154.3	55.4	15.1	0.000288	0.426	66.59	106640	0.00110	0.352	0.00356	4.822	0.881
9	157.0	55.1	14.0	0.000263	0.434	68.12	107080	0.00108	0.354	0.00347	4.653	0.852
10	170.6	55.0	13.5	0.000252	0.437	68.85	107277	0.00105	0.346	0.00299	3.770	0.738
RUN NO 310	ORIF DIA 0.0831 CM		FLOW RATE 4.51 G/S		LIQ TEMP 80.0 K		LIQ PRESS 1.58 ATM		CART HTR PWR 1.779 W			
1	348.3	59.3	40.3	0.000947	0.322	46.46	100868	0.05106	12.284	0.04250	*******	13.898
2	180.9	58.7	35.6	0.000725	0.375	58.62	101608	0.00173	0.484	0.00396	*******	1.072
3	131.6	58.5	33.2	0.000675	0.378	58.98	102019	0.00193	0.547	0.00747	*******	1.936
4	129.9	58.2	30.9	0.000627	0.381	59.24	102434	0.00126	0.360	0.00501	*******	1.293
5	130.2	57.6	26.8	0.000543	0.385	59.53	103292	0.00123	0.357	0.00491	*******	1.263
6	139.7	56.9	22.6	0.000454	0.393	60.55	104261	0.00120	0.354	0.00427	*******	1.098
7	144.3	56.1	18.1	0.000352	0.413	64.10	105555	0.00114	0.355	0.00402	5.666	1.005
8	153.3	55.4	15.3	0.000288	0.429	67.31	106596	0.00110	0.354	0.00362	4.901	0.891
9	155.8	55.1	14.0	0.000262	0.436	68.82	107058	0.00108	0.356	0.00354	4.745	0.864
10	169.1	55.0	13.5	0.000251	0.440	69.52	107264	0.00105	0.349	0.00306	3.852	0.749
RUN NO 313	ORIF DIA 0.0831 CM		FLOW RATE 4.51 G/S		LIQ TEMP 79.8 K		LIQ PRESS 1.58 ATM		CART HTR PWR 0.000 W			
1	350.9	59.3	40.3	0.000954	0.320	45.85	100868	0.05122	12.226	0.04193	*******	13.809
2	62.3	58.7	35.6	0.000729	0.373	58.11	101608	0.00233	0.648	0.18372	*******	43.382
3	59.2	58.5	33.2	0.000679	0.376	58.41	102019	0.00092	0.260	0.32899	*******	76.955
4	59.0	58.2	30.9	0.000632	0.378	58.50	102434	0.00088	0.250	0.29054	*******	67.817
5	58.0	57.6	26.8	0.000548	0.382	58.59	103292	0.00088	0.251	0.61411	*******	142.753
6	60.7	56.9	22.6	0.000461	0.387	59.14	104261	0.00086	0.252	0.06742	*******	15.664
7	114.8	56.1	18.1	0.000362	0.401	61.36	105555	0.00083	0.250	0.00425	6.907	1.056
8	126.9	55.4	15.3	0.000300	0.413	63.29	106596	0.00080	0.250	0.00350	5.262	0.867
9	129.0	55.1	14.0	0.000274	0.418	64.16	107058	0.00080	0.252	0.00340	5.060	0.840
10	137.8	55.0	13.5	0.000263	0.420	64.56	107264	0.00078	0.248	0.00299	4.217	0.742

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 314	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 79.9 K	LIQ PRESS 1.58 ATM	CART HTR PWR 1.718 W							
1	346.6	59.2	39.7	0.000940	0.320	45.87	100951	0.05012	11.982	0.04170	*******	13.708
2	62.1	58.7	35.1	0.000721	0.372	57.87	101693	0.00228	0.636	0.18832	*******	44.534
3	59.2	58.4	32.8	0.000672	0.375	58.16	102095	0.00090	0.254	0.31584	*******	74.020
4	59.1	58.1	30.6	0.000626	0.377	58.24	102500	0.00087	0.244	0.26234	*******	61.362
5	57.9	57.5	26.5	0.000544	0.381	58.32	103355	0.00086	0.246	0.65620	*******	152.851
6	61.4	56.9	22.5	0.000459	0.386	58.85	104318	0.00085	0.246	0.05430	*******	12.665
7	113.6	56.1	18.9	0.000361	0.400	61.00	105588	0.00081	0.245	0.00425	6.903	1.057
8	125.5	55.4	15.2	0.000300	0.411	62.88	106618	0.00079	0.245	0.00350	5.264	0.868
9	127.2	55.1	14.0	0.000274	0.416	63.73	107069	0.00079	0.246	0.00342	5.100	0.845
10	135.5	55.0	13.5	0.000263	0.418	64.13	107271	0.00077	0.242	0.00301	4.260	0.747
RUN NO 315	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 80.4 K	LIQ PRESS 1.58 ATM	CART HTR PWR 6.510 W							
1	336.0	59.3	40.5	0.000944	0.325	47.08	100840	0.04986	12.085	0.04368	*******	14.146
2	62.5	58.8	35.7	0.000724	0.377	59.17	101580	0.00218	0.616	0.16478	*******	38.574
3	59.3	58.5	33.4	0.000675	0.380	59.45	101994	0.00090	0.256	0.32340	*******	74.979
4	58.9	58.2	31.1	0.000627	0.382	59.53	102412	0.00086	0.246	0.35120	*******	81.233
5	58.0	57.6	26.9	0.000544	0.386	59.61	103272	0.00086	0.248	0.70081	*******	161.492
6	61.2	56.9	22.7	0.000458	0.391	60.13	104242	0.00084	0.248	0.05877	*******	13.555
7	113.1	56.1	18.2	0.000359	0.405	62.27	105544	0.00081	0.246	0.00431	6.976	1.061
8	125.0	55.4	15.3	0.000298	0.416	64.12	106588	0.00079	0.246	0.00354	5.301	0.869
9	126.5	55.1	14.0	0.000272	0.421	64.95	107055	0.00078	0.248	0.00347	5.157	0.849
10	134.8	55.0	13.5	0.000261	0.423	65.33	107262	0.00076	0.244	0.00305	4.311	0.751
RUN NO 316	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 81.1 K	LIQ PRESS 1.58 ATM	CART HTR PWR 15.568 W							
1	325.5	59.3	41.0	0.000932	0.333	49.27	100756	0.04958	12.336	0.04635	*******	14.642
2	62.1	58.8	36.2	0.000715	0.387	61.59	101495	0.00208	0.602	0.18439	*******	42.252
3	59.2	58.5	33.8	0.000666	0.390	61.86	101918	0.00089	0.259	0.41047	*******	93.233
4	58.9	58.2	31.4	0.000619	0.392	61.93	102345	0.00085	0.250	0.35729	*******	80.993
5	57.9	57.6	27.2	0.000536	0.395	62.01	103209	0.00085	0.252	0.87641	*******	197.945
6	60.2	57.0	22.9	0.000450	0.401	62.53	104186	0.00084	0.252	0.07771	*******	17.545
7	112.3	56.1	18.3	0.000353	0.415	64.67	105511	0.00080	0.250	0.00445	7.136	1.074
8	124.6	55.4	15.3	0.000292	0.426	66.50	106566	0.00078	0.250	0.00362	5.369	0.874
9	125.8	55.1	14.1	0.000266	0.430	67.30	107044	0.00078	0.252	0.00356	5.241	0.855
10	134.0	55.0	13.5	0.000255	0.432	67.66	107256	0.00076	0.248	0.00313	4.382	0.756
RUN NO 317	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 81.1 K	LIQ PRESS 1.58 ATM	CART HTR PWR 22.821 W							
1	315.5	59.3	41.0	0.000913	0.340	50.95	100756	0.04888	12.411	0.04845	*******	15.006
2	62.3	58.8	36.2	0.000702	0.394	63.31	101495	0.00200	0.588	0.16866	*******	38.109
3	59.3	58.5	33.8	0.000654	0.397	63.57	101918	0.00089	0.264	0.34708	*******	77.736
4	59.0	58.2	31.4	0.000608	0.399	63.65	102345	0.00085	0.255	0.35382	*******	79.082
5	58.1	57.6	27.2	0.000527	0.402	63.71	103209	0.00085	0.256	0.62078	*******	138.298
6	59.9	57.0	22.9	0.000443	0.408	64.23	104186	0.00084	0.256	0.08683	*******	19.325
7	111.9	56.1	18.3	0.000347	0.422	66.39	105511	0.00080	0.254	0.00456	7.263	1.084
8	124.4	55.4	15.3	0.000287	0.433	68.23	106566	0.00078	0.255	0.00369	5.424	0.878
9	125.7	55.1	14.1	0.000262	0.437	69.03	107044	0.00078	0.256	0.00363	5.306	0.860
10	133.9	55.0	13.5	0.000251	0.439	69.38	107256	0.00076	0.252	0.00319	4.434	0.761
RUN NO 318	ORIF DIA 0.0831 CM	FLOW RATE 4.51 G/S	LIQ TEMP 81.1 K	LIQ PRESS 1.58 ATM	CART HTR PWR 26.624 W							
1	312.9	59.4	41.6	0.000916	0.343	51.80	100672	0.04860	12.454	0.04914	*******	15.087
2	62.8	58.9	36.7	0.000704	0.397	64.20	101411	0.00196	0.582	0.15030	*******	33.744
3	59.1	58.6	34.2	0.000656	0.400	64.46	101843	0.00089	0.267	0.48965	*******	108.848
4	59.1	58.3	31.8	0.000609	0.402	64.54	102278	0.00085	0.255	0.32824	*******	72.855
5	58.0	57.7	27.5	0.000527	0.406	64.60	103147	0.00084	0.257	0.70894	*******	156.806
6	59.9	57.0	23.1	0.000443	0.411	65.12	104136	0.00083	0.257	0.08827	*******	19.506
7	111.7	56.1	18.4	0.000346	0.425	67.28	105478	0.00080	0.255	0.00459	7.297	1.085
8	124.3	55.4	15.4	0.000286	0.436	69.10	106544	0.00078	0.256	0.00371	5.436	0.877
9	125.6	55.1	14.1	0.000261	0.441	69.88	107034	0.00077	0.257	0.00365	5.317	0.860
10	133.8	55.0	13.5	0.000250	0.443	70.22	107250	0.00076	0.253	0.00321	4.435	0.760

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 500	ORIF DIA 0.0635 CM	FLOW RATE 1.17 G/S	LIQ TEMP 22.2 K	LIQ PRESS 3.22 ATM	CANT HTR PWR 0.000 W							
1	143.3	12.6	13.5	0.000118	0.310	-218.69	173512	0.03829	4.658	0.03547	*******	4.927
2	13.2	12.6	13.5	0.000105	0.347	-200.75	173691	0.00161	0.219	0.17380	*******	16.638
3	13.4	12.6	13.4	0.000104	0.348	-200.16	173780	0.00085	0.116	0.08038	*******	7.692
4	15.6	12.6	13.4	0.000104	0.349	-199.77	173869	0.00084	0.115	0.03168	30.845	3.102
5	20.3	11.9	13.3	0.000102	0.351	-198.99	174096	0.00083	0.114	0.01363	11.384	1.386
6	23.0	11.9	12.7	0.000098	0.355	-197.18	175254	0.00083	0.115	0.01025	7.917	1.050
7	26.7	11.8	11.8	0.000088	0.367	-191.57	177337	0.00080	0.115	0.00767	5.392	0.780
8	25.6	11.7	11.1	0.000081	0.379	-185.97	178857	0.00077	0.115	0.00822	5.950	0.812
9	25.8	11.6	10.8	0.000078	0.386	-183.00	179562	0.00076	0.114	0.00808	5.828	0.789
10	24.8	11.6	10.6	0.000076	0.389	-181.53	179916	0.00076	0.115	0.00870	6.444	0.840
RUN NO 504	ORIF DIA 0.0635 CM	FLOW RATE 1.17 G/S	LIQ TEMP 22.3 K	LIQ PRESS 3.22 ATM	CANT HTR PWR 0.000 W							
1	200.7	12.4	20.7	0.000174	0.310	-217.05	165914	0.03728	4.557	0.02421	*******	3.446
2	15.3	12.4	20.3	0.000150	0.351	-196.33	166329	0.00729	1.011	0.34758	*******	33.381
3	15.1	12.4	20.1	0.000146	0.358	-192.90	166535	0.00632	0.894	0.32387	*******	30.574
4	39.4	12.4	19.9	0.000142	0.365	-189.77	166740	0.00586	0.844	0.03122	22.547	3.307
5	59.2	12.3	19.5	0.000135	0.377	-183.69	167163	0.00570	0.847	0.01807	9.700	1.938
6	73.2	12.3	18.3	0.000118	0.409	-168.53	168349	0.00531	0.853	0.01400	6.376	1.450
7	134.6	12.2	16.4	0.000087	0.501	-123.19	170267	0.00433	0.851	0.00696	1.897	0.653
8	131.2	12.1	15.1	0.000068	0.592	-78.51	171558	0.00367	0.853	0.00716	1.998	0.587
9	141.2	12.0	14.6	0.000061	0.640	-55.09	172172	0.00338	0.848	0.00657	1.716	0.511
10	119.4	12.0	14.3	0.000058	0.663	-43.46	172480	0.00330	0.859	0.00800	2.432	0.595
RUN NO 505	ORIF DIA 0.0635 CM	FLOW RATE 1.17 G/S	LIQ TEMP 22.4 K	LIQ PRESS 3.22 ATM	CANT HTR PWR 0.000 W							
1	220.6	12.6	24.0	0.000198	0.311	-215.41	162724	0.03660	4.509	0.02168	*******	3.091
2	18.1	12.6	23.2	0.000168	0.356	-193.21	163483	0.01030	1.450	0.26279	*******	25.555
3	17.0	12.6	22.8	0.000160	0.366	-188.16	163859	0.00927	1.343	0.30157	*******	28.398
4	53.7	12.5	22.4	0.000154	0.376	-183.50	164238	0.00833	1.238	0.03004	16.809	3.187
5	72.8	12.5	21.7	0.000142	0.394	-174.48	164973	0.00811	1.263	0.02094	9.283	2.219
6	94.7	12.4	20.1	0.000119	0.441	-151.77	166530	0.00729	1.268	0.01540	5.530	1.539
7	184.3	12.2	17.8	0.000081	0.579	-84.15	168851	0.00556	1.265	0.00735	1.360	0.633
8	159.6	12.2	16.3	0.000061	0.714	-17.68	170326	0.00453	1.268	0.00860	1.900	0.616
9	167.1	12.1	15.7	0.000053	0.784	17.13	171028	0.00410	1.263	0.00815	1.701	0.545
10	148.2	12.1	15.3	0.000050	0.819	34.35	171382	0.00395	1.271	0.00934	2.265	0.597
RUN NO 506	ORIF DIA 0.0635 CM	FLOW RATE 1.17 G/S	LIQ TEMP 22.4 K	LIQ PRESS 3.22 ATM	CANT HTR PWR 0.000 W							
1	212.7	12.6	23.9	0.000197	0.310	-216.11	162873	0.03703	4.542	0.02270	*******	3.236
2	17.4	12.6	23.1	0.000168	0.354	-194.49	163604	0.00900	1.258	0.25921	*******	25.202
3	16.7	12.5	22.7	0.000161	0.362	-190.13	163967	0.00804	1.152	0.27406	*******	25.969
4	49.8	12.5	22.3	0.000155	0.371	-186.14	164332	0.00722	1.058	0.02840	17.164	3.025
5	65.9	12.5	21.6	0.000145	0.387	-178.44	165042	0.00709	1.082	0.02026	9.902	2.193
6	85.2	12.4	20.0	0.000123	0.427	-159.01	166573	0.00646	1.086	0.01491	5.961	1.515
7	152.5	12.2	17.8	0.000086	0.545	-101.06	168868	0.00506	1.084	0.00772	1.841	0.683
8	149.9	12.2	16.3	0.000066	0.661	-44.01	170333	0.00418	1.085	0.00787	1.919	0.597
9	148.0	12.1	15.6	0.000058	0.721	-14.06	171031	0.00383	1.084	0.00798	1.977	0.564
10	141.2	12.1	15.3	0.000054	0.752	0.75	171382	0.00368	1.085	0.00840	2.174	0.574
RUN NO 507	ORIF DIA 0.0635 CM	FLOW RATE 1.17 G/S	LIQ TEMP 22.3 K	LIQ PRESS 3.22 ATM	CANT HTR PWR 0.000 W							
1	204.6	12.5	22.2	0.000185	0.310	-216.44	164474	0.03739	4.583	0.02386	*******	3.393
2	16.8	12.5	21.7	0.000160	0.352	-195.53	164911	0.00738	1.027	0.23692	*******	23.015
3	16.9	12.5	21.5	0.000155	0.359	-191.99	165128	0.00655	0.929	0.22090	*******	21.092
4	50.1	12.5	21.3	0.000151	0.366	-188.82	165344	0.00572	0.827	0.02194	13.516	2.367
5	68.5	12.4	20.8	0.000143	0.378	-182.74	165790	0.00577	0.862	0.01868	10.249	1.993
6	72.1	12.4	19.6	0.000125	0.410	-167.29	167041	0.00534	0.863	0.01445	6.754	1.487
7	121.9	12.2	17.6	0.000092	0.504	-121.19	169065	0.00435	0.862	0.00786	2.375	0.726
8	135.3	12.1	16.2	0.000072	0.597	-75.71	170429	0.00368	0.862	0.00700	1.926	0.572
9	130.2	12.1	15.6	0.000065	0.646	-51.77	171079	0.00341	0.863	0.00731	2.083	0.559
10	127.9	12.1	15.3	0.000061	0.670	-39.91	171405	0.00328	0.862	0.00744	2.156	0.552
RUN NO 508	ORIF DIA 0.0635 CM	FLOW RATE 1.17 G/S	LIQ TEMP 22.3 K	LIQ PRESS 3.22 ATM	CANT HTR PWR 0.000 W							
1	191.8	12.3	19.2	0.000162	0.311	-216.98	167373	0.03769	4.615	0.02571	*******	3.643
2	18.0	12.3	18.6	0.000141	0.351	-196.92	167766	0.00565	0.782	0.13737	*******	13.577
3	18.4	12.3	18.7	0.000137	0.356	-194.31	167960	0.00480	0.674	0.11090	*******	10.867
4	42.8	12.3	18.5	0.000134	0.361	-192.02	168154	0.00427	0.608	0.01995	14.019	2.151
5	52.4	12.3	18.1	0.000128	0.370	-187.61	168553	0.00432	0.630	0.01569	9.517	1.691
6	75.5	12.2	17.3	0.000114	0.393	-176.50	169672	0.00406	0.628	0.00992	4.541	1.066
7	97.1	12.1	15.2	0.000088	0.461	-143.30	171480	0.00347	0.629	0.00740	2.763	0.720
8	112.7	12.0	14.1	0.000072	0.528	-110.54	172695	0.00304	0.629	0.00624	2.056	0.554
9	111.3	12.0	13.5	0.000065	0.564	-93.29	173545	0.00285	0.630	0.00634	2.113	0.534
10	115.0	11.9	13.3	0.000062	0.581	-84.77	174126	0.00275	0.626	0.00608	1.967	0.501

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 510	ORIF DIA 0.0635 CM	FLOW RATE 1.12 G/S	LIQ TEMP 22.7 K	LIQ PRESS 3.24 ATM	CART HTR PWR 0.000 W							
1	173.0	12.2	16.8	0.000138	0.321	-212.42	162920	0.03787	4.586	0.02851	*******	4.036
2	15.6	12.2	16.8	0.000123	0.360	-192.98	162923	0.00313	0.425	0.12332	*******	12.106
3	13.9	12.2	16.8	0.000122	0.363	-191.60	162925	0.00225	0.307	0.17993	*******	17.223
4	24.4	12.2	16.8	0.000122	0.365	-190.48	162926	0.00209	0.288	0.02367	16.052	2.448
5	30.7	12.2	16.7	0.000120	0.370	-188.29	162941	0.00210	0.292	0.01575	9.191	1.661
6	35.4	12.2	16.6	0.000115	0.381	-182.82	163108	0.00204	0.293	0.01260	6.705	1.322
7	42.5	12.1	15.9	0.000102	0.414	-166.48	163736	0.00188	0.293	0.00965	4.537	0.968
8	42.7	12.1	15.5	0.000092	0.447	-150.18	164195	0.00174	0.293	0.00959	4.497	0.905
9	41.1	12.1	15.2	0.000088	0.465	-141.52	164438	0.00168	0.293	0.01011	4.870	0.922
10	41.4	12.1	15.1	0.000085	0.474	-137.23	164559	0.00163	0.290	0.00987	4.727	0.888
RUN NO 511	ORIF DIA 0.0635 CM	FLOW RATE 1.12 G/S	LIQ TEMP 22.6 K	LIQ PRESS 3.24 ATM	CART HTR PWR 0.000 W							
1	178.4	12.2	17.3	0.000144	0.318	-213.63	162390	0.03768	4.527	0.02724	*******	3.896
2	13.5	12.2	17.3	0.000127	0.359	-193.53	162428	0.00484	0.656	0.52058	*******	50.003
3	14.8	12.2	17.2	0.000125	0.363	-191.29	162446	0.00387	0.530	0.20850	*******	20.127
4	24.0	12.2	17.2	0.000124	0.367	-189.31	162465	0.00376	0.521	0.04421	31.944	4.540
5	37.6	12.2	17.2	0.000121	0.375	-185.41	162526	0.00366	0.518	0.02039	10.998	2.179
6	49.2	12.2	16.7	0.000112	0.395	-175.74	162953	0.00349	0.519	0.01404	6.263	1.479
7	69.6	12.1	15.8	0.000093	0.454	-146.79	163870	0.00304	0.519	0.00904	3.097	0.888
8	74.2	12.1	15.1	0.000079	0.512	-118.05	164545	0.00270	0.520	0.00836	2.722	0.752
9	76.2	12.1	14.8	0.000073	0.543	-102.86	164866	0.00253	0.517	0.00806	2.570	0.694
10	57.0	12.1	14.6	0.000070	0.559	-95.30	165027	0.00247	0.519	0.01156	4.625	0.939
RUN NO 512	ORIF DIA 0.0635 CM	FLOW RATE 1.12 G/S	LIQ TEMP 22.5 K	LIQ PRESS 3.24 ATM	CART HTR PWR 0.000 W							
1	191.4	12.4	20.5	0.000169	0.316	-214.07	159301	0.03873	4.628	0.02586	*******	3.732
2	14.7	12.4	20.3	0.000147	0.359	-192.61	159513	0.00654	0.888	0.38695	*******	37.538
3	18.4	12.4	20.2	0.000144	0.365	-189.50	159618	0.00552	0.763	0.12612	*******	12.514
4	36.1	12.4	20.1	0.000141	0.371	-186.68	159723	0.00521	0.731	0.03087	20.999	3.298
5	52.6	12.4	19.8	0.000135	0.382	-181.17	159962	0.00507	0.732	0.01818	9.468	1.972
6	62.5	12.3	18.8	0.000121	0.410	-167.44	160891	0.00476	0.737	0.01469	6.717	1.534
7	118.5	12.2	17.2	0.000092	0.494	-126.31	162495	0.00395	0.735	0.00692	1.876	0.670
8	119.2	12.1	16.0	0.000074	0.577	-85.65	163625	0.00339	0.737	0.00688	1.858	0.590
9	127.1	12.1	15.5	0.000067	0.621	-64.22	164157	0.00314	0.733	0.00637	1.626	0.519
10	110.5	12.1	15.2	0.000063	0.642	-53.63	164424	0.00303	0.731	0.00743	2.148	0.581
RUN NO 513	ORIF DIA 0.0635 CM	FLOW RATE 1.12 G/S	LIQ TEMP 22.5 K	LIQ PRESS 3.24 ATM	CART HTR PWR 0.000 W							
1	198.9	12.5	21.2	0.000175	0.315	-214.07	158627	0.03862	4.612	0.02474	*******	3.583
2	15.5	12.4	21.0	0.000151	0.360	-191.88	158898	0.00802	1.093	0.35728	*******	34.846
3	21.2	12.4	20.8	0.000147	0.368	-187.99	159032	0.00695	0.967	0.11012	*******	11.072
4	42.5	12.4	20.7	0.000143	0.375	-184.42	159166	0.00648	0.920	0.03061	18.000	3.299
5	58.9	12.4	20.4	0.000136	0.389	-177.46	159460	0.00630	0.927	0.01996	9.237	2.155
6	69.2	12.3	19.3	0.000119	0.425	-160.04	160505	0.00581	0.933	0.01641	6.704	1.688
7	127.4	12.2	17.4	0.000087	0.531	-107.99	162281	0.00465	0.931	0.00808	1.987	0.744
8	128.4	12.1	16.2	0.000068	0.635	-56.63	163517	0.00390	0.932	0.00802	1.959	0.641
9	137.0	12.1	15.6	0.000060	0.690	-29.63	164104	0.00357	0.928	0.00743	1.713	0.560
10	117.3	12.1	15.3	0.000057	0.717	-16.29	164399	0.00343	0.927	0.00881	2.335	0.634
RUN NO 514	ORIF DIA 0.0635 CM	FLOW RATE 1.12 G/S	LIQ TEMP 22.5 K	LIQ PRESS 3.24 ATM	CART HTR PWR 0.000 W							
1	209.0	12.5	22.5	0.000184	0.316	-213.63	157441	0.03829	4.581	0.02332	*******	3.388
2	16.5	12.5	22.0	0.000157	0.362	-190.61	157915	0.00977	1.340	0.33208	*******	32.542
3	26.1	12.5	21.8	0.000151	0.372	-185.80	158149	0.00858	1.207	0.08888	*******	9.078
4	50.8	12.5	21.5	0.000146	0.381	-181.36	158384	0.00792	1.142	0.02975	15.265	3.218
5	67.1	12.4	21.0	0.000137	0.398	-172.69	158860	0.00769	1.160	0.02120	8.798	2.282
6	87.3	12.4	19.7	0.000116	0.443	-150.92	160111	0.00695	1.164	0.01552	5.241	1.587
7	165.7	12.2	17.6	0.000081	0.575	-86.05	162102	0.00535	1.161	0.00756	1.402	0.668
8	143.7	12.2	16.2	0.000061	0.705	-22.16	163429	0.00439	1.164	0.00885	1.941	0.658
9	155.6	12.1	15.6	0.000054	0.773	11.36	164061	0.00398	1.158	0.00808	1.620	0.561
10	138.1	12.1	15.3	0.000051	0.806	27.88	164378	0.00380	1.153	0.00915	2.083	0.610
RUN NO 516	ORIF DIA 0.0635 CM	FLOW RATE 1.12 G/S	LIQ TEMP 22.4 K	LIQ PRESS 3.24 ATM	CART HTR PWR 0.000 W							
1	187.1	12.2	17.1	0.000143	0.316	-214.86	162608	0.03862	4.605	0.02632	*******	3.806
2	15.8	12.2	17.1	0.000127	0.355	-195.29	162621	0.00326	0.437	0.12248	*******	12.166
3	19.4	12.2	17.1	0.000126	0.358	-193.90	162627	0.00221	0.298	0.04121	*******	4.205
4	28.3	12.2	17.1	0.000125	0.360	-192.81	162634	0.00207	0.281	0.01743	11.576	1.856
5	39.6	12.2	17.0	0.000124	0.365	-190.67	162662	0.00210	0.288	0.01567	9.911	1.669
6	35.8	12.2	16.8	0.000118	0.376	-185.29	162906	0.00203	0.288	0.01222	6.985	1.297
7	42.7	12.1	16.1	0.000105	0.409	-169.21	163623	0.00187	0.288	0.00943	4.773	0.956
8	43.9	12.1	15.5	0.000094	0.441	-153.19	164148	0.00174	0.288	0.00906	4.497	0.866
9	44.2	12.1	15.3	0.000089	0.459	-144.67	164416	0.00167	0.289	0.00898	4.440	0.834
10	46.1	12.1	15.1	0.000087	0.467	-140.46	164550	0.00162	0.285	0.00837	4.020	0.769

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 517	ORIF DIA 0.0635 CM	FLOW RATE 1.12 G/S	LIQ TEMP 22.5 K	LIQ PRESS 3.24 ATM	CART HTR PWR 0.000 W							
1	173.5	11.9	12.9	0.000110	0.318	-215.08	167636	0.03876	4.632	0.02867	*******	4.115
2	14.4	11.9	12.8	0.000098	0.357	-196.22	167923	0.00221	0.296	0.11839	*******	11.641
3	15.9	11.9	12.7	0.000097	0.358	-195.39	168064	0.00125	0.168	0.04135	*******	4.119
4	21.4	11.9	12.7	0.000096	0.360	-194.80	168206	0.00119	0.160	0.01678	11.178	1.742
5	23.7	11.8	12.5	0.000094	0.362	-193.67	168530	0.00120	0.163	0.01378	8.609	1.441
6	26.8	11.8	11.9	0.000089	0.368	-190.94	169811	0.00118	0.163	0.01087	6.267	1.141
7	31.1	11.6	10.9	0.000078	0.387	-182.57	172040	0.00113	0.163	0.00841	4.416	0.868
8	30.8	11.6	10.2	0.000070	0.404	-174.24	173622	0.00108	0.163	0.00850	4.498	0.847
9	31.8	11.5	9.8	0.000067	0.414	-169.85	174368	0.00106	0.163	0.00805	4.176	0.792
10	32.3	11.5	9.7	0.000065	0.418	-167.71	174744	0.00103	0.161	0.00774	3.979	0.756
RUN NO 518	ORIF DIA 0.0635 CM	FLOW RATE 1.12 G/S	LIQ TEMP 22.5 K	LIQ PRESS 3.24 ATM	CART HTR PWR 0.000 W							
1	176.6	11.9	13.2	0.000113	0.317	-215.61	167098	0.03844	4.576	0.02780	*******	4.010
2	15.3	11.9	13.1	0.000100	0.356	-196.38	167320	0.00332	0.444	0.13220	*******	13.134
3	19.5	11.9	13.0	0.000099	0.359	-194.99	167429	0.00230	0.310	0.04117	*******	4.224
4	26.1	11.9	13.0	0.000098	0.361	-193.87	167539	0.00223	0.302	0.02130	14.272	2.256
5	31.0	11.9	12.9	0.000096	0.366	-191.67	167803	0.00222	0.305	0.01594	9.545	1.709
6	36.1	11.8	12.3	0.000089	0.377	-186.27	168984	0.00216	0.305	0.01258	6.830	1.343
7	43.4	11.7	11.3	0.000076	0.412	-170.00	171075	0.00198	0.305	0.00964	4.615	0.983
8	44.3	11.6	10.6	0.000066	0.445	-153.91	172581	0.00184	0.305	0.00934	4.405	0.897
9	44.4	11.6	10.3	0.000062	0.463	-145.42	173285	0.00177	0.305	0.00931	4.391	0.869
10	46.5	11.6	10.1	0.000060	0.472	-141.25	173639	0.00171	0.301	0.00860	3.924	0.795
RUN NO 519	ORIF DIA 0.0635 CM	FLOW RATE 1.12 G/S	LIQ TEMP 22.4 K	LIQ PRESS 3.24 ATM	CART HTR PWR 0.000 W							
1	183.2	12.1	15.9	0.000134	0.315	-215.96	163793	0.03839	4.549	0.02660	*******	3.860
2	15.5	12.1	15.6	0.000117	0.355	-195.98	164049	0.00472	0.631	0.18363	*******	18.258
3	17.3	12.1	15.5	0.000115	0.359	-193.86	164175	0.00377	0.510	0.09819	*******	9.837
4	32.6	12.1	15.4	0.000113	0.363	-192.04	164302	0.00349	0.477	0.02324	15.463	2.511
5	39.1	12.1	15.1	0.000109	0.370	-188.50	164571	0.00350	0.487	0.01804	10.633	1.964
6	48.1	12.0	14.2	0.000098	0.389	-179.66	165440	0.00334	0.488	0.01353	6.889	1.446
7	63.4	11.9	12.8	0.000079	0.444	-153.16	167862	0.00293	0.488	0.00947	3.920	0.940
8	69.6	11.8	11.9	0.000066	0.498	-127.03	169867	0.00262	0.488	0.00844	3.248	0.775
9	70.3	11.7	11.4	0.000060	0.526	-113.30	170827	0.00248	0.488	0.00833	3.182	0.734
10	74.5	11.7	11.2	0.000057	0.540	-106.57	171310	0.00238	0.480	0.00764	2.790	0.665
RUN NO 520	ORIF DIA 0.0635 CM	FLOW RATE 1.12 G/S	LIQ TEMP 22.4 K	LIQ PRESS 3.24 ATM	CART HTR PWR 0.000 W							
1	195.3	12.2	16.6	0.000141	0.314	-216.07	163041	0.03833	4.536	0.02477	*******	3.618
2	13.5	12.2	16.4	0.000123	0.356	-195.16	163238	0.00653	0.877	0.66434	*******	64.293
3	16.2	12.2	16.3	0.000120	0.362	-192.11	163336	0.00553	0.756	0.18817	*******	18.504
4	36.8	12.2	16.2	0.000117	0.368	-189.37	163434	0.00513	0.711	0.02887	18.556	3.129
5	47.6	12.1	16.0	0.000113	0.379	-184.03	163652	0.00507	0.723	0.02039	10.941	2.218
6	63.2	12.1	15.2	0.000100	0.406	-170.70	164469	0.00474	0.724	0.01415	6.127	1.501
7	98.6	12.0	13.8	0.000076	0.487	-130.94	165866	0.00395	0.724	0.00835	2.536	0.808
8	113.7	11.9	12.9	0.000062	0.568	-91.78	167776	0.00340	0.723	0.00711	1.912	0.618
9	110.7	11.8	12.4	0.000056	0.610	-71.21	168705	0.00317	0.724	0.00732	2.019	0.600
10	109.2	11.8	12.2	0.000053	0.631	-61.11	169173	0.00301	0.711	0.00730	2.037	0.582
RUN NO 521	ORIF DIA 0.0635 CM	FLOW RATE 1.12 G/S	LIQ TEMP 22.3 K	LIQ PRESS 3.24 ATM	CART HTR PWR 0.000 W							
1	210.9	12.5	21.8	0.000181	0.312	-215.75	158087	0.03820	4.512	0.02274	*******	3.342
2	14.3	12.5	21.5	0.000157	0.356	-193.92	158355	0.00813	1.095	0.61113	*******	59.344
3	18.7	12.5	21.4	0.000152	0.363	-190.04	158487	0.00693	0.953	0.15169	*******	15.127
4	38.0	12.5	21.2	0.000149	0.371	-186.52	158619	0.00649	0.910	0.03558	21.872	3.825
5	48.5	12.4	20.9	0.000141	0.385	-179.59	158911	0.00635	0.924	0.02563	13.281	2.740
6	74.2	12.4	19.8	0.000123	0.420	-162.26	159962	0.00581	0.923	0.01493	5.597	1.563
7	119.3	12.3	18.0	0.000090	0.525	-110.58	161754	0.00466	0.923	0.00863	2.181	0.795
8	131.1	12.2	16.7	0.000070	0.629	-59.52	163004	0.00389	0.923	0.00776	1.804	0.626
9	125.3	12.1	16.1	0.000063	0.684	-32.63	163597	0.00358	0.922	0.00814	1.971	0.612
10	111.2	12.1	15.8	0.000059	0.711	-19.34	163895	0.00343	0.916	0.00925	2.490	0.667
RUN NO 526	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.61 ATM	CART HTR PWR 0.000 W							
1	113.3	12.0	14.4	0.000122	0.317	-215.06	117025	0.05204	4.396	0.04342	*******	7.893
2	10.9	12.0	14.0	0.000101	0.373	-187.71	117275	0.00583	0.578	*******	*******	*******
3	13.3	12.0	13.9	0.000099	0.379	-184.81	117398	0.00515	0.519	0.39448	*******	48.008
4	28.2	12.0	13.7	0.000096	0.384	-182.11	117587	0.00489	0.500	0.03080	31.941	4.127
5	45.0	11.9	13.3	0.000091	0.395	-176.85	118083	0.00473	0.497	0.01506	11.443	2.085
6	56.0	11.8	12.5	0.000081	0.423	-163.76	119348	0.00447	0.501	0.01135	7.339	1.524
7	118.6	11.7	11.2	0.000061	0.504	-124.54	121356	0.00375	0.500	0.00467	1.643	0.594
8	124.8	11.6	10.3	0.000049	0.584	-85.85	122695	0.00324	0.500	0.00442	1.485	0.503
9	123.0	11.5	9.9	0.000044	0.626	-65.52	123335	0.00302	0.498	0.00447	1.522	0.481
10	107.8	11.5	9.7	0.000042	0.647	-55.42	123658	0.00295	0.503	0.00522	2.001	0.541

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 527	ORIF DIA 0.0635 CM			FLOW RATE 0.79 G/S		LIQ TEMP 21.9 K		LIQ PRESS 1.61 ATM		CART HTR PWR 0.000 W		
1	114.0	12.0	13.8	0.000117	0.317	-215.31	117445	0.05176	4.368	0.04284	*******	7.801
2	11.5	12.	13.4	0.000098	0.372	-188.16	117955	0.00584	0.578	*******	*******	*******
3	13.9	11.9	13.3	0.000095	0.378	-185.26	118215	0.00515	0.518	0.26650	*******	32.723
4	29.0	11.9	13.1	0.000092	0.384	-182.59	118476	0.00487	0.497	0.02914	29.737	3.926
5	44.8	11.9	12.7	0.000088	0.395	-177.37	118997	0.00473	0.496	0.01508	11.494	2.093
6	58.0	11.8	11.9	0.000077	0.422	-164.37	120259	0.00446	0.500	0.01081	6.803	1.460
7	115.5	11.6	10.0	0.000059	0.503	-125.45	122235	0.00375	0.498	0.00479	1.723	0.610
8	107.0	11.5	9.8	0.000047	0.582	-87.07	123538	0.00325	0.499	0.00523	2.016	0.589
9	110.5	11.5	9.4	0.000042	0.624	-66.91	124161	0.00302	0.497	0.00502	1.881	0.537
10	103.0	11.4	9.2	0.000040	0.645	-56.92	124475	0.00295	0.501	0.00547	2.178	0.567
RUN NO 528	ORIF DIA 0.0635 CM			FLOW RATE 0.79 G/S		LIQ TEMP 21.9 K		LIQ PRESS 1.61 ATM		CART HTR PWR 0.000 W		
1	117.2	12.1	15.6	0.000132	0.316	-215.11	116144	0.05167	4.359	0.04148	*******	7.567
2	12.8	12.1	15.2	0.000108	0.374	-186.76	116468	0.00797	0.794	1.10016	*******	134.113
3	17.1	12.1	14.9	0.000105	0.382	-182.69	116629	0.00722	0.735	0.14556	*******	18.284
4	34.8	12.1	14.7	0.000101	0.390	-178.87	116789	0.00679	0.705	0.03094	26.370	4.200
5	51.0	12.0	14.3	0.000095	0.405	-171.39	117105	0.00655	0.707	0.01813	11.810	2.485
6	67.7	11.9	13.3	0.000081	0.444	-152.70	118183	0.00602	0.710	0.01273	6.676	1.677
7	110.5	11.8	11.8	0.000058	0.559	-96.86	120378	0.00479	0.710	0.00719	2.536	0.834
8	123.7	11.6	10.9	0.000045	0.672	-41.84	121810	0.00399	0.709	0.00633	2.018	0.642
9	119.3	11.6	10.4	0.000040	0.732	-12.96	122496	0.00366	0.708	0.00658	2.168	0.622
10	106.4	11.6	10.2	0.000037	0.761	1.38	122842	0.00355	0.714	0.00753	2.748	0.683
RUN NO 529	ORIF DIA 0.0635 CM			FLOW RATE 0.79 G/S		LIQ TEMP 21.9 K		LIQ PRESS 1.61 ATM		CART HTR PWR 0.000 W		
1	121.6	12.2	16.8	0.000141	0.316	-215.01	115344	0.05160	4.353	0.03978	*******	7.279
2	14.3	12.1	16.1	0.000114	0.376	-185.59	115819	0.00994	0.996	0.47021	*******	58.047
3	24.7	12.1	15.7	0.000109	0.386	-180.45	116055	0.00908	0.935	0.07445	*******	9.739
4	46.1	12.1	15.4	0.000104	0.396	-175.60	116292	0.00843	0.890	0.02616	18.336	3.612
5	66.0	12.1	14.8	0.000095	0.416	-166.15	116744	0.00806	0.892	0.01654	8.841	2.283
6	61.5	12.0	13.0	0.000079	0.464	-142.46	117734	0.00732	0.903	0.01826	10.330	2.290
7	138.6	11.8	11.9	0.000054	0.610	-71.58	120188	0.00556	0.900	0.00709	2.038	0.784
8	128.3	11.7	10.9	0.000040	0.753	-1.97	121721	0.00453	0.902	0.00773	2.387	0.719
9	143.6	11.6	10.5	0.000035	0.828	34.44	122453	0.00410	0.897	0.00679	1.893	0.592
10	124.9	11.6	10.2	0.000033	0.865	52.47	122821	0.00397	0.907	0.00800	2.531	0.666
RUN NO 531	ORIF DIA 0.0635 CM			FLOW RATE 0.79 G/S		LIQ TEMP 21.9 K		LIQ PRESS 1.61 ATM		CART HTR PWR 0.000 W		
1	128.4	12.2	17.7	0.000148	0.316	-214.85	114665	0.05168	4.360	0.03754	*******	6.900
2	14.3	12.2	16.8	0.000119	0.376	-185.35	115308	0.00996	0.999	0.46193	*******	57.021
3	23.9	12.2	16.4	0.000112	0.386	-180.16	115628	0.00923	0.951	0.08125	*******	10.571
4	62.1	12.1	15.9	0.000107	0.396	-175.32	115949	0.00826	0.873	0.02184	14.341	3.047
5	67.4	12.1	15.1	0.000097	0.416	-165.98	116548	0.00809	0.896	0.01620	8.727	2.241
6	83.9	12.0	13.7	0.000080	0.464	-142.29	117511	0.00728	0.900	0.01251	5.671	1.630
7	138.8	11.8	12.0	0.000054	0.610	-71.64	120107	0.00556	0.898	0.00707	2.080	0.782
8	144.2	11.7	10.9	0.000040	0.753	-2.25	121729	0.00452	0.899	0.00678	1.929	0.638
9	144.5	11.6	10.4	0.000035	0.827	34.10	122475	0.00411	0.898	0.00676	1.919	0.590
10	139.6	11.6	10.2	0.000033	0.864	52.06	122832	0.00393	0.898	0.00701	2.055	0.590
RUN NO 532	ORIF DIA 0.0635 CM			FLOW RATE 0.79 G/S		LIQ TEMP 21.9 K		LIQ PRESS 1.61 ATM		CART HTR PWR 0.000 W		
1	124.3	12.2	16.9	0.000139	0.316	-214.98	115512	0.05166	4.359	0.03889	*******	7.130
2	13.0	12.1	15.9	0.000113	0.374	-186.45	115953	0.00827	0.825	0.97537	*******	118.990
3	22.2	12.1	15.6	0.000109	0.383	-182.15	116171	0.00774	0.790	0.07813	*******	10.162
4	53.8	12.1	15.3	0.000104	0.391	-178.23	116391	0.00664	0.691	0.01658	10.905	2.347
5	60.7	12.1	14.7	0.000097	0.406	-170.71	116811	0.00674	0.730	0.01499	8.990	2.085
6	73.8	12.0	13.5	0.000082	0.446	-151.45	117816	0.00616	0.731	0.01181	6.085	1.567
7	121.4	11.8	11.9	0.000058	0.565	-94.02	120222	0.00488	0.730	0.00666	2.268	0.773
8	130.1	11.7	10.9	0.000044	0.681	-37.45	121734	0.00405	0.730	0.00616	1.974	0.622
9	128.3	11.6	10.4	0.000039	0.742	-7.73	122459	0.00372	0.730	0.00626	2.031	0.590
10	128.2	11.6	10.2	0.000037	0.773	6.95	122824	0.00357	0.729	0.00624	2.027	0.570
RUN NO 533	ORIF DIA 0.0635 CM			FLOW RATE 0.79 G/S		LIQ TEMP 21.9 K		LIQ PRESS 1.61 ATM		CART HTR PWR 0.000 W		
1	121.1	12.1	14.9	0.000126	0.317	-215.15	116643	0.05170	4.364	0.04003	*******	7.327
2	13.8	12.0	14.0	0.000105	0.372	-187.75	116875	0.00620	0.615	0.35846	*******	44.416
3	20.9	12.1	14.4	0.000102	0.379	-184.61	116989	0.00563	0.567	0.06367	*******	8.309
4	45.8	12.0	14.3	0.000100	0.384	-181.79	117104	0.00485	0.496	0.01471	11.141	2.082
5	50.9	12.0	14.0	0.000095	0.395	-176.39	117338	0.00498	0.524	0.01349	9.459	1.886
6	58.7	11.9	13.1	0.000084	0.424	-162.58	118472	0.00466	0.525	0.01123	7.078	1.508
7	81.7	11.7	11.7	0.000063	0.510	-121.30	120502	0.00389	0.525	0.00750	3.650	0.911
8	89.0	11.6	10.8	0.000051	0.594	-80.51	121872	0.00334	0.525	0.00600	2.496	0.659
9	102.2	11.6	10.4	0.000045	0.638	-59.01	122528	0.00312	0.525	0.00580	2.350	0.603
10	107.9	11.6	10.2	0.000043	0.660	-48.36	122858	0.00300	0.523	0.00543	2.104	0.553

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 534	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.61 ATM	CART HTR PWR 0.000 W							
1	117.9	11.9	12.9	0.000111	0.318	-215.44	118683	0.05171	4.365	0.04116	*******	7.526
2	14.2	11.9	12.9	0.000094	0.370	-189.36	118807	0.00385	0.379	0.16493	*******	20.688
3	19.2	11.9	12.8	0.000093	0.374	-187.55	118868	0.00307	0.305	0.04192	*******	5.474
4	29.8	11.9	12.8	0.000092	0.377	-185.98	118929	0.00284	0.284	0.01591	14.880	2.182
5	33.1	11.9	12.7	0.000090	0.384	-182.92	119084	0.00287	0.293	0.01378	12.028	1.891
6	38.2	11.8	12.1	0.000083	0.400	-175.25	119855	0.00276	0.293	0.01112	8.837	1.506
7	49.0	11.7	11.2	0.000069	0.448	-152.24	121239	0.00247	0.293	0.00785	5.230	0.998
8	54.4	11.6	10.6	0.000060	0.495	-129.39	122246	0.00224	0.293	0.00686	4.228	0.814
9	57.3	11.6	10.3	0.000055	0.520	-117.28	122713	0.00214	0.293	0.00642	3.808	0.737
10	60.7	11.6	10.1	0.000053	0.533	-111.25	122948	0.00209	0.294	0.00598	3.392	0.678
RUN NO 536	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.61 ATM	CART HTR PWR 0.000 W							
1	98.1	12.4	20.5	0.000169	0.314	-214.75	112825	0.05220	4.398	0.05132	*******	9.188
2	12.9	12.4	20.5	0.000146	0.366	-189.13	112825	0.00219	0.215	0.42574	*******	52.481
3	12.7	12.4	20.5	0.000145	0.368	-188.13	112825	0.00155	0.152	0.45408	*******	55.610
4	15.2	12.4	20.5	0.000144	0.369	-187.31	112825	0.00153	0.151	0.05459	63.905	6.856
5	21.8	12.4	20.5	0.000143	0.373	-185.69	112826	0.00150	0.149	0.01599	15.200	2.105
6	26.1	12.4	20.4	0.000140	0.381	-181.65	112854	0.00147	0.150	0.01099	9.299	1.454
7	30.4	12.4	20.2	0.000130	0.405	-169.51	112965	0.00138	0.150	0.00834	6.403	1.071
8	30.1	12.4	20.1	0.000122	0.430	-157.38	113047	0.00131	0.150	0.00848	6.545	1.037
9	30.0	12.4	20.1	0.000118	0.443	-150.91	113090	0.00127	0.150	0.00855	6.625	1.021
10	30.7	12.4	20.0	0.000116	0.449	-147.67	113112	0.00125	0.150	0.00821	6.265	0.972
RUN NO 537	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.61 ATM	CART HTR PWR 0.000 W							
1	130.8	12.4	20.7	0.000171	0.315	-214.62	112691	0.05190	4.375	0.03696	*******	6.797
2	14.6	12.4	20.7	0.000146	0.368	-188.14	112691	0.00400	0.394	0.17714	*******	22.198
3	15.4	12.4	20.7	0.000145	0.371	-186.25	112691	0.00308	0.306	0.10315	*******	12.925
4	21.9	12.4	20.7	0.000143	0.375	-184.62	112691	0.00298	0.299	0.03149	31.346	4.130
5	30.6	12.4	20.7	0.000141	0.381	-181.39	112694	0.00292	0.298	0.01640	13.191	2.212
6	37.4	12.4	20.6	0.000135	0.397	-173.34	112733	0.00281	0.299	0.01199	8.459	1.604
7	46.6	12.4	20.4	0.000119	0.446	-149.15	112893	0.00251	0.299	0.00875	5.289	1.092
8	48.7	12.4	20.2	0.000106	0.495	-124.99	113010	0.00226	0.299	0.00825	4.837	0.952
9	47.8	12.4	20.1	0.000101	0.521	-112.10	113072	0.00215	0.300	0.00846	5.024	0.936
10	50.5	12.4	20.0	0.000098	0.534	-105.68	113103	0.00209	0.298	0.00781	4.459	0.852
RUN NO 538	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.61 ATM	CART HTR PWR 0.000 W							
1	139.5	12.4	21.1	0.000174	0.314	-214.56	112399	0.05184	4.370	0.03440	*******	6.366
2	15.6	12.4	21.1	0.000148	0.369	-187.48	112399	0.00514	0.508	0.16122	*******	20.351
3	16.3	12.4	21.1	0.000146	0.374	-184.96	112399	0.00423	0.424	0.11000	*******	13.833
4	29.3	12.4	21.1	0.000145	0.378	-182.74	112399	0.00394	0.399	0.02375	21.490	3.202
5	37.8	12.4	21.1	0.000141	0.387	-178.41	112404	0.00390	0.404	0.01593	12.201	2.179
6	45.7	12.4	21.0	0.000133	0.409	-167.49	112468	0.00370	0.405	0.01221	8.200	1.629
7	60.8	12.4	20.6	0.000113	0.475	-134.73	112734	0.00319	0.405	0.00839	4.555	1.021
8	68.9	12.4	20.3	0.000098	0.541	-102.02	112928	0.00280	0.405	0.00717	3.532	0.801
9	69.7	12.4	20.1	0.000091	0.576	-84.59	113032	0.00264	0.406	0.00709	3.461	0.754
10	74.0	12.4	20.1	0.000088	0.593	-75.90	113084	0.00254	0.403	0.00654	3.051	0.685
RUN NO 539	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.61 ATM	CART HTR PWR 0.000 W							
1	140.0	12.5	21.7	0.000178	0.314	-214.45	112017	0.05199	4.384	0.03437	*******	6.360
2	15.5	12.5	21.7	0.000152	0.370	-186.82	112017	0.00601	0.596	0.19847	*******	24.951
3	16.5	12.5	21.7	0.000149	0.376	-183.81	112017	0.00515	0.519	0.12978	*******	16.268
4	33.8	12.5	21.7	0.000147	0.381	-181.10	112017	0.00471	0.481	0.02256	20.672	3.077
5	42.7	12.5	21.7	0.000143	0.392	-175.85	112024	0.00468	0.491	0.01624	12.701	2.227
6	52.9	12.5	21.5	0.000133	0.418	-162.58	112121	0.00439	0.493	0.01219	8.168	1.618
7	76.1	12.4	20.9	0.000109	0.499	-122.79	112526	0.00369	0.493	0.00774	3.921	0.933
8	95.8	12.4	20.5	0.000092	0.579	-83.10	112821	0.00318	0.492	0.00591	2.484	0.648
9	99.7	12.4	20.2	0.000085	0.621	-61.95	112979	0.00297	0.493	0.00565	2.300	0.588
10	106.2	12.4	20.1	0.000082	0.642	-51.43	113059	0.00284	0.489	0.00521	2.013	0.532
RUN NO 540	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.61 ATM	CART HTR PWR 0.000 W							
1	143.0	12.5	22.7	0.000186	0.314	-214.43	111324	0.05194	4.377	0.03355	*******	6.215
2	12.8	12.5	22.7	0.000158	0.371	-185.79	111335	0.00789	0.786	3.86859	*******	468.958
3	13.1	12.5	22.7	0.000154	0.379	-181.73	111340	0.00705	0.718	1.37499	*******	164.492
4	36.3	12.5	22.7	0.000151	0.387	-177.97	111345	0.00649	0.674	0.02839	24.689	3.856
5	53.3	12.5	22.7	0.000145	0.401	-170.66	111369	0.00630	0.679	0.01665	11.019	2.282
6	70.6	12.5	22.3	0.000131	0.438	-152.30	111580	0.00580	0.682	0.01176	6.278	1.552
7	114.1	12.5	21.4	0.000101	0.549	-97.22	112208	0.00463	0.682	0.00671	2.420	0.780
8	136.4	12.4	20.7	0.000082	0.660	-42.35	112669	0.00386	0.681	0.00550	1.689	0.562
9	133.8	12.4	20.3	0.000074	0.719	-13.15	112904	0.00355	0.683	0.00562	1.757	0.536
10	135.7	12.4	20.2	0.000070	0.748	1.36	113022	0.00338	0.676	0.00548	1.692	0.507

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 541	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.61 ATM	CART HTR PWR 0.000 W							
1	148.0	12.6	23.9	0.000195	0.313	-214.40	110564	0.05190	4.370	0.03228	*******	5.990
2	14.3	12.6	23.9	0.000164	0.373	-184.57	110599	0.01010	1.012	0.61519	*******	75.564
3	15.1	12.6	23.8	0.000159	0.383	-179.29	110616	0.00912	0.940	0.37334	*******	45.282
4	38.8	12.6	23.8	0.000155	0.393	-174.35	110633	0.00840	0.888	0.03392	26.927	4.578
5	52.6	12.6	23.7	0.000147	0.413	-164.68	110690	0.00814	0.903	0.02259	14.441	3.020
6	86.4	12.6	23.1	0.000129	0.462	-140.37	111086	0.00727	0.901	0.01219	5.299	1.580
7	143.7	12.5	21.8	0.000093	0.608	-67.69	111928	0.00552	0.900	0.00686	1.921	0.750
8	156.8	12.4	20.9	0.000072	0.754	4.66	112550	0.00446	0.900	0.00623	1.580	0.578
9	147.5	12.4	20.4	0.000064	0.832	43.09	112846	0.00404	0.900	0.00666	1.822	0.569
10	135.0	12.4	20.2	0.000061	0.870	62.29	112995	0.00388	0.903	0.00736	2.182	0.603
RUN NO 543	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.61 ATM	CART HTR PWR 0.000 W							
1	149.8	12.6	24.3	0.000198	0.313	-214.32	110346	0.05200	4.380	0.03194	*******	5.929
2	15.5	12.6	24.2	0.000166	0.373	-184.37	110388	0.01019	1.022	0.36315	*******	45.152
3	17.9	12.6	24.2	0.000161	0.384	-178.97	110409	0.00946	0.976	0.18433	*******	22.941
4	42.3	12.6	24.1	0.000157	0.394	-173.96	110429	0.00829	0.878	0.02215	14.855	3.070
5	68.0	12.6	24.0	0.000149	0.413	-164.33	110495	0.00814	0.904	0.01631	8.940	2.242
6	80.4	12.6	23.3	0.000129	0.463	-139.89	110944	0.00732	0.909	0.01340	6.449	1.722
7	144.5	12.5	21.9	0.000093	0.610	-66.60	111847	0.00554	0.907	0.00687	2.001	0.749
8	150.0	12.4	20.9	0.000072	0.757	6.34	112516	0.00448	0.908	0.00660	1.849	0.608
9	140.3	12.4	20.5	0.000064	0.836	45.05	112829	0.00405	0.905	0.00612	1.578	0.524
10	148.9	12.4	20.2	0.000060	0.875	64.36	112987	0.00389	0.909	0.00666	1.883	0.547
RUN NO 544	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.61 ATM	CART HTR PWR 0.000 W							
1	144.8	12.5	22.2	0.000182	0.314	-214.45	111690	0.05191	4.375	0.03309	*******	6.133
2	13.2	12.5	22.2	0.000155	0.370	-186.48	111690	0.00671	0.666	0.97243	*******	118.916
3	13.6	12.5	22.2	0.000152	0.377	-183.01	111690	0.00610	0.617	0.55525	*******	67.252
4	45.9	12.5	22.2	0.000149	0.383	-179.92	111690	0.00513	0.528	0.01580	12.436	2.218
5	52.6	12.5	22.2	0.000145	0.395	-174.05	111699	0.00527	0.558	0.01393	9.930	1.933
6	68.7	12.5	22.0	0.000133	0.425	-158.96	111824	0.00491	0.560	0.01214	7.969	1.605
7	98.3	12.5	21.2	0.000106	0.517	-113.74	112347	0.00404	0.559	0.00652	2.842	0.784
8	114.0	12.4	20.6	0.000088	0.607	-68.65	112730	0.00344	0.560	0.00551	2.118	0.591
9	122.1	12.4	20.3	0.000081	0.656	-44.66	112935	0.00319	0.560	0.00510	1.844	0.518
10	126.4	12.4	20.1	0.000077	0.680	-32.70	113038	0.00306	0.558	0.00489	1.715	0.485
RUN NO 545	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.61 ATM	CART HTR PWR 0.000 W							
1	141.8	12.5	21.4	0.000176	0.315	-214.46	112228	0.05196	4.383	0.03389	*******	6.275
2	14.8	12.5	21.4	0.000150	0.369	-187.22	112228	0.00532	0.527	0.22594	*******	28.245
3	16.3	12.5	21.4	0.000148	0.374	-184.57	112228	0.00454	0.456	0.11927	*******	14.971
4	37.5	12.5	21.4	0.000146	0.379	-182.24	112228	0.00401	0.407	0.01629	13.913	2.262
5	47.8	12.5	21.4	0.000143	0.388	-177.77	112234	0.00403	0.419	0.01185	8.526	1.655
6	53.9	12.5	21.2	0.000134	0.411	-166.44	112313	0.00383	0.422	0.01018	6.703	1.373
7	65.2	12.4	20.7	0.000112	0.479	-132.37	112642	0.00328	0.422	0.00799	4.545	0.974
8	75.8	12.4	20.4	0.000097	0.548	-98.35	112881	0.00287	0.422	0.00665	3.366	0.744
9	80.6	12.4	20.2	0.000090	0.584	-80.23	113009	0.00270	0.422	0.00621	2.999	0.665
10	86.6	12.4	20.1	0.000087	0.603	-71.17	113073	0.00262	0.422	0.00569	2.593	0.599
RUN NO 660	ORIF DIA 0.0635 CM	FLOW RATE 1.18 G/S	LIQ TEMP 24.0 K	LIQ PRESS 3.33 ATM	CART HTR PWR 0.000 W							
1	112.9	12.2	17.6	0.000134	0.346	-199.68	171074	0.03048	4.203	0.04175	*******	5.115
2	16.8	12.2	17.5	0.000122	0.380	-183.11	171147	0.00209	0.315	0.06858	*******	6.251
3	15.5	12.2	17.5	0.000121	0.382	-182.12	171184	0.00160	0.243	0.07548	*******	6.759
4	19.4	12.2	17.5	0.000120	0.383	-181.27	171220	0.00156	0.238	0.03339	30.454	3.088
5	26.3	12.2	17.4	0.000119	0.387	-179.60	171326	0.00154	0.237	0.01686	12.676	1.608
6	29.5	12.2	16.7	0.000112	0.395	-175.54	171983	0.00151	0.238	0.01375	9.611	1.310
7	35.5	12.1	15.6	0.000099	0.421	-163.27	173183	0.00142	0.238	0.01018	6.319	0.946
8	39.4	12.1	14.7	0.000089	0.446	-151.04	174065	0.00134	0.238	0.01018	6.329	0.903
9	45.2	12.1	14.4	0.000084	0.459	-144.68	174469	0.00127	0.231	0.00999	6.245	0.866
10	33.8	12.1	14.2	0.000082	0.466	-141.60	174671	0.00121	0.224	0.01027	6.594	0.877
RUN NO 661	ORIF DIA 0.0635 CM	FLOW RATE 1.18 G/S	LIQ TEMP 24.1 K	LIQ PRESS 3.33 ATM	CART HTR PWR 0.000 W							
1	107.5	12.2	17.5	0.000133	0.349	-198.39	171156	0.03035	4.218	0.04428	*******	5.368
2	15.6	12.2	17.5	0.000121	0.382	-181.97	171222	0.00169	0.257	0.07675	*******	6.877
3	14.5	12.2	17.4	0.000120	0.384	-181.18	171255	0.00123	0.187	0.08239	*******	7.272
4	16.6	12.2	17.4	0.000119	0.385	-180.53	171288	0.00121	0.185	0.04197	40.057	3.777
5	22.6	12.2	17.3	0.000118	0.388	-179.24	171387	0.00119	0.183	0.01770	14.077	1.655
6	25.4	12.2	16.7	0.000112	0.394	-176.13	172030	0.00117	0.184	0.01398	10.322	1.309
7	30.5	12.1	15.6	0.000100	0.414	-166.68	173209	0.00112	0.184	0.01003	6.584	0.926
8	30.0	12.1	14.7	0.000091	0.434	-157.27	174078	0.00107	0.184	0.01026	6.812	0.913
9	30.1	12.1	14.4	0.000087	0.444	-152.33	174475	0.00103	0.181	0.01001	6.640	0.875
10	28.9	12.1	14.2	0.000085	0.449	-149.92	174674	0.00099	0.177	0.01048	7.128	0.903

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 662	ORIF DIA 0.0635 CM	FLOW RATE 1.18 G/S	LIQ TEMP 24.2 K	LIQ PRESS 3.33 ATM	CART HTR PWR 0.000 W							
1	102.8	12.2	17.8	0.000134	0.351	-197.37	170827	0.03014	4.211	0.04652	*******	5.590
2	15.0	12.2	17.7	0.000122	0.384	-181.08	170922	0.00149	0.227	0.08192	*******	7.269
3	14.3	12.2	17.7	0.000121	0.385	-180.39	170970	0.00105	0.161	0.07911	*******	6.942
4	16.2	12.2	17.7	0.000121	0.386	-179.83	171017	0.00104	0.159	0.04021	38.071	3.593
5	21.4	12.2	17.5	0.000119	0.389	-178.73	171144	0.00102	0.158	0.01718	13.812	1.593
6	23.1	12.2	16.9	0.000113	0.394	-176.09	171843	0.00101	0.158	0.01447	11.087	1.340
7	28.2	12.1	15.6	0.000101	0.411	-168.03	173106	0.00097	0.158	0.00985	6.640	0.906
8	27.6	12.1	14.8	0.000092	0.428	-160.00	174026	0.00093	0.158	0.01021	6.985	0.907
9	27.8	12.0	14.4	0.000088	0.437	-155.78	174450	0.00089	0.155	0.00980	6.675	0.859
10	26.5	12.0	14.2	0.000086	0.441	-153.74	174662	0.00086	0.151	0.01037	7.288	0.896
RUN NO 663	ORIF DIA 0.0635 CM	FLOW RATE 1.18 G/S	LIQ TEMP 24.0 K	LIQ PRESS 3.33 ATM	CART HTR PWR 0.000 W							
1	102.7	12.4	21.0	0.000158	0.345	-199.23	167685	0.03051	4.209	0.04665	*******	5.652
2	14.5	12.4	20.5	0.000141	0.378	-183.07	168149	0.00120	0.182	0.08873	*******	7.888
3	14.0	12.4	20.3	0.000139	0.379	-182.57	168379	0.00075	0.114	0.07289	*******	6.430
4	15.1	12.4	20.0	0.000137	0.380	-182.20	168609	0.00075	0.113	0.04126	39.672	3.682
5	19.2	12.4	19.6	0.000134	0.382	-181.47	169077	0.00074	0.112	0.01632	13.727	1.509
6	20.3	12.3	18.8	0.000125	0.386	-179.68	170318	0.00073	0.113	0.01403	11.443	1.298
7	24.6	12.2	16.4	0.000109	0.398	-174.13	172299	0.00071	0.113	0.00905	6.557	0.838
8	24.0	12.1	15.2	0.000099	0.410	-168.57	173621	0.00069	0.113	0.00946	6.988	0.854
9	24.4	12.0	14.6	0.000094	0.417	-165.68	174249	0.00067	0.110	0.00891	6.505	0.797
10	23.2	12.0	14.3	0.000091	0.420	-164.28	174565	0.00065	0.108	0.00966	7.307	0.855
RUN NO 664	ORIF DIA 0.0635 CM	FLOW RATE 1.18 G/S	LIQ TEMP 23.8 K	LIQ PRESS 3.33 ATM	CART HTR PWR 0.000 W							
1	102.2	12.3	19.4	0.000148	0.341	-201.69	169282	0.03092	4.210	0.04684	*******	5.738
2	14.2	12.3	19.1	0.000134	0.374	-185.53	169513	0.00122	0.181	0.09637	*******	8.634
3	13.8	12.3	19.0	0.000133	0.375	-185.02	169627	0.00076	0.114	0.07729	*******	6.877
4	15.0	12.3	18.9	0.000132	0.376	-184.63	169741	0.00076	0.114	0.04244	40.798	3.822
5	19.7	12.3	18.7	0.000130	0.377	-183.87	169997	0.00074	0.112	0.01524	12.576	1.428
6	20.8	12.2	17.7	0.000122	0.382	-182.06	170962	0.00074	0.113	0.01323	10.580	1.240
7	24.8	12.1	16.1	0.000109	0.394	-176.45	172619	0.00072	0.113	0.00888	6.356	0.831
8	24.2	12.1	15.0	0.000099	0.406	-170.85	173780	0.00070	0.113	0.00933	6.805	0.851
9	24.6	12.0	14.5	0.000094	0.412	-167.92	174328	0.00068	0.110	0.00877	6.324	0.793
10	23.2	12.0	14.2	0.000092	0.415	-166.50	174603	0.00066	0.108	0.00969	7.272	0.864
RUN NO 665	ORIF DIA 0.0635 CM	FLOW RATE 1.18 G/S	LIQ TEMP 23.4 K	LIQ PRESS 3.33 ATM	CART HTR PWR 0.000 W							
1	105.1	12.3	18.1	0.000143	0.332	-206.53	170564	0.03173	4.201	0.04524	*******	5.687
2	14.0	12.2	17.8	0.000129	0.365	-190.52	170873	0.00114	0.165	0.09471	*******	8.650
3	13.5	12.2	17.6	0.000127	0.366	-190.08	171025	0.00066	0.096	0.07629	*******	6.914
4	15.0	12.2	17.5	0.000126	0.366	-189.77	171178	0.00065	0.095	0.03407	32.490	3.137
5	18.8	12.2	17.2	0.000124	0.368	-189.16	171503	0.00064	0.094	0.01424	11.973	1.356
6	19.7	12.1	16.2	0.000116	0.371	-187.73	172529	0.00064	0.094	0.01243	10.173	1.186
7	23.5	12.0	14.6	0.000103	0.381	-183.23	174234	0.00062	0.094	0.00826	6.079	0.789
8	22.4	12.0	13.5	0.000093	0.391	-178.71	175697	0.00061	0.094	0.00901	6.845	0.841
9	23.4	11.9	13.0	0.000089	0.397	-176.34	176807	0.00059	0.092	0.00805	5.966	0.747
10	21.8	11.9	12.7	0.000087	0.399	-175.21	177367	0.00057	0.090	0.00910	7.063	0.834
RUN NO 666	ORIF DIA 0.0635 CM	FLOW RATE 1.18 G/S	LIQ TEMP 23.3 K	LIQ PRESS 3.33 ATM	CART HTR PWR 0.000 W							
1	115.8	12.2	17.5	0.000140	0.330	-207.95	171221	0.03187	4.185	0.04040	*******	5.162
2	14.5	12.2	17.2	0.000126	0.362	-192.04	171448	0.00107	0.154	0.06775	*******	6.266
3	13.7	12.2	17.1	0.000125	0.363	-191.65	171560	0.00053	0.076	0.05153	*******	4.713
4	14.5	12.2	17.0	0.000124	0.363	-191.41	171672	0.00052	0.075	0.03263	31.252	3.010
5	17.6	12.2	16.8	0.000122	0.364	-190.93	171922	0.00051	0.074	0.01357	11.670	1.289
6	17.1	12.1	15.9	0.000115	0.367	-189.83	172835	0.00051	0.075	0.01498	13.132	1.409
7	21.0	12.0	14.4	0.000103	0.375	-186.35	174393	0.00050	0.074	0.00833	6.490	0.796
8	20.5	12.0	13.4	0.000095	0.383	-182.84	175857	0.00049	0.074	0.00875	6.936	0.821
9	21.2	11.9	13.0	0.000091	0.387	-181.01	176886	0.00047	0.072	0.00777	6.039	0.727
10	19.8	11.9	12.7	0.000089	0.389	-180.15	177405	0.00045	0.069	0.00870	7.048	0.805
RUN NO 668	ORIF DIA 0.0635 CM	FLOW RATE 1.18 G/S	LIQ TEMP 24.3 K	LIQ PRESS 3.33 ATM	CART HTR PWR 0.000 W							
1	102.9	12.6	23.9	0.000173	0.354	-194.10	164832	0.02979	4.222	0.04678	*******	5.537
2	14.5	12.6	23.2	0.000154	0.386	-178.05	165455	0.00080	0.123	0.06501	*******	5.659
3	12.9	12.6	22.9	0.000152	0.387	-177.76	165764	0.00037	0.057	0.16363	*******	13.961
4	14.0	12.5	22.6	0.000150	0.388	-177.59	166073	0.00035	0.055	0.03689	33.158	3.189
5	16.2	12.5	22.0	0.000146	0.389	-177.27	166688	0.00035	0.054	0.01482	12.370	1.310
6	15.6	12.4	20.5	0.000136	0.391	-176.50	168147	0.00035	0.055	0.01706	14.553	1.494
7	19.2	12.3	18.3	0.000121	0.398	-173.97	170404	0.00035	0.055	0.00789	6.008	0.707
8	18.2	12.2	16.8	0.000110	0.404	-171.40	171879	0.00034	0.055	0.00912	7.191	0.802
9	18.8	12.1	16.1	0.000106	0.407	-170.07	172582	0.00033	0.053	0.00807	6.256	0.709
10	17.5	12.1	15.8	0.000103	0.408	-169.44	172936	0.00032	0.052	0.00958	7.736	0.832

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 669	ORIF DIA 0.0635 CM			FLOW RATE 1.18 G/S		LIQ TEMP 24.6 K		LIQ PRESS 3.33 ATM		CART HTR PWR 0.000 W		
1	122.9	12.7	24.7	0.000175	0.359	-191.47	164109	0.02911	4.185	0.03797	*******	4.517
2	14.7	12.6	23.6	0.000155	0.391	-175.55	165134	0.00086	0.135	0.06294	*******	5.439
3	14.8	12.6	23.1	0.000151	0.392	-175.27	165644	0.00031	0.048	0.02196	*******	1.896
4	14.8	12.5	22.5	0.000148	0.393	-175.16	166157	0.00031	0.049	0.02152	18,295	1.858
5	16.1	12.5	21.5	0.000142	0.394	-174.94	167131	0.00031	0.048	0.01319	10,738	1.154
6	14.1	12.4	19.8	0.000130	0.396	-174.35	168882	0.00031	0.048	0.02858	25,109	2.439
7	16.8	12.2	17.3	0.000114	0.402	-172.28	171371	0.00030	0.048	0.01060	8,515	0.924
8	16.7	12.1	15.8	0.000104	0.407	-170.15	172911	0.00030	0.048	0.01066	8,620	0.920
9	17.6	12.1	15.2	0.000099	0.410	-169.05	173635	0.00029	0.047	0.00846	6,633	0.734
10	16.5	12.1	14.8	0.000097	0.411	-168.54	173993	0.00028	0.046	0.01031	8,405	0.883
RUN NO 672	ORIF DIA 0.0635 CM			FLOW RATE 1.18 G/S		LIQ TEMP 25.1 K		LIQ PRESS 3.33 ATM		CART HTR PWR 0.000 W		
1	132.9	13.5	43.1	0.000281	0.367	-183.24	152642	0.02808	4.181	0.03500	*******	4.048
2	14.0	13.3	38.2	0.000232	0.400	-167.32	155022	0.00067	0.109	0.15302	*******	12.675
3	14.1	13.2	35.7	0.000218	0.402	-167.18	156222	0.00009	0.014	0.01594	*******	1.322
4	14.8	13.1	33.3	0.000204	0.402	-167.22	157440	0.00008	0.014	0.00817	6,448	0.683
5	16.4	12.9	29.1	0.000180	0.404	-167.35	160051	0.00008	0.013	0.00390	2,939	0.332
6	13.5	12.7	24.6	0.000155	0.407	-167.45	164127	0.00008	0.014	0.01635	13,735	1.348
7	14.7	12.4	19.9	0.000127	0.410	-167.35	168759	0.00008	0.014	0.00598	4,867	0.500
8	13.1	12.2	16.8	0.000108	0.412	-167.33	171872	0.00008	0.014	0.01585	13,789	1.300
9	14.7	12.1	15.6	0.000101	0.413	-167.37	173199	0.00008	0.014	0.00526	4,317	0.440
10	13.4	12.1	15.0	0.000097	0.413	-167.39	173782	0.00009	0.014	0.01029	8,860	0.849
RUN NO 673	ORIF DIA 0.0635 CM			FLOW RATE 1.18 G/S		LIQ TEMP 25.1 K		LIQ PRESS 3.33 ATM		CART HTR PWR 0.000 W		
1	133.1	13.5	43.1	0.000281	0.367	-183.20	152642	0.02816	4.193	0.03504	*******	4.052
2	13.9	13.3	38.2	0.000231	0.401	-167.25	155022	0.00065	0.105	0.14227	*******	13.427
3	14.2	13.2	35.7	0.000218	0.402	-167.12	156222	0.00006	0.010	0.00958	*******	0.795
4	15.0	13.1	33.3	0.000204	0.402	-167.18	157440	0.00006	0.009	0.00503	3,916	0.421
5	16.5	12.9	29.1	0.000179	0.404	-167.33	160051	0.00006	0.009	0.00253	1,887	0.216
6	13.8	12.7	24.6	0.000155	0.407	-167.51	164127	0.00006	0.009	0.00804	6,634	0.666
7	14.1	12.4	19.9	0.000127	0.409	-167.64	168759	0.00006	0.009	0.00559	4,623	0.465
8	12.5	12.2	16.8	0.000109	0.411	-167.85	171872	0.00006	0.009	0.03278	28,991	2.675
9	14.0	12.1	15.6	0.000101	0.411	-168.01	173199	0.00006	0.009	0.00474	3,966	0.395
10	12.9	12.1	15.0	0.000098	0.412	-168.09	173782	0.00005	0.009	0.01107	9,675	0.909

STA NO -	TURF WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STEFMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 546	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.65 ATM	CART HTR PWR 0.000 W							
1	100.7	11.8	11.8	0.000101	0.321	-214.47	120437	0.05223	4.442	0.04997	*******	8.959
2	12.9	11.8	11.7	0.000087	0.373	-188.99	120469	0.00202	0.200	0.17248	*******	21.274
3	12.7	11.8	11.7	0.000086	0.374	-188.09	120484	0.00139	0.138	0.15156	*******	18.561
4	17.5	11.7	11.7	0.000086	0.376	-187.38	120500	0.00132	0.132	0.02290	23.414	2.947
5	21.3	11.7	11.7	0.000085	0.379	-185.98	120553	0.00132	0.132	0.01383	12.545	1.821
6	23.8	11.7	11.4	0.000082	0.386	-183.54	120946	0.00130	0.133	0.01100	9.310	1.447
7	29.0	11.6	10.8	0.000074	0.408	-172.18	121852	0.00123	0.133	0.00767	5.698	0.991
8	29.7	11.6	10.4	0.000068	0.429	-161.84	122521	0.00117	0.133	0.00734	5.375	0.914
9	31.0	11.6	10.2	0.000065	0.441	-156.35	122846	0.00114	0.133	0.00684	4.880	0.839
10	29.4	11.6	10.1	0.000063	0.446	-153.62	123009	0.00112	0.132	0.00742	5.473	0.895
RUN NO 547	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.65 ATM	CART HTR PWR 0.478 W							
1	100.1	11.8	11.8	0.000101	0.322	-213.80	120316	0.05214	4.453	0.05043	*******	9.007
2	12.9	11.8	11.8	0.000087	0.374	-188.26	120352	0.00201	0.200	0.17438	*******	21.438
3	12.8	11.8	11.8	0.000086	0.376	-187.36	120369	0.00138	0.138	0.13320	*******	16.289
4	17.7	11.8	11.8	0.000086	0.377	-186.65	120387	0.00132	0.132	0.02223	21.944	2.857
5	21.7	11.8	11.8	0.000085	0.380	-185.25	120445	0.00132	0.133	0.01337	11.661	1.758
6	23.8	11.7	11.5	0.000082	0.387	-181.80	120867	0.00130	0.133	0.01107	9.107	1.450
7	29.1	11.6	10.9	0.000074	0.409	-171.43	121807	0.00123	0.133	0.00765	5.510	0.985
8	29.9	11.6	10.4	0.000067	0.431	-161.07	122502	0.00117	0.133	0.00729	5.166	0.905
9	30.9	11.6	10.2	0.000064	0.442	-155.57	122836	0.00114	0.133	0.00688	4.771	0.841
10	29.5	11.6	10.1	0.000063	0.448	-152.84	123004	0.00112	0.132	0.00736	5.263	0.886
RUN NO 548	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.65 ATM	CART HTR PWR 1.768 W							
1	98.7	11.8	11.9	0.000101	0.326	-212.04	120165	0.05188	4.479	0.05154	*******	9.112
2	12.7	11.8	11.9	0.000087	0.378	-186.36	120206	0.00199	0.199	0.21309	*******	25.916
3	13.6	11.8	11.9	0.000086	0.380	-185.47	120225	0.00136	0.137	0.07531	*******	9.227
4	17.8	11.8	11.9	0.000086	0.381	-184.75	120245	0.00131	0.133	0.02189	21.664	2.794
5	21.9	11.8	11.8	0.000085	0.384	-183.35	120310	0.00131	0.133	0.01312	11.451	1.714
6	24.0	11.7	11.5	0.000081	0.391	-179.89	120769	0.00129	0.134	0.01094	9.018	1.424
7	29.6	11.6	10.9	0.000073	0.413	-169.48	121751	0.00122	0.134	0.00747	5.366	0.957
8	30.7	11.6	10.4	0.000067	0.435	-159.10	122478	0.00116	0.134	0.00701	4.928	0.868
9	31.8	11.6	10.2	0.000064	0.446	-153.58	122825	0.00113	0.134	0.00661	4.543	0.806
10	30.5	11.6	10.1	0.000063	0.452	-150.84	122999	0.00111	0.133	0.00702	4.953	0.842
RUN NO 549	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.65 ATM	CART HTR PWR 3.760 W							
1	100.0	11.7	10.9	0.000092	0.331	-209.87	121691	0.05100	4.468	0.05056	*******	8.857
2	12.1	11.7	10.9	0.000079	0.383	-184.33	121710	0.00197	0.200	0.43527	*******	52.077
3	11.7	11.7	10.9	0.000079	0.385	-183.44	121719	0.00136	0.138	2.52849	*******	299.646
4	16.9	11.7	10.9	0.000078	0.386	-182.72	121729	0.00129	0.132	0.02525	25.970	3.169
5	20.4	11.6	10.9	0.000078	0.389	-181.32	121765	0.00129	0.133	0.01515	13.893	1.946
6	21.8	11.6	10.7	0.000075	0.396	-177.86	122056	0.00128	0.134	0.01317	11.615	1.681
7	28.7	11.6	10.2	0.000068	0.418	-167.49	122829	0.00121	0.134	0.00781	5.739	0.989
8	30.9	11.5	9.9	0.000063	0.440	-157.13	123397	0.00115	0.134	0.00691	4.857	0.850
9	32.3	11.5	9.7	0.000060	0.451	-151.64	123682	0.00112	0.134	0.00643	4.392	0.780
10	31.2	11.5	9.6	0.000059	0.457	-148.91	123824	0.00110	0.133	0.00672	4.691	0.804
RUN NO 553	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.65 ATM	CART HTR PWR 2.033 W							
1	100.1	12.0	14.5	0.000120	0.324	-211.87	114911	0.05076	4.375	0.04967	*******	8.783
2	12.0	12.0	14.3	0.000101	0.378	-186.72	117092	0.00556	0.560	*******	*******	*******
3	15.6	12.0	14.2	0.000099	0.384	-181.88	117182	0.00496	0.508	0.14075	*******	17.366
4	28.8	12.0	14.0	0.000097	0.390	-179.23	117272	0.00474	0.492	0.02930	25.008	3.888
5	44.8	12.0	13.8	0.000093	0.400	-174.04	117463	0.00468	0.488	0.01487	9.440	2.036
6	52.2	11.9	13.0	0.000082	0.427	-161.15	118626	0.00433	0.492	0.01222	6.945	1.613
7	74.0	11.7	11.7	0.000063	0.507	-122.48	120566	0.00346	0.492	0.00790	3.427	0.950
8	89.2	11.6	10.8	0.000051	0.586	-84.26	121902	0.00317	0.492	0.00634	2.369	0.695
9	91.1	11.6	10.4	0.000046	0.628	-64.13	122541	0.00296	0.491	0.00618	2.274	0.644
10	88.1	11.6	10.2	0.000044	0.648	-54.21	122863	0.00283	0.485	0.00634	2.398	0.642
RUN NO 554	ORIF DIA 0.0635 CM	FLOW RATE 0.66 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.65 ATM	CART HTR PWR 4.064 W							
1	94.0	12.0	14.1	0.000111	0.342	-202.74	97323	0.05835	4.415	0.05387	*******	10.508
2	11.6	12.0	13.9	0.000092	0.409	-169.69	97437	0.00615	0.556	*******	*******	*******
3	12.5	12.0	13.9	0.000090	0.416	-166.25	97494	0.00556	0.511	1.05623	*******	136.836
4	26.0	12.0	13.8	0.000088	0.423	-163.01	97562	0.00530	0.495	0.03544	34.360	5.051
5	40.8	12.0	13.6	0.000084	0.436	-156.67	97810	0.00511	0.492	0.01708	12.291	2.516
6	49.3	11.9	12.8	0.000074	0.469	-140.88	98695	0.00479	0.495	0.01325	8.331	1.876
7	76.2	11.7	11.6	0.000056	0.566	-93.56	100212	0.00368	0.495	0.00768	3.454	0.986
8	97.6	11.6	10.8	0.000045	0.663	-46.69	101275	0.00340	0.495	0.00576	2.119	0.670
9	98.7	11.6	10.4	0.000041	0.714	-21.93	101782	0.00316	0.495	0.00567	2.069	0.624
10	96.4	11.6	10.2	0.000039	0.739	-9.73	102038	0.00301	0.487	0.00574	2.134	0.613

STA NO -	TURE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STEPMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/EPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 555		ORIF DIA 0.0635 CM		FLOW RATE 0.52 G/S		LIQ TEMP 21.9 K		LIQ PRESS 1.65 ATM		CART HTR PWR	7.397 W	
1	106.4	11.8	12.1	0.000087	0.378	-186.25	78326	0.06739	4.406	0.04658	*******	10.356
2	11.8	11.8	11.9	0.000070	0.463	-144.13	78489	0.00709	0.568	16.83810	*******	2416.632
3	14.1	11.8	11.8	0.000069	0.472	-139.70	78570	0.00622	0.509	0.22035	*******	32.070
4	25.6	11.8	11.7	0.000067	0.481	-135.58	78651	0.00596	0.495	0.03564	38.354	5.577
5	39.4	11.7	11.6	0.000064	0.497	-127.48	78828	0.00573	0.493	0.01782	14.429	2.867
6	49.7	11.7	10.9	0.000056	0.539	-107.32	79457	0.00533	0.496	0.01304	8.953	2.014
7	88.0	11.5	9.9	0.000042	0.664	-46.94	80528	0.00433	0.495	0.00667	2.842	0.906
8	113.8	11.4	9.2	0.000033	0.787	12.81	81276	0.00366	0.495	0.00483	1.709	0.607
9	114.8	11.4	8.8	0.000029	0.852	44.38	81632	0.00338	0.495	0.00479	1.679	0.565
10	113.3	11.4	8.7	0.000028	0.884	59.90	81812	0.00319	0.485	0.00476	1.689	0.544
RUN NO 556		ORIF DIA 0.0635 CM		FLOW RATE 0.79 G/S		LIQ TEMP 21.9 K		LIQ PRESS 1.65 ATM		CART HTR PWR	0.000 W	
1	111.5	12.2	14.3	0.000136	0.318	-214.10	115636	0.05162	4.381	0.04411	*******	7.967
2	13.2	12.1	13.9	0.000113	0.376	-185.59	115965	0.00794	0.795	0.70994	*******	86.592
3	17.0	12.1	13.6	0.000109	0.384	-181.49	116128	0.00727	0.745	0.15227	*******	19.007
4	36.0	12.1	13.4	0.000105	0.392	-177.61	116292	0.00682	0.712	0.02979	22.052	4.039
5	55.0	12.1	13.0	0.000098	0.408	-170.05	116614	0.00655	0.712	0.01659	9.080	2.277
6	67.2	12.0	13.0	0.000084	0.446	-151.18	117352	0.00603	0.717	0.01300	6.096	1.701
7	106.1	11.8	12.4	0.000060	0.563	-94.66	119502	0.00480	0.716	0.00760	2.466	0.872
8	121.2	11.7	11.4	0.000046	0.677	-38.92	120979	0.00399	0.716	0.00654	1.886	0.657
9	117.7	11.7	10.9	0.000041	0.738	-9.62	121687	0.00367	0.715	0.00674	1.999	0.632
10	107.5	11.6	10.7	0.000039	0.767	4.83	122044	0.00350	0.710	0.00741	2.380	0.667
RUN NO 557		ORIF DIA 0.0635 CM		FLOW RATE 0.79 G/S		LIQ TEMP 21.9 K		LIQ PRESS 1.65 ATM		CART HTR PWR	0.482 W	
1	110.6	12.1	15.9	0.000132	0.320	-213.45	115945	0.05159	4.397	0.04467	*******	8.035
2	13.4	12.1	15.4	0.000109	0.377	-184.87	116306	0.00793	0.797	0.62448	*******	76.057
3	18.0	12.1	15.1	0.000105	0.386	-180.76	116484	0.00728	0.748	0.12562	*******	15.782
4	37.7	12.1	14.9	0.000101	0.394	-176.88	116664	0.00679	0.712	0.02773	19.993	3.773
5	55.9	12.0	14.4	0.000094	0.409	-169.34	117012	0.00654	0.713	0.01627	8.840	2.231
6	63.9	11.9	13.4	0.000081	0.448	-150.47	118067	0.00603	0.719	0.01385	6.791	1.796
7	106.2	11.8	11.8	0.000058	0.565	-93.96	120328	0.00480	0.718	0.00761	2.479	0.872
8	121.9	11.6	10.9	0.000044	0.679	-38.31	121785	0.00400	0.718	0.00651	1.880	0.655
9	120.2	11.6	10.4	0.000039	0.740	-9.11	122483	0.00367	0.716	0.00659	1.927	0.619
10	106.9	11.6	10.2	0.000037	0.769	5.29	122835	0.00351	0.714	0.00749	2.429	0.674
RUN NO 558		ORIF DIA 0.0635 CM		FLOW RATE 0.79 G/S		LIQ TEMP 21.9 K		LIQ PRESS 1.65 ATM		CART HTR PWR	2.045 W	
1	105.5	12.1	15.9	0.000131	0.323	-211.64	115973	0.05080	4.380	0.04688	*******	8.321
2	13.5	12.1	15.4	0.000108	0.381	-183.20	116329	0.00778	0.789	0.57559	*******	69.687
3	18.9	12.1	15.1	0.000104	0.389	-179.12	116505	0.00717	0.743	0.10857	*******	13.650
4	38.3	12.1	14.9	0.000100	0.397	-175.28	116681	0.00669	0.708	0.02695	19.335	3.649
5	56.2	12.0	14.4	0.000094	0.413	-167.79	117025	0.00644	0.707	0.01603	8.717	2.185
6	56.1	11.9	13.7	0.000080	0.451	-149.04	118083	0.00596	0.716	0.01620	8.834	2.060
7	106.7	11.8	11.8	0.000057	0.567	-92.86	120335	0.00475	0.714	0.00751	2.451	0.859
8	122.5	11.6	10.9	0.000044	0.681	-37.54	121789	0.00397	0.714	0.00644	1.860	0.644
9	131.2	11.6	10.4	0.000039	0.741	-8.56	122485	0.00363	0.710	0.00594	1.612	0.561
10	111.9	11.6	10.2	0.000037	0.770	5.73	122836	0.00349	0.710	0.00707	2.214	0.639
RUN NO 559		ORIF DIA 0.0635 CM		FLOW RATE 0.61 G/S		LIQ TEMP 21.9 K		LIQ PRESS 1.65 ATM		CART HTR PWR	5.697 W	
1	92.8	12.1	15.7	0.000119	0.351	-197.68	90017	0.06003	4.363	0.05407	*******	10.867
2	13.0	12.1	15.2	0.000096	0.426	-161.08	90279	0.00878	0.772	0.83418	*******	112.659
3	14.6	12.1	15.0	0.000092	0.436	-155.85	90408	0.00824	0.743	0.29687	*******	40.059
4	35.4	12.1	14.8	0.000089	0.446	-150.85	90538	0.00762	0.703	0.03014	24.082	4.510
5	50.5	12.0	14.3	0.000082	0.466	-141.14	90792	0.00734	0.707	0.01839	11.439	2.758
6	56.0	11.9	13.3	0.000070	0.517	-116.75	91621	0.00669	0.713	0.01617	9.314	2.262
7	112.8	11.8	11.9	0.000049	0.667	-43.72	93342	0.00519	0.711	0.00704	2.307	0.871
8	131.8	11.6	10.9	0.000037	0.815	28.43	94460	0.00426	0.711	0.00592	1.689	0.635
9	136.9	11.6	10.4	0.000033	0.893	66.41	94995	0.00387	0.708	0.00565	1.558	0.567
10	120.3	11.6	10.2	0.000031	0.932	85.16	95264	0.00370	0.705	0.00648	2.010	0.621
RUN NO 560		ORIF DIA 0.0635 CM		FLOW RATE 0.52 G/S		LIQ TEMP 21.9 K		LIQ PRESS 1.64 ATM		CART HTR PWR	8.738 W	
1	102.2	12.0	14.6	0.000103	0.380	-193.66	76300	0.06633	4.387	0.04865	*******	10.651
2	13.1	12.0	14.1	0.000081	0.469	-139.82	76540	0.00964	0.786	0.75799	*******	108.903
3	16.5	12.0	13.8	0.000077	0.482	-133.55	76658	0.00883	0.740	0.16299	*******	23.827
4	33.7	12.0	13.6	0.000074	0.494	-127.59	76878	0.00828	0.710	0.03270	30.084	5.153
5	49.3	11.9	13.1	0.000068	0.519	-115.93	77337	0.00791	0.712	0.01907	13.470	3.016
6	60.2	11.8	12.1	0.000057	0.579	-86.74	78289	0.00715	0.716	0.01479	8.991	2.191
7	127.9	11.6	10.7	0.000039	0.759	0.57	79703	0.00546	0.715	0.00615	2.006	0.799
8	146.5	11.5	9.8	0.000029	0.936	86.80	80600	0.00443	0.715	0.00529	1.528	0.591
9	142.8	11.5	9.4	0.000027	0.990	132.93	81029	0.00419	0.714	0.00543	1.606	0.579
10	132.5	11.4	9.2	0.000026	0.990	156.24	81245	0.00414	0.705	0.00583	1.843	0.617

STA NO -	TURF WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 561	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.64 ATM	CART HTR PWR 0.000 W							
1	112.8	12.2	17.4	0.000147	0.317	-274.13	114748	0.05142	4.359	0.04336	*******	7.840
2	14.8	12.2	16.7	0.000118	0.377	-184.67	115371	0.00987	0.993	0.38405	*******	47.493
3	26.4	12.2	16.7	0.000112	0.388	-179.54	115680	0.00907	0.938	0.06541	*******	8.624
4	47.7	12.1	15.8	0.000106	0.398	-174.69	115992	0.00841	0.892	0.02509	15.171	3.461
5	67.3	12.1	15.0	0.000096	0.417	-165.21	116572	0.00809	0.899	0.01628	7.575	2.245
6	83.9	12.0	13.7	0.000079	0.466	-141.41	117539	0.00729	0.905	0.01258	4.922	1.635
7	136.2	11.8	12.0	0.000054	0.613	-70.36	120118	0.00556	0.903	0.00726	1.874	0.799
8	132.8	11.7	10.9	0.000040	0.756	-0.54	121728	0.00453	0.905	0.00747	1.977	0.695
9	147.8	11.6	10.4	0.000035	0.831	35.97	122473	0.00410	0.900	0.00661	1.586	0.575
10	128.2	11.6	10.2	0.000033	0.868	53.94	122831	0.00392	0.898	0.00770	2.104	0.640
RUN NO 564	ORIF DIA 0.0635 CM	FLOW RATE 0.79 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.64 ATM	CART HTR PWR 3.588 W							
1	100.8	11.6	10.9	0.000092	0.329	-210.73	121757	0.05001	4.358	0.04890	*******	8.607
2	12.3	11.6	10.8	0.000079	0.380	-145.79	121854	0.00204	0.205	0.28928	*******	34.940
3	15.7	11.6	10.8	0.000079	0.382	-144.89	121902	0.00137	0.138	0.03401	*******	4.256
4	20.1	11.6	10.8	0.000078	0.383	-144.18	121950	0.00132	0.134	0.01591	13.345	2.064
5	22.6	11.6	10.7	0.000077	0.386	-142.78	122075	0.00133	0.136	0.01239	9.643	1.621
6	24.2	11.6	10.3	0.000073	0.394	-139.36	122736	0.00131	0.136	0.01081	8.062	1.406
7	29.9	11.5	9.5	0.000064	0.416	-149.01	123927	0.00124	0.136	0.00738	4.785	0.946
8	31.1	11.4	9.0	0.000058	0.438	-158.69	124796	0.00118	0.136	0.00691	4.370	0.856
9	32.8	11.4	8.7	0.000055	0.449	-153.23	125197	0.00115	0.136	0.00637	3.900	0.778
10	33.3	11.4	8.6	0.000054	0.455	-150.54	125398	0.00112	0.134	0.00610	3.701	0.740
RUN NO 565	ORIF DIA 0.0635 CM	FLOW RATE 0.61 G/S	LIQ TEMP 21.9 K	LIQ PRESS 1.64 ATM	CART HTR PWR 7.379 W							
1	103.5	11.6	10.1	0.000078	0.361	-195.61	95397	0.05911	4.371	0.04755	*******	9.577
2	11.1	11.6	10.1	0.000066	0.427	-163.16	95397	0.00235	0.206	*******	*******	*******
3	12.5	11.6	10.1	0.000066	0.429	-161.97	95397	0.00159	0.140	0.15242	*******	20.541
4	17.3	11.6	10.1	0.000065	0.431	-161.02	95397	0.00153	0.135	0.02352	22.492	3.331
5	20.3	11.6	10.1	0.000065	0.435	-159.15	95402	0.00153	0.136	0.01540	13.546	2.249
6	22.1	11.5	10.0	0.000063	0.445	-154.48	95466	0.00150	0.137	0.01299	10.696	1.859
7	29.5	11.5	9.8	0.000058	0.474	-140.49	95735	0.00141	0.137	0.00760	5.164	1.073
8	31.5	11.5	9.7	0.000054	0.502	-126.51	95931	0.00133	0.137	0.00684	4.460	0.930
9	33.4	11.5	9.6	0.000052	0.517	-119.07	96036	0.00129	0.137	0.00624	3.920	0.835
10	34.2	11.5	9.5	0.000051	0.525	-115.40	96088	0.00125	0.134	0.00590	3.644	0.782
RUN NO 567	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 24.9 K	LIQ PRESS 3.45 ATM	CART HTR PWR 0.000 W							
1	129.6	12.1	15.7	0.000112	0.373	-187.18	165834	0.03083	4.375	0.03725	*******	4.526
2	16.7	12.1	15.7	0.000102	0.409	-169.06	165838	0.00242	0.378	0.08186	*******	7.286
3	16.6	12.1	15.7	0.000102	0.412	-167.82	165840	0.00188	0.295	0.06598	*******	5.835
4	24.3	12.1	15.7	0.000101	0.414	-166.75	165842	0.00179	0.282	0.02304	16.788	2.141
5	31.3	12.1	15.7	0.000100	0.418	-164.67	165857	0.00178	0.283	0.01475	9.132	1.403
6	34.4	12.1	15.5	0.000096	0.429	-159.48	166027	0.00174	0.284	0.01275	7.421	1.203
7	41.5	12.1	14.9	0.000087	0.460	-144.00	166638	0.00162	0.284	0.00964	4.941	0.881
8	42.0	12.0	14.4	0.000079	0.492	-128.57	167085	0.00152	0.284	0.00949	4.824	0.823
9	44.4	12.0	14.2	0.000075	0.508	-120.40	167320	0.00146	0.283	0.00875	4.279	0.743
10	32.9	12.0	14.1	0.000073	0.517	-116.32	167437	0.00146	0.287	0.01374	8.251	1.113
RUN NO 568	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 24.5 K	LIQ PRESS 3.45 ATM	CART HTR PWR 1.841 W							
1	130.1	12.1	16.0	0.000118	0.362	-192.36	165512	0.03170	4.372	0.03707	*******	4.610
2	15.9	12.1	14.0	0.000107	0.399	-174.22	165526	0.00249	0.378	0.09985	*******	8.999
3	16.0	12.1	16.0	0.000106	0.401	-172.98	165533	0.00192	0.293	0.07586	*******	6.809
4	23.5	12.1	16.0	0.000105	0.403	-171.91	165540	0.00184	0.282	0.02492	18.727	2.353
5	30.9	12.1	15.9	0.000104	0.407	-169.82	165570	0.00182	0.283	0.01507	9.470	1.460
6	33.9	12.1	15.7	0.000100	0.418	-164.65	165818	0.00178	0.284	0.01304	7.738	1.255
7	40.9	12.1	15.0	0.000089	0.460	-149.18	166521	0.00166	0.284	0.00987	5.153	0.916
8	41.4	12.0	14.5	0.000081	0.481	-133.76	167035	0.00155	0.284	0.00968	5.006	0.853
9	44.3	12.0	14.2	0.000077	0.498	-125.60	167295	0.00149	0.283	0.00877	4.329	0.757
10	32.7	12.0	14.1	0.000075	0.506	-121.51	167426	0.00149	0.287	0.01384	8.400	1.139
RUN NO 569	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 24.4 K	LIQ PRESS 3.45 ATM	CART HTR PWR 7.088 W							
1	122.2	12.1	16.1	0.000118	0.361	-192.68	165432	0.03179	4.376	0.03977	*******	4.922
2	15.3	12.1	16.1	0.000107	0.398	-174.55	165448	0.00245	0.371	0.11580	*******	10.388
3	15.6	12.1	16.1	0.000107	0.400	-173.32	165457	0.00192	0.293	0.08540	*******	7.642
4	23.0	12.1	16.0	0.000106	0.402	-172.26	165465	0.00184	0.282	0.02611	19.528	2.461
5	30.6	12.1	16.0	0.000105	0.407	-170.17	165498	0.00182	0.282	0.01527	9.475	1.480
6	33.2	12.1	15.7	0.000101	0.417	-165.00	165766	0.00179	0.284	0.01345	7.928	1.292
7	40.0	12.1	15.0	0.000090	0.449	-149.54	166491	0.00166	0.284	0.01018	5.295	0.944
8	41.2	12.0	14.5	0.000081	0.480	-134.13	167022	0.00156	0.284	0.00975	4.975	0.860
9	44.9	12.0	14.3	0.000077	0.497	-125.97	167289	0.00150	0.283	0.00861	4.132	0.745
10	32.6	12.0	14.1	0.000075	0.505	-121.89	167423	0.00149	0.286	0.01392	8.315	1.146

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STEPMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 570	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 24.7 K	LIQ PRESS 3.45 ATM	CART HTR PWR 14.391 W							
1	111.3	12.2	14.3	0.000118	0.367	-189.88	165191	0.03119	4.359	0.04396	*******	5.325
2	15.0	12.2	14.3	0.000107	0.403	-171.86	165216	0.00233	0.358	0.12538	*******	11.088
3	15.2	12.2	14.3	0.000107	0.406	-170.66	165228	0.00187	0.289	0.09368	*******	8.265
4	22.3	12.2	14.3	0.000106	0.408	-169.61	165240	0.00180	0.280	0.02749	20.626	2.556
5	30.3	12.1	14.2	0.000105	0.412	-167.54	165283	0.00178	0.280	0.01544	9.515	1.474
6	32.2	12.1	15.9	0.000100	0.422	-162.45	165610	0.00175	0.281	0.01400	8.297	1.325
7	38.7	12.1	15.1	0.000089	0.454	-147.16	166403	0.00163	0.281	0.01058	5.555	0.969
8	40.5	12.0	14.5	0.000080	0.485	-131.92	166985	0.00153	0.281	0.00988	5.026	0.864
9	50.7	12.0	14.3	0.000076	0.501	-123.88	167271	0.00146	0.279	0.00721	3.121	0.627
10	32.8	12.0	14.1	0.000075	0.509	-119.85	167414	0.00147	0.284	0.01370	8.039	1.121
RUN NO 571	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 25.3 K	LIQ PRESS 3.45 ATM	CART HTR PWR 28.104 W							
1	92.6	12.2	14.4	0.000113	0.386	-180.39	165111	0.02985	4.390	0.05456	*******	6.236
2	14.8	12.2	14.4	0.000103	0.422	-162.34	165138	0.00212	0.342	0.13025	*******	11.071
3	14.9	12.2	14.4	0.000102	0.425	-161.17	165151	0.00179	0.290	0.10399	*******	8.815
4	22.0	12.2	14.3	0.000102	0.427	-160.12	165165	0.00172	0.280	0.02837	20.759	2.539
5	29.4	12.2	14.3	0.000101	0.431	-158.05	165212	0.00171	0.280	0.01627	9.880	1.497
6	30.8	12.1	14.0	0.000096	0.441	-152.97	165558	0.00168	0.282	0.01510	8.903	1.372
7	37.4	12.1	15.1	0.000086	0.473	-137.71	166374	0.00157	0.282	0.01112	5.774	0.981
8	40.1	12.0	14.6	0.000078	0.504	-122.49	166973	0.00147	0.282	0.01006	4.988	0.852
9	52.2	12.0	14.3	0.000074	0.520	-114.47	167264	0.00141	0.279	0.00694	2.844	0.587
10	33.2	12.0	14.1	0.000072	0.528	-110.45	167411	0.00142	0.285	0.01348	7.594	1.073
RUN NO 572	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 25.3 K	LIQ PRESS 3.45 ATM	CART HTR PWR 41.616 W							
1	70.1	12.2	14.9	0.000110	0.406	-170.06	164632	0.02854	4.421	0.07639	*******	8.113
2	14.4	12.2	14.8	0.000101	0.443	-151.97	164675	0.00190	0.321	0.14619	*******	11.901
3	14.7	12.2	14.8	0.000100	0.445	-150.84	164695	0.00171	0.289	0.11349	*******	9.238
4	21.9	12.2	14.8	0.000100	0.447	-149.79	164716	0.00164	0.280	0.02878	20.444	2.477
5	28.8	12.2	14.7	0.000098	0.451	-147.74	164784	0.00163	0.280	0.01683	10.002	1.488
6	30.0	12.2	14.7	0.000094	0.462	-142.71	165247	0.00160	0.281	0.01580	9.170	1.379
7	36.6	12.1	15.3	0.000083	0.493	-127.55	166198	0.00150	0.281	0.01147	5.848	0.976
8	39.7	12.1	14.6	0.000075	0.524	-112.45	166898	0.00141	0.282	0.01017	4.909	0.834
9	51.5	12.0	14.3	0.000071	0.540	-104.48	167228	0.00136	0.279	0.00706	2.826	0.579
10	32.9	12.0	14.1	0.000069	0.548	-100.50	167393	0.00136	0.284	0.01363	7.478	1.053
RUN NO 577	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 22.6 K	LIQ PRESS 3.33 ATM	CART HTR PWR 0.000 W							
1	143.2	12.2	17.7	0.000148	0.316	-214.50	163788	0.03543	4.279	0.03268	*******	4.553
2	14.9	12.2	17.5	0.000130	0.366	-194.88	163975	0.00623	0.846	0.31731	*******	30.898
3	17.6	12.2	17.4	0.000127	0.362	-191.89	164067	0.00583	0.764	0.14304	*******	14.111
4	34.5	12.2	17.3	0.000125	0.368	-189.12	164159	0.00523	0.733	0.03299	22.069	3.510
5	49.5	12.2	17.1	0.000120	0.379	-183.68	164370	0.00509	0.735	0.01970	10.232	2.128
6	58.0	12.2	16.3	0.000107	0.406	-170.18	165199	0.00477	0.739	0.01614	7.452	1.675
7	98.2	12.1	14.9	0.000082	0.489	-129.80	166630	0.00397	0.739	0.00857	2.605	0.818
8	111.1	12.0	13.9	0.000066	0.570	-90.00	167637	0.00341	0.738	0.00745	2.038	0.637
9	106.7	12.0	13.4	0.000059	0.613	-69.07	168460	0.00317	0.737	0.00778	2.208	0.626
10	93.3	11.9	13.2	0.000056	0.634	-58.71	168935	0.00306	0.735	0.00904	2.870	0.699
RUN NO 579	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 24.5 K	LIQ PRESS 3.33 ATM	CART HTR PWR 26.205 W							
1	99.7	12.3	18.5	0.000134	0.341	-192.05	163063	0.03162	4.361	0.04990	*******	6.040
2	15.4	12.3	18.3	0.000120	0.401	-172.27	163260	0.00529	0.810	0.26007	*******	23.125
3	16.5	12.3	18.2	0.000117	0.407	-169.34	163358	0.00497	0.771	0.18028	*******	16.031
4	35.0	12.3	18.1	0.000115	0.413	-166.56	163455	0.00467	0.735	0.03236	19.789	3.144
5	49.5	12.2	17.9	0.000111	0.424	-161.12	163677	0.00457	0.738	0.01984	9.523	1.957
6	55.3	12.2	17.0	0.000100	0.462	-147.60	164541	0.00432	0.743	0.01725	7.628	1.637
7	81.2	12.1	15.5	0.000077	0.534	-117.11	166031	0.00365	0.742	0.01074	3.519	0.936
8	89.4	12.0	14.4	0.000063	0.615	-87.17	167079	0.00318	0.743	0.00961	2.917	0.756
9	102.8	12.0	14.0	0.000057	0.658	-46.21	167572	0.00295	0.739	0.00813	2.198	0.615
10	83.3	12.0	13.7	0.000054	0.679	-35.84	167878	0.00287	0.741	0.01040	3.344	0.752
RUN NO 580	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 22.5 K	LIQ PRESS 3.33 ATM	CART HTR PWR 0.000 W							
1	147.7	12.4	19.7	0.000164	0.314	-215.20	158219	0.03660	4.294	0.03173	*******	4.526
2	15.5	12.3	19.5	0.000143	0.366	-194.21	158412	0.00787	1.048	0.33721	*******	33.533
3	20.2	12.3	19.4	0.000139	0.364	-190.35	158508	0.00713	0.969	0.12290	*******	12.532
4	41.5	12.3	19.3	0.000136	0.371	-186.74	158603	0.00664	0.921	0.03155	18.456	3.460
5	56.1	12.3	19.1	0.000130	0.386	-179.69	158823	0.00646	0.931	0.02125	10.092	2.327
6	71.2	12.3	18.1	0.000113	0.422	-162.03	159695	0.00594	0.934	0.01595	6.260	1.665
7	125.4	12.2	16.6	0.000083	0.529	-119.33	161706	0.00474	0.933	0.00824	2.033	0.768
8	118.3	12.1	15.5	0.000065	0.634	-87.31	162274	0.00396	0.935	0.00880	2.290	0.706
9	136.7	12.1	15.0	0.000058	0.690	-29.97	162775	0.00362	0.928	0.00745	1.702	0.567
10	114.2	12.1	14.7	0.000055	0.717	-16.46	163026	0.00348	0.929	0.00910	2.444	0.660

STA NO -	TURE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 581	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 23.2 K	LIQ PRESS 3.33 ATM	CART HTR PWR 9.252 W							
1	133.1	12.4	26.5	0.000161	0.332	-206.20	157473	0.03479	4.314	0.03575	*******	4.837
2	15.8	12.4	26.2	0.000141	0.374	-185.19	157732	0.00738	1.032	0.29932	*******	28.721
3	18.1	12.4	26.1	0.000137	0.382	-181.36	157860	0.00683	0.974	0.17029	*******	16.423
4	41.7	12.4	19.9	0.000134	0.389	-177.75	157988	0.00631	0.918	0.03128	18.326	3.304
5	56.0	12.4	19.6	0.000127	0.403	-170.71	158269	0.00618	0.931	0.02130	10.068	2.248
6	73.0	12.3	18.6	0.000111	0.439	-153.09	159269	0.00569	0.934	0.01537	5.922	1.567
7	134.8	12.2	14.8	0.000082	0.546	-100.52	160972	0.00458	0.932	0.00760	1.746	0.694
8	119.7	12.1	15.6	0.000064	0.652	-48.65	162156	0.00385	0.934	0.00848	2.221	0.682
9	135.9	12.1	15.0	0.000057	0.707	-21.41	162718	0.00353	0.929	0.00754	1.728	0.562
10	115.8	12.1	14.8	0.000054	0.735	-7.96	163001	0.00340	0.928	0.00894	2.357	0.637
RUN NO 582	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 25.1 K	LIQ PRESS 3.33 ATM	CART HTR PWR 44.361 W							
1	77.6	12.5	21.5	0.000141	0.394	-174.63	156530	0.02990	4.411	0.06771	*******	7.556
2	16.4	12.4	26.9	0.000124	0.437	-153.49	157060	0.00602	0.885	0.24762	*******	21.076
3	19.1	12.4	26.7	0.000121	0.445	-149.78	157322	0.00588	0.878	0.14718	*******	12.656
4	42.3	12.4	26.4	0.000117	0.452	-146.20	157586	0.00545	0.920	0.03074	17.364	2.882
5	55.3	12.4	19.8	0.000111	0.466	-139.22	158109	0.00536	0.933	0.02174	10.112	2.040
6	63.4	12.3	18.5	0.000097	0.502	-121.71	159362	0.00500	0.938	0.01834	7.684	1.649
7	107.3	12.2	14.5	0.000072	0.609	-69.39	161305	0.00413	0.936	0.00985	2.705	0.807
8	116.6	12.1	15.2	0.000057	0.714	-17.86	162574	0.00353	0.938	0.00897	2.289	0.654
9	138.4	12.0	14.6	0.000051	0.769	9.10	163179	0.00326	0.932	0.00738	1.614	0.516
10	121.1	12.0	14.3	0.000048	0.796	22.37	163483	0.00314	0.930	0.00852	2.105	0.572
RUN NO 584	ORIF DIA 0.0635 CM	FLOW RATE 1.15 G/S	LIQ TEMP 24.1 K	LIQ PRESS 3.35 ATM	CART HTR PWR 21.671 W							
1	105.7	12.2	14.5	0.000125	0.351	-197.73	168619	0.03219	4.400	0.04703	*******	5.772
2	15.8	12.2	16.5	0.000113	0.387	-179.92	168619	0.00240	0.362	0.09861	*******	8.933
3	16.4	12.2	16.5	0.000113	0.389	-178.71	168619	0.00199	0.301	0.07071	*******	6.411
4	25.3	12.2	14.5	0.000112	0.391	-177.65	168619	0.00186	0.284	0.02156	14.198	2.067
5	29.0	12.2	14.5	0.000111	0.396	-175.57	168629	0.00188	0.289	0.01716	10.333	1.658
6	33.2	12.2	16.4	0.000107	0.406	-170.35	168766	0.00183	0.290	0.01379	7.636	1.328
7	39.1	12.1	15.8	0.000096	0.438	-154.80	169334	0.00170	0.290	0.01075	5.333	0.996
8	43.0	12.1	15.4	0.000088	0.469	-139.28	169748	0.00159	0.290	0.00938	4.354	0.830
9	40.9	12.1	15.2	0.000084	0.486	-131.05	169970	0.00153	0.290	0.01006	4.841	0.863
10	42.0	12.1	15.1	0.000082	0.494	-126.96	170082	0.00149	0.287	0.00958	4.526	0.812
RUN NO 585	ORIF DIA 0.0635 CM	FLOW RATE 1.15 G/S	LIQ TEMP 24.9 K	LIQ PRESS 3.35 ATM	CART HTR PWR 35.361 W							
1	84.3	12.2	14.9	0.000120	0.373	-186.52	168212	0.03048	4.433	0.06145	*******	7.020
2	15.6	12.2	16.9	0.000110	0.409	-168.66	168220	0.00215	0.344	0.10089	*******	8.711
3	17.6	12.2	16.9	0.000109	0.412	-167.50	168224	0.00185	0.296	0.05453	*******	4.779
4	23.9	12.2	16.9	0.000108	0.414	-166.44	168228	0.00178	0.287	0.02440	14.717	2.221
5	28.0	12.2	16.9	0.000107	0.418	-164.35	168250	0.00178	0.290	0.01828	9.930	1.682
6	31.1	12.2	16.7	0.000103	0.428	-159.15	168463	0.00174	0.290	0.01530	7.783	1.399
7	37.6	12.1	16.5	0.000093	0.460	-143.64	169158	0.00162	0.290	0.01138	5.116	1.008
8	38.0	12.1	15.5	0.000084	0.492	-128.16	169667	0.00152	0.290	0.01119	4.999	0.942
9	37.5	12.1	15.2	0.000080	0.508	-119.95	169930	0.00147	0.290	0.01143	5.155	0.935
10	38.9	12.1	15.1	0.000078	0.517	-115.89	170062	0.00143	0.287	0.01071	4.712	0.869
RUN NO 586	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 25.0 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	105.9	12.7	25.9	0.000175	0.376	-182.58	152636	0.03118	4.403	0.04725	*******	5.618
2	14.4	12.7	25.9	0.000159	0.413	-163.70	152636	0.00231	0.359	0.21305	*******	18.439
3	14.7	12.7	25.9	0.000158	0.416	-162.45	152636	0.00187	0.292	0.15174	*******	13.104
4	19.2	12.7	25.9	0.000157	0.418	-161.33	152636	0.00183	0.288	0.04442	42.596	3.988
5	27.7	12.7	25.9	0.000155	0.422	-159.12	152641	0.00180	0.286	0.01905	14.522	1.777
6	31.3	12.7	25.8	0.000151	0.434	-153.61	152709	0.00176	0.287	0.01545	10.930	1.434
7	37.7	12.7	25.5	0.000134	0.467	-137.07	152990	0.00164	0.287	0.01150	7.213	1.030
8	40.1	12.7	25.2	0.000128	0.500	-120.53	153195	0.00153	0.287	0.01048	6.301	0.896
9	49.6	12.7	25.1	0.000124	0.518	-111.74	153304	0.00147	0.285	0.00771	3.986	0.664
10	35.7	12.7	25.1	0.000121	0.527	-107.30	153359	0.00149	0.294	0.01277	8.307	1.033
RUN NO 587	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 25.0 K	LIQ PRESS 3.30 ATM	CART HTR PWR 4.525 W							
1	99.5	12.7	25.9	0.000169	0.387	-176.73	152636	0.03029	4.410	0.05086	*******	5.867
2	14.2	12.7	25.9	0.000154	0.425	-157.86	152636	0.00221	0.354	0.24622	*******	20.782
3	14.6	12.7	25.9	0.000153	0.427	-156.62	152636	0.00181	0.291	0.15528	*******	13.111
4	19.0	12.7	25.9	0.000153	0.430	-155.50	152636	0.00178	0.288	0.04599	43.114	4.033
5	27.4	12.7	25.9	0.000151	0.434	-153.29	152641	0.00175	0.285	0.01948	14.518	1.775
6	30.4	12.7	25.8	0.000147	0.445	-147.79	152709	0.00171	0.287	0.01619	11.316	1.466
7	36.6	12.7	25.5	0.000135	0.478	-131.26	152990	0.00160	0.287	0.01199	7.439	1.050
8	39.0	12.7	25.2	0.000126	0.512	-114.74	153195	0.00149	0.287	0.01093	6.506	0.914
9	48.6	12.7	25.1	0.000121	0.529	-106.96	153304	0.00143	0.285	0.00794	4.049	0.660
10	35.2	12.7	25.1	0.000119	0.538	-101.53	153359	0.00145	0.293	0.01304	8.315	1.034

STA NO	TURE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSO H-T COEF -	EXP/S-T H-T COEF -
RUN NO 588		ORIF DIA 0.0635 CM		FLOW RATE 1.10 G/S		LIQ TEMP 25.0 K		LIQ PRESS 3.30 ATM		CART HTR PWR 26.351 W		
1	72.4	12.8	26.7	0.000159	0.422	-158.90	151940	0.02803	4.453	0.07468	********	7.759
2	14.1	12.8	26.7	0.000146	0.460	-139.96	151940	0.00190	0.329	0.25791	********	20.381
3	14.3	12.8	26.7	0.000146	0.463	-138.76	151940	0.00167	0.291	0.19227	********	15.173
4	17.5	12.8	26.7	0.000145	0.465	-137.64	151940	0.00166	0.291	0.06155	57.14)	4.999
5	27.5	12.8	26.7	0.000144	0.469	-135.42	151949	0.00162	0.286	0.01950	13.720	1.668
6	29.8	12.8	26.5	0.000140	0.480	-129.91	152078	0.00159	0.288	0.01691	11.321	1.435
7	35.6	12.7	25.9	0.000128	0.514	-113.36	152611	0.00149	0.288	0.01259	7.530	1.037
8	36.9	12.7	25.8	0.000118	0.547	-96.82	153000	0.00140	0.288	0.01190	6.951	0.937
9	43.6	12.7	25.2	0.000114	0.565	-88.03	153208	0.00135	0.287	0.00926	4.826	0.724
10	33.8	12.7	25.1	0.000111	0.574	-83.61	153313	0.00136	0.293	0.01390	8.619	1.042
RUN NO 589		ORIF DIA 0.0635 CM		FLOW RATE 1.10 G/S		LIQ TEMP 25.0 K		LIQ PRESS 3.30 ATM		CART HTR PWR 0.000 W		
1	100.0	12.7	25.9	0.000175	0.376	-182.52	152636	0.03132	4.424	0.05069	********	5.994
2	14.1	12.7	25.9	0.000158	0.415	-162.69	152636	0.00375	0.585	0.42531	********	36.538
3	14.8	12.7	25.9	0.000156	0.420	-160.55	152636	0.00334	0.526	0.25827	********	22.171
4	22.2	12.7	25.9	0.000155	0.424	-158.53	152636	0.00327	0.521	0.05518	43.535	4.995
5	36.0	12.7	25.9	0.000152	0.432	-154.54	152641	0.00318	0.515	0.02215	12.834	2.099
6	41.2	12.7	25.8	0.000145	0.452	-144.60	152709	0.00305	0.518	0.01820	9.624	1.691
7	61.5	12.7	25.5	0.000127	0.511	-114.76	152990	0.00270	0.518	0.01062	4.189	0.928
8	57.2	12.7	25.2	0.000112	0.571	-84.97	153195	0.00242	0.518	0.01164	4.855	0.925
9	54.2	12.7	25.1	0.000106	0.603	-69.12	153304	0.00229	0.517	0.01244	5.401	0.942
10	46.2	12.7	25.1	0.000103	0.619	-61.17	153359	0.00224	0.521	0.01553	7.580	1.135
RUN NO 590		ORIF DIA 0.0635 CM		FLOW RATE 1.10 G/S		LIQ TEMP 24.5 K		LIQ PRESS 3.30 ATM		CART HTR PWR 9.646 W		
1	107.5	12.7	26.0	0.000182	0.362	-189.47	152567	0.03271	4.450	0.04699	********	5.763
2	14.2	12.7	26.0	0.000164	0.402	-169.50	152567	0.00393	0.594	0.40473	********	35.744
3	14.5	12.7	26.0	0.000162	0.406	-167.32	152567	0.00349	0.533	0.29741	********	26.138
4	25.2	12.7	26.0	0.000160	0.410	-165.29	152567	0.00338	0.520	0.04165	31.881	3.931
5	39.3	12.7	26.0	0.000157	0.418	-161.30	152572	0.00329	0.516	0.01944	11.188	1.911
6	41.1	12.7	25.9	0.000150	0.438	-151.31	152646	0.00316	0.521	0.01837	10.255	1.748
7	88.6	12.7	25.5	0.000130	0.498	-121.34	152952	0.00277	0.519	0.00683	2.131	0.638
8	51.5	12.7	25.3	0.000115	0.558	-91.41	153175	0.00249	0.521	0.01344	6.391	1.077
9	66.6	12.7	25.1	0.000108	0.590	-75.48	153295	0.00234	0.518	0.00961	3.758	0.758
10	59.2	12.7	25.1	0.000105	0.606	-67.53	153354	0.00229	0.521	0.01121	4.799	0.852
RUN NO 591		ORIF DIA 0.0635 CM		FLOW RATE 1.10 G/S		LIQ TEMP 24.0 K		LIQ PRESS 3.30 ATM		CART HTR PWR 0.000 W		
1	115.8	12.7	26.0	0.000189	0.348	-196.21	152567	0.03415	4.474	0.04341	********	5.527
2	14.0	12.7	26.0	0.000169	0.389	-176.10	152567	0.00414	0.604	0.49906	********	45.129
3	14.3	12.7	26.0	0.000167	0.393	-173.89	152567	0.00364	0.538	0.34893	********	31.391
4	25.9	12.7	26.0	0.000166	0.397	-171.85	152567	0.00350	0.523	0.03965	30.498	3.853
5	39.5	12.7	26.0	0.000162	0.405	-167.82	152572	0.00342	0.520	0.01944	11.477	1.961
6	43.7	12.7	25.9	0.000154	0.425	-157.77	152646	0.00328	0.524	0.01691	9.302	1.657
7	88.4	12.7	25.5	0.000133	0.486	-127.57	152952	0.00286	0.523	0.00691	2.223	0.658
8	73.6	12.7	25.3	0.000118	0.546	-97.45	153175	0.00255	0.524	0.00860	3.204	0.731
9	65.1	12.7	25.1	0.000111	0.578	-81.39	153295	0.00241	0.524	0.01000	4.093	0.799
10	64.4	12.7	25.1	0.000107	0.594	-73.38	153354	0.00234	0.522	0.01011	4.176	0.789
RUN NO 592		ORIF DIA 0.0635 CM		FLOW RATE 1.10 G/S		LIQ TEMP 24.5 K		LIQ PRESS 3.30 ATM		CART HTR PWR 0.000 W		
1	108.3	12.8	27.0	0.000189	0.360	-190.02	151663	0.03319	4.498	0.04712	********	5.797
2	15.6	12.8	27.0	0.000169	0.402	-168.95	151663	0.00545	0.825	0.29664	********	26.535
3	15.1	12.8	27.0	0.000167	0.408	-165.86	151663	0.00507	0.779	0.34513	********	30.332
4	33.3	12.8	27.0	0.000164	0.414	-162.92	151663	0.00478	0.745	0.03637	25.868	3.521
5	48.3	12.8	27.0	0.000160	0.426	-157.17	151674	0.00466	0.747	0.02101	11.573	2.073
6	55.7	12.8	26.8	0.000149	0.455	-142.74	151827	0.00439	0.751	0.01751	8.688	1.662
7	90.4	12.8	26.1	0.000122	0.541	-99.68	152460	0.00369	0.751	0.00966	3.284	0.845
8	104.5	12.7	25.6	0.000103	0.628	-56.37	152922	0.00318	0.750	0.00818	2.469	0.645
9	100.2	12.7	25.3	0.000095	0.674	-33.46	153170	0.00296	0.749	0.00856	2.675	0.636
10	88.3	12.7	25.1	0.000092	0.697	-21.99	153294	0.00288	0.754	0.00997	3.455	0.712
RUN NO 593		ORIF DIA 0.0635 CM		FLOW RATE 1.10 G/S		LIQ TEMP 24.7 K		LIQ PRESS 3.30 ATM		CART HTR PWR 0.000 W		
1	102.1	12.8	27.6	0.000190	0.365	-187.22	151181	0.03210	4.416	0.04945	********	5.978
2	16.1	12.8	27.6	0.000170	0.408	-165.77	151181	0.00656	1.007	0.30544	********	27.133
3	16.0	12.8	27.6	0.000167	0.416	-161.94	151181	0.00625	0.979	0.30592	********	26.749
4	39.6	12.8	27.6	0.000164	0.423	-158.26	151181	0.00581	0.925	0.03454	22.648	3.360
5	55.0	12.8	27.5	0.000158	0.437	-151.09	151195	0.00567	0.934	0.02214	11.470	2.162
6	65.8	12.8	27.3	0.000145	0.473	-133.06	151389	0.00527	0.939	0.01772	8.011	1.659
7	110.7	12.8	26.4	0.000115	0.582	-79.04	152196	0.00429	0.938	0.00967	2.845	0.805
8	125.2	12.7	25.7	0.000095	0.690	-25.24	152786	0.00362	0.938	0.00836	2.222	0.620
9	131.2	12.7	25.3	0.000086	0.747	3.30	153103	0.00333	0.934	0.00788	2.014	0.553
10	111.9	12.7	25.2	0.000083	0.776	17.58	153262	0.00324	0.943	0.00951	2.800	0.837

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 594	ORIF DIA 0.0635 CM	FLOW RATE 1.08 G/S	LIQ TEMP 24.6 K	LIQ PRESS 3.28 ATM	CART HTR PWR 0.000 W							
1	123.4	12.7	24.6	0.000172	0.363	-189.14	150184	0.03265	4.349	0.03928	*******	4.970
2	16.5	12.7	24.6	0.000156	0.402	-169.96	150184	0.00256	0.377	0.09782	*******	9.040
3	16.4	12.7	24.6	0.000155	0.404	-168.63	150184	0.00201	0.298	0.08016	*******	7.359
4	23.0	12.7	24.6	0.000154	0.407	-167.48	150184	0.00193	0.288	0.02798	21.327	2.684
5	29.6	12.7	24.6	0.000152	0.411	-165.20	150187	0.00191	0.288	0.01699	10.999	1.667
6	32.7	12.7	24.5	0.000148	0.423	-159.51	150230	0.00187	0.290	0.01446	8.799	1.405
7	39.9	12.6	24.3	0.000136	0.457	-142.40	150407	0.00173	0.290	0.01064	5.679	0.997
8	40.9	12.6	24.2	0.000126	0.491	-125.31	150536	0.00161	0.290	0.01024	5.371	0.908
9	39.8	12.6	24.1	0.000121	0.509	-116.20	150605	0.00155	0.290	0.01067	5.703	0.917
10	41.5	12.6	24.0	0.000119	0.519	-111.66	150639	0.00152	0.288	0.00996	5.168	0.847
RUN NO 595	ORIF DIA 0.0635 CM	FLOW RATE 1.08 G/S	LIQ TEMP 24.6 K	LIQ PRESS 3.28 ATM	CART HTR PWR 6.800 W							
1	118.1	12.7	25.0	0.000174	0.365	-188.21	149838	0.03256	4.358	0.04133	*******	5.185
2	15.6	12.7	25.0	0.000158	0.403	-169.01	149838	0.00252	0.373	0.12830	*******	11.702
3	16.1	12.7	25.0	0.000157	0.406	-167.69	149838	0.00200	0.297	0.08804	*******	8.027
4	22.7	12.7	25.0	0.000156	0.408	-166.53	149838	0.00192	0.288	0.02867	21.382	2.736
5	29.6	12.7	25.0	0.000154	0.413	-164.26	149843	0.00190	0.288	0.01704	10.743	1.666
6	32.7	12.7	24.9	0.000149	0.424	-158.56	149916	0.00186	0.290	0.01443	8.541	1.398
7	38.9	12.7	24.5	0.000136	0.459	-141.47	150219	0.00172	0.290	0.01103	5.827	1.027
8	39.7	12.6	24.3	0.000126	0.493	-124.39	150439	0.00160	0.290	0.01071	5.585	0.944
9	38.3	12.6	24.1	0.000121	0.511	-115.29	150557	0.00155	0.290	0.01127	6.015	0.961
10	40.1	12.6	24.1	0.000118	0.520	-110.75	150616	0.00151	0.288	0.01046	5.413	0.885
RUN NO 596	ORIF DIA 0.0635 CM	FLOW RATE 1.08 G/S	LIQ TEMP 24.9 K	LIQ PRESS 3.28 ATM	CART HTR PWR 14.538 W							
1	108.1	12.7	25.3	0.000173	0.371	-185.11	149562	0.03226	4.390	0.04600	*******	5.646
2	15.2	12.7	25.3	0.000157	0.410	-165.81	149562	0.00243	0.365	0.14426	*******	12.945
3	15.7	12.7	25.3	0.000156	0.412	-164.50	149562	0.00197	0.298	0.09845	*******	8.835
4	22.0	12.7	25.3	0.000155	0.414	-163.34	149562	0.00191	0.290	0.03135	23.033	2.943
5	29.4	12.7	25.3	0.000153	0.419	-161.05	149569	0.00188	0.289	0.01733	10.578	1.672
6	32.2	12.7	25.2	0.000149	0.431	-155.34	149666	0.00184	0.291	0.01490	8.584	1.423
7	38.3	12.7	24.7	0.000135	0.465	-138.18	150069	0.00171	0.291	0.01133	5.828	1.041
8	39.0	12.6	24.4	0.000125	0.500	-121.05	150362	0.00159	0.291	0.01104	5.613	0.960
9	37.7	12.6	24.2	0.000119	0.518	-111.91	150519	0.00153	0.291	0.01161	6.044	0.978
10	39.6	12.6	24.1	0.000117	0.527	-107.37	150598	0.00149	0.289	0.01070	5.388	0.894
RUN NO 597	ORIF DIA 0.0635 CM	FLOW RATE 1.08 G/S	LIQ TEMP 25.0 K	LIQ PRESS 3.28 ATM	CART HTR PWR 26.029 W							
1	99.0	12.7	25.3	0.000166	0.388	-176.47	149562	0.03107	4.425	0.05127	*******	6.019
2	15.1	12.7	25.3	0.000151	0.427	-157.05	149562	0.00229	0.359	0.15163	*******	13.137
3	15.6	12.7	25.3	0.000150	0.430	-155.75	149562	0.00190	0.300	0.10401	*******	9.016
4	22.2	12.7	25.3	0.000149	0.432	-154.59	149562	0.00184	0.291	0.03069	21.698	2.791
5	29.5	12.7	25.3	0.000147	0.437	-152.29	149569	0.00182	0.291	0.01730	10.205	1.616
6	31.5	12.7	25.2	0.000143	0.448	-146.54	149666	0.00178	0.293	0.01556	8.813	1.435
7	37.0	12.7	24.7	0.000130	0.483	-129.30	150069	0.00165	0.293	0.01203	6.141	1.068
8	37.7	12.6	24.4	0.000120	0.518	-112.06	150362	0.00154	0.293	0.01167	5.886	0.983
9	36.3	12.6	24.2	0.000115	0.536	-102.98	150519	0.00149	0.293	0.01240	6.419	1.011
10	38.1	12.6	24.1	0.000113	0.545	-98.31	150598	0.00145	0.290	0.01138	5.697	0.921
RUN NO 598	ORIF DIA 0.0635 CM	FLOW RATE 1.08 G/S	LIQ TEMP 25.0 K	LIQ PRESS 3.28 ATM	CART HTR PWR 38.810 W							
1	86.4	12.7	25.4	0.000158	0.409	-166.17	149425	0.02974	4.459	0.06048	*******	6.723
2	14.8	12.7	25.4	0.000144	0.448	-146.67	149425	0.00212	0.348	0.16404	*******	13.648
3	15.4	12.7	25.4	0.000144	0.450	-145.39	149425	0.00183	0.302	0.11038	*******	9.202
4	22.4	12.7	25.4	0.000143	0.453	-144.22	149425	0.00176	0.292	0.03014	20.491	2.643
5	29.3	12.7	25.4	0.000141	0.457	-141.92	149433	0.00174	0.292	0.01763	10.102	1.585
6	31.1	12.7	25.3	0.000137	0.469	-136.15	149542	0.00171	0.294	0.01594	8.795	1.416
7	36.6	12.7	24.8	0.000125	0.504	-118.85	149994	0.00159	0.294	0.01227	6.103	1.052
8	37.3	12.6	24.4	0.000116	0.538	-101.56	150324	0.00149	0.294	0.01194	5.867	0.972
9	35.8	12.6	24.2	0.000111	0.557	-92.35	150500	0.00144	0.294	0.01247	6.295	1.000
10	37.7	12.6	24.1	0.000109	0.566	-87.77	150589	0.00141	0.292	0.01163	5.672	0.912
RUN NO 599	ORIF DIA 0.0635 CM	FLOW RATE 1.08 G/S	LIQ TEMP 23.2 K	LIQ PRESS 3.28 ATM	CART HTR PWR 0.000 W							
1	163.9	12.6	24.4	0.000188	0.331	-205.49	150323	0.03587	4.349	0.02875	*******	4.015
2	15.3	12.6	24.4	0.000167	0.373	-184.46	150323	0.00628	0.858	0.32182	*******	31.184
3	15.8	12.6	24.4	0.000164	0.379	-181.22	150323	0.00541	0.752	0.23564	*******	22.650
4	20.0	12.6	24.4	0.000162	0.385	-178.29	150323	0.00519	0.733	0.04490	28.383	4.630
5	44.4	12.6	24.4	0.000157	0.397	-172.52	150325	0.00501	0.729	0.02292	10.909	2.428
6	45.6	12.6	24.4	0.000146	0.426	-158.09	150356	0.00471	0.735	0.02232	10.442	2.241
7	101.4	12.6	24.2	0.000121	0.512	-114.76	150482	0.00390	0.733	0.00825	2.075	0.779
8	90.6	12.6	24.1	0.000103	0.599	-71.57	150574	0.00335	0.734	0.00941	2.593	0.776
9	88.6	12.6	24.1	0.000095	0.645	-48.60	150624	0.00310	0.732	0.00950	2.644	0.738
10	75.1	12.6	24.0	0.000092	0.668	-37.16	150648	0.00298	0.729	0.01167	3.738	0.864

STA NO	TURE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STEPMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 600	ORIF DIA 0.0635 CM		FLOW RATE 1.08 G/S		LIQ TEMP 23.4 K		LIQ PRESS 3.28 ATM		CART HTR PWR 6.496 W			
1	143.8	12.7	25.0	0.000190	0.335	-203.42	149769	0.03551	4.358	0.03324	*******	4.553
2	15.8	12.7	25.0	0.000169	0.377	-182.37	149769	0.00606	0.837	0.26912	*******	25.981
3	16.3	12.7	25.0	0.000166	0.383	-179.22	149769	0.00540	0.759	0.21227	*******	20.318
4	34.4	12.7	25.0	0.000164	0.389	-176.29	149769	0.00506	0.722	0.03327	22.653	3.477
5	47.5	12.7	25.0	0.000159	0.400	-170.57	149775	0.00496	0.727	0.02090	11.393	2.210
6	58.0	12.7	24.9	0.000148	0.429	-156.19	149854	0.00465	0.731	0.01611	7.569	1.643
7	101.7	12.7	24.4	0.000122	0.515	-113.08	150181	0.00386	0.730	0.00819	2.468	0.770
8	109.5	12.6	24.3	0.000103	0.601	-70.08	150420	0.00332	0.731	0.00754	2.134	0.631
9	120.4	12.6	24.1	0.000095	0.647	-47.25	150548	0.00307	0.727	0.00674	1.753	0.537
10	104.3	12.6	24.1	0.000092	0.670	-35.89	150612	0.00296	0.725	0.00791	2.333	0.604
RUN NO 601	ORIF DIA 0.0635 CM		FLOW RATE 1.08 G/S		LIQ TEMP 24.0 K		LIQ PRESS 3.28 ATM		CART HTR PWR 14.668 W			
1	129.7	12.7	26.0	0.000189	0.348	-196.18	148949	0.03395	4.343	0.03714	*******	4.872
2	16.1	12.7	26.0	0.000169	0.390	-175.25	148949	0.00572	0.819	0.24774	*******	33.277
3	16.2	12.7	26.0	0.000166	0.396	-172.15	148949	0.00518	0.753	0.22058	*******	30.488
4	34.0	12.7	26.0	0.000164	0.402	-169.24	148949	0.00486	0.718	0.03382	23.034	3.430
5	47.6	12.7	26.0	0.000159	0.414	-163.56	148959	0.00476	0.722	0.02074	11.211	2.133
6	57.4	12.7	25.8	0.000148	0.442	-149.29	149110	0.00447	0.725	0.01626	7.652	1.614
7	96.3	12.7	25.1	0.000121	0.528	-106.51	149735	0.00374	0.725	0.00866	2.712	0.794
8	105.2	12.7	24.6	0.000102	0.614	-63.86	150192	0.00323	0.725	0.00784	2.282	0.643
9	119.2	12.6	24.3	0.000094	0.659	-41.23	150437	0.00299	0.721	0.00677	1.764	0.530
10	103.2	12.6	24.1	0.000091	0.682	-29.97	150560	0.00289	0.720	0.00796	2.353	0.599
RUN NO 602	ORIF DIA 0.0635 CM		FLOW RATE 1.08 G/S		LIQ TEMP 24.8 K		LIQ PRESS 3.28 ATM		CART HTR PWR 25.890 W			
1	107.8	12.7	25.8	0.000177	0.369	-185.79	149154	0.03221	4.367	0.04596	*******	5.655
2	16.0	12.7	25.8	0.000159	0.411	-164.87	149154	0.00529	0.798	0.24143	*******	31.764
3	16.2	12.7	25.8	0.000157	0.417	-161.80	149154	0.00492	0.753	0.21541	*******	19.227
4	34.4	12.7	25.8	0.000154	0.423	-158.90	149154	0.00461	0.716	0.03307	21.037	3.227
5	47.7	12.7	25.7	0.000150	0.434	-153.23	149163	0.00452	0.721	0.02062	10.473	2.041
6	56.8	12.7	25.6	0.000140	0.463	-138.99	149296	0.00427	0.724	0.01721	7.894	1.641
7	82.9	12.7	25.0	0.000116	0.549	-96.28	149847	0.00360	0.724	0.01031	3.432	0.903
8	93.7	12.7	24.5	0.000099	0.634	-53.70	150250	0.00312	0.724	0.00894	2.696	0.706
9	102.4	12.6	24.2	0.000091	0.679	-31.09	150465	0.00290	0.722	0.00804	2.252	0.606
10	91.3	12.6	24.1	0.000088	0.702	-19.83	150573	0.00280	0.720	0.00915	2.819	0.665
RUN NO 603	ORIF DIA 0.0635 CM		FLOW RATE 1.08 G/S		LIQ TEMP 25.0 K		LIQ PRESS 3.28 ATM		CART HTR PWR 40.405 W			
1	87.3	12.8	26.5	0.000169	0.396	-172.41	148523	0.03024	4.393	0.05897	*******	6.724
2	16.2	12.8	26.5	0.000153	0.437	-151.45	148523	0.00486	0.780	0.23087	*******	19.809
3	16.3	12.8	26.5	0.000151	0.443	-148.42	148523	0.00442	0.753	0.21387	*******	18.177
4	34.0	12.8	26.5	0.000149	0.449	-145.52	148523	0.00435	0.717	0.03373	20.329	3.130
5	46.7	12.8	26.5	0.000145	0.461	-139.85	148534	0.00427	0.721	0.02127	10.323	2.003
6	50.6	12.8	26.3	0.000136	0.489	-125.60	148684	0.00404	0.725	0.01918	8.789	1.735
7	76.5	12.7	25.4	0.000113	0.575	-82.86	149305	0.00344	0.725	0.01136	3.795	0.949
8	85.5	12.7	25.1	0.000097	0.660	-40.25	149760	0.00300	0.725	0.00995	3.042	0.754
9	89.2	12.7	24.8	0.000089	0.706	-17.61	150003	0.00280	0.724	0.00945	2.791	0.681
10	81.4	12.7	24.6	0.000086	0.729	-6.34	150125	0.00270	0.721	0.01048	3.334	0.731
RUN NO 604	ORIF DIA 0.0635 CM		FLOW RATE 1.08 G/S		LIQ TEMP 22.9 K		LIQ PRESS 3.28 ATM		CART HTR PWR 0.000 W			
1	146.7	12.7	24.0	0.000205	0.321	-209.95	148949	0.03622	4.269	0.02773	*******	3.968
2	15.9	12.7	24.0	0.000181	0.364	-188.34	148949	0.00797	1.065	0.33994	*******	33.698
3	17.5	12.7	24.0	0.000177	0.372	-184.31	148949	0.00713	0.974	0.20330	*******	20.122
4	39.7	12.7	24.0	0.000173	0.380	-180.56	148949	0.00662	0.923	0.03419	20.572	3.705
5	53.2	12.7	24.0	0.000167	0.394	-173.22	148959	0.00645	0.934	0.02307	11.761	2.492
6	68.2	12.7	25.8	0.000152	0.431	-154.77	149110	0.00592	0.937	0.01690	6.825	1.748
7	127.9	12.7	25.1	0.000118	0.542	-99.51	149735	0.00471	0.935	0.00812	1.948	0.748
8	126.5	12.7	24.6	0.000096	0.652	-44.48	150192	0.00392	0.936	0.00822	1.993	0.653
9	126.1	12.6	24.3	0.000087	0.711	-15.24	150437	0.00359	0.935	0.00824	2.001	0.611
10	116.7	12.6	24.1	0.000083	0.740	-0.72	150560	0.00342	0.927	0.00891	2.321	0.635
RUN NO 605	ORIF DIA 0.0635 CM		FLOW RATE 1.08 G/S		LIQ TEMP 23.5 K		LIQ PRESS 3.28 ATM		CART HTR PWR 6.482 W			
1	152.9	12.8	27.2	0.000204	0.335	-202.32	147899	0.03552	4.381	0.03128	*******	4.277
2	16.4	12.8	27.2	0.000181	0.380	-180.22	147899	0.00768	1.072	0.30333	*******	29.178
3	18.8	12.8	27.2	0.000177	0.388	-176.14	147899	0.00697	0.994	0.16656	*******	16.103
4	41.5	12.8	27.2	0.000174	0.395	-172.32	147899	0.00647	0.939	0.03281	19.669	3.450
5	55.1	12.8	27.2	0.000167	0.410	-164.84	147911	0.00632	0.952	0.02253	11.004	2.362
6	72.6	12.8	27.0	0.000152	0.448	-146.02	148077	0.00580	0.955	0.01596	6.301	1.613
7	131.7	12.8	26.2	0.000118	0.561	-89.68	148768	0.00463	0.953	0.00802	1.924	0.720
8	130.5	12.7	25.6	0.000097	0.673	-33.53	149273	0.00387	0.955	0.00811	1.963	0.629
9	144.6	12.7	25.3	0.000088	0.733	-3.73	149544	0.00354	0.950	0.00721	1.590	0.527
10	129.8	12.7	25.1	0.000084	0.763	11.06	149680	0.00338	0.945	0.00806	1.961	0.566

STA NO	TURE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/EPSD H-T COEF -	EXP/S-T H-T COEF -
RUN NO 606	ORIF DIA 0.0635 CM		FLOW RATE 1.08 G/S		LIQ TEMP 24.2 K		LIQ PRESS 3.28 ATM		CART HTR PWR 14.445 W			
1	129.1	12.9	27.7	0.000198	0.352	-193.71	147496	0.03380	4.380	0.03767	********	4.885
2	16.6	12.9	27.7	0.000176	0.396	-171.74	147496	0.00715	1.042	0.27852	********	35.934
3	16.7	12.9	27.7	0.000172	0.404	-167.72	147496	0.00669	0.994	0.25923	********	33.775
4	42.1	12.9	27.7	0.000169	0.412	-163.91	147496	0.00616	0.932	0.03192	18.799	3.251
5	57.0	12.9	27.7	0.000163	0.427	-156.49	147511	0.00603	0.945	0.02140	10.109	2.180
6	73.3	12.8	27.5	0.000149	0.464	-137.80	147711	0.00556	0.949	0.01570	6.109	1.543
7	124.7	12.8	26.5	0.000116	0.576	-81.84	148547	0.00448	0.947	0.00846	2.117	0.740
8	127.8	12.7	25.8	0.000095	0.688	-26.09	149159	0.00376	0.949	0.00825	2.019	0.628
9	144.1	12.7	25.4	0.000086	0.748	3.49	149488	0.00345	0.944	0.00718	1.578	0.517
10	128.3	12.7	25.2	0.000082	0.777	18.18	149653	0.00330	0.939	0.00812	1.982	0.562
RUN NO 607	ORIF DIA 0.0635 CM		FLOW RATE 1.08 G/S		LIQ TEMP 25.0 K		LIQ PRESS 3.28 ATM		CART HTR PWR 26.560 W			
1	101.6	12.8	27.6	0.000184	0.378	-180.94	147563	0.03230	4.487	0.05057	********	6.061
2	16.8	12.8	27.6	0.000164	0.422	-158.58	147563	0.00665	1.032	0.25891	********	32.957
3	17.2	12.8	27.6	0.000161	0.430	-154.54	147563	0.00638	1.010	0.23082	********	30.234
4	42.8	12.8	27.6	0.000159	0.438	-150.68	147563	0.00587	0.946	0.03155	17.454	3.063
5	57.4	12.8	27.6	0.000153	0.453	-143.15	147577	0.00576	0.960	0.02155	9.741	2.093
6	71.7	12.8	27.4	0.000140	0.491	-124.18	147772	0.00534	0.963	0.01636	6.231	1.533
7	109.2	12.8	26.4	0.000110	0.605	-67.37	148584	0.00434	0.963	0.00998	2.702	0.828
8	117.9	12.7	25.7	0.000091	0.719	-10.76	149178	0.00366	0.964	0.00917	2.322	0.669
9	137.5	12.7	25.4	0.000083	0.779	19.25	149497	0.00336	0.958	0.00768	1.694	0.533
10	119.1	12.7	25.2	0.000079	0.809	34.18	149657	0.00323	0.957	0.00900	2.259	0.594
RUN NO 608	ORIF DIA 0.0635 CM		FLOW RATE 1.08 G/S		LIQ TEMP 25.0 K		LIQ PRESS 3.28 ATM		CART HTR PWR 38.465 W			
1	75.7	12.9	28.0	0.000173	0.405	-167.09	147296	0.02999	4.469	0.07115	********	7.820
2	18.7	12.9	28.0	0.000156	0.449	-144.96	147301	0.00603	0.996	0.17186	********	14.737
3	17.7	12.9	28.0	0.000153	0.457	-141.02	147303	0.00595	1.001	0.20844	********	17.493
4	42.9	12.9	27.9	0.000151	0.465	-137.20	147306	0.00566	0.933	0.03103	17.151	2.873
5	54.7	12.9	27.9	0.000146	0.480	-129.76	147327	0.00539	0.950	0.02273	10.550	2.099
6	64.3	12.8	27.6	0.000134	0.517	-111.01	147569	0.00502	0.953	0.01854	7.608	1.642
7	108.9	12.8	26.6	0.000107	0.630	-54.86	148465	0.00412	0.952	0.00990	2.661	0.796
8	113.6	12.7	25.8	0.000088	0.742	1.09	149122	0.00350	0.954	0.00946	2.449	0.669
9	137.8	12.7	25.4	0.000081	0.802	30.75	149470	0.00322	0.948	0.00758	1.651	0.514
10	120.2	12.7	25.2	0.000077	0.832	45.49	149644	0.00311	0.946	0.00880	2.168	0.573
RUN NO 609	ORIF DIA 0.0635 CM		FLOW RATE 1.10 G/S		LIQ TEMP 24.5 K		LIQ PRESS 3.30 ATM		CART HTR PWR 0.000 W			
1	120.8	12.7	24.5	0.000173	0.361	-190.59	153884	0.03182	4.306	0.03982	********	4.964
2	18.0	12.7	24.5	0.000157	0.398	-172.05	153884	0.00250	0.374	0.07047	********	6.529
3	16.5	12.7	24.5	0.000156	0.400	-170.76	153884	0.00198	0.298	0.07752	********	7.049
4	22.5	12.7	24.5	0.000155	0.402	-169.63	153884	0.00191	0.288	0.02920	25.554	2.765
5	29.6	12.7	24.5	0.000154	0.407	-167.42	153887	0.00188	0.288	0.01698	12.481	1.648
6	34.3	12.7	24.4	0.000149	0.418	-161.88	153925	0.00184	0.289	0.01331	8.901	1.289
7	42.4	12.6	24.3	0.000137	0.451	-145.24	154080	0.00170	0.289	0.00969	5.618	0.905
8	43.2	12.6	24.1	0.000127	0.485	-128.61	154193	0.00159	0.289	0.00944	5.400	0.834
9	41.8	12.6	24.1	0.000123	0.502	-119.75	154254	0.00153	0.289	0.00980	5.797	0.848
10	43.8	12.6	24.0	0.000120	0.511	-115.31	154284	0.00151	0.291	0.00931	5.279	0.790
RUN NO 610	ORIF DIA 0.0635 CM		FLOW RATE 1.10 G/S		LIQ TEMP 24.4 K		LIQ PRESS 3.30 ATM		CART HTR PWR 6.500 W			
1	130.5	12.7	24.7	0.000176	0.359	-191.50	153671	0.03195	4.302	0.03652	********	4.606
2	15.6	12.7	24.7	0.000159	0.396	-172.94	153671	0.00258	0.384	0.13067	********	11.880
3	16.0	12.7	24.7	0.000158	0.398	-171.63	153671	0.00199	0.297	0.09030	********	8.196
4	22.5	12.7	24.7	0.000157	0.400	-170.50	153671	0.00192	0.288	0.02924	24.461	2.778
5	29.8	12.7	24.7	0.000156	0.405	-168.28	153675	0.00190	0.288	0.01686	11.910	1.644
6	33.8	12.7	24.7	0.000151	0.416	-162.73	153732	0.00185	0.289	0.01369	8.919	1.327
7	40.5	12.6	24.4	0.000139	0.450	-146.05	153965	0.00171	0.289	0.01039	6.000	0.969
8	40.6	12.6	24.2	0.000128	0.483	-129.39	154134	0.00160	0.289	0.01035	5.966	0.912
9	39.0	12.6	24.1	0.000123	0.501	-120.51	154225	0.00154	0.290	0.01097	6.496	0.935
10	41.1	12.6	24.0	0.000121	0.510	-116.06	154270	0.00152	0.290	0.01020	5.828	0.862
RUN NO 611	ORIF DIA 0.0635 CM		FLOW RATE 1.10 G/S		LIQ TEMP 24.8 K		LIQ PRESS 3.30 ATM		CART HTR PWR 14.634 W			
1	113.6	12.7	24.0	0.000179	0.368	-186.45	152545	0.03130	4.330	0.04291	********	5.222
2	15.3	12.7	24.0	0.000163	0.405	-167.82	152545	0.00242	0.369	0.14596	********	12.956
3	15.6	12.7	24.0	0.000162	0.408	-166.54	152545	0.00194	0.297	0.10380	********	9.200
4	21.9	12.7	24.0	0.000161	0.410	-165.41	152545	0.00188	0.289	0.03169	26.387	2.940
5	30.0	12.7	24.0	0.000159	0.414	-163.18	152556	0.00185	0.288	0.01671	11.391	1.598
6	32.9	12.7	25.8	0.000154	0.426	-157.63	152710	0.00181	0.290	0.01440	9.267	1.364
7	38.7	12.7	25.1	0.000139	0.459	-140.96	153351	0.00168	0.290	0.01114	6.442	1.015
8	39.3	12.7	24.4	0.000127	0.493	-124.31	153819	0.00157	0.290	0.01088	6.235	0.940
9	37.7	12.6	24.3	0.000121	0.511	-115.44	154070	0.00151	0.290	0.01160	6.837	0.968
10	39.4	12.6	24.1	0.000119	0.520	-111.00	154195	0.00149	0.291	0.01087	6.217	0.900

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 612		ORIF DIA 0.0635 CM		FLOW RATE 1.10 G/S		LIQ TEMP 25.0 K		LIQ PRESS 3.30 ATM		CART HTR PWR 25.908 W		
1	99.6	12.8	27.0	0.000177	0.384	-178.08	151712	0.03001	4.337	0.04994	*******	5.793
2	15.0	12.8	27.0	0.000161	0.421	-159.47	151720	0.00225	0.356	0.16412	*******	14.060
3	15.5	12.8	26.9	0.000160	0.424	-158.21	151724	0.00186	0.297	0.10929	*******	9.372
4	22.3	12.8	26.9	0.000160	0.426	-157.08	151728	0.00180	0.288	0.03053	24.425	2.749
5	30.0	12.8	26.9	0.000158	0.430	-154.86	151753	0.00178	0.288	0.01674	11.087	1.551
6	32.4	12.8	26.6	0.000152	0.442	-149.33	152019	0.00174	0.289	0.01474	9.301	1.352
7	37.8	12.7	25.5	0.000136	0.475	-132.72	152940	0.00162	0.289	0.01152	6.577	1.018
8	38.4	12.7	24.8	0.000124	0.509	-116.13	153616	0.00151	0.289	0.01123	6.345	0.942
9	36.8	12.6	24.4	0.000118	0.527	-107.29	153969	0.00146	0.290	0.01198	6.972	0.972
10	38.6	12.6	24.2	0.000115	0.536	-102.87	154147	0.00144	0.290	0.01119	6.318	0.902
RUN NO 613		ORIF DIA 0.0635 CM		FLOW RATE 1.10 G/S		LIQ TEMP 25.0 K		LIQ PRESS 3.30 ATM		CART HTR PWR 40.602 W		
1	86.8	12.8	26.3	0.000164	0.407	-166.67	152266	0.02850	4.764	0.05894	*******	6.442
2	14.8	12.8	26.3	0.000150	0.444	-148.02	152266	0.00206	0.344	0.16741	*******	13.727
3	15.3	12.8	26.3	0.000149	0.447	-146.78	152266	0.00177	0.297	0.11916	*******	9.773
4	21.4	12.8	26.3	0.000148	0.449	-145.65	152266	0.00171	0.289	0.03333	26.280	2.867
5	29.2	12.8	26.3	0.000147	0.454	-143.43	152279	0.00169	0.288	0.01756	11.390	1.556
6	31.0	12.8	26.1	0.000142	0.465	-137.88	152457	0.00166	0.290	0.01590	9.944	1.393
7	36.8	12.7	25.3	0.000129	0.499	-121.25	153198	0.00155	0.290	0.01204	6.744	1.021
8	37.3	12.7	24.8	0.000118	0.532	-104.64	153740	0.00145	0.290	0.01178	6.545	0.950
9	35.6	12.6	24.3	0.000113	0.550	-95.79	154031	0.00141	0.290	0.01261	7.216	0.985
10	37.3	12.6	24.2	0.000110	0.559	-91.37	154177	0.00138	0.290	0.01178	6.542	0.914
RUN NO 614		ORIF DIA 0.0635 CM		FLOW RATE 1.10 G/S		LIQ TEMP 23.3 K		LIQ PRESS 3.30 ATM		CART HTR PWR 0.000 W		
1	147.2	12.6	24.3	0.000188	0.330	-205.87	154027	0.03450	4.276	0.03177	*******	4.326
2	14.7	12.6	24.3	0.000169	0.368	-186.96	154027	0.00362	0.500	0.24099	*******	23.015
3	15.2	12.6	24.3	0.000167	0.371	-185.22	154027	0.00288	0.402	0.15685	*******	14.947
4	24.4	12.6	24.3	0.000166	0.374	-183.70	154027	0.00277	0.389	0.03304	26.899	3.348
5	33.8	12.6	24.3	0.000163	0.380	-180.70	154028	0.00273	0.389	0.01840	12.177	1.917
6	39.6	12.6	24.3	0.000157	0.395	-173.19	154054	0.00263	0.391	0.01452	8.656	1.497
7	51.7	12.6	24.2	0.000140	0.441	-150.64	154157	0.00236	0.391	0.00999	4.919	0.969
8	52.5	12.6	24.1	0.000127	0.486	-128.12	154233	0.00214	0.391	0.00979	4.766	0.880
9	48.8	12.6	24.0	0.000121	0.510	-116.12	154273	0.00205	0.391	0.01082	5.565	0.929
10	49.8	12.6	24.0	0.000118	0.522	-110.12	154293	0.00200	0.391	0.01051	5.318	0.887
RUN NO 615		ORIF DIA 0.0635 CM		FLOW RATE 1.10 G/S		LIQ TEMP 23.1 K		LIQ PRESS 3.30 ATM		CART HTR PWR 0.000 W		
1	157.1	12.6	24.0	0.000188	0.326	-208.17	154312	0.03510	4.290	0.02970	*******	4.104
2	14.6	12.6	24.0	0.000168	0.365	-188.64	154312	0.00472	0.646	0.32146	*******	30.897
3	15.4	12.6	24.0	0.000166	0.369	-186.37	154312	0.00385	0.533	0.19275	*******	18.494
4	20.5	12.6	24.0	0.000164	0.373	-184.32	154312	0.00378	0.530	0.06724	59.017	6.687
5	31.0	12.6	24.0	0.000161	0.381	-180.25	154312	0.00368	0.527	0.02868	19.388	2.950
6	43.6	12.6	24.0	0.000153	0.402	-170.09	154312	0.00350	0.528	0.01703	9.163	1.750
7	71.4	12.6	24.0	0.000133	0.463	-139.64	154312	0.00304	0.528	0.00898	3.341	0.869
8	80.6	12.6	24.0	0.000117	0.523	-109.27	154312	0.00269	0.527	0.00775	2.618	0.691
9	68.1	12.6	24.0	0.000111	0.556	-93.11	154312	0.00253	0.526	0.00949	3.659	0.789
10	49.6	12.6	24.0	0.000107	0.572	-84.99	154312	0.00248	0.533	0.01442	7.078	1.131
RUN NO 616		ORIF DIA 0.0635 CM		FLOW RATE 1.10 G/S		LIQ TEMP 23.1 K		LIQ PRESS 3.30 ATM		CART HTR PWR 5.222 W		
1	150.0	12.6	24.3	0.000189	0.328	-206.87	154029	0.03548	4.370	0.03182	*******	4.358
2	15.0	12.6	24.3	0.000169	0.368	-187.00	154029	0.00470	0.648	0.27541	*******	26.388
3	15.6	12.6	24.3	0.000167	0.372	-184.69	154029	0.00397	0.555	0.18715	*******	17.868
4	28.9	12.6	24.3	0.000165	0.377	-182.59	154029	0.00376	0.532	0.03270	24.024	3.367
5	40.6	12.6	24.3	0.000161	0.385	-178.49	154031	0.00369	0.533	0.01908	11.239	2.016
6	45.3	12.6	24.3	0.000153	0.405	-168.19	154056	0.00353	0.537	0.01641	8.940	1.679
7	67.6	12.6	24.2	0.000132	0.467	-137.25	154160	0.00306	0.536	0.00975	3.936	0.929
8	71.2	12.6	24.1	0.000116	0.529	-106.38	154236	0.00270	0.536	0.00917	3.557	0.796
9	75.8	12.6	24.0	0.000109	0.562	-89.99	154276	0.00253	0.533	0.00844	3.118	0.705
10	56.7	12.6	24.0	0.000106	0.578	-81.75	154296	0.00250	0.542	0.01228	5.677	0.967
RUN NO 617		ORIF DIA 0.0635 CM		FLOW RATE 1.10 G/S		LIQ TEMP 23.8 K		LIQ PRESS 3.30 ATM		CART HTR PWR 14.622 W		
1	132.8	12.7	24.7	0.000183	0.343	-199.08	153674	0.03394	4.378	0.03644	*******	4.765
2	15.1	12.7	24.7	0.000165	0.383	-179.27	153674	0.00437	0.628	0.26175	*******	24.284
3	15.8	12.7	24.7	0.000163	0.388	-177.00	153674	0.00378	0.550	0.17821	*******	16.497
4	28.8	12.7	24.7	0.000161	0.392	-174.92	153674	0.00359	0.528	0.03275	23.837	3.265
5	40.4	12.7	24.7	0.000158	0.400	-170.85	153678	0.00352	0.529	0.01907	11.127	1.952
6	45.5	12.7	24.7	0.000150	0.420	-160.65	153734	0.00337	0.532	0.01621	8.707	1.611
7	65.4	12.6	24.4	0.000129	0.482	-130.00	153967	0.00294	0.531	0.01007	4.121	0.933
8	67.3	12.6	24.2	0.000114	0.543	-99.42	154137	0.00261	0.532	0.00973	3.896	0.822
9	49.6	12.6	24.1	0.000107	0.575	-83.16	154228	0.00245	0.530	0.00929	3.624	0.753
10	57.3	12.6	24.0	0.000104	0.592	-75.02	154273	0.00241	0.535	0.01198	5.434	0.927

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 618	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 24.4 K	LIQ PRESS 3.30 ATM	CART HTR PWR 26.074 W							
1	110.9	12.7	24.9	0.000175	0.363	-189.32	153532	0.03229	4.400	0.04478	*******	5.506
2	15.3	12.7	24.9	0.000157	0.402	-169.50	153532	0.00603	0.410	0.23554	*******	21.047
3	15.6	12.7	24.9	0.000156	0.407	-167.27	153532	0.00360	0.551	0.19146	*******	17.009
4	28.4	12.7	24.9	0.000154	0.411	-165.19	153532	0.00343	0.529	0.03357	23.817	3.215
5	40.0	12.7	24.9	0.000151	0.419	-161.11	153537	0.00337	0.530	0.01938	11.020	1.909
6	43.4	12.7	24.8	0.000144	0.440	-150.89	153606	0.00323	0.533	0.01733	9.308	1.655
7	68.4	12.7	24.5	0.000125	0.501	-120.21	153890	0.00283	0.532	0.00955	3.652	0.862
8	62.8	12.6	24.2	0.000110	0.563	-89.59	154097	0.00253	0.533	0.01063	4.349	0.865
9	65.9	12.6	24.1	0.000104	0.595	-73.30	154208	0.00238	0.531	0.00998	3.934	0.782
10	56.7	12.6	24.1	0.000101	0.612	-65.15	154263	0.00233	0.535	0.01215	5.375	0.914
RUN NO 619	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 25.0 K	LIQ PRESS 3.30 ATM	CART HTR PWR 40.620 W							
1	93.1	12.7	25.6	0.000167	0.388	-176.42	152898	0.03048	4.446	0.05531	*******	6.330
2	15.2	12.7	25.6	0.000152	0.428	-156.47	152898	0.00371	0.597	0.23949	*******	20.341
3	16.3	12.7	25.6	0.000150	0.432	-154.26	152898	0.00340	0.552	0.15649	*******	13.324
4	28.5	12.7	25.6	0.000149	0.437	-152.17	152898	0.00324	0.532	0.03361	22.932	3.066
5	39.6	12.7	25.6	0.000146	0.445	-148.07	152907	0.00319	0.532	0.01983	10.948	1.858
6	41.5	12.7	25.4	0.000139	0.465	-137.80	153031	0.00307	0.536	0.01863	9.956	1.691
7	67.3	12.7	24.9	0.000120	0.527	-107.00	153545	0.00270	0.535	0.00979	3.657	0.846
8	61.0	12.7	24.4	0.000106	0.589	-76.27	153920	0.00242	0.536	0.01109	4.476	0.866
9	62.7	12.6	24.2	0.000100	0.622	-59.92	154121	0.00229	0.534	0.01067	4.215	0.802
10	54.7	12.6	24.1	0.000097	0.638	-51.75	154221	0.00224	0.537	0.01277	5.595	0.926
RUN NO 620	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 22.6 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	174.0	12.7	24.5	0.000198	0.315	-213.57	153887	0.03668	4.933	0.02685	*******	3.861
2	15.4	12.7	24.5	0.000176	0.355	-193.36	153887	0.00581	0.775	0.28360	*******	28.061
3	16.0	12.7	24.5	0.000173	0.361	-190.58	153887	0.00491	0.665	0.19997	*******	19.662
4	31.9	12.7	24.5	0.000171	0.366	-188.08	153887	0.00463	0.635	0.03305	25.934	3.528
5	44.7	12.7	24.5	0.000166	0.375	-183.17	153890	0.00453	0.638	0.01991	12.440	2.163
6	53.0	12.7	24.4	0.000156	0.400	-170.85	153927	0.00427	0.642	0.01592	8.790	1.670
7	111.6	12.6	24.3	0.000131	0.474	-143.90	154083	0.00360	0.640	0.00646	1.972	0.643
8	96.4	12.6	24.1	0.000113	0.548	-97.05	154196	0.00312	0.641	0.00765	2.644	0.669
9	97.4	12.6	24.1	0.000105	0.587	-77.43	154257	0.00291	0.640	0.00754	2.583	0.624
10	91.3	12.6	24.0	0.000101	0.607	-67.62	154287	0.00282	0.642	0.00816	2.948	0.654
RUN NO 621	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 23.0 K	LIQ PRESS 3.29 ATM	CART HTR PWR 0.000 W							
1	123.0	12.1	14.7	0.000121	0.324	-211.59	166867	0.03215	3.965	0.03574	*******	4.837
2	15.8	12.1	14.7	0.000110	0.357	-195.35	166875	0.00217	0.295	0.07964	*******	7.843
3	15.4	12.1	14.7	0.000110	0.359	-194.40	166879	0.00157	0.214	0.06345	*******	6.201
4	20.6	12.1	14.7	0.000109	0.360	-193.63	166882	0.00151	0.207	0.02407	19.065	2.452
5	26.3	12.1	14.6	0.000108	0.363	-192.10	166902	0.00150	0.207	0.01451	9.834	1.513
6	29.6	12.0	14.5	0.000105	0.371	-188.33	167092	0.00147	0.208	0.01183	7.429	1.231
7	35.1	12.0	13.9	0.000095	0.394	-177.06	167702	0.00139	0.208	0.00900	5.065	0.913
8	35.3	12.0	13.4	0.000087	0.417	-165.80	168502	0.00131	0.208	0.00890	4.989	0.863
9	34.5	11.9	13.2	0.000083	0.430	-159.91	168963	0.00124	0.203	0.00899	5.127	0.851
10	37.5	11.9	13.1	0.000082	0.435	-157.09	169195	0.00116	0.191	0.00748	4.029	0.708
RUN NO 622	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 22.6 K	LIQ PRESS 3.29 ATM	CART HTR PWR 0.000 W							
1	123.0	12.1	14.7	0.000125	0.315	-216.17	166867	0.03263	3.909	0.03523	*******	4.880
2	15.2	12.1	14.7	0.000113	0.347	-200.13	166875	0.00221	0.292	0.09257	*******	9.265
3	15.4	12.1	14.7	0.000113	0.349	-199.21	166879	0.00158	0.210	0.06299	*******	6.288
4	19.8	12.1	14.7	0.000112	0.351	-198.44	166882	0.00153	0.205	0.02649	23.199	2.743
5	25.9	12.1	14.6	0.000111	0.354	-196.93	166902	0.00152	0.204	0.01467	10.805	1.560
6	29.3	12.0	14.5	0.000107	0.361	-193.20	167092	0.00149	0.205	0.01185	8.061	1.259
7	34.9	12.0	13.9	0.000097	0.384	-182.07	167702	0.00140	0.205	0.00895	5.444	0.926
8	35.0	12.0	13.4	0.000089	0.407	-170.96	168502	0.00132	0.205	0.00888	5.398	0.879
9	27.2	11.9	13.2	0.000086	0.418	-165.86	168963	0.00095	0.150	0.00984	7.040	0.974
10	30.8	11.9	13.1	0.000084	0.421	-164.33	169195	0.00042	0.066	0.00353	2.336	0.335
RUN NO 623	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 22.4 K	LIQ PRESS 3.29 ATM	CART HTR PWR 0.000 W							
1	123.3	12.0	13.5	0.000117	0.310	-219.04	168410	0.03303	3.889	0.03494	*******	4.913
2	14.8	12.0	13.5	0.000106	0.342	-203.14	168410	0.00225	0.292	0.10389	*******	10.497
3	14.9	12.0	13.5	0.000106	0.344	-202.21	168410	0.00161	0.210	0.07148	*******	7.201
4	19.9	12.0	13.5	0.000105	0.345	-201.44	168410	0.00156	0.204	0.02572	22.104	2.704
5	26.0	12.0	13.5	0.000104	0.348	-199.94	168417	0.00154	0.204	0.01451	10.501	1.565
6	29.3	12.0	13.4	0.000102	0.356	-196.18	168504	0.00151	0.205	0.01183	7.925	1.273
7	34.8	11.9	13.3	0.000095	0.379	-184.92	168868	0.00142	0.205	0.00895	5.364	0.937
8	34.9	11.9	13.1	0.000089	0.402	-173.69	169132	0.00134	0.205	0.00890	5.326	0.890
9	23.7	11.9	13.1	0.000086	0.412	-168.84	169274	0.00082	0.128	0.01090	8.400	1.018
10	28.2	11.9	13.0	0.000085	0.414	-167.83	169345	0.00007	0.011	0.00070	0.483	0.067

STA NO -	TURE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 624	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 22.1 K	LIQ PRESS 3.29 ATM	CART HTR PWR 0.000 W							
1	126.1	12.0	14.0	0.000124	0.305	-221.37	167564	0.03404	3.944	0.03459	*******	4.934
2	14.3	12.0	14.0	0.000111	0.337	-205.20	167587	0.00232	0.297	0.13079	*******	13.271
3	14.9	12.0	14.0	0.000111	0.339	-204.26	167597	0.00165	0.212	0.07388	*******	7.434
4	19.8	12.0	14.0	0.000110	0.341	-203.49	167608	0.00160	0.207	0.02671	23.000	2.831
5	26.0	12.0	13.9	0.000109	0.344	-201.97	167647	0.00158	0.207	0.01472	10.629	1.603
6	29.5	12.0	13.6	0.000105	0.352	-198.24	168084	0.00155	0.208	0.01188	7.913	1.291
7	35.1	11.9	13.0	0.000094	0.375	-187.03	169489	0.00146	0.208	0.00895	5.337	0.947
8	35.3	11.8	12.5	0.000085	0.398	-175.86	170527	0.00137	0.207	0.00883	5.242	0.892
9	23.0	11.8	12.2	0.000082	0.408	-171.13	171038	0.00081	0.126	0.01121	8.823	1.053
10	27.8	11.8	12.1	0.000081	0.410	-170.29	171294	0.00000	0.000	0.00000	0.002	0.000
RUN NO 625	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 22.0 K	LIQ PRESS 3.29 ATM	CART HTR PWR 0.000 W							
1	123.5	11.9	13.0	0.000117	0.303	-222.76	169369	0.03422	3.934	0.03525	*******	5.057
2	13.8	11.9	13.0	0.000105	0.335	-206.89	169385	0.00190	0.242	0.13051	*******	13.270
3	13.9	11.9	13.0	0.000105	0.336	-206.15	169393	0.00124	0.159	0.07827	*******	7.947
4	17.8	11.9	13.0	0.000105	0.338	-205.58	169401	0.00121	0.155	0.02612	18.853	2.752
5	23.1	11.9	13.0	0.000104	0.340	-204.44	169440	0.00120	0.154	0.01381	8.507	1.499
6	25.7	11.9	12.8	0.000101	0.346	-201.66	169802	0.00118	0.155	0.01127	6.479	1.223
7	30.2	11.8	12.3	0.000092	0.363	-193.34	170935	0.00113	0.155	0.00845	4.372	0.901
8	30.2	11.8	11.9	0.000086	0.380	-185.03	171768	0.00108	0.155	0.00842	4.361	0.866
9	30.0	11.7	11.7	0.000083	0.390	-180.61	172198	0.00166	0.156	0.00857	4.460	0.864
10	33.3	11.7	11.6	0.000081	0.394	-178.42	172413	0.00103	0.153	0.00710	3.650	0.719
RUN NO 626	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 22.0 K	LIQ PRESS 3.29 ATM	CART HTR PWR 0.000 W							
1	122.8	12.0	14.0	0.000125	0.301	-223.24	167585	0.03382	3.871	0.03493	*******	5.021
2	13.6	12.0	13.9	0.000113	0.333	-207.57	167625	0.00189	0.239	0.15213	*******	15.484
3	14.2	12.0	13.9	0.000112	0.334	-206.84	167645	0.00123	0.156	0.07237	*******	7.391
4	17.5	12.0	13.9	0.000112	0.335	-206.28	167664	0.00120	0.153	0.02774	27.049	2.923
5	22.9	12.0	13.8	0.000110	0.337	-205.17	167727	0.00118	0.152	0.01394	11.543	1.517
6	25.5	12.0	13.4	0.000106	0.343	-202.49	168507	0.00117	0.153	0.01126	8.695	1.226
7	30.1	11.9	12.8	0.000095	0.361	-194.36	170198	0.00112	0.153	0.00839	5.838	0.899
8	30.1	11.8	12.0	0.000087	0.378	-186.26	171454	0.00107	0.153	0.00835	5.819	0.864
9	27.3	11.8	11.8	0.000084	0.386	-182.21	172042	0.00093	0.136	0.00877	6.514	0.880
10	30.7	11.7	11.6	0.000082	0.390	-180.50	172338	0.00074	0.109	0.00577	3.974	0.584
RUN NO 627	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 22.0 K	LIQ PRESS 3.29 ATM	CART HTR PWR 0.000 W							
1	123.4	11.8	12.4	0.000112	0.302	-223.41	170678	0.03439	3.939	0.03531	*******	5.083
2	13.6	11.8	12.4	0.000101	0.334	-207.58	170766	0.00191	0.242	0.13506	*******	13.757
3	13.9	11.8	12.3	0.000100	0.336	-206.85	170809	0.00125	0.159	0.07548	*******	7.690
4	17.7	11.8	12.3	0.000100	0.337	-206.28	170853	0.00122	0.155	0.02641	24.940	2.789
5	23.0	11.8	12.3	0.000099	0.339	-205.16	170988	0.00120	0.155	0.01386	11.148	1.509
6	25.6	11.8	11.8	0.000094	0.345	-202.51	171881	0.00119	0.155	0.01125	8.443	1.226
7	30.2	11.7	11.7	0.000085	0.362	-194.43	173561	0.00113	0.155	0.00838	5.649	0.899
8	30.1	11.6	10.5	0.000077	0.379	-186.39	174809	0.00108	0.155	0.00840	5.688	0.870
9	23.7	11.6	10.2	0.000074	0.387	-182.71	175383	0.00079	0.115	0.00947	7.512	0.937
10	27.8	11.6	10.1	0.000073	0.389	-181.62	175672	0.00036	0.053	0.00325	2.317	0.326
RUN NO 628	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 22.0 K	LIQ PRESS 3.29 ATM	CART HTR PWR 0.000 W							
1	122.2	11.9	13.1	0.000118	0.301	-223.41	169118	0.03453	3.951	0.03583	*******	5.152
2	13.6	11.9	13.1	0.000106	0.334	-207.48	169219	0.00190	0.241	0.14084	*******	14.339
3	13.8	11.9	13.1	0.000106	0.335	-206.75	169268	0.00125	0.160	0.08577	*******	8.714
4	17.8	11.9	13.0	0.000105	0.336	-206.17	169318	0.00122	0.155	0.02624	24.146	2.772
5	23.1	11.9	13.0	0.000104	0.339	-205.06	169470	0.00121	0.155	0.01379	10.813	1.502
6	25.9	11.8	12.5	0.000099	0.345	-202.38	176451	0.00119	0.156	0.01111	8.113	1.212
7	30.3	11.7	11.7	0.000089	0.362	-194.23	172260	0.00114	0.156	0.00837	5.512	0.897
8	30.3	11.7	11.0	0.000081	0.379	-186.12	173604	0.00109	0.156	0.00837	5.532	0.866
9	21.6	11.6	10.8	0.000077	0.387	-182.61	174220	0.00069	0.100	0.01008	8.324	0.985
10	26.1	11.6	10.6	0.000076	0.388	-181.89	174530	0.00011	0.015	0.00107	0.781	0.107
RUN NO 629	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 22.0 K	LIQ PRESS 3.29 ATM	CART HTR PWR 0.000 W							
1	122.0	12.0	13.7	0.000123	0.301	-223.34	167921	0.03451	3.948	0.03589	*******	5.157
2	13.4	12.0	13.7	0.000111	0.333	-207.39	168020	0.00190	0.241	0.16672	*******	16.923
3	13.9	12.0	13.6	0.000110	0.335	-206.66	168069	0.00125	0.159	0.08360	*******	8.503
4	17.8	12.0	13.6	0.000109	0.336	-206.09	168118	0.00122	0.155	0.02656	24.209	2.804
5	23.1	12.0	13.6	0.000108	0.338	-204.96	168269	0.00120	0.155	0.01392	10.830	1.515
6	25.7	11.9	13.1	0.000103	0.344	-202.27	169262	0.00119	0.156	0.01125	8.161	1.225
7	30.3	11.8	12.2	0.000092	0.362	-194.06	171105	0.00113	0.156	0.00839	5.482	0.899
8	30.2	11.7	11.6	0.000084	0.379	-185.89	172476	0.00108	0.155	0.00842	5.525	0.870
9	20.6	11.7	11.3	0.000081	0.386	-182.45	173105	0.00064	0.094	0.01056	8.894	1.025
10	25.4	11.7	11.1	0.000079	0.388	-181.87	173421	0.00000	0.000	0.00001	0.007	0.001

STA NO -	TURF TEMP K	WALL	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSO H-T COEF -	EXP/S-T H-T COEF -
RUN NO 630		ORIF DIA 0.0635 CM		FLOW RATE 1.13 G/S		LIQ TEMP 21.9 K		LIQ PRESS 3.29 ATM		CART HTR PWR 0.000 W			
1	122.4	11.9	12.9	0.000116	0.300	-223.99	169669	0.03454	3.939	0.03565	*******		5.143
2	12.8	11.9	12.8	0.000105	0.332	-208.38	169834	0.00140	0.177	0.19235	*******		19.465
3	13.2	11.9	12.8	0.000104	0.333	-207.90	169916	0.00074	0.093	0.06839	*******		6.944
4	15.9	11.9	12.7	0.000104	0.334	-207.57	16999R	0.00072	0.091	0.02273	23.133		2.374
5	19.4	11.9	12.6	0.000103	0.335	-206.94	170209	0.00071	0.091	0.01214	11.016		1.304
6	20.8	11.8	12.1	0.000098	0.339	-205.48	171289	0.00071	0.091	0.01015	8.834		1.094
7	24.1	11.7	11.2	0.000089	0.349	-200.92	173234	0.00069	0.091	0.00737	5.860		0.792
8	23.5	11.6	10.6	0.000082	0.359	-196.35	174652	0.00067	0.091	0.00767	6.203		0.804
9	23.4	11.6	10.3	0.000079	0.364	-193.95	175309	0.00065	0.090	0.00758	6.156		0.786
10	26.6	11.6	10.1	0.000077	0.367	-192.80	175640	0.00043	0.087	0.00574	4.281		0.602
RUN NO 631		ORIF DIA 0.0635 CM		FLOW RATE 1.13 G/S		LIQ TEMP 21.9 K		LIQ PRESS 3.29 ATM		CART HTR PWR 0.000 W			
1	122.5	11.8	12.7	0.000112	0.301	-224.24	170854	0.03456	3.938	0.03556	*******		5.138
2	12.8	11.8	12.3	0.000101	0.332	-208.65	170937	0.00141	0.177	0.17351	*******		17.592
3	13.6	11.8	12.3	0.000101	0.333	-208.17	170978	0.00073	0.093	0.05340	*******		5.450
4	15.6	11.8	12.2	0.000100	0.334	-207.84	171019	0.00072	0.092	0.02435	24.617		2.538
5	19.3	11.8	12.2	0.000099	0.335	-207.19	171147	0.00072	0.091	0.01209	10.796		1.301
6	20.7	11.8	11.8	0.000096	0.339	-205.70	171998	0.00071	0.091	0.01021	8.748		1.101
7	23.9	11.7	11.0	0.000088	0.349	-201.09	173631	0.00069	0.091	0.00745	5.833		0.800
8	23.3	11.6	10.5	0.000081	0.359	-196.48	174842	0.00067	0.091	0.00779	6.210		0.816
9	21.7	11.6	10.2	0.000079	0.364	-194.20	175403	0.00058	0.080	0.00788	6.598		0.810
10	25.0	11.6	10.1	0.000077	0.366	-193.29	175685	0.00044	0.061	0.00451	3.438		0.470
RUN NO 632		ORIF DIA 0.0635 CM		FLOW RATE 1.13 G/S		LIQ TEMP 21.9 K		LIQ PRESS 3.29 ATM		CART HTR PWR 0.000 W			
1	123.9	11.8	12.7	0.000111	0.301	-224.15	170982	0.03447	3.930	0.03505	*******		5.068
2	12.8	11.8	12.2	0.000101	0.332	-208.59	171023	0.00141	0.178	0.17896	*******		18.131
3	13.1	11.8	12.2	0.000100	0.333	-208.09	171043	0.00074	0.093	0.07113	*******		7.219
4	15.7	11.8	12.2	0.000100	0.334	-207.76	171063	0.00072	0.091	0.02316	23.059		2.417
5	19.4	11.8	12.2	0.000099	0.335	-207.10	171134	0.00071	0.091	0.01197	10.562		1.287
6	20.7	11.8	11.9	0.000097	0.339	-205.54	171669	0.00071	0.091	0.01027	8.722		1.106
7	23.9	11.7	11.3	0.000090	0.349	-200.84	172956	0.00069	0.091	0.00750	5.821		0.804
8	23.3	11.7	10.9	0.000084	0.359	-196.12	173906	0.00067	0.091	0.00785	6.207		0.821
9	20.7	11.6	10.7	0.000082	0.364	-193.86	174372	0.00054	0.074	0.00816	6.949		0.833
10	24.3	11.6	10.6	0.000081	0.366	-193.05	174606	0.00034	0.047	0.00375	2.889		0.389
RUN NO 633		ORIF DIA 0.0635 CM		FLOW RATE 1.13 G/S		LIQ TEMP 21.9 K		LIQ PRESS 3.29 ATM		CART HTR PWR 0.000 W			
1	125.4	11.8	11.8	0.000108	0.300	-224.54	171883	0.03458	3.934	0.03462	*******		5.021
2	12.7	11.8	11.8	0.000098	0.332	-208.99	171934	0.00143	0.179	0.18379	*******		18.642
3	13.2	11.8	11.8	0.000097	0.333	-208.50	171959	0.00074	0.093	0.06642	*******		6.758
4	15.7	11.8	11.8	0.000097	0.334	-208.16	171984	0.00072	0.091	0.02337	23.142		2.443
5	19.5	11.8	11.8	0.000096	0.335	-207.51	172068	0.00072	0.091	0.01170	10.191		1.262
6	20.6	11.7	11.5	0.000093	0.338	-205.98	172670	0.00071	0.091	0.01027	8.661		1.108
7	23.9	11.6	10.9	0.000086	0.349	-201.32	174014	0.00069	0.091	0.00749	5.767		0.805
8	23.2	11.6	10.4	0.000081	0.359	-196.65	175006	0.00068	0.091	0.00788	6.193		0.826
9	19.7	11.6	10.2	0.000079	0.363	-194.51	175484	0.00050	0.068	0.00837	7.288		0.851
10	23.5	11.6	10.1	0.000077	0.365	-193.87	175724	0.00023	0.032	0.00270	2.108		0.280
RUN NO 634		ORIF DIA 0.0635 CM		FLOW RATE 1.13 G/S		LIQ TEMP 21.9 K		LIQ PRESS 3.29 ATM		CART HTR PWR 0.000 W			
1	125.7	11.9	12.8	0.000117	0.299	-224.51	169753	0.03461	3.933	0.03457	*******		5.014
2	12.7	11.9	12.8	0.000105	0.331	-208.89	169795	0.00143	0.179	0.22737	*******		23.027
3	13.1	11.9	12.8	0.000105	0.332	-208.39	169815	0.00074	0.093	0.07781	*******		7.903
4	15.6	11.9	12.8	0.000105	0.333	-208.05	169836	0.00072	0.091	0.02477	24.334		2.585
5	19.3	11.9	12.8	0.000104	0.334	-207.39	169909	0.00072	0.091	0.01224	10.614		1.317
6	20.6	11.8	12.5	0.000101	0.338	-205.81	170459	0.00071	0.092	0.01044	8.714		1.126
7	23.8	11.8	11.9	0.000094	0.348	-201.05	171787	0.00069	0.092	0.00763	5.828		0.818
8	23.0	11.7	11.4	0.000088	0.358	-196.27	172767	0.00068	0.091	0.00809	6.318		0.846
9	18.8	11.7	11.2	0.000085	0.363	-194.14	173249	0.00046	0.063	0.00892	7.910		0.899
10	22.8	11.7	11.1	0.000084	0.364	-193.60	173490	0.00015	0.020	0.00182	1.436		0.188
RUN NO 635		ORIF DIA 0.0635 CM		FLOW RATE 1.13 G/S		LIQ TEMP 21.9 K		LIQ PRESS 3.29 ATM		CART HTR PWR 0.000 W			
1	126.7	11.8	12.7	0.000112	0.300	-224.59	170811	0.03464	3.937	0.03426	*******		4.976
2	12.7	11.8	12.3	0.000102	0.331	-208.99	170858	0.00144	0.181	0.19943	*******		20.224
3	13.2	11.8	12.3	0.000101	0.332	-208.49	170880	0.00074	0.094	0.06934	*******		7.055
4	15.6	11.8	12.3	0.000101	0.333	-208.15	170903	0.00073	0.092	0.02395	23.455		2.502
5	19.4	11.8	12.3	0.000100	0.334	-207.49	170981	0.00072	0.091	0.01209	10.467		1.302
6	20.6	11.8	12.0	0.000097	0.338	-205.93	171558	0.00072	0.092	0.01038	8.662		1.120
7	23.7	11.7	11.4	0.000090	0.348	-201.21	172893	0.00070	0.092	0.00762	5.824		0.818
8	23.0	11.7	10.9	0.000085	0.358	-196.47	173879	0.00068	0.092	0.00805	6.280		0.842
9	18.2	11.6	10.7	0.000082	0.363	-194.41	174359	0.00044	0.060	0.00916	8.277		0.920
10	22.6	11.6	10.6	0.000081	0.364	-193.96	174600	0.00009	0.012	0.00109	0.864		0.113

STA NO -	TUBE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 636	ORIF DIA 0.0635 CM	FLOW RATE 1.13 G/S	LIQ TEMP 21.9 K	LIQ PRESS 3.29 ATM	CART HTR PWR 0.000 W							
1	129.7	12.0	14.9	0.000128	0.300	-229.84	167283	0.03479	3.966	0.03487	*******	5.040
2	12.8	12.0	14.2	0.000115	0.332	-208.03	167382	0.00143	0.180	0.24808	*******	25.041
3	13.2	12.0	14.1	0.000114	0.333	-207.53	167431	0.00074	0.093	0.08008	*******	8.109
4	14.9	12.0	14.1	0.000114	0.333	-207.20	167480	0.00073	0.093	0.03238	32.185	3.340
5	19.5	12.0	14.0	0.000112	0.335	-206.55	167603	0.00072	0.092	0.01216	10.354	1.306
6	20.6	12.0	13.4	0.000107	0.338	-205.04	168602	0.00072	0.092	0.01062	8.760	1.140
7	23.9	11.8	12.4	0.000097	0.349	-200.34	170737	0.00070	0.092	0.00762	5.740	0.815
8	23.2	11.7	11.7	0.000089	0.359	-195.63	172290	0.00068	0.092	0.00804	6.194	0.839
9	17.7	11.7	11.3	0.000086	0.364	-193.66	173013	0.00041	0.056	0.00933	8.507	0.929
10	22.3	11.7	11.2	0.000085	0.364	-193.36	173376	0.00000	0.000	0.00002	0.017	0.002
RUN NO 637	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 23.7 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	120.1	12.1	14.8	0.000116	0.343	-202.37	163005	0.03165	4.033	0.03734	*******	4.912
2	15.6	12.1	14.8	0.000106	0.375	-186.07	163005	0.00099	0.139	0.03903	*******	3.751
3	15.0	12.1	14.8	0.000105	0.376	-185.70	163005	0.00041	0.058	0.01989	*******	1.896
4	17.2	12.1	14.8	0.000105	0.377	-185.49	163005	0.00038	0.054	0.01040	8.981	1.013
5	19.5	12.1	14.8	0.000105	0.377	-185.08	163010	0.00039	0.054	0.00733	5.902	0.727
6	18.8	12.1	14.7	0.000104	0.379	-184.07	163080	0.00039	0.055	0.00806	6.611	0.791
7	21.4	12.0	14.4	0.000100	0.386	-181.07	163372	0.00038	0.055	0.00584	4.436	0.576
8	20.9	12.0	14.2	0.000097	0.392	-178.05	163584	0.00037	0.055	0.00613	4.718	0.596
9	22.7	12.0	14.1	0.000096	0.395	-176.46	163697	0.00036	0.054	0.00501	3.667	0.489
10	23.6	12.0	14.1	0.000095	0.397	-175.69	163754	0.00035	0.052	0.00445	3.177	0.435
RUN NO 638	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 23.5 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	124.4	12.1	14.9	0.000119	0.336	-205.57	162925	0.03215	4.020	0.03580	*******	4.797
2	15.2	12.1	14.9	0.000108	0.369	-189.29	162925	0.00104	0.142	0.04503	*******	4.372
3	14.7	12.1	14.9	0.000108	0.370	-188.91	162925	0.00041	0.057	0.02129	*******	2.053
4	16.4	12.1	14.9	0.000108	0.370	-188.70	162925	0.00040	0.055	0.01257	11.080	1.232
5	19.1	12.1	14.9	0.000107	0.371	-188.29	162931	0.00039	0.054	0.00764	6.158	0.766
6	18.6	12.1	14.8	0.000106	0.373	-187.28	163008	0.00039	0.055	0.00833	6.830	0.828
7	21.2	12.0	14.5	0.000102	0.379	-184.28	163328	0.00039	0.055	0.00594	4.498	0.594
8	20.7	12.0	14.2	0.000099	0.385	-181.27	163562	0.00038	0.055	0.00630	4.853	0.620
9	21.8	12.0	14.1	0.000098	0.389	-179.73	163686	0.00035	0.050	0.00511	3.805	0.503
10	22.5	12.0	14.1	0.000097	0.390	-179.05	163749	0.00030	0.043	0.00413	3.019	0.406
RUN NO 639	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 23.3 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	123.7	12.1	15.0	0.000121	0.332	-207.66	162846	0.03259	4.024	0.03605	*******	4.877
2	14.7	12.1	15.0	0.000110	0.365	-191.36	162846	0.00105	0.142	0.05391	*******	5.252
3	14.5	12.1	15.0	0.000110	0.365	-190.98	162846	0.00042	0.056	0.02368	*******	2.277
4	16.1	12.1	15.0	0.000109	0.366	-190.77	162846	0.00040	0.055	0.01339	11.239	1.320
5	18.9	12.1	15.0	0.000109	0.367	-190.36	162852	0.00040	0.054	0.00790	6.658	0.798
6	18.6	12.1	14.9	0.000108	0.369	-189.35	162936	0.00040	0.055	0.00838	6.488	0.840
7	21.2	12.0	14.5	0.000104	0.375	-186.36	163285	0.00039	0.055	0.00599	4.294	0.604
8	20.5	12.0	14.3	0.000100	0.381	-183.34	163539	0.00039	0.055	0.00643	4.698	0.637
9	20.4	12.0	14.1	0.000099	0.384	-181.93	163675	0.00030	0.042	0.00506	3.714	0.498
10	21.2	12.0	14.1	0.000098	0.385	-181.46	163743	0.00016	0.023	0.00246	1.759	0.243
RUN NO 640	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 23.1 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	123.4	12.1	14.6	0.000120	0.328	-209.84	163185	0.03307	4.031	0.03621	*******	4.949
2	14.5	12.1	14.6	0.000109	0.360	-193.53	163185	0.00106	0.142	0.05784	*******	5.676
3	14.3	12.1	14.6	0.000108	0.361	-193.15	163185	0.00042	0.057	0.02544	*******	2.486
4	16.0	12.1	14.6	0.000108	0.362	-192.94	163185	0.00041	0.055	0.01374	11.201	1.366
5	18.8	12.1	14.6	0.000108	0.363	-192.53	163192	0.00040	0.054	0.00810	6.034	0.824
6	18.4	12.0	14.5	0.000107	0.365	-191.52	163290	0.00040	0.055	0.00859	6.468	0.868
7	21.2	12.0	14.1	0.000102	0.371	-188.55	163700	0.00040	0.055	0.00599	4.153	0.609
8	20.4	12.0	13.8	0.000099	0.377	-185.56	163998	0.00039	0.055	0.00652	4.626	0.652
9	19.6	12.0	13.7	0.000097	0.380	-184.21	164286	0.00027	0.038	0.00508	3.495	0.502
10	20.5	12.0	13.6	0.000096	0.381	-183.85	164445	0.00009	0.013	0.00154	1.093	0.153
RUN NO 641	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 23.0 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	123.7	12.0	14.4	0.000119	0.324	-211.60	163445	0.03318	4.001	0.03582	*******	4.940
2	14.2	12.0	14.4	0.000108	0.357	-195.41	163445	0.00107	0.142	0.06495	*******	6.408
3	14.1	12.0	14.4	0.000108	0.358	-195.04	163445	0.00042	0.056	0.02788	*******	2.663
4	15.7	12.0	14.4	0.000108	0.358	-194.83	163445	0.00041	0.055	0.01486	13.886	1.486
5	18.4	12.0	14.4	0.000107	0.359	-194.41	163453	0.00041	0.054	0.00859	7.344	0.879
6	18.3	12.0	14.2	0.000106	0.361	-193.42	163574	0.00041	0.055	0.00867	7.419	0.883
7	21.0	12.0	13.7	0.000101	0.367	-190.49	164117	0.00040	0.055	0.00607	4.792	0.622
8	20.3	12.0	13.4	0.000097	0.374	-187.52	164843	0.00039	0.055	0.00657	5.304	0.662
9	18.9	11.9	13.2	0.000095	0.376	-186.23	165233	0.00026	0.036	0.00511	4.304	0.507
10	20.3	11.9	13.1	0.000094	0.377	-185.95	165429	0.00005	0.007	0.00087	0.700	0.087

STA NO -	TURE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 642	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 22.9 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	125.3	12.0	13.9	0.000116	0.322	-212.80	163927	0.03370	4.034	0.03560	*******	4.946
2	14.2	12.0	13.9	0.000105	0.355	-196.50	163927	0.00109	0.144	0.06420	*******	6.367
3	14.1	12.0	13.9	0.000105	0.356	-196.12	163927	0.00043	0.057	0.02756	*******	2.723
4	15.3	12.0	13.9	0.000105	0.356	-195.91	163927	0.00042	0.056	0.01689	15.987	1.690
5	18.4	12.0	13.9	0.000105	0.357	-195.50	163933	0.00041	0.055	0.00853	7.267	0.878
6	18.4	12.0	13.8	0.000103	0.359	-194.48	164011	0.00041	0.055	0.00863	7.356	0.884
7	21.0	12.0	13.5	0.000100	0.366	-191.46	164641	0.00041	0.055	0.00608	4.784	0.626
8	20.2	11.9	13.2	0.000096	0.372	-188.43	165113	0.00040	0.055	0.00667	5.389	0.675
9	18.4	11.9	13.1	0.000095	0.375	-187.14	165367	0.00024	0.033	0.00519	4.439	0.514
10	20.0	11.9	13.1	0.000094	0.375	-186.91	165493	0.00000	0.000	0.00006	0.046	0.006
RUN NO 643	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 22.7 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	132.0	12.1	15.4	0.000128	0.319	-213.77	162448	0.03432	4.079	0.03402	*******	4.774
2	15.2	12.1	15.4	0.000116	0.354	-196.64	162448	0.00224	0.295	0.09647	*******	9.669
3	14.9	12.1	15.4	0.000115	0.356	-195.68	162448	0.00155	0.205	0.07416	*******	7.378
4	19.3	12.1	15.4	0.000115	0.357	-194.91	162448	0.00151	0.200	0.02778	22.041	2.871
5	25.8	12.1	15.4	0.000114	0.360	-193.40	162457	0.00149	0.199	0.01455	9.605	1.549
6	28.9	12.1	15.2	0.000111	0.368	-189.63	162576	0.00146	0.200	0.01189	7.286	1.264
7	34.5	12.1	14.7	0.000101	0.391	-178.39	163069	0.00138	0.200	0.00892	4.883	0.924
8	34.2	12.0	14.4	0.000093	0.414	-167.17	163428	0.00130	0.200	0.00904	4.979	0.894
9	33.5	12.0	14.2	0.000090	0.426	-161.26	163621	0.00124	0.197	0.00918	5.129	0.885
10	35.7	12.0	14.1	0.000088	0.432	-158.41	163717	0.00117	0.188	0.00793	4.242	0.763
RUN NO 644	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 22.6 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	132.8	12.1	15.7	0.000132	0.317	-214.75	162132	0.03428	4.048	0.03355	*******	4.734
2	15.0	12.1	15.7	0.000119	0.351	-197.73	162136	0.00225	0.295	0.10200	*******	10.258
3	15.0	12.1	15.7	0.000118	0.353	-196.78	162138	0.00155	0.204	0.07089	*******	7.097
4	19.6	12.1	15.7	0.000118	0.355	-196.02	162140	0.00150	0.199	0.02644	19.287	2.753
5	25.8	12.1	15.7	0.000117	0.358	-194.51	162155	0.00149	0.198	0.01446	8.868	1.548
6	29.1	12.1	15.5	0.000113	0.366	-190.78	162321	0.00146	0.199	0.01173	6.655	1.253
7	34.7	12.1	14.9	0.000103	0.388	-179.62	162918	0.00138	0.199	0.00878	4.447	0.915
8	34.4	12.0	14.4	0.000094	0.411	-168.49	163355	0.00130	0.199	0.00888	4.525	0.884
9	30.8	12.0	14.2	0.000090	0.422	-162.98	163585	0.00110	0.173	0.00922	5.052	0.885
10	33.0	12.0	14.1	0.000089	0.427	-160.74	163700	0.00082	0.130	0.00620	3.247	0.596
RUN NO 645	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 22.6 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	128.2	12.1	15.3	0.000129	0.316	-215.23	162528	0.03449	4.062	0.03499	*******	4.932
2	15.0	12.1	15.3	0.000116	0.351	-198.19	162528	0.00223	0.291	0.09982	*******	10.060
3	14.8	12.1	15.3	0.000116	0.353	-197.25	162528	0.00155	0.204	0.07451	*******	7.463
4	19.2	12.1	15.3	0.000115	0.354	-196.48	162528	0.00151	0.199	0.02785	19.821	2.897
5	25.7	12.1	15.3	0.000114	0.357	-194.97	162536	0.00149	0.198	0.01450	8.582	1.555
6	28.7	12.1	15.2	0.000111	0.365	-191.23	162648	0.00147	0.199	0.01197	6.593	1.279
7	34.7	12.1	14.7	0.000102	0.388	-180.05	163112	0.00138	0.199	0.00880	4.298	0.918
8	34.5	12.0	14.4	0.000094	0.410	-168.89	163450	0.00130	0.199	0.00885	4.340	0.883
9	29.6	12.0	14.2	0.000090	0.421	-163.47	163632	0.00105	0.165	0.00938	5.081	0.898
10	31.8	12.0	14.1	0.000089	0.426	-161.45	163722	0.00069	0.109	0.00554	2.863	0.531
RUN NO 646	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 22.6 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	130.7	12.1	15.3	0.000130	0.315	-215.88	162528	0.03419	4.009	0.03391	*******	4.790
2	15.2	12.1	15.3	0.000117	0.349	-199.04	162528	0.00225	0.292	0.09298	*******	9.431
3	14.7	12.1	15.3	0.000116	0.351	-198.09	162528	0.00157	0.205	0.07704	*******	7.738
4	19.8	12.1	15.3	0.000116	0.352	-197.33	162528	0.00151	0.198	0.02573	18.017	2.699
5	25.7	12.1	15.3	0.000115	0.355	-195.82	162536	0.00149	0.198	0.01456	8.633	1.566
6	28.9	12.1	15.2	0.000112	0.363	-192.09	162648	0.00147	0.199	0.01180	6.471	1.267
7	34.6	12.1	14.7	0.000102	0.386	-180.93	163112	0.00138	0.199	0.00879	4.297	0.921
8	34.3	12.0	14.4	0.000094	0.409	-169.79	163450	0.00131	0.198	0.00891	4.383	0.891
9	29.1	12.0	14.2	0.000091	0.419	-164.42	163632	0.00104	0.162	0.00950	5.200	0.911
10	31.3	12.0	14.1	0.000089	0.424	-162.46	163722	0.00066	0.104	0.00538	2.815	0.517
RUN NO 647	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 22.5 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	131.7	12.1	15.4	0.000131	0.314	-216.35	162369	0.03426	4.006	0.03349	*******	4.761
2	15.0	12.1	15.4	0.000118	0.348	-199.50	162369	0.00226	0.293	0.10053	*******	10.194
3	15.0	12.1	15.4	0.000118	0.350	-198.56	162369	0.00156	0.204	0.07150	*******	7.214
4	19.8	12.1	15.4	0.000117	0.351	-197.79	162369	0.00151	0.198	0.02569	22.331	2.700
5	25.8	12.1	15.4	0.000116	0.354	-196.29	162378	0.00150	0.197	0.01444	10.611	1.557
6	29.0	12.1	15.3	0.000113	0.362	-192.56	162504	0.00147	0.198	0.01173	7.982	1.263
7	34.7	12.1	14.8	0.000103	0.385	-181.43	163025	0.00139	0.198	0.00876	5.318	0.920
8	34.4	12.0	14.4	0.000095	0.407	-170.32	163406	0.00131	0.198	0.00888	5.425	0.890
9	26.8	12.0	14.2	0.000091	0.418	-165.22	163610	0.00093	0.145	0.00983	7.058	0.936
10	29.1	12.0	14.1	0.000090	0.421	-163.69	163712	0.00041	0.064	0.00373	2.534	0.356

STA NO -	WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/EPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 648	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 22.4 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	129.6	12.1	15.5	0.000129	0.312	-217.43	162786	0.03462	4.021	0.03421	*******	4.882
2	14.9	12.1	15.5	0.000116	0.346	-200.55	162786	0.00226	0.292	0.10471	*******	10.652
3	14.6	12.1	15.5	0.000115	0.348	-199.61	162787	0.00157	0.203	0.08206	*******	8.283
4	18.6	12.1	15.5	0.000115	0.350	-198.84	162787	0.00153	0.199	0.03062	27.585	3.203
5	25.7	12.1	15.5	0.000114	0.353	-197.33	162797	0.00151	0.198	0.01455	10.700	1.576
6	28.9	12.1	14.9	0.000111	0.360	-193.60	162934	0.00148	0.199	0.01170	8.010	1.274
7	34.7	12.0	14.3	0.000100	0.383	-182.47	163486	0.00140	0.199	0.00877	5.312	0.925
8	34.4	12.0	13.9	0.000092	0.406	-171.36	163889	0.00132	0.199	0.00889	5.418	0.895
9	26.2	12.0	13.7	0.000089	0.416	-166.33	164179	0.00091	0.141	0.00996	7.250	0.950
10	28.6	12.0	13.6	0.000088	0.419	-164.92	164393	0.00034	0.053	0.00317	2.175	0.304
RUN NO 649	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 22.3 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	128.8	12.1	15.2	0.000131	0.310	-218.28	162627	0.03514	4.058	0.03476	*******	4.980
2	14.7	12.1	15.2	0.000118	0.345	-201.25	162633	0.00227	0.291	0.11136	*******	11.345
3	14.5	12.1	15.2	0.000117	0.346	-200.31	162635	0.00158	0.204	0.08342	*******	8.445
4	18.9	12.1	15.2	0.000116	0.348	-199.54	162638	0.00154	0.199	0.02928	25.930	3.080
5	25.7	12.1	15.2	0.000115	0.351	-198.04	162655	0.00151	0.198	0.01454	10.603	1.580
6	29.0	12.1	15.0	0.000112	0.359	-194.31	162831	0.00149	0.199	0.01176	7.931	1.276
7	34.8	12.0	14.4	0.000101	0.381	-183.19	163428	0.00140	0.199	0.00872	5.228	0.923
8	34.5	12.0	13.9	0.000093	0.404	-172.10	163864	0.00132	0.199	0.00884	5.332	0.892
9	24.7	12.0	13.7	0.000089	0.414	-167.23	164154	0.00085	0.131	0.01027	7.702	0.976
10	27.7	12.0	13.6	0.000088	0.417	-166.09	164382	0.00018	0.027	0.00173	1.201	0.166
RUN NO 650	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 22.3 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	129.0	12.1	15.5	0.000134	0.310	-218.55	162290	0.03518	4.055	0.03468	*******	4.976
2	14.7	12.1	15.5	0.000120	0.344	-201.51	162290	0.00227	0.291	0.11156	*******	11.381
3	14.6	12.1	15.5	0.000120	0.346	-200.56	162290	0.00159	0.204	0.08311	*******	8.427
4	19.5	12.1	15.5	0.000119	0.347	-199.80	162290	0.00153	0.198	0.02684	23.163	2.841
5	25.6	12.1	15.5	0.000118	0.350	-198.29	162300	0.00152	0.198	0.01466	10.641	1.594
6	28.8	12.1	15.4	0.000115	0.358	-194.55	162432	0.00149	0.199	0.01189	7.992	1.291
7	34.7	12.1	14.8	0.000104	0.381	-183.38	162982	0.00140	0.199	0.00879	5.245	0.930
8	34.4	12.0	14.4	0.000096	0.404	-172.24	163384	0.00132	0.199	0.00890	5.347	0.899
9	23.7	12.0	14.2	0.000092	0.413	-167.42	163599	0.00082	0.126	0.01079	8.249	1.020
10	27.0	12.0	14.1	0.000091	0.416	-166.40	163706	0.00010	0.016	0.00103	0.725	0.099
RUN NO 651	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 22.2 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	131.2	12.1	15.4	0.000133	0.308	-219.44	162448	0.03523	4.037	0.03390	*******	4.895
2	14.6	12.1	15.4	0.000120	0.342	-202.48	162448	0.00230	0.292	0.11684	*******	11.958
3	14.6	12.1	15.4	0.000119	0.344	-201.53	162448	0.00159	0.203	0.08073	*******	8.227
4	19.2	12.1	15.4	0.000119	0.345	-200.77	162448	0.00154	0.198	0.02775	24.174	2.945
5	25.5	12.1	15.4	0.000118	0.348	-199.27	162457	0.00152	0.197	0.01467	10.679	1.602
6	28.8	12.1	15.2	0.000114	0.356	-195.54	162576	0.00149	0.198	0.01188	7.998	1.295
7	34.6	12.1	14.7	0.000104	0.379	-184.48	163069	0.00141	0.198	0.00879	5.260	0.934
8	34.2	12.0	14.4	0.000096	0.401	-173.29	163428	0.00133	0.198	0.00892	5.376	0.904
9	23.4	12.0	14.2	0.000093	0.411	-168.50	163621	0.00081	0.125	0.01090	8.410	1.034
10	26.8	12.0	14.1	0.000092	0.413	-167.51	163717	0.00008	0.012	0.00082	0.579	0.079
RUN NO 652	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 22.2 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	131.8	12.1	15.4	0.000134	0.307	-219.97	162369	0.03533	4.035	0.03371	*******	4.883
2	14.4	12.1	15.4	0.000121	0.341	-203.00	162369	0.00231	0.293	0.12597	*******	12.900
3	14.5	12.1	15.4	0.000120	0.343	-202.06	162369	0.00159	0.203	0.08294	*******	8.467
4	18.7	12.1	15.4	0.000120	0.344	-201.30	162369	0.00155	0.199	0.03015	26.741	3.193
5	25.5	12.1	15.4	0.000119	0.347	-199.79	162378	0.00152	0.197	0.01467	10.687	1.606
6	28.8	12.1	15.3	0.000115	0.355	-196.06	162504	0.00150	0.198	0.01185	7.975	1.295
7	34.7	12.1	14.8	0.000105	0.378	-184.92	163025	0.00141	0.198	0.00875	5.234	0.933
8	34.3	12.0	14.4	0.000097	0.400	-173.80	163406	0.00133	0.198	0.00891	5.373	0.905
9	23.3	12.0	14.2	0.000093	0.410	-169.03	163610	0.00081	0.123	0.01097	8.518	1.042
10	26.8	12.0	14.1	0.000092	0.412	-168.08	163712	0.00006	0.009	0.00058	0.412	0.056
RUN NO 653	ORIF DIA 0.0635 CM	FLOW RATE 1.10 G/S	LIQ TEMP 22.1 K	LIQ PRESS 3.30 ATM	CART HTR PWR 0.000 W							
1	132.9	12.1	15.4	0.000135	0.305	-220.71	162369	0.03513	3.993	0.03307	*******	4.812
2	14.5	12.1	15.4	0.000122	0.339	-203.91	162369	0.00232	0.293	0.12414	*******	12.772
3	14.4	12.1	15.4	0.000121	0.341	-202.96	162369	0.00160	0.203	0.08655	*******	8.864
4	19.5	12.1	15.4	0.000120	0.343	-202.20	162369	0.00155	0.197	0.02679	23.112	2.867
5	25.5	12.1	15.4	0.000119	0.346	-200.70	162378	0.00153	0.197	0.01473	10.718	1.619
6	28.7	12.1	15.3	0.000116	0.353	-196.98	162504	0.00150	0.198	0.01193	8.029	1.308
7	34.5	12.1	14.8	0.000105	0.376	-185.86	163025	0.00141	0.198	0.00883	5.283	0.943
8	34.0	12.0	14.4	0.000097	0.398	-174.77	163406	0.00133	0.198	0.00899	5.430	0.916
9	22.6	12.0	14.2	0.000093	0.408	-170.05	163610	0.00079	0.120	0.01139	8.985	1.081
10	26.3	12.0	14.1	0.000092	0.410	-169.18	163712	0.00001	0.001	0.00007	0.047	0.006

STA NO -	TURE WALL TEMP K	MIXTURE SAT TEMP K	STATIC PRESSURE MM HG	MIXTURE DENSITY G/CM3	QUALITY VAP/MIX -	MIXTURE ENTHALPY J/G	REYNOLDS NUMBER -	STERMAN PARAMETER -	HEAT FLUX AT WALL W/CM2	EXP H-T COEF W/CM2-K	EXP/FPSP H-T COEF -	EXP/S-T H-T COEF -
RUN NO 654		ORIF DIA 0.0635 CM		FLOW RATE 1.10 G/S		LIQ TEMP 22.1 K		LIQ PRESS 3.30 ATM		CART HTR PWR	0.000 W	
1	133.3	12.1	15.0	0.000132	0.305	-221.05	162766	0.03519	3.992	0.03293	*******	4.803
2	14.5	12.1	15.0	0.000119	0.339	-204.27	162766	0.00233	0.294	0.12296	*******	12.674
3	14.3	12.1	15.0	0.000118	0.340	-203.33	162766	0.00160	0.203	0.09006	*******	9.227
4	19.2	12.1	15.0	0.000118	0.342	-202.57	162766	0.00155	0.197	0.02768	24.138	2.961
5	25.5	12.1	15.0	0.000117	0.345	-201.07	162772	0.00153	0.197	0.01468	10.709	1.617
6	28.8	12.1	14.9	0.000113	0.353	-197.34	162864	0.00151	0.198	0.01185	7.980	1.302
7	34.5	12.0	14.6	0.000104	0.375	-186.21	163242	0.00142	0.198	0.00881	5.282	0.943
8	34.0	12.0	14.3	0.000096	0.398	-175.09	163517	0.00133	0.197	0.00898	5.439	0.917
9	22.5	12.0	14.1	0.000093	0.408	-170.36	163664	0.00079	0.120	0.01142	9.051	1.086
10	26.4	12.0	14.1	0.000092	0.409	-169.49	163738	0.00000	0.000	0.00001	0.007	0.001