# NVLAP®

**N**ational
**V**oluntary
**L**aboratory
**A**ccreditation
**P**rogram

# 2001 DIRECTORY

NIST Special Publication 810, 2001 Edition




NIST
National Institute of Standards and Technology
Technology Administration, U.S. Department of Commerce

The National Institute of Standards and Technology was established in 1988 by Congress to "assist industry in the development of technology . . . needed to improve product quality, to modernize manufacturing processes, to ensure product reliability . . . and to facilitate rapid commercialization . . . of products based on new scientific discoveries."

NIST, originally founded as the National Bureau of Standards in 1901, works to strengthen U.S. industry's competitiveness; advance science and engineering; and improve public health, safety, and the environment. One of the agency's basic functions is to develop, maintain, and retain custody of the national standards of measurement, and provide the means and methods for comparing standards used in science, engineering, manufacturing, commerce, industry, and education with the standards adopted or recognized by the Federal Government.

As an agency of the U.S. Commerce Department's Technology Administration, NIST conducts basic and applied research in the physical sciences and engineering, and develops measurement techniques, test methods, standards, and related services. The Institute does generic and precompetitive work on new and advanced technologies. NIST's research facilities are located at Gaithersburg, MD 20899, and at Boulder, CO 80303. Major technical operating units and their principal activities are listed below. For more information contact the Publications and Program Inquiries Desk, 301-975-3058.

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- National Quality Program
- International and Academic Affairs

## Technology Services
- Standards Services
- Technology Partnerships
- Measurement Services
- Information Services

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- Information Technology and Applications
- Chemistry and Life Sciences
- Materials and Manufacturing Technology
- Electronics and Photonics Technology

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- Program Development

## Electronics and Electrical Engineering Laboratory
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- Law Enforcement Standards
- Electricity
- Semiconductor Electronics
- Radio-Frequency Technology[1]
- Electromagnetic Technology[1]
- Optoelectronics[1]

## Materials Science and Engineering Laboratory
- Intelligent Processing of Materials
- Ceramics
- Materials Reliability[1]
- Polymers
- Metallurgy
- NIST Center for Neutron Research

## Chemical Science and Technology Laboratory
- Biotechnology
- Physical and Chemical Properties[2]
- Analytical Chemistry
- Process Measurements
- Surface and Microanalysis Science

## Physics Laboratory
- Electron and Optical Physics
- Atomic Physics
- Optical Technology
- Ionizing Radiation
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- Quantum Physics[1]

## Manufacturing Engineering Laboratory
- Precision Engineering
- Manufacturing Metrology
- Intelligent Systems
- Fabrication Technology
- Manufacturing Systems Integration

## Building and Fire Research Laboratory
- Applied Economics
- Structures
- Building Materials
- Building Environment
- Fire Safety Engineering
- Fire Science

## Information Technology Laboratory
- Mathematical and Computational Sciences[2]
- Advanced Network Technologies
- Computer Security
- Information Access
- Convergent Information Systems
- Information Services and Computing
- Software Diagnostics and Conformance Testing
- Statistical Engineering

[1] At Boulder, CO 80303.
[2] Some elements at Boulder, CO.

NIST Special Publication 810, 2001 Edition

# National Voluntary Laboratory Accreditation Program

# 2001 Directory

Vanda R. White, Editor
National Voluntary Laboratory Accreditation Program
Office of Standards Services
Technology Services

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Technology Administration
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National Institute of Standards and Technology
Karen H. Brown, Acting Director

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# INTRODUCTION

The laboratories listed in this Directory have been found to be competent to perform certain tests or calibrations as specified. These laboratories are allowed to use the NVLAP logo on their test or calibration certificates or reports, which implies that the processes used to achieve the tests or calibrations have been evaluated by NVLAP as being technically adequate when performed under the conditions specified in the laboratories' quality manuals and associated documentation. Further, NVLAP certifies that the laboratories have demonstrated traceability of their tests or calibrations to national standards at the appropriate levels of uncertainty for which the laboratories have been accredited.

As a prospective customer of the laboratories listed in this Directory, you should be aware that the laboratories are obligated to inform you, before the fact, whenever a test or a calibration service which you have requested is not covered by the NVLAP accreditation (NIST Handbook 150, Section 285.33(k)(8)). When contracting for the test or calibration service, you have the right to specify whether or not you desire a NVLAP-accredited test or calibration. Provision of a non-NVLAP-accredited test or calibration shall not be accompanied by the use of the NVLAP logo on the certificate or report, and NVLAP does not endorse any claims made regarding traceability and uncertainty of the measurements performed.

In addition, if a laboratory performs a combination of tests or calibrations, some of which have been accredited by NVLAP and some of which have not, the laboratory is bound by the provisions of NIST Handbook 150 to clearly identify the tests or calibrations covered by NVLAP accreditation and those not accredited by NVLAP on the test or calibration certificate or report.

Current information on the accreditation status of a laboratory can be obtained by contacting NVLAP as follows:

(1) Address: Chief, Laboratory Accreditation Program
National Institute of Standards and Technology
100 Bureau Drive, Stop 2140
Gaithersburg, MD 20899-2140;

(2) Phone: (301) 975-4016;

(3) Fax: (301) 926-2884; or

(4) E-mail: nvlap@nist.gov.

NVLAP also maintains a directory of accredited laboratories on the Internet, which is updated quarterly. The URL for NVLAP's home page is http://www.nist.gov/nvlap.

# CONTENTS

# PROGRAM SUMMARY

The National Institute of Standards and Technology (NIST) administers the National Voluntary Laboratory Accreditation Program (NVLAP). NVLAP is comprised of a series of laboratory accreditation programs (LAPs) which are established on the basis of requests and demonstrated need. Each LAP includes specific calibration and/or test standards and related methods and protocols assembled to satisfy the unique needs for accreditation in a field of testing or calibration. NVLAP accredits public and private laboratories based on evaluation of their technical qualifications and competence to carry out specific calibrations or tests. Accreditation criteria are published in NIST Handbook 150, *NVLAP Procedures and General Requirements*, and encompass the requirements of ISO/IEC Guide 25 and the relevant requirements of ISO 9002. Accreditation is granted following successful completion of a process which includes submission of an application and payment of fees by the laboratory, an on-site assessment, resolution of any deficiencies identified during the on-site assessment, participation in proficiency testing, and technical evaluation. The accreditation is formalized through issuance of a Certificate of Accreditation and Scope of Accreditation (fig. 1) and publicized by announcement in various government and private media.

NVLAP accreditation is available to commercial laboratories; manufacturers' in-house laboratories; university laboratories; and federal, state, and local government laboratories. Foreign-based laboratories may also be accredited if they meet the same requirements as domestic laboratories and pay any additional fees required for travel expenses.

NVLAP provides an unbiased third party evaluation and recognition of performance, as well as expert technical guidance to upgrade laboratory performance. NVLAP accreditation signifies that a laboratory has demonstrated that it operates in accordance with NVLAP requirements in the following areas: accommodation and environment; calibration and test methods; certificates and reports; complaints; equipment and reference materials; handling of calibration and test items; measurement traceability and calibration; organization and management; outside support services and supplies; personnel; quality system, audit and review; records; and subcontracting. NVLAP accreditation does not imply any guarantee (certification) of laboratory performance or test/calibration data; it is solely a finding of laboratory competence. A laboratory may cite its accredited status and use the NVLAP logo on reports, stationery, and in business and trade publications provided that this use does not imply product certification.

This Directory of laboratories is published annually and lists the name, address, contact person, phone and fax numbers, e-mail and URL addresses (if available), accreditation renewal date, and scope of accreditation for each laboratory. An updated listing of laboratories is published quarterly on NVLAP's home page on the Internet: http://www.nist.gov/nvlap.

### *Accreditation Renewal Date*

A laboratory accreditation is valid for one year and commences on one of four dates: January 1, April 1, July 1, or October 1; an accreditation will terminate after one year unless renewed by the laboratory. Users of this Directory who are considering selection of accredited laboratories should be aware of the renewal date and verify that the laboratory has retained its accreditation at the time its services are to be provided. Verification of accreditation status can be obtained by contacting NVLAP.

*On-Site Assessment*

Before initial accreditation, an on-site assessment of each laboratory is conducted to determine compliance with the NVLAP criteria. After accreditation is granted, an on-site assessment must be conducted every two years in order for the laboratory to maintain accreditation. An assessment is conducted by one or more NVLAP assessors selected on the basis of their expertise in the field of testing or calibration to be reviewed. They may be engineers or scientists currently active in the field, consultants, college professors or retired persons. Their services are generally contracted as required.

For most programs, assessors use checklists provided by NVLAP so that each laboratory receives an assessment comparable to that received by others. However, assessors have some latitude to make judgments about a laboratory's compliance with the NVLAP criteria.

An assessment normally takes one to five days depending on the extent of the laboratory's application. Every effort is made to conduct an assessment with as little disruption as possible to the normal operations of the laboratory. During the assessment, the assessor carries out the following functions:

- meets with management and supervisory personnel responsible for the laboratory's activities to review the assessment process and to set the assessment agenda;

- examines the laboratory's quality assurance system, selects and traces the history of one or more samples from receipt to final issuance of reports, conducts a thorough review of the laboratory's quality manual, evaluates the training program, examines notebooks or records pertaining to the samples, checks sample identification and tracking procedures, determines whether the appropriate environmental conditions are maintained, and examines copies of completed reports;

- reviews records of periodic internal audits, use of check samples or participation in round-robin testing or other similar programs, personnel records including resumes and job descriptions of key personnel, competency evaluations for all staff members who routinely perform the testing or calibration for which accreditation is sought, calibration or verification records for apparatus used, reports, and sample control records;

- observes demonstrations of laboratory techniques and discusses them with the technical personnel to assure their understanding of the procedures; and

- examines major equipment, apparatus, and facilities.

At the conclusion of the assessment, the assessor will conduct an exit briefing to discuss observations and any deficiencies with responsible laboratory staff. A written assessment report will be left with the laboratory, and a copy forwarded to NVLAP.

If the on-site inspection reveals deficiencies that pertain to NVLAP requirements, the laboratory must respond in writing to NVLAP within 30 days of such notification. The response must provide documentation, signed by the Authorized Representative, that the specified deficiencies have either been corrected or include a plan of action to make corrections.

*Monitoring Visits*

Monitoring visits may be conducted at any time during the accreditation period for cause or on a random selection basis. These visits serve to verify reported changes in the laboratory's personnel, facilities, or operations, or to explore possible reasons for poor performance in proficiency testing. The scope of a monitoring visit may range from checking a few designated items to a complete review.

*Proficiency Testing*

Proficiency testing is an integral part of the NVLAP accreditation process. On-site demonstration of appropriate facilities, equipment, personnel, etc., is essential, but may not be sufficient for the continuing evaluation of laboratory competence. The production of test/calibration data using special proficiency testing samples or artifacts provides NVLAP with a means to determine the overall competence of the laboratory. Information obtained from proficiency testing helps to identify problems in a laboratory. When problems are found, NVLAP works with the laboratory staff to solve them.

Most fields of accreditation have proficiency testing requirements. Data submitted by the laboratories in response to specific NVLAP requirements are analyzed and reports of the results are made known to the participants. Summary results are available upon request to other interested parties; e.g., professional societies and standards writing bodies. The identity and performance of individual laboratories are kept confidential.

Satisfactory participation is based on specially tailored exercises designed to evaluate the ability of the laboratory to produce the services for which it is accredited. Some methods define pass/fail criteria; in other cases, individual laboratory results must fall within statistically acceptable limits of overall group performance. In a number of programs, NVLAP requires satisfactory participation in proficiency testing as a condition of initial, as well as continuing, accreditation.

*Technical Evaluation*

To determine if all technical requirements have been fulfilled by a laboratory, a final technical evaluation is performed by NVLAP. The evaluation is based on a review of the record of the laboratory as a whole, including:

- information provided on the application;
- results of quality system documentation review;
- on-site assessment reports;
- actions taken by the laboratory to correct deficiencies;
- results of proficiency testing; and
- information from any monitoring visits of the laboratory.

If the technical evaluation reveals additional deficiencies, written notification of the deficiencies will be sent to the laboratory. The laboratory must respond as specified in the previous section, *On-Site Assessment*. Clarification of some issues may be requested by telephone. All deficiencies must be resolved before accreditation can be granted.

*Accreditation Actions*

After the technical evaluation has been completed and all financial and administrative requirements have been satisfied, NVLAP takes one of the following accreditation actions:

***Accreditation*** The laboratory is issued a Certificate of Accreditation and a Scope of Accreditation.

***Denial*** The laboratory is notified of a proposal to deny accreditation and the reason(s).

If an accredited laboratory is found to be out of compliance with the NVLAP criteria, NVLAP may take one of the following actions:

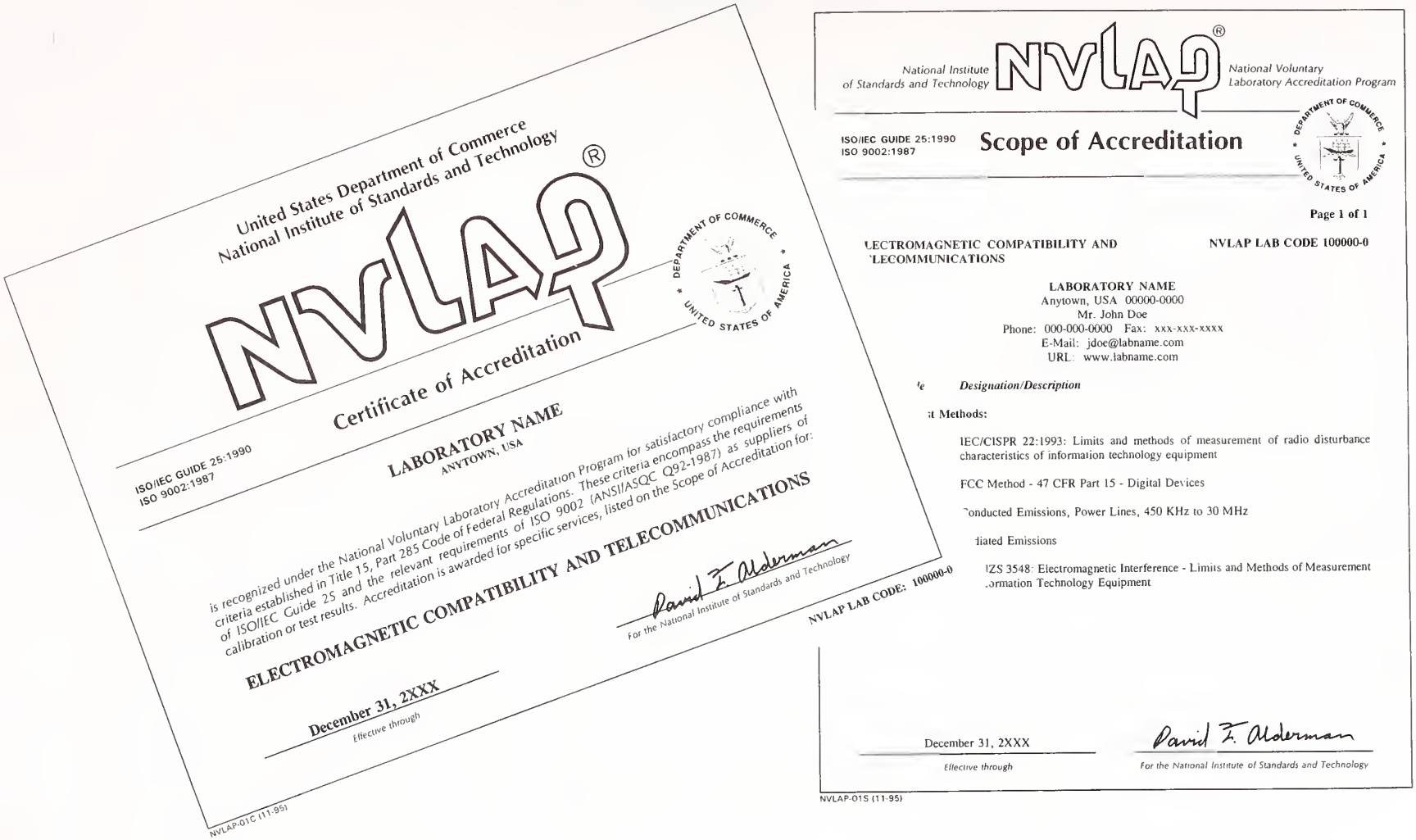
***Suspension*** Suspension is a temporary removal of the accredited status of a laboratory when it is found to be out of compliance with the terms of its accreditation. The laboratory will be notified of the reasons for and conditions of the suspension and the action(s) that the laboratory must take to have the accreditation reinstated.

Reasons for suspension include: loss of key personnel, loss of major equipment, damage to laboratory by fire, changing laboratory location, proficiency test failure.

***Revocation*** Revocation is the removal of the accredited status of a laboratory when it is found to have violated the terms of its accreditation. The laboratory will be notified of the reasons for proposed revocation and the procedure for appealing such a decision. If accreditation is revoked, the laboratory may be given the option of voluntarily terminating the accreditation. A laboratory whose accreditation has been revoked must return its Certificate of Accreditation and cease use of the NVLAP logo on any of its reports, correspondence, or advertising.

Reasons for revocation include: obtaining accreditation through fraud, refusal to resolve deficiencies, no longer providing the type of calibration or testing service for which accreditation was issued.

If denial or revocation has been proposed, the laboratory may appeal the decision to the Director of NIST. If an appeal is not requested, the action becomes final upon the expiration of the 30-day period following receipt of the notification.



United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation

ISO/IEC GUIDE 25:1990
ISO 9002:1987

LABORATORY NAME
ANYTOWN, USA

is recognized under the National Voluntary Laboratory Accreditation Program for satisfactory compliance with criteria established in Title 15, Part 285 Code of Federal Regulations. These criteria encompass the requirements of ISO/IEC Guide 25 and the relevant requirements of ISO 9002 (ANSI/ASQC Q92-1987) as suppliers of calibration or test results. Accreditation is awarded for specific services, listed on the Scope of Accreditation for:

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

December 31, 2XXX
Effective through

For the National Institute of Standards and Technology

NVLAP LAB CODE: 100000-0

NVLAP-01C (11-95)

National Institute of Standards and Technology
NVLAP®
National Voluntary Laboratory Accreditation Program

ISO/IEC GUIDE 25:1990
ISO 9002:1987

Scope of Accreditation

Page 1 of 1

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

NVLAP LAB CODE 100000-0

LABORATORY NAME
Anytown, USA 00000-0000
Mr. John Doe
Phone: 000-000-0000 Fax: xxx-xxx-xxxx
E-Mail: jdoe@labname.com
URL: www.labname.com

*Designation/Description*

Methods:

IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment

FCC Method - 47 CFR Part 15 - Digital Devices

Conducted Emissions, Power Lines, 450 KHz to 30 MHz

diated Emissions

IZS 3548: Electromagnetic Interference - Limits and Methods of Measurement ormation Technology Equipment

December 31, 2XXX
Effective through

For the National Institute of Standards and Technology

NVLAP-01S (11-95)

**Figure 1.** NVLAP Certificate and Scope of Accreditation (sample)

## LABORATORY ACCREDITATION SUMMARY

The following table summarizes laboratory accreditations by field of testing or calibration as of the date this Directory was prepared for publication. Since some laboratories are accredited in more than one field, the total number of laboratories listed by field of accreditation (see Index B) is greater than the number of laboratories in the system (see Index A).

| *PROGRAM GROUP/Field of Accreditation* | | *Number of Accreditations* |
|---|---|---|
| **CALIBRATION LABORATORIES GROUP** | | |
| Dimensional | | 19 |
| Electromagnetics - DC/Low Frequency | | 12 |
| Electromagnetics - RF/Microwave | | 6 |
| Ionizing Radiation | | 6 |
| Mechanical | | 18 |
| Optical Radiation | | 2 |
| Thermodynamic | | 9 |
| Time and Frequency | | 12 |
| **CHEMICAL CALIBRATION LABORATORIES GROUP** | | |
| NIST Traceable Reference Materials (NTRMs) | | 3 |
| Providers of Proficiency Testing (PPT) | | 12 |
| **DOSIMETRY GROUP**/Ionizing Radiation Dosimetry | | 39 |
| **ELECTROMAGNETIC COMPATIBILITY & TELECOMMUNICATIONS GROUP** | | 186 |
| **ENVIRONMENTAL GROUP**/Asbestos Fiber Analysis: | PLM test method | 263 |
| | TEM test method | 75 |
| **FASTENERS AND METALS GROUP** | | 49 |
| **INFORMATION TECHNOLOGY SECURITY TESTING GROUP** | | |
| Common Criteria Testing | | 5 |
| Cryptographic Module Testing | | 5 |
| **PRODUCT TESTING GROUP** | | |
| Acoustical Testing Services | | 24 |
| Carpet and Carpet Cushion | | 12 |
| Commercial Products Testing (Paints, Paper, Plastics, Plumbing, Roofing, Seals/Sealants) | | 8 |
| Construction Materials Testing | | 15 |
| Efficiency of Electric Motors | | 11 |
| Energy Efficient Lighting Products | | 11 |
| Thermal Insulation Materials | | 15 |
| Wood Based Products | | 5 |
| **TOTAL ACCREDITATIONS** | | 822 |

## HOW TO USE THIS DIRECTORY

The *2001 Directory* lists laboratories accredited by NVLAP. It consists of six indexes which are cross-referenced by NVLAP Lab Code, a unique identifier assigned to each laboratory; e.g., 100000-0. The Directory enables the user to locate name, address, contact, and accreditation information about laboratories of interest. The user should contact the laboratories directly to get information beyond that provided here.

**INDEX A, LISTING BY LABORATORY NAME,** lists all laboratories in alphabetical order by laboratory name. The name of each laboratory is listed as it appears on its application for accreditation.

**INDEX B, LISTING BY FIELD OF ACCREDITATION,** lists all laboratories in alphabetical order by laboratory name within field of accreditation. The index is organized by PROGRAM GROUPS, which are groups of Laboratory Accreditation Programs (LAPs) assembled in categories of technical fields for efficiency in management (see page 6). Listed under each PROGRAM GROUP are the technical fields of accreditation managed within that GROUP. Laboratories accredited in more than one field will have more than one listing in this index.

**INDEX C, LISTING BY STATE/COUNTRY,** lists all laboratories in alphabetical order by laboratory name within state. The states are designated by the standard two-letter postal abbreviations. Laboratories located outside of the United States are listed at the end of the index. Index C also indicates the field of accreditation for each laboratory.

**INDEX D, LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE,** lists all testing laboratories in numerical order by NVLAP Lab Code. There is only one listing per Lab Code in Index D.

**INDEX E, LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE,** lists calibration laboratories in numerical order by NVLAP Lab Code. There is only one listing per Lab Code in Index E.

**INDEX F, LISTING OF CHEMICAL CALIBRATION LABORATORIES BY NVLAP LAB CODE,** lists chemical calibration laboratories in numerical order by NVLAP Lab Code. There are two fields of accreditation listed in Index F: NIST Traceable Reference Materials (NTRMs) and Providers of Proficiency Testing (PPT).

### INFORMATION CONTAINED IN INDEXES D, E, AND F

Each laboratory receives a Certificate of Accreditation and a Scope of Accreditation when accreditation is granted or renewed. The Scope of Accreditation details the methods and services for which accreditation has been granted to a laboratory. Indexes D, E, and F present a condensation of the Scope(s) of Accreditation for testing, calibration, and chemical calibration laboratories, respectively.

The following information is presented for each laboratory listed in Indexes D, E, or F:

(a) NVLAP Lab Code;
(b) Laboratory name and address;
(c) Authorized representative (contact);
(d) Phone number;
(e) Fax number;
(f) E-mail address (if available);
(g) URL (web site) address (if available);

(h) Field of accreditation;
(i) Accreditation expiration date; and
(j) Scope of accreditation.

## HOW TO LOCATE SPECIFIC INFORMATION

*For a laboratory whose name is known*

Refer to Index A and note the laboratory's NVLAP Lab Code. Look up the Lab Code in Index D, E or F to obtain specific information about the laboratory; e.g., address, phone number, Scope of Accreditation, etc.

*For a laboratory in a particular geographic area*

Determine the states (or country) included in the geographic area of interest. Refer to Index C to obtain the NVLAP Lab Code of a laboratory within the selected geographic area for a given field of accreditation. Look up the Lab Code in Index D, E, or F to obtain specific information about the laboratory; e.g., address, phone number, Scope of Accreditation, etc.

*For a laboratory in a particular field of accreditation*

Choose the field of accreditation from the list on page 6. Refer to Index B and note the name and Lab Code of each laboratory of interest. Index B is organized by field of accreditation within major program group. Look up the Lab Code in Index D, E, or F to obtain specific information about the laboratory; e.g., address, phone number, Scope of Accreditation, etc.

## SPECIAL NOTE ABOUT LABORATORIES ACCREDITED IN ASBESTOS FIBER ANALYSIS

The test method designations for Bulk Asbestos Analysis (PLM) and Airborne Asbestos Analysis (TEM) are as follows:

| *NVLAP Code* | *Program Title/Test Method Designation* |
|---|---|
| 18/A01 | BULK ASBESTOS ANALYSIS (PLM) |
| | U.S. Environmental Protection Agency (EPA) "Interim Method for the Determination of Asbestos in Bulk Insulation Samples" as found in 40 Code of Federal Regulations (CFR), Part 763, Subpart F, Appendix A, or the current U.S. EPA method for the analysis of asbestos in building material. |
| 18/A02 | AIRBORNE ASBESTOS ANALYSIS (TEM) |
| | U.S. Environmental Protection Agency (EPA) "Interim Transmission Electron Microscopy Analytical Methods—Mandatory and Nonmandatory—and Mandatory Section to Determine Completion of Response Actions" as found in 40 Code of Federal Regulations (CFR), Part 763, Subpart E, Appendix A. |

# INDEX



## LISTING BY LABORATORY NAME

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| **3** | | | |
| 3M Product Safety EMC Laboratory | 200033-0 | St. Paul | MN |
| **A** | | | |
| A & B Environmental Services, Inc. | 101793-0 | Houston | TX |
| A-Pex International Co., Ltd. Yamakita Laboratory | 200441-0 | Ashigarakami-gun | JAPAN |
| A-Pex International Co., Ltd. Yokowa Laboratory | 200109-0 | Mie-ken | JAPAN |
| A.E.S.L. Environmental Laboratory | 200303-0 | Tempe | AZ |
| A.O. Smith (Lexington) Engineering Laboratory | 200053-0 | Lexington | TN |
| A.R.C. Laboratories, Inc. | 101832-0 | Grand Forks | ND |
| Absolute Standards, Inc. | 200390-0 | Hamden | CT |
| Accredited Environmental Technologies, Inc. | 101051-0 | Media | PA |
| AccuStandard, Inc. | 200389-0 | New Haven | CT |
| ACM Environmental, Inc. | 101977-0 | South Bend | IN |
| Acos Villares SA - Chemical Laboratory | 200394-0 | Pindamonhangaba SP | BRAZIL |
| Acoustic Systems Acoustical Research Facility | 100286-0 | Austin | TX |
| Advance Data Technology Corporation | 200102-0 | Taipei Hsien | TAIWAN |
| Advance Data Technology Corporation Hsin Chu EMC Laboratory | 200376-0 | Hsin Chu Hsien | TAIWAN |
| Advanced Compliance Laboratory | 200101-0 | Hillsborough | NJ |
| Advanced Energy, Industrial Energy Laboratory | 200081-0 | Raleigh | NC |
| Advanced Industrial Hygiene Services, Inc. | 101006-0 | Miami | FL |
| Advantest Analysis Labroatory Ltd. EMC Center | 200477-0 | Gunma | JAPAN |
| Aearo Company, E·A·RCAL Acoustical Laboratory | 100374-0 | Indianapolis | IN |
| Aerospace NYLOK - a subsidiary of the NYLOK Fastener Corporation | 200271-0 | Hawthorne | NJ |
| AES International | 200051-0 | Santurce | PR |
| AGX, Inc. | 101578-0 | Cranberry Township | PA |
| AHD | 200129-0 | Dowagiac | MI |
| Aires Consulting Group, Inc. | 101014-0 | Batavia | IL |
| Airtek Environmental Corp. | 102011-0 | New York | NY |
| Akzo Kashima Ltd., Kawasaki Technical Center | 200300-0 | Kawasaki | JAPAN |
| Akzo Nobel K.K., Kakegawa EMC Test Site | 100290-2 | Shizuoka | JAPAN |
| Akzo Nobel K.K., Kashima EMC Site | 100290-0 | Ibaraki | JAPAN |
| Akzo Nobel K.K., Matsuda EMC Test Site | 100290-4 | Kanagawa | JAPAN |
| Akzo Nobel K.K., Nagano EMC Test Site | 100290-3 | Nagano | JAPAN |
| Akzo Nobel K.K., Tochigi EMC Test Site | 100290-5 | Tochigi | JAPAN |
| ALAC | 200323-0 | New York | NY |
| Allegheny Asbestos Analysis | 101704-0 | Carnegie | PA |
| Alpine Consulting, Inc. | 102089-0 | Colorado Springs | CO |
| AMA Analytical Services, Inc. | 101143-0 | Lanham | MD |
| Ambient Group, Inc. | 101618-0 | Glen Cove | NY |
| AMEC Earth & Environmental, Inc., PLM LAB | 200444-0 | Phoenix | AZ |
| American Asbestos Laboratories, Inc. | 101775-0 | Miami Lakes | FL |
| American Carpet Laboratories, Inc. | 100139-0 | Ringgold | GA |

 (See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| American Medical Laboratories, Inc. | 101136-0 | Chantilly | VA |
| American Testing Laboratories, Inc. | 100146-0 | Lancaster | PA |
| Analab, LLC | 200260-0 | Sterling | PA |
| Analytica Solutions, Inc. | 101086-0 | Thornton | CO |
| Analytical Chemistry Services (ACS), Dolan Chemical Lab | 102102-0 | Columbus | OH |
| Analytical Environmental Services, Inc. | 102082-0 | Atlanta | GA |
| Analytical Industries, Inc. | 101855-0 | Paducah | KY |
| Analytical Labs San Francisco, Inc. | 101909-0 | San Francisco | CA |
| Analytical Products Group, Inc. | 200384-0 | Belpre | OH |
| AnalyticaLab | 101727-0 | Willow Springs | IL |
| Analytics Corporation | 101004-0 | Richmond | VA |
| Andover Corporation | 200461-0 | Salem | NH |
| APA - The Engineered Wood Association Research Center | 100423-0 | Tacoma | WA |
| Apex Research, Inc. | 102118-0 | Whitmore Lake | MI |
| Apollo Environmental, Inc. | 101871-0 | Gibsonton | FL |
| Apple Computer, Inc., EMC Compliance Laboratory | 200071-0 | Cupertino | CA |
| Applied Environmental, Inc. | 101611-0 | Reston | VA |
| Architectural Testing Inc. | 200361-0 | York | PA |
| Armstrong Acoustic Labs, Armstrong World Ind., Inc. Innov. Center | 100228-0 | Lancaster | PA |
| ASBESTECH | 101442-0 | Carmichael | CA |
| Asbestos Analysis and Information Service, Inc. | 101261-0 | Four Oaks | NC |
| Asbestos Consulting & Testing (ACT) | 101649-0 | Lenexa | KS |
| Asbestos TEM Laboratories, Inc. | 101891-0 | Berkeley | CA |
| Asbestos TEM Laboratories, Inc. | 200104-0 | Sparks | NV |
| Assaigai Analytical Laboratories, Inc. | 101457-0 | Albuquerque | NM |
| AST International Environmental Consultants Inc. | 200474-0 | Spring Valley | CA |
| ATC Associates Inc. | 101187-0 | New York | NY |
| ATC Associates Inc. | 200250-0 | Columbia | MD |
| ATC Associates, Inc. | 102031-0 | Englewood | CO |
| Athenica Environmental Services, Inc. | 101958-0 | Long Island City | NY |
| Atlan Laboratories | 200492-0 | McLean | VA |
| Atomic Energy Industrial Laboratory of the Southwest, Inc. | 100556-0 | Houston | TX |
| Auditory Systems Laboratory, ISE Department, Virginia Tech | 200479-0 | Blacksburg | VA |
| Audix Technology (Shanghai) Co., Ltd. | 200371-0 | Shanghai | CHINA |
| AUDIX Technology (Shenzhen) Co., Ltd. | 200372-0 | Shenzhen, Guangdong | CHINA |
| Aurora Consolidated Laboratories | 101661-0 | West Allis | WI |

## B

| | | | |
|---|---|---|---|
| BAE Environmental and EMC Test Centre | 200304-0 | Kent | UNITED KINGDOM |
| BAE Systems | 200425-0 | Nashua | NH |
| Batta Laboratories, Inc. | 101032-0 | Newark | DE |
| Battelle - Pacific Northwest National Laboratory | 200216-0 | Richland | WA |
| Bay Area Air Quality Management District | 102090-0 | San Francisco | CA |
| Bay Area Compliance Laboratory, Corp. | 200167-0 | Sunnyvale | CA |
| BCAG Fastener Quality Test Lab Everett Site | 200292-0 | Seattle | WA |
| Beaulieu of America - Carpet Testing Lab | 100190-0 | Dalton | GA |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Beaulieu of America Hollytex Division | 100247-0 | Anadarko | OK |
| Bechtel BWXT Idaho, Standards and Calibration Lab | 200115-0 | Idaho Falls | ID |
| Bella Donna Labs Inc. | 101868-0 | Wauwatosa | WI |
| Benesol Corp. | 200438-0 | Sagamihara-shi, Kanagawa | JAPAN |
| Bentley Testing Laboratory | 100288-0 | City of Industry | CA |
| Best Laboratory | 200484-0 | Taipei Hsein | TAIWAN |
| Binder Metal Products, Inc. | 200321-0 | Gardena | CA |
| Boeing - St. Louis Electromagnetic Compatibility Laboratory | 200382-0 | St. Louis | MO |
| BPB America, Inc. | 200520-0 | St. Petersburg | FL |
| Braun Intertec Corporation | 101234-0 | Minneapolis | MN |
| Brewer Environmental Services Industrial Hygiene Group Laboratory | 102085-0 | Honolulu | HI |
| **C** | | | |
| CA Laboratories, L.L.C. | 200452-0 | Baton Rouge | LA |
| Cabletron Systems, Inc. | 200121-0 | Rochester | NH |
| California Screw Products | 200183-0 | Paramount | CA |
| Calvert Cliffs Nuclear Power Plant, Inc. | 100501-0 | Lusby | MD |
| CAM Environmental Services | 200240-0 | Pasadena | TX |
| CAMCO Lab | 101803-0 | Fontana | CA |
| Canon D5 RF Anechoic Chamber; FCC Part 15; CISPR 22/AS/NZS 3548 | 200478-0 | Ibaraki | JAPAN |
| Cape Environmental Management, Inc. | 102111-0 | Atlanta | GA |
| Carolina Environmental, Inc. | 101768-0 | Cary | NC |
| Carolina Power & Light Company, Harris Energy & Enviro. Center | 100517-0 | New Hill | NC |
| Casey Products, Inc. | 200278-0 | Lisle | IL |
| CBS Fasteners, Inc. | 200253-0 | Anaheim | CA |
| CDRH X-Ray Calibration Laboratory | 105018-0 | Rockville | MD |
| Celotex Technical Center | 100417-0 | St. Petersburg | FL |
| Chatfield Technical Consulting Limited | 101103-0 | Mississauga Ontario | CANADA |
| Chemitox EMC Research, Inc. | 200120-0 | Yamanashi-ken | JAPAN |
| ChemScope, Inc. | 101061-0 | North Haven | CT |
| Chomerics Test Services (CTS) | 100296-0 | Woburn | MA |
| Chrisope Technologies, A Division of Remel | 200388-0 | Lake Charles | LA |
| Cisco Systems, Inc. | 200114-0 | San Jose | CA |
| City of Los Angeles Department of Water and Power | 101111-0 | Los Angeles | CA |
| City of San Jose, Materials Testing Laboratory | 100325-0 | San Jose | CA |
| Clark Seif Clark, Inc. | 200324-0 | Chatsworth | CA |
| Clayton Group Services | 101106-0 | Seattle | WA |
| Clayton Group Services | 101125-0 | Kennesaw | GA |
| Clinton Power Station | 100570-0 | Clinton | IL |
| COACT Inc. CAFE Laboratory | 200416-0 | Columbia | MD |
| Commercial Testing Company | 100120-0 | Dalton | GA |
| Communication Certification Laboratory | 100272-0 | Salt Lake City | UT |
| Compaq Computer Corp. EMC Test Facility | 200078-0 | Colorado Springs | CO |
| Compaq Computer Corp. Emissions Control Lab | 200058-0 | Houston | TX |
| Compaq Corporate Metrology | 200154-0 | Houston | TX |
| Compaq Regulatory Compliance Engineering - East | 100413-0 | Marlboro | MA |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Compatible Electronics, Inc. | 200063-0 | Agoura | CA |
| Compliance Eng. Svces, Inc., Compliance Certification Services | 200065-0 | Sunnyvale | CA |
| Compliance Test Laboratories, Inc. | 200237-0 | Liberty | SC |
| Composite Panel Association (CPA) | 100418-0 | Gaithersburg | MD |
| Comprehensive Health Services-Environmental Health PLM Laboratory | 101759-0 | Kennedy Space Center | FL |
| Computer Sciences Corporation | 200426-0 | Hanover | MD |
| Con Edison, EH&S - ChemLab | 101558-0 | Long Island City | NY |
| Con Edison, Indian Point | 100538-0 | Buchanan | NY |
| Concord Analysis, Inc. | 101884-0 | Chatsworth | CA |
| Continental Envirotech, Inc. | 200080-0 | Mesa | AZ |
| Converse Consultants | 102091-0 | Reno | NV |
| Cooper Lighting - Metalux Research Laboratories | 200050-0 | Americus | GA |
| Cosmos Corporation | 200151-0 | Watarai-gun Mie | JAPAN |
| Covino Environmental Associates, Inc. | 101781-0 | Woburn | MA |
| Crisp Analytical Laboratory | 200349-0 | Carrollton | TX |
| Criterion Laboratories, Inc. | 102046-0 | Bensalem | PA |
| Criterion Technology Corp. | 100396-0 | Rollinsville | CO |
| CSA International | 100322-0 | Toronto Ontario | CANADA |
| CTL Environmental Services | 101216-0 | Harbor City | CA |
| Cygnacom Solutions, Inc. An Entrust Technologies Company | 200002-0 | McLean | VA |

## D

| | | | |
|---|---|---|---|
| D.L.S. Electronic Systems, Inc. | 100276-0 | Wheeling | IL |
| Dames & Moore, Inc. | 101433-0 | Salem | NH |
| DataChem Laboratories | 101917-0 | Cincinnati | OH |
| David L. Ellis Co., Incorporated | 200127-0 | Acton | MA |
| Davis & Floyd, Inc. | 101410-0 | Greenwood | SC |
| Davis Environmental Labs, Inc. | 101039-0 | Chicago | IL |
| Daybrite Lighting (Genlyte Thomas Group) Photometric Laboratory | 200016-0 | Tupelo | MS |
| Dayton T. Brown, Inc. | 200422-0 | Bohemia | NY |
| DCM Science Laboratory, Inc. | 101258-0 | Wheat Ridge | CO |
| Dell Regulatory Test Laboratories | 200052-0 | Round Rock | TX |
| Denver Instrument Co. Weight Lab | 200106-0 | Arvada | CO |
| Design for Health Environmental Services | 101864-0 | San Diego | CA |
| Detroit Edison, Fermi 2 Dosimetry Laboratory | 100529-0 | Newport | MI |
| Dexter Fastener Technologies, Inc. | 200144-0 | Dexter | MI |
| DH Analytical Services | 102086-0 | Stafford | TX |
| DHMH-Air Quality Laboratory | 101523-0 | Baltimore | MD |
| Diviersified T.E.S.T. Technologies, Inc. | 200340-0 | Groton | NY |
| Dixon Information Inc. | 101012-0 | South Salt Lake | UT |
| DL Labs, Inc. | 100252-0 | New York | NY |
| Dodge-Regupol, Inc. Laboratory | 200030-0 | Lancaster | PA |
| DOMUS ITSL | 200017-0 | Ottawa Ontario | CANADA |
| Dove Environmental Corporation | 102053-0 | Miami | FL |
| Dow Chemical N. America Foam Products Research, Prod. Perf. Lab. | 100103-0 | Midland | MI |
| Duke Engineering and Services Environmental Laboratory | 100524-0 | Marlborough | MA |



(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Duke Power Company Dosimetry Laboratory | 100505-0 | Charlotte | NC |
| Durkee Testing Laboratories, Inc. | 200178-0 | Paramount | CA |
| Dwight D.I.C., Inc. | 200405-0 | Lyndhurst | NJ |
| **E** | | | |
| E. M. Analytical, Inc. | 101902-0 | Dania | FL |
| EA Group | 101019-0 | Mentor | OH |
| EAI, Inc. | 102114-0 | Jersey City | NJ |
| Eastern Analytical Services, Inc. | 101646-0 | Elmsford | NY |
| Eastern Materials Testing Lab a division of Jaworski Geotech | 100315-0 | Berlin | CT |
| Eastman Kodak Co.-Regulatory Compliance Center-EMC Facility | 200313-0 | Rochester | NY |
| Eaton E3 Laboratory | 100382-0 | Southfield | MI |
| EcoSystems Environmental, Inc. | 101162-0 | Carrollton | TX |
| Electric Boat Corp/A General Dynamics Co. Radiological Ctrl. Dept | 100560-0 | Groton | CT |
| Electro Magnetic Test, Inc. | 200147-0 | Mountain View | CA |
| Electronic Automation | 200410-0 | Grand Rapids | MI |
| Electronic Research & Service Organization/ITRI | 200118-0 | Chutung Hsinchu | TAIWAN |
| Electronics Test Centre | 200282-0 | Kanata, Ont. | CANADA |
| Electronics Testing Center, Taiwan | 200133-0 | Taoyuan Hsien | TAIWAN |
| Elite Electronic Engineering Inc. | 100278-0 | Downers Grove | IL |
| Elliott Laboratories, Inc. | 200069-0 | Sunnyvale | CA |
| EMC Automation, a TDK Group Company | 200430-0 | Cedar Park | TX |
| EMC Compliance Mgmt Group, dba Turntech Scientific & Instr., Inc. | 200068-0 | Mountain View | CA |
| EMC Corporation | 100339-0 | Westboro | MA |
| EMCE Engineering, Inc. | 200092-0 | Fremont | CA |
| EMS Laboratories, Inc. | 101218-0 | Pasadena | CA |
| EMSL Analytical Inc. Bulk And Airborne Asbestos Fiber Analysis | 200399-0 | Chicago | IL |
| EMSL Analytical Inc. Mobile Laboratory | 200481-0 | Westmont | NJ |
| EMSL Analytical, Inc. | 101048-0 | Westmont | NJ |
| EMSL Analytical, Inc. | 101048-1 | Atlanta | GA |
| EMSL Analytical, Inc. | 101048-2 | Piscataway | NJ |
| EMSL Analytical, Inc. | 101048-3 | Milpitas | CA |
| EMSL Analytical, Inc. | 101048-4 | Ann Arbor | MI |
| EMSL Analytical, Inc. | 101048-9 | New York | NY |
| EMSL Analytical, Inc. | 101048-10 | Carle Place | NY |
| EMSL Analytical, Inc. | 101151-0 | Orlando | FL |
| EMSL Analytical, Inc. | 102104-0 | Greensboro | NC |
| EMSL Analytical, Inc. | 102106-0 | Houston | TX |
| EMSL Analytical, Inc. | 200019-0 | Minneapolis | MN |
| EMSL Analytical, Inc. | 200034-0 | Dallas | TX |
| EMSL Analytical, Inc. | 200056-0 | Williamsville | NY |
| EMSL Analytical, Inc. | 200188-0 | Indianapolis | IN |
| EMSL Analytical, Inc. | 200204-0 | N. Miami Beach | FL |
| EMSL Analytical, Inc. | 200293-0 | Beltsville | MD |
| EMSL Analytical, Inc. | 200333-0 | Elmsford | NY |
| EMSL Analytical, Inc. | 200375-0 | Baton Rouge | LA |
| ENCORP | 200013-0 | El Segundo | CA |
| Entergy Operations, Inc. | 100535-0 | Killona | LA |
| Enviro Techniques, Inc. | 200024-0 | Paterson | NJ |
| Enviro-Probe, Inc. | 101222-0 | Bronx | NY |


(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| EnviroHealth Technologies, Inc. | 200374-0 | St. Louis | MO |
| EnviroMed Services, Inc. | 101514-0 | New Haven | CT |
| Environmental Enterprise Group(EEG), Inc. | 101587-0 | Russellville | AR |
| Environmental Hazards Services, L.L.C. | 101882-0 | Richmond | VA |
| Environmental Health Laboratories | 101506-0 | Clayton | MO |
| Environmental Management Consultants, Inc. | 101926-0 | Scottsdale | AZ |
| Environmental Monitoring & Consulting Associates | 101087-0 | Somerville | NJ |
| Environmental Resource Associates (ERA) | 200386-0 | Arvada | CO |
| Environmental Science Services, Inc. | 200424-0 | Lockeford | CA |
| Environmental Services International, Inc. | 101306-0 | St. Albans | WV |
| Environmental Testing and Monitoring Services, Inc. | 200131-0 | Virginia Beach | VA |
| Environmental Testing, Inc. | 101848-0 | Middletown | DE |
| Envirotest, Inc. | 101595-0 | Houston | TX |
| ERI Consulting Engineers, Inc. | 101232-0 | Tyler | TX |
| ESG Laboratories | 102029-0 | Indianapolis | IN |
| EssTek Ohio, Inc. | 102093-0 | Middleburg Heights | OH |
| Exelon Generation Company, LLC - TLD Processing Laboratory | 100541-0 | Wilmington | IL |

## F

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|---|---|---|---|
| Fairfield Testing Laboratory, Inc. | 100317-0 | Stamford | CT |
| Fairway Testing Company, Inc. | 100340-0 | Stony Point | NY |
| Family Analytical Laboratory Services, Inc. | 200448-0 | Denver | CO |
| Fastener Innovation Technology, Inc. | 200179-0 | Gardena | CA |
| FENOC, Beaver Valley Power Station | 100521-0 | Shippingport | PA |
| Fiberquant, Inc. | 101031-0 | Phoenix | AZ |
| Fibertec, Inc. | 101510-0 | Holt | MI |
| Flextronics EMC Laboratories East Coast Operations | 200094-0 | Youngsville | NC |
| Florida Power & Light Company | 100544-0 | Juno Beach | FL |
| Fluke Corporation Primary Standards Laboratory | 105016-0 | Everett | WA |
| Fluor Fernald, Inc., Analytical Laboratory Services | 102010-0 | Cincinnati | OH |
| Fong Prean Industrial Co., Ltd. | 200288-0 | Kaohsiung Hsien | TAIWAN |
| Forensic Analytical | 101459-0 | Hayward | CA |
| Forensic Analytical Specialties, Inc. | 101459-1 | Rancho Domingues | CA |
| FRS Geotech, Inc. | 102078-0 | Denver | CO |
| Fuji Buhin Kogyo Kabushiki Kaisha | 200203-0 | Ohta Gunma | JAPAN |
| Fuji Component Parts USA, Inc. | 200180-0 | Indianapolis | IN |
| Fujitsu Evaluation Engineering Laboratory | 200281-0 | Numazu, Shizuoka-Pref. | JAPAN |
| Fujitsu General EMC Laboratory | 200373-0 | Kawasaki | JAPAN |

## G

| | | | |
|---|---|---|---|
| Galson Laboratories | 101375-0 | East Syracuse | NY |
| Garwood Laboratories, Inc. | 200119-0 | Placentia | CA |
| GE Industrial Systems | 200029-0 | Rome | NY |
| GE Lighting- Product Testing | 100398-0 | Cleveland | OH |
| GE Owensboro Test Laboratory | 200305-0 | Owensboro | KY |
| Gelles Laboratories, Division, CC Technologies | 101170-0 | Dublin | OH |
| Genicom Corporation | 200342-0 | Waynesboro | VA |
| Georgia Power Company/Enviro. Affairs, | 100551-0 | Smyrna | GA |


(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Enviro. Lab-Dosimetry | | | |
| Geoscience Ltd. | 100142-0 | San Diego | CA |
| Ginna Nuclear Station | 100514-0 | Ontario | NY |
| GLE Associates, Inc. | 102003-0 | Tampa | FL |
| Global EMC Standard Tech. Corp. | 200085-0 | Taipei County | TAIWAN |
| Global Testing | 200436-0 | Santa Ana | CA |
| GSC Environmental Laboratories, Inc. | 101626-0 | Augusta | GA |
| GTE Electronic Repair Services | 200352-0 | Fort Wayne | IN |
| **H** | | | |
| Hart Scientific Calibration Laboratory | 200348-0 | American Fork | UT |
| Health Science Associates | 101384-0 | Los Alamitos | CA |
| Henry Troemner, LLC | 105013-0 | Thorofare | NJ |
| Hewlett Packard, Product Test Lab, San Diego | 200138-0 | San Diego | CA |
| Hi-Tech Environmental and Laboratory Services | 102013-0 | Cypress | CA |
| HIH Laboratory, Inc. | 101233-0 | Webster | TX |
| Hillmann Environmental Group, L.L.C. | 101421-0 | Union | NJ |
| Hitachi Information Technology Co., Ltd. | 200186-0 | Kanagawa | JAPAN |
| Holmes Environmental, Inc. | 200467-0 | Norfolk | VA |
| Holometrix - Micromet | 100113-0 | Bedford | MA |
| HomeTek Technology Inc. | 200331-0 | Taipei Shien | TAIWAN |
| Honeywell FM&T Metrology | 200108-0 | Kansas City | MO |
| Howard Leight Acoustical Testing Laboratory | 200475-0 | San Diego | CA |
| Hubbell Lighting Photometric Laboratory | 200020-0 | Christiansburg | VA |
| Hufcor Laboratory | 100239-0 | Janesville | WI |
| Hygeia Laboratories Inc. | 102116-0 | Sierra Madre | CA |
| Hygeia Laboratories, Inc. | 102087-0 | Marietta | GA |
| Hygeia Laboratories, Inc. | 200335-0 | Miami | FL |
| HYGENIX, INC. | 101199-0 | Stamford | CT |
| Hygieneering, Inc. | 101997-0 | Willowbrook | IL |
| Hygienetics Laboratory Services | 101147-0 | Boston | MA |
| **I** | | | |
| IAPMO Testing and Services, L.L.C. | 200460-0 | Walnut | CA |
| IBM Austin EMC | 200112-0 | Austin | TX |
| IBM Endicott EMC Lab | 200418-0 | Endicott | NY |
| IBM Hudson Valley Acoustics Laboratory | 100323-0 | Poughkeepsie | NY |
| IBM Poughkeepsie EMC Laboratory | 200435-0 | Poughkeepsie | NY |
| IBM Rochester EMC Lab | 200091-0 | Rochester | MN |
| IBM RTP PSG EMC Test Labs | 200200-0 | Research Triangle Park | NC |
| IBM Shock and Vibration Laboratory | 200503-0 | Poughkeepsie | NY |
| IBM Yamato EMC Engineering | 200198-0 | Yamato Kanagawa | JAPAN |
| ICN Worldwide Dosimetry Service, Div. of ICN Biomedicals, Inc. | 100555-0 | Costa Mesa | CA |
| IIT Research Institute/R&B Operation | 100280-0 | West Conshohocken | PA |
| Independent Materials Testing Laboratories, Inc. | 100316-0 | Plainville | CT |
| Independent Textile Testing Service, Inc. | 100166-0 | Dalton | GA |
| Indiana Division of Weights and Measures | 200421-0 | Indianapolis | IN |
| Industrial Acoustics Company, Inc., Aero-Acoustics Laboratory | 100404-0 | Bronx | NY |
| Industrial Laboratory | 102115-0 | Portsmouth | VA |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| INEEL Materials Testing Lab CFA 602 | 200415-0 | Idaho Falls | ID |
| InFocus Systems, Inc. | 200152-0 | Wilsonville | OR |
| InfoGard Laboratories, Inc. | 100432-0 | San Luis Obispo | CA |
| Ingersoll Fasteners | 200208-0 | Ingersoll Ontario | CANADA |
| Inland Foundation Engineering, Inc. | 100406-0 | San Jacinto | CA |
| Institute for Environmental Assessment | 101249-0 | Brooklyn Park | MN |
| Instron Field Calibration Laboratory | 200301-0 | Canton | MA |
| Instron Force Calibration Laboratory | 105023-0 | Canton | MA |
| Instrument Specialties Co., Inc. | 200076-0 | Delaware Water Gap | PA |
| Integrex Testing Systems - Product Testing Laboratory | 100109-0 | Granville | OH |
| Integrity Design & Test Services, an Entela Company | 200004-0 | Littleton | MA |
| Interface Testing Laboratory | 200402-0 | LaGrange | GA |
| Intermec Technologies Corporation | 100269-0 | Cedar Rapids | IA |
| International Asbestos Testing Laboratory | 101165-0 | Mt. Laurel | NJ |
| International Standards Laboratory | 200234-0 | Hsichih Chen, Taipei | TAIWAN |
| International Technology Company (ITC) | 200172-0 | Sunol | CA |
| Interocean EMC Technology Corp. | 200458-0 | Taipei County | TAIWAN |
| Intertek Testing Services | 200201-0 | Menlo Park | CA |
| Intertek Testing Services NA Inc. | 100270-0 | Boxborough | MA |
| Intertek Testing Services NA Inc. | 100274-0 | Lexington | KY |
| Intertek Testing Services NA Inc. | 100402-0 | Cortland | NY |
| Intertek Testing Services NA Inc. | 100409-0 | Duluth | GA |
| Intertek Testing Services NA Inc. | 200031-0 | Middleton | WI |
| Intertek Testing Services NA Inc. | 200297-0 | Laguna Niguel | CA |
| Intertek Testing Services NA, Inc. | 200049-0 | Oakdale | MN |
| Inventec Corp. (Taoyuan) EMC Labs | 200140-0 | Taoyuan | TAIWAN |
| Iowa Environmental Services, Inc. | 101990-0 | Des Moines | IA |
| IPS Corporation | 200012-0 | Nagano | JAPAN |
| Ivaco Rolling Mills, Chemistry Laboratory | 200143-0 | L'Orignal Ontario | CANADA |
| **J** | | | |
| Japan Quality Assurance Org. Chubu Testing Center Shikatsu Branch | 200190-0 | Aichi | JAPAN |
| Japan Quality Assurance Org. Safety Testing Ctr. Tsuru EMC Branch | 200192-0 | Yamanashi | JAPAN |
| Japan Quality Assurance Organization Kita-Kansai Testing Center | 200191-0 | Osaka | JAPAN |
| Japan Quality Assurance Organization Safety Testing Center | 200189-0 | Tokyo | JAPAN |
| Jimmie Ann Bolton | 101735-0 | Austin | TX |
| JLC Environmental Consultants, Inc. | 101953-0 | New York | NY |
| JMR Compliance Engineering | 200413-0 | Chatsworth | CA |
| JMR Environmental Services Inc. | 200067-0 | San Diego | CA |
| JMS Environmental Associates, Ltd. | 102012-0 | Westmont | IL |
| Johns Manville Technical Center | 100425-0 | Littleton | CO |
| **K** | | | |
| KAM Consultants | 102047-0 | Long Island City | NY |
| Kansai Electronic Industry Development Center, Ikoma Testing Lab. | 200207-0 | Ikoma Nara | JAPAN |
| Kellco Services, Inc. | 101331-0 | Hayward | CA |
| Kevco Services, Inc. | 101941-0 | Butler | PA |
| Key Tronic Corp. | 200096-0 | Spokane | WA |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Kingston Environmental Laboratory | 200041-0 | Lee's Summit | MO |
| Knauf Fiber Glass Research Laboratory | 100248-0 | Shelbyville | IN |
| Kobelco Research Institute, Inc. Stock Company | 200169-0 | Kobe | JAPAN |
| Korea Testing & Research Inst. for Chemical Industry-Inchon Off. | 200177-0 | Inchon | KOREA |
| KSL | 200442-0 | Jackson | CA |
| KTL Dallas, Inc. | 100426-0 | Lewisville | TX |
| KTL Ottawa Inc. | 100351-0 | Ottawa Ontario | CANADA |
| Kyowa Kogyosyo Co., Ltd. Test Laboratory | 200274-0 | Komatsu City, Ishikawa | JAPAN |
| Kyushu Matsushita Electric Test Lab EMC Center | 200364-0 | Tosu-shi Saga-ken | JAPAN |
| **L** | | | |
| LA Testing | 200232-0 | S. Pasadena | CA |
| Lab/Cor, Inc. | 101920-0 | Seattle | WA |
| Landauer, Inc. | 100518-0 | Glenwood | IL |
| Larron Laboratory | 101415-0 | Cape Girardeau | MO |
| Law Engineering and Environmental Services, Inc. | 101066-0 | Birmingham | AL |
| Law Engineering and Environmental Services, Inc. | 101515-0 | Tampa | FL |
| Law Engineering and Environmental Services, Inc. | 101515-1 | Miami Lakes | FL |
| Law Engineering and Environmental Services, Inc. | 101973-0 | Dallas | TX |
| Law Engineering and Environmental Services, Inc. | 102035-0 | Phoenix | AZ |
| Leeson Electric - Grafton Engineering Laboratory | 200483-0 | Grafton | WI |
| Legend Technical Services, Inc. | 102081-0 | St. Paul | MN |
| Leland-Powell Fasteners, Inc. Fastener Testing Laboratory | 200171-0 | Martin | TN |
| Levecque Technical Center | 100101-0 | Blue Bell | PA |
| LEX Scientific Inc. | 101949-0 | Guelph Ontario | CANADA |
| LG Electronics, Inc., Quality and Reliability Center | 200040-0 | Seoul | KOREA |
| Liberty Labs, Inc. | 200123-0 | Kimballton | IA |
| Lighting Research Center Lighting Products | 200480-0 | Troy | NY |
| Litetronics International | 200504-0 | Alsip | IL |
| Lithonia Testing Laboratories | 200007-0 | Conyers | GA |
| Lockheed Martin Control Systems EMI Laboratory | 200142-0 | Johnson City | NY |
| Loflin Environmental Services,Inc. | 102044-0 | Houston | TX |
| Los Angeles Unified School District | 101505-0 | Los Angeles | CA |
| Louisiana Department of Environmental Quality Microanalytical Lab | 102000-0 | Baton Rouge | LA |
| Lucent Technologies, Global Product Compliance Lab | 100275-0 | Holmdel | NJ |
| **M** | | | |
| m.a.c. Paran Consulting Services, Inc. | 102108-0 | Amelia | OH |
| MAC Fasteners, Inc. | 200141-0 | Ottawa | KS |
| MacLean Fasteners - QC Laboratory | 200153-0 | Mundelein | IL |
| MacLean Maynard Laboratory Services | 200451-0 | Chesterfield Township | MI |

 (See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| MACS Lab, Inc. | 101948-0 | Santa Clara | CA |
| Mallinckrodt, Inc. | 100503-0 | Maryland Heights | MO |
| Marathon Electric - Wausau Engineering Lab. | 200134-0 | Wausau | WI |
| Marine Chemist Service, Inc. | 101425-0 | Newport News | VA |
| Materials Analytical Services, Inc. | 101235-0 | Suwanee | GA |
| Materials Testing, Inc. | 100320-0 | Milford | CT |
| Matsushita EMC Center | 100428-0 | Sasayama, Hyogo | JAPAN |
| McCall and Spero Environmental, Inc. | 101895-0 | Louisville | KY |
| McGill AirFlow Corp. Airflow and Acoustical Testing Laboratory | 200463-0 | Westerville | OH |
| McKee Environmental Health, Inc. | 101135-0 | Friendswood | TX |
| MDS Nordion Dosimetry Laboratory | 200370-0 | Kanata Ontario | CANADA |
| Met Laboratories Incorporated | 200445-0 | Union City | CA |
| MET Laboratories, Inc. | 100273-0 | Baltimore | MD |
| Metroplex Metrology Lab, Inc. | 200262-0 | Fort Worth | TX |
| Michael & Associates | 100427-0 | State College | PA |
| Michigan Dept. of Agriculture, E.C. Heffron Metrology Laboratory | 200408-0 | Williamston | MI |
| Micro Air of Texas, Inc. | 102008-0 | Houston | TX |
| Micro Air, Inc. | 101221-0 | Indianapolis | IN |
| Micro Analytical Laboratories, Inc. | 101872-0 | Emeryville | CA |
| Micro Analytical, Inc. | 101247-0 | Milwaukee | WI |
| Microcheck, Inc. | 200391-0 | Northfield | VT |
| Micron Environmental Labs | 200294-0 | Arcadia | CA |
| Microscopic Analysis, Inc. | 101037-0 | St. Louis | MO |
| Midwest Laboratories, Inc. | 101894-0 | Countryside | IL |
| Minebea Co., Ltd. Fujisawa Manufacturing Unit | 200229-0 | Fujisawa, Kanagawa | JAPAN |
| Minnesota Metrology Laboratory | 105003-0 | St. Paul | MN |
| Minolta Co., Ltd. Toyokawa EMC Lab | 200434-0 | Toyokawa, Aichi | JAPAN |
| Modern Plating Corporation | 200320-0 | Freeport | IL |
| Mohawk Industries, Inc.- Lyerly Plant | 100156-0 | Lyerly | GA |
| Motorola EMC Test Services Lab | 200005-0 | Mansfield | MA |
| Motorola PPG Compliance Laboratory | 200318-0 | Boynton Beach | FL |
| Motorola SSG EMC/TEMPEST Laboratory | 100405-0 | Scottsdale | AZ |
| Mountain Laboratories | 101890-0 | Spokane | WA |
| Murata Mfg. Co., Ltd. Yokohama Technical Center EMM Office | 200263-0 | Kanagawa | JAPAN |
| Mystic Air Quality Consultants, Inc. | 101282-0 | Groton | CT |

## N

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|---|---|---|---|
| NAHB Research Center, Inc. | 100104-0 | Upper Marlboro | MD |
| National Econ Corporation | 102062-0 | Tustin | CA |
| National Econ Corporation | 200047-0 | Memphis | TN |
| National Environmental Reference Laboratory | 101593-0 | Denver | CO |
| National Technical Systems | 100347-0 | Boxborough | MA |
| National Technical Systems | 200245-0 | Plano | TX |
| Naval Dosimetry Center | 100504-0 | Bethesda | MD |
| Naval Nuclear Propulsion Program Directorate, Washington, DC | 100565-0 | Bremerton | WA |
| NAWC AD 5.1.7.2. EMI Lab | 100408-0 | Patuxent River | MD |
| NAWC-Aircraft Div. Lakehurst Electromagnetic Interference Lab. | 200222-0 | Lakehurst | NJ |
| NCR Corp. San Diego EMC Lab | 200383-0 | San Diego | CA |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| NEC Kofu, Ltd., EMC Center | 200433-0 | Yamanashi | JAPAN |
| NEC Niigata, Ltd, EMC Group | 200490-0 | Niigata | JAPAN |
| NEC Shizuoka, Ltd. EMC Center | 200488-0 | Shizuoka-ken | JAPAN |
| Nemko EESI, Inc. | 200116-0 | San Diego | CA |
| Neutron Engineering Inc. | 200145-0 | Taipei | TAIWAN |
| New York Testing Laboratories, Inc. | 101332-0 | Bay Shore | NY |
| Newport News Shipbuilding Radiological Control Department | 100561-0 | Newport News | VA |
| NGC Testing Services, National Gypsum Research Center | 200291-0 | Buffalo | NY |
| Niche Analysis, Inc. | 102057-0 | Mount Vernon | NY |
| Nortel Networks BVW Lab | 200098-0 | Belleville, Ontario | CANADA |
| Northeast Nuclear Energy Co. Dosimetry Laboratory | 100540-0 | Waterford | CT |
| Northern Analytical Laboratories, Inc. | 101292-0 | Billings | MT |
| Northern Industrial Hygiene, Inc. | 200511-0 | Burien | WA |
| Northern Testing Laboratories, Inc. | 101463-0 | Fairbanks | AK |
| Northwest EMC, Inc. | 200059-0 | Hillsboro | OR |
| Northwestern Steel and Wire Company | 200224-0 | Sterling | IL |
| Nova Consulting Group, Inc. | 101545-0 | Chaska | MN |
| NOVA Machine Products | 200202-0 | Middleburg Heights | OH |
| Nowicki & Associates, Inc. | 200322-0 | Federal Way | WA |
| NSI Solutions, Inc. | 200440-0 | Raleigh | NC |
| NVL Laboratories, Inc. | 102063-0 | Seattle | WA |
| NY Environmental & Analytical Labs, Inc. | 101967-0 | Port Washington | NY |
| NYLOK Fastener Corporation | 200272-0 | Anaheim | CA |
| NYLOK Fastener Corporation | 200273-0 | Macomb | MI |
| NYLOK Fastener Corporation - Chicago Testing Laboratory | 200275-0 | Lincolnwood | IL |
| NYS DOH Environmental Laboratory Approval Program | 200387-0 | Albany | NY |

## O

| | | | |
|---|---|---|---|
| O & K Company Limited, Osaka Test Center | 200166-0 | Osaka-Shi | JAPAN |
| O'Brien & Gere Laboratories, Inc. | 101343-0 | Syracuse | NY |
| Oak Ridge Metrology Center | 105000-0 | Oak Ridge | TN |
| OCCU-TEC, Inc. | 102025-0 | Kansas City | MO |
| Occupational Health Conservation, Inc. | 102050-0 | Jacksonville | FL |
| Ohio E.M.A. Radiological Instrument Calibration Facility | 200419-0 | Columbus | OH |
| Ohtama Co., Ltd. Yamanashi EMC Test Site | 200175-0 | Yamanashi | JAPAN |
| Okai Iron Works Co., Ltd. | 200299-0 | Izumisano Osaka | JAPAN |
| Okawa Laboratory | 200296-0 | Naka-gun, Ibaraki-ken | JAPAN |
| Oklahoma Bureau of Standards | 200396-0 | Oklahoma City | OK |
| Oklahoma Dept. of Environmental Quality-DEQ Laboratory | 102112-0 | Oklahoma City | OK |
| Olympus EMC Laboratory | 200472-0 | Tokyo | JAPAN |
| Omega Environmental Services | 101289-0 | Hackensack | NJ |
| Omni Environmental, Inc. | 102061-0 | Austin | TX |
| Optiglass Ltd. | 200466-0 | Hainault Essex | UNITED KINGDOM |
| Orfield Laboratories, Inc. | 200248-0 | Minneapolis | MN |
| ORIX Rentec EMC Center; Electromagnetic Compatibility | 200404-0 | Aiko-Gun, Kanagawa | JAPAN |
| OSRAM SYLVANIA, Test & Measurements Laboratory | 100403-0 | Beverly | MA |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| **P** | | | |
| PA DEP Bureau of Laboratories | 101323-0 | Harrisburg | PA |
| Pacific Gas & Electric Company, Diablo Canyon Nuclear Power Plant | 100537-0 | Avila Beach | CA |
| Pacific Northwest National Laboratory / Battelle | 105020-0 | Richland | WA |
| Pacific Rim Environmental, Inc. | 101631-0 | Tukwila | WA |
| Palmetto Laboratory, Inc. | 102077-0 | St. Petersburg | FL |
| Paradyne Corporation | 200125-0 | Largo | FL |
| Patriot Environmental Laboratory Services, Inc. | 200358-0 | Garden Grove | CA |
| PB Fasteners | 200139-0 | Gardena | CA |
| PBS Environmental Building Consultants, Inc. | 101910-0 | Portland | OR |
| PCI Industries Acoustical Testing Laboratories | 200453-0 | Fort Worth | TX |
| PCTEST Engineering Laboratory, Inc. | 100431-0 | Columbia | MD |
| PDE Laboratories | 200082-0 | San Clemente | CA |
| PEP Testing Laboratory | 200097-0 | Taipei Hsien | TAIWAN |
| PFS Corporation | 100421-0 | Madison | WI |
| PFU TECHNOCONSUL EMC Center | 200259-0 | Ishikawa-Ken | JAPAN |
| Philip Analytical Services | 101262-0 | Reading | PA |
| Philip Environmental Services Corp. | 101192-0 | Columbia | IL |
| Philips Electronics Industries (TAIWAN) Ltd. | 200137-0 | Chungli, Taoyuan | TAIWAN |
| Philips Lighting Corporate Calibration & Standards Laboratory | 100399-0 | Fairmont | WV |
| Philips Testing Service | 200409-0 | Knoxville | TN |
| Pinchin Environmental Ltd. | 101270-0 | Mississauga Ontario | CANADA |
| Pinnacle West Energy Corp., Palo Verde Nuclear Generating Station | 100536-0 | Tonopah | AZ |
| Piolax Inc. | 200411-0 | Mooka-shi Tochigi-ken | JAPAN |
| PMK Group, Inc. | 101301-0 | Kenilworth | NJ |
| PPL Susquehanna, LLC | 100554-0 | Allentown | PA |
| Pratt & Whitney Materials Control Lab/Quality & Standards Lab | 200336-0 | East Hartford | CT |
| Precision Testing Laboratories, Inc. | 101580-0 | Moore | OK |
| Professional Service Industries, Inc., Pittsburgh Test. Lab. Div. | 100430-0 | Eugene | OR |
| Professional Testing (EMI), Inc. | 200062-0 | Round Rock | TX |
| Professional Testing Laboratory, Inc. | 100297-0 | Dalton | GA |
| ProScience Analytical Services, Inc. | 200090-0 | Woburn | MA |
| Prospect Testing Labs, Inc. | 200328-0 | Des Plaines | IL |
| Protocol Analytical Supplies, Inc. | 200395-0 | Middlesex | NJ |
| Prottsa, S.A. de C.V. | 200261-0 | Mexico City | MEXICO |
| Proxtronics, Inc. | 100573-0 | Burke | VA |
| PSI | 101350-0 | Pittsburgh | PA |
| Puget Sound Naval Shipyard | 101539-0 | Bremerton | WA |
| PWC Environmental Laboratory, Pearl Harbor | 200369-0 | Pearl Harbor | HI |
| **Q** | | | |
| QuanTEM Laboratories, LLC | 101959-0 | Oklahoma City | OK |
| Quest Engineering Solutions, Inc. | 200036-0 | N. Billerica | MA |



(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Quest MicroAnalytics | 200249-0 | Dallas | TX |
| Quietek Corporation | 200347-0 | Hsin-Chu Country | TAIWAN |
| **R** | | | |
| R & D Services, Inc. | 200265-0 | Cookeville | TN |
| R. Robinson Analytical Services, Inc. | 102041-0 | Pensacola | FL |
| Radiation Detection Company | 100512-0 | Sunnyvale | CA |
| Radiation Laboratory, Taiwan Power Company | 100562-0 | Shihmen, Taipei | TAIWAN |
| Raymond-Beling, Inc. | 101356-0 | Moline | IL |
| Raytheon Electronic Systems,California Engineering EEE Laboratory | 200431-0 | El Segundo | CA |
| Raytheon Technical Services Co. EMI Laboratory | 200317-0 | Indianapolis | IN |
| RCM Laboratories, Inc. | 101853-0 | Countryside | IL |
| Republic Technologies International, Franklin Chemical Laboratory | 200148-0 | Johnstown | PA |
| Reservoirs Environmental Services, Inc. | 101896-0 | Denver | CO |
| Resource Technology Corporation (RTC) | 200393-0 | Laramie | WY |
| Retlif Testing Laboratories | 100267-0 | Ronkonkoma | NY |
| Retlif Testing Laboratories | 100267-1 | Goffstown | NH |
| Rhein Tech Laboratories, Inc. | 200061-0 | Herndon | VA |
| RI Analytical Laboratories, Inc. | 101440-0 | Warwick | RI |
| Rice Lake Weighing Systems | 105001-0 | Rice Lake | WI |
| Ricoh Company LTD. Ohmori Acoustics Test Site | 200345-0 | Tokyo | JAPAN |
| Ricoh Company, Ltd. Ohmori EMC Center | 200163-0 | Tokyo | JAPAN |
| Riverbank Acoustical Laboratories | 100227-0 | Geneva | IL |
| RJ Lee Group, Inc. | 101208-0 | Monroeville | PA |
| RJ Lee Group, Inc. | 101208-2 | San Leandro | CA |
| RJ Lee Group, Inc. | 101208-3 | Manassas | VA |
| Rockford Bolt & Steel Co. | 200255-0 | Rockford | IL |
| Rogers Labs, Inc. | 200087-0 | Louisburg | KS |
| Roy F. Weston, Inc. | 101254-0 | Auburn | AL |
| **S** | | | |
| S&ME, Inc. | 102075-0 | Charlottc | NC |
| Safe Environment of America, Inc. | 102021-0 | Auburn | WA |
| SAIC Common Criteria Testing Laboratory | 200427-0 | Columbia | MD |
| Samsung Electronics EMC Laboratory | 200447-0 | Suwon, Kyungki Do | KOREA |
| San Shing Hardware Works Co., Ltd. Test Laboratory | 200158-0 | Tainan | TAIWAN |
| Sandia National Laboratories | 105002-0 | Albuquerque | NM |
| Sanmina Homologation Services | 100411-0 | Santa Clara | CA |
| Saturn Fasteners, Inc. | 200327-0 | Burbank | CA |
| Schneider Laboratories, Inc. | 101150-0 | Richmond | VA |
| Scientific Laboratories, Inc. | 101904-0 | Midlothian | VA |
| Scientific Laboratories, Inc. | 101904-1 | New York | NY |
| SCILAB BOSTON, Inc. | 102079-0 | East Weymouth | MA |
| SCILAB California, Inc. | 200346-0 | Carson | CA |
| SE Laboratories | 200338-0 | Santa Clara | CA |
| SEAS, Inc. | 101185-0 | Blacksburg | VA |
| Seiko Epson Corporation | 200157-0 | Shiojiri-City Nagano | JAPAN |
| SGS U.S. Testing Company, Inc. | 100416-0 | Tulsa | OK |
| Shanghai Testing & Inspection Institute for | 200407-0 | Shanghai | CHINA |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Electrical Equipment | | | |
| Sharp Nara EMC Center, EMI Measurement for ITE | 200457-0 | Yamatokooriyama-shi Nara | JAPAN |
| Shaw Industries, Inc., Central Laboratory Operations | 100193-0 | Dalton | GA |
| SK Tech Co., LTD. | 200220-0 | Namyangju-si, Kyunggi-Do | KOREA |
| Small IAC Test Laboratory | 200287-0 | Peterborough, ON | CANADA |
| SNB Laboratory | 200308-0 | Cumberland | RI |
| Solar Environmental Services, Inc. | 102006-0 | Anchorage | AK |
| Sony Bonson EMC Test Laboratory | 200456-0 | Saitama-ken | JAPAN |
| Sony Electronics Inc. Product Quality Division EMC Group | 200312-0 | San Diego | CA |
| Sony Ikegami EMC Site | 200439-0 | Shinagawa, Tokyo | JAPAN |
| Sony Kisarazu EMC Test Laboratory | 200432-0 | Kisarazu Chiba | JAPAN |
| Sony Kohda EMC Test Laboratory | 200398-0 | Nukata-gun Aichi | JAPAN |
| Sony Minokamo EMC Site | 200368-0 | Gifu-Pref. | JAPAN |
| South Carolina Department of Health & Environmental Control | 101572-0 | Columbia | SC |
| South Coast Air Quality Management District | 101567-0 | Diamond Bar | CA |
| South Texas Project Dosimetry Laboratory | 100519-0 | Wadsworth | TX |
| Southern California Edison | 100506-0 | San Clemente | CA |
| Southern California Edison Company | 105014-0 | Westminster | CA |
| Special Testing Laboratories, Inc. | 100308-0 | Bethel | CT |
| Spectrum Research & Testing Laboratory, Inc. | 200099-0 | Chung-Li, Taoyuan | TAIWAN |
| Spex Certiprep Inc. | 200392-0 | Metuchen | NJ |
| Sporton International, Inc. | 200079-0 | Taipei Hsien | TAIWAN |
| SPS Technologies Aerospace Fasteners Group | 200298-0 | Santa Ana | CA |
| St. of California, Bur. of Home Furnishings & Thermal Insulation | 100251-0 | North Highlands | CA |
| STAT Analysis Corporation | 101202-0 | Chicago | IL |
| State of Connecticut | 101237-0 | Hartford | CT |
| State of Virginia Metrology Lab | 105007-0 | Richmond | VA |
| STERIS-Isomedix Services | 200235-0 | Morton Grove | IL |
| Steve Moody Micro Services, Inc. | 102056-0 | Carrollton | TX |
| Storagtek Open Area Test Site | 200251-0 | Louisville | CO |
| Stork-Twin City Testing Corporation | 200046-0 | St. Paul | MN |
| Strategic Weapons Fac. Pacific Cal. Lab. Oper. by Lockheed Martin | 200406-0 | Silverdale | WA |
| Strom Environmental | 200450-0 | Denver | CO |
| STS Consultants, Ltd. | 100191-0 | Vernon Hills | IL |
| Sumitomo Metals (Kokura), Ltd. Quality System Section | 200215-0 | Kitakyushu | JAPAN |
| Sun City Analytical, Inc. | 101870-0 | El Paso | TX |
| Sun Microsystems, Inc. EMC Testing | 200363-0 | Palo Alto | CA |
| Sundram Fasteners Limited (Inhouse test laboratory) | 200212-0 | Chennai (Madras), Taonil, Nadu | INDIA |
| Sundram Fasteners Limited Chemical Testing Laboratory | 200256-0 | Andhra Pradesh | INDIA |
| SWFLANT Calibration Laboratory Operated by Lockheed Martin | 200403-0 | Kings Bay | GA |
| Syonan Site Testing Laboratory as Conducted & Radiated Emissions | 200482-0 | Kanagawa | JAPAN |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| **T** | | | |
| Taiwan Tokin EMC Eng. Corp. | 200077-0 | Taipei | TAIWAN |
| Taylor Environmental Group, Inc. | 102101-0 | Floral Park | NY |
| TDK Corporation's 10m Anechoic Chamber | 200309-0 | Ichikawa-shi, Chiba-ken | JAPAN |
| TDK Corporation's Chikumagawa Open Site | 200319-0 | Saku-shi, Nagano-ken | JAPAN |
| TEAC Corporation EMC Center | 200362-0 | Saitama-ken | JAPAN |
| TEC-AN, Inc. | 200325-0 | Oklahoma City | OK |
| Techni-Cal Services of Orange Cty, Inc. | 200459-0 | Monroe | NY |
| TECO Electric & Machinery Co., Ltd. | 200378-0 | Taoyuan | TAIWAN |
| Teco Industry (Malaysia) SDN. BHD. | 200476-0 | Penang | MALAYSIA |
| TEM, Incorporated | 101130-0 | Glen Ellyn | IL |
| Tennessee Valley Authority External Dosimetry Service | 100516-0 | Soddy-Daisy | TN |
| Test Site Services, Inc. | 100419-0 | Marlboro | MA |
| Test-Con Incorporated | 200018-0 | Danbury | CT |
| Testing Mechanics Corp. | 102001-0 | Seaford | NY |
| Testwell Laboratories, Inc./Testwell Industries, Inc. | 200083-0 | Ossining | NY |
| The Dow Chemical Company- NA System House-Joliet | 100210-0 | Joliet | IL |
| The Saul Corporation | 200473-0 | Houston | TX |
| The Scott Lawson Group, Ltd. | 101228-0 | Concord | NH |
| Thermo Spectronic | 200462-0 | Cambridge | UNITED KINGDOM |
| Timberco, Inc.- dba TECO | 100420-0 | Eugene | OR |
| Tokin EMC Engineering Co., Ltd. Kawasaki Facility | 200217-0 | Kawasaki-city, Kanagawa | JAPAN |
| Tokin EMC Engineering Co., Ltd. Nagoya Testing Laboratory | 200219-0 | Daian-cho, Inabe-gun, Mie | JAPAN |
| Tokin EMC Engineering Co., Ltd. Osaka Testing Laboratory | 200218-0 | Sanda-city, Hyogo | JAPAN |
| Tokin EMC Engineering Co., Ltd. Tsukuba Testing Laboratory | 200221-0 | Tsukuba-city, Ibaraki | JAPAN |
| TolTest, Inc. | 101594-0 | Toledo | OH |
| Toshiba Corp., Ome Operations | 200107-0 | Ome Tokyo | JAPAN |
| Toshiba/Houston Test Laboratory | 200088-0 | Houston | TX |
| Training Research Co., Ltd. | 200174-0 | Taipei Hsien | TAIWAN |
| TRC Environmental Corporation | 101424-0 | Windsor | CT |
| Tremco, Inc. - Roofing Division, An RPM Company | 101188-0 | Beachwood | OH |
| Tri-State Materials Testing Lab, Inc. | 200010-0 | Wallingford | CT |
| Triad Environmental Consulting, Inc. | 102073-0 | Huntington | WV |
| Troxler Radiation Monitoring Svc. a div. of Troxler Elect. Labs | 100559-0 | Research Triangle Park | NC |
| TSi, Testing Services, Inc. | 100108-0 | Dalton | GA |
| TUV Product Service, Inc. | 100268-0 | San Diego | CA |
| TUV Product Service, Inc. | 100271-0 | New Brighton | MN |
| TUV Product Service, Inc. | 100271-1 | Boulder | CO |
| TUV Rheinland of North America, Inc. | 200111-0 | Newtown | CT |
| TUV Telecom Services, Inc. | 200039-0 | St. Paul | MN |
| TUViT, IT Security Laboratory | 200428-0 | Austin | TX |
| Twin Ports Testing, Inc. | 102083-0 | Superior | WI |
| TXU Electric - Comanche Peak Steam Electric Station | 100528-0 | Glen Rose | TX |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| **U** | | | |
| U.S. Army Center for Health Promotion and Preventive Medicine | 200044-0 | Aberdeen Proving Ground | MD |
| U.S. Army Radiation Standards & Dosimetry Laboratory | 100539-0 | Redstone Arsenal | AL |
| U.S. EPA | 200231-0 | Las Vegas | NV |
| U.S. EPA - National Enforcement Investigations Center | 101703-0 | Denver | CO |
| Ultra Scientific, Inc. | 200379-0 | North Kingstown | RI |
| UltraTech Engineering Labs Inc. | 200093-0 | Oakville, Ontario | CANADA |
| Underwriters Laboratories | 200252-0 | Santa Clara | CA |
| Underwriters Laboratories Inc. | 100414-0 | Northbrook | IL |
| Underwriters Laboratories Inc. | 200214-0 | Camas | WA |
| Underwriters Laboratories, Inc. | 100255-0 | Melville | NY |
| Underwriters Laboratories, Inc. | 200246-0 | Research Triangle Park | NC |
| Union Electric Company, Callaway Plant | 100502-0 | Fulton | MO |
| United Analytical Services, Inc. | 101732-0 | Downers Grove | IL |
| United States Dosimetry Technology, Inc. | 100571-0 | Richland | WA |
| United States Technologies, Inc. | 200162-0 | Alpharetta | GA |
| United Steel and Fasteners Inc. | 200341-0 | Itasca | IL |
| United Testing Sys. Canada, Ltd., Dynamic Testing Sys. Int. Inc. | 200311-0 | Concord Ontario | CANADA |
| Universal Compliance Laboratories | 200117-0 | San Jose | CA |
| University (State) Hygienic Laboratory | 101288-0 | Iowa City | IA |
| University of Alabama Asbestos Laboratory | 102005-0 | Tuscaloosa | AL |
| US Air Force Center for Radiation Dosimetry | 100548-0 | Brooks AFB | TX |
| USEM de Mexico, S.A. de C.V. | 200506-0 | Apodaca NL | Mexico |
| USG Research - Construction Systems Laboratory | 200132-0 | Libertyville | IL |
| **V** | | | |
| Vartest Laboratories, Inc. | 200027-0 | New York | NY |
| Vermont Fasteners Manufacturing | 200254-0 | Swanton | VT |
| Vibro-Acoustics Laboratory | 100424-0 | Scarborough Ontario | CANADA |
| VLSI Standards, Inc. | 200302-0 | San Jose | CA |
| Volz Environmental Services, Inc. | 101269-0 | Pittsburgh | PA |
| **W** | | | |
| W.R. Grace & Co. | 200258-0 | Cambridge | MA |
| Washington Laboratories, Ltd. | 200066-0 | Gaithersburg | MD |
| Wayne Langston, Inc. | 200021-0 | League City | TX |
| Webber Gage Division / L.S. Starrett Co. | 200038-0 | Cleveland | OH |
| Western Analytical Laboratory | 200037-0 | Arleta | CA |
| Western Electro-Acoustic Lab., Inc. | 100256-0 | Santa Monica | CA |
| White Environmental Consultants Inc. | 200124-0 | Anchorage | AK |
| White Environmental Consultants, Inc. | 200350-0 | Honolulu | HI |
| Willamette Industries, Inc. West Coast Development Lab | 200045-0 | Wilsonville | OR |
| Windermere Info. Tech. Sys. Military/Commercial Compliance Lab. | 200084-0 | Annapolis | MD |
| Wisconsin Occupational Health Laboratory | 101109-0 | Madison | WI |
| WKP Laboratories, Inc. | 101950-0 | New York City | NY |
| Wolverine Plating Corp. | 200230-0 | Roseville | MI |
| Wonder Makers Environmental, Inc. | 102065-0 | Kalamazoo | MI |



(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| **Y** | | | |
| Yamaha EMC Center | 200455-0 | Tenryu-shi, Shizuoka-ken | JAPAN |
| **Z** | | | |
| Zacta Technology Corporation Yonezawa Testing Center | 200306-0 | Yonezawa-shi Yamagata | JAPAN |


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# INDEX



## LISTING BY FIELD OF ACCREDITATION

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|

## CALIBRATION LABORATORIES GROUP

### *Dimensional*

| | | | |
|---|---|---|---|
| Bechtel BWXT Idaho, Standards and Calibration Lab | 200115-0 | Idaho Falls | ID |
| Dwight D.I.C., Inc. | 200405-0 | Lyndhurst | NJ |
| GE Industrial Systems | 200029-0 | Rome | NY |
| Honeywell FM&T Metrology | 200108-0 | Kansas City | MO |
| Indiana Division of Weights and Measures | 200421-0 | Indianapolis | IN |
| Instron Field Calibration Laboratory | 200301-0 | Canton | MA |
| Metroplex Metrology Lab, Inc. | 200262-0 | Fort Worth | TX |
| Michigan Dept. of Agriculture, E.C. Heffron Metrology Laboratory | 200408-0 | Williamston | MI |
| Minnesota Metrology Laboratory | 105003-0 | St. Paul | MN |
| Oak Ridge Metrology Center | 105000-0 | Oak Ridge | TN |
| Oklahoma Bureau of Standards | 200396-0 | Oklahoma City | OK |
| Sandia National Laboratories | 105002-0 | Albuquerque | NM |
| Southern California Edison Company | 105014-0 | Westminster | CA |
| State of Virginia Metrology Lab | 105007-0 | Richmond | VA |
| Strategic Weapons Fac. Pacific Cal. Lab. Oper. by Lockheed Martin | 200406-0 | Silverdale | WA |
| SWFLANT Calibration Laboratory Operated by Lockheed Martin | 200403-0 | Kings Bay | GA |
| United Testing Sys. Canada, Ltd., Dynamic Testing Sys. Int. Inc. | 200311-0 | Concord Ontario | CANADA |
| VLSI Standards, Inc. | 200302-0 | San Jose | CA |
| Webber Gage Division / L.S. Starrett Co. | 200038-0 | Cleveland | OH |

### *Electromagnetics - DC/Low Frequency*

| | | | |
|---|---|---|---|
| Bechtel BWXT Idaho, Standards and Calibration Lab | 200115-0 | Idaho Falls | ID |
| Compaq Corporate Metrology | 200154-0 | Houston | TX |
| Electronic Automation | 200410-0 | Grand Rapids | MI |
| Fluke Corporation Primary Standards Laboratory | 105016-0 | Everett | WA |
| GE Industrial Systems | 200029-0 | Rome | NY |
| GTE Electronic Repair Services | 200352-0 | Fort Wayne | IN |
| Hart Scientific Calibration Laboratory | 200348-0 | American Fork | UT |
| Sandia National Laboratories | 105002-0 | Albuquerque | NM |
| SE Laboratories | 200338-0 | Santa Clara | CA |
| Southern California Edison Company | 105014-0 | Westminster | CA |
| Strategic Weapons Fac. Pacific Cal. Lab. Oper. by Lockheed Martin | 200406-0 | Silverdale | WA |
| SWFLANT Calibration Laboratory Operated by Lockheed Martin | 200403-0 | Kings Bay | GA |

### *Electromagnetics - RF/Microwave*

| | | | |
|---|---|---|---|
| Compaq Corporate Metrology | 200154-0 | Houston | TX |
| Honeywell FM&T Metrology | 200108-0 | Kansas City | MO |
| IPS Corporation | 200012-0 | Nagano | JAPAN |
| Liberty Labs, Inc. | 200123-0 | Kimballton | IA |
| Sandia National Laboratories | 105002-0 | Albuquerque | NM |
| SE Laboratories | 200338-0 | Santa Clara | CA |


(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| ***Ionizing Radiation*** | | | |
| CDRH X-Ray Calibration Laboratory | 105018-0 | Rockville | MD |
| MDS Nordion Dosimetry Laboratory | 200370-0 | Kanata Ontario | CANADA |
| Ohio E.M.A. Radiological Instrument Calibration Facility | 200419-0 | Columbus | OH |
| Pacific Northwest National Laboratory / Battelle | 105020-0 | Richland | WA |
| Sandia National Laboratories | 105002-0 | Albuquerque | NM |
| STERIS-Isomedix Services | 200235-0 | Morton Grove | IL |
| ***Mechanical*** | | | |
| Bechtel BWXT Idaho, Standards and Calibration Lab | 200115-0 | Idaho Falls | ID |
| David L. Ellis Co., Incorporated | 200127-0 | Acton | MA |
| Denver Instrument Co. Weight Lab | 200106-0 | Arvada | CO |
| Henry Troemner, LLC | 105013-0 | Thorofare | NJ |
| Honeywell FM&T Metrology | 200108-0 | Kansas City | MO |
| Indiana Division of Weights and Measures | 200421-0 | Indianapolis | IN |
| Instron Field Calibration Laboratory | 200301-0 | Canton | MA |
| Instron Force Calibration Laboratory | 105023-0 | Canton | MA |
| Michigan Dept. of Agriculture, E.C. Heffron Metrology Laboratory | 200408-0 | Williamston | MI |
| Minnesota Metrology Laboratory | 105003-0 | St. Paul | MN |
| Oak Ridge Metrology Center | 105000-0 | Oak Ridge | TN |
| Oklahoma Bureau of Standards | 200396-0 | Oklahoma City | OK |
| Rice Lake Weighing Systems | 105001-0 | Rice Lake | WI |
| Sandia National Laboratories | 105002-0 | Albuquerque | NM |
| Southern California Edison Company | 105014-0 | Westminster | CA |
| State of Virginia Metrology Lab | 105007-0 | Richmond | VA |
| Strategic Weapons Fac. Pacific Cal. Lab. Oper. by Lockheed Martin | 200406-0 | Silverdale | WA |
| United Testing Sys. Canada, Ltd., Dynamic Testing Sys. Int. Inc. | 200311-0 | Concord Ontario | CANADA |
| ***Optical Radiation*** | | | |
| Electronic Automation | 200410-0 | Grand Rapids | MI |
| Techni-Cal Services of Orange Cty, Inc. | 200459-0 | Monroe | NY |
| ***Thermodynamic*** | | | |
| Bechtel BWXT Idaho, Standards and Calibration Lab | 200115-0 | Idaho Falls | ID |
| Electronic Automation | 200410-0 | Grand Rapids | MI |
| Fluke Corporation Primary Standards Laboratory | 105016-0 | Everett | WA |
| GE Industrial Systems | 200029-0 | Rome | NY |
| Hart Scientific Calibration Laboratory | 200348-0 | American Fork | UT |
| Minnesota Metrology Laboratory | 105003-0 | St. Paul | MN |
| Oak Ridge Metrology Center | 105000-0 | Oak Ridge | TN |
| Sandia National Laboratories | 105002-0 | Albuquerque | NM |
| State of Virginia Metrology Lab | 105007-0 | Richmond | VA |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| ***Time & Frequency*** | | | |
| Bechtel BWXT Idaho, Standards and Calibration Lab | 200115-0 | Idaho Falls | ID |
| Compaq Corporate Metrology | 200154-0 | Houston | TX |
| Electronic Automation | 200410-0 | Grand Rapids | MI |
| Fluke Corporation Primary Standards Laboratory | 105016-0 | Everett | WA |
| Honeywell FM&T Metrology | 200108-0 | Kansas City | MO |
| Indiana Division of Weights and Measures | 200421-0 | Indianapolis | IN |
| Oak Ridge Metrology Center | 105000-0 | Oak Ridge | TN |
| Sandia National Laboratories | 105002-0 | Albuquerque | NM |
| SE Laboratories | 200338-0 | Santa Clara | CA |
| State of Virginia Metrology Lab | 105007-0 | Richmond | VA |
| Strategic Weapons Fac. Pacific Cal. Lab. Oper. by Lockheed Martin | 200406-0 | Silverdale | WA |
| SWFLANT Calibration Laboratory Operated by Lockheed Martin | 200403-0 | Kings Bay | GA |
| **CHEMICAL CALIBRATION GROUP** | | | |
| ***NIST Traceable Reference Materials*** | | | |
| Andover Corporation | 200461-0 | Salem | NH |
| Optiglass Ltd. | 200466-0 | Hainault Essex | UNITED KINGDOM |
| Thermo Spectronic | 200462-0 | Cambridge | UNITED KINGDOM |
| ***Providers of Proficiency Testing*** | | | |
| Absolute Standards, Inc. | 200390-0 | Hamden | CT |
| AccuStandard, Inc. | 200389-0 | New Haven | CT |
| Analytical Products Group, Inc. | 200384-0 | Belpre | OH |
| Chrisope Technologies, A Division of Remel | 200388-0 | Lake Charles | LA |
| Environmental Resource Associates (ERA) | 200386-0 | Arvada | CO |
| Microcheck, Inc. | 200391-0 | Northfield | VT |
| NSI Solutions, Inc. | 200440-0 | Raleigh | NC |
| NYS DOH Environmental Laboratory Approval Program | 200387-0 | Albany | NY |
| Protocol Analytical Supplies, Inc. | 200395-0 | Middlesex | NJ |
| Resource Technology Corporation (RTC) | 200393-0 | Laramie | WY |
| Spex Certiprep Inc. | 200392-0 | Metuchen | NJ |
| Ultra Scientific, Inc. | 200379-0 | North Kingstown | RI |
| **DOSIMETRY GROUP** | | | |
| ***Ionizing Radiation Dosimetry*** | | | |
| Atomic Energy Industrial Laboratory of the Southwest, Inc. | 100556-0 | Houston | TX |
| Battelle - Pacific Northwest National Laboratory | 200216-0 | Richland | WA |
| Calvert Cliffs Nuclear Power Plant, Inc. | 100501-0 | Lusby | MD |
| Carolina Power & Light Company, Harris Energy & Enviro. Center | 100517-0 | New Hill | NC |
| Clinton Power Station | 100570-0 | Clinton | IL |
| Con Edison, Indian Point | 100538-0 | Buchanan | NY |
| Detroit Edison, Fermi 2 Dosimetry Laboratory | 100529-0 | Newport | MI |


(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Duke Engineering and Services Environmental Laboratory | 100524-0 | Marlborough | MA |
| Duke Power Company Dosimetry Laboratory | 100505-0 | Charlotte | NC |
| Electric Boat Corp/A General Dynamics Co. Radiological Ctrl. Dept | 100560-0 | Groton | CT |
| Entergy Operations, Inc. | 100535-0 | Killona | LA |
| Exelon Generation Company, LLC - TLD Processing Laboratory | 100541-0 | Wilmington | IL |
| FENOC, Beaver Valley Power Station | 100521-0 | Shippingport | PA |
| Florida Power & Light Company | 100544-0 | Juno Beach | FL |
| Georgia Power Company/Enviro. Affairs, Enviro. Lab-Dosimetry | 100551-0 | Smyrna | GA |
| Ginna Nuclear Station | 100514-0 | Ontario | NY |
| ICN Worldwide Dosimetry Service, Div. of ICN Biomedicals, Inc. | 100555-0 | Costa Mesa | CA |
| Landauer, Inc. | 100518-0 | Glenwood | IL |
| Mallinckrodt, Inc. | 100503-0 | Maryland Heights | MO |
| Naval Dosimetry Center | 100504-0 | Bethesda | MD |
| Naval Nuclear Propulsion Program Directorate, Washington, DC | 100565-0 | Bremerton | WA |
| Newport News Shipbuilding Radiological Control Department | 100561-0 | Newport News | VA |
| Northeast Nuclear Energy Co. Dosimetry Laboratory | 100540-0 | Waterford | CT |
| Pacific Gas & Electric Company, Diablo Canyon Nuclear Power Plant | 100537-0 | Avila Beach | CA |
| Pinnacle West Energy Corp., Palo Verde Nuclear Generating Station | 100536-0 | Tonopah | AZ |
| PPL Susquehanna, LLC | 100554-0 | Allentown | PA |
| Proxtronics, Inc. | 100573-0 | Burke | VA |
| Radiation Detection Company | 100512-0 | Sunnyvale | CA |
| Radiation Laboratory, Taiwan Power Company | 100562-0 | Shihmen, Taipei | TAIWAN |
| South Texas Project Dosimetry Laboratory | 100519-0 | Wadsworth | TX |
| Southern California Edison | 100506-0 | San Clemente | CA |
| Tennessee Valley Authority External Dosimetry Service | 100516-0 | Soddy-Daisy | TN |
| Troxler Radiation Monitoring Svc. a div. of Troxler Elect. Labs | 100559-0 | Research Triangle Park | NC |
| TXU Electric - Comanche Peak Steam Electric Station | 100528-0 | Glen Rose | TX |
| U.S. Army Radiation Standards & Dosimetry Laboratory | 100539-0 | Redstone Arsenal | AL |
| U.S. EPA | 200231-0 | Las Vegas | NV |
| Union Electric Company, Callaway Plant | 100502-0 | Fulton | MO |
| United States Dosimetry Technology, Inc. | 100571-0 | Richland | WA |
| US Air Force Center for Radiation Dosimetry | 100548-0 | Brooks AFB | TX |


(See 'How To Use This Directory' on page 7.)

## ELECTROMAGNETIC COMPATIBILITY & TELECOMMUNICATIONS GROUP

### *Electromagnetic Compatibility & Telecommunications*

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| 3M Product Safety EMC Laboratory | 200033-0 | St. Paul | MN |
| A-Pex International Co., Ltd. Yamakita Laboratory | 200441-0 | Ashigarakami-gun | JAPAN |
| A-Pex International Co., Ltd. Yokowa Laboratory | 200109-0 | Mie-ken | JAPAN |
| Advance Data Technology Corporation | 200102-0 | Taipei Hsien | TAIWAN |
| Advance Data Technology Corporation Hsin Chu EMC Laboratory | 200376-0 | Hsin Chu Hsien | TAIWAN |
| Advanced Compliance Laboratory | 200101-0 | Hillsborough | NJ |
| Advantest Analysis Labroatory Ltd. EMC Center | 200477-0 | Gunma | JAPAN |
| AHD | 200129-0 | Dowagiac | MI |
| Akzo Kashima Ltd., Kawasaki Technical Center | 200300-0 | Kawasaki | JAPAN |
| Akzo Nobel K.K., Kakegawa EMC Test Site | 100290-2 | Shizuoka | JAPAN |
| Akzo Nobel K.K., Kashima EMC Site | 100290-0 | Ibaraki | JAPAN |
| Akzo Nobel K.K., Matsuda EMC Test Site | 100290-4 | Kanagawa | JAPAN |
| Akzo Nobel K.K., Nagano EMC Test Site | 100290-3 | Nagano | JAPAN |
| Akzo Nobel K.K., Tochigi EMC Test Site | 100290-5 | Tochigi | JAPAN |
| Analab, LLC | 200260-0 | Sterling | PA |
| Apple Computer, Inc., EMC Compliance Laboratory | 200071-0 | Cupertino | CA |
| Audix Technology (Shanghai) Co., Ltd. | 200371-0 | Shanghai | CHINA |
| AUDIX Technology (Shenzhen) Co., Ltd. | 200372-0 | Shenzhen, Guangdong | CHINA |
| BAE Environmental and EMC Test Centre | 200304-0 | Kent | UNITED KINGDOM |
| BAE Systems | 200425-0 | Nashua | NH |
| Bay Area Compliance Laboratory, Corp. | 200167-0 | Sunnyvale | CA |
| Benesol Corp. | 200438-0 | Sagamihara-shi, Kanagawa | JAPAN |
| Best Laboratory | 200484-0 | Taipei Hsein | TAIWAN |
| Boeing - St. Louis Electromagnetic Compatibility Laboratory | 200382-0 | St. Louis | MO |
| Cabletron Systems, Inc. | 200121-0 | Rochester | NH |
| Canon D5 RF Anechoic Chamber; FCC Part 15; CISPR 22/AS/NZS 3548 | 200478-0 | Ibaraki | JAPAN |
| Chemitox EMC Research, Inc. | 200120-0 | Yamanashi-ken | JAPAN |
| Chomerics Test Services (CTS) | 100296-0 | Woburn | MA |
| Cisco Systems, Inc. | 200114-0 | San Jose | CA |
| Communication Certification Laboratory | 100272-0 | Salt Lake City | UT |
| Compaq Computer Corp. EMC Test Facility | 200078-0 | Colorado Springs | CO |
| Compaq Computer Corp. Emissions Control Lab | 200058-0 | Houston | TX |
| Compaq Regulatory Compliance Engineering - East | 100413-0 | Marlboro | MA |
| Compatible Electronics, Inc. | 200063-0 | Agoura | CA |
| Compliance Eng. Svces, Inc., Compliance Certification Services | 200065-0 | Sunnyvale | CA |
| Compliance Test Laboratories, Inc. | 200237-0 | Liberty | SC |
| Cosmos Corporation | 200151-0 | Watarai-gun Mie | JAPAN |
| Criterion Technology Corp. | 100396-0 | Rollinsville | CO |


(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| CSA International | 100322-0 | Toronto Ontario | CANADA |
| D.L.S. Electronic Systems, Inc. | 100276-0 | Wheeling | IL |
| Dayton T. Brown, Inc. | 200422-0 | Bohemia | NY |
| Dell Regulatory Test Laboratories | 200052-0 | Round Rock | TX |
| Diviersified T.E.S.T. Technologies, Inc. | 200340-0 | Groton | NY |
| Eastman Kodak Co.-Regulatory Compliance Center-EMC Facility | 200313-0 | Rochester | NY |
| Eaton E3 Laboratory | 100382-0 | Southfield | MI |
| Electro Magnetic Test, Inc. | 200147-0 | Mountain View | CA |
| Electronic Research & Service Organization/ITRI | 200118-0 | Chutung Hsinchu | TAIWAN |
| Electronics Test Centre | 200282-0 | Kanata, Ont. | CANADA |
| Electronics Test Centre | 200282-0 | Kanata, Ont. | CANADA |
| Electronics Testing Center, Taiwan | 200133-0 | Taoyuan Hsien | TAIWAN |
| Elite Electronic Engineering Inc. | 100278-0 | Downers Grove | IL |
| Elliott Laboratories, Inc. | 200069-0 | Sunnyvale | CA |
| EMC Automation, a TDK Group Company | 200430-0 | Cedar Park | TX |
| EMC Compliance Mgmt Group, dba Turntech Scientific & Instr., Inc. | 200068-0 | Mountain View | CA |
| EMC Corporation | 100339-0 | Westboro | MA |
| EMCE Engineering, Inc. | 200092-0 | Fremont | CA |
| Flextronics EMC Laboratories East Coast Operations | 200094-0 | Youngsville | NC |
| Fujitsu Evaluation Engineering Laboratory | 200281-0 | Numazu, Shizuoka-Pref. | JAPAN |
| Fujitsu General EMC Laboratory | 200373-0 | Kawasaki | JAPAN |
| Garwood Laboratories, Inc. | 200119-0 | Placentia | CA |
| Genicom Corporation | 200342-0 | Waynesboro | VA |
| Global EMC Standard Tech. Corp. | 200085-0 | Taipei County | TAIWAN |
| Global Testing | 200436-0 | Santa Ana | CA |
| Hewlett Packard, Product Test Lab, San Diego | 200138-0 | San Diego | CA |
| Hitachi Information Technology Co., Ltd. | 200186-0 | Kanagawa | JAPAN |
| HomeTek Technology Inc. | 200331-0 | Taipei Shien | TAIWAN |
| IBM Austin EMC | 200112-0 | Austin | TX |
| IBM Endicott EMC Lab | 200418-0 | Endicott | NY |
| IBM Poughkeepsie EMC Laboratory | 200435-0 | Poughkeepsie | NY |
| IBM Rochester EMC Lab | 200091-0 | Rochester | MN |
| IBM RTP PSG EMC Test Labs | 200200-0 | Research Triangle Park | NC |
| IBM Yamato EMC Engineering | 200198-0 | Yamato Kanagawa | JAPAN |
| IIT Research Institute/R&B Operation | 100280-0 | West Conshohocken | PA |
| InFocus Systems, Inc. | 200152-0 | Wilsonville | OR |
| Instrument Specialties Co., Inc. | 200076-0 | Delaware Water Gap | PA |
| Integrity Design & Test Services, an Entela Company | 200004-0 | Littleton | MA |
| Intermec Technologies Corporation | 100269-0 | Cedar Rapids | IA |
| International Standards Laboratory | 200234-0 | Hsichih Chen, Taipei | TAIWAN |
| International Technology Company (ITC) | 200172-0 | Sunol | CA |
| Interocean EMC Technology Corp. | 200458-0 | Taipei County | TAIWAN |
| Intertek Testing Services | 200201-0 | Menlo Park | CA |
| Intertek Testing Services NA Inc. | 100270-0 | Boxborough | MA |
| Intertek Testing Services NA Inc. | 100274-0 | Lexington | KY |
| Intertek Testing Services NA Inc. | 100409-0 | Duluth | GA |

 (See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Intertek Testing Services NA Inc. | 200297-0 | Laguna Niguel | CA |
| Intertek Testing Services NA, Inc. | 200049-0 | Oakdale | MN |
| Inventec Corp. (Taoyuan) EMC Labs | 200140-0 | Taoyuan | TAIWAN |
| IPS Corporation | 200012-0 | Nagano | JAPAN |
| Japan Quality Assurance Org. Chubu Testing Center Shikatsu Branch | 200190-0 | Aichi | JAPAN |
| Japan Quality Assurance Org. Safety Testing Ctr. Tsuru EMC Branch | 200192-0 | Yamanashi | JAPAN |
| Japan Quality Assurance Organization Kita-Kansai Testing Center | 200191-0 | Osaka | JAPAN |
| Japan Quality Assurance Organization Safety Testing Center | 200189-0 | Tokyo | JAPAN |
| JMR Compliance Engineering | 200413-0 | Chatsworth | CA |
| Kansai Electronic Industry Development Center, Ikoma Testing Lab. | 200207-0 | Ikoma Nara | JAPAN |
| Key Tronic Corp. | 200096-0 | Spokane | WA |
| KTL Dallas, Inc. | 100426-0 | Lewisville | TX |
| KTL Ottawa Inc. | 100351-0 | Ottawa Ontario | CANADA |
| Kyushu Matsushita Electric Test Lab EMC Center | 200364-0 | Tosu-shi Saga-ken | JAPAN |
| LG Electronics, Inc., Quality and Reliability Center | 200040-0 | Seoul | KOREA |
| Lockheed Martin Control Systems EMI Laboratory | 200142-0 | Johnson City | NY |
| Lucent Technologies, Global Product Compliance Lab | 100275-0 | Holmdel | NJ |
| Matsushita EMC Center | 100428-0 | Sasayama, Hyogo | JAPAN |
| Met Laboratories Incorporated | 200445-0 | Union City | CA |
| MET Laboratories, Inc. | 100273-0 | Baltimore | MD |
| Minolta Co., Ltd. Toyokawa EMC Lab | 200434-0 | Toyokawa, Aichi | JAPAN |
| Motorola EMC Test Services Lab | 200005-0 | Mansfield | MA |
| Motorola PPG Compliance Laboratory | 200318-0 | Boynton Beach | FL |
| Motorola SSG EMC/TEMPEST Laboratory | 100405-0 | Scottsdale | AZ |
| Murata Mfg. Co., Ltd. Yokohama Technical Center EMM Office | 200263-0 | Kanagawa | JAPAN |
| National Technical Systems | 100347-0 | Boxborough | MA |
| National Technical Systems | 200245-0 | Plano | TX |
| NAWC AD 5.1.7.2. EMI Lab | 100408-0 | Patuxent River | MD |
| NAWC-Aircraft Div. Lakehurst Electromagnetic Interference Lab. | 200222-0 | Lakehurst | NJ |
| NCR Corp. San Diego EMC Lab | 200383-0 | San Diego | CA |
| NEC Kofu, Ltd., EMC Center | 200433-0 | Yamanashi | JAPAN |
| NEC Niigata, Ltd, EMC Group | 200490-0 | Niigata | JAPAN |
| NEC Shizuoka, Ltd. EMC Center | 200488-0 | Shizuoka-ken | JAPAN |
| Nemko EESI, Inc. | 200116-0 | San Diego | CA |
| Neutron Engineering Inc. | 200145-0 | Taipei | TAIWAN |
| Nortel Networks BVW Lab | 200098-0 | Belleville, Ontario | CANADA |
| Northwest EMC, Inc. | 200059-0 | Hillsboro | OR |
| Ohtama Co., Ltd. Yamanashi EMC Test Site | 200175-0 | Yamanashi | JAPAN |
| Olympus EMC Laboratory | 200472-0 | Tokyo | JAPAN |
| ORIX Rentec EMC Center; Electromagnetic Compatibility | 200404-0 | Aiko-Gun, Kanagawa | JAPAN |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Paradyne Corporation | 200125-0 | Largo | FL |
| PCTEST Engineering Laboratory, Inc. | 100431-0 | Columbia | MD |
| PDE Laboratories | 200082-0 | San Clemente | CA |
| PEP Testing Laboratory | 200097-0 | Taipei Hsien | TAIWAN |
| PFU TECHNOCONSUL EMC Center | 200259-0 | Ishikawa-Ken | JAPAN |
| Philips Electronics Industries (TAIWAN) Ltd. | 200137-0 | Chungli, Taoyuan | TAIWAN |
| Philips Testing Service | 200409-0 | Knoxville | TN |
| Professional Testing (EMI), Inc. | 200062-0 | Round Rock | TX |
| Quest Engineering Solutions, Inc. | 200036-0 | N. Billerica | MA |
| Quietek Corporation | 200347-0 | Hsin-Chu Country | TAIWAN |
| Raytheon Electronic Systems,California Engineering EBE Laboratory | 200431-0 | El Segundo | CA |
| Raytheon Technical Services Co. EMI Laboratory | 200317-0 | Indianapolis | IN |
| Retlif Testing Laboratories | 100267-0 | Ronkonkoma | NY |
| Retlif Testing Laboratories | 100267-1 | Goffstown | NH |
| Rhein Tech Laboratories, Inc. | 200061-0 | Herndon | VA |
| Ricoh Company, Ltd. Ohmori EMC Center | 200163-0 | Tokyo | JAPAN |
| Rogers Labs, Inc. | 200087-0 | Louisburg | KS |
| Samsung Electronics EMC Laboratory | 200447-0 | Suwon, Kyungki Do | KOREA |
| Sanmina Homologation Services | 100411-0 | Santa Clara | CA |
| Seiko Epson Corporation | 200157-0 | Shiojiri-City Nagano | JAPAN |
| Sharp Nara EMC Center, EMI Measurement for ITE | 200457-0 | Yamatokooriyama-shi Nara | JAPAN |
| SK Tech Co., LTD. | 200220-0 | Namyangju-si, Kyunggi-Do | KOREA |
| Sony Bonson EMC Test Laboratory | 200456-0 | Saitama-ken | JAPAN |
| Sony Electronics Inc. Product Quality Division EMC Group | 200312-0 | San Diego | CA |
| Sony Ikegami EMC Site | 200439-0 | Shinagawa, Tokyo | JAPAN |
| Sony Kisarazu EMC Test Laboratory | 200432-0 | Kisarazu Chiba | JAPAN |
| Sony Kohda EMC Test Laboratory | 200398-0 | Nukata-gun Aichi | JAPAN |
| Sony Minokamo EMC Site | 200368-0 | Gifu-Pref. | JAPAN |
| Spectrum Research & Testing Laboratory, Inc. | 200099-0 | Chung-Li, Taoyuan | TAIWAN |
| Sporton International, Inc. | 200079-0 | Taipei Hsien | TAIWAN |
| Storagtek Open Area Test Site | 200251-0 | Louisville | CO |
| Sun Microsystems, Inc. EMC Testing | 200363-0 | Palo Alto | CA |
| Syonan Site Testing Laboratory as Conducted & Radiated Emissions | 200482-0 | Kanagawa | JAPAN |
| Taiwan Tokin EMC Eng. Corp. | 200077-0 | Taipei | TAIWAN |
| TDK Corporation's 10m Anechoic Chamber | 200309-0 | Ichikawa-shi, Chiba-ken | JAPAN |
| TDK Corporation's Chikumagawa Open Site | 200319-0 | Saku-shi, Nagano-ken | JAPAN |
| TEAC Corporation EMC Center | 200362-0 | Saitama-ken | JAPAN |
| Test Site Services, Inc. | 100419-0 | Marlboro | MA |
| Tokin EMC Engineering Co., Ltd. Kawasaki Facility | 200217-0 | Kawasaki-city, Kanagawa | JAPAN |
| Tokin EMC Engineering Co., Ltd. Nagoya Testing Laboratory | 200219-0 | Daian-cho, Inabe-gun, Mie | JAPAN |
| Tokin EMC Engineering Co., Ltd. Osaka Testing Laboratory | 200218-0 | Sanda-city, Hyogo | JAPAN |
| Tokin EMC Engineering Co., Ltd. Tsukuba | 200221-0 | Tsukuba-city, Ibaraki | JAPAN |



(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Testing Laboratory | | | |
| Toshiba Corp., Ome Operations | 200107-0 | Ome Tokyo | JAPAN |
| Training Research Co., Ltd. | 200174-0 | Taipei Hsien | TA1WAN |
| TUV Product Service, Inc. | 100268-0 | San Diego | CA |
| TUV Product Service, Inc. | 100271-0 | New Brighton | MN |
| TUV Product Service, Inc. | 100271-1 | Boulder | CO |
| TUV Rheinland of North America, Inc. | 200111-0 | Newtown | CT |
| TUV Telecom Services, Inc. | 200039-0 | St. Paul | MN |
| UltraTech Engineering Labs Inc. | 200093-0 | Oakville, Ontario | CANADA |
| Underwriters Laboratories | 200252-0 | Santa Clara | CA |
| Underwriters Laboratories Inc. | 100414-0 | Northbrook | IL |
| Underwriters Laboratories Inc. | 200214-0 | Camas | WA |
| Underwriters Laboratories, Inc. | 100255-0 | Melville | NY |
| Underwriters Laboratories, Inc. | 200246-0 | Research Triangle Park | NC |
| United States Technologies, Inc. | 200162-0 | Alpharetta | GA |
| Universal Compliance Laboratories | 200117-0 | San Jose | CA |
| Washington Laboratories, Ltd. | 200066-0 | Gaithersburg | MD |
| Wayne Langston, Inc. | 200021-0 | League City | TX |
| Windermere Info. Tech. Sys. Military/Commercial Compliance Lab. | 200084-0 | Annapolis | MD |
| Yamaha EMC Center | 200455-0 | Tenryu-shi, Shizuoka-ken | JAPAN |
| Zacta Technology Corporation Yonezawa Testing Center | 200306-0 | Yonezawa-shi Yamagata | JAPAN |

## ENVIRONMENTAL GROUP

### *Asbestos Fiber Analysis (PLM Test Method)*

| | | | |
|---|---|---|---|
| A & B Environmental Services, Inc. | 101793-0 | Houston | TX |
| A.E.S.L. Environmental Laboratory | 200303-0 | Tempe | AZ |
| A.R.C. Laboratories, Inc. | 101832-0 | Grand Forks | ND |
| Accredited Environmental Technologies, Inc. | 101051-0 | Media | PA |
| ACM Environmental, Inc. | 101977-0 | South Bend | IN |
| Advanced Industrial Hygiene Services, Inc. | 101006-0 | Miami | FL |
| AES International | 200051-0 | Santurce | PR |
| AGX, Inc. | 101578-0 | Cranberry Township | PA |
| Aires Consulting Group, Inc. | 101014-0 | Batavia | IL |
| Airtek Environmental Corp. | 102011-0 | New York | NY |
| ALAC | 200323-0 | New York | NY |
| Allegheny Asbestos Analysis | 101704-0 | Carnegie | PA |
| Alpine Consulting, Inc. | 102089-0 | Colorado Springs | CO |
| AMA Analytical Services, Inc. | 101143-0 | Lanham | MD |
| Ambient Group, Inc. | 101618-0 | Glen Cove | NY |
| AMEC Earth & Environmental, Inc., PLM LAB | 200444-0 | Phoenix | AZ |
| American Asbestos Laboratories, Inc. | 101775-0 | Miami Lakes | FL |
| American Medical Laboratories, Inc. | 101136-0 | Chantilly | VA |
| Analytica Solutions, Inc. | 101086-0 | Thornton | CO |
| Analytical Chemistry Services (ACS), Dolan Chemical Lab | 102102-0 | Columbus | OH |
| Analytical Environmental Services, Inc. | 102082-0 | Atlanta | GA |
| Analytical Industries, Inc. | 101855-0 | Paducah | KY |
| Analytical Labs San Francisco, Inc. | 101909-0 | San Francisco | CA |
| AnalyticaLab | 101727-0 | Willow Springs | IL |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Analytics Corporation | 101004-0 | Richmond | VA |
| Apex Research, Inc. | 102118-0 | Whitmore Lake | MI |
| Apollo Environmental, Inc. | 101871-0 | Gibsonton | FL |
| Applied Environmental, Inc. | 101611-0 | Reston | VA |
| ASBESTECH | 101442-0 | Carmichael | CA |
| Asbestos Analysis and Information Service, Inc. | 101261-0 | Four Oaks | NC |
| Asbestos Consulting & Testing (ACT) | 101649-0 | Lenexa | KS |
| Asbestos TEM Laboratories, Inc. | 101891-0 | Berkeley | CA |
| Asbestos TEM Laboratories, Inc. | 200104-0 | Sparks | NV |
| Assaigai Analytical Laboratories, Inc. | 101457-0 | Albuquerque | NM |
| AST International Environmental Consultants Inc. | 200474-0 | Spring Valley | CA |
| ATC Associates Inc. | 101187-0 | New York | NY |
| ATC Associates Inc. | 200250-0 | Columbia | MD |
| ATC Associates, Inc. | 102031-0 | Englewood | CO |
| Athenica Environmental Services, Inc. | 101958-0 | Long Island City | NY |
| Aurora Consolidated Laboratories | 101661-0 | West Allis | WI |
| Batta Laboratories, Inc. | 101032-0 | Newark | DE |
| Bay Area Air Quality Management District | 102090-0 | San Francisco | CA |
| Bella Donna Labs Inc. | 101868-0 | Wauwatosa | WI |
| Braun Intertec Corporation | 101234-0 | Minneapolis | MN |
| Brewer Environmental Services Industrial Hygiene Group Laboratory | 102085-0 | Honolulu | HI |
| CA Laboratories, L.L.C. | 200452-0 | Baton Rouge | LA |
| CAM Environmental Services | 200240-0 | Pasadena | TX |
| CAMCO Lab | 101803-0 | Fontana | CA |
| Cape Environmental Management, Inc. | 102111-0 | Atlanta | GA |
| Carolina Environmental, Inc. | 101768-0 | Cary | NC |
| Chatfield Technical Consulting Limited | 101103-0 | Mississauga Ontario | CANADA |
| ChemScope, Inc. | 101061-0 | North Haven | CT |
| City of Los Angeles Department of Water and Power | 101111-0 | Los Angeles | CA |
| Clark Seif Clark, Inc. | 200324-0 | Chatsworth | CA |
| Clayton Group Services | 101106-0 | Seattle | WA |
| Clayton Group Services | 101125-0 | Kennesaw | GA |
| Comprehensive Health Services-Environmental Health PLM Laboratory | 101759-0 | Kennedy Space Center | FL |
| Con Edison, EH&S - ChemLab | 101558-0 | Long Island City | NY |
| Concord Analysis, Inc. | 101884-0 | Chatsworth | CA |
| Continental Envirotech, Inc. | 200080-0 | Mesa | AZ |
| Converse Consultants | 102091-0 | Reno | NV |
| Covino Environmental Associates, Inc. | 101781-0 | Woburn | MA |
| Crisp Analytical Laboratory | 200349-0 | Carrollton | TX |
| Criterion Laboratories, Inc. | 102046-0 | Bensalem | PA |
| CTL Environmental Services | 101216-0 | Harbor City | CA |
| Dames & Moore, Inc. | 101433-0 | Salem | NH |
| DataChem Laboratories | 101917-0 | Cincinnati | OH |
| Davis & Floyd, Inc. | 101410-0 | Greenwood | SC |
| Davis Environmental Labs, Inc. | 101039-0 | Chicago | IL |
| DCM Science Laboratory, Inc. | 101258-0 | Wheat Ridge | CO |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Design for Health Environmental Services | 101864-0 | San Diego | CA |
| DH Analytical Services | 102086-0 | Stafford | TX |
| DHMH-Air Quality Laboratory | 101523-0 | Baltimore | MD |
| Dixon Information Inc. | 101012-0 | South Salt Lake | UT |
| Dove Environmental Corporation | 102053-0 | Miami | FL |
| EA Group | 101019-0 | Mentor | OH |
| EAI, Inc. | 102114-0 | Jersey City | NJ |
| Eastern Analytical Services, Inc. | 101646-0 | Elmsford | NY |
| EcoSystems Environmental, Inc. | 101162-0 | Carrollton | TX |
| EMS Laboratories, Inc. | 101218-0 | Pasadena | CA |
| EMSL Analytical Inc. Bulk And Airborne Asbestos Fiber Analysis | 200399-0 | Chicago | IL |
| EMSL Analytical Inc. Mobile Laboratory | 200481-0 | Westmont | NJ |
| EMSL Analytical, Inc. | 101048-0 | Westmont | NJ |
| EMSL Analytical, Inc. | 101048-1 | Atlanta | GA |
| EMSL Analytical, Inc. | 101048-2 | Piscataway | NJ |
| EMSL Analytical, Inc. | 101048-3 | Milpitas | CA |
| EMSL Analytical, Inc. | 101048-4 | Ann Arbor | MI |
| EMSL Analytical, Inc. | 101048-9 | New York | NY |
| EMSL Analytical, Inc. | 101048-10 | Carle Place | NY |
| EMSL Analytical, Inc. | 101151-0 | Orlando | FL |
| EMSL Analytical, Inc. | 102104-0 | Greensboro | NC |
| EMSL Analytical, Inc. | 102106-0 | Houston | TX |
| EMSL Analytical, Inc. | 200019-0 | Minneapolis | MN |
| EMSL Analytical, Inc. | 200034-0 | Dallas | TX |
| EMSL Analytical, Inc. | 200056-0 | Williamsville | NY |
| EMSL Analytical, Inc. | 200188-0 | Indianapolis | IN |
| EMSL Analytical, Inc. | 200204-0 | N. Miami Beach | FL |
| EMSL Analytical, Inc. | 200293-0 | Beltsville | MD |
| EMSL Analytical, Inc. | 200333-0 | Elmsford | NY |
| EMSL Analytical, Inc. | 200375-0 | Baton Rouge | LA |
| ENCORP | 200013-0 | El Segundo | CA |
| Enviro Techniques, Inc. | 200024-0 | Paterson | NJ |
| Enviro-Probe, Inc. | 101222-0 | Bronx | NY |
| EnviroHealth Technologies, Inc. | 200374-0 | St. Louis | MO |
| EnviroMed Services, Inc. | 101514-0 | New Haven | CT |
| Environmental Enterprise Group(EEG), Inc. | 101587-0 | Russellville | AR |
| Environmental Hazards Services, L.L.C. | 101882-0 | Richmond | VA |
| Environmental Health Laboratories | 101506-0 | Clayton | MO |
| Environmental Management Consultants, Inc. | 101926-0 | Scottsdale | AZ |
| Environmental Monitoring & Consulting Associates | 101087-0 | Somerville | NJ |
| Environmental Science Services, Inc. | 200424-0 | Lockeford | CA |
| Environmental Services International, Inc. | 101306-0 | St. Albans | WV |
| Environmental Testing and Monitoring Services, Inc. | 200131-0 | Virginia Beach | VA |
| Environmental Testing, Inc. | 101848-0 | Middletown | DE |
| Envirotest, Inc. | 101595-0 | Houston | TX |
| ERI Consulting Engineers, Inc. | 101232-0 | Tyler | TX |
| ESG Laboratories | 102029-0 | Indianapolis | IN |
| EssTek Ohio, Inc. | 102093-0 | Middleburg Heights | OH |
| Family Analytical Laboratory Services, Inc. | 200448-0 | Denver | CO |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Fiberquant, Inc. | 101031-0 | Phoenix | AZ |
| Fibertec, Inc. | 101510-0 | Holt | MI |
| Fluor Fernald, Inc., Analytical Laboratory Services | 102010-0 | Cincinnati | OH |
| Forensic Analytical | 101459-0 | Hayward | CA |
| Forensic Analytical Specialties, Inc. | 101459-I | Rancho Domingues | CA |
| FRS Geotech, Inc. | 102078-0 | Denver | CO |
| Galson Laboratories | 101375-0 | East Syracuse | NY |
| Gelles Laboratories, Division, CC Technologies | 101170-0 | Dublin | OH |
| GLE Associates, Inc. | 102003-0 | Tampa | FL |
| GSC Environmental Laboratories, Inc. | 101626-0 | Augusta | GA |
| Health Science Associates | 101384-0 | Los Alamitos | CA |
| Hi-Tech Environmental and Laboratory Services | 102013-0 | Cypress | CA |
| HIH Laboratory, Inc. | 101233-0 | Webster | TX |
| Hillmann Environmental Group, L.L.C. | 101421-0 | Union | NJ |
| Holmes Environmental, Inc. | 200467-0 | Norfolk | VA |
| Hygeia Laboratories Inc. | 102116-0 | Sierra Madre | CA |
| Hygeia Laboratories, Inc. | 102087-0 | Marietta | GA |
| Hygeia Laboratories, Inc. | 200335-0 | Miami | FL |
| HYGENIX, INC. | 101199-0 | Stamford | CT |
| Hygieneering, Inc. | 101997-0 | Willowbrook | IL |
| Hygienetics Laboratory Services | 101147-0 | Boston | MA |
| Industrial Laboratory | 102115-0 | Portsmouth | VA |
| Institute for Environmental Assessment | 101249-0 | Brooklyn Park | MN |
| International Asbestos Testing Laboratory | 101165-0 | Mt. Laurel | NJ |
| Iowa Environmental Services, Inc. | 101990-0 | Des Moines | IA |
| Jimmie Ann Bolton | 101735-0 | Austin | TX |
| JLC Environmental Consultants, Inc. | 101953-0 | New York | NY |
| JMR Environmental Services Inc. | 200067-0 | San Diego | CA |
| JMS Environmental Associates, Ltd. | 102012-0 | Westmont | IL |
| KAM Consultants | 102047-0 | Long Island City | NY |
| Kellco Services, Inc. | 101331-0 | Hayward | CA |
| Kevco Services, Inc. | 101941-0 | Butler | PA |
| Kingston Environmental Laboratory | 200041-0 | Lee's Summit | MO |
| KSL | 200442-0 | Jackson | CA |
| LA Testing | 200232-0 | S. Pasadena | CA |
| Larron Laboratory | 101415-0 | Cape Girardeau | MO |
| Law Engineering and Environmental Services, Inc. | 101066-0 | Birmingham | AL |
| Law Engineering and Environmental Services, Inc. | 101515-0 | Tampa | FL |
| Law Engineering and Environmental Services, Inc. | 101515-1 | Miami Lakes | FL |
| Law Engineering and Environmental Services, Inc. | 101973-0 | Dallas | TX |
| Law Engineering and Environmental Services, Inc. | 102035-0 | Phoenix | AZ |
| Legend Technical Services, Inc. | 102081-0 | St. Paul | MN |
| LEX Scientific Inc. | 101949-0 | Guelph Ontario | CANADA |
| Loflin Environmental Services,Inc. | 102044-0 | Houston | TX |


(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Los Angeles Unified School District | 101505-0 | Los Angeles | CA |
| Louisiana Department of Environmental Quality Microanalytical Lab | 102000-0 | Baton Rouge | LA |
| m.a.c. Paran Consulting Services, Inc. | 102108-0 | Amelia | OH |
| MACS Lab, Inc. | 101948-0 | Santa Clara | CA |
| Marine Chemist Service, Inc. | 101425-0 | Newport News | VA |
| Materials Analytical Services, Inc. | 101235-0 | Suwanee | GA |
| McCall and Spero Environmental, Inc. | 101895-0 | Louisville | KY |
| McKee Environmental Health, Inc. | 101135-0 | Friendswood | TX |
| Micro Air of Texas, Inc. | 102008-0 | Houston | TX |
| Micro Air, Inc. | 101221-0 | Indianapolis | IN |
| Micro Analytical Laboratories, Inc. | 101872-0 | Emeryville | CA |
| Micro Analytical, Inc. | 101247-0 | Milwaukee | WI |
| Micron Environmental Labs | 200294-0 | Arcadia | CA |
| Microscopic Analysis, Inc. | 101037-0 | St. Louis | MO |
| Midwest Laboratories, Inc. | 101894-0 | Countryside | IL |
| Mountain Laboratories | 101890-0 | Spokane | WA |
| Mystic Air Quality Consultants, Inc. | 101282-0 | Groton | CT |
| National Econ Corporation | 102062-0 | Tustin | CA |
| National Econ Corporation | 200047-0 | Memphis | TN |
| National Environmental Reference Laboratory | 101593-0 | Denver | CO |
| New York Testing Laboratories, Inc. | 101332-0 | Bay Shore | NY |
| Niche Analysis, Inc. | 102057-0 | Mount Vernon | NY |
| Northern Analytical Laboratories, Inc. | 101292-0 | Billings | MT |
| Northern Industrial Hygiene, Inc. | 200511-0 | Burien | WA |
| Northern Testing Laboratories, Inc. | 101463-0 | Fairbanks | AK |
| Nova Consulting Group, Inc. | 101545-0 | Chaska | MN |
| Nowicki & Associates, Inc. | 200322-0 | Federal Way | WA |
| NVL Laboratories, Inc. | 102063-0 | Seattle | WA |
| NY Environmental & Analytical Labs, Inc. | 101967-0 | Port Washington | NY |
| O'Brien & Gere Laboratories, Inc. | 101343-0 | Syracuse | NY |
| OCCU-TEC, Inc. | 102025-0 | Kansas City | MO |
| Occupational Health Conservation, Inc. | 102050-0 | Jacksonville | FL |
| Oklahoma Dept. of Environmental Quality-DEQ Laboratory | 102112-0 | Oklahoma City | OK |
| Omega Environmental Services | 101289-0 | Hackensack | NJ |
| Omni Environmental, Inc. | 102061-0 | Austin | TX |
| PA DEP Bureau of Laboratories | 101323-0 | Harrisburg | PA |
| Pacific Rim Environmental, Inc. | 101631-0 | Tukwila | WA |
| Palmetto Laboratory, Inc. | 102077-0 | St. Petersburg | FL |
| Patriot Environmental Laboratory Services, Inc. | 200358-0 | Garden Grove | CA |
| PBS Environmental Building Consultants, Inc. | 101910-0 | Portland | OR |
| Philip Analytical Services | 101262-0 | Reading | PA |
| Philip Environmental Services Corp. | 101192-0 | Columbia | IL |
| Pinchin Environmental Ltd. | 101270-0 | Mississauga Ontario | CANADA |
| PMK Group, Inc. | 101301-0 | Kenilworth | NJ |
| Precision Testing Laboratories, Inc. | 101580-0 | Moore | OK |
| ProScience Analytical Services, Inc. | 200090-0 | Woburn | MA |
| PSI | 101350-0 | Pittsburgh | PA |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Puget Sound Naval Shipyard | 101539-0 | Bremerton | WA |
| PWC Environmental Laboratory, Pearl Harbor | 200369-0 | Pearl Harbor | HI |
| QuanTEM Laboratories, LLC | 101959-0 | Oklahoma City | OK |
| Quest MicroAnalytics | 200249-0 | Dallas | TX |
| R. Robinson Analytical Services, Inc. | 102041-0 | Pensacola | FL |
| Raymond-Beling, Inc. | 101356-0 | Moline | IL |
| RCM Laboratories, Inc. | 101853-0 | Countryside | IL |
| Reservoirs Environmental Services, Inc. | 101896-0 | Denver | CO |
| RI Analytical Laboratories, Inc. | 101440-0 | Warwick | RI |
| RJ Lee Group, Inc. | 101208-0 | Monroeville | PA |
| RJ Lee Group, Inc. | 101208-2 | San Leandro | CA |
| RJ Lee Group, Inc. | 101208-3 | Manassas | VA |
| Roy F. Weston, Inc. | 101254-0 | Auburn | AL |
| S&ME, Inc. | 102075-0 | Charlotte | NC |
| Safe Environment of America, Inc. | 102021-0 | Auburn | WA |
| Schneider Laboratories, Inc. | 101150-0 | Richmond | VA |
| Scientific Laboratories, Inc. | 101904-0 | Midlothian | VA |
| Scientific Laboratories, Inc. | 101904-1 | New York | NY |
| SCILAB BOSTON, Inc. | 102079-0 | East Weymouth | MA |
| SCILAB California, Inc. | 200346-0 | Carson | CA |
| SEAS, Inc. | 101185-0 | Blacksburg | VA |
| Solar Environmental Services, Inc. | 102006-0 | Anchorage | AK |
| South Carolina Department of Health & Environmental Control | 101572-0 | Columbia | SC |
| South Coast Air Quality Management District | 101567-0 | Diamond Bar | CA |
| STAT Analysis Corporation | 101202-0 | Chicago | IL |
| State of Connecticut | 101237-0 | Hartford | CT |
| Steve Moody Micro Services, Inc. | 102056-0 | Carrollton | TX |
| Strom Environmental | 200450-0 | Denver | CO |
| Sun City Analytical, Inc. | 101870-0 | El Paso | TX |
| Taylor Environmental Group, Inc. | 102101-0 | Floral Park | NY |
| TEC-AN, Inc. | 200325-0 | Oklahoma City | OK |
| TEM, Incorporated | 101130-0 | Glen Ellyn | IL |
| Testing Mechanics Corp. | 102001-0 | Seaford | NY |
| Testwell Laboratories, Inc./Testwell Industries, Inc. | 200083-0 | Ossining | NY |
| The Saul Corporation | 200473-0 | Houston | TX |
| The Scott Lawson Group, Ltd. | 101228-0 | Concord | NH |
| TolTest, Inc. | 101594-0 | Toledo | OH |
| TRC Environmental Corporation | 101424-0 | Windsor | CT |
| Tremco, Inc. - Roofing Division, An RPM Company | 101188-0 | Beachwood | OH |
| Triad Environmental Consulting, Inc. | 102073-0 | Huntington | WV |
| Twin Ports Testing, Inc. | 102083-0 | Superior | WI |
| U.S. Army Center for Health Promotion and Preventive Medicine | 200044-0 | Aberdeen Proving Ground | MD |
| U.S. EPA - National Enforcement Investigations Center | 101703-0 | Denver | CO |
| United Analytical Services, Inc. | 101732-0 | Downers Grove | IL |
| University (State) Hygienic Laboratory | 101288-0 | Iowa City | IA |
| University of Alabama Asbestos Laboratory | 102005-0 | Tuscaloosa | AL |


(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Volz Environmental Services, Inc. | 101269-0 | Pittsburgh | PA |
| Western Analytical Laboratory | 200037-0 | Arleta | CA |
| White Environmental Consultants Inc. | 200124-0 | Anchorage | AK |
| White Environmental Consultants, Inc. | 200350-0 | Honolulu | HI |
| Wisconsin Occupational Health Laboratory | 101109-0 | Madison | WI |
| WKP Laboratories, Inc. | 101950-0 | New York City | NY |
| Wonder Makers Environmental, Inc. | 102065-0 | Kalamazoo | MI |
| ***Asbestos Fiber Analysis (TEM Test Method)*** | | | |
| Aires Consulting Group, Inc. | 101014-0 | Batavia | IL |
| AMA Analytical Services, Inc. | 101143-0 | Lanham | MD |
| Analytica Solutions, Inc. | 101086-0 | Thornton | CO |
| Analytical Environmental Services, Inc. | 102082-0 | Atlanta | GA |
| ASBESTECH | 101442-0 | Carmichael | CA |
| Asbestos TEM Laboratories, Inc. | 101891-0 | Berkeley | CA |
| ATC Associates Inc. | 101187-0 | New York | NY |
| Athenica Environmental Services, Inc. | 101958-0 | Long Island City | NY |
| Batta Laboratories, Inc. | 101032-0 | Newark | DE |
| Braun Intertec Corporation | 101234-0 | Minneapolis | MN |
| Clayton Group Services | 101125-0 | Kennesaw | GA |
| Crisp Analytical Laboratory | 200349-0 | Carrollton | TX |
| DataChem Laboratories | 101917-0 | Cincinnati | OH |
| Davis Environmental Labs, Inc. | 101039-0 | Chicago | IL |
| E. M. Analytical, Inc. | 101902-0 | Dania | FL |
| Eastern Analytical Services, Inc. | 101646-0 | Elmsford | NY |
| EMS Laboratories, Inc. | 101218-0 | Pasadena | CA |
| EMSL Analytical Inc. Bulk And Airborne Asbestos Fiber Analysis | 200399-0 | Chicago | IL |
| EMSL Analytical Inc. Mobile Laboratory | 200481-0 | Westmont | NJ |
| EMSL Analytical, Inc. | 101048-0 | Westmont | NJ |
| EMSL Analytical, Inc. | 101048-1 | Atlanta | GA |
| EMSL Analytical, Inc. | 101048-2 | Piscataway | NJ |
| EMSL Analytical, Inc. | 101048-3 | Milpitas | CA |
| EMSL Analytical, Inc. | 101048-4 | Ann Arbor | MI |
| EMSL Analytical, Inc. | 101048-9 | New York | NY |
| EMSL Analytical, Inc. | 101048-10 | Carle Place | NY |
| EMSL Analytical, Inc. | 101151-0 | Orlando | FL |
| EMSL Analytical, Inc. | 102104-0 | Greensboro | NC |
| EMSL Analytical, Inc. | 102106-0 | Houston | TX |
| EMSL Analytical, Inc. | 200019-0 | Minneapolis | MN |
| EMSL Analytical, Inc. | 200034-0 | Dallas | TX |
| EMSL Analytical, Inc. | 200056-0 | Williamsville | NY |
| EMSL Analytical, Inc. | 200188-0 | Indianapolis | IN |
| EMSL Analytical, Inc. | 200204-0 | N. Miami Beach | FL |
| EMSL Analytical, Inc. | 200293-0 | Beltsville | MD |
| EMSL Analytical, Inc. | 200333-0 | Elmsford | NY |
| EMSL Analytical, Inc. | 200375-0 | Baton Rouge | LA |
| Fiberquant, Inc. | 101031-0 | Phoenix | AZ |
| Forensic Analytical | 101459-0 | Hayward | CA |
| Gelles Laboratories, Division, CC Technologies | 101170-0 | Dublin | OH |
| Hygeia Laboratories Inc. | 102116-0 | Sierra Madre | CA |
| Hygeia Laboratories, Inc. | 200335-0 | Miami | FL |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Hygienetics Laboratory Services | 101147-0 | Boston | MA |
| International Asbestos Testing Laboratory | 101165-0 | Mt. Laurel | NJ |
| JMS Environmental Associates, Ltd. | 102012-0 | Westmont | IL |
| KAM Consultants | 102047-0 | Long Island City | NY |
| KSL | 200442-0 | Jackson | CA |
| LA Testing | 200232-0 | S. Pasadena | CA |
| Lab/Cor, Inc. | 101920-0 | Seattle | WA |
| Los Angeles Unified School District | 101505-0 | Los Angeles | CA |
| MACS Lab, Inc. | 101948-0 | Santa Clara | CA |
| Materials Analytical Services, Inc. | 101235-0 | Suwanee | GA |
| McCall and Spero Environmental, Inc. | 101895-0 | Louisville | KY |
| Micro Analytical Laboratories, Inc. | 101872-0 | Emeryville | CA |
| Midwest Laboratories, Inc. | 101894-0 | Countryside | IL |
| New York Testing Laboratories, Inc. | 101332-0 | Bay Shore | NY |
| O'Brien & Gere Laboratories, Inc. | 101343-0 | Syracuse | NY |
| Philip Analytical Services | 101262-0 | Reading | PA |
| ProScience Analytical Services, Inc. | 200090-0 | Woburn | MA |
| PSI | 101350-0 | Pittsburgh | PA |
| QuanTEM Laboratories, LLC | 101959-0 | Oklahoma City | OK |
| Reservoirs Environmental Services, Inc. | 101896-0 | Denver | CO |
| RJ Lee Group, Inc. | 101208-0 | Monroeville | PA |
| RJ Lee Group, Inc. | 101208-2 | San Leandro | CA |
| RJ Lee Group, Inc. | 101208-3 | Manassas | VA |
| Scientific Laboratories, Inc. | 101904-0 | Midlothian | VA |
| Scientific Laboratories, Inc. | 101904-1 | New York | NY |
| SCILAB BOSTON, Inc. | 102079-0 | East Weymouth | MA |
| SCILAB California, Inc. | 200346-0 | Carson | CA |
| STAT Analysis Corporation | 101202-0 | Chicago | IL |
| Steve Moody Micro Services, Inc. | 102056-0 | Carrollton | TX |
| TEM, Incorporated | 101130-0 | Glen Ellyn | IL |
| Testwell Laboratories, Inc./Testwell Industries, Inc. | 200083-0 | Ossining | NY |
| United Analytical Services, Inc. | 101732-0 | Downers Grove | IL |
| University (State) Hygienic Laboratory | 101288-0 | Iowa City | IA |

## FASTENER & METALS GROUP

### *Fasteners & Metals*

| | | | |
|---|---|---|---|
| Acos Villares SA - Chemical Laboratory | 200394-0 | Pindamonhangaba SP | BRAZIL |
| Aerospace NYLOK - a subsidiary of the NYLOK Fastener Corporation | 200271-0 | Hawthorne | NJ |
| BCAG Fastener Quality Test Lab Everett Site | 200292-0 | Seattle | WA |
| Binder Metal Products, Inc. | 200321-0 | Gardena | CA |
| California Screw Products | 200183-0 | Paramount | CA |
| Casey Products, Inc. | 200278-0 | Lisle | IL |
| CBS Fasteners, Inc. | 200253-0 | Anaheim | CA |
| Dexter Fastener Technologies, Inc. | 200144-0 | Dexter | MI |
| Durkee Testing Laboratories, Inc. | 200178-0 | Paramount | CA |
| Fastener Innovation Technology, Inc. | 200179-0 | Gardena | CA |
| Fong Prean Industrial Co., Ltd. | 200288-0 | Kaohsiung Hsien | TAIWAN |
| Fuji Buhin Kogyo Kabushiki Kaisha | 200203-0 | Ohta Gunma | JAPAN |
| Fuji Component Parts USA, Inc. | 200180-0 | Indianapolis | IN |
| Ingersoll Fasteners | 200208-0 | Ingersoll Ontario | CANADA |


(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Ivaco Rolling Mills, Chemistry Laboratory | 200143-0 | L'Orignal Ontario | CANADA |
| Kobelco Research Institute, Inc. Stock Company | 200169-0 | Kobe | JAPAN |
| Korea Testing & Research Inst. for Chemical Industry-Inchon Off. | 200177-0 | Inchon | KOREA |
| Kyowa Kogyosyo Co., Ltd. Test Laboratory | 200274-0 | Komatsu City, Ishikawa | JAPAN |
| Leland-Powell Fasteners, Inc. Fastener Testing Laboratory | 200171-0 | Martin | TN |
| MAC Fasteners, Inc. | 200141-0 | Ottawa | KS |
| MacLean Fasteners - QC Laboratory | 200153-0 | Mundelein | IL |
| MacLean Maynard Laboratory Services | 200451-0 | Chesterfield Township | MI |
| Minebea Co., Ltd. Fujisawa Manufacturing Unit | 200229-0 | Fujisawa, Kanagawa | JAPAN |
| Modern Plating Corporation | 200320-0 | Freeport | IL |
| Northwestern Steel and Wire Company | 200224-0 | Sterling | IL |
| NOVA Machine Products | 200202-0 | Middleburg Heights | OH |
| NYLOK Fastener Corporation | 200272-0 | Anaheim | CA |
| NYLOK Fastener Corporation | 200273-0 | Macomb | MI |
| NYLOK Fastener Corporation - Chicago Testing Laboratory | 200275-0 | Lincolnwood | IL |
| O & K Company Limited, Osaka Test Center | 200166-0 | Osaka-Shi | JAPAN |
| Okai Iron Works Co., Ltd. | 200299-0 | Izumisano Osaka | JAPAN |
| Okawa Laboratory | 200296-0 | Naka-gun, Ibaraki-ken | JAPAN |
| PB Fasteners | 200139-0 | Gardena | CA |
| Piolax Inc. | 200411-0 | Mooka-shi Tochigi-ken | JAPAN |
| Pratt & Whitney Materials Control Lab/Quality & Standards Lab | 200336-0 | East Hartford | CT |
| Prospect Testing Labs, Inc. | 200328-0 | Des Plaines | IL |
| Prottsa, S.A. de C.V. | 200261-0 | Mexico City | MEXICO |
| Republic Technologies International, Franklin Chemical Laboratory | 200148-0 | Johnstown | PA |
| Rockford Bolt & Steel Co. | 200255-0 | Rockford | IL |
| San Shing Hardware Works Co., Ltd. Test Laboratory | 200158-0 | Tainan | TAIWAN |
| Saturn Fasteners, Inc. | 200327-0 | Burbank | CA |
| SNB Laboratory | 200308-0 | Cumberland | RI |
| SPS Technologies Aerospace Fasteners Group | 200298-0 | Santa Ana | CA |
| Sumitomo Metals (Kokura), Ltd. Quality System Section | 200215-0 | Kitakyushu | JAPAN |
| Sundram Fasteners Limited (Inhouse test laboratory) | 200212-0 | Chennai (Madras), Taonil, Nadu | INDIA |
| Sundram Fasteners Limited Chemical Testing Laboratory | 200256-0 | Andhra Pradesh | INDIA |
| United Steel and Fasteners Inc. | 200341-0 | Itasca | IL |
| Vermont Fasteners Manufacturing | 200254-0 | Swanton | VT |
| Wolverine Plating Corp. | 200230-0 | Roseville | MI |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| **INFORMATION TECHNOLOGY SECURITY TESTING GROUP** | | | |
| ***Common Criteria Testing*** | | | |
| COACT Inc. CAFE Laboratory | 200416-0 | Columbia | MD |
| Computer Sciences Corporation | 200426-0 | Hanover | MD |
| Cygnacom Solutions, Inc. An Entrust Technologies Company | 200002-0 | McLean | VA |
| SAIC Common Criteria Testing Laboratory | 200427-0 | Columbia | MD |
| TUViT, IT Security Laboratory | 200428-0 | Austin | TX |
| ***Cryptographic Module Testing*** | | | |
| Atlan Laboratories | 200492-0 | McLean | VA |
| COACT Inc. CAFE Laboratory | 200416-0 | Columbia | MD |
| Cygnacom Solutions, Inc. An Entrust Technologies Company | 200002-0 | McLean | VA |
| DOMUS ITSL | 200017-0 | Ottawa Ontario | CANADA |
| InfoGard Laboratories, Inc. | 100432-0 | San Luis Obispo | CA |
| **PRODUCT TESTING GROUP** | | | |
| ***Acoustical Testing Services*** | | | |
| Acoustic Systems Acoustical Research Facility | 100286-0 | Austin | TX |
| Aearo Company, E·A·RCAL Acoustical Laboratory | 100374-0 | Indianapolis | IN |
| Architectural Testing Inc. | 200361-0 | York | PA |
| Armstrong Acoustic Labs, Armstrong World Ind., Inc. Innov. Center | 100228-0 | Lancaster | PA |
| Auditory Systems Laboratory, ISE Department, Virginia Tech | 200479-0 | Blacksburg | VA |
| BPB America, Inc. | 200520-0 | St. Petersburg | FL |
| Dell Regulatory Test Laboratories | 200052-0 | Round Rock | TX |
| Howard Leight Acoustical Testing Laboratory | 200475-0 | San Diego | CA |
| Hufcor Laboratory | 100239-0 | Janesville | WI |
| IBM Hudson Valley Acoustics Laboratory | 100323-0 | Poughkeepsie | NY |
| Industrial Acoustics Company, Inc., Aero-Acoustics Laboratory | 100404-0 | Bronx | NY |
| Integrex Testing Systems - Product Testing Laboratory | 100109-0 | Granville | OH |
| Johns Manville Technical Center | 100425-0 | Littleton | CO |
| McGill AirFlow Corp. Airflow and Acoustical Testing Laboratory | 200463-0 | Westerville | OH |
| Michael & Associates | 100427-0 | State College | PA |
| NGC Testing Services, National Gypsum Research Center | 200291-0 | Buffalo | NY |
| Orfield Laboratories, Inc. | 200248-0 | Minneapolis | MN |
| PCI Industries Acoustical Testing Laboratories | 200453-0 | Fort Worth | TX |
| Ricoh Company LTD. Ohmori Acoustics Test Site | 200345-0 | Tokyo | JAPAN |
| Riverbank Acoustical Laboratories | 100227-0 | Geneva | IL |
| Stork-Twin City Testing Corporation | 200046-0 | St. Paul | MN |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| USG Research - Construction Systems Laboratory | 200132-0 | Libertyville | IL |
| Vibro-Acoustics Laboratory | 100424-0 | Scarborough Ontario | CANADA |
| Western Electro-Acoustic Lab., Inc. | 100256-0 | Santa Monica | CA |
| ***Carpet and Carpet Cushion*** | | | |
| American Carpet Laboratories, Inc. | 100139-0 | Ringgold | GA |
| Beaulieu of America - Carpet Testing Lab | 100190-0 | Dalton | GA |
| Beaulieu of America Hollytex Division | 100247-0 | Anadarko | OK |
| Bentley Testing Laboratory | 100288-0 | City of Industry | CA |
| Commercial Testing Company | 100120-0 | Dalton | GA |
| Independent Textile Testing Service, Inc. | 100166-0 | Dalton | GA |
| Interface Testing Laboratory | 200402-0 | LaGrange | GA |
| Mohawk Industries, Inc.- Lyerly Plant | 100156-0 | Lyerly | GA |
| Professional Testing Laboratory, Inc. | 100297-0 | Dalton | GA |
| Shaw Industries, Inc., Central Laboratory Operations | 100193-0 | Dalton | GA |
| TSi, Testing Services, Inc. | 100108-0 | Dalton | GA |
| Vartest Laboratories, Inc. | 200027-0 | New York | NY |
| ***Commercial Products Testing*** | | | |
| CSA International | 100322-0 | Toronto Ontario | CANADA |
| DL Labs, Inc. | 100252-0 | New York | NY |
| Dodge-Regupol, Inc. Laboratory | 200030-0 | Lancaster | PA |
| IAPMO Testing and Services, L.L.C. | 200460-0 | Walnut | CA |
| IBM Shock and Vibration Laboratory | 200503-0 | Poughkeepsie | NY |
| NAHB Research Center, Inc. | 100104-0 | Upper Marlboro | MD |
| SGS U.S. Testing Company, Inc. | 100416-0 | Tulsa | OK |
| Willamette Industries, Inc. West Coast Development Lab | 200045-0 | Wilsonville | OR |
| ***Construction Materials Testing*** | | | |
| American Testing Laboratories, Inc. | 100146-0 | Lancaster | PA |
| City of San Jose, Materials Testing Laboratory | 100325-0 | San Jose | CA |
| Eastern Materials Testing Lab a division of Jaworski Geotech | 100315-0 | Berlin | CT |
| Fairfield Testing Laboratory, Inc. | 100317-0 | Stamford | CT |
| Fairway Testing Company, Inc. | 100340-0 | Stony Point | NY |
| Independent Materials Testing Laboratories, Inc. | 100316-0 | Plainville | CT |
| INEEL Materials Testing Lab CFA 602 | 200415-0 | Idaho Falls | ID |
| Inland Foundation Engineering, Inc. | 100406-0 | San Jacinto | CA |
| Materials Testing, Inc. | 100320-0 | Milford | CT |
| Special Testing Laboratories, Inc. | 100308-0 | Bethel | CT |
| STS Consultants, Ltd. | 100191-0 | Vernon Hills | IL |
| Test-Con Incorporated | 200018-0 | Danbury | CT |
| Testwell Laboratories, Inc./Testwell Industries, Inc. | 200083-0 | Ossining | NY |
| Tri-State Materials Testing Lab, Inc. | 200010-0 | Wallingford | CT |
| W.R. Grace & Co. | 200258-0 | Cambridge | MA |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| ***Efficiency of Electric Motors*** | | | |
| A.O. Smith (Lexington) Engineering Laboratory | 200053-0 | Lexington | TN |
| Advanced Energy, Industrial Energy Laboratory | 200081-0 | Raleigh | NC |
| GE Owensboro Test Laboratory | 200305-0 | Owensboro | KY |
| Leeson Electric - Grafton Engineering Laboratory | 200483-0 | Grafton | WI |
| Marathon Electric - Wausau Engineering Lab. | 200134-0 | Wausau | WI |
| Shanghai Testing & Inspection Institute for Electrical Equipment | 200407-0 | Shanghai | CHINA |
| Small IAC Test Laboratory | 200287-0 | Peterborough, ON | CANADA |
| TECO Electric & Machinery Co., Ltd. | 200378-0 | Taoyuan | TAIWAN |
| Teco Industry (Malaysia) SDN. BHD. | 200476-0 | Penang | MALAYSIA |
| Toshiba/Houston Test Laboratory | 200088-0 | Houston | TX |
| USEM de Mexico, S.A. de C.V. | 200506-0 | Apodaca NL | Mexico |
| ***Energy Efficient Lighting Products*** | | | |
| Cooper Lighting - Metalux Research Laboratories | 200050-0 | Americus | GA |
| Daybrite Lighting (Genlyte Thomas Group) Photometric Laboratory | 200016-0 | Tupelo | MS |
| GE Lighting- Product Testing | 100398-0 | Cleveland | OH |
| Hubbell Lighting Photometric Laboratory | 200020-0 | Christiansburg | VA |
| Intertek Testing Services NA Inc. | 100402-0 | Cortland | NY |
| Lighting Research Center Lighting Products | 200480-0 | Troy | NY |
| Litetronics International | 200504-0 | Alsip | IL |
| Lithonia Testing Laboratories | 200007-0 | Conyers | GA |
| OSRAM SYLVANIA, Test & Measurements Laboratory | 100403-0 | Beverly | MA |
| Philips Lighting Corporate Calibration & Standards Laboratory | 100399-0 | Fairmont | WV |
| Underwriters Laboratories, Inc. | 100255-0 | Melville | NY |
| ***Thermal Insulation Materials*** | | | |
| Celotex Technical Center | 100417-0 | St. Petersburg | FL |
| Dow Chemical N. America Foam Products Research, Prod. Perf. Lab. | 100103-0 | Midland | MI |
| Geoscience Ltd. | 100142-0 | San Diego | CA |
| Holometrix - Micromet | 100113-0 | Bedford | MA |
| Integrex Testing Systems - Product Testing Laboratory | 100109-0 | Granville | OH |
| Intertek Testing Services NA Inc. | 200031-0 | Middleton | WI |
| Johns Manville Technical Center | 100425-0 | Littleton | CO |
| Knauf Fiber Glass Research Laboratory | 100248-0 | Shelbyville | IN |
| Levecque Technical Center | 100101-0 | Blue Bell | PA |
| NAHB Research Center, Inc. | 100104-0 | Upper Marlboro | MD |
| R & D Services, Inc. | 200265-0 | Cookeville | TN |
| SGS U.S. Testing Company, Inc. | 100416-0 | Tulsa | OK |
| St. of California, Bur. of Home Furnishings & Thermal Insulation | 100251-0 | North Highlands | CA |
| The Dow Chemical Company- NA System House-Joliet | 100210-0 | Joliet | IL |


(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY |
|---|---|---|---|
| Underwriters Laboratories Inc. | 100414-0 | Northbrook | IL |
| ***Wood Based Products*** | | | |
| APA - The Engineered Wood Association Research Center | 100423-0 | Tacoma | WA |
| Composite Panel Association (CPA) | 100418-0 | Gaithersburg | MD |
| PFS Corporation | 100421-0 | Madison | WI |
| Professional Service Industries, Inc., Pittsburgh Test. Lab. Div. | 100430-0 | Eugene | OR |
| Timberco, Inc.- dba TECO | 100420-0 | Eugene | OR |

# INDEX

C

## LISTING BY STATE/ COUNTRY

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| **AK** | | | | |
| Northern Testing Laboratories, Inc. | 101463-0 | Fairbanks | AK | PLM |
| Solar Environmental Services, Inc. | 102006-0 | Anchorage | AK | PLM |
| White Environmental Consultants Inc. | 200124-0 | Anchorage | AK | PLM |
| **AL** | | | | |
| Law Engineering and Environmental Services, Inc. | 101066-0 | Birmingham | AL | PLM |
| Roy F. Weston, Inc. | 101254-0 | Auburn | AL | PLM |
| U.S. Army Radiation Standards & Dosimetry Laboratory | 100539-0 | Redstone Arsenal | AL | Dosimetry |
| University of Alabama Asbestos Laboratory | 102005-0 | Tuscaloosa | AL | PLM |
| **AR** | | | | |
| Environmental Enterprise Group(EEG), Inc. | 101587-0 | Russellville | AR | PLM |
| **AZ** | | | | |
| A.E.S.L. Environmental Laboratory | 200303-0 | Tempe | AZ | PLM |
| AMEC Earth & Environmental, Inc., PLM LAB | 200444-0 | Phoenix | AZ | PLM |
| Continental Envirotech, Inc. | 200080-0 | Mesa | AZ | PLM |
| Environmental Management Consultants, Inc. | 101926-0 | Scottsdale | AZ | PLM |
| Fiberquant, Inc. | 101031-0 | Phoenix | AZ | PLM |
| Fiberquant, Inc. | 101031-0 | Phoenix | AZ | TEM |
| Law Engineering and Environmental Services, Inc. | 102035-0 | Phoenix | AZ | PLM |
| Motorola SSG EMC/TEMPEST Laboratory | 100405-0 | Scottsdale | AZ | EC&T |
| Pinnacle West Energy Corp., Palo Verde Nuclear Generating Station | 100536-0 | Tonopah | AZ | Dosimetry |
| **CA** | | | | |
| Analytical Labs San Francisco, Inc. | 101909-0 | San Francisco | CA | PLM |
| Apple Computer, Inc., EMC Compliance Laboratory | 200071-0 | Cupertino | CA | EC&T |
| ASBESTECH | 101442-0 | Carmichael | CA | PLM |
| ASBESTECH | 101442-0 | Carmichael | CA | TEM |
| Asbestos TEM Laboratories, Inc. | 101891-0 | Berkeley | CA | PLM |
| Asbestos TEM Laboratories, Inc. | 101891-0 | Berkeley | CA | TEM |
| AST International Environmental Consultants Inc. | 200474-0 | Spring Valley | CA | PLM |
| Bay Area Air Quality Management District | 102090-0 | San Francisco | CA | PLM |
| Bay Area Compliance Laboratory, Corp. | 200167-0 | Sunnyvale | CA | EC&T |
| Bentley Testing Laboratory | 100288-0 | City of Industry | CA | Carpet |
| Binder Metal Products, Inc. | 200321-0 | Gardena | CA | Fasteners |
| California Screw Products | 200183-0 | Paramount | CA | Fasteners |
| CAMCO Lab | 101803-0 | Fontana | CA | PLM |
| CBS Fasteners, Inc. | 200253-0 | Anaheim | CA | Fasteners |
| Cisco Systems, Inc. | 200114-0 | San Jose | CA | EC&T |
| City of Los Angeles Department of Water and Power | 101111-0 | Los Angeles | CA | PLM |
| City of San Jose, Materials Testing Laboratory | 100325-0 | San Jose | CA | Construction |



(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| Clark Seif Clark, Inc. | 200324-0 | Chatsworth | CA | PLM |
| Compatible Electronics, Inc. | 200063-0 | Agoura | CA | EC&T |
| Compliance Eng. Svces, Inc., Compliance Certification Services | 200065-0 | Sunnyvale | CA | EC&T |
| Concord Analysis, Inc. | 101884-0 | Chatsworth | CA | PLM |
| CTL Environmental Services | 101216-0 | Harbor City | CA | PLM |
| Design for Health Environmental Services | 101864-0 | San Diego | CA | PLM |
| Durkee Testing Laboratories, Inc. | 200178-0 | Paramount | CA | Fasteners |
| Electro Magnetic Test, Inc. | 200147-0 | Mountain View | CA | EC&T |
| Elliott Laboratories, Inc. | 200069-0 | Sunnyvale | CA | EC&T |
| EMC Compliance Mgmt Group, dba Turntech Scientific & Instr., Inc. | 200068-0 | Mountain View | CA | EC&T |
| EMCE Engineering, Inc. | 200092-0 | Fremont | CA | EC&T |
| EMS Laboratories, Inc. | 101218-0 | Pasadena | CA | PLM |
| EMS Laboratories, Inc. | 101218-0 | Pasadena | CA | TEM |
| EMSL Analytical, Inc. | 101048-3 | Milpitas | CA | PLM |
| EMSL Analytical, Inc. | 101048-3 | Milpitas | CA | TEM |
| ENCORP | 200013-0 | El Segundo | CA | PLM |
| Environmental Science Services, Inc. | 200424-0 | Lockeford | CA | PLM |
| Fastener Innovation Technology, Inc. | 200179-0 | Gardena | CA | Fasteners |
| Forensic Analytical | 101459-0 | Hayward | CA | PLM |
| Forensic Analytical | 101459-0 | Hayward | CA | TEM |
| Forensic Analytical Specialties, Inc. | 101459-1 | Rancho Domingues | CA | PLM |
| Garwood Laboratories, Inc. | 200119-0 | Placentia | CA | EC&T |
| Geoscience Ltd. | 100142-0 | San Diego | CA | Thermal Insl. |
| Global Testing | 200436-0 | Santa Ana | CA | EC&T |
| Health Science Associates | 101384-0 | Los Alamitos | CA | PLM |
| Hewlett Packard, Product Test Lab, San Diego | 200138-0 | San Diego | CA | EC&T |
| Hi-Tech Environmental and Laboratory Services | 102013-0 | Cypress | CA | PLM |
| Howard Leight Acoustical Testing Laboratory | 200475-0 | San Diego | CA | Acoustics |
| Hygeia Laboratories Inc. | 102116-0 | Sierra Madre | CA | PLM |
| Hygeia Laboratories Inc. | 102116-0 | Sierra Madre | CA | TEM |
| IAPMO Testing and Services, L.L.C. | 200460-0 | Walnut | CA | Commercial |
| ICN Worldwide Dosimetry Service, Div. of ICN Biomedicals, Inc. | 100555-0 | Costa Mesa | CA | Dosimetry |
| InfoGard Laboratories, Inc. | 100432-0 | San Luis Obispo | CA | Cryptographic |
| Inland Foundation Engineering, Inc. | 100406-0 | San Jacinto | CA | Construction |
| International Technology Company (ITC) | 200172-0 | Sunol | CA | EC&T |
| Intertek Testing Services | 200201-0 | Menlo Park | CA | EC&T |
| Intertek Testing Services NA Inc. | 200297-0 | Laguna Niguel | CA | EC&T |
| JMR Compliance Engineering | 200413-0 | Chatsworth | CA | EC&T |
| JMR Environmental Services Inc. | 200067-0 | San Diego | CA | PLM |
| Kellco Services, Inc. | 101331-0 | Hayward | CA | PLM |
| KSL | 200442-0 | Jackson | CA | PLM |
| KSL | 200442-0 | Jackson | CA | TEM |
| LA Testing | 200232-0 | S. Pasadena | CA | PLM |
| LA Testing | 200232-0 | S. Pasadena | CA | TEM |
| Los Angeles Unified School District | 101505-0 | Los Angeles | CA | PLM |
| Los Angeles Unified School District | 101505-0 | Los Angeles | CA | TEM |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| MACS Lab, Inc. | 101948-0 | Santa Clara | CA | PLM |
| MACS Lab, Inc. | 101948-0 | Santa Clara | CA | TEM |
| Met Laboratories Incorporated | 200445-0 | Union City | CA | EC&T |
| Micro Analytical Laboratories, Inc. | 101872-0 | Emeryville | CA | PLM |
| Micro Analytical Laboratories, Inc. | 101872-0 | Emeryville | CA | TEM |
| Micron Environmental Labs | 200294-0 | Arcadia | CA | PLM |
| National Econ Corporation | 102062-0 | Tustin | CA | PLM |
| NCR Corp. San Diego EMC Lab | 200383-0 | San Diego | CA | EC&T |
| Nemko EESI, Inc. | 200116-0 | San Diego | CA | EC&T |
| NYLOK Fastener Corporation | 200272-0 | Anaheim | CA | Fasteners |
| Pacific Gas & Electric Company, Diablo Canyon Nuclear Power Plant | 100537-0 | Avila Beach | CA | Dosimetry |
| Patriot Environmental Laboratory Services, Inc. | 200358-0 | Garden Grove | CA | PLM |
| PB Fasteners | 200139-0 | Gardena | CA | Fasteners |
| PDE Laboratories | 200082-0 | San Clemente | CA | EC&T |
| Radiation Detection Company | 100512-0 | Sunnyvale | CA | Dosimetry |
| Raytheon Electronic Systems,California Engineering EEE Laboratory | 200431-0 | El Segundo | CA | EC&T |
| RJ Lee Group, Inc. | 101208-2 | San Leandro | CA | PLM |
| RJ Lee Group, Inc. | 101208-2 | San Leandro | CA | TEM |
| Sanmina Homologation Services | 100411-0 | Santa Clara | CA | EC&T |
| Saturn Fasteners, Inc. | 200327-0 | Burbank | CA | Fasteners |
| SCILAB California, Inc. | 200346-0 | Carson | CA | PLM |
| SCILAB California, Inc. | 200346-0 | Carson | CA | TEM |
| SE Laboratories | 200338-0 | Santa Clara | CA | Calibration |
| Sony Electronics Inc. Product Quality Division EMC Group | 200312-0 | San Diego | CA | EC&T |
| South Coast Air Quality Management District | 101567-0 | Diamond Bar | CA | PLM |
| Southern California Edison | 100506-0 | San Clemente | CA | Dosimetry |
| Southern California Edison Company | 105014-0 | Westminster | CA | Calibration |
| SPS Technologies Aerospace Fasteners Group | 200298-0 | Santa Ana | CA | Fasteners |
| St. of California, Bur. of Home Furnishings & Thermal Insulation | 100251-0 | North Highlands | CA | Thermal Insl. |
| Sun Microsystems, Inc. EMC Testing | 200363-0 | Palo Alto | CA | EC&T |
| TUV Product Service, Inc. | 100268-0 | San Diego | CA | EC&T |
| Underwriters Laboratories | 200252-0 | Santa Clara | CA | EC&T |
| Universal Compliance Laboratories | 200117-0 | San Jose | CA | EC&T |
| VLSI Standards, Inc. | 200302-0 | San Jose | CA | Calibration |
| Western Analytical Laboratory | 200037-0 | Arleta | CA | PLM |
| Western Electro-Acoustic Lab., Inc. | 100256-0 | Santa Monica | CA | Acoustics |
| **CO** | | | | |
| Alpine Consulting, Inc. | 102089-0 | Colorado Springs | CO | PLM |
| Analytica Solutions, Inc. | 101086-0 | Thornton | CO | PLM |
| Analytica Solutions, Inc. | 101086-0 | Thornton | CO | TEM |
| ATC Associates, Inc. | 102031-0 | Englewood | CO | PLM |
| Compaq Computer Corp. EMC Test Facility | 200078-0 | Colorado Springs | CO | EC&T |
| Criterion Technology Corp. | 100396-0 | Rollinsville | CO | EC&T |
| DCM Science Laboratory, Inc. | 101258-0 | Wheat Ridge | CO | PLM |
| Denver Instrument Co. Weight Lab | 200106-0 | Arvada | CO | Calibration |
| Environmental Resource Associates (ERA) | 200386-0 | Arvada | CO | PPT |


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| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| Family Analytical Laboratory Services, Inc. | 200448-0 | Denver | CO | PLM |
| FRS Geotech, Inc. | 102078-0 | Denver | CO | PLM |
| Johns Manville Technical Center | 100425-0 | Littleton | CO | Acoustics |
| Johns Manville Technical Center | 100425-0 | Littleton | CO | Thermal Insl. |
| National Environmental Reference Laboratory | 101593-0 | Denver | CO | PLM |
| Reservoirs Environmental Services, Inc. | 101896-0 | Denver | CO | PLM |
| Reservoirs Environmental Services, Inc. | 101896-0 | Denver | CO | TEM |
| Storagtek Open Area Test Site | 200251-0 | Louisville | CO | EC&T |
| Strom Environmental | 200450-0 | Denver | CO | PLM |
| TUV Product Service, Inc. | 100271-1 | Boulder | CO | EC&T |
| U.S. EPA - National Enforcement Investigations Center | 101703-0 | Denver | CO | PLM |
| **CT** | | | | |
| Absolute Standards, Inc. | 200390-0 | Hamden | CT | PPT |
| AccuStandard, Inc. | 200389-0 | New Haven | CT | PPT |
| ChemScope, Inc. | 101061-0 | North Haven | CT | PLM |
| Eastern Materials Testing Lab a division of Jaworski Geotech | 100315-0 | Berlin | CT | Construction |
| Electric Boat Corp/A General Dynamics Co. Radiological Ctrl. Dept | 100560-0 | Groton | CT | Dosimetry |
| EnviroMed Services, Inc. | 101514-0 | New Haven | CT | PLM |
| Fairfield Testing Laboratory, Inc. | 100317-0 | Stamford | CT | Construction |
| HYGENIX, INC. | 101199-0 | Stamford | CT | PLM |
| Independent Materials Testing Laboratories, Inc. | 100316-0 | Plainville | CT | Construction |
| Materials Testing, Inc. | 100320-0 | Milford | CT | Construction |
| Mystic Air Quality Consultants, Inc. | 101282-0 | Groton | CT | PLM |
| Northeast Nuclear Energy Co. Dosimetry Laboratory | 100540-0 | Waterford | CT | Dosimetry |
| Pratt & Whitney Materials Control Lab/Quality & Standards Lab | 200336-0 | East Hartford | CT | Fasteners |
| Special Testing Laboratories, Inc. | 100308-0 | Bethel | CT | Construction |
| State of Connecticut | 101237-0 | Hartford | CT | PLM |
| Test-Con Incorporated | 200018-0 | Danbury | CT | Construction |
| TRC Environmental Corporation | 101424-0 | Windsor | CT | PLM |
| Tri-State Materials Testing Lab, Inc. | 200010-0 | Wallingford | CT | Construction |
| TUV Rheinland of North America, Inc. | 200111-0 | Newtown | CT | EC&T |
| **DE** | | | | |
| Batta Laboratories, Inc. | 101032-0 | Newark | DE | PLM |
| Batta Laboratories, Inc. | 101032-0 | Newark | DE | TEM |
| Environmental Testing, Inc. | 101848-0 | Middletown | DE | PLM |
| **FL** | | | | |
| Advanced Industrial Hygiene Services, Inc. | 101006-0 | Miami | FL | PLM |
| American Asbestos Laboratories, Inc. | 101775-0 | Miami Lakes | FL | PLM |
| Apollo Environmental, Inc. | 101871-0 | Gibsonton | FL | PLM |
| BPB America, Inc. | 200520-0 | St. Petersburg | FL | Acoustics |
| Celotex Technical Center | 100417-0 | St. Petersburg | FL | Thermal Insl. |
| Comprehensive Health Services-Environmental Health PLM | 101759-0 | Kennedy Space Center | FL | PLM |


(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| Laboratory | | | | |
| Dove Environmental Corporation | 102053-0 | Miami | FL | PLM |
| E. M. Analytical, Inc. | 101902-0 | Dania | FL | TEM |
| EMSL Analytical, Inc. | 101151-0 | Orlando | FL | PLM |
| EMSL Analytical, Inc. | 101151-0 | Orlando | FL | TEM |
| EMSL Analytical, Inc. | 200204-0 | N. Miami Beach | FL | PLM |
| EMSL Analytical, Inc. | 200204-0 | N. Miami Beach | FL | TEM |
| Florida Power & Light Company | 100544-0 | Juno Beach | FL | Dosimetry |
| GLE Associates, Inc. | 102003-0 | Tampa | FL | PLM |
| Hygeia Laboratories, Inc. | 200335-0 | Miami | FL | PLM |
| Hygeia Laboratories, Inc. | 200335-0 | Miami | FL | TEM |
| Law Engineering and Environmental Services, Inc. | 101515-0 | Tampa | FL | PLM |
| Law Engineering and Environmental Services, Inc. | 101515-1 | Miami Lakes | FL | PLM |
| Motorola PPG Compliance Laboratory | 200318-0 | Boynton Beach | FL | EC&T |
| Occupational Health Conservation, Inc. | 102050-0 | Jacksonville | FL | PLM |
| Palmetto Laboratory, Inc. | 102077-0 | St. Petersburg | FL | PLM |
| Paradyne Corporation | 200125-0 | Largo | FL | EC&T |
| R. Robinson Analytical Services, Inc. | 102041-0 | Pensacola | FL | PLM |
| **GA** | | | | |
| American Carpet Laboratories, Inc. | 100139-0 | Ringgold | GA | Carpet |
| Analytical Environmental Services, Inc. | 102082-0 | Atlanta | GA | PLM |
| Analytical Environmental Services, Inc. | 102082-0 | Atlanta | GA | TEM |
| Beaulieu of America - Carpet Testing Lab | 100190-0 | Dalton | GA | Carpet |
| Cape Environmental Management, Inc. | 102111-0 | Atlanta | GA | PLM |
| Clayton Group Services | 101125-0 | Kennesaw | GA | PLM |
| Clayton Group Services | 101125-0 | Kennesaw | GA | TEM |
| Commercial Testing Company | 100120-0 | Dalton | GA | Carpet |
| Cooper Lighting - Metalux Research Laboratories | 200050-0 | Americus | GA | Lighting |
| EMSL Analytical, Inc. | 101048-1 | Atlanta | GA | PLM |
| EMSL Analytical, Inc. | 101048-1 | Atlanta | GA | TEM |
| Georgia Power Company/Enviro. Affairs, Enviro. Lab-Dosimetry | 100551-0 | Smyrna | GA | Dosimetry |
| GSC Environmental Laboratories, Inc. | 101626-0 | Augusta | GA | PLM |
| Hygeia Laboratories, Inc. | 102087-0 | Marietta | GA | PLM |
| Independent Textile Testing Service, Inc. | 100166-0 | Dalton | GA | Carpet |
| Interface Testing Laboratory | 200402-0 | LaGrange | GA | Carpet |
| Intertek Testing Services NA Inc. | 100409-0 | Duluth | GA | EC&T |
| Lithonia Testing Laboratories | 200007-0 | Conyers | GA | Lighting |
| Materials Analytical Services, Inc. | 101235-0 | Suwanee | GA | PLM |
| Materials Analytical Services, Inc. | 101235-0 | Suwanee | GA | TEM |
| Mohawk Industries, Inc.- Lyerly Plant | 100156-0 | Lyerly | GA | Carpet |
| Professional Testing Laboratory, Inc. | 100297-0 | Dalton | GA | Carpet |
| Shaw Industries, Inc., Central Laboratory Operations | 100193-0 | Dalton | GA | Carpet |
| SWFLANT Calibration Laboratory Operated by Lockheed Martin | 200403-0 | Kings Bay | GA | Calibration |
| TSi, Testing Services, Inc. | 100108-0 | Dalton | GA | Carpet |
| United States Technologies, Inc. | 200162-0 | Alpharetta | GA | EC&T |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| **HI** | | | | |
| Brewer Environmental Services Industrial Hygiene Group Laboratory | 102085-0 | Honolulu | HI | PLM |
| PWC Environmental Laboratory, Pearl Harbor | 200369-0 | Pearl Harbor | HI | PLM |
| White Environmental Consultants, Inc. | 200350-0 | Honolulu | HI | PLM |
| **IA** | | | | |
| Intermec Technologies Corporation | 100269-0 | Cedar Rapids | IA | EC&T |
| Iowa Environmental Services, Inc. | 101990-0 | Des Moines | IA | PLM |
| Liberty Labs, Inc. | 200123-0 | Kimballton | IA | Calibration |
| University (State) Hygienic Laboratory | 101288-0 | Iowa City | IA | PLM |
| University (State) Hygienic Laboratory | 101288-0 | Iowa City | IA | TEM |
| **ID** | | | | |
| Bechtel BWXT Idaho, Standards and Calibration Lab | 200115-0 | Idaho Falls | ID | Calibration |
| INEEL Materials Testing Lab CFA 602 | 200415-0 | Idaho Falls | ID | Construction |
| **IL** | | | | |
| Aires Consulting Group, Inc. | 101014-0 | Batavia | IL | PLM |
| Aires Consulting Group, Inc. | 101014-0 | Batavia | IL | TEM |
| AnalyticaLab | 101727-0 | Willow Springs | IL | PLM |
| Casey Products, Inc. | 200278-0 | Lisle | IL | Fasteners |
| Clinton Power Station | 100570-0 | Clinton | IL | Dosimetry |
| D.L.S. Electronic Systems, Inc. | 100276-0 | Wheeling | IL | EC&T |
| Davis Environmental Labs, Inc. | 101039-0 | Chicago | IL | PLM |
| Davis Environmental Labs, Inc. | 101039-0 | Chicago | IL | TEM |
| Elite Electronic Engineering Inc. | 100278-0 | Downers Grove | IL | EC&T |
| EMSL Analytical Inc. Bulk And Airborne Asbestos Fiber Analysis | 200399-0 | Chicago | IL | PLM |
| EMSL Analytical Inc. Bulk And Airborne Asbestos Fiber Analysis | 200399-0 | Chicago | IL | TEM |
| Exelon Generation Company, LLC - TLD Processing Laboratory | 100541-0 | Wilmington | IL | Dosimetry |
| Hygieneering, Inc. | 101997-0 | Willowbrook | IL | PLM |
| JMS Environmental Associates, Ltd. | 102012-0 | Westmont | IL | PLM |
| JMS Environmental Associates, Ltd. | 102012-0 | Westmont | IL | TEM |
| Landauer, Inc. | 100518-0 | Glenwood | IL | Dosimetry |
| Litetronics International | 200504-0 | Alsip | IL | Lighting |
| MacLean Fasteners - QC Laboratory | 200153-0 | Mundelein | IL | Fasteners |
| Midwest Laboratories, Inc. | 101894-0 | Countryside | IL | PLM |
| Midwest Laboratories, Inc. | 101894-0 | Countryside | IL | TEM |
| Modern Plating Corporation | 200320-0 | Freeport | IL | Fasteners |
| Northwestern Steel and Wire Company | 200224-0 | Sterling | IL | Fasteners |
| NYLOK Fastener Corporation - Chicago Testing Laboratory | 200275-0 | Lincolnwood | IL | Fasteners |
| Philip Environmental Services Corp. | 101192-0 | Columbia | IL | PLM |
| Prospect Testing Labs, Inc. | 200328-0 | Des Plaines | IL | Fasteners |
| Raymond-Beling, Inc. | 101356-0 | Moline | IL | PLM |
| RCM Laboratories, Inc. | 101853-0 | Countryside | IL | PLM |
| Riverbank Acoustical Laboratories | 100227-0 | Geneva | IL | Acoustics |


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| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| Rockford Bolt & Steel Co. | 200255-0 | Rockford | IL | Fasteners |
| STAT Analysis Corporation | 101202-0 | Chicago | IL | PLM |
| STAT Analysis Corporation | 101202-0 | Chicago | IL | TEM |
| STERIS-Isomedix Services | 200235-0 | Morton Grove | IL | Calibration |
| STS Consultants, Ltd. | 100191-0 | Vernon Hills | IL | Construction |
| TEM, Incorporated | 101130-0 | Glen Ellyn | IL | PLM |
| TEM, Incorporated | 101130-0 | Glen Ellyn | IL | TEM |
| The Dow Chemical Company- NA System House-Joliet | 100210-0 | Joliet | IL | Thermal Insl. |
| Underwriters Laboratories Inc. | 100414-0 | Northbrook | IL | EC&T |
| Underwriters Laboratories Inc. | 100414-0 | Northbrook | IL | Thermal Insl. |
| United Analytical Services, Inc. | 101732-0 | Downers Grove | IL | PLM |
| United Analytical Services, Inc. | 101732-0 | Downers Grove | IL | TEM |
| United Steel and Fasteners Inc. | 200341-0 | Itasca | IL | Fasteners |
| USG Research - Construction Systems Laboratory | 200132-0 | Libertyville | IL | Acoustics |
| **IN** | | | | |
| ACM Environmental, Inc. | 101977-0 | South Bend | IN | PLM |
| Aearo Company, E·A·RCAL Acoustical Laboratory | 100374-0 | Indianapolis | IN | Acoustics |
| EMSL Analytical, Inc. | 200188-0 | Indianapolis | IN | PLM |
| EMSL Analytical, Inc. | 200188-0 | Indianapolis | IN | TEM |
| ESG Laboratories | 102029-0 | Indianapolis | IN | PLM |
| Fuji Component Parts USA, Inc. | 200180-0 | Indianapolis | IN | Fasteners |
| GTE Electronic Repair Services | 200352-0 | Fort Wayne | IN | Calibration |
| Indiana Division of Weights and Measures | 200421-0 | Indianapolis | IN | Calibration |
| Knauf Fiber Glass Research Laboratory | 100248-0 | Shelbyville | IN | Thermal Insl. |
| Micro Air, Inc. | 101221-0 | Indianapolis | IN | PLM |
| Raytheon Technical Services Co. EMI Laboratory | 200317-0 | Indianapolis | IN | EC&T |
| **KS** | | | | |
| Asbestos Consulting & Testing (ACT) | 101649-0 | Lenexa | KS | PLM |
| MAC Fasteners, Inc. | 200141-0 | Ottawa | KS | Fasteners |
| Rogers Labs, Inc. | 200087-0 | Louisburg | KS | EC&T |
| **KY** | | | | |
| Analytical Industries, Inc. | 101855-0 | Paducah | KY | PLM |
| GE Owensboro Test Laboratory | 200305-0 | Owensboro | KY | Electric Motors |
| Intertek Testing Services NA Inc. | 100274-0 | Lexington | KY | EC&T |
| McCall and Spero Environmental, Inc. | 101895-0 | Louisville | KY | PLM |
| McCall and Spero Environmental, Inc. | 101895-0 | Louisville | KY | TEM |
| **LA** | | | | |
| CA Laboratories, L.L.C. | 200452-0 | Baton Rouge | LA | PLM |
| Chrisope Technologies, A Division of Remel | 200388-0 | Lake Charles | LA | PPT |
| EMSL Analytical, Inc. | 200375-0 | Baton Rouge | LA | PLM |
| EMSL Analytical, Inc. | 200375-0 | Baton Rouge | LA | TEM |
| Entergy Operations, Inc. | 100535-0 | Killona | LA | Dosimetry |
| Louisiana Department of Environmental Quality Microanalytical Lab | 102000-0 | Baton Rouge | LA | PLM |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| **MA** | | | | |
| Chomerics Test Services (CTS) | 100296-0 | Woburn | MA | EC&T |
| Compaq Regulatory Compliance Engineering - East | 100413-0 | Marlboro | MA | EC&T |
| Covino Environmental Associates, Inc. | 101781-0 | Woburn | MA | PLM |
| David L. Ellis Co., Incorporated | 200127-0 | Acton | MA | Calibration |
| Duke Engineering and Services Environmental Laboratory | 100524-0 | Marlborough | MA | Dosimetry |
| EMC Corporation | 100339-0 | Westboro | MA | EC&T |
| Holometrix - Micromet | 100113-0 | Bedford | MA | Thermal Insl. |
| Hygienetics Laboratory Services | 101147-0 | Boston | MA | PLM |
| Hygienetics Laboratory Services | 101147-0 | Boston | MA | TEM |
| Instron Field Calibration Laboratory | 200301-0 | Canton | MA | Calibration |
| Instron Force Calibration Laboratory | 105023-0 | Canton | MA | Calibration |
| Integrity Design & Test Services, an Entela Company | 200004-0 | Littleton | MA | EC&T |
| Intertek Testing Services NA Inc. | 100270-0 | Boxborough | MA | EC&T |
| Motorola EMC Test Services Lab | 200005-0 | Mansfield | MA | EC&T |
| National Technical Systems | 100347-0 | Boxborough | MA | EC&T |
| OSRAM SYLVANIA, Test & Measurements Laboratory | 100403-0 | Beverly | MA | Lighting |
| ProScience Analytical Services, Inc. | 200090-0 | Woburn | MA | PLM |
| ProScience Analytical Services, Inc. | 200090-0 | Woburn | MA | TEM |
| Quest Engineering Solutions, Inc. | 200036-0 | N. Billerica | MA | EC&T |
| SCILAB BOSTON, Inc. | 102079-0 | East Weymouth | MA | PLM |
| SCILAB BOSTON, Inc. | 102079-0 | East Weymouth | MA | TEM |
| Test Site Services, Inc. | 100419-0 | Marlboro | MA | EC&T |
| W.R. Grace & Co. | 200258-0 | Cambridge | MA | Construction |
| **MD** | | | | |
| AMA Analytical Services, Inc. | 101143-0 | Lanham | MD | PLM |
| AMA Analytical Services, Inc. | 101143-0 | Lanham | MD | TEM |
| ATC Associates Inc. | 200250-0 | Columbia | MD | PLM |
| Calvert Cliffs Nuclear Power Plant, Inc. | 100501-0 | Lusby | MD | Dosimetry |
| CDRH X-Ray Calibration Laboratory | 105018-0 | Rockville | MD | Calibration |
| COACT Inc. CAFE Laboratory | 200416-0 | Columbia | MD | Common |
| COACT Inc. CAFE Laboratory | 200416-0 | Columbia | MD | Cryptographic |
| Composite Panel Association (CPA) | 100418-0 | Gaithersburg | MD | Wood Prod. |
| Computer Sciences Corporation | 200426-0 | Hanover | MD | Common |
| DHMH-Air Quality Laboratory | 101523-0 | Baltimore | MD | PLM |
| EMSL Analytical, Inc. | 200293-0 | Beltsville | MD | PLM |
| EMSL Analytical, Inc. | 200293-0 | Beltsville | MD | TEM |
| MET Laboratories, Inc. | 100273-0 | Baltimore | MD | EC&T |
| NAHB Research Center, Inc. | 100104-0 | Upper Marlboro | MD | Commercial |
| NAHB Research Center, Inc. | 100104-0 | Upper Marlboro | MD | Thermal Insl. |
| Naval Dosimetry Center | 100504-0 | Bethesda | MD | Dosimetry |
| NAWC AD 5.1.7.2. EMI Lab | 100408-0 | Patuxent River | MD | EC&T |
| PCTEST Engineering Laboratory, Inc. | 100431-0 | Columbia | MD | EC&T |
| SAIC Common Criteria Testing Laboratory | 200427-0 | Columbia | MD | Common |
| U.S. Army Center for Health Promotion and Preventive Medicine | 200044-0 | Aberdeen Proving Ground | MD | PLM |
| Washington Laboratories, Ltd. | 200066-0 | Gaithersburg | MD | EC&T |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| Windermere Info. Tech. Sys. Military/Commercial Compliance Lab. | 200084-0 | Annapolis | MD | EC&T |
| **MI** | | | | |
| AHD | 200129-0 | Dowagiac | MI | EC&T |
| Apex Research, Inc. | 102118-0 | Whitmore Lake | MI | PLM |
| Detroit Edison, Fermi 2 Dosimetry Laboratory | 100529-0 | Newport | MI | Dosimetry |
| Dexter Fastener Technologies, Inc. | 200144-0 | Dexter | MI | Fasteners |
| Dow Chemical N. America Foam Products Research, Prod. Perf. Lab. | 100103-0 | Midland | MI | Thermal Insl. |
| Eaton E3 Laboratory | 100382-0 | Southfield | MI | EC&T |
| Electronic Automation | 200410-0 | Grand Rapids | MI | Calibration |
| EMSL Analytical, Inc. | 101048-4 | Ann Arbor | MI | PLM |
| EMSL Analytical, Inc. | 101048-4 | Ann Arbor | MI | TEM |
| Fibertec, Inc. | 101510-0 | Holt | MI | PLM |
| MacLean Maynard Laboratory Services | 200451-0 | Chesterfield Township | MI | Fasteners |
| Michigan Dept. of Agriculture, E.C. Heffron Metrology Laboratory | 200408-0 | Williamston | MI | Calibration |
| NYLOK Fastener Corporation | 200273-0 | Macomb | MI | Fasteners |
| Wolverine Plating Corp. | 200230-0 | Roseville | MI | Fasteners |
| Wonder Makers Environmental, Inc. | 102065-0 | Kalamazoo | MI | PLM |
| **MN** | | | | |
| 3M Product Safety EMC Laboratory | 200033-0 | St. Paul | MN | EC&T |
| Braun Intertec Corporation | 101234-0 | Minneapolis | MN | PLM |
| Braun Intertec Corporation | 101234-0 | Minneapolis | MN | TEM |
| EMSL Analytical, Inc. | 200019-0 | Minneapolis | MN | PLM |
| EMSL Analytical, Inc. | 200019-0 | Minneapolis | MN | TEM |
| IBM Rochester EMC Lab | 200091-0 | Rochester | MN | EC&T |
| Institute for Environmental Assessment | 101249-0 | Brooklyn Park | MN | PLM |
| Intertek Testing Services NA, Inc. | 200049-0 | Oakdale | MN | EC&T |
| Legend Technical Services, Inc. | 102081-0 | St. Paul | MN | PLM |
| Minnesota Metrology Laboratory | 105003-0 | St. Paul | MN | Calibration |
| Nova Consulting Group, Inc. | 101545-0 | Chaska | MN | PLM |
| Orfield Laboratories, Inc. | 200248-0 | Minneapolis | MN | Acoustics |
| Stork-Twin City Testing Corporation | 200046-0 | St. Paul | MN | Acoustics |
| TUV Product Service, Inc. | 100271-0 | New Brighton | MN | EC&T |
| TUV Telecom Services, Inc. | 200039-0 | St. Paul | MN | EC&T |
| **MO** | | | | |
| Boeing - St. Louis Electromagnetic Compatibility Laboratory | 200382-0 | St. Louis | MO | EC&T |
| EnviroHealth Technologies, Inc. | 200374-0 | St. Louis | MO | PLM |
| Environmental Health Laboratories | 101506-0 | Clayton | MO | PLM |
| Honeywell FM&T Metrology | 200108-0 | Kansas City | MO | Calibration |
| Kingston Environmental Laboratory | 200041-0 | Lee's Summit | MO | PLM |
| Larron Laboratory | 101415-0 | Cape Girardeau | MO | PLM |
| Mallinckrodt, Inc. | 100503-0 | Maryland Heights | MO | Dosimetry |
| Microscopic Analysis, Inc. | 101037-0 | St. Louis | MO | PLM |
| OCCU-TEC, Inc. | 102025-0 | Kansas City | MO | PLM |
| Union Electric Company, Callaway Plant | 100502-0 | Fulton | MO | Dosimetry |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| **MS** | | | | |
| Daybrite Lighting (Genlyte Thomas Group) Photometric Laboratory | 200016-0 | Tupelo | MS | Lighting |
| **MT** | | | | |
| Northern Analytical Laboratories, Inc. | 101292-0 | Billings | MT | PLM |
| **NC** | | | | |
| Advanced Energy, Industrial Energy Laboratory | 200081-0 | Raleigh | NC | Electric Motors |
| Asbestos Analysis and Information Service, Inc. | 101261-0 | Four Oaks | NC | PLM |
| Carolina Environmental, Inc. | 101768-0 | Cary | NC | PLM |
| Carolina Power & Light Company, Harris Energy & Enviro. Center | 100517-0 | New Hill | NC | Dosimetry |
| Duke Power Company Dosimetry Laboratory | 100505-0 | Charlotte | NC | Dosimetry |
| EMSL Analytical, Inc. | 102104-0 | Greensboro | NC | PLM |
| EMSL Analytical, Inc. | 102104-0 | Greensboro | NC | TEM |
| Flextronics EMC Laboratories East Coast Operations | 200094-0 | Youngsville | NC | EC&T |
| IBM RTP PSG EMC Test Labs | 200200-0 | Research Triangle Park | NC | EC&T |
| NSI Solutions, Inc. | 200440-0 | Raleigh | NC | PPT |
| S&ME, Inc. | 102075-0 | Charlotte | NC | PLM |
| Troxler Radiation Monitoring Svc. a div. of Troxler Elect. Labs | 100559-0 | Research Triangle Park | NC | Dosimetry |
| Underwriters Laboratories, Inc. | 200246-0 | Research Triangle Park | NC | EC&T |
| **ND** | | | | |
| A.R.C. Laboratories, Inc. | 101832-0 | Grand Forks | ND | PLM |
| **NH** | | | | |
| Andover Corporation | 200461-0 | Salem | NH | NTRMs |
| BAE Systems | 200425-0 | Nashua | NH | EC&T |
| Cabletron Systems, Inc. | 200121-0 | Rochester | NH | EC&T |
| Dames & Moore, Inc. | 101433-0 | Salem | NH | PLM |
| Retlif Testing Laboratories | 100267-1 | Goffstown | NH | EC&T |
| The Scott Lawson Group, Ltd. | 101228-0 | Concord | NH | PLM |
| **NJ** | | | | |
| Advanced Compliance Laboratory | 200101-0 | Hillsborough | NJ | EC&T |
| Aerospace NYLOK - a subsidiary of the NYLOK Fastener Corporation | 200271-0 | Hawthorne | NJ | Fasteners |
| Dwight D.I.C., Inc. | 200405-0 | Lyndhurst | NJ | Calibration |
| EAI, Inc. | 102114-0 | Jersey City | NJ | PLM |
| EMSL Analytical Inc. Mobile Laboratory | 200481-0 | Westmont | NJ | PLM |
| EMSL Analytical Inc. Mobile Laboratory | 200481-0 | Westmont | NJ | TEM |
| EMSL Analytical, Inc. | 101048-0 | Westmont | NJ | PLM |
| EMSL Analytical, Inc. | 101048-0 | Westmont | NJ | TEM |
| EMSL Analytical, Inc. | 101048-2 | Piscataway | NJ | PLM |
| EMSL Analytical, Inc. | 101048-2 | Piscataway | NJ | TEM |
| Enviro Techniques, Inc. | 200024-0 | Paterson | NJ | PLM |
| Environmental Monitoring & Consulting | 101087-0 | Somerville | NJ | PLM |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| Associates | | | | |
| Henry Troemner, LLC | 105013-0 | Thorofare | NJ | Calibration |
| Hillmann Environmental Group, L.L.C. | 101421-0 | Union | NJ | PLM |
| International Asbestos Testing Laboratory | 101165-0 | Mt. Laurel | NJ | PLM |
| International Asbestos Testing Laboratory | 101165-0 | Mt. Laurel | NJ | TEM |
| Lucent Technologies, Global Product Compliance Lab | 100275-0 | Holmdel | NJ | EC&T |
| NAWC-Aircraft Div. Lakehurst Electromagnetic Interference Lab. | 200222-0 | Lakehurst | NJ | EC&T |
| Omega Environmental Services | 101289-0 | Hackensack | NJ | PLM |
| PMK Group, Inc. | 101301-0 | Kenilworth | NJ | PLM |
| Protocol Analytical Supplies, Inc. | 200395-0 | Middlesex | NJ | PPT |
| Spex Certiprep Inc. | 200392-0 | Metuchen | NJ | PPT |
| **NM** | | | | |
| Assaigai Analytical Laboratories, Inc. | 101457-0 | Albuquerque | NM | PLM |
| Sandia National Laboratories | 105002-0 | Albuquerque | NM | Calibration |
| **NV** | | | | |
| Asbestos TEM Laboratories, Inc. | 200104-0 | Sparks | NV | PLM |
| Converse Consultants | 102091-0 | Reno | NV | PLM |
| U.S. EPA | 200231-0 | Las Vegas | NV | Dosimetry |
| **NY** | | | | |
| Airtek Environmental Corp. | 10201I-0 | New York | NY | PLM |
| ALAC | 200323-0 | New York | NY | PLM |
| Ambient Group, Inc. | 101618-0 | Glen Cove | NY | PLM |
| ATC Associates Inc. | 101187-0 | New York | NY | PLM |
| ATC Associates Inc. | 101187-0 | New York | NY | TEM |
| Athenica Environmental Services, Inc. | 10I958-0 | Long lsland City | NY | PLM |
| Athenica Environmental Services, Inc. | 101958-0 | Long lsland City | NY | TEM |
| Con Edison, EH&S - ChemLab | 101558-0 | Long Island City | NY | PLM |
| Con Edison, Indian Point | 100538-0 | Buchanan | NY | Dosimetry |
| Dayton T. Brown, Inc. | 200422-0 | Bohemia | NY | EC&T |
| Diviersified T.E.S.T. Technologies, Inc. | 200340-0 | Groton | NY | EC&T |
| DL Labs, Inc. | 100252-0 | New York | NY | Commercial |
| Eastern Analytical Services, Inc. | 101646-0 | Elmsford | NY | PLM |
| Eastern Analytical Services, Inc. | 101646-0 | Elmsford | NY | TEM |
| Eastman Kodak Co.-Regulatory Compliance Center-EMC Facility | 200313-0 | Rochester | NY | EC&T |
| EMSL Analytical, Inc. | 101048-9 | New York | NY | PLM |
| EMSL Analytical, Inc. | 101048-9 | New York | NY | TEM |
| EMSL Analytical, Inc. | 101048-10 | Carle Place | NY | PLM |
| EMSL Analytical, Inc. | 101048-10 | Carle Place | NY | TEM |
| EMSL Analytical, Inc. | 200056-0 | Williamsville | NY | PLM |
| EMSL Analytical, Inc. | 200056-0 | Williamsville | NY | TEM |
| EMSL Analytical, Inc. | 200333-0 | Elmsford | NY | PLM |
| EMSL Analytical, Inc. | 200333-0 | Elmsford | NY | TEM |
| Enviro-Probe, Inc. | 101222-0 | Bronx | NY | PLM |
| Fairway Testing Company, Inc. | 100340-0 | Stony Point | NY | Construction |
| Galson Laboratories | 101375-0 | East Syracuse | NY | PLM |
| GE Industrial Systems | 200029-0 | Rome | NY | Calibration |
| Ginna Nuclear Station | 100514-0 | Ontario | NY | Dosimetry |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| IBM Endicott EMC Lab | 200418-0 | Endicott | NY | EC&T |
| IBM Hudson Valley Acoustics Laboratory | 100323-0 | Poughkeepsie | NY | Acoustics |
| IBM Poughkeepsie EMC Laboratory | 200435-0 | Poughkeepsie | NY | EC&T |
| IBM Shock and Vibration Laboratory | 200503-0 | Poughkeepsie | NY | Commercial |
| Industrial Acoustics Company, Inc., Aero-Acoustics Laboratory | 100404-0 | Bronx | NY | Acoustics |
| Intertek Testing Services NA Inc. | 100402-0 | Cortland | NY | Lighting |
| JLC Environmental Consultants, Inc. | 101953-0 | New York | NY | PLM |
| KAM Consultants | 102047-0 | Long Island City | NY | PLM |
| KAM Consultants | 102047-0 | Long Island City | NY | TEM |
| Lighting Research Center Lighting Products | 200480-0 | Troy | NY | Lighting |
| Lockheed Martin Control Systems EMI Laboratory | 200142-0 | Johnson City | NY | EC&T |
| New York Testing Laboratories, Inc. | 101332-0 | Bay Shore | NY | PLM |
| New York Testing Laboratories, Inc. | 101332-0 | Bay Shore | NY | TEM |
| NGC Testing Services, National Gypsum Research Center | 200291-0 | Buffalo | NY | Acoustics |
| Niche Analysis, Inc. | 102057-0 | Mount Vernon | NY | PLM |
| NY Environmental & Analytical Labs, Inc. | 101967-0 | Port Washington | NY | PLM |
| NYS DOH Environmental Laboratory Approval Program | 200387-0 | Albany | NY | PPT |
| O'Brien & Gere Laboratories, Inc. | 101343-0 | Syracuse | NY | PLM |
| O'Brien & Gere Laboratories, Inc. | 101343-0 | Syracuse | NY | TEM |
| Retlif Testing Laboratories | 100267-0 | Ronkonkoma | NY | EC&T |
| Scientific Laboratories, Inc. | 101904-1 | New York | NY | PLM |
| Scientific Laboratories, Inc. | 101904-1 | New York | NY | TEM |
| Taylor Environmental Group, Inc. | 102101-0 | Floral Park | NY | PLM |
| Techni-Cal Services of Orange Cty, Inc. | 200459-0 | Monroe | NY | Calibration |
| Testing Mechanics Corp. | 102001-0 | Seaford | NY | PLM |
| Testwell Laboratories, Inc./Testwell Industries, Inc. | 200083-0 | Ossining | NY | Construction |
| Testwell Laboratories, Inc./Testwell Industries, Inc. | 200083-0 | Ossining | NY | PLM |
| Testwell Laboratories, Inc./Testwell Industries, Inc. | 200083-0 | Ossining | NY | TEM |
| Underwriters Laboratories, Inc. | 100255-0 | Melville | NY | EC&T |
| Underwriters Laboratories, Inc. | 100255-0 | Melville | NY | Lighting |
| Vartest Laboratories, Inc. | 200027-0 | New York | NY | Carpet |
| WKP Laboratories, Inc. | 101950-0 | New York City | NY | PLM |
| **OH** | | | | |
| Analytical Chemistry Services (ACS), Dolan Chemical Lab | 102102-0 | Columbus | OH | PLM |
| Analytical Products Group, Inc. | 200384-0 | Belpre | OH | PPT |
| DataChem Laboratories | 101917-0 | Cincinnati | OH | PLM |
| DataChem Laboratories | 101917-0 | Cincinnati | OH | TEM |
| EA Group | 101019-0 | Mentor | OH | PLM |
| EssTek Ohio, Inc. | 102093-0 | Middleburg Heights | OH | PLM |
| Fluor Fernald, Inc., Analytical Laboratory Services | 102010-0 | Cincinnati | OH | PLM |
| GE Lighting- Product Testing | 100398-0 | Cleveland | OH | Lighting |
| Gelles Laboratories, Division, CC Technologies | 101170-0 | Dublin | OH | PLM |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| Gelles Laboratories, Division, CC Technologies | 101170-0 | Dublin | OH | TEM |
| Integrex Testing Systems - Product Testing Laboratory | 100109-0 | Granville | OH | Acoustics |
| Integrex Testing Systems - Product Testing Laboratory | 100109-0 | Granville | OH | Thermal Insl. |
| m.a.c. Paran Consulting Services, Inc. | 102108-0 | Amelia | OH | PLM |
| McGill AirFlow Corp. Airflow and Acoustical Testing Laboratory | 200463-0 | Westerville | OH | Acoustics |
| NOVA Machine Products | 200202-0 | Middleburg Heights | OH | Fasteners |
| Ohio E.M.A. Radiological Instrument Calibration Facility | 200419-0 | Columbus | OH | Calibration |
| TolTest, Inc. | 101594-0 | Toledo | OH | PLM |
| Tremco, Inc. - Roofing Division, An RPM Company | 101188-0 | Beachwood | OH | PLM |
| Webber Gage Division / L.S. Starrett Co. | 200038-0 | Cleveland | OH | Calibration |
| **OK** | | | | |
| Beaulieu of America Hollytex Division | 100247-0 | Anadarko | OK | Carpet |
| Oklahoma Bureau of Standards | 200396-0 | Oklahoma City | OK | Calibration |
| Oklahoma Dept. of Environmental Quality-DEQ Laboratory | 102112-0 | Oklahoma City | OK | PLM |
| Precision Testing Laboratories, Inc. | 101580-0 | Moore | OK | PLM |
| QuanTEM Laboratories, LLC | 101959-0 | Oklahoma City | OK | PLM |
| QuanTEM Laboratories, LLC | 101959-0 | Oklahoma City | OK | TEM |
| SGS U.S. Testing Company, Inc. | 100416-0 | Tulsa | OK | Commercial |
| SGS U.S. Testing Company, Inc. | 100416-0 | Tulsa | OK | Thermal Insl. |
| TEC-AN, Inc. | 200325-0 | Oklahoma City | OK | PLM |
| **OR** | | | | |
| InFocus Systems, Inc. | 200152-0 | Wilsonville | OR | EC&T |
| Northwest EMC, Inc. | 200059-0 | Hillsboro | OR | EC&T |
| PBS Environmental Building Consultants, Inc. | 101910-0 | Portland | OR | PLM |
| Professional Service Industries, Inc., Pittsburgh Test. Lab. Div. | 100430-0 | Eugene | OR | Wood Prod. |
| Timberco, Inc.- dba TECO | 100420-0 | Eugene | OR | Wood Prod. |
| Willamette Industries, Inc. West Coast Development Lab | 200045-0 | Wilsonville | OR | Commercial |
| **PA** | | | | |
| Accredited Environmental Technologies, Inc. | 101051-0 | Media | PA | PLM |
| AGX, Inc. | 101578-0 | Cranberry Township | PA | PLM |
| Allegheny Asbestos Analysis | 101704-0 | Carnegie | PA | PLM |
| American Testing Laboratories, Inc. | 100146-0 | Lancaster | PA | Construction |
| Analab, LLC | 200260-0 | Sterling | PA | EC&T |
| Architectural Testing Inc. | 200361-0 | York | PA | Acoustics |
| Armstrong Acoustic Labs, Armstrong World Ind., Inc. Innov. Center | 100228-0 | Lancaster | PA | Acoustics |
| Criterion Laboratories, Inc. | 102046-0 | Bensalem | PA | PLM |
| Dodge-Regupol, Inc. Laboratory | 200030-0 | Lancaster | PA | Commercial |
| FENOC, Beaver Valley Power Station | 100521-0 | Shippingport | PA | Dosimetry |
| IIT Research Institute/R&B Operation | 100280-0 | West Conshohocken | PA | EC&T |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| Instrument Specialties Co., Inc. | 200076-0 | Delaware Water Gap | PA | EC&T |
| Kevco Services, Inc. | 101941-0 | Butler | PA | PLM |
| Levecque Technical Center | 100101-0 | Blue Bell | PA | Thermal Insl. |
| Michael & Associates | 100427-0 | State College | PA | Acoustics |
| PA DEP Bureau of Laboratories | 101323-0 | Harrisburg | PA | PLM |
| Philip Analytical Services | 101262-0 | Reading | PA | PLM |
| Philip Analytical Services | 101262-0 | Reading | PA | TEM |
| PPL Susquehanna, LLC | 100554-0 | Allentown | PA | Dosimetry |
| PSI | 101350-0 | Pittsburgh | PA | PLM |
| PSI | 101350-0 | Pittsburgh | PA | TEM |
| Republic Technologies International, Franklin Chemical Laboratory | 200148-0 | Johnstown | PA | Fasteners |
| RJ Lee Group, Inc. | 101208-0 | Monroeville | PA | PLM |
| RJ Lee Group, Inc. | 101208-0 | Monroeville | PA | TEM |
| Volz Environmental Services, Inc. | 101269-0 | Pittsburgh | PA | PLM |
| **PR** | | | | |
| AES International | 200051-0 | Santurce | PR | PLM |
| **RI** | | | | |
| RI Analytical Laboratories, Inc. | 101440-0 | Warwick | RI | PLM |
| SNB Laboratory | 200308-0 | Cumberland | RI | Fasteners |
| Ultra Scientific, Inc. | 200379-0 | North Kingstown | RI | PPT |
| **SC** | | | | |
| Compliance Test Laboratories, Inc. | 200237-0 | Liberty | SC | EC&T |
| Davis & Floyd, Inc. | 101410-0 | Greenwood | SC | PLM |
| South Carolina Department of Health & Environmental Control | 101572-0 | Columbia | SC | PLM |
| **TN** | | | | |
| A.O. Smith (Lexington) Engineering Laboratory | 200053-0 | Lexington | TN | Electric Motors |
| Leland-Powell Fasteners, Inc. Fastener Testing Laboratory | 200171-0 | Martin | TN | Fasteners |
| National Econ Corporation | 200047-0 | Memphis | TN | PLM |
| Oak Ridge Metrology Center | 105000-0 | Oak Ridge | TN | Calibration |
| Philips Testing Service | 200409-0 | Knoxville | TN | EC&T |
| R & D Services, Inc. | 200265-0 | Cookeville | TN | Thermal Insl. |
| Tennessee Valley Authority External Dosimetry Service | 100516-0 | Soddy-Daisy | TN | Dosimetry |
| **TX** | | | | |
| A & B Environmental Services, Inc. | 101793-0 | Houston | TX | PLM |
| Acoustic Systems Acoustical Research Facility | 100286-0 | Austin | TX | Acoustics |
| Atomic Energy Industrial Laboratory of the Southwest, Inc. | 100556-0 | Houston | TX | Dosimetry |
| CAM Environmental Services | 200240-0 | Pasadena | TX | PLM |
| Compaq Computer Corp. Emissions Control Lab | 200058-0 | Houston | TX | EC&T |
| Compaq Corporate Metrology | 200154-0 | Houston | TX | Calibration |
| Crisp Analytical Laboratory | 200349-0 | Carrollton | TX | PLM |



(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| Crisp Analytical Laboratory | 200349-0 | Carrollton | TX | TEM |
| Dell Regulatory Test Laboratories | 200052-0 | Round Rock | TX | Acoustics |
| Dell Regulatory Test Laboratories | 200052-0 | Round Rock | TX | EC&T |
| DH Analytical Services | 102086-0 | Stafford | TX | PLM |
| EcoSystems Environmental, Inc. | 101162-0 | Carrollton | TX | PLM |
| EMC Automation, a TDK Group Company | 200430-0 | Cedar Park | TX | EC&T |
| EMSL Analytical, Inc. | 102106-0 | Houston | TX | PLM |
| EMSL Analytical, Inc. | 102106-0 | Houston | TX | TEM |
| EMSL Analytical, Inc. | 200034-0 | Dallas | TX | PLM |
| EMSL Analytical, Inc. | 200034-0 | Dallas | TX | TEM |
| Envirotest, Inc. | 101595-0 | Houston | TX | PLM |
| ERI Consulting Engineers, Inc. | 101232-0 | Tyler | TX | PLM |
| HIH Laboratory, Inc. | 101233-0 | Webster | TX | PLM |
| IBM Austin EMC | 200112-0 | Austin | TX | EC&T |
| Jimmie Ann Bolton | 101735-0 | Austin | TX | PLM |
| KTL Dallas, Inc. | 100426-0 | Lewisville | TX | EC&T |
| Law Engineering and Environmental Services, Inc. | 101973-0 | Dallas | TX | PLM |
| Loflin Environmental Services,Inc. | 102044-0 | Houston | TX | PLM |
| McKee Environmental Health, Inc. | 101135-0 | Friendswood | TX | PLM |
| Metroplex Metrology Lab, Inc. | 200262-0 | Fort Worth | TX | Calibration |
| Micro Air of Texas, Inc. | 102008-0 | Houston | TX | PLM |
| National Technical Systems | 200245-0 | Plano | TX | EC&T |
| Omni Environmental, Inc. | 102061-0 | Austin | TX | PLM |
| PCI Industries Acoustical Testing Laboratories | 200453-0 | Fort Worth | TX | Acoustics |
| Professional Testing (EMI), Inc. | 200062-0 | Round Rock | TX | EC&T |
| Quest MicroAnalytics | 200249-0 | Dallas | TX | PLM |
| South Texas Project Dosimetry Laboratory | 100519-0 | Wadsworth | TX | Dosimetry |
| Steve Moody Micro Services, Inc. | 102056-0 | Carrollton | TX | PLM |
| Steve Moody Micro Services, Inc. | 102056-0 | Carrollton | TX | TEM |
| Sun City Analytical, Inc. | 101870-0 | El Paso | TX | PLM |
| The Saul Corporation | 200473-0 | Houston | TX | PLM |
| Toshiba/Houston Test Laboratory | 200088-0 | Houston | TX | Electric Motors |
| TUViT, IT Security Laboratory | 200428-0 | Austin | TX | Common |
| TXU Electric - Comanche Peak Steam Electric Station | 100528-0 | Glen Rose | TX | Dosimetry |
| US Air Force Center for Radiation Dosimetry | 100548-0 | Brooks AFB | TX | Dosimetry |
| Wayne Langston, Inc. | 200021-0 | League City | TX | EC&T |
| **UT** | | | | |
| Communication Certification Laboratory | 100272-0 | Salt Lake City | UT | EC&T |
| Dixon Information Inc. | 101012-0 | South Salt Lake | UT | PLM |
| Hart Scientific Calibration Laboratory | 200348-0 | American Fork | UT | Calibration |
| **VA** | | | | |
| American Medical Laboratories, Inc. | 101136-0 | Chantilly | VA | PLM |
| Analytics Corporation | 101004-0 | Richmond | VA | PLM |
| Applied Environmental, Inc. | 101611-0 | Reston | VA | PLM |
| Atlan Laboratories | 200492-0 | McLean | VA | Cryptographic |
| Auditory Systems Laboratory, ISE Department, Virginia Tech | 200479-0 | Blacksburg | VA | Acoustics |
| Cygnacom Solutions, Inc. An Entrust | 200002-0 | McLean | VA | Common |


(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| Technologies Company | | | | |
| Cygnacom Solutions, Inc. An Entrust Technologies Company | 200002-0 | McLean | VA | Cryptographic |
| Environmental Hazards Services, L.L.C. | 101882-0 | Richmond | VA | PLM |
| Environmental Testing and Monitoring Services, Inc. | 200131-0 | Virginia Beach | VA | PLM |
| Genicom Corporation | 200342-0 | Waynesboro | VA | EC&T |
| Holmes Environmental, Inc. | 200467-0 | Norfolk | VA | PLM |
| Hubbell Lighting Photometric Laboratory | 200020-0 | Christiansburg | VA | Lighting |
| Industrial Laboratory | 102115-0 | Portsmouth | VA | PLM |
| Marine Chemist Service, Inc. | 101425-0 | Newport News | VA | PLM |
| Newport News Shipbuilding Radiological Control Department | 100561-0 | Newport News | VA | Dosimetry |
| Proxtronics, Inc. | 100573-0 | Burke | VA | Dosimetry |
| Rhein Tech Laboratories, Inc. | 200061-0 | Herndon | VA | EC&T |
| RJ Lee Group, Inc. | 101208-3 | Manassas | VA | PLM |
| RJ Lee Group, Inc. | 101208-3 | Manassas | VA | TEM |
| Schneider Laboratories, Inc. | 101150-0 | Richmond | VA | PLM |
| Scientific Laboratories, Inc. | 101904-0 | Midlothian | VA | PLM |
| Scientific Laboratories, Inc. | 101904-0 | Midlothian | VA | TEM |
| SEAS, Inc. | 101185-0 | Blacksburg | VA | PLM |
| State of Virginia Metrology Lab | 105007-0 | Richmond | VA | Calibration |
| **VT** | | | | |
| Microcheck, Inc. | 200391-0 | Northfield | VT | PPT |
| Vermont Fasteners Manufacturing | 200254-0 | Swanton | VT | Fasteners |
| **WA** | | | | |
| APA - The Engineered Wood Association Research Center | 100423-0 | Tacoma | WA | Wood Prod. |
| Battelle - Pacific Northwest National Laboratory | 200216-0 | Richland | WA | Dosimetry |
| BCAG Fastener Quality Test Lab Everett Site | 200292-0 | Seattle | WA | Fasteners |
| Clayton Group Services | 101106-0 | Seattle | WA | PLM |
| Fluke Corporation Primary Standards Laboratory | 105016-0 | Everett | WA | Calibration |
| Key Tronic Corp. | 200096-0 | Spokane | WA | EC&T |
| Lab/Cor, Inc. | 101920-0 | Seattle | WA | TEM |
| Mountain Laboratories | 101890-0 | Spokane | WA | PLM |
| Naval Nuclear Propulsion Program Directorate, Washington, DC | 100565-0 | Bremerton | WA | Dosimetry |
| Northern Industrial Hygiene, Inc. | 200511-0 | Burien | WA | PLM |
| Nowicki & Associates, Inc. | 200322-0 | Federal Way | WA | PLM |
| NVL Laboratories, Inc. | 102063-0 | Seattle | WA | PLM |
| Pacific Northwest National Laboratory / Battelle | 105020-0 | Richland | WA | Calibration |
| Pacific Rim Environmental, Inc. | 101631-0 | Tukwila | WA | PLM |
| Puget Sound Naval Shipyard | 101539-0 | Bremerton | WA | PLM |
| Safe Environment of America, Inc. | 102021-0 | Auburn | WA | PLM |
| Strategic Weapons Fac. Pacific Cal. Lab. Oper. by Lockheed Martin | 200406-0 | Silverdale | WA | Calibration |
| Underwriters Laboratories Inc. | 200214-0 | Camas | WA | EC&T |
| United States Dosimetry Technology, Inc. | 100571-0 | Richland | WA | Dosimetry |



(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| **WI** | | | | |
| Aurora Consolidated Laboratories | 101661-0 | West Allis | WI | PLM |
| Bella Donna Labs Inc. | 101868-0 | Wauwatosa | WI | PLM |
| Hufcor Laboratory | 100239-0 | Janesville | WI | Acoustics |
| Intertek Testing Services NA Inc. | 200031-0 | Middleton | WI | Thermal Insl. |
| Leeson Electric - Grafton Engineering Laboratory | 200483-0 | Grafton | WI | Electric Motors |
| Marathon Electric - Wausau Engineering Lab. | 200134-0 | Wausau | WI | Electric Motors |
| Micro Analytical, Inc. | 101247-0 | Milwaukee | WI | PLM |
| PFS Corporation | 100421-0 | Madison | WI | Wood Prod. |
| Rice Lake Weighing Systems | I05001-0 | Rice Lake | WI | Calibration |
| Twin Ports Testing, Inc. | I02083-0 | Superior | WI | PLM |
| Wisconsin Occupational Health Laboratory | 101109-0 | Madison | WI | PLM |
| **WV** | | | | |
| Environmental Services International, Inc. | 101306-0 | St. Albans | WV | PLM |
| Philips Lighting Corporate Calibration & Standards Laboratory | 100399-0 | Fairmont | WV | Lighting |
| Triad Environmental Consulting, Inc. | 102073-0 | Huntington | WV | PLM |
| **WY** | | | | |
| Resource Technology Corporation (RTC) | 200393-0 | Laramie | WY | PPT |
| **BRAZIL** | | | | |
| Acos Villares SA - Chemical Laboratory | 200394-0 | Pindamonhangaba SP | BRAZIL | Fasteners |
| **CANADA** | | | | |
| Chatfield Technical Consulting Limited | 101103-0 | Mississauga Ontario | CANADA | PLM |
| CSA International | 100322-0 | Toronto Ontario | CANADA | Commercial |
| CSA International | 100322-0 | Toronto Ontario | CANADA | EC&T |
| DOMUS ITSL | 200017-0 | Ottawa Ontario | CANADA | Cryptographic |
| Electronics Test Centre | 200282-0 | Kanata, Ont. | CANADA | EC&T |
| Electronics Test Centre | 200282-0 | Kanata, Ont. | CANADA | EC&T |
| Ingersoll Fasteners | 200208-0 | Ingersoll Ontario | CANADA | Fasteners |
| Ivaco Rolling Mills, Chemistry Laboratory | 200143-0 | L'Orignal Ontario | CANADA | Fasteners |
| KTL Ottawa Inc. | 100351-0 | Ottawa Ontario | CANADA | EC&T |
| LEX Scientific Inc. | 101949-0 | Guelph Ontario | CANADA | PLM |
| MDS Nordion Dosimetry Laboratory | 200370-0 | Kanata Ontario | CANADA | Calibration |
| Nortel Networks BVW Lab | 200098-0 | Belleville, Ontario | CANADA | EC&T |
| Pinchin Environmental Ltd. | 101270-0 | Mississauga Ontario | CANADA | PLM |
| Small IAC Test Laboratory | 200287-0 | Peterborough, ON | CANADA | Electric Motors |
| UltraTech Engineering Labs Inc. | 200093-0 | Oakville, Ontario | CANADA | EC&T |
| United Testing Sys. Canada, Ltd., Dynamic Testing Sys. Int. Inc. | 200311-0 | Concord Ontario | CANADA | Calibration |
| Vibro-Acoustics Laboratory | 100424-0 | Scarborough Ontario | CANADA | Acoustics |
| **CHINA** | | | | |
| Audix Technology (Shanghai) Co., Ltd. | 200371-0 | Shanghai | CHINA | EC&T |
| AUDIX Technology (Shenzhen) Co., Ltd. | 200372-0 | Shenzhen, Guangdong | CHINA | EC&T |
| Shanghai Testing & Inspection Institute for Electrical Equipment | 200407-0 | Shanghai | CHINA | Electric Motors |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| **INDIA** | | | | |
| Sundram Fasteners Limited (Inhouse test laboratory) | 200212-0 | Chennai (Madras), Taonil | INDIA | Fasteners |
| Sundram Fasteners Limited Chemical Testing Laboratory | 200256-0 | Andhra Pradesh | INDIA | Fasteners |
| **JAPAN** | | | | |
| A-Pex International Co., Ltd. Yamakita Laboratory | 200441-0 | Ashigarakami-gun | JAPAN | EC&T |
| A-Pex International Co., Ltd. Yokowa Laboratory | 200109-0 | Mie-ken | JAPAN | EC&T |
| Advantest Analysis Labroatory Ltd. EMC Center | 200477-0 | Gunma | JAPAN | EC&T |
| Akzo Kashima Ltd., Kawasaki Technical Center | 200300-0 | Kawasaki | JAPAN | EC&T |
| Akzo Nobel K.K., Kakegawa EMC Test Site | 100290-2 | Shizuoka | JAPAN | EC&T |
| Akzo Nobel K.K., Kashima EMC Site | 100290-0 | Ibaraki | JAPAN | EC&T |
| Akzo Nobel K.K., Matsuda EMC Test Site | 100290-4 | Kanagawa | JAPAN | EC&T |
| Akzo Nobel K.K., Nagano EMC Test Site | 100290-3 | Nagano | JAPAN | EC&T |
| Akzo Nobel K.K., Tochigi EMC Test Site | 100290-5 | Tochigi | JAPAN | EC&T |
| Benesol Corp. | 200438-0 | Sagamihara-shi, Kanagawa | JAPAN | EC&T |
| Canon D5 RF Anechoic Chamber; FCC Part 15; CISPR 22/AS/NZS 3548 | 200478-0 | Ibaraki | JAPAN | EC&T |
| Chemitox EMC Research, Inc. | 200120-0 | Yamanashi-ken | JAPAN | EC&T |
| Cosmos Corporation | 200151-0 | Watarai-gun Mie | JAPAN | EC&T |
| Fuji Buhin Kogyo Kabushiki Kaisha | 200203-0 | Ohta Gunma | JAPAN | Fasteners |
| Fujitsu Evaluation Engineering Laboratory | 200281-0 | Numazu, Shizuoka-Pref. | JAPAN | EC&T |
| Fujitsu General EMC Laboratory | 200373-0 | Kawasaki | JAPAN | EC&T |
| Hitachi Information Technology Co., Ltd. | 200186-0 | Kanagawa | JAPAN | EC&T |
| IBM Yamato EMC Engineering | 200198-0 | Yamato Kanagawa | JAPAN | EC&T |
| IPS Corporation | 200012-0 | Nagano | JAPAN | Calibration |
| IPS Corporation | 200012-0 | Nagano | JAPAN | EC&T |
| Japan Quality Assurance Org. Chubu Testing Center Shikatsu Branch | 200190-0 | Aichi | JAPAN | EC&T |
| Japan Quality Assurance Org. Safety Testing Ctr. Tsuru EMC Branch | 200192-0 | Yamanashi | JAPAN | EC&T |
| Japan Quality Assurance Organization Kita-Kansai Testing Center | 200191-0 | Osaka | JAPAN | EC&T |
| Japan Quality Assurance Organization Safety Testing Center | 200189-0 | Tokyo | JAPAN | EC&T |
| Kansai Electronic Industry Development Center, Ikoma Testing Lab. | 200207-0 | Ikoma Nara | JAPAN | EC&T |
| Kobelco Research Institute, Inc. Stock Company | 200169-0 | Kobe | JAPAN | Fasteners |
| Kyowa Kogyosyo Co., Ltd. Test Laboratory | 200274-0 | Komatsu City, Ishikawa | JAPAN | Fasteners |
| Kyushu Matsushita Electric Test Lab EMC Center | 200364-0 | Tosu-shi Saga-ken | JAPAN | EC&T |
| Matsushita EMC Center | 100428-0 | Sasayama, Hyogo | JAPAN | EC&T |
| Minebea Co., Ltd. Fujisawa Manufacturing Unit | 200229-0 | Fujisawa, Kanagawa | JAPAN | Fasteners |
| Minolta Co., Ltd. Toyokawa EMC Lab | 200434-0 | Toyokawa, Aichi | JAPAN | EC&T |
| Murata Mfg. Co., Ltd. Yokohama Technical | 200263-0 | Kanagawa | JAPAN | EC&T |


(See 'How To Use This Directory' on page 7.)

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| Center EMM Office | | | | |
| NEC Kofu, Ltd., EMC Center | 200433-0 | Yamanashi | JAPAN | EC&T |
| NEC Niigata, Ltd, EMC Group | 200490-0 | Niigata | JAPAN | EC&T |
| NEC Shizuoka, Ltd. EMC Center | 200488-0 | Shizuoka-ken | JAPAN | EC&T |
| O & K Company Limited, Osaka Test Center | 200166-0 | Osaka-Shi | JAPAN | Fasteners |
| Ohtama Co., Ltd. Yamanashi EMC Test Site | 200175-0 | Yamanashi | JAPAN | EC&T |
| Okai Iron Works Co., Ltd. | 200299-0 | Izumisano Osaka | JAPAN | Fasteners |
| Okawa Laboratory | 200296-0 | Naka-gun, Ibaraki-ken | JAPAN | Fasteners |
| Olympus EMC Laboratory | 200472-0 | Tokyo | JAPAN | EC&T |
| ORIX Rentec EMC Center; Electromagnetic Compatibility | 200404-0 | Aiko-Gun, Kanagawa | JAPAN | EC&T |
| PFU TECHNOCONSUL EMC Center | 200259-0 | Ishikawa-Ken | JAPAN | EC&T |
| Piolax Inc. | 200411-0 | Mooka-shi Tochigi-ken | JAPAN | Fasteners |
| Ricoh Company LTD. Ohmori Acoustics Test Site | 200345-0 | Tokyo | JAPAN | Acoustics |
| Ricoh Company, Ltd. Ohmori EMC Center | 200163-0 | Tokyo | JAPAN | EC&T |
| Seiko Epson Corporation | 200157-0 | Shiojiri-City Nagano | JAPAN | EC&T |
| Sharp Nara EMC Center, EMI Measurement for ITE | 200457-0 | Yamatokooriyama-shi Nara | JAPAN | EC&T |
| Sony Bonson EMC Test Laboratory | 200456-0 | Saitama-ken | JAPAN | EC&T |
| Sony Ikegami EMC Site | 200439-0 | Shinagawa, Tokyo | JAPAN | EC&T |
| Sony Kisarazu EMC Test Laboratory | 200432-0 | Kisarazu Chiba | JAPAN | EC&T |
| Sony Kohda EMC Test Laboratory | 200398-0 | Nukata-gun Aichi | JAPAN | EC&T |
| Sony Minokamo EMC Site | 200368-0 | Gifu-Pref. | JAPAN | EC&T |
| Sumitomo Metals (Kokura), Ltd. Quality System Section | 200215-0 | Kitakyushu | JAPAN | Fasteners |
| Syonan Site Testing Laboratory as Conducted & Radiated Emissions | 200482-0 | Kanagawa | JAPAN | EC&T |
| TDK Corporation's 10m Anechoic Chamber | 200309-0 | Ichikawa-shi, Chiba-ken | JAPAN | EC&T |
| TDK Corporation's Chikumagawa Open Site | 200319-0 | Saku-shi, Nagano-ken | JAPAN | EC&T |
| TEAC Corporation EMC Center | 200362-0 | Saitama-ken | JAPAN | EC&T |
| Tokin EMC Engineering Co., Ltd. Kawasaki Facility | 200217-0 | Kawasaki-city, Kanagawa | JAPAN | EC&T |
| Tokin EMC Engineering Co., Ltd. Nagoya Testing Laboratory | 200219-0 | Daian-cho, Inabe-gun, Mie | JAPAN | EC&T |
| Tokin EMC Engineering Co., Ltd. Osaka Testing Laboratory | 200218-0 | Sanda-city, Hyogo | JAPAN | EC&T |
| Tokin EMC Engineering Co., Ltd. Tsukuba Testing Laboratory | 200221-0 | Tsukuba-city, Ibaraki | JAPAN | EC&T |
| Toshiba Corp., Ome Operations | 200107-0 | Ome Tokyo | JAPAN | EC&T |
| Yamaha EMC Center | 200455-0 | Tenryu-shi, Shizuoka-ken | JAPAN | EC&T |
| Zacta Technology Corporation Yonezawa Testing Center | 200306-0 | Yonezawa-shi Yamagata | JAPAN | EC&T |
| **KOREA** | | | | |
| Korea Testing & Research Inst. for Chemical Industry-Inchon Off. | 200177-0 | Inchon | KOREA | Fasteners |
| LG Electronics, Inc., Quality and Reliability Center | 200040-0 | Seoul | KOREA | EC&T |
| Samsung Electronics EMC Laboratory | 200447-0 | Suwon, Kyungki Do | KOREA | EC&T |
| SK Tech Co., LTD. | 200220-0 | Namyangju-si, Kyunggi-Do | KOREA | EC&T |

| LABORATORY NAME | NVLAP LAB CODE | CITY | STATE/ COUNTRY | FIELD |
|---|---|---|---|---|
| **MALAYSIA** | | | | |
| Teco Industry (Malaysia) SDN. BHD. | 200476-0 | Penang | MALAYSIA | Electric Motors |
| **MEXICO** | | | | |
| Prottsa, S.A. de C.V. | 200261-0 | Mexico City | MEXICO | Fasteners |
| USEM de Mexico, S.A. de C.V. | 200506-0 | Apodaca NL | MEXICO | Electric Motors |
| **TAIWAN** | | | | |
| Advance Data Technology Corporation | 200102-0 | Taipei Hsien | TAIWAN | EC&T |
| Advance Data Technology Corporation Hsin Chu EMC Laboratory | 200376-0 | Hsin Chu Hsien | TAIWAN | EC&T |
| Best Laboratory | 200484-0 | Taipei Hsein | TAIWAN | EC&T |
| Electronic Research & Service Organization/ITRI | 200118-0 | Chutung Hsinchu | TAIWAN | EC&T |
| Electronics Testing Center, Taiwan | 200133-0 | Taoyuan Hsien | TAIWAN | EC&T |
| Fong Prean Industrial Co., Ltd. | 200288-0 | Kaohsiung Hsien | TAIWAN | Fasteners |
| Global EMC Standard Tech. Corp. | 200085-0 | Taipei County | TAIWAN | EC&T |
| HomeTek Technology Inc. | 200331-0 | Taipei Shien | TAIWAN | EC&T |
| International Standards Laboratory | 200234-0 | Hsichih Chen, Taipei | TAIWAN | EC&T |
| Interocean EMC Technology Corp. | 200458-0 | Taipei County | TAIWAN | EC&T |
| Invcntec Corp. (Taoyuan) EMC Labs | 200140-0 | Taoyuan | TAIWAN | EC&T |
| Neutron Engineering Inc. | 200145-0 | Taipei | TAIWAN | EC&T |
| PEP Testing Laboratory | 200097-0 | Taipei Hsien | TAIWAN | EC&T |
| Philips Electronics Industries (TAIWAN) Ltd. | 200137-0 | Chungli, Taoyuan | TAIWAN | EC&T |
| Quietek Corporation | 200347-0 | Hsin-Chu Country | TAIWAN | EC&T |
| Radiation Laboratory, Taiwan Power Company | 100562-0 | Shihmen, Taipei | TAIWAN | Dosimetry |
| San Shing Hardwarc Works Co., Ltd. Test Laboratory | 200158-0 | Tainan | TAIWAN | Fasteners |
| Spectrum Research & Testing Laboratory, Inc. | 200099-0 | Chung-Li, Taoyuan | TAIWAN | EC&T |
| Sporton International, Inc. | 200079-0 | Taipei Hsien | TAIWAN | EC&T |
| Taiwan Tokin EMC Eng. Corp. | 200077-0 | Taipei | TAIWAN | EC&T |
| TECO Electric & Machinery Co., Ltd. | 200378-0 | Taoyuan | TAIWAN | Electric Motors |
| Training Research Co., Ltd. | 200174-0 | Taipei Hsien | TAIWAN | EC&T |
| **UNITED KINGDOM** | | | | |
| BAE Environmental and EMC Test Centre | 200304-0 | Kent | U. K. | EC&T |
| Optiglass Ltd. | 200466-0 | Hainault Essex | U. K. | NTRMs |
| Thermo Spectronic | 200462-0 | Cambridge | U. K. | NTRMs |



(See 'How To Use This Directory' on page 7.)

# INDEX

# D

## LISTING OF TESTING LABORATORIES BY NVLAP LAB CODE

NVLAP LAB CODE 100101-0

**Levecque Technical Center**
1400 Union Meeting Road
P.O. Box 1100
Blue Bell, PA 19422-0761
Contact: Mr. Peter Herault
Phone: 610-341-6376
Fax: 610-341-6291
E-Mail: pete.c.herault@CT.SGCNA.com

**Thermal Insulation Materials**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Canadian Standards (Specifications)*** | |
| 01/W03 | CAN/CGSB-51.10-92 |
| 01/W04 | CAN/CGSB-51.11-92 |
| 01/WNOT | Note: Scope excludes CGSB 51-GP-52M; however, ASTM E96 & ASTM D828 are included where specified in the Canadian Standards (01/W02-W04) |
| ***Corrosiveness*** | |
| 01/C02 | 16 CFR-Part 1209.5 |
| ***Flammability*** | |
| 01/F01 | TAPPI T461-OM |
| 01/F05 | ASTM E136 |
| 01/F07 | 16 CFR-Part 1209.6 |
| 01/F08 | 16 CFR-Part 1209.7 |
| ***Mass, Density, and Dimensional Stability*** | |
| 01/D01 | ASTM C136 |
| 01/D02 | ASTM C167 |
| 01/D09 | ASTM C303 |
| 01/D11 | ASTM C356 |
| 01/D12 | ASTM C411 |
| 01/D24 | ASTM C739 (Sec. 12) |
| 01/D26 | 16 CFR-Part 1209.4 |
| 01/D27 | ASTM C739 (Sec. 8) |
| 01/D31 | MIL-I-22344D (Para. 4.6.3, 4.6.4.) |
| ***Related Material Properties*** | |
| 01/V04 | ASTM E96 |
| 01/V07 | ASTM C1104/C1104M |
| ***Strength*** | |
| 01/S01b | ASTM C165 (Proc. B) |
| 01/S10 | ASTM D828 |
| 01/S15 | ASTM C421 |
| 01/S16 | ASTM C1101/C1101M |
| ***Thermal Resistance*** | |
| 01/T01 | ASTM C177 |
| 01/T04 | ASTM C236 |
| 01/T05 | ASTM C335 |
| 01/T06 | ASTM C518 |
| 01/T09 | ASTM C653 |
| 01/T10 | ASTM C687 |

NVLAP LAB CODE 100103-0

**Dow Chemical N. America Foam Products Research, Prod. Perf. Lab.**
1605 Joseph Drive
Midland, MI 48674
Contact: Ms. Linda Hess
Phone: 517-636-5069
Fax: 517-636-0194
E-Mail: lindahess@dow.com

**Thermal Insulation Materials**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Mass, Density, and Dimensional Stability*** | |
| 01/D07 | ASTM C272 |
| 01/D18 | ASTM D1622 |
| 01/D19 | ASTM D2126 |
| 01/D23 | ASTM D2842 |
| ***Related Material Properties*** | |
| 01/V04 | ASTM E96 |
| ***Strength*** | |
| 01/S02 | ASTM C203 |
| 01/S07 | ASTM C273 |
| 01/S11 | ASTM D1621 (Proc. A of ASTM Practice D618) |
| ***Thermal Resistance*** | |
| 01/T06 | ASTM C518 |

NVLAP LAB CODE 100104-0

**NAHB Research Center, Inc.**
400 Prince George's Boulevard
Upper Marlboro, MD 20774-8731
Contact: Mr. Thomas M. Kenney, P.E.
Phone: 301-430-6246
Fax: 301-430-6184
E-Mail: tkenney@nahbrc.org
URL: http://www.nahbrc.org

**Thermal Insulation Materials**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Mass, Density, and Dimensional Stability*** | |
| 01/D02 | ASTM C167 |
| 01/D13 | ASTM C519 |
| 01/D27 | ASTM C739 (Sec. 8) |
| ***Thermal Resistance*** | |
| 01/T06 | ASTM C518 |
| 01/T09 | ASTM C653 |
| 01/T10 | ASTM C687 |

**Commercial Products Testing**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Paints and Related Coatings and Materials*** | |
| 09/A20 | ASTM D2244 |


(See 'How To Use This Directory' on page 7.)

*Plastics*

| | |
|---|---|
| 15/A01 | ASTM D256 |
| 15/A06 | ASTM D638 |
| 15/A10 | ASTM D790 |
| 15/A18 | ASTM D2565 |
| 15/A19 | ASTM D2583 |
| 15/A31 | ASTM D570 |
| 15/A32 | ASTM D792 |

*Plumbing*

| | |
|---|---|
| 19/M01 | ICC/ANSI A117.1 (Sec. 609, 610) |
| 19/M02 | ASME/ANSI A112.19.7M (Sec. 5, 7) |
| 19/M03 | ASME/ANSI A112.19.8M (Sec. 4, 5) |
| 19/M04 | ASTM F446 |
| 19/M05 | ASTM F462 |
| 19/P01 | ANSI Z124.1 (Sec. 4, 5, 6) |
| 19/P02 | ANSI Z124.2 (Sec. 4, 5, 6) |
| 19/P03 | ANSI Z124.3 (Sec. 4, 5, 6) |
| 19/P03a | ICPA-SS-1 (Sec. 4, 5, 6) |
| 19/P04 | ANSI Z124.4 (Sec. 4, 5) |
| 19/P05 | ANSI Z124.4 (Sec. 8) per ASME A112.19.6M (Sec. 7.1) |
| 19/P06 | ANSI/IAPMO Z124.6 (Sec. 4, 5, 6) |
| 19/P07 | ANSI/IAPMO Z124.8 (Sec. 4, 5) |
| 19/V01 | ASME A112.19.2M (Sec. 8.1) |
| 19/V02 | ASME A112.19.2M (Sec. 8.2) |
| 19/V03 | ASME A112.19.2M (Sec. 8.3) |
| 19/V04 | ASME A112.19.2M (Sec. 8.7) |
| 19/V06 | ASME A112.19.2M (Sec. 8.5) |
| 19/W01 | ASME A112.19.6 (Sec. 7.1.2) |
| 19/W02 | ASME A112.19.6 (Sec. 7.1.3) |
| 19/W03 | ASME A112.19.6 (Sec. 7.1.4) |
| 19/W04 | ASME A112.19.6 (Sec. 7.1.5) |
| 19/W05 | ASME A112.19.6 (Sec. 7.1.6) |
| 19/W06 | ASME A112.19.6 (Sec. 7.1.7) |
| 19/W07 | ASME A112.19.6 (Sec. 7.1.8) |
| 19/W08 | ASME A112.19.6 (Sec. 7.1.9) |

**NVLAP LAB CODE 100108-0**

### TSi, Testing Services, Inc.

817 Showalter Avenue
P.O. Box 2041
Dalton, GA 30721
Contact: Mr. Erle W. Miles, Jr.
Phone: 706-226-1400
Fax: 706-226-6118
E-Mail: emiles@alltel.net
URL: http://www.testing1-2-3.com

### Carpet and Carpet Cushion

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Tests Applicable to Carpet Cushion*** | |
| 03/U01a | ASTM D3574 (Sec. 8.2 & Test A) |
| 03/U01b | ASTM D3676 (Secs. 10-12) |
| 03/U02 | ASTM D297 |
| 03/U03 | ASTM D629 (Sec. 10) |
| 03/U04 | ASTM D629 (Secs. 13-22) |
| 03/U05 | ASTM D629 (Secs. 23-27) |
| 03/U06 | ASTM D1667 (Suffix B) |
| 03/U07 | ASTM D3574 (Test C) |
| 03/U08 | ASTM D3574 (Test D) |
| 03/U09 | ASTM D3574 (Test E) |
| 03/U10 | ASTM D3676 (Sec. 13) |
| 03/U11 | ASTM D3676 (Sec.14) |
| 03/U12 | ASTM D3676 (Sec.15) |
| 03/U13 | ASTM D3676 (Sec.16) |
| ***Tests Applicable to Carpet and Carpet Cushion*** | |
| 03/T01 | AATCC 16 (Option E) |
| 03/T02 | ASTM D2646 (Secs. 16-24) |
| 03/T02a | ASTM D2646 (Sec. 16) |
| 03/T04 | 16 CFR Part 1630 (FF-1-70) |
| ***Tests Applicable to Carpets*** | |
| 03/G01 | AATCC 20 |
| 03/G02 | AATCC 20A |
| 03/G03 | AATCC 134 |
| 03/G04 | AATCC 165 |
| 03/G05 | ASTM D418 (Sec. 8) |
| 03/G05a | ASTM D5848 (Sec. 8) |
| 03/G06 | ASTM D418 (Sec. 9) |
| 03/G06a | ASTM D5848 (Sec. 9) |
| 03/G07 | ASTM D418 (Secs. 10-11) |
| 03/G08 | ASTM D418 (Sec. 13) |
| 03/G08a | ASTM D5823 |
| 03/G09 | ASTM D1335 |
| 03/G10 | ASTM D3936 |
| 03/G11 | ASTM D5252 |
| 03/G12 | ASTM E648 |
| 03/G13 | ASTM E662 |
| 03/G14 | Fed Spec, DDD-C-0095A |
| 03/G15 | ASTM D6119 |
| 03/G16 | CRI TM-101 |

**NVLAP LAB CODE 100109-0**

### Integrex Testing Systems - Product Testing Laboratory

2790 Columbus Road, Route 16
Granville, OH 43023-1200
Contact: Mr. J. Michael Stair
Phone: 740-321-7053
Fax: 740-321-4080
E-Mail: mike.stair@owenscorning.com

### Thermal Insulation Materials

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Flammability*** | |
| 01/F02 | ASTM E84 |
| 01/F05 | ASTM E136 |
| 01/F07 | 16 CFR-Part 1209.6 |
| 01/F08 | 16 CFR-Part 1209.7 |
| ***Mass, Density, and Dimensional Stability*** | |
| 01/D02 | ASTM C167 |
| 01/D08 | ASTM C302 |
| 01/D09 | ASTM C303 |
| 01/D11 | ASTM C356 |
| 01/D12 | ASTM C411 |
| 01/D24 | ASTM C739 (Sec. 12) |
| 01/D27 | ASTM C739 (Sec. 8) |
| ***Related Material Properties*** | |
| 01/V04 | ASTM E96 |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| 01/V07 | ASTM C1104/C1104M |

*Streugth*

| | |
|---|---|
| 01/S01a | ASTM C165 (Proc. A) |
| 01/S02 | ASTM C203 |
| 01/S08 | ASTM C446 |

*Thermal Resistance*

| | |
|---|---|
| 01/T01 | ASTM C177 |
| 01/T05 | ASTM C335 |
| 01/T06 | ASTM C518 |
| 01/T09 | ASTM C653 |
| 01/T10 | ASTM C687 |
| 01/T11 | ASTM C976 |

### Acoustical Testing Services

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P03 | ASTM C423 |
| 08/P04 | ASTM C522 |
| 08/P06 | ASTM E90 |
| 08/P10 | ANSI S12.31 |
| 08/P11 | ISO 3744 |
| 08/P21 | ISO 3745 |
| 08/P35 | ASTM E1050 |
| 08/P46 | ISO 3741 |

**NVLAP LAB CODE 100113-0**

### Holometrix - Micromet

25 Wiggins Avenue
Bedford, MA 01730-2323
Contact: Mr. Timothy Kunz
Phone: 781-275-3300 x245
Fax: 781-275-3705
E-Mail: tkunz@holometrix.com
URL: http://www.holometrix.com

### Thermal Insulation Materials

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|

*Thermal Resistauce*

| | |
|---|---|
| 01/T01 | ASTM C177 |
| 01/T05 | ASTM C335 |
| 01/T06 | ASTM C518 |

**NVLAP LAB CODE 100120-0**

### Commercial Testing Company

1215 South Hamilton Street
P.O. Box 985
Dalton, GA 30722-0985
Contact: Mr. Jonathan Jackson
Phone: 706-278-3935
Fax: 706-278-3936
E-Mail: jjackson@commercialtesting.com
URL: http://www.commercialtesting.com

### Carpet and Carpet Cushion

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|

*Tests Applicable to Carpet Cushiou*

| | |
|---|---|
| 03/U01a | ASTM D3574 (Sec. 8.2 & Test A) |
| 03/U01b | ASTM D3676 (Secs. 10-12) |
| 03/U02 | ASTM D297 |
| 03/U06 | ASTM D1667 (Suffix B) |
| 03/U07 | ASTM D3574 (Test C) |
| 03/U08 | ASTM D3574 (Test D) |
| 03/U09 | ASTM D3574 (Test E) |
| 03/U10 | ASTM D3676 (Sec. 13) |
| 03/U11 | ASTM D3676 (Sec.14) |
| 03/U12 | ASTM D3676 (Sec.15) |
| 03/U13 | ASTM D3676 (Sec.16) |

*Tests Applicable to Carpet and Carpet Cushiou*

| | |
|---|---|
| 03/T01 | AATCC 16 (Option E) |
| 03/T02 | ASTM D2646 (Secs. 16-24) |
| 03/T02a | ASTM D2646 (Sec. 16) |
| 03/T03 | ASTM E84 |
| 03/T04 | 16 CFR Part 1630 (FF-1-70) |

*Tests Applicable to Carpets*

| | |
|---|---|
| 03/G01 | AATCC 20 |
| 03/G02 | AATCC 20A |
| 03/G03 | AATCC 134 |
| 03/G04 | AATCC 165 |
| 03/G05 | ASTM D418 (Sec. 8) |
| 03/G05a | ASTM D5848 (Sec. 8) |
| 03/G06 | ASTM D418 (Sec. 9) |
| 03/G06a | ASTM D5848 (Sec. 9) |
| 03/G07 | ASTM D418 (Secs. 10-11) |
| 03/G08 | ASTM D418 (Sec. 13) |
| 03/G08a | ASTM D5823 |
| 03/G09 | ASTM D1335 |
| 03/G10 | ASTM D3936 |
| 03/G12 | ASTM E648 |
| 03/G13 | ASTM E662 |

**NVLAP LAB CODE 100139-0**

### American Carpet Laboratories, Inc.

7517 Nashville Street
P.O. Box 357
Ringgold, GA 30736
Contact: Mr. Michael D. Connell
Phone: 706-935-5672
Fax: 706-891-5713

### Carpet and Carpet Cushion

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|

*Tests Applicable to Carpet Cushiou*

| | |
|---|---|
| 03/U01b | ASTM D3676 (Secs. 10-12) |
| 03/U02 | ASTM D297 |
| 03/U08 | ASTM D3574 (Test D) |
| 03/U10 | ASTM D3676 (Sec. 13) |
| 03/U11 | ASTM D3676 (Sec.14) |
| 03/U12 | ASTM D3676 (Sec.15) |
| 03/U13 | ASTM D3676 (Sec.16) |

*Tests Applicable to Carpet and Carpet Cushion*

| | |
|---|---|
| 03/T01 | AATCC 16 (Option E) |
| 03/T02 | ASTM D2646 (Secs. 16-24) |



(See 'How To Use This Directory' on page 7.)

03/T02a ASTM D2646 (Sec. 16)
03/T04 16 CFR Part 1630 (FF-1-70)

*Tests Applicable to Carpets*

03/G01 AATCC 20
03/G02 AATCC 20A
03/G04 AATCC 165
03/G05 ASTM D418 (Sec. 8)
03/G05a ASTM D5848 (Sec. 8)
03/G06 ASTM D418 (Sec. 9)
03/G06a ASTM D5848 (Sec. 9)
03/G07 ASTM D418 (Secs. 10-11)
03/G08 ASTM D418 (Sec. 13)
03/G08a ASTM D5823
03/G09 ASTM D1335
03/G10 ASTM D3936
03/G12 ASTM E648
03/G13 ASTM E662
03/G14 Fed Spec, DDD-C-0095A

**NVLAP LAB CODE 100142-0**

### Geoscience Ltd.

6260-B Marindustry Drive
San Diego, CA 92121
Contact: Dr. H. F. Poppendiek
Phone: 858-453-5483
Fax: 858-453-4694

### Thermal Insulation Materials

Accreditation Valid Through: December 31, 2001

*NVLAP*
*Code* *Designation*

*Flammability*

01/F05 ASTM E136

*Thermal Resistance*

01/T01 ASTM C177
01/T04 ASTM C236

**NVLAP LAB CODE 100146-0**

### American Testing Laboratories, Inc.

784 Flory Mill Road
P.O. Box 4014
Lancaster, PA 17604-4014
Contact: Mr. John S. Kassees
Phone: 717-569-0488
Fax: 717-569-3429

### Construction Materials Testing

Accreditation Valid Through: March 31, 2001

*NVLAP*
*Code* *Designation*

*Aggregates*

02/A03 ASTM C29
02/A04 ASTM C40
02/A06 ASTM C88
02/A07 ASTM C117
02/A09 ASTM C127
02/A10 ASTM C128
02/A11 ASTM C131
02/A12 ASTM C136
02/A44 ASTM C566
02/A46 ASTM C535

*Cement*

02/A17 ASTM C109
02/A51 ASTM C780 (Annex A7)
02/A52 ASTM C1019

*Concrete*

02/A01 ASTM C39
02/A02 ASTM C617
02/A41 ASTM C192
02/A43 ASTM C1064
02/A45 ASTM C42
02/G01 ASTM C31/C172/C143/C138/C231
02/G02 ASTM C173

*Soil and Rock*

02/L02 ASTM D422
02/L04 ASTM D698
02/L05 ASTM D854
02/L06 ASTM D1140
02/L08 ASTM D1557
02/L11 ASTM D2166
02/L13 ASTM D2216
02/L16 ASTM D2487
02/L17 ASTM D2488
02/L20 ASTM D4318
02/L23 ASTM D2922
02/L25 ASTM D3017

**NVLAP LAB CODE 100156-0**

### Mohawk Industries, Inc.- Lyerly Plant

5081 Hwy. 114
Lyerly, GA 30730
Contact: Mr. Richard Turner
Phone: 706-895-3341 x6250
Fax: 706-895-2346
E-Mail: richard_turner@mohawkind.com

### Carpet and Carpet Cushion

Accreditation Valid Through: December 31, 2001

*NVLAP*
*Code* *Designation*

*Tests Applicable to Carpet Cushion*

03/U01b ASTM D3676 (Secs. 10-12)
03/U06 ASTM D1667 (Suffix B)

*Tests Applicable to Carpet and Carpet Cushion*

03/T01 AATCC 16 (Option E)
03/T02 ASTM D2646 (Secs. 16-24)
03/T04 16 CFR Part 1630 (FF-1-70)

*Tests Applicable to Carpets*

03/G03 AATCC 134
03/G04 AATCC 165
03/G05 ASTM D418 (Sec. 8)
03/G05a ASTM D5848 (Sec. 8)
03/G06 ASTM D418 (Sec. 9)
03/G06a ASTM D5848 (Sec. 9)
03/G07 ASTM D418 (Secs. 10-11)
03/G08 ASTM D418 (Sec. 13)
03/G08a ASTM D5823
03/G09 ASTM D1335


(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| 03/G10 | ASTM D3936 |
| 03/G11 | ASTM D5252 |
| 03/G12 | ASTM E648 |
| 03/G13 | ASTM E662 |
| 03/G14 | Fed Spec, DDD-C-0095A |
| 03/G15 | ASTM D6119 |
| 03/G16 | CRI TM-101 |

**NVLAP LAB CODE 100166-0**

### Independent Textile Testing Service, Inc.

1503 Murray Avenue, P.O. Box 1948
Dalton, GA 30722-1948
Contact: Mr. L. Kent Suddeth
Phone: 706-278-3013
Fax: 706-272-7057
E-Mail: ittslab@dalton.net
URL: ittslab.com

**Carpet and Carpet Cushion**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Tests Applicable to Carpet Cushion*** | |
| 03/U01a | ASTM D3574 (Sec. 8.2 & Test A) |
| 03/U01b | ASTM D3676 (Secs. 10-12) |
| 03/U02 | ASTM D297 |
| 03/U03 | ASTM D629 (Sec. 10) |
| 03/U04 | ASTM D629 (Secs. 13-22) |
| 03/U05 | ASTM D629 (Secs. 23-27) |
| 03/U06 | ASTM D1667 (Suffix B) |
| 03/U07 | ASTM D3574 (Test C) |
| 03/U08 | ASTM D3574 (Test D) |
| 03/U09 | ASTM D3574 (Test E) |
| 03/U10 | ASTM D3676 (Sec. 13) |
| 03/U11 | ASTM D3676 (Sec.14) |
| 03/U12 | ASTM D3676 (Sec.15) |
| 03/U13 | ASTM D3676 (Sec.16) |
| ***Tests Applicable to Carpet and Carpet Cushion*** | |
| 03/T01 | AATCC 16 (Option E) |
| 03/T02 | ASTM D2646 (Secs. 16-24) |
| 03/T02a | ASTM D2646 (Sec. 16) |
| 03/T04 | 16 CFR Part 1630 (FF-1-70) |
| ***Tests Applicable to Carpets*** | |
| 03/G01 | AATCC 20 |
| 03/G02 | AATCC 20A |
| 03/G03 | AATCC 134 |
| 03/G04 | AATCC 165 |
| 03/G05 | ASTM D418 (Sec. 8) |
| 03/G05a | ASTM D5848 (Sec. 8) |
| 03/G06 | ASTM D418 (Sec. 9) |
| 03/G06a | ASTM D5848 (Sec. 9) |
| 03/G07 | ASTM D418 (Secs. 10-11) |
| 03/G08 | ASTM D418 (Sec. 13) |
| 03/G08a | ASTM D5823 |
| 03/G09 | ASTM D1335 |
| 03/G10 | ASTM D3936 |
| 03/G11 | ASTM D5252 |
| 03/G12 | ASTM E648 |
| 03/G13 | ASTM E662 |
| 03/G14 | Fed Spec, DDD-C-0095A |
| 03/G15 | ASTM D6119 |
| 03/G16 | CRI TM-101 |

**NVLAP LAB CODE 100190-0**

### Beaulieu of America - Carpet Testing Lab

1502 Coronet Drive
P.O. Box 1248
Dalton, GA 30722-1248
Contact: Mr. E. Ronald Vinyard
Phone: 706-259-4511 x7367
Fax: 706-259-2211 x7893

**Carpet and Carpet Cushion**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Tests Applicable to Carpet and Carpet Cushion*** | |
| 03/T01 | AATCC 16 (Option E) |
| 03/T02 | ASTM D2646 (Secs. 16-24) |
| 03/T02a | ASTM D2646 (Sec. 16) |
| 03/T04 | 16 CFR Part 1630 (FF-1-70) |
| ***Tests Applicable to Carpets*** | |
| 03/G04 | AATCC 165 |
| 03/G05 | ASTM D418 (Sec. 8) |
| 03/G05a | ASTM D5848 (Sec. 8) |
| 03/G06 | ASTM D418 (Sec. 9) |
| 03/G06a | ASTM D5848 (Sec. 9) |
| 03/G07 | ASTM D418 (Secs. 10-11) |
| 03/G08 | ASTM D418 (Sec. 13) |
| 03/G08a | ASTM D5823 |
| 03/G09 | ASTM D1335 |
| 03/G10 | ASTM D3936 |

**NVLAP LAB CODE 100191-0**

### STS Consultants, Ltd.

750 Corporate Woods Parkway
Vernon Hills, IL 60061
Contact: Mr. William P. Quinn
Phone: 847-279-2500
Fax: 847-279-2550
E-Mail: quinn@stsltd.com
URL: http://STSLTD.com

**Construction Materials Testing**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Aggregates*** | |
| 02/A03 | ASTM C29 |
| 02/A04 | ASTM C40 |
| 02/A06 | ASTM C88 |
| 02/A07 | ASTM C117 |
| 02/A09 | ASTM C127 |
| 02/A10 | ASTM C128 |
| 02/A11 | ASTM C131 |
| 02/A12 | ASTM C136 |
| 02/A13 | ASTM C142 |
| 02/A15 | ASTM D75 |
| 02/A44 | ASTM C566 |
| 02/A46 | ASTM C535 |


(See 'How To Use This Directory' on page 7.)

*Cement*

02/A17 ASTM C109
02/A20 ASTM C151
02/A51 ASTM C780 (Annex A7)
02/A52 ASTM C1019

*Concrete*

02/A01 ASTM C39
02/A02 ASTM C617
02/A40 ASTM C78
02/A41 ASTM C192
02/A43 ASTM C1064
02/A45 ASTM C42
02/G01 ASTM C31/C172/C143/C138/C231
02/G02 ASTM C173

*Geotextiles*

02/L28 ASTM D4354
02/L33 ASTM D4632
02/L34 ASTM D3884
02/L35 ASTM D4886
02/L36 ASTM D4533
02/L37 ASTM D4884
02/L38 ASTM D792
02/L39 ASTM D4491
02/L41 ASTM D4751
02/L42 ASTM D1777
02/L43 ASTM D4437
02/L44 ASTM D638
02/L45 ASTM D4595
02/L48 ASTM D5321
02/L49 ASTM D6243

*Road and Paving Materials*

02/M03 ASTM D140
02/M09 ASTM D1074
02/M11 ASTM D1188
02/M12 ASTM D1559
02/M19 ASTM D2172
02/M24 ASTM D2041
02/M25 ASTM D2726

*Soil and Rock*

02/L01 ASTM D4220
02/L02 ASTM D422
02/L03 ASTM D427
02/L04 ASTM D698
02/L05 ASTM D854
02/L06 ASTM D1140
02/L08 ASTM D1557
02/L10 ASTM D1883
02/L11 ASTM D2166
02/L13 ASTM D2216
02/L15 ASTM D2435
02/L16 ASTM D2487
02/L17 ASTM D2488
02/L18 ASTM D3080
02/L20 ASTM D4318
02/L21 ASTM D2434
02/L22 ASTM D2850
02/L23 ASTM D2922
02/L24 ASTM D2974
02/L25 ASTM D3017
02/L26 ASTM D4221
02/L29 Corps of Engineers - Manual EM-1110-2-1906, Appendix VII, Permeability of Fine Grained Soils Using a Triaxial Apparatus
02/L30 Corps of Engineers - Manual EM-1110-2-1906, Appendix X, Consolidated Undrained and Consolidated Drained Triaxial Test
02/L46 ASTM D5084
02/L50 ASTM D2664
02/L51 ASTM D2938
02/L52 ASTM D3148
02/L53 ASTM D3967
02/L54 ASTM D4543
02/L55 ASTM D5407
02/L56 ASTM D5607

*Standard Practices*

02/A38 ASTM E329
02/A39 ASTM C1077
02/L32 ASTM D3740
02/M26 ASTM D3666

**NVLAP LAB CODE 100193-0**

## Shaw Industries, Inc., Central Laboratory Operations

South Glenwood Avenue
P.O. Box 2128
Dalton, GA 30722-2128
Contact: Mr. Jerry T. Wright, Jr.
Phone: 706-275-2205
Fax: 706-275-2221
E-Mail: jay.wright@shawinc.com

### Carpet and Carpet Cushion

Accreditation Valid Through: June 30, 2001

*NVLAP Code* *Designation*

*Tests Applicable to Carpet and Carpet Cushion*

03/T01 AATCC 16 (Option E)
03/T02 ASTM D2646 (Secs. 16-24)
03/T04 16 CFR Part 1630 (FF-1-70)

*Tests Applicable to Carpets*

03/G04 AATCC 165
03/G06 ASTM D418 (Sec. 9)
03/G07 ASTM D418 (Secs. 10-11)
03/G08 ASTM D418 (Sec. 13)
03/G09 ASTM D1335
03/G10 ASTM D3936
03/G12 ASTM E648
03/G13 ASTM E662
03/G15 ASTM D6119
03/G16 CRI TM-101


(See 'How To Use This Directory' on page 7.)

**NVLAP LAB CODE 100210-0**

**The Dow Chemical Company- NA System House-Joliet**

2050 North Broadway
Joliet, IL 60435-3187
Contact: Mr. Robert Braun
Phone: 815-774-6500 x1560
Fax: 815-774-6542
E-Mail: bgbraun@dow.com

**Thermal Insulation Materials**

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Mass, Density, and Dimensional Stability*** | |
| 01/D15 | ASTM D756 (Proc. A) |
| 01/D16 | ASTM D756 (Proc. B) |
| 01/D17 | ASTM D756 (Proc. E) |
| 01/D18 | ASTM D1622 |
| 01/D19 | ASTM D2126 |
| 01/D23 | ASTM D2842 |
| ***Related Material Properties*** | |
| 01/V04 | ASTM E96 |
| ***Strength*** | |
| 01/S02 | ASTM C203 |
| 01/S07 | ASTM C273 |
| 01/S11 | ASTM D1621 (Proc. A of ASTM Practice D618) |
| ***Thermal Resistance*** | |
| 01/T06 | ASTM C518 |

**NVLAP LAB CODE 100227-0**

**Riverbank Acoustical Laboratories**

1512 S. Batavia Avenue
Geneva, IL 60134-3302
Contact: Mr. James E. Stangel
Phone: 630-232-0104
Fax: 630-232-0138
E-Mail: jstangel@iitri.org
URL: http://riverbank.iitri.org

**Acoustical Testing Services**

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P03 | ASTM C423 |
| 08/P05 | ASTM C523 |
| 08/P06 | ASTM E90 |
| 08/P07 | ASTM E492 |
| 08/P10 | ANSI S12.31 |
| 08/P30 | ASTM E1408 |
| 08/P39 | ANSI S12.5 |
| 08/P44 | ISO 354 |
| 08/P45 | ISO 140, Part 3 |
| 08/P46 | ISO 3741 |
| 08/P51 | ISO 6926 |

**NVLAP LAB CODE 100228-0**

**Armstrong Acoustic Labs, Armstrong World Ind., Inc. Innov. Center**

P.O. Box 3511
2500 Columbia Avenue
Lancaster, PA 17604
Contact: Mr. Robert Alan Hallman
Phone: 717-396-6225
Fax: 717-396-5865
E-Mail: Robert_A_Hallman@armstrong.com

**Acoustical Testing Services**

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P03 | ASTM C423 |
| 08/P07 | ASTM E492 |
| 08/P28 | ASTM E1375 |
| 08/P29 | ASTM E1376 |
| 08/P33 | ASTM E1111 |
| 08/P34 | ASTM E1414 |
| 08/P44 | ISO 354 |
| 08/P49 | AMA-1-II-67 |
| 08/P50 | ISO 140, Part 9 |

**NVLAP LAB CODE 100239-0**

**Hufcor Laboratory**

1017 South Jackson Street
P.O. Box 591
Janesville, WI 53547-0591
Contact: Mr. Todd A. Williams
Phone: 608-758-8329
Fax: 608-758-8300
E-Mail: twilliams@hufcor.com

**Acoustical Testing Services**

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P06 | ASTM E90 |
| 08/P31 | ASTM E336 |

**NVLAP LAB CODE 100247-0**

**Beaulieu of America Hollytex Division**

505 N.E. 7th
P.O. Box 369
Anadarko, OK 73005-2299
Contact: Ms. Carla McCathern
Phone: 405-247-7453
Fax: 405-247-9303

**Carpet and Carpet Cushion**

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Tests Applicable to Carpet and Carpet Cushion*** | |
| 03/T01 | AATCC 16 (Option E) |



(See 'How To Use This Directory' on page 7.)

03/T04 16 CFR Part 1630 (FF-1-70)

*Tests Applicable to Carpets*

03/G04 AATCC 165
03/G09 ASTM D1335
03/G10 ASTM D3936

**NVLAP LAB CODE 100248-0**

## Knauf Fiber Glass Research Laboratory

240 Elizabeth Street
Shelbyville, IN 46176-1496
Contact: Mr. Timothy R. Jonas
Phone: 317-398-4434
Fax: 317-398-3675
E-Mail: trj1@knauffiberglass.com

### Thermal Insulation Materials

Accreditation Valid Through: March 31, 2001

*NVLAP*
*Code* *Designation*

*Corrosiveness*

01/C03 ASTM C665 (Sec. 13.8)

*Mass, Density, and Dimensional Stability*

01/D02 ASTM C167
01/D08 ASTM C302
01/D09 ASTM C303
01/D11 ASTM C356
01/D12 ASTM C411
01/D13 ASTM C519

*Strength*

01/S01a ASTM C165 (Proc. A)

*Thermal Resistance*

01/T01 ASTM C177
01/T05 ASTM C335
01/T06 ASTM C518
01/T09 ASTM C653
01/T10 ASTM C687

**NVLAP LAB CODE 100251-0**

## St. of California, Bur. of Home Furnishings & Thermal Insulation

3485 Orange Grove Avenue
North Highlands, CA 95660-5595
Contact: Dr. Stephen J. Fischer
Phone: 916-574-2060
Fax: 916-574-2449
E-Mail: steve_fischer@dca.ca.gov

### Thermal Insulation Materials

Accreditation Valid Through: June 30, 2001

*NVLAP*
*Code* *Designation*

*Corrosiveness*

01/C01 ASTM C739 (Sec. 9)
01/C02 16 CFR-Part 1209.5

*Flammability*

01/F07 16 CFR-Part 1209.6
01/F08 16 CFR-Part 1209.7
01/F09 ASTM C739 (Sec. 10) by ASTM E970
01/F10 ASTM C739 (Sec. 14)

*Mass, Density, and Dimensional Stability*

01/D02 ASTM C167
01/D08 ASTM C302
01/D09 ASTM C303
01/D26 16 CFR-Part 1209.4
01/D27 ASTM C739 (Sec. 8)

*Thermal Resistance*

01/T01 ASTM C177
01/T05 ASTM C335
01/T10 ASTM C687

**NVLAP LAB CODE 100252-0**

## DL Labs, Inc.

116 East 16th Street
New York, NY 10003-2112
Contact: Mr. Thomas J. Sliva
Phone: 212-777-4445
Fax: 212-505-8419
E-Mail: dllabs@aol.com
URL: http://www.dllabs.com

### Commercial Products Testing

Accreditation Valid Through: December 31, 2001

*NVLAP*
*Code* *Designation*

*Building Seals and Sealants*

13/O01 ASTM C510
13/O02a ASTM C603
13/O02b CAN2-19.0-M77, Meth. 3.1
13/O03 ASTM C639
13/O04a ASTM C661
13/O04b CAN2-19.0-M77, Meth. 8.1
13/O05a ASTM C679
13/O05b CAN2-19.0-M77, Meth. 2.1
13/O06 ASTM C681
13/O07 ASTM C711
13/O08 ASTM C712
13/O09 ASTM C713
13/O10 ASTM C718
13/O11a ASTM C719
13/O11b CAN2-19.0-M77, Meth. 14.4
13/O12 ASTM C731
13/O13 ASTM C732
13/O14 ASTM C733
13/O15 ASTM C734
13/O16 ASTM C736
13/O17 ASTM C741
13/O18 ASTM C742
13/O19a ASTM C792
13/O19b CAN2-19.0-M77, Meth. 5.1
13/O20 ASTM C793
13/O21 ASTM C794
13/O22 ASTM C910
13/O23 ASTM D2202
13/O24 ASTM D2203
13/O25 ASTM D2376
13/O26 ASTM D2377
13/O27 ASTM D2450
13/O28 ASTM D2451
13/O29 ASTM D2452
13/O30 ASTM D2453
13/O31 CAN2-19.0-M77, Meth. 7.1


(See 'How To Use This Directory' on page 7.)

13/O32 CAN2-19.0-M77, Meth. 7.3
13/O33 CAN2-19.0-M77, Meth. 8.2
13/O34 CAN2-19.0-M77, Meth. 11.1
13/O35 CAN2-19.0-M77, Meth. 14.7
13/O36 CAN2-19.0-M77, Meth. 19.2
13/O37 ASTM C920
13/O38 ASTM C1241
13/O39 ASTM C1183
13/O40 ASTM C1246
13/O41 CAN2-19.0-M77, Meth. 9.1
13/O42 CAN2-19.0-M77, Meth. 9.2
13/O43 CAN2-19.0-M77, Meth. 14.6
13/O44 CAN2-19.0-M77, Meth. 18.2
13/O45 ASTM C834

***Paints and Related Coatings and Materials***

09/A01 ASTM D56
09/A02 ASTM D93 (Method A)
09/A03 ASTM D153
09/A04 ASTM D185
09/A05 ASTM D281
09/A07 ASTM D523
09/A08 ASTM D562
09/A09 ASTM D1005
09/A10 ASTM D1186
09/A11 ASTM D1200
09/A12 ASTM D1210
09/A13 ASTM D1212 (Method A)
09/A14 ASTM D1296
09/A15 ASTM D1310
09/A16 ASTM D1400
09/A17 ASTM D1475
09/A18 ASTM D1544
09/A19 ASTM D1729
09/A20 ASTM D2244
09/A21 ASTM D3278
09/A22 ASTM D3363
09/A23 ASTM D3793
09/A25 ASTM D4212
09/A26 ASTM E1347
09/A28 ASTM E313
09/A30 CGSB Method 1-GP-71, Meth. 10.1
09/A31 CGSB Method 1-GP-71, Meth. 12.8
09/A32 CGSB Method 1-GP-71, Meth. 45.1
09/A33 ASTM D2196
09/B02 ASTM D332
09/B03 ASTM D344
09/B04 ASTM D610
09/B05 ASTM D4214
09/B06 ASTM D660
09/B07 ASTM D661
09/B08 ASTM D662
09/B09 ASTM D711
09/B10 ASTM D714
09/B11 ASTM D772
09/B12 ASTM D868
09/B13a ASTM D968
09/B13b CGSB Method 1-GP-71 Meth. 104.1
09/B14 ASTM D869
09/B15 ASTM D870
09/B16 ASTM D913
09/B18 ASTM D969
09/B19a ASTM D1308
09/B19b CGSB Method 1-GP-71, Meth. 105.1
09/B19c CGSB Method 1-GP-71, Meth. 106.1
09/B19d CGSB Method 1-GP-71, Meth. 107.1
09/B19e CGSB Method 1-GP-71, Meth. 110.1
09/B20 ASTM D1309
09/B23 ASTM D1640
09/B24 ASTM D522
09/B25 ASTM D2197
09/B26 ASTM D2243
09/B27 ASTM D2248
09/B29 ASTM D2486
09/B31 ASTM D2805
09/B32 ASTM D3273
09/B33 ASTM D3274
09/B34 ASTM D3450
09/B37 ASTM D4060
09/B38 ASTM D4062
09/B39 ASTM D4213
09/B41 Fed. Std. 141, Method 4494
09/B42 Fed. Std. 141, Method 4061
09/B43 ASTM D3359
09/B44 ASTM D4828
09/B45 CGSB Method 1-GP-71, Meth. 14.1
09/B46a ASTM D1849
09/B46b CGSB Method 1-GP-71, Meth. 30.3
09/B47 CGSB Method 1-GP-71, Meth. 32.1
09/B48 CGSB Method 1-GP-71, Meth. 37.3
09/B49 CGSB Method 1-GP-71, Meth. 112.2
09/B50 CGSB Method 1-GP-71, Meth. 114.1
09/B51 CGSB Method 1-GP-71, Meth. 116.2
09/B52 CGSB Method 1-GP-71, Meth. 123.2
09/B53 CGSB Method 1-GP-71, Meth. 125.1
09/B54 CGSB Method 1-GP-71, Meth. 127.1
09/B55 CGSB Method 1-GP-71, Meth. 130.1
09/B56 CGSB Method 1-GP-71, Meth. 131.2
09/B57 CGSB Method 1-GP-71, Meth. 132.1
09/B58 CGSB Method 1-GP-71, Meth. 134.1
09/B59 CGSB Method 1-GP-71, Meth. 135.1
09/B59 CGSB Method 1-GP-71, Meth. 135.1
09/B60 CGSB Method 1-GP-71, Meth. 142.1
09/B61 ASTM D412
09/B62 ASTM D1653
09/B63 ASTM D2134
09/B64 ASTM D2370
09/B65 ASTM D3258
09/B66 ASTM D3806
09/B67 ASTM D4400
09/B68 ASTM D4541
09/B69 ASTM D4707
09/B70 ASTM D4946
09/B71 ASTM D2794
09/C07 ASTM D1133
09/C09 ASTM D1259
09/C11 ASTM D1353
09/C12 ASTM D1364
09/C22 ASTM D1644
09/C26a ASTM D2369
09/C26b CGSB Method 1-GP-71, Meth.17.1
09/C26c CGSB Method 1-GP-71, Meth. 19.1
09/C27 ASTM D2371
09/C28 ASTM D2697
09/C29 ASTM D2698


(See 'How To Use This Directory' on page 7.)

09/C30 ASTM D2832
09/C37 ASTM D3723
09/C39 ASTM D3960
09/C40 ASTM D4017
09/C42 CGSB Method 1-GP-71, Meth. 21.1
09/C43 CGSB Method 1-GP-71, Meth. 24.1
09/C44 ASTM D5095
09/C45 CGSB Method 1-GP-71, Meth. 69.3
09/D01 ASTM B117
09/D02 ASTM D609
09/D03 ASTM D822
09/D04 ASTM D823 (Limited to Practices B, C, D and E)
09/D05 ASTM D1006
09/D06 ASTM D1014
09/D07 ASTM D1654
09/D13 ASTM D3924
09/D14 ASTM G23
09/D16 ASTM G53
09/D17 ASTM D4446
09/D18 ASTM D5401

***Plastics***

15/A26 ASTM D2240

**NVLAP LAB CODE 100255-0**

## Underwriters Laboratories, Inc.

1285 Walt Whitman Road
Melville, NY 11747-3081
Contact: Mr. Rick A. Titus
Phone: 847-272-8800
Fax: 847-509-6321
E-Mail: Rick.A.Titus@us.ul.com
URL: http://www.ul.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

*NVLAP Code* *Designation*

***Emissions Test Methods:***

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b Radiated Emissions
12/T51 AS/NZS 3548

***Immunity Test Methods:***

12/I01 IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test
12/I02 IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test
12/I03 IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test
12/I04 IEC 61000-4-5 (1995): Surge Immunity Test
12/I05 IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields
12/I06 IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test
12/I07 IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests

***Safety Test Methods:***

12/T41 ACA TS-001
12/T50 AS/NZS 3260

***Telecommunications Test Methods:***

12/CS03 CS-03
12/T01 Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital
12/T01a 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection
12/T01b 68.316 Hearing Aid Compatibility: technical standards
12/T01c 68.302 Environmental simulation (Par. a,b)
12/T42 ACA TS-002
12/T44 ACA TS-004
12/T45 ACA TS-006
12/T46 ACA TS-008

### Energy Efficient Lighting Products

Accreditation Valid Through: September 30, 2001

*NVLAP Code* *Designation*

***Color Measurements***

22/C01 IES LM-58

***Electrical Measurements***

22/E01 IES LM-9
22/E02 IES LM-45
22/E04 IES LM-66
22/E05 ANSI-C78.375

***Life Tests***

22/L01 IES LM-40
22/L04 IES LM-65

***Photometric Measurements***

22/P01a IES LM-9 (Total Flux)
22/P03a IES LM-45 (Total Flux)
22/P05a IES LM-66 (Total Flux)


(See 'How To Use This Directory' on page 7.)

**NVLAP LAB CODE 100256-0**

### Western Electro-Acoustic Lab., Inc.

1711 16th Street
Santa Monica, CA 90404
Contact: Mr. Gary E. Mange
Phone: 310-450-1733
Fax: 310-396-3424
E-Mail: gmange@weal.com

### Acoustical Testing Services

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P03 | ASTM C423 |
| 08/P06 | ASTM E90 |
| 08/P30 | ASTM E1408 |
| 08/P31 | ASTM E336 |
| 08/P32 | ASTM E1007 |
| 08/P45 | ISO 140, Part 3 |

**NVLAP LAB CODE 100267-0**

### Retlif Testing Laboratories

795 Marconi Avenue
Ronkonkoma, NY 11779-7231
Contact: Mr. Ross A. Hansen
Phone: 631-737-1500
Fax: 631-737-1497
E-Mail: rhansen@retlif.com
URL: http://www.retlif.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Immunity Test Methods:*** | |
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |
| ***MIL-STD-462 : Conducted Emissions:*** | |
| 12/A01 | MIL-STD-462 Method CE01 |
| 12/A04 | MIL-STD-462 Method CE02 |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A08 | MIL-STD-462 Method CE04 |
| 12/A10 | MIL-STD-462 Method CE06 |
| 12/A12 | MIL-STD-462 Method CE07 |
| 12/A13 | MIL-STD-462 Version D Method CE101 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |
| 12/A15 | MIL-STD-462 Version D Method CE106 |
| ***MIL-STD-462 : Conducted Susceptibility:*** | |
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B04 | MIL-STD-462 Method CS03/CS04/CS05/CS08 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B06 | MIL-STD-462 Method CS07 |
| 12/B07 | MIL-STD-462 Method CS09 |
| 12/B08 | MIL-STD-462 Method CS10 |
| 12/B09 | MIL-STD-462 Method CS11 |
| 12/B10 | MIL-STD-462 Method CS12 |
| 12/B11 | MIL-STD-462 Method CS13 |
| 12/B12 | MIL-STD-462 Version D Method CS101 |
| 12/B13 | MIL-STD-462 Version D Method CS103 |
| 12/B14 | MIL-STD-462 Version D Method CS104 |
| 12/B15 | MIL-STD-462 Version D Method CS105 |
| 12/B16 | MIL-STD-462 Version D Method CS109 |
| 12/B17 | MIL-STD-462 Version D Method CS114 |
| 12/B18 | MIL-STD-462 Version D Method CS115 |
| 12/B19 | MIL-STD-462 Version D Method CS116 |
| ***MIL-STD-462 : Radiated Emissions:*** | |
| 12/D01 | MIL-STD-462 Method RE01 |
| 12/D02 | MIL-STD-462 Method RE02 |
| 12/D03 | MIL-STD-462 Method RE03 |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |
| 12/D06 | MIL-STD-462 Version D Method RE103 |
| ***MIL-STD-462 : Radiated Susceptibility:*** | |
| 12/E01 | MIL-STD-462 Method RS01 |
| 12/E02 | MIL-STD-462 Method RS02 |
| 12/E04 | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |
| 12/E05 | MIL-STD-462 Method RS05 |
| 12/E07 | MIL-STD-462 Method RS06 |
| 12/E08 | MIL-STD-462 Version D Method RS101 |



(See 'How To Use This Directory' on page 7.)

12/E09 MIL-STD-462 Version D Method RS103
12/E10 MIL-STD-462 Version D Method RS105

***Telecommunications Test Methods:***

12/CS03 CS-03
12/T01 Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital
12/T01a 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection
12/T01b 68.316 Hearing Aid Compatibility: technical standards
12/T01c 68.302 Environmental simulation (Par. a,b)

**NVLAP LAB CODE 100267-1**

## Retlif Testing Laboratories

101 New Boston Road
Goffstown, NH 03045
Contact: John Monahan
Phone: 631-497-4600
Fax: 631-497-5281

URL: http://www.retlif.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

*NVLAP Code* *Designation*

***Emissions Test Methods:***

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b Radiated Emissions
12/T51 AS/NZS 3548

**NVLAP LAB CODE 100268-0**

## TUV Product Service, Inc.

10040 Mesa Rim Road
San Diego, CA 92121-1034
Contact: Mr. R. Barry Wallen
Phone: 619-546-3999
Fax: 619-546-0364
E-Mail: bwallen@TUVps.com
URL: http://www.tuvps.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

*NVLAP Code* *Designation*

***Emissions Test Methods:***

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b Radiated Emissions
12/T51 AS/NZS 3548

***MIL-STD-462 : Conducted Emissions:***

12/A01 MIL-STD-462 Method CE01
12/A04 MIL-STD-462 Method CE02
12/A06 MIL-STD-462 Method CE03
12/A08 MIL-STD-462 Method CE04
12/A10 MIL-STD-462 Method CE06
12/A12 MIL-STD-462 Method CE07

***MIL-STD-462 : Conducted Susceptibility:***

12/B01 MIL-STD-462 Method CS01
12/B02 MIL-STD-462 Method CS02
12/B04 MIL-STD-462 Method CS03/CS04/CS05/CS08
12/B05 MIL-STD-462 Method CS06
12/B06 MIL-STD-462 Method CS07
12/B07 MIL-STD-462 Method CS09

***MIL-STD-462 : Radiated Emissions:***

12/D01 MIL-STD-462 Method RE01
12/D02 MIL-STD-462 Method RE02
12/D03 MIL-STD-462 Method RE03

***MIL-STD-462 : Radiated Susceptibility:***

12/E01 MIL-STD-462 Method RS01
12/E02 MIL-STD-462 Method RS02
12/E03 MIL-STD-462 Method RS03 (Consult laboratory for field strengths available)
12/E04 MIL-STD-462 Method RS03 employing



(See 'How To Use This Directory' on page 7.)

RADHAZ procedures for high level testing (Consult laboratory for field strengths available)

**NVLAP LAB CODE 100269-0**

**Intermec Technologies Corporation**
550 Second Street S.E.
Cedar Rapids, IA 52401-2094
Contact: Mr. Cedric Brownfield
Phone: 319-846-2415
Fax: 319-846-2475
E-Mail: cedric.brownfield@intermec.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 100270-0**

**Intertek Testing Services NA Inc.**
70 Codman Hill Road
Boxborough, MA 01719
Contact: Mr. Robert F. Martin
Phone: 978-635-8606
Fax: 978-263-7086
E-Mail: rfm@itsqs.com
URL: http://www.etlsemko.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***MIL-STD-462 : Conducted Emissions:*** | |
| 12/A01 | MIL-STD-462 Method CE01 |
| 12/A04 | MIL-STD-462 Method CE02 |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A08 | MIL-STD-462 Method CE04 |
| 12/A10 | MIL-STD-462 Method CE06 |
| 12/A12 | MIL-STD-462 Method CE07 |
| ***MIL-STD-462 : Conducted Susceptibility:*** | |
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B04 | MIL-STD-462 Method CS03/CS04/CS05/CS08 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B06 | MIL-STD-462 Method CS07 |
| 12/B07 | MIL-STD-462 Method CS09 |
| 12/B08 | MIL-STD-462 Method CS10 |
| 12/B09 | MIL-STD-462 Method CS11 |
| 12/B10 | MIL-STD-462 Method CS12 |
| 12/B11 | MIL-STD-462 Method CS13 |
| ***MIL-STD-462 : Radiated Emissions:*** | |
| 12/D01 | MIL-STD-462 Method RE01 |
| 12/D02 | MIL-STD-462 Method RE02 |
| 12/D03 | MIL-STD-462 Method RE03 |
| ***MIL-STD-462 : Radiated Susceptibility:*** | |
| 12/E01 | MIL-STD-462 Method RS01 |
| 12/E02 | MIL-STD-462 Method RS02 |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available) |
| 12/E04 | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |
| 12/E05 | MIL-STD-462 Method RS05 |
| 12/E07 | MIL-STD-462 Method RS06 |
| ***Safety Test Methods:*** | |
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |
| ***Telecommunications Test Methods:*** | |
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |
| 12/T42 | ACA TS-002 |
| 12/T43 | ACA TS-003 |
| 12/T44 | ACA TS-004 |
| 12/T45 | ACA TS-006 |
| 12/T49 | ACA TS-016 |

**NVLAP LAB CODE 100271-0**

**TUV Product Service, Inc.**
1775 Old Hwy. 8 NW, Suite 104
New Brighton, MN 55112-1891
Contact: Mr. R. Barry Wallen
Phone: 303-402-5241
Fax: 303-449-3004
E-Mail: bwallen@tuvps.com
URL: http://www.tuvglobal.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Immunity Test Methods:*** | |
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |
| ***MIL-STD-462 : Conducted Emissions:*** | |
| 12/A01 | MIL-STD-462 Method CE01 |
| 12/A04 | MIL-STD-462 Method CE02 |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A08 | MIL-STD-462 Method CE04 |
| 12/A12 | MIL-STD-462 Method CE07 |
| ***MIL-STD-462 : Conducted Susceptibility:*** | |
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B07 | MIL-STD-462 Method CS09 |
| ***MIL-STD-462 : Radiated Emissions:*** | |
| 12/D01 | MIL-STD-462 Method RE01 |
| 12/D02 | MIL-STD-462 Method RE02 |
| ***MIL-STD-462 : Radiated Susceptibility:*** | |
| 12/E01 | MIL-STD-462 Method RS01 |
| 12/E02 | MIL-STD-462 Method RS02 |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available) |
| 12/E04 | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |
| 12/E07 | MIL-STD-462 Method RS06 |
| ***Safety Test Methods:*** | |
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |

**NVLAP LAB CODE 100271-1**

**TUV Product Service, Inc.**
5541 Central Avenue
Boulder, CO 80301-2846
Contact: R. Barry Wallen
Phone: 303-402-5241
Fax: 303-449-3004
E-Mail: jdoolittle@tuvps.com
URL: http://www.tuvglobal.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 100272-0**

### Communication Certification Laboratory

1940 West Alexander Street
Salt Lake City, UT 84119-2039
Contact: Ms. Anh T. Wride
Phone: 801-972-6146
Fax: 801-972-8432
E-Mail: wsh@cclab.com
URL: http://www.cclab.com/

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Safety Test Methods:*** | |
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |
| ***Telecommunications Test Methods:*** | |
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |
| 12/T42 | ACA TS-002 |
| 12/T43 | ACA TS-003 |
| 12/T44 | ACA TS-004 |
| 12/T45 | ACA TS-006 |
| 12/T46 | ACA TS-008 |
| 12/T49 | ACA TS-016 |

**NVLAP LAB CODE 100273-0**

### MET Laboratories, Inc.

914 W. Patapsco Avenue
Baltimore, MD 21230-3432
Contact: Mr. Robert Frier
Phone: 410-354-3300
Fax: 410-354-3313
E-Mail: rfrier@metlabs.com
URL: http://www.metlabs.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Immunity Test Methods:*** | |
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |
| ***Safety Test Methods:*** | |
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |



(See 'How To Use This Directory' on page 7.)

*Telecommunications Test Methods:*

| | |
|---|---|
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |
| 12/T42 | ACA TS-002 |
| 12/T43 | ACA TS-003 |
| 12/T44 | ACA TS-004 |
| 12/T45 | ACA TS-006 |
| 12/T49 | ACA TS-016 |

**NVLAP LAB CODE 100274-0**

## Intertek Testing Services NA Inc.

731 Enterprise Drive
Lexington, KY 40510-1029
Contact: Mr. Tim Scott
Phone: 859-226-1083
Fax: 859-225-1050
E-Mail: tims@itsqs.com
URL: http://www.testmark.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|

*Emissions Test Methods:*

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

*Immunity Test Methods:*

| | |
|---|---|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |

*Safety Test Methods:*

| | |
|---|---|
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |

*Telecommunications Test Methods:*

| | |
|---|---|
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |
| 12/T42 | ACA TS-002 |
| 12/T43 | ACA TS-003 |
| 12/T44 | ACA TS-004 |
| 12/T45 | ACA TS-006 |
| 12/T46 | ACA TS-008 |
| 12/T49 | ACA TS-016 |

**NVLAP LAB CODE 100275-0**

## Lucent Technologies, Global Product Compliance Lab

101 Crawfords Corner Road, M/S 11C-195
P.O. Box 3030
Holmdel, NJ 07733-3030
Contact: Mr. E. Gardner Burkhardt
Phone: 732-332-6001
Fax: 732-332-5999
E-Mail: egburkhardt@lucent.com
URL: http://www.gpcl.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|

*Emissions Test Methods:*

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference |



(See 'How To Use This Directory' on page 7.)

Characteristics of Information Technology Equipment
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b Radiated Emissions
12/T51 AS/NZS 3548

***Immunity Test Methods:***

12/I01 IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test
12/I02 IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test
12/I03 IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test
12/I04 IEC 61000-4-5 (1995): Surge Immunity Test
12/I05 IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields
12/I07 IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests

***Safety Test Methods:***

12/T41 ACA TS-001
12/T50 AS/NZS 3260

***Telecommunications Test Methods:***

12/T42 ACA TS-002
12/T44 ACA TS-004
12/T45 ACA TS-006
12/T46 ACA TS-008

**NVLAP LAB CODE 100276-0**

## D.L.S. Electronic Systems, Inc.

1250 Peterson Drive
Wheeling, IL 60090-6454
Contact: Mr. Brian J. Mattson
Phone: 847-537-6400
Fax: 847-537-6488
E-Mail: bmattson@dlsemc.com
URL: http://www.dlsemc.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

*NVLAP Code* *Designation*

***Emissions Test Methods:***

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b Radiated Emissions
12/T51 AS/NZS 3548

***Immunity Test Methods:***

12/I01 IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test
12/I02 IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test
12/I03 IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test
12/I04 IEC 61000-4-5 (1995): Surge Immunity Test
12/I05 IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields
12/I06 IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test
12/I07 IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests

**NVLAP LAB CODE 100278-0**

## Elite Electronic Engineering Inc.

1516 Centre Circle
Downers Grove, IL 60515-1082
Contact: Mr. Raymond Klouda
Phone: 630-495-9770
Fax: 630-495-9785
E-Mail: engineering@elitetest.com
URL: http://www.elitetest.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

*NVLAP Code* *Designation*

***Emissions Test Methods:***

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b Radiated Emissions
12/T51 AS/NZS 3548

***Immunity Test Methods:***

12/I01 IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test
12/I02 IEC 61000-4-3 (1995) and Amendment 1



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |

***MIL-STD-462 : Conducted Emissions:***

| | |
|---|---|
| 12/A01 | MIL-STD-462 Method CE01 |
| 12/A04 | MIL-STD-462 Method CE02 |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A08 | MIL-STD-462 Method CE04 |
| 12/A10 | MIL-STD-462 Method CE06 |
| 12/A12 | MIL-STD-462 Method CE07 |
| 12/A13 | MIL-STD-462 Version D Method CE101 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |
| 12/A15 | MIL-STD-462 Version D Method CE106 |

***MIL-STD-462 : Conducted Susceptibility:***

| | |
|---|---|
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B04 | MIL-STD-462 Method CS03/CS04/CS05/CS08 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B06 | MIL-STD-462 Method CS07 |
| 12/B07 | MIL-STD-462 Method CS09 |
| 12/B08 | MIL-STD-462 Method CS10 |
| 12/B09 | MIL-STD-462 Method CS11 |
| 12/B10 | MIL-STD-462 Method CS12 |
| 12/B11 | MIL-STD-462 Method CS13 |
| 12/B12 | MIL-STD-462 Version D Method CS101 |
| 12/B13 | MIL-STD-462 Version D Method CS103 |
| 12/B14 | MIL-STD-462 Version D Method CS104 |
| 12/B15 | MIL-STD-462 Version D Method CS105 |
| 12/B16 | MIL-STD-462 Version D Method CS109 |
| 12/B17 | MIL-STD-462 Version D Method CS114 |
| 12/B18 | MIL-STD-462 Version D Method CS115 |
| 12/B19 | MIL-STD-462 Version D Method CS116 |

***MIL-STD-462 : Radiated Emissions:***

| | |
|---|---|
| 12/D01 | MIL-STD-462 Method RE01 |
| 12/D02 | MIL-STD-462 Method RE02 |
| 12/D03 | MIL-STD-462 Method RE03 |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |
| 12/D06 | MIL-STD-462 Version D Method RE103 |

***MIL-STD-462 : Radiated Susceptibility:***

| | |
|---|---|
| 12/E01 | MIL-STD-462 Method RS01 |
| 12/E02 | MIL-STD-462 Method RS02 |
| 12/E04 | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |
| 12/E05 | MIL-STD-462 Method RS05 |
| 12/E07 | MIL-STD-462 Method RS06 |
| 12/E08 | MIL-STD-462 Version D Method RS101 |
| 12/E09 | MIL-STD-462 Version D Method RS103 |
| 12/E10 | MIL-STD-462 Version D Method RS105 |

***Telecommunications Test Methods:***

| | |
|---|---|
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |

**NVLAP LAB CODE 100280-0**

## IIT Research Institute/R&B Operation

20 Clipper Road
West Conshohocken, PA 19428-2721
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Phone: 610-825-1960 x229
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E-Mail: rvohra@iitri.org
URL: www.IITRI.org

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|

***Emissions Test Methods:***

| | |
|---|---|
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |

***MIL-STD-462 : Conducted Emissions:***

| | |
|---|---|
| 12/A01 | MIL-STD-462 Method CE01 |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A10 | MIL-STD-462 Method CE06 |
| 12/A12 | MIL-STD-462 Method CE07 |

***MIL-STD-462 : Conducted Susceptibility:***

| | |
|---|---|
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B06 | MIL-STD-462 Method CS07 |
| 12/B07 | MIL-STD-462 Method CS09 |
| 12/B08 | MIL-STD-462 Method CS10 |
| 12/B09 | MIL-STD-462 Method CS11 |
| 12/B10 | MIL-STD-462 Method CS12 |
| 12/B11 | MIL-STD-462 Method CS13 |

***MIL-STD-462 : Radiated Emissions:***

| | |
|---|---|
| 12/D01 | MIL-STD-462 Method RE01 |
| 12/D02 | MIL-STD-462 Method RE02 |

***MIL-STD-462 : Radiated Susceptibility:***

| | |
|---|---|
| 12/E01 | MIL-STD-462 Method RS01 |
| 12/E02 | MIL-STD-462 Method RS02 |
| 12/E04 | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | (Consult laboratory for field strengths available) |
| 12/E05 | MIL-STD-462 Method RS05 |

**NVLAP LAB CODE 100286-0**

### Acoustic Systems Acoustical Research Facility

415 East St. Elmo Road
P.O. Box 3610
Austin, TX 78764
Contact: Mr. Michael C. Black
Phone: 512-444-1961
Fax: 512-444-2282
E-Mail: acoustic@inetport.com

### Acoustical Testing Services

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P03 | ASTM C423 |
| 08/P06 | ASTM E90 |
| 08/P08 | ASTM E596 |
| 08/P10 | ANSI S12.31 |
| 08/P24 | ANSI S12.10 |
| 08/P35 | ASTM E1050 |
| 08/P40 | ISO 9296 |
| 08/P41 | ECMA 74 |
| 08/P42 | ECMA 109 |
| 08/P48 | ISO 7779 |

**NVLAP LAB CODE 100288-0**

### Bentley Testing Laboratory

14641 E. Don Julian Road
P.O. Box 527
City of Industry, CA 91746-3106
Contact: Ms. Sandy Kolby
Phone: 626-333-4585 x2253
Fax: 626-333-4125
E-Mail: Sandy.Kolby@us.interfaceinc.com

### Carpet and Carpet Cushion

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Tests Applicable to Carpet Cushiou*** | |
| 03/U01a | ASTM D3574 (Sec. 8.2 & Test A) |
| 03/U01b | ASTM D3676 (Secs. 10-12) |
| 03/U02 | ASTM D297 |
| 03/U07 | ASTM D3574 (Test C) |
| 03/U08 | ASTM D3574 (Test D) |
| 03/U10 | ASTM D3676 (Sec. 13) |
| 03/U11 | ASTM D3676 (Sec.14) |
| 03/U12 | ASTM D3676 (Sec.15) |
| 03/U13 | ASTM D3676 (Sec.16) |
| ***Tests Applicable to Carpet aud Carpet Cushiou*** | |
| 03/T01 | AATCC 16 (Option E) |
| 03/T04 | 16 CFR Part 1630 (FF-1-70) |
| ***Tests Applicable to Carpets*** | |
| 03/G04 | AATCC 165 |
| 03/G05 | ASTM D418 (Sec. 8) |
| 03/G05a | ASTM D5848 (Sec. 8) |
| 03/G06 | ASTM D418 (Sec. 9) |
| 03/G07 | ASTM D418 (Secs. 10-11) |
| 03/G08 | ASTM D418 (Sec. 13) |
| 03/G09 | ASTM D1335 |
| 03/G10 | ASTM D3936 |
| 03/G12 | ASTM E648 |
| 03/G13 | ASTM E662 |
| 03/G14 | Fed Spec, DDD-C-0095A |

**NVLAP LAB CODE 100290-0**

### Akzo Nobel K.K., Kashima EMC Site

1 Oaza Sunayama, Hasaki, Kashima-gun
Ibaraki 314-02
JAPAN
Contact: Mr. Shuichi Kobayashi
Phone: +81-479-40-1097
Fax: +81-479-46-1788
E-Mail: shuichi.kobayashi@nifty.ne.jp
URL: http://www.akzoemc.co.jp

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissious Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 100290-2**

### Akzo Nobel K.K., Kakegawa EMC Test Site

322 Shimotaruki, Kakegawa
Shizuoka 436-0222
JAPAN
Contact: Seiji Matsuda
Phone: +81-837-24-8191
Fax: +81-537-24-8193
E-Mail: matsuda@akzoemc.co.jp
URL: http://www.akzoemc.co.jp

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Euissious Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |



(See 'How To Use This Directory' on page 7.)

12/T51 AS/NZS 3548

**NVLAP LAB CODE 100290-3**

### Akzo Nobel K.K., Nagano EMC Test Site

3226 Yokokawa, Tatsuno, Kamiina-gun
Nagano 399-0511
JAPAN
Contact: Yoshio Kowase
Phone: +81-266-47-5311
Fax: +81-266-47-5540
E-Mail: kowase@akzoemc.co.jp
URL: http://www.akzoemc.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001
*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b Radiated Emissions
12/T51 AS/NZS 3548

**NVLAP LAB CODE 100290-4**

### Akzo Nobel K.K., Matsuda EMC Test Site

1283 Yadorigi, Matsuda, Ashigarakami-gun
Kanagawa 258-0001
JAPAN
Contact: Hideki Hayashi
Phone: +81-465-89-2316
Fax: +81-465-89-2160
E-Mail: hayashi@akzoemc.co.jp
URL: http://www.akzoemc.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001
*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b Radiated Emissions
12/T51 AS/NZS 3548

**NVLAP LAB CODE 100290-5**

### Akzo Nobel K.K., Tochigi EMC Test Site

870 Nakaawano, Awano, Kamitsuga-gun
Tochigi 322-0306
JAPAN
Contact: Kazuharu Yanagisawa
Phone: +81-289-86-7121
Fax: +81-289-86-7126
E-Mail: ohashi@akzoemc.co.jp
URL: http://www.akzoemc.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001
*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b Radiated Emissions
12/T51 AS/NZS 3548

**NVLAP LAB CODE 100296-0**

### Chomerics Test Services (CTS)

77 Dragon Court
Woburn, MA 01888-4014
Contact: Mr. David C. Inman
Phone: 781-939-4375
Fax: 781-935-2758
E-Mail: dinman@parker.com
URL: http://www.chomericstest.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001
*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 100297-0**

## Professional Testing Laboratory, Inc.

714 Glenwood Place
Dalton, GA 30721
Contact: Mr. Greg Phillips
Phone: 706-226-3283
Fax: 706-226-6787
E-Mail: protest@alltel.net

### Carpet and Carpet Cushion

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Tests Applicable to Carpet Cushion*** | |
| 03/U01a | ASTM D3574 (Sec. 8.2 & Test A) |
| 03/U01b | ASTM D3676 (Secs. 10-12) |
| 03/U02 | ASTM D297 |
| 03/U03 | ASTM D629 (Sec. 10) |
| 03/U04 | ASTM D629 (Secs. 13-22) |
| 03/U05 | ASTM D629 (Secs. 23-27) |
| 03/U06 | ASTM D1667 (Suffix B) |
| 03/U07 | ASTM D3574 (Test C) |
| 03/U08 | ASTM D3574 (Test D) |
| 03/U09 | ASTM D3574 (Test E) |
| 03/U10 | ASTM D3676 (Sec.13) |
| 03/U11 | ASTM D3676 (Sec.14) |
| 03/U12 | ASTM D3676 (Sec.15) |
| 03/U13 | ASTM D3676 (Sec.16) |
| ***Tests Applicable to Carpet and Carpet Cushion*** | |
| 03/T01 | AATCC 16 (Option E) |
| 03/T02 | ASTM D2646 (Secs. 16-24) |
| 03/T04 | 16 CFR Part 1630 (FF-1-70) |
| ***Tests Applicable to Carpets*** | |
| 03/G01 | AATCC 20 |
| 03/G02 | AATCC 20A |
| 03/G03 | AATCC 134 |
| 03/G04 | AATCC 165 |
| 03/G05 | ASTM D418 (Sec. 8) |
| 03/G06 | ASTM D418 (Sec. 9) |
| 03/G07 | ASTM D418 (Secs. 10-11) |
| 03/G08 | ASTM D418 (Sec. 13) |
| 03/G09 | ASTM D1335 |
| 03/G10 | ASTM D3936 |
| 03/G11 | ASTM D5252 |
| 03/G12 | ASTM E648 |
| 03/G13 | ASTM E662 |
| 03/G15 | ASTM D6119 |
| 03/G16 | CRI TM-101 |

**NVLAP LAB CODE 100308-0**

## Special Testing Laboratories, Inc.

21 Henry Street
P.O. Box 200
Bethel, CT 06801-0200
Contact: Mr. Richard Speciale
Phone: 203-743-7281
Fax: 203-791-2451

### Construction Materials Testing

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Aggregates*** | |
| 02/A03 | ASTM C29 |
| 02/A04 | ASTM C40 |
| 02/A06 | ASTM C88 |
| 02/A07 | ASTM C117 |
| 02/A09 | ASTM C127 |
| 02/A10 | ASTM C128 |
| 02/A11 | ASTM C131 |
| 02/A12 | ASTM C136 |
| 02/A15 | ASTM D75 |
| 02/A15 | ASTM D75 |
| 02/A44 | ASTM C566 |
| ***Concrete*** | |
| 02/A01 | ASTM C39 |
| 02/A02 | ASTM C617 |
| 02/A41 | ASTM C192 |
| 02/A43 | ASTM C1064 |
| 02/A45 | ASTM C42 |
| 02/G01 | ASTM C31/C172/C143/C138/C231 |
| 02/G02 | ASTM C173 |
| ***Road and Paving Materials*** | |
| 02/M25 | ASTM D2726 |
| ***Soil and Rock*** | |
| 02/L02 | ASTM D422 |
| 02/L04 | ASTM D698 |
| 02/L06 | ASTM D1140 |
| 02/L07 | ASTM D1556 |
| 02/L08 | ASTM D1557 |
| 02/L09 | ASTM D1558 |
| 02/L12 | ASTM D2168 |
| 02/L13 | ASTM D2216 |
| 02/L16 | ASTM D2487 |
| 02/L17 | ASTM D2488 |
| 02/L20 | ASTM D4318 |
| 02/L23 | ASTM D2922 |
| 02/L25 | ASTM D3017 |
| 02/L31 | ASTM D2167 |
| ***Standard Practices*** | |
| 02/A38 | ASTM E329 |
| 02/A39 | ASTM C1077 |
| ***Steel Materials*** | |
| 02/S02 | ASTM A370 (Sec. 14)/E190 |
| 02/S07 | ASTM E709 |
| 02/S08 | ASTM E165 |



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 100315-0

**Eastern Materials Testing Lab a division of Jaworski Geotech**

114 Woodlawn Road
Berlin, CT 06037
Contact: Mr. Kevin J. Brigandi
Phone: 800-232-3634
Fax: 888-215-9721
E-Mail: emtl@jgl-geo.com
URL: http://www.jgi-geo.com

**Construction Materials Testing**

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Aggregates*** | |
| 02/A03 | ASTM C29 |
| 02/A04 | ASTM C40 |
| 02/A06 | ASTM C88 |
| 02/A07 | ASTM C117 |
| 02/A09 | ASTM C127 |
| 02/A10 | ASTM C128 |
| 02/A12 | ASTM C136 |
| 02/A15 | ASTM D75 |
| ***Cement*** | |
| 02/A17 | ASTM C109 |
| 02/A21 | ASTM C157 |
| 02/A28 | ASTM C227 |
| 02/A30 | ASTM C266 |
| 02/A51 | ASTM C780 (Annex A7) |
| 02/A52 | ASTM C1019 |
| ***Concrete*** | |
| 02/A01 | ASTM C39 |
| 02/A02 | ASTM C617 |
| 02/A41 | ASTM C192 |
| 02/A43 | ASTM C1064 |
| 02/A45 | ASTM C42 |
| 02/G01 | ASTM C31/C172/C143/C138/C231 |
| 02/G02 | ASTM C173 |
| ***Road and Paving Materials*** | |
| 02/M19 | ASTM D2172 |
| ***Soil and Rock*** | |
| 02/L02 | ASTM D422 |
| 02/L04 | ASTM D698 |
| 02/L05 | ASTM D854 |
| 02/L06 | ASTM D1140 |
| 02/L08 | ASTM D1557 |
| 02/L12 | ASTM D2168 |
| 02/L13 | ASTM D2216 |
| 02/L16 | ASTM D2487 |
| 02/L17 | ASTM D2488 |
| 02/L20 | ASTM D4318 |
| 02/L23 | ASTM D2922 |
| 02/L25 | ASTM D3017 |
| 02/L31 | ASTM D2167 |
| ***Standard Practices*** | |
| 02/A38 | ASTM E329 |
| 02/A39 | ASTM C1077 |

NVLAP LAB CODE 100316-0

**Independent Materials Testing Laboratories, Inc.**

57 N. Washington Street
P.O. Box 745
Plainville, CT 06062-0745
Contact: Mr. David P. Aiudi
Phone: 203-525-7193
Fax: 203-747-6455

**Construction Materials Testing**

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Aggregates*** | |
| 02/A03 | ASTM C29 |
| 02/A04 | ASTM C40 |
| 02/A05 | ASTM C87 |
| 02/A06 | ASTM C88 |
| 02/A07 | ASTM C117 |
| 02/A08 | ASTM C123 |
| 02/A09 | ASTM C127 |
| 02/A10 | ASTM C128 |
| 02/A11 | ASTM C131 |
| 02/A12 | ASTM C136 |
| 02/A13 | ASTM C142 |
| 02/A15 | ASTM D75 |
| 02/A44 | ASTM C566 |
| 02/A46 | ASTM C535 |
| ***Cement*** | |
| 02/A26 | ASTM C191 |
| 02/A31 | ASTM C305 |
| 02/A51 | ASTM C780 (Annex A7) |
| 02/A52 | ASTM C1019 |
| ***Concrete*** | |
| 02/A01 | ASTM C39 |
| 02/A02 | ASTM C617 |
| 02/A40 | ASTM C78 |
| 02/A41 | ASTM C192 |
| 02/A43 | ASTM C1064 |
| 02/A45 | ASTM C42 |
| 02/G01 | ASTM C31/C172/C143/C138/C231 |
| 02/G02 | ASTM C173 |
| ***Road and Paving Materials*** | |
| 02/M08 | ASTM D979 |
| 02/M11 | ASTM D1188 |
| 02/M19 | ASTM D2172 |
| 02/M24 | ASTM D2041 |
| 02/M25 | ASTM D2726 |
| ***Soil and Rock*** | |
| 02/L01 | ASTM D4220 |
| 02/L02 | ASTM D422 |
| 02/L04 | ASTM D698 |
| 02/L05 | ASTM D854 |
| 02/L06 | ASTM D1140 |
| 02/L07 | ASTM D1556 |
| 02/L08 | ASTM D1557 |
| 02/L10 | ASTM D1883 |
| 02/L12 | ASTM D2168 |



(See 'How To Use This Directory' on page 7.)

02/L13 ASTM D2216
02/L14 ASTM D2217
02/L16 ASTM D2487
02/L17 ASTM D2488
02/L19 ASTM D4254
02/L20 ASTM D4318
02/L21 ASTM D2434
02/L23 ASTM D2922
02/L24 ASTM D2974
02/L25 ASTM D3017
02/L27 ASTM D4253
02/L29 Corps of Engineers - Manual EM-1110-2-1906, Appendix VII, Permeability of Fine Grained Soils Using a Triaxial Apparatus
02/L31 ASTM D2167

***Standard Practices***

02/A38 ASTM E329
02/A39 ASTM C1077

***Steel Materials***

02/S07 ASTM E709
02/S08 ASTM E165

**NVLAP LAB CODE 100317-0**

## Fairfield Testing Laboratory, Inc.

652 Glenbrook Road, P.O. 2310
Stamford, CT 06906
Contact: Mr. James E. Quill
Phone: 203-372-1980
Fax: 203-372-1898
E-Mail: JQuill@aol.com

### Construction Materials Testing

Accreditation Valid Through: March 31, 2001

*NVLAP*
*Code* *Designation*

***Concrete***

02/A01 ASTM C39
02/A02 ASTM C617
02/A43 ASTM C1064
02/G01 ASTM C31/C172/C143/C138/C231
02/G02 ASTM C173

***Soil and Rock***

02/L02 ASTM D422
02/L04 ASTM D698
02/L08 ASTM D1557
02/L16 ASTM D2487
02/L17 ASTM D2488
02/L23 ASTM D2922
02/L25 ASTM D3017

**NVLAP LAB CODE 100320-0**

## Materials Testing, Inc.

200 Rowe Avenue
Milford, CT 06460
Contact: Mr. Frank A. Soucy
Phone: 203-878-2765
Fax: 203-878-1504

### Construction Materials Testing

Accreditation Valid Through: December 31, 2001

*NVLAP*
*Code* *Designation*

***Aggregates***

02/A03 ASTM C29
02/A04 ASTM C40
02/A06 ASTM C88
02/A07 ASTM C117
02/A08 ASTM C123
02/A09 ASTM C127
02/A10 ASTM C128
02/A11 ASTM C131
02/A12 ASTM C136
02/A46 ASTM C535

***Cement***

02/A17 ASTM C109

***Concrete***

02/A01 ASTM C39
02/A02 ASTM C617
02/A41 ASTM C192
02/A43 ASTM C1064
02/G01 ASTM C31/C172/C143/C138/C231
02/G02 ASTM C173

***Soil and Rock***

02/L02 ASTM D422
02/L04 ASTM D698
02/L05 ASTM D854
02/L06 ASTM D1140
02/L08 ASTM D1557
02/L13 ASTM D2216
02/L23 ASTM D2922
02/L31 ASTM D2167

**NVLAP LAB CODE 100322-0**

## CSA International

178 Rexdale Boulevard
Toronto Ontario M9W 1R3
CANADA
Contact: Mr. Otto C. Krepps, P.Eng
Phone: 416-747-2798
Fax: 416-747-4173
E-Mail: otto.krepps@csa-international.org

### Commercial Products Testing

Accreditation Valid Through: March 31, 2001

*NVLAP*
*Code* *Designation*

*Plumbing*

| | |
|---|---|
| 19/F01 | ASME A112.18.1M (Sec. 5.2) |
| 19/F02 | ASME A112.18.1M (Sec. 5.14) |
| 19/F03 | ASME A112.18.1M (Sec. 6.2) |
| 19/F04 | ASME A112.18.1M (Sec. 6.4) |
| 19/F05 | ASME A112.18.1M (Sec. 6.5) |
| 19/F06 | ASME A112.18.1M (Sec. 6.6) |
| 19/F07 | ASME A112.18.1M (Sec. 6.7) |
| 19/F08 | ASME A112.18.1M (Sec. 6.8) |
| 19/F09 | ASME A112.18.1M (Sec. 5.13) |
| 19/F10 | ASME A112.18.1M (Sec. 6.3) |
| 19/M01 | ICC/ANSI A117.1 (Sec. 609, 610) |
| 19/M02 | ASME/ANSI A112.19.7M (Sec. 5, 7) |
| 19/M03 | ASME/ANSI A112.19.8M (Sec. 4, 5) |
| 19/M04 | ASTM F446 |
| 19/P01 | ANSI Z124.1 (Sec. 4, 5, 6) |
| 19/P02 | ANSI Z124.2 (Sec. 4, 5, 6) |
| 19/P03 | ANSI Z124.3 (Sec. 4, 5, 6) |
| 19/P03a | IAPMO-SS-1 (Sec. 4, 5, 6) |
| 19/P04 | ANSI Z124.4 (Sec. 4, 5) |
| 19/P05 | ANSI Z124.4 (Sec. 8) per ASME A112.19.6M (Sec. 7.1) |
| 19/P06 | ANSI/IAPMO Z124.6 (Sec. 4, 5, 6) |
| 19/P07 | ANSI/IAPMO Z124.8 (Sec. 4, 5) |
| 19/U01 | ASME/ANSI A112.18.3M (Sec. 5.1, 12.1, 12.2, 13, 14, 16) |
| 19/V01 | ASME A112.19.2M (Sec. 8.1) |
| 19/V02 | ASME A112.19.2M (Sec. 8.2) |
| 19/V03 | ASME A112.19.2M (Sec. 8.3) |
| 19/V04 | ASME A112.19.2M (Sec. 8.7) |
| 19/V05 | ASME A112.19.2M (Sec. 8.6) |
| 19/V06 | ASME A112.19.2M (Sec. 8.5) |
| 19/W01 | ASME A112.19.6 (Sec. 7.1.2) |
| 19/W02 | ASME A112.19.6 (Sec. 7.1.3) |
| 19/W03 | ASME A112.19.6 (Sec. 7.1.4) |
| 19/W04 | ASME A112.19.6 (Sec. 7.1.5) |
| 19/W05 | ASME A112.19.6 (Sec. 7.1.6) |
| 19/W06 | ASME A112.19.6 (Sec. 7.1.7) |
| 19/W07 | ASME A112.19.6 (Sec. 7.1.8) |
| 19/W08 | ASME A112.19.6 (Sec. 7.1.9) |

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Safety Test Methods:*** | |
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |

**NVLAP LAB CODE 100323-0**

### IBM Hudson Valley Acoustics Laboratory

Building 704, M/S P226
522 South Road
Poughkeepsie, NY 12601-5400
Contact: Dr. Matthew A. Nobile
Phone: 914-435-4959
Fax: 914-432-9880
E-Mail: nobile@us.ibm.com

### Acoustical Testing Services

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P03 | ASTM C423 |
| 08/P10 | ANSI S12.31 |
| 08/P11 | ISO 3744 |
| 08/P13 | ANSI S12.32 |
| 08/P21 | ISO 3745 |
| 08/P24 | ANSI S12.10 |
| 08/P38 | ANSI S12.11 |
| 08/P39 | ANSI S12.5 |
| 08/P40 | ISO 9296 |
| 08/P41 | ECMA 74 |
| 08/P42 | ECMA 109 |
| 08/P44 | ISO 354 |
| 08/P46 | ISO 3741 |
| 08/P47 | ISO 3742 |
| 08/P48 | ISO 7779 |
| 08/P51 | ISO 6926 |
| 08/P56 | ANSI S12.35 |
| 08/P57 | ANSI S12.34 |

**NVLAP LAB CODE 100325-0**

### City of San Jose, Materials Testing Laboratory

Central Service Yard
1661 Senter Road, Building A
San Jose, CA 95112
Contact: Mr. Pier L. Maggiani
Phone: 408-998-6110
Fax: 408-971-4883

### Construction Materials Testing

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Aggregates*** | |
| 02/A03 | ASTM C29 |
| 02/A04 | ASTM C40 |
| 02/A06 | ASTM C88 |



(See 'How To Use This Directory' on page 7.)

02/A07 ASTM C117
02/A09 ASTM C127
02/A10 ASTM C128
02/A11 ASTM C131
02/A12 ASTM C136
02/A13 ASTM C142
02/A15 ASTM D75
02/A16 ASTM D2419
02/A44 ASTM C566

***Cement***

02/A17 ASTM C109
02/A22 ASTM C183
02/A52 ASTM C1019

***Concrete***

02/A01 ASTM C39
02/A02 ASTM C617
02/A40 ASTM C78
02/A41 ASTM C192
02/A42 ASTM C360
02/A43 ASTM C1064
02/A45 ASTM C42
02/G01 ASTM C31/C172/C143/C138/C231
02/G02 ASTM C173

***Road and Paving Materials***

02/M01 ASTM D5
02/M03 ASTM D140
02/M05 ASTM D244
02/M07 ASTM D546
02/M08 ASTM D979
02/M09 ASTM D1074
02/M11 ASTM D1188
02/M12 ASTM D1559
02/M13 ASTM D1560
02/M14 ASTM D1561
02/M15 ASTM D1856
02/M16 ASTM D2042
02/M17 ASTM D2170
02/M18 ASTM D2171
02/M19 ASTM D2172
02/M20 ASTM D2872
02/M24 ASTM D2041
02/M25 ASTM D2726

***Soil and Rock***

02/L02 ASTM D422
02/L05 ASTM D854
02/L06 ASTM D1140
02/L08 ASTM D1557
02/L12 ASTM D2168
02/L13 ASTM D2216
02/L14 ASTM D2217
02/L16 ASTM D2487
02/L20 ASTM D4318
02/L23 ASTM D2922
02/L25 ASTM D3017
02/L47 ASTM D2844

***Standard Practices***

02/A38 ASTM E329
02/A39 ASTM C1077
02/L32 ASTM D3740
02/M26 ASTM D3666

**NVLAP LAB CODE 100339-0**

## EMC Corporation

4400 Computer Drive
Westboro, MA 01580
Contact: Mr. Joseph DeMonaco
Phone: 508-898-6051
Fax: 508-898-7729
E-Mail: Demonaco_Joe@emc.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 100340-0**

## Fairway Testing Company, Inc.

Smith Street
P.O. Box 578
Stony Point, NY 10980
Contact: Mr. Patsy J. Aguanno
Phone: 914-942-2088
Fax: 914-942-0995

### Construction Materials Testing

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Aggregates*** | |
| 02/A03 | ASTM C29 |
| 02/A04 | ASTM C40 |
| 02/A06 | ASTM C88 |
| 02/A07 | ASTM C117 |
| 02/A08 | ASTM C123 |
| 02/A09 | ASTM C127 |
| 02/A10 | ASTM C128 |
| 02/A12 | ASTM C136 |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| 02/A13 | ASTM C142 |
| 02/A15 | ASTM D75 |
| 02/A16 | ASTM D2419 |
| 02/A44 | ASTM C566 |

***Concrete***

| | |
|---|---|
| 02/A01 | ASTM C39 |
| 02/A02 | ASTM C617 |
| 02/A40 | ASTM C78 |
| 02/A41 | ASTM C192 |
| 02/A43 | ASTM C1064 |
| 02/G01 | ASTM C31/C172/C143/C138/C231 |
| 02/G02 | ASTM C173 |

***Road and Paving Materials***

| | |
|---|---|
| 02/M01 | ASTM D5 |
| 02/M07 | ASTM D546 |
| 02/M08 | ASTM D979 |
| 02/M11 | ASTM D1188 |
| 02/M12 | ASTM D1559 |
| 02/M15 | ASTM D1856 |
| 02/M19 | ASTM D2172 |
| 02/M24 | ASTM D2041 |
| 02/M25 | ASTM D2726 |

***Soil and Rock***

| | |
|---|---|
| 02/L01 | ASTM D4220 |
| 02/L02 | ASTM D422 |
| 02/L04 | ASTM D698 |
| 02/L05 | ASTM D854 |
| 02/L06 | ASTM D1140 |
| 02/L07 | ASTM D1556 |
| 02/L08 | ASTM D1557 |
| 02/L13 | ASTM D2216 |
| 02/L16 | ASTM D2487 |
| 02/L17 | ASTM D2488 |
| 02/L20 | ASTM D4318 |
| 02/L21 | ASTM D2434 |
| 02/L23 | ASTM D2922 |
| 02/L25 | ASTM D3017 |
| 02/L29 | Corps of Engineers - Manual EM-1110-2-1906, Appendix VII, Permeability of Fine Grained Soils Using a Triaxial Apparatus |

***Standard Practices***

| | |
|---|---|
| 02/A38 | ASTM E329 |
| 02/A39 | ASTM C1077 |
| 02/L32 | ASTM D3740 |
| 02/M26 | ASTM D3666 |

***Steel Materials***

| | |
|---|---|
| 02/S02 | ASTM A370 (Sec. 14)/E190 |
| 02/S07 | ASTM E709 |
| 02/S08 | ASTM E165 |

**NVLAP LAB CODE 100347-0**

### National Technical Systems

1146 Massachusetts Avenue
Boxborough, MA 01719
Contact: Mr. James Press
Phone: 978-266-1001
Fax: 978-266-1073
E-Mail: jimp@ntscorp.com
URL: http://www.ntscorp.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***MIL-STD-462 : Conducted Emissions:*** | |
| 12/A01 | MIL-STD-462 Method CE01 |
| 12/A04 | MIL-STD-462 Method CE02 |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A08 | MIL-STD-462 Method CE04 |
| 12/A12 | MIL-STD-462 Method CE07 |
| ***MIL-STD-462 : Conducted Susceptibility:*** | |
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B07 | MIL-STD-462 Method CS09 |
| ***MIL-STD-462 : Radiated Emissions:*** | |
| 12/D01 | MIL-STD-462 Method RE01 |
| 12/D02 | MIL-STD-462 Method RE02 |
| ***MIL-STD-462 : Radiated Susceptibility:*** | |
| 12/E01 | MIL-STD-462 Method RS01 |
| 12/E02 | MIL-STD-462 Method RS02 |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available) |
| 12/E04 | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |
| 12/E07 | MIL-STD-462 Method RS06 |

**NVLAP LAB CODE 100351-0**

### KTL Ottawa Inc.

3325 River Road, R.R. No. 5
Ottawa Ontario K1V 1H2
CANADA
Contact: Mr. Marc Beisheim
Phone: 613-737-9680
Fax: 613-737-9691
E-Mail: mbeisheim@ktlcanada.com
URL: http://www.ktl.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

***Immunity Test Methods:***

| | |
|---|---|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |

***Safety Test Methods:***

| | |
|---|---|
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |

***Telecommunications Test Methods:***

| | |
|---|---|
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |
| 12/T42 | ACA TS-002 |
| 12/T43 | ACA TS-003 |
| 12/T44 | ACA TS-004 |
| 12/T45 | ACA TS-006 |
| 12/T49 | ACA TS-016 |

**NVLAP LAB CODE 100374-0**

## Aearo Company, E·A·RCAL Acoustical Laboratory

7911 Zionsville Road
Indianapolis, IN 46268-1657
Contact: Mr. Elliott H. Berger
Phone: 317-692-3031
Fax: 317-692-3116
E-Mail: eberger@compuserve.com
URL: http://www.e-a-r.com

### Acoustical Testing Services

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P26 | ANSI S3.19 (ANSI S3.19-1974) |
| 08/P27 | ANSI S12.6 |

**NVLAP LAB CODE 100382-0**

## Eaton E3 Laboratory

26201 Northwestern Highway
P.O. Box 766
Southfield, MI 48037-0766
Contact: Mr. Kimball Williams
Phone: 248-354-2845
Fax: 248-208-2018
E-Mail: k.williams@ieee.org
URL: http://www.eaton.com/emc

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|

***MIL-STD-462 : Conducted Emissions:***

| | |
|---|---|
| 12/A01 | MIL-STD-462 Method CE01 |
| 12/A04 | MIL-STD-462 Method CE02 |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A08 | MIL-STD-462 Method CE04 |
| 12/A12 | MIL-STD-462 Method CE07 |
| 12/A13 | MIL-STD-462 Version D Method CE101 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |

***MIL-STD-462 : Conducted Susceptibility:***

| | |
|---|---|
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B07 | MIL-STD-462 Method CS09 |
| 12/B12 | MIL-STD-462 Version D Method CS101 |
| 12/B16 | MIL-STD-462 Version D Method CS109 |
| 12/B17 | MIL-STD-462 Version D Method CS114 |

***MIL-STD-462 : Radiated Emissions:***

| | |
|---|---|
| 12/D01 | MIL-STD-462 Method RE01 |
| 12/D02 | MIL-STD-462 Method RE02 |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |

***MIL-STD-462 : Radiated Susceptibility:***

| | |
|---|---|
| 12/E01 | MIL-STD-462 Method RS01 |
| 12/E02 | MIL-STD-462 Method RS02 |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available) |
| 12/E04 | MIL-STD-462 Method RS03 employing |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |
| 12/E07 | MIL-STD-462 Method RS06 |
| 12/E08 | MIL-STD-462 Version D Method RS101 |
| 12/E09 | MIL-STD-462 Version D Method RS103 |

**NVLAP LAB CODE 100396-0**

### Criterion Technology Corp.

1350 County Road 16
P.O. Box 387
Rollinsville, CO 80474
Contact: Mr. Michael E. Mussler
Phone: 303-258-0100
Fax: 303-258-0775
E-Mail: mmussler@criteriontech.com
URL: www.criteriontech.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 100398-0**

### GE Lighting- Product Testing

1975 Noble Road
Nela Park
Cleveland, OH 44112-6300
Contact: Mr. Lawrence Mead
Phone: 216-266-5520
Fax: 216-266-3503
E-Mail: lawrence.mead@lighting.ge.com

### Energy Efficient Lighting Products

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Color Measurements*** | |
| 22/C01 | IES LM-58 |
| ***Electrical Measurements*** | |
| 22/E01 | IES LM-9 |
| 22/E02 | IES LM-45 |
| 22/E03 | IES LM-51 |
| 22/E04 | IES LM-66 |
| 22/E05 | ANSI-C78.375 |
| ***Life Tests*** | |
| 22/L01 | IES LM-40 |
| 22/L03 | IES LM-49 |
| 22/L04 | IES LM-65 |
| ***Photometric Measurements*** | |
| 22/P01a | IES LM-9 (Total Flux) |
| 22/P01b | IES LM-9 (Intensity) |
| 22/P02a | IES LM-20 (Total Flux) |
| 22/P02b | IES LM-20 (Intensity) |
| 22/P03a | IES LM-45 (Total Flux) |
| 22/P03b | IES LM-45 (Intensity) |
| 22/P04a | IES LM-51 (Total Flux) |
| 22/P05a | IES LM-66 (Total Flux) |
| 22/P05b | IES LM-66 (Intensity) |

**NVLAP LAB CODE 100399-0**

### Philips Lighting Corporate Calibration & Standards Laboratory

Route 3, P.O. Box 505, Hoult Road
Fairmont, WV 26554-9484
Contact: Dr. Ronald Gibbons
Phone: 304-367-7608
Fax: 304-367-7602
E-Mail: ronald.b.gibbons@philips.com

### Energy Efficient Lighting Products

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Color Measurements*** | |
| 22/C01 | IES LM-58 |
| ***Electrical Measurements*** | |
| 22/E01 | IES LM-9 |
| 22/E02 | IES LM-45 |
| 22/E03 | IES LM-51 |
| 22/E04 | IES LM-66 |
| 22/E05 | ANSI-C78.375 |
| ***Life Tests*** | |
| 22/L03 | IES LM-49 |
| 22/L04 | IES LM-65 |
| ***Photometric Measurements*** | |
| 22/P01a | IES LM-9 (Total Flux) |
| 22/P02a | IES LM-20 (Total Flux) |
| 22/P02b | IES LM-20 (Intensity) |
| 22/P03a | IES LM-45 (Total Flux) |
| 22/P03b | IES LM-45 (Intensity) |
| 22/P04a | IES LM-51 (Total Flux) |
| 22/P04b | IES LM-51 (Intensity) |
| 22/P05a | IES LM-66 (Total Flux) |
| 22/P05b | IES LM-66 (Intensity) |

NVLAP LAB CODE 100402-0

**Intertek Testing Services NA Inc.**
3933 U.S. Route 11
Cortland, NY 13045-0950
Contact: Mr. John Sabelli
Phone: 607-758-6382
Fax: 607-753-0439
E-Mail: jsabelli@itsqs.com
URL: http://www.worldlab.com

**Energy Efficient Lighting Products**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Color Measurements*** | |
| 22/C01 | IES LM-58 |
| ***Electrical Measurements*** | |
| 22/E01 | IES LM-9 |
| 22/E02 | IES LM-45 |
| 22/E03 | IES LM-51 |
| 22/E04 | IES LM-66 |
| 22/E05 | ANSI-C78.375 |
| 22/E06 | ANSI-C78.386 |
| 22/E07 | ANSI-C78.387 |
| 22/E08 | ANSI-C78.388 |
| ***Life Tests*** | |
| 22/L01 | IES LM-40 |
| 22/L03 | IES LM-49 |
| 22/L04 | IES LM-65 |
| ***Photometric Measurements*** | |
| 22/P01a | IES LM-9 (Total Flux) |
| 22/P02a | IES LM-20 (Total Flux) |
| 22/P02b | IES LM-20 (Intensity) |
| 22/P03a | IES LM-45 (Total Flux) |
| 22/P03b | IES LM-45 (Intensity) |
| 22/P04a | IES LM-51 (Total Flux) |
| 22/P05a | IES LM-66 (Total Flux) |
| 22/P05b | IES LM-66 (Intensity) |

NVLAP LAB CODE 100403-0

**OSRAM SYLVANIA, Test & Measurements Laboratory**
71 Cherry Hill Dr.
Beverly, MA 01915
Contact: Dr. Ronald O. Daubach
Phone: 508-750-1593
Fax: 508-750-1794
E-Mail: ronald.daubach@sylvania.com

**Energy Efficient Lighting Products**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Color Measurements*** | |
| 22/C01 | IES LM-58 |
| ***Electrical Measurements*** | |
| 22/E01 | IES LM-9 |
| 22/E02 | IES LM-45 |
| 22/E03 | IES LM-51 |
| 22/E04 | IES LM-66 |
| 22/E05 | ANSI-C78.375 |
| 22/E06 | ANSI-C78.386 |
| 22/E07 | ANSI-C78.387 |
| 22/E08 | ANSI-C78.388 |
| ***Life Tests*** | |
| 22/L01 | IES LM-40 |
| 22/L02 | IES LM-47 |
| 22/L03 | IES LM-49 |
| 22/L04 | IES LM-65 |
| ***Photometric Measurements*** | |
| 22/P01a | IES LM-9 (Total Flux) |
| 22/P01b | IES LM-9 (Intensity) |
| 22/P02a | IES LM-20 (Total Flux) |
| 22/P02b | IES LM-20 (Intensity) |
| 22/P03a | IES LM-45 (Total Flux) |
| 22/P03b | IES LM-45 (Intensity) |
| 22/P04a | IES LM-51 (Total Flux) |
| 22/P04b | IES LM-51 (Intensity) |
| 22/P05a | IES LM-66 (Total Flux) |
| 22/P05b | IES LM-66 (Intensity) |

NVLAP LAB CODE 100404-0

**Industrial Acoustics Company, Inc., Aero-Acoustics Laboratory**
1160 Commerce Avenue
Bronx, NY 10462
Contact: Mr. Jon Weinstein
Phone: 718-931-8000
Fax: 718-863-1138
E-Mail: jonw@industrialacoustics.com
URL: http://www.industrialacoustics.com

**Acoustical Testing Services**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P02 | ASTM C384 |
| 08/P03 | ASTM C423 |
| 08/P04 | ASTM C522 |
| 08/P06 | ASTM E90 |
| 08/P08 | ASTM E596 |
| 08/P30 | ASTM E1408 |
| 08/P36 | ASTM E477 |
| 08/P44 | ISO 354 |
| 08/P45 | ISO 140, Part 3 |

NVLAP LAB CODE 100405-0

**Motorola SSG EMC/TEMPEST Laboratory**
8201 E. McDowell Road
Scottsdale, AZ 85252
Contact: Mr. Dwayne R. Awerkamp
Phone: 480-441-3138
Fax: 480-441-3625
E-Mail: p09969@email.mot.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|


(See 'How To Use This Directory' on page 7.)

*Emissions Test Methods:*

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

***MIL-STD-462 : Conducted Emissions:***

| | |
|---|---|
| 12/A01 | MIL-STD-462 Method CE01 |
| 12/A04 | MIL-STD-462 Method CE02 |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A08 | MIL-STD-462 Method CE04 |
| 12/A10 | MIL-STD-462 Method CE06 |
| 12/A12 | MIL-STD-462 Method CE07 |
| 12/A13 | MIL-STD-462 Version D Method CE101 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |
| 12/A15 | MIL-STD-462 Version D Method CE106 |

***MIL-STD-462 : Conducted Susceptibility:***

| | |
|---|---|
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B04 | MIL-STD-462 Method CS03/CS04/CS05/CS08 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B06 | MIL-STD-462 Method CS07 |
| 12/B07 | MIL-STD-462 Method CS09 |
| 12/B08 | MIL-STD-462 Method CS10 |
| 12/B09 | MIL-STD-462 Method CS11 |
| 12/B10 | MIL-STD-462 Method CS12 |
| 12/B11 | MIL-STD-462 Method CS13 |
| 12/B12 | MIL-STD-462 Version D Method CS101 |
| 12/B13 | MIL-STD-462 Version D Method CS103 |
| 12/B14 | MIL-STD-462 Version D Method CS104 |
| 12/B15 | MIL-STD-462 Version D Method CS105 |
| 12/B16 | MIL-STD-462 Version D Method CS109 |
| 12/B17 | MIL-STD-462 Version D Method CS114 |
| 12/B19 | MIL-STD-462 Version D Method CS116 |

***MIL-STD-462 : Radiated Emissions:***

| | |
|---|---|
| 12/D01 | MIL-STD-462 Method RE01 |
| 12/D02 | MIL-STD-462 Method RE02 |
| 12/D03 | MIL-STD-462 Method RE03 |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |
| 12/D06 | MIL-STD-462 Version D Method RE103 |

***MIL-STD-462 : Radiated Susceptibility:***

| | |
|---|---|
| 12/E01 | MIL-STD-462 Method RS01 |
| 12/E02 | MIL-STD-462 Method RS02 |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available) |
| 12/E04 | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |
| 12/E05 | MIL-STD-462 Method RS05 |
| 12/E07 | MIL-STD-462 Method RS06 |
| 12/E08 | MIL-STD-462 Version D Method RS101 |
| 12/E09 | MIL-STD-462 Version D Method RS103 |
| 12/E10 | MIL-STD-462 Version D Method RS105 |

**NVLAP LAB CODE 100406-0**

## Inland Foundation Engineering, Inc.

1310 South Santa Fe Avenue
P.O. Box 937
San Jacinto, CA 92581-0937
Contact: Mr. Donald O. Swenson
Phone: 909-654-1555
Fax: 909-654-0551

### Construction Materials Testing

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Aggregates*** | |
| 02/A04 | ASTM C40 |
| 02/A06 | ASTM C88 |
| 02/A07 | ASTM C117 |
| 02/A08 | ASTM C123 |
| 02/A09 | ASTM C127 |
| 02/A10 | ASTM C128 |
| 02/A11 | ASTM C131 |
| 02/A12 | ASTM C136 |
| 02/A13 | ASTM C142 |
| 02/A15 | ASTM D75 |
| 02/A16 | ASTM D2419 |
| 02/A44 | ASTM C566 |
| 02/A46 | ASTM C535 |
| ***Concrete*** | |
| 02/A01 | ASTM C39 |
| 02/A02 | ASTM C617 |
| 02/A41 | ASTM C192 |
| 02/A43 | ASTM C1064 |
| 02/A45 | ASTM C42 |
| 02/G01 | ASTM C31/C172/C143/C138/C231 |
| ***Road and Paving Materials*** | |
| 02/M03 | ASTM D140 |
| 02/M07 | ASTM D546 |
| 02/M08 | ASTM D979 |
| 02/M11 | ASTM D1188 |
| 02/M12 | ASTM D1559 |
| 02/M14 | ASTM D1561 |
| 02/M19 | ASTM D2172 |
| 02/M24 | ASTM D2041 |
| ***Soil and Rock*** | |
| 02/L01 | ASTM D4220 |
| 02/L02 | ASTM D422 |
| 02/L04 | ASTM D698 |



(See 'How To Use This Directory' on page 7.)

02/L05 ASTM D854
02/L06 ASTM D1140
02/L07 ASTM D1556
02/L08 ASTM D1557
02/L13 ASTM D2216
02/L16 ASTM D2487
02/L17 ASTM D2488
02/L18 ASTM D3080
02/L20 ASTM D4318
02/L21 ASTM D2434
02/L22 ASTM D2850
02/L23 ASTM D2922
02/L25 ASTM D3017
02/L47 ASTM D2844

***Standard Practices***

02/A38 ASTM E329
02/A39 ASTM C1077
02/L32 ASTM D3740
02/M26 ASTM D3666

**NVLAP LAB CODE 100408-0**

## NAWC AD 5.1.7.2. EMI Lab

48298 Shaw Road, Unit 4, Bldg. 1461
Patuxent River, MD 20670-1900
Contact: Mr. Robert Smith
Phone: 301-342-0851
Fax: 301-342-5390
E-Mail: smithRB@navair.navy.mil

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

*NVLAP Code* *Designation*

***MIL-STD-462 : Conducted Emissions:***

12/A01 MIL-STD-462 Method CE01
12/A04 MIL-STD-462 Method CE02
12/A06 MIL-STD-462 Method CE03
12/A08 MIL-STD-462 Method CE04
12/A10 MIL-STD-462 Method CE06
12/A13 MIL-STD-462 Version D Method CE101
12/A14 MIL-STD-462 Version D Method CE102
12/A15 MIL-STD-462 Version D Method CE106

***MIL-STD-462 : Conducted Susceptibility:***

12/B01 MIL-STD-462 Method CS01
12/B02 MIL-STD-462 Method CS02
12/B04 MIL-STD-462 Method CS03/CS04/CS05/CS08
12/B05 MIL-STD-462 Method CS06
12/B08 MIL-STD-462 Method CS10
12/B09 MIL-STD-462 Method CS11
12/B13 MIL-STD-462 Version D Method CS103
12/B14 MIL-STD-462 Version D Method CS104
12/B15 MIL-STD-462 Version D Method CS105
12/B17 MIL-STD-462 Version D Method CS114
12/B18 MIL-STD-462 Version D Method CS115
12/B19 MIL-STD-462 Version D Method CS116

***MIL-STD-462 : Radiated Emissions:***

12/D01 MIL-STD-462 Method RE01
12/D02 MIL-STD-462 Method RE02
12/D03 MIL-STD-462 Method RE03
12/D04 MIL-STD-462 Version D Method RE101
12/D05 MIL-STD-462 Version D Method RE102
12/D06 MIL-STD-462 Version D Method RE103

***MIL-STD-462 : Radiated Susceptibility:***

12/E01 MIL-STD-462 Method RS01
12/E02 MIL-STD-462 Method RS02
12/E03 MIL-STD-462 Method RS03 (Consult laboratory for field strengths available)
12/E04 MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available)
12/E08 MIL-STD-462 Version D Method RS101
12/E09 MIL-STD-462 Version D Method RS103

**NVLAP LAB CODE 100409-0**

## Intertek Testing Services NA Inc.

1950 Evergreen Boulevard, Suite 100
Duluth, GA 30096
Contact: Mr. David C. Dennis
Phone: 678-775-2400
Fax: 678-775-2401
E-Mail: ddennis@itsqs.com
URL: http://www.worldlab.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

*NVLAP Code* *Designation*

***Emissions Test Methods:***

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b Radiated Emissions
12/T51 AS/NZS 3548

***Safety Test Methods:***

12/T41 ACA TS-001
12/T50 AS/NZS 3260

***Telecommunications Test Methods:***

12/CS03 CS-03
12/T01 Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital
12/T01a 68.302 (Par. e,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306

| | |
|---|---|
| | Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |
| 12/T46 | ACA TS-008 |

**NVLAP LAB CODE 100411-0**

### Sanmina Homologation Services

4401 Great America Parkway, M/S 01-02
Santa Clara, CA 95054
Contact: Mr. John Shinn, P.E.
Phone: 408-495-2046
Fax: 408-495-1297
E-Mail: jshinn@nortelnetworks.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Safety Test Methods:*** | |
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |
| ***Telecommunications Test Methods:*** | |
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |
| 12/T42 | ACA TS-002 |
| 12/T43 | ACA TS-003 |
| 12/T44 | ACA TS-004 |
| 12/T45 | ACA TS-006 |
| 12/T49 | ACA TS-016 |

**NVLAP LAB CODE 100413-0**

### Compaq Regulatory Compliance Engineering - East

200 Forest Street, Mail Stop MRO1-D
Marlboro, MA 01752-3085
Contact: Ms. Diana Montvitt-Jones
Phone: 508-467-2851
Fax: 508-467-2846
E-Mail: diana.montvitt@compaq.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 100414-0**

### Underwriters Laboratories Inc.

333 Pfingsten Road
Northbrook, IL 60062-2096
Contact: Mr. Rick A. Titus
Phone: 847-272-8800 x43281
Fax: 847-509-6321
E-Mail: Rick.A.Titus@us.ul.com
URL: http://www.ul.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Immunity Test Methods:*** | |
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |
| ***Safety Test Methods:*** | |
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |

### Thermal Insulation Materials

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Corrosiveness*** | |
| 01/C01 | ASTM C739 (Sec. 9) |
| 01/C02 | 16 CFR-Part 1209.5 |
| ***Flammability*** | |
| 01/F02 | ASTM E84 |
| 01/F07 | 16 CFR-Part 1209.6 |
| 01/F08 | 16 CFR-Part 1209.7 |
| 01/F09 | ASTM C739 (Sec. 10) by ASTM E970 |
| 01/F10 | ASTM C739 (Sec. 14) |
| ***Mass, Density, and Dimensional Stability*** | |
| 01/D24 | ASTM C739 (Sec. 12) |
| 01/D26 | 16 CFR-Part 1209.4 |
| 01/D27 | ASTM C739 (Sec. 8) |
| ***Related Material Properties*** | |
| 01/V05 | ASTM C739 (Sec. 11) |
| ***Thermal Resistance*** | |
| 01/T06 | ASTM C518 |
| 01/T10 | ASTM C687 |

**NVLAP LAB CODE 100416-0**

## SGS U.S. Testing Company, Inc.

1341 North 108th East Avenue
Tulsa, OK 74116-5637
Contact: Mr. Dale E. Holloway
Phone: 918-437-8333
Fax: 918-437-8487
E-Mail: dale_holloway@sgsgroup.com

### Thermal Insulation Materials

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Corrosiveness*** | |
| 01/C01 | ASTM C739 (Sec. 9) |
| 01/C02 | 16 CFR-Part 1209.5 |
| ***Flammability*** | |
| 01/F08 | 16 CFR-Part 1209.7 |
| 01/F10 | ASTM C739 (Sec. 14) |
| ***Mass, Density, and Dimensional Stability*** | |
| 01/D02 | ASTM C167 |
| 01/D18 | ASTM D1622 |
| 01/D24 | ASTM C739 (Sec. 12) |
| 01/D26 | 16 CFR-Part 1209.4 |
| 01/D27 | ASTM C739 (Sec. 8) |
| ***Related Material Properties*** | |
| 01/V04 | ASTM E96 |
| 01/V05 | ASTM C739 (Sec. 11) |
| 01/V06 | ASTM C739 (Sec. 15) |

### Commercial Products Testing

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Plumbing*** | |
| 19/F01 | ASME A112.18.1M (Sec. 5.2) |
| 19/F02 | ASME A112.18.1M (Sec. 5.14) |
| 19/F03 | ASME A112.18.1M (Sec. 6.2) |
| 19/F04 | ASME A112.18.1M (Sec. 6.4) |
| 19/F05 | ASME A112.18.1M (Sec. 6.5) |
| 19/F06 | ASME A112.18.1M (Sec. 6.6) |
| 19/F07 | ASME A112.18.1M (Sec. 6.7) |
| 19/F08 | ASME A112.18.1M (Sec. 6.8) |
| 19/F09 | ASME A112.18.1M (Sec. 5.13) |
| 19/F10 | ASME A112.18.1M (Sec. 6.3) |
| 19/M01 | ICC/ANSI A117.1 (Sec. 609, 610) |
| 19/M02 | ASME/ANSI A112.19.7M (Sec. 5, 7) |
| 19/M03 | ASME/ANSI A112.19.8M (Sec. 4, 5) |
| 19/M04 | ASTM F446 |
| 19/M05 | ASTM F462 |
| 19/P01 | ANSI Z124.1 (Sec. 4, 5, 6) |
| 19/P02 | ANSI Z124.2 (Sec. 4, 5, 6) |
| 19/P03 | ANSI Z124.3 (Sec. 4, 5, 6) |
| 19/P04 | ANSI Z124.4 (Sec. 4, 5) |
| 19/P05 | ANSI Z124.4 (Sec. 8) per ASME A112.19.6M (Sec. 7.1) |
| 19/P06 | ANSI/IAPMO Z124.6 (Sec. 4, 5, 6) |
| 19/P07 | ANSI/IAPMO Z124.8 (Sec. 4, 5) |
| 19/V01 | ASME A112.19.2M (Sec. 8.1) |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| 19/V02 | ASME A112.19.2M (Sec. 8.2) |
| 19/V03 | ASME A112.19.2M (Sec. 8.3) |
| 19/V04 | ASME A112.19.2M (Sec. 8.7) |
| 19/V05 | ASME A112.19.2M (Sec. 8.6) |
| 19/V06 | ASME A112.19.2M (Sec. 8.5) |
| 19/W01 | ASME A112.19.6 (Sec. 7.1.2) |
| 19/W02 | ASME A112.19.6 (Sec. 7.1.3) |
| 19/W03 | ASME A112.19.6 (Sec. 7.1.4) |
| 19/W04 | ASME A112.19.6 (Sec. 7.1.5) |
| 19/W05 | ASME A112.19.6 (Sec. 7.1.6) |
| 19/W06 | ASME A112.19.6 (Sec. 7.1.7) |
| 19/W07 | ASME A112.19.6 (Sec. 7.1.8) |
| 19/W08 | ASME A112.19.6 (Sec. 7.1.9) |

**NVLAP LAB CODE 100417-0**

### Celotex Technical Center

10301 Ninth Street North
St. Petersburg, FL 33716-1514
Contact: Dr. Stanley R. Prince
Phone: 727-563-5159
Fax: 727-563-5218
E-Mail: sprince@celotex.com
URL: http://www.celotex.com

**Thermal Insulation Materials**

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Flammability*** | |
| 01/F02 | ASTM E84 |
| ***Mass, Density, and Dimensional Stability*** | |
| 01/D03 | ASTM C209 (Sec. 7) |
| 01/D04 | ASTM C209 (Sec. 14, 2 hour) |
| 01/D05 | ASTM C209 (Sec. 14, 24 hour) by D1037 (Sec. 100-106) |
| 01/D06 | ASTM C209 (Sec. 15) by D1037 (Sec. 107-110) |
| 01/D07 | ASTM C272 |
| 01/D18 | ASTM D1622 |
| 01/D19 | ASTM D2126 |
| 01/D23 | ASTM D2842 |
| ***Related Material Properties*** | |
| 01/V04 | ASTM E96 |
| ***Strength*** | |
| 01/S01a | ASTM C165 (Proc. A) |
| 01/S02 | ASTM C203 |
| 01/S03 | ASTM C209 (Sec. 10) |
| 01/S04 | ASTM C209 (Sec. 11) |
| 01/S05 | ASTM C209 (Sec. 12) |
| 01/S06 | ASTM C209 (Sec. 13) |
| 01/S07 | ASTM C273 |
| 01/S10 | ASTM D828 |
| 01/S11 | ASTM D1621 (Proc. A of ASTM Practice D618) |
| ***Thermal Resistance*** | |
| 01/T04 | ASTM C236 |
| 01/T06 | ASTM C518 |

**NVLAP LAB CODE 100418-0**

### Composite Panel Association (CPA)

18928 Premiere Court
Gaithersburg, MD 20879-1569
Contact: Mr. Gary Heroux
Phone: 301-670-0604
Fax: 301-840-1252
E-Mail: gheroux@cpamail.org

**Wood Based Products**

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***General Wood Products*** | |
| 23/G02 | ASTM D1037 (Part A, Sec. 11-20) |
| 23/G03 | ASTM D1037 (Part A, Sec. 28-33) |
| ***Particleboard and Medium-Density Fiberboard*** | |
| 23/P02 | ASTM D1037 (Part A, Sec. 61-67) |
| 23/P03 | ASTM D1037 (Part A, Sec. 68-73) |
| 23/P05 | ASTM D1037 (Part A, Sec. 100-106) |
| 23/P06 | ASTM D1037 (Part A, Sec. 107-110) |
| 23/P08 | ASTM D1037 (Part A, Sec. 126-127) |
| 23/P09 | ANSI/A208.1 (Sec. 3.4.4) |
| 23/T01 | ASTM E1333 |
| 23/T03 | EN 120:92 |
| 23/T04 | ASTM D5582 |
| 23/T05 | ASTM D6007 |

**NVLAP LAB CODE 100419-0**

### Test Site Services, Inc.

P.O. Box 766
Marlboro, MA 01752
Contact: Mr. Richard L. Wiedeman
Phone: 508-481-1684
Fax: 508-481-1684
E-Mail: slp@ma.ultranet.com
URL: http://testsiteservices.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 100420-0**

### Timberco, Inc.- dba TECO

86305 College View Road
Eugene, OR 97405-9631
Contact: Mr. Darin Thompson
Phone: 541-746-8271
Fax: 541-747-1630
E-Mail: dthompson@pfs-teco.com

### Wood Based Products

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***General Wood Products*** | |
| 23/G01 | ASTM D906 (CSA 0112.0-M Series 1977) |
| 23/G02 | ASTM D1037 (Part A, Sec. 11-20) |
| 23/G03 | ASTM D1037 (Part A, Sec. 28-33) |
| 23/G04 | ASTM D2395 (Method A) |
| 23/G05 | ASTM D2718 |
| 23/G07 | ASTM D3043 (Method C) |
| 23/G08 | ASTM D4442 (Method A) |
| 23/G09 | ASTM D4442 (Method B) |
| 23/G10 | ASTM E72 (Sec. 14) |
| 23/G11 | ASTM E72 (Sec. 15) |
| 23/G12 | ASTM E564 |
| ***Hardwood Plywood*** | |
| 23/H01 | HP-1 (Sec. 4.3) |
| 23/H02 | HP-1 (Sec. 4.4) |
| 23/H03 | HP-1 (Sec. 4.6) |
| 23/H04 | ASTM E96 |
| ***Particleboard and Medium-Density Fiberboard*** | |
| 23/P01 | ASTM D1037 (Part A, Sec. 21-27) |
| 23/P02 | ASTM D1037 (Part A, Sec. 61-67) |
| 23/P03 | ASTM D1037 (Part A, Sec. 68-73) |
| 23/P05 | ASTM D1037 (Part A, Sec. 100-106) |
| 23/P06 | ASTM D1037 (Part A, Sec. 107-110) |
| 23/P07 | ASTM D1037 (Part A, Sec. 118-124) |
| 23/P08 | ASTM D1037 (Part A, Sec. 126-127) |
| 23/P09 | ANSI/A208.1 (Sec. 3.4.4) |
| 23/T01 | ASTM E1333 |
| 23/T02 | FTM 1-83 |
| 23/T04 | ASTM D5582 |
| ***Structural Composite Lumber, Glulam, I-Joists, Laminated Veneer Lumber*** | |
| 23/J01 | ASTM D143 (Sec. 8) |
| 23/J02 | ASTM D143 (Sec. 14) |
| 23/J04 | ASTM D198 (Sec. 4-11) |
| 23/J06 | ASTM D905 (CSA 0112.0-M Series 1977) |
| 23/J07 | ASTM D1037 (Part A, Sec. 87-90) |
| 23/J08 | ASTM D1101 |
| 23/J09 | ASTM D1761 (Sec. 1-11) |
| 23/J10 | ASTM D2559 (Shear) |
| 23/J11 | ASTM D2559 (Delamination) (CSA 0112.0-M Series 1977) |
| 23/J12 | ASTM D4688 |
| 23/J13 | AITC 200 (T106) |
| 23/J14 | AITC 200 (T107) |
| 23/J15 | AITC 200 (T110) |
| 23/J16 | AITC 200 (T114) |
| 23/J17 | AITC 200 (T116) |
| 23/J20 | ASTM D3110 |
| 23/J21 | ASTM D3535 (CSA 0112.0-M Series 1977) |
| ***Structural Use Panels*** | |
| 23/S04 | ASTM E661 |
| 23/S05 | PS-1 (Sec. 4.5.2) |
| 23/S06 | PS-1 (Sec. 4.5.3) (CAN/CSA-0325.1-88) |
| 23/S07 | PS-2 (Sec. 6.4.1) (CAN/CSA-0325.1-88) |
| 23/S08 | PS-2 (Sec. 6.4.2) (CAN/CSA-0325.1-88) |
| 23/S09 | PS-2 (Sec. 6.4.4) (CAN/CSA-0325.1-88) |
| 23/S10 | PS-2 (Sec. 6.4.7) (CAN/CSA-0325.1-88) |
| 23/S11 | PS-2 (Sec. 6.4.8) (CAN/CSA-0325.1-88) |
| 23/S12 | PS-2 (Sec. 6.4.9) (CAN/CSA-0325.1-88) |
| 23/S13 | PS-2 (Sec. 6.4.17) (CAN/CSA-0325.1-88) |
| 23/S14 | PS-2 (Sec. 6.4.18) (CAN/CSA-0325.1-88) |
| 23/S15 | PS-2 (Sec. 6.4.19) (Supplement No.1-92 to CAN/CSA-0325.1-88) |
| 23/S16 | PS-2 (Sec. 6.4.20) (Supplement No.1-92 to CAN/CSA-0325.1-88) |

**NVLAP LAB CODE 100421-0**

### PFS Corporation

2402 Daniels Street
Madison, WI 53718-6798
Contact: Mr. James P. VanSchoyck
Phone: 608-221-3361
Fax: 608-223-5560
E-Mail: JVanSchoyck@pfs-teco.com
URL: http://www.pfs-teco.com

### Wood Based Products

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***General Wood Products*** | |
| 23/G01 | ASTM D906 (CSA 0112.0-M Series 1977) |
| 23/G02 | ASTM D1037 (Part A, Sec. 11-20) |
| 23/G03 | ASTM D1037 (Part A, Sec. 28-33) |
| 23/G04 | ASTM D2395 (Method A) |
| 23/G05 | ASTM D2718 |
| 23/G06 | ASTM D2719 (Method C) |
| 23/G08 | ASTM D4442 (Method A) |
| 23/G09 | ASTM D4442 (Method B) |
| 23/G10 | ASTM E72 (Sec. 14) |
| 23/G11 | ASTM E72 (Sec. 15) |
| 23/G12 | ASTM E564 |
| 23/G13 | ASTM E695 |
| 23/G14 | AFG-01-84 (Sec. 3.1) |
| 23/G15 | AFG-01-84 (Sec. 3.2) |
| 23/G16 | ASTM E489 |
| 23/G17 | ASTM E767 |
| 23/G18 | ASTM D1761 (Sec. 41-52) |
| 23/G19 | ASTM E72 (Sec. 9, 10) |
| 23/G20 | ASTM E72 (Sec. 11, 17, 20) |
| 23/G21 | ASTM E72 (Sec. 13, 18, 21) |
| 23/G22 | ASTM D5764 |
| 23/G23 | ASTM E1803 |

*Hardwood Plywood*

23/H01 HP-1 (Sec. 4.3)
23/H02 HP-1 (Sec. 4.4)
23/H03 HP-1 (Sec. 4.6)
23/H04 ASTM E96

*Particleboard and Medium-Density Fiberboard*

23/P01 ASTM D1037 (Part A, Sec. 21-27)
23/P02 ASTM D1037 (Part A, Sec. 61-67)
23/P03 ASTM D1037 (Part A, Sec. 68-73)
23/P04 ASTM D1037 (Part A, Sec. 81-86)
23/P05 ASTM D1037 (Part A, Sec. 100-106)
23/P06 ASTM D1037 (Part A, Sec. 107-110)
23/P07 ASTM D1037 (Part A, Sec. 118-124)
23/P08 ASTM D1037 (Part A, Sec. 126-127)
23/P09 ANSI/A208.1 (Sec. 3.4.4)
23/T01 ASTM E1333
23/T02 FTM 1-83
23/T04 ASTM D5582

*Sandwich Constructions*

23/X01 ASTM C273
23/X02 ATSM C297
23/X03 ASTM C365 (Method A)
23/X04 ASTM C393
23/X05 ASTM C480
23/X06 ASTM C481
23/X07 ASTM D1183

*Structural Composite Lumber, Glulam, I-Joists, Laminated Veneer Lumber*

23/J01 ASTM D143 (Sec. 8)
23/J02 ASTM D143 (Sec. 14)
23/J03 ASTM D143 (Sec. 16)
23/J04 ASTM D198 (Sec. 4-11)
23/J06 ASTM D905 (CSA 0112.0-M Series 1977)
23/J07 ASTM D1037 (Part A, Sec. 87-90)
23/J08 ASTM D1101
23/J09 ASTM D1761 (Sec. 1-11)
23/J10 ASTM D2559 (Shear)
23/J11 ASTM D2559 (Delamination) (CSA 0112.0-M Series 1977)
23/J12 ASTM D4688
23/J13 AITC 200 (T106)
23/J14 AITC 200 (T107)
23/J15 AITC 200 (T110)
23/J16 AITC 200 (T114)
23/J17 AITC 200 (T116)
23/J21 ASTM D3535 (CSA 0112.0-M Series 1977)

*Structural Use Panels*

23/S01 ASTM D3044
23/S03 ASTM D3501 (Method B)
23/S04 ASTM E661
23/S05 PS-1 (Sec. 4.5.2)
23/S06 PS-1 (Sec. 4.5.3) (CAN/CSA-0325.1-88)
23/S07 PS-2 (Sec. 6.4.1) (CAN/CSA-0325.1-88)
23/S08 PS-2 (Sec. 6.4.2) (CAN/CSA-0325.1-88)
23/S09 PS-2 (Sec. 6.4.4) (CAN/CSA-0325.1-88)
23/S10 PS-2 (Sec. 6.4.7) (CAN/CSA-0325.1-88)
23/S11 PS-2 (Sec. 6.4.8) (CAN/CSA-0325.1-88)
23/S12 PS-2 (Sec. 6.4.9) (CAN/CSA-0325.1-88)
23/S13 PS-2 (Sec. 6.4.17) (CAN/CSA-0325.1-88)
23/S14 PS-2 (Sec. 6.4.18) (CAN/CSA-0325.1-88)
23/S15 PS-2 (Sec. 6.4.19) (Supplement No.1-92 to CAN/CSA-0325.1-88)
23/S16 PS-2 (Sec. 6.4.20) (Supplement No.1-92 to CAN/CSA-0325.1-88)

**NVLAP LAB CODE 100423-0**

## APA - The Engineered Wood Association Research Center

7011 South 19th Street
P.O. Box 11700
Tacoma, WA 98411-0700
Contact: Mr. Thomas G. Williamson
Phone: 253-565-6600
Fax: 253-565-7265
E-Mail: tom.williamson@apawood.org
URL: http://www.apawood.org

### Wood Based Products

Accreditation Valid Through: December 31, 2001

*NVLAP Code* *Designation*

*General Wood Products*

23/G05 ASTM D2718
23/G06 ASTM D2719 (Method C)
23/G07 ASTM D3043 (Method C)
23/G10 ASTM E72 (Sec. 14)
23/G11 ASTM E72 (Sec. 15)

*Structural Composite Lumber, Glulam, I-Joists, Laminated Veneer Lumber*

23/J04 ASTM D198 (Sec. 4-11)
23/J05 ASTM D198 (Sec. 28-35)
23/J09 ASTM D1761 (Sec. 1-11)
23/J10 ASTM D2559 (Shear)
23/J11 ASTM D2559 (Delamination) (CSA 0112.0-M Series 1977)
23/J12 ASTM D4688

*Structural Use Panels*

23/S01 ASTM D3044
23/S02 ASTM D3500 (Method B)
23/S03 ASTM D3501 (Method B)
23/S04 ASTM E661
23/S07 PS-2 (Sec. 6.4.1) (CAN/CSA-0325.1-88)
23/S08 PS-2 (Sec. 6.4.2) (CAN/CSA-0325.1-88)
23/S09 PS-2 (Sec. 6.4.4) (CAN/CSA-0325.1-88)
23/S10 PS-2 (Sec. 6.4.7) (CAN/CSA-0325.1-88)
23/S11 PS-2 (Sec. 6.4.8) (CAN/CSA-0325.1-88)
23/S12 PS-2 (Sec. 6.4.9) (CAN/CSA-0325.1-88)
23/S13 PS-2 (Sec. 6.4.17) (CAN/CSA-0325.1-88)
23/S14 PS-2 (Sec. 6.4.18) (CAN/CSA-0325.1-88)
23/S15 PS-2 (Sec. 6.4.19) (Supplement No.1-92 to CAN/CSA-0325.1-88)
23/S16 PS-2 (Sec. 6.4.20) (Supplement No.1-92 to CAN/CSA-0325.1-88)



(See 'How To Use This Directory' on page 7.)

**NVLAP LAB CODE 100424-0**

### Vibro-Acoustics Laboratory

727 Tapscott Road
Scarborough Ontario M1X 1A2
CANADA
Contact: Mr. Robert Gault
Phone: 416-291-7371
Fax: 416-291-8049
E-Mail: bgault@vibro-acoustics.com

### Acoustical Testing Services

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P03 | ASTM C423 |
| 08/P10 | ANSI S12.31 |
| 08/P36 | ASTM E477 |
| 08/P44 | ISO 354 |
| 08/P46 | ISO 3741 |

**NVLAP LAB CODE 100425-0**

### Johns Manville Technical Center

10100 West Ute Avenue
P.O. Box 625005
Littleton, CO 80162-5005
Contact: Mr. Mark A. Albers
Phone: 303-978-5008
Fax: 303-978-3123
E-Mail: albersm@jm.com
URL: http://www.jm.com/mtc/appliedtech.html

### Acoustical Testing Services

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P03 | ASTM C423 |
| 08/P04 | ASTM C522 |
| 08/P06 | ASTM E90 |
| 08/P10 | ANSI S12.31 |
| 08/P13 | ANSI S12.32 |
| 08/P24 | ANSI S12.10 |
| 08/P28 | ASTM E1375 |
| 08/P29 | ASTM E1376 |
| 08/P33 | ASTM E1111 |
| 08/P34 | ASTM E1414 |
| 08/P35 | ASTM E1050 |
| 08/P36 | ASTM E477 |
| 08/P45 | ISO 140, Part 3 |
| 08/P48 | ISO 7779 |

### Thermal Insulation Materials

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Flammability*** | |
| 01/F01 | TAPPI T461-OM |
| 01/F02 | ASTM E84 |
| 01/F05 | ASTM E136 |
| ***Mass, Density, and Dimensional Stability*** | |
| 01/D02 | ASTM C167 |
| 01/D03 | ASTM C209 (Sec. 7) |
| 01/D04 | ASTM C209 (Sec. 14, 2 hour) |
| 01/D05 | ASTM C209 (Sec. 14, 24 hour) by D1037 (Sec. 100-106) |
| 01/D08 | ASTM C302 |
| 01/D09 | ASTM C303 |
| 01/D11 | ASTM C356 |
| 01/D12 | ASTM C411 |
| 01/D13 | ASTM C519 |
| ***Related Material Properties*** | |
| 01/V04 | ASTM E96 |
| 01/V07 | ASTM C1104/C1104M |
| ***Strength*** | |
| 01/S01a | ASTM C165 (Proc. A) |
| 01/S01b | ASTM C165 (Proc. B) |
| 01/S02 | ASTM C203 |
| 01/S03 | ASTM C209 (Sec. 10) |
| 01/S04 | ASTM C209 (Sec. 11) |
| 01/S05 | ASTM C209 (Sec. 12) |
| 01/S06 | ASTM C209 (Sec. 13) |
| 01/S08 | ASTM C446 |
| 01/S10 | ASTM D828 |
| ***Thermal Resistance*** | |
| 01/T01 | ASTM C177 |
| 01/T05 | ASTM C335 |
| 01/T06 | ASTM C518 |
| 01/T10 | ASTM C687 |
| 01/T11 | ASTM C976 |

**NVLAP LAB CODE 100426-0**

### KTL Dallas, Inc.

802 N. Kealy
Lewisville, TX 75057-3136
Contact: Mr. John Olivant
Phone: 972-436-9600
Fax: 972-436-2667
E-Mail: jolivant@icomply.com
URL: http://www.ktl.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CISS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CISS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Immunity Test Methods:*** | |
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |

***Safety Test Methods:***

| | |
|---|---|
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |

***Telecommunications Test Methods:***

| | |
|---|---|
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |
| 12/T42 | ACA TS-002 |
| 12/T43 | ACA TS-003 |
| 12/T44 | ACA TS-004 |
| 12/T45 | ACA TS-006 |
| 12/T49 | ACA TS-016 |

**NVLAP LAB CODE 100427-0**

### Michael & Associates

200 Innovation Blvd., Suite 229
State College, PA 16803
Contact: Mr. Kevin Michael
Phone: 814-234-7042
Fax: 814-235-1381
E-Mail: Michaelassoc@home.com
URL: http://www.michaelassociates.com

### Acoustical Testing Services

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P26 | ANSI S3.19 (ANSI S3.19-1974) |
| 08/P27 | ANSI S12.6 |

**NVLAP LAB CODE 100428-0**

### Matsushita EMC Center

Yunitopia Sasayama, Yashiro
Sasayama-City
Sasayama, Hyogo 669-2356
JAPAN
Contact: Mr. Katsuo Ishihara
Phone: 81-795-52-5681
Fax: 81-795-52-5682
E-Mail: PAN02796@pas.mei.co.jp

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|

***Emissions Test Methods:***

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

***Immunity Test Methods:***

| | |
|---|---|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 100430-0

**Professional Service Industries, Inc., Pittsburgh Test. Lab. Div.**
2710 West 5th Avenue
Eugene, OR 97402
Contact: Mr. Ralph M. Vaughn
Phone: 541-484-9212
Fax: 541-344-2735
E-Mail: ralph.vaughn@PSI.USA.com

**Wood Based Products**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***General Wood Products*** | |
| 23/G02 | ASTM D1037 (Part A, Sec. 11-20) |
| 23/G03 | ASTM D1037 (Part A, Sec. 28-33) |
| 23/G08 | ASTM D4442 (Method A) |
| 23/G10 | ASTM E72 (Sec. 14) |
| 23/G11 | ASTM E72 (Sec. 15) |
| ***Hardwood Plywood*** | |
| 23/H01 | HP-1 (Sec. 4.3) |
| 23/H02 | HP-1 (Sec. 4.4) |
| 23/H03 | HP-1 (Sec. 4.6) |
| ***Particleboard and Medium-Density Fiberboard*** | |
| 23/P04 | ASTM D1037 (Part A, Sec. 81-86) |
| 23/P05 | ASTM D1037 (Part A, Sec. 100-106) |
| 23/P06 | ASTM D1037 (Part A, Sec. 107-110) |
| 23/P07 | ASTM D1037 (Part A, Sec. 118-124) |
| 23/P08 | ASTM D1037 (Part A, Sec. 126-127) |
| 23/P09 | ANSI/A208.1 (Sec. 3.4.4) |
| 23/T01 | ASTM E1333 |
| 23/T02 | FTM 1-83 |
| ***Structural Use Panels*** | |
| 23/S04 | ASTM E661 |
| 23/S05 | PS-1 (Sec. 4.5.2) |
| 23/S06 | PS-1 (Sec. 4.5.3) (CAN/CSA-0325.1-88) |
| 23/S07 | PS-2 (Sec. 6.4.1) (CAN/CSA-0325.1-88) |
| 23/S08 | PS-2 (Sec. 6.4.2) (CAN/CSA-0325.1-88) |
| 23/S09 | PS-2 (Sec. 6.4.4) (CAN/CSA-0325.1-88) |
| 23/S10 | PS-2 (Sec. 6.4.7) (CAN/CSA-0325.1-88) |
| 23/S11 | PS-2 (Sec. 6.4.8) (CAN/CSA-0325.1-88) |
| 23/S12 | PS-2 (Sec. 6.4.9) (CAN/CSA-0325.1-88) |
| 23/S13 | PS-2 (Sec. 6.4.17) (CAN/CSA-0325.1-88) |
| 23/S14 | PS-2 (Sec. 6.4.18) (CAN/CSA-0325.1-88) |
| 23/S15 | PS-2 (Sec. 6.4.19) (Supplement No.1-92 to CAN/CSA-0325.1-88) |
| 23/S16 | PS-2 (Sec. 6.4.20) (Supplement No.1-92 to CAN/CSA-0325.1-88) |

NVLAP LAB CODE 100431-0

**PCTEST Engineering Laboratory, Inc.**
6660-B Dobbin Road
Columbia, MD 21045-4708
Contact: Mr. Randy Ortanez
Phone: 410-290-6652
Fax: 410-290-6654
E-Mail: randy@pctestlab.com
URL: http://www.pctestlab.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Immunity Test Methods:*** | |
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |


(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 100432-0

**InfoGard Laboratories, Inc.**
641 Higuera Street, Second Floor
San Luis Obispo, CA 93401
Contact: Ms. Patricia Lareau
Phone: 805-783-0810
Fax: 805-783-0889
E-Mail: plareau@infogard.com
URL: http://www.infogard.com

**Cryptographic Module Testing**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 17/C01 | NIST-CSTT:140-1; National Institute of Standards and Technology-Cryptographic Support Test Tool (CSTT) for the Federal Information Processing Standard 140-1 (FIPS 140-1) "Security Requirements for Cryptographic Modules." |
| 17/C01a | Test Method Group 1: All test methods derived from FIPS 140-1 and specified in the CSTT, except those listed in Group 2 and Group 3. |
| 17/C01b | Test Method Group 2: Test methods for Physical Security, Level 4 derived from FIPS 140-1 and specified in the CSTT |
| 17/C01c | Test Method Group 3: Test methods for Software Security, Level 4 derived from FIPS 140-1 and specified in the CSTT |
| 17/C02 | FIPS-Approved Cryptographic Algorithms (see <http://csrc.nist.gov/cryptval>) as required in FIPS PUB 140-1. |

NVLAP LAB CODE 100501-0

**Calvert Cliffs Nuclear Power Plant, Inc.**
Member of Constellation Energy Group
1650 Calvert Cliffs Parkway
Lusby, MD 20657-4702
Contact: Mr. Timothy J. Kirkham
Phone: 410-495-6885
Fax: 410-495-2539
E-Mail: timothy.j.kirkham@ccnppi.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802 in a Panasonic UD874A holder for ANSI-N13.11 categories I, II, IIIA, IIIB, IV, VA, VB, VC, VI, VII, VIII.

NVLAP LAB CODE 100502-0

**Union Electric Company, Callaway Plant**
P.O. Box 620
Fulton, MO 65251-0620
Contact: Mr. Christopher C. Graham
Phone: 573-676-8380
Fax: 573-676-4476
E-Mail: ccgraham@cal.ameren.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: March 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic Automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD-802-AS in a Panasonic UD-874A holder for ANSI HPS N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

NVLAP LAB CODE 100503-0

**Mallinckrodt, Inc.**
2703 Wagner Place
Maryland Heights, MO 63043
Contact: Mr. Roger Moroney
Phone: 314-654-7457
Fax: 314-654-7998
E-Mail: roger.moroney@mkg.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing Harshaw automatic reader model 6600E.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Harshaw TLD model 8825 for ANSI-N13.11 catergories II, IIIB, IV, VC, VI, VII.


(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 100504-0

**Naval Dosimetry Center**
National Naval Medical Center
8901 Wisconsin Ave.
Bethesda, MD 20889-5614
Contact: CAPT K. Mendenhall
Phone: 301-295-0142/5410
Fax: 301-295-5981
E-Mail: kmendenhall@navdoscen.med.navy.mil

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing the Harshaw/Bicron automatic reader models 8800PC and 6600.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 and ANSI HPS N13.32-1995 through testing.

Harshaw 8801 (DT 648/PD)(Harshaw 4 Chip Card, 3 TLD700, 1 TLD600) in a Type 88 holder for ANSI-N13.11 categories I, II, IIIA, IIIB, IV, VA, VI, VII, VIII.

Bicron 8840-8841 (4 chip MCP Copper Doped Intergrated Dosimetry System) for ANSI.N13.11 categories I, II, IIIA, IV, VA, VI, VII, VIII.

Harshaw extremity TLD EXTRAD-100 in a finger ring holder for ANSI HPS N13.32 (NIST Handbook 150-4, Table 2) categories I, II, IIIB, IV, VA.

Bicron DXTRAD-707H finger ring for ANSI HPS N13.32 (NIST Handbook 150-4, Table 2) categories I, II, IIIA, IIIB, IV, VA, VB, VC, VI, VII.

NVLAP LAB CODE 100505-0

**Duke Power Company Dosimetry Laboratory**
526 South Church Street
P.O. Box 1006
Charlotte, NC 28201-1006
Contact: Mr. Donald N. Mei
Phone: 704-382-7547
Fax: 704-382-4477
E-Mail: dnmei@duke-energy.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: March 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Harshaw Model 8800.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Harshaw TLD card Type 8801 in a model 8814 BGN holder for ANSI-N13.11 categories I, II, IIIA, IV, VB, VI, VII, VIII.

NVLAP LAB CODE 100506-0

**Southern California Edison**
San Onofre Nuclear Generating Station
5000 Pacific Coast Highway, P.O. Box 128
San Clemente, CA 92674-0128
Contact: Mr. Richard V. Warnock
Phone: 949-368-6784
Fax: 949-368-9881
E-Mail: warnocrv@songs.sce.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS-N13.11-1993 through testing.

Panasonic TLD model UD802-AS2 in a Panasonic holder for ANSI-N13.11 categories I, II, IIIB, IV, VC, VI, VII.

NVLAP LAB CODE 100512-0

**Radiation Detection Company**
162 N. Wolfe Road
P.O. Box 3414
Sunnyvale, CA 94088-3414
Contact: Mr. Richard H. Holden
Phone: 408-735-8700
Fax: 408-735-0126
E-Mail: barrie.laing@radetco.com
URL: http://www.radetco.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing (1) Teledyne 7300 and 310 reader; (2) Harshaw 3000A and 3500 reader; (3) by manual film processing and reading on a Macbeth TD932 densitometer; (4) NE Autoscan 60 system and Ziess microscope and (5) Harshaw 6600 and 8800 TLD readers.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.



(See 'How To Use This Directory' on page 7.)

| DESIGNATION | PROCESS | ANSI-N13.11 CATEGORIES |
|---|---|---|
| Hi Energy Photons TLD-100 powder (Type 06 & 09) | 1* | II, IV |
| Lo Energy Photons TLD-100, 600, 700 chips (Type 22) | 2 | I, IIIB, VI |
| TLD Albedo (Type 22) | 2 | VIII |
| Film XBG (Type 01) | 3 | I, II, IIIA, IIIB, IV, VA, VB, VI, VII |
| Neutron Tracketch PN-3 (Type 23) | 4 | VIII |
| Beta/gamma Albedo TLD (Type 23) | 2 | II, IV, VA, VII |
| TLD-Beta/gamma-TLD 100 powder & chips (Type 30) | 1 or 2 | I, IIIA, IIIB, VA, VB, VI |
| TLD-Beta/gamma-TLD 100 powder & chips (Type 9) | 1 or 2 | VA, VII |

* Process 2 is considered functionally acceptable as a substitute which can be used in lieu of process I as listed above.

Extremity Finger Ring Type 05 Harshaw TLD-100 dosimeter using processes 1 and 2 readers for ANSI HPS N13.32-1995 and NIST Handbook 150-4, table 2 categories II, IVA, VA.

**NVLAP LAB CODE 100514-0**

**Ginna Nuclear Station**
1503 Lake Road
Ontario, NY 14519-9742
Contact: Mr. William H. Thomson
Phone: 716-771-3219
Fax: 716-771-3905
E-Mail: bill_thomson@RGE.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the TLD radiation dosimeters listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS-N13.11-1993 through testing.

Panasonic TLD model UD802-AS in an ISA Model 821 hanger for ANSI-N13.11 categories I, II, IIIB, IV, VA, VI, VII.

Panasonic TLD model UD812A-5 in a Panasonic UD884A-T hanger for ANSI-N13.11 categories I, II, IV, VA, VII.

Combination Panasonic TLD model UD812A-5 and UD809-AS in a Panasonic UD884A-T holder with cd shields for ANSI-N13.11 category VIII.

Rados Electronic Dosimeter RAD-51R with a Rados ADR 1000 and 2000 reader for HPS ANSI-N13.32-1995 categories II, IIIB, IV and VI.

**NVLAP LAB CODE 100516-0**

**Tennessee Valley Authority External Dosimetry Service**
Sequoyah Access Road, P.O. Box 2000
Soddy-Daisy, TN 37379-2000
Contact: Mr. Mark A. Palmer
Phone: 423-843-8857
Fax: 423-843-7133
E-Mail: MAPALMER@TVA.GOV

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: March 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802-AS in an ISA model 820 or Polymer 1-A holder for ANSI HPS N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

**NVLAP LAB CODE 100517-0**

**Carolina Power & Light Company, Harris Energy & Enviro. Center**
3932 New Hill-Holleman Road
P.O. Box 327
New Hill, NC 27562-0327
Contact: Mr. A. G. Cheatham
Phone: 919-362-3215
Fax: 919-362-3354
E-Mail: gooch.cheatham@cplc.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to


(See 'How To Use This Directory' on page 7.)

process the TLD radiation dosimeters listed below through employing a Panasonic automatic reader model UD7I0A.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS-N13.I1-1993 and ANSI HPS-N13.32-1995 through testing.

Panasonic TLD model UD802 in a Panasonic closed type UD-874 ATM1 holder for ANSI HPS-N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

Panasonic extremity TLD model UD-807 in a plastic ring holder for ANSI HPS-13.32 (NIST Handbook I50-4, table 2) category IVA.

Based on equivalency, the Panasonic TLD model UD802 in a wrist holder for ANSI HPS-13.32 (NIST Handbook 150-4, table 2) categories I, II, IIIA, IV, VC, VI, VII.

Merlin Gerin DMC-I00 Electronic Dosimeter (ED) with LDM-101 reader for ANSI HPS N13.11 category IV.

Based on equivalency, the DMC-100 Electronic Personal Dosimeter (EPD) in a wrist holder for ANSI HPS-13.32 (NIST Handbook 150-4, table 2) category IV.

**NVLAP LAB CODE 100518-0**

### Landauer, Inc.

2 Science Road
Glenwood, IL 60425-1586
Contact: Dr. R. Craig Yoder
Phone: 708-755-7000
Fax: 708-755-7011
E-Mail: cyoder@landauerinc.com
URL: http://www.landauerinc.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing (1) Landauer (Kanars Data) automatic film reader; (2) Harshaw 2000 B/D Laser reader; (3) CR-39 manual optical readers; (4) manual densitometers X-Rite, Tech/Ops model 301, Macbeth models TD504, TD931, TD904; (5) ALNOR Dosacus reader; (6) Pulsed Optically Stimulated Luminescence (POSL); (7) Harshaw 4000 single chip reader; (8) microscopes.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Landauer designation:

| DOSIMETER | PROCESS | ANSI N13.11 CATEGORY | |
|---|---|---|---|
| | | Based On Testing | Based On Tech. Equiv. |
| FILM | | | |
| G - Film "GARDRAY" (I00518A) | 1,4 | II, IV, V, VII | |
| R - G badge plus Neutrak ER (I00518G) | 1,2,3,4,8 | VIII | II, IV, V, VII |
| B - G badge plus CR-39(100518L) | 1,3,4 | VIII | II, IV, V, VII |
| C - G badge plus CR-39 and Cadmium | 1,3,4 | | II, IV, V, VII, VIII |
| Y - G badge plus Cadmium | 1,3,4 | | II, IV, V, VII |
| TLD | | | |
| K - ALNOR (TLD 100 or TLD 700 chips)(100518H/K) | 5 | I-VII | |
| W - modified - 2 chip Escort with x-ray filtration (100518-J) | 2,7 | I, II | |
| Z - K badge (TLD 100 or 700 chips) plus Neutron Track Etch Neutrak 144 (100518-U) | 3,5,8 | VIII | I-VII |
| F - L badge plus CR-39 | 1,3 | | I-VIII |
| L - 4 chip Alnor TLD | 5 | | I-VII |
| M - K badge (TLD 700 chips) | 5 | | I-VII |
| S - K badge (TLD 700 chips) plus ER | 3,5 | | I-VIII |
| POSL | | | |
| J - Luxel (003/POSL) plus Neutrak I44 (100518-V) | 6,8 | VIII | I-VII |
| P - Luxel (003/POSL) (100518-U) | 6 | I, II, IIIA, IV, VC, VI, VII | |

This facility has been accredited to process the extremity dosimeters listed below, by virtue of actual demonstration of compliance with ANSI-N13.32-1995 and NIST Handbook I50-4, Pg. I4, Table 2, through employing the following readers/process: (1) Landauer Custom



(See 'How To Use This Directory' on page 7.)

Automated; (2) Kanars Data Custom Automated (film); (3) Alnor Dosacus Automatic Reader; (4) Harshaw 2000B/D, 4000 manual; (5) Macbeth TD504, TD904, TD931 manual; (6) Landauer Custom Luxel reader; (7) Pulsed Optically Stimulated Luminescence (POSL).

| DOSIMETER | PROCESS | ANSI N13.32 CATEGORY | |
|---|---|---|---|
| | | Based On Testing | Based On Tech. Equiv. |
| TLD | | | |
| U - Ring | | I, II, IIIA, | |
| (TLD-100 chip) | | IV, VA, VB, | |
| (Finger) (100518B) | 1,4 | VD, VI, VII | |
| K - Modified K | | | |
| (Wrist) | | | |
| (100518H) | 3,4 | IIIA and VI | I, II, IV, VA, VB, VD, VII |
| POSL | | | |
| P- Luxel | | | |
| (003/POSL) | | | |
| (100518U) | 7 | IIIA and VI | I, II, IV, VA, VB, VII |

**NVLAP LAB CODE 100519-0**

**South Texas Project Dosimetry Laboratory**
P.O. Box 289
Wadsworth, TX 77483
Contact: Mr. G. T. Powell
Phone: 361-972-7566
Fax: 361-972-7757
E-Mail: gtpowell@stpegs.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS-N13.11-1993 through testing.

Panasonic TLD Model UD802-AT in an ISA Model 830 holder for ANSI-N13.11 categories II, IV, VC, VI, VII.

Panasonic TLD Model UD802-AT in an ISA Model 810 holder for ANSI-N13.11 category VIII.

Panasonic TLD Model UD802/Neutron Pack in a Model ISA 830/ISA 810 holder for ANSI-N13.11 category VIII.

**NVLAP LAB CODE 100521-0**

**FENOC, Beaver Valley Power Station**
Mail Drop BV-ERF
P.O. Box 4
Shippingport, PA 15077-0004
Contact: Mr. John T. Lebda
Phone: 724-682-5872
Fax: 724-682-5845
E-Mail: lebdaj@firstenergycorp.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD812-AS2 for ANSI HPS N13.11 categories I, II, IIIA, IIIB, IV, VA, VB, VC, VI, VII.

The dosimeter is housed in a custom made plastic clam shell type holder with filtering of 4mg/cm² mylar over elements 1 & 2, 140 mg/cm² plastic over element 3, and 840 mg/cm² plastic over element 4.

**NVLAP LAB CODE 100524-0**

**Duke Engineering and Services Environmental Laboratory**
400 Donald Lynch Boulevard
Marlborough, MA 01752-4713
Contact: Mr. Edward F. Maher, Sc.D
Phone: 978-568-2522
Fax: 978-568-2520
E-Mail: efmaher@dukeengineering.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing a Panasonic automatic reader model 710A and a Rialto XT extremity dosimeter reader.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 and ANSI HPS N13.32-1995 through testing.

Panasonic TLD model UD-808 in a ISA model 830U holder for ANSI-N13.11 categories I, II, IIIA, IIIB, IV,



(See 'How To Use This Directory' on page 7.)

VA, VB, VC, VI, VII.

Panasonic TLD model 814-AS4 in a ISA model 830U holder for ANSI-N13.11 categories I, II, IIIA, IIIB, IV, VA, VB, VC, VI, VII.

Panasonic TLD models UD808/UD814 combined for category VIII.

Bicron-NE extremity TLD mode 869/A/2B in a ring tape holder for HPS ANSI 13.32 (NIST Handbook 150-4, table 2) categories IVA, IVB, VA, VB and VD.

**NVLAP LAB CODE 100528-0**

**TXU Electric - Comanche Peak Steam Electric Station**
5 miles North of Glen Rose on Hwy. 56 N
P.O. Box 1002
Glen Rose, TX 76043
Contact: Mr. John R. Curtis
Phone: 254-897-5332
Fax: 254-897-0972
E-Mail: jcurtisl@txu.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: June 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802-AT in an ISA 810 holder with Mylar-window for ANSI-N13.11 categories IIIB, IV, VB, VI, VII, VIII.

**NVLAP LAB CODE 100529-0**

**Detroit Edison, Fermi 2 Dosimetry Laboratory**
6400 North Dixie Highway, 100 AIB
Newport, MI 48166
Contact: Mr. Ronald Gillmore
Phone: 734-586-1388
Fax: 734-586-1041
E-Mail: gillmorer@dteenergy.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS-N13.11-1993 through testing.

Panasonic TLD model UD802-AS in an ISA-820 holder for ANSI-N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

**NVLAP LAB CODE 100535-0**

**Entergy Operations, Inc.**
Waterford 3, 17265 River Road
Killona, LA 70066
Contact: Mr. Ronald C. McLendon
Phone: 504-464-3199
Fax: 504-464-3151
E-Mail: rcmlend@entergy.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802-AS in a Panasonic 874A holder for ANSI-N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

**NVLAP LAB CODE 100536-0**

**Pinnacle West Energy Corp., Palo Verde Nuclear Generating Station**
5801 S. Wintersburg Road, Station 6107
Tonopah, AZ 85354-7529
Contact: Mr. Michael W. Lantz
Phone: 623-393-5200
Fax: 623-393-2624
E-Mail: mlantz@apsc.com
URL: http://www.apsc.com/dosim.asp

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the TLD radiation dosimeters listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD812-AS5 in a single use holder for ANSI-N13.11 categories I, II, IIIB, IV, VC, VI, VII.

Panasonic TLD combination UD809 (in UD885A-T holder)/UD812 (in a single use holder) for ANSI-N13.11 category VIII.



(See 'How To Use This Directory' on page 7.)

Merlin Gerlin DMC-100 Electronic Personnel Dosimeter for ANSI-N13.11 categories II, IIIB, IV, VI.

NVLAP LAB CODE 100537-0

**Pacific Gas & Electric Company, Diablo Canyon Nuclear Power Plant**
P.O. Box 56
Avila Beach, CA 93424
Contact: Mr. Mark O. Somerville
Phone: 805-545-4007
Fax: 805-545-6645
E-Mail: mos3@pge.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of complianee with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802-AS in a Panasonic UD875AT holder for ANSI-N13.11 categories II, IIIA, IV, VA, VI, VII, VIII.

Combination Panasonic TLD model UD813-AS8 in a Panasonic UD885AT holder for ANSI-N13.11 eategory VIII.

NVLAP LAB CODE 100538-0

**Con Edison, Indian Point**
Broadway and Bleakley Avenue
Buchanan, NY 10511-1099
Contact: Mr. Edward Salisbury
Phone: 914-271-7118
Fax: 914-734-5734
E-Mail: salisburye@coned.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: June 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI-HPS N13.11-1993 through testing.

Panasonic TLD model UD802-AT in an 874 AT holder for ANSI-N13.11 categories I, II, IIIB, IV, VC, VI, VII, VIII.

NVLAP LAB CODE 100539-0

**U.S. Army Radiation Standards & Dosimetry Laboratory**
Attn: AMSAM-TMD-SR-D, Bldg. 5417
Redstone Arsenal, AL 35898-5000
Contact: Mr. Patrick Kuykendall
Phone: 256-876-3340
Fax: 256-955-6413
E-Mail: patrick.kuykendall@redstone.army.mil

**Ionizing Radiation Dosimetry**
Acereditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic Model 710 reader.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic Model UD802AS in a Panasonic UD-874A-T holder for ANSI-N13.11 categories I, II, IIIA, IIIB, IV, VA, VB, VC, VI, VII, VIII.

NVLAP LAB CODE 100540-0

**Northeast Nuclear Energy Co. Dosimetry Laboratory**
Route 156, Rope Ferry Road
Waterford, CT 06385
Contact: Mr. Robert J. Decensi
Phone: 860-444-5454
Fax: 860-444-5640
E-Mail: deeenrj@nu.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Harshaw model 8800 TLD workstation.

This facility is accredited to proeess the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Harshaw TLD card model 8801N (3 TLD 700, 1 TLD 600 chips) in a Harshaw Model 8810 holder for ANSI-N13.11 categories I, II, IIIB, IV, VB, VI, VII, and VIII.



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 100541-0

**Exelon Generation Company, LLC - TLD Processing Laboratory**
PTC TLD Lab, Room 173
36400 South Essex Road
Wilmington, IL 60481
Contact: Mr. Frank Rescek
Phone: 815-458-7643
Fax: 815-458-7864
E-Mail: Frank.Rescek@Exeloncorp.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802AS in a UD874-T hanger for ANSI-N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

NVLAP LAB CODE 100544-0

**Florida Power & Light Company**
700 Universe Blvd.
P.O. Box 14000
Juno Beach, FL 33408-0420
Contact: Mr. Joseph Danek
Phone: 561-694-4213
Fax: 561-694-3706
E-Mail: joe_danek@fpl.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: June 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD716.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI-N13.11-1993 through testing.

Panasonic TLD model UD802-AT or AS in a ISA 820 holder for ANSI-N13.11 categories I, II, IIIB, IV, VC, VI, VII, VIII.

NVLAP LAB CODE 100548-0

**US Air Force Center for Radiation Dosimetry**
2402 E. Drive
Brooks AFB, TX 78235-5114
Contact: Dr. David N. Erwin
Phone: 210-536-2003
Fax: 210-536-2025
E-Mail: David.Erwin@Guardian.Brooks.AF.MIL
URL: http://sg-www.satx.disa.mil/iera/sdr/sdrd.htm

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: March 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing the Panasonic automatic readers model UD716AGL and UD-7900. Also, the Harshaw 6600 Automatic TLD Reader for the Ext-Rad extremity dosimeter.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802AT in model 820-C hanger for ANSI-N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

Panasonic TLD model UD802AT in ISA model 822 neutron hanger for ANSI-N13.11 categories IV, VIII.

Harshaw Ext-Rad extremity TLD-100 chip in a finger ring strap for ANSI HPS N-13.32-1995 (NIST Handbook 150-4, table 2) categories IV, VA, and VII.

NVLAP LAB CODE 100551-0

**Georgia Power Company/Enviro. Affairs, Enviro. Lab-Dosimetry**
5131 Maner Road
Smyrna, GA 30080-7321
Contact: Mr. Michael C. Nichols
Phone: 404-799-2112
Fax: 404-799-2141
E-Mail: mcnichol@southernco.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: March 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing Panasonic automatic readers model UD-710A and UD-717.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 and ANSI HPS N13.32 through testing.


(See 'How To Use This Directory' on page 7.)

Panasonic TLD model UD802-AS in a Panasonic 854A or UD-874ATM1 (closed) hanger for ANSI HPS N13.11 categories II, IIIA, IV, VC, VI, VII, VIII.

Panasonic extremity TLD model UD-817 in an elastic ring holder for ANSI HPS N13.32-1995 (NIST Handbook 150-4, table 2) categories II, IV and VII.

**NVLAP LAB CODE 100554-0**

**PPL Susquehanna, LLC**
Two North Ninth Street
Allentown, PA 18101-1179
Contact: Mr. Stephen L. Ingram
Phone: 610-774-5412
Fax: 610-774-7205
E-Mail: slingram@papl.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: March 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802-AS in a Panasonic UD874-AT1 or UD874-ATM1 hanger for ANSI-N13.11 categories I, II, IIIB, IV, VC, VI, VII, VIII.

**NVLAP LAB CODE 100555-0**

**ICN Worldwide Dosimetry Service, Div. of ICN Biomedicals, Inc.**
3300 Hyland Ave., ICN Plaza
Costa Mesa, CA 92626
Contact: Ms. Sandra Nemecek
Phone: 714-545-0100 x2297
Fax: 714-668-3149
E-Mail: smncmecck@icnpharm.com
URL: http://www.dosimetry.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: June 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing the TLD automatic readers: Panasonic model UD710A, UD716, and Harshaw models 8800 and 6600. In addition, the TLD manual readers: Panasonic model UD702 and Harshaw models 5500 and 3500. The MacBeth TD932 densitometer, a custom automatic developer and densitometer for film processing and a Bicron Autoscan 60 chemical etch system.

WHOLE BODY

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model ICN UD-802 with a model UD-854 or UD-874 hanger for ANSI-N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

ICN Film Badge (Kodak Type 4) for ANSI-N13.11 categories I, II, IIIA, IV, VA, VI, VII.

ICN Film Badge (Kodak Type 4 with CR39) for ANSI-N13.11 category VIII.

Panasonic TLD model UD-802 with CR39 in a model UD-874 hanger for ANSI-N13.11 category VIII.

ICN Remtrack (Harshaw) TLD model 100 enclosed in a laminated polyethylene material holder for ANSI N13.11 category II and IV.

TLD-100 for ANSI-N13.11 categories I, II, IIIA, IV, VA, VI, VII.

TLD-760 for ANSI-N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

TLD-760 plus CR39 for ANSI-N13.11 category VIII, based on equivalence.

EXTREMITY

This facility has been accredited to process the extremity dosimeters listed below by virtue of actual demonstration of compliance with ANSI HPS N13.32-1995 and NIST Handbook 150-4, Page 14, Table 2 categories.

Panasonic extremity TLD UD-807 in flex ring holder, based on testing, for categories IVA, VA, and VB.

TLD-100 (Ring), based on testing, for categories I, II, IIIA, IV, VA, VB, VD, VI, and VII.

TLD-100 (Wrist), based on technical equivalence, for categories I, II IIIA, IIIB, IV, VA, VI, VII.

TLD-100 1C (Ring), based on technical equivalence, for categories I, II, IIIA, IV, VA, VB, VD.

TLD-760 (Wrist), based on technical equivalence, for categories I, II, IIIA, IIIB, IV, VA, VI, VII.

TLD 802 (Wrist), based on technical equivalence, for categories I, II, IIIA, IV, VC, VI, VII.



(See 'How To Use This Directory' on page 7.)

TLD 803 (Wrist), based on technical equivalence, for catergories I, II, IIIA, IV, VA, VI, VII.

ICN film (Wrist), based on technical eqivalence, for categories I, II, IIIA, IV, VA, VI, VII.

NVLAP LAB CODE 100556-0

**Atomic Energy Industrial Laboratory of the Southwest, Inc.**
9261 Kirby Drive
Houston, TX 77054-2514
Contact: Mr. Steven H. Allen
Phone: 713-790-9719
Fax: 713-790-0542
E-Mail: shallen@aeil.com
URL: http://www.aeil.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing film processing using a computerized custom densitometer.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Film Badge B-4 (Kodak Type 2) for ANSI-N13.11 categories I, II, IIIA, IV, VC, VI, VII.

Film Badge N-5 (Kodak Type 2 and A) for ANSI-N13.11 category VIII.

NVLAP LAB CODE 100559-0

**Troxler Radiation Monitoring Svc. a div. of Troxler Elect. Labs**
3008 Cornwallis Road
P.O. Box 12057
Research Triangle Park, NC 27709
Contact: Mr. Stephen A. Browne
Phone: 919-549-8661
Fax: 919-549-0761
E-Mail: troxrso@troxlerlabs.com
URL: http://troxlerlabs.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: June 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802 with model UD854 hanger for ANSI-N13.11 category I, II, IIIA, IV, VC, VI, VII, VIIIA.

NVLAP LAB CODE 100560-0

**Electric Boat Corp/A General Dynamics Co. Radiological Ctrl. Dept**
75 Eastern Point Road
Groton, CT 06340-4909
Contact: Mr. Robert D. Renza
Phone: 860-433-3674
Fax: 860-433-0946
E-Mail: rrenza@ebmail.gdeb.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: March 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Harshaw manual reader model 4000.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

A Harshaw TLD model 4040, CaF2 Bulb Dosimeter in a model 4039 holder for ANSI HPS N13.11 Category IV.

NVLAP LAB CODE 100561-0

**Newport News Shipbuilding Radiological Control Department**
4101 Washington Avenue
Newport News, VA 23607-2770
Contact: Mrs. C. W. Amos
Phone: 757-380-3243
Fax: 757-380-3778
E-Mail: amos_cw@nns.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: March 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Harshaw automatic reader model 8800.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Harshaw TLD model 2276-L, BG (2 TLD 700, 1 TLD 600) in a Type 80 Harshaw cardholder for ANSI HPS N13.11 category IV.


(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 100562-0

**Radiation Laboratory, Taiwan Power Company**

P.O. Box 7
Shihmen, Taipei 25302
TAIWAN
Contact: Mr. W. W. Yeh
Phone: +886-2-2638-1397
Fax: +886-2-2638-2446
E-Mail: u706667@taipower.com.tw

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic automatic reader model UD710A.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD802AS in a UD-874A holder for ANSI-N13.11 categories I, II, IIIA, IV, VA, VI, VII, VIII.

NVLAP LAB CODE 100565-0

**Naval Nuclear Propulsion Program Directorate, Washington, DC**

Puget Sound Naval Shipyard, Rad. Hlth
Division, Code 105.5, 1400 Farragut Ave
Bremerton, WA 98314-5001
Contact: Mr. Mark S. Johnson
Phone: 360-476-3596
Fax: 360-476-4383

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: March 31, 2001

The facility listed has been evaluated as a representative site and deemed competent to process the radiation dosimeter listed below through employing a Radiac Computer-Indicator Model No. CP-1112/PD TLD reader.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing:

CaF Bulb Dosimeter (DT-526/PD) for ANSI-N13.11 categories II, IV.

The accreditation is also extended to include processing performed by other facilities in the Naval Nuclear Propulsion Program which use identical equipment and procedures as listed above.

NVLAP LAB CODE 100570-0

**Clinton Power Station**

6 mi. East of Clinton, Route 54 East
P.O. Box 678
Clinton, IL 61727-0678
Contact: Ms. Mary J. Lewis
Phone: 217-935-8881 x3718
Fax: 217-935-4934
E-Mail: MLewis@Amergenergy.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing a Panasonic Model UD716AGL automatic reader.

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Panasonic TLD model UD-802-AT in a ISA model 820 holder for ANSI-N13.11 categories I, II, IIIA, IIIB, IV, VA, VB, VI, VII, VIII.

NVLAP LAB CODE 100571-0

**United States Dosimetry Technology, Inc.**

660-A George Washington Way
Richland, WA 99352-4246
Contact: Mr. M. K. Winegardner
Phone: 509-946-8738
Fax: 509-943-2710
E-Mail: mk_wine@compuserve.com
URL: http://www.usdt.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below employing (1) USDT TLD Card Reader (2) Bar-Ray Film Developing System and USDT/Mini film densitometer, and (3) Harshaw Model 2000A TLD Chip Reader.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

USDT-F (TLD-600) and USDT-U (TLD-700) for ANSI-N13.11 categories I, II, IIIA, IV, VA, VI, VII, VIII using (1).

USD T-3 Kodak type 2 film for ANSI-13.11 categories I, II, IIIA, IV, VA, VI, VII using (2).



(See 'How To Use This Directory' on page 7.)

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI N13.32 through testing:

USDT-R finger ring dosimeter for ANSI N13.32 category IV using (3).

**NVLAP LAB CODE 100573-0**

**Proxtronics, Inc.**
5795-B Burke Centre Parkway
P.O. Box 12150
Burke, VA 22015
Contact: Mr. W. Guy Davis
Phone: 703-425-4811
Fax: 703-503-2856
E-Mail: sales@Proxtronics.com
URL: http://www.proxtronics.com

**Ionizing Radiation Dosimetry**
Accreditation Valid Through: June 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing film processing using a Victoreen 07-440 densitometer and TLD processing using a Panasonic UD710A and UD717AS.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 through testing.

Film Badge (Kodak Type II) for ANSI N13.11 categories IIIA, IV and VC.

Panasonic TLD model UD802-AS2 in an ISA 831, GDS 500, or UD875-ATM1 hanger for ANSI N13.11 categories I, II, IIIA, IV, VC, VI, VII, VIII.

Panasonic TLD model UD802-AS2 in a Panasonic 854 hanger for ANSI N13.11 categories IIIA, IV.

Panasonic TLD model UD-817 in a Wallet Card Holder for ANSI N13.11 categories II and IV.

This facility has been accredited to process the extremity dosimeters listed below by virtue of actual demonstration of compliance with ANSI N13.32 - 1995 and NIST Handbook 150-4, page 14, Table 12 categories.

Panasonic extremity TLD model UD-817 in a finger ring strip holder for categories I, II, IIIA, IVA, VA, VB, and VD.

Panasonic TLD model UD-802 (wrist), based on equivalence, for categories I, II, IIIA, IV, VC, VI, and VII

**NVLAP LAB CODE 101004-0**

**Analytics Corporation**
8040 Villa Park Drive
Richmond, VA 23228
Contact: Mr. James A. Calpin, CIH
Phone: 804-264-7100
Fax: 804-264-8873
E-Mail: jcalpin@ix.netcom.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 101006-0**

**Advanced Industrial Hygiene Services, Inc.**
2131 S.W. 2 Ave.
Miami, FL 33129-1411
Contact: Mr. Bruce Marchette
Phone: 305-854-7554
Fax: 305-285-0677
E-Mail: AIHS1@AOL.COM

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 101012-0**

**Dixon Information Inc.**
78 West 2400 South
South Salt Lake, UT 84115-3013
Contact: Mr. Willard C. Dixon
Phone: 801-486-0800
Fax: 801-486-0849

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 101014-0**

**Aires Consulting Group, Inc.**
1550 Hubbard
Batavia, IL 60510
Contact: Ms. Cynthia Darling
Phone: 630-879-3006
Fax: 630-879-3014
E-Mail: cindydarling@airesconsulting.com
URL: airesconsulting.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 101019-0**

**EA Group**
7118 Industrial Park Blvd.
Mentor, OH 44060-5314
Contact: Mr. Carl R. Eggebraaten
Phone: 440-951-3514
Fax: 440-951-3774

URL: http://www.eagroup-ohio.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 101031-0**

**Fiberquant, Inc.**
5025 S. 33rd St.
Phoenix, AZ 85040
Contact: Mr. Larry S. Pierce
Phone: 602-276-6139
Fax: 602-276-4558
E-Mail: FIBERQUANT@ABILNET.COM
URL: http://www.fiberq.com/labs/fq.htm

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 101032-0**

**Batta Laboratories, Inc.**
Delaware Industrial Park
6 Garfield Way
Newark, DE 19713-5817
Contact: Mr. Naresh C. Batta
Phone: 302-737-3376
Fax: 302-737-5764
E-Mail: ncbatta@battaenv.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 101037-0**

**Microscopic Analysis, Inc.**
11760 Westline Industrial Drive
St. Louis, MO 63146-3402
Contact: Mr. Douglas N. Nimmo
Phone: 314-993-2212
Fax: 314-993-3193
E-Mail: IHSI@COMPUSERVE.COM

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 101039-0**

**Davis Environmental Labs, Inc.**
333 W. Wacker Drive, Suite 1400
Chicago, IL 60606-1226
Contact: Mr. David Kedrowski
Phone: 312-782-4486
Fax: 312-782-5145

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: September 30, 2001

**NVLAP LAB CODE 101048-0**

**EMSL Analytical, Inc.**
107 Haddon Avenue
Westmont, NJ 08108-2799
Contact: Mr. Stephen Siegel, CIH
Phone: 856-858-4800
Fax: 856-858-4960
E-Mail: ssiegel@emsl.com
URL: http://www.emsl.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 101048-1

**EMSL Analytical, Inc.**
1770 The Exchange SE, Suite 135
Atlanta, GA 30339
Contact: Richard White
Phone: 770-956-9150
Fax: 770-956-9181
E-Mail: RWhite@emsl.com
URL: http://www.emsl.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101048-2

**EMSL Analytical, Inc.**
1056 Stelton Rd.
Piscataway, NJ 08854
Contact: Adrian Arav
Phone: 908-981-0550
Fax: 908-981-0551
E-Mail: piscatawaylab@emsl.com
URL: http://www.emsl.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101048-3

**EMSL Analytical, Inc.**
382 South Abbott Avenue
Milpitas, CA 95035
Contact: Sean Fitzgerald
Phone: 408-934-7010
Fax: 408-934-7015

URL: http://www.emsl.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101048-4

**EMSL Analytical, Inc.**
212 S. Wagner Road
Ann Arbor, MI 48103
Contact: Hildegard Hohnke
Phone: 734-668-6810
Fax: 734-668-8532
E-Mail: Hhohnke@emsl.com
URL: http://www.emsl.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101048-9

**EMSL Analytical, Inc.**
307 W. 38th Street
New York, NY 10118
Contact: Jose Arriaga
Phone: 212-290-0051
Fax: 212-290-0058
E-Mail: jarriaga@emsl.com
URL: http://www.emsl.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101048-10

**EMSL Analytical, Inc.**
208 Stone Henge Road
Carle Place, NY 11514
Contact: Michele McGowan
Phone: 516-997-7251
Fax: 516-997-7528

URL: http://www.emsl.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101051-0

**Accredited Environmental Technologies, Inc.**
28 North Pennell Road
Media, PA 19063
Contact: Mr. Carl Josephson
Phone: 610-891-0114
Fax: 610-891-0559

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101061-0

**ChemScope, Inc.**
15 Moulthrop Street
North Haven, CT 06473-3686
Contact: Mr. Ronald D. Arena
Phone: 203-865-5605
Fax: 203-498-1610
E-Mail: chem.scope@snet.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101066-0

**Law Engineering and Environmental Services, Inc.**
2100 Riverchase Center, Suite 450
Birmingham, AL 35244
Contact: Ms. Carol Payne
Phone: 205-733-7671
Fax: 205-985-2951
E-Mail: cpayne@lawco.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101086-0

**Analytica Solutions, Inc.**
12189 Pennsylvania Street
Thornton, CO 80241
Contact: Mr. Steve Merritt
Phone: 303-469-8868 x123
Fax: 303-469-5254
E-Mail: smerritt@Analyticagroup.com
URL: http://www.analyticagroup.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101087-0

**Environmental Monitoring & Consulting Associates**
P.O. Box 872
Somerville, NJ 08876
Contact: Mr. Joel Russell
Phone: 732-249-3005
Fax: 732-249-3384

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 101103-0

**Chatfield Technical Consulting Limited**
2071 Dickson Road
Mississauga Ontario L5B 1Y8
CANADA
Contact: Dr. Eric J. Chatfield
Phone: 905-896-7611
Fax: 905-896-1930
E-Mail: echatfield@ejchatfield.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101106-0

**Clayton Group Services**
4636 East Marginal Way South, Suite 215
Seattle, WA 98134-2331
Contact: Ms. Venetia Runnion
Phone: 206-763-7364
Fax: 206-763-4189
E-Mail: vrunnion @claytongrp.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001


(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 101109-0

**Wisconsin Occupational Health Laboratory**
2601 Agriculture Drive
P.O. Box 7996
Madison, WI 53707-7996
Contact: Mr. Lyle Reichmann
Phone: 608-224-6221
Fax: 608-224-6213
E-Mail: lr@mail.slh.wisc.edu

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101111-0

**City of Los Angeles Department of Water and Power**
Department of Water and Power
PO Box 51111, 1630 N. Main St., Bldg. 7
Los Angeles, CA 90051-0100
Contact: Mr. Stanley M. Kung
Phone: 213-367-7270
Fax: 213-367-7285
E-Mail: stanley.kung@water.ladwp.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101125-0

**Clayton Group Services**
3380 Chastain Meadows Pkwy., Suite 300
Kennesaw, GA 30144
Contact: Mr. Alan M. Segrave
Phone: 770-499-7500
Fax: 770-423-4990
E-Mail: ASEG007@AOL.COM
URL: http://www.claytongrp.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101130-0

**TEM, Incorporated**
443 Duane Street
Glen Ellyn, IL 60137
Contact: Mr. James Tuinenga
Phone: 630-790-0880
Fax: 630-790-0882
E-Mail: jimtcih@ameritech.net
URL: http://www.tem-inc.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101135-0

**McKee Environmental Health, Inc.**
303 Westfield Lane
Friendswood, TX 77546-6316
Contact: Mr. Ronald S. McKee
Phone: 281-482-3403
Fax: 281-482-7203
E-Mail: mehi@wt.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101136-0

**American Medical Laboratories, Inc.**
14225 Newbrook Drive
P.O. Box 10841
Chantilly, VA 20153-0841
Contact: Mr. Christopher Kase
Phone: 703-802-6900
Fax: 703-802-7041
E-Mail: ckase@aml.com
URL: http://www.aml.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 101143-0

**AMA Analytical Services, Inc.**
4475 Forbes Blvd.
Lanham, MD 20706
Contact: Mr. Andreas Saldivar
Phone: 301-459-2640
Fax: 301-459-2643
E-Mail: asaldivar@amalab.com
URL: http://www.amalab.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101147-0

**Hygienetics Laboratory Services**
98 North Washington Street
Boston, MA 02114
Contact: Mr. Bryan Clark
Phone: 617-589-0660
Fax: 617-742-4285
E-Mail: lab@hygienetics.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101150-0

**Schneider Laboratories, Inc.**
2512 W. Cary Street
Richmond, VA 23220-5117
Contact: Mr. Raja F. Abouzaki
Phone: 804-353-6778
Fax: 804-353-6928
E-Mail: s_lab@ix.netcom.com
URL: http://www.slabinc.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101151-0

**EMSL Analytical, Inc.**
5125 Adanson Street, Suite 900
Orlando, FL 32804
Contact: Mr. A. Mark Antonelli
Phone: 407-599-5887
Fax: 407-599-9063

URL: http://www.emsl.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101162-0

**EcoSystems Environmental, Inc.**
1408A Vantage Street
Carrollton, TX 75006
Contact: Mr. Bakhtiar Dargali
Phone: 972-416-0520
Fax: 972-416-4512

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101165-0

**International Asbestos Testing Laboratory**
16000 Horizon Way, Unit 100
Mt. Laurel, NJ 08054
Contact: Mr. Frank E. Ehrenfeld, III
Phone: 856-231-9449
Fax: 856-231-9818

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 101170-0

**Gelles Laboratories, Division, CC Technologies**
6141 Avery Road
Dublin, OH 43016
Contact: Dr. Stanley H. Gelles
Phone: 614-761-1214
Fax: 614-761-1633
E-Mail: sgelles@cctlabs.com
URL: http://www.cctechnologies.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101185-0

**SEAS, Inc.**
3089 Pandapas Pond Road
P.O. Box 660
Blacksburg, VA 24063-0660
Contact: Mr. David L. Violette
Phone: 540-951-9283
Fax: 540-951-9282
E-Mail: seas@swva.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101187-0

**ATC Associates Inc.**
104 E. 25th Street 10th Floor
New York, NY 10010
Contact: Ms. Milena Lowd
Phone: 212-353-8280 x247
Fax: 212-353-3599
E-Mail: Lowd15@ATC-ENVIRO.COM

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101188-0

**Tremco, Inc. - Roofing Division, An RPM Company**
3735 Green Road
Beachwood, OH 44122
Contact: Mr. Greg Rudolph
Phone: 216-766-5644
Fax: 216-765-6737

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101192-0

**Philip Environmental Services Corp.**
210 West Sandbank Road
P.O. Box 230
Columbia, IL 62236-0230
Contact: Mr. Craig M. Brooks
Phone: 618-281-7173
Fax: 618-281-5120
E-Mail: cbrooks@philipinc.com
URL: http://www.philipinc.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101199-0

**HYGENIX, INC.**
49 Woodside Street
Stamford, CT 06902-2411
Contact: Mr. Arthur Morris
Phone: 203-324-2222
Fax: 203-324-9857

URL: http://www.hygenix.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 101202-0

**STAT Analysis Corporation**
2201 W. Campbell Park Dr.
Chicago, IL 60612-3501
Contact: Dr. Surendra N. Kumar
Phone: 312-733-0551
Fax: 312-733-2386

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001



(See 'How To Use This Directory' on page 7.)

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 101208-0**

**RJ Lee Group, Inc.**
350 Hochberg Road
Monroeville, PA 15146-1516
Contact: Mr. Drew R. Van Orden
Phone: 724-325-1776
Fax: 724-733-1799
E-Mail: DREW@RJLG.COM
URL: http://www.RJLG.COM

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 101208-2**

**RJ Lee Group, Inc.**
Bay Area Laboratory
530 McCormick Place
San Leandro, CA 94577
Contact: Dr. Benedict Schiefelbein
Phone: 510-567-0480
Fax: 510-567-0488

URL: http://www.RJLG.COM

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 101208-3**

**RJ Lee Group, Inc.**
Manassas Laboratory
10503 Battleview Parkway
Manassas, VA 20109
Contact: Monica McCloy
Phone: 703-368-7880
Fax: 703-368-7761

URL: http://www.RJLG.COM

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 101216-0**

**CTL Environmental Services**
24404 S. Vermont Avenue, Suite 307
Harbor City, CA 90710
Contact: Dr. Stuart E. Salot
Phone: 310-530-5006
Fax: 310-530-0792
E-Mail: salot@ctles.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

**NVLAP LAB CODE 101218-0**

**EMS Laboratories, Inc.**
117 West Bellevue Drive
Pasadena, CA 91105-2503
Contact: Ms. Bernadine M. Kolk
Phone: 626-568-4065
Fax: 626-796-5282
E-Mail: emslab2@aol.com
URL: http://www.cmslabs.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 101221-0**

**Micro Air, Inc.**
6320 La Pas Trail
Indianapolis, IN 46268-4104
Contact: Dr. Morris L.V. French
Phone: 317-293-1533
Fax: 317-290-3566
E-Mail: microair@microair.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 101222-0

**Enviro-Probe, Inc.**
2917 Bruckner Boulevard
Bronx, NY 10461
Contact: Dr. Ved P. Kukreja
Phone: 718-863-0045
Fax: 718-518-7454

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 101228-0

**The Scott Lawson Group, Ltd.**
29 River Road
P.O. Box 3304
Concord, NH 03302-3304
Contact: Mr. Joseph LaBarre
Phone: 603-228-3610
Fax: 603-228-3871

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101232-0

**ERI Consulting Engineers, Inc.**
2024 Republic Drive
P.O. Box 2024
Tyler, TX 75701-2024
Contact: Ms. Kathy R. Schosek
Phone: 903-534-5001
Fax: 903-534-8701
E-Mail: kathy@ericonsulting.com
URL: http://www.ericonsulting.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101233-0

**HIH Laboratory, Inc.**
100 East NASA Road One, Suite 210
P.O. Box 57727
Webster, TX 77598
Contact: Mr. Jerry W. Bright
Phone: 281-338-9000
Fax: 281-338-2351
E-Mail: jerry@hihlaboratory.com
URL: http://www.hihlaboratory.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101234-0

**Braun Intertec Corporation**
6875 Washington Avenue South
P.O. Box 39108
Minneapolis, MN 55439-0108
Contact: Ms. Beth Regan
Phone: 612-942-4828
Fax: 612-942-4844
E-Mail: bregan@brauncorp.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101235-0

**Materials Analytical Services, Inc.**
3945 Lakefield Court
Suwanee, GA 30024
Contact: Dr. William E. Longo
Phone: 770-866-3200
Fax: 770-866-3259
E-Mail: wlongo@mastest.com
URL: http://www.mastest.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101237-0

**State of Connecticut**
Dept. of Public Health Laboratory
P.O. Box 1689
Hartford, CT 06144-1689
Contact: Dr. Kati Kelley
Phone: 860-509-8500
Fax: 860-509-8697

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 101247-0

**Micro Analytical, Inc.**
11521 W. North Ave.
Milwaukee, WI 53226
Contact: Mr. Jon Yakish
Phone: 414-771-0855
Fax: 414-771-6570

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 101249-0

**Institute for Environmental Assessment**
9201 West Broadway, Suite 600
Brooklyn Park, MN 55445
Contact: Ms. Yolanda Pope
Phone: 763-315-7900
Fax: 763-315-7920
E-Mail: yolandap@ieainstitute.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101254-0

**Roy F. Weston, Inc.**
1635 Pumphrey Avenue
Auburn, AL 36832-4303
Contact: Mr. Jamieson D. Webb
Phone: 334-826-6100
Fax: 334-826-8232

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101258-0

**DCM Science Laboratory, Inc.**
12421 W. 49th Ave., Unit 6
Wheat Ridge, CO 80033
Contact: Ms. Cindy Mefford
Phone: 303-463-8270
Fax: 303-463-8267
E-Mail: dcmscilab@aol.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101261-0

**Asbestos Analysis and Information Service, Inc.**
603 North Baker Street
P.O. Box 837
Four Oaks, NC 27524
Contact: Mr. Stephen H. Westbrook
Phone: 919-963-2898
Fax: 919-963-2841
E-Mail: STEHWEST@AOL.COM

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101262-0

**Philip Analytical Services**
4418 Pottsville Pike
Reading, PA 19605
Contact: Mr. Michael Salum
Phone: 610-921-8833
Fax: 610-921-9667
E-Mail: Salum,Michael@philipinc.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101269-0

**Volz Environmental Services, Inc.**
1200 Gulf Lab Road
Pittsburgh, PA 15238-1304
Contact: Mr. George J. Skarupa
Phone: 412-826-8480
Fax: 412-826-8488
E-Mail: georgeskarupa@volzenvironmental.com
URL: http://www.volzenvironmental.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001



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NVLAP LAB CODE 101270-0

**Pinchin Environmental Ltd.**
5749 Coopers Ave.
Mississauga Ontario L4Z 1R9
CANADA
Contact: Ms. Wendy Bunner
Phone: 905-507-4850
Fax: 905-507-4884
E-Mail: wbunncr@pinchin.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101282-0

**Mystic Air Quality Consultants, Inc.**
1204 North Road
Groton, CT 06340
Contact: Mr. Christopher J. Eident
Phone: 860-449-8903
Fax: 860-449-8860
E-Mail: MAQC2@AOL.COM
URL: http://www.mysticair.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101288-0

**University (State) Hygienic Laboratory**
University of Iowa
102 Oakdale Campus, #H101 OH
Iowa City, IA 52242-5002
Contact: Dr. George Breuer
Phone: 319-335-4500
Fax: 319-335-4555
E-Mail: gbreuer@uhl.uiowa.edu
URL: http://www.uhl.uiowa.edu

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101289-0

**Omega Environmental Services**
165 State Street
Hackensack, NJ 07601
Contact: Ms. Veronica Kero
Phone: 201-489-8700
Fax: 201-342-5412
E-Mail: Veronicaomega@att.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101292-0

**Northern Analytical Laboratories, Inc.**
602 South 25th Street
P.O. Box 30315
Billings, MT 59107
Contact: Ms. Kathleen A. Smit
Phone: 406-254-7226
Fax: 406-254-1389
E-Mail: nlabs@wtp.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101301-0

**PMK Group, Inc.**
629 Springfield Road
Kenilworth, NJ 07033
Contact: Mr. Stanley Lewandowski
Phone: 908-686-0044
Fax: 908-686-0715
E-Mail: slewandowski@pmkgroup.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101306-0

**Environmental Services International, Inc.**
6404 MacCorkle Avenue, SW, Suite #2
St. Albans, WV 25177
Contact: Mr. Leiton E. Miller, III
Phone: 304-768-2233
Fax: 304-768-9988
E-Mail: esilab@citynet.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001



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NVLAP LAB CODE 101323-0

**PA DEP Bureau of Laboratories**
P.O. Box 1467
Harrisburg, PA 17105-1467
Contact: Mr. Paul E. Baker
Phone: 717-787-4669
Fax: 717-783-1502
E-Mail: Baker,Paul@al.DEP.state.PA.US

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101331-0

**Kellco Services, Inc.**
3137 Diablo Ave.
Hayward, CA 94545
Contact: Dr. Xiaomin (Simon) Wang
Phone: 510-786-9751
Fax: 510-786-9625
E-Mail: xwang@kellco.com
URL: http://www.kellco.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101332-0

**New York Testing Laboratories, Inc.**
100 Sweeneydale Avenue
Bay Shore, NY 11706
Contact: Mr. William Loch
Phone: 631-952-7300
Fax: 631-952-7441

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101343-0

**O'Brien & Gere Laboratories, Inc.**
5000 Brittonfield Parkway
P.O. Box 4942
Syracuse, NY 13221
Contact: Mr. Michael J. Gerber
Phone: 315-437-0200
Fax: 315-463-7554

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101350-0

**PSI**
850 Poplar Street
Pittsburgh, PA 15220
Contact: Mr. Louis Lombardi
Phone: 412-922-4010 x260
Fax: 412-922-4014
E-Mail: louis.lombardi@psiusa.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101356-0

**Raymond-Beling, Inc.**
1001 16th Street
Moline, IL 61265
Contact: Mr. David M. Bloss
Phone: 309-757-9870
Fax: 309-757-9808
E-Mail: dave_bloss@raymond-beling.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001



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NVLAP LAB CODE 101375-0

**Galson Laboratories**
6601 Kirkville Road
P.O. Box 369
East Syracuse, NY 13057
Contact: Ms. Eva Galson
Phone: 315-432-5227
Fax: 315-437-0571

URL: http://www.galsonlabs.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101384-0

**Health Science Associates**
10771 Noel Street
Los Alamitos, CA 90720-2547
Contact: Ms. Jaime Steedman-Lyde
Phone: 714-220-3922
Fax: 714-220-2081
E-Mail: steedmanlyde@earthlink.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101410-0

**Davis & Floyd, Inc.**
816 East Durst Street
P.O. Drawer 428
Greenwood, SC 29649
Contact: Mr. E. Carl Burrell, Jr.
Phone: 864-229-4413
Fax: 864-229-7119
E-Mail: cburrell@davisfloyd.com
URL: http://www.davisfloyd.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101415-0

**Larron Laboratory**
529 Broadway
Cape Girardeau, MO 63701
Contact: Mr. Ronald E. Farrow
Phone: 573-334-8910
Fax: 573-334-8910
E-Mail: ron.farrow@larronlab.com
URL: www.larronlab.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 101421-0

**Hillmann Environmental Group, L.L.C.**
1600 Route 22 East
Union, NJ 07083-1597
Contact: Ms. Marianne Hillmann
Phone: 908-688-7800
Fax: 908-686-2636
E-Mail: hecopa@penn.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101424-0

**TRC Environmental Corporation**
5 Waterside Crossing
Windsor, CT 06095
Contact: Mr. Lance R. Cotton
Phone: 860-289-8631
Fax: 860-298-6399

URL: http://www.trcsolutions.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101425-0

**Marine Chemist Service, Inc.**
11850 Tug Boat Lane
Newport News, VA 23606
Contact: Ms. Tina Greer
Phone: 757-873-0933
Fax: 757-873-1074
E-Mail: marchem@visi.net
URL: http://www.marinechemist.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101433-0

**Dames & Moore, Inc.**
5 Industrial Way
Salem, NH 03079
Contact: Mr. Douglas R. Lawson
Phone: 603-893-0616
Fax: 603-893-6240

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 101440-0

**RI Analytical Laboratories, Inc.**
41 Illinois Avenue
Warwick, RI 02888-3007
Contact: Mr. Eric Neff
Phone: 401-737-8500
Fax: 401-738-1970

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101442-0

**ASBESTECH**
6825 Fair Oaks Blvd., Suite 103
Carmichael, CA 95608
Contact: Mr. Tommy Conlon
Phone: 916-481-8902
Fax: 916-481-3975
E-Mail: asbestoslab@hotmail.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101457-0

**Assaigai Analytical Laboratories, Inc.**
7300 Jefferson NE
P.O. Box 90430
Albuquerque, NM 87199-0430
Contact: Mr. William P. Biava
Phone: 505-822-8061
Fax: 505-822-8063
E-Mail: bjbiava@swcp.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101459-0

**Forensic Analytical**
3777 Depot Road, Suite 409
Hayward, CA 94545-2761
Contact: Mr. David Sandusky
Phone: 510-887-8828
Fax: 510-887-4218
E-Mail: Daves@forensica.com
URL: http://www.forensica.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101459-1

**Forensic Analytical Specialties, Inc.**
2959 Pacific Commerce Drive
Rancho Domingues, CA 90221
Contact: Matilde Antillon
Phone: 310-763-2374
Fax: 310-763-8684

URL: http://www.forensica.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101463-0

**Northern Testing Laboratories, Inc.**
3330 Industrial Avenue
Fairbanks, AK 99701-7395
Contact: Mr. Michael R. Pollen
Phone: 907-456-3116
Fax: 907-456-3125
E-Mail: mrp@NTLALASKA.com
URL: http://www.NTLALASKA.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 101505-0

**Los Angeles Unified School District**
BSC Annex, Env. Health & Safety Branch
1449 So. San Pedro Street
Los Angeles, CA 90015
Contact: Ms. Greta Galoustian
Phone: 213-743-5086
Fax: 213-749-7201
E-Mail: ggaloust@lausd.k12.ca.us

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101506-0

**Environmental Health Laboratories**
St. Louis County Department of Health
111 So. Meramec
Clayton, MO 63105-1711
Contact: Dr. Robert A. Nicolotti
Phone: 314-615-6830
Fax: 314-854-6648
E-Mail: robert_nicolotti@co.stlouisco.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 101510-0

**Fibertec, Inc.**
4291 Veterans Way, Suite A
Holt, MI 48842
Contact: Mr. Phillip A. Peterson
Phone: 517-699-0345
Fax: 517-699-0388
E-Mail: asbestos@fibertec-usa.com
URL: http://www.asbestos@fibertec-usa.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 101514-0

**EnviroMed Services, Inc.**
25 Science Park
New Haven, CT 06511
Contact: Mr. Joseph Pasquariello
Phone: 203-786-5580
Fax: 203-786-5579

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101515-0

**Law Engineering and Environmental Services, Inc.**
4919 West Laurel Street
Tampa, FL 33607
Contact: Mr. Monte Hall
Phone: 813-289-0750
Fax: 813-289-5474
E-Mail: mhall@lawco.com
URL: http://www.law-USA.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101515-1

**Law Engineering and Environmental Services, Inc.**
5845 N.W. 158th Street
Miami Lakes, FL 33014
Contact: Chris DuBour
Phone: 305-826-5588
Fax: 305-826-1799

URL: http://www.law-USA.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101523-0

**DHMH-Air Quality Laboratory**
201 West Preston Street
P.O. Box 2355
Baltimore, MD 21201-2355
Contact: Ms. Yvonne Tai-Sen-Choy
Phone: 410-767-5948
Fax: 410-333-5403
E-Mail: taisenchoy@DHMH.state.md.us
URL: http://www.charm.net/~epi6/labs.htm

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 101539-0

**Puget Sound Naval Shipyard**
Code 134, Bldg. 371
1400 Farragut Ave.
Bremerton, WA 98314-5000
Contact: Mr. Michael Heaton
Phone: 360-476-8091
Fax: 360-476-5587
E-Mail: heatonm@psns.navy.mil

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101545-0

**Nova Consulting Group, Inc.**
1107 Hazeltine Boulevard, Suite 400
Chaska, MN 55318-1008
Contact: Mr. Steve Cummings
Phone: 612-448-9393
Fax: 612-448-9572
E-Mail: Novasbc@aol.com
URL: http://www.novaconsulting.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101558-0

**Con Edison, EH&S - ChemLab**
31-01 20th Avenue, Bldg. 138
Long Island City, NY 11105-2048
Contact: Mr. Edward Chin
Phone: 718-204-4148
Fax: 718-956-8058

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101567-0

**South Coast Air Quality Management District**
21865 E. Copley Drive
Diamond Bar, CA 91765-4182
Contact: Ms. Corazon B. Choa
Phone: 909-396-2172
Fax: 909-396-2175
E-Mail: cchoa@aqmd.gov

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101572-0

**South Carolina Department of Health & Environmental Control**
Division of Air Quality Analysis
8231 Parklane Road
Columbia, SC 29223-4903
Contact: Mr. Scott A. Reynolds
Phone: 803-896-0902
Fax: 803-896-0980
E-Mail: reynolds@columb36.dhec.state.sc.us

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101578-0

**AGX, Inc.**
50 Progress Avenue
Cranberry Township, PA 16066
Contact: Mr. Daniel Winkle
Phone: 724-776-1905
Fax: 724-776-5714

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101580-0

**Precision Testing Laboratories, Inc.**
1909 S. Eastern
Moore, OK 73160-6060
Contact: Mr. C. Jack Harrel
Phone: 405-793-1468
Fax: 405-793-1489
E-Mail: cjharrel@flash.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101587-0

**Environmental Enterprise Group(EEG), Inc.**
220 North Knoxville, Suite 200
Russellville, AR 72801
Contact: Mr. Keith Zimmerman
Phone: 501-968-6767
Fax: 501-968-1956
E-Mail: KZimmerman@3wco.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101593-0

**National Environmental Reference Laboratory**
C/O US Geological Survey, MS PHL/NERL
P.O. Box 25046
Denver, CO 80225-0046
Contact: Mr. Bruce Hills
Phone: 303-236-3455 x500
Fax: 303-236-3440
E-Mail: bhills@foh.dhhs.gov

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101594-0

**TolTest, Inc.**
1915 North 12th Street
P.O. Box 2186
Toledo, OH 43624-1305
Contact: Ms. Susan Pellitieri
Phone: 419-241-7175
Fax: 419-241-1808
E-Mail: spellitieri@toltest.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101595-0

**Envirotest, Inc.**
3902 Braxton
Houston, TX 77063-6304
Contact: Dr. James D. Murphy
Phone: 713-782-4411
Fax: 713-782-3428
E-Mail: murphy@envirotestinc.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101611-0

**Applied Environmental, Inc.**
11800 Sunrise Valley Drive, Suite 1200
Reston, VA 20191
Contact: Ms. Jana H. Ambrose
Phone: 703-648-0822
Fax: 703-648-0575

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101618-0

**Ambient Group, Inc.**
10 Morris Ave.
Glen Cove, NY 11542
Contact: Mr. William Esposito, Jr.
Phone: 516-609-0009
Fax: 212-463-9397

URL: http://www.Ambientgroup.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101626-0

**GSC Environmental Laboratories, Inc.**
1527 Crescent Drive
Augusta, GA 30909
Contact: Dr. Andrew N. McGovern
Phone: 706-737-0185
Fax: 706-737-0743
E-Mail: gscaugusta@earthlink.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101631-0

**Pacific Rim Environmental, Inc.**
6510 Southcenter Boulevard
Tukwila, WA 98188
Contact: Mr. William F. Golloway
Phone: 206-244-8965
Fax: 206-244-9096

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 101646-0

**Eastern Analytical Services, Inc.**
4 Westchester Plaza
Elmsford, NY 10523-1610
Contact: Mr. Paul Stascavage
Phone: 914-592-8380
Fax: 914-592-8956
E-Mail: PaulS@EASInc.com
URL: http://www.EASInc.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101649-0

**Asbestos Consulting & Testing (ACT)**
14953 West 101st Terrace
Lenexa, KS 66215
Contact: Ms. Tami L. Van
Phone: 913-492-1337
Fax: 913-492-1392

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101661-0

**Aurora Consolidated Laboratories**
8901 W. Lincoln Avenue
West Allis, WI 53227
Contact: Dr. Leon Saryan
Phone: 414-328-7946
Fax: 414-328-8560

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101703-0

**U.S. EPA - National Enforcement Investigations Center**
Box 25227 Bldg. 53, Denver Federal Ctr.
Denver, CO 80225
Contact: Ms. Peggy J. Forney
Phone: 303-236-6079
Fax: 303-236-5116
E-Mail: forney.peggy@epa.gov

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101704-0

**Allegheny Asbestos Analysis**
416 Anthony Street
Carnegie, PA 15106
Contact: Ms. Tammy Seiler
Phone: 412-278-5400
Fax: 412-278-5404
E-Mail: tseiler@gloenvmgmt.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101727-0

**AnalyticaLab**
8270 Archer Avenue
Willow Springs, IL 60480
Contact: Mr. Richard J. Langenderfer
Phone: 708-839-1338
Fax: 708-839-6970

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101732-0

**United Analytical Services, Inc.**
1515 Brook Drive
Downers Grove, IL 60515-1024
Contact: Dr. Charles D. Byers
Phone: 630-691-8271
Fax: 630-691-1819
E-Mail: uasinc@flash.net
URL: http://www.flash.net/~uasinc.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001



(See 'How To Use This Directory' on page 7.)

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101735-0

**Jimmie Ann Bolton**
2105 Nathan Drive
Austin, TX 78728-4530
Contact: Ms. Jimmie Ann Bolton
Phone: 512-251-8388
Fax: 512-251-8388
E-Mail: jabolton@earthlink.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101759-0

**Comprehensive Health Services-Environmental Health PLM Laboratory**
Environmental Health PLM Laboratory
CHS-022
Kennedy Space Center, FL 32899
Contact: Ms. Joanne W. Creech
Phone: 321-867-9014
Fax: 321-867-3694
E-Mail: joanne.creech-1@kmail.ksc.nasa.gov

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101768-0

**Carolina Environmental, Inc.**
102-H Commonwealth Court
Cary, NC 27511
Contact: Dr. Tianbao Bai
Phone: 919-481-1413
Fax: 919-481-1442

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101775-0

**American Asbestos Laboratories, Inc.**
14505 Commerce Way, Suite 400
Miami Lakes, FL 33016
Contact: Dr. Daniel J. Cottrell
Phone: 305-374-8300
Fax: 305-374-9004
E-Mail: eegmiami@mindspring.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101781-0

**Covino Environmental Associates, Inc.**
300 Wildwood Avenue
Woburn, MA 01801
Contact: Ms. Ann D. Eckmann
Phone: 781-933-2555
Fax: 781-932-9402
E-Mail: covino@tiac.net
URL: http://www.covinoenvironmental.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101793-0

**A & B Environmental Services, Inc.**
1643 Federal Road
Houston, TX 77015
Contact: Mr. Robert L. Voorhies
Phone: 713-453-6060
Fax: 713-453-6091
E-Mail: aandblab@flash.net
URL: http://www.ABLABS.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 101803-0

**CAMCO Lab**
11040 Rose Avenue
Fontana, CA 92337-7051
Contact: Ms. Pamela Landreth
Phone: 909-428-3099
Fax: 909-428-3098

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101832-0

**A.R.C. Laboratories, Inc.**
1323 9th Avenue South
Grand Forks, ND 58201
Contact: Mr. Joseph J. Worman
Phone: 701-772-6496
Fax: 701-772-6416
E-Mail: arclabs@arclabs.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101848-0

**Environmental Testing, Inc.**
100 South Cass Street
P.O. Box 138
Middletown, DE 19709-0138
Contact: Ms. Lee Ann Shinaberry
Phone: 302-378-9881
Fax: 302-378-9107
E-Mail: LEEANN.ECSI@DEL.NET

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101853-0

**RCM Laboratories, Inc.**
5400 East Avenue, Second Floor
Countryside, IL 60525
Contact: Mr. Thomas P. Marlin
Phone: 708-485-8600
Fax: 708-485-8607

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101855-0

**Analytical Industries, Inc.**
6025 Kentucky Dam Road
P.O. Box 3327
Paducah, KY 42003
Contact: Mr. Steve Stamper
Phone: 270-898-8683
Fax: 270-898-3531
E-Mail: aii@apex.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101864-0

**Design for Health Environmental Services**
3574 Kettner Blvd.
San Diego, CA 92101
Contact: Mr. Kabir Shefa
Phone: 619-291-1777
Fax: 619-291-4318
E-Mail: DFHPRD@AOL.COM

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 101868-0

**Bella Donna Labs Inc.**
Environmental Consultants and Laboratory
3031 North 114th Street
Wauwatosa, WI 53222
Contact: Mr. Aleksey Torosin
Phone: 414-476-3131
Fax: 414-476-2201

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101870-0

**Sun City Analytical, Inc.**
1409 Montana
El Paso, TX 79902
Contact: Ms. Priscilla Acuna
Phone: 915-533-8840
Fax: 915-533-8843
E-Mail: scai@flash.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101871-0

**Apollo Environmental, Inc.**
11553 U.S. Highway 41 South
P.O. Box 239
Gibsonton, FL 33534-9720
Contact: Mr. Michael L. Williamson
Phone: 813-671-3999
Fax: 813-677-3422
E-Mail: LaFroice@aol.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101872-0

**Micro Analytical Laboratories, Inc.**
5900 Hollis Street, Suite M
Emeryville, CA 94608-2008
Contact: Mr. Frank Raviola
Phone: 510-653-0824
Fax: 510-653-1361
E-Mail: microlab@labmicro.com
URL: http://www.labmicro.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101882-0

**Environmental Hazards Services, L.L.C.**
7469 White Pine Road
Richmond, VA 23237
Contact: Ms. Irma Faszewski
Phone: 804-275-4788
Fax: 804-275-4907
E-Mail: managerqaqc@leadlab.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 101884-0

**Concord Analysis, Inc.**
9960 Canoga Ave., Suite D8
Chatsworth, CA 91311-6704
Contact: Ms. Johanna Fann
Phone: 818-407-0128
Fax: 818-882-9409

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101890-0

**Mountain Laboratories**
10905 East Montgomery Avenue, Suite 1
Spokane, WA 99206
Contact: Ms. Karen L. Drader
Phone: 509-924-9236
Fax: 509-924-2287
E-Mail: mcskaren@myavista.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101891-0

**Asbestos TEM Laboratories, Inc.**
1409 Fifth Street, Suite C
Berkeley, CA 94710
Contact: Mr. R. Mark Bailey
Phone: 510-528-0108
Fax: 510-528-0109
E-Mail: MBaileyASB@aol.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101894-0

**Midwest Laboratories, Inc.**
6246 Joliet Road, Suite 4
Countryside, IL 60525
Contact: Mr. James P. Hahn
Phone: 708-354-7117
Fax: 708-354-7142

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: September 30, 2001



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NVLAP LAB CODE 101895-0

**McCall and Spero Environmental, Inc.**
13005 Middletown Industrial Blvd.
Suite H
Louisville, KY 40223
Contact: Mr. R. Dale McCall
Phone: 502-244-7135
Fax: 502-244-7136
E-Mail: customerservice@mselabs.com
URL: http://www.mselabs.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101896-0

**Reservoirs Environmental Services, Inc.**
1827 Grant Street
Denver, CO 80203
Contact: Ms. Jeanne Spencer Orr
Phone: 303-830-1986
Fax: 303-863-9196
E-Mail: residen@rmi.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101902-0

**E. M. Analytical, Inc.**
8000 North Ocean Drive
Dania, FL 33004-3078
Contact: Ms. Pat Blackwelder
Phone: 305-751-1184
Fax: 954-921-6747
E-Mail: pblackwelder@rsmas.miami.edu

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101904-0

**Scientific Laboratories, Inc.**
13635 Genito Road
Midlothian, VA 23112
Contact: Mr. Rob Fleet
Phone: 804-763-1200
Fax: 804-763-1800
E-Mail: rob_fleet@hotmail.com
URL: http://www.scilabs.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101904-1

**Scientific Laboratories, Inc.**
117 East 30th Street
New York, NY 10016
Contact: Dr. Robert E. Tompkins
Phone: 212-679-8600
Fax: 212-679-9392
E-Mail: rtomplins@scilabs.com
URL: http://www.scilabs.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101909-0

**Analytical Labs San Francisco, Inc.**
467 Potrero Avenue
San Francisco, CA 94110
Contact: Ms. Olga Kist
Phone: 415-552-4595
Fax: 415-552-0730
E-Mail: alsf@wenet.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 101910-0

**PBS Environmental Building Consultants, Inc.**
1220 SW Morrison Street, Suite 600
Portland, OR 97205-2225
Contact: Mr. Rollie Champe
Phone: 503-248-1939
Fax: 503-248-0223

URL: http://www.pbsenv.com/pbsinfo

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101917-0

**DataChem Laboratories**
4388 Glendale-Milford Road
Cincinnati, OH 45242-3706
Contact: Ms. Anna Marie Ristich
Phone: 513-733-5336
Fax: 513-733-5347
E-Mail: amristich@datachemlabs.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101920-0

**Lab/Cor, Inc.**
7619 6th Avenue, NW
Seattle, WA 98117-4037
Contact: Mr. John Harris
Phone: 206-781-0155
Fax: 206-789-8424
E-Mail: mail@labcor.net
URL: http://www.labcor.net

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101926-0

**Environmental Management Consultants, Inc.**
7342 East Thomas Road
Scottsdale, AZ 85251-7216
Contact: Mr. Kurt A. Kettler
Phone: 480-990-2069
Fax: 480-990-8468
E-Mail: kkettler@earthlink.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101941-0

**Kevco Services, Inc.**
890 Pittsburgh Road
Butler, PA 16002-8901
Contact: Mr. George M. Beck
Phone: 724-586-6343
Fax: 724-586-2172

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101948-0

**MACS Lab, Inc.**
2070A Walsh Avenue
Santa Clara, CA 95050-2531
Contact: Mr. James A. Richards
Phone: 408-727-9727
Fax: 408-727-7065
E-Mail: jrichards@macslab.com
URL: http://www.macslab.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: March 31, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 101949-0

**LEX Scientific Inc.**
2 Quebec Street, Suite 204
Guelph Ontario N1H 2T3
CANADA
Contact: Ms. Kim O'Neill
Phone: 519-824-7082
Fax: 519-824-5784
E-Mail: LEXSCI@SENTEX.NET
URL: http://www.sentex.net/~LEXSCI

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 101950-0

**WKP Laboratories, Inc.**
228 E. 45th St. 10 Floor
New York City, NY 10017
Contact: Mr. Fabio J. Pedone
Phone: 212-922-0077
Fax: 212-922-0630

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101953-0

**JLC Environmental Consultants, Inc.**
200 Park Avenue South, Suite 1001
New York, NY 10003
Contact: Mr. Al Wallner
Phone: 212-420-8119
Fax: 212-420-6092
E-Mail: JLCenviron@aol.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101958-0

**Athenica Environmental Services, Inc.**
45-09 Greenpoint Avenue
Long Island City, NY 11104
Contact: Mr. Spiro Dongaris
Phone: 718-784-7490
Fax: 718-784-4085

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101959-0

**QuanTEM Laboratories, LLC**
2033 Heritage Park Drive
Oklahoma City, OK 73120-7579
Contact: Mr. John E. Barnett
Phone: 405-755-7272
Fax: 405-755-2058
E-Mail: quantem@ionet.net
URL: http://www.quantem.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 101967-0

**NY Environmental & Analytical Labs, Inc.**
88 Harbor Road
Port Washington, NY 11050
Contact: Mr. Li Tsang
Phone: 516-944-9500
Fax: 516-944-9507
E-Mail: NYEA@YAHOO.COM

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101973-0

**Law Engineering and Environmental Services, Inc.**
7616 LBJ Freeway, Suite 600
Dallas, TX 75251
Contact: Mr. John R. Cates
Phone: 972-934-0800
Fax: 972-934-1429
E-Mail: jcates@lawco.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101977-0

**ACM Environmental, Inc.**
229 South Michigan Street
South Bend, IN 46601
Contact: Mr. Michael A. Dials
Phone: 219-234-8435
Fax: 219-234-6800

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101990-0

**Iowa Environmental Services, Inc.**
4801 Grand Avenue
Des Moines, IA 50312
Contact: Mr. Richard E. Soyer
Phone: 515-279-8042
Fax: 515-279-1853

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 101997-0

**Hygieneering, Inc.**
7575 Plaza Court
Willowbrook, IL 60521
Contact: Ms. Jacqueline M. Cadwallader
Phone: 630-654-2550
Fax: 630-789-3813

URL: http://www.hygieneering.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 102000-0

**Louisiana Department of Environmental Quality Microanalytical Lab**
Microanalytical Lab
8000 GSRI Avenue, Building #402
Baton Rouge, LA 70820
Contact: Ms. Pamela D. Ellis
Phone: 225-765-0876
Fax: 225-765-0048
E-Mail: pame@deq.state.la.us/

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102001-0

**Testing Mechanics Corp.**
3770 Merrick Road
Seaford, NY 11783-2815
Contact: Mr. Kevin Tumulty
Phone: 516-221-3800
Fax: 516-221-3810
E-Mail: LITUMULTY@AOL.COM

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102003-0

**GLE Associates, Inc.**
1451 Channelside Drive, Suite 200
Tampa, FL 33605
Contact: Ms. Jennifer Workman
Phone: 813-241-8350
Fax: 813-241-8737
E-Mail: jworkman@gleassociates.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102005-0

**University of Alabama Asbestos Laboratory**
Bryant Drive - Martha Parham West
P.O. Box 870388
Tuscaloosa, AL 35487-0388
Contact: Mr. John Sikes
Phone: 205-348-4667
Fax: 205-348-9878
E-Mail: jsikes@ccs.us.edu
URL: http://bama.ua.edu/~deip/envprogs.html#LAB

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 102006-0

**Solar Environmental Services, Inc.**
1131 E. 76th Avenue, Suite 102
Anchorage, AK 99518
Contact: Ms. Gracita O. Torrijos
Phone: 907-349-7705
Fax: 907-349-7944
E-Mail: sesenvir@alaska.net
URL: http://www.alaska.net/~sesenvir

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 102008-0

**Micro Air of Texas, Inc.**
1052 Hercules Drive
Houston, TX 77058
Contact: Mr. Eric Eitzen
Phone: 281-280-9965
Fax: 281-280-9847

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102010-0

**Fluor Fernald, Inc., Analytical Laboratory Services**
P.O. Box 538704
Cincinnati, OH 45253-8704
Contact: Ms. Amy Meyer
Phone: 513-648-5423
Fax: 513-648-5198
E-Mail: amy_meyer@fernald.gov

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102011-0

**Airtek Environmental Corp.**
39 West 38th Street, 12th Floor
New York, NY 10018
Contact: Mr. Saad Zouak
Phone: 212-768-0516
Fax: 212-768-0759

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102012-0

**JMS Environmental Associates, Ltd.**
816 Burr Oak Drive
Westmont, IL 60559
Contact: Mr. John Aschbacher
Phone: 630-655-8500
Fax: 630-655-8724
E-Mail: jms@starnetinc.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102013-0

**Hi-Tech Environmental and Laboratory Services**
DBA Hi-Tech Environmental & Lab. Srvs.
5396 Lincoln Ave., Suite A
Cypress, CA 90630
Contact: Ms. Gwenda Hatcher
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Fax: 714-827-0695
E-Mail: Hitechol@ix.netcom.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 102021-0

**Safe Environment of America, Inc.**
dba Med-Tox Northwest
3902 West Valley Highway North, Ste. 502
Auburn, WA 98002
Contact: Ms. Kimberly Brooks
Phone: 253-351-0677
Fax: 253-351-0688
E-Mail: medtownw@msn.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102025-0

**OCCU-TEC, Inc.**
6700 Corporate Drive, Suite 130
Kansas City, MO 64120
Contact: Mr. Greg Sharp
Phone: 816-231-5580
Fax: 816-231-5641
E-Mail: occutec@unicom.net
URL: http://www.occutec.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102029-0

**ESG Laboratories**
5933 W. 71st Street
Indianapolis, IN 46278
Contact: Ms. Mary Dunlap
Phone: 317-290-1471
Fax: 317-290-1670

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 102031-0

**ATC Associates, Inc.**
6746 South Revere Parkway, Suite 180
Englewood, CO 80112-6708
Contact: Mr. Jeffrey Lomme
Phone: 303-799-6100
Fax: 303-799-3441

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102035-0

**Law Engineering and Environmental Services, Inc.**
4634 S. 36th Place
Phoenix, AZ 85040
Contact: Mr. Michael A. Cook
Phone: 602-437-0250
Fax: 602-437-3675
E-Mail: mcook@lawco.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102041-0

**R. Robinson Analytical Services, Inc.**
1960 Peyton Drive
Pensacola, FL 32503
Contact: Mr. William F. Robin Robinson
Phone: 850-438-5552
Fax: 850-432-7394
E-Mail: rrobinson@gulf.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102044-0

**Loflin Environmental Services,Inc.**
2020 Montrose, Suite 100
Houston, TX 77006
Contact: Mr. James Murray
Phone: 713-521-3300
Fax: 713-523-0829
E-Mail: loflin1@ibm.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102046-0

**Criterion Laboratories, Inc.**
3370 Progress Drive, Suite J
Bensalem, PA 19020
Contact: Mr. James A. Weltz
Phone: 215-244-1300 x25
Fax: 215-244-4349
E-Mail: j.weltz@criterionlabs.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102047-0

**KAM Consultants**
35-40 36th Street
Long Island City, NY 11106
Contact: Mr. George Kouvaras
Phone: 718-729-1997
Fax: 718-729-1876

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 102050-0

**Occupational Health Conservation, Inc.**
1840 Southside Blvd., Suite 3C
Jacksonville, FL 32216-0317
Contact: Mr. Gregory Davis
Phone: 904-725-8279
Fax: 904-721-2809
E-Mail: lab@ohcnet.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102053-0

**Dove Environmental Corporation**
4715 NW 157th Street, Suite 203
Miami, FL 33014
Contact: Mr. Rajendranath Ramnath
Phone: 305-620-6050
Fax: 305-620-6350

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102056-0

**Steve Moody Micro Services, Inc.**
1510 Randolph St., Suite #602
Carrollton, TX 75006
Contact: Mr. Steve Moody
Phone: 972-446-9482
Fax: 972-446-9870
E-Mail: SMMS1@AIRMAIL.NET

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102057-0

**Niche Analysis, Inc.**
6 Gramatan Avenue, Suite 404
Mount Vernon, NY 10550
Contact: Dr. Thomas Palackal
Phone: 914-663-8937
Fax: 914-663-8782

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102061-0

**Omni Environmental, Inc.**
13740 Research Blvd., Suite H-5
Austin, TX 78750
Contact: Mr. Joseph Mink
Phone: 512-258-9114
Fax: 512-258-9115
E-Mail: jmink@prismnet.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102062-0

**National Econ Corporation**
730 El Camino Real
Tustin, CA 92780
Contact: Mr. Mark S. Ervin
Phone: 714-730-9235
Fax: 714-730-9236
E-Mail: NationalEconCorp@earthlink.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 102063-0

**NVL Laboratories, Inc.**
4708 Aurora Avenue N.
Seattle, WA 98103
Contact: Mr. Nghiep Vi Ly
Phone: 206-547-0100
Fax: 206-634-1936
E-Mail: munaf@nvllabs.com
URL: http://www.nvllabs.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 102065-0

**Wonder Makers Environmental, Inc.**
2117 Lane Boulevard
P.O. Box 50209
Kalamazoo, MI 49005-0209
Contact: Dr. Michael Pinto
Phone: 616-382-4154
Fax: 616-382-4161
E-Mail: info@wondermakers.com
URL: http://www.wondermakers.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 102073-0

**Triad Environmental Consulting, Inc.**
309 3rd Avenue
Huntington, WV 25701
Contact: Mr. Brian E. Galligan
Phone: 304-523-2195
Fax: 304-523-2197
E-Mail: Duxster@earthlink.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102075-0

**S&ME, Inc.**
9751 Southern Pine Boulevard
P.O. Box 7668
Charlotte, NC 28241-7668
Contact: Ms. Jane Wasilewski
Phone: 704-523-4726
Fax: 704-525-3953
E-Mail: jwasilewski@smeinc.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 102077-0

**Palmetto Laboratory, Inc.**
2351 Fifth Avenue North
St. Petersburg, FL 33713
Contact: Mr. John J. Henderson
Phone: 727-328-9850
Fax: 727-328-9830

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 102078-0

**FRS Geotech, Inc.**
1441 West 46th Avenue, Suite 14
Denver, CO 80211-2338
Contact: Mr. Ed Raines
Phone: 303-477-2559
Fax: 303-477-2580
E-Mail: frsgeo@ix.netcom.com
URL: http://www.netcom.com/frsgeo

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 102079-0

**SCILAB BOSTON, Inc.**
8 School Street
East Weymouth, MA 02189
Contact: Mr. John Sulkowski
Phone: 781-337-9334
Fax: 781-337-7642
E-Mail: jsulkowski@scilabs.com
URL: http://www.SCILABS.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102081-0

**Legend Technical Services, Inc.**
775 Vandalia Street
St. Paul, MN 55114
Contact: Ms. Cheryl Sykora
Phone: 612-642-1150
Fax: 612-642-1239
E-Mail: cas@legend-group.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 102082-0

**Analytical Environmental Services, Inc.**
3125 Marjan Drive
Atlanta, GA 30340
Contact: Mr. Mehmet Yildirim
Phone: 800-972-4889
Fax: 770-457-8188

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 102083-0

**Twin Ports Testing, Inc.**
1301 N. 3rd Street
Superior, WI 54880-1131
Contact: Mr. Greg Heinecke
Phone: 715-392-7114
Fax: 715-392-7163
E-Mail: TPT@GNN.COM

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102085-0

**Brewer Environmental Services Industrial Hygiene Group Laboratory**
a div. of Brewer Env. Industries, Inc.
311B Pacific Street
Honolulu, HI 96817
Contact: Mr. Steve Tanaka
Phone: 808-848-8866
Fax: 808-847-5267
E-Mail: stanaka@brewerenv.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 102086-0

**DH Analytical Services**
13955 Murphy Road, Suite 208
Stafford, TX 77477
Contact: Mr. Joseph Bury
Phone: 281-208-4569
Fax: 281-208-4579
E-Mail: JBURY@ev1.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102087-0

**Hygeia Laboratories, Inc.**
1300 Williams Drive, Suite A
Marietta, GA 30066-6299
Contact: Mr. Clayton Call
Phone: 770-514-6933
Fax: 770-514-6966
E-Mail: call67@atc-enviro.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102089-0

**Alpine Consulting, Inc.**
1706 N. Circle Drive
Colorado Springs, CO 80909
Contact: Mr. Kevin R. Weaver
Phone: 719-473-2311
Fax: 719-473-2312

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102090-0

**Bay Area Air Quality Management District**
939 Ellis Street
San Francisco, CA 94109
Contact: Mr. James Hesson
Phone: 415-749-4625
Fax: 415-749-5101
E-Mail: jhesson@baaqmd.gov

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 102091-0

**Converse Consultants**
4840 Mill Street #5
Reno, NV 89502
Contact: Mr. Dan R. Dolk
Phone: 775-856-3833
Fax: 775-856-3513

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102093-0

**EssTek Ohio, Inc.**
6950 Engle Road #B
Middleburg Heights, OH 44130-3420
Contact: Mr. Clifford W. Thomas
Phone: 440-826-4220
Fax: 440-826-3841

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102101-0

**Taylor Environmental Group, Inc.**
130 Jericho Turnpike
Floral Park, NY 11001
Contact: Mr. George Taylor
Phone: 516-358-2955
Fax: 516-358-1780
E-Mail: georget@taylorenvironmental.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 102102-0

**Analytical Chemistry Services (ACS), Dolan Chemical Lab**
Dolan Chemical Lab
1 Riverside Plaza
Columbus, OH 43215-2373
Contact: Mr. Geoffrey E. Campbell
Phone: 614-836-4210
Fax: 614-836-4168
E-Mail: Geoffrey_E._Campbell@AEP.COM

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102104-0

**EMSL Analytical, Inc.**
620-G Guilford College Road
Greensboro, NC 27409
Contact: Mr. Nathan Durham
Phone: 336-297-1487
Fax: 336-297-1676

URL: http://www.emsl.com/

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102106-0

**EMSL Analytical, Inc.**
2501 Central Parkway, Suite C-13
Houston, TX 77092
Contact: Mr. Darryl Neldner
Phone: 713-686-3635
Fax: 713-686-3645

URL: http://www/emsl.com/

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102108-0

**m.a.c. Paran Consulting Services, Inc.**
Analytical Laboratory
4005 Bach Buxton Road
Amelia, OH 45102
Contact: Mr. James R. Jones
Phone: 513-752-9111
Fax: 513-752-7973

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 102111-0

**Cape Environmental Management, Inc.**
2302 Parklake Drive, Suite 200
Atlanta, GA 30345-2907
Contact: Mr. Aleksey Reznik
Phone: 770-908-7200
Fax: 770-908-7219

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102112-0

**Oklahoma Dept. of Environmental Quality-DEQ Laboratory**
P.O. Box 1677
Oklahoma City, OK 73101-1677
Contact: Mr. Chris Armstrong
Phone: 405-702-9129
Fax: 405-702-9101
E-Mail: CHRIS.Armstrong@deqmail.state.ok.us

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 102114-0

**EAI, Inc.**
454 Central Avenue
Jersey City, NJ 07307
Contact: Mr. Robert Carvalho
Phone: 201-714-9858
Fax: 201-714-9895

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102115-0

**Industrial Laboratory**
Norfolk Naval Shipyard
Building 184, 3rd Fl.
Portsmouth, VA 23709-5000
Contact: Mr. Robert West
Phone: 757-396-3207
Fax: 757-396-3972
E-Mail: WestR@nnsy.navy.mil

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 102116-0

**Hygeia Laboratories Inc.**
82 W. Sierra Madre Blvd.
Sierra Madre, CA 91024-2434
Contact: Mr. Gustavo Delgado
Phone: 626-355-4711
Fax: 626-355-4497
E-Mail: gdelgado77@atc-enviro.com
URL: htpp://home.earthlink.net/delgadog

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 102118-0

**Apex Research, Inc.**
8739 Main Street, Suite 1
Whitmore Lake, MI 48189
Contact: Mr. Robert Letarte
Phone: 734-449-9990
Fax: 734-449-9991

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 200002-0

**Cygnacom Solutions, Inc. An Entrust Technologies Company**
7927 Jones Branch Drive, Suite 100 West
McLean, VA 22102-3305
Contact: Dr. Santosh Chokhani
Phone: 703-848-0883
Fax: 703-848-0960
E-Mail: chokhani@cygnacom.com
URL: http://cygnacom.com

**Common Criteria Testing**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 26/A01 | ISO/IEC 15408: Common Criteria for Info Tech Security Evaluation; Common Evaluation Methodology for Info Tech Security, Part 1; Common Methodology for Info Tech Security Evaluation, Part 2 |
| 26/A01a | APE: Protection Profile evaluation |
| 26/A01b | ASE: Security Target evaluation |
| 26/A01c | EAL1: Evaluation assurance level 1 |
| 26/A01d | EAL2: Evaluation assurance level 2 |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| 26/A01e | EAL3: Evaluation assurance level 3 |
| 26/A01f | EAL4: Evaluation assurance level 4 |

**Cryptographic Module Testing**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 17/C01 | NIST-CSTT:140-1; National Institute of Standards and Technology-Cryptographic Support Test Tool (CSTT) for the Federal Information Processing Standard 140-1 (FIPS 140-1) "Security Requirements for Cryptographic Modules." |
| 17/C01a | Test Method Group 1: All test methods derived from FIPS 140-1 and specified in the CSTT, except those listed in Group 2 and Group 3. |
| 17/C01b | Test Method Group 2: Test methods for Physical Security, Level 4 derived from FIPS 140-1 and specified in the CSTT |
| 17/C01c | Test Method Group 3: Test methods for Software Security, Level 4 derived from FIPS 140-1 and specified in the CSTT |
| 17/C02 | FIPS-Approved Cryptographic Algorithms (see <http://csrc.nist.gov/cryptval>) as required in FIPS PUB 140-1. |

**NVLAP LAB CODE 200004-0**

## Integrity Design & Test Services, an Entela Company

37 Ayer Road, Unit #7 & #9
Littleton, MA 01460
Contact: Ms. Sherryl Acey
Phone: 616-247-0515
Fax: 616-247-7527
E-Mail: sacey@entela.com
URL: integrity@idts.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200005-0**

## Motorola EMC Test Services Lab

20 Cabot Boulevard
Mansfield, MA 02048-1153
Contact: Mr. James E. Powers
Phone: 508-261-5241
Fax: 508-261-4777
E-Mail: LJP018@email.mot.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200007-0**

## Lithonia Testing Laboratories

1335 Industrial Blvd.
P.O. Box A
Conyers, GA 30012-9001
Contact: Mr. James Hospodarsky
Phone: 770-922-9000 x2424
Fax: 770-929-8789
E-Mail: jhospodarsky@lithonia.com

**Energy Efficient Lighting Products**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Luminaires (Lighting Fixtures)*** | |
| 22/F04 | IES LM-41 |


(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 200010-0

### Tri-State Materials Testing Lab, Inc.

121 P North Plains Industrial Road
Wallingford, CT 06492
Contact: Mr. William Antonetti
Phone: 203-949-7733
Fax: 203-949-7735
E-Mail: mattestlab@aol.com
URL: http://www.materials-testing.com

**Construction Materials Testing**

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Aggregates*** | |
| 02/A03 | ASTM C29 |
| 02/A04 | ASTM C40 |
| 02/A07 | ASTM C117 |
| 02/A09 | ASTM C127 |
| 02/A10 | ASTM C128 |
| 02/A12 | ASTM C136 |
| 02/A15 | ASTM D75 |
| 02/A44 | ASTM C566 |
| ***Cement*** | |
| 02/A17 | ASTM C109 |
| 02/A22 | ASTM C183 |
| ***Concrete*** | |
| 02/A01 | ASTM C39 |
| 02/A02 | ASTM C617 |
| 02/A41 | ASTM C192 |
| 02/A43 | ASTM C1064 |
| 02/G01 | ASTM C31/C172/C143/C138/C231 |
| ***Road and Paving Materials*** | |
| 02/M08 | ASTM D979 |
| 02/M24 | ASTM D2041 |
| 02/M25 | ASTM D2726 |
| ***Soil and Rock*** | |
| 02/L02 | ASTM D422 |
| 02/L04 | ASTM D698 |
| 02/L06 | ASTM D1140 |
| 02/L08 | ASTM D1557 |
| 02/L13 | ASTM D2216 |
| 02/L20 | ASTM D4318 |
| ***Standard Practices*** | |
| 02/A38 | ASTM E329 |
| 02/A39 | ASTM C1077 |
| 02/M26 | ASTM D3666 |

NVLAP LAB CODE 200012-0

### IPS Corporation

1878-1, Harumiya Ono, Tatsuno-machi,
Kamiina-gun, Nagano-ken, PO Box 399-0601
Nagano 399-0601
JAPAN
Contact: Mr. Takashi Maruyama
Phone: +81-266-44-5200
Fax: +81-266-44-5300
E-Mail: maruyama@ips-emc.co.jp
URL: http://www.ips-emc.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

NVLAP LAB CODE 200013-0

### ENCORP

615 North Nash Street, Suite 203
El Segundo, CA 90245
Contact: Mr. Roger Casillas
Phone: 310-640-9811
Fax: 310-640-9804
E-Mail: fmateo@encorp.net
URL: http://www.encorp.net

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: December 31, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 200016-0

**Daybrite Lighting (Genlyte Thomas Group) Photometric Laboratory**

776 S. Green Street
P.O. Box 1687
Tupelo, MS 38802-1687
Contact: Dr. David W. Knoble, P.E.
Phone: 662-842-7212
Fax: 662-841-5596
E-Mail: dknoble@genlytethomas.com

**Energy Efficient Lighting Products**

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Luminaires (Lighting Fixtures)*** | |
| 22/F01 | IES LM-10 |
| 22/F03 | IES LM-35 |
| 22/F04 | IES LM-41 |
| 22/F05 | IES LM-46 |

NVLAP LAB CODE 200017-0

**DOMUS ITSL**

116 Albert Street, Suite 200
Ottawa Ontario K1P 5G3
CANADA
Contact: Ms. Laurie L. Mack
Phone: 613-755-2215
Fax: 613-230-3274
E-Mail: laurie_mack@lgs.com
URL: http://www.domus.com

**Cryptographic Module Testing**

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 17/C01 | NIST-CSTT:140-1; National Institute of Standards and Technology-Cryptographic Support Test Tool (CSTT) for the Federal Information Processing Standard 140-1 (FIPS 140-1) "Security Requirements for Cryptographic Modules." |
| 17/C01a | Test Method Group 1: All test methods derived from FIPS 140-1 and specified in the CSTT, except those listed in Group 2 and Group 3. |
| 17/C01b | Test Method Group 2: Test methods for Physical Security, Level 4 derived from FIPS 140-1 and specified in the CSTT |
| 17/C01c | Test Method Group 3: Test methods for Software Security, Level 4 derived from FIPS 140-1 and specified in the CSTT |
| 17/C02 | FIPS-Approved Cryptographic Algorithms (see <http://csrc.nist.gov/cryptval>) as required in FIPS PUB 140-1. |

NVLAP LAB CODE 200018-0

**Test-Con Incorporated**

16 East Franlin Street
P.O. Box 3116
Danbury, CT 06813-3116
Contact: Mr. Chin Okwuka
Phone: 203-748-3012
Fax: 203-778-0633
E-Mail: chin@test-con.com
URL: http://www.test-con.com

**Construction Materials Testing**

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Admixtures*** | |
| 02/A35 | ASTM C233 |
| ***Aggregates*** | |
| 02/A03 | ASTM C29 |
| 02/A04 | ASTM C40 |
| 02/A05 | ASTM C87 |
| 02/A06 | ASTM C88 |
| 02/A07 | ASTM C117 |
| 02/A09 | ASTM C127 |
| 02/A10 | ASTM C128 |
| 02/A12 | ASTM C136 |
| 02/A15 | ASTM D75 |
| 02/A44 | ASTM C566 |
| ***Cement*** | |
| 02/A17 | ASTM C109 |
| 02/A51 | ASTM C780 (Annex A7) |
| 02/A52 | ASTM C1019 |
| ***Concrete*** | |
| 02/A01 | ASTM C39 |
| 02/A02 | ASTM C617 |
| 02/A41 | ASTM C192 |
| 02/A43 | ASTM C1064 |
| 02/A45 | ASTM C42 |
| 02/G01 | ASTM C31/C172/C143/C138/C231 |
| 02/G02 | ASTM C173 |
| ***Road and Paving Materials*** | |
| 02/M03 | ASTM D140 |
| 02/M11 | ASTM D1188 |
| 02/M25 | ASTM D2726 |
| ***Soil and Rock*** | |
| 02/L02 | ASTM D422 |
| 02/L04 | ASTM D698 |
| 02/L05 | ASTM D854 |
| 02/L06 | ASTM D1140 |
| 02/L07 | ASTM D1556 |
| 02/L08 | ASTM D1557 |
| 02/L09 | ASTM D1558 |
| 02/L13 | ASTM D2216 |
| 02/L14 | ASTM D2217 |
| 02/L16 | ASTM D2487 |
| 02/L17 | ASTM D2488 |
| 02/L20 | ASTM D4318 |
| 02/L21 | ASTM D2434 |
| 02/L22 | ASTM D2850 |
| 02/L23 | ASTM D2922 |

02/L24 ASTM D2974
02/L25 ASTM D3017
02/L31 ASTM D2167

*Standard Practices*

02/A38 ASTM E329
02/A39 ASTM C1077

**NVLAP LAB CODE 200019-0**

**EMSL Analytical, Inc.**
14375 23rd Avenue North
Minneapolis, MN 55447
Contact: Ms. Rachel Travis
Phone: 612-449-4922
Fax: 612-449-4924

URL: http://www.emsl.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 200020-0**

**Hubbell Lighting Photometric Laboratory**
2000 Electric Way
Christiansburg, VA 24073-2502
Contact: Mr. Steven Regnaud
Phone: 540-382-6111 x267
Fax: 540-382-1544
E-Mail: slregnau@hubbell-ltg.com
URL: www.hubbell-ltg.com/dcfault.htm/photlab.html

**Energy Efficient Lighting Products**
Accreditation Valid Through: December 31, 2001
*NVLAP*
*Code* *Designation*

***Luminaires (Lighting Fixtures)***

22/F01 IES LM-10
22/F02 IES LM-31
22/F03 IES LM-35
22/F04 IES LM-41
22/F05 IES LM-46

**NVLAP LAB CODE 200021-0**

**Wayne Langston, Inc.**
P.O. Box 1377
League City, TX 77574-1377
Contact: Mr. Wayne Langston
Phone: 281-337-6785
Fax: 281-337-7217
E-Mail: langstoninc@msn.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001
*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b Radiated Emissions
12/T51 AS/NZS 3548

**NVLAP LAB CODE 200024-0**

**Enviro Techniques, Inc.**
22 California Avenue
Paterson, NJ 07503
Contact: Mr. Frank Marino
Phone: 973-684-0202
Fax: 973-684-3007
E-Mail: ETICOM@MSN.COM

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

**NVLAP LAB CODE 200027-0**

**Vartest Laboratories, Inc.**
19 West 36th Street, 10th Floor
New York, NY 10018-7909
Contact: Mr. Adam R. Varley
Phone: 212-947-8391
Fax: 212-947-8719
E-Mail: avarley@vartest.com
URL: http://www.vartest.com

**Carpet and Carpet Cushion**
Accreditation Valid Through: December 31, 2001
*NVLAP*
*Code* *Designation*

***Tests Applicable to Carpet and Carpet Cushion***

03/T01 AATCC 16 (Option E)
03/T02 ASTM D2646 (Secs. 16-24)
03/T04 16 CFR Part 1630 (FF-1-70)

***Tests Applicable to Carpets***

03/G01 AATCC 20
03/G02 AATCC 20A
03/G04 AATCC 165

NVLAP LAB CODE 200030-0

**Dodge-Regupol, Inc. Laboratory**

715 Fountain Avenue
P.O. Box 989
Lancaster, PA 17608-0989
Contact: Mr. Clyde T. Diffendall
Phone: 717-295-3400 x262
Fax: 717-295-3414

**Commercial Products Testing**

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Plastics*** | |
| 15/A23a | ASTM D412 (Test Method A - Dumbell Specimens) |
| 15/A24 | ASTM D573 |
| 15/A25a | ASTM D624 (Die B and Die C) |
| 15/A26 | ASTM D2240 (Type A Durometer) |
| 15/A30 | ASTM D297 (Sec. 16; Para. 16.3) |

NVLAP LAB CODE 200031-0

**Intertek Testing Services NA Inc.**

8431 Murphy Drive
Middleton, WI 53562
Contact: Mr. Edwin (Ned) Hodgson
Phone: 608-836-4400
Fax: 608-831-9279
E-Mail: nhodgson@itsqs.com
URL: http://www.worldlab.com

**Thermal Insulation Materials**

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Thermal Resistance*** | |
| 01/T04 | ASTM C236 |

NVLAP LAB CODE 200033-0

**3M Product Safety EMC Laboratory**

410 E. Fillmore Avenue
Bldg 76-1-01
St. Paul, MN 55144-1000
Contact: Mr. Greg Demaray
Phone: 612-736-4427
Fax: 612-737-1035
E-Mail: gedemaray@mmm.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Immunity Test Methods:*** | |
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |

NVLAP LAB CODE 200034-0

**EMSL Analytical, Inc.**

Westwood Business Park 1801 Royal Lane
Suite 908
Dallas, TX 75229
Contact: Mr. Darryl Neldner
Phone: 972-831-9725
Fax: 972-444-0884
E-Mail: DallasLab@EMSL.com

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

**Airborne Asbestos Analysis (TEM)**

Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 200036-0

**Quest Engineering Solutions, Inc.**

7 Sterling Road
P.O. Box 125
N. Billerica, MA 01862
Contact: Mr. Richard Ferris
Phone: 978-667-7000
Fax: 978-667-3388
E-Mail: d.ferris@QES.com
URL: http://www.QES.com



(See 'How To Use This Directory' on page 7.)

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001
*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200037-0**

## Western Analytical Laboratory

12734 Branford Street, Unit #19
Arleta, CA 91331
Contact: Mr. Mike Maladzhikyan
Phone: 818-899-0949
Fax: 818-899-0399
E-Mail: mail@asbestostesting.com
URL: http://www.asbestostesting.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 200039-0**

## TUV Telecom Services, Inc.

1775 Old Highway 8, Suite 107/108
St. Paul, MN 55112-1891
Contact: Mr. David A. Freemore
Phone: 651-639-0775
Fax: 651-639-0873
E-Mail: dfreemore@us.tuv.com
URL: http://www.tuv.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001
*NVLAP*
*Code* *Designation*

***Telecommunications Test Methods:***

| | |
|---|---|
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |
| 12/T45 | ACA TS-006 |
| 12/T49 | ACA TS-016 |

**NVLAP LAB CODE 200040-0**

## LG Electronics, Inc., Quality and Reliability Center

36, Munlae-dong, 6-ga Youngdungpo-gu
Seoul 150-096
KOREA
Contact: Mr. Tae-Yeong Oh
Phone: 82 2 2630 3008
Fax: 82 2 2630 3050
E-Mail: tyojlight@lge.co.kr

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001
*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

***Immunity Test Methods:***

| | |
|---|---|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |

NVLAP LAB CODE 200041-0

**Kingston Environmental Laboratory**
1600 S.W. Market
Lee's Summit, MO 64081-3109
Contact: Ms. Melissa McKee
Phone: 816-246-8746
Fax: 816-525-5027
E-Mail: info@kingstonenv.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 200044-0

**U.S. Army Center for Health Promotion and Preventive Medicine**
Attn: MCHB-TS-L, Bldg. E-2100
5158 Blackhawk Road
Aberdeen Proving Ground, MD 21010-5403
Contact: Ms. Rosemary Gaffney
Phone: 410-436-2208
Fax: 410-436-8315

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 200045-0

**Willamette Industries, Inc. West Coast Development Lab**
9130 SW Pioneer Court, Suite D
Wilsonville, OR 97070
Contact: Mr. Gary Vosler
Phone: 503-682-4995
Fax: 503-682-4545
E-Mail: gvosler@wii.com

**Commercial Products Testing**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Paper and Related Products*** | |
| 09/E02 | TAPPI T402-OM; ASTM D685 |
| 09/E03 | TAPPI T403-OM; ASTM D774 |
| 09/E05 | TAPPI T410-OM |
| 09/E06 | TAPPI T411-OM |
| 09/E08 | TAPPI T414-OM |
| 09/E17 | TAPPI T494-OM |
| 09/E20 | TAPPI T809-OM |
| 09/E21 | TAPPI T818-OM |
| 09/E22 | TAPPI T807-OM |
| 09/E25 | TAPPI T826-PM |
| 09/E27 | TAPPI TM 833-PM |
| 09/E29 | TAPPI T476-OM |
| 09/E31 | TAPPI T838-PM |
| 09/H01 | ASTM D642; TAPPI T804-OM |
| 09/H24 | TAPPI T802-OM |
| 09/H28 | TAPPI T810-OM |
| 09/H30 | TAPPI T821-OM |
| 09/H31 | TAPPI T825-PM |

NVLAP LAB CODE 200046-0

**Stork-Twin City Testing Corporation**
662 Cromwell Avenue
St. Paul, MN 55114-1776
Contact: Mr. Richard S. Alberg
Phone: 651-659-7528
Fax: 651-659-7229
E-Mail: dalberg@tct.storkgroup.com
URL: http:/www.twincitytesting.com

**Acoustical Testing Services**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P03 | ASTM C423 |
| 08/P06 | ASTM E90 |
| 08/P10 | ANSI S12.31 |
| 08/P31 | ASTM E336 |
| 08/P32 | ASTM E1007 |
| 08/P37 | ASTM E966 |
| 08/P52 | ISO 3822 |

NVLAP LAB CODE 200047-0

**National Econ Corporation**
4515 Poplar Avenue, Suite 410
Memphis, TN 38117
Contact: Mr. Chester V. Ervin
Phone: 901-761-5431
Fax: 901-767-2466

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 200049-0

**Intertek Testing Services NA, Inc.**
7250 Hudson Blvd. Suite 100
Oakdale, MN 55128
Contact: Mr. Albert Garlatti
Phone: 651-730-1188
Fax: 651-730-1282
E-Mail: agarlatti@itsqs.com
URL: http://www.worldlab.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance |


(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200050-0**

### Cooper Lighting - Metalux Research Laboratories

1101 Southerfield Road
P.O. Box 1207
Americus, GA 31709-1207
Contact: Mr. Gregory B. Bacon
Phone: 912-924-8000
Fax: 912-924-5507
E-Mail: gbacon@cooperlighting.com
URL: http://www.cooperlighting.com/metalux/

### Energy Efficient Lighting Products

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Luminaires (Lighting Fixtures)*** | |
| 22/F04 | IES LM-41 |

**NVLAP LAB CODE 200051-0**

### AES International

1004 Calle Labra, 2nd Floor
R.H. Todd Avenue
Santurce, PR 00907
Contact: Mr. Ady Padan
Phone: 787-722-0220
Fax: 787-724-5788
E-Mail: YOTA1@msn.com

### Bulk Asbestos Analysis (PLM)

Accreditation Valid Through: December 31, 2001

**NVLAP LAB CODE 200052-0**

### Dell Regulatory Test Laboratories

One Dell Way
Round Rock, TX 78682
Contact: Mr. David Staggs
Phone: 512-728-3751
Fax: 512-728-3653
E-Mail: David_Staggs@us.dell.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Immunity Test Methods:*** | |
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |

### Acoustical Testing Services

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P40 | ISO 9296 |
| 08/P41 | ECMA 74 |
| 08/P42 | ECMA 109 |
| 08/P48 | ISO 7779 |

**NVLAP LAB CODE 200053-0**

### A.O. Smith (Lexington) Engineering Laboratory

669 Natchez Trace Drive
Lexington, TN 38351-4198
Contact: Mr. Hugh Fesmire
Phone: 901-967-4713
Fax: 901-968-4164
E-Mail: HFesmire@aosmith.com

**Efficiency of Electric Motors**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 24/M01 | IEEE 112, Method B |

**NVLAP LAB CODE 200056-0**

**EMSL Analytical, Inc.**
440 Lawrence Bell Drive, Suite #2
Williamsville, NY 14221
Contact: Mr. Kenneth J. Najuch
Phone: 716-631-5887
Fax: 716-631-7693
E-Mail: knajuch@emsl.com
URL: http://www.emsl.com/

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 200058-0**

**Compaq Computer Corp. Emissions Control Lab**
M/C 060607
P.O. Box 692000
Houston, TX 77070-2000
Contact: Mr. Steve Ortmann
Phone: 281-514-4897
Fax: 281-514-8029
E-Mail: Steve.Ortmann@Compaq.Com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Safety Test Methods:*** | |
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |

**NVLAP LAB CODE 200059-0**

**Northwest EMC, Inc.**
22975 NW Evergreen Parkway, Suite 400
Hillsboro, OR 9712497132
Contact: Mr. Dean Ghizzone
Phone: 503-844-4066
Fax: 503-844-3826
E-Mail: dghizzone@nwemc.com
URL: http://www.nwemc.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200061-0**

**Rhein Tech Laboratories, Inc.**
360 Herndon Parkway, Suite #1400
Herndon, VA 20170-4824
Contact: Mr. Bruno Clavier
Phone: 703-689-0368
Fax: 703-689-2056
E-Mail: bclavier@rheintech.com
URL: http://www.rheintech.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| 12/CISS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200062-0**

**Professional Testing (EMI), Inc.**
1601 FM 1460, Suite B
Round Rock, TX 78664
Contact: Mr. Jeffrey A. Lenk
Phone: 512-244-3371
Fax: 512-244-1846
E-Mail: jlenk@ptitest.com
URL: http://www.ptitest.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CISS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CISS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CISS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Telecommunications Test Methods:*** | |
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |

**NVLAP LAB CODE 200063-0**

**Compatible Electronics, Inc.**
2337 Troutdale Drive
Agoura, CA 91301
Contact: Mr. Jeff Klinger
Phone: 818-597-0600
Fax: 818-597-1187
E-Mail: jklinger@celectronics.com
URL: http://celectronics.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CISS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CISS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CISS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Safety Test Methods:*** | |
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |
| ***Telecommunications Test Methods:*** | |
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |


(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 200065-0

**Compliance Eng. Svces, Inc., Compliance Certification Services**
1366 Bordeaux Drive
Sunnyvale, CA 94089-1005
Contact: Mr. Scott Wang
Phone: 408-752-8166 x116
Fax: 408-752-8168

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

NVLAP LAB CODE 200066-0

**Washington Laboratories, Ltd.**
7560 Lindbergh Drive
Gaithersburg, MD 20879
Contact: Mr. Michael F. Violette
Phone: 301-417-0220
Fax: 301-417-9069
E-Mail: mikev@wll.com
URL: http://www.wll.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |

NVLAP LAB CODE 200067-0

**JMR Environmental Services Inc.**
3491 Kurtz Street
San Diego, CA 92110
Contact: Mr. Craig Sobotka
Phone: 619-222-0544
Fax: 619-224-7260

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 200068-0

**EMC Compliance Mgmt Group, dba Turntech Scientific & Instr., Inc.**
670 National Avenue
Mountain View, CA 94043-2244
Contact: Mr. Paul F. Chen
Phone: 650-988-0900
Fax: 650-988-6647
E-Mail: pfchen@emclab2000.com
URL: http://www.emclab2000.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |


(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 200069-0

**Elliott Laboratories, Inc.**
684 West Maude Avenue
Sunnyvale, CA 94086-3518
Contact: Mr. Thomas H. Parker
Phone: 408-245-7800 x236
Fax: 408-245-3499
E-Mail: tparker@elliottlabs.com
URL: http://www.elliottlabs.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Safety Test Methods:*** | |
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |

NVLAP LAB CODE 200071-0

**Apple Computer, Inc., EMC Compliance Laboratory**
1 Infinite Loop, Mailstop 26-A
Cupertino, CA 95014-2084
Contact: Mr. Robert Steinfeld
Phone: 408-974-2618
Fax: 408-862-5061
E-Mail: steinfeld@apple.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

NVLAP LAB CODE 200076-0

**Instrument Specialties Co., Inc.**
P.O. Box 650, Shielding Way
Delaware Water Gap, PA 18327-0136
Contact: Mr. James B. Thomson
Phone: 570-424-8510
Fax: 570-421-4227
E-Mail: jim_thomson@instr.com
URL: http://www.instrumentspecialties.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |


(See 'How To Use This Directory' on page 7.)

**NVLAP LAB CODE 200077-0**

**Taiwan Tokin EMC Eng. Corp.**

No. 53-11, Tin-Fu, Tsun, Lin-Kou Hsiang
Taipei 24443
TAIWAN
Contaet: Mr. Jaekie Deng
Phone: 886-2-26092133
Fax: 886-2-26099303
E-Mail: tteme@tpts1.seed.net.tw
URL: http://www.audix.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | 1EC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | 1EC/CISPR 22:1993: Limits and methods of measurement of radio disturbanee characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Teehnology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200078-0**

**Compaq Computer Corp. EMC Test Facility**

301 Roekrimmon Blvd. South
Colorado Springs, CO 80919-2398
Contaet: Mr. Dennis Laurence
Phone: 719-548-2080
Fax: 719-548-2070
E-Mail: dennis.laurenee@eompaq.com

**Electromagnetic Compatibility & Telecommunications**
Aeereditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance eharacteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Teehnology Equipmcnt |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Condueted Emissions, Powcr Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200079-0**

**Sporton International, Inc.**

6F, No. 106, Sec. 1, Hsin Tai Wu Road
Hsi Chih
Taipei Hsien
TAIWAN
Contact: Mr. W. L. Huang
Phone: 886-2-2696-2468
Fax: 886-2-2696-2255
E-Mail: kathylin@sporton.com.tw
URL: http://www.sporton.com.tw

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | 1EC/CISPR 22:1993: Limits and methods of measurement of radio disturbanee characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200080-0**

**Continental Envirotech, Inc.**

646 West Broadway Road, Suite 401
Mesa, AZ 85210-1212
Contact: Mr. Stephen P. Kovac
Phone: 480-844-1710
Fax: 480-844-1752

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

**NVLAP LAB CODE 200081-0**

**Advanced Energy, Industrial Energy Laboratory**

909 Capability Drive, #2100
Raleigh, NC 27606-3870
Contaet: Mr. Roy B. Miller, P.E.
Phone: 919-857-9036
Fax: 919-832-2696
E-Mail: rmiller@advancedenergy.org
URL: http://www.advaneedenergy.org



**(See 'How To Use This Directory' on page 7.)**

**Efficiency of Electric Motors**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 24/M01 | IEEE 112, Method B |

**NVLAP LAB CODE 200082-0**

## PDE Laboratories

950 Calle Negocio
San Clemente, CA 92673-6201
Contact: Mr. Dave Farrant
Phone: 949-361-9189
Fax: 949-361-9597
E-Mail: testsvcs@pdelabs.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200083-0**

## Testwell Laboratories, Inc./Testwell Industries, Inc.

47 Hudson Street
Ossining, NY 10562
Contact: Mr. V. Reddy Kancharla
Phone: 914-762-9000
Fax: 914-762-9638

URL: http://www.testwelllabs.com

**Construction Materials Testing**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Admixtures*** | |
| 02/A35 | ASTM C233 |
| ***Aggregates*** | |
| 02/A03 | ASTM C29 |
| 02/A04 | ASTM C40 |
| 02/A06 | ASTM C88 |
| 02/A07 | ASTM C117 |
| 02/A08 | ASTM C123 |
| 02/A09 | ASTM C127 |
| 02/A10 | ASTM C128 |
| 02/A11 | ASTM C131 |
| 02/A12 | ASTM C136 |
| 02/A13 | ASTM C142 |
| 02/A15 | ASTM D75 |
| 02/A44 | ASTM C566 |
| 02/A46 | ASTM C535 |
| ***Cement*** | |
| 02/A17 | ASTM C109 |
| 02/A18 | ASTM C114 |
| 02/A21 | ASTM C157 |
| 02/A22 | ASTM C183 |
| 02/A26 | ASTM C191 |
| 02/A31 | ASTM C305 |
| ***Concrete*** | |
| 02/A01 | ASTM C39 |
| 02/A02 | ASTM C617 |
| 02/A40 | ASTM C78 |
| 02/A41 | ASTM C192 |
| 02/A43 | ASTM C1064 |
| 02/A45 | ASTM C42 |
| 02/A47 | ASTM C457 |
| 02/A48 | ASTM C856 |
| 02/G01 | ASTM C31/C172/C143/C138/C231 |
| ***Road and Paving Materials*** | |
| 02/M08 | ASTM D979 |
| 02/M11 | ASTM D1188 |
| 02/M12 | ASTM D1559 |
| 02/M19 | ASTM D2172 |
| 02/M24 | ASTM D2041 |
| 02/M25 | ASTM D2726 |
| ***Soil and Rock*** | |
| 02/L02 | ASTM D422 |
| 02/L04 | ASTM D698 |
| 02/L05 | ASTM D854 |
| 02/L06 | ASTM D1140 |
| 02/L07 | ASTM D1556 |
| 02/L08 | ASTM D1557 |
| 02/L13 | ASTM D2216 |
| 02/L16 | ASTM D2487 |
| 02/L17 | ASTM D2488 |
| 02/L20 | ASTM D4318 |
| 02/L23 | ASTM D2922 |
| 02/L24 | ASTM D2974 |
| 02/L25 | ASTM D3017 |
| ***Standard Practices*** | |
| 02/A38 | ASTM E329 |
| 02/A39 | ASTM C1077 |
| ***Steel Materials*** | |
| 02/S01 | ASTM A370 (Sec. 5-13)/E8 |
| 02/S05 | ASTM A370 (Sec. 18)/E18 |
| 02/S07 | ASTM E709 |
| 02/S08 | ASTM E165 |


(See 'How To Use This Directory' on page 7.)

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 200084-0**

### Windermere Info. Tech. Sys. Military/Commercial Compliance Lab.

401 Defense Highway
Annapolis, MD 21401
Contact: Mr. William Banchero
Phone: 410-266-1737
Fax: 410-266-1751/1725
E-Mail: bbanchero@witsusa.com
URL: http://www.witsusa.com/services/test/com.html

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200085-0**

### Global EMC Standard Tech. Corp.

No. 3, Pau-Tou-Tsuo Valley
Chia-Pau Tsuen, Lin Kou Hsiang
Taipei County
TAIWAN
Contact: Mr. Raymond Chang
Phone: 886-2-26035321
Fax: 886-2-26035325
E-Mail: GESTEK@MS5.HINET.NET

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200087-0**

### Rogers Labs, Inc.

4405 W. 259th Terrace
Louisburg, KS 66053
Contact: Mr. Scot D. Rogers
Phone: 913-837-3214
Fax: 913-837-3214
E-Mail: rogers@micoks.net

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200088-0**

### Toshiba/Houston Test Laboratory

13131 W. Little York Road
Houston, TX 77041-5807
Contact: Mr. Willard Gray
Phone: 713-466-0277
Fax: 713-466-8773

**Efficiency of Electric Motors**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|


(See 'How To Use This Directory' on page 7.)

24/M01 IEEE 112, Method B

**NVLAP LAB CODE 200090-0**

**ProScience Analytical Services, Inc.**
22 Cummings Park
Woburn, MA 01801-2122
Contact: Mr. Adrian Stanca
Phone: 781-935-3212
Fax: 781-932-4857
E-Mail: PASI96@aol.com
URL: http://www.proscience.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: December 31, 2001

**NVLAP LAB CODE 200091-0**

**IBM Rochester EMC Lab**
3605 North Highway 52, Department 515
Rochester, MN 55901-7829
Contact: Mr. John S. Maas
Phone: 507-253-2426
Fax: 507-253-1317
E-Mail: johnmaas@us.ibm.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200092-0**

**EMCE Engineering, Inc.**
44366 South Grimmer Boulevard
Fremont, CA 94538-6385
Contact: Mr. Stephen A. Sawyer
Phone: 510-490-4307
Fax: 510-490-3441
E-Mail: emceengrg@aol.com
URL: http://www.emce1.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Immunity Test Methods:*** | |
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| ***Telecommunications Test Methods:*** | |
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; |


(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |

**NVLAP LAB CODE 200093-0**

**UltraTech Engineering Labs Inc.**
3000 Bristol Circle
Oakville, Ontario L6H 6G4
CANADA
Contact: Mr. Victor Kee
Phone: 905-829-1570
Fax: 905-829-8050
E-Mail: vhk.ultratech@sympatico.ca
URL: http://www.ultratech-labs.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200094-0**

**Flextronics EMC Laboratories East Coast Operations**
762 Park Avenue
Youngsville, NC 27596
Contact: Mr. Michael Cantwell, P.E.
Phone: 919-554-0901
Fax: 919-556-2043

URL: http://www.flextronics.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Immunity Test Methods:*** | |
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |

**NVLAP LAB CODE 200096-0**

**Key Tronic Corp.**
4424 N. Sullivan Road
P.O. Box 14687
Spokane, WA 99214-0687
Contact: Mr. James L. Adams
Phone: 509-927-5541
Fax: 509-927-5258
E-Mail: jadams1@keytronic.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200097-0**

### PEP Testing Laboratory

12-3 FL. No. 27-1,Lane 169, Kang Ning St
Hsi-Chi
Taipei Hsien
TAIWAN
Contact: Mr. Peter Kao
Phone: 886-2-2692-2097
Fax: 886-2-2695-6236
E-Mail: peplab@ms32.hiner.net

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200098-0**

### Nortel Networks BVW Lab

250 Sidney Street
Belleville, Ontario K8P 3Z3
CANADA
Contact: Mrs. Seham Fawzy
Phone: 613-967-5545
Fax: 613-967-5417
E-Mail: sfawzy@nortelnetworks.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200099-0**

### Spectrum Research & Testing Laboratory, Inc.

No. 101-10, Ling 8, Shan-Tong Li
Chung-Li, Taoyuan
TAIWAN
Contact: Mr. Cheng-Yang Ho
Phone: 011-886-3-4987684
Fax: 011-886-3-4986528
E-Mail: srtlab@ms17.hinet.net
URL: http://www.srtlab.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200101-0**

### Advanced Compliance Laboratory

6 Randolph Way
Hillsborough, NJ 08876
Contact: Mr. Wei Li
Phone: 732-560-9010
Fax: 732-560-9173
E-Mail: weili2@juno.com
URL: http://www.ac-lab.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and |


(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | Amendment 2:1996. |
| 12/CISS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200102-0**

**Advance Data Technology Corporation**
No. 47, 14 Ling, Chia Pau Tsuen,
Lin Kou Hsiang
Taipei Hsien
TAIWAN
Contact: Mr. Harris W. Lai
Phone: 886-2-2652180
Fax: 886-2-26052943
E-Mail: harris@mail.adt.com.tw
URL: http://www.adt.com.tw

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CISS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CISS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CISS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200104-0**

**Asbestos TEM Laboratories, Inc.**
952 Greg Street
Sparks, NV 89431
Contact: Mr. R. Mark Bailey
Phone: 510-528-0108
Fax: 510-528-0109
E-Mail: MBaileyASB@aol.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

**NVLAP LAB CODE 200107-0**

**Toshiba Corp., Ome Operations**
2-9 Suehiro-cho
Ome Tokyo 198-8710
JAPAN
Contact: Mr. Hiroshi Kiguchi
Phone: 81-428-33-1170
Fax: 81-428-30-7911
E-Mail: hiroshi.kiguchi@toshiba.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CISS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200109-0**

**A-Pex International Co., Ltd. Yokowa Laboratory**
108 Yokowa-cho, Ise-shi
Mie-ken 516-1106
JAPAN
Contact: Mr. Kazunori Nishimura
Phone: 81-596-39-1485
Fax: 81-596-39-0232
E-Mail: nisimura@a-pex.co.jp
URL: http://www.a-pex.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CISS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |


(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200111-0**

### TUV Rheinland of North America, Inc.

12 Commerce Road
Newtown, CT 06470-1607
Contact: Mr. Timothy M. Dwyer
Phone: 203-426-0888 x104
Fax: 203-270-8883
E-Mail: tdwyer@us.tuv.com
URL: http://www.us.tuv.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Immunity Test Methods:*** | |
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |
| ***Safety Test Methods:*** | |
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |

**NVLAP LAB CODE 200112-0**

### IBM Austin EMC

11400 Burnet Road, M.S. 4469
Austin, TX 78758-3493
Contact: Mr. Jerry W. Scibielski
Phone: 512-838-5816
Fax: 512-838-7101
E-Mail: scib@us.ibm.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200114-0**

### Cisco Systems, Inc.

170 West Tasman Drive
San Jose, CA 95134-1706
Contact: Mr. Mark King
Phone: 408-527-5014
Fax: 408-526-4184
E-Mail: markking@cisco.com
URL: http://www.cisco.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200116-0**

**Nemko EESI, Inc.**
11696 Sorrento Valley Road, Suite F
San Diego, CA 92121
Contact: Mr. John Lavery
Phone: 858-259-4946
Fax: 858-259-7170
E-Mail: j_lavery@eesi.com
URL: http://www.eesi.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200117-0**

**Universal Compliance Laboratories**
775 B Mabury Road
San Jose, CA 95133
Contact: Mr. Bob Cole
Phone: 408-453-8744
Fax: 408-453-8747
E-Mail: bob@universalcompliance.com
URL: http://www.universalcompliance.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology cquipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200118-0**

**Electronic Research & Service Organization/ITRI**
1500 ERSO/ITRI, Bldg. 17, 195-4, Sec. 4
Chung Hsing Road
Chutung Hsinchu 310
TAIWAN
Contact: Mr. Paul Y. Liau
Phone: 886-3-5915994
Fax: 886-3-5825720
E-Mail: pyl@itri.org.tw

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |


(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 200119-0

**Garwood Laboratories, Inc.**
565 Porter Way
Placentia, CA 92870-6454
Contact: Ms. Lisa Rodefeld
Phone: 714-572-2027
Fax: 714-572-2025
E-Mail: lisar@garwoodtestlabs.com
URL: http://www.garwoodtestlabs.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CISS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CISS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CISS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

NVLAP LAB CODE 200120-0

**Chemitox EMC Research, Inc.**
14979, Egusa, Sudama-cho, Kitakoma-gun
Yamanashi-ken 408-0103
JAPAN
Contact: Mr. Kohichi Nakayama
Phone: 81-551-42-4411
Fax: 81-551-20-6002
E-Mail: KNAKAYAMA7@aol.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CISS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CISS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CISS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

NVLAP LAB CODE 200121-0

**Cabletron Systems, Inc.**
35 Industrial Way
P.O. Box 5005
Rochester, NH 03867-5005
Contact: Mr. John Ballew
Phone: 603-337-5222
Fax: 603-337-5163
E-Mail: jballew@ctron.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CISS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CISS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CISS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

NVLAP LAB CODE 200124-0

**White Environmental Consultants Inc.**
731 I Street, Suite 201
Anchorage, AK 99501
Contact: Mr. David O. Milton
Phone: 907-258-8661
Fax: 907-258-8662
E-Mail: dmilton@wec-laboratories.com


(See 'How To Use This Directory' on page 7.)

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

**NVLAP LAB CODE 200125-0**

### Paradyne Corporation

8545 126th Avenue N.
P.O. Box 2826
Largo, FL 33773-2826
Contact: Mr. Tom Wissman
Phone: 727-530-2775
Fax: 727-532-5552
E-Mail: twissman@eng.paradyne.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200129-0**

### AHD

92723 M-152
Dowagiac, MI 49047
Contact: Mr. Edmund (Ted) Chaffee
Phone: 616-424-7014
Fax: 616-424-7014
E-Mail: ahd@locallink.net
URL: http://www.ahde.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200131-0**

### Environmental Testing and Monitoring Services, Inc.

2425 Boward Parkway, Suite 107
Virginia Beach, VA 23454
Contact: Mr. Scott J. Eggleston
Phone: 757-498-7873
Fax: 757-498-7896

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 200132-0**

### USG Research - Construction Systems Laboratory

700 N. Highway 45
Libertyville, IL 60048-1296
Contact: Mr. Richard T. Kaczkowski
Phone: 847-970-5255
Fax: 847-362-4871
E-Mail: rkaczkowski@usgres.com

**Acoustical Testing Services**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P03 | ASTM C423 |
| 08/P06 | ASTM E90 |
| 08/P33 | ASTM E1111 |
| 08/P34 | ASTM E1414 |
| 08/P44 | ISO 354 |
| 08/P45 | ISO 140, Part 3 |
| 08/P50 | ISO 140, Part 9 |

**NVLAP LAB CODE 200133-0**

### Electronics Testing Center, Taiwan

No.8, Lane 29, Wen-Ming Rd
Lo-Shan Tsun, Kui-shan Hsiang
Taoyuan Hsien 333
TAIWAN
Contact: Mr. Win-Po Tsai
Phone: 886-03-3276174
Fax: 886-03-3276188
E-Mail: winpo@etc.org.tw

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200134-0**

**Marathon Electric - Wausau Engineering Lab.**
100 East Randolph Street
P.O. Box 8003
Wausau, WI 54402-8003
Contact: Mr. Gene Sickler
Phone: 715-675-3311 x4155
Fax: 715-675-8032

**Efficiency of Electric Motors**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 24/M01 | IEEE 112, Method B |

**NVLAP LAB CODE 200137-0**

**Philips Electronics Industries (TAIWAN) Ltd.**
5, Tze Chiang 1 Road, Chungli Ind. Park
P.O. Box 123, Chungli
Chungli, Taoyuan
TAIWAN
Contact: Mr. Ronnie Yang
Phone: 886-2-454-9862
Fax: 886-3-454-9887
E-Mail: ronnie.yang@philips.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200138-0**

**Hewlett Packard, Product Test Lab, San Diego**
16399 W. Bernardo Drive
San Diego, CA 92127-1899
Contact: Mr. John Hall
Phone: 858-655-8236
Fax: 858-655-5951
E-Mail: john_hall@HP.com
URL: http://john_hall@hp.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200139-0**

**PB Fasteners**
1700 W. 132nd Street
P.O. Box 1157
Gardena, CA 90249-0157
Contact: Mr. Merle Oglesby
Phone: 310-323-6222
Fax: 310-329-4685

**Fasteners & Metals**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Chemical Analysis*** | |
| ***Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen*** | |
| FB/1167 | SP 34-11 |
| ***Dimensional Inspection*** | |

*Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets*
FA/539 SAE AS 870
FA/540 MIL-STD-33787
*External thread parameters - system 21*
FA/379 ANSI/ASME B1.3M
FA/380 FED-STD-H28/20
FA/528 MIL-S-7742
FA/533 SAE AS 8879
FA/940 ANSI/ASME B1.2
*External thread parameters - system 22*
FA/381 ANSI/ASME B1.3M
FA/382 FED-STD-H28/20
FA/383 MIL-S-7742
FA/534 SAE AS 8879
FA/941 ANSI/ASME B1.2
*External thread parameters - system 23*
FA/385 ANSI/ASME B1.3M
FA/386 FED-STD-H28/20
FA/388 MIL-S-8879
FA/535 SAE AS 8879
FB/1169 ANSI/ASME B1.2
*Internal thread parameters - system 21*
FA/391 ANSI/ASME B1.3M
FA/392 FED-STD-H28/20
FA/529 MIL-S-7742
FA/536 SAE AS 8879
FA/942 ANSI/ASME B1.2
*Internal thread parameters - system 22*
FA/393 ANSI/ASME B1.3M
FA/394 FED-STD-H28/20
FA/395 MIL-S-7742
FA/537 SAE AS 8879
FA/943 ANSI/ASME B1.2
*Internal thread parameters - system 23*
FA/397 ANSI/ASME B1.3M
FA/398 FED-STD-H28/20
FA/399 MIL-S-7742
FA/538 SAE AS 8879
FB/1170 ANSI/ASME B1.2
*Surface texture*
FA/439 ANSI/ASME B46.1

### *Mechanical and Physical Testing and Inspection*

*Adhesion of metallic coatings on fasteners*
FA/532 BMS 10-85M Sec. 8.2
FB/1168 DPS 9.28
*Axial tensile strength of full-size threaded fasteners*
FA/271 MIL-STD-1312-8
*Double shear of externally threaded fasteners*
FA/257 MIL-STD-1312-13
*Fatigue of full-size threaded fasteners*
FA/183 MIL-STD-1312-11
*Hydrogen embrittlement (stress durability) of externally threaded fasteners*
FA/176 MIL-STD-1312-5
*Magnetic permeability*
FA/215 MIL-I-17214
*Measurement of fastener coating thickness - eddy-current method*
FA/150 FED TM STD NO. 151 Method 520.1
FA/152 MIL-STD-1312-12
*Microhardness of fasteners*
FA/189 ASTM E384
FA/193 MIL-STD-1312-6
*Permanent set test of self-locking nuts*
FA/109 MIL-N-25027
FB/1160 MIL-N-85729
FB/1161 MIL-N-85730
*Recess strength test in both the installation and removal directions*
FA/476 MIL-STD-1312-25
*Reusability test of self-locking internally threaded fasteners*
FA/124 MIL-N-25027
FB/1162 MIL-N-85729
FB/1163 MIL-N-85730
*Rockwell hardness of fasteners*
FA/201 MIL-STD-1312-6
*Rockwell superficial hardness of fasteners*
FA/209 MIL-STD-1312-6
*Salt spray testing of fasteners*
FA/166 ASTM B117
FA/168 MIL-STD-1312-1
*Single shear of externally threaded fasteners*
FA/256 MIL-STD-1312-20
*Stress rupture of fasteners*
FA/262 MIL-STD-1312-10
*Tension testing of machined specimens from externally threaded fasteners*
FA/475 ASTM E8
*Test for embrittlement of metallic coated externally threaded fasteners*
FA/525 MIL-STD-1312-5
FB/1166 QQ-P-416
*Wedge tensile strength of full-size threaded fasteners*
FB/1069 D2-2860
*Wrench torque test of externally wrenched nuts of spline and hexagon and double hexagon (1*
FA/141 MIL-N-25027
FB/1164 MIL-N-85729
FB/1165 MIL-N-85730
*Yield strength of full-size externally threaded fasteners*
FA/303 MIL-STD-1312-8

### *Metallography*

*Decarburization and case depth measurement in fasteners*
FA/521 ASTM E384
*Determination of grain size of fasteners*
FA/331 ASTM E112
*Macroscopic examination of fasteners by etching*
FA/511 ASTM E340
*Microscopic examination of fasteners by etching*
FA/512 ASTM E407


(See 'How To Use This Directory' on page 7.)

*Nondestructive Inspection*

*Liquid penetrant inspection of fasteners*
FA/527 ASTM E1417
*Magnetic particle inspection of fasteners*
FA/485 ASTM E1444

**NVLAP LAB CODE 200140-0**

**Inventec Corp. (Taoyuan) EMC Labs**
255, Jen-Ho Road Sec 2, Tachi
Taoyuan
TAIWAN
Contact: Mr. Steve Wang
Phone: 886-3-390-0000
Fax: 886-3-3908052
E-Mail: wang.steve@inventec.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001
*NVLAP*
*Code* *Designation*

*Emissions Test Methods:*
12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b Radiated Emissions
12/T51 AS/NZS 3548

**NVLAP LAB CODE 200141-0**

**MAC Fasteners, Inc.**
1110 Enterprise
Ottawa, KS 66067
Contact: Mr. Donald C. Krenkel
Phone: 785-242-8812
Fax: 785-242-4616

**Fasteners & Metals**
Accreditation Valid Through: December 31, 2001
*NVLAP*
*Code* *Designation*

*Dimensional Inspection*

*External thread parameters - system 21*
FA/380 FED-STD-H28/20
*External thread parameters - system 22*
FA/382 FED-STD-H28/20

*Mechanical and Physical Testing and Inspection*

*Adhesion of metallic coatings on fasteners*
FA/541 QQ-P-416 Sec. 4.6.2
*Axial tensile strength of full-size threaded fasteners*
FA/799 NASM 1312-8
*Double shear of externally threaded fasteners*
FA/880 NASM 1312-13
*Intergranular corrosion susceptibility in austentic stainless steel fasteners - nitric aci*
FA/173 ASTM A262 Sec. 15-21, Practice C
*Measurement of fastener coating thickness - dimensional change method*
FA/874 NASM 1312-12
*Measurement of fastener coating thickness - microscopical method*
FA/873 NASM 1312-12
*Microhardness of fasteners*
FA/877 NASM 1312-6
*Recess strength test in both the installation and removal directions*
FA/886 NASM 1312-25
*Rockwell hardness of fasteners*
FA/878 NASM 1312-6
*Rockwell superficial hardness of fasteners*
FB/1004 NASM 1312-6

*Metallography*

*Decarburization and case depth measurement in fasteners*
FA/521 ASTM E384
*Determination of grain size of fasteners*
FA/331 ASTM E112
*Macroscopic examination of fasteners by etching*
FA/511 ASTM E340
*Microscopic examination of fasteners by etching*
FA/512 ASTM E407

*Nondestructive Inspection*

*Liquid penetrant inspection of fasteners*
FA/527 ASTM E1417
*Magnetic particle inspection of fasteners*
FA/485 ASTM E1444

NVLAP LAB CODE 200142-0

**Lockheed Martin Control Systems EMI Laboratory**
600 Main Street
Johnson City, NY 13790-1888
Contact: Mr. Paul Heiland
Phone: 607-770-3771
Fax: 607-770-3922
E-Mail: paul.h.heiland.jr@lmco.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***MIL-STD-462 : Conducted Emissions:*** | |
| 12/A01 | MIL-STD-462 Method CE01 |
| 12/A04 | MIL-STD-462 Method CE02 |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A08 | MIL-STD-462 Method CE04 |
| 12/A12 | MIL-STD-462 Method CE07 |
| 12/A13 | MIL-STD-462 Version D Method CE101 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |
| ***MIL-STD-462 : Conducted Susceptibility:*** | |
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B08 | MIL-STD-462 Method CS10 |
| 12/B09 | MIL-STD-462 Method CS11 |
| 12/B10 | MIL-STD-462 Method CS12 |
| 12/B11 | MIL-STD-462 Method CS13 |
| 12/B12 | MIL-STD-462 Version D Method CS101 |
| 12/B17 | MIL-STD-462 Version D Method CS114 |
| 12/B18 | MIL-STD-462 Version D Method CS115 |
| 12/B19 | MIL-STD-462 Version D Method CS116 |
| ***MIL-STD-462 : Radiated Emissions:*** | |
| 12/D01 | MIL-STD-462 Method RE01 |
| 12/D02 | MIL-STD-462 Method RE02 |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |
| ***MIL-STD-462 : Radiated Susceptibility:*** | |
| 12/E01 | MIL-STD-462 Method RS01 |
| 12/E02 | MIL-STD-462 Method RS02 |
| 12/E04 | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |
| 12/E07 | MIL-STD-462 Method RS06 |
| 12/E08 | MIL-STD-462 Version D Method RS101 |
| 12/E09 | MIL-STD-462 Version D Method RS103 |

NVLAP LAB CODE 200143-0

**Ivaco Rolling Mills, Chemistry Laboratory**
Highway 17, P.O. Box 322
L'Orignal Ontario K0B 1K0
CANADA
Contact: Mr. William V. Berry
Phone: 613-675-4671 x237
Fax: 613-675-6863
E-Mail: wberry@ivacorm.com

**Fasteners & Metals**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Chemical Analysis*** | |
| ***Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen*** | |
| FA/455 | ASTM E1019 |
| ***Optical emission spectrochemical analysis*** | |
| FA/457 | ASTM E415 |

NVLAP LAB CODE 200144-0

**Dexter Fastener Technologies, Inc.**
2110 Bishop Circle E.
Dexter, MI 48130
Contact: Mr. Mike Frazier
Phone: 734-426-5200
Fax: 734-426-5870
E-Mail: mfrazier@dextech.textron.com

**Fasteners & Metals**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Chemical Analysis*** | |
| ***Optical emission spectrochemical analysis*** | |
| FA/457 | ASTM E415 |
| ***Dimensional Inspection*** | |
| ***Dimensions of ISO grade A and B fasteners*** | |
| FA/589 | JIS B1071 |
| ***Dimensions of fasteners - straightness*** | |
| FA/423 | ANSI/ASME B18.2.1 |
| ***External thread parameters - ISO*** | |
| FA/390 | ISO 1502 |
| ***External thread parameters - system 21*** | |
| FA/379 | ANSI/ASME B1.3M |
| ***External thread parameters - system 22*** | |
| FA/381 | ANSI/ASME B1.3M |
| ***Mechanical and Physical Testing and Inspection*** | |
| ***Axial tensile strength of full-size threaded fasteners*** | |
| FA/270 | ISO 898-1 Sec. 8.2 |
| ***Fatigue of full-size threaded fasteners*** | |
| FA/182 | ISO 3800-1 |



(See 'How To Use This Directory' on page 7.)

*Head soundness testing*
FA/614 ISO 898-1 Sec. 8.7
FA/615 JIS B1051 Sec. 4.2.6
*Measurement of fastener coating thickness - magnetic methods*
FA/153 ASTM B499
*Measurement of fastener coating thickness - microscopical method*
FA/160 ASTM B487
*Microhardness of fasteners*
FA/191 ISO 6507-2
*Proof load of full-size externally threaded fasteners*
FA/228 ISO 898-1 Sec. 8.4
*Rockwell hardness of fasteners*
FA/200 ISO 6508
*Rockwell superficial hardness of fasteners*
FA/205 ASTM E18
*Salt spray testing of fasteners*
FA/166 ASTM B117
*Tension testing of machined specimens from externally threaded fasteners*
FA/282 ISO 898-1
*Torque-tension of full-size threaded fasteners*
FA/576 JIS B1084
*Total extension at fracture of externally threaded fasteners*
FA/285 ASTM F606 Sec. 3.7
*Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)*
FA/571 JIS Z2244
*Wedge tensile strength of full-size threaded fasteners*
FA/294 ISO 898-1 Sec. 8.5
*Yield strength of full-size externally threaded fasteners*
FA/298 ASTM F606 Sec. 3.2.4

### *Metallography*

*Decarburization and case depth measurement in fasteners*
FA/323 ASTM E1077
*Determination of grain size of fasteners*
FA/331 ASTM E112
*Macroscopic examination of fasteners by etching*
FA/511 ASTM E340
*Microscopic examination of fasteners by etching*
FA/512 ASTM E407
*Surface discontinuities of externally threaded fasteners*
FA/359 ISO 6157-1

**NVLAP LAB CODE 200145-0**

## Neutron Engineering Inc.

132-1, Lane 329, Sec. 2 Palain Rd Shijir
P.O. Box 187 Neihu
Taipei
TAIWAN
Contact: Mr. George Yao
Phone: 886-2-26465426
Fax: 886-2-26466815
E-Mail: g.yao@neutron.com.tw
URL: http://www.neutron.com.tw

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200147-0**

## Electro Magnetic Test, Inc.

1547 Plymouth Strect
Mountain View, CA 94043
Contact: Mr. Jay Gandhi
Phone: 650-965-4000
Fax: 650-965-3000
E-Mail: Jgcmt@aol.com
URL: http://www.emtlab.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz |


(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

***Telecommunications Test Methods:***

| | |
|---|---|
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |

**NVLAP LAB CODE 200148-0**

### Republic Technologies International, Franklin Chemical Laboratory

Franklin Chemical Laboratory
1001 Main Street, Gate #3
Johnstown, PA 15909
Contact: Mr. Alan K. O'Donnell
Phone: 814-533-7333
Fax: 814-533-7319
E-Mail: alanod@prodigy.net

### Fasteners & Metals

Accreditation Valid Through: June 30, 2001

*NVLAP*
*Code* *Designation*

***Chemical Analysis***

***Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen***

FA/455 ASTM E1019

***Optical emission spectrochemical analysis***

FA/457 ASTM E415

***Solution chemical analysis***

FA/531 ASTM E663

**NVLAP LAB CODE 200151-0**

### Cosmos Corporation

319 Akeno, Obata-cho
Watarai-gun Mie 519-0501
JAPAN
Contact: Mr. Kay Hamaguchi
Phone: 81-596-37-0190
Fax: 81-596-37-3609
E-Mail: cosmos@mint.or.jp

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200152-0**

### InFocus Systems, Inc.

27700B SE Parkway Avenue
Wilsonville, OR 97070-9215
Contact: Mr. Don Rhodes
Phone: 503-685-8588
Fax: 503-685-8887
E-Mail: don.rhodes@infocus.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200153-0**

### MacLean Fasteners - QC Laboratory

1000 Allanson Road
Mundelein, IL 60060
Contact: Ms. Charlotte Kotowski
Phone: 847-566-0010 x3521
Fax: 847-949-0285
E-Mail: CLK@fastener.maclean-fogg.com

### Fasteners & Metals

Accreditation Valid Through: June 30, 2001

*NVLAP*
*Code* *Designation*

***Dimensional Inspection***



(See 'How To Use This Directory' on page 7.)

*Dimensions of ISO grade A and B fasteners*
FA/408 ISO 4759-1
*Dimensions of ISO grade C fasteners*
FA/410 ISO 4759-1
*Dimensions of fasteners - gaging for slotted nuts*
FA/417 ANSI/ASME B18.2.2
FA/418 ANSI/ASME B18.2.4.3M
*Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets*
FA/843 ASME/ANSI B18.2.2
FA/945 ANSI B18.2.4.1M
*Internal thread parameters - ISO*
FA/402 ISO 1502
FA/948 ANSI/ASME B1.16M
*Internal thread parameters - system 21*
FA/942 ANSI/ASME B1.2
FA/946 ANSI/ASME B1.16M
*Internal thread parameters - system 22*
FA/943 ANSI/ASME B1.2
FA/947 ANSI/ASME B1.16M

### *Mechanical and Physical Testing and Inspection*

*Cone proof load of internally threaded fasteners (nuts)*
FA/221 ASTM F606M Sec. 4.3
FA/951 SAE J995
*Hardness preparation*
FA/464 ASTM F606M
*Measurement of fastener coating thickness - magnetic methods*
FA/155 ASTM E376
*Prevailing torque*
FA/217 IFI-100/107
FA/218 ISO 2320
FA/836 Ford WE 950
FA/839 Ford ES-21000-S100
FA/954 GM 9092P
FA/956 Chrysler PF-6180
FA/957 Chrysler PF-4666
FA/959 Ford ESS-M1A171-B
FA/960 Ford WZ 100
*Proof load of full-size externally threaded fasteners*
FA/229 SAE J429 Sec. 5.3
FA/230 SAE J1216 Sec. 3.3
FA/467 ASTM F606M Sec. 3.2.1-3.2.3
*Proof load of internally threaded fasteners (nuts)*
FA/237 ASTM F606M Sec. 4.2
FA/239 ISO 898-2 Sec. 8.1
FA/241 SAE J995 Sec. 5.1
FA/242 SAE J1216 Sec 4.2
FB/1192 ISO 2320
FB/1193 Chrysler PF-4666
FB/1194 Ford ES-21000-S100
FB/1195 Ford ESS-M1A171-B
FB/1205 GM 510M
FB/1206 DaimlerChrysler MS-6179
*Rockwell hardness of fasteners*
FA/197 ASTM E18
FA/200 ISO 6508
FA/202 SAE J417
*Rockwell superficial hardness of fasteners*
FA/205 ASTM E18
FA/208 ISO 1024
FA/210 SAE J417
*Torque-tension of full-size threaded fasteners*
FA/306 IFI-101
FA/308 SAE J174
FA/944 ISO 2320

### *Metallography*

*Decarburization and case depth measurement in fasteners*
FA/323 ASTM E1077
FA/329 SAE J419
FA/330 SAE J423
*Microscopic examination of fasteners by etching*
FA/512 ASTM E407
FA/552 ASTM E3
*Surface discontinuities of internally threaded fasteners*
FA/364 ASTM F812M
FA/703 SAE J122

**NVLAP LAB CODE 200157-0**

## Seiko Epson Corporation

80 Harashinden Hirooka
Shiojiri-City Nagano 399-0785
JAPAN
Contact: Mr. Atsushi Shinozaki
Phone: 81 263-52-5094
Fax: 81 263-54-5806
E-Mail: shinozaki.atsushi@exc.epson.co.jp

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |


(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 200158-0

**San Shing Hardware Works Co., Ltd. Test Laboratory**

Test Laboratory
355-6,1F,Chung Shan Rd Section 3,kui-Jen
Tainan
TAIWAN
Contact: Mr. Tony Shieh
Phone: 886-6-2306611 x311
Fax: 886-6-2306000
E-Mail: smc@sanshing.com.tw

**Fasteners & Metals**

Accreditation Valid Through: June 30, 2001

*NVLAP Code* *Designation*

***Chemical Analysis***

***Optical emission spectrochemical analysis***
FA/457 ASTM E415

***Dimensional Inspection***

***Dimensions of fasteners - flange screw heads and flange nuts***
FA/566 IFI D21 p. D21

***Dimensions of fasteners - gaging for slotted nuts***
FA/417 ANSI/ASME B18.2.2

***External thread parameters - system 21***
FA/379 ANSI/ASME B1.3M
FA/940 ANSI/ASME B1.2

***External thread parameters - system 22***
FA/381 ANSI/ASME B1.3M
FA/941 ANSI/ASME B1.2

***Internal thread parameters - ISO***
FA/953 ANSI/ASME B18.2.2

***Internal thread parameters - system 21***
FA/391 ANSI/ASME B1.3M
FA/942 ANSI/ASME B1.2

***Internal thread parameters - system 22***
FA/393 ANSI/ASME B1.3M
FA/943 ANSI/ASME B1.2

***Mechanical and Physical Testing and Inspection***

***Axial tensile strength of full-size threaded fasteners***
FA/266 ASTM F606 Sec. 3.4.1-3.4.3
FA/267 ASTM F606M Sec. 3.4.1-3.4.3
FA/270 ISO 898-1 Sec. 8.2
FA/273 SAE J429

***Clamp load test***
FA/558 ISO 2320
FA/559 DIN 267, Part 15
FA/560 IFI-100/107

***Cone proof load of internally threaded fasteners (nuts)***
FA/220 ASTM F606 Sec. 4.3
FA/221 ASTM F606M Sec. 4.3

***Embrittlement test of washers***
FA/315 SAE J238

***Measurement of fastener coating thickness - X-ray methods***
FA/556 ASTM B568

***Measurement of fastener coating thickness - eddy-current method***
FA/149 ASTM E376

***Measurement of fastener coating thickness - weight of coating***
FA/164 ASTM A90

***Microhardness of fasteners***
FA/189 ASTM E384

***Prevailing torque***
FA/217 IFI-100/107
FA/218 ISO 2320
FA/557 DIN 267, Part 15

***Proof load of full-size externally threaded fasteners***
FA/226 ASTM F606 Sec. 3.2.1-3.2.3
FA/228 ISO 898-1 Sec. 8.4
FA/229 SAE J429
FA/467 ASTM F606M Sec. 3.2.1-3.2.3

***Proof load of internally threaded fasteners (nuts)***
FA/236 ASTM F606 Sec. 4.2
FA/237 ASTM F606M Sec. 4.2
FA/239 ISO 898-2 Sec. 8.1
FA/241 SAE J995 Sec. 5.1

***Rockwell hardness of fasteners***
FA/197 ASTM E18

***Rockwell superficial hardness of fasteners***
FA/205 ASTM E18

***Salt spray testing of fasteners***
FA/166 ASTM B117

***Torque-tension of full-size threaded fasteners***
FA/306 IFI-101

***Total extension at fracture of externally threaded fasteners***
FA/285 ASTM F606 Sec. 3.7
FA/286 ASTM F606M Sec. 3.7

***Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)***
FA/492 ASTM E92

***Wedge tensile strength of full-size threaded fasteners***
FA/290 ASTM F606 Sec. 3.5
FA/291 ASTM F606M Sec. 3.5
FA/294 ISO 898-1 Sec. 8.5
FA/468 SAE J429

***Metallography***

***Decarburization and case depth measurement in fasteners***
FA/323 ASTM E1077
FA/561 ASTM E3
FA/562 ASTM G79

***Surface discontinuities of externally threaded fasteners***
FA/357 ASTM F788/788M

***Surface discontinuities of internally threaded fasteners***
FA/865 ASTM F812/F812M

NVLAP LAB CODE 200162-0

**United States Technologies, Inc.**

3505 Francis Circle
Alpharetta, GA 30004
Contact: Mr. Tim Johnson
Phone: 770-740-0717
Fax: 770-740-1508
E-Mail: tjohnson@UStech-lab.com
URL: http://www.ustech-lab.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Telecommunications Test Methods:*** | |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |

NVLAP LAB CODE 200163-0

**Ricoh Company, Ltd. Ohmori EMC Center**

3-6, Naka-magome 1-Chome Ohta-ku
Tokyo 143-8555
JAPAN
Contact: Mr. Masashi Odawara
Phone: 81-3-3776-6281
Fax: 81-3-3777-8317
E-Mail: masashi.odawara@nts.ricoh.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

NVLAP LAB CODE 200166-0

**O & K Company Limited, Osaka Test Center**

8-81, Nakajima 2-Chome, Nishiyodogawa-Ku
Osaka-Shi 555-0041
JAPAN
Contact: Mr. Norio Shiga
Phone: 06-6471-0110
Fax: 06-6472-0554
E-Mail: osaka@o-and-k.co.jp
URL: http://www.o-and-k.co.jp

**Fasteners & Metals**

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Chemical Analysis*** | |
| ***Optical emission spectrochemical analysis*** | |
| FA/457 | ASTM E415 |



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 200167-0

**Bay Area Compliance Laboratory, Corp.**
230 Commercial Street, Suite 2
Sunnyvale, CA 94086
Contact: Mr. John Y. Chan
Phone: 408-732-9162
Fax: 408-732-9164
E-Mail: Johnc@baclcorp.com
URL: http://www.baclcorp.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Safety Test Methods:*** | |
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |
| ***Telecommunications Test Methods:*** | |
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |
| 12/T42 | ACA TS-002 |
| 12/T44 | ACA TS-004 |
| 12/T45 | ACA TS-006 |

NVLAP LAB CODE 200169-0

**Kobelco Research Institute, Inc. Stock Company**
2 Nadahama-Higashimachi, Nada-ku
Kobe 657-0863
JAPAN
Contact: Mr. Morifumi Nakamura
Phone: 81-78-882-8058
Fax: 81-78-882-8211

**Fasteners & Metals**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Chemical Analysis*** | |
| ***Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen*** | |
| FA/586 | JIS G1211 |
| FA/587 | JIS G1215 |
| ***Optical emission spectrochemical analysis*** | |
| FA/588 | JIS G1253 |
| ***Solution chemical analysis*** | |
| FA/585 | JIS G1258 |

NVLAP LAB CODE 200171-0

**Leland-Powell Fasteners, Inc. Fastener Testing Laboratory**
Highway 45 South
P.O. Box 260
Martin, TN 38237
Contact: Mr. Jason Danner
Phone: 901-587-3106
Fax: 901-587-9613
E-Mail: jason@lpf.net

**Fasteners & Metals**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Dimensional Inspection*** | |
| ***Dimensions of fasteners - straightness*** | |
| FA/754 | IFI 138 |
| ***Dimensions of general purpose fasteners and high-volume machine assembly fasteners*** | |
| FA/404 | ANSI/ASME B18.18.2M |
| ***Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap*** | |
| FA/405 | ANSI/ASME B18.18.3M |
| ***External thread parameters - system 22*** | |
| FA/381 | ANSI/ASME B1.3M |
| ***Mechanical and Physical Testing and Inspection*** | |
| ***Axial tensile strength of full-size threaded fasteners*** | |
| FA/273 | SAE J429 |
| FA/752 | SAE J82 |


(See 'How To Use This Directory' on page 7.)

***Drive test***

FA/248 SAE J81
FA/750 SAE J933

***Ductility test of thread rolling and self-drilling tappings screws***

FA/250 SAE J81

***Hydrogen embrittlement (stress durability) of externally threaded fasteners***

FA/709 SAE J81 Sec. 3.9

***Measurement of fastener coating thickness - eddy-current method***

FA/149 ASTM E376

***Proof load of full-size externally threaded fasteners***

FA/229 SAE J429 Sec. 5.3

***Proof torque test***

FB/1180 SAE J429

***Rockwell hardness of fasteners***

FA/202 SAE J417

***Rockwell superficial hardness of fasteners***

FA/210 SAE J417

***Torque-tension of full-size threaded fasteners***

FA/308 SAE J174
FB/1181 SAE J1701

***Torsional strength test of thread rolling and self-drilling tappings screws***

FA/254 SAE J81
FA/751 SAE J933

***Wedge tensile strength of full-size threaded fasteners***

FA/468 SAE J429 Sec. 5.5
FA/753 SAE J82

**NVLAP LAB CODE 200172-0**

## International Technology Company (ITC)

9959 Calaveras Road
P.O. Box 543
Sunol, CA 94586-0543
Contact: Mr. Michael Gbadebo
Phone: 925-862-2944
Fax: 925-862-9013
E-Mail: itcemc@aol.com
URL: http://www.itcemc.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Telecommunications Test Methods:*** | |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |

**NVLAP LAB CODE 200174-0**

## Training Research Co., Ltd.

2, Lane 194, Huan-Ho Street Hsichih
Taipei Hsien 221
TAIWAN
Contact: Mr. Frank Tsai
Phone: 886-2-2693-5155
Fax: 886-2-2693-4440
E-Mail: report@trclab.com.tw

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |



(See 'How To Use This Directory' on page 7.)

**NVLAP LAB CODE 200175-0**

**Ohtama Co., Ltd. Yamanashi EMC Test Site**

1661 Oshuku Asigawa Higashi-Yatsushiro
Yamanashi
JAPAN
Contact: Mr. Etsuji Nogami
Phone: 81-552-98-2141
Fax: 81-552-98-2125

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP Code* *Designation*

***Emissions Test Methods:***

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b Radiated Emissions
12/T51 AS/NZS 3548

**NVLAP LAB CODE 200177-0**

**Korea Testing & Research Inst. for Chemical Industry-Inchon Off.**

GAJOA 3 DONG 539-8
Inchon 404-253
KOREA
Contact: Mr. Park-Kil Kim
Phone: 82-32-577-6801
Fax: 82-32-575-5613
E-Mail: kpk@KOTRIC.or.kr

**Fasteners & Metals**

Accreditation Valid Through: December 31, 2001

*NVLAP Code* *Designation*

***Chemical Analysis***

***Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen***
FA/455 ASTM E1019
***Optical emission spectrochemical analysis***
FA/457 ASTM E415
***Solution chemical analysis***
FA/448 ASTM E350

***Dimensional Inspection***

***Dimensions of fasteners - straightness***
FA/423 ANSI/ASME B18.2.1
***Dimensions of general purpose fasteners and high-volume machine assembly fasteners***
FA/486 MIL-STD-120 (W/ Notice dtd 9 SEP 63)
***Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap***
FA/493 MIL-STD-120 (W/ Notice dtd 9SEP 63)
***External thread parameters - system 21***
FA/379 ANSI/ASME B1.3M
***External thread parameters - system 22***
FA/381 ANSI/ASME B1.3M
***Internal thread parameters - system 21***
FA/391 ANSI/ASME B1.3M
***Internal thread parameters - system 22***
FA/393 ANSI/ASME B1.3M

***Mechanical and Physical Testing and Inspection***

***Axial tensile strength of full-size threaded fasteners***
FA/266 ASTM F606 Sec. 3.4.1-3.4.3
FA/267 ASTM F606M Sec. 3.4.1-3.4.3
***Brinell hardness of fasteners***
FA/186 ASTM E10
***Charpy impact (u-notch) testing***
FA/517 ASTM E23
***Charpy impact (v-notch) testing***
FA/212 ASTM E23
***Cone proof load of internally threaded fasteners (nuts)***
FA/220 ASTM F606 Sec. 4.3
FA/221 ASTM F606M Sec. 4.3
***Measurement of fastener coating thickness - X-ray methods***
FA/760 ASTM A754/A754M
***Measurement of fastener coating thickness - magnetic methods***
FA/153 ASTM B499
***Measurement of fastener coating thickness - weight of coating***
FA/164 ASTM A90
***Microhardness of fasteners***
FA/189 ASTM E384
***Proof load of full-size externally threaded fasteners***
FA/226 ASTM F606 Sec. 3.2.1-3.2.3
FA/467 ASTM F606M Sec. 3.2.1-3.2.3
***Proof load of internally threaded fasteners (nuts)***
FA/236 ASTM F606 Sec. 4.2
FA/237 ASTM F606M Sec. 4.2
***Rockwell hardness of fasteners***
FA/197 ASTM E18
***Salt spray testing of fasteners***
FA/166 ASTM B117
***Tension testing of machined specimens from externally threaded fasteners***
FA/279 ASTM F606 Sec. 3.6
FA/280 ASTM F606M Sec. 3.6
***Wedge tensile strength of full-size threaded fasteners***
FA/290 ASTM F606 Sec. 3.5
FA/291 ASTM F606M Sec. 3.5
***Yield strength of full-size externally threaded fasteners***
FA/298 ASTM F606 Sec. 3.2.4
FA/300 ASTM F606M Sec. 3.2.4

***Metallography***



(See 'How To Use This Directory' on page 7.)

***Decarburization and case depth measurement in fasteners***
FA/323 ASTM E1077
***Determination of grain size of fasteners***
FA/638 ASTM E112
***Macroscopic examination of fasteners by etching***
FA/511 ASTM E340
***Microscopic examination of fasteners by etching***
FA/512 ASTM E407
***Surface discontinuities of externally threaded fasteners***
FA/357 ASTM F788/788M
***Surface discontinuities of internally threaded fasteners***
FA/865 ASTM F812/F812M

**NVLAP LAB CODE 200178-0**

## Durkee Testing Laboratories, Inc.

15700 Texaco Street
P.O. Box 1401
Paramount, CA 90723-1401
Contact: Mr. John A. Durkee
Phone: 562-531-7111
Fax: 562-531-7137
E-Mail: durkee@IBM.net

### Fasteners & Metals

Accreditation Valid Through: March 31, 2001

*NVLAP Code* *Designation*

#### *Chemical Analysis*

***Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen***
FA/455 ASTM E1019
FA/472 ASTM E1447
FA/513 ASTM E1409
FA/514 ASTM E351 Sec. 37
FA/515 ASTM E352 Sec. 36
FA/516 ASTM E353 Sec. 37
***Energy dispersive X-ray analysis***
FB/1153 ASTM E1508 (excluding Section 9)
***Optical emission spectrochemical analysis***
FA/457 ASTM E415
FA/458 ASTM E607
FA/459 ASTM E1086
***Spot test analysis***
FA/501 ASTM STP550

#### *Mechanical and Physical Testing and Inspection*

***Adhesion of metallic coatings on fasteners***
FA/541 QQ-P-416 Sec. 4.6.2
FB/1134 QQ-C-320
***Axial tensile strength of full-size threaded fasteners***
FA/271 MIL-STD-1312-8
***Bend test of full size eyebolts***
FA/503 ASTM A370
FB/1133 ASTM E290
***Breaking strength of fullsize eyebolts***
FA/508 MIL-STD-1312-8
***Brinell hardness of fasteners***
FA/186 ASTM E10
***CASS test (copper-accelerated acetic acid-salt spray test) of fasteners***
FA/496 ASTM B368
***Charpy impact (u-notch) testing***
FA/517 ASTM E23
***Charpy impact (v-notch) testing***
FA/211 ASTM A370 Sec. 19-28
FA/212 ASTM E23
***Copper sulfate test - test for free iron on the surface of corrosion resistant fasteners***
FA/499 ASTM A380
***Double shear of externally threaded fasteners***
FA/257 MIL-STD-1312-13
***Elevated temperature testing capability***
FA/505 MIL-STD-1312-18
***Fatigue of full-size threaded fasteners***
FA/183 MIL-STD-1312-11
***Humidity testing of fasteners***
FA/473 MIL-STD-1312-3
***Hydrogen embrittlement (stress durability) of externally threaded fasteners***
FA/176 MIL-STD-1312-5
***Hydrogen embrittlement (stress durability) of internally threaded fasteners***
FA/178 MIL-STD-1312-14
***Intergranular corrosion susceptibility in austentic stainless steel fasteners - nitric aci***
FA/173 ASTM A262 Sec. 15-21, Practice C
FA/504 ASTM G28
***Intergranular corrosion susceptibility of austentic stainles steel fasteners - oxalic acid***
FA/174 ASTM A262 Sec. 3-7, Practice A
***Measurement of fastener coating thickness - dimensional change method***
FA/495 MIL-STD-1312-12
***Measurement of fastener coating thickness - magnetic methods***
FA/159 MIL-STD-1312-12
***Measurement of fastener coating thickness - microscopical method***
FA/163 MIL-STD-1312-12
***Measurement of fastener coating thickness - weight of coating***
FA/165 MIL-STD-1312-12
***Microhardness of fasteners***
FA/193 MIL-STD-1312-6
***Proof load of full-size externally threaded fasteners***
FA/226 ASTM F606 Sec. 3.2.1-3.2.3
***Proof load of full-size eyebolts***
FA/232 ASTM F541
***Proof load of internally threaded fasteners (nuts)***
FA/236 ASTM F606 Sec. 4.2
***Push out test of floating plate nuts, gang channel nuts, and anchor nuts***
FA/116 MIL-N-25027


(See 'How To Use This Directory' on page 7.)

***Recess strength test in both the installation and removal directions***
FA/476 MIL-STD-1312-25
***Rockwell hardness of fasteners***
FA/201 MIL-STD-1312-6
***Rockwell superficial hardness of fasteners***
FA/209 MIL-STD-1312-6
***Salt spray testing of fasteners***
FA/166 ASTM B117
FA/168 MIL-STD-1312-1
***Single shear of externally threaded fasteners***
FA/256 MIL-STD-1312-20
***Stress corrosion of fasteners***
FA/172 MIL-STD-1312-9
***Stress rupture of fasteners***
FA/262 MIL-STD-1312-10
***Tension testing of machined specimens from externally threaded fasteners***
FA/278 ASTM A370
FA/475 ASTM E8
FA/526 MIL-STD-1312-8
***Test for embrittlement of metallic coated externally threaded fasteners***
FA/525 MIL-STD-1312-5
***Torque-out test***
FA/133 MIL-N-25027
FA/502 MIL-N-45913
FA/523 MIL-STD-1312-31
***Water immersion method - test for anodic surface contaminants on corrosion resistant faste***
FA/498 ASTM G31
***Wedge tensile strength of full-size threaded fasteners***
FA/289 ASTM A370
FA/290 ASTM F606 Sec. 3.5
***Yield strength of full-size externally threaded fasteners***
FA/303 MIL-STD-1312-8

### *Metallography*

***Decarburization and case depth measurement in fasteners***
FA/483 ASTM A574 Sec. 12
FA/520 ASTM F835
***Determination of grain size of fasteners***
FA/331 ASTM E112
***Macroscopic examination of fasteners by etching***
FA/511 ASTM E340
***Microscopic examination of fasteners by etching***
FA/512 ASTM E407
***Surface discoutinuities of externally threaded fasteners***
FA/357 ASTM F788/788M
***Surface discontinuities of internally threaded fasteners***
FA/865 ASTM F812/F812M

**NVLAP LAB CODE 200179-0**

## Fastener Innovation Technology, Inc.

14601 So. Broadway
Gardena, CA 90248-1811
Contact: Mr. Jorge W. Molina
Phone: 310-538-1111
Fax: 310-324-7602
E-Mail: JWM@fitfastener.com

### Fasteners & Metals

Accreditation Valid Through: June 30, 2001

*NVLAP Code* *Designation*

### *Dimensional Inspection*

***Dimensions of fasteners - flange screw heads and flange nuts***
FA/712 IFI 111
FB/1139 IFI 115
***Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets***
FA/411 ANSI/ASME B18.3
FB/1140 ANSI B18.2.1
***Dimensions of fasteners - straightness***
FA/423 ANSI/ASME B18.2.1
***Dimensions of general purpose fasteners and high-volume machine assembly fasteners***
FA/791 NAS 527
FA/854 ANSI/ASME B18.6.4
FB/1137 NAS 9800
***Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap***
FB/1062 BPS-F-67
***External thread parameters - ISO***
FA/594 FED-STD-H28/21
***External thread parameters - system 21***
FA/380 FED-STD-H28/20
FA/628 MIL-S-8879
***External thread parameters - system 22***
FA/382 FED-STD-H28/20
FA/384 MIL-S-8879
***External thread parameters - system 23***
FA/386 FED-STD-H28/20
FA/388 MIL-S-8879
***Surface texture***
FA/439 ANSI/ASME B46.1

### *Mechanical and Physical Testing and Inspection*

***Axial tensile strength of full-size threaded fasteners***
FA/271 MIL-STD-1312-8
FA/530 ASTM E8
***Copper sulfate test - test for free iron on the surface of corrosion resistant fasteners***
FA/499 ASTM A380
FB/1138 SAE-AMS-STD-753
***Double shear of externally threaded fasteners***
FA/257 MIL-STD-1312-13


(See 'How To Use This Directory' on page 7.)

*Elevated temperature testing capability*
FA/505 MIL-STD-1312-18
*Fatigue of full-size threaded fasteners*
FA/183 MIL-STD-1312-11
*Humidity testing of fasteners*
FA/169 MIL-STD-753 Test Method 101
*Hydrogen embrittlement (stress durability) of externally threaded fasteners*
FA/176 MIL-STD-1312-5
*Magnetic permeability*
FA/214 ASTM A342 Test Method 3
*Measurement of fastener coating thickness - dimensional change method*
FA/495 MIL-STD-1312-12
*Measurement of fastener coating thickness - microscopical method*
FA/160 ASTM B487
FA/163 MIL-STD-1312-12
*Microhardness of fasteners*
FA/189 ASTM E384
FA/193 MIL-STD-1312-6
*Proof load of full-size externally threaded fasteners*
FA/226 ASTM F606 Sec. 3.2.1-3.2.3
*Push out test of floating plate nuts, gang channel nuts, and anchor nuts*
FA/116 MIL-N-25027
*Recess strength test in both the installation and removal directions*
FA/476 MIL-STD-1312-25
*Reusability test of self-locking internally threaded fasteners*
FA/124 MIL-N-25027
*Rockwell hardness of fasteners*
FA/197 ASTM E18
FA/201 MIL-STD-1312-6
*Rockwell superficial hardness of fasteners*
FA/209 MIL-STD-1312-6
*Salt spray testing of fasteners*
FA/166 ASTM B117
FA/168 MIL-STD-1312-1
*Single shear of externally threaded fasteners*
FA/256 MIL-STD-1312-20
*Stress rupture of fasteners*
FA/262 MIL-STD-1312-10
*Tension testing of machined specimens from externally threaded fasteners*
FA/475 ASTM E8
FA/526 MIL-STD-1312-8
*Torque-out test*
FA/133 MIL-N-25027
*Total extension at fracture of externally threaded fasteners*
FA/592 ASTM E8
*Wedge tensile strength of full-size threaded fasteners*
FA/289 ASTM A370
FA/290 ASTM F606 Sec. 3.5
*Wrench torque test of externally wrenched nuts of spline and hexagon and double hexagon (1*
FA/141 MIL-N-25027
*Yield strength of full-size externally threaded fasteners*
FA/593 ASTM E8

### *Metallography*

*Decarburization and case depth measurement in fasteners*
FA/323 ASTM E1077
FB/1047 BPS-F-67
FB/1107 BPS-F-69
*Determination of grain size of fasteners*
FA/331 ASTM E112
*Macroscopic examination of fasteners by etching*
FA/511 ASTM E340
FB/1108 BPS-F-67
FB/1109 BPS-F-69
*Microscopic examination of fasteners by etching*
FA/512 ASTM E407
FB/1118 BPS-F-67
FB/1121 BPS-F-69
*Surface discontinuities of externally threaded fasteners*
FA/357 ASTM F788/788M

### *Nondestructive Inspection*

*Liquid penetrant inspection of fasteners*
FA/371 MIL-STD-6866
FA/527 ASTM E1417
*Magnetic particle inspection of fasteners*
FA/485 ASTM E1444

**NVLAP LAB CODE 200180-0**

## Fuji Component Parts USA, Inc.

4115 West 54th Street
Indianapolis, IN 46254
Contact: Mr. Steve Egelhoff
Phone: 317-347-4115
Fax: 317-347-4123
E-Mail: fcpfuji@ix.netcom.com

### Fasteners & Metals

Accreditation Valid Through: March 31, 2001

*NVLAP Code* *Designation*

### *Chemical Analysis*

*Optical emission spectrochemical analysis*
FA/457 ASTM E415

### *Dimensional Inspection*

*External thread parameters - system 21*
FA/379 ANSI/ASME B1.3M
*Internal thread parameters - system 21*
FA/391 ANSI/ASME B1.3M

### *Mechanical and Physical Testing and Inspection*

*Axial tensile strength of full-size threaded fasteners*
FA/266 ASTM F606 Sec. 3.4.1-3.4.3


(See 'How To Use This Directory' on page 7.)

***Measurement of fastener coating thickness - coulometric method***
FA/567 ASTM B504
***Microhardness of fasteners***
FA/657 ASTM E92
***Proof load of full-size externally threaded fasteners***
FA/226 ASTM F606 Sec. 3.2.1-3.2.3
***Proof load of internally threaded fasteners (nuts)***
FA/236 ASTM F606 Sec. 4.2
***Rockwell hardness of fasteners***
FA/197 ASTM E18
***Salt spray testing of fasteners***
FA/166 ASTM B117
***Wedge tensile strength of full-size threaded fasteners***
FA/290 ASTM F606 Sec. 3.5
***Yield strength of full-size externally threaded fasteners***
FA/298 ASTM F606 Sec. 3.2.4

**NVLAP LAB CODE 200183-0**

**California Screw Products**
14957 Gwenchris Court
Paramount, CA 90723-3423
Contact: Mr. Ralph Terrazas
Phone: 562-633-6626
Fax: 562-633-2082

**Fasteners & Metals**
Accreditation Valid Through: March 31, 2001
*NVLAP*
*Code* *Designation*

***Dimensional Inspection***

***Dimensions of fasteners - bearing surface squareness***
FB/1197 NAS 4002
FB/1201 NAS 4003
***Dimensions of fasteners - flange screw heads and flange nuts***
FB/1198 NAS 4002
FB/1202 NAS 4003
***Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets***
FA/972 NAS 4002
FB/1200 NAS 4003
***Dimensions of fasteners - straightness***
FA/423 ANSI/ASME B18.2.1
FB/1196 NASM 6812
***Dimensions of general purpose fasteners and high-volume machine assembly fasteners***
FB/1199 NAS 4002
FB/1203 NAS 4003
***External thread parameters - SAE fastener with MJ metric screw threads***
FA/922 ANSI/ASME B1.3M
***External thread parameters - system 22***
FA/381 ANSI/ASME B1.3M
***External thread parameters - system 23***
FA/385 ANSI/ASME B1.3M

***Mechanical and Physical Testing and Inspection***

***Axial tensile strength of full-size threaded fasteners***
FA/799 NASM 1312-8
***Double shear of externally threaded fasteners***
FA/880 NASM 1312-13
***Hydrogen embrittlement (stress durability) of externally threaded fasteners***
FA/875 NASM 1312-5
***Magnetic permeability***
FA/214 ASTM A342 Test Method 3
***Measurement of fastener coating thickness - dimensional change method***
FA/874 NASM 1312-12
***Measurement of fastener coating thickness - eddy-current method***
FA/872 NASM 1312-12
***Measurement of fastener coating thickness - microscopical method***
FA/873 NASM 1312-12
***Microhardness of fasteners***
FA/877 NASM 1312-6
***Recess strength test in both the installation and removal directions***
FA/886 NASM 1312-25
***Rockwell hardness of fasteners***
FA/878 NASM 1312-6
***Single shear of externally threaded fasteners***
FA/879 NASM 1312-20
***Stress rupture of fasteners***
FA/881 NASM 1312-10

***Metallography***

***Decarburization and case depth measurement in fasteners***
FA/328 SAE J121
FB/1204 CSP WI-0010
***Determination of grain size of fasteners***
FA/331 ASTM E112
***Macroscopic examination of fasteners by etching***
FA/511 ASTM E340
***Microscopic examination of fasteners by etching***
FA/512 ASTM E407
***Surface discontinuities of externally threaded fasteners***
FA/357 ASTM F788/788M

**NVLAP LAB CODE 200186-0**

**Hitachi Information Technology Co., Ltd.**
456 Sakai, Nakai-machi, Ashigarakami-gun
Kanagawa 259-0157
JAPAN
Contact: Mr. Masanori Yamaji
Phone: 81-463-88-8090
Fax: 81-463-87-1723
E-Mail: myamaji@kanagawa.hitachi.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200188-0**

## EMSL Analytical, Inc.

6330 East 75th Street, Suite 152
Indianapolis, IN 46250
Contact: Mr. Richard Harding
Phone: 317-570-5892
Fax: 317-570-5894

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 200189-0**

## Japan Quality Assurance Organization Safety Testing Center

1-21-25, Kinuta, Setagaya-ku
Tokyo 157-8573
JAPAN
Contact: Mr. Fumio Matsuda
Phone: 81-3-3416-0193
Fax: 81-3-3416-8290
E-Mail: JQA00127@nifty.ne.jp
URL: http://www/jqa.or.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200190-0**

## Japan Quality Assurance Org. Chubu Testing Center Shikatsu Branch

53-1, Yamaura, Yakushiji, Shikatsu-cho
Nishikasugai-gun
Aichi 481-0005
JAPAN
Contact: Mr. Yutaka Suzuki
Phone: 81-568-23-0023
Fax: 81-568-23-0116
E-Mail: JAQ00519@nifty.ne.jp
URL: http://www.jqa.or.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200191-0**

## Japan Quality Assurance Organization Kita-Kansai Testing Center

7-7, Ishimaru 1-chome, Minoo-shi
Osaka 562-0027
JAPAN
Contact: Mr. Hiroaki Hayashi
Phone: 81-727-29-2243
Fax: 81-727-28-6848
E-Mail: JQA00616@nifty.ne.jp

**Electromagnetic Compatibility & Telecommunicatio**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|



(See 'How To Use This Directory' on page 7.)

*Emissions Test Methods:*

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200192-0**

### Japan Quality Assurance Org. Safety Testing Ctr. Tsuru EMC Branch

2096, Ohata Tanbozawa, Tsuru-shi
Yamanashi 402-0045
JAPAN
Contact: Mr. Fumio Matsuda
Phone: 81-3-3416-0193
Fax: 81-3-3416-8290
E-Mail: JQA00127@nifty.ne.jp
URL: http://www.jqa.or.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|

*Emissions Test Methods:*

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200198-0**

### IBM Yamato EMC Engineering

1623-14, Shimotsuruma
Yamato Kanagawa 242-8502
JAPAN
Contact: Mr. Akihisa Sakurai
Phone: 81-462-73-2613
Fax: 81-462-73-7420
E-Mail: akihisa@jp.ibm.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|

*Emissions Test Methods:*

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200200-0**

### IBM RTP PSG EMC Test Labs

3039 Cornwallis Road
Research Triangle Park, NC 27709-2195
Contact: Mr. Randy Smith
Phone: 919-543-0837
Fax: 919-254-7778
E-Mail: smithran@us.ibm.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|

*Emissions Test Methods:*

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200201-0**

### Intertek Testing Services

1365 Adams Court
Menlo Park, CA 94025
Contact: Mr. John D. Quigley
Phone: 650-463-2948
Fax: 650-463-2910
E-Mail: ckli@itsqs.com
URL: http://www.etlsemko.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Telecommunications Test Methods:*** | |
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |

**NVLAP LAB CODE 200202-0**

### NOVA Machine Products

18001 Sheldon Road
Middleburg Heights, OH 44130-2471
Contact: Mr. David Nenstiel
Phone: 216-898-8017
Fax: 216-267-8515
E-Mail: dnenstiel@nova-nsa.com
URL: http://www.lab@nova-nsa.com

### Fasteners & Metals

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Chemical Analysis*** | |
| ***Optical emission spectrochemical analysis*** | |
| FA/457 | ASTM E415 |
| FA/459 | ASTM E1086 |
| ***Spot test analysis*** | |
| FA/748 | Alloy Detector Mark II |
| ***Dimensional Inspection*** | |
| ***Dimensions of ISO grade A and B fasteners*** | |
| FA/738 | ISO 4014 |
| FA/739 | ISO 4017 |
| FA/740 | ISO 4032 |
| ***Dimensions of ISO grade C fasteners*** | |
| FA/741 | ISO 4016 |
| FA/742 | ISO 4018 |
| FA/743 | ISO 4034 |
| ***Dimensions of fasteners - bearing surface squareness*** | |
| FA/745 | ANSI B18.2.1 |
| FA/746 | ASME/ANSI B18.2.2 |
| FA/747 | ASME/ANSI B18.3 |
| ***Dimensions of fasteners - flange screw heads and flange nuts*** | |
| FA/744 | ANSI B18.2.1 |
| ***Dimensions of fasteners - gaging for slotted nuts*** | |
| FA/417 | ANSI/ASME B18.2.2 |
| ***Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets*** | |
| FA/411 | ANSI/ASME B18.3 |
| ***Dimensions of fasteners - straightness*** | |
| FA/423 | ANSI/ASME B18.2.1 |
| ***Dimensions of general purpose fasteners and high-volume machine assembly fasteners*** | |
| FA/403 | ANSI/ASME B18.18.1M |
| FA/404 | ANSI/ASME B18.18.2M |
| ***Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap*** | |
| FA/405 | ANSI/ASME B18.18.3M |
| FA/406 | ANSI/ASME B18.18.4M |
| ***External thread parameters - ISO*** | |
| FA/728 | ISO 68 |
| FA/729 | ISO 261 |
| FA/730 | ISO 262 |
| FA/731 | ISO 965-1 |
| FA/732 | ISO 965-2 |



(See 'How To Use This Directory' on page 7.)

*External thread parameters - system 21*
FA/379 ANSI/ASME B1.3M
*External thread parameters - system 22*
FA/381 ANSI/ASME B1.3M
*External thread parameters - system 23*
FA/385 ANSI/ASME B1.3M
*Internal thread parameters - ISO*
FA/733 ISO 68
FA/734 ISO 261
FA/735 ISO 262
FA/736 ISO 965-1
FA/737 ISO 965-2
*Internal thread parameters - system 21*
FA/391 ANSI/ASME B1.3M
*Internal thread parameters - system 22*
FA/393 ANSI/ASME B1.3M
*Internal thread parameters - system 23*
FA/397 ANSI/ASME B1.3M
*Surface texture*
FA/439 ANSI/ASME B46.1

### *Mechanical and Physical Testing and Inspection*

*Axial tensile strength of full-size threaded fasteners*
FA/265 ASTM A370 Sec. A3.2.1.4
FA/266 ASTM F606 Sec. 3.4.1-3.4.3
FA/273 SAE J429
FA/274 SAE J1216
FA/687 ISO 6892
*Compression load of compressible-washer-type direct tension indicators*
FA/312 ASTM F959
*Cone proof load of internally threaded fasteners (nuts)*
FA/220 ASTM F606 Sec. 4.3
*Embrittlement test of washers*
FA/313 ASME B18.21.1
*Hardness preparation*
FA/482 ASTM F606
*Hydrogen embrittlement (stress durability) of externally threaded fasteners*
FA/176 MIL-STD-1312-5
*Hydrogen embrittlement (stress durability) of internally threaded fasteners*
FA/178 MIL-STD-1312-14
*Proof load of full-size externally threaded fasteners*
FA/225 ASTM A370 Sec. A3.2.1.1-A3.2.1.3
FA/226 ASTM F606 Sec. 3.2.1-3.2.3
FA/229 SAE J429 Sec. 5.3
FA/230 SAE J1216 Sec. 3.3
*Proof load of internally threaded fasteners (nuts)*
FA/235 ASTM A370 Sec. A3.5.1
FA/236 ASTM F606 Sec. 4.2
FA/241 SAE J995 Sec. 5.1
*Recovery test of washers*
FA/726 ASME/ANSI B18.21.1
*Rockwell hardness of fasteners*
FA/196 ASTM A370 Sec. 18
FA/197 ASTM E18
FA/200 ISO 6508
FA/202 SAE J417
*Rockwell superficial hardness of fasteners*
FA/205 ASTM E18
FA/206 ASTM A370 Sec. 18
FA/210 SAE J417
*Temper test of lock washers*
FA/319 ASME B18.21.1
*Tension testing of machined specimens from externally threaded fasteners*
FA/278 ASTM A370
FA/279 ASTM F606 Sec. 3.6
FA/283 SAE J429
FA/475 ASTM E8
FA/580 ISO 6892
*Test for embrittlement of metallic coated externally threaded fasteners*
FA/179 ASTM F606 Sec. 7
FA/724 ASTM A143
*Torque-tension of full-size threaded fasteners*
FA/307 MIL-STD-1312-15
*Total extension at fracture of externally threaded fasteners*
FA/285 ASTM F606 Sec. 3.7
FA/725 ISO 6892
*Twist test of lock washers*
FA/321 ASME B18.21.1
*Wedge tensile strength of full-size threaded fasteners*
FA/289 ASTM A370
FA/290 ASTM F606 Sec. 3.5
FA/468 SAE J429 Sec. 5.5
FA/469 SAE J1216 Sec. 3.6
FA/688 ISO 6892

### *Metallography*

*Surface discontinuities of externally threaded fasteners*
FA/357 ASTM F788/788M
FA/359 ISO 6157-1
FA/360 ISO 6157-3
FA/361 SAE J123
*Surface discontinuities of internally threaded fasteners*
FA/363 ASTM F812
FA/365 SAE J122
FA/727 ISO 6157-2

### *Nondestructive Inspection*

*Liquid penetrant inspection of fasteners*
FA/367 ASTM E165
FA/370 MIL-STD-271
FA/371 MIL-STD-6866
FA/372 SAE J426
FA/527 ASTM E1417
*Magnetic particle inspection of fasteners*
FA/374 ASTM E709
FA/376 MIL-STD-271
FA/377 MIL-STD-1949
FA/378 SAE J420
FA/485 ASTM E1444
FB/1208 ASTM A275/A275M


(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 200203-0

**Fuji Buhin Kogyo Kabushiki Kaisha**
47-1 Fujikura-Cho
Ohta Gunma 373-8501
JAPAN
Contact: Mr. Shinji Kanai
Phone: 276-31-2311
Fax: 276-31-9621

**Fasteners & Metals**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Dimensional Inspection*** | |
| ***Internal thread parameters - system 21*** | |
| FA/621 | JIS B0251 |
| FA/622 | JIS B0252 |
| FA/623 | JIS B1071 |
| ***Mechanical and Physical Testing and Inspection*** | |
| ***Axial tensile strength of full-size threaded fasteners*** | |
| FA/574 | JIS B1051 Sec. 4.2.2 |
| ***Measurement of fastener coating thickness - coulometric method*** | |
| FA/597 | JIS H8501 |
| ***Microhardness of fasteners*** | |
| FA/620 | JIS Z2244 |
| ***Prevailing torque*** | |
| FA/600 | JIS B1056 |
| ***Proof load of internally threaded fasteners (nuts)*** | |
| FA/601 | JIS B1052 |
| ***Rockwell hardness of fasteners*** | |
| FA/572 | JIS Z2245 |
| ***Salt spray testing of fasteners*** | |
| FA/569 | JIS Z2371 |
| ***Wedge tensile strength of full-size threaded fasteners*** | |
| FA/575 | JIS B1051 Sec. 4.2.3 |

NVLAP LAB CODE 200204-0

**EMSL Analytical, Inc.**
19595 NE 10th Ave., Bay C
N. Miami Beach, FL 33179
Contact: Ms. Kimberly A. Wallace
Phone: 305-650-0577
Fax: 305-650-0578

URL: http://www.emsl.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 200207-0

**Kansai Electronic Industry Development Center, Ikoma Testing Lab.**
12128 Takayama-cho
Ikoma Nara 630-0101
JAPAN
Contact: Mr. Tadayoshi Sakabe
Phone: 0743-78-0283
Fax: 0743-79-1014
E-Mail: sakabe@kec.or.jp
URL: http://www.kec.or.jp/

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CISS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CISS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CISS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

NVLAP LAB CODE 200208-0

**Ingersoll Fasteners**
390 Thomas Street
Ingersoll Ontario N5C 3K3
CANADA
Contact: Mr. Alan Palmer
Phone: 519-485-4610
Fax: 519-485-2435
E-Mail: apalmer@ivaco.com

**Fasteners & Metals**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Dimensional Inspection*** | |
| ***Dimensions of general purpose fasteners and high-volume machine assembly fasteners*** | |
| FA/404 | ANSI/ASME B18.18.2M |
| ***External thread parameters - system 21*** | |
| FA/379 | ANSI/ASME B1.3M |



(See 'How To Use This Directory' on page 7.)

*External thread parameters - system 22*
FA/381 ANSI/ASME B1.3M
*Internal thread parameters - system 21*
FA/391 ANSI/ASME B1.3M

### *Mechanical and Physical Testing and Inspection*

*Axial tensile strength of full-size threaded fasteners*
FA/273 SAE J429
FA/578 SAE J1216 Sec. 3.5
*Cone proof load of internally threaded fasteners (nuts)*
FA/220 ASTM F606 Sec. 4.3
*Measurement of fastener coating thickness - magnetic methods*
FA/153 ASTM B499
*Microhardness of fasteners*
FA/189 ASTM E384
*Proof load of full-size externally threaded fasteners*
FA/229 SAE J429 Sec. 5.3
FA/577 SAE J1216 Sec. 3.3
*Proof load of internally threaded fasteners (nuts)*
FA/241 SAE J995 Sec. 5.1
*Rockwell hardness of fasteners*
FA/197 ASTM E18
*Rockwell superficial hardness of fasteners*
FA/205 ASTM E18
*Salt spray testing of fasteners*
FA/166 ASTM B117
*Tension testing of machined specimens from externally threaded fasteners*
FA/278 ASTM A370
*Wedge tensile strength of full-size threaded fasteners*
FA/468 SAE J429 Sec. 5.5
FA/579 SAE J1216 Sec. 3.6

### *Metallography*

*Decarburization and case depth measurement in fasteners*
FA/328 SAE J121
*Macroscopic examination of fasteners by etching*
FA/337 SAE J1061
*Microscopic examination of fasteners by etching*
FA/344 SAE J121
*Surface discontinuities of externally threaded fasteners*
FA/362 SAE J1061
*Surface discontinuities of internally threaded fasteners*
FA/363 ASTM F812

**NVLAP LAB CODE 200212-0**

## Sundram Fasteners Limited (Inhouse test laboratory)

Padi
Chennai (Madras), Taonil, Nadu 600 050
INDIA
Contact: Mr. Sampathkumar Moorthy
Phone: 91-44-852-1870
Fax: 91-44-853-5435

## Fasteners & Metals

Accreditation Valid Through: September 30, 2001

*NVLAP Code* *Designation*

### *Dimensional Inspection*

*Dimensions of ISO grade A and B fasteners*
FA/408 ISO 4759-1
*Dimensions of ISO grade C fasteners*
FA/410 ISO 4759-1
*Dimensions of fasteners - flange screw heads and flange nuts*
FA/669 ISO 4161
FA/670 ISO 4162
*Dimensions of fasteners - gaging for slotted nuts*
FA/980 ISO 4759-2
*Dimensions of fasteners - straightness*
FA/668 ISO 4759-1
*Dimensions of general purpose fasteners and high-volume machine assembly fasteners*
FA/665 ISO 4759-1
*External thread parameters - ISO*
FA/390 ISO 1502
*External thread parameters - SAE fastener with MJ metric screw threads*
FA/389 SAE MA1566
FA/661 ISO 4759-1
FA/662 ISO 1502
*External thread parameters - system 21*
FA/659 ISO 4759-1
FA/660 ISO 1502
*Internal thread parameters - ISO*
FA/402 ISO 1502
FA/664 ISO 4759-1
*Internal thread parameters - SAE fastener with MJ metric screw threads*
FA/979 ISO 4759-1
*Surface texture*
FB/1207 IS 3073

### *Mechanical and Physical Testing and Inspection*

*Axial tensile strength of full-size threaded fasteners*
FA/266 ASTM F606 Sec. 3.4.1-3.4.3
FA/270 ISO 898-1 Sec. 8.2
FA/273 SAE J429
FA/274 SAE J1216

***Brinell hardness of fasteners***

FA/466 ISO 6506

***Cone proof load of internally threaded fasteners (nuts)***

FA/220 ASTM F606 Sec. 4.3
FA/221 ASTM F606M Sec. 4.3
FA/223 SAE J122 Sec. 4.3

***Measurement of fastener coating thickness - X-ray methods***

FA/556 ASTM B568

***Microhardness of fasteners***

FA/657 ASTM E92

***Prevailing torque***

FA/217 IFI-100/107
FA/218 ISO 2320

***Proof load of full-size externally threaded fasteners***

FA/226 ASTM F606 Sec. 3.2.1-3.2.3
FA/228 ISO 898-1 Sec. 8.4
FA/229 SAE J429 Sec. 5.3
FA/230 SAE J1216 Sec. 3.3
FA/467 ASTM F606M Sec. 3.2.1-3.2.3

***Proof load of internally threaded fasteners (nuts)***

FA/236 ASTM F606 Sec. 4.2
FA/237 ASTM F606M Sec. 4.2
FA/239 ISO 898-2 Sec. 8.1
FA/240 ISO 898-6 Sec. 8.1
FA/241 SAE J995 Sec. 5.1

***Rockwell hardness of fasteners***

FA/197 ASTM E18
FA/200 ISO 6508

***Salt spray testing of fasteners***

FA/166 ASTM B117

***Tension testing of machined specimens from externally threaded fasteners***

FA/279 ASTM F606 Sec. 3.6
FA/280 ASTM F606M Sec. 3.6
FA/282 ISO 898-1
FA/283 SAE J429

***Torque-tension of full-size threaded fasteners***

FA/306 IFI-101
FA/308 SAE J174
FA/944 ISO 2320

***Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)***

FA/658 ISO 6507-1

***Wedge tensile strength of full-size threaded fasteners***

FA/290 ASTM F606 Sec. 3.5
FA/291 ASTM F606M Sec. 3.5
FA/294 ISO 898-1 Sec. 8.5
FA/468 SAE J429 Sec. 5.5
FA/469 SAE J1216 Sec. 3.6

***Yield strength of full-size externally threaded fasteners***

FA/298 ASTM F606 Sec. 3.2.4
FA/300 ASTM F606M Sec. 3.2.4

### *Metallography*

***Decarburization and case depth measurement in fasteners***

FA/323 ASTM E1077
FA/328 SAE J121
FA/329 SAE J419
FA/330 SAE J423

***Determination of grain size of fasteners***

FA/331 ASTM E112
FA/333 SAE J418

***Macroscopic examination of fasteners by etching***

FA/334 ISO 6157-1
FA/335 ISO 6157-3
FA/336 SAE J123

***Surface discontinuities of externally threaded fasteners***

FA/357 ASTM F788/788M
FA/361 SAE J123

***Surface discontinuities of internally threaded fasteners***

FA/365 SAE J122
FA/865 ASTM F812/F812M

### *Nondestructive Inspection*

***Magnetic particle inspection of fasteners***

FA/374 ASTM E709
FA/378 SAE J420

**NVLAP LAB CODE 200214-0**

## Underwriters Laboratories Inc.

2600 N.W. Lake Road
Camas, WA 98607-8542
Contact: Mr. Rick A. Titus
Phone: 847-272-8800
Fax: 847-509-6321
E-Mail: Rick.A.Titus@us.ul.com
URL: http://www.ul.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |



(See 'How To Use This Directory' on page 7.)

**NVLAP LAB CODE 200215-0**

### Sumitomo Metals (Kokura), Ltd. Quality System Section

Quality System Section
1, Konomi-machi, Kokurakita-ku
Kitakyushu 803-0803
JAPAN
Contact: Mr. Masamichi Suzuki
Phone: 81-93-581-3289
Fax: 81-93-561-8099

### Fasteners & Metals

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Chemical Analysis*** | |
| ***Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen*** | |
| FA/586 | JIS G1211 |
| FA/587 | JIS G1215 |
| FB/1189 | JIS G1228 |
| ***Optical emission spectrochemical analysis*** | |
| FA/588 | JIS G1253 |
| ***Solution chemical analysis*** | |
| FA/585 | JIS G1258 |
| FA/680 | JIS G1227 |
| FB/1182 | JIS G1212 |
| FB/1183 | JIS G1213 |
| FB/1184 | JIS G1214 |
| FB/1185 | JIS G1216 |
| FB/1186 | JIS G1217 |
| FB/1187 | JIS G1218 |
| FB/1188 | JIS G1219 |
| FB/1191 | JIS G1257 |
| ***X-ray fluorescence (XRF) spectrochemical analysis*** | |
| FB/1190 | JIS G1256 |

**NVLAP LAB CODE 200216-0**

### Battelle - Pacific Northwest National Laboratory

Battelle Boulevard (Mail Stop K3-55)
P.O. Box 999
Richland, WA 99352-4553
Contact: Mr. Jack J. Fix
Phone: 509-375-2512
Fax: 509-373-0167
E-Mail: jack.fix@pnl.gov
URL: http://www.pnl.gov/health/health_prot/

### Ionizing Radiation Dosimetry

Accreditation Valid Through: September 30, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeters listed below through employing the Harshaw automatic reader model 8800 and manual reader model 6600.

This facility is accredited to process the following dosimeters by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993 and ANSI HPS N13.32-1995 through testing.

Harshaw Card 7776 (15, 15, 6, 15) in a Type 8825 holder for ANSI-N13.11 categories I, II, IIIA, IIIB, IV, VC, VI, VII, VIII.

Harshaw Combo 7777 (15, 15, 6, 15) in a type 8825 holder for ANSI-N13.11 categories I, II, IIIA, IIIB, IV, VC, VI, VII, VIII, and 7666 (15, 15, 15, 15) in a type 8816 holder for ANSI-N13.11 category VIII.

Harshaw extremity TLD XD-740 (TLD-700) in a finger ring holder for ANSI HPS N13.32 (NIST Handbook 150-4, Table 2) categories I, II, IIIA, IVA, VC.

**NVLAP LAB CODE 200217-0**

### Tokin EMC Engineering Co., Ltd. Kawasaki Facility

398, Shiboguchi Takatsu-ku
Kawasaki-city, Kanagawa 213
JAPAN
Contact: Mr. Hiro Shida
Phone: 81-298-37-2400
Fax: 81-298-37-2401
E-Mail: shida@tee.tokin.co.jp

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200218-0**

### Tokin EMC Engineering Co., Ltd. Osaka Testing Laboratory

49, Aza-Miyanowaki, Sakai
Sanda-city, Hyogo 669-14
JAPAN
Contact: Mr. Motoji Nakai
Phone: 81-795-69-1290
Fax: 81-795-69-0079
E-Mail: nakai@tee.tokin.co.jp



(See 'How To Use This Directory' on page 7.)

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001
*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200219-0**

**Tokin EMC Engineering Co., Ltd. Nagoya Testing Laboratory**
1684, Nishinoda, Nyugawakami
Daian-cho, Inabe-gun, Mie 511-0261
JAPAN
Contact: Mr. Motoji Nakai
Phone: 81-795-69-1290
Fax: 81-795-69-0079
E-Mail: nakai@tee.tokin.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001
*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200220-0**

**SK Tech Co., LTD.**
820-2, Wolmoon-Ri, WaBu-up
Namyangju-si, Kyunggi-Do 472-900
KOREA
Contact: Mr. Jae-Yeong Hyun
Phone: 82 31 576 2204
Fax: 82 31 576 2205
E-Mail: ktemc@unitel.co.kr
URL: http://www.skemc.co.kr

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001
*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200221-0**

**Tokin EMC Engineering Co., Ltd. Tsukuba Testing Laboratory**
28-1, Aza-Kitahara
Ohaza- Hanashimashinden
Tsukuba-city, Ibaraki 305
JAPAN
Contact: Mr. Hiro Shida
Phone: 81-298-37-2400
Fax: 81-298-37-2401
E-Mail: shida@tee.tokin.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001
*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200222-0**

**NAWC-Aircraft Div. Lakehurst Electromagnetic Interference Lab.**
Highway 547, 355-2, Code 48L500B
Lakehurst, NJ 08733-5100
Contact: Mr. Lee Taylor
Phone: 732-323-7782
Fax: 732-323-1844
E-Mail: Taylorlm@lakehurst.navy.mil
URL: http://www.lakehurst.navy.mil

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001
*NVLAP*
*Code* *Designation*

***MIL-STD-462 : Conducted Emissions:***
12/A01 MIL-STD-462 Method CE01
12/A04 MIL-STD-462 Method CE02
12/A06 MIL-STD-462 Method CE03
12/A12 MIL-STD-462 Method CE07
12/A13 MIL-STD-462 Version D Method CE101
***MIL-STD-462 : Conducted Susceptibility:***
12/B01 MIL-STD-462 Method CS01
12/B02 MIL-STD-462 Method CS02
12/B05 MIL-STD-462 Method CS06
12/B08 MIL-STD-462 Method CS10
12/B09 MIL-STD-462 Method CS11
***MIL-STD-462 : Radiated Emissions:***
12/D01 MIL-STD-462 Method RE01
12/D02 MIL-STD-462 Method RE02
***MIL-STD-462 : Radiated Susceptibility:***
12/E01 MIL-STD-462 Method RS01
12/E02 MIL-STD-462 Method RS02
12/E04 MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available)
12/E07 MIL-STD-462 Method RS06

**NVLAP LAB CODE 200224-0**

## Northwestern Steel and Wire Company

121 Wallace Street
P.O. Box 618
Sterling, IL 61081
Contact: Mr. Raymond Wisneski
Phone: 815-625-2500
Fax: 815-625-6445
E-Mail: rwisneski@nwsw.com

**Fasteners & Metals**
Accreditation Valid Through: September 30, 2001
*NVLAP*
*Code* *Designation*

***Chemical Analysis***

***Optical emission spectrochemical analysis***
FA/457 ASTM E415

**NVLAP LAB CODE 200229-0**

## Minebea Co., Ltd. Fujisawa Manufacturing Unit

1-1-1 Katase
Fujisawa, Kanagawa 251-8531
JAPAN
Contact: Mr. Yukio Shimada
Phone: 0466-23-2137
Fax: 0466-23-2173

**Fasteners & Metals**
Accreditation Valid Through: March 31, 2001
*NVLAP*
*Code* *Designation*

***Chemical Analysis***

***Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen***
FA/472 ASTM E1447

***Dimensional Inspection***

***Dimensions of fasteners - bearing surface squareness***
FA/649 JIS B1071
***Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets***
FA/539 SAE AS 870
FA/790 SBAC RS680
***Dimensions of fasteners - straightness***
FA/648 JIS B1071
***Dimensions of general purpose fasteners and high-volume machine assembly fasteners***
FA/607 JIS B1071
FA/791 NAS 527
***External thread parameters - system 21***
FA/379 ANSI/ASME B1.3M
FA/380 FED-STD-H28/20
***External thread parameters - system 22***
FA/381 ANSI/ASME B1.3M
FA/382 FED-STD-H28/20
***External thread parameters - system 23***
FA/385 ANSI/ASME B1.3M
FA/386 FED-STD-H28/20
***Surface texture***
FA/439 ANSI/ASME B46.1
FA/650 JIS B1071
FA/771 BS 1134, Part 1

***Mechanical and Physical Testing and Inspection***

***Axial tensile strength of full-size threaded fasteners***
FA/266 ASTM F606 Sec. 3.4.1-3.4.3
FA/574 JIS B1051 Sec. 4.2.2
FA/799 NASM 1312-8
***Double shear of externally threaded fasteners***
FA/880 NASM 1312-13
***Elevated temperature testing capability***
FB/1158 NASM 1312-18
***Fatigue of full-size threaded fasteners***
FA/876 NASM 1312-11
***Hardness preparation***
FA/482 ASTM F606
***Head soundness testing***
FA/615 JIS B1051 Sec. 4.2.6
***Humidity testing of fasteners***
FB/1159 AMS-QQ-P-35
***Measurement of fastener coating thickness - dimensional change method***
FA/874 NASM 1312-12


(See 'How To Use This Directory' on page 7.)

*Measurement of fastener coating thickness - eddy-current method*
FA/618 JIS H8501
*Measurement of fastener coating thickness - microscopical method*
FA/640 JIS H8501
FA/873 NASM 1312-12
*Measurement of fastener coating thickness - weight of coating*
FA/619 JIS H8501
*Microhardness of fasteners*
FA/620 JIS Z2244
FA/642 JIS B1051 Sec. 4.2.5
FA/877 NASM 1312-6
*Proof load of full-size externally threaded fasteners*
FA/573 JIS B1051 Sec. 4.2.4
*Recess strength test in both the installation and removal directions*
FA/886 NASM 1312-25
*Rockwell hardness of fasteners*
FA/197 ASTM E18
FA/572 JIS Z2245
FA/707 JIS B1051 Sec. 4.2.5
FA/765 BS EN 10109-1
FA/878 NASM 1312-6
*Rockwell superficial hardness of fasteners*
FA/205 ASTM E18
FA/766 BS EN 10109-1
FB/1004 NASM 1312-6
*Salt spray testing of fasteners*
FA/166 ASTM B117
FA/569 JIS Z2371
FB/1032 NASM 1312-1
*Stress rupture of fasteners*
FA/260 ASTM E139
FA/767 BS 4A 4,Part 1,Sec 3
*Tension testing of machined specimens from externally threaded fasteners*
FA/581 JIS B1051 Sec. 4.2.1
FA/582 JIS Z2241
FA/768 BS 4A 4,Part 1,Sec 1
*Wedge tensile strength of full-size threaded fasteners*
FA/290 ASTM F606 Sec. 3.5
FA/575 JIS B1051 Sec. 4.2.3

### *Metallography*

*Decarburization and case depth measurement in fasteners*
FA/645 JIS B1051
FB/1157 NASM 1312-6
*Determination of grain size of fasteners*
FA/331 ASTM E112
*Macroscopic examination of fasteners by etching*
FA/511 ASTM E340
FA/769 AMS 7477
FA/780 SBAC TS21
FA/782 SBAC TS22
FA/783 SBAC TS23
FA/786 SBAC TS24
FA/787 SBAC TS25
*Microscopic examination of fasteners by etching*
FA/512 ASTM E407
FA/770 AMS 7477
FA/781 SBAC TS21
FA/784 SBAC TS22
FA/785 SBAC TS23
FA/788 SBAC TS24
FA/789 SBAC TS25
*Surface discontinuities of externally threaded fasteners*
FA/603 JIS B1043
FA/646 JIS B1041

### *Nondestructive Inspection*

*Liquid penetrant inspection of fasteners*
FA/371 MIL-STD-6866
FA/527 ASTM E1417
*Magnetic particle inspection of fasteners*
FA/377 MIL-STD-1949
FA/485 ASTM E1444

**NVLAP LAB CODE 200230-0**

## Wolverine Plating Corp.

29456 Groesbeck Highway
Roseville, MI 48066-1943
Contact: Mr. Kenneth Wrobel
Phone: 810-771-5000
Fax: 810-771-5830
E-Mail: wolvpltg@aol.com

### Fasteners & Metals

Accreditation Valid Through: December 31, 2001

*NVLAP Code* *Designation*

### *Mechanical and Physical Testing and Inspection*

*Adhesion of metallic coatings on fasteners*
FA/143 ASTM B571
*Measurement of fastener coating thickness - X-ray methods*
FA/556 ASTM B568
*Salt spray testing of fasteners*
FA/166 ASTM B117

**NVLAP LAB CODE 200231-0**

## U.S. EPA

P.O. Box 98517
Las Vegas, NV 89193-8517
Contact: Mr. Loyd D. Carroll
Phone: 702-798-2313
Fax: 702-798-2489
E-Mail: carroll.loyd@epa.gov

### Ionizing Radiation Dosimetry

Accreditation Valid Through: December 31, 2001

This facility has been evaluated and deemed competent to process the radiation dosimeter listed below through employing the Panasonic automatic reader model UD710A.



(See 'How To Use This Directory' on page 7.)

This facility is accredited to process the following dosimeter by virtue of actual demonstration of compliance with ANSI HPS N13.11-1993.

Panasonic TLD model UD802AT in a UD874 holder for ANSI-N13.11 categories I, II, IIIA, IV, VC, VI, VII.

**NVLAP LAB CODE 200232-0**

**LA Testing**
159 Pasadena Avenue
S. Pasadena, CA 91030
Contact: Mr. Derrick Tanner
Phone: 323-254-9960
Fax: 323-254-9982

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 200234-0**

**International Standards Laboratory**
21, Alley 37, Lane 122, Sec. 2
Hsiwan Road
Hsichih Chen, Taipei 221
TAIWAN
Contact: Mr. L. Y. Soong
Phone: 886-2-2646-2550
Fax: 886-2-2646-4641
E-Mail: lysoong@acer.com.tw

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200237-0**

**Compliance Test Laboratories, Inc.**
137 Airport Road
P.O. Box 120
Liberty, SC 29657
Contact: Mr. Pryor McGinnis
Phone: 864-843-1604
Fax: 864-843-1812
E-Mail: ctl@prodigy.net
URL: http://CTL-LAB.COM

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Safety Test Methods:*** | |
| 12/T50 | AS/NZS 3260 |

**NVLAP LAB CODE 200240-0**

**CAM Environmental Services**
312 South Richey Street
Pasadena, TX 77506-1059
Contact: Mr. Andrew Steranko
Phone: 713-475-9003
Fax: 713-472-2117
E-Mail: asteranko@rocketmail.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 200245-0**

### National Technical Systems

1701 East Plano Parkway, Suite 150
Plano, TX 75074-8127
Contact: Mr. Jim Press
Phone: 972-509-2566
Fax: 972-509-0073
E-Mail: jimp@ntscorp.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200246-0**

### Underwriters Laboratories, Inc.

12 Laboratory Drive
Research Triangle Park, NC 27709
Contact: Mr. Rick A. Titus
Phone: 847-272-8800 x43281
Fax: 847-509-6321
E-Mail: Rick.A.Titus@us.ul.com
URL: http://www.ul.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Safety Test Methods:*** | |
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |

**NVLAP LAB CODE 200248-0**

### Orfield Laboratories, Inc.

2709 E. 25th Street
Minneapolis, MN 55406
Contact: Mr. Steven J. Orfield
Phone: 612-721-2455
Fax: 612--721-2457
E-Mail: steve.orfieldlabs.com
URL: http://www.orfield.labs.com

### Acoustical Testing Services

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P03 | ASTM C423 |
| 08/P06 | ASTM E90 |
| 08/P10 | ANSI S12.31 |
| 08/P13 | ANSI S12.32 |
| 08/P30 | ASTM E1408 |
| 08/P31 | ASTM E336 |
| 08/P32 | ASTM E1007 |
| 08/P37 | ASTM E966 |

**NVLAP LAB CODE 200249-0**

### Quest MicroAnalytics

2530 Electronic Lane, Suite 712
Dallas, TX 75220-1229
Contact: Ms. Jennifer Jaber
Phone: 214-351-4441
Fax: 214-351-4487
E-Mail: questmic@flash.net

### Bulk Asbestos Analysis (PLM)

Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 200250-0**

### ATC Associates Inc.

8989 Herrmann Drive, Suite 300
Columbia, MD 21045-4710
Contact: Ms. Dawn E. Suszynski
Phone: 410-381-0232
Fax: 410-381-8908
E-Mail: Suszynski9@atc-enviro.com



(See 'How To Use This Directory' on page 7.)

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 200251-0**

**Storagtek Open Area Test Site**
One Storagetek Drive
Louisville, CO 80028-9172
Contact: Mr. Robert B. Reinert
Phone: 303-673-6256
Fax: 303-661-6717
E-Mail: reinerb@louisville.stortek.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200252-0**

**Underwriters Laboratories**
1655 Scott Blvd.
Santa Clara, CA 95050
Contact: Mr. Rick A. Titus
Phone: 847-272-8800 x43281
Fax: 847-509-6321
E-Mail: Rick.A.Titus@us.ul.com
URL: http://www.ul.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Immunity Test Methods:*** | |
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |
| ***Safety Test Methods:*** | |
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |
| ***Telecommunications Test Methods:*** | |
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |
| 12/T42 | ACA TS-002 |
| 12/T44 | ACA TS-004 |
| 12/T45 | ACA TS-006 |
| 12/T49 | ACA TS-016 |

**NVLAP LAB CODE 200253-0**

**CBS Fasteners, Inc.**
1345 N. Brasher Street
Anaheim, CA 92807
Contact: Mr. Bill Sisler
Phone: 714-779-6368
Fax: 714-779-0934
E-Mail: bill@cbsfasteners.com

**Fasteners & Metals**
Accreditation Valid Through: September 30, 2001
*NVLAP*
*Code* *Designation*

***Dimensional Inspection***

***Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets***
FA/411 ANSI/ASME B18.3
***Dimensions of fasteners - straightness***
FA/423 ANSI/ASME B18.2.1
***Dimensions of general purpose fasteners and high-volume machine assembly fasteners***
FA/404 ANSI/ASME B18.18.2M
***External thread parameters - system 22***
FA/382 FED-STD-H28/20
***Surface texture***
FA/439 ANSI/ASME B46.1

***Mechanical and Physical Testing and Inspection***

***Axial tensile strength of full-size threaded fasteners***
FA/271 MIL-STD-1312-8
***Double shear of externally threaded fasteners***
FA/257 MIL-STD-1312-13
***Hydrogen embrittlement (stress durability) of externally threaded fasteners***
FA/176 MIL-STD-1312-5
***Magnetic permeability***
FA/214 ASTM A342 Test Method 3
***Measurement of fastener coating thickness - dimensional change method***
FA/495 MIL-STD-1312-12
***Measurement of fastener coating thickness - microscopical method***
FA/163 MIL-STD-1312-12
***Microhardness of fasteners***
FA/193 MIL-STD-1312-6
***Recess strength test in both the installation and removal directions***
FA/476 MIL-STD-1312-25
***Rockwell hardness of fasteners***
FA/201 MIL-STD-1312-6
***Rockwell superficial hardness of fasteners***
FA/209 MIL-STD-1312-6
***Single shear of externally threaded fasteners***
FA/256 MIL-STD-1312-20
***Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)***
FA/671 MIL-STD-1312-6
***Wedge tensile strength of full-size threaded fasteners***
FA/295 MIL-STD-1312-8

***Metallography***

***Decarburization and case depth measurement in fasteners***
FA/330 SAE J423
FA/483 ASTM A574 Sec. 12
***Determination of grain size of fasteners***
FA/638 ASTM E112
***Macroscopic examination of fasteners by etching***
FA/511 ASTM E340
FA/651 ASTM F788/788M
***Microscopic examination of fasteners by etching***
FA/341 ASTM E1077
FA/345 ASTM F788/788M
FA/351 ASTM E112
FA/512 ASTM E407
FA/552 ASTM E3
FA/679 ASTM A574
***Surface discontinuities of externally threaded fasteners***
FA/357 ASTM F788/788M

**NVLAP LAB CODE 200254-0**

**Vermont Fasteners Manufacturing**
50 Jonergin Drive
P.O. Box 50
Swanton, VT 05488-0050
Contact: Mr. Pierre Gagne
Phone: 802-868-3663
Fax: 802-868-2089

**Fasteners & Metals**
Accreditation Valid Through: September 30, 2001
*NVLAP*
*Code* *Designation*

***Dimensional Inspection***

***Dimensions of fasteners - straightness***
FA/423 ANSI/ASME B18.2.1
***Dimensions of general purpose fasteners and high-volume machine assembly fasteners***
FA/403 ANSI/ASME B18.18.1M
FA/404 ANSI/ASME B18.18.2M
FA/494 ANSI B18.2.1
***Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap***
FA/405 ANSI/ASME B18.18.3M
FA/963 ANSI B18.2.1
***External thread parameters - system 21***
FA/379 ANSI/ASME B1.3M
***External thread parameters - system 22***
FA/381 ANSI/ASME B1.3M
***Internal thread parameters - system 21***
FA/391 ANSI/ASME B1.3M


(See 'How To Use This Directory' on page 7.)

*Internal thread parameters - system 22*
FA/393 ANSI/ASME B1.3M

*Mechanical and Physical Testing and Inspection*

*Axial tensile strength of full-size threaded fasteners*
FA/265 ASTM A370 Sec. A3.2.1.4
FA/266 ASTM F606 Sec. 3.4.1-3.4.3
FA/267 ASTM F606M Sec. 3.4.1-3.4.3
FA/273 SAE J429
*Brinell hardness of fasteners*
FA/185 ASTM A370 Sec. 16
FA/186 ASTM E10
*Cone proof load of internally threaded fasteners (nuts)*
FA/219 ASTM F812/F812M
FA/220 ASTM F606 Sec. 4.3
FA/655 ASTM A194/A194M
*Hardness preparation*
FA/482 ASTM F606
*Measurement of fastener coating thickness - eddy-current method*
FA/149 ASTM E376
*Measurement of fastener coating thickness - magnetic methods*
FA/155 ASTM E376
*Microhardness of fasteners*
FA/654 SAE J121
*Proof load of full-size externally threaded fasteners*
FA/225 ASTM A370 Sec. A3.2.1.1-A3.2.1.3
FA/226 ASTM F606 Sec. 3.2.1-3.2.3
FA/467 ASTM F606M Sec. 3.2.1-3.2.3
*Proof load of internally threaded fasteners (nuts)*
FA/235 ASTM A370 Sec. A3.5.1
FA/236 ASTM F606 Sec. 4.2
FA/237 ASTM F606M Sec. 4.2
*Rockwell hardness of fasteners*
FA/196 ASTM A370 Sec. 18
FA/197 ASTM E18
*Rockwell superficial hardness of fasteners*
FA/205 ASTM E18
FA/206 ASTM A370 Sec. 18
*Rotational capacity of full-size fasteners*
FA/243 ASTM A325
FA/245 ASTM A563
FA/965 AASHTO M164
*Wedge tensile strength of full-size threaded fasteners*
FA/289 ASTM A370
FA/290 ASTM F606 Sec. 3.5
FA/291 ASTM F606M Sec. 3.5
FA/468 SAE J429 Sec. 5.5

*Metallography*

*Decarburization and case depth measurement in fasteners*
FA/328 SAE J121
FA/964 ASTM A490
*Macroscopic examination of fasteners by etching*
FA/336 SAE J123
FA/337 SAE J1061
FA/651 ASTM F788/788M
*Microscopic examination of fasteners by etching*
FA/344 SAE J121
*Surface discontinuities of externally threaded fasteners*
FA/357 ASTM F788/788M
FA/361 SAE J123
FA/362 SAE J1061
FA/652 ASTM A490
*Surface discontinuities of internally threaded fasteners*
FA/363 ASTM F812
FA/365 SAE J122

*Nondestructive Inspection*

*Magnetic particle inspection of fasteners*
FA/374 ASTM E709

**NVLAP LAB CODE 200255-0**

**Rockford Bolt & Steel Co.**
126 Mill Street
Rockford, IL 61101
Contact: Mr. John Petty
Phone: 815-968-0514
Fax: 815-968-3111

**Fasteners & Metals**
Accreditation Valid Through: December 31, 2001
*NVLAP Code* *Designation*

*Dimensional Inspection*

*Dimensions of fasteners - straightness*
FA/423 ANSI/ASME B18.2.1
*External thread parameters - system 21*
FA/379 ANSI/ASME B1.3M
*External thread parameters - system 22*
FA/381 ANSI/ASME B1.3M

*Mechanical and Physical Testing and Inspection*

*Axial tensile strength of full-size threaded fasteners*
FA/266 ASTM F606 Sec. 3.4.1-3.4.3
*Hardness preparation*
FA/482 ASTM F606
*Rockwell hardness of fasteners*
FA/202 SAE J417
*Tension testing of machined specimens from externally threaded fasteners*
FA/278 ASTM A370
FA/279 ASTM F606 Sec. 3.6
*Wedge tensile strength of full-size threaded fasteners*
FA/290 ASTM F606 Sec. 3.5
*Yield strength of full-size externally threaded fasteners*
FA/298 ASTM F606 Sec. 3.2.4
FA/299 ASTM A370 Sec. A3.2.1.3(a)

**NVLAP LAB CODE 200256-0**

## Sundram Fasteners Limited Chemical Testing Laboratory

Bonthapally Village, Medak District
Andhra Pradesh 502 313
INDIA
Contact: Mr. Sampathkumar Moorthy
Phone: 91-44-8521870
Fax: 91-44-853-5435

### Fasteners & Metals

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Chemical Analysis*** | |
| ***Optical emission spectrochemical analysis*** | |
| FA/457 | ASTM E415 |

**NVLAP LAB CODE 200258-0**

## W.R. Grace & Co.

62 Whittemore Avenuc
Cambridge, MA 02140
Contact: Mr. Stephen C. Garrity
Phone: 617-498-4394
Fax: 617-498-4360
E-Mail: stephen.c.garrity@grace.com

### Construction Materials Testing

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Aggregates*** | |
| 02/A03 | ASTM C29 |
| 02/A04 | ASTM C40 |
| 02/A07 | ASTM C117 |
| 02/A09 | ASTM C127 |
| 02/A10 | ASTM C128 |
| 02/A12 | ASTM C136 |
| 02/A15 | ASTM D75 |
| 02/A44 | ASTM C566 |
| ***Cement*** | |
| 02/A17 | ASTM C109 |
| 02/A21 | ASTM C157 |
| 02/A23 | ASTM C185 |
| 02/A26 | ASTM C191 |
| 02/A27 | ASTM C204 |
| 02/A30 | ASTM C266 |
| 02/A31 | ASTM C305 |
| 02/A32 | ASTM C430 |
| 02/A33 | ASTM C451 |
| ***Concrete*** | |
| 02/A01 | ASTM C39 |
| 02/A02 | ASTM C617 |
| 02/A40 | ASTM C78 |
| 02/A41 | ASTM C192 |
| 02/A43 | ASTM C1064 |
| 02/A45 | ASTM C42 |
| 02/A47 | ASTM C457 |
| 02/G01 | ASTM C31/C172/C143/C138/C231 |
| 02/G02 | ASTM C173 |
| ***Standard Practices*** | |
| 02/A39 | ASTM C1077 |

**NVLAP LAB CODE 200259-0**

## PFU TECHNOCONSUL EMC Center

98-2 Nu, Unoke, Unoke-Machi, Kahoku-Gun
Ishikawa-Ken 929-1192
JAPAN
Contact: Mr. Youichi Masui
Phone: 81-76-283-8600
Fax: 81-76-283-8601
E-Mail: masui@pfu.co.jp

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200260-0**

## Analab, LLC

P.O. Box 34
Spring Hill Road
Sterling, PA 18463
Contact: Mr. Paul Janecki
Phone: 570-689-3919
Fax: 570-689-3830
E-Mail: info@analab1.com
URL: http://www.analab1.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

***Immunity Test Methods:***

| | |
|---|---|
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |

**NVLAP LAB CODE 200261-0**

## Prottsa, S.A. de C.V.

Oriente 233 No. 91 Agricola Oriental
C.P. 08500
Mexico City
MEXICO
Contact: Mr. Gilberto Laguna
Phone: 5-558-85-77
Fax: 5-558-25-23
E-Mail: prottsa@dfl.telmex.net.mx

### Fasteners & Metals

Accreditation Valid Through: September 30, 2001

*NVLAP Code* *Designation*

***Dimensional Inspection***

***Dimensions of general purpose fasteners and high-volume machine assembly fasteners***

| | |
|---|---|
| FA/403 | ANSI/ASME B18.18.1M |
| FA/981 | ANSI/ASME B1.3M |

***Mechanical and Physical Testing and Inspection***

***Axial tensile strength of full-size threaded fasteners***

| | |
|---|---|
| FA/266 | ASTM F606 Sec. 3.4.1-3.4.3 |

***Bend test of full size eyebolts***

| | |
|---|---|
| FA/982 | AAR 4-2-15 Section 8 (1969) |

***Cone proof load of internally threaded fasteners (nuts)***

| | |
|---|---|
| FA/220 | ASTM F606 Sec. 4.3 |

***Hardness preparation***

| | |
|---|---|
| FA/482 | ASTM F606 |

***Measurement of fastener coating thickness - magnetic methods***

| | |
|---|---|
| FA/153 | ASTM B499 |

***Proof load of full-size externally threaded fasteners***

| | |
|---|---|
| FA/226 | ASTM F606 Sec. 3.2.1-3.2.3 |
| FA/983 | AAR 4-2-15 Section 9 (1969) |

***Proof load of internally threaded fasteners (nuts)***

| | |
|---|---|
| FA/235 | ASTM A370 Sec. A3.5.1 |
| FA/236 | ASTM F606 Sec. 4.2 |

***Rockwell hardness of fasteners***

| | |
|---|---|
| FA/196 | ASTM A370 Sec. 18 |

***Tension testing of machined specimens from externally threaded fasteners***

| | |
|---|---|
| FA/279 | ASTM F606 Sec. 3.6 |

***Torque-tension of full-size threaded fasteners***

| | |
|---|---|
| FA/984 | AAR 4-2-15 Section 13b (1969) |
| FA/985 | ASTM A183 Section 8.2.2 |
| FA/986 | Prottsa W.I. 1.030 rev. b |

***Wedge tensile strength of full-size threaded fasteners***

| | |
|---|---|
| FA/290 | ASTM F606 Sec. 3.5 |

***Yield strength of full-size externally threaded fasteners***

| | |
|---|---|
| FA/298 | ASTM F606 Sec. 3.2.4 |

**NVLAP LAB CODE 200263-0**

## Murata Mfg. Co., Ltd. Yokohama Technical Center EMM Office

Yokohama Technical Center
1-18 Hakusan 1-Chome, Midori-ku Yokohama
Kanagawa 226-006
JAPAN
Contact: Mr. Yuzo Katayama
Phone: 045-939-7100
Fax: 045-939-7156
E-Mail: katayama@murata.co.jp

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

*NVLAP Code* *Designation*

***Emissions Test Methods:***

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

NVLAP LAB CODE 200265-0

**R & D Services, Inc.**
2594 West Broad Street
P.O. Box 2400
Cookeville, TN 38502-2400
Contact: Mr. Ronald S. Graves
Phone: 931-372-8871
Fax: 931-525-3896
E-Mail: rdserv@usit.net
URL: http://rdservices.com

**Thermal Insulation Materials**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Corrosiveness*** | |
| 01/C01 | ASTM C739 (Sec. 9) |
| 01/C02 | 16 CFR-Part 1209.5 |
| ***Flammability*** | |
| 01/F07 | 16 CFR-Part 1209.6 |
| 01/F08 | 16 CFR-Part 1209.7 |
| 01/F09 | ASTM C739 (Sec. 10) by ASTM E970 |
| 01/F10 | ASTM C739 (Sec. 14) |
| ***Mass, Density, and Dimensional Stability*** | |
| 01/D02 | ASTM C167 |
| 01/D24 | ASTM C739 (Sec. 12) |
| 01/D26 | 16 CFR-Part 1209.4 |
| 01/D27 | ASTM C739 (Sec. 8) |
| ***Related Material Properties*** | |
| 01/V05 | ASTM C739 (Sec. 11) |
| 01/V06 | ASTM C739 (Sec. 15) |
| ***Thermal Resistance*** | |
| 01/T06 | ASTM C518 |
| 01/T10 | ASTM C687 |

NVLAP LAB CODE 200271-0

**Aerospace NYLOK - a subsidiary of the NYLOK Fastener Corporation**
11 Thomas Road South
Hawthorne, NJ 07507-0651
Contact: Mr. Chet Radwan
Phone: 973-427-8555
Fax: 973-427-4723

**Fasteners & Metals**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Dimensional Inspection*** | |
| ***Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap*** | |
| FA/805 | MIL-DTL-18240 |
| FA/806 | MIL-F-18240 |
| ***Mechanical and Physical Testing and Inspection*** | |
| ***Prevailing torque*** | |
| FA/217 | IFI-100/107 |
| FA/794 | MIL-DTL-18240 |
| FA/795 | IFI 124 |
| FA/796 | MIL-F-18240 |
| FA/797 | IFI 125 |
| FA/798 | IFI 524 |
| FA/833 | IFI 525 |
| ***Reusability test of self-locking internally threaded fasteners*** | |
| FA/792 | MIL-F-18240 (externally and internally threaded) |
| FA/793 | MIL-DTL-18240 (externally and internally threaded) |

NVLAP LAB CODE 200272-0

**NYLOK Fastener Corporation**
313 North Euclid Way
Anaheim, CA 92801-6738
Contact: Mr. William Steinman
Phone: 714-635-3993
Fax: 714-635-9553
E-Mail: sales@nylokfastener.com
URL: http://www.nylock.com

**Fasteners & Metals**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Dimensional Inspection*** | |
| ***Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap*** | |
| FA/802 | NYLOK TP-NW-5.0 |
| FA/805 | MIL-DTL-18240 |
| FA/806 | MIL-F-18240 |
| ***External thread parameters - system 21*** | |
| FA/379 | ANSI/ASME B1.3M |
| FA/380 | FED-STD-H28/20 |
| ***External thread parameters - system 22*** | |
| FA/381 | ANSI/ASME B1.3M |
| FA/382 | FED-STD-H28/20 |
| FA/383 | MIL-S-7742 |
| FA/384 | MIL-S-8879 |
| FA/534 | SAE AS 8879 |
| FA/803 | ASME B1.15 |
| ***Internal thread parameters - system 21*** | |
| FA/391 | ANSI/ASME B1.3M |
| FA/392 | FED-STD-H28/20 |
| ***Internal thread parameters - system 22*** | |
| FA/393 | ANSI/ASME B1.3M |
| FA/394 | FED-STD-H28/20 |
| FA/395 | MIL-S-7742 |
| FA/396 | MIL-S-8879 |
| FA/537 | SAE AS 8879 |
| FA/804 | ASME B1.15 |
| ***Mechanical and Physical Testing and Inspection*** | |
| ***Axial tensile strength of full-size threaded fasteners*** | |
| FA/266 | ASTM F606 Sec. 3.4.1-3.4.3 |
| FA/799 | NASM 1312-8 |



(See 'How To Use This Directory' on page 7.)

*Hydrogen embrittlement (stress durability) of externally threaded fasteners*

FA/801 QQ-P-416
FA/875 NASM 1312-5

*Hydrogen embrittlement (stress durability) of internally threaded fasteners*

FA/800 QQ-P-416

*Prevailing torque*

FA/217 IFI-100/107
FA/794 MIL-DTL-18240
FA/795 IFI 124
FA/796 MIL-F-18240
FA/797 IFI 125
FA/798 IFI 524

*Reusability test of self-locking internally threaded fasteners*

FA/792 MIL-F-18240
FA/793 MIL-DTL-18240

**NVLAP LAB CODE 200273-0**

## NYLOK Fastener Corporation

Macomb Plant Testing Lab
15260 Hallmark Drive
Macomb, MI 48042-4007
Contact: Mr. Clifford Terry
Phone: 810-786-0100
Fax: 810-786-0498

### Fasteners & Metals

Accreditation Valid Through: March 31, 2001

*NVLAP Code* *Designation*

***Dimensional Inspection***

*Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap*

FA/802 NYLOK TP-NW-5.0

***Mechanical and Physical Testing and Inspection***

*Prevailing torque*

FA/216 ANSI B18.16.1M
FA/217 IFI-100/107
FA/557 DIN 267, Part 15
FA/794 MIL-DTL-18240
FA/795 IFI 124
FA/796 MIL-F-18240
FA/797 IFI 125
FA/798 IFI 524
FA/807 GM 6189P
FA/808 Ford ES382101-S100
FA/809 Ford ES-N800688-S100
FA/810 Ford ES-384103-S-A
FA/811 Ford WA 970
FA/812 Ford ES-F77U-9E926-AA
FA/813 Chrysler PF-5077
FA/814 Chrysler PF-5144
FA/815 Chrysler PF-5461
FA/816 Chrysler PF-5683
FA/817 Chrysler PF-6157
FA/818 Chrysler PF-6158
FA/819 DIN 267, Part 27
FA/820 Navistar 0810
FA/821 GM TES-113
FA/822 Bendix W1287
FA/823 Mack Trucks 10AMSI
FA/824 Mack Trucks 3AXS5
FA/825 Mack Trucks 6AXS5
FA/826 Allied Signal WI-504
FA/827 GM 6175M/6194M
FA/828 Ford ES-20010-S100
FA/829 Ford ES-20007-S100
FA/830 Ford WX 200
FA/831 Ford WSS-M11P45-A1
FA/832 Ford ESS-M11P24-A1
FA/833 IFI 525
FA/834 Rockwell International Q-29
FA/835 Ford ES-N804199-S192
FA/836 Ford WE 950
FA/837 Ford ES-21002-S100
FA/838 Ford ES-21006-S100
FA/839 Ford ES-21000-S100
FA/840 Chrysler MS-CD914
FA/841 GM 6076M
FA/842 Chrysler PS-8542
FB/1149 DIN 267, Part 28
FB/1150 DaimlerChrysler PF-6616
FB/1151 Bosch UI-197
FB/1152 Bosch WI-287

*Torque-tension of full-size threaded fasteners*

FA/306 IFI-101
FA/307 MIL-STD-1312-15
FA/308 SAE J174

**NVLAP LAB CODE 200274-0**

## Kyowa Kogyosyo Co., Ltd. Test Laboratory

1-57, Kogyo-Danchi
Komatsu City, Ishikawa
JAPAN
Contact: Mr. Mataichi Fukuda
Phone: 81-761-21-0531
Fax: 81-761-21-0533

### Fasteners & Metals

Accreditation Valid Through: June 30, 2001

*NVLAP Code* *Designation*

***Dimensional Inspection***

*Dimensions of ISO grade A and B fasteners*

FA/589 JIS B1071

*Dimensions of fasteners - bearing surface squareness*

FA/649 JIS B1071

*Dimensions of fasteners - straightness*

FA/648 JIS B1071

*External thread parameters - system 21*

FA/647 JIS B1071

*Surface texture*

FA/650 JIS B1071



(See 'How To Use This Directory' on page 7.)

*Mechanical and Physical Testing and Inspection*

***Axial tensile strength of full-size threaded fasteners***
FA/266 ASTM F606 Sec. 3.4.1-3.4.3
FA/574 JIS B1051 Sec. 4.2.2
***Charpy impact (u-notch) testing***
FA/845 JIS Z2242
***Hardness preparation***
FA/482 ASTM F606
***Measurement of fastener coating thickness - magnetic methods***
FA/596 JIS H8501
***Microhardness of fasteners***
FA/620 JIS Z2244
FA/642 JIS B1051 Sec. 4.2.5
***Proof load of full-size externally threaded fasteners***
FA/573 JIS B1051 Sec. 4.2.4
***Rockwell hardness of fasteners***
FA/197 ASTM E18
FA/572 JIS Z2245
FA/707 JIS B1051 Sec. 4.2.5
***Tension testing of machined specimens from externally threaded fasteners***
FA/581 JIS B1051 Sec. 4.2.1
FA/582 JIS Z2241
***Wedge tensile strength of full-size threaded fasteners***
FA/290 ASTM F606 Sec. 3.5
FA/575 JIS B1051 Sec. 4.2.3

*Metallography*

***Decarburization and case depth measurement in fasteners***
FA/645 JIS B1051
***Surface discontinnities of externally threaded fasteners***
FA/603 JIS B1043

**NVLAP LAB CODE 200275-0**

## NYLOK Fastener Corporation - Chicago Testing Laboratory

6465 Proesel Avenue
Lincolnwood, IL 60645
Contact: Mr. Peter Beck
Phone: 800-446-5956
Fax: 847-674-1269

**Fasteners & Metals**
Accreditation Valid Through: June 30, 2001
*NVLAP*
*Code* *Designation*

*Dimensional Inspection*

***Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap***
FA/850 NYLOK TP-NC-5.0

*Mechanical and Physical Testing and Inspection*

***Prevailing torque***
FA/846 NYLOK TP-NC-1.0
FA/847 NYLOK TP-NC-2.0
FA/848 NYLOK TP-NC-3.0
FA/849 NYLOK TP-NC-4.0

**NVLAP LAB CODE 200278-0**

## Casey Products, Inc.

1955 University Lane
Lisle, IL 60532-4149
Contact: Mr. Michael B. Connelly, CQE
Phone: 630-960-3360
Fax: 630-960-3419
E-Mail: mbconnelly@aol.com

**Fasteners & Metals**
Accreditation Valid Through: March 31, 2001
*NVLAP*
*Code* *Designation*

*Dimensional Inspection*

***Dimensions of ISO grade A and B fasteners***
FA/407 ISO 3269
FA/408 ISO 4759-1
***Dimensions of ISO grade C fasteners***
FA/409 ISO 3269
FA/410 ISO 4759-1
***Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets***
FA/411 ANSI/ASME B18.3
FA/412 ANSI/ASME B18.3.1M
FA/413 ANSI/ASME B18.3.3M
FA/414 ANSI/ASME B18.3.4M
FA/415 ANSI/ASME B18.3.5M
FA/416 ANSI/ASME B18.3.6M
***Dimensions of fasteners - straightness***
FA/423 ANSI/ASME B18.2.1
FA/424 ANSI/ASME B18.2.3.1M
FA/425 ANSI/ASME B18.2.3.2M
FA/426 ANSI/ASME B18.2.3.3M
FA/427 ANSI/ASME B18.2.3.4M
FA/428 ANSI/ASME B18.2.3.5M
FA/429 ANSI/ASME B18.2.3.6M
FA/433 ANSI/ASME B18.5.2.2M
***Dimensions of general purpose fasteners and high-volume machine assembly fasteners***
FA/403 ANSI/ASME B18.18.1M
FA/404 ANSI/ASME B18.18.2M
FA/486 MIL-STD-120 (W/ Notice dtd 9 SEP 63)
FA/870 ANSI/ASME B1.16M
FA/871 ANSI/ASME B1.2
***Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap***
FA/405 ANSI/ASME B18.18.3M
FA/406 ANSI/ASME B18.18.4M
***External thread parameters - ISO***
FA/390 ISO 1502
***External thread parameters - system 21***
FA/379 ANSI/ASME B1.3M
***External thread parameters - system 22***
FA/381 ANSI/ASME B1.3M


(See 'How To Use This Directory' on page 7.)

*Internal thread parameters - ISO*
FA/402 ISO 1502
*Internal thread parameters - system 21*
FA/391 ANSI/ASME B1.3M
*Internal thread parameters - system 22*
FA/393 ANSI/ASME B1.3M

### *Mechanical and Physical Testing and Inspection*

*Axial tensile strength of full-size threaded fasteners*
FA/265 ASTM A370 Sec. A3.2.1.4
FA/266 ASTM F606 Sec. 3.4.1-3.4.3
FA/267 ASTM F606M Sec. 3.4.1-3.4.3
FA/270 ISO 898-1 Sec. 8.2
FA/273 SAE J429
FA/274 SAE J1216
*Hardness preparation*
FA/464 ASTM F606M
FA/482 ASTM F606
*Measurement of fastener coating thickness - eddy-current method*
FA/149 ASTM E376
*Measurement of fastener coating thickness - magnetic methods*
FA/155 ASTM E376
*Microhardness of fasteners*
FA/189 ASTM E384
*Prevailing torque*
FA/217 IFI-100/107
*Proof load of full-size externally threaded fasteners*
FA/225 ASTM A370 Sec. A3.2.1.1-A3.2.1.3
FA/226 ASTM F606 Sec. 3.2.1-3.2.3
FA/228 ISO 898-1 Sec. 8.4
FA/229 SAE J429 Sec. 5.3
FA/467 ASTM F606M Sec. 3.2.1-3.2.3
FA/577 SAE J1216 Sec. 3.3
*Proof load of internally threaded fasteners (nuts)*
FA/235 ASTM A370 Sec. A3.5.1
FA/236 ASTM F606 Sec. 4.2
FA/237 ASTM F606M Sec. 4.2
FA/239 ISO 898-2 Sec. 8.1
FA/241 SAE J995 Sec. 5.1
*Rockwell hardness of fasteners*
FA/196 ASTM A370 Sec. 18
FA/197 ASTM E18
*Rockwell superficial hardness of fasteners*
FA/205 ASTM E18
FA/206 ASTM A370 Sec. 18
*Test for embrittlement of metallic coated externally threaded fasteners*
FA/179 ASTM F606 Sec. 7
FA/180 ASTM F606M Sec. 7
*Total extension at fracture of externally threaded fasteners*
FA/285 ASTM F606 Sec. 3.7
FA/286 ASTM F606M Sec. 3.7
*Wedge tensile strength of full-size threaded fasteners*
FA/289 ASTM A370
FA/290 ASTM F606 Sec. 3.5
FA/291 ASTM F606M Sec. 3.5
FA/294 ISO 898-1 Sec. 8.5
FA/468 SAE J429 Sec. 5.5
FA/469 SAE J1216 Sec. 3.6
*Yield strength of full-size externally threaded fasteners*
FA/298 ASTM F606 Sec. 3.2.4
FA/300 ASTM F606M Sec. 3.2.4

### *Metallography*

*Decarburization and case depth measurement in fasteners*
FA/323 ASTM E1077
FA/324 ISO 898-1
FA/325 ISO 898-5
FA/328 SAE J121
FA/329 SAE J419
FA/330 SAE J423
FA/483 ASTM A574 Sec. 12
FA/519 ASTM A574M
FA/520 ASTM F835
FA/758 SAE J121M
FA/866 ASTM F835M
FA/867 ASTM F912
FA/868 ASTM F912M
*Determination of grain size of fasteners*
FA/638 ASTM E112
*Macroscopic examination of fasteners by etching*
FA/484 ASTM E381
FA/511 ASTM E340
*Microscopic examination of fasteners by etching*
FA/512 ASTM E407
*Surface discontinuities of externally threaded fasteners*
FA/357 ASTM F788/788M
FA/359 ISO 6157-1
FA/360 ISO 6157-3
FA/361 SAE J123
FA/362 SAE J1061
FA/859 ASTM A574
FA/860 ASTM A574M
FA/861 ASTM F835
FA/862 ASTM F835M
FA/863 ASTM F912
FA/864 ASTM F912M
*Surface discontinuities of internally threaded fasteners*
FA/365 SAE J122
FA/727 ISO 6157-2
FA/865 ASTM F812/F812M

**NVLAP LAB CODE 200281-0**

**Fujitsu Evaluation Engineering Laboratory**
140 Miyamoto
Numazu, Shizuoka-Pref. 410-0396
JAPAN
Contact: Mr. Yoshiyuki Okita
Phone: 81-559-24-7209
Fax: 81-559-24-6183
E-Mail: okita@psl.fujitsu.co.jp


(See 'How To Use This Directory' on page 7.)

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001
*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b Radiated Emissions
12/T51 AS/NZS 3548

**NVLAP LAB CODE 200282-0**

## Electronics Test Centre

302 Legget Drive, Unit 100
Kanata, Ont. K2K 1Y5
CANADA
Contact: Mr. Dave Scribailo
Phone: 613-599-6800
Fax: 613-599-7614
E-Mail: daves@etc-mpbt.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001
*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996.
12/CIS22b CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b Radiated Emissions
12/T51 AS/NZS 3548

***MIL-STD-462 : Conducted Emissions:***

12/A01 MIL-STD-462 Method CE01
12/A06 MIL-STD-462 Method CE03
12/A13 MIL-STD-462 Version D Method CE101
12/A14 MIL-STD-462 Version D Method CE102

***MIL-STD-462 : Conducted Susceptibility:***

12/B01 MIL-STD-462 Method CS01
12/B02 MIL-STD-462 Method CS02
12/B05 MIL-STD-462 Method CS06
12/B12 MIL-STD-462 Version D Method CS101
12/B17 MIL-STD-462 Version D Method CS114
12/B19 MIL-STD-462 Version D Method CS116

***MIL-STD-462 : Radiated Emissions:***

12/D04 MIL-STD-462 Version D Method RE101
12/D05 MIL-STD-462 Version D Method RE102

***MIL-STD-462 : Radiated Susceptibility:***

12/E09 MIL-STD-462 Version D Method RS103

***Safety Test Methods:***

12/T41 ACA TS-001
12/T50 AS/NZS 3260

**NVLAP LAB CODE 200287-0**

## Small IAC Test Laboratory

107 Park St. N
Peterborough, ON K9J-7B5
CANADA
Contact: Ms. Nancy Edgar-Ward
Phone: 705-748-7125
Fax: 705-748-7677
E-Mail: Nancy.edgar-ward@indsys.ge.com

**Efficiency of Electric Motors**
Accreditation Valid Through: September 30, 2001
*NVLAP*
*Code* *Designation*

24/M01 IEEE 112, Method B

**NVLAP LAB CODE 200288-0**

## Fong Prean Industrial Co., Ltd.

No. 6 Kung-Wei St. Tzu Hsin T'Sun
Tzu Kuan Hsiang
Kaohsiung Hsien
TAIWAN
Contact: Mr. Chang San Tien
Phone: 886-7-6170526
Fax: 886-7-6103160

**Fasteners & Metals**
Accreditation Valid Through: March 31, 2001
*NVLAP*
*Code* *Designation*

***Dimensional Inspection***

***Dimensions of general purpose fasteners and high-volume machine assembly fasteners***

FA/854 ANSI/ASME B18.6.4
FA/855 ISO 1479


(See 'How To Use This Directory' on page 7.)

*Mechanical and Physical Testing and Inspection*

*Drill-drive test*

FA/247 SAE J78
FA/851 DIN 7504

*Hardness preparation*

FA/464 ASTM F606M
FA/482 ASTM F606

*Measurement of fastener coating thickness - X-ray methods*

FA/760 ASTM A754/A754M

*Microhardness of fasteners*

FA/189 ASTM E384

*Rockwell hardness of fasteners*

FA/197 ASTM E18

*Rockwell superficial hardness of fasteners*

FA/205 ASTM E18

*Salt spray testing of fasteners*

FA/166 ASTM B117

*Torsional strength test of thread rolling and self-drilling tappings screws*

FA/751 SAE J933
FA/852 ISO 2702
FA/853 DIN 7504

*Metallography*

*Decarburization and case depth measurement in fasteners*

FA/330 SAE J423
FA/562 ASTM G79

*Surface discontinnities of externally threaded fasteners*

FA/357 ASTM F788/788M
FA/361 SAE J123

**NVLAP LAB CODE 200291-0**

## NGC Testing Services, National Gypsum Research Center

1650 Military Road
Buffalo, NY 14217-1198
Contact: Mr. Robert J. Menchetti
Phone: 716-873-9750
Fax: 716-873-9753
E-Mail: rjmenchetti@nationalgypsum.com
URL: http://www.national-gypsum.com/testing/index.html

### Acoustical Testing Services

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P03 | ASTM C423 |
| 08/P06 | ASTM E90 |
| 08/P07 | ASTM E492 |
| 08/P30 | ASTM E1408 |
| 08/P34 | ASTM E1414 |
| 08/P44 | ISO 354 |
| 08/P45 | ISO 140, Part 3 |
| 08/P50 | ISO 140, Part 9 |
| 08/P54 | SAE J1400 |
| 08/P58 | ASTM E1222 |

**NVLAP LAB CODE 200292-0**

## BCAG Fastener Quality Test Lab Everett Site

P.O. Box 370, MS 04-02
Scattle, WA 98124-2207
Contact: Mr. Eugene J. Brown
Phone: 425-342-3888
Fax: 425-266-4673
E-Mail: eugene.j.brown@boeing.com

### Fasteners & Metals

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|

*Chemical Analysis*

*Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen*

FA/472 ASTM E1447

*Optical emission spectrochemical analysis*

FA/456 ASTM E327
FA/457 ASTM E415
FA/458 ASTM E607
FA/459 ASTM E1086
FA/460 ASTM E1251

*Spot test analysis*

FB/1076 D1-8018-2

*Dimensional Inspection*

*Dimensions of fasteners - bearing surface squareness*

FA/911 BPS-N-70

*Dimensions of fasteners - gaging for slotted nuts*

FA/417 ANSI/ASME B18.2.2
FA/418 ANSI/ASME B18.2.4.3M

*Dimensions of fasteners - straightness*

FA/423 ANSI/ASME B18.2.1

*Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap*

FA/405 ANSI/ASME B18.18.3M
FA/406 ANSI/ASME B18.18.4M
FB/1060 BPS-F-69
FB/1061 BPS-F-76
FB/1062 BPS-F-67
FB/1063 D-11805
FB/1064 BPS-N-70
FB/1065 BPS-F-68

*External thread parameters - system 22*

FA/381 ANSI/ASME B1.3M
FA/382 FED-STD-H28/20
FA/383 MIL-S-7742
FA/384 MIL-S-8879

*Internal thread parameters - system 21*

FA/391 ANSI/ASME B1.3M
FA/392 FED-STD-H28/20
FA/529 MIL-S-7742

*Surface texture*

FA/439 ANSI/ASME B46.1

*Mechanical and Physical Testing and Inspection*

*Adhesion of metallic coatings on fasteners*
FA/532 BMS 10-85M Sec. 8.2
*Axial tensile strength of full-size threaded fasteners*
FA/271 MIL-STD-1312-8
FA/799 NASM 1312-8
FB/1067 D2-2860
*Double shear of externally threaded fasteners*
FA/257 MIL-STD-1312-13
FA/880 NASM 1312-13
FB/1066 D2-2860
FB/1070 NAS 498
*Fatigue of full-size threaded fasteners*
FA/183 MIL-STD-1312-11
FA/184 NAS 1069
FA/876 NASM 1312-11
FB/1038 D2-2860
*Hardness preparation*
FB/1071 NAS 498
*Hydrogen embrittlement (stress durability) of externally threaded fasteners*
FA/176 MIL-STD-1312-5
FA/801 QQ-P-416
FA/875 NASM 1312-5
*Hydrogen embrittlement (stress durability) of internally threaded fasteners*
FA/178 MIL-STD-1312-14
FA/800 QQ-P-416
FB/1033 NASM 1312-14
*Intergranular corrosion susceptibility of austentic stainles steel fasteners - oxalic acid*
FA/174 ASTM A262 Sec. 3-7, Practice A
*Measurement of fastener coating thickness - dimensional change method*
FA/495 MIL-STD-1312-12
FA/874 NASM 1312-12
*Measurement of fastener coating thickness - microscopical method*
FA/160 ASTM B487
FA/163 MIL-STD-1312-12
FA/873 NASM 1312-12
*Microhardness of fasteners*
FA/189 ASTM E384
*Prevailing torque*
FA/630 MIL-N-25027
FA/899 BPS-N-70
FA/902 NAS 3350
*Proof load of full-size externally threaded fasteners*
FA/691 MIL-STD-1312-8
FB/1037 NASM 1312-8
FB/1041 D2-2860
*Proof load of internally threaded fasteners (nuts)*
FB/1039 MIL-STD-1312-8
FB/1040 NASM 1312-8
FB/1042 D2-2860
*Push out test of floating plate nuts, gang channel nuts, and anchor nuts*
FA/116 MIL-N-25027
FA/891 BPS-N-70
*Recess strength test in both the installation and removal directions*
FA/886 NASM 1312-25
*Reusability test of self-locking internally threaded fasteners*
FA/124 MIL-N-25027
FA/125 NAS 3350
FA/774 BPS-N-70
*Rockwell hardness of fasteners*
FA/196 ASTM A370 Sec. 18
FA/197 ASTM E18
FA/201 MIL-STD-1312-6
FA/878 NASM 1312-6
FB/1072 BAC 5650
*Rockwell superficial hardness of fasteners*
FA/205 ASTM E18
FA/206 ASTM A370 Sec. 18
FA/209 MIL-STD-1312-6
FB/1035 NASM 1312-6
*Salt spray testing of fasteners*
FA/168 MIL-STD-1312-1
FB/1032 NASM 1312-1
*Tension testing of machined specimens from externally threaded fasteners*
FA/475 ASTM E8
FB/1043 ASTM B557
*Test for embrittlement of metallic coated externally threaded fasteners*
FA/525 MIL-STD-1312-5
FB/1034 NASM 1312-5
*Torque-out test*
FA/133 MIL-N-25027
FB/1031 BPS-N-70
*Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)*
FA/671 MIL-STD-1312-6
FB/1036 NASM 1312-6
*Wedge tensile strength of full-size threaded fasteners*
FA/295 MIL-STD-1312-8
FB/1044 NASM 1312-8
FB/1069 D2-2860
*Wrench torque test of externally wrenched nuts of spline and hexagon and double hexagon (1*
FA/141 MIL-N-25027
FA/142 NAS 3350
FA/893 BPS-N-70
*Yield strength of full-size externally threaded fasteners*
FA/303 MIL-STD-1312-8
FB/1045 NASM 1312-8
FB/1068 D2-2860

### *Metallography*

*Decarburization and case depth measurement in fasteners*
FA/323 ASTM E1077
FA/904 BPS-N-70
FB/1046 BPS-F-76
FB/1047 BPS-F-67
FB/1048 NAS 498


(See 'How To Use This Directory' on page 7.)

FB/1073 BPS-F-46

***Determination of grain size of fasteners***

FA/331 ASTM E112

***Macroscopic examination of fasteners by etching***

FA/511 ASTM E340

***Microscopic examination of fasteners by etching***

FA/512 ASTM E407

***Surface discontinuities of externally threaded fasteners***

FA/357 ASTM F788/788M
FA/859 ASTM A574
FB/1049 NAS 4002
FB/1050 NAS 4003
FB/1051 NAS 4004
FB/1052 BPS-F-67
FB/1053 BPS-F-69
FB/1054 BPS-F-68
FB/1055 BPS-F-76
FB/1056 NAS 498
FB/1057 FF-S-86

***Surface discontinuities of internally threaded fasteners***

FA/907 BPS-N-70

### *Nondestructive Inspection*

***Liquid penetrant inspection of fasteners***

FA/527 ASTM E1417
FB/1059 MIL-I-25135
FB/1074 BAC 5423

***Magnetic particle inspection of fasteners***

FA/485 ASTM E1444
FB/1075 BAC 5424

**NVLAP LAB CODE 200293-0**

## EMSL Analytical, Inc.

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Beltsville, MD 20705
Contact: Mr. Joseph Centifonti
Phone: 301-937-5700
Fax: 301-937-5701
E-Mail: jcentifonti@emsl.com
URL: http://www.emsl.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: December 31, 2001

**NVLAP LAB CODE 200294-0**

## Micron Environmental Labs

292 E. Foothill Blvd., Suite B
Arcadia, CA 91006
Contact: Mr. Daniel Gamez
Phone: 626-357-8627
Fax: 626-256-9017
E-Mail: micronlabs@integrityonline7.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

**NVLAP LAB CODE 200296-0**

## Okawa Laboratory

6357-1 Oba, Omiya-cho
Naka-gun, Ibaraki-ken 319-21
JAPAN
Contact: Mr. Katsuyoshi Okawa
Phone: 81-2955-3-0111
Fax: 81-2955-3-5290

**Fasteners & Metals**
Accreditation Valid Through: June 30, 2001

*NVLAP*
*Code* *Designation*

### *Dimensional Inspection*

***Dimensions of general purpose fasteners and high-volume machine assembly fasteners***

FA/607 JIS B1071

### *Mechanical and Physical Testing and Inspection*

***Axial tensile strength of full-size threaded fasteners***

FA/574 JIS B1051 Sec. 4.2.2

***Measurement of fastener coating thickness - magnetic methods***

FA/596 JIS H8501

***Proof load of full-size externally threaded fasteners***

FA/573 JIS B1051 Sec. 4.2.4

***Rockwell hardness of fasteners***

FA/572 JIS Z2245
FA/616 JIS B1051 Sec. 4.3
FA/707 JIS B1051 Sec. 4.2.5

***Salt spray testing of fasteners***

FA/569 JIS Z2371

***Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)***

FA/571 JIS Z2244
FA/643 JIS B1051 Sec. 4.2.5

### *Metallography*

***Decarburization and case depth measurement in fasteners***

FA/645 JIS B1051

***Surface discontinuities of externally threaded fasteners***

FA/646 JIS B1041

**NVLAP LAB CODE 200297-0**

## Intertek Testing Services NA Inc.

27611 La Paz Road, Suite C
Laguna Niguel, CA 92677
Contact: Mr. Jeffrey Davidson
Phone: 949-448-4100
Fax: 949-448-4111
E-Mail: jeffrey@itsqs.com
URL: http://www.etlsemko.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Immunity Test Methods:*** | |
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |
| ***MIL-STD-462 : Conducted Emissions:*** | |
| 12/A14 | MIL-STD-462 Version D Method CE102 |
| ***Safety Test Methods:*** | |
| 12/T41 | ACA TS-001 |
| 12/T50 | AS/NZS 3260 |

**NVLAP LAB CODE 200298-0**

**SPS Technologies Aerospace Fasteners Group**
2701 S. Harbor Boulevard
Santa Ana, CA 92702-1259
Contact: Mr. Rob Dewitz
Phone: 714-850-3664
Fax: 714-850-3605
E-Mail: rdewitz@spstech.com
URL: http://www.spstech.com

**Fasteners & Metals**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Dimensional Inspection*** | |
| ***Dimensions of fasteners - bearing surface squareness*** | |
| FA/633 | MIL-N-25027 |
| ***Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets*** | |
| FA/411 | ANSI/ASME B18.3 |
| FA/540 | MIL-STD-33787 |
| FA/634 | MIL-STD-21132 |
| FA/635 | SAE AS 870 |
| ***Dimensions of fasteners - straightness*** | |
| FA/423 | ANSI/ASME B18.2.1 |
| ***External thread parameters - system 21*** | |
| FA/379 | ANSI/ASME B1.3M |
| FA/380 | FED-STD-H28/20 |
| FA/628 | MIL-S-8879 |
| ***External thread parameters - system 22*** | |
| FA/381 | ANSI/ASME B1.3M |
| FA/382 | FED-STD-H28/20 |
| FA/384 | MIL-S-8879 |
| ***External thread parameters - system 23*** | |
| FA/385 | ANSI/ASME B1.3M |
| FA/386 | FED-STD-H28/20 |
| FA/388 | MIL-S-8879 |
| ***Internal thread parameters - system 21*** | |
| FA/391 | ANSI/ASME B1.3M |
| FA/392 | FED-STD-H28/20 |
| FA/629 | MIL-S-8879 |
| ***Internal thread parameters - system 22*** | |
| FA/393 | ANSI/ASME B1.3M |
| FA/394 | FED-STD-H28/20 |
| FA/537 | SAE AS 8879 |
| ***Surface texture*** | |
| FA/439 | ANSI/ASME B46.1 |
| ***Mechanical and Physical Testing and Inspection*** | |
| ***Adhesion of metallic coatings on fasteners*** | |
| FA/143 | ASTM B571 |
| ***Axial tensile strength of full-size threaded fasteners*** | |
| FA/265 | ASTM A370 Sec. A3.2.1.4 |
| FA/266 | ASTM F606 Sec. 3.4.1-3.4.3 |
| FA/271 | MIL-STD-1312-8 |
| ***Double shear of externally threaded fasteners*** | |
| FA/257 | MIL-STD-1312-13 |



(See 'How To Use This Directory' on page 7.)

*Hardness preparation*
FA/482 ASTM F606
*Humidity testing of fasteners*
FA/169 MIL-STD-753 Test Method 101
FA/473 MIL-STD-1312-3
FA/923 ASTM A967
*Hydrogen embrittlement (stress durability) of externally threaded fasteners*
FA/176 MIL-STD-1312-5
FA/924 ASTM F606
*Hydrogen embrittlement (stress durability) of internally threaded fasteners*
FA/178 MIL-STD-1312-14
*Magnetic permeability*
FA/214 ASTM A342 Test Method 3
*Measurement of fastener coating thickness - X-ray methods*
FA/556 ASTM B568
*Measurement of fastener coating thickness - magnetic methods*
FA/153 ASTM B499
FA/159 MIL-STD-1312-12
*Measurement of fastener coating thickness - microscopical method*
FA/160 ASTM B487
FA/163 MIL-STD-1312-12
*Microhardness of fasteners*
FA/189 ASTM E384
FA/193 MIL-STD-1312-6
*Permanent set test of self-locking nuts*
FA/109 MIL-N-25027
*Prevailing torque*
FA/630 MIL-N-25027
*Proof load of full-size externally threaded fasteners*
FA/226 ASTM F606 Sec. 3.2.1-3.2.3
*Proof load of internally threaded fasteners (nuts)*
FA/236 ASTM F606 Sec. 4.2
*Push out test of floating plate nuts, gang channel nuts, and anchor nuts*
FA/926 SPS 316
*Recess strength test in both the installation and removal directions*
FA/476 MIL-STD-1312-25
*Reusability test of self-locking internally threaded fasteners*
FA/124 MIL-N-25027
FA/522 MIL-STD-1312-31
*Rockwell hardness of fasteners*
FA/197 ASTM E18
FA/201 MIL-STD-1312-6
*Rockwell superficial hardness of fasteners*
FA/205 ASTM E18
FA/209 MIL-STD-1312-6
*Room temperature of three cycles test of floating plate nuts, gang channel nuts and anchor*
FA/927 SPS 380
*Salt spray testing of fasteners*
FA/166 ASTM B117
FA/168 MIL-STD-1312-1
*Single shear of externally threaded fasteners*
FA/255 ASTM F606
FA/256 MIL-STD-1312-20
FA/925 ASTM F606M
*Stress rupture of fasteners*
FA/260 ASTM E139
FA/261 ASTM E292
FA/262 MIL-STD-1312-10
*Tension testing of machined specimens from externally threaded fasteners*
FA/278 ASTM A370
FA/279 ASTM F606 Sec. 3.6
FA/475 ASTM E8
*Test for embrittlement of metallic coated externally threaded fasteners*
FA/179 ASTM F606 Sec. 7
FA/525 MIL-STD-1312-5
*Torque-out test*
FA/133 MIL-N-25027
FA/523 MIL-STD-1312-31
*Torque-tension of full-size threaded fasteners*
FA/307 MIL-STD-1312-15
*Vibration of full-size threaded fasteners*
FA/311 MIL-STD-1312-7
FA/631 MIL-N-25027
*Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)*
FA/492 ASTM E92
*Wedge tensile strength of full-size threaded fasteners*
FA/289 ASTM A370
FA/290 ASTM F606 Sec. 3.5
*Yield strength of full-size externally threaded fasteners*
FA/298 ASTM F606 Sec. 3.2.4
FA/299 ASTM A370 Sec. A3.2.1.3(a)

### *Metallography*

*Decarburization and case depth measurement in fasteners*
FA/323 ASTM E1077
*Determination of grain size of fasteners*
FA/638 ASTM E112
*Macroscopic examination of fasteners by etching*
FA/511 ASTM E340
*Microscopic examination of fasteners by etching*
FA/512 ASTM E407
*Surface discontinuities of externally threaded fasteners*
FA/357 ASTM F788/788M
*Surface discontinuities of internally threaded fasteners*
FA/865 ASTM F812/F812M

### *Nondestructive Inspection*

*Liquid penetrant inspection of fasteners*
FA/371 MIL-STD-6866
FA/527 ASTM E1417


(See 'How To Use This Directory' on page 7.)

*Magnetic particle inspection of fasteners*
FA/485 ASTM E1444

**NVLAP LAB CODE 200299-0**

**Okai Iron Works Co., Ltd.**
3-12-41 Tsuruhara
Izumisano Osaka 598-0071
JAPAN
Contact: Mr. Yasuhiro Okai
Phone: 0724-63-6101
Fax: 0724-63-6228
E-Mail: okaikk@osk3.3web.ne.jp

**Fasteners & Metals**
Accreditation Valid Through: March 31, 2001
*NVLAP*
*Code* *Designation*

***Dimensional Inspection***

*Dimensions of ISO grade A and B fasteners*
FA/408 ISO 4759-1
FA/930 ISO 4759-3
*Dimensions of ISO grade C fasteners*
FA/410 ISO 4759-1
FA/931 ISO 4759-3
*Dimensions of fasteners - bearing surface squareness*
FA/936 ISO 4759-1
*Dimensions of fasteners - flange screw heads and flange nuts*
FA/933 ISO 4161
FA/934 ISO 4162
*Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets*
FA/411 ANSI/ASME B18.3
FA/932 ISO 4759-1
*Dimensions of fasteners - straightness*
FA/935 ISO 4759-1
*External thread parameters - system 21*
FA/379 ANSI/ASME B1.3M
*Internal thread parameters - system 21*
FA/391 ANSI/ASME B1.3M
*Surface texture*
FA/937 ISO 4288

***Mechanical and Physical Testing and Inspection***

*Adhesion of metallic coatings on fasteners*
FA/144 ISO 2819
*Axial tensile strength of full-size threaded fasteners*
FA/270 ISO 898-1 Sec. 8.2
*Measurement of fastener coating thickness - magnetic methods*
FA/153 ASTM B499
*Measurement of fastener coating thickness - microscopical method*
FA/162 ISO 1463
*Microhardness of fasteners*
FA/191 ISO 6507-2
FA/192 ISO 6507-3
*Proof load of full-size externally threaded fasteners*
FA/228 ISO 898-1 Sec. 8.4
*Proof load of internally threaded fasteners (nuts)*
FA/239 ISO 898-2 Sec. 8.1
*Rockwell hardness of fasteners*
FA/200 ISO 6508
*Tension testing of machined specimens from externally threaded fasteners*
FA/282 ISO 898-1
*Total extension at fracture of externally threaded fasteners*
FA/287 ISO 3506
*Wedge tensile strength of full-size threaded fasteners*
FA/294 ISO 898-1 Sec. 8.5
*Yield strength of full-size externally threaded fasteners*
FA/298 ASTM F606 Sec. 3.2.4

***Metallography***

*Decarburization and case depth measurement in fasteners*
FA/324 ISO 898-1
FA/928 ISO 2639
*Macroscopic examination of fasteners by etching*
FA/929 ISO 4969
*Surface discontinuities of externally threaded fasteners*
FA/359 ISO 6157-1
FA/360 ISO 6157-3
*Surface discontinuities of internally threaded fasteners*
FA/727 ISO 6157-2

**NVLAP LAB CODE 200300-0**

**Akzo Kashima Ltd., Kawasaki Technical Center**
5-23-13 Minamikase, Saiwai-ku
Kawasaki 211-0955
JAPAN
Contact: Mr. Shuichi Kobayashi
Phone: 81-479-40-1097
Fax: 81-479-46-1788
E-Mail: shuichi.kobayashi@nifty.ne.jp
URL: http://www.akzoemc.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001
*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***
12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/F01 FCC Method - 47 CFR Part 15 - Digital Devices
12/F01a Conducted Emissions, Power Lines, 450 KHz to 30 MHz
12/F01b Radiated Emissions
12/T51 AS/NZS 3548
***Telecommunications Test Methods:***
12/T01 Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 -


(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |

**NVLAP LAB CODE 200303-0**

### A.E.S.L. Environmental Laboratory

800 North Mary Street
Tempe, AZ 85281-1945
Contact: Mr. Jerry Denton
Phone: 480-966-3714
Fax: 480-394-0188

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 200304-0**

### BAE Environmental and EMC Test Centre

Airport Works
Rochester
Kent ME1 2XX
UNITED KINGDOM
Contact: Mr. Frank Ewen
Phone: 01-634-816794
Fax: 01-634-816647
E-Mail: frank.ewen@baesystems.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***MIL-STD-462 : Conducted Emissions:*** | |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A12 | MIL-STD-462 Method CE07 |
| ***MIL-STD-462 : Conducted Susceptibility:*** | |
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B05 | MIL-STD-462 Method CS06 |
| ***MIL-STD-462 : Radiated Emissions:*** | |
| 12/D02 | MIL-STD-462 Method RE02 |
| ***MIL-STD-462 : Radiated Susceptibility:*** | |
| 12/E02 | MIL-STD-462 Method RS02 |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available) |
| 12/E04 | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |

**NVLAP LAB CODE 200305-0**

### GE Owensboro Test Laboratory

3301 Old Hartford Road
Owensboro, KY 42303
Contact: Mr. Robert Riley
Phone: 270-686-1270
Fax: 270-686-1240

**Efficiency of Electric Motors**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 24/M01 | IEEE 112, Method B |

**NVLAP LAB CODE 200306-0**

### Zacta Technology Corporation Yonezawa Testing Center

4149-7 Hachimanpara 5-chome
Yonezawa-shi Yamagata 992-1128
JAPAN
Contact: Mr. Shin-ichi Abe
Phone: 81-238-28-2880
Fax: 81-238-28-2888
E-Mail: shinichi_abe@zacta.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Immunity Test Methods:*** | |
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced |


(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |

**NVLAP LAB CODE 200308-0**

### SNB Laboratory

49 Abbott Street
P.O. Box 68
Cumberland, RI 02864-0968
Contact: Mr. James Faria
Phone: 401-722-6700
Fax: 401-726-4960

### Fasteners & Metals

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| | ***Mechanical and Physical Testing and Inspection*** |
| | ***Axial tensile strength of full-size threaded fasteners*** |
| FA/265 | ASTM A370 Sec. A3.2.1.4 |
| FA/266 | ASTM F606 Sec. 3.4.1-3.4.3 |
| FA/273 | SAE J429 |
| | ***Cone proof load of internally threaded fasteners (nuts)*** |
| FA/220 | ASTM F606 Sec. 4.3 |
| | ***Proof load of full-size externally threaded fasteners*** |
| FA/226 | ASTM F606 Sec. 3.2.1-3.2.3 |
| FA/229 | SAE J429 Sec. 5.3 |
| | ***Proof load of internally threaded fasteners (nuts)*** |
| FA/236 | ASTM F606 Sec. 4.2 |
| | ***Rockwell hardness of fasteners*** |
| FA/197 | ASTM E18 |
| | ***Tension testing of machined specimens from externally threaded fasteners*** |
| FA/278 | ASTM A370 |
| FA/279 | ASTM F606 Sec. 3.6 |
| | ***Wedge tensile strength of full-size threaded fasteners*** |
| FA/289 | ASTM A370 |
| FA/290 | ASTM F606 Sec. 3.5 |
| | ***Yield strength of full-size externally threaded fasteners*** |
| FA/298 | ASTM F606 Sec. 3.2.4 |

**NVLAP LAB CODE 200309-0**

### TDK Corporation's 10m Anechoic Chamber

2-15-7 Higashi-Owada
Ichikawa-shi, Chiba-ken 272-8558
JAPAN
Contact: Mr. Akira Bandoh
Phone: 011-81-47-378-9190
Fax: 011-81-47-378-9780
E-Mail: aban@mb1.tdk.co.jp

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| | ***Emissions Test Methods:*** |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200312-0**

### Sony Electronics Inc. Product Quality Division EMC Group

16450 West Bernardo Drive, Building 8
San Diego, CA 92127-1804
Contact: Mr. Dave Traver
Phone: 858-942-2601
Fax: 858-942-9231
E-Mail: david.traver@am.sony.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| | ***Emissions Test Methods:*** |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| | ***Immunity Test Methods:*** |
| 12/I01 | IEC 61000-4-2 (1995) and Amendment 1 (1998): Electrostatic Discharge Immunity Test |
| 12/I02 | IEC 61000-4-3 (1995) and Amendment 1 (1998): Radiated, Radio-Frequency Electromagnetic Field Immunity Test |
| 12/I03 | IEC 61000-4-4 (1995): Electrical Fast Transient/Burst Immunity Test |
| 12/I04 | IEC 61000-4-5 (1995): Surge Immunity Test |
| 12/I05 | IEC 61000-4-6 (1996): Immunity to Conducted Disturbances, Induced |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | Radio-Frequency Fields |
| 12/I06 | IEC 61000-4-8 (1993): Power Frequency Magnetic Field Immunity Test |
| 12/I07 | IEC 61000-4-11 (1994): Voltage Dips, Short Interruptions and Voltage Variations Immunity Tests |

**NVLAP LAB CODE 200313-0**

**Eastman Kodak Co.-Regulatory Compliance Center-EMC Facility**
901 Elmgrove Road
Rochester, NY 14653-5513
Contact: Ms. Gina T. Wyffels
Phone: 716-726-3200
Fax: 716-726-4297
E-Mail: gwyffels@kodak.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200317-0**

**Raytheon Technical Services Co. EMI Laboratory**
6125 E. 21st Street, M/S 32
Indianapolis, IN 46219-2058
Contact: Mr. Keith Hines
Phone: 317-306-7484
Fax: 317-306-3739
E-Mail: hinesk@indy.raytheon.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***MIL-STD-462 : Conducted Emissions:*** | |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A13 | MIL-STD-462 Version D Method CE101 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |
| 12/A15 | MIL-STD-462 Version D Method CE106 |
| ***MIL-STD-462 : Conducted Susceptibility:*** | |
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B12 | MIL-STD-462 Version D Method CS101 |
| 12/B13 | MIL-STD-462 Version D Method CS103 |
| 12/B14 | MIL-STD-462 Version D Method CS104 |
| 12/B15 | MIL-STD-462 Version D Method CS105 |
| 12/B16 | MIL-STD-462 Version D Method CS109 |
| 12/B17 | MIL-STD-462 Version D Method CS114 |
| 12/B18 | MIL-STD-462 Version D Method CS115 |
| 12/B19 | MIL-STD-462 Version D Method CS116 |
| ***MIL-STD-462 : Radiated Emissions:*** | |
| 12/D02 | MIL-STD-462 Method RE02 |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |
| ***MIL-STD-462 : Radiated Susceptibility:*** | |
| 12/E02 | MIL-STD-462 Method RS02 |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available) |
| 12/E08 | MIL-STD-462 Version D Method RS101 |
| 12/E09 | MIL-STD-462 Version D Method RS103 |

**NVLAP LAB CODE 200318-0**

**Motorola PPG Compliance Laboratory**
1500 Gateway Boulevard, M/S 75
Boynton Beach, FL 33426
Contact: Mr. Mac Elliott, III
Phone: 561-739-3792
Fax: 561-739-2341
E-Mail: FME001@email.mot.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01b | Radiated Emissions |

**NVLAP LAB CODE 200319-0**

**TDK Corporation's Chikumagawa Open Site**
543 Otai
Saku-shi, Nagano-ken 385-8555
JAPAN
Contact: Mr. Akira Bandoh
Phone: 011-81-47-378-9190
Fax: 011-81-47-378-9780
E-Mail: aban@mb1.tdk.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of |


(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200320-0**

**Modern Plating Corporation**
P.O. Box 838, South Hancock Avenue
Freeport, IL 61032-0838
Contact: Mr. Daniel James Mauer
Phone: 815-235-3111
Fax: 815-235-4571

**Fasteners & Metals**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Chemical Analysis*** | |
| ***Solution chemical analysis*** | |
| FA/969 | MPC AA Work Instructions |
| ***Dimensional Inspection*** | |
| ***Dimensions of general purpose fasteners and high-volume machine assembly fasteners*** | |
| FA/404 | ANSI/ASME B18.18.2M |
| ***Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap*** | |
| FA/405 | ANSI/ASME B18.18.3M |
| FA/406 | ANSI/ASME B18.18.4M |
| ***Mechanical and Physical Testing and Inspection*** | |
| ***Adhesion of metallic coatings on fasteners*** | |
| FA/143 | ASTM B571 |
| ***Measurement of fastener coating thickness - X-ray methods*** | |
| FA/556 | ASTM B568 |
| ***Measurement of fastener coating thickness - eddy-current method*** | |
| FA/148 | ASTM B244 |
| ***Measurement of fastener coating thickness - magnetic methods*** | |
| FA/153 | ASTM B499 |
| ***Measurement of fastener coating thickness - weight of coating*** | |
| FA/970 | MPC Coating Weight Work Instructions |
| ***Salt spray testing of fasteners*** | |
| FA/166 | ASTM B117 |

**NVLAP LAB CODE 200321-0**

**Binder Metal Products, Inc.**
14909 South Broadway
Gardena, CA 90248
Contact: Mr. Bill Weber
Phone: 213-321-4835
Fax: 310-532-2936
E-Mail: billw@bindermetal.com
URL: http://bindermetal.com

**Fasteners & Metals**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Dimensional Inspection*** | |
| ***Dimensions of fasteners - flatness*** | |
| FA/975 | ASME Y14.5M |
| FA/976 | Binder QAI 0007 |
| ***Mechanical and Physical Testing and Inspection*** | |
| ***Hardness preparation*** | |
| FA/482 | ASTM F606 |
| ***Measurement of fastener coating thickness - eddy-current method*** | |
| FA/977 | Binder QAI 0005 |
| ***Rockwell hardness of fasteners*** | |
| FA/197 | ASTM E18 |
| FA/978 | Binder QAI 0006 |

**NVLAP LAB CODE 200322-0**

**Nowicki & Associates, Inc.**
33516 9th Avenue South Bldg. 6
Federal Way, WA 98003-6322
Contact: Mr. Michael Quoc Lam
Phone: 253-927-5233
Fax: 253-924-0323
E-Mail: RENOWICK1@AOL.COM

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 200323-0**

**ALAC**
522 East 20th Street, Suite 6E
New York, NY 10009
Contact: Mr. Alcksandr Knobel
Phone: 646-654-1473
Fax: 646-654-1476

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 200324-0

**Clark Seif Clark, Inc.**
21732 Devonshire Street, 2nd Floor
Chatsworth, CA 91311
Contact: Mr. Christian Goerrissen
Phone: 818-727-2553
Fax: 818-727-2556
E-Mail: cgoerrissen@csceng.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 200325-0

**TEC-AN, Inc.**
2517 S. Purdue Avenue
Oklahoma City, OK 73128-1830
Contact: Mr. Donald J. Nist
Phone: 405-681-7076
Fax: 405-681-7256

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 200327-0

**Saturn Fasteners, Inc.**
425 South Varney Street
Burbank, CA 91502
Contact: Mr. Charles Boda
Phone: 818-846-7145
Fax: 818-846-7306

**Fasteners & Metals**
Accreditation Valid Through: September 30, 2001
*NVLAP*
*Code* *Designation*

***Dimensional Inspection***

***Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets***
FA/972 NAS 4002
FA/973 NAS 624-644
***Dimensions of fasteners - straightness***
FA/974 NAS 4002
***External thread parameters - SAE fastener with MJ metric screw threads***
FA/693 FED-STD-H28/20
***External thread parameters - system 21***
FA/380 FED-STD-H28/20
***External thread parameters - system 22***
FA/382 FED-STD-H28/20
***External thread parameters - system 23***
FA/386 FED-STD-H28/20
***Surface texture***
FA/439 ANSI/ASME B46.1

***Mechanical and Physical Testing and Inspection***

***Axial tensile strength of full-size threaded fasteners***
FA/271 MIL-STD-1312-8
***Bend test of full size eyebolts***
FA/971 MIL-B-6812 Section 4.5.4
***Double shear of externally threaded fasteners***
FA/257 MIL-STD-1312-13
***Fatigue of full-size threaded fasteners***
FA/183 MIL-STD-1312-11
***Hydrogen embrittlement (stress durability) of externally threaded fasteners***
FA/176 MIL-STD-1312-5
***Magnetic permeability***
FA/214 ASTM A342 Test Method 3
***Measurement of fastener coating thickness - dimensional change method***
FA/495 MIL-STD-1312-12
***Measurement of fastener coating thickness - eddy-current method***
FA/152 MIL-STD-1312-12
***Microhardness of fasteners***
FA/189 ASTM E384
***Recess strength test in both the installation and removal directions***
FA/476 MIL-STD-1312-25
***Rockwell hardness of fasteners***
FA/201 MIL-STD-1312-6
***Rockwell superficial hardness of fasteners***
FA/209 MIL-STD-1312-6
***Tension testing of machined specimens from externally threaded fasteners***
FA/475 ASTM E8
***Wedge tensile strength of full-size threaded fasteners***
FA/290 ASTM F606 Sec. 3.5

***Metallography***

***Decarburization and case depth measurement in fasteners***
FA/483 ASTM A574 Sec. 12
***Determination of grain size of fasteners***
FA/331 ASTM E112
***Macroscopic examination of fasteners by etching***
FA/511 ASTM E340
***Microscopic examination of fasteners by etching***
FA/341 ASTM E1077
***Surface discontinuities of externally threaded fasteners***
FA/357 ASTM F788/788M

NVLAP LAB CODE 200328-0

**Prospect Testing Labs, Inc.**
1245 Forest Avenue
Des Plaines, IL 60018
Contact: Mr. Seung W. Lyu
Phone: 847-827-4766
Fax: 847-299-6222

**Fasteners & Metals**
Accreditation Valid Through: March 31, 2001
*NVLAP*
*Code* *Designation*

***Chemical Analysis***

***Optical emission spectrochemical analysis***
FA/457 ASTM E415
FA/459 ASTM E1086
FA/460 ASTM E1251

***Mechanical and Physical Testing and Inspection***

***Axial tensile strength of full-size threaded fasteners***
FA/266 ASTM F606 Sec. 3.4.1-3.4.3
FA/273 SAE J429
FA/530 ASTM E8
FA/799 NASM 1312-8
***Brinell hardness of fasteners***
FA/186 ASTM E10
***Hydrogen embrittlement (stress durability) of externally threaded fasteners***
FA/875 NASM 1312-5
FA/924 ASTM F606
FA/967 GM 6010M
***Hydrogen embrittlement (stress durability) of internally threaded fasteners***
FA/968 GM 6010M
***Intergranular corrosion susceptibility in austentic stainless steel fasteners - nitric aci***
FA/173 ASTM A262 Sec. 15-21, Practice C
***Intergranular corrosion susceptibility of austentic stainles steel fasteners - oxalic acid***
FA/174 ASTM A262 Sec. 3-7, Practice A
***Measurement of fastener coating thickness - microscopical method***
FA/160 ASTM B487
FA/873 NASM 1312-12
***Measurement of fastener coating thickness - weight of coating***
FA/164 ASTM A90
***Microhardness of fasteners***
FA/189 ASTM E384
***Proof load of full-size externally threaded fasteners***
FA/226 ASTM F606 Sec. 3.2.1-3.2.3
FA/229 SAE J429
***Proof load of internally threaded fasteners (nuts)***
FA/236 ASTM F606 Sec. 4.2
FA/241 SAE J995 Sec. 5.1
***Rockwell hardness of fasteners***
FA/197 ASTM E18
***Rockwell superficial hardness of fasteners***
FA/205 ASTM E18
***Tension testing of machined specimens from externally threaded fasteners***
FA/475 ASTM E8
***Torque-tension of full-size threaded fasteners***
FA/882 NASM 1312-15
***Torsional strength test of thread rolling and self-drilling tappings screws***
FA/252 ASTM F738M
FA/254 SAE J81
FA/751 SAE J933
FA/966 ASTM F880M
***Wedge tensile strength of full-size threaded fasteners***
FA/290 ASTM F606 Sec. 3.5
FA/468 SAE J429

***Metallography***

***Decarburization and case depth measurement in fasteners***
FA/323 ASTM E1077
FA/328 SAE J121
***Determination of grain size of fasteners***
FA/331 ASTM E112
***Macroscopic examination of fasteners by etching***
FA/551 ASTM E3
***Microscopic examination of fasteners by etching***
FA/552 ASTM E3
***Surface discontinuities of externally threaded fasteners***
FA/361 SAE J123
FA/362 SAE J1061
***Surface discontinuities of internally threaded fasteners***
FA/365 SAE J122

NVLAP LAB CODE 200331-0

**HomeTek Technology Inc.**
P.O Box: 13-131, Pan-Chiao City
No. 85-5 Shir Men Rd., Tu Chen City
Taipei Shien 236
TAIWAN
Contact: Mr. Grant Huang
Phone: 886-2-22608375
Fax: 886-2-22748013
E-Mail: hometek@ms15.hinet.net

**Electromagnetic Compatibility & Telecommunication**
Accreditation Valid Through: September 30, 2001
*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***
12/CIS22 IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment
12/CIS22a IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance


(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

NVLAP LAB CODE 200333-0

**EMSL Analytical, Inc.**
175 Clearbrook Road
Cross West Chester Executive Plaza
Elmsford, NY 10523
Contact: Mr. Robert Georgens
Phone: 914-592-4688
Fax: 914-592-6798
E-Mail: elmsfordlab@emsl.com
URL: http://www.emsl.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 200335-0

**Hygeia Laboratories, Inc.**
9955 NW 116 Way, Suite 1
Miami, FL 33178
Contact: Mr. Julio Lopez
Phone: 305-882-8200
Fax: 305-882-1200
E-Mail: LOPEZ31@ATC-ENVIRO.COM
URL: http://www.atc-enviro.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 200336-0

**Pratt & Whitney Materials Control Lab/Quality & Standards Lab**
400 Main Street, Mail Stop 114-47
East Hartford, CT 06108
Contact: Mr. Stanley F. Ciempa, Jr.
Phone: 860-565-2857
Fax: 860-565-1506
E-Mail: ciempasf@pweh.com

**Fasteners & Metals**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|

***Chemical Analysis***

***Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen***
FB/1024 P&W M-165
FB/1025 P&W M-166
FB/1026 P&W M-175

***Energy dispersive X-ray analysis***
FB/1030 P&W N-51

***Optical emission spectrochemical analysis***
FB/1027 P&W M-186
FB/1028 P&W N-11

***X-ray fluorescence (XRF) spectrochemical analysis***
FB/1029 P&W N-60

***Mechanical and Physical Testing and Inspection***

***Axial tensile strength of full-size threaded fasteners***
FB/1018 P&W K-32

***Brinell hardness of fasteners***
FB/1009 P&W E-O Supp C

***Charpy impact (v-notch) testing***
FB/1014 P&W K-162

***Elevated temperature testing capability***
FB/1135 P&W K-33

***Fatigue of full-size threaded fasteners***
FB/1008 P&W K-317

***Flareability test of clinch and shank nuts***
FB/1006 P&W K-309

***Measurement of fastener coating thickness - microscopical method***
FB/1136 P&W E-23

***Microhardness of fasteners***
FB/1010 P&W E-O Supp C

***Proof load of full-size externally threaded fasteners***
FB/1015 P&W K-32

***Proof load of internally threaded fasteners (nuts)***
FB/1016 P&W K-32

***Rockwell hardness of fasteners***
FB/1011 P&W E-O Supp C

***Rockwell superficial hardness of fasteners***
FB/1012 P&W E-O Supp C

***Salt spray testing of fasteners***
FB/1007 P&W P-23

***Stress rupture of fasteners***
FB/1017 P&W E-1107

***Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)***
FB/1013 P&W E-O Supp C

***Metallography***

***Decarburization and case depth measurement in fasteners***
FB/1019 P&W E-23


(See 'How To Use This Directory' on page 7.)

*Determination of grain size of fasteners*
FA/331 ASTM E112
*Macroscopic examination of fasteners by etching*
FB/1020 P&W K-76
*Microscopic examination of fasteners by etching*
FB/1021 P&W E-23
*Surface discontinuities of externally threaded fasteners*
FB/1022 P&W E-23
FB/1023 P&W E-242

**NVLAP LAB CODE 200340-0**

## Diversified T.E.S.T. Technologies, Inc.

556 Route 222, P.O. Box 8
Groton, NY 13073
Contact: Mr. Thomas P. Sims
Phone: 607-898-4218
Fax: 607-898-4830
E-Mail: tom@dttlab.com
URL: http://www.dttlab.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200341-0**

## United Steel and Fasteners Inc.

1500 Industrial Drive
Itasca, IL 60143
Contact: Mr. G. Perri
Phone: 630-250-0900
Fax: 630-250-0220
E-Mail: us_f@msn.com

### Fasteners & Metals

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Dimensional Inspection*** | |
| ***Dimensions of fasteners - bearing surface squareness*** | |
| FA/745 | ANSI B18.2.1 |
| ***Dimensions of fasteners - straightness*** | |
| FA/423 | ANSI/ASME B18.2.1 |
| ***Dimensions of general purpose fasteners and high-volume machine assembly fasteners*** | |
| FA/494 | ANSI B18.2.1 |
| ***Mechanical and Physical Testing and Inspection*** | |
| ***Axial tensile strength of full-size threaded fasteners*** | |
| FA/266 | ASTM F606 Sec. 3.4.1-3.4.3 |
| FA/273 | SAE J429 |
| ***Hardness preparation*** | |
| FA/482 | ASTM F606 |
| ***Proof load of full-size externally threaded fasteners*** | |
| FA/226 | ASTM F606 Sec. 3.2.1-3.2.3 |
| FA/229 | SAE J429 |
| ***Rockwell hardness of fasteners*** | |
| FA/202 | SAE J417 |
| ***Tension testing of machined specimens from externally threaded fasteners*** | |
| FA/279 | ASTM F606 Sec. 3.6 |
| FA/283 | SAE J429 |

**NVLAP LAB CODE 200342-0**

## Genicom Corporation

One Solutions Way
Waynesboro, VA 22980-1999
Contact: Mr. J. J. Tolbert
Phone: 540-949-1105
Fax: 540-949-1989
E-Mail: jtolbert@genicom.com
URL: http://www.genicom.com

### Electromagnetic Compatibility & Telecommunication

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200345-0**

## Ricoh Company LTD. Ohmori Acoustics Test Site

3-6, 1 Chome, Nakamagome, Ohta-ku
Tokyo 143-8555
JAPAN
Contact: Mr. Yuji Noritake
Phone: 03-3777-8183
Fax: 03-3777-0811
E-Mail: yuji.noritake@nts.ricoh.co.jp

### Acoustical Testing Services

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P24 | ANSI S12.10 |
| 08/P48 | ISO 7779 |


(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 200346-0

**SCILAB California, Inc.**
24416 South Main Street, Suite 308
Carson, CA 90745
Contact: Ms. Cristina Tabatt
Phone: 310-834-4868
Fax: 310-834-4772
E-Mail: ctabatt@scilabs.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 200347-0

**Quietek Corporation**
No. 75-2 Wang-Yeh Velley, Yung-Hsing
Chiung-Lin
Hsin-Chu Country
TAIWAN
Contact: Mr. Gene Chang
Phone: 886-3-5928858
Fax: 886-3-5928859
E-Mail: gene@quietek.com
URL: http://www.quietek.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

NVLAP LAB CODE 200349-0

**Crisp Analytical Laboratory**
2081 Hutton Drive, Suite 301
Carrollton, TX 75006
Contact: Mr. David Bertolacci
Phone: 972-488-1414
Fax: 972-488-8006

URL: http://www.calabs.homepage.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 200350-0

**White Environmental Consultants, Inc.**
1130 N. Nimitz Hwy. #3220
Honolulu, HI 96817
Contact: Mr. Jim Willard
Phone: 808-536-8819
Fax: 808-536-0191
E-Mail: weclabs@gte.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 200358-0

**Patriot Environmental Laboratory Services, Inc.**
12832 Valley View Street, Suite 107
Garden Grove, CA 92845
Contact: Mr. James Thornbrugh, II
Phone: 714-899-8900
Fax: 714-899-7098
E-Mail: Patriotlab@earthlink.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 200361-0

**Architectural Testing Inc.**
130 Derry Ct.
York, PA 17402
Contact: Mr. Eric J. Miller
Phone: 717-764-7700
Fax: 717-764-4129
E-Mail: emiller@testati.com
URL: http://www.testati.com

**Acoustical Testing Services**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P03 | ASTM C423 |
| 08/P06 | ASTM E90 |
| 08/P10 | ANSI S12.31 |
| 08/P30 | ASTM E1408 |
| 08/P31 | ASTM E336 |
| 08/P37 | ASTM E966 |
| 08/P43 | ASTM E1425 |
| 08/P44 | ISO 354 |
| 08/P45 | ISO 140, Part 3 |
| 08/P46 | ISO 3741 |


(See 'How To Use This Directory' on page 7.)

**NVLAP LAB CODE 200362-0**

### TEAC Corporation EMC Center

857 Koyata, Iruma-shi
Saitama-ken 358-8510
JAPAN
Contact: Mr. Hirokatsu Nagashima
Phone: 81-42-462-7159
Fax: 81-42-963-7153
E-Mail: hiro@ir.teac.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |

**NVLAP LAB CODE 200363-0**

### Sun Microsystems, Inc. EMC Testing

901 San Antonio Road
MS UMPK25-101
Palo Alto, CA 94303-4900
Contact: Mr. Hugh Hagel
Phone: 650-786-3215
Fax: 650-786-4316
E-Mail: Hugh.Hagel@sun.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200364-0**

### Kyushu Matsushita Electric Test Lab EMC Center

441-13 Nagahasu Tateishi-cho
Tosu-shi Saga-ken 841-8585
JAPAN
Contact: Mr. Hideo Hara
Phone: 81-942-84-8472
Fax: 81-942-84-8470
E-Mail: PAN40452@pios.kme.mei.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200368-0**

### Sony Minokamo EMC Site

9-15-22, Hongo-cho Minokamo City
Gifu-Pref. 505-8510
JAPAN
Contact: Mr. Yoshiki Matsuguchi
Phone: 81-574-25-8161
Fax: 81-574-25-9143
E-Mail: matuguti@mkm.sony.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 200369-0

**PWC Environmental Laboratory, Pearl Harbor**
Code 343
400 Marshall Road
Pearl Harbor, HI 96860
Contact: Ms. Ginger Nakamoto
Phone: 808-474-3704 X317
Fax: 808-471-4534
E-Mail: nakamotogj@pwcpearl.navy.mil

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 200371-0

**Audix Technology (Shanghai) Co., Ltd.**
3-4 F., 34 Bldg. 680 Guiping Road
Caohejing, Hi-Tech Park
Shanghai 200233
CHINA
Contact: Mr. Jeremy Geng
Phone: 86-21-649-55500
Fax: 86-21-649-50791
E-Mail: jgeng@ihw.com.cn

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |

NVLAP LAB CODE 200372-0

**AUDIX Technology (Shenzhen) Co., Ltd.**
No. 6 Ke Feng Road 52 Block Shenzhen
Science & Industry Park, Nantou
Shenzhen, Guangdong
CHINA
Contact: Mr. Smart Tsai
Phone: 86-755-663-9496
Fax: 86-755-663-2877
E-Mail: smartsai@ms12.hinet.net

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

NVLAP LAB CODE 200373-0

**Fujitsu General EMC Laboratory**
1116, Suenaga, Takatsu-ku
Kawasaki 213-8502
JAPAN
Contact: Mr. Hiroyuki Shimanoe
Phone: 81-44-861-7897
Fax: 81-44-861-9890
E-Mail: shimanoe@fujitsugeneral.co.jp
URL: http://www.fujitsugeneral.co.jp/emc/

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

NVLAP LAB CODE 200374-0

**EnviroHealth Technologies, Inc.**
3830 Washington Boulevard, Suite 123
St. Louis, MO 63108-3406
Contact: Mr. William J. Lowry
Phone: 314-531-9868
Fax: 314-531-9196
E-Mail: eht@stlnet.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001


(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 200375-0

**EMSL Analytical, Inc.**
11931 Industriplex, Suite 100
Baton Rouge, LA 70809
Contact: Mr. Kenneth Klutts
Phone: 225-755-1920
Fax: 225-755-1989
E-Mail: batonrouge@emsl.com
URL: http://www.emsl.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 200376-0

**Advance Data Technology Corporation Hsin Chu EMC Laboratory**
No. 81-1, Lu Liao Keng, 9 Ling, Wu Lung
Tsuen, Chiung Lin Hsiang
Hsin Chu Hsien 307
TAIWAN
Contact: Mr. Harris Lai
Phone: 886-2-26032180
Fax: 886-2-26022943
E-Mail: harris@mail.adt.com.tw
URL: www.adt.com.tw

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

NVLAP LAB CODE 200378-0

**TECO Electric & Machinery Co., Ltd.**
11 An Tung Road, Chung Li Ind. District
Taoyuan
TAIWAN
Contact: Mr. Arnold Wu
Phone: 02-256-21111
Fax: 02-252-18341
E-Mail: wu.arnold@teco.com.tw

**Efficiency of Electric Motors**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 24/M01 | IEEE 112, Method B |

NVLAP LAB CODE 200382-0

**Boeing - St. Louis Electromagnetic Compatibility Laboratory**
Mail Code S1069635
P.O. Box 516
St. Louis, MO 63166-0516
Contact: Mr. Randy R. Vollmer
Phone: 314-233-7798
Fax: 314-233-7451
E-Mail: randy.r.vollmer@boeing.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***MIL-STD-462 : Conducted Emissions:*** | |
| 12/A01 | MIL-STD-462 Method CE01 |
| 12/A04 | MIL-STD-462 Method CE02 |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A08 | MIL-STD-462 Method CE04 |
| 12/A13 | MIL-STD-462 Version D Method CE101 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |
| ***MIL-STD-462 : Conducted Susceptibility:*** | |
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B07 | MIL-STD-462 Method CS09 |
| 12/B08 | MIL-STD-462 Method CS10 |
| 12/B09 | MIL-STD-462 Method CS11 |
| 12/B10 | MIL-STD-462 Method CS12 |
| 12/B11 | MIL-STD-462 Method CS13 |
| 12/B12 | MIL-STD-462 Version D Method CS101 |
| 12/B16 | MIL-STD-462 Version D Method CS109 |
| 12/B17 | MIL-STD-462 Version D Method CS114 |
| 12/B18 | MIL-STD-462 Version D Method CS115 |
| 12/B19 | MIL-STD-462 Version D Method CS116 |
| ***MIL-STD-462 : Radiated Emissions:*** | |
| 12/D01 | MIL-STD-462 Method RE01 |
| 12/D02 | MIL-STD-462 Method RE02 |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |

*MIL-STD-462 : Radiated Susceptibility:*

| | |
|---|---|
| 12/E01 | MIL-STD-462 Method RS01 |
| 12/E02 | MIL-STD-462 Method RS02 |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available) |
| 12/E04 | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |
| 12/E07 | MIL-STD-462 Method RS06 |
| 12/E08 | MIL-STD-462 Version D Method RS101 |
| 12/E09 | MIL-STD-462 Version D Method RS103 |

**NVLAP LAB CODE 200383-0**

**NCR Corp. San Diego EMC Lab**

17095 Via del Campo
San Diego, CA 92127-1711
Contact: Mr. Paul Rostek
Phone: 858-485-2860
Fax: 858-485-3788
E-Mail: paul.rostek@ncr.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200394-0**

**Acos Villares SA - Chemical Laboratory**

Rodovia Luiz Dumont Villares km 02
Pindamonhangaba SP 12420-000
BRAZIL
Contact: Mr. Kiyoshi Miyada
Phone: 55 12 240-8450
Fax: 55 12 240-8378
E-Mail: kiyoshi@villares.com.br

**Fasteners & Metals**

Accreditation Valid Through: December 31, 2001

*NVLAP*
*Code* *Designation*

***Chemical Analysis***

***Combustion analysis for carbon, sulfur, oxygen, nitrogen, and hydrogen***

FA/455 ASTM E1019

***Optical emission spectrochemical analysis***

FA/457 ASTM E415

***X-ray fluorescence (XRF) spectrochemical analysis***

FA/463 ASTM E1085

**NVLAP LAB CODE 200398-0**

**Sony Kohda EMC Test Laboratory**

1, Aza-Suzumegairi Ohaza-Sakazaki
Kohta-cho
Nukata-gun Aichi 444-0194
JAPAN
Contact: Mr. Katsuyoshi Fukui
Phone: 81-564-62-8948
Fax: 81-564-62-2478
E-Mail: kfukui@skd.sony.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: June 30, 2001

*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

| | |
|---|---|
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |

**NVLAP LAB CODE 200399-0**

**EMSL Analytical Inc. Bulk And Airborne Asbestos Fiber Analysis**

706 North Aberdeen, Suite 1A
Chicago, IL 60622
Contact: Mr. J. Craig Nixon
Phone: 312-733-0896
Fax: 312-733-0590

URL: http://www.emsl.com



(See 'How To Use This Directory' on page 7.)

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: March 31, 2001

**NVLAP LAB CODE 200402-0**

### Interface Testing Laboratory

1603 Executive Drive. P.O. Box 1503
LaGrange, GA 30240-1503
Contact: Ms. Toni Brown
Phone: 706-812-6152
Fax: 706-884-8669
E-Mail: toni.brown@us.interfaceinc.com

**Carpet and Carpet Cushion**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Tests Applicable to Carpet and Carpet Cushion*** | |
| 03/T04 | 16 CFR Part 1630 (FF-1-70) |
| ***Tests Applicable to Carpets*** | |
| 03/G04 | AATCC 165 |
| 03/G09 | ASTM D1335 |
| 03/G10 | ASTM D3936 |
| 03/G12 | ASTM E648 |
| 03/G13 | ASTM E662 |

**NVLAP LAB CODE 200404-0**

### ORIX Rentec EMC Center; Electromagnetic Compatibility

3130, Susugaya, Kiyokawa-Mura
Aiko-Gun, Kanagawa 243-0112
JAPAN
Contact: Mr. Kazushige Nagae
Phone: 81-462-88-2971
Fax: 81-462-88-2961
E-Mail: k-nagae@rentec.orix.co.jp
URL: http://www.orixrentec.co.jp/emc/

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200407-0**

### Shanghai Testing & Inspection Institute for Electrical Equipment

505 Wu Ning Road
Shanghai 200063
CHINA
Contact: Mr. Chen Weihua
Phone: 86-21-62577704
Fax: 86-21-62577704

**Efficiency of Electric Motors**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 24/M01 | IEEE 112, Method B |

**NVLAP LAB CODE 200409-0**

### Philips Testing Service

One Philips Drive, P.O. Box 14810
Knoxville, TN 37914-1810
Contact: Mr. Fred A. Fisher
Phone: 865-521-4720
Fax: 865-521-4786
E-Mail: fred.fisher@philips.com
URL: http://www.philipstesting.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200411-0**

### Piolax Inc.

14-2 Matsuyama-cho
Mooka-shi Tochigi-ken 321-4346
JAPAN
Contact: Mr. Shigenobu Ito
Phone: 81-285-82-4651
Fax: 81-285-84-2884
E-Mail: shibata@ypat.gr.jp

**Fasteners & Metals**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Dimensional Inspection*** | |


(See 'How To Use This Directory' on page 7.)

*Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap*

FB/1146 JIS B7507
FB/1147 JIS B7502
FB/1148 JIS B7524

*Mechanical and Physical Testing and Inspection*

*Adhesion of metallic coatings on fasteners*

FA/595 JIS H8504

*Measurement of fastener coating thickness - dimensional change method*

FB/1145 JIS H8501

*Measurement of fastener coating thickness - eddy-current method*

FA/618 JIS H8501

*Rockwell hardness of fasteners*

FA/572 JIS Z2245

*Salt spray testing of fasteners*

FA/569 JIS Z2371

*Vickers hardness - test forces from 9.807 to 1176 N (1 to 120 kgf)*

FA/571 JIS Z2244

**NVLAP LAB CODE 200413-0**

## JMR Compliance Engineering

20400 Plummer Street
Chatsworth, CA 91311
Contact: Mr. Leon Kogan
Phone: 818-739-1122
Fax: 818-993-9173
E-Mail: leonk@jmr.com
URL: http://www.jmr.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200415-0**

## INEEL Materials Testing Lab CFA 602

BBWI CFA602 MS 4136
P.O. Box 1625
Idaho Falls, ID 83415-4136
Contact: Mr. H. Craig Bean
Phone: 208-526-9941
Fax: 208-526-6673
E-Mail: xhb@inel.gov

### Construction Materials Testing

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Aggregates*** | |
| 02/A07 | ASTM C117 |
| 02/A09 | ASTM C127 |
| 02/A10 | ASTM C128 |
| 02/A12 | ASTM C136 |
| 02/A44 | ASTM C566 |
| ***Concrete*** | |
| 02/A01 | ASTM C39 |
| 02/A02 | ASTM C617 |
| 02/A41 | ASTM C192 |
| 02/A43 | ASTM C1064 |
| 02/G01 | ASTM C31/C172/C143/C138/C231 |
| ***Soil and Rock*** | |
| 02/L02 | ASTM D422 |
| 02/L04 | ASTM D698 |
| 02/L05 | ASTM D854 |
| 02/L06 | ASTM D1140 |
| 02/L08 | ASTM D1557 |
| 02/L13 | ASTM D2216 |
| 02/L16 | ASTM D2487 |
| 02/L20 | ASTM D4318 |
| 02/L23 | ASTM D2922 |
| 02/L25 | ASTM D3017 |
| ***Standard Practices*** | |
| 02/A38 | ASTM E329 |
| ***Steel Materials*** | |
| 02/S01 | ASTM A370 (Sec. 5-13)/E8 |

**NVLAP LAB CODE 200416-0**

## COACT Inc. CAFE Laboratory

9140 Guilford Road, Suite L
Columbia, MD 21046
Contact: Mr. James McGeHee
Phone: 301-498-0150
Fax: 301-498-0855
E-Mail: jom@coact.com
URL: http://www.coact.com

### Common Criteria Testing

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 26/A01 | ISO/IEC FDIS 15408: Common Criteria for Info. Tech. Security Evaluation; CEM-97/017: Common Evaluation Methodology for Info. |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | Tech. Security, Part 1; CEM-99/008: Common Methodology for Info. Tech. Security Evaluation, Part 2 |
| 26/A01a | APE: Protection Profile evaluation |
| 26/A01b | ASE: Security Target evaluation |
| 26/A01c | EAL1: Evaluation assurance level 1 |
| 26/A01d | EAL2: Evaluation assurance level 2 |
| 26/A01e | EAL3: Evaluation assurance level 3 |
| 26/A01f | EAL4: Evaluation assurance level 4 |

**Cryptographic Module Testing**

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 17/C01 | NIST-CSTT:140-1; National Institute of Standards and Technology-Cryptographic Support Test Tool (CSTT) for the Federal Information Processing Standard 140-1 (FIPS 140-1) "Security Requirements for Cryptographic Modules." |
| 17/C01a | Test Method Group 1: All test methods derived from FIPS 140-1 and specified in the CSTT, except those listed in Group 2 and Group 3. |
| 17/C02 | FIPS-Approved Cryptographic Algorithms (see <http://csrc.nist.gov/cryptval>) as required in FIPS PUB 140-1. |

**NVLAP LAB CODE 200418-0**

## IBM Endicott EMC Lab

P.O. Box 5825, Union Station
Endicott, NY 13763-5825
Contact: Mr. Lynn Price
Phone: 607-741-8970
Fax: 607-741-8988
E-Mail: pricela@us.ibm.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200422-0**

## Dayton T. Brown, Inc.

Church Street
Bohemia, NY 11716
Contact: Mr. Charles Gortakowski
Phone: 631-244-6315
Fax: 631-589-4046
E-Mail: c.gortakowski@daytontbrown.com
URL: http://www.daytontbrown.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***MIL-STD-462 : Conducted Emissions:*** | |
| 12/A01 | MIL-STD-462 Method CE01 |
| 12/A04 | MIL-STD-462 Method CE02 |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A08 | MIL-STD-462 Method CE04 |
| 12/A10 | MIL-STD-462 Method CE06 |
| 12/A12 | MIL-STD-462 Method CE07 |
| 12/A13 | MIL-STD-462 Version D Method CE101 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |
| 12/A15 | MIL-STD-462 Version D Method CE106 |
| ***MIL-STD-462 : Conducted Susceptibility:*** | |
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B04 | MIL-STD-462 Method CS03/CS04/CS05/CS08 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B06 | MIL-STD-462 Method CS07 |
| 12/B07 | MIL-STD-462 Method CS09 |
| 12/B08 | MIL-STD-462 Method CS10 |
| 12/B09 | MIL-STD-462 Method CS11 |
| 12/B10 | MIL-STD-462 Method CS12 |
| 12/B11 | MIL-STD-462 Method CS13 |
| 12/B12 | MIL-STD-462 Version D Method CS101 |
| 12/B13 | MIL-STD-462 Version D Method CS103 |
| 12/B14 | MIL-STD-462 Version D Method CS104 |
| 12/B15 | MIL-STD-462 Version D Method CS105 |
| 12/B16 | MIL-STD-462 Version D Method CS109 |
| 12/B19 | MIL-STD-462 Version D Method CS116 |
| ***MIL-STD-462 : Radiated Emissions:*** | |
| 12/D01 | MIL-STD-462 Method RE01 |
| 12/D02 | MIL-STD-462 Method RE02 |
| 12/D03 | MIL-STD-462 Method RE03 |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |
| 12/D06 | MIL-STD-462 Version D Method RE103 |
| ***MIL-STD-462 : Radiated Susceptibility:*** | |
| 12/E01 | MIL-STD-462 Method RS01 |
| 12/E02 | MIL-STD-462 Method RS02 |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available) |
| 12/E04 | MIL-STD-462 Method RS03 employing RADHAZ procedures for high level testing (Consult laboratory for field strengths available) |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| 12/E05 | MIL-STD-462 Method RS05 |
| 12/E07 | MIL-STD-462 Method RS06 |
| 12/E08 | MIL-STD-462 Version D Method RS101 |
| 12/E09 | MIL-STD-462 Version D Method RS103 |
| 12/E10 | MIL-STD-462 Version D Method RS105 |

**NVLAP LAB CODE 200424-0**

### Environmental Science Services, Inc.

12875 East Locke Road
Lockeford, CA 95237
Contact: Mr. Mike Ostlund
Phone: 209-333-6157
Fax: 209-333-0492
E-Mail: envss1@aol.com

### Bulk Asbestos Analysis (PLM)

Accreditation Valid Through: September 30, 2001

**NVLAP LAB CODE 200425-0**

### BAE Systems

95 Canal Street, P.O. Box 868
Nashua, NH 03061-0868
Contact: Mr. James A. Cirillo
Phone: 603-885-2671
Fax: 603-885-2919
E-Mail: james.a.cirillo@lmco.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***MIL-STD-462 : Conducted Emissions:*** | |
| 12/A01 | MIL-STD-462 Method CE01 |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A10 | MIL-STD-462 Method CE06 |
| 12/A12 | MIL-STD-462 Method CE07 |
| 12/A13 | MIL-STD-462 Version D Method CE101 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |
| 12/A15 | MIL-STD-462 Version D Method CE106 |
| ***MIL-STD-462 : Conducted Susceptibility:*** | |
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B04 | MIL-STD-462 Method CS03/CS04/CS05/CS08 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B07 | MIL-STD-462 Method CS09 |
| 12/B09 | MIL-STD-462 Method CS11 |
| 12/B12 | MIL-STD-462 Version D Method CS101 |
| 12/B13 | MIL-STD-462 Version D Method CS103 |
| 12/B14 | MIL-STD-462 Version D Method CS104 |
| 12/B15 | MIL-STD-462 Version D Method CS105 |
| 12/B16 | MIL-STD-462 Version D Method CS109 |
| 12/B17 | MIL-STD-462 Version D Method CS114 |
| 12/B18 | MIL-STD-462 Version D Method CS115 |
| 12/B19 | MIL-STD-462 Version D Method CS116 |
| ***MIL-STD-462 : Radiated Emissions:*** | |
| 12/D01 | MIL-STD-462 Method RE01 |
| 12/D02 | MIL-STD-462 Method RE02 |
| 12/D04 | MIL-STD-462 Version D Method RE101 |
| 12/D05 | MIL-STD-462 Version D Method RE102 |
| ***MIL-STD-462 : Radiated Susceptibility:*** | |
| 12/E01 | MIL-STD-462 Method RS01 |
| 12/E02 | MIL-STD-462 Method RS02 |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available) |
| 12/E07 | MIL-STD-462 Method RS06 |
| 12/E08 | MIL-STD-462 Version D Method RS101 |
| 12/E09 | MIL-STD-462 Version D Method RS103 |

**NVLAP LAB CODE 200426-0**

### Computer Sciences Corporation

7471 Candlewood Road
Hanover, MD 21076
Contact: Mr. James Fink
Phone: 410-691-4020
Fax: 410-691-4097
E-Mail: kcaplan@csc.com
URL: http://www.csc.com

### Common Criteria Testing

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 26/A01 | ISO/IEC 15408: Common Criteria for Info Tech Security Evaluation; Common Evaluation Methodology for Info Tech Security, Part 1; Common Methodology for Info Tech Security Evaluation, Part 2 |
| 26/A01a | APE: Protection Profile evaluation |
| 26/A01b | ASE: Security Target evaluation |
| 26/A01c | EAL1: Evaluation assurance level 1 |
| 26/A01d | EAL2: Evaluation assurance level 2 |
| 26/A01e | EAL3: Evaluation assurance level 3 |
| 26/A01f | EAL4: Evaluation assurance level 4 |

**NVLAP LAB CODE 200427-0**

### SAIC Common Criteria Testing Laboratory

Ctr. for Information Security Tech. SAIC
7125 Columbia Gateway Drive, Suite 300
Columbia, MD 21046
Contact: Mr. Robert L. Williamson
Phone: 410-953-6819
Fax: 410-953-6930
E-Mail: robert.l.williamson.jr@cpmx.saic.com

### Common Criteria Testing

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 26/A01 | ISO/IEC 15408: Common Criteria for Info Tech Security Evaluation; Common Evaluation Methodology for Info Tech Security, Part 1; Common Methodology for Info Tech Security Evaluation, Part 2 |
| 26/A01a | APE: Protection Profile evaluation |
| 26/A01b | ASE: Security Target evaluation |
| 26/A01c | EAL1: Evaluation assurance level 1 |
| 26/A01d | EAL2: Evaluation assurance level 2 |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| 26/A01c | EAL3: Evaluation assurance level 3 |
| 26/A01f | EAL4: Evaluation assurance level 4 |

**NVLAP LAB CODE 200428-0**

### TUViT, IT Security Laboratory

8716 N. Mo-Pac Expressway, Suite 220
Austin, TX 78759-8368
Contact: Mr. Roland Mueller
Phone: 512-795-0494
Fax: 512-795-0495
E-Mail: roland@tuvit.net
URL: http://www.tuvit.net

**Common Criteria Testing**

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 26/A01 | ISO/IEC 15408: Common Criteria for Info Tech Security Evaluation; Common Evaluation Methodology for Info Tech Security, Part 1; Common Methodology for Info Tech Security Evaluation, Part 2 |
| 26/A01a | APE: Protection Profile evaluation |
| 26/A01b | ASE: Security Target evaluation |
| 26/A01c | EAL1: Evaluation assurance level 1 |
| 26/A01d | EAL2: Evaluation assurance level 2 |
| 26/A01e | EAL3: Evaluation assurance level 3 |
| 26/A01f | EAL4: Evaluation assurance level 4 |

**NVLAP LAB CODE 200430-0**

### EMC Automation, a TDK Group Company

1101 Cypress Creek Road
Cedar Park, TX 78613
Contact: Mr. Michael E. Hill
Phone: 512-258-9478 x135
Fax: 512-258-0740
E-Mail: mikehill@emca.com
URL: http://www.emc-automation.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CISS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200431-0**

### Raytheon Electronic Systems,California Engineering EEE Laboratory

2000 E. El Segundo Blvd.
P.O. Box 902, Bldg. E1, M/S J131
El Segundo, CA 90245-0902
Contact: Mr. Gino G. Bosdachin
Phone: 310-647-4575
Fax: 310-647-4582
E-Mail: gbosdachin@west.raytheon.com

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***MIL-STD-462 : Conducted Emissions:*** | |
| 12/A01 | MIL-STD-462 Method CE01 |
| 12/A06 | MIL-STD-462 Method CE03 |
| 12/A10 | MIL-STD-462 Method CE06 |
| 12/A12 | MIL-STD-462 Method CE07 |
| 12/A14 | MIL-STD-462 Version D Method CE102 |
| ***MIL-STD-462 : Conducted Susceptibility:*** | |
| 12/B01 | MIL-STD-462 Method CS01 |
| 12/B02 | MIL-STD-462 Method CS02 |
| 12/B04 | MIL-STD-462 Method CS03/CS04/CS05/CS08 |
| 12/B05 | MIL-STD-462 Method CS06 |
| 12/B09 | MIL-STD-462 Method CS11 |
| 12/B12 | MIL-STD-462 Version D Method CS101 |
| 12/B17 | MIL-STD-462 Version D Method CS114 |
| 12/B18 | MIL-STD-462 Version D Method CS115 |
| 12/B19 | MIL-STD-462 Version D Method CS116 |
| ***MIL-STD-462 : Radiated Emissions:*** | |
| 12/D05 | MIL-STD-462 Version D Method RE102 |
| 12/D06 | MIL-STD-462 Version D Method RE103 |
| ***MIL-STD-462 : Radiated Susceptibility:*** | |
| 12/E02 | MIL-STD-462 Method RS02 |
| 12/E03 | MIL-STD-462 Method RS03 (Consult laboratory for field strengths available) |
| 12/E07 | MIL-STD-462 Method RS06 |
| 12/E09 | MIL-STD-462 Version D Method RS103 |

**NVLAP LAB CODE 200432-0**

### Sony Kisarazu EMC Test Laboratory

8-4 Shiomi
Kisarazu Chiba 292-0834
JAPAN
Contact: Mr. Akihiro Arihara
Phone: 814-383-74916
Fax: 814-383-75595
E-Mail: akichan@skz.co.jp

**Electromagnetic Compatibility & Telecommunications**

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CISS22 | IEC/CISPR 22:1993: Limits and methods of |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |

**NVLAP LAB CODE 200433-0**

## NEC Kofu, Ltd., EMC Center

1088-3 Ohtsu-cho, Kofu City
Yamanashi 400-0055
JAPAN
Contact: Mr. Shinji Mine
Phone: 81-55-243-4158
Fax: 81-55-243-4229
E-Mail: mine@comc.kofu.nec.co.jp

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200434-0**

## Minolta Co., Ltd. Toyokawa EMC Lab

2, Higashi-Akatsuchi, Yawata-Cho
Toyokawa, Aichi
JAPAN
Contact: Mr. Yasuhiro Kotera
Phone: 81-533-88-2118
Fax: 81-533-88-5368
E-Mail: koteraya@ngw.minolta.co.jp

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200435-0**

## IBM Poughkeepsie EMC Laboratory

M/S P355
422 South Road
Poughkeepsie, NY 12601-5400
Contact: Mr. William F. McCarthy
Phone: 914-433-1634
Fax: 914-435-2062
E-Mail: wfmcc@us.ibm.com

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |



(See 'How To Use This Directory' on page 7.)

12/F01b Radiated Emissions

**NVLAP LAB CODE 200436-0**

### Global Testing

1433 E. Borchard Avenue
Santa Ana, CA 92705-4414
Contact: Kumar Chaklashiya
Phone: 714-550-6004
Fax: 714-550-9424
E-Mail: kumar@global-testing.com
URL: http://www.global-testing.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Telecommunications Test Methods:*** | |
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01b | 68.316 Hearing Aid Compatibility: technical standards |

**NVLAP LAB CODE 200438-0**

### Benesol Corp.

14-15, Miyashimo, 3-Chome
Sagamihara-shi, Kanagawa
JAPAN
Contact: Mr. Yukio Yamamoto
Phone: 042-772-7842
Fax: 042-772-7843

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |

**NVLAP LAB CODE 200439-0**

### Sony Ikegami EMC Site

6-7-35, Kitashinagawa
Shinagawa, Tokyo, 141-0001
JAPAN
Contact: Mr. Makoto Suzuki
Phone: 81-3-5795-7152
Fax: 81-3-5795-5849
E-Mail: MakotoA.suzuki@jp.sony.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of rádio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200441-0**

### A-Pex International Co., Ltd. Yamakita Laboratory

907 Kawanishi, Yamakita-machi,
Ashigarakami-gun 258-0124
JAPAN
Contact: Mr. Tetsuya Hashimoto
Phone: 81-596-24-6717
Fax: 81-596-24-8020
E-Mail: hasimt@a-pex.co.jp
URL: http://www.a-pex.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

NVLAP LAB CODE 200442-0

**KSL**
505-1 S. Hwy. 49, #101
Jackson, CA 95642
Contact: Mr. Kevin Smith
Phone: 209-286-1822
Fax: 209-286-0706
E-Mail: kevinksl@earthlink.net

**Airborne Asbestos Analysis (TEM)**
Accreditation Valid Through: September 30, 2001

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: September 30, 2001

NVLAP LAB CODE 200444-0

**AMEC Earth & Environmental, Inc., PLM LAB**
3232 West Virginia
Phoenix, AZ 85009-1502
Contact: Mr. Paul W. Barbera
Phone: 602-272-6848
Fax: 602-272-7239
E-Mail: paul.barbera@amec.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

NVLAP LAB CODE 200445-0

**Met Laboratories Incorporated**
33439 Western Avenue
Union City, CA 94587
Contact: Mr. Robert Frier
Phone: 510-489-6300
Fax: 510-489-6372
E-Mail: rfrier@metlabs.com
URL: http://www.metlabs.com

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |
| ***Telecommunications Test Methods:*** | |
| 12/CS03 | CS-03 |
| 12/T01 | Terminal Equipment Network Protection Standards, FCC Method - 47 CFR Part 68 - Analog and Digital |
| 12/T01a | 68.302 (Par. c,d,e,f) Environmental simulation; 68.304 Leakage current limit.; 68.306 Hazardous voltage limit.; 68.308 Signal power limit.; 68.310 Longitudinal balance limit.; 68.312 On-hook impedance limit.; 68.314 Billing protection |
| 12/T01c | 68.302 Environmental simulation (Par. a,b) |

NVLAP LAB CODE 200447-0

**Samsung Electronics EMC Laboratory**
416 Maetan Dong, Paldal Gu
Suwon, Kyungki Do
KOREA
Contact: Mr. Taek J. Shin
Phone: 82-331-200-2140
Fax: 82-331-200-2138

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CISS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CISS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |

NVLAP LAB CODE 200448-0

**Family Analytical Laboratory Services, Inc.**
3650 Chestnut Place
Denver, CO 80216
Contact: Mr. Timothy J. Bergquist
Phone: 303-296-6022
Fax: 303-292-1451
E-Mail: FamilyEnviro@aol.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001



(See 'How To Use This Directory' on page 7.)

NVLAP LAB CODE 200450-0

**Strom Environmental**

7100 N. Broadway, Bldg. 6, Ste. S
Denver, CO 80221
Contact: Mr. Lars Malmstrom
Phone: 303-487-4533
Fax: 303-487-4534
E-Mail: larso@uswest.net

**Bulk Asbestos Analysis (PLM)**

Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 200451-0

**MacLean Maynard Laboratory Services**

50855 E. Russell Schmidt Blvd.
Chesterfield Township, MI 48051
Contact: Mr. Dick Catherwood
Phone: 810-949-0471
Fax: 810-949-7940
E-Mail: dickc@maynard.maclean-fogg.com

**Fasteners & Metals**

Accreditation Valid Through: June 30, 2001

*NVLAP Code* *Designation*

***Dimensional Inspection***

***Dimensions of fasteners - hexagon and double hexagon (12 point) and spline sockets***

FB/1140 ANSI B18.2.1

***Dimensions of general purpose fasteners and high-volume machine assembly fasteners***

FA/403 ANSI/ASME B18.18.1M
FA/404 ANSI/ASME B18.18.2M
FA/665 ISO 4759-1

***Dimensions of special purpose fasteners and fasteners for highly specialized engineered ap***

FA/405 ANSI/ASME B18.18.3M
FA/406 ANSI/ASME B18.18.4M

***External thread parameters - ISO***

FA/390 ISO 1502

***External thread parameters - system 21***

FA/940 ANSI/ASME B1.2
FB/1173 ANSI/ASME B1.1
FB/1175 ANSI/ASME B1.12

***Internal thread parameters - ISO***

FA/402 ISO 1502

***Internal thread parameters - system 21***

FA/391 ANSI/ASME B1.3M
FA/942 ANSI/ASME B1.2
FB/1172 ANSI/ASME B1.1
FB/1174 ANSI/ASME B1.12

***Mechanical and Physical Testing and Inspection***

***Axial tensile strength of full-size threaded fasteners***

FA/265 ASTM A370 Sec. A3.2.1.4
FA/266 ASTM F606 Sec. 3.4.1-3.4.3
FA/267 ASTM F606M Sec. 3.4.1-3.4.3
FA/270 ISO 898-1 Sec. 8.2
FA/271 MIL-STD-1312-8
FA/273 SAE J429
FA/530 ASTM E8
FA/578 SAE J1216 Sec. 3.5
FB/1089 SAE J995

***Prevailing torque***

FA/216 ANSI B18.16.1M
FA/217 IFI-100/107

***Rockwell hardness of fasteners***

FA/197 ASTM E18
FA/200 ISO 6508
FA/202 SAE J417

***Tension testing of machined specimens from externally threaded fasteners***

FA/282 ISO 898-1
FA/283 SAE J429

***Torque-tension of full-size threaded fasteners***

FA/305 ANSI B18.16.2M
FA/306 IFI-101
FA/308 SAE J174

***Wedge tensile strength of full-size threaded fasteners***

FA/290 ASTM F606 Sec. 3.5
FA/291 ASTM F606M Sec. 3.5
FA/294 ISO 898-1 Sec. 8.5
FA/295 MIL-STD-1312-8
FA/468 SAE J429
FA/469 SAE J1216 Sec. 3.6
FA/510 ASTM E8

***Yield strength of full-size externally threaded fasteners***

FA/298 ASTM F606 Sec. 3.2.4
FA/299 ASTM A370 Sec. A3.2.1.3(a)
FA/300 ASTM F606M Sec. 3.2.4
FA/885 ISO 6892
FB/1171 SAE J429

***Metallography***

***Decarburization and case depth measurement in fasteners***

FA/323 ASTM E1077
FA/329 SAE J419
FA/330 SAE J423
FA/561 ASTM E3
FA/562 ASTM G79
FA/758 SAE J121M
FB/1177 SAE J121M

***Macroscopic examination of fasteners by etching***

FA/511 ASTM E340

***Microscopic examination of fasteners by etching***

FA/512 ASTM E407
FB/1178 SAE J422
FB/1179 ASTM E45

***Surface discontinuities of externally threaded fasteners***

FA/357 ASTM F788/788M
FA/359 ISO 6157-1
FA/361 SAE J123
FA/362 SAE J1061

***Surface discontinuities of internally threaded fasteners***

FA/727 ISO 6157-2
FA/865 ASTM F812/F812M
FB/1176 IFI 533



(See 'How To Use This Directory' on page 7.)

*Nondestructive Inspection*

*Liquid penetrant inspection of fasteners*

FA/371 MIL-STD-6866

**NVLAP LAB CODE 200452-0**

**CA Laboratories, L.L.C.**
11800 Industriplex, Suite #5
Baton Rouge, LA 70809
Contact: Mr. Arthur Hernandez
Phone: 225-751-5632
Fax: 225-751-5634

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

**NVLAP LAB CODE 200453-0**

**PCI Industries Acoustical Testing Laboratories**
2824 N. Sylvania Avenue
Fort Worth, TX 76111
Contact: Mr. Mike Beaver
Phone: 817-831-7038
Fax: 817-831-3110
E-Mail: mkebeaver@aol.com

**Acoustical Testing Services**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P10 | ANSI S12.31 |
| 08/P36 | ASTM E477 |

**NVLAP LAB CODE 200455-0**

**Yamaha EMC Center**
200 Minazawa
Tenryu-shi, Shizuoka-ken 431-3422
JAPAN
Contact: Mr. Yoshimi Hirose
Phone: 81-53-460-2376
Fax: 81-53-460-2379
E-Mail: hiros@caucus.yamaha.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |

**NVLAP LAB CODE 200456-0**

**Sony Bonson EMC Test Laboratory**
1300 Tsukakoshi, Sakado-shi
Saitama-ken 350-0209
JAPAN
Contact: Mr. Kazuaki Suda
Phone: 81-492-89-2261
Fax: 81-492-89-2275
E-Mail: suda@bonson.sony.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |

**NVLAP LAB CODE 200457-0**

**Sharp Nara EMC Center, EMI Measurement for ITE**
492 Minosho-cho
Yamatokooriyama-shi Nara 639-1186
JAPAN
Contact: Mr. Katsuhiro Fukushima
Phone: 81-743-55-5082
Fax: 81-743-55-4440
E-Mail: fukushi@info.nara.sharp.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200458-0**

### Interocean EMC Technology Corp.

No. 5-2, Lin 1, Tin-Fu Tsun, Lin-Kou Hsiang
Taipei County 24443
TAIWAN
Contact: Mr. Mike Huang
Phone: 886-2-26006861
Fax: 886-2-26006859
E-Mail: ietc@ms43.hinet.net

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200460-0**

### IAPMO Testing and Services, L.L.C.

20001 E. Walnut Drive South
Walnut, CA 91789-2825
Contact: Mr. Ken Wijaya
Phone: 909-595-8449 x141
Fax: 909-595-8819
E-Mail: kenwijaya@iapmo.org

### Commercial Products Testing

Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Plumbing*** | |
| 19/F01 | ASME A112.18.1M (Sec. 5.2) |
| 19/F02 | ASME A112.18.1M (Sec. 5.14) |
| 19/F03 | ASME A112.18.1M (Sec. 6.2) |
| 19/F04 | ASME A112.18.1M (Sec. 6.4) |
| 19/F05 | ASME A112.18.1M (Sec. 6.5) |
| 19/F06 | ASME A112.18.1M (Sec. 6.6) |
| 19/F07 | ASME A112.18.1M (Sec. 6.7) |
| 19/F08 | ASME A112.18.1M (Sec. 6.8) |
| 19/F09 | ASME A112.18.1M (Sec. 5.13) |
| 19/F10 | ASME A112.18.1M (Sec. 6.3) |
| 19/M01 | ANSI/CABO A117.1 (Sec. 4.24) |
| 19/M02 | ASME/ANSI A112.19.7M (Sec. 5, 7) |
| 19/M03 | ASME/ANSI A112.19.8M (Sec. 4, 5) |
| 19/M04 | ASTM F446 |
| 19/P01 | ANSI Z124.1 (Sec. 4, 5, 6) |
| 19/P02 | ANSI Z124.2 (Sec. 4, 5, 6) |
| 19/P03 | ANSI Z124.3 (Sec. 4, 5, 6) |
| 19/P04 | ANSI Z124.4 (Sec. 4, 5) |
| 19/P05 | ANSI Z124.4 (Sec. 8) per ASME A112.19.6M (Sec. 7.1) |
| 19/P06 | ANSI/IAPMO Z124.6 (Sec. 4, 5, 6) |
| 19/P07 | ANSI/IAPMO Z124.8 (Sec. 4, 5) |
| 19/V01 | ASME A112.19.2M (Sec. 7.1) |
| 19/V02 | ASME A112.19.2M (Sec. 7.2) |
| 19/V03 | ASME A112.19.2M (Sec. 7.3) |
| 19/V04 | ASME A112.19.2M (Sec. 7.4) |
| 19/V05 | ASME A112.19.2M (Sec. 7.5) |
| 19/V06 | ASME A112.19.2M (Sec. 7.7) |
| 19/W01 | ASME A112.19.6 (Sec. 7.1.2) |
| 19/W02 | ASME A112.19.6 (Sec. 7.1.3) |
| 19/W03 | ASME A112.19.6 (Sec. 7.1.4) |
| 19/W04 | ASME A112.19.6 (Sec. 7.1.5) |
| 19/W05 | ASME A112.19.6 (Sec. 7.1.6) |
| 19/W06 | ASME A112.19.6 (Sec. 7.1.7) |
| 19/W07 | ASME A112.19.6 (Sec. 7.1.8) |
| 19/W08 | ASME A112.19.6 (Sec. 7.1.9) |

**NVLAP LAB CODE 200463-0**

### McGill AirFlow Corp. Airflow and Acoustical Testing Laboratory

200 East Broadway Avenue, Building 6
Westerville, OH 43081
Contact: Mr. John B. Gierzak
Phone: 614-882-5455 x123
Fax: 614-882-2090
E-Mail: mcgillairfloweng@compuserve.com

### Acoustical Testing Services

Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P36 | ASTM E477 |

**NVLAP LAB CODE 200467-0**

### Holmes Environmental, Inc.

1600 East Little Creek Road, Ste. 308
Norfolk, VA 23518-4136
Contact: Ms. Ethel H. Holmes
Phone: 757-587-1164
Fax: 757-587-1352



(See 'How To Use This Directory' on page 7.)

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 200472-0

### Olympus EMC Laboratory

2951 Ishkawa-cho Hachioji
Tokyo 192-8507
JAPAN
Contact: Mr. Kiyoshi Mori
Phone: 81-426-42-2167
Fax: 81-426-42-2017
E-Mail: ki_mori@ot.olympus.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

NVLAP LAB CODE 200473-0

### The Saul Corporation

888 W. Sam Houston Parkway S., Suite 288
P.0. Box 941727
Houston, TX 77094-8727
Contact: Mr. Brett S. Colbert
Phone: 832-252-7640
Fax: 832-252-7641
E-Mail: hal2000@ev1.net

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: March 31, 2001

NVLAP LAB CODE 200474-0

### AST International Environmental Consultants Inc.

3705 South Cordoba Street
Spring Valley, CA 91977-1819
Contact: Mr. Jeff Krogstad
Phone: 619-660-2838
Fax: 619-660-2845
E-Mail: ASTInt@aol.com

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: June 30, 2001

NVLAP LAB CODE 200475-0

### Howard Leight Acoustical Testing Laboratory

7828 Waterville Road
San Diego, CA 92154
Contact: Mr. Vernon D. Larson
Phone: 619-671-1357
Fax: 619-661-8393
E-Mail: vlarson@howardleight.com

**Acoustical Testing Services**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P26 | ANSI S3.19 (ANSI S3.19-1974) |
| 08/P27 | ANSI S12.6 |

NVLAP LAB CODE 200476-0

### Teco Industry (Malaysia) SDN. BHD.

2600 Jalan Perusahaan Baru
Kawasan Perindustrial Prai 13600 Prai
Penang
MALAYSIA
Contact: Mr. Lim Boon Pin
Phone: 60-04-3909908
Fax: 60-04-3909901

**Efficiency of Electric Motors**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 24/M01 | IEEE 112, Method B |

NVLAP LAB CODE 200477-0

### Advantest Analysis Labroatory Ltd. EMC Center

336-1 Ohwa Meiwa-Machi, Ohra-gun
Gunma 370-0718
JAPAN
Contact: Mr. Shinichi Kouya
Phone: 81-276-70-3300
Fax: 81-276-70-3420
E-Mail: kouya@ais.advantest.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: June 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200478-0**

### Canon D5 RF Anechoic Chamber; FCC Part 15; CISPR 22/AS/NZS 3548

7-5-1 Hakusan Toride
Ibaraki 302-8501
JAPAN
Contact: Mr. Keiji Tsukamoto
Phone: 81-45-323-6855
Fax: 81-45-323-6857
E-Mail: todct@bl.mmtr.or.jp

### Electromagnetic Compatibility & Telecommunications

Accreditation Valid Through: September 30, 2001

*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

| | |
|---|---|
| 12/CISS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |

**NVLAP LAB CODE 200479-0**

### Auditory Systems Laboratory, ISE Department, Virginia Tech

Virginia Tech
250 New Engineering Building
Blacksburg, VA 24061
Contact: Dr. John G. Casali
Phone: 540-231-9081
Fax: 540-231-3322
E-Mail: jcasali@vt.edu

### Acoustical Testing Services

Accreditation Valid Through: June 30, 2001

*NVLAP*
*Code* *Designation*

| | |
|---|---|
| 08/P26 | ANSI S3.19 (ANSI S3.19-1974) |
| 08/P27 | ANSI S12.6 |

**NVLAP LAB CODE 200480-0**

### Lighting Research Center Lighting Products

21 Union Street
Troy, NY 12180-3352
Contaet: Mr. Conan O'Rourke
Phone: 518-687-7182
Fax: 518-687-7120
E-Mail: orourc@rpi.edu

### Energy Efficient Lighting Products

Accreditation Valid Through: September 30, 2001

*NVLAP*
*Code* *Designation*

***Color Measurements***

| | |
|---|---|
| 22/C01 | IES LM-58 |

***Electrical Measurements***

| | |
|---|---|
| 22/E01 | IES LM-9 |
| 22/E02 | IES LM-45 |
| 22/E04 | IES LM-66 |

***Photometric Measurements***

| | |
|---|---|
| 22/P01a | IES LM-9 (Total Flux) |
| 22/P03a | IES LM-45 (Total Flux) |
| 22/P05a | IES LM-66 (Total Flux) |

**NVLAP LAB CODE 200481-0**

### EMSL Analytical Inc. Mobile Laboratory

107 Haddon Avenue
Westmont, NJ 08108-2799
Contact: Mr. Robert DeMalo
Phone: 856-858-4800
Fax: 856-858-1292
E-Mail: rdemalo@EMSL.com

### Bulk Asbestos Analysis (PLM)

Accreditation Valid Through: June 30, 2001

### Airborne Asbestos Analysis (TEM)

Accreditation Valid Through: June 30, 2001

**NVLAP LAB CODE 200482-0**

### Syonan Site Testing Laboratory as Conducted & Radiated Emissions

1-1 Koyato, 2-chome, Samukawa-machi
Koza-gun
Kanagawa 253-0103
JAPAN
Contact: Mr. Yasuji Yamaguchi
Phone: 81-0467-74-1298
Fax: 81-0467-74-9358
E-Mail: yamaguch@toyocom.co.jp

### Electromagnetic Compatibility & Telecommunication

Accreditation Valid Through: September 30, 2001

*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

| | |
|---|---|
| 12/CISS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance |



(See 'How To Use This Directory' on page 7.)

| | |
|---|---|
| | characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200483-0**

### Leeson Electric - Grafton Engineering Laboratory

2100 Washington Street
Grafton, WI 53024-9541
Contact: Mr. Peter F. Hennig
Phone: 262-377-8810
Fax: 262-387-5449
E-Mail: hennigpf@leeson.com

**Efficiency of Electric Motors**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 24/M01 | IEEE 112, Method B |

**NVLAP LAB CODE 200484-0**

### Best Laboratory

No. 336, Ba Lian Roasd, Sec. 1
Hsi Chih City
Taipei Hsein
TAIWAN
Contact: Mr. Jeff Chiu
Phone: 886-2-2646-2855
Fax: 886-2-2646-2870
E-Mail: jeff@bestlab.com.tw

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200488-0**

### NEC Shizuoka, Ltd. EMC Center

557-2 Yokooka, Kanaya-cho, Haibara-gun
Shizuoka-ken 428-0004
JAPAN
Contact: Mr. Hidenori Muramatsu
Phone: 81-547-45-3410
Fax: 81-537-22-8263
E-Mail: muramatsu@ced.snec.nec.co.jp

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***Emissions Test Methods:*** | |
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |
| 12/T51 | AS/NZS 3548 |

**NVLAP LAB CODE 200490-0**

### NEC Niigata, Ltd, EMC Group

7546 Yasuda, Kashiwazaki-City
Niigata 945-1398
JAPAN
Contact: Mr. Kazuo Ogata
Phone: 81-257-21-1112
Fax: 81-257-21-1147
E-Mail: ogata-K@ninec.nec.co.jp


(See 'How To Use This Directory' on page 7.)

**Electromagnetic Compatibility & Telecommunications**
Accreditation Valid Through: September 30, 2001
*NVLAP*
*Code* *Designation*

***Emissions Test Methods:***

| | |
|---|---|
| 12/CIS22 | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment |
| 12/CIS22a | IEC/CISPR 22:1993: Limits and methods of measurement of radio disturbance characteristics of information technology equipment, Amendment 1:1995, and Amendment 2:1996. |
| 12/CIS22b | CNS 13438:1997: Limits and Methods of Measurement of Radio Interference Characteristics of Information Technology Equipment |
| 12/F01 | FCC Method - 47 CFR Part 15 - Digital Devices |
| 12/F01a | Conducted Emissions, Power Lines, 450 KHz to 30 MHz |
| 12/F01b | Radiated Emissions |

**NVLAP LAB CODE 200492-0**

**Atlan Laboratories**
1340 Old Chain Bridge Road, Suite 401
McLean, VA 22101
Contact: Mr. Edward D. Morris
Phone: 703-748-4551
Fax: 703-748-4552
E-Mail: emorris@atlanlabs.com
URL: http://www.atlanlabs.com

**Cryptographic Module Testing**
Accreditation Valid Through: December 31, 2001
*NVLAP*
*Code* *Designation*

| | |
|---|---|
| 17/C01 | NIST-CSTT:140-1; National Institute of Standards and Technology-Cryptographic Support Test Tool (CSTT) for the Federal Information Processing Standard 140-1 (FIPS 140-1) "Security Requirements for Cryptographic Modules." |
| 17/C01a | Test Method Group 1: All test methods derived from FIPS 140-1 and specified in the CSTT, except those listed in Group 2 and Group 3. |
| 17/C01b | Test Method Group 2: Test methods for Physical Security, Level 4 derived from FIPS 140-1 and specified in the CSTT |
| 17/C01c | Test Method Group 3: Test methods for Software Security, Level 4 derived from FIPS 140-1 and specified in the CSTT |
| 17/C02 | FIPS-Approved Cryptographic Algorithms (see <http://csrc.nist.gov/cryptval>) as required in FIPS PUB 140-1. |

**NVLAP LAB CODE 200503-0**

**IBM Shock and Vibration Laboratory**
MS P932, Dept 575S, Bldg. 416, Rm 10-10
2455 South Road
Poughkeepsie, NY 12601
Contact: Mr. Budy Notohardjono
Phone: 845-435-1047
Fax: 845-432-9807
E-Mail: budy@us.ibm.com

**Commercial Products Testing**
Accreditation Valid Through: December 31, 2001
*NVLAP*
*Code* *Designation*

***Paper and Related Products***

| | |
|---|---|
| 09/H08 | Method 5007.1; ASTM D5276; TAPPI T802-OM |
| 09/H19 | Method 5019.1;TAPPI T817-OM/A |
| 09/H20 | Method 5020.1;TAPPI T817-OM/B,C |

**NVLAP LAB CODE 200504-0**

**Litetronics International**
4101W 123 Street
Alsip, IL 60803
Contact: Mr. Sandeep Sood
Phone: 708-389-8000
Fax: 708-371-0627
E-Mail: ssood@litetronics.com
URL: http://www.litetronics.com

**Energy Efficient Lighting Products**
Accreditation Valid Through: December 31, 2001
*NVLAP*
*Code* *Designation*

***Electrical Measurements***

| | |
|---|---|
| 22/E02 | IES LM-45 |

***Photometric Measurements***

| | |
|---|---|
| 22/P02a | IES LM-20 (Total Flux) |
| 22/P03a | IES LM-45 (Total Flux) |

**NVLAP LAB CODE 200506-0**

**USEM de Mexico, S.A. de C.V.**
Blvd. Carlos Salinas de G. KM 9.5
Apodaca NL 66600
Mexico
Contact: Mr. Jose Raymundo Leal Lacavex
Phone: 011-528-389-1300
Fax: 011-528-389-1360
E-Mail: Raymundo.Leal@usmotors.com

**Efficiency of Electric Motors**
Accreditation Valid Through: December 31, 2001
*NVLAP*
*Code* *Designation*

| | |
|---|---|
| 24/M01 | IEEE 112, Method B |

**NVLAP LAB CODE 200511-0**

**Northern Industrial Hygiene, Inc.**
410A SW 153rd Street
Burien, WA 98166
Contact: Ms. Crystal Wright
Phone: 206-988-1746
Fax: 206-988-1978
E-Mail: NIHINCLAB@AOL.COM

**Bulk Asbestos Analysis (PLM)**
Accreditation Valid Through: December 31, 2001

**NVLAP LAB CODE 200520-0**

**BPB America, Inc.**
10301 Ninth Street North
St. Petersburg, FL 33716-3704
Contact: Mr. Robert E. Metz
Phone: 727-563-5118
Fax: 727-563-5218
E-Mail: rmetz@celotex.com
URL: http://www.celotex.com

**Acoustical Testing Services**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| 08/P03 | ASTM C423 |
| 08/P04 | ASTM C522 |
| 08/P06 | ASTM E90 |
| 08/P07 | ASTM E492 |
| 08/P34 | ASTM E1414 |
| 08/P35 | ASTM E1050 |
| 08/P49 | AMA-1-II-67 |


(See 'How To Use This Directory' on page 7.)

# INDEX

# E

## LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE

National Institute of Standards and Technology **NVLAP** National Voluntary Laboratory Accreditation Program

ISO/IEC GUIDE 25:1990
ANSI/NCSL Z540-1-1994
ISO 9002:1987

## Scope of Accreditation



CALIBRATION LABORATORIES — NVLAP LAB CODE 105000-0

OAK RIDGE METROLOGY CENTER
P.O. Box 2009
Oak Ridge, TN 37831-7670
W. T. (Bill) McKeethan
Phone: 423-574-2707 Fax: 423-574-2802
E-Mail: wmt.@ornl.gov
URL: http://www.ornl.gov/orcmt.mfgqual

DIMENSIONAL

*NVLAP Code:* 20/D03
Gage Blocks, Steel Only

| *Range* | *Best Uncertainty (±)[note 1]* | *Remarks* |
|---|---|---|
| 0.010 to 0.090 | 2.4 μin | Mechanical Comparison |
| 0.01 to 1.000 | 1.8 μin | Mechanical Comparison |
| 2.0 to 4.0 | 2 μin + 0.8 x $10^{-6}$; L is length in inches | Mechanical Comparison |

*NVLAP Code:* 20/D05
Length

| *Range* | *Best Uncertainty (±)[note 1]* | *Remarks* |
|---|---|---|
| 0 - 1.35 m | (0.3 + 0.4L) micrometers; L is length in meters | Step and End Gages using M-60 Coordinate Measuring Machine |
| 0 - 1.2 m | (0.3 + 0.4L) micrometers; L is length in meters | Step and End Gages using M-48 Coordinate Measuring Machine |

March 31, 2001
*Effective through*

David F. Alderman
*For the National Institute of Standards and Technology*

NVLAP-02S (11-95)

National Institute of Standards and Technology **NVLAP** National Voluntary Laboratory Accreditation Program

ISO/IEC GUIDE 25:1990
ANSI/NCSL Z540-1-1994
ISO 9002:1987

## Scope of Accreditation



CALIBRATION LABORATORIES — NVLAP LAB CODE 105000-0

OAK RIDGE METROLOGY CENTER

Grid Plates

| *Range* | *Best Uncertainty (±)[note 1]* | *Remarks* |
|---|---|---|
| 600 mm x 800 mm | 0.6 μm + 0.45 Lμm; L is length in meters | CMM (optical) |

*NVLAP Code:* 20/D18
Gears

| *Range* | *Best Uncertainty (±)[note 1]* | *Remarks* |
|---|---|---|
| to 6" Diameter | 0.9 μm | Involute Profile |
| to 6" Diameter and Infinite Lead | 0.8 μm | Tooth Alignment |
| to 6" Diameter and 99" Lead | 0.9 μm | Tooth Alignment |
| to 6" Diameter and 32" Lead | 1.1 μm | Tooth Alignment |
| to 6" Diameter and 16" Lead | 1.2 μm | Tooth Alignment |
| to 6" Diameter and 11" Lead | 1.4 μm | Tooth Alignment |
| to 6" Diameter (pin offset) | 0.7 μm | Pin Master |
| to 6" Diameter (pin diameter) | 0.5 μm | Pin Master |
| to 6" Diameter (pin roundness) | 0.3 μm | Pin Master |

March 31, 2001
*Effective through*

David F. Alderman
*For the National Institute of Standards and Technology*

NVLAP-02S (11-95)



(See 'How To Use This Directory' on page 7.)

National Institute of Standards and Technology NVLAP® National Voluntary Laboratory Accreditation Program

ISO/IEC GUIDE 25:1990
ANSI/NCSL Z540-1-1994
ISO 9002:1987

## Scope of Accreditation



CALIBRATION LABORATORIES — NVLAP LAB CODE 105000-0

OAK RIDGE METROLOGY CENTER

### TIME AND FREQUENCY

*NVLAP Code:* 20/F01
Frequency Dissemination

| *Range* | *Best Uncertainty (±)in Hz*[note 1] | *Remarks* |
|---|---|---|
| 1 MHz, 5 MHz, 10 MHz | $1.01 \times 10^{-10}$ | Comparison using FMS |
| 1 MHz, 5 MHz, 10 MHz | $5.3 \times 10^{-11}$ | Comparison |
| 1 Hz to < 1 MHz | $(1 \times 10^{-6} + 0.1\ \text{Hz})$[note 2] | Direct Reading |
| 1 MHz to 10 MHz | $1 \times 10^{-8}$ [note 2] | Direct Reading |
| >10 MHz to 1 GHz | $1 \times 10^{-7}$ [note 2] | Direct Reading |

### MECHANICAL

*NVLAP Code:* 20/M08
Mass

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 30 kg | 95 mg | |
| 20 kg | 41 mg | |
| 10 kg | 19.4 mg | |

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## Scope of Accreditation



CALIBRATION LABORATORIES — NVLAP LAB CODE 105000-0

OAK RIDGE METROLOGY CENTER

| | |
|---|---|
| 5 kg | 14.5 mg |
| 2 kg | 13.0 mg |
| 1 kg | 1.31 mg |
| 500 g | 0.66 mg |
| 200 g | 0.29 |
| 100 g | 0.136 |
| 50 g | 0.072 |
| 20 g | 0.038 |
| 10 g | 0.029 |
| 5 g | 0.0083 |
| 2 g | 0.0052 |
| 1 g | 0.0052 |
| 500 mg | 0.0040 |
| 200 mg | 0.0037 |
| 100 mg | 0.0036 |
| 50 mg | 0.0036 |
| 20 mg | 0.0036 |
| 10 mg | 0.0036 |

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## Scope of Accreditation



CALIBRATION LABORATORIES NVLAP LAB CODE 105000-0

OAK RIDGE METROLOGY CENTER

| | |
|---|---|
| 5 mg | 0.0036 |
| 2 mg | 0.0036 |
| 1 mg | 0.0036 |

THERMODYNAMICS

*NVLAP Code:* 20/T07
Resistance Temperature Devices

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 0.01 °C to 29.7646 °C | 0.001 °C | Comparison |

1. Represents an expanded uncertainty using a coverage factor, k=2
2. Realizable uncertainty depends on frequency being measured, customer requirements, and suitability of customer's equipment.

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CALIBRATION LABORATORIES NVLAP LAB CODE 105001-0

RICE LAKE WEIGHING SYSTEMS
230 West Colcman Street
P.O. Box 272
Rice Lake, WI 54868
Mr. Richard Calkins
Phone: 715-234-9171 x243 Fax: 715-234-6967
E-Mail: riccal@rlws.com
URL: http://www.rlws.com

MECHANICAL

*NVLAP Code:* 20/M08
Mass

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 30 kg | 12.1 mg | Class 1 Facility |
| 20 kg | 6.4 mg | Class 1 Facility |
| 10 kg | 1.6 mg | Class 1 Facility |
| 5 kg | 0.84 mg | Class 1 Facility |
| 3 kg | 0.55 mg | Class 1 Facility |
| 2 kg | 0.38 mg | Class 1 Facility |
| 1 kg | 0.057 mg | Class 1 Facility |
| 500 g | 0.037 mg | Class 1 Facility |
| 300 g | 0.029 mg | Class 1 Facility |
| 200 g | 0.027 mg | Class 1 Facility |

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RICE LAKE WEIGHING SYSTEMS

| | | |
|---|---|---|
| 100 g | 0.030 mg | Class I Facility |
| 50 g | 0.0159 mg | Class I Facility |
| 30 g | 0.0104 mg | Class I Facility |
| 20 g | 0.0080 mg | Class I Facility |
| 10 g | 0.0071 mg | Class I Facility |
| 5 g | 0.0047 mg | Class I Facility |
| 3 g | 0.0036 mg | Class I Facility |
| 2 g | 0.0033 mg | Class I Facility |
| 1 g | 0.0036 mg | Class I Facility |
| 500 mg | 0.00268 mg | Class I Facility |
| 300 mg | 0.00216 mg | Class I Facility |
| 200 mg | 0.00206 mg | Class I Facility |
| 100 mg | 0.00234 mg | Class I Facility |
| 50 mg | 0.00168 mg | Class I Facility |
| 30 mg | 0.00134 mg | Class I Facility |
| 20 mg | 0.00128 mg | Class I Facility |
| 10 mg | 0.00144 mg | Class I Facility |
| 5 mg | 0.0011 mg | Class I Facility |

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RICE LAKE WEIGHING SYSTEMS

| | | |
|---|---|---|
| 3 mg | 0.0009 mg | Class I Facility |
| 2 mg | 0.00086 mg | Class I Facility |
| 1 mg | 0.00098 mg | Class I Facility |
| 50 kg | 99 mg | Class II Facility |
| 30 kg | 12 mg | Class II Facility |
| 20 kg | 6 mg | Class II Facility |
| 10 kg | 1.6 mg | Class II Facility |
| 5 kg | 0.84 mg | Class II Facility |
| 3 kg | 0.55 mg | Class II Facility |
| 2 kg | 0.38 mg | Class II Facility |
| 1 kg | 0.06 mg | Class II Facility |
| 500 g | 0.04 mg | Class II Facility |
| 300 g | 0.03 mg | Class II Facility |
| 200 g | 0.03 mg | Class II Facility |
| 100 g | 0.030 mg | Class II Facility |
| 50 g | 0.016 mg | Class II Facility |
| 30 g | 0.010 mg | Class II Facility |
| 20 g | 0.008 mg | Class II Facility |

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RICE LAKE WEIGHING SYSTEMS

| | | |
|---|---|---|
| 10 g | 0.007 mg | Class II Facility |
| 5 g | 0.0047 mg | Class II Facility |
| 3 g | 0.0036 mg | Class II Facility |
| 2 g | 0.0033 mg | Class II Facility |
| 1 g | 0.0036 mg | Class II Facility |
| 500 mg | 0.003 mg | Class II Facility |
| 300 mg | 0.002 mg | Class II Facility |
| 200 mg | 0.002 mg | Class II Facility |
| 100 mg | 0.002 mg | Class II Facility |
| 50 mg | 0.002 mg | Class II Facility |
| 30 mg | 0.001 mg | Class II Facility |
| 20 mg | 0.001 mg | Class II Facility |
| 10 mg | 0.001 mg | Class II Facility |
| 5 mg | 0.001 mg | Class II Facility |
| 3 mg | 0.001 mg | Class II Facility |
| 2 mg | 0.001 mg | Class II Facility |
| 1 mg | 0.001 mg | Class II Facility |
| 1000 kg | 29 g | Class III Facility |

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RICE LAKE WEIGHING SYSTEMS

| | | |
|---|---|---|
| 500 kg | 5.1 g | Class III Facility |
| 200 kg | 2.7 g | Class III Facility |
| 100 kg | 2.7 g | Class III Facility |
| 50 kg | 210 mg | Class III Facility |
| 30 kg | 12 mg | Class III Facility |
| 20 kg | 11 mg | Class III Facility |
| 10 kg | 1.9 mg | Class III Facility |
| 5 kg | 0.99 mg | Class III Facility |
| 3 kg | 0.64 mg | Class III Facility |
| 2 kg | 0.47 mg | Class III Facility |
| 1 kg | 0.012 mg | Class III Facility |
| 500 g | 0.069 mg | Class III Facility |
| 300 g | 0.052 mg | Class III Facility |
| 200 g | 0.047 mg | Class III Facility |
| 100 g | 0.043 mg | Class III Facility |
| 50 g | 0.023 mg | Class III Facility |
| 30 g | 0.015 mg | Class III Facility |
| 20 g | 0.017 mg | Class III Facility |

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RICE LAKE WEIGHING SYSTEMS

| | | |
|---|---|---|
| 10 g | 0.015 mg | Class III Facility |
| 5 g | 0.005 mg | Class III Facility |
| 3 g | 0.004 mg | Class III Facility |
| 2 g | 0.004 mg | Class III Facility |
| 1 g | 0.004 mg | Class III Facility |
| 500 mg | 0.003 mg | Class III Facility |
| 300 mg | 0.002 mg | Class III Facility |
| 200 mg | 0.003 mg | Class III Facility |
| 100 mg | 0.003 mg | Class III Facility |
| 50 mg | 0.002 mg | Class III Facility |
| 30 mg | 0.002 mg | Class III Facility |
| 20 mg | 0.002 mg | Class III Facility |
| 10 mg | 0.002 mg | Class III Facility |
| 5 mg | 0.001 mg | Class III Facility |
| 3 mg | 0.001 mg | Class III Facility |
| 2 mg | 0.001 mg | Class III Facility |
| 1 mg | 0.001 mg | Class III Facility |

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RICE LAKE WEIGHING SYSTEMS

*NVLAP Code:* 20/M08
Mass Avoirdupois

| *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| 2500 lb | 46 g | Class III Facility |
| 2000 lb | 14 g | Class III Facility |
| 1000 lb | 4.8 g | Class III Facility |
| 500 lb | 2.7 g | Class III Facility |
| 250 lb | 2.7 g | Class III Facility |
| 200 lb | 2.6 g | Class III Facility |
| 100 lb | 210 mg | Class III Facility |
| 50 lb | 15 mg | Class III Facility |
| 30 lb | 13 mg | Class III Facility |
| 25 lb | 17 mg | Class III Facility |
| 20 lb | 2.3 mg | Class III Facility |
| 10 lb | 1.10 mg | Class III Facility |
| 5 lb | 0.56 mg | Class III Facility |
| 4 lb | 1.20 mg | Class III Facility |
| 3 lb | 0.38 mg | Class III Facility |

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RICE LAKE WEIGHING SYSTEMS

| | | |
|---|---|---|
| 2 lb | 0.12 mg | Class III Facility |
| 1 lb | 0.062 mg | Class III Facility |
| 0.5 lb | 0.04 mg | Class III Facility |
| 0.3 lb | 0.04 mg | Class III Facility |
| 0.2 lb | 0.018 mg | Class III Facility |
| 0.1 lb | 0.018 mg | Class III Facility |
| 0.05 lb | 0.012 mg | Class III Facility |
| 0.03 lb | 0.010 mg | Class III Facility |
| 0.02 lb | 0.010 mg | Class III Facility |
| 0.01 lb | 0.003 mg | Class III Facility |
| 0.005 lb | 0.002 mg | Class III Facility |
| 0.003 lb | 0.001 mg | Class III Facility |
| 0.002 lb | 0.001 mg | Class III Facility |
| 0.001 lb | 0.001 mg | Class III Facility |
| 4 oz | 0.036 mg | Class III Facility |
| 2 oz | 0.015 mg | Class III Facility |
| 1 oz | 0.016 mg | Class III Facility |
| 1/2 oz | 0.011 mg | Class III Facility |

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RICE LAKE WEIGHING SYSTEMS

| | | |
|---|---|---|
| 1/4 oz | 0.010 mg | Class III Facility |
| 1/8 oz | 0.009 mg | Class III Facility |
| 1/16 oz | 0.009 mg | Class III Facility |
| 1/32 oz | 0.010 mg | Class III Facility |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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CALIBRATION LABORATORIES — NVLAP LAB CODE 105002-0

SANDIA NATIONAL LABORATORIES
Primary Electrical Standards Dept. 1542
P.O. Box 5800, Mail Stop 0665
Albuquerque, NM 87185-0665
Dr. Richard B. Pettit
Phone: 505-844-6242 Fax: 505-844-4372
E-Mail: rbpetti@sandia.gov
URL: http://www.sandia.gov/psl

### DIMENSIONAL

*NVLAP Code:* 20/D01
Angular

| *Range* | *Best Uncertainty (±) in percent*[note 1] | *Remarks* |
|---|---|---|
| Angle Blocks | 0.60 arc second | Standard Sizes, 1 arc second to 45° |
| Optical Squares | 0.46 arc second | |
| True Squares | 0.28 arc second | |

*NVLAP Code:* 20/D03
Gage Blocks

| *Range* | *Best Uncertainty (±) in percent*[note 1,8] | *Remarks* |
|---|---|---|
| to 100 mm (4 in) | 30 nm + 0.14 L | Interferometry with Historical Analysis |
| to 100 mm (4 in) | 34 nm + 0.33 L | Interferometry, single wiring |

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SANDIA NATIONAL LABORATORIES

| | | |
|---|---|---|
| < 1 mm (.04 in) | 41 nm | Mechanical Comparison to Masters[note 2,3,4] |
| 1 to 100 mm (.04 to 4 in) | 35 nm + 0.59 L | Mechanical Comparison to Masters[note 2,3,4] |
| 125 to 500 mm (5 to 20 in) | 127 nm + 0.30 L | Mechanical Comparison to Masters[note 2,3,4] |

### DC/LOW FREQUENCY

*NVLAP Code:* 20/E01
Voltage Converters

*Best Uncertainty (±)in ppm*[note 1]

*Frequency in Hertz*

| *Range* | *10* | *100* | *1 k* | *20 k* | *50 k* | *100 k* | *200 k* | *500 k* | *1 M* |
|---|---|---|---|---|---|---|---|---|---|
| 1 V | 102 | 20 | 23 | 17 | 26 | 42 | 71 | 73 | 75 |
| 2 V | 101 | 18 | 17 | 21 | 27 | 42 | 72 | 71 | 73 |
| 3 V | 102 | 16 | 18 | 17 | 27 | 42 | 71 | 73 | 75 |
| 4 V | 101 | 17 | 17 | 19 | 30 | 42 | 71 | 71 | 72 |
| 6 V | 101 | 16 | 16 | 17 | 27 | 41 | 72 | 74 | 76 |
| 10 V | 101 | 16 | 18 | 18 | 27 | 41 | 72 | 73 | 74 |
| 12 V | 101 | 18 | 18 | 16 | 27 | 42 | 72 | 72 | 73 |

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| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 20 V | 104 | 19 | 16 | 17 | 30 | 41 | 72 | 76 | 78 |
| 30 V | 102 | 17 | 16 | 16 | 27 | 42 | 71 | 76 | 77 |
| 40 V | 101 | 17 | 16 | 19 | 27 | 41 | 73 | 76 | 77 |
| 60 V | 101 | 23 | 16 | 17 | 27 | 42 | 71 | 71 | 74 |
| 100 V | 101 | 19 | 16 | 17 | 28 | 43 | 73 | 75 | 75 |
| 120 V | 102 | 22 | 21 | 22 | 31 | 52 | | | |
| 200 V | 101 | 23 | 22 | 24 | 32 | 51 | | | |
| 300 V | 103 | 29 | 25 | 25 | 34 | 56 | | | |
| 400 V | 102 | 21 | 22 | 22 | 32 | 59 | | | |
| 600 V | 102 | 23 | 22 | 21 | 33 | 57 | | | |
| 1000 V | 104 | 31 | 29 | 31 | 43 | 69 | | | |

*NVLAP Code:* 20/E01
AC Current Shunts

| *Range* | *Frequency* | *Best Uncertainty (±) in percent*[note 1] |
|---|---|---|
| 10 mA | 50 kHz | 0.010 |
| 25 mA | 50 kHz | 0.010 |
| 50 mA | 50 kHz | 0.010 |
| 100 mA | 50 kHz | 0.014 |

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| | | |
|---|---|---|
| 250 mA | 50 kHz | 0.010 |
| 500 mA | 50 kHz | 0.011 |
| 1 A | 50 kHz | 0.011 |
| 1 A | 100 kHz | 0.014 |
| 2.5 A | 50 kHz | 0.011 |
| 5 A | 50 Hz | 0.009 |
| 5 A | 60 Hz | 0.009 |
| 5 A | 50 kHz | 0.011 |
| 10 A | 50 kHz | 0.017 |
| 20 A | 50 Hz | 0.013 |
| 20 A | 400 Hz | 0.013 |
| 20 A | 1 kHz | 0.013 |
| 20 A | 50 kHz | 0.017 |

*NVLAP Code:* 20/E03
Capacitance Dividers - Pulsed High-Voltage Condition

| *Range* | *Best Uncertainty (±) in percent*[note 1] | *Remarks* |
|---|---|---|
| 1 to 350 kV | 2.0 | 1 to 30 μs Pulse |

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*NVLAP Code:* 20/E05
DC Resistance

| *Range in ohms* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 0.0001 to 0.001 | 11 | Low Resistance |
| 0.001 to 0.01 | 4 | Low Resistance |
| 0.01 to 0.1 | 2.5 | Low Resistance |
| 0.1 to 1 | 2 | Low Resistance |
| 1 | 0.057 | Thomas |
| 1 to 10 | 1 | |
| 10 to $10^4$ | 0.5 | |
| 10 k | 0.15 | SR104 |
| $10^5$ | 2 | |
| $10^6$ | 3 | |
| $10^7$ | 5 | |
| $10^8$ | 10 | |
| $10^8$ | 240 | with Teraohmeter |

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| | | |
|---|---|---|
| $10^9$ | 330 | with Teraohmeter |
| $10^{10}$ | 470 | with Teraohmeter |
| $10^{11}$ | 670 | with Teraohmeter |
| $10^{12}$ | 1400 | with Teraohmeter |
| $10^{13}$ | 2000 | with Teraohmeter |
| $10^{14}$ | 3300 | with Teraohmeter |
| $10^{15}$ | 6700 | with Teraohmeter |
| $10^{16}$ | 7.0% | with Teraohmeter |
| Special Resisters | | |
| 2 and 5 | 0.5 | Reichsanstalt |
| 25 and 100 | 0.15 | Tinsley |
| 28.5 | 0.5 | NBS |
| Shunts | | |
| 100 mA to 1000 A | 2.5 | |

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SANDIA NATIONAL LABORATORIES

*NVLAP Code:* 20/E06
DC Voltage

| *Range* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 1, 1.018 V | 0.14 | Josephson Array System |
| 10.0 V | 0.017 | Josephson Array System |
| 1.018 V | 0.21 | Standard Cell System |
| 1.0 to 10.0 V | 0.26 | Zener Ref. System |
| Voltage dividers - Potentiometer combination | | |
| 1.5 V to 1500 V | 2.5 | Intermediate System |
| x1.0 range to 1.05 V | 0.5 of reading +0.1 μV | Potentiometer only, k=3 |
| x1.0 range above 1.05 V | 1.0 of reading +0.1 μV | Potentiometer only, k=3 |
| x0.1 range | 1.5 of reading +0.01 μV | Potentiometer only, k=3 |
| x0.01 range | 2.5 of reading +0.005 μV | Potentiometer only, k=3 |
| High Voltage | | |
| to 100 kV | 106 | 200 kV system |
| 100 kV to 200 kV | 140 | 200 kV system |

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SANDIA NATIONAL LABORATORIES

| | | |
|---|---|---|
| to 10 kV | 0.2% | 10 kV system |
| Ratio/Bridges | | |
| 1:1 to 1:100,000 | 0.5 x $10^7$ (ratio) | For ratio based on 20 step first dial (k=3). For bridges, uncertainty combines ratio and resistance uncertainties |

*NVLAP Code:* 20/E08
Inductive Dividers

| *Range* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 15, 35 and 100 V | 55 | @ 60,1 k and 10 kHz |

*NVLAP Code:* 20/E10
LF Capacitance

| *Range* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 0.01 to 1000 pF | 5 | @ 1 kHz |

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E13

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## Scope of Accreditation



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SANDIA NATIONAL LABORATORIES

*NVLAP Code:* 20/E11
LF Inductance

| *Range* | *Best Uncertainty (±) in percent*[note 1] *Frequency in Hz* | | |
|---|---|---|---|
| | *100* | *1 k* | *10 k* |
| 10 μH | 1.10 | 0.20 | 0.20 |
| 20 μH | 0.50 | 0.20 | 0.20 |
| 50 μH | 0.20 | 0.20 | 0.20 |
| 100 μH | 0.10 | 0.10 | 0.10 |
| 200 μH | 0.10 | 0.10 | 0.10 |
| 500 μH | 0.02 | 0.02 | 0.05 |
| 1 mH | 0.02 | 0.02 | 0.06 |
| 2 mH | 0.03 | 0.03 | 0.06 |
| 5 mH | 0.03 | 0.03 | 0.06 |
| 10 mH | 0.02 | 0.02 | 0.05 |
| 20 mH | 0.02 | 0.02 | 0.05 |
| 50 mH | 0.02 | 0.02 | 0.05 |
| 100 mH | 0.02 | 0.02 | 0.05 |

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| | | |
|---|---|---|
| 200 mH | 0.02 | 0.02 |
| 500 mH | 0.02 | 0.02 |
| 1 H | 0.02 | 0.05 |
| 2 H | 0.02 | 0.05 |
| 5 H | 0.02 | 0.10 |
| 10 H | 0.02 | 0.20 |

*NVLAP Code:* 20/E18
Resistive Dividers - Pulsed High-Voltage Condition

| *Range* | *Best Uncertainty (±) in percent*[note 1] | *Remarks* |
|---|---|---|
| 1 to 350 kV | 1.0 | 1 to 30 μs Pulse |

TIME AND FREQUENCY

*NVLAP Code:* 20/F01
Frequency Dissemination

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 0.1 MHz | 1 part in $10^{12}$ | |
| 1 MHz | 1 part in $10^{12}$ | |
| 5 MHz | 1 part in $10^{12}$ | |
| 10 MHz | 1 part in $10^{12}$ | |

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**IONIZING RADIATION**

*NVLAP Code:* 20/I04
Radioactive Sources

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| Alpha Emission Rate | | |
| 1 to 2 x $10^5$ /s into $2\pi$ | 1.6 % | |
| Beta Emission Rate | | |
| 50 to 5000 /s into $2\pi$ | 5.0 % | |
| Alpha Energy | | |
| 3 to 8 MeV | 30 keV | |

**MECHANICAL**

*NVLAP Code:* 20/M06
Force

| *Range* | *Best Uncertainty (±) in percent*[note 1, 2, 6] | *Remarks* |
|---|---|---|
| 100 to 1,000 | 0.0052 | Primary Standard (Deadweight) |
| 1,000 to 100,000 | 0.016 | Secondary Standards (Proving Rings) |
| 50 to 30,000 | 0.075 | Secondary Standards (Load Cells)[note 7] |

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**RF MICROWAVE**

*NVLAP Code:* 20/R05
HF Capacitance

| | *Best Uncertainty (±) in percent*[note 1] *Frequency in Hz* | | | | |
|---|---|---|---|---|---|
| *Range in pF* | *100* | *1 k* | *10 k* | *100 k* | *1 M* |
| 0.01 | | 0.20 | | 1.3 | |
| 0.1 | | 0.05 | | 1.3 | |
| 1 | | 0.02 | | 0.04 | |
| 10 | | 0.01 | | 0.02 | |
| 100 | | 0.01 | | 0.01 | |
| 1000 | | 0.01 | | 0.03 | |
| 1 | | 0.02 | | 0.2 | 0.30 |
| 2 | | 0.02 | | 0.35 | 0.60 |
| 5 | | 0.02 | | 0.22 | 0.26 |
| 10 | | 0.10 | | 0.14 | 0.15 |
| 20 | | 0.10 | | 0.13 | 0.11 |

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| | | | | | |
|---|---|---|---|---|---|
| 50 | | | | 0.03 | 0.02 |
| 100 | | | | 0.02 | 0.02 |
| 200 | | | | 0.01 | 0.01 |
| 500 | | | | 0.02 | 0.01 |
| 1000 | | | | 0.02 | 0.03 |
| 10 | | 0.0001 | | | |
| 100 | | 0.0001 | | | |
| 1 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| 10 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |
| 100 | 0 01 | 0.01 | 0.01 | 0 01 | 0.01 |
| 1000 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 |

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*NVLAP Code:* 20/R06
HF Inductance

| | *Best Uncertainty (±) in percent*[note 1] *Frequency in Hz* | | | |
|---|---|---|---|---|
| *Range* | *10 k* | *100 k* | *1 M* | *10 M* |
| 0.1 μH | | 2.19 | 4.00 | |
| 0.2 μH | | 2.03 | 2.03 | |
| 0.5 μH | | 0.80 | 1.20 | |
| 1.0 μH | | 0.56 | 0.92 | |
| 2.0 μH | | 0.31 | 0.73 | |
| 5.0 μH | | 0.25 | 0.68 | |
| 10 μH | | 0.39 | 0.63 | |
| 25 μH | | 0.32 | 0.16 | |
| 50 μH | | 0.26 | 0.12 | |
| 100 μH | | 0 24 | 0.11 | |
| 250 μH | | 0.32 | 0.16 | |
| 500 μH | | 0.26 | 0.09 | |
| 1 mH | | 0.24 | | |

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| | | | | |
|---|---|---|---|---|
| 2.5 mH | | 0.25 | | |
| 5 mH | | 0.24 | | |
| 10 mH | | 0.29 | | |
| 25 mH | | 0.25 | | |
| 0.25 μH | 1.2 | 1.4 | 1.7 | 0.8 |
| 1 μH | 0.4 | 0.5 | 0.9 | 0.6 |
| 10 μH | 0.4 | 0.4 | 0.6 | 0.1 |
| 100 μH | 0.2 | 0.2 | 0.2 | |

*NVLAP Code:* 20/R10
Q Standards

| *Range* | *Best Uncertainty (±) in percent*[note 1] | *Remarks* |
|---|---|---|
| Selected values from 95 to 607 | 1.2 to 4.5 dependent on Q value and frequency | frequency range 50 kHz to 45 MHz |

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*NVLAP Code:* 20/R11
RF-DC Voltage Converter

High Frequency TVC

| | *Best Uncertainty (±) in percent*[note 1] *Frequency in Hz* | | | | |
|---|---|---|---|---|---|
| *Range* | *1 M* | *10 M* | *30 M* | *50 M* | *100 M* |
| 0.5 V | 0.06 | 0.11 | 0.21 | 0.51 | 1.1 |
| 1 V | 0.06 | 0.11 | 0.21 | 0.51 | 1.1 |
| 2 V | 0.06 | 0.11 | 0.21 | 0.51 | 1.1 |
| 2.5 V | 0.06 | 0.11 | 0.21 | 0.51 | 1.1 |
| 3 V | 0.06 | 0.11 | 0.21 | 0.51 | 1.1 |
| 5 V | 0.06 | 0.11 | 0.21 | | 1.1 |
| 10 V | 0.06 | 0.11 | 0.21 | | 1.1 |
| 20 V | 0.06 | 0.11 | 0.21 | | 1.1 |
| 50 V | 0.06 | 0.11 | 0.22 | | 1.2 |
| 100 V | 0.06 | 0.11 | 0.27 | | 1.5 |
| 200 V | 0.06 | 0.12 | 0.21 | | 1.1 |

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RF TVC

*Best Uncertainty (±) in percent*[note 1]

*Frequency in Hz*

| *Range* | *300 M* | *600 M* | *700 M* | *800 M* | *900 M* | *1000 M* |
|---|---|---|---|---|---|---|
| 1 V | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| 2.4 V | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 | 1.3 |
| 7 V | 1.3 | 1.3 | 1 3 | 1.3 | 1.3 | 1.3 |

Micropotentiometers

*Best Uncertainty (±) in percent*[note 1]

*Frequency in Hz*

| *Range* | *30 M* | *100 M* | *300 M* | *600 M* | *900 M* |
|---|---|---|---|---|---|
| 0.1 mV | 2.32 | 3.56 | 3.36 | 5.10 | 5 10 |
| 0.2 mV | 0.54 | 1.04 | 1.02 | 1.35 | 1.42 |
| 0.4 mV | 2.34 | 3.44 | 3.18 | 5.10 | 5.10 |
| 0.9 mV | 0.54 | 1.04 | 1.05 | 1.35 | 1.44 |
| 1 mV | 2.24 | 3.33 | 3.21 | 5.10 | 5.10 |

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| | | | | | |
|---|---|---|---|---|---|
| 1.5 mV | 0.59 | 1.02 | 1.02 | 1.33 | 1.33 |
| 4 mV | 0.53 | 1.07 | 1.21 | 1.38 | 1.39 |
| 5 mV | 2.24 | 3.16 | 3.17 | 5.10 | 5.10 |
| 10 mV | 2.27 | 3.19 | 3.16 | 5.10 | 5.10 |
| 11 mV | 2.25 | 3.17 | 3.58 | 5.10 | 5.10 |
| 25 mV | 0.48 | 0.97 | 0.97 | 1.28 | 1.30 |
| 28.5 mV | 2.52 | 3.49 | 3.95 | 5.10 | |
| 102 mV | 0.53 | 0.99 | 1.08 | 1.30 | 1.28 |
| 150 mV | 0.43 | 0.99 | 1.06 | 1.32 | 1.28 |
| 320 mV | 2.24 | 3.23 | 3.18 | 5.10 | 5.10 |
| 330 mV | 0.45 | 1.01 | 0.98 | 1.38 | 1.29 |

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*NVLAP Code:* 20/R12
RF/Microwave Bolometer Units

Expanded Uncertainties[note 1,2,3] on Effective Efficiency & Calibration Factor of HP bolometric power sensors.

| | | | *Frequency (MHz)* | | | |
|---|---|---|---|---|---|---|
| *Connector Type* | *Quantity* | *Quantity Range* | *50-2000* | *2000-8000* | *8000-12000* | *12000-18000* |
| N | Calibration Factor | 0.9 to 1 | 0.004-0.006 | 0.004-0.006 | 0.005-0.007 | 0.006-0.008 |
| APC-3.5 | Calibration Factor | 0.9 to 1 | ------- | 0.007-0.009 | 0.009-0.010 | 0.010-0.011 |
| N | Effective Efficiency | 0.9 to 1 | 0.004-0.005 | 0.004-0.005 | 0.005-0.006 | 0.006-0.008 |
| APC-3.5 | Effective Efficiency | 0.9 to 1 | ------- | 0.007-0.008 | 0.008-0.009 | 0.009-0.010 |

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*NVLAP Code:* 20/R13
RF/Microwave Attenuators

Reflection Coefficient (or Scattering Parameter Sii)

A. Dual 6-Port Network Analyzer Certification Uncertainties [note 2,3,4]

| | | | *Frequency (MHz)* | | | |
|---|---|---|---|---|---|---|
| *Connector Type* | *Quantity* | *Quantity Range* | *50-2000* | *2000-8000* | *8000-12000* | *12000-18000* |
| GR-900 | $\|S_{ii}\|$ | 0 to 1 | 0.002-0.009 | 0.002-0.015 | ------ | ------ |
| N | $\|S_{ii}\|$ | 0 to 1 | 0.002-0.008 | 0.002-0.027 | 0.006-0.018 | 0.006-0.030 |
| APC-7 | $\|S_{ii}\|$ | 0 to 1 | 0.002-0.006 | 0.002-0.009 | 0.003-0.018 | 0.005-0.015 |
| APC-3.5 | $\|S_{ii}\|$ | 0 to 1 | 0.002-0.012 | 0.002-0.015 | 0.005-0.019 | 0.012-0.050 |
| GR-900 | $Arg(S_{ii})$ | $0 < \|S_{ii}\| < 1$ -180 to +180 deg | 0.120-180.0 | 0.019-180.0 | ------ | ------ |
| N | $Arg(S_{ii})$ | $0 < \|S_{ii}\| < 1$ -180 to +180 deg | 0 360-180.0 | 0.300-180.0 | 0.600-180.0 | 0.800-180.0 |
| APC-7 | $Arg(S_{ii})$ | $0 < \|S_{ii}\| < 1$ -180 to +180 deg | 0.012-180.0 | 0.200-180.0 | 0.540-180.0 | 0.525-180.0 |
| APC-3.5 | $Arg(S_{ii})$ | $0 < \|S_{ii}\| < 1$ -180 to +180 deg | 0.360-180.0 | 0.240-180.0 | 0.540-180.0 | 0.560-180.0 |

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B. HP8510 Vector Network Analyzer Uncertainties

1. Expanded Uncertainties [note 1,2,3] on one or two-port devices

| | | | Frequency (MHz) | | | |
|---|---|---|---|---|---|---|
| *Connector Type* | *Quantity* | *Quantity Range* | *50-2000* | *2000-8000* | *8000-12000* | *12000-18000* |
| N | $\|S_{ii}\|$ | 0 to 1 | 0.001-0.003 | 0.001-0.009 | 0.004-0.009 | 0.004-0.021 |
| APC-7 | $\|S_{ii}\|$ | 0 to 1 | 0.001-0.007 | 0.001-0.003 | 0.003-0.007 | 0.001-0.004 |
| APC-3.5 | $\|S_{ii}\|$ | 0 to 1 | 0.001-0.007 | 0.004-0.020 | 0.004-0.020 | 0.004-0.020 |
| N | $Arg(S_{ii})$ | $0<\|S_{ii}\|<1$ -180 to +180 deg | 0.05-180 | 0.36-180 | 1.43-180 | 1.34-180 |
| APC-7 | $Arg(S_{ii})$ | $0<\|S_{ii}\|<1$ -180 to +180 deg | 0.15-180 | 0.16-180 | 0.33-180 | 0.38-180 |
| APC-3.5 | $Arg(S_{ii})$ | $0<\|S_{ii}\|<1$ -180 to +180 deg | 0.53-180 | 0.33-180 | 0.35-180 | 0.33-180 |

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2. Certification Uncertainties [note 2,3,4] on three-port devices

| | | | Frequency (MHz) | | | |
|---|---|---|---|---|---|---|
| *Connector Type* | *Quantity* | *Quantity Range* | *50-2000* | *2000-8000* | *8000-12000* | *12000-18000* |
| N, APC-7, APC-3.5 | $\|S_{ii}\|$ | 0 to 0.3 | 0.011 - 0.075 | 0.011 - 0.075 | 0.03 - 0.09 | 0.050 - 0.092 |
| N, APC-7, APC-3.5 | $\|\Gamma_{ge}\|$ | 0 to 0.3 | 0.011 - 0.080 | 0.012 - 0.080 | 0.030 - 0.084 | 0.071 - 0.119 |

C. HP8753 Vector Network Analyzer Certification Uncertainties [note 2,3,4]

1. One or two-port devices

| *Connector Type* | *Quantity* | *Quantity Range* | *25-1000* | *1000-3000* |
|---|---|---|---|---|
| N | $\|S_{ii}\|$ | 0 to 1 | 0.001-0.009 | 0.003-0.016 |
| APC-7 | $\|S_{ii}\|$ | 0 to 1 | 0.002-0.04 | 0.002-0.004 |
| APC-3.5 | $\|S_{ii}\|$ | 0 to 1 | 0.006-0.02 | 0.006-0.035 |
| N | $Arg(S_{ii})$ | $0<\|S_{ii}\|<1$ -180 to +180 deg | 0.2-70 | 1-180 |
| APC-7 | $Arg(S_{ii})$ | $0<\|S_{ii}\|<1$ -180 to +180 deg | 0.3-180 | 0.2-25 |
| APC-3.5 | $Arg(S_{ii})$ | $0<\|S_{ii}\|<1$ -180 to +180 deg | 1-180 | 1.6-180 |

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2. Three-port devices

| *Connector Type* | *Quantity* | *Quantity Range* | *25-1000 (MHz)* |
|---|---|---|---|
| N, APC-7-APC-3.5 | $\|S_{ii}\|$ | 0 to 0.3 | 0.011 - 0.020 |
| N, APC-7-APC-3.5 | $\|\Gamma_{ig}\|$ | 0 to 0.3 | 0.01 - 0.03 |

D. Weinschel VM-4B Certification Uncertainties [note 2,3,4]

| | | | *Frequency (MHz)* | | | |
|---|---|---|---|---|---|---|
| *Cannectar Type* | *Quantity* | *Quantity Range* | *10-2000* | *2000-8000* | *8000-12000* | *12000-18000* |
| N | $\|S_{ii}\|$ | 0 to 1 | 0.025-0.080 | 0.031-0.085 | 0.040-0.090 | 0.046-0.112 |
| APC-7 | $\|S_{ii}\|$ | 0 to 1 | 0.011-0.075 | 0.015-0.080 | 0.030-0.085 | 0.036-0.106 |
| BNC | $\|S_{ii}\|$ | 0 to 1 | 0.026-0.060[note 5] | ------- | ------- | ------- |

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Attenuation (or Scattering Parameter Sij)

A. Dual 6-Port Network Analyzer Certification Uncertainties [note 2,3,4]

| | | | *Frequency (MHz)* | | | |
|---|---|---|---|---|---|---|
| *Cannectar Type* | *Quantity* | *Quantity Range* | *50-2000* | *2000-8000* | *8000-12000* | *12000-18000* |
| GR-900 | $\|S_{ij}\|$ | 0 to 60 dB | 0.012-0.390 | 0.015-0.410 | ------- | ------- |
| N | $\|S_{ij}\|$ | 0 to 60 dB | 0.012-0.390 | 0.015-0.410 | 0.018-0.410 | 0.021-0.900 |
| APC-7 | $\|S_{ij}\|$ | 0 to 60 dB | 0.012-0.390 | 0.015-0.410 | 0.020-0.410 | 0.021-0.900 |
| APC-3.5 | $\|S_{ij}\|$ | 0 to 60 dB | 0.012-0.150 | 0.015-0.410 | 0.020-0.410 | 0.030-0.90 |

B. HP8510 Vector Network Analyzer Uncertainties

1. Expanded Uncertainties[note 1,2,3] on one or two-port devices

| | | | *Frequency (MHz)* | | | |
|---|---|---|---|---|---|---|
| *Connectar Type* | *Quantity* | *Quantity Range* | *50-2000* | *2000-8000* | *8000-12000* | *12000-18000* |
| N | $\|S_{ij}\|$ | 0 to 60 dB | 0.01-0.12 | 0.02-0.17 | 0.03-0.25 | 0.03-0.48 |
| APC-7 | $\|S_{ij}\|$ | 0 to 60 dB | 0.01-0.08 | 0.01-0.13 | 0.01-0.13 | 0.01-0.18 |
| APC-3.5 | $\|S_{ij}\|$ | 0 to 60 dB | 0.01-0.12 | 0.02-0.22 | 0.04-0.25 | 0.05-0.49 |

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| | | | | | | |
|---|---|---|---|---|---|---|
| N | Arg($S_{ij}$) | $0 < \|S_{ij}\| < 60$ dB<br>0 to 360 deg | 0.22-1.19 | 0.32-1.27 | 0.36-1.84 | 0.58-3.46 |
| APC-7 | Arg($S_{ij}$) | $0 < \|S_{ij}\| < 60$ dB<br>0 to 360 deg | 0.22-0.73 | 0.25-1.21 | 0.41-1.70 | 0.57-2.85 |
| APC-3.5 | Arg($S_{ij}$) | $0 < \|S_{ij}\| < 60$ dB<br>0 to 360 deg | 0.45-0.80 | 0.35-1.39 | 0.41-1.94 | 0.66-3.17 |

2. Certification Uncertainties [note 2,3,4] on three-port devices

| | | | Frequency (MHz) | | | |
|---|---|---|---|---|---|---|
| *Connector Type* | *Quantity* | *Quantity Range* | *50-2000* | *2000-8000* | *8000-12000* | *12000-18000* |
| N, APC-7, APC-3.5 | \|Coupling\| (dB) | 3-40 dB | 0.071 - 0.320 | 0.110 - 0.500 | 0.012 - 0.500 | 0.320 - 0.600 |
| N, APC-7, APC-3.5 | \|Mainline\| (dB) | 0 to 8 dB | 0.020 - 0.221 | 0.020 - 0.221 | 0.020 - 0.221 | 0.131 - .290 |
| N, APC-7 APC-3.5 | \|Directivity\| (dB) | 15-25 dB | 0.19 - 9.2 | 0.53 - 9.2 | 0.80 - 9.2 | 1.55 - 9.2 |
| N, APC-7, APC-3.5 | \|Directivity\| (dB) | 30-40 dB | 1.0 - ∞ | 2.6 - ∞ | 5.7 - ∞ | 7.2 - ∞ |

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C. HP8753 Vector Network Analyzer Certification Uncertainties [note 2,3,4]

1. One or two-port devices

| | | | Frequency (MHz) | |
|---|---|---|---|---|
| *Connector Type* | *Quantity* | *Quantity Range* | *25-1000* | *1000-3000* |
| N | $\|S_{ij}\|$ | 0 to 60 dB | 0.003-0.5 | 0.004-1.2 |
| APC-7 | $\|S_{ij}\|$ | 0 to 60 dB | 0.002-0.6 | 0.003-0.9 |
| APC-3.5 | $\|S_{ij}\|$ | 0 to 60 dB | 0.003-0.6 | 0.003-1.0 |
| APC-3.5 | Arg($S_{ij}$) | $0 < \|S_{ij}\| < 60$ dB<br>0 to 360 deg | 0.4-10 | 0.4-10 |

2. Three-port devices

| *Connector Type* | *Quantity* | *Quantity Range* | *25-1000 (MHz)* |
|---|---|---|---|
| N, APC-7-APC-3.5 | \|Coupling\| (dB) | 3-20 dB | 0.050 - 0.230 |
| N, APC-7-APC-3.5 | \|Mainline\| (dB) | 0 to 8 dB | 0.020 - 0.050 |
| N, APC-7-APC-3.5 | \|Directivity\| (dB) | 15-25 dB | 0.9 - 3.8 |
| N, APC-7-APC-3.5 | \|Directivity\| (dB) | 30-40 dB | 4 - ∞ |

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D. Weinschel VM-4B Certification Uncertainties note 2,3,4 on Attenuation

| | | | Frequency (MHz) | | | |
|---|---|---|---|---|---|---|
| *Connector Type* | *Quantity* | *Quantity Range* | *10-2000* | *2000-8000* | *8000-12000* | *12000-18000* |
| N | $\|S_{ij}\|$ | 0 to 100 dB | 0.06-0.60 | 0.10-1.10 | 0.25-1.52 | 0.38-1.80 |
| APC-7 | $\|S_{ij}\|$ | 0 to 100 dB | 0.06-0.60 | 0.10-1.00 | 0.20-1.43 | 0.30-1.75 |
| BNC | $\|S_{ij}\|$ | 0 to 100 dB | 0.10-0.90 note 5 | ------ | ------ | ------ |

E. Power Ratio Attenuation Expanded Uncertainties note 1,2,3

| | | | Frequency (MHz) | | | |
|---|---|---|---|---|---|---|
| *Connector Type* | *Quantity* | *Quantity Range* | *10-2000* | *2000-8000* | *8000-12000* | *12000-18000* |
| Fixed Attenuators or Step/Variable Attenuators | | | | | | |
| N, APC-7 APC-3.5 | $\|S_{ij}\|$ | 0 to 11 dB | 0.008-0.014 + Mismatch Unc. | 0.014-0.016 + Mismatch Unc. | 0.013-0.015 + Mismatch Unc. | 0.015-0.018 + Mismatch Unc. |
| Isolated Step/Variable Attenuators | | | | | | |
| N, APC-7 APC-3.5 | $\|S_{ij}\|$ | 0 to 11 dB | 0.008-0.014 | 0.014-0.016 | 0.013-0.015 | 0.015-0.018 |

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Group Delay Certification Uncertainties note 2,3,4

| *Connector Type* | *Typical Atten. (dB)* | *Delay (ns)* | *50-1000 (MHz)* |
|---|---|---|---|
| APC-7, N, APC-3.5 | 0.08 | 5 | 0.02 - 0.05 |
| APC-7, N, APC-3.5 | 0.21 | 15 | 0.04 - 0.13 |
| APC-7, N, APC-3.5 | 0.8 | 50 | 0.05 - 0.12 |
| APC-7, N, APC-3.5 | 3 | 200 | 0.15 - 0.41 |
| APC-7, N, APC-3.5 | 2.2 | 385 | 0.46 - 0.50 |

*NVLAP Code:* 20/R17
RF/Microwave Power Meters

CW Power Certification Uncertainties note 2,3,4

A. Low to Medium Power CW Microwave Power Meter Calibration at Type N Connector

| | | Frequency (MHz) | | | |
|---|---|---|---|---|---|
| *Quantity* | *Quantity Range* | *1 to 2000* | *2000 to 4000* | *4000 to 12400* | *12400 to 16500* |
| Power (dBm) | -30 to -10 | .09 to .41 dB | .13 to .41 dB | .14 to .34 dB | .16 to .46 dB |
| Power (dBm) | -10 to 10 | .06 to .27 dB | .10 to .25 dB | .11 to .30 dB | ------ |
| Power (dBm) | 10 to 30 | .06 to .25 dB | .10 to .21 dB | .11 to .24 dB | ------ |

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B. Low Power, Wide Range, CW Microwave Power Meter Calibration at Type N Connector

| | | Frequency (MHz) | | |
|---|---|---|---|---|
| *Quantity* | *Quantity Runge* | *30 to 4000* | *4000 to 8000* | *8000 to 12400* |
| Power (dBm) | -60 to -50 | 0.20 to 0.41 dB | 0.25 to 0.43 dB | 0.24 to 0.43 dB |
| Power (dBm) | -50 to -40 | 0.18 to 0.29 dB | 0.23 to 0.35 dB | 0.22 to 0.35 dB |
| Power (dBm) | -40 to -30 | 0.14 to 0.25 dB | 0.16 to 0.32 dB | 0.20 to 0.32 dB |
| Power (dBm) | -30 to -20 | 0.14 to 0.23 dB | 0.16 to 0.27 dB | 0.18 to 0.27 dB |

C. Medium Power CW Microwave Power Meter Calibration at Type N Connector

| | | Frequency (MHz) | | |
|---|---|---|---|---|
| *Quantity* | *Quantity Range* | *12 to 1000* | *240* | *2000 to 2500* |
| Power (mW) | 1 to 10 | 1.7 to 3.3% | ------ | ------ |
| Power (mW) | 1 to 100 | ------ | ------ | 3.1 to 4.3% |
| Power (mW) | 80 to 160 | ------ | 1.9 to 2.4% | ------ |

D. Medium Power CW Microwave Power Meter Calibrations at APC-3.5 Connector

| | | Frequency (MHz) | | |
|---|---|---|---|---|
| *Quantity* | *Quantity Range* | *2000 to 4000* | *4000 to 8000* | *8000 to 18000* |
| Power (mW) | 0.1 to 8 | 2.8 to 4.0% | 3.0 to 4.9% | 4.0 to 5.8% |

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E. High Power CW Microwave Power Meter Calibrations at Type N Connector

| | | Frequency (MHz) | |
|---|---|---|---|
| *Quantity* | *Quantity Range* | *13.6 to 300* | *300 to 3000* |
| Power (Watts) | 0.2 to 10 | 9.0 to 9.1% | 3.3 to 10.6% |
| Power (Watts) | 10 to 200 | 4.4 to 10.1% | 9.6 to 10.6% |

Pulse Power Certification Uncertainties[note 2,3,4]

A. Pulse Power Meter Calibrations at Type N Connector

| | | |
|---|---|---|
| *Quantity* | *Quuntity Range* | *2000* |
| Power (mW) | 10 to 100 | 7.3 to 8.2% |

THERMODYNAMICS

*NVLAP Code:* 20/T04
Leak Artifacts

| *Range* | *Best Uncertainty (±) in percent*[note 1] | *Remarks* |
|---|---|---|
| Gas Leak - PΔV Technique | | |
| $1 \times 10^{-7}$ moles/s | 0.7 | Total Gas Measurement |
| $1 \times 10^{-8}$ moles/s | 0.9 | Total Gas Measurement |
| $1 \times 10^{-9}$ moles/s | 1.0 | Total Gas Measurement |

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| | | |
|---|---|---|
| 1 x $10^{-10}$ moles/s | 1.0 | Total Gas Measurement |
| Gas Leak - Accumulate - Dump Technique | | |
| 1 x $10^{-10}$ moles/s to 1 x $10^{-14}$ moles/s | 1.0 | 1 to 200 Atomic Mass Units for any non-reactive, non-hazardous, non-radioactive gas |
| Gas Leak - Comparison Technique | | |
| 1 x $10^{-10}$ moles/s | 2.5 | Helium |
| 1 x $10^{-11}$ moles/s | 2.4 | Helium |
| 1 x $10^{-12}$ moles/s | 2.3 | Helium |
| 1 x $10^{-13}$ moles/s | 2.3 | Helium |
| 1 x $10^{-14}$ moles/s | 7.0 | Helium |

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THERMODYNAMICS

*NVLAP Code:* 20/T05
Pressure

| *Range* | *Best Uncertainty (±) in ppm[note 1]* | *Remarks* |
|---|---|---|
| Pneumatic Deadweight Piston Gauges (absolute mode) - Direct Pressure Comparison | | |
| 0.2 to 24 psia [≈1.4 to 170 kPa] | 31 | Nitrogen |
| 2.0 to 70 psia [≈14 to 480 kPa] | 28 | Nitrogen |
| 52 to 1000 psia [≈0.4 to 7.0 MPa] | 46 | Nitrogen |
| Pneumatic Deadweight Piston Gauges (gauge mode) - Direct Pressure Comparison | | |
| 0.2 to 24 psig [≈1.4 to 170 kPa] | 29 | Nitrogen |
| 2.0 to 70 psig [≈14 to 480 kPa] | 26 | Nitrogen |
| 52 to 1000 psig [≈0.4 to 7.0 MPa] | 44 | Nitrogen |
| Hydraulic Deadweight Piston Gauges (gauge mode) - Direct Pressure Comparison | | |
| 0.4 to 4.0 kpsig [≈2.8 to 28 MPa] | 44 | Oil |
| 2.0 to 20 kpsig [≈14 to 140 MPa] | 61 | Oil |
| 4.0 to 40 kpsig [≈28 to 280 MPa] | 59 | Oil |
| Pneumatic Deadweight Piston Gauges - Cross Float (effective area) | | |
| 0.2 to 24 psig [≈14 kPa to 170 kPa] | 35 | Nitrogen |

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| | | |
|---|---|---|
| 2.0 to 70 psig [≈14 kPa to 480 kPa] | 33 | Nitrogen |
| 52 to 1000 psig [≈0.4 MPa to 7.0 MPa] | 46 | Nitrogen |
| Hydraulic Deadweight Piston Gauges - Cross Float (effective area) | | |
| 0.4 to 4.0 kpsig [≈2.8 to 28 MPa] | 46 | Oil |
| 2.0 to 20 kpsig [≈14 to 140 MPa] | 67 | Oil |
| 4.0 to 40 kpsig [≈28 to 280 MPa] | 61 | Oil |
| Secondary Pressure Low Range Absolute | | |
| *Pressure* | *Best Uncertainty (±) in psi*[note 1] | *Remarks* |
| 0.2 psia [≈1.4 kPa] | 0.0013 | Nitrogen |
| 1.0 psia [≈7.0 kPa] | 0.0013 | Nitrogen |
| 6.0 psia [≈41 kPa] | 0.0017 | Nitrogen |
| 10 psia [≈70 kPa] | 0.0021 | Nitrogen |
| 15 psia [≈100 kPa] | 0.0028 | Nitrogen |
| Secondary Pressure Low Range Gauge or Absolute | | |
| *Pressure* | *Best Uncertainty (±) in psi*[note 1] | *Remarks* |
| 20 psi [≈140 kPa] | 0.009 | Nitrogen |
| 40 psi [≈280 kPa] | 0.010 | Nitrogen |

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| | | |
|---|---|---|
| 60 psi [≈410 kPa] | 0.011 | Nitrogen |
| 80 psi [≈550 kPa] | 0.013 | Nitrogen |
| 100 psi [≈690 kPa] | 0.014 | Nitrogen |
| Secondary Pressure Mid-Range Gauge or Absolute | | |
| *Pressure* | *Best Uncertainty (±) in psi*[note 1] | *Remarks* |
| 200 psi [≈1.4 MPa] | 0.137 | Nitrogen |
| 500 psi [≈3.4 MPa] | 0.157 | Nitrogen |
| 1.0 kpsi [≈7.0 MPa] | 0.201 | Nitrogen |
| 1.5 kpsi [≈10 MPa] | 0.247 | Nitrogen |
| 2.0 kpsi [≈14 MPa] | 0.280 | Nitrogen |
| Secondary Pressure High-Range Gauge or Absolute | | |
| 4.0 kspi [≈28 MPa] | 0.6 | Nitrogen |
| 6.0 kspi [≈41 MPa] | 0.8 | Nitrogen |
| 8.0 kspi [≈55 MPa] | 1.0 | Nitrogen |
| 10 kspi [≈70 MPa] | 1.0 | Nitrogen |

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THERMODYNAMICS

*NVLAP Code:* 20/T07
Resistance Thermometry

| *Temperature (°C)* | *Best Uncertainty (±) in m °C[note 1]* | *Material/ Equilibrium State* |
|---|---|---|
| -189.3442 | 0.53 | Ar/Triple Point |
| -38.8344 | 0.30 | Hg/Triple Point |
| 0.01 | 0.16 | $H_2O$/Triple Point |
| 29.7646 | 0.12 | Ga/Melting Point |
| 156.5985 | 2.00 | In/Freezing Point |
| 231.928 | 0.92 | Sn/Freezing Point |
| 419.527 | 1.10 | Zn/Freezing Point |
| 660.323 | 5.0 | Al/Freezing Point |
| 961.78 | 10.0 | Ag/Freezing Point |

Standard Platinum Resistance Thermometer Calibrations

| | | |
|---|---|---|
| -189.3442 | 1.1 | Ar/Triple Point |
| -38.8344 | 0.6 | Hg/Triple Point |
| 0.01 | 0.6 | $H_2O$/Triple Point |

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| | | |
|---|---|---|
| 29.7646 | 0.6 | Ga/Melting Point |
| 156.5985 | 2.6 | In/Freezing Point |
| 231.928 | 1.8 | Sn/Freezing Point |
| 419.527 | 2.0 | Zn/Freezing Point |
| 660.323 | 5.2 | Al/Freezing Point |
| 961.78 | 10.1 | Ag/Freezing Point |

Comparison Calibrations

| *Temperature Range (°C)* | *Best Uncertainty (±) in °C[note 1]* | *Type of Device* |
|---|---|---|
| -80 to 0 | 0.10 | Thermocouples |
| 10 to 150 | 0.10 | Thermocouples |
| 150 to 660 | 0.22 | Thermocouples |
| 660 to 700 | 0.47 | Thermocouples |
| 700 to 1100 | 2.5 | Thermocouples |
| 1100 to 1300 | 2.8 | Thermocouples |
| -80 to 0 | 0.06 | RTD/IPRT/PRT |
| 10 to 150 | 0.09 | RTD/IPRT/PRT |
| 150 to 660 | 0.21 | RTD/IPRT/PRT |

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|---|---|---|---|
| | -80 to 0 | 0.05 | Liquid in Glass |
| | 10 to 150 | 0.06 | Liquid in Glass |
| | -80 to 0 | 0.06 | Thermistors |
| | 10 to 150 | 0.09 | Thermistors |
| | 150 to 250 | 0.21 | Thermistors |

Thermocouple Simulator/Readout Calibration Methods

| *Type* | *ITS-90 Temperature Range (°C)* | *Best Uncertainty (±) in °C[note 1,9]* | *NIST Monograph 175 Reference Table[note 10]* |
|---|---|---|---|
| K | -200 TO 1370 | 0.10 to 0.30 | 7.3.3 |
| J | -200 to 1200 | 0.08 to 0.22 | 6.3.3 |
| E | -240 to 1000 | 0.07 to 0.38 | 5.3.3 |
| T | -240 to 400 | 0.09 to 0.53 | 9.3.3 |
| R | -50 to 1750 | 0.38 to 1.09 | 3.3.3 |
| S | -50 to 1750 | 0.43 to 1.02 | 4.3.3 |
| B | 100 to 1750 | 0.43 to 4.45 | 2.3.3 |
| C | 0 to 2300 | 0.24 to 0.82 | |

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THERMODYNAMICS

*NVLAP Code:* 20/T10
Vacuum

| *Range* | *Best Uncertainty (±) in percent[note 1]* | *Remarks* |
|---|---|---|
| Ionization Gage Reference for direct comparison | | |
| $1.3 \times 10^{-6}$ Pa < reading ≤ $1.3 \times 10^{-5}$ Pa | 4.8 | $N_2$; $10^{-8}$ Torr |
| $1.3 \times 10^{-5}$ Pa < reading ≤ $1.3 \times 10^{-4}$ Pa | 4.7 | $N_2$; $10^{-7}$ Torr |
| $1.3 \times 10^{-4}$ Pa < reading ≤ $1.3 \times 10^{-3}$ Pa | 4.7 - 2.5 | $N_2$; $10^{-6}$ Torr |
| Spinning Rotor Gage Reference for direct comparison | | |
| $1.3 \times 10^{-4}$ Pa < reading ≤ $1.3 \times 10^{-3}$ Pa | 4.3 - 2-1 | $N_2$; $10^{-6}$ Torr |
| $1.3 \times 10^{-3}$ Pa < reading ≤ 1.3 Pa | 2.1 | $N_2$; $10^{-5}$ Torr - $10^{-3}$ Torr |
| 1.3 Pa ≤ reading ≤ 13 Pa | 2.2 | $N_2$; $10^{-3}$ Torr |

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| | | |
|---|---|---|
| Capacitance Diaphragm Gages Reference for direct comparison | | |
| $1.3 \times 10^{-1}$ Pa ≤ reading ≤ 13.3 Pa | 2.1 - 0.7 | $N_2$; 0.1 Torr range |
| 13.3 Pa ≤ reading ≤ 133.3 Pa | 0.7 | $N_2$; 1 Torr range |
| 133.3 Pa ≤ reading ≤ 1.3 kPa | 0.4 | $N_2$; 10 Torr range |
| 1.3 kPa ≤ reading ≤ 13.3 kPa | 0.2 | $N_2$; 100 Torr range |
| 13.3 kPa ≤ reading ≤ 133.3 kPa | 0.6 to 0.1 | $N_2$; 1000 Torr range |
| Secondary Capacitance Diaphragm Gages Reference for direct comparison | | |
| $1.3 \times 10^{-1}$ Pa ≤ reading ≤ 13.3 Pa | 2.2 to 0.9 | $N_2$; 0.1 Torr range |
| 13.3 Pa ≤ reading ≤ 133.3 Pa | 1.1 | $N_2$; 1 Torr range |
| 133.3 Pa ≤ reading ≤ 1.3 kPa | 0.5 | $N_2$; 10 Torr range |
| 1.3 kPa ≤ reading ≤ 13.3 kPa | 0.5 | $N_2$; 100 Torr range |
| 13.3 kPa ≤ reading ≤ 133.3 kPa | 0.59 to 0.11 | $N_2$; 1000 Torr range |

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1. Expanded uncertainty with coverage factor of k=2, unless otherwise specified.
2. Approximate value. Actual value determined by test results.
3. The uncertainty ranges are the lowest and highest uncertainty values within the specified frequency range and quantity range.
4. Uncertainty consists of an appropriate combination of the measurement uncertainty (which includes all significant sources of uncertainty associated with the calibration process) and uncertainties due to use, environment, handling or variation with time over the certification interval.
5. Maximum frequency for BNC is 1000 MHz.
6. ASTM loading range classes (e.g., A, AA) are not used or reported.
7. Calibrations to 30,000 lbf versus load cells can be automated; other calibrations are manual.
8. Uncertainties listed are linearized forms (A'+B'L) of uncertainties calculated as root sum squares of constant and length-dependent terms $\{A^2+(BL)^2\}^{1/2}$. A' and B' are calculated by fitting a straight line through the RSS uncertainty values at the upper and lower limits of range.
9. Uncertainty is dependent on the specific temperature point tested.
10. Referenced tables in NIST Monograph 175 (April, 1993) provide values for emf E output/input of the thermocouple simulator/readout and the Seebeck coefficient S for the specific temperature points within the specified ranges. The best uncertainty (at k=2) of the emf E in $\mu$V is equal to the product of U * S, where U is the best uncertainty (at k=2) of the temperature point tested.

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*For the National Institute of Standards and Technology*

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MINNESOTA METROLOGY LABORATORY
2277 Hwy. 36
St. Paul, MN 55113-3800
Ms. Carol Hockert
Phone: 651-628-6851 Fax: 651-639-4014
E-Mail: carol.hockert@state.mn.us

DIMENSIONAL

*NVLAP Code:* 20/D13
Surveying Rods and Tapes

| *Range in inches* | *Best Uncertainty (±) in inches*[note 1] | *Remarks* |
|---|---|---|
| 1 | 0.0028 | Rigid Rules |
| 2 | 0.0028 | Rigid Rules |
| 3 | 0.0028 | Rigid Rules |
| 4 | 0.0028 | Rigid Rules |
| 5 | 0.0028 | Rigid Rules |
| 6 | 0.0028 | Rigid Rules |
| 7 | 0.0028 | Rigid Rules |
| 8 | 0.0028 | Rigid Rules |
| 9 | 0.0028 | Rigid Rules |
| 10 | 0.0028 | Rigid Rules |
| 11 | 0.0028 | Rigid Rules |

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MINNESOTA METROLOGY LABORATORY

| | | |
|---|---|---|
| 12 | 0.0028 | Rigid Rules |
| 24 | 0.0049 | Rigid Rules |
| 36 | 0.0069 | Rigid Rules |
| 48 | 0.0089 | Rigid Rules |
| 60 | 0.0109 | Rigid Rules |
| 72 | 0.0129 | Rigid Rules |

| *Range in feet* | *Best Uncertainty (±) in inches*[note 1] | *Remarks* |
|---|---|---|
| 1 | 0.0048 | Metal Tapes (Bench Method) |
| 2 | 0.0065 | Metal Tapes (Bench Method) |
| 3 | 0.0079 | Metal Tapes (Bench Method) |
| 4 | 0.0090 | Metal Tapes (Bench Method) |
| 5 | 0.0100 | Metal Tapes (Bench Method) |
| 6 | 0.0110 | Metal Tapes (Bench Method) |
| 7 | 0.0118 | Metal Tapes (Bench Method) |
| 8 | 0.0126 | Metal Tapes (Bench Method) |
| 9 | 0.0134 | Metal Tapes (Bench Method) |
| 10 | 0.0141 | Metal Tapes (Bench Method) |

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MINNESOTA METROLOGY LABORATORY

| | | |
|---|---|---|
| 20 | 0.0200 | Metal Tapes (Bench Method) |
| 30 | 0.0244 | Metal Tapes (Bench Method) |
| 40 | 0.0283 | Metal Tapes (Bench Method) |
| 50 | 0.0317 | Metal Tapes (Bench Method) |
| 60 | 0.0345 | Metal Tapes (Bench Method) |
| 70 | 0.0374 | Metal Tapes (Bench Method) |
| 80 | 0.0400 | Metal Tapes (Bench Method) |
| 90 | 0.0424 | Metal Tapes (Bench Method) |
| 100 | 0.0447 | Metal Tapes (Bench Method) |
| 110 | 0.0469 | Metal Tapes (Bench Method) |
| 120 | 0.0489 | Metal Tapes (Bench Method) |
| 130 | 0.0509 | Metal Tapes (Bench Method) |
| 140 | 0.0529 | Metal Tapes (Bench Method) |
| 150 | 0.0548 | Metal Tapes (Bench Method) |
| 160 | 0.0566 | Metal Tapes (Bench Method) |
| 170 | 0.0584 | Metal Tapes (Bench Method) |
| 180 | 0.0600 | Metal Tape (Bench Method) |
| 190 | 0.0616 | Metal Tape (Bench Method) |

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MINNESOTA METROLOGY LABORATORY

| | | |
|---|---|---|
| 200 | 0.0632 | Metal Tape (Bench Method) |
| *Range in feet* | *Best Uncertainty (±) in feet*[note 1] | *Remarks* |
| 1 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 2 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 3 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 4 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 5 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 6 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 7 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 8 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 9 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 10 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 20 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 30 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 40 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 50 | 0.0054 | Steel Tape (Tape-to-Tape) |
| 60 | 0.0108 | Steel Tape (Tape-to-Tape) |

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MINNESOTA METROLOGY LABORATORY

| | | |
|---|---|---|
| 70 | 0.0108 | Steel Tape (Tape-to-Tape) |
| 80 | 0.0108 | Steel Tape (Tape-to-Tape) |
| 90 | 0.0108 | Steel Tape (Tape-to-Tape) |
| 100 | 0.0108 | Steel Tape (Tape-to-Tape) |
| 110 | 0.0162 | Steel Tape (Tape-to-Tape) |
| 120 | 0.0162 | Steel Tape (Tape-to-Tape) |
| 130 | 0.0162 | Steel Tape (Tape-to-Tape) |
| 140 | 0.0162 | Steel Tape (Tape-to-Tape) |
| 150 | 0.0162 | Steel Tape (Tape-to-Tape) |
| 160 | 0.0215 | Steel Tape (Tape-to-Tape) |
| 170 | 0.0215 | Steel Tape (Tape-to-Tape) |
| 180 | 0.0215 | Steel Tape (Tape-to-Tape) |
| 190 | 0.0215 | Steel Tape (Tape-to-Tape) |
| 200 | 0.0215 | Steel Tape (Tape-to-Tape) |
| 1 | 0.0018 | Pi Tapes (Bench Method) |
| 2 | 0.0031 | Pi Tapes (Bench Method) |
| 3 | 0.0036 | Pi Tapes (Bench Method) |

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MINNESOTA METROLOGY LABORATORY

| | | |
|---|---|---|
| 4 | 0.0037 | Pi Tapes (Bench Method) |
| 5 | 0.0042 | Pi Tapes (Bench Method) |
| 6 | 0.0053 | Pi Tapes (Bench Method) |
| 7 | 0.0044 | Pi Tapes (Bench Method) |
| 8 | 0.0060 | Pi Tapes (Bench Method) |
| 9 | 0.0074 | Pi Tapes (Bench Method) |
| 10 | 0.0066 | Pi Tapes (Bench Method) |

MECHANICAL

*NVLAP Code:* 20/M08
Mass

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 50 kg | 101.4 mg | Accuracy Class I |
| 30 kg | 17.2 mg | Accuracy Class I |
| 20 kg | 11.7 mg | Accuracy Class I |
| 10 kg | 1.7 mg | Accuracy Class I |
| 5 kg | 0.22 mg | Accuracy Class I |
| 3 kg | 0.14 mg | Accuracy Class I |

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MINNESOTA METROLOGY LABORATORY

| | | |
|---|---|---|
| 2 kg | 0.10 mg | Accuracy Class I |
| 1 kg | 0.04 mg | Accuracy Class I |
| 500 g | 0.025 mg | Accuracy Class I |
| 300 g | 0.018 mg | Accuracy Class I |
| 200 g | 0.015 mg | Accuracy Class I |
| 100 g | 0.014 mg | Accuracy Class I |
| 50 g | 0.011 mg | Accuracy Class I |
| 30 g | 0.008 mg | Accuracy Class I |
| 20 g | 0.0064 mg | Accuracy Class I |
| 10 g | 0.0065 mg | Accuracy Class I |
| 5 g | 0.0033 mg | Accuracy Class I |
| 3 g | 0.0021 mg | Accuracy Class I |
| 2 g | 0.0015 mg | Accuracy Class I |
| 1 g | 0.0012 mg | Accuracy Class I |
| 500 mg | 0.0013 mg | Accuracy Class I |
| 300 mg | 0.0011 mg | Accuracy Class I |
| 200 mg | 0.0011 mg | Accuracy Class I |
| 100 mg | 0.0014 mg | Accuracy Class I |

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MINNESOTA METROLOGY LABORATORY

| | | |
|---|---|---|
| 50 mg | 0.0008 mg | Accuracy Class I |
| 30 mg | 0.0006 mg | Accuracy Class I |
| 20 mg | 0.0005 mg | Accuracy Class I |
| 10 mg | 0.0006 mg | Accuracy Class I |
| 5 mg | 0.0003 mg | Accuracy Class I |
| 3 mg | 0.0003 mg | Accuracy Class I |
| 2 mg | 0.0002 mg | Accuracy Class I |
| 1 mg | 0.0003 mg | Accuracy Class I |
| | | |
| 1000 kg | 10.4 g | Accuracy Class II |
| 500 kg | 1.5 g | Accuracy Class II |
| 300 kg | 1.5 g | Accuracy Class II |
| 200 kg | 1.5 g | Accuracy Class II |
| 100 kg | 1.3 g | Accuracy Class II |
| 50 kg | 112.8 mg | Accuracy Class II |
| 30 kg | 34.3 mg | Accuracy Class II |
| 20 kg | 22.3 mg | Accuracy Class II |
| 10 kg | 5.1 mg | Accuracy Class II |

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MINNESOTA METROLOGY LABORATORY

| | | |
|---|---|---|
| 5 kg | 2 64 mg | Accuracy Class II |
| 3 kg | 1.72 mg | Accuracy Class II |
| 2 kg | 1.30 mg | Accuracy Class II |
| 1 kg | 0.503 mg | Accuracy Class II |
| 500 g | 0.253 mg | Accuracy Class II |
| 300 g | 0.153 mg | Accuracy Class II |
| 200 g | 0.110 mg | Accuracy Class II |
| 100 g | 0.057 mg | Accuracy Class II |
| 50 g | 0.035 mg | Accuracy Class II |
| 30 g | 0.029 mg | Accuracy Class II |
| 20 g | 0.013 mg | Accuracy Class II |
| 10 g | 0.012 mg | Accuracy Class II |
| 5 g | 0.0086 mg | Accuracy Class II |
| 3 g | 0.0082 mg | Accuracy Class II |
| 2 g | 0.0081 mg | Accuracy Class II |
| 1 g | 0.0080 mg | Accuracy Class II |
| 500 mg | 0.0018 mg | Accuracy Class II |
| 300 mg | 0.0016 mg | Accuracy Class II |

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MINNESOTA METROLOGY LABORATORY

| | | |
|---|---|---|
| 200 mg | 0.0016 mg | Accuracy Class II |
| 100 mg | 0.0018 mg | Accuracy Class II |
| 50 mg | 0.0014 mg | Accuracy Class II |
| 30 mg | 0.0013 mg | Accuracy Class II |
| 20 mg | 0.0012 mg | Accuracy Class II |
| 10 mg | 0.0013 mg | Accuracy Class II |
| 5 mg | 0.0012 mg | Accuracy Class II |
| 3 mg | 0.0012 mg | Accuracy Class II |
| 2 mg | 0.0012 mg | Accuracy Class II |
| 1 mg | 0.0012 mg | Accuracy Class II |
| | | |
| 1000 kg | 13.6 g | Tolerance Test |
| 500 kg | 8.1 g | Tolerance Test |
| 300 kg | 6.1 g | Tolerance Test |
| 200 kg | 4.8 g | Tolerance Test |
| 100 kg | 1.7 g | Tolerance Test |
| 50 kg | 359.7 mg | Tolerance Test |
| 30 kg | 242.6 mg | Tolerance Test |

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MINNESOTA METROLOGY LABORATORY

| | | |
|---|---|---|
| 20 kg | 68.3 mg | Tolerance Test |
| 10 kg | 46.5 mg | Tolerance Test |
| 5 kg | 7.78 mg | Tolerance Test |
| 3 kg | 5.87 mg | Tolerance Test |
| 2 kg | 4.43 mg | Tolerance Test |
| 1 kg | 2.39 mg | Tolerance Test |
| 500 g | 2.138 mg | Tolerance Test |
| 300 g | 1.674 mg | Tolerance Test |
| 200 g | 0.326 mg | Tolerance Test |
| 100 g | 0.206 mg | Tolerance Test |
| 50 g | 0.122 mg | Tolerance Test |
| 30 g | 0.100 mg | Tolerance Test |
| 20 g | 0.067 mg | Tolerance Test |
| 10 g | 0.056 mg | Tolerance Test |
| 5 g | 0.049 mg | Tolerance Test |
| 3 g | 0.047 mg | Tolerance Test |
| 2 g | 0.045 mg | Tolerance Test |
| 1 g | 0.045 mg | Tolerance Test |

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MINNESOTA METROLOGY LABORATORY

| | | |
|---|---|---|
| 500 mg | 0.022 mg | Tolerance Test |
| 300 mg | 0.022 mg | Tolerance Test |
| 200 mg | 0.022 mg | Tolerance Test |
| 100 mg | 0.020 mg | Tolerance Test |
| 50 mg | 0.019 mg | Tolerance Test |
| 30 mg | 0.018 mg | Tolerance Test |
| 20 mg | 0.015 mg | Tolerance Test |
| 10 mg | 0.014 mg | Tolerance Test |
| 5 mg | 0.014 mg | Tolerance Test |
| 3 mg | 0.014 mg | Tolerance Test |
| 2 mg | 0.012 mg | Tolerance Test |
| 1 mg | 0.012 mg | Tolerance Test |

*NVLAP Code:* 20/M12
Volume

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 10000 ml | 0.6248 ml | Gravimetric Method |
| 1000 ml | 0.0628 ml | Gravimetric Method |
| 100 ml | 0.00617 ml | Gravimetric Method |

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MINNESOTA METROLOGY LABORATORY

| | | |
|---|---|---|
| 10 ml | 0.00063 ml | Gravimetric Method |
| 1 ml | 0.00010 ml | Gravimetric Method |
| 5 gal | 0.484 $in^3$ | Small Volume Volumetric |
| 1500 gal | 40.87 $in^3$ | Large Volume Volumetric |
| 1000 gal | 27.25 $in^3$ | Large Volume Volumetric |
| 500 gal | 13.62 $in^3$ | Large Volume Volumetric |
| 100 gal | 2.72 $in^3$ | Large Volume Volumetric |
| 100 gal | 7.71 $in^3$ | LPG Volumetric |
| 25 gal | 2.68 $in^3$ | LPG Volumetric |

Density in the Range of 2.7 to 9.4 $g/cm^3$

| *Mass Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| 5 kg | 0.00058 $g/cm^3$ | |
| 3 kg | 0.00051 $g/cm^3$ | |
| 2 kg | 0.00039 $g/cm^3$ | |
| 1 kg | 0.00017 $g/cm^3$ | |
| 500 g | 0.00188 $g/cm^3$ | |

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MINNESOTA METROLOGY LABORATORY

| | |
|---|---|
| 300 g | 0.00598 $g/cm^3$ |
| 200 g | 0.00300 $g/cm^3$ |
| 100 g | 0.00220 $g/cm^3$ |
| 50 g | 0.00170 $g/cm^3$ |
| 30 g | 0.00170 $g/cm^3$ |
| 20 g | 0.00163 $g/cm^3$ |
| 10 g | 0.00162 $g/cm^3$ |

THERMODYNAMICS

*NVLAP Code:* 20/T03
Laboratory Thermometers

| *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| Triple Point of Water (TPW) | 0.0303 °C | Liquid-in-glass |
| 10 °C | 0.0731 °C | Liquid-in-glass |
| 20 °C | 0.0731 °C | Liquid-in-glass |
| 30 °C | 0.0731 °C | Liquid-in-glass |
| 40 °C | 0.0731 °C | Liquid-in-glass |
| 50 °C | 0.0731 °C | Liquid-in-glass |
| 60 °C | 0.0731 °C | Liquid-in-glass |

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MINNESOTA METROLOGY LABORATORY

| | | |
|---|---|---|
| 70 °C | 0.0731 °C | Liquid-in-glass |
| 80 °C | 0.0731 °C | Liquid-in-glass |
| 90 °C | 0.0731 °C | Liquid-in-glass |
| 100 °C | 0.0731 °C | Liquid-in-glass |
| 150 °C | 0.0731 °C | Liquid-in-glass |
| 200 °C | 0.0760 °C | Liquid-in-glass |
| 250 °C | 0.0760 °C | Liquid-in-glass |
| 300 °C | 0.0760 °C | Liquid-in-glass |
| 350 °C | 0.0760 °C | Liquid-in-glass |
| 400 °C | 0.0760 °C | Liquid-in-glass |
| 450 °C | 0.0760 °C | Liquid-in-glass |
| 500 °C | 0.0760 °C | Liquid-in-glass |

*NVLAP Code:* 20/T07
Resistance Thermometry

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 0 °C | 0.0089 °C | Thermistors |
| 10 °C | 0.0089 °C | Thermistors |

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MINNESOTA METROLOGY LABORATORY

| | | |
|---|---|---|
| 20 °C | 0.0089 °C | Thermistors |
| 30 °C | 0.0089 °C | Thermistors |
| 40 °C | 0.0089 °C | Thermistors |
| 50 °C | 0.0089 °C | Thermistors |
| 60 °C | 0.0090 °C | Thermistors |
| 70 °C | 0.0093 °C | Thermistors |
| 80 °C | 0.0103 °C | Thermistors |
| 90 °C | 0.0137 °C | Thermistors |
| 100 °C | 0.0226 °C | Thermistors |
| TPW | 0.004 | PRT |
| Tin FP | 0.005 | PRT |
| Zinc FP | 0.007 | PRT |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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STATE OF VIRGINIA METROLOGY LAB
1 North 14th Street, Room 025
Richmond, VA 23219-3691
Mr. Michael J. Kramer
Phone: 804-786-0479 Fax: 804-371-0351
E-Mail: mkramer@vdacs.state.va.us

### DIMENSIONAL

*NVLAP Code:* 20/D13
Survey Rods and Tapes

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 2 to 10 ft | 0.0027 inches | Metal Tapes (Bench Method) |
| 11 to 25 ft | 0.003954 inches | Metal Tapes (Bench Method) |
| 26 to 50 ft | 0.00712 inches | Metal Tapes (Bench Method) |
| 51 to 75 ft | 0.01026 inches | Metal Tapes (Bench Method) |
| 76 to 100 ft | 0.01366 inches | Metal Tapes (Bench Method) |
| 1 to 18 inches | 0.0076 inches | Rigid Rules |

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CALIBRATION LABORATORIES NVLAP LAB CODE 105007-0

STATE OF VIRGINIA METROLOGY LAB

### TIME AND FREQUENCY

*NVLAP Code:* 20/F01
Frequency

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 1000 to 10,000 Hz | 0.02% | Tuning forks at frequencies used in law enforcement |

### MECHANICAL

*NVLAP Code:* 20/M08
Mass

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 30 kg | 219.93 mg | Tolerance Testing |
| 20 kg | 213.34 mg | Tolerance Testing |
| 10 kg | 132.73 mg | Tolerance Testing |
| 5 kg | 24.26 mg | Tolerance Testing |
| 3 kg | 5.93 mg | Tolerance Testing |
| 2 kg | 4.98 mg | Tolerance Testing |
| 1 kg | 0.146 mg | Double Substitution |

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*For the National Institute of Standards and Technology*

NVLAP-02S (11-95)



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ISD 9002:1987

### Scope of Accreditation



CALIBRATION LABORATORIES — NVLAP LAB CODE 105007-0

STATE OF VIRGINIA METROLOGY LAB

| | | |
|---|---|---|
| 500 g | 0.357 mg | Double Substitution |
| 300 g | 0.355 mg | Double Substitution |
| 200 g | 0.349 mg | Double Substitution |
| 100 g | 0.059 mg | Double Substitution |
| 50 g | 0.052 mg | Double Substitution |
| 30 g | 0.049 mg | Double Substitution |
| 20 g | 0.047 mg | Double Substitution |
| 10 g | 0.014 mg | Double Substitution |
| 5 g | 0.010 mg | Double Substitution |
| 3 g | 0.020 mg | Double Substitution |
| 2 g | 0.008 mg | Double Substitution |
| 1 g | 0.022 mg | Double Substitution |
| 500 mg | 0.012 mg | Double Substitution |
| 300 mg | 0.008 mg | Double Substitution |
| 200 mg | 0.007 mg | Double Substitution |
| 100 mg | 0.007 mg | Double Substitution |
| 50 mg | 0.006 mg | Double Substitution |
| 30 mg | 0.006 mg | Double Substitution |

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STATE OF VIRGINIA METROLOGY LAB

| | | |
|---|---|---|
| 20 mg | 0.006 mg | Double Substitution |
| 10 mg | 0.003 mg | Double Substitution |
| 5 mg | 0.003 mg | Double Substitution |
| 3 mg | 0.003 mg | Double Substitution |
| 2 mg | 0.003 mg | Double Substitution |
| 1 mg | 0.003 mg | Double Substitution |
| 6000 lbs | 0.039 lbs | Tolerance Testing |
| 5000 lbs | 0.036 lbs | Tolerance Testing |
| 4000 lbs | 0.034 lbs | Tolerance Testing |
| 3000 lbs | 0.032 lbs | Tolerance Testing |
| 2000 lbs | 0.029 lbs | Tolerance Testing |
| 1000 lbs | 0.010 lbs | Tolerance Testing |
| 500 lbs | 0.005 lbs | Tolerance Testing |
| 50 lbs | 215.21 mg | Tolerance Testing |
| 30 lbs | 136.55 mg | Tolerance Testing |
| 20 lbs | 135.22 mg | Tolerance Testing |
| 10 lbs | 22.28 mg | Tolerance Testing |

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CALIBRATION LABORATORIES — NVLAP LAB CODE 105007-0

STATE OF VIRGINIA METROLOGY LAB

| | | |
|---|---|---|
| 5 lbs | 10.07 mg | Tolerance Testing |
| 3 lbs | 5.53 mg | Tolerance Testing |
| 2 lbs | 5.11 mg | Tolerance Testing |
| 1* lbs | 0.90 mg | Tolerance Testing |
| 1** lbs | 0.90 mg | Tolerance Testing |
| 0.5 lbs | 0.65 mg | Tolerance Testing |
| 0.3 lbs | 0.54 mg | Tolerance Testing |
| 0.2 lbs | 0.50 mg | Tolerance Testing |
| 0.1 lbs | 0.17 mg | Tolerance Testing |
| 0.05 lbs | 0.17 mg | Tolerance Testing |
| 0.03 lbs | 0.16 mg | Tolerance Testing |
| 0.02 lbs | 0.15 mg | Tolerance Testing |
| 0.01 lbs | 0.05 mg | Tolerance Testing |
| 0.005 lbs | 0.04 mg | Tolerance Testing |
| 0.003 lbs | 0.04 mg | Tolerance Testing |
| 0.002 lbs | 0.04 mg | Tolerance Testing |
| 0.001 lbs | 0.04 mg | Tolerance Testing |

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CALIBRATION LABORATORIES — NVLAP LAB CODE 105007-0

STATE OF VIRGINIA METROLOGY LAB

MECHANICAL

*NVLAP Code:* 20/M12
Volume and Density

| *Range* | *Best Uncertainty (±)[note 1]* | *Remarks* |
|---|---|---|
| 1.0 fluid ounce | 0.40 minim | Volume Transfer |
| 1.0 gill | 0.82 minim | Volume Transfer |
| 0.5 pint | 3.89 minim | Volume Transfer |
| 1.0 pint | 4.92 minim | Volume Transfer |
| 1.0 quart | 4.48 minim | Volume Transfer |
| 0.5 gallon | 5.2 minim | Volume Transfer |
| 1.0 gallon | 16.74 minim | Volume Transfer |
| 10 mL | 0.036 mL | Volume Transfer |
| 50 mL | 0.041 mL | Volume Transfer |
| 100 mL | 0.055 mL | Volume Transfer |
| 200 mL | 0.053 mL | Volume Transfer |
| 500 mL | 0.241 mL | Volume Transfer |
| 1 Liter | 0.41 mL | Volume Transfer |

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STATE OF VIRGINIA METROLOGY LAB

| | | |
|---|---|---|
| 2 Liter | 0.32 mL | Volume Transfer |
| 5 Liter | 0.59 mL | Volume Transfer |
| 5 gallons | 0.262 $in^3$ | Volume Transfer |
| 50 gallons | 9.64 $in^3$ | Volume Transfer |
| 100 gallons | 14.26 $in^3$ | Volume Transfer |
| 200 gallons | 26.22 $in^3$ | Volume Transfer |
| 500 gallons | 55.60 $in^3$ | Volume Transfer |
| 1000 gallons | 94.04 $in^3$ | Volume Transfer |
| 1500 gallons | 134.8 $in^3$ | Volume Transfer |
| 2000 gallons | 172.82 $in^3$ | Volume Transfer |

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STATE OF VIRGINIA METROLOGY LAB

THERMODYNAMICS

*NVLAP Code:* 20/T03
Laboratory Thermometers

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| -8 to 32 °C | 0.122 °C | Liquid in Glass |
| 33 to 55 °C | 0.122 °C | Liquid in Glass |
| 56 to 80 °C | 0.163 °C | Liquid in Glass |
| 81 to 105 °C | 0.097 °C | Liquid in Glass |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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**CALIBRATION LABORATORIES** — **NVLAP LAB CODE 105013-0**

**HENRY TROEMNER, LLC**
201 Wolf Drive
P.O. Box 87
Thorofare, NJ 08086-0087
Mr. Wilbert D. Abele
Phone: 856-686-1600 Fax: 856-686-1601
E-Mail: troemner@troemner.com
URL: http://www.troemner.com

**MECHANICAL**

*NVLAP Code:* 20/M08
Mass

| *Range* | *Best Uncertainty (±)*[note 1,2] | *Remarks* |
|---|---|---|
| 30 kg | 10.0 mg | Class I |
| 20 kg | 4.0 mg | Class I |
| 10 kg | 1.0 mg | Class I |
| 5 kg | 0.5 mg | Class I |
| 3 kg | 0.3 mg | Class I |
| 2 kg | 0.2 mg | Class I |
| 1 kg | 0.10 mg | Class I |
| 500 g | 0.05 mg | Class I |
| 300 g | 0.04 mg | Class I |
| 200 g | 0.033 mg | Class I |

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**CALIBRATION LABORATORIES** — **NVLAP LAB CODE 105013-0**

**HENRY TROEMNER, LLC**

| | | |
|---|---|---|
| 100 g | 0.017 mg | Class I |
| 50 g | 0.010 mg | Class I |
| 30 g | 0.006 mg | Class I |
| 20 g | 0.005 mg | Class I |
| 10 g | 0.004 mg | Class I |
| 5 g | 0.002 mg | Class I |
| 3 g | 0.002 mg | Class I |
| 2 g | 0.0015 mg | Class I |
| 1 g | 0.0015 mg | Class I |
| 500 mg | 0.0006 mg | Class I |
| 300 mg | 0.0006 mg | Class I |
| 200 mg | 0.0006 mg | Class I |
| 100 mg | 0.0006 mg | Class I |
| 50 mg | 0.0006 mg | Class I |
| 30 mg | 0.0006 mg | Class I |
| 20 mg | 0.0006 mg | Class I |
| 10 mg | 0.0006 mg | Class I |
| 5 mg | 0.0006 mg | Class I |

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HENRY TROEMNER, LLC

| | | |
|---|---|---|
| 3 mg | 0.0006 mg | Class I |
| 2 mg | 0.0006 mg | Class I |
| 1 mg | 0.0006 mg | Class I |
| 1000 kg | 10.34 g | Class III |
| 500 kg | 5.03 g | Class III |
| 200 kg | 3.26 g | Class III |
| 100 kg | 1.64 g | Class III |
| 50 kg | 0.087 g | Class III |
| 30 kg | 0.072 g | Class III |
| 25 kg | 0.066 g | Class III |
| 20 kg | 0.057 g | Class III |
| 10 kg | 0.024 g | Class III |
| 5 kg | 18.30 mg | Class III |
| 3 kg | 16.77 mg | Class III |
| 2 kg | 11.52 mg | Class III |
| 1 kg | 10.09 mg | Class III |
| 500 g | 10.02 mg | Class III |
| 300 g | 10.01 mg | Class III |

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HENRY TROEMNER, LLC

| | | |
|---|---|---|
| 3000 lb | 16.791 g | Class III |
| 2500 lb | 13.551 g | Class III |
| 2000 lb | 10.312 g | Class III |
| 1000 lb | 5.178 g | Class III |
| 500 lb | 3.841 g | Class III |
| 100 lb | 0.088 g | Class III |
| 50 lb | 0.054 g | Class III |
| 30 lb | 0.046 g | Class III |
| 25 lb | 0.035 g | Class III |
| 20 lb | 0.029 g | Class III |
| 10 lb | 0.018 g | Class III |
| 5 lb | 10.572 mg | Class III |
| 3 lb | 10.127 mg | Class III |
| 2 lb | 10.093 mg | Class III |
| 1 lb | 10.019 mg | Class III |
| 0.5 lb | 10.005 mg | Class III |

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HENRY TROEMNER, LLC

*NVLAP Code:* 20/M12
Volume - Pipettes

| *Test Volume in µl*[note 4] | *Best Uncertainty (±)in µl*[note 1,3] | *Remarks* |
|---|---|---|
| 0.2 | 0.0477 | |
| 0.5 | 0.0422 | |
| 1.0 | 0.0469 | |
| 2.5 | 0.0860 | |
| 5.0 | 0.0983 | |
| 10 | 0.32 | |
| 50 | 0.52 | |
| 100 | 0.45 | |
| 500 | 0.90 | |
| 1000 | 2.18 | |
| 2500 | 18.75 | |

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HENRY TROEMNER, LLC

Density in the Range of 2.69 to 8.5 g/cm³

| *Mass Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 5 kg | 0.0056 g/cm³ | |
| 3 kg | 0.0041 g/cm³ | |
| 2 kg | 0.0034 g/cm³ | |
| 1 kg | 0.0014 g/cm³ | |
| 500 g | 0.0064 g/cm³ | |
| 300 g | 0.0075 g/cm³ | |
| 200 g | 0.0053 g/cm³ | |
| 100 g | 0.0031 g/cm³ | |
| 50 g | 0.0030 g/cm³ | |
| 30 g | 0.0067 g/cm³ | |
| 20 g | 0.0029 g/cm³ | |
| 10 g | 0.0065 g/cm³ | |
| 5 g | 0.0170 g/cm³ | |
| 3 g | 0.0148 g/cm³ | |
| 2 g | 0.0127 g/cm³ | |
| 1 g | 0.0156 g/cm³ | |

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HENRY TROEMNER, LLC

1. Represents expanded uncertainty using a coverage factor, k = 2.
2. Approximate value. Actual value determined by the test statistics.
3. Uncertainties at specified test volumes may be greater depending on the range of the unit under test.
4. It is recommended that adjustable volume pipettes not be used below 10% of capacity.

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CALIBRATION LABORATORIES — NVLAP LAB CODE 105014-0

SOUTHERN CALIFORNIA EDISON COMPANY
7300 Fenwick Lane
Westminster, CA 92683
Mr. Jack Burdick
Phone: 714-895-0422 Fax: 714-895-0686
E-Mail: burdiejj@sce.com

DIMENSIONAL

*NVLAP Code:* 20/D03
Gage Blocks

| *Range* | *Best Uncertainty (±)* note 1 & 2 | *Remarks* |
|---|---|---|
| thru 1 in | 3.0 μin | Direct Comparison |
| >1.0 thru 6.0 in | 3.0 μin + 1 μin/in | Direct Comparison |
| 7.0 in | 7.0 μin | Direct Comparison |
| 8.0 in | 7.0 μin | Direct Comparison |
| 10.0 in | 7.0 μin | Direct Comparison |
| 12.0 in | 7.0 μin | Direct Comparison |
| 16.0 in | 10.0 μin | Direct Comparison |
| 20.0 in | 10.0 μin | Direct Comparison |

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CALIBRATION LABORATORIES

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SOUTHERN CALIFORNIA EDISON COMPANY

MECHANICAL

*NVLAP Code:* 20/M08
Mass

| *Range* | *Best Uncertainty (±)* note 1 & 2 |
|---|---|
| 30 kg | 53.4 mg |
| 20 kg | 28.7 mg |
| 10 kg | 4.4 mg |
| 5 kg | 1.6 mg |
| 2 kg | 1 6 mg |
| 1 kg | 0.145 mg |
| 500 g | 0.086 mg |
| 200 g | 0.046 mg |
| 100 g | 0.032 mg |
| 50 g | 0.0202 mg |
| 20 g | 0.0095 mg |
| 10 g | 0.0092 mg |
| 5 g | 0.0048 mg |
| 2 g | 0.0030 mg |

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SOUTHERN CALIFORNIA EDISON COMPANY

| | |
|---|---|
| 1 g | 0.0023 mg |
| 500 mg | 0.0015 mg |
| 200 mg | 0.0019 mg |
| 100 mg | 0.0006 mg |
| 50 mg | 0.0017 mg |
| 20 mg | 0.0019 mg |
| 10 mg | 0.0006 mg |
| 5 mg | 0.0006 mg |
| 2 mg | 0.0009 mg |
| 1 mg | 0.0005 mg |

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SOUTHERN CALIFORNIA EDISON COMPANY

ELECTROMAGNETICS - DC/LOW FREQUENCY

*NVLAP Code:* 20/E05
DC Resistance

| *Nominal Value in Ohms* | *Best Uncertainty (±) in ppm* note 1 | *Remarks* |
|---|---|---|
| 1 | 0.10 | |
| 10 | 0.35 | |
| 25 | 0.40 | |
| 100 | 0.40 | |
| 1 k | 0.45 | |
| 10 k | 0.50 | |
| 100 k | 1.3 | |
| 1 M | 2.0 | |
| 10 M | 2.5 | |

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SOUTHERN CALIFORNIA EDISON COMPANY

ELECTROMAGNETICS - DC/LOW FREQUENCY

NVLAP Code: 20/E06
DC Voltage

| *Range* | *Best Uncertainty (±)* note 1 & 2 | *Remarks* |
|---|---|---|
| 1.018 V | 0.35 ppm | Reference Cells |
| 10.00 V | 0.28 ppm | |
| 1.000 V | 0.33 ppm | |
| 100 mV | 2.6 ppm | Meters and Multifunction Calibrators |
| 1.0 V | 1.1 ppm | |
| 10.0 V | 1.0 ppm | |
| 100.0 V | 1.1 ppm | |
| 1000.0 V | 1.2 ppm | |

1. Represents an expanded uncertainty using a coverage factor, k=2.
2. Approximate value. Actual value determined by the test statistics.

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CALIBRATION LABORATORIES — NVLAP LAB CODE 105016-0

**FLUKE CORPORATION PRIMARY STANDARDS LABORATORY**

6920 Seaway Boulevard, M/S 169G
P.O. Box 9090
Everett, WA 98206-9090
Mr. David Deaver
Phone: 425-356-6434 Fax: 425-356-5649
E-Mail: david.deaver@fluke.com
URL: http://www.fluke.com/service/acc_usa.asp

**ELECTROMAGNETICS - DC/LOW FREQUENCY**

*NVLAP Code:* 20/E01
AC/DC Difference for Low Frequency Voltage

*Best Uncertainty (±) in ppm[note 1]*
*Frequency in Hertz*

| *Range* | *Level* | *10* | *20* | *40* | *100* | *1k* | *10k* | *20k* | *50k* | *100k* | *300k* | *500k* | *800k* | *1M* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 22 mV | 2 mV | 320 | 890 | 610 | 900 | 320 | 760 | 1050 | 330 | 1110 | 1230 | 2020 | 2520 | 2900 |
| 22 mV | 6 mV | 220 | 260 | 130 | 120 | 190 | 150 | 130 | 310 | 510 | 700 | 900 | 330 | 370 |
| 22 mV | 10 mV | 90 | 220 | 70 | 160 | 230 | 110 | 120 | 190 | 330 | 220 | 630 | 350 | 380 |
| 22 mV | 20 mV | 80 | 65 | 60 | 60 | 60 | 60 | 60 | 160 | 260 | 350 | 500 | 330 | 360 |
| 220 mV | 20 mV | 110 | 110 | 76 | 67 | 60 | 60 | 66 | 140 | 240 | 280 | 400 | 450 | 580 |
| 220 mV | 60 mV | 75 | 80 | 57 | 45 | 32 | 33 | 38 | 60 | 120 | 230 | 280 | 330 | 370 |
| 220 mV | 100 mV | 35 | 70 | 17 | 41 | 32 | 18 | 22 | 40 | 70 | 140 | 150 | 210 | 190 |

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CALIBRATION LABORATORIES — NVLAP LAB CODE 105016-0

FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

| | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 220 mV | 200 mV | 35 | 25 | 17 | 17 | 17 | 17 | 17 | 28 | 60 | 100 | 110 | 190 | 190 |
| 700 mV | 200 mV | 35 | 55 | 23 | 30 | 27 | 17 | 23 | 23 | 60 | 110 | 140 | 210 | 190 |
| 700 mV | 600 mV | 20 | 68 | 17 | 7 | 16 | 6 | 7 | 10 | 10 | 80 | 80 | 80 | 80 |
| 2.2 V | 0.6 V | 20 | 43 | 24 | 10 | 8 | 10 | 9 | 18 | 10 | 100 | 100 | 100 | 80 |
| 2.2 V | 1 V | 120 | 35 | 14 | 8 | 11 | 11 | 6 | 25 | 10 | 80 | 100 | 100 | 80 |
| 2.2 V | 2 V | 20 | 16 | 21 | 7 | 6 | 6 | 6 | 16 | 10 | 95 | 100 | 80 | 80 |
| 7 V | 2 V | 25 | 37 | 26 | 18 | 14 | 14 | 14 | 26 | 12 | 100 | 110 | 100 | 100 |
| 7 V | 3 V | 85 | 36 | 25 | 17 | 15 | 15 | 16 | 40 | 43 | 95 | 100 | 100 | 100 |
| 7 V | 6 V | 25 | 17 | 15 | 8 | 6 | 7 | 7 | 22 | 15 | 100 | 100 | 80 | 80 |
| 22 V | 6 V | 115 | 35 | 27 | 8 | 9 | 18 | 15 | 25 | 15 | 80 | 80 | 130 | 130 |
| 22 V | 10 V | 20 | 42 | 13 | 8 | 7 | 7 | 8 | 10 | 15 | 80 | 100 | 100 | 100 |
| 22 V | 20 V | 20 | 20 | 16 | 8 | 7 | 7 | 7 | 10 | 15 | 100 | 110 | 80 | 80 |
| 70 V | 20 V | 30 | 41 | 24 | 19 | 12 | 10 | 16 | 35 | 50 | 130 | | | |
| 70 V | 30 V | 80 | 36 | 24 | 18 | 19 | 17 | 22 | 40 | 56 | 100 | | | |
| 70 V | 60 V | 25 | 20 | 17 | 10 | 10 | 13 | 10 | 40 | 20 | 80 | | | |
| 220 V | 60 V | 120 | 40 | 19 | 17 | 17 | 18 | 30 | 40 | 50 | 120 | | | |
| 220 V | 100 V | 140 | 45 | 19 | 12 | 10 | 10 | 10 | 40 | 20 | | | | |
| 220 V | 200 V | 25 | 25 | 15 | 14 | 11 | 11 | 11 | 40 | 25 | | | | |

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| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1000 V | 200 V | 160 | 45 | 37 | 18 | 15 | 18 | 20 | 20 | 35 |
| 1000 V | 600 V | 180 | 55 | 30 | 20 | 15 | 15 | 15 | 23 | 45 |
| 1000 V | 1000 V | 55 | 25 | 20 | 19 | 18 | 18 | 19 | 26 | 50 |

*NVLAP Code:* 20/E01
AC/DC Difference for High Frequency Thermal Converters

*Best Uncertainty (±) in Percent[note 1]*
*Frequeucy in Hertz*

| *Range* | *2 M* | *10 M* | *20 M* | *30 M* | *50 M* | *100 M* |
|---|---|---|---|---|---|---|
| 0.5 V | | 0.1 | 0.2 | 0.2 | 0.5 | 1.0 |
| 1 V | | 0.1 | 0.2 | 0.2 | 0.5 | 1.0 |
| 2 V | | 0.08 | 0.16 | 0.16 | 0.4 | 0.8 |
| 3 V | 0.08 | 0.1 | 0.16 | 0.2 | 0.5 | 1.0 |
| 5 V | | 0.1 | 0.2 | 0.2 | 0.5 | 1.0 |
| 10 V | | 0.1 | 0.2 | 0.2 | 0.5 | 1.0 |
| 20 V | | 0.1 | 0.15 | 0.2 | 0.5 | 1.0 |
| 30 V | | 0.08 | 0.16 | 0.16 | 0.4 | 0.8 |
| 50 V | | 0.08 | 0.16 | 0.16 | 0.4 | 0.8 |

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*NVLAP Code:* 20/E01
AC/DC Difference for Low Frequency Thermal Current Converters and Shunts

*Best Uncertainty (±) in ppm[note 1]*
*Frequency in Hertz*

| *Range* | *10* | *20* | *40* | *400* | *1 k* | *5 k* | *10 k* | *20 k* | *50 k* | *100 k* |
|---|---|---|---|---|---|---|---|---|---|---|
| 10 mA | 200 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 120 | 200 |
| 20 mA | 200 | 80 | 50 | 80 | 50 | 80 | 80 | 80 | 120 | 200 |
| 30 mA | 200 | | 80 | 80 | 80 | 80 | 80 | 80 | 120 | 200 |
| 50 mA | | | | 80 | | | | 80 | 120 | 200 |
| 0.1 A | 200 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 120 | 200 |
| 0.2 A | 200 | 80 | 50 | 80 | 50 | 80 | 80 | 80 | 120 | 200 |
| 0.3 A | 200 | | 80 | 80 | 80 | 80 | 80 | 80 | 120 | 200 |
| 0.5 A | | | | 80 | | | | 80 | 120 | 200 |
| 1.0 A | 200 | | 80 | 80 | 80 | 80 | 80 | 80 | 120 | 200 |
| 2.0 A | 200 | 80 | 80 | 80 | 80 | 80 | 80 | 80 | 120 | 200 |
| 3.0 A | 200 | | 80 | 80 | 80 | 80 | 80 | 80 | 120 | 200 |
| 5.0 A | | | | 80 | | | | 80 | 120 | 200 |
| 10.0 A | 200 | 140 | 80 | 80 | 80 | 110 | 110 | 120 | 200 | |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 20.0 A | | 110 | | | 110 | 200 | |

*NVLAP Code:* 20/E02
AC Current

For Calibrators or DMMs

*Best Uncertainty (±) in ppm[note 1]*
*Frequency in Hertz*

| *Current* | *10* | *20* | *40* | *400* | *1 k* | *5 k* | *10 k* |
|---|---|---|---|---|---|---|---|
| 19 μA | 250 | 200 | 200 | 200 | 200 | 250 | 250 |
| 100 μA | 160 | 90 | 70 | 70 | 70 | 150 | 200 |
| 190 μA | 150 | 85 | 57 | 60 | 55 | 150 | 200 |
| 1 mA | 150 | 80 | 50 | 50 | 50 | 80 | 100 |
| 1.9 mA | 150 | 80 | 50 | 50 | 41 | 70 | 90 |
| 10 mA | 260 | 90 | 85 | 85 | 85 | 85 | 100 |
| 19 mA | 260 | 85 | 51 | 85 | 51 | 85 | 100 |
| 100 mA | 260 | 90 | 85 | 85 | 85 | 85 | 100 |
| 190 mA | 260 | 85 | 51 | 85 | 51 | 85 | 100 |
| 1.0 A | | | 85 | 85 | 85 | 100 | 150 |

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| | | | | | | |
|---|---|---|---|---|---|---|
| 1.9 A | 85 | 85 | 85 | 100 | 150 | |
| 10 A | 85 | 115 | 85 | 120 | 150 | |

*NVLAP Code:* 20/E02
AC Current

AC/DC Difference of Y5020 Shunt

*Best Uncertainty (±) in ppm[note 1]*
*Frequency in Hertz*

| *Current* | *50* | *100* | *300* | *1 k* | *3 k* | *4 k* | *5 k* |
|---|---|---|---|---|---|---|---|
| 10 A | 70 | 70 | 70 | 70 | 150 | 150 | 150 |

*NVLAP Code:* 20/E02
AC Current

5500A Console

*Best Uncertainty (±) in ppm[note 1]*
*Frequency in Hertz*

| *Range* | *10* | *45* | *65* | *500* | *1 k* | *5 k* | *10k* |
|---|---|---|---|---|---|---|---|
| 33 μA | | | | | 180 | | 600 |

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| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 190 μA | | 70 | | | 80 | | 470 |
| 329 μA | 80 | 60 | | | 80 | 150 | 330 |
| 330 μA | | | | | 160 | 180 | |
| 1.9 mA | | | | | 60 | | 100 |
| 3.29 mA | 80 | 60 | | | 60 | 80 | 90 |
| 3.3 mA | | | | | 140 | 150 | |
| 19 mA | | | | | 60 | | 90 |
| 32.9 mA | 130 | 65 | | | 65 | 80 | 90 |
| 33 mA | | | | | 85 | 90 | |
| 190 mA | | | | | 60 | | 90 |
| 329 mA | 130 | 65 | | | 65 | 80 | 90 |
| 330 mA | | | | | 85 | 100 | |
| 2.19 A | 130 | 70 | | | 70 | 100 | |
| 2.2 A | | | | 100 | 100 | | |
| 11 A | | 80 | 80 | 80 | 80 | | |

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*NVLAP Code:* 20/E02
AC Current

At Factory Annex - Multifunction Calibrators Similar to Fluke 5720A

***Best Uncertainty (±) in ppm[note 1]***
***Frequency in Hertz***

| *Range* | *40* | *1 k* | *10 k* |
|---|---|---|---|
| 19 μA | | 210 | 1050 |
| 190 μA | 53 | 53 | 260 |
| 1.9 mA | | 46 | 260 |
| 19 mA | | 53 | 260 |
| 190 mA | 43 | 53 | 260 |
| 1.9 A | 90 | 90 | 1000 |

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*NVLAP Code:* 20/E02
AC Current

At Factory Annex - Multiproduct Calibrators Similar to Fluke 5500A

*Best Uncertainty (±) in ppm[note 1]*
*Frequency in Hertz*

| *Range* | *10* | *45* | *65* | *500* | *1 k* | *5 k* | *10k* |
|---|---|---|---|---|---|---|---|
| 33 μA | | | | | 1400 | | 2200 |
| 190 μA | | 270 | | | 360 | | 1600 |
| 329 μA | 380 | 220 | | | 270 | 560 | 1600 |
| 330 μA | | | | | 270 | 390 | |
| 1.9 mA | | | | | 170 | | 750 |
| 3.29 mA | 320 | 140 | | | 140 | 260 | 730 |
| 3.3 mA | | | | | 260 | 390 | |
| 19 mA | | | | | 150 | | 750 |
| 32.9 mA | 350 | 140 | | | 140 | 260 | 740 |
| 33 mA | | | | | 260 | 390 | |

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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 190 mA | | | | | | 170 | | 750 |
| 329 mA | 350 | 140 | | | | 140 | 250 | 740 |
| 330 mA | | | | | | 270 | 1300 | |
| 2.19 A | 410 | 150 | | | | 210 | 1200 | |
| 2.2 A | | | | | 300 | 550 | | |
| 11 A | 110 | | | 120 | 160 | 430 | | |

*NVLAP Code:* 20/E02
AC Current

5520A Console

*Best Uncertainty (±) in ppm[note 1]*
*Frequency in Hertz*

| *Range* | *10* | *45* | *65* | *500* | *1 k* | *5 k* | *10 k* | *30 k* |
|---|---|---|---|---|---|---|---|---|
| 33 μA | | | | | 130 | | 220 | 400 |
| 190 μA | | 60 | | | 60 | | 160 | 350 |
| 329 μA | 80 | 60 | | | 60 | 100 | 120 | 250 |
| 330 μA | | | | | 90 | 150 | | 300 |
| 1.9 mA | | | | | 50 | | 85 | 140 |

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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 3.29 mA | 70 | 55 | | | 55 | 75 | 85 | 140 |
| 3.3 mA | | | | | 70 | 100 | | 150 |
| 19 mA | | | | | 55 | | 70 | 150 |
| 32.9 mA | 115 | 62 | | | 62 | 65 | 70 | 150 |
| 33 mA | | | | | 85 | 90 | | 175 |
| 190 mA | | | | | 55 | | 70 | 150 |
| 329 mA | 125 | 62 | | | 62 | 65 | 70 | 150 |
| 330 mA | | | | | 90 | 100 | 150 | |
| 1.09 A | 125 | 73 | | | 73 | 150 | 500 | |
| 2.99 A | 125 | 72 | | | 72 | 150 | 500 | |
| 3.3 A | | | | 150 | 150 | 1100 | | |
| 11 A | | 80 | 80 | 80 | 80 | 200 | | |
| 20 A | | 100 | 100 | 100 | 130 | 200 | | |

AC Current Factory Annex 5520A Test Console

| | *Frequency in Hertz* | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| *Range* | *10* | *45* | *65* | *500* | *1 k* | *5 k* | *10 k* | *30 k* |
| 33 μA | | | | | 300 | | 700 | 1300 |

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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 190 μA | | 200 | | | 200 | | 600 | 800 |
| 329 μA | 200 | 140 | | | 140 | 200 | 400 | 700 |
| 330 μA | | | | | 180 | 300 | | 600 |
| 1.9 mA | | | | | 180 | | 300 | 300 |
| 3.29 mA | 200 | 140 | | | 140 | 200 | 200 | 300 |
| 3.3 mA | | | | | 180 | 200 | | 400 |
| 19 mA | | | | | 150 | | 200 | 300 |
| 32.9 mA | 200 | 130 | | | 130 | 140 | 140 | 200 |
| 33 mA | | | | | 200 | 200 | | 300 |
| 190 mA | | | | | 160 | | 200 | 300 |
| 329 mA | 200 | 140 | | | 140 | 140 | 140 | 300 |
| 330 mA | | | | | 180 | 500 | 1400 | |
| 1.09 A | 140 | 100 | | | 100 | 200 | 1000 | |
| 2.99 A | 140 | 100 | | | 100 | 220 | 900 | |
| 3.3 A | | | | 200 | 140 | 2700 | | |
| 11 A | | 140 | 140 | 140 | 140 | 800 | | |
| 20 A | | 140 | 140 | 140 | 200 | 800 | | |

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

*NVLAP Code:* 20/E02
AC Current

5725A Console

| *Range(±)* | *Frequency* | *Best Uncertainty (±) in ppm[note 1]* |
|---|---|---|
| 2.5 A | 100 Hz | 140 |
| 2.5 A | 1 kHz | 95 |
| 2.5 A | 5 kHz | 150 |
| 2.5 A | 10 kHz | 150 |
| 11 A | 100 Hz | 40 |
| 11 A | 1 kHz | 95 |
| 11 A | 5 kHz | 150 |
| 11 A | 10 kHz | 150 |

Factory Annex, 5725A Console

| | | |
|---|---|---|
| 2.5 A | 100 Hz | 150 |
| 2.5 A | 1 kHz | 140 |
| 2.5 A | 5 kHz | 270 |
| 2.5 A | 10 kHz | 400 |

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

| | | |
|---|---|---|
| 11 A | 100 Hz | 150 |
| 11 A | 1 kHz | 140 |
| 11 A | 5 kHz | 270 |
| 11 A | 10 kHz | 400 |

*NVLAP Code:* 20/E05
DC Resistance

| *Range in ohms* | *Best Uncertainty (±) in ppm[note 1]* | *Remarks* |
|---|---|---|
| 0.01 to <0.1 | 10 | Guildline Bridge |
| 0.1 to <1 | .5 | Guildline Bridge |
| 1 to <11 | 0.3 | Guildline Bridge |
| 11 to <110 | 0.35 | Guildline Bridge |
| 110 to <190 | 0.45 | Guildline Bridge |
| 190 to <11 k | 0.4 | Guildline Bridge |
| 11 k to <19 k | 0.45 | Guildline Bridge |
| 19 k to <110 k | 0.4 | Guildline Bridge |
| 110 k to <1.1 M | 1.2 | Guildline Bridge |
| 1 | 0 5 | Low Ohm System |

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| | | |
|---|---|---|
| 10 | 0.6 | Low Ohm System |
| 100 | 0.75 | Low Ohm System |
| 1 k | 0.6 | Low Ohm System |
| 10 k | 0.75 | Low Ohm System |

*NVLAP Code:* 20/E05
DC Resistance

| *Range in ohms* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 1 | 12 | 5700A Console |
| 1.9 | 10 | 5700A Console |
| 10 | 5 | 5700A Console |
| 19 | 4 | 5700A Console |
| 100 | 3 | 5700A Console |
| 190 | 2 | 5700A Console |
| 1 k | 2 | 5700A Console |
| 1.9 k | 2 | 5700A Console |
| 10 k | 0.5 | 5700A Console |
| 19 k | 1 | 5700A Console |

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| | | |
|---|---|---|
| 100 k | 2 | 5700A Console |
| 190 k | 2.5 | 5700A Console |
| 1 M | 3 | 5700A Console |
| 1.9 M | 3.5 | 5700A Console |
| 3 M | 4 | 5700A Console |
| 10 M | 4.5 | 5700A Console |
| 19 M | 6 | 5700A Console |
| 30 M | 15 | 5700A Console |
| 100 M | 25 | 5700A Console |
| 300 M | 60 | 5700A Console |

*NVLAP Code:* 20/E05
DC Resistance

| *Range in ohms* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 0 | 100 | 5500A Console |
| 2.0 | 55 | 5500A Console |
| 10.9 | 25 | 5500A Console |
| 11.9 | 25 | 5500A Console |

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| | | |
|---|---|---|
| 19 | 70 | 5500A Console |
| 30 | 70 | 5500A Console |
| 33 | 40 | 5500A Console |
| 109 | 21 | 5500A Console |
| 119 | 17 | 5500A Console |
| 190 | 13 | 5500A Console |
| 300 | 12 | 5500A Console |
| 330 | 11 | 5500A Console |
| 1.09 k | 10 | 5500A Console |
| 1.19 k | 10 | 5500A Console |
| 1.9 k | 13 | 5500A Console |
| 3 k | 12 | 5500A Console |
| 3.3 k | 11 | 5500A Console |
| 10.9 k | 10 | 5500A Console |
| 11.9 k | 10 | 5500A Console |
| 19 k | 12 | 5500A Console |
| 30 k | 12 | 5500A Console |
| 33 k | 11 | 5500A Console |

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| | | |
|---|---|---|
| 109 k | 10 | 5500A Console |
| 119 k | 10 | 5500A Console |
| 190 k | 24 | 5500A Console |
| 300 k | 20 | 5500A Console |
| 330 k | 20 | 5500A Console |
| 1.09 M | 16 | 5500A Console |
| 1.19 M | 15 | 5500A Console |
| 1.9 M | 8 | 5500A Console |
| 3 M | 8 | 5500A Console |
| 3.3 M | 85 | 5500A Console |
| 10.9 M | 62 | 5500A Console |
| 11.9 M | 61 | 5500A Console |
| 19 M | 30 | 5500A Console |
| 30 M | 30 | 5500A Console |
| 33 M | 550 | 5500A Console |
| 109 M | 525 | 5500A Console |
| 119 M | 525 | 5500A Console |
| 290 M | 100 | 5500A Console |

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*NVLAP Code:* 20/E05
DC Resistance

At Factory Annex - Multifunction Calibrators Similar to Fluke 5720A

| *Range in ohms* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 1 | 24.0 | 5720A Console |
| 1.9 | 20.0 | 5720A Console |
| 10 | 10.0 | 5720A Console |
| 19 | 8.4 | 5720A Console |
| 100 | 3.2 | 5720A Console |
| 190 | 2.6 | 5720A Console |
| 1 k | 3.0 | 5720A Console |
| 1.9 k | 2.5 | 5720A Console |
| 10 k | 2.0 | 5720A Console |
| 19 k | 2.2 | 5720A Console |
| 100 k | 2.2 | 5720A Console |
| 190 k | 2.4 | 5720A Console |
| 1 M | 4.0 | 5720A Console |
| 1.9 M | 4.7 | 5720A Console |

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| | | |
|---|---|---|
| 10 M | 8.0 | 5720A Console |
| 19 M | 10.5 | 5720A Console |
| 100 M | 35.5 | 5720A Console |

*NVLAP Code:* 20/E05
DC Resistance

At Factory Annex - Multifunction Calibrators Similar to Fluke 5500A

| *Range in ohms* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 2 | 100 | 5500A Console |
| 10.9 | 40 | 5500A Console |
| 11.9 | 40 | 5500A Console |
| 19 | 90 | 5500A Console |
| 30 | 90 | 5500A Console |
| 33 | 50 | 5500A Console |
| 109 | 40 | 5500A Console |
| 119 | 20 | 5500A Console |
| 190 | 20 | 5500A Console |
| 300 | 20 | 5500A Console |

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

| | | |
|---|---|---|
| 330 | 15 | 5500A Console |
| 1.1 k | 15 | 5500A Console |
| 1.2 k | 15 | 5500A Console |
| 1.9 k | 15 | 5500A Console |
| 3 k | 15 | 5500A Console |
| 3.3 k | 15 | 5500A Console |
| 10.9 k | 15 | 5500A Console |
| 11.9 k | 15 | 5500A Console |
| 19 k | 15 | 5500A Console |
| 30 k | 15 | 5500A Console |
| 33 k | 15 | 5500A Console |
| 109 k | 15 | 5500A Console |
| 119 k | 15 | 5500A Console |
| 190 k | 25 | 5500A Console |
| 300 k | 25 | 5500A Console |
| 330 k | 25 | 5500A Console |
| 1.1 M | 25 | 5500A Console |
| 1.2 M | 25 | 5500A Console |

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

| | | |
|---|---|---|
| 1.9 M | 25 | 5500A Console |
| 3.0 M | 25 | 5500A Console |
| 3.3 M | 100 | 5500A Console |
| 10.9 M | 100 | 5500A Console |
| 11.9 M | 100 | 5500A Console |
| 19 M | 100 | 5500A Console |
| 30 M | 100 | 5500A Console |
| 33 M | 800 | 5500A Console |
| 109 M | 800 | 5500A Console |
| 119 M | 800 | 5500A Console |
| 290 M | 800 | 5500A Console |

*NVLAP Code:* 20/E05
DC Resistance

| *Range in Ohms* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 0 | 20 μohms | 5520A Console |
| 2 | 8.5 | 5520A Console |
| 10.9 | 2.5 | 5520A Console |

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| | | |
|---|---|---|
| 11.9 | 2.5 | 5520A Console |
| 19 | 2.5 | 5520A Console |
| 30 | 2.8 | 5520A Console |
| 33 | 2.5 | 5520A Console |
| 109 | 2 | 5520A Console |
| 119 | 2 | 5520A Console |
| 190 | 2 | 5520A Console |
| 300 | 2.5 | 5520A Console |
| 330 | 2.5 | 5520A Console |
| 1.09 k | 2 | 5520A Console |
| 1.19 k | 2 | 5520A Console |
| 1.9 k | 2 | 5520A Console |
| 3 k | 2.5 | 5520A Console |
| 3.3 k | 3.0 | 5520A Console |
| 10.9 k | 2.5 | 5520A Console |
| 11.9 k | 2.5 | 5520A Console |
| 19 k | 2.5 | 5520A Console |
| 30 k | 3 | 5520A Console |

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| | | |
|---|---|---|
| 33 k | 3 | 5520A Console |
| 109 k | 3 | 5520A Console |
| 119 k | 3 | 5520A Console |
| 190 k | 3 | 5520A Console |
| 300 k | 3.5 | 5520A Console |
| 330 k | 3.5 | 5520A Console |
| 1.09 M | 4.5 | 5520A Console |
| 1.19 M | 4.5 | 5520A Console |
| 1.9 M | 5 | 5520A Console |
| 3 M | 6 | 5520A Console |
| 3.3 M | 6 | 5520A Console |
| 10.9 M | 8 | 5520A Console |
| 11.9 M | 8 | 5520A Console |
| 19 M | 20 | 5520A Console |
| 30 M | 30 | 5520A Console |
| 33 M | 30 | 5520A Console |
| 109 M | 70 | 5520A Console |
| 119 M | 70 | 5520A Console |

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

| | | |
|---|---|---|
| 290 M | 200 | 5520A Console |
| 400 M | 200 | 5520A Console |
| 640 M | 600 | 5520A Console |
| 1.09 G | 1000 | 5520A Console |
| 2 to 30 | 25 | Factory Annex, 5520A Console |
| 33 to 109 | 12 | Factory Annex, 5520A Console |
| 119 to 1.19 M | 7 | Factory Annex, 5520A Console |
| 1.9 M to 11.9 M | 12 | Factory Annex, 5520A Console |
| 19 M | 25 | Factory Annex, 5520A Console |
| 30 M | 75 | Factory Annex, 5520A Console |
| 33 M | 75 | Factory Annex, 5520A Console |
| 109 M | 120 | Factory Annex, 5520A Console |
| 119 M | 150 | Factory Annex, 5520A Console |
| 290 M | 550 | Factory Annex, 5520A Console |
| 400 M | 800 | Factory Annex, 5520A Console |
| 640 M | 1500 | Factory Annex, 5520A Console |
| 1090 M | 2500 | Factory Annex, 5520A Console |

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

*NVLAP Code:* 20/E05
DC Current

| *Range* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| to 19 μA | 10 | Calibrators or DMMs |
| 100 μA to 190 μA | 4 | Calibrators or DMMs |
| 1.0 mA to 1.9 mA | 4 | Calibrators or DMMs |
| 10 mA to 19 mA | 9 | Calibrators or DMMs |
| 100 mA to 190 mA | 10 | Calibrators or DMMs |
| 1.0 A | 11 | Calibrators or DMMs |
| 1.9 A | 10 | Calibrators or DMMs |
| 10 A | 22 | Calibrators or DMMs |

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**FLUKE CORPORATION PRIMARY STANDARDS LABORATORY**

*NVLAP Code:* 20/E05
DC Current

| *Range (±) in Ampheres* | *Best Uncertainty (±) in ppm[note 1]* | *Remarks* |
|---|---|---|
| 0 | 3 (nA) | 5500A Console |
| 190 μ | 8 | 5500A Console |
| 1.9 m | 7 | 5500A Console |
| 3.29 m | 7 | 5500A Console |
| 19 m | 7 | 5500A Console |
| 32.9 m | 7 | 5500A Console |
| 190 m | 8 | 5500A Console |
| 329 m | 8 | 5500A Console |
| 2.19 m | 14 | 5500A Console |
| 11 | 30 | 5500A Console |

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*NVLAP Code:* 20/E05
DC Current

At Factory Annex - Multifunction Calibrators Similar to Fluke 5720A

| *Range* | *Best Uncertainty (±) in ppm[note 1]* | *Remarks* |
|---|---|---|
| 19 μA | 100 | 5720A Console |
| 190 μA | 28 | 5720A Console |
| -190 μA | 16 | 5720A Console |
| ±1.9 mA | 8 | 5720A Console |
| ±19 mA | 12 | 5720A Console |
| 100 mA | 12 | 5720A Console |
| ±190 mA | 12 | 5720A Console |
| 1 A | 19 | 5720A Console |
| ±1.9 A | 16 | 5720A Console |

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

*NVLAP Code:* 20/E05
DC Current

At Factory Annex - Multifunction Calibrators Similar to Fluke 5500A

| *Range (±) Amperes* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 190 μ | 58 | 5500A Console |
| 1.9 m | 32 | 5500A Console |
| 3.3 m | 29 | 5500A Console |
| 19 m | 21 | 5500A Console |
| 32.9 m | 20 | 5500A Console |
| 190 m | 42 | 5500A Console |
| 329 m | 40 | 5500A Console |
| 2.29 | 40 | 5500A Console |
| 11 | 65 | 5500A Console |

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DC Current

| *Range (±) Amperes* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 0 | 100 (pA) | 5520A Console |
| 190 μ | 10 | 5520A Console |
| 329 μ | 10 | 5520A Console |
| 1.9 m | 9 | 5520A Console |
| 3.29 m | 8 | 5520A Console |
| 19 m | 9 | 5520A Console |
| 32.9 m | 8 | 5520A Console |
| 190 m | 9 | 5520A Console |
| 329 m | 8 | 5520A Console |
| 1.09 | 19 | 5520A Console |
| 2.99 | 18 | 5520A Console |
| 11 | 30 | 5520A Console |
| 20 | 65 | 5520A Console |
| 190 μ to 329 μ | 25 | Factory Annex, 5520A Console |

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**FLUKE CORPORATION PRIMARY STANDARDS LABORATORY**

| | | |
|---|---|---|
| 1.9 m to 3.29 m | 17 | Factory Annex, 5520A Console |
| 19 m to 32.9 m | 18 | Factory Annex, 5520A Console |
| 190 m to 329 m | 34 | Factory Annex, 5520A Console |
| 1.09 | 35 | Factory Annex, 5520A Console |
| 2.99 | 55 | Factory Annex, 5520A Console |
| 11 to 20 | 90 | Factory Annex, 5520A Console |

*NVLAP Code:* 20/E05
DC Current

| *Range (±)* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 0.0 | 100 μA | 5725A Console |
| 190 mA | 18 | 5725A Console |
| 1 A | 60 | 5725A Console |
| 2.5 A | 60 | 5725A Console |
| 11 A | 60 | 5725A Console |
| 0.0 | 120 μA | Factory Annex, 5725A Console |
| 190 mA | 20 | Factory Annex, 5725A Console |

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

| | | |
|---|---|---|
| 1 A | 100 | Factory Annex, 5725A Console |
| 11 A | 70 | Factory Annex, 5725A Console |

*NVLAP Code:* 20/E06
DC Voltage

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| Reference Standards | | |
| 10.00 V | 0.02 ppm[note 2] | Direct Comparison - in lab |
| 10.00 V | 0.06 ppm[note 2] | Direct Comparison - remote location |
| Well Isolated DC Sources or Voltmeters | | |
| 200 μV to 10 V | $(0.02 + 0.1E^{0.2})$ μV[note 2, 3] | Direct against J Array |
| >10 V to 100 V | 0.5 ppm[note 2] | J Array & Divider |
| >100 V to 1000 V | 0.7 ppm[note 2] | J Array & Divider |
| Calibrators or Digital Voltmeters | | |
| 0.1 V | 3.0 ppm | Transfer Method |
| 1.0 V | 0.8 ppm | Transfer Method |

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

| | | |
|---|---|---|
| 10.0 V | 0.3 ppm | Transfer Method |
| 100.0 V | 0.5 ppm | Transfer Method |
| 1000.0 V | 0.8 ppm | Transfer Method |

*NVLAP Code:* 20/E06
DC Voltage

| *Range (±) in Volts* | *Best Uncertainty (±) in ppm note 1* | *Remarks* |
|---|---|---|
| 0 | 0.5 | 5500A Console |
| 0.329 | 7.0 | 5500A Console |
| 3.29 | 5.5 | 5500A Console |
| 32.9 | 8.0 | 5500A Console |
| 50 | 8.0 | 5500A Console |
| 329 | 8.0 | 5500A Console |
| 334 | 8.5 | 5500A Console |
| 900 | 7.0 | 5500A Console |
| 1020 | 7.0 | 5500A Console |

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

*NVLAP Code:* 20/E06
DC Voltage

At Factory Annex - Multifunction Calibrators Similar to Fluke 5720A

| *Range* | *Best Uncertainty (±) in ppm note 1* | *Remarks* |
|---|---|---|
| 100 mV | 5.0 | 5720A Console |
| -100 mV | 6.5 | 5720A Console |
| ±1.0 V | 1.2 | 5720A Console |
| ±10.0 V | 0.7 | 5720A Console |
| ±100.0 V | 1.0 | 5720A Console |
| ±1000.0 V | 1.4 | 5720A Console |

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*NVLAP Code:* 20/E06
DC Voltage

At Factory Annex - Multiproduct Calibrators Similar to Fluke 5500A

| *Range (±) in Volts* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 0.329 | 8 | 5500A Console |
| 3.29 | 7 | 5500A Console |
| 32.9 | 10 | 5500A Console |
| 50 | 9 | 5500A Console |
| 329 | 9 | 5500A Console |
| 334 | 10 | 5500A Console |
| 900 | 9 | 5500A Console |
| 1020 | 9 | 5500A Console |

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*NVLAP Code:* 20/E06
DC Voltage

| *Range (±) in Volts* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 0 | 0.15 μV | 5520A Console |
| 0.329 | 2 | 5520A Console |
| 1 | 1.5 | 5520A Console |
| 3.29 | 16 | 5520A Console |
| 7 | 6 | 5520A Console |
| 10 | 1 | 5520A Console |
| 32.9 | 1.2 | 5520A Console |
| 50 | 2 | 5520A Console |
| 329 | 2.2 | 5520A Console |
| 334 | 2.2 | 5520A Console |
| 900 | 2.5 | 5520A Console |
| 1020 | 2.2 | 5520A Console |
| 0 to 32.9 | 2.5 | Factory Annex, 5520A Console |
| 33 to 1020 | 4.5 | Factory Annex, 5520A Console |

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*NVLAP Code:* 20/E09
LF AC Voltage

*Best Uncertainty (±) in ppm[note 1]*
*Frequency in Hertz*

| *Range* | *10* | *20* | *40* | *100* | *1k* | *10k* | *20k* | *50k* | *100k* | *300k* | *500k* | *800k* | *1 M* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 2 mV | 500 | 970 | 720 | 980 | 500 | 850 | 1120 | 500 | 1170 | 1280 | 2060 | 2550 | 2910 |
| 6 mV | 260 | 290 | 190 | 180 | 230 | 200 | 180 | 330 | 520 | 700 | 900 | 360 | 390 |
| 10 mV | 130 | 230 | 110 | 180 | 250 | 140 | 140 | 210 | 340 | 240 | 640 | 360 | 390 |
| 20 mV | 90 | 80 | 75 | 75 | 75 | 75 | 75 | 170 | 260 | 350 | 500 | 330 | 360 |
| 60 mV | 80 | 80 | 60 | 48 | 37 | 38 | 43 | 62 | 120 | 230 | 270 | 330 | 370 |
| 100 mV | 35 | 70 | 21 | 44 | 34 | 22 | 26 | 41 | 70 | 140 | 140 | 210 | 180 |
| 200 mV | 35 | 23 | 19 | 19 | 19 | 19 | 19 | 30 | 60 | 100 | 110 | 180 | 190 |
| 600 mV | 20 | 65 | 17 | 10 | 16 | 9 | 10 | 12 | 12 | 80 | 80 | 80 | 80 |
| 1 V | 120 | 31 | 14 | 10 | 13 | 13 | 10 | 22 | 10 | 80 | 100 | 100 | 80 |
| 2 V | 20 | 15 | 20 | 9 | 8 | 8 | 8 | 15 | 10 | 90 | 100 | 80 | 80 |
| 6 V | 25 | 16 | 15 | 9 | 8 | 9 | 8 | 21 | 11 | 100 | 100 | 80 | 80 |
| 10 V | 20 | 40 | 13 | 10 | 9 | 9 | 10 | 10 | 15 | 80 | 100 | 100 | 90 |

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*NVLAP Code:* 20/E09
LF AC Voltage

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 V | 20 | 17 | 16 | 9 | 9 | 9 | 9 | 10 | 15 | 100 | 110 | 80 | 80 |
| 60 V | 25 | 19 | 18 | 11 | 11 | 14 | 11 | 35 | 20 | 80 | | | |
| 100 V | 130 | 45 | 20 | 14 | 13 | 12 | 10 | 40 | 20 | | | | |
| 200 V | 25 | 22 | 16 | 15 | 12 | 12 | 13 | 40 | 20 | | | | |
| 600 V | 180 | 55 | 31 | 22 | 16 | 17 | 18 | 25 | 45 | | | | |
| 1000 V | 55 | 22 | 21 | 20 | 19 | 19 | 19 | 30 | 50 | | | | |

*NVLAP Code:* 20/E09
AC Voltage

Multiproduct Calibrators Similar to Fluke 5500A

*Best Uncertainty (±) in ppm[note 1]*
*Frequency in Hertz*

| *Range in Volts* | *9.5* | *10* | *45* | *1 k* | *5k* | *8 k* | *10 k* | *18 k* | *20 k* | *50 k* | *90 k* | *100 k* | *450 k* | *500 k* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.01 | | | 430 | 430 | 430 | | 430 | | | | | | | |
| 0.03 | 1000 | 120 | 70 | 65 | | | 65 | | 65 | 150 | | 260 | 470 | |
| 0.3 | 1000 | 50 | 30 | 30 | 35 | | 25 | | 25 | 35 | | 70 | | 180 |

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*NVLAP Code:* 20/E09
AC Voltage

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.0 | 1000 | 30 | 25 | 20 | 25 | | 20 | | 20 | 35 | 35 | 130 |
| 30 | 1000 | 35 | 27 | 20 | | | 20 | | 25 | 45 | 65 | |
| 300 | | | 36 | 25 | | | 25 | 25 | | | | |
| 1000 | | | 35 | 35 | 35 | 35 | | | | | | |

*NVLAP Code:* 20/E09
AC Voltage

At Factory Annex - Multifunction Calibrators Similar to Fluke 5720A

*Best Uncertainty (±) in ppm[note 1]*
*Frequency in Hertz*

| *Range* | *40* | *50* | *1 k* | *20 k* | *100 k* | *300 k* | *500 k* | *1 M* |
|---|---|---|---|---|---|---|---|---|
| 1.9 mV | | | 740 | 840 | | | | |
| 19 mV | 90 | | 90 | 90 | 270 | 420 | | 1100 |
| 190 mV | 30 | | 60 | 80 | 130 | 240 | | 740 |
| 600 mV | 30 | | 20 | 20 | 50 | 130 | | 500 |
| 1 V | 20 | | 10 | 10 | 50 | 100 | | 400 |

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**FLUKE CORPORATION PRIMARY STANDARDS LABORATORY**

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 2 V | | | 20 | 20 | | | | 400 |
| 3 V | 30 | | 20 | 20 | 50 | 180 | | 670 |
| 10 V | 20 | | 10 | 10 | 40 | 140 | | 400 |
| 20 V | | | 10 | 10 | | | | 400 |
| 30 V | 30 | | 20 | 20 | 60 | 330 | 1700 | |
| 100 V | 20 | | 20 | 20 | 50 | | | |
| 200 V | 25 | | 20 | | 60 | | | |
| 500 V | | 30 | 20 | | | | | |
| 1100 V | | 25 | 30 | | | | | |

*NVLAP Code:* 20/E09
AC Voltage

At Factory Annex - Multiproduct Calibrators Similar to Fluke 5500A

*Best Uncertainty (±) in ppm[note 1]*
*Frequency in Hertz*

| *Range* | *10* | *45* | *1 k* | *5 k* | *10 k* | *20 k* | *50 k* | *100 k* | *500 k* |
|---|---|---|---|---|---|---|---|---|---|
| 0.03 V | 300 | 180 | 180 | | 180 | 180 | 250 | 350 | 900 |
| 0.3 V | 180 | 27 | 27 | | 27 | 27 | 50 | 75 | 380 |

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AC Voltage

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 3.0 V | 180 | 27 | 27 | | 27 | 27 | 50 | 75 | 380 |
| 30 V | 160 | 30 | 30 | | 30 | 30 | 55 | 100 | |
| 300 V | | 50 | 40 | | 40 | 60 | | | |
| 1000 V | | 50 | 50 | 50 | 50[note 4] | | | | |

*NVLAP Code:* 20/E09
AC Voltage

5520A Console

*Best Uncertainty (±) in ppm[note 1]*
*Frequency in Hertz*

| *Range* | *9.5* | *10* | *45* | *1 k* | *5 k* | *10 k* | *18 k* | *20 k* | *30 k* | *50 k* | *90 k* | *100 k* | *450 k* | *500 k* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.003 | | | 250 | | | 250 | | | | | | | | |
| 0.01 | | | 350 | 350 | 350 | 500 | | | 1050 | | | | | |
| 0.03 | 1000 | 110 | 64 | 60 | | 60 | | 60 | | 140 | | 250 | 450 | |
| 0.3 | 1000 | 45 | 25 | 29 | | 21 | | 25 | | 31 | | 70 | | 150 |
| 3.0 | 1000 | 30 | 25 | 16 | | 16 | | 16 | | 30 | | 35 | 120 | |
| 5.0 | 1000 | 60 | 50 | 40 | 40 | 40 | | | | | | | | |
| 30 | 1000 | 35 | 26 | 18 | | 18 | | 20 | | 40 | 60 | | | |

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| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 200 | | | | | | | | | 110 |
| 300 | 36 | 22 | | 21 | 23 | | 40 | | |
| 1000 | 30 | 30 | 30 | 30[note 4] | | | | | |

*NVLAP Code:* 20/E09
AC Voltage

Factory Annex 5520A Test Console

*Best Uncertainty (±) in ppm[note 1]*
*Frequency in Hertz*

| *Voltage Alternating* | *9.5* | *10* | *45* | *1 k* | *10 k[note 8]* | *20 k[note 7]* | *50 k* | *100 k[note 6]* | *450 k[note 5]* |
|---|---|---|---|---|---|---|---|---|---|
| 0.003 V | | | 400 | | 400 | | | | |
| 0.03 V | 1100 | 120 | 70 | 70 | 70 | 70 | 150 | 300 | 600 |
| 0.033 V | | | 120 | | 120 | | | | |
| 0.3 V | 1100 | 50 | 35 | 32 | 32 | 32 | 50 | 90 | 250 |
| 0.33 V | | | 80 | | 80 | | | | |
| 3 V | 1100 | 50 | 30 | 30 | 30 | 30 | 50 | 50 | 200 |
| 3.3 V | | | 85 | | 85 | | | | |

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| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 30 V | 1100 | 50 | 30 | 30 | 30 | 30 | 50 | 100 |
| 33 V | | | 70 | | 80 | | | |
| 300 V | | | 40 | 30 | 30 | 40 | 50 | 300 |
| 330 V | | | 50 | | 40 | | | |
| 1000 V | | | 40 | 40 | 40 | 40 | | |
| 1020 V | | | 40 | | 40 | | | |

*NVLAP Code:* 20/E09
AC Voltage

5725A Console

*Best Uncertainty (±) in ppm[note 1]*
*Frequency in Hertz*

| *Range* | *40* | *1 k* | *20 k* | *50 k* | *100 k* |
|---|---|---|---|---|---|
| 300 V | 38 | 21 | 30 | 61 | 170 |
| 600 V | 32 | 21 | 30 | 61 | 170 |
| 1000 V | 23 | 21 | 30 | | |

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Factory Annex, 5725A Console

| | | | | | |
|---|---|---|---|---|---|
| 300 V | 39 | 25 | 33 | 70 | 200 |
| 600 V | 32 | 25 | 33 | 70 | 200 |
| 1000 V | 23 | 25 | 42 | | |

*NVLAP Code:* 20/E10
Capacitance

Three Wire

*Best Uncertainty (±)[note 1]*
*Frequency in Hertz*

| *Range* | *1 k* | *10 k* |
|---|---|---|
| 1.0 pF to 1.1111 μF | 0.01% + (0.002% * C μF) $f^2$ kHz | 0.01% + (0.002% * C μF) $f^2$ kHz |
| 1.0 pF to 0.001 μF | 0.01% | 0.01% |
| 0.001 μF to 0.01 μF | 0.01% | 0.012% |
| 0.01 μF to 0.05 μF | 0.01% | 0.02% |
| 0.05 μF to 0.1 μF | 0.01% | 0.03% |
| 0.1 μF to 0.5 μF | 0.011% | 0.11% |
| 0.5 μF to 1.11 μF | 0.012% | 0.21% |

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Two Wire

| | | |
|---|---|---|
| 10 pF to 1.1111 μF | $0.01 + (0.002 * C\ \mu F)^2\ kHz + \frac{5 * 10^{-17}}{C\ \mu F}\ \%$ | $0.01 + (0.002 * C\ \mu F)^2\ kHz + \frac{5 * 10^{-17}}{C\ \mu F}\ \%$ |
| 10 pF | 5% | 5% |
| 100 pF | 0.5% | 0.5% |
| 1000 pF | 0.06% | 0.06% |
| 0.01 μF | 0.015% | 0.017% |
| 0.1 μF to 1 μF | 0.015% | 0.017% |

*NVLAP Code:* 20/E10
Capacitance

| *Range* | *Best Uncertainty (±) in ppm[note 1]* | *Remarks* |
|---|---|---|
| 350 pF @ 1000 Hz | 2500 | 5500A Console |
| 480 pF @ 1000 Hz | 2100 | 5500A Console |
| 600 pF @ 1000 Hz | 1300 | 5500A Console |
| 1 nF @ 1000 Hz | 1000 | 5500A Console |
| 2 nF @ 1000 Hz | 800 | 5500A Console |

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| | | |
|---|---|---|
| 7 nF @ 1000 Hz | 710 | 5500A Console |
| 10.9 nF @ 1000 Hz | 700 | 5500A Console |
| 20 nF @ 1000 Hz | 700 | 5500A Console |
| 70 nF @ 1000 Hz | 690 | 5500A Console |
| 200 nF @ 1000 Hz | 690 | 5500A Console |
| 300 nF @ 1000 Hz | 680 | 5500A Console |
| 700 nF @ 100 Hz | 680 | 5500A Console |
| 2 μF @ 100 Hz | 690 | 5500A Console |
| 3 μF @ 100 Hz | 690 | 5500A Console |
| 7 μF @ 100 Hz | 690 | 5500A Console |
| 10.9 μF @ 100 Hz | 690 | 5500A Console |
| 20 μF @ 100 Hz | 700 | 5500A Console |
| 30 μF @ 100 Hz | 710 | 5500A Console |
| 70 μF @ 100 Hz | 740 | 5500A Console |
| 200 μF @ 100 Hz | 1400 | 5500A Console |
| 300 μF @ 100 Hz | 1500 | 5500A Console |
| 330 μF @ 50 Hz | 1600 | 5500A Console |
| 1.1 mF @ 50 Hz | 2400 | 5500A Console |

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Capacitance

At Factory Annex - Multiproduct Calibrators Similar to Fluke 5500A

| *Range* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 350 pF @ 1000 Hz | 3200 | 5500A Console |
| 480 pF @ 1000 Hz | 3000 | 5500A Console |
| 600 pF @ 1000 Hz | 1600 | 5500A Console |
| 1 nF @ 1000 Hz | 1600 | 5500A Console |
| 2 nF @ 1000 Hz | 1200 | 5500A Console |
| 7 nF @ 1000 Hz | 1200 | 5500A Console |
| 10.9 nF @ 1000 Hz | 1000 | 5500A Console |
| 20 nF @ 1000 Hz | 1000 | 5500A Console |
| 70 nF @ 1000 Hz | 820 | 5500A Console |
| 200 nF @ 1000 Hz | 820 | 5500A Console |
| 300 nF @ 1000 Hz | 820 | 5500A Console |
| 700 nF @ 100 Hz | 820 | 5500A Console |
| 2 μF @ 100 Hz | 850 | 5500A Console |

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| | | |
|---|---|---|
| 3 μF @ 100 Hz | 850 | 5500A Console |
| 7 μF @ 100 Hz | 850 | 5500A Console |
| 10.9 μF @ 100 Hz | 850 | 5500A Console |
| 20 μF @ 100 Hz | 850 | 5500A Console |
| 30 μF @ 100 Hz | 860 | 5500A Console |
| 70 μF @ 100 Hz | 900 | 5500A Console |
| 200 μF @ 100 Hz | 1500 | 5500A Console |
| 300 μF @ 100 Hz | 1550 | 5500A Console |
| 330 μF @ 50 Hz | 1700 | 5500A Console |
| 1.1 mF @ 50 Hz | 2400 | 5500A Console |

*NVLAP Code:* 20/E10
Capacitance

| *Range* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 190 pF @ 5000 Hz | 2000 | 5520A Console |
| 350 pF @ 1000 Hz | 1800 | 5520A Console |
| 480 pF @ 1000 Hz | 1650 | 5520A Console |

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| | | |
|---|---|---|
| 600 pF @ 1000 Hz | 1000 | 5520A Console |
| 1 nF @ 1000 Hz | 900 | 5520A Console |
| 2 nF @ 1000 Hz | 770 | 5520A Console |
| 7 nF @ 1000 Hz | 700 | 5520A Console |
| 10.9 nF @ 1000 Hz | 690 | 5520A Console |
| 20 nF @ 1000 Hz | 685 | 5520A Console |
| 70 nF @ 1000 Hz | 680 | 5520A Console |
| 109 nF @ 1000 Hz | 680 | 5520A Console |
| 200 nF @ 1000 Hz | 680 | 5520A Console |
| 300 nF @ 1000 Hz | 680 | 5520A Console |
| 700 nF @ 100 Hz | 680 | 5520A Console |
| 1.09 µF @ 100 Hz | 680 | 5520A Console |
| 2 µF @ 100 Hz | 680 | 5520A Console |
| 3 µF @ 100 Hz | 680 | 5520A Console |
| 7 µF @ 100 Hz | 680 | 5520A Console |
| 10.9 µF @ 100 Hz | 685 | 5520A Console |
| 20 µF @ 100 Hz | 700 | 5520A Console |
| 30 µF @ 100 Hz | 700 | 5520A Console |

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| | | |
|---|---|---|
| 70 µF @ 50 Hz | 1280 | 5520A Console |
| 109 µF @ 50 Hz | 1320 | 5520A Console |

| *Range* | *10 Second Charge Current* | *Best Uncertainty (±) in ppm[note 1]* | *Remarks* |
|---|---|---|---|
| 200 µF | 60 µA | 250 | 5520A Console |
| 300 µF | 90 µA | 250 | 5520A Console |
| 330 µF | 100 µA | 250 | 5520A Console |
| 700 µF | 200 µA | 250 | 5520A Console |
| 1.09 mF | 300 µA | 250 | 5520A Console |
| 1.1 mF | 300 µA | 250 | 5520A Console |
| 2 mF | 600 µA | 250 | 5520A Console |
| 3 mF | 900 µA | 250 | 5520A Console |
| 3.3 mF | 1 mA | 250 | 5520A Console |
| 10.9 mF | 3 mA | 250 | 5520A Console |
| 20 mF | 6 mA | 250 | 5520A Console |
| 30 mF | 9 mA | 250 | 5520A Console |
| 33 mF | 10 mA | 250 | 5520A Console |

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110 mF 30 mA 250 5520A Console

| *Range* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 190 pF @ 5 kHz | 15000 | Factory Annex, 5520A Console |
| 350 pF @ 1 kHz | 7800 | Factory Annex, 5520A Console |
| 480 pF @ 1 kHz | 4200 | Factory Annex, 5520A Console |
| 600 pF @ 1 kHz | 3200 | Factory Annex, 5520A Console |
| 1000 pF @ 1 kHz | 2000 | Factory Annex, 5520A Console |
| 2000 pF @ 1 kHz | 1000 | Factory Annex, 5520A Console |
| 7000 pF @ 1 kHz | 700 | Factory Annex, 5520A Console |
| .7 μF to 30 μF @ 100 Hz | 700 | Factory Annex, 5520A Console |
| 70 μF to 109 μF @ 50 Hz | 1300 | Factory Annex, 5520A Console |
| 200 μF to 110 mF[note 9] | 300 | Factory Annex, 5520A Console |

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*NVLAP Code:* 20/E15
Phase

5500A Console

*Best Uncertainty (±) in degrees*[note 1]
*Frequency in Hertz*

| *Range Phase (degrees)* | *60* | *65* | *400* | *1 k* | *5 k* | *10 k* | *Mode* |
|---|---|---|---|---|---|---|---|
| 0 | | 0.02 | 0.02 | | | | ACV/ACC |
| 0 | 0.02 | | | 0.02 | 0.02 | 0.025 | ACV/ACV |
| 60 | 0.02 | | | 0.02 | 0.02 | 0.025 | ACV/ACV |
| 90 | 0.02 | | | 0.02 | 0.02 | 0.025 | ACV/ACV |

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Phase

At Factory Annex - Multiproduct Calibrators Similar to Fluke 5500A

| *Range in degrees* | *Frequency in Hz* | *Best Uncertainty (±) in degrees*[note 1] |
|---|---|---|
| 0 | 60 to 65 | 0.025 |
| 0 | 400 to 10 k | 0.075 |
| 60 | 60 | 0.025 |

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|---|---|---|
| 60 | 400 to 10 k | 0.075 |
| 90 | 60 | 0.025 |
| 90 | 400 to 10 k | 0.075 |

5520 A Console

| *Range Phase (degrees)* | *Reference Volts* | *Signal Amps* | *Frequency Hz* | *Best Uncertainty (±) in degrees[note 1]* | *Remarks* |
|---|---|---|---|---|---|
| 0 | 0.03 | 0.3 | 65 | 0.015 | ACV/ACC |
| 0 | 0.03 | 0.3 | 1 k | 0.025 | ACV/ACC |
| 0 | 0.03 | 0.3 | 30 k | 0.5 | ACV/ACC |
| 0 | 0.2 | 2 | 65 | 0.015 | ACV/ACC |
| 0 | 0.05 | 5 | 65 | 0.022 | ACV/ACC |
| 0 | 0.05 | 5 | 400 | 0.025 | ACV/ACC |
| 60 | 0.03 | 0.3 | 65 | 0.015 | ACV/ACC |
| 60 | 0.2 | 2 | 65 | 0.015 | ACV/ACC |
| 60 | 0.2 | 20 | 65 | 0.015 | ACV/ACC |
| 60 | 0.2 | 20 | 400 | 0 030 | ACV/ACC |
| 0 | 3.3 | 0.3 | 65 | 0.016 | ACV/ACC |

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| | | | | | |
|---|---|---|---|---|---|
| 0 | 3.3 | 2 | 65 | 0.020 | ACV/ACC |
| 0 | 3.3 | 5 | 65 | 0.016 | ACV/ACC |
| 0 | 3.3 | 5 | 400 | 0.030 | ACV/ACC |
| 90 | 3.3 | 0.3 | 65 | 0.020 | ACV/ACC |
| 90 | 3.3 | 2 | 65 | 0.018 | ACV/ACC |
| 90 | 3.3 | 20 | 65 | 0.018 | ACV/ACC |
| 90 | 3.3 | 20 | 400 | 0.030 | ACV/ACC |
| 0 | 33 | 0.3 | 65 | 0.020 | ACV/ACC |
| 0 | 33 | 2 | 65 | 0.018 | ACV/ACC |
| 0 | 33 | 5 | 65 | 0.016 | ACV/ACC |
| 0 | 33 | 5 | 400 | 0.030 | ACV/ACC |
| 90 | 33 | 0.3 | 65 | 0.018 | ACV/ACC |
| 90 | 33 | 2 | 65 | 0.022 | ACV/ACC |
| 90 | 33 | 20 | 65 | 0.023 | ACV/ACC |
| 90 | 33 | 20 | 400 | 0.030 | ACV/ACC |
| 0, 60, 90 | 3 | 3 | 65 | 0.015 | ACV/ACV |
| 0, 60, 90 | 3 | 3 | 400 | 0.020 | ACV/ACV |
| 0, 60, 90 | 3 | 3 | 1 k | 0.020 | ACV/ACV |

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# Scope of Accreditation



**CALIBRATION LABORATORIES** **NVLAP LAB CODE 105016-0**

**FLUKE CORPORATION PRIMARY STANDARDS LABORATORY**

| | | | | | |
|---|---|---|---|---|---|
| 0, 60, 90 | 3 | 3 | 5 k | 0.025 | ACV/ACV |
| 0, 60, 90 | 3 | 3 | 10 k | 0.025 | ACV/ACV |
| 0, 60, 90 | 3 | 3 | 30 k | 0.300 | ACV/ACV |
| 90 | 30 | 3 | 65 | 0.015 | ACV/ACV |
| 90 | 50 | 3 | 65 | 0.016 | ACV/ACV |

Phase
Factory Annex, 5520A Console

| *Range in degrees* | *Frequency in Hz* | *Best Uncertainty (±) in degrees*[note 1] |
|---|---|---|
| 0 to 90 | 65 to 1 k | 0.025 |
| 0 to 90 | 5 k to 10 k | 0.1 |
| 0 to 90 | 30 k | 0.5 |

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# Scope of Accreditation



**CALIBRATION LABORATORIES** **NVLAP LAB CODE 105016-0**

**FLUKE CORPORATION PRIMARY STANDARDS LABORATORY**

**TIME AND FREQUENCY**

*NVLAP Code:* 20/F01
Frequency

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 10 MHz | 1 mHz | GPS Console |

| *Range in Hz* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 119 to 120 | 1 | 5500A Console |
| 1000 | 1 | 5500A Console |
| 100000 | 1 | 5500A Console |

*NVLAP Code:* 20/F01
Frequency

At Factory Annex Multiproduct Calibrators Similar to Fluke 5500A

| *Range in Hz* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 119 | 5 | 5500A Console |
| 120 | 5 | 5500A Console |
| 1000 | 5 | 5500A Console |
| 100000 | 5 | 5500A Console |

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CALIBRATION LABORATORIES — NVLAP LAB CODE 105016-0

FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

Frequency

| *Range in Hz* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 119 | 0.10 | 5520A Console |
| 120 | 0.10 | 5520A Console |
| 1000 | 0.10 | 5520A Console |
| 100000 | 0.10 | 5520A Console |
| 119 to 100000 k | 0.8 | Factory Annex, 5520A Console |

THERMODYNAMICS

*NVLAP Code:* 20/T03
Temperature

| *Range in °C* | *Best Uncertainty (±) in mK*[note 1] | *Remarks* |
|---|---|---|
| -40 to -197 | 11 | |
| -1 to -40 | 8 | |
| -1 to 1 | 5 | |
| 0.01 | 4.5 | |
| 1 to 150 | 10 | |

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| | | |
|---|---|---|
| 150 to 350 | 15 | |

*NVLAP Code:* 20/T06
Thermocouple Temperature

| *Range in °C* | *Best Uncertainty (±) in °C*[note 1] | *Remarks* |
|---|---|---|
| Simulated TC Temperature with UUT Sourcing, 5500 Console Measuring | | |
| 0 | 0.03 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| 100 | 0.03 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| -100 | 0.03 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| 1000 | 0.04 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| -1000 | 0.04 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| 10000 | 0.08 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| -10000 | 0.08 | 10 μV/C Linear Mode, Voltage Simulates Temperature |

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

Simulated TC Temperature with UUT Measurement, 5500A Console Sourcing

| | | |
|---|---|---|
| 0 | 0.05 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| 10000 | 0.12 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| -10000 | 0.12 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| 30000 | 0.24 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| -30000 | 0.24 | 10 μV/C Linear Mode, Voltage Simulates Temperature |

Thermocouple Temperature

| | | |
|---|---|---|
| 23 | 0.018 | Type K 5500A & 5520A Consoles |

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

*NVLAP Code:* 20/T08
Simulated Temperature

At Factory Annex - Multiproduct Calibrators Similar to Fluke 5500A

| *Range in °C* | *Function* | *Best Uncertainty (±)in °C* [note 1] |
|---|---|---|
| 0 to ±1000 | Source | 0.1 |
| ±10000 | Source | 0.16 |
| 0 | Measure | 0.1 |
| 23 | Measure | 0.05 |
| ±10000 | Measure | 0.2 |
| ±30000 | Measure | 0.4 |

Thermocouple Temperature

Simulated TC Temperature with UUT Measurement, 5520A Console Measuring

| *Range in °C* | *Best Uncertainty (±) in °C* [note 1] | *Remarks* |
|---|---|---|
| 0 | 0.02 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| 100 | 0.02 | 10 μV/C Linear Mode, Voltage Simulates Temperature |

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| | | |
|---|---|---|
| -100 | 0.02 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| 1000 | 0.025 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| -1000 | 0.025 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| 10000 | 0.07 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| -10000 | 0.07 | 10 μV/C Linear Mode, Voltage Simulates Temperature |

Simulated TC Temperature with UUT Measurement, 5520A Console Sourcing

| | | |
|---|---|---|
| 0 | 0.02 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| 10000 | 0.12 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| -10000 | 0.12 | 10 μV/C Linear Mode, Voltage Simulates Temperature |
| 30000 | 0.24 | 10 μV/C Linear Mode, Voltage Simulates Temperature |

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FLUKE CORPORATION PRIMARY STANDARDS LABORATORY

| | | |
|---|---|---|
| -30000 | 0.24 | 10 μV/C Linear Mode, Voltage Simulates Temperature |

Factory Annex, 5520A Console

| *Range in °C* | *Function* | *Best Uncertainty (±) in °C*[note 1] |
|---|---|---|
| 0 to ±1000 | Source | 0.06 |
| ±10000 | Source | 0.1 |
| 0, 23 | Measure | 0.04 |
| ±10000 | Measure | 0.15 |
| ±30000 | Measure | 0.25 |

1. Represents an expanded uncertainty at a level of confidence of 99%; coverage factor *k* is determined by the test statistics.
2. Approximate value. Actual value determined by the test statistics.
3. E = Actual Voltage.
4. 1000 V Limit is 8 kHz.
5. 500 kHz @ 0.33 V
6. 90 kHz @ 30 V
7. 18 kHz @ 300 V, 8 kHz for voltage > = 1000 V
8. 5 kHz @ 1000 V
9. Above 200 μF the method of calibration is a charge technique with charge currents ranging from 60 μA at 200 μF to 30 mA at 110 mF.

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CALIBRATION LABORATORIES — NVLAP LAB CODE 105018-0

**CDRH X-RAY CALIBRATION LABORATORY**
12720 Twinbrook Parkway, HFZ-143
Rockville, MD 20857
Mr. Frank Cerra
Phone: 301-443-2536 x123 Fax: 301-443-9101
E-Mail: fxc@cdrh.fda.gov
URL: http://www.fda.gov/cdrh

This facility has demonstrated compliance with the NVLAP Criteria for Calibration Laboratories under the field of Ionizing Radiation for the following:

| *Procedures/Instruments* | *Radiation Types* |
|---|---|
| Calibration of Survey Instruments | X-ray Beam Codes M30, M50, L80, L100, and M100 over the Exposure Rate Range 2 mR/s to 100 mR/s, and the H50 Beam Code over the range 0.5 mR/h to 4 mR/s, with total uncertainty in the reference field value of ± 5 percent. |

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CALIBRATION LABORATORIES — NVLAP LAB CODE 105018-0

**CDRH X-RAY CALIBRATION LABORATORY**

| | |
|---|---|
| Calibration of Instruments for Diagnostic Level | X-ray Beam Codes M20, M30, M50, L80, L100, and M100 over the Exposure Rate Range 2 mR/s to 100 mR/s, with total uncertainty in the reference field value of ± 3 percent.<br><br>Mammography entrance Beam Codes Mo/Mo25, Mo/Mo 28, Mo/Mo 30, Mo/Mo 35, Mo/Rh 28, Mo/Rh 32, Rh/Rh 30, and Rh/Rh 35 over the Exposure Rate Range 5 mR/s to 200 mR/s, with total uncertainty in the reference field value of ± 3 percent.<br><br>Mammography exit Beam Codes Mo/Mo 25X, Mo/Mo 28X, Mo/Mo 30X, Mo/Mo 35X, Rh/Rh 30X, and Rh/Rh 35X over the Exposure Rate Range 2 mR/s to 17 mR/s, with total uncertainty in the reference field value of ± 3 percent. |

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CALIBRATION LABORATORIES — NVLAP LAB CODE 105018-0

**CDRH X-RAY CALIBRATION LABORATORY**

| | |
|---|---|
| Calibration of Reference-Class Instruments | X-ray Beam Codes M20, M30, M50, L80, L100, and M100 over the Exposure Rate Range 2 mR/s to 100 mR/s, with total uncertainty in the reference field value of ± 3 percent. |
| | Mammography entrance Beam Codes Mo/Mo25, Mo/Mo 28, Mo/Mo 30, Mo/Mo 35, Mo/Rh 28, Mo/Rh 32, Rh/Rh 30, and Rh/Rh 35 over the Exposure Rate Range 5 mR/s to 200 mR/s, with total uncertainty in the reference field value of ± 3 percent. |
| | Mammography exit Beam Codes Mo/Mo 25X, Mo/Mo 28X, Mo/Mo 30X, Mo/Mo 35X, Rh/Rh 30X, and Rh/Rh 35X over the Exposure Rate Range 2 mR/s to 17 mR/s, with total uncertainty in the reference field value of ± 3 percent |

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CALIBRATION LABORATORIES — NVLAP LAB CODE 105020-0

**PACIFIC NORTHWEST NATIONAL LABORATORY / BATTELLE**

Battelle Boulevard
P.O. Box 999
Richland, WA 99352
Mr. R. Kim Piper
Phone: 509-376-6187 Fax: 509-376-1992
E-Mail: kim.piper@pnl.gov
URL: http://www.pnl.gov/eshs/

This facility has demonstrated compliance with the NVLAP Criteria for Calibration Laboratories under the field of Ionizing Radiation for the following:

| *Calibration Category* | *Radiation Type or Beam Code* | *Nominal Intensity Range*[note 3] | *Uncertainty of Reference Field (±)*[note 1,2] |
|---|---|---|---|
| **CALIBRATION OF SURVEY INSTRUMENTS** | | | |
| Gamma | $^{241}$Am | 0.125 R/h | 5.2% |
| | $^{137}$Cs | 0.1 to 250 R/h | 1.5% |
| | $^{60}$Co | 4 to 60,000 R/h | 1.5% |
| X-ray | M30 | 3 to 500 R/h | 1.5% |
| | M50 | 4 to 600 R/h | 1.5% |
| | M60 | 3 to 450 R/h | 1.5% |
| | M100 | 3 to 500 R/h | 1.5% |
| | M150 | 4 to 550 R/h | 1.5% |

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| | | | |
|---|---|---|---|
| | M200 | 4 to 650 R/h | 1.5% |
| | S60 | 1 to 175 R/h | 1.5% |
| | S75 | 5 to 700 R/h | 1.5% |
| | H40 | 0.02 to 4 R/h | 1.5% |
| | H50 | 0.05 to 10 R/h | 1.5% |
| | H100 | 0.02 to 3 R/h | 1.5% |
| | H150 | 1 to 15 R/h | 1.5% |
| | H200 | 0.9 to 9 R/h | 1.5% |
| | H250 | 0.9 to 9 R/h | 1.5% |
| | H300 | 0.6 to 3 R/h | 1.5% |
| Beta | $^{204}$Tl | 0.9 rad/h | 3.3% |
| | $^{90}$Sr/$^{90}$Y | 0.4 to 19 rad/h | 3.3% |
| Neutron | $^{252}$Cf Bare | 0.014 to 4.8 rem/h | 14.0% |
| | $^{252}$Cf Moderated | 0.004 to 1.1 rem/h | 21.9% |

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CALIBRATION LABORATORIES — NVLAP LAB CODE 105020-0

PACIFIC NORTHWEST NATIONAL LABORATORY / BATTELLE

| *Calibration Category* | *Radiation Type or Beam Code* | *Nominal Range*[note 3] | *Uncertainty of Delivered Quantity (±)*[note 1,2] |
|---|---|---|---|
| **IRRADIATION OF PERSONNEL DOSIMETERS** | | | |
| Gamma | $^{241}$Am | ≥ 0.002 R | 5.4% |
| | $^{137}$Cs | ≥ 0.020 R | 1.6% |
| | $^{60}$Co | ≥ 0.025 R | 1.6% |
| X-ray | M30 | ≥ 0.025 R | 2.4% |
| | M50 | ≥ 0.035 R | 2.4% |
| | M60 | ≥ 0.025 R | 2.4% |
| | M100 | ≥ 0.025 R | 2.4% |
| | M150 | ≥ 0.035 R | 2.4% |
| | M200 | ≥ 0.035 R | 2.4% |
| | S60 | ≥ 0.010 R | 2.4% |
| | S75 | ≥ 0.040 R | 2.4% |
| | H40 | ≥ 0.0002 R | 2.4% |

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| | | | |
|---|---|---|---|
| | H50 | ≥ 0.0005 R | 2.4% |
| | H100 | ≥ 0.0002 R | 2.4% |
| | H150 | ≥ 0.008 R | 2.4% |
| | H200 | ≥ 0.008 R | 2.4% |
| | H250 | ≥ 0.008 R | 2.4% |
| | H300 | ≥ 0.005 R | 2.4% |
| Beta | $^{204}$Tl | ≥ 0.015 rad | 3.6% |
| | $^{90}$Sr/$^{90}$Y | ≥ 0.007 rad | 3.6% |
| Neutron | $^{252}$Cf Bare | ≥ 0.001 rem | 14.1% |
| | $^{252}$Cf Moderated | ≥ 0.002 rem | 22.4% |

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CALIBRATION OF REFERENCE-CLASS INSTRUMENTS

| *Calibration Category* | *Radiation Type or Beam Code* | *Nominal Intensity Range*[note 3] | *Uncertainty of Reference Field (±)*[note 1,2] |
|---|---|---|---|
| Gamma | $^{241}$Am | 0.125 R/h | 5.2% |
| | $^{137}$Cs | 0.1 to 250 R/h | 1.5% |
| | $^{60}$Co | 4 to 60,000 R/h | 1.5% |
| X-ray | M30 | 3 to 500 R/h | 1.5% |
| | M50 | 4 to 600 R/h | 1.5% |
| | M60 | 3 to 450 R/h | 1.5% |
| | M100 | 3 to 500 R/h | 1.5% |
| | M150 | 4 to 550 R/h | 1.5% |
| | M200 | 4 to 650 R/h | 1.5% |
| | S60 | 1 to 175 R/h | 1.5% |
| | S75 | 5 to 700 R/h | 1.5% |
| | H40 | 0.02 to 4 R/h | 1.5% |
| | H50 | 0.05 to 10 R/h | 1.5% |

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| | | | |
|---|---|---|---|
| | H100 | 0.02 to 3 R/h | 1.5% |
| | H150 | 1 to 15 R/h | 1.5% |
| | H200 | 0.9 to 9 R/h | 1.5% |
| | H250 | 0.9 to 9 R/h | 1.5% |
| | H300 | 0.6 to 3 R/h | 1.5% |
| Beta | $^{204}$ T1 | 0.9 rad/h | 3.3% |
| | $^{90}$ Sr/$^{90}$ Y | 0.4 to 19 rad/h | 3.3% |
| Neutron | $^{252}$ Cf Bare | 0.014 to 4.8 rad/h | 14.0% |
| | $^{252}$ Cf Moderated | 0.004 to 1.1 rad/h | 21.9% |

1. Values listed at the 95% confidence level.
2. Uncertainties are valid for nominal intensity range listed.
3. For calibration outside of the nominal intensity range shown, uncertainties would be determined commensurate with the parameters of the reference field calibration.

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CALIBRATION LABORATORIES — NVLAP LAB CODE 105023-0

INSTRON FORCE CALIBRATION LABORATORY
100 Royall Street
Canton, MA 02021
Dr. Anatoly Perlov
Phone: 781-575-5479 Fax: 781-575-5767
E-Mail: Anatoly_Perlov@instron.com
URL: http://www.instron.com

| *NVLAP Code/ Parameters* | *Range* | *Best Uncertainty (±)[note 1,2,3]* | *Remarks* |
|---|---|---|---|
| MECHANICAL 20/M06 | | | |
| Force | | | |
| | Applied Force in Pounds | | |
| | 0.1 to 130000 | 0.005% | Primary Standard |
| | 130000 to 240000 | 0.005% | Secondary Standard |

1. Represents an expanded uncertainty using a coverage factor, k=2.
2. Uncertainty of the voltage ratio is <0.1 microvolt per volt.
3. Uncertainty of the measured value is determined by the statistics of the test and the artifact tested but are typically better than ±0.05% for class AA instruments, ±0.25% for class A instruments and ±0.1% for class A1 instruments.

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200012-0

IPS CORPORATION
1878-1, Harumiya Ono, Tatsuno-machi
Kamiina-gun, Nagano-ken, PO Box 399-0601
Nagano 399-0601
JAPAN
Mr. Takashi Maruyama
Phone: +81-266-44-5200 Fax: +81-266-44-5300
E-Mail: maruyama@ips-emc.co.jp
URL: http://www.ips-emc.co.jp

ELECTROMAGNETICS - RF Microwave

*NVLAP Code:* 20/R08
Microwave Antenna Parameters

| *Range* | *Best Uncertainty (±)[note 1]* | *Remarks* |
|---|---|---|
| Dipole Antenna (such as the VHA9103/UHA9105) | | |
| 30 to 80 MHz (tuned 80 MHz) | 1.1 dB | Horizontal Antenna Factor |
| 30 to 300 MHz | 1.1 dB | Horizontal Antenna Factor |
| 300 to 1000 MHz | 1.3 dB | Horizontal Antenna Factor |
| Biconical Antenna (such as the BBA9106) | | |
| 30 to 300 MHz | 1.2 dB | Horizontal Antenna Factor |
| Log-Peliodoc Antenna (such as the UHALP9107) | | |
| 300 to 1000 MHz | 1.2 dB | Horizontal Antenna Factor |

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IPS CORPORATION

| | | |
|---|---|---|
| Bi-log Antenna (such as the CBL6112B) | | |
| 30 to 300 MHz | 1.4 dB | Horizontal Antenna Factor |
| 300 to 1000 MHz | 1.4 dB | Horizontal Antenna Factor |
| LISN | | |
| 0.1 to 30 MHz | 0.5 dB | Impedance |
| 0.1 to 30 MHz | 0.5 dB | Insertion Loss |
| CDN | | |
| 0.1 to 10 MHz | 1.2 dB | Impedance |
| 10 to 30 MHz | 0.7 dB | Impedance |
| 30 to 100 MHz | 0.6 dB | Impedance |
| 100 to 230 MHz | 0.8 dB | Impedance |
| 0.1 to 10 MHz | 0.5 dB | Insertion Loss |
| 10 to 230 MHz | 0.5 dB | Insertion Loss |
| RF Amplifier | | |
| 10 to 1000 MHz | 1.4 dB | Gain |
| ESD Simulators | | |
| 0 to 15 kV | 0.6 dB | Amplitude |
| 0 to 15 kV | 46.9 pS | Time at 500 pS/div |

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IPS CORPORATION

| | | |
|---|---|---|
| EFT/Burst | | |
| 0 to 2 kV | 0.7 dB | Amplitude |
| 1 to 2 kV | 46.9 pS | Time at 500 pS/div |
| EM Clamp | | |
| 0.1 to 230 MHz | 0.5 dB | Insertion Loss |
| Current Probe | | |
| 0.1 to 230 MHz | 0.5 dB | Insertion Loss |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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GE INDUSTRIAL SYSTEMS
92 Otis Street
Rome, NY 13441
Mr. Timothy S. Eldred
Phone: 315-334-7605 Fax: 315-334-7660
E-Mail: Timothy.Eldred@indsys.ge.com

**DIMENSIONAL**

*NVLAP Code:* 20/D03
Gage Blocks - Steel and Chrome Carbide

| *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| thru 1.0 in | 2.8 μin | Laser Interferometer Height Gage |
| >1.0 thru 2.0 in | 3.2 μin | Laser Interferometer Height Gage |
| >2.0 thru 3.0 in | 3.6 μin | Laser Interferometer Height Gage |
| >3.0 thru 4.0 in | 4.0 μin | Laser Interferometer Height Gage |

**ELECTROMAGNETICS/DC-LOW FREQUENCY**

*NVLAP CODE:* 20/E05
DC Resistance

| *Value in ohms* | *Best Uncertainty in ppm (±)note 1* | *Remarks* |
|---|---|---|
| 0.1 | 1.0 | |
| 1 | 1.0 | |
| 10 | 1.0 | |

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GE INDUSTRIAL SYSTEMS

| | |
|---|---|
| 100 | 1.0 |
| 1 k | 1.5 |
| 10 k | 1.5 |
| 100 k | 4.0 |
| 1 M | 4.6 |
| 10 M | 6.2 |
| 100 M | 13.4 |

*NVLAP Code:* 20/E06
DC Voltage

| *Range in Volts* | *Best Uncertainty in ppm (±)*[note 1] | *Remarks* |
|---|---|---|
| 0.1 | 3 | Zener Reference Diodes, Standard Cells, High Level MMs and Calibrators |
| 1.0 | 1.5 | Zener Reference Diodes, Standard Cells, High Level MMs and Calibrators |
| 10.0 | 1.2 | Zener Reference Diodes, Standard Cells, High Level MMs and Calibrators |
| 100.0 | 1.5 | Zener Reference Diodes, Standard Cells, High Level MMs and Calibrators |

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GE INDUSTRIAL SYSTEMS

| | | |
|---|---|---|
| 1000.0 | 2.0 | Zener Reference Diodes, Standard Cells, High Level MMs and Calibrators |

THERMODYNAMICS

*NVLAP Code:* 20/T05
Pressure

| *Range* | *Uncertainty (±) of reading*[note 1] | *Remarks* |
|---|---|---|
| 0.2 to 1000 psia | 36 ppm | Inert Gas |
| 0.2 to 1000 psi | 36 ppm | Inert Gas |
| 15 to 10000 psi | 0.02% | Inert Gas |
| 15 to 15000 psi | 0.02% | Fluid |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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NVLAP LAB CODE 200038-0

**WEBBER GAGE DIVISION / L.S. STARRETT CO.**
24500 Detroit Road
Cleveland, OH 44145
Mr. David Friedel
Phone: 440-835-0001 Fax: 440-892-9555

**DIMENSIONAL**

*NVLAP Code:* 20/D03
Gage Blocks

| *Range* | *Best Uncertainty (±)*[note 1,2,3] | *Remarks* |
|---|---|---|
| Standard Size Gage Blocks | | |
| thru 1.0 in | 1.3 μin[note 6] | Master Grade Calibration |
| thru 25 mm | 0.035 μm[note 6] | Master Grade Calibration |
| >1.0 thru 4.0 in | (0.8 + 0.5L) μin[note 6] | Master Grade Calibration |
| > 25 thru 100 mm | (0.02 + 0.5L) μ[note 6] | Master Grade Calibration |
| > 4.0 thru 20.0 in | (3.5 + 0.25L) μin | Master Grade Calibration |
| >100 thru 500 mm | (0.09 + 0.25L) μm | Master Grade Calibration |
| thru 4.0 in | (1.4 + 0.6L) μin[note 4] | Commercial Grade Calibration |
| thru 100 mm | (0.035 + 0.6L) μm[note 5] | Commercial Grade Calibration |
| >4.0 thru 20.0 in | (6.0 + 0.3L) μin | Commercial Grade Calibration |
| >100 thru 500 mm | (0.15 + 0.3L) μm | Commercial Grade Calibration |

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**WEBBER GAGE DIVISION / L.S. STARRETT CO.**

| | | |
|---|---|---|
| Non Standard Size Gage Blocks | | |
| to 1.0 in | 2.2 μin | Master Grade Calibration |
| to 25 mm | 0.055 μm | Master Grade Calibration |
| >1.0 thru 4.6 in | (1.6 + 0.6L) μin | Master Grade Calibration |
| > 25 thru 117 mm | (0.04 + 0.6L) μm | Master Grade Calibration |
| >4.6 thru 20.0 in | (6.0 + 0.35L) μin | Master Grade Calibration |
| >117 thru 500 mm | (0.15 + 0.35L) μm | Master Grade Calibration |

1. Represents an expanded uncertainty using a coverage factor, k=2.
2. Approximate value. Actual value determined by the test statistics.
3. L is in inches or meters as appropriate.
4. Uncertainty not less than 2.0 μin.
5. Uncertainty not less than 0.05 μm.
6. Best uncertainty is for gage blocks of chrome-carbide material. Best uncertainty for materials other than chrome-carbide may be approximately 40% larger.

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DENVER INSTRUMENT CO. WEIGHT LAB
6542 Fig Street
Arvada, CO 80004-1042
Mr. Mark Fritz
Phone: 303-431-7255 Fax: 303-423-4831
E-Mail: mark.fritz@denverinstrument.com

MECHANICAL

*NVLAP Code:* 20/M08
Mass

| *Range* | *Best Uncertainty (±)[note 1]* | *Remarks* |
|---|---|---|
| 5 kg | 3.8 mg | |
| 4 kg | 2.4 mg | |
| 3 kg | 2.4 mg | |
| 2 kg | 0.26 mg | |
| 1 kg | 0.24 mg | |
| 500 g | 0.068 mg | |
| 400 g | 0.071 mg | |
| 300 g | 0.067 mg | |
| 200 g | 0.055 mg | |
| 160 g | 0.033 mg | |

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DENVER INSTRUMENT CO. WEIGHT LAB

| | |
|---|---|
| 150 g | 0.037 mg |
| 100 g | 0.034 mg |
| 50 g | 0.0149 mg |
| 40 g | 0.0071 mg |
| 30 g | 0.0068 mg |
| 20 g | 0.0065 mg |
| 10 g | 0.0065 mg |
| 5 g | 0.0050 mg |
| 3 g | 0.0054 mg |
| 2 g | 0.0044 mg |
| 1 g | 0.0045 mg |
| 500 mg | 0.0012 mg |
| 300 mg | 0.0012 mg |
| 200 mg | 0.0012 mg |
| 100 mg | 0.0012 mg |
| 50 mg | 0.0012 mg |
| 30 mg | 0.0012 mg |

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DENVER INSTRUMENT CO. WEIGHT LAB

| | |
|---|---|
| 20 mg | 0.0012 mg |
| 10 mg | 0.0012 mg |
| 5 mg | 0.0012 mg |
| 3 mg | 0.0012 mg |
| 2 mg | 0.0012 mg |
| 1 mg | 0.0012 mg |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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HONEYWELL FM&T METROLOGY
2000 East 95th Street
P.O. Box 419159
Kansas City, MO 64141-6159
Mr. Roger N. Burton
Phone: 816-997-5431 Fax: 816-997-3856
E-Mail: rburton@kcp.com

DIMENSIONAL

*NVLAP Code:* 20/D01
Angle Blocks

| *Range* | *Best Uncertainty (±)[note 1]* | *Remarks* |
|---|---|---|
| up to 45 ° | 1.1 arc seconds | Comparison Method |
| **Autocollimators** | | |
| 0 to 600 arc seconds | (0.3 arc seconds + 0.25% of angle) | Small Angle Generator |
| **Index Table/Polygons** | | |
| 0 to 360 ° (in 10 ° or 30 ° increments) | 0.6 arc seconds | 3 Stack Method |

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HONEYWELL FM&T METROLOGY

Optical Comparators

| | | |
|---|---|---|
| Length up to 12 in | (0.0002 + 30L ) in[note 2] | Magnifications Standard |
| Angle 0 to 360 ° | 0.1 ° | Angle Blocks |

*NVLAP Code:* 20/D03
Gage Blocks

| *Range* | *Best Uncertainty (±)*[note 1, 4] | *Remarks* |
|---|---|---|
| up to 4 in | (3.2 + .88L) μin[note 2] | Comparison |
| >4 in to 20 in | (5.8 + .53L) μin[note 2] | Comparison |
| up to 100 mm | (0.081 + .88L) μm[note 3] | Comparison |
| >100 mm to 500 mm | (0.161 + .41L) μm[note 3] | Comparison |

*NVLAP Code:* 20/D04
Laser Frequency/Wavelength

| *Laser Type* | *Best Uncertainty (±)* | *Remarks* |
|---|---|---|
| HeNe | 0.05 ppm | Comparison |

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HONEYWELL FM&T METROLOGY

*NVLAP Code:* 20/D05
Length

Stage Micrometers (Chrome on Glass)

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 0 to 2 in | 18 μin | Laser Interferometer with Laser Edge Detection |

Undirectional Step Gages

| | | |
|---|---|---|
| 0 to 24 in | (20 μin + 1.8L)[note 2] | CMM with Bi-swing Probe |

Inspection Masters

| | | |
|---|---|---|
| 0 to 2 in | Length 18 μin | Laser Interferometer with Laser Edge Detection |
| >2 to 12 in | Length 32 μin | Laser Interferometer with Laser Edge Detection |
| | Perpendicularity 8 ppm | CMM with Video Probe |

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HONEYWELL FM&T METROLOGY

| | | |
|---|---|---|
| Magnification Scales | | |
| up to 24 in | 0.0003 in | CMM with Video Probe |
| Micrometer Masters | | |
| 0 to 3 in | 60 μin | Single - Axis Measuring Machine |
| Precision Micrometer Heads | | |
| 0 to 2 in | 35 μin | Laser Interferometer |
| (0 to 50 mm) | | |
| 1-D Ball Plates | | |
| up to 48 in | (30 μin + 2L)[note 2] | CMM Single - Axis Method |
| Squares | | |
| up to 24 in by 36 in | 30 μin | CMM, Self Closing Method |
| Straight Edges | | |
| up to 48 in | 5 μin | CMM, Reversal Method |
| Dial Calipers | | |
| ≤12 in | 0.002 in | Gage Blocks |

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HONEYWELL FM&T METROLOGY

*NVLAP Code:* 20/D07
Thread Measuring Wires

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| All 29 ° and 60 ° Wires | 8.0 μin | Direct Measurement |

*NVLAP Code:* 20/D08
Optical Reference Planes
Optical Flats, Mirrors

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 0 to 12 in | 1.2 μin | 3 Flat Method |
| 0 to 12 in | 2.0 μin | Interferometer Method |
| 0 to 12 in | 4.0 μin | Comparison to Master |

*NVLAP Code:* 20/D09
Roundness

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| up to 18 in Diameter | 3 μin | Roundness Machine |

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HONEYWELL FM&T METROLOGY

*NVLAP Code:* 20/D11
Spherical Diameter
Master Balls

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 1/16 to 1.0 in<br>( 1 to 25 mm) | 9 μin | Comparison to Master |
| Calibration Spheres | | |
| to 1 in (25 mm) | 11 μin Diameter | Comparison to Master |
| | 5 μin Sphericity | Roundness |
| OD Micrometers | | |
| up to 3 in | (0.0002 + L/50000) in[note 2] | Micrometer Master |

*NVLAP Code:* 20/D12
Surface Plates

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| Up to 8 ft Diagonal | (30 μin + 2 μin/ft²) | Moody and Least Squares Method with Autocollimator |

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HONEYWELL FM&T METROLOGY

*NVLAP Code:* 20/D14

Plug Gages

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 0 to 1 in | 6.5 μin | Comparison to Master |

Threaded Plug Gages - Pitch and Major Diameter per ASME B1.2, ASME B1.16M or ASME B1.5

| | | |
|---|---|---|
| up to 10 in | P.D. 0.0001 in | 3 - Wire P.D. Measurement |
| | M.D. 0.000035 in | |

Adj. - Thread Ring Gages - Functional Threads per ASME B1.2 (UN or UNR Thread Form), ASME B1.15 (UNJ Threads)

| | | |
|---|---|---|
| up to 10 in | P.D. 0.0002 in | Set to 'W' Thread Set Master |
| | M.D. 0.0001 in | |

Thread Set Plugs - Pitch and Major Diameter per ASME B1.2, ASME B1.16M or ASME B1.5

| | | |
|---|---|---|
| up to 10 in | P.D. 0.000035 in | 3 - Wire P.D. Measurement |
| | M.D. 0.000020 in | |

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HONEYWELL FM&T METROLOGY

*NVLAP Code:* 20/D15
2-D Ball Plates

| *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| 36 in x 36 in | (30 μin + 2.5L)note 2 | CMM Single - Axial Method |

*NVLAP Code:* 20/D16
Coordinate Measuring Machines

| *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| To 120 x 120 x 120 in | Axial (10 + 1.5L) μin | Parametrical Calibration |
| | Planar (35 + 8.5L) μin | |
| To 24 in Volumetric | Axial (35 + 4L) μin | Step Gage |
| Diagonals | Planar (45 + 4L) μin | Step Gage |
| | Spatial (50 + 5L) μin | Step Gage |
| To 56 in Volumetric | Axial (60 + 3L) μin | 1-D Ball Plates |
| Diagonals | Spatial (70 + 3L) μin | 1-D Ball Plates |
| To 36 in Volumetric | Axial (50 + 5L) μin | 2-D Ball Plates |
| Diagonals | Planar (50 + 7L) μin | 2-D Ball Plates |
| | Spatial (50 + 9L) μin | |

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HONEYWELL FM&T METROLOGY

TIME AND FREQUENCY

*NVLAP Code:* 20/F01
Frequency Dissemination

| | *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|---|
| Frequency | 0.1 MHz | 1 part in $10^9$ | |
| Frequency | 1.0 MHz | 1 part in $10^9$ | |
| Frequency | 5.0 MHz | 1 part in $10^9$ | |
| Frequency | 10.0 MHz | 1 part in $10^9$ | |

MECHANICAL

*NVLAP Code:* 20/M06
Force

| *Range* | *Best Uncertainty (±) in %note 1* | *Remarks* |
|---|---|---|
| 5 thru 2400 lbf | 0.01 | of Applied Force |
| >2400 thru 100000 lbf | 0.015 | of Range |
| >100000 thru 300000 lbf | 0.035 | of Range |

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HONEYWELL FM&T METROLOGY

*NVLAP Code:* 20/M08
Mass

| *Range* | *Best Uncertainty (±) in mg*[note 1] | *Method* |
|---|---|---|
| 5 kg | 19 70 | Direct-Reading Weighing |
| 3 kg | 15.12 | Direct-Reading Weighing |
| 2 kg | 12.08 | Direct-Reading Weighing |
| 1 kg | 3 832 | Direct-Reading Weighing |
| 500 g | 2.168 | Direct-Reading Weighing |
| 300 g | 1.410 | Direct-Reading Weighing |
| 200 g | 1.040 | Direct-Reading Weighing |
| 100 g | 0.598 | Direct-Reading Weighing |
| 50 g | 0.4480 | Direct-Reading Weighing |
| 30 g | 0.4010 | Direct-Reading Weighing |
| 20 g | 0.1528 | Direct-Reading Weighing |
| 10 g | 0.1002 | Direct-Reading Weighing |
| 5 g | 0.0780 | Direct-Reading Weighing |
| 3 g | 0 0423 | Direct-Reading Weighing |
| 2 g | 0.0266 | Direct-Reading Weighing |

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200108-0

HONEYWELL FM&T METROLOGY

| | | |
|---|---|---|
| 1 g | 0 0296 | Direct-Reading Weighing |
| 500 mg | 0.0272 | Direct-Reading Weighing |
| 300 mg | 0.0267 | Direct-Reading Weighing |
| 200 mg | 0.0265 | Direct-Reading Weighing |
| 100 mg | 0.0264 | Direct-Reading Weighing |
| 50 mg | 0 0264 | Direct-Reading Weighing |
| 30 mg | 0.0264 | Direct-Reading Weighing |
| 20 mg | 0 0045 | Single Substitution Comparison to Reference Weights |
| 10 mg | 0.0035 | Single Substitution Comparison to Reference Weights |
| 5 mg | 0.0034 | Single Substitution Comparison to Reference Weights |
| 3 mg | 0.0036 | Single Substitution Comparison to Reference Weights |
| 2 mg | 0.0034 | Single Substitution Comparison to Reference Weights |
| 1 mg | 0.0034 | Single Substitution Comparison to Reference Weights |
| 10 lb | 19.09 | Direct-Reading Weighing |

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HONEYWELL FM&T METROLOGY

| | | |
|---|---|---|
| 8 lb | 15.90 | Direct-Reading Weighing |
| 5 lh | 12.43 | Direct-Reading Weighing |
| 4 lb | 10.80 | Direct-Reading Weighing |
| 3 lb | 10.11 | Direct-Reading Weighing |
| 2 lb | 3.723 | Direct-Reading Weighing |
| 1 lb | 1.899 | Direct-Reading Weighing |
| 0.5 lb | 1.150 | Direct-Reading Weighing |
| 0.3 lb | 0.821 | Direct-Reading Weighing |
| 0.2 lb | 0.575 | Direct-Reading Weighing |
| 0.1 lb | 0.460 | Direct-Reading Weighing |
| 0.05 lb | 0.417 | Direct-Reading Weighing |
| 0.03 lb | 0.1277 | Direct-Reading Weighing |
| 0.02 lb | 0.1064 | Direct-Reading Weighing |
| 0.01 lb | 0.0998 | Direct-Reading Weighing |
| 0.005 lb | 0.0518 | Direct-Reading Weighing |
| 0.003 lb | 0.0458 | Direct-Reading Weighing |
| 0.002 lb | 0.0290 | Direct-Reading Weighing |
| 0.001 lb | 0.0356 | Direct-Reading Weighing |

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HONEYWELL FM&T METROLOGY

| | | |
|---|---|---|
| 10 oz | 1.253 | Direct-Reading Weighing |
| 8 oz | 1.150 | Direct-Reading Weighing |
| 6 oz | 0.868 | Direct-Reading Weighing |
| 5 oz | 0.865 | Direct-Reading Weighing |
| 4 oz | 0.815 | Direct-Reading Weighing |
| 3 oz | 0.551 | Direct-Reading Weighing |
| 2 oz | 0.4850 | Direct-Reading Weighing |
| 1 oz | 0.4250 | Direct-Reading Weighing |
| 1/2 oz | 0.1373 | Direct-Reading Weighing |
| 1/4 oz | 0.0985 | Direct-Reading Weighing |
| 1/8 oz | 0.0968 | Direct-Reading Weighing |
| 1/16 oz | 0.0482 | Direct-Reading Weighing |
| 1/32 oz | 0.0370 | Direct-Reading Weighing |
| 1/64 oz | 0.0356 | Direct-Reading Weighing |

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HONEYWELL FM&T METROLOGY

*NVLAP Code:* 20/M11
Vibration/Acceleration

| *Range* | *Best Uncertainty (±) in %*[note 1] |
|---|---|
| 0.3 g @ 10 thru 40 Hz | 2.5 |
| 1 g @ 10 thru 100 Hz | 2.5 |
| 2 g @ 10 thru 100 Hz | 2.5 |
| 5 g @ 100 Hz | 2.5 |
| 10 g @ 30 thru < 100 Hz | 2.5 |
| 10 g @ 100 thru 2000 Hz | 1.8 |
| 10 g @ > 2000 thru 10000 Hz | 2.5 |
| Shock | |
| 10 thru 10000 g @ 10 thru 10000 Hz | 3.5 |

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HONEYWELL FM&T METROLOGY

RF MICROWAVE

*NVLAP Code:* 20/R01
Coaxial Air Line Standards

Air Lines (Air-Dielectric)

| | | | *Best Uncertainty (±)*[note 1] *Frequency (GHz)* | | |
|---|---|---|---|---|---|
| *Connector Type* | *Quantity* | *Quantity Range* | *0.05 to 8.5* | *8.5 to 18.0* | *18.0 to 26.5* |
| GR-900 | Impedance | 50 Ω | 0.028 - 0.050 Ω | --- | --- |
| APC-7 | Impedance | 50 Ω | 0.044 - 0.080 Ω | 0.060 - 0.096 Ω | --- |
| N | Impedance | 50 Ω | 0.044 - 0.080 Ω | 0.060 - 0.096 Ω | --- |
| APC-3.5 | Impedance | 50 Ω | 0.115 - 0.165 Ω | 0.125 - 0.185 Ω | 0.158 - 0.200 Ω |
| GR-900 | Electrical Length | 3 to 30 cm | 0.0019 - 0.0081 cm | --- | --- |
| APC-7 | Electrical Length | 3 to 30 cm | 0.0021 - 0.028 cm | 0.0021 - 0.0041 cm | --- |
| N | Electrical Length | 3 to 15 cm | 0.0021 - 0.014 cm | 0.0021 - 0.0028 cm | |
| APC-3.5 | Electrical Length | 5 to 15 cm | 0.0026 - 0.028 cm | 0.0025 - 0.0036 cm | 0.0025 - 0.0032 cm |

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HONEYWELL FM&T METROLOGY

*NVLAP Code:* 20/R02
Coaxial/Waveguide Terminations

Reflection Coefficient (Scattering Parameter $S_{11}$) on the HP8510 Vector Automatic Network Analyzer

| *Connector Type* | *Quantity* | *Quantity Range* | *Best Uncertainty (±)note 1 Frequency (GHz) 0.05 to 8.5* | *8.5 to 18.0* | *18.0 to 26.5* |
|---|---|---|---|---|---|
| GR-900 | $\|S_{11}\|$ | 0 to 1 | 0.002 - 0.005 | --- | --- |
| APC-7 | $\|S_{11}\|$ | 0 to 1 | 0.0025 - 0.004 | 0.004 - 0.006 | --- |
| N | $\|S_{11}\|$ | 0 to 1 | 0.0045 - 0.018 | 0.012 - 0.030 | --- |
| APC-3.5 | $\|S_{11}\|$ | 0 to 1 | 0.0045 - 0.0055 | 0.0055 - 0.008 | 0.008 - 0.009 |
| GR-900 | ARG ($S_{11}$) | -180 to 180°, $0<\|S_{11}\|<1$ | 0.35 - 180° | --- | --- |
| APC-7 | ARG ($S_{11}$) | -180 to 180°, $0<\|S_{11}\|<1$ | 0.35 - 180° | 0.50 - 180° | --- |
| N | ARG ($S_{11}$) | -180 to 180°, $0<\|S_{11}\|<1$ | 1.0 - 180° | 6.50 -180° | --- |
| APC-3.5 | ARG ($S_{11}$) | -180 to 180°, $0<\|S_{11}\|<1$ | 0.40 - 180° | 0.55 - 180° | 1.15 - 180° |

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HONEYWELL FM&T METROLOGY

*NVLAP Code:* 20/R02
Coaxial/Waveguide Terminations

Reflection Coefficient (Scattering Parameter $S_{11}$) on HP8753 Vector Automatic Network Analyzer

| *Connector Type* | *Quantity* | *Quantity Range* | *Best Uncertainty (±)note 1 Frequency (MHz) 0.30 to 100* | *100 to 3000* |
|---|---|---|---|---|
| GR-900 | $\|S_{11}\|$ | 0 to 1 | 0.004 - 0.005 | 0.005 - 0.035 |
| APC-7 | $\|S_{11}\|$ | 0 to 1 | 0.0025 - 0.0075 | 0.0025 - 0.0075 |
| N | $\|S_{11}\|$ | 0 to 1 | 0.0045 - 0.012 | 0.0055 - 0.015 |
| APC-3.5 | $\|S_{11}\|$ | 0 to 1 | --- | 0.0045 - 0.018 |
| GR-900 | ARG ($S_{11}$) | -180 to 180°, $0<\|S_{11}\|<1$ | 0.50 -180° | 0.55 - 180° |
| APC-7 | ARG ($S_{11}$) | -180 to 180°, $0<\|S_{11}\|<1$ | 0.50 -180° | 0.50 - 180° |
| N | ARG ($S_{11}$) | -180 to 180°, $0<\|S_{11}\|<1$ | 0.50 -180° | 3.0 - 180° |
| APC-3.5 | ARG ($S_{11}$) | -180 to 180°, $0<\|S_{11}\|<1$ | --- | 0.50 - 180° |

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HONEYWELL FM&T METROLOGY

*NVLAP Code:* 20/R12
RF/Microwave Bolometer Units

Thermistor Mounts at Type N Connector

| *Quantity* | *Power Level Ronge* | *Quontity Range* | *Best Uncertainty (±)[note 1] Frequency 1 to 1000 MHz* | *1.0 to 8.5 GHz* |
|---|---|---|---|---|
| Calibration Factor | -10 to 10 dB | 0.9 to 1.0 | 0.75 - 2.3% | 1.0 - 3.1% |

*NVLAP Code:* 20/R13
RF/Microwave Attenuators

Attenuation (Scattering Parameter $S_{ii}$) on the HP8510 Vector Automatic Network Analyzer

| *Connector Type* | *Quantity* | *Quantity Ronge* | *Best Uncertointy (±)[note 1] Frequency (GHz) 0.05 to 8.5* | *8.5 to 18.0* | *18.0 to 26.5* |
|---|---|---|---|---|---|
| APC-7 | $\|S_{ii}\|$ | 0 to 60 dB | 0.02 - 0.50 dB | 0.034 - 0.30 dB | --- |
| APC-3.5 | $\|S_{ii}\|$ | 0 to 60 dB | 0.02 - 0.50 dB | 0.031 - 0.29 dB | 0.044 - 0.37 dB |

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HONEYWELL FM&T METROLOGY

*NVLAP Code:* 20/R13
RF/Microwave Attenuators

Attenuation (Scattering Parameter $S_{ii}$) on the HP8753 Vector Automatic Network Analyzer

| *Connector Type* | *Quontity* | *Quontity Range* | *Best Uncertainty (±)[note 1] Frequency (MHz) 0.30 to 3000* |
|---|---|---|---|
| APC-7 | $\|S_{ii}\|$ | 0 to 60 dB | 0.02 - 0.40 dB |

*NVLAP Code:* 20/R16
Group Delay

| *Connector Type* | *Deloy (ns)* | *Best Uncertointy (±)[note 1] Frequency (GHz) 0.05 to 2.0* |
|---|---|---|
| GR-900, APC-7, N, APC-3.5 | 1 to 1200 | 0.005 - 0.5 |

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HONEYWELL FM&T METROLOGY

*NVLAP Code:* 20/R17
RF/Microwave Power Meters

CW Microwave Power Meter Calibration at Type N Connector

| | | *Best Uncertainty (±)note 1 Frequency* | | |
|---|---|---|---|---|
| *Quantity* | *Quantity Range (dBm)* | *0.1 to 10 MHz* | *0.01 to 3.0 GHz* | *3.0 to 8.5 GHz* |
| Power | -60 to -20 dBm | --- | 0.11 dB | 0.13 dB |
| Power | -20 to +20 dBm | 0.16 - 0.18 dB | 0.10 - 0.15 dB | 0.10 - 0.16 dB |

*NVLAP Code:* 20/R17
RF/Microwave Power Meters

Peak Power Meter Calibration at Type N Connector

| | | *Best Uncertainty (±)note 1 Frequency (GHz)* |
|---|---|---|
| *Quantity* | *Quantity Range (dBm)* | *1.0 to 2.0 GHz* |
| Power | -20 to +20 dBm | 0.2 dB |

*Power System Calibration Procedure is MW-085

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HONEYWELL FM&T METROLOGY

*NVLAP Code:* 20/R17
RF/Microwave Power Wattmeters

| | | *Best Uncertainty (±)note 1 Frequency 2 MHz to 1.2 GHz* |
|---|---|---|
| *Quantity* | *Quantity Range (Watts)* | |
| Power | 0.1 to 1.0 k | 3.4% |

1. Represents an expanded uncertainty using a coverage factor, k=2.
2. L is in inches.
3. L is in meters.
4. Best uncertainty is for steel blades.

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CALIBRATION LABORATORIES NVLAP LAB CODE 200115-0

BECHTEL BWXT IDAHO, STANDARDS AND CALIBRATION LAB
P.O. Box 1625
Idaho Falls, ID 83415-4137
Mr. Harry J. Moody
Phone: 208-526-2656 Fax: 208-526-5462
E-Mail: moodhj@inel gov

DIMENSIONAL

*NVLAP Code:* 20/D03
Gage Blocks

| *Range* | *Best Uncertainty (±)note 1* |
|---|---|
| 0-4 in | 3.4 - 4.5 μin |
| 5-8 in | 4 5 - 5.9 μin |
| 10-12 in | 6 9 - 7.8 μin |
| 16 in | 9 8 μin |
| 20 in | 11 8 μin |

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BECHTEL BWXT IDAHO, STANDARDS AND CALIBRATION LAB

ELECTROMAGNETICS -DC/LOW FREQUENCY

*NVLAP Code:* 20/E05
Resistance

| *Range in Ohms* | *Best Uncertainty (±)note 1* |
|---|---|
| 0.1 | 0.35 ppm |
| 1.0 | 0.3 ppm |
| 10.0 | 0.35 ppm |
| 100 | 0.5 ppm |
| 1 k | 0.6 ppm |
| 10 k | 0.5 ppm |
| 100 k | 1.0 ppm |
| 1 M | 5.0 ppm |

*NVLAP Code:* 20/E06
DC Voltage

| *Range* | *Best Uncertainty (±)note 1* |
|---|---|
| 10 volt Zener Reference | 0 3 ppm |

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**TIME AND FREQUENCY**

*NVLAP Code:* 20/F01
Frequency Dissemination

| *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| 0.1 MHz, 1 MHz, 5 MHz, 10 MHz | $1 \times 10^{-11}$/24 hours | NIST FMS System |

*NVLAP Code:* 20/F03
Oscillator Characterization (Electronic Counters)

| *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| 0.1 MHz, 1 MHz, 5 MHz, 10 MHz | $5 \times 10^{-10}$/24 hours | NIST FMS System |

**MECHANICAL**

*NVLAP Code:* 20/M03
Mass

| *Range* | *Best Uncertainty (±)note 1 in µg* | *Remarks* |
|---|---|---|
| 1 kg | 115.67 | Repetitive Double Substitution |
| 500 g | 66.46 | Repetitive Double Substitution |
| 200 g | 54.37 | Repetitive Double Substitution |
| 100 g | 29.80 | Repetitive Double Substitution |
| 50 g | 7.22 | Repetitive Double Substitution |

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| | | |
|---|---|---|
| 20 g | 6.02 | Repetitive Double Substitution |
| 10 g | 2.65 | Repetitive Double Substitution |
| 5 g | 4.19 | Repetitive Double Substitution |
| 2 g | 4.92 | Repetitive Double Substitution |
| 1 g | 3.87 | Repetitive Double Substitution |
| 0.5 g | 3.27 | Repetitive Double Substitution |
| 0.2 g | 1.59 | Repetitive Double Substitution |
| 0.1 g | 1.51 | Repetitive Double Substitution |
| 0.05 g | 0.81 | Repetitive Double Substitution |
| 0.02 g | 0.77 | Repetitive Double Substitution |
| 0.01 g | 0.21 | Repetitive Double Substitution |
| 0.005 g | 3.01 | Repetitive Double Substitution |
| 0.002 g | 0.98 | Repetitive Double Substitution |
| 0.001 g | 0.71 | Repetitive Double Substitution |

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*NVLAP Code:* 20/M06
Force

| *Range in lbf* | *Best Uncertainty (±) % of F/S* | *Remarks* |
|---|---|---|
| 10 - 100 | 0.0063 | Primary Standard (Dcadweight) |
| 101 - 200 | 0.0062 | Primary Standard (Deadweight) |
| 201 - 1000 | 0 0061 | Primary Standard (Deadweight) |
| 1000 - 5000 | 0.020 | Secondary Standards (Proving Rings) |
| 5001 - 10,000 | 0.021 | Secondary Standards (Proving Rings) |
| 10,001 - 30,000 | 0.026 | Secondary Standards (Proving Rings) |
| 30,001 - 50,000 | 0.023 | Secondary Standards (Proving Rings) |
| 50,001 -100,000 | 0.042 | Secondary Standards (Proving Rings) |
| 100 - 1000 | 0.073 | Secondary Standards (Load Cells) |
| 1001 - 3000 | 0.062 | Secondary Standards (Load Cells) |
| 3001 - 10,000 | 0.058 | Secondary Standards (Load Cells) |
| 10,001 - 30,000 | 0.060 | Secondary Standards (Load Cells) |
| 30,001 - 50,000 | 0.063 | Secondary Standards (Load Cells) |
| 50,001 - 100,000 | 0.144 | Secondary Standards (Load Cells) |

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THERMODYNAMICS

*NVLAP Code:* 20/T05
Pressure

| *Range in psi* | *Best Uncertainty (±)*[note 1] *in ppm* | *Remarks* |
|---|---|---|
| Deadweight Pressure Gauge - Direct Pressure Comparison | | |
| 0 - 18 | 41.0 | Nitrogen |
| 18 - 700 | 56.0 | Nitrogen |
| 700 - 4000 | 54.0 | Oil |
| 4000 - 40,000 | 73.0 | Oil |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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CALIBRATION LABORATORIES NVLAP LAB CODE 200123-0

LIBERTY LABS, INC.
1346 Yellowwood Road
P.O. Box 230
Kimballton, IA 51543
Mr. Michael W. Howard
Phone: 712-773-2199 Fax: 712-773-2299
E-Mail: mhoward@liberty-labs.com

ELECTROMAGNETIC - RF/MICROWAVE

*NVLAP Code:* 20/R08
Microwave Antenna Parameters

| *Range* | *Best Uncertainty in dB (±)*[note 1] | *Remarks* |
|---|---|---|
| Early Designed Biconical Antennas (such as the EMCO 3104) | | |
| 30-60 MHz | 1.7 | |
| 60-300 MHz | 1.0 | |
| New Designed Biconical Antennas (such as the EMCO 3110) | | |
| 30-90 MHz | 1.2 | |
| 90-300 MHz | 0.9 | |

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LIBERTY LABS, INC.

| | | |
|---|---|---|
| Log-Periodic Antennas (such as the EMCO 3146) | | |
| 200-1000 MHz | 1.0 | Vertical |
| 200-1000 MHz | 1.1 | Horizontal |
| 200-1000 MHz | 1.0 to 2.2 | Fixed Heights |
| BiLog Antennas (such as the Chase CBL6111) | | |
| 20-1000 MHz | 0.9 | |
| Dipole Antennas (such as the EMCO 3121) | | |
| 30-1000 MHz | 0.6 | |
| DRWG Horn Antennas (such as the EMCO 3115) | | |
| 1-18 GHz | 1.1 | 3 Ant. Method, OATS |
| 1-18 GHz | 1.2 | Standard Field, OATS |
| Horn Antennas (above 18 GHz) | | |
| 18-40 GHz | 1.2 | Standard Field, Anechoic |

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LIBERTY LABS, INC.

| | | |
|---|---|---|
| LISN's | | |
| 10 kHz to 100 MHz | 0.4 | Insertion Loss |
| 10 kHz to 100 MHz | 0.4 | Impedance |
| Current Probes/Injection Probes | | |
| 5 Hz - 500 MHz | 0.3 | Insertion Loss |
| Absorbing Clamps | | |
| 30 to 1000 MHz | 2.3 | |
| CDN'S & 150-50 Ohm Adapters | | |
| 10 kHz to 230 MHz | 0.4 | Impedance & Insertion Loss |
| Isotropic Probes | | |
| 10 kHz-1 GHz | 2.4 | GTEM, Boonton MV |
| 100 MHz - 18 GHz | 2.4 | GTEM, PWR Sensors |
| 10 kHz - 1 GHz | 1.3 | Stripline |
| 18-40 GHz | 1.9 | Standard Field |

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*For the National Institute of Standards and Technology*

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Scope of Accreditation



CALIBRATION LABORATORIES — NVLAP LAB CODE 200123-0

LIBERTY LABS, INC.

| | | |
|---|---|---|
| RF Pre-amps & Amps | | |
| 10 kHz to 18 GHz | 0.4 | GAIN Cal |
| Loop Antennas | | |
| 1kHz - 30 MHz | 1.1 | Vacuo Junction |
| 20 Hz - 1 kHz | 1.1 | Series Resistor |
| Rod Antennas | | |
| 100 Hz to 30 MHz | 0.5 | Using ECSM (Insertion Loss with Mfr's Fixture) |
| 100 Hz to 10 kHz | 1.0 | Using NIST 1347 |
| 10 kHz to 30 MHz | 0.9 | Using NIST 1347 |
| RF Insertion Loss | | |
| 10 kHz to 18 GHz | 0.4 | |

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200123-0

LIBERTY LABS, INC.

ESD Simulators/Surge Generators

| | |
|---|---|
| 0 to 15 kV ESD Gun | 0.3 dB |
| 0 to 6 kV Surge | 0.3 dB |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200127-0

DAVID L. ELLIS CO., INCORPORATED
310 Old High Street, P.O. Box 592
Acton, MA 01720-0010
Mr. Robert A. Ellis
Phone: 978-897-1795 Fax: 978-897-0844

MECHANICAL

*NVLAP Code:* 20/M13
Calibration of Test Blocks

| *Hardness Scale and Range* | *Best Uncertainty (±) in Rockwell Points*[note 1] | *Remarks* |
|---|---|---|
| HRC 25 level | 0.31 | |
| HRC 45 level | 0.29 | |
| HRC 63 level | 0.31 | |

Field Service Indirect Verification of Hardness of Testing Machines

| | | |
|---|---|---|
| HRC 20 to 65 | 0.64 | |

1 Represents an expanded uncertainty using a coverage factor, k=2.

September 30, 2001
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*For the National Institute of Standards and Technology*

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## Scope of Accreditation

Revised 3/3/2000



**CALIBRATION LABORATORIES** **NVLAP LAB CODE 200154-0**

COMPAQ CORPORATE METROLOGY
20555 SH 249 (MS 070110)
P.O. Box 692000 (MS 070110)
Houston, TX 77269-2000
Mr. David H. Shumway
Phone: 281-514-5787 Fax: 281-518-7275
E-Mail: dave.shumway@compaq.com

### DC/LOW FREQUENCY

*NVLAP Code:* 20/E17
Pulse Waveform

| *Parameter* | *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|---|
| Risetime (Generate) | < 20 ps | 14.43% | |
| Risetime (Measure) | < 1 ns to 100 ps | 5.78% | Single Shot |
| Impulse Spectral Amplitude | | | |
| Impulse Noise (Source) | 10 kHz to 150 kHz | 14.21% | Band A |
| Impulse Noise (Source) | 150 kHz to 30 MHz | 14.21% | Band B |
| Impulse Noise (Source) | 30 MHz to 1 GHz | 23.43% | Band C & D |
| HV (Measure) | 1 kV to 60 kV | 0.13% | with HVD |
| | 1 kV to 40 kV | 2.33% | with HV Probe |

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**CALIBRATION LABORATORIES** **NVLAP LAB CODE 200154-0**

COMPAQ CORPORATE METROLOGY

### TIME AND FREQUENCY

*NVLAP Code:* 20/F03
Oscillator Characterization

| *Parameter* | *Nominal* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|---|
| Frequency/Period | | | |
| Frequency (Source) | 10 MHz | $2.82 \times 10^{-9}$ | |
| Frequency (Measure) | 10 MHz, 1 Vrms | $1.34 \times 10^{-7}$ | |
| Frequency (Comparison) | 10 MHz, 1 Vrms | $1.34 \times 10^{-9}$ | 1 second |
| Duty Cycle/Duration | | | |
| @ 1 s Time Interval | 10 MHz, 1 Vrms | 0.61% | |
| @ 100 mV p-p | 2 GHz | 6.24% | |
| Jitter | | | |
| @ 200 mV p-p | 2 GHz | 1.38% | |
| @ 1Vrms | 10 MHz | 1.71% | |

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*For the National Institute of Standards and Technology*

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COMPAQ CORPORATE METROLOGY

| | | | |
|---|---|---|---|
| Drift | | | |
| @ 100 s Time Interval | 10 MHz | $5.7 \times 10^{-9}$ | |
| Spectral Purity | | | |
| Phase Noise | | | |
| | 10 MHz to 18 GHz | 34.3% | Noise Test Set |
| Single Sideband Phase Noise (SSB) | | | |
| @ +30 to -20 dBm | 10 MHz to 1300 MHz | 15.10% | with receiver |
| @ 0 ≥ -22 dBm | 1 GHz | 15.10% | with spectrum analyzer |
| Harmonic Distortion | | | |
| @ 0 dBm | 0.2 Hz to 100 Hz | 5.44% | |
| @ 0 dBm | 1 GHz | 15.10% | |
| @ -22 dBm | 10 Hz to 100 kHz | 29.91% | |

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COMPAQ CORPORATE METROLOGY

| | | |
|---|---|---|
| 2nd Order Harmonic/Intermodulation Distortion | | |
| @ 0 dBm | 0.24 Hz to 100 Hz | 5.44% |
| @ 0 dBm | 1 GHz | 15.10% |
| AM Modulation | | |
| AM (Source) | 50 Hz to 50 kHz Rates | 0.18% |
| AM (Measure) | 50 Hz to 50 kHz Rates | 1.41% |
| AM (Source) | 33.33% of depth | 0.12% |
| FM Modulation | | |
| FM (Source) | DC to 100 kHz Rates | 0.16% |
| FM (Measure) | 50 Hz to 100 kHz Rates | 1.72% |
| FM (Source) | 34 kHz Peak Deviation | 0.12% |
| PM Modulation | | |
| PM (Measure) | 150 kHz to 1300 MHz | 4.77% |
| Spurious Content | | |
| @ 0 dBm | 0.2 Hz to 100 Hz | 5.44% |

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COMPAQ CORPORATE METROLOGY

| | | | |
|---|---|---|---|
| @ 0 dBm | 1 GHz | 15.10% | |

**RF/MICROWAVE**

*NVLAP Code:* 20/R13
Attenuators

Relative RF Power (Attenuation-Measure)

| *Frequency* | *Nominal* | *Best Uncertainty (±)note 1,2* | *Remarks* |
|---|---|---|---|
| 100 kHz to 2.6 GHz | 0 dB to - 20 dB | M + 0 02 dB | |
| 100 kHz to 2.6 GHz | -20 dB to -40 dB | M + 0.03 dB | |
| 100 kHz to 2.6 GHz | -40 dB to -60 dB | M + 0.04 dB | |
| 100 kHz to 2.6 GHz | -60 dB to -80 dB | M + 0.05 dB | |
| 100 kHz to 2.6 GHz | -80 dB to -100 dB | M + 0.06 dB | |
| 100 kHz to 2.6 GHz | -100 dB to -110 dB | M + 0.12 dB | |
| 100 kHz to 2.6 GHz | -110 dB to -120 dB | M + 0.17 dB | |
| 2.5 GHz to 26.5 GHz | -0 dB to -10 dB | M + 0.22 dB | |
| 2.5 GHz to 26.5 GHz | -10 dB to -20 dB | M + 0.09 dB | |
| 2.5 GHz to 26.5 GHz | -20 dB to -30 dB | M + 0.10 dB | |
| 2.5 GHz to 26.5 GHz | -30 dB to -40 dB | M + 0.13 dB | |

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| | | | |
|---|---|---|---|
| 2.5 GHz to 26.5 GHz | -40 dB to -50 dB | M + 0.14 dB | |
| 2.5 GHz to 26.5 GHz | -50 dB to -60 dB | M + 0.16 dB | |
| 2.5 GHz to 26.5 GHz | -60 dB to -70 dB | M + 0.18 dB | |
| 2.5 GHz to 26.5 GHz | -70 dB to -80 dB | M + 0.20 dB | |
| 2.5 GHz to 26.5 GHz | -80 dB to -90 dB | M + 0.31 dB | |
| 2.5 GHz to 26.5 GHz | -90 dB to -100 dB | M + 0.32 dB | |
| 2.5 GHz to 26.5 GHz | -100 dB to -110 dB | M + 0.34 dB | |
| 2.5 GHz to 26.5 GHz | -110 dB to -120 dB | M + 0.36 dB | |
| 30 MHz | 0 dB to 50 dB | M + 0.07 dB | |

Attenuation High Power (Generate)

| | | | |
|---|---|---|---|
| DC to 2 GHz | 20 dB | M + 0.44 dB | with Narda 766-20 ATTN. |
| DC to 2 GHz | 20 dB | M + 0.80 dB | with Narda 769-20 ATTN. |

Attenuation High Voltage (Generate)

| | | | |
|---|---|---|---|
| DC to 1 GHz | 20 dB | M + 0.30 dB | |

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COMPAQ CORPORATE METROLOGY

| | | | |
|---|---|---|---|
| DC to 2 GHz | 20 dB | M + 0.64 dB | |
| Impedance (Source) | | | |
| DC to 18 GHz | 50 ohms | 1.84% | |
| DC to 6 GHz | 50 ohms | 0.61% | |
| DC to 3 GHz | 75 ohms | 0.76% | |
| Impedance (Measure) | | | |
| 100 kHz to 500 MHz | | 2.2% | Vector Analyzer |
| 100 Hz, 1 kHz, 10 kHz, 100 kHz | 50 ohms | 1 97% | with LCR Meter |
| DC to 6 GHz | 50 ohms | 11.79% | (TDR) |
| Electrical Length (TDR Measure) | | | |
| 1 GHz | 30 cm | 7.57% | |

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COMPAQ CORPORATE METROLOGY

Return Loss

| *Frequency* | *Nominal* | *Best Uncertainty (±)[note 1]* | *Remarks* |
|---|---|---|---|
| 10 MHz to 12.4 GHz | 0 to -10 dB | M + 14 75% | Scaler Analyzer |
| 12.4 GHz to 18 GHz | 0 to -10 db | M + 14.39% | Scaler Analyzer |
| 30 kHz to 6.0 GHz | 0 to -10 db | M + 14.25% | Vector Analyzer |
| Insertion Loss | | | |
| 10 MHz to 18 GHz | 0 to - 30 db | M + 2.96% | Scaler Analyzer |
| 10 MHz to 18 GHz | -30 db to -60 db | M + 28.52% | Scaler Analyzer |
| 30 kHz to 6.0 GHz | 0 to -60 db | M + 5.44% | Vector Analyzer |
| Phase (Measure) | | | |
| 30 kHz to 6.0 GHz | 0 to 360 degrees | 2.08 degrees | Vector Analyzer |
| 0.01 Hz to 160 MHz | -180 to 360 degrees | 2.96% | with Series Counters |

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COMPAQ CORPORATE METROLOGY

*NVLAP Code:* 20/R17
Power Meters

| *Frequency* | *Nominal* | *Best Uncertainty (±)*[note 1,2] | *Remarks* |
|---|---|---|---|
| RF Power Sensor Transfer | | | |
| 10 MHz to 18 GHz | | M + 1.54% | |
| 50 MHz to 26.5 GHz | | M + 2.90% | |
| RF Power Absolute | | | |
| 10 MHz to 18 GHz | | M + 1.52% | |
| 50 MHz to 26.5 GHz | | M + 2.89% | |
| 10 kHz to 100 MHz | 0.5 mV | M + 0.20 dB | |
| 100 MHz to 300 MHz | 0.5 mV | M + 0.24 dB | |
| 300 MHz to 1 GHz | 0.5 mV | M + 0.28 dB | |
| 1 GHz to 1.2 GHz | 0.5 mV | M + 0.43 dB | |
| 10 kHz to 100 MHz | 1.0 mV | M + 0.14 dB | |
| 100 MHz to 1 GHz | 1.0 mV | M + 0.20 dB | |
| 300 MHz to 1 GHz | 1.0 mV | M + 0.24 dB | |
| 1 GHz to 1.2 GHz | 1.0 mV | M + 0.42 dB | |

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COMPAQ CORPORATE METROLOGY

| | | |
|---|---|---|
| 10 kHz to 100 MHz | 10 mV to 1000 mV | M + 0.11 dB |
| 100 MHz to 300 MHz | 10 mV to 1000 mV | M + 0.11 dB |
| 300 MHz to 1 GHz | 10 mV to 1000 mV | M + 0.22 dB |
| 1 GHz to 1.2 GHz | 10 mV to 1000 mV | M + 0.41 dB |
| Tuned RF Power - Absolute | | |
| 100 kHz to 2.6 GHz | 0 dBm to -100 dBm | M + 0.28 dB |
| 100 kHz to 2.6 GHz | -100 dBm to -110 dBm | M + 0.30 dB |
| 100 kHz to 2.6 GHz | -110 dBm to -120 dBm | M + 0.32 dB |
| 2.5 GHz to 26.5 GHz | 0 dBm to -10 dBm | M + 0.64 dB |
| 2.5 GHz to 26.5 GHz | -10 dBm to -40 dBm | M + 0.61 dB |
| 2.5 GHz to 26.5 GHz | -40 dBm to -60 dBm | M + 0.62 dB |
| 2.5 GHz to 26.5 GHz | -60 dBm to -80 dBm | M + 0.63 dB |
| 2.5 GHz to 26.5 GHz | -80 dBm to -90 dBm | M + 0.67 dB |
| 2.5 GHz to 26.5 GHz | -90 dBm to -110 dBm | M + 0.68 dB |
| 2.5 GHz to 26.5 GHz | -110 dBm to -120 dBm | M + 0.69 dB |

1. Represents an expanded uncertainty using a coverage factor, k=2.
2. M = Mismatch uncertainty.

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200235-0

**STERIS-ISOMEDIX SERVICES**
7828 Nagle Avenue
Morton Grove, IL 60053
Mr. Glenn W. Calvert
Phone: 847-247-0970 Fax: 847-247-0882
E-Mail: glenn_calvert@steris.com

**IONIZING RADIATION**

*NVLAP Code:* 20/I02
High Dose Dosimetry

| *Source* | *Range* | *Best Uncertainty(±)*[note 1] |
|---|---|---|
| $^{60}$Co Gamma Rays | 100 grays or more at a rate of approximately 1 to 20 kGy/hour | 2.5% |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200262-0

**METROPLEX METROLOGY LAB, INC.**
2309 E. Loop 820 North
Fort Worth, TX 76118-7103
Mr. James L. Johnson
Phone: 817-589-8300 Fax: 817-589-8311
E-Mail: jjohnson@metroplexmetrology.com

**DIMENSIONAL**

*NVLAP Code:* 20/D03
Gage Blocks

| *Range* | *Best Uncertainty in µin (±)*[note 1] | *Remarks* |
|---|---|---|
| to 1 in | 2.5 | Comparison to Master |
| >1 in to 4 in | 2.5 + 0.5L[note 2] | Comparison to Master |

*NVLAP Code:* 20/D05
Length and Diameter

| | *Range* | *Best Uncertainty in µin (±)*[note 1] | *Remarks* |
|---|---|---|---|
| Calipers | to 72 in | 500 + 12L[note 2] | Gage Blocks |
| OD Micrometers | to 36 in | 66 + 11L[note 2] | Gage Blocks |
| ID Micrometer Head | to 1.0 in | 66 | Comparison to Gage Blocks |

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METROPLEX METROLOGY LAB, INC.

| | | | |
|---|---|---|---|
| ID Micrometer Rods | to 30 in | 34 + 2L[note 2] | Comparison to Gage Blocks |
| Micrometer End Stds. | to 30 in | 34 + 2L[note 2] | Comparison to Gage Blocks |
| Dial Indicators | | | |
| Resolution | 0.0010 in | 580 | Comparison to ULM |
| | 0.0005 in | 290 | Comparison to ULM |
| | 0.0001 in | 64 | Comparison to ULM |
| Radius Gages | All Sizes | 180 | Optical Comparator |
| Optical Comparators | | | |
| Linear Travel | to 4 in | 224 | |

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200262-0

METROPLEX METROLOGY LAB, INC.

*NVLAP Code:* 20/D07
Measuring Wires

| | *Range* | *Best Uncertainty in μin (±)*[note 1] | *Remarks* |
|---|---|---|---|
| Thread Wires | 29 ° and 60 ° | 13 | In accordance with ANSI/ASME B1.2 |

*NVLAP Code:* 20/D11
Plug/Ring Gages

| | *Range* | *Best Uncertainty in μin (±)*[note 1] | *Remarks* |
|---|---|---|---|
| Plain Plug Gages | to 12 in | 16 + 4L[note 2] | Comparison to Gage Blocks |
| Plain Ring Gages | to 7 in | 22 + 4L[note 2] | Comparison to Master Ring |

*NVLAP Code:* 20/D12
Surface —

| | *Range* | *Best Uncertainty in μin (±)*[note 1] | *Remarks* |
|---|---|---|---|
| Surface Plates | to 72 X 144 in | 10 + 13D[note 3] | Measured in lab @ 68 °F ±2 |

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**METROPLEX METROLOGY LAB, INC.**

*NVLAP Code:* 20/D14
Threaded Plug and Ring Gages

| | *Range* | *Best Uncertainty in μin (±)*[note 1] | *Remarks* |
|---|---|---|---|
| Threaded Plug Gages | | | |
| Pitch Diameter | to 17 in | 73 + 3L[note 2] | Over wire measurement |
| Major Diameter | to 17 in | 16 + 4L[note 2] | Direct Measurement |
| Threaded Ring Gages | | | |
| Pitch Diameter | to 8 in | 184 to 16L[note 2] | Functional |
| Minor Diameter | to 3 in | 120 | |
| | to 8 in | 200 | |

1. Represents an expanded uncertainty using a coverage factor, k=2.
2. L=Length in inches
3. D=Diagonal Length in feet

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**CALIBRATION LABORATORIES** **NVLAP LAB CODE 20030I-0**

**INSTRON FIELD CALIBRATION LABORATORY**
100 Royall Street
Canton, MA 02021
Dr. Anatoly Perlov
Phone: 781-575-5479 Fax: 781-575-5767
E-Mail: anatoly_perlov@instron.com
URL: http://www.instron.com

**DIMENSIONAL**

*NVLAP Code:* 20/D05
Length

| *Range* | *Best Uncertainty (±)*[note 2] | *Remarks* |
|---|---|---|
| Field Service Calibration of Strain: | | |
| 0.5 in (12.5 mm) to 4.0 in (100 mm) | 0.5% of measured value but not less than 50 μin | Gage Length |
| >0 to 10 in (254 mm) | 0.5% of measured value but not less than 50 μin | Displacement |

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CALIBRATION LABORATORIES NVLAP LAB CODE 200301-0

INSTRON FIELD CALIBRATION LABORATORY

MECHANICAL

*NVLAP Code:* 20/M06
Field Service Calibration of Force

| *Range* | *Best Uncertainty (±)*[note 2] | *Remarks* |
|---|---|---|
| 1 gram to 500 ton (0.01 N to 5MN) | 0.125% of applied force | Compression |
| 1 gram to 150 ton (0.01 N to 1.5 MN) | 0.125% of applied force | Tension |

*NVLAP Code:* 20/M13
Field Service indirect verification of hardness testing machines.

| *Hardness Scale and Range* | *Best Uncertainty (±) in Rockwell Points*[note 1,2] | *Remarks* |
|---|---|---|
| **HRA Steel Scale** | | |
| 80 & Above | 0 25 | |
| Below 80 | 0.42 | |
| **HRB Scale** | | |
| 45 & Above | 0.57 | |
| Below 45 | 0 83 | |
| **HRC Scale** | | |
| 60 & Above | 0.26 | |
| Below 60 | 0.33 | |
| **HRD Scale** | | |
| 70.7 & Above | 0 26 | |
| Below 70.7 | 0.42 | |

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INSTRON FIELD CALIBRATION LABORATORY

| | |
|---|---|
| **HRE Scale** | |
| 57-100 | 0.58 |
| **HRF Scale** | |
| 57-100 | 0.60 |
| **HRG Scale** | |
| 82.5 & Above | 0.45 |
| Below 82.5 | 0.61 |
| **HRH Scale** | |
| 87-100 | 0.58 |
| **HRK Scale** | |
| 21-100 | 0.58 |
| **HRL Scale** | |
| 100-130 | 0.61 |
| **HRM Scale** | |
| 80-130 | 0.60 |
| **HR15N Scale** | |
| 90 & Above | 0.45 |
| Below 90 | 0.53 |
| **HR30N Scale** | |
| 77.5 & Above | 0.42 |
| Below 77 5 | 0.51 |

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INSTRON FIELD CALIBRATION LABORATORY

| | |
|---|---|
| **HR45N Scale** | |
| 66.5 & Above | 0.48 |
| Below 66.5 | 0.48 |
| **HRP Scale** | |
| 57-100 | 0.60 |
| **HRR Scale** | |
| 100-125 | 0.42 |
| **HRS Scale** | |
| 100-125 | 0.45 |
| **HR15T Scale** | |
| 75.3 & Above | 0.60 |
| Below 75.3 | 0.60 |
| **HRT30T Scale** | |
| 46.2 & Above | 0.58 |
| Below 17.6 | 0.58 |
| **HR45T Scale** | |
| 17.6 & Above | 0.61 |
| Below 17.6 | 0.61 |
| **HRV Scale** | |
| 90-110 | 0.42 |
| **HR15W Scale** | |
| 70-100 | 0.61 |

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INSTRON FIELD CALIBRATION LABORATORY

| | |
|---|---|
| **HR30W Scale** | |
| 45-96 | 0.60 |
| **HR45W Scale** | |
| 25-91 | 0.60 |
| **HR15X Scale** | |
| 80-100 | 0.58 |
| **HR30X Scale** | |
| 65-100 | 0.60 |
| **HR45X Scale** | |
| 50-95 | 0.61 |
| **HR15Y Scale** | |
| 85-100 | 0.58 |
| **HR30Y Scale** | |
| 80-100 | 0.60 |
| **HR45Y Scale** | |
| 66-106 | 0.58 |

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INSTRON FIELD CALIBRATION LABORATORY

1. The standardized test blocks used for verification are calibrated at the Wilson Hardness Calibration Laboratory in accordance with ASTM E18-00 section C using N.I.S.T. Rockwell HRC standard reference materials (SRM) 2810, 2811, and 2812. All other Rockwell scales are traceable to Wilson hardness levels thru laboratory standardizing machines. The standardizing machines are directly verified according to ASTM E18-00 using devices that are traceable to N.I.S.T either directly or through a NVLAP approved laboratory.
2. Represents an expanded uncertainty using a coverage factory, k=2.

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Scope of Accreditation



CALIBRATION LABORATORIES NVLAP LAB CODE 200302-0

VLSI STANDARDS, INC.
3087 North First Street
San Jose, CA 95134-2006
Ms. Charma Daniel
Phone: 408-428-1800 x151 Fax: 408-428-9555
E-Mail: charma.daniel@vlsistd.com
URL: http://www.visistd.com

DIMENSIONAL

*NVLAP Code:* 20/D12
Surface Texture

STEP HEIGHT STANDARDS (SHS) - Thin

| *Nominal Height* | *Best Uncertainty (±)[note 1]* | *Percentage Uncertainty (±)[note 2]* |
|---|---|---|
| 8 nm | 0.7 nm | 8.7 |
| 18 nm | 0.7 nm | 3.8 |
| 44 nm | 0.8 nm | 1.8 |
| 88 nm | 1.1 nm | 1.2 |
| 180 nm | 1.8 nm | 1.0 |
| 450 nm | 2.7 nm | 0.6 |
| 940 nm | 5.5 nm | 0.5 |

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VLSI STANDARDS, INC.

STEP HEIGHT STANDARDS (SHS) - Thick

| | | |
|---|---|---|
| 1.8 μm | 0.01 μm | 0.5 |
| 4.5 μm | 0.04 μm | 0.8 |
| 8.0 μm | 0.08 μm | 1.0 |
| 24 μm | 0.14 μm | 0.5 |
| 50 μm | 0.26 μm | 0.5 |

*NVLAP Code:* 20/D17
Film Thickness Standards (FTS)

FTS for $SiO_2$ films

| *Nominal Thickness* | *Best Uncertainty (±)*[note 1] | *Percentage Uncertainty (±)*[note 2] |
|---|---|---|
| 4.5 nm | 0.2 nm | 4.44 |
| 7.5 nm | 0.2 nm | 2.67 |
| 12 nm | 0.2 nm | 1.67 |
| 25 nm | 0.2 nm | 0.80 |
| 50 nm | 0.2 nm | 0.40 |
| 100 nm | 0.4 nm | 0.40 |
| 125 nm | 0.4 nm | 0.32 |

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VLSI STANDARDS, INC.

| | | |
|---|---|---|
| 200 nm | 0.5 nm | 0.25 |
| 285 nm | 0.5 nm | 0.18 |
| 400 nm | 0.5 nm | 0.13 |
| 675 nm | 0.6 nm | 0.09 |
| 940 nm | 0.6 nm | 0.06 |
| 1010 nm | 0.6 nm | 0.06 |

1. Represents an expanded uncertainty using a coverage factor, k=2.
2. Normalized to the nominal value.

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UNITED TESTING SYS. CANADA, LTD. DYNAMIC TESTING SYS. INT. INC.
225 Bradwick Drive, #21
Concord Ontario L4K 1K7
CANADA
Mr. Arno M. Dickertmann
Phone: 905-669-5327 Fax: 905-738-5051
E-Mail: arno@utscanada.com

### DIMENSIONAL

*NVLAP Code:* 20/D05
Length

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| Extensometer Linear Calibrator | | |
| 0 to 25.4 mm (0 to 1.0 in) | 0.33 μm | Heidenhain MT25 |
| Extensometer Gage Length | | |
| 0 to 4.0 in | 0.00137 in | Mitutoyo Digimatic Caliper |
| 0 to 12.0 in | 0.00177 in | Mitutoyo Digimatic Caliper |
| Crosshead Travel | | |
| 0 to 24 0 in | 0.00206 in | Mitutoyo Digimatic |

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UNITED TESTING SYS. CANADA, LTD. DYNAMIC TESTING SYS. INT. INC.

Field Service Calibration or Extensometers

| | | |
|---|---|---|
| 0 to 1 in | 0.000034" | ASTM E83 |

### MECHANICAL

*NVLAP Code:* 20/M06
Force

| | *Range in lbs* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|---|
| | .1 to 300,000 | 0.05% | ASTM E74 |
| | .1 to 1,000,000 | 0.25% | ASTM E4 |

Field Service Calibration of:

| *Devices* | *Range in lbs* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|---|
| Tensile Testing Machines | to 1,000,000 | 0.25% | ASTM E4 |
| Compression Testers | to 1,000,000 | 0.25% | ASTM E4 |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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CALIBRATION LABORATORIES NVLAP LAB CODE 200338-0

SE LABORATORIES
1065 Comstock Street
Santa Clara, CA 95054
Mr. Anil R. Singh
Phone: 408-727-3286 Fax: 408-988-6186
URL: http://www.se-labs.com

ELECTROMAGNETIC - DC/LOW FREQUENCY

*NVLAP Code:* 20/E02
AC Current

| *Range* | *Best Uncertainty (±) in ppm of output + nA [note 1,3] Frequency in Hertz* 10 to 20 | 20 to 40 | 40 to 1 k | 1 k to 5 k | 5 k to 10 k |
|---|---|---|---|---|---|
| 220 μA | 250 + 16 | 160 + 10 | 120 + 8 | 280 + 12 | 1100 + 65 |
| 2.2 mA | 250 + 40 | 160 + 35 | 120 + 35 | 200 + 110 | 1100 + 650 |
| 22 mA | 250 + 400 | 160 + 350 | 120 + 350 | 200 + 550 | 1100 + 5000 |
| | *Best Uncertainty (±) in ppm of output + μA [note 1,3]* | | | | |
| 220 mA | 250 + 4 | 160 + 3.5 | 120 + 2.5 | 200 + 3.5 | 1100 + 10 |
| 2.2 A | | 260 + 35 | 260 + 35 | 450 + 80 | 7000 + 160 |

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*NVLAP Code:* 20/E05
DC Resistance

| *Range in ohms* | *Best Uncertainty (±) in ppm of output [note 1]* | *Remarks* |
|---|---|---|
| 19 k | 8.5 | Meter Calibration |
| 100 k | 11 | Meter Calibration |
| 190 k | 11 | Meter Calibration |
| 1 M | 20 | Meter Calibration |
| 1.9 M | 21 | Meter Calibration |
| 10 M | 40 | Meter Calibration |
| 19 M | 47 | Meter Calibration |
| 100 M | 100 | Meter Calibration |

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*NVLAP Code:* 20/E05
DC Resistance

| *Range in ohms* | *Best Uncertainty (±) in ppm of output*[note 1] | *Remarks* |
|---|---|---|
| 1 | 95 | Meter Calibration |
| 1.9 | 95 | Meter Calibration |
| 10 | 23 | Meter Calibration |
| 19 | 23 | Meter Calibration |
| 100 | 10 | Meter Calibration |
| 190 | 10 | Meter Calibration |
| 1 k | 8.5 | Meter Calibration |
| 1.9 k | 8.5 | Meter Calibration |
| 10 k | 8.5 | Meter Calibration |

*NVLAP Code:* 20/E05
DC Current

| *Range* | *Best Uncertainty (±) in ppm of output + nA*[note 1] | *Remarks* |
|---|---|---|
| 220 µA | 40 + 6 | Meter Calibration |
| 2.2 mA | 35 + 7 | Meter Calibration |
| 22 mA | 35 + 40 | Meter Calibration |

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| *Range* | *Best Uncertainty (±) in ppm of output + µA*[note 1] | *Remarks* |
|---|---|---|
| 220 mA | 45 + 7 | add (±) 200 x $I^2$ in ppm |
| 2.2 A | 80 + 12 | add (±) 10 x $I^2$ in ppm |

*NVLAP Code:* 20/E06
DC Voltage

| *Runge in volts* | *Best Uncertainty (±) in ppm of output*[note 1,2] | *Remarks* |
|---|---|---|
| Reference Standards | | |
| 1.0 | 1.68 | Zener Reference[note 2] |
| 1.018 | 2.13 | Zener Reference[note 2] |
| 10 | 3 54 | Zener Reference[note 2] |
| *Range in volts* | *Best Uncertainty (±) in ppm of output + µV*[note 1] | *Remarks* |
| 220 m | 7.5 + 0.4 | Meter Calibration |
| 2.2 | 5 + .07 | Meter Calibration |
| 11 | 3.5 + 2.5 | Meter Calibration |
| 22 | 3 5 + 4 | Meter Calibration |
| 220 | 5 + 40 | Meter Calibration |
| 1100 | 6.5 + 400 | Meter Calibration |

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*NVLAP Code:* 20/E09
LF AC Voltage

*Best Uncertainty (±) in ppm of output + μV* [note 1,3]

| *Range in volts* | *10 to 20* | *20 to 40* | *40 to 20 k* | *20 k to 50 k* | *50 k to 100 k* | *100 k to 300 k* | *300 k to 500 k* | *500 k to 1 MHz* |
|---|---|---|---|---|---|---|---|---|
| 2.2 m | 240 + 4 | 90 + 4 | 80 + 4 | 200 + 4 | 500 + 5 | 1050 + 10 | 1400 + 20 | 2700 + 20 |
| 22 m | 240 + 4 | 90 + 4 | 80 + 4 | 200 + 4 | 500 + 5 | 1050 + 10 | 1400 + 20 | 2700 + 20 |
| 220 m | 240 + 12 | 90 + 7 | 80 + 7 | 200 + 7 | 460 + 17 | 900 + 20 | 1400 + 25 | 2700 + 45 |
| 2.2 | 240 + 40 | 90 + 15 | 45 + 8 | 75 + 10 | 110 + 300 | 420 + 80 | 1000 + 200 | 1700 + 300 |
| 22 | 240 + 400 | 90 + 150 | 45 + 50 | 75 + 100 | 100 + 200 | 275 + 600 | 1000 + 2000 | 1500 + 3200 |

*Best Uncertainty (±) in ppm of output + mV* [note 1,3]

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 220 | 240 + 4 | 90 + 1.5 | 52 + 0.6 | 80 + 1 | 150 + 2.5 | 900 + 16 | 4400 + 40 | 8000 + 80 |
| 1100 | 15 to 50 Hz [note 7] | | 50 Hz to 1 kHz [note 4, 7] | | | | | |
| | 300 + 16 | | 70 + 3.5 [note 4] | | | | | |

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SE LABORATORIES

TIME AND FREQUENCY

*NVLAP Code:* 20/F01
Frequency Dissemination

| *Range in MHz* | *Best Uncertainty (±)* [note 1] | *Remarks* |
|---|---|---|
| 0.1 | 4 parts in $10^{12}$ | Cesium Beam GPS |
| 1 | 4 parts in $10^{12}$ | Cesium Beam GPS |
| 5 | 4 parts in $10^{12}$ | Cesium Beam GPS |
| 10 | 4 parts in $10^{12}$ | Cesium Beam GPS |

*NVLAP Code:* 20/F03
Oscillator Characterization

| *Range in MHz* | *Best Uncertainty (±)* [note 1] | *Remarks* |
|---|---|---|
| 0.1 | 4 parts in $10^{12}$ | Cesium Beam GPS |
| 1 | 4 parts in $10^{12}$ | Cesium Beam GPS |
| 5 | 4 parts in $10^{12}$ | Cesium Beam GPS |
| 10 | 4 parts in $10^{12}$ | Cesium Beam GPS |

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ELECTROMAGNETIC - RF/MICROWAVE

*NVLAP Code:* 20/R08
Microwave Antenna Parameters

| *Range in MHz* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| LISN's | | |
| 0.010 to 100 | 0.3 dB | Insertion Loss |
| 0.010 to 100 | 3.4 % of reading | Impedance 4 to 65 Ohms |
| CDN's | | |
| 0.010 to 230 | 0.3 dB | Insertion Loss |
| 0.010 to 230 | 3.4 % of reading | Impedance Nominal 150 Ohms |

*NVLAP Code:* 20/R12
RF Microwave Bolometer Units

| *Power Level Range* | *Best Uncertainty (±)*[note 1] | *Frequency*[note 5] |
|---|---|---|
| 1 microwatt to 10 milliwatts | 0.5 % of reading | 0.01 to 0.04 GHz |
| | 0.3 % of reading | 0.05 to 1.0 GHz |

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*NVLAP Code:* 20/R13
RF Microwave Attenuators

Reflection Coefficient (or Scattering Parameters $S_{ii}$)

HP8510 Vector Network Analyzer Uncertainties

1. Expanded Uncertainties on one or two port devices

| | | | *Frequency (MHz)* | | | | |
|---|---|---|---|---|---|---|---|
| *Connector Type* | *Quantity* | *Quantity Range* | *.01-45* | *45-2000* | *2000-8000* | *8000-18000* | *20000-26500* |
| N | $S_{ii}$ | 0-1 | .0063-.0204 | .0063-.0204 | .0102-.0340 | .0136-.0479 | |
| APC-7 | $S_{ii}$ | 0-1 | .0114-.0261 | .0114-.0261 | .0114-.0325 | .0148-.0467 | |
| APC-3.5 | $S_{ii}$ | 0-1 | .0054-.0174 | .0064-.0228 | .0056-.0149 | .0088-.0182[see 8] | .0090-.0185 |
| N | $Arg(S_{ii})$ | $0 < \|S_{ii}\| < 1$ -180 +180 deg | 1.7-180 | 1.48-180 | 6.73-180 | 8.21-180 | |
| APC-7 | $Arg(S_{ii})$ | $0 < \|S_{ii}\| < 1$ -180 +180 deg | 1.4-180 | 2.08-180 | 6.93-180 | 8.41-180 | |
| APC-3.5 | $Arg(S_{ii})$ | $0 < \|S_{ii}\| < 1$ -180 +180 deg | 1.6-180 | 1.73-180 | 5.59-180 | 6.65-180[see 8] | 7.91-180 |

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*NVLAP Code:* 20/R13
RF Microwave Attenuators

Attenuation (or Scattering Parameters $S_{ij}$)

HP8510 Vector Network Analyzer Uncertainties

1. Expanded Uncertainties on one or two port devices

| | | | *Frequency (MHz)* | | | | |
|---|---|---|---|---|---|---|---|
| *Connector Type* | *Quantity* | *Quantity Range* | *.01-45* | *45-2000* | *2000-8000* | *8000-18000* | *20,000-26,500* |
| N | $\|S_{ij}\|$ | 0-60 dB | .096-.326 | .091-.200 | .102-.258 | .174-.519 | |
| APC-7 | $\|S_{ij}\|$ | 0-60 dB | .096-.326 | .058-.196 | .062-.251 | .127-.508 | |
| APC-3.5 | $\|S_{ij}\|$ | 0-60 dB | .096-.326 | .079-.197 | .076-.241 | .121-.510[see 8] | .125-2.007 |
| N | $Arg(S_{ij})$ | $0<\|S_{ij}\|<60$ dB -180 to 180 deg | .72-10.22 | .43-1.39 | 2.39-3.68 | 5.46-7.94 | |
| APC-7 | $Arg(S_{ij})$ | $0<\|S_{ij}\|<60$ dB -180 to 180 deg | .72-10.22 | .46-1.43 | 2.38-3.68 | 5.39-7.90 | |
| APC-35 | $Arg(S_{ij})$ | $0<\|S_{ij}\|<60$ dB -180 to 180 deg | .72-10.22 | .43-1.41 | 2.15-3.44 | 6.21-8.92[see 8] | 6.59-17.86 |

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## Scope of Accreditation

Revised 1/26/2001



CALIBRATION LABORATORIES

NVLAP LAB CODE 200338-0

SE LABORATORIES

1. Represents an expanded uncertainty using a coverage factor, k=2.
2. Approximate value. Actual value determined by the test statistics.
3. Meter Calibration.
4. Maximum output is 250 V.
5. Characterization of levelled sine sources used in calibration of oscilloscope bandwidth.
6. 15 to 50 Hz only
7. 50 Hz to 1 kHz only
8. 8000 to 20000 MHz

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200348-0

**HART SCIENTIFIC CALIBRATION LABORATORY**
799 E. Utah Valley Drive
American Fork, UT 84003-9775
Mr. Thomas J. Wiandt
Phone: 801-763-1600 Fax: 801-763-1010
E-Mail: tom_wiandt@hartscientific.com
URL: http://www.hartscientific.com/product/cal-service.htm

### ELECTROMAGNETICS - DC/LOW FREQUENCY

*NVLAP Labcode:* 20/E05
DC Resistance

| *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| 1 Ω to 10 Ω | 0.35 ppm | DC Resistance |
| 10 Ω to 100 Ω | 0.45 ppm | DC Resistance |
| 100 Ω to 1000 Ω | 0.60 ppm | DC Resistance |
| 1000 Ω to 10000 Ω | 0.70 ppm | DC Resistance |

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HART SCIENTIFIC CALIBRATION LABORATORY

### THERMODYNAMICS

*NVLAP Code:* 20/T07
Resistance Thermometry - Calibration of Thermometric Devices

| *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| -197 °C (LN2) (TPAr substitution) | 0.5 mK | Direct Comparison |
| -38.8344 °C (TPHg) | 0.4 mK | Fixed Point |
| 0.010 °C (TPW) | 0.2 mK | Fixed Point |
| 29.7646 °C (MPGa) | 0.4 mK | Fixed Point |
| 156.599 °C (FPIn) | 0.9 mK | Fixed Point |
| 231.928 °C (FPSn) | 0.9 mK | Fixed Point |
| 419.527 °C (FPZn) | 1.1 mK | Fixed Point |
| 660.323 °C (FPAl) | 2.1 mK | Fixed Point |
| 961.78 °C (FPAg) | 10.0 mK | Fixed Point |
| -200 °C | 10 mK | Comparison Method 1 |
| -100 °C to -50 °C | 10 mK | Comparison Method 1 |
| -50 °C to 0 °C | 8 mK | Comparison Method 1 |

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HART SCIENTIFIC CALIBRATION LABORATORY

| | | |
|---|---|---|
| 0.010 °C | 5 mK | Comparison Method I |
| 0 °C to 200 °C | 8 mK | Comparison Method I |
| 200 °C to 300 °C | 9 mK | Comparison Method I |
| 300 °C to 400 °C | 10 mK | Comparison Method I |
| 400 °C to 550 °C | 11 mK | Comparison Method I |
| 550 °C to 660 °C | 15 mK | Comparison Method I |
| -197 °C (LN2) (TPAr substitution) | 2.0 mK | Comparison Method II |
| -100.000 °C | 2.0 mK | Comparison Method II |
| -38.834 °C (TPHg substitution) | 2.0 mK | Comparison Method II |
| 0.010 °C (TPW substitution) | 2.0 mK | Comparison Method II |
| 29.765 °C (MPGa substitution) | 2.0 mK | Comparison Method II |
| 156.599 °C (FPIn substitution) | 3.0 mK | Comparison Method II |

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HART SCIENTIFIC CALIBRATION LABORATORY

| | | |
|---|---|---|
| 231.928 °C (FPSn substitution) | 4.0 mK | Comparison Method II |
| 419.527 °C (FPZn substitution) | 6.0 mK | Comparison Method II |
| 500.000 °C | 7.0 mK | Comparison Method II |
| 660.323 °C (FPAl substitution) | 8.0 mK | Comparison Method II |
| -20 °C to 100 °C | 1.5 mK | Precision Thermistors |
| 100 °C to 150 °C | 3.0 mK | Precision Thermistors |
| -50 °C to -20 °C | 5.0 mK | Thermistors |
| -20 °C to 120 °C | 4.0 mK | Thermistors |
| 120 °C to 150 °C | 6.0 mK | Thermistors |
| Certification of Thermometric Fixed Point Cells | | |
| TPHg | 0.20 mK | Direct Comparison To Reference Cells |
| TPW | 0.07 mK | Direct Comparison To Reference Cells |

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HART SCIENTIFIC CALIBRATION LABORATORY

| | | |
|---|---|---|
| MPGa | 0.08 mK | Direct Comparison To Reference Cells |
| FPIn | 0.50 mK | Direct Comparison To Reference Cells |
| FPSn | 0.60 mK | Direct Comparison To Reference Cells |
| FPZn | 0.80 mK | Direct Comparison To Reference Cells |
| FPAl | 1.50 mK | Direct Comparison To Reference Cells |
| FPAg | 3.50 mK | Direct Comparison To Reference Cells |
| | | |
| TPHg | 0.25 mK | Direct Comparison to Working Cells |
| TPW | 0.10 mK | Direct Comparison to Working Cells |
| MPGa | 0.10 mK | Direct Comparison to Working Cells |
| FPIn | 0.70 mK | Direct Comparison to Working Cells |
| FPSn | 0.80 mK | Direct Comparison to Working Cells |
| FPZn | 1.00 mK | Direct Comparison to Working Cells |
| FPAl | 1.80 mK | Direct Comparison to Working Cells |
| FPAg | 4.50 mK | Direct Comparison to Working Cells |

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HART SCIENTIFIC CALIBRATION LABORATORY

Digital Thermometry (readout devices that actually measure resistance)

| | | |
|---|---|---|
| 0.25 to 4.0 | 0.20 ppm | Ratio Function |
| 1 Ω | 5 ppm | Resistance Function |
| 10 Ω | 4 ppm | Resistance Function |
| 100 Ω | 1 ppm | Resistance Function |
| 10000 Ω | 2 ppm | Resistance Function |
| 0 Ω to 400 Ω | 4 ppm | Resistance Function |
| 400 Ω to 10 kΩ | 8 ppm | Resistance Function |
| 10 kΩ to 100 kΩ | 8 ppm | Resistance Function |
| 100 kΩ to 1 MΩ | 25 ppm | Resistance Function |

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HART SCIENTIFIC CALIBRATION LABORATORY

*NVLAP Code:* 20/T08
Thermocouples

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| Type S & Type R | 100 mK | Fixed Point |
| Au/Pt | 20 mK | Fixed Point |

Digital Thermometers

| | | |
|---|---|---|
| 0 °C to 25.0 °C | 10 mK | Internal Reference Junction Compensation |

Digital Thermometers (readout devices that actually measure voltage)

| | | |
|---|---|---|
| 0 mV to 50 mV | 0.45 μV | Voltage Function |
| 50 mV to 100 mV | 0.75 μV | Voltage Function |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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CALIBRATION LABORATORIES NVLAP LAB CODE 200352-0

GTE SUPPLY ELECTRONIC REPAIR SERVICES
3301 Wayne Trace
Fort Wayne, IN 46806-1400
Mr. Jeff C. Gust
Phone: 219-428-6504 Fax: 219-424-1031
E-Mail: jeff.gust@supply.gte.com

ELECTROMAGNETICS - DC/LOW FREQUENCY

*NVLAP Code:* 20/E05
DC Resistance

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 0.001 ohm | 1.5 ppm | |
| 0.01 ohm | 1 ppm | |
| 0.1 ohm | 1 ppm | |
| 1 ohm | 0.5 ppm | |
| 10 ohm | 2.5 ppm | |
| 100 ohm | 3.5 ppm | |
| 1,000 ohm | 4.5 ppm | |
| 10,000 ohm | 0.5 ppm | |
| 100,000 ohm | 2.5 ppm | |
| 1,000,000 ohm | 7 ppm | |
| 10,000,000 ohm | 15 ppm | |

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GTE ELECTRONIC REPAIR SERVICE

| | |
|---|---|
| 100,000,000 ohm | 35 ppm |
| 1,000,000,000 ohm | 125 ppm |

*NVLAP Code:* 20/E06
DC Voltage

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 10 V Zener Ref | 0.5 ppm | |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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MDS NORDION DOSIMETRY LABORATORY
447 March Road
Kanata Ontario K2K 1X8
Canada
Mr. David Sidney
Phone: 613-592-3400 x2242 Fax: 613-592-2006

IONIZING RADIATION DOSIMETRY

*NVLAP Code:* 20/I02
High-Dose Dosimetry

Evaluation of Transfer-standard and Reference-standard Dosimeters for Production Irradiators

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| .5 to 50 kGy | 4.0 % | Results reported as absorbed dose. |

Evaluation of Transfer-standard and Reference-standard Dosimeters for Research Irradiators

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 20 to 400 Gy | 2.0 % | Results reported as absorbed dose or absorbed-dose rate. |

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200370-0

MDS NORDION DOSIMETRY LABORATORY

Irradiation of Dosimeters for Known Absorbed-dose Levels

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| Specified by the needs of the customer. | 2.3 % | Results reported as absorbed-dose values or may be analyzed for dosimeter response and reported as a calibration curve. |

Calibration of Routine Dosimeters using Reference-standard or Transfer-standard Dosimeters

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 0.5 to 50 kGy | 4.0 % | Results reported as absorbed-dose values or may be analyzed for dosimeter response and reported as a calibration curve. |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200396-0

OKLAHOMA BUREAU OF STANDARDS
2800 North Lincoln Boulevard
Oklahoma City, OK 73105
Mr. Ken Fraley
Phone: 405-521-3864 Fax: 405-521-4912
E-Mail: kfraley@odagis.oklaosf.state.ok.us
URL: http://www.state.ok.us/~okag/aglab.bureau.html

DIMENSIONAL

*NVLAP Code:* 20/D13
Surveying Rods and Tapes

| *Interval in inches* | *Best Uncertainty (±) in inches*[note 1] | *Remarks* |
|---|---|---|
| 0 to 12 | 0.00230 | Rigid Rules |
| 0 to 24 | 0.00297 | Rigid Rules |
| 0 to 36 | 0.00351 | Rigid Rules |
| 0 to 48 | 0.00398 | Rigid Rules |

| *Tape Interval in feet* | *Best Uncertainty (±) in inches*[note 1] | *Remarks* |
|---|---|---|
| 0 to 1 | 0.0037 | Steel Tapes |
| 0 to 2 | 0.0038 | Steel Tapes |
| 0 to 3 | 0.0038 | Steel Tapes |
| 0 to 4 | 0.0038 | Steel Tapes |

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OKLAHOMA BUREAU OF STANDARDS

| | | |
|---|---|---|
| 0 to 5 | 0.0039 | Steel Tapes |
| 0 to 6 | 0.0039 | Steel Tapes |
| 0 to 7 | 0.0039 | Steel Tapes |
| 0 to 8 | 0.0039 | Steel Tapes |
| 0 to 9 | 0.0041 | Steel Tapes |
| 0 to 10 | 0.0041 | Steel Tapes |
| 0 to 20 | 0.0048 | Steel Tapes |
| 0 to 30 | 0.0054 | Steel Tapes |
| 0 to 40 | 0.0060 | Steel Tapes |
| 0 to 50 | 0.0065 | Steel Tapes |
| 0 to 60 | 0.0069 | Steel Tapes |
| 0 to 70 | 0.0074 | Steel Tapes |
| 0 to 80 | 0.0078 | Steel Tapes |
| 0 to 90 | 0.0082 | Steel Tapes |
| 0 to 100 | 0.0087 | Steel Tapes |
| 0 to 110 | 0.0090 | Steel Tapes |
| 0 to 120 | 0.0094 | Steel Tapes |
| 0 to 130 | 0.0098 | Steel Tapes |

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OKLAHOMA BUREAU OF STANDARDS

| | | |
|---|---|---|
| 0 to 140 | 0.0102 | Steel Tapes |
| 0 to 150 | 0.0105 | Steel Tapes |
| 0 to 1 | 0.0043 | Fiberglass/Plastic Tapes |
| 0 to 2 | 0.0043 | Fiberglass/Plastic Tapes |
| 0 to 3 | 0.0044 | Fiberglass/Plastic Tapes |
| 0 to 4 | 0.0044 | Fiberglass/Plastic Tapes |
| 0 to 5 | 0.0046 | Fiberglass/Plastic Tapes |
| 0 to 6 | 0.0047 | Fiberglass/Plastic Tapes |
| 0 to 7 | 0.0048 | Fiberglass/Plastic Tapes |
| 0 to 8 | 0.0049 | Fiberglass/Plastic Tapes |
| 0 to 9 | 0.0051 | Fiberglass/Plastic Tapes |
| 0 to 10 | 0.0052 | Fiberglass/Plastic Tapes |
| 0 to 20 | 0.0075 | Fiberglass/Plastic Tapes |
| 0 to 30 | 0.0100 | Fiberglass/Plastic Tapes |
| 0 to 40 | 0.0125 | Fiberglass/Plastic Tapes |
| 0 to 50 | 0.0150 | Fiberglass/Plastic Tapes |
| 0 to 60 | 0.0175 | Fiberglass/Plastic Tapes |

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| | | |
|---|---|---|
| 0 to 70 | 0.0200 | Fiberglass/Plastic Tapes |
| 0 to 80 | 0.0225 | Fiberglass/Plastic Tapes |
| 0 to 90 | 0.0251 | Fiberglass/Plastic Tapes |
| 0 to 100 | 0.0276 | Fiberglass/Plastic Tapes |
| 0 to 110 | 0.0301 | Fiberglass/Plastic Tapes |
| 0 to 120 | 0.0327 | Fiberglass/Plastic Tapes |
| 0 to 130 | 0.0352 | Fiberglass/Plastic Tapes |
| 0 to 140 | 0.0378 | Fiberglass/Plastic Tapes |
| 0 to 150 | 0.0403 | Fiberglass/Plastic Tapes |
| 0 to 1 | 0.0054 | Cloth Tapes |
| 0 to 2 | 0.0055 | Cloth Tapes |
| 0 to 3 | 0.0055 | Cloth Tapes |
| 0 to 4 | 0.0056 | Cloth Tapes |
| 0 to 5 | 0.0057 | Cloth Tapes |
| 0 to 6 | 0.0057 | Cloth Tapes |
| 0 to 7 | 0.0058 | Cloth Tapes |
| 0 to 8 | 0.0059 | Cloth Tapes |

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| | | |
|---|---|---|
| 0 to 9 | 0.0061 | Cloth Tapes |
| 0 to 10 | 0.0062 | Cloth Tapes |
| 0 to 20 | 0.0089 | Cloth Tapes |
| 0 to 30 | 0.0116 | Cloth Tapes |
| 0 to 40 | 0.0142 | Cloth Tapes |
| 0 to 50 | 0.0167 | Cloth Tapes |
| 0 to 60 | 0.0193 | Cloth Tapes |
| 0 to 70 | 0.0219 | Cloth Tapes |
| 0 to 80 | 0.0245 | Cloth Tapes |
| 0 to 90 | 0.0270 | Cloth Tapes |
| 0 to 100 | 0.0296 | Cloth Tapes |
| 0 to 110 | 0.0321 | Cloth Tapes |
| 0 to 120 | 0.0347 | Cloth Tapes |
| 0 to 130 | 0.0372 | Cloth Tapes |
| 0 to 140 | 0.0398 | Cloth Tapes |
| 0 to 150 | 0.0424 | Cloth Tapes |

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OKLAHOMA BUREAU OF STANDARDS

MECHANICAL

*NVLAP Code:* 20/M08
Mass - Metric

| *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| 30 kg | 22.9 mg | Accuracy Class I |
| 20 kg | 13.4 mg | Accuracy Class I |
| 10 kg | 8.0 mg | Accuracy Class I |
| 5 kg | 2.02 mg | Accuracy Class I |
| 3 kg | 1.02 mg | Accuracy Class I |
| 2 kg | 0.76 mg | Accuracy Class I |
| 1 kg | 0.10 mg | Accuracy Class I |
| 500 g | 0.076 mg | Accuracy Class I |
| 300 g | 0.045 mg | Accuracy Class I |
| 200 g | 0.045 mg | Accuracy Class I |
| 100 g | 0.048 mg | Accuracy Class I |
| 50 g | 0.023 mg | Accuracy Class I |
| 30 g | 0.014 mg | Accuracy Class I |

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| | | |
|---|---|---|
| 20 g | 0.0109 mg | Accuracy Class I |
| 10 g | 0.0071 mg | Accuracy Class I |
| 5 g | 0.0037 mg | Accuracy Class I |
| 3 g | 0.0026 mg | Accuracy Class I |
| 2 g | 0.0022 mg | Accuracy Class I |
| 1 g | 0.0016 mg | Accuracy Class I |
| 500 mg | 0.0010 mg | Accuracy Class I |
| 300 mg | 0.0007 mg | Accuracy Class I |
| 200 mg | 0.0005 mg | Accuracy Class I |
| 100 mg | 0.0008 mg | Accuracy Class I |
| 50 mg | 0.0003 mg | Accuracy Class I |
| 30 mg | 0.0002 mg | Accuracy Class I |
| 20 mg | 0.0002 mg | Accuracy Class I |
| 10 mg | 0.0002 mg | Accuracy Class I |
| 5 mg | 0.0001 mg | Accuracy Class I |
| 3 mg | 0.0002 mg | Accuracy Class I |
| 2 mg | 0.0001 mg | Accuracy Class I |
| 1 mg | 0.0002 mg | Accuracy Class I |

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OKLAHOMA BUREAU OF STANDARDS

| | | |
|---|---|---|
| 450 kg | 1.3 g | Accuracy Class II |
| 227 kg | 703.1 mg | Accuracy Class II |
| 30 kg | 24.4 mg | Accuracy Class II |
| 20 kg | 14.7 mg | Accuracy Class II |
| 10 kg | 8.9 mg | Accuracy Class II |
| 5 kg | 2.85 mg | Accuracy Class II |
| 3 kg | 1.76 mg | Accuracy Class II |
| 2 kg | 1.69 mg | Accuracy Class II |
| 1 kg | 0.200 mg | Accuracy Class II |
| 500 g | 0.198 mg | Accuracy Class II |
| 300 g | 0.155 mg | Accuracy Class II |
| 200 g | 0.143 mg | Accuracy Class II |
| 100 g | 0.058 mg | Accuracy Class II |
| 50 g | 0.030 mg | Accuracy Class II |
| 30 g | 0.027 mg | Accuracy Class II |
| 20 g | 0.017 mg | Accuracy Class II |
| 10 g | 0.008 mg | Accuracy Class II |
| 5 g | 0.0042 mg | Accuracy Class II |

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OKLAHOMA BUREAU OF STANDARDS

| | | |
|---|---|---|
| 3 g | 0.0031 mg | Accuracy Class II |
| 2 g | 0.0027 mg | Accuracy Class II |
| 1 g | 0.0018 mg | Accuracy Class II |
| 500 mg | 0.0017 mg | Accuracy Class II |
| 300 mg | 0.0012 mg | Accuracy Class II |
| 200 mg | 0.0009 mg | Accuracy Class II |
| 100 mg | 0.0009 mg | Accuracy Class II |
| 50 mg | 0.0005 mg | Accuracy Class II |
| 30 mg | 0.0004 mg | Accuracy Class II |
| 20 mg | 0.0004 mg | Accuracy Class II |
| 10 mg | 0.0003 mg | Accuracy Class II |
| 5 mg | 0.0003 mg | Accuracy Class II |
| 3 mg | 0.0003 mg | Accuracy Class II |
| 2 mg | 0.0003 mg | Accuracy Class II |
| 1 mg | 0.0003 mg | Accuracy Class II |
| 500 kg | 4.0 g | Accuracy Class III |
| 300 kg | 3.2 g | Accuracy Class III |

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OKLAHOMA BUREAU OF STANDARDS

| | | |
|---|---|---|
| 200 kg | 2.1 g | Accuracy Class III |
| 100 kg | 1.8 g | Accuracy Class III |
| 50 kg | 1.6 g | Accuracy Class III |
| 30 kg | 189 mg | Accuracy Class III |
| 25 kg | 182 mg | Accuracy Class III |
| 20 kg | 175 mg | Accuracy Class III |
| 10 kg | 151 mg | Accuracy Class III |
| 5 kg | 18.0 mg | Accuracy Class III |
| 3 kg | 7.54 mg | Accuracy Class III |
| 2 kg | 6.84 mg | Accuracy Class III |
| 1 kg | 6.08 mg | Accuracy Class III |
| 500 g | 5.996 mg | Accuracy Class III |
| 300 g | 5.932 mg | Accuracy Class III |
| 200 g | 5.910 mg | Accuracy Class III |
| 100 g | 0.258 mg | Accuracy Class III |
| 50 g | 0.244 mg | Accuracy Class III |
| 30 g | 0.239 mg | Accuracy Class III |
| 20 g | 0.236 mg | Accuracy Class III |

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OKLAHOMA BUREAU OF STANDARDS

| | | |
|---|---|---|
| 10 g | 0.122 mg | Accuracy Class III |
| 5 g | 0.121 mg | Accuracy Class III |
| 3 g | 0.121 mg | Accuracy Class III |
| 2 g | 0.121 mg | Accuracy Class III |
| 1 g | 0.119 mg | Accuracy Class III |
| 500 mg | 0.022 mg | Accuracy Class III |
| 300 mg | 0.015 mg | Accuracy Class III |
| 200 mg | 0.013 mg | Accuracy Class III |
| 100 mg | 0.011 mg | Accuracy Class III |
| 50 mg | 0.010 mg | Accuracy Class III |
| 30 mg | 0.010 mg | Accuracy Class III |
| 20 mg | 0.010 mg | Accuracy Class III |
| 10 mg | 0.010 mg | Accuracy Class III |
| 5 mg | 0.010 mg | Accuracy Class III |
| 3 mg | 0.010 mg | Accuracy Class III |
| 2 mg | 0.010 mg | Accuracy Class III |
| 1 mg | 0.010 mg | Accuracy Class III |

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OKLAHOMA BUREAU OF STANDARDS

Mass Avoirdupois

| *Range* | *Best Uncertainty (±)[note 1]* | *Remarks* |
|---|---|---|
| 1000 lb | 4.0 g | Accuracy Class III |
| 500 lb | 3.2 g | Accuracy Class III |
| 250 lb | 2.1 g | Accuracy Class III |
| 200 lb | 1.8 g | Accuracy Class III |
| 100 lb | 1.59 g | Accuracy Class III |
| 50 lb | 0.178 g | Accuracy Class III |
| 25 lb | 0.151 g | Accuracy Class III |
| 20 lb | 0.150 g | Accuracy Class III |
| 12 lb | 0.148 g | Accuracy Class III |
| 10 lb | 11.31 mg | Accuracy Class III |
| 5 lb | 6.90 mg | Accuracy Class III |
| 4 lb | 6.59 mg | Accuracy Class III |
| 3 lb | 6.36 mg | Accuracy Class III |
| 2 lb | 6.06 mg | Accuracy Class III |
| 1 lb | 5.95 mg | Accuracy Class III |
| 0.5 lb | 5.91 mg | Accuracy Class III |

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OKLAHOMA BUREAU OF STANDARDS

| | | |
|---|---|---|
| 0.3 lb | 0.269 mg | Accuracy Class III |
| 0.2 lb | 0.251 mg | Accuracy Class III |
| 0.1 lb | 0.239 mg | Accuracy Class III |
| 0.05 lb | 0.236 mg | Accuracy Class III |
| 0.03 lb | 0.235 mg | Accuracy Class III |
| 0.02 lb | 0.123 mg | Accuracy Class III |
| 0.01 lb | 0.123 mg | Accuracy Class III |
| 0.005 lb | 0.152 mg | Accuracy Class III |
| 0.003 lb | 0.134 mg | Accuracy Class III |
| 0.002 lb | 0.128 mg | Accuracy Class III |
| 0.001 lb | 0.124 mg | Accuracy Class III |
| 4 oz | 0.260 mg | Accuracy Class III |
| 2 oz | 0.242 mg | Accuracy Class III |
| 1 oz | 0.237 mg | Accuracy Class III |
| 0.5 oz | 0.235 mg | Accuracy Class III |
| 0.25 oz | 0.123 mg | Accuracy Class III |
| 0.125 oz | 0.123 mg | Accuracy Class III |
| 0.0625 oz | 0.123 mg | Accuracy Class III |

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OKLAHOMA BUREAU OF STANDARDS

| | | |
|---|---|---|
| 0.03125 oz | 0.123 mg | Accuracy Class III |
| 0.015625 oz | 0.123 mg | Accuracy Class III |

*NVLAP Code:* 20/M12
Volume

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 5 gal | 0.30 $in^3$ | Small Volume Volumetric |
| 10 gal | 0.60 $in^3$ | Small Volume Volumetric |
| 20 gal | 1.23 $in^3$ | Small Volume Volumetric |
| 25 gal | 1.53 $in^3$ | Small Volume Volumetric |
| 30 gal | 1.83 $in^3$ | Small Volume Volumetric |
| 50 gal | 3.06 $in^3$ | Small Volume Volumetric |
| 100 gal | 6.1 $in^3$ | Small Volume Volumetric |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200403-0

SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN
P.O. Box 47299
Kings Bay, GA 31547
Mr. Dave M. Catalano
Phone: 912-673-2927 x1850 Fax: 912-673-3609

DIMENSIONAL

*NVLAP Code:* 20/D03
Gage Blocks - Steel and Chrome Carbide

| *Range in inches* | *Best Uncertainty (±) in μ inches*[note 1,2] | *Remarks* |
|---|---|---|
| 0.01 to 0.09375 | 4.6 | Mechanical Comparison |
| 0.1 to 0.100025 | 3.9 | Mechanical Comparison |
| 0.10005 to 1.0 | 3.6 | Mechanical Comparison |
| 2.0 to 4.0 | 3.0 + 0.6 x $10^{-6}$L | Mechanical Comparison |
| 5.0 to 20.0 | 8.8 + 0.2 x $10^{-6}$L | Mechanical Comparison |

Gage Blocks - Ceramic and Tungsten Carbide

| | | |
|---|---|---|
| 0.01 to 0.09375 | 5.6 | Mechanical Comparison |
| 0.1 to 0.100025 | 4.9 | Mechanical Comparison |

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| | | |
|---|---|---|
| 0.10005 to 1.0 | 4.6 | Mechanical Comparison |
| 2.0 to 4.0 | 4.0 + 0.6 x $10^{-6}$L | Mechanical Comparison |

*NVLAP Code:* 20/D07
Measuring Wires

| *Range in inches* | *Best Uncertainty (±) in μ inches*[note 1] | *Remarks* |
|---|---|---|
| 0.007227 (80 TPI) to 0.14434 (4 TPI) | 13 | Universal Measuring Machine |

*NVLAP Code:* 20/D11
Spherical Diameter, Plug/Ring Gages

| *Range in inches* | *Best Uncertainty (±) in μ inches*[note 1,2] | *Remarks* |
|---|---|---|
| Ring Gages | | |
| 0.25 to 4.99 | 5.6 + 0.5 x $10^{-6}$L | Comparison to Gage Blocks |
| 5.0 to 12.0 | 8.8 + 0.6 x $10^{-6}$L | Comparison to Gage Blocks |

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SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN

| | | |
|---|---|---|
| Plug Gages | | |
| >0 to 4.99 | 6.0 + 0.6 x $10^{-6}$L | Comparison to Gage Blocks |
| 5.0 to 12.0 | 8.8 + 0.6 x $10^{-6}$L | Comparison to Gage Blocks |

*NVLAP Code:* 20/D14
Threaded Plug and Ring Gages

Threaded Plug Gages, 60° Unified

| | *Range* | *Best Uncertainty (±)*[note 1,2] | *Remarks* |
|---|---|---|---|
| Pitch Diameter | >0 to 6.0 in | (61 + 0.7 x $10^{-6}$L) μin | Three Wire Method |
| Major Diameter | 1.0 to 6.0 in | (35 + 1.1 x $10^{-6}$L) μin | Universal Measuring Machine |
| Half Angle | 60° | 3 arc minutes | Optical Comparator Inspection |
| Pitch | 4 to 80 TPI | 28 μin | Universal Measuring Machine |

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SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN

Threaded Ring Gages, Solid, 60° Unified

| | *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|---|
| Pitch Diameter | >0 to 3.1 in | 55 μin | Universal Measuring Machine |
| Minor Diameter | >0 to 0 272 in | 55 μin | Compared to Go/NoGo Plugs |
| Minor Diameter | 0.273 to 0.499 in | 150 μin | Measured with Bore Micrometers |
| Minor Diameter | 0.5 to 3.999 in | 250 μin | Measured with Bore Micrometers |
| Minor Diameter | 4.0 to 8.0 in | 600 μin | Measured with Bore Micrometers |
| Half Angle | 60° | 4 arc minutes | Optical Inspection of Thread Casting |

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SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN

Threaded Ring Gages, Split, 60° Unified

| | *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|---|
| Functional Diameter | >0 to 6 in, 4 to 80 TPI | 83 μin | Fit Test with Class W Thread Plug |
| Minor Diameter | >0 to 0 272 in | 55 μin | Compared to Go/NoGo Plugs |
| Minor Diameter | 0.273 to 0.499 in | 150 μin | Measured with Bore Micrometers |
| Minor Diameter | 0.5 to 3.999 in | 250 μin | Measured with Bore Micrometers |
| Minor Diameter | 4.0 to 8.0 in | 600 μin | Measured with Bore Micrometers |

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SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN

ELECTROMAGNETICS - DC/LOW FREQUENCY

*NVLAP Code:* 20/E02
AC Current

| | *Best Uncertainty (±) in ppm[note 1] Frequency in Hertz* | | | | | |
|---|---|---|---|---|---|---|
| *Current* | *10* | *20* | *40* | *1 k* | *5 k* | *10 k* |
| 20 mA | 120 | 120 | 110 | 110 | 110 | 110 |
| 200 mA | 120 | 120 | 110 | 110 | 110 | 110 |
| 2 A | | | 120 | 120 | 120 | 120 |
| 10 A | | | 180 | 180 | 200 | 200 |

*NVLAP Code:* 20/E05
DC Current

| *Range (±)* | *Best Uncertainty (±) in ppm[note 1]* | *Remarks* |
|---|---|---|
| 200 μA | 22 | |
| 2.0 mA | 22 | |
| 20 mA | 22 | |
| 200 mA | 22 | |
| 2.0 A | 40 | |

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| | | |
|---|---|---|
| 3.0 A | 120 | |
| 5.0 A | 120 | |
| 10.0 A | 120 | |

*NVLAP Code:* 20/E05
DC Resistance

| *Range in ohms* | *Best Uncertainty (±) in ppm[note 1]* | *Remarks* |
|---|---|---|
| 1.0 | 2 | Using Guildline Bridge |
| 10.0 | 2 | Using Guildline Bridge |
| 100.0 | 2 | Using Guildline Bridge |
| 1000.0 | 2 | Using Guildline Bridge |
| 10000.0 | 2 | Using Guildline Bridge |
| 100000.0 | 2 | Using Guildline Bridge |
| 0.01 | 0.2 (in %) | Using 242D System |
| 0.1 | 200 | Using 242D System |
| 1.0 | 20 | Using 242D System |
| 10.0 | 10 | Using 242D System |

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SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN

| | | |
|---|---|---|
| 100.0 | 10 | Using 242D System |
| 1000.0 | 10 | Using 242D System |
| 10000.0 | 10 | Using 242D System |
| 100000.0 | 10 | Using 242D System |
| 1.0 M | 10 | Using 242D System |
| 10.0 M | 10 | Using 242D System |
| 100.0 M | 15 | Using 242D System |

*NVLAP Code:* 20/E06
DC Voltage - Generation

| *Range (±)* | *Best Uncertainty (±) in ppm* note 1 | *Remarks* |
|---|---|---|
| 0.1 V | 3.0 | |
| 0.2 V | 2.1 | |
| 1.0 V | 1.8 | |
| 2.0 V | 1.8 | |
| 10.0 V | 1.8 | |
| 20.0 V | 1.8 | |
| 100.0 V | 1.8 | |

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| | |
|---|---|
| 200.0 V | 2.0 |
| 1000.0 V | 2.0 |
| DC Voltage - Measurement | |
| 0.1 V | 4.0 |
| 0.2 V | 3.0 |
| 1.0 V | 3.0 |
| 2.0 V | 3.0 |
| 10.0 V | 3.0 |
| 20.0 V | 3.0 |
| 100.0 V | 3.0 |
| 200.0 V | 3.0 |
| 1000.0 V | 3.0 |

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SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN

*NVLAP Code:* 20/E09
LF AC Voltage

*Best Uncertainty (±) in ppm[note 1]*
*Frequency in Hertz*

| *Range* | *10* | *20* | *40* | *50* | *300* | *1 k* | *20 k* | *50 k* | *100 k* | *300 k* | *500 k* | *1 M* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 mV | 110 | 100 | 100 | | | 100 | 100 | 200 | 310 | 410 | 580 | 580 |
| 200 mV | 50 | 50 | 30 | | | 30 | 30 | 50 | 90 | 150 | 150 | 240 |
| 2 V | 100 | 40 | 30 | | | 20 | 20 | 40 | 50 | 120 | 120 | 120 |
| 20 V | 40 | 40 | 30 | | | 20 | 20 | 40 | 50 | 120 | 130 | 130 |
| 200 V | 40 | 45 | 25 | | | 25 | 25 | 50 | 60 | | | |
| 300 V | | | | | | | 40 | | | | | |
| 600 V | | | | | | | | 60 | 80 | | | |
| 1000 V | | | 35 | 35 | 30 | 30 | 40 | 40 | | | | |

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SWFLANT CALIBRATION LABORATORY OPERATED BY LOCKHEED MARTIN

TIME AND FREQUENCY

*NVLAP Code:* 20/F01
Frequency Dissemination

| *Range* | *Best Uncertainty (±) in HZ[note 1]* | *Remarks* |
|---|---|---|
| 1 MHz, 5 MHz, 10 MHz | $5.0 \times 10^{-12}$ | Comparison using FMAS |

*NVLAP Code:* 20/F02
Time Dissemination

| *Range* | *Best Uncertainty (±) in Hz[note 1]* | *Remarks* |
|---|---|---|
| n/a | 1 μ second | UTC(USNO) Transfer |

1. Represents an expanded uncertainty using a coverage factor, k=2.
2. L is length or diameter in inches.

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200405-0

DWIGHT D.I.C., INC.
10 Stuyvesant Avenue, P.O. Box 909
Lyndhurst, NJ 07071-0909
Mr. Daniel Manning
Phone: 1-800-635-2910 Fax: 201-438-0594
E-Mail: dwight@comcat.com
URL: http://www.dwightdic.com

### DIMENSIONAL

*NVLAP Code:* 20/D03
Gage Blocks - Steel only

| *Range* | *Best Uncertainty (±) in μ inches[note 1,2]* | *Remarks* |
|---|---|---|
| >0 to 20 in | (3.5 + 2L) | Comparison |

*NVLAP Code:* 20/D05
Length

Micrometers - in lab and field service

| *Range* | *Best Uncertainty (±) in μ inches[note 1,2]* | *Remarks* |
|---|---|---|
| >0 to 24 in | (100 + 2L) | |

Dial Indicators - in lab and field service

| | | |
|---|---|---|
| >0 to 2 in | 50 | |

Calipers - in lab and field service

| | | |
|---|---|---|
| >0 to 36 in | (1000 + 20L) | |

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DWIGHT D.I.C., INC.

*NVLAP Code:* 20/D07
Thread Measuring Wires

| *Range* | *Best Uncertainty (±) in μ inches[note 1,2]* | *Remarks* |
|---|---|---|
| Up to 80 pitch | 20 | Light Wave Micrometer |

*NVLAP Code:* 20/D11
Spherical Diameter - Plain Rings

| *Range* | *Best Uncertainty (±) in μ inches[note 1,2]* | *Remarks* |
|---|---|---|
| >0 to 8 in | (50 + 5L) | |

*NVLAP Code:* 20/D12
Granite Surface Plates - in lab and field service

| *Range* | *Best Uncertainty (±) in μ inches[note 1,2]* | *Remarks* |
|---|---|---|
| Up to 12 ft | 50 per ft | Moody Method |

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200405-0

DWIGHT D.I.C., INC.

*NVLAP Code:* 20/D14
Threaded Plug Gages - Pitch Diameter

| *Range* | *Best Uncertainty (±) in μ inches*[note 1,2] | *Remarks* |
|---|---|---|
| >0 to 4 in | 100 | |
| Threaded Ring Gages - Functional Diameter | | |
| >0 to 4 in | 100 | |

1. Represents an expanded uncertainty using a coverage factor, k=2.
2. L is in inches.

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200406-0

STRATEGIC WEAPONS FAC. PACIFIC CAL. LAB. OPER. BY LOCKHEED MARTIN
6402 Skipjack Cir. Org. 43-50, Bldg. TSB
P.O. Box 6429, NSB Bangor
Silverdale, WA 98315-6429
Mr. Robert J. Ott
Phone: 360-396-8425 Fax: 360-396-6737
E-Mail: bob.ott@lmco.com

DIMENSIONAL

*NVLAP Code:* 20/D03
Gage Blocks - Steel and Chrome Carbide

| *Range in inches* | *Best Uncertainty (±) in μ inches*[note 1] | *Remarks* |
|---|---|---|
| 0.01 to 0.09375 (except 0.05) | 3.7 | Mechanical Comparison |
| 0.05 | 4.4 | Mechanical Comparison |
| 0.1 to 0.95 (except 0.35 and 0.85) | 3 0 | Mechanical Comparison |
| 0.35 | 3.2 | Mechanical Comparison |
| 0.85 | 3.3 | Mechanical Comparison |
| 1.0 | 3.3 | Mechanical Comparison |
| 2.0 | 3.2 | Mechanical Comparison |
| 3.0 | 3.5 | Mechanical Comparison |
| 4.0 | 4.4 | Mechanical Comparison |

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| | | |
|---|---|---|
| 5.0 | 9.7 | Mechanical Comparison |
| 6.0 | 10.0 | Mechanical Comparison |
| 7.0 | 10.3 | Mechanical Comparison |
| 8.0 | 10.6 | Mechanical Comparison |
| 10.0 | 11.3 | Mechanical Comparison |
| 12.0 | 12.1 | Mechanical Comparison |
| 16.0 | 14.0 | Mechanical Comparison |
| 20.0 | 16.1 | Mechanical Comparison |
| Gage Blocks - Ceramic and Tungsten Carbide | | |
| 0.01 to 0.09375 (except 0.05) | 4.7 | Mechanical Comparison |
| 0.05 | 5.4 | Mechanical Comparison |
| 0.1 to 0.95 (except 0.35 and 0.85) | 4.0 | Mechanical Comparison |
| 0.35 | 4.2 | Mechanical Comparison |
| 0.85 | 4.3 | Mechanical Comparison |
| 1.0 | 4.3 | Mechanical Comparison |

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| | | |
|---|---|---|
| 2.0 | 5.2 | Mechanical Comparison |
| 3.0 | 6.5 | Mechanical Comparison |
| 4.0 | 8.4 | Mechanical Comparison |

*NVLAP Code:* 20/D11
Spherical Diameter, Plug Ring Gages

| *Range in inches* | *Best Uncertainty (±) in μ inches*[note 1] | *Remarks* |
|---|---|---|
| Ring Gages | | |
| >0 to 8.0 | 20 | Comparison to Gage Blocks |
| Plug Gages | | |
| >0 to 3.0 | 40 | Comparison to Gage Blocks |

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STRATEGIC WEAPONS FAC. PACIFIC CAL. LAB. OPER. BY LOCKHEED MARTIN

*NVLAP Code:* 20/D14
Threaded Plug and Ring Gages

Threaded Plug Gages, 60°

| | *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|---|
| Pitch Diameter | >0 to 6.0 in | 90 μin | Three Wire Method |
| Major Diameter | >0 to 6.0 in | 40 μin | Universal Measuring Machine |
| Half Angle | 60° | 3 arc minutes | Optical Comparator Inspection |
| Pitch | 4 to 80 TPI | 100 μin | Universal Measuring Machine |

Threaded Ring Gages, 60°

| | | | |
|---|---|---|---|
| Minor Diameter | >0 to 6.0 in | 40 μin | |

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STRATEGIC WEAPONS FAC. PACIFIC CAL. LAB. OPER. BY LOCKHEED MARTIN

ELECTROMAGNETICS - DC/LOW FREQUENCY

*NVLAP Code:* 20/E02
AC Current

| *Range* | *Best Uncertainty (±) in ppm*[note 1] | *Frequency Range* |
|---|---|---|
| 10 μA to 220 μA | 176 to 9100 | 10 Hz to 10 kHz |
| 220 μA to 2.2 mA | 148 to 4300 | 10 Hz to 10 kHz |
| 2.2 mA to 22 mA | 148 to 3500 | 10 Hz to 10 kHz |
| 22 mA to 220 mA | 144 to 1580 | 10 Hz to 10 kHz |
| 220 mA to 2.2 A | 318 to 7800 | 20 Hz to 10 kHz |
| 2.2 A to 11 A(w/5725A) | 417 to 3375 | 40 Hz to 10 kHz |

*NVLAP Code:* 20/E05
DC Current

| *Range* | *Best Uncertainty (±) in ppm*[note 1] | *Remarks* |
|---|---|---|
| 10 μA to 220 μA | 74 to 360 | |
| 220 μA to 2.2 mA | 39 to 71 | |
| 2.2 mA to 22 mA | 37 to 58 | |
| 22 mA to 220 mA | 59 to 87 | |

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| | |
|---|---|
| 220 mA to 2.2 A | 125 to 183 |
| 2.2 A to 11 A(w/5725A) | 388 to 558 |

*NVLAP Code:* 20/E05
DC Resistance

| *Range in ohms* | *Best Uncertainty (±) in ppm[note 1]* | *Remarks* |
|---|---|---|
| 1.0 | 1 | Using Guildline Bridge |
| 10.0 | 1 | Using Guildline Bridge |
| 100.0 | 1 | Using Guildline Bridge |
| 1000.0 | 1 | Using Guildline Bridge |
| 10000.0 | 1 | Using Guildline Bridge |
| 100000.0 | 2 | Using Guildline Bridge |

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*NVLAP Code:* 20/E06
DC Voltage

| *Range (±)* | *Best Uncertainty (±) in ppm[note 1]* | *Remarks* |
|---|---|---|
| 0.1 V | 8.1 | Compared to 10 V Reference Cell |
| 1.0 V | 1.3 | Compared to 10 V Reference Cell |
| 10.0 V | 1.0 | Compared to 10 V Reference Cell |
| 100.0 V | 1.0 | Compared to 10 V Reference Cell |
| 1000.0 V | 1.1 | Compared to 10 V Reference Cell |

*NVLAP Code:* 20/E09
LF AC Voltage

| *Range* | *Best Uncertainty (±) in ppm[note 1]* | *Frequency Range* |
|---|---|---|
| 1 mV to 220 mV | 126 to 28000 | 10 Hz to 1 Mhz |
| 220 mV to 2.2 V | 52 to 4409 | 10 Hz to 1 Mhz |
| 2.2 V to 22 V | 50 to 3200 | 10 Hz to 1 Mhz |
| 22 V to 220 V | 63 to 13348 | 10 Hz to 1 Mhz |
| 220 V to 250 V | 400 to 410 | 15 Hz to 50 Hz |
| 220 V to 1100 V | 79 to 100 | 50 Hz to 1 kHz |
| 220 V to 1100 V (w/5725A) | 85 to 1360 | 40 Hz to 30 kHz |

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STRATEGIC WEAPONS FAC. PACIFIC CAL. LAB. OPER. BY LOCKHEED MARTIN

TIME AND FREQUENCY

*NVLAP Code:* 20/F01
Frequency Dissemination

| *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| 0.1 MHz | 2 parts in $10^{12}$ Hz | |
| 1 MHz | 2 parts in $10^{12}$ Hz | |
| 5 MHz | 2 parts in $10^{12}$ Hz | |
| 10 MHz | 2 parts in $10^{12}$ Hz | |

*NVLAP Code:* 20/F02
Time Dissemination

| *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| 1 pps | 10 μs | |

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*NVLAP Code:* 20/F03
Oscillator Characterization

| *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| 0.1 MHz | 2 parts in $10^{12}$ Hz | |
| 1 MHz | 2 parts in $10^{12}$ Hz | |
| 5 MHz | 2 parts in $10^{12}$ Hz | |
| 10 MHz | 2 parts in $10^{12}$ Hz | |

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MECHANICAL

*NVLAP Code:* 20/M06
Force - Torque

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 2.0 lb-in to 20 lb-in | 0.1% of Full Scale (FS) or 0.2% of Indicated Value (IV) whichever is greater | |
| 10 lb-in to 100 lb-in | 0.1% of Full Scale (FS) or 0.2% of Indicated Value (IV) whichever is greater | |
| 10 lb-ft to 100 lb-ft | 0.1% of Full Scale (FS) or 0.2% of Indicated Value (IV) whichever is greater | |
| 100 lb-ft to 1000 lb-ft | 0.1% of Full Scale (FS) or 0.2% of Indicated Value (IV) whichever is greater | |

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*NVLAP Code:* 20/M08
Mass

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 20 kg | 28.95 | Accuracy Class II |
| 10 kg | 5.80 | Accuracy Class II |
| 5 kg | 4.10 | Accuracy Class II |
| 3 kg | 4.10 | Accuracy Class II |
| 2 kg | 4.10 | Accuracy Class II |
| 1 kg | 0.47 | Accuracy Class II |
| 500 g | 0.46 | Accuracy Class II |
| 300 g | 0.45 | Accuracy Class II |
| 200 g | 0.45 | Accuracy Class II |
| 100 g | 0.120 | Accuracy Class II |
| 50 g | 0.088 | Accuracy Class II |
| 30 g | 0.087 | Accuracy Class II |
| 20 g | 0.086 | Accuracy Class II |
| 10 g | 0.022 | Accuracy Class II |

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| | | |
|---|---|---|
| 5 g | 0.0121 | Accuracy Class II |
| 3 g | 0.0117 | Accuracy Class II |
| 2 g | 0.0115 | Accuracy Class II |
| 1 g | 0.0048 | Accuracy Class II |
| 500 mg | 0.0045 | Accuracy Class II |
| 300 mg | 0.0047 | Accuracy Class II |
| 200 mg | 0.0046 | Accuracy Class II |
| 100 mg | 0.0043 | Accuracy Class II |
| 50 mg | 0.0046 | Accuracy Class II |
| 30 mg | 0.0044 | Accuracy Class II |
| 20 mg | 0.0043 | Accuracy Class II |
| 10 mg | 0.0040 | Accuracy Class II |
| 5 mg | 0.0040 | Accuracy Class II |
| 3 mg | 0.0041 | Accuracy Class II |
| 2 mg | 0.0041 | Accuracy Class II |
| 1 mg | 0.0040 | Accuracy Class II |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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MICHIGAN DEPT. OF AGRICULTURE, E.C. HEFRON METROLOGY LABORATORY
940 Venture Lane
Williamston, MI 48895
Mr. Ronald E. Balaze
Phone: 517-655-8202 x3155 Fax: 517-655-8303
E-Mail: balazer@state.mi.us

DIMENSIONAL

*NVLAP Code:* 20/D13
Surveying Rods and Tapes

| *Range in inches* | *Best Uncertainty (±) in inches*[note 1] | *Remarks* |
|---|---|---|
| 0 to 18 | 0.0029 | Rigid Rules |

| *Range in feet* | *Best Uncertainty (±) in inches*[note 1] | *Remarks* |
|---|---|---|
| 0 to 100 | 0.013 | Tape to Tape Method |

MECHANICAL

*NVLAP Code:* 20/M08
Mass

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 20 kg | 11.6 mg | Echelon I and II |
| 10 kg | 4.5 mg | Echelon I and II |
| 5 kg | 2.65 mg | Echelon I and II |

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MICHIGAN DEPT. OF AGRICULTURE, E.C. HEFRON METROLOGY LABORATORY

| | | |
|---|---|---|
| 3 kg | 1.33 mg | Echelon I and II |
| 2 kg | 0.47 mg | Echelon I and II |
| 1 kg | 0.14 mg | Echelon I and II |
| 500 g | 0.107 mg | Echelon I and II |
| 300 g | 0.079 mg | Echelon I and II |
| 200 g | 0.110 mg | Echelon I and II |
| 100 g | 0.019 mg | Echelon I and II |
| 50 g | 0.018 mg | Echelon I and II |
| 30 g | 0.013 mg | Echelon I and II |
| 20 g | 0.0138 mg | Echelon I and II |
| 10 g | 0.012 mg | Echelon I and II |
| 5 g | 0.0057 mg | Echelon I and II |
| 3 g | 0.0037 mg | Echelon I and II |
| 2 g | 0.0026 mg | Echelon I and II |
| 1 g | 0.0015 mg | Echelon I and II |
| 500 mg | 0.0015 mg | Echelon I and II |
| 300 mg | 0.0013 mg | Echelon I and II |
| 200 mg | 0.0013 mg | Echelon I and II |

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| | | |
|---|---|---|
| 100 mg | 0.0019 mg | Echelon I and II |
| 50 mg | 0.009 mg | Echelon I and II |
| 30 mg | 0.007 mg | Echelon I and II |
| 20 mg | 0.0018 mg | Echelon I and II |
| 10 mg | 0.0011 mg | Echelon I and II |
| 5 mg | 0.0010 mg | Echelon I and II |
| 3 mg | 0.0007 mg | Echelon I and II |
| 2 mg | 0.0009 mg | Echelon I and II |
| 1 mg | 0.0011 mg | Echelon I and II |
| | | |
| 500 kg | 3100.0 mg | Echelon III |
| 250 kg | 2500.0 mg | Echelon III |
| 50 kg | 220.0 mg | Echelon III |
| 25 kg | 170.0 mg | Echelon III |
| 10 kg | 74.0 mg | Echelon III |
| 5 kg | 7.6 mg | Echelon III |
| 3 kg | 7.6 mg | Echelon III |
| 2 kg | 0.82 mg | Echelon III |

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| | | |
|---|---|---|
| 1 kg | 0.21 mg | Echelon III |
| 500 g | 0.18 mg | Echelon III |
| 300 g | 0.18 mg | Echelon III |
| 200 g | 0.18 mg | Echelon III |
| 100 g | 0.060 mg | Echelon III |
| 50 g | 0.032 mg | Echelon III |
| 30 g | 0.025 mg | Echelon III |
| 20 g | 0.020 mg | Echelon III |
| 10 g | 0.021 mg | Echelon III |
| 5 g | 0.0054 mg | Echelon III |
| 3 g | 0.0037 mg | Echelon III |
| 2 g | 0.0045 mg | Echelon III |
| 1 g | 0.0037 mg | Echelon III |
| 500 mg | 0.0027 mg | Echelon III |
| 300 mg | 0.0026 mg | Echelon III |
| 200 mg | 0.0028 mg | Echelon III |
| 100 mg | 0.0020 mg | Echelon III |

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| | | |
|---|---|---|
| 50 mg | 0.0020 mg | Echelon III |
| 30 mg | 0.0020 mg | Echelon III |
| 20 mg | 0.0020 mg | Echelon III |
| 10 mg | 0.0020 mg | Echelon III |
| 5 mg | 0.0020 mg | Echelon III |
| 3 mg | 0.0020 mg | Echelon III |
| 2 mg | 0.0020 mg | Echelon III |
| 1 mg | 0.0020 mg | Echelon III |
| 1000 lb | 3100.0 mg | Echelon III |
| 500 lb | 2500.0 mg | Echelon III |
| 100 lb | 220.0 mg | Echelon III |
| 50 lb | 170.0 mg | Echelon III |
| 25 lb to 20 lb | 74.0 mg | Echelon III |
| 10 lb to 3 lb | 7.6 mg | Echelon III |
| 2 lb to 0.3 lb | 2.6 mg | Echelon III |
| 0.2 lb to 0.001 lb | 0.22 mg | Echelon III |
| 0.02 lb to 0.03 lb | 0.047 mg | Echelon III |

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MICHIGAN DEPT. OF AGRICULTURE, E.C. HEFRON METROLOGY LABORATORY

| | | |
|---|---|---|
| 0.02 lb | 0.028 mg | Echelon III |
| 0.01 lb to 0.002 lb | 0.035 mg | Echelon III |
| 0.001 lb to 0.0001 lb | 0.025 mg | Echelon III |

*NVLAP Code:* 20/M12
Density

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 1500 gallon | 40.0 $in^3$ | Volume Transfer |
| 1000 gallon | 67.0 $in^3$ | Volume Transfer |
| 750 gallon | 25.0 $in^3$ | Volume Transfer |
| 500 gallon | 13.0 $in^3$ | Volume Transfer |
| 100 gallon | 2.8 $in^3$ | Volume Transfer |
| 50 gallon | 2.8 $in^3$ | Volume Transfer |
| 25 gallon | 2.8 $in^3$ | Volume Transfer |
| 5 gallon | 0.43 $in^3$ | Volume Transfer |
| 100 gallon | 1.84 $in^3$ | Volume Gravimetric |
| 25 gallon | 0.46 $in^3$ | Volume Gravimetric |
| 5 gallon | 0.17 $in^3$ | Volume Gravimetric |

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200408-0

MICHIGAN DEPT. OF AGRICULTURE, E.C. HEFRON METROLOGY LABORATORY

| | | |
|---|---|---|
| 1 gallon | 0.068 $in^3$ | Volume Gravimetric |
| 1/2 gallon | 0.024 $in^3$ | Volume Gravimetric |
| 1 quart | 0.016 $in^3$ | Volume Gravimetric |
| 1 pint | 0.014 $in^3$ | Volume Gravimetric |
| 1 liter | 0.039 $in^3$ | Volume Gravimetric |
| 50 milliliter | 0.054 $in^3$ | Volume Gravimetric |
| 120 minim | 0.051 $in^3$ | Volume Gravimetric |

*NVLAP Code:* 20/M06
Force

| *Range* | *Best Uncertainty (±) in lbs*[note 1] | *Remarks* |
|---|---|---|
| < =20,000 lb | 40.0 lb | Wheel Load Weighers |

1. Represents an expanded uncertainty using a coverage factor, k=2.

September 30, 2001
*Effective through*

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*For the National Institute of Standards and Technology*

NVLAP-02S (11-95)



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CALIBRATION LABORATORIES — NVLAP LAB CODE 200410-0

ELECTRONIC AUTOMATION INC.
2846 Three Mile Road N.W.
Grand Rapids, MI 49544
Mr. John Rittenhouse
Phone: 616-791-9117 Fax: 616-791-9365

### ELECTROMAGNETICS - DC LOW FREQUENCY

*NVLAP Code:* 20/E02
AC Current

*Best Uncertainty (±)[note 1]*

*Frequency in Hertz*

| *Range* | *10 to 20* | *20 to 45* | *45 to 1 k* | *1 k to 5 k* | *5 k to 10 k* |
|---|---|---|---|---|---|
| 0.029 to 0.32999 mA | 0.194% + 0.12 μA | 0.098% + 0.12 μA | 0.098% + 0.2 μA | 0.312% + 0.12 μA | 0.970% + 0.12 μA |
| 0.33 to 3.2999 mA | 0.156% + 0.24 μA | 0.078% + 0.24 μA | 0.078% + 0.24 μA | 0.156% + 0.24 μA | 0.466% + 0.24 μA |
| 3.33 to 32.999 mA | 0.156% + 2.4 μA | 0.078% + 2.4 μA | 0.070% + 2.4 μA | 0.156% + 2.4 μA | 0.466% + 2.4 μA |
| 33 to 329.99 mA | 0.156% + 24 μA | 0.078% + 24 μA | 0.070% + 24 μA | 0.156% + 24 μA | 0.466% + 24 μA |

| | *10 to 45* | *45 to 1 k* | *1 k to 5 k* |
|---|---|---|---|
| 0.33 to 2.19999 A | 0.156% + 234 μA | 0.078% + 234 μA | 0.582% + 234 μA |

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| | *45 to 65* | *65 to 500* | *500 to 1 k* |
|---|---|---|---|
| 2.5 to 11 A | 0.048% + 1552 μA | 0.078% + 1552 μA | 0.256% + 1552 μA |

### ELECTROMAGNETICS - DC/LOW FREQUENCY

*NVLAP Code:* 20/E05
DC Current

| *Range* | *Best Uncertainty (±)[note 1]* |
|---|---|
| 0 to 3.29999 mA | 0.0102% + 0.04 μA |
| 0 to 32.9999 mA | 0.0078% + 194 μA |
| 0 to 329.999 mA | 0.0078% + 2.6 μA |
| 0 to 2.19999 A | 0.024% + 36 μA |
| 0 to 11 A | 0.048% + 256 μA |

*NVLAP Code:* 20/E05
DC Resistance

| *Range in ohms* | *Best Uncertainty (±)[note 1]* |
|---|---|
| 0 to 10.99 | 0.0094% + 0.006 ohms |
| 11 to 32.999 | 0.0094% + 0.008 ohms |
| 33 to 109.999 | 0.007% + 0.008 ohms |
| 110 to 329.999 | 0.007% + 0.008 ohms |

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E153



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ELECTRONIC AUTOMATION INC.

| | |
|---|---|
| 0.330 k to 1.09999 k | 0.007% + 0.048 ohms |
| 1.1 k to 3.29999 k | 0.007% + 0.048 ohms |
| 3.3 k to 10.9999 k | 0.007% + 0.48 ohms |
| 11 k to 32.9999 k | 0.007% + 0.48 ohms |
| 33 k to 109.999 k | 0.0086% + 4.8 ohms |
| 110 k to 329.999 k | 0.0094% + 4.8 ohms |
| 0.33 M to 1.09999 M | 0.0118% + 44 ohms |
| 1.1 M to 3.29999 M | 0.0118% + 44 ohms |
| 3.3 M to 10.9999 M | 0.048% + 428 ohms |
| 11 M to 32.9999 M | 0.078% + 428 ohms |
| 33 M to 109.999 M | 0.388% + 4264 ohms |
| 110 M to 330 M | 0.388% + 12792 ohms |

*NVLAP Code:* 20/E06
DC Voltage

| *Range* | *Best Uncertainty (±)[note 1]* |
|---|---|
| 0 to 329.9999 mV | 0.0048% + 2.4 μV |
| 0 to 3.299999 V | 0.004% + 4 μV |

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| | |
|---|---|
| 0 to 32.99999 V | 0.004% + 40 μV |
| 30 to 329.9999 V | 0.0044% + 388 μV |
| 100 to 1000.000 V | 0.0044% + 1164 μV |

*NVLAP Code:* 20/E09
LF AC Voltage

*Best Uncertainty (±)[note 1]*

*Frequency in Hertz*

| *Range* | *10 to 45* | *45 to 10 k* | *10 k to 20 k* | *20 k to 50 k* | *50 k to 100 k* | *100 k to 500 k* |
|---|---|---|---|---|---|---|
| 1.0 to 32.999 mV | 0.274% + 16 μV | 0.118% + 16 μV | 0.156% + 16 μV | 0.194% + 16 μV | 0.274% + 26 μV | 0.776% + 48 μV |
| 33 to 329.999 mV | 0.194% + 40 μV | 0.040% + 16 μV | 0.078% + 16 μV | 0.126% + 32 μV | 0.188% + 132 μV | 0.544% + 256 μV |
| 0.33 to 3.29999 V | 0.118% + 194 μV | 0.024% + 48 μV | 0.064% + 48 μV | 0.110% + 234 μV | 0.188% + 1318 μV | 0.388% + 2560 μV |
| 3.3 to 32.9999 V | 0.118% + 1938 μV | 0.032% + 466 μV | 0.064% + 2016 μV | 0.148% + 3876 μV | 0.188% + 13180 μV | |
| 33 to 329.999 V | 0.040% to 5.2 mV | 0.064% + 12 mV | 0.070% + 26 mV | | | |
| 330 to 1000 V | 0.040% to 64 mV | 0.156% + 78 mV | 0.156% + 388 mV | | | |

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ELECTRONIC AUTOMATION INC.

*NVLAP Code:* 20/E10
Capacitance

| *Range* | *Best Uncertainty (±)[note 1]* |
|---|---|
| 0.33 nF to 0.4999 nF | 0.388% + 0.0078 nF |
| 0.5 nF to 1.0999 nF | 0.388% + 0.0078 nF |
| 1.1 nF to 3.2999 nF | 0.388% + 0.0078 nF |
| 3.3 nF to 10.9999 nF | 0.388% + 0.0078 nF |
| 11 nF to 32.9999 nF | 0.194% + 0.078 nF |
| 33 nF to 109.999 nF | 0.194% + 0.078 nF |
| 110 nF to 329.999 nF | 0.194% + 0.234 nF |
| 0.33 μF to 1.09999 μF | 0.194% + 0.78 nF |
| 1.1 μF to 3.29999 μF | 0.268% + 2.34 nF |
| 3.3 μF to 10.9999 μF | 0.268% + 7.8 nF |
| 11 μF to 32.9999 μF | 0.312% + 23.4 nF |
| 33 μF to 109.999 μF | 0.388% + 78 nF |
| 110 μF to 329.999 μF | 0.544% + 234 nF |
| 0.33 mF to 1.1 mF | 0.776% + 234 nF |

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ELECTRONIC AUTOMATION INC.

*NVLAP Code:* 20/E12
DC Wattage

| *Range in W* | *Best Uncertainty (±)[note 1]* | *Remarks* |
|---|---|---|
| 0.000108 to 330 | 0.03% | 33 mV to 1000 V |
| 0.01089 to 1004.5 | 0.09% | 33 mV to 1000 V |
| 0.1485 to 11000 | 0.07% | 33 mV to 1000 V |

*NVLAP Code:* 20/E12
AC Wattage

| *Range in W* | *Best Uncertainty (±)[note 3]* | *Remarks* |
|---|---|---|
| 0.0001089 to 0.00297 | 0.312% | 33 mV to 329.999 V |
| 0.000297 to 0.01089 | 0.194% | 33 mV to 329.999 V |
| 0.001089 to 0.0297 | 0.272% | 33 mV to 329.999 V |
| 0.00297 to 0.1089 | 0.194% | 33 mV to 329.999 V |
| 0.01089 to 0.297 | 0.272% | 33 mV to 329.999 V |
| 0.0297 to 726 | 0.194% | 33 mV to 329.999 V |
| 0.0726 to 1.485 | 0.272% | 33 mV to 329.999 V |
| 0.1485 to 3.63 | 0.194% | 33 mV to 329.999 V |
| 0.001089 to 8.999 | 0.194% | 0.33 to 1000 V |

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| | | |
|---|---|---|
| 0.00297 to 32.999 | 0.118% | 0.33 to 1000 V |
| 0.01089 to 89.99 | 0.194% | 0.33 to 1000 V |
| 0.0297 to 329.99 | 0.118% | 0.33 to 1000 V |
| 0.1089 to 899.99 | 0.194% | 0.33 to 1000 V |
| 0.297 to 2199.9 | 0.118% | 0.33 to 1000 V |
| 0.726 to 4499.9 | 0.156% | 0.33 to 1000 V |
| 1.485 to 11000 | 0.118% | 0.33 to 1000 V |

*NVLAP Code:* 20/E15
Phase Angle

| *Frequency Range in Hz* | *Best Uncertainty (±)*[note 1] |
|---|---|
| 10 to 65 | 0.12° |
| 65 to 500 | 0.70° |
| 500 to 1 k | 1.6° |
| 1 k to 5 k | 4.8° |
| 5 k to 10 k | 7.8° |

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ELECTRONIC AUTOMATION INC.

TIME AND FREQUENCY

*NVLAP Code:* 20/F01
Frequency

| *Range in Hz* | *Best Uncertainty (±)*[note 1,7] | *Remarks* |
|---|---|---|
| 0.01 to 119.99 | 0.00194% + 0.78 mHz | (1.6 μs) Jitter |
| 120.00 to 1199.9 | 0.00194% + 0.78 mHz | (1.6 μs) Jitter |
| 1.200 to 10.000 k | 0.00194% + 0.78 mHz | (1.6 μs) Jitter |
| 10.001 to 11.999 k | 0.00194% + 11.8 mHz | (109 ns) Jitter |
| 12.00 to 119.99 k | 0.00194% + 11.8 mHz | (109 ns) Jitter |
| 120.0 to 500.0 k | 0.00194% + 11.8 mHz | (109 ns) Jitter |

OPTICAL RADIATION

*NVLAP Code:* 20/O02
Color Temperature

| *Range in °Kelvin* | *Best Uncertainty (±) in °Kelvin*[note 1] |
|---|---|
| 2300 | 8 |
| 2856 | 9 |

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ELECTRONIC AUTOMATION INC.

THERMODYNAMIC

*NVLAP Code:* 20/T07
Temperature RTD, °C

Simulated ouput in ohms

| *Range in °C* | *Best Uncertainty (±) in °C note 1, 6* | *Type* |
|---|---|---|
| -200 to -80 | 0.040 | Pt385, 100 ohm |
| -80 to 0 | 0.040 | Pt385, 100 ohm |
| 0 to 100 | 0.056 | Pt385, 100 ohm |
| 100 to 300 | 0.070 | Pt385, 100 ohm |
| 300 to 400 | 0.078 | Pt385, 100 ohm |
| 400 to 630 | 0.094 | Pt385, 100 ohm |
| 630 to 800 | 0.180 | Pt385, 100 ohm |
| -200 to -80 | 0.040 | Pt392.6, 100 ohm |
| -80 to 0 | 0.040 | Pt392.6, 100 ohm |
| 0 to 100 | 0.056 | Pt392.6, 100 ohm |
| 100 to 300 | 0.070 | Pt392.6, 100 ohm |
| 300 to 400 | 0.078 | Pt392.6, 100 ohm |

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| | | |
|---|---|---|
| 400 to 630 | 0.094 | Pt392.6, 100 ohm |
| -200 to -190 | 0.194 | Pt391.6, 100 ohm |
| -190 to -80 | 0.032 | Pt391.6, 100 ohm |
| -80 to 0 | 0.040 | Pt391.6, 100 ohm |
| 0 to 100 | 0.048 | Pt391.6, 100 ohm |
| 100 to 260 | 0.056 | Pt391.6, 100 ohm |
| 260 to 300 | 0.064 | Pt391.6, 100 ohm |
| 300 to 400 | 0.070 | Pt391.6, 100 ohm |
| 400 to 600 | 0.094 | Pt391.6, 100 ohm |
| 600 to 630 | 0.180 | Pt391.6, 100 ohm |
| -200 to -80 | 0.032 | Pt385, 200 ohm |
| -80 to 0 | 0.032 | Pt385, 200 ohm |
| 0 to 100 | 0.032 | Pt385, 200 ohm |
| 100 to 260 | 0.040 | Pt385, 200 ohm |
| 260 to 300 | 0.094 | Pt385, 200 ohm |
| 300 to 400 | 0.102 | Pt385, 200 ohm |
| 400 to 600 | 0.110 | Pt385, 200 ohm |

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ELECTRONIC AUTOMATION INC.

| | | |
|---|---|---|
| 600 to 630 | 0.126 | Pt385, 200 ohm |
| -200 to -80 | 0.032 | Pt385, 500 ohm |
| -80 to 0 | 0.040 | Pt385, 500 ohm |
| 0 to 100 | 0.040 | Pt385, 500 ohm |
| 100 to 260 | 0.048 | Pt385, 500 ohm |
| 260 to 300 | 0.064 | Pt385, 500 ohm |
| 300 to 400 | 0.064 | Pt385, 500 ohm |
| 400 to 600 | 0.070 | Pt385, 500 ohm |
| 600 to 630 | 0.086 | Pt385, 500 ohm |
| -200 to -80 | 0.024 | Pt385, 1000 ohm |
| -80 to 0 | 0.024 | Pt385, 1000 ohm |
| 0 to 100 | 0.032 | Pt385, 1000 ohm |
| 100 to 260 | 0.040 | Pt385, 1000 ohm |
| 260 to 300 | 0.048 | Pt385, 1000 ohm |
| 300 to 400 | 0.056 | Pt385, 1000 ohm |
| 400 to 600 | 0.056 | Pt385, 1000 ohm |

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ELECTRONIC AUTOMATION INC.

| | | |
|---|---|---|
| 600 to 630 | 0.180 | Pt385, 1000 ohm |
| -80 to 0 | 0.064 | Ni 120 ohm |
| 0 to 100 | 0.064 | Ni 120 ohm |
| 100 to 260 | 0.110 | Ni 120 ohm |
| -100 to 260 | 0.234 | Cu427, 10 ohm |

Temperature, RTD °F

| *Range in °F* | *Best Uncertainty (±) in °F[see 1,6]* | *Type* |
|---|---|---|
| -328 to -112 | 0.072 | Pt385, 100 ohm |
| -112 to 32 | 0.072 | Pt385, 100 ohm |
| 32 to 212 | 0.102 | Pt385, 100 ohm |
| 212 to 572 | 0.126 | Pt385, 100 ohm |
| 572 to 752 | 0.142 | Pt385, 100 ohm |
| 752.to 1166 | 0.170 | Pt385, 100 ohm |
| 1166 to 1472 | 0.324 | Pt385, 100 ohm |
| -328 to -112 | 0.072 | Pt392.6, 100 ohm |

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ELECTRONIC AUTOMATION INC.

| | | |
|---|---|---|
| -112 to 32 | 0.072 | Pt392.6, 100 ohm |
| 32 to 212 | 0.102 | Pt392.6, 100 ohm |
| 212 to 572 | 0.126 | Pt392.6, 100 ohm |
| 572 to 752 | 0.142 | Pt392.6, 100 ohm |
| 752 to 1166 | 0.170 | Pt392.6, 100 ohm |
| | | |
| -328 to -310 | 0.350 | Pt391.6, 100 ohm |
| -310 to -112 | 0.058 | Pt391.6, 100 ohm |
| -112 to 32 | 0.072 | Pt391.6, 100 ohm |
| 32 to 212 | 0.088 | Pt391.6, 100 ohm |
| 212 to 500 | 0.102 | Pt391.6, 100 ohm |
| 500 to 572 | 0.116 | Pt391.6, 100 ohm |
| 572 to 752 | 0.126 | Pt391.6, 100 ohm |
| 752 to 1112 | 0.142 | Pt391.6, 100 ohm |
| 1112 to 1166 | 0.324 | Pt391.6, 100 ohm |
| | | |
| -328 to -112 | 0.058 | Pt385, 200 ohm |
| -112 to 32 | 0.058 | Pt385, 200 ohm |

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| | | |
|---|---|---|
| 32 to 212 | 0.058 | Pt385, 200 ohm |
| 212 to 500 | 0.072 | Pt385, 200 ohm |
| 500 to 572 | 0.170 | Pt385, 200 ohm |
| 572 to 752 | 0.184 | Pt385, 200 ohm |
| 752 to 1112 | 0.198 | Pt385, 200 ohm |
| 1112 to 1166 | 0.228 | Pt385, 200 ohm |
| | | |
| -328 to -112 | 0.058 | Pt385, 500 ohm |
| -112 to 32 | 0.072 | Pt385, 500 ohm |
| 32 to 212 | 0.072 | Pt385, 500 ohm |
| 212 to 500 | 0.088 | Pt385, 500 ohm |
| 500 to 572 | 0.116 | Pt385, 500 ohm |
| 572 to 752 | 0.116 | Pt385, 500 ohm |
| 752 to 1112 | 0.126 | Pt385, 500 ohm |
| 1112 to 1166 | 0.156 | Pt385, 500 ohm |
| | | |
| -328 to -112 | 0.044 | Pt385, 1000 ohm |
| -112 to 32 | 0.044 | Pt385, 1000 ohm |

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| | | |
|---|---|---|
| 32 to 212 | 0.058 | Pt385, 1000 ohm |
| 212 to 500 | 0.072 | Pt385, 1000 ohm |
| 500 to 572 | 0.088 | Pt385, 1000 ohm |
| 572 to 752 | 0.102 | Pt385, 1000 ohm |
| 752 to 1112 | 0.102 | Pt385, 1000 ohm |
| 1112 to 1166 | 0.324 | Pt385, 1000 ohm |
| -112 to 32 | 0.116 | Ni120, 120 ohm |
| 32 to 212 | 0.116 | Ni120, 120 ohm |
| 212 to 500 | 0.198 | Ni120, 120 ohm |
| -148 to 500 | 0.422 | Cu427, 10 ohm |

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ELECTRONIC AUTOMATION INC.

*NVLAP Code:* 20/T08
Temperature
Thermocouple, °C
Simulated output in V

| *Range in °C* | *Best Uncertainty (±) in °C*[note 1,4,5] | *Type* |
|---|---|---|
| 600 to 800 | 0.342 | B |
| 800 to 1000 | 0.264 | B |
| 1000 to 1550 | 0.234 | B |
| 1550 to 1820 | 0.256 | B |
| 0 to 150 | 0.234 | C |
| 150 to 650 | 0.202 | C |
| 650 to 1000 | 0.242 | C |
| 1000 to 1800 | 0.388 | C |
| 1800 to 2316 | 0.652 | C |
| -250 to -100 | 0.388 | E |
| -100 to -25 | 0.126 | E |

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| | | |
|---|---|---|
| -25 to 350 | 0.110 | E |
| 350 to 650 | 0.126 | E |
| 650 to 1000 | 0.164 | E |
| | | |
| -210 to -100 | 0.210 | J |
| -100 to -30 | 0.126 | J |
| -30 to 150 | 0.110 | J |
| 150 to 760 | 0.132 | J |
| 760 to 1200 | 0.180 | J |
| | | |
| -200 to -100 | 0.256 | K |
| -100 to -25 | 0.140 | K |
| -25 to 120 | 0.126 | K |
| 120 to 1000 | 0.202 | K |
| 1000 to 1372 | 0.312 | K |
| | | |
| 0 to 250 | 0.442 | R |
| 250 to 400 | 0.272 | R |

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ELECTRONIC AUTOMATION INC.

| | | |
|---|---|---|
| 400 to 1000 | 0.256 | R |
| 1000 to 1767 | 0.312 | R |
| | | |
| 0 to 250 | 0.366 | S |
| 250 to 1000 | 0.280 | S |
| 1000 to 1400 | 0.288 | S |
| 1400 to 1767 | 0.358 | S |
| | | |
| -250 to -150 | 0.490 | T |
| -150 to 0 | 0.188 | T |
| 0 to 120 | 0.126 | T |
| 120 to 400 | 0.110 | T |

Temperature
Thermocouple, °F

| *Range in °F* | *Best Uncertainty (±) in °F[note 1,2,4,5]* | *Type* |
|---|---|---|
| 1112 to 1472 | 0.616 | B |
| 1472 to 1832 | 0.476 | B |

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ELECTRONIC AUTOMATION INC.

| | | |
|---|---|---|
| 1832 to 2822 | 0.422 | B |
| 2822 to 3308 | 0.462 | B |
| 32 to 302 | 0.422 | C |
| 302 to 1202 | 0.364 | C |
| 1202 to 1832 | 0.436 | C |
| 1832 to 3272 | 0.700 | C |
| 3272 to 4201 | 1.174 | C |
| -418 to -148 | 0.700 | E |
| -148 to -13 | 0.228 | E |
| -13 to 622 | 0.198 | E |
| 622 to 1202 | 0.228 | E |
| 1202 to 1832 | 0.296 | E |
| -346 to -148 | 0.378 | J |
| -148 to -22 | 0.228 | J |
| -22 to 302 | 0.198 | J |

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| | | |
|---|---|---|
| 302 to 1400 | 0.238 | J |
| 1400 to 2192 | 0.324 | J |
| -328 to -148 | 0.462 | K |
| -148 to -13 | 0.252 | K |
| -13 to 248 | 0.228 | K |
| 248 to 1832 | 0.364 | K |
| 1832 to 2502 | 0.562 | K |
| 32 to 482 | 0.796 | R |
| 482 to 752 | 0.490 | R |
| 752 to 1832 | 0.462 | R |
| 1832 to 3212 | 0.562 | R |
| 32 to 482 | 0.660 | S |
| 482 to 1832 | 0.504 | S |
| 1832 to 2552 | 0.520 | S |
| 2552 to 3212 | 0.646 | S |

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## INDEX E. LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE - continued

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200410-0

ELECTRONIC AUTOMATION INC.

| | | |
|---|---|---|
| -418 to -238 | 0.882 | T |
| -238 to 32 | 0.340 | T |
| 32 to 248 | 0.228 | T |
| 248 to 752 | 0.198 | T |

1. Represents an expanded uncertainty using a coverage factor, k=2.
2. The uncertainties shown are for ratiometrie reading only.
3. Uncertainty at 45 to 65 Hz, PF-1, only.
4. Best uncertainty does not include thermocouple error.
5. The uncertainties shown are for both generating and reading.
6. The uncertainty shown is for generating RTD equivalence only.
7. Jitter uncertainty will be treated as random and its influence will vary as to counter design.

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CALIBRATION LABORATORIES — NVLAP LAB CODE 200419-0

OHIO RADIOLOGICAL CALIBRATION FACILITY
1296 Kinnear Road
Columbus, OH 43212
Mr. Daniel Redman
Phone: 614-688-3363 Fax: 614-688-3362

IONIZING RADIATION DOSIMETRY

*NVLAP Code:* 20/I01
Dosimetry of X-Rays, Gamma Rays, and Electrons

Calibration of Survey Instruments

| *Calibration Category* | *Radiation Type or Beam Code* | *Nominal Intensity Range* | *Uncertainty of Reference Field (±)[note 1]* | *Remarks* |
|---|---|---|---|---|
| Gamma | $^{137}$Cs | 1 R/hr to 500 R/hr | 5.0% | Source 1 |
| | $^{137}$Cs | > 10 mR/hr to 5 R/hr | 5.0% | Source 2 |
| | $^{137}$Cs | > 10 mR/hr to 50 mR/hr | 5.0% | Souree 3 |
| | $^{137}$Cs | 0.1 mR/hr to 10mR/hr | 7.0% | Source 3 |

1. Represents an expanded uncertainty using a coverage factor, k=2.

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CALIBRATION LABORATORIES NVLAP LAB CODE 200421-0

INDIANA DIVISION OF WEIGHTS AND MEASURES
2525 North Shadeland Avenue, Suite D3
Indianapolis, IN 46219-1791
Mr. Larry J. Stump
Phone: 317-356-7078 Fax: 317-351-2877
E-Mail: lstump@isdh.state.in.us

### DIMENSIONAL

*NVLAP Labcode:* 20/D13
Surveying Rods and Tapes

| *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| 0 - 18" | ± 0.0042" | Rigid Rules |

### TIME AND FREQUENCY

*NVLAP Code:* 20/F02
Time Dissemination

| *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| ≤ 3 hours | 0.214 second | Stop Watches |

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*For the National Institute of Standards and Technology*

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INDIANA DIVISION OF WEIGHTS AND MEASURES

### MECHANICAL

*NVLAP Code:* 20/M08
MASS

| *Range* | *Best Uncertainty (±)note 1* | *Remarks* |
|---|---|---|
| 50 kg | 146.7 mg | Double Substitution |
| 30 kg | 142.6 mg | Double Substitution |
| 25 kg | 23.4 mg | Double Substitution |
| 20 kg | 20.3 mg | Double Substitution |
| 10 kg | 14.23 mg | Double Substitution |
| 5 kg | 7.84 mg | Double Substitution |
| 3 kg | 4.27 mg | Double Substitution |
| 2 kg | 3.92 mg | Double Substitution |
| 1 kg | 0.75 mg | Double Substitution |
| 500 g | 0.391 mg | Double Substitution |
| 300 g | 0.254 mg | Double Substitution |
| 200 g | 0.184 mg | Double Substitution |
| 100 g | 0.109 mg | Double Substitution |

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INDIANA DIVISION OF WEIGHTS AND MEASURES

| | | |
|---|---|---|
| 50 g | 0.066 mg | Double Substitution |
| 30 g | 0.056 mg | Double Substitution |
| 20 g | 0.028 mg | Double Substitution |
| 10 g | 0.020 mg | Double Substitution |
| 5 g | 0.0107 mg | Double Substitution |
| 3 g | 0.0075 mg | Double Substitution |
| 2 g | 0.0061 mg | Double Substitution |
| 1 g | 0.0053 mg | Double Substitution |
| 500 mg | 0.0050 mg | Double Substitution |
| 300 mg | 0.0046 mg | Double Substitution |
| 200 mg | 0.0045 mg | Double Substitution |
| 100 mg | 0.0018 mg | Double Substitution |
| 50 mg | 0.0017 mg | Double Substitution |
| 30 mg | 0.0018 mg | Double Substitution |
| 20 mg | 0.0017 mg | Double Substitution |
| 10 mg | 0.0010 mg | Double Substitution |
| 5 mg | 0.0009 mg | Double Substitution |

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INDIANA DIVISION OF WEIGHTS AND MEASURES

| | | |
|---|---|---|
| 3 mg | 0.0009 mg | Double Substitution |
| 2 mg | 0.0009 mg | Double Substitution |
| 1 mg | 0.0010 mg | Double Substitution |
| 100 lb | 3.40 g | Double Substitution |
| 50 lb | 23.06 mg | Double Substitution |
| 30 lb | 14.57 mg | Double Substitution |
| 25 lb | 12.43 mg | Double Substitution |
| 20 lb | 9.56 mg | Double Substitution |
| 10 lb | 4.53 mg | Double Substitution |
| 5 lb | 4.01 mg | Double Substitution |
| 3 lb | 3.76 mg | Double Substitution |
| 2 lb | 0.763 mg | Double Substitution |
| 1 lb | 0.416 mg | Double Substitution |
| 0.5 lb | 0.300 mg | Double Substitution |
| 0.3 lb | 0.264 mg | Double Substitution |
| 0.25 lb | 0.108 mg | Double Substitution |

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## Scope of Accreditation



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INDIANA DIVISION OF WEIGHTS AND MEASURES

| | | |
|---|---|---|
| 0.2 lb | 0.094 mg | Double Substitution |
| 0 1 lb | 0.060 mg | Double Substitution |
| 0.05 lb | 0.025 mg | Double Substitution |
| 0.03 lb | 0.021 mg | Double Substitution |
| 0.02 lb | 0.019 mg | Double Substitution |
| 0.01 lb | 0.008 mg | Double Substitution |
| 0.005 lb | 0.006 mg | Double Substitution |
| 0.003 lb | 0.005 mg | Double Substitution |
| 0.002 lb | 0.005 mg | Double Substitution |
| 0.001 lb | 0.005 mg | Double Substitution |
| 500 µlb | 0.0051 mg | Double Substitution |
| 300 µlb | 0.0051 mg | Double Substitution |
| 200 µlb | 0.0025 mg | Double Substitution |
| 100 µlb | 0.0024 mg | Double Substitution |
| 50 µlb | 0.0012 mg | Double Substitution |
| 30 µlb | 0.0012 mg | Double Substitution |
| 20 µlb | 0.0012 mg | Double Substitution |

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## Scope of Accreditation



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INDIANA DIVISION OF WEIGHTS AND MEASURES

| | | |
|---|---|---|
| 10 µlb | 0.0012 mg | Double Substitution |
| 5 µlb | 0.0008 mg | Double Substitution |
| 3 µlb | 0.0008 mg | Double Substitution |
| 2 µlb | 0.0008 mg | Double Substitution |
| 1 µlb | 0.0008 mg | Double Substitution |
| 500 kg | 11.48 g | Tolerance Test - Modified Substitution |
| 300 kg | 9.64 g | Tolerance Test - Modified Substitution |
| 200 kg | 9.48 g | Tolerance Test - Modified Substitution |
| 100 kg | 14.09 g | Tolerance Test - Modified Substitution |
| 50 kg | 342.83 mg | Tolerance Test - Modified Substitution |
| 30 kg | 221.68 mg | Tolerance Test - Modified Substitution |
| 25 kg | 220.92 mg | Tolerance Test - Modified Substitution |
| 20 kg | 46.94 mg | Tolerance Test - Modified Substitution |
| 10 kg | 44.66 mg | Tolerance Test - Modified Substitution |
| 5 kg | 22.33 mg | Tolerance Test - Modified Substitution |
| 3 kg | 6.43 mg | Tolerance Test - Modified Substitution |

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INDIANA DIVISION OF WEIGHTS AND MEASURES

| | | |
|---|---|---|
| 2 kg | 6.20 mg | Tolerance Test - Modified Substitution |
| 1 kg | 6.05 mg | Tolerance Test - Modified Substitution |
| 500 g | 6.01 mg | Tolerance Test - Modified Substitution |
| 300 g | 6.00 mg | Tolerance Test - Modified Substitution |
| 200 g | 0.167 mg | Tolerance Test - Modified Substitution |
| 100 g | 0.100 mg | Tolerance Test - Modified Substitution |
| 50 g | 0.066 mg | Tolerance Test - Modified Substitution |
| 30 g | 0.060 mg | Tolerance Test - Modified Substitution |
| 20 g | 0.025 mg | Tolerance Test - Modified Substitution |
| 10 g | 0.050 mg | Tolerance Test - Modified Substitution |
| 5 g | 0.001 mg | Tolerance Test - Modified Substitution |
| 3 g | 0.007 mg | Tolerance Test - Modified Substitution |
| 2 g | 0.005 mg | Tolerance Test - Modified Substitution |
| 1 g | 0.004 mg | Tolerance Test - Modified Substitution |
| 500 mg | 0.0041 mg | Tolerance Test - Modified Substitution |
| 300 mg | 0.0037 mg | Tolerance Test - Modified Substitution |
| 200 mg | 0.0036 mg | Tolerance Test - Modified Substitution |

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INDIANA DIVISION OF WEIGHTS AND MEASURES

| | | |
|---|---|---|
| 100 mg | 0.0008 mg | Tolerance Test - Modified Substitution |
| 50 mg | 0.0008 mg | Tolerance Test - Modified Substitution |
| 30 mg | 0.0008 mg | Tolerance Test - Modified Substitution |
| 20 mg | 0.0008 mg | Tolerance Test - Modified Substitution |
| 10 mg | 0.0006 mg | Tolerance Test - Modified Substitution |
| 5 mg | 0.0006 mg | Tolerance Test - Modified Substitution |
| 3 mg | 0.0006 mg | Tolerance Test - Modified Substitution |
| 2 mg | 0.0006 mg | Tolerance Test - Modified Substitution |
| 1 mg | 0.0007 mg | Tolerance Test - Modified Substitution |
| 1000 lb | 4.80 g | Tolerance Test - Modified Substitution |
| 500 lb | 3.28 g | Tolerance Test - Modified Substitution |
| 250 lb | 1.81 g | Tolerance Test - Modified Substitution |
| 200 lb | 1.58 g | Tolerance Test - Modified Substitution |
| 100 lb | 0.227 g | Tolerance Test - Modified Substitution |
| 75 lb | 231.04 mg | Tolerance Test - Modified Substitution |
| 50 lb | 191.51 mg | Tolerance Test - Modified Substitution |

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INDIANA DIVISION OF WEIGHTS AND MEASURES

| | | |
|---|---|---|
| 30 lb | 155.45 mg | Tolerance Test - Modified Substitution |
| 25 lb | 155.31 mg | Tolerance Test - Modified Substitution |
| 20 lb | 7.11 mg | Tolerance Test - Modified Substitution |
| 10 lb | 35.519 mg | Tolerance Test - Modified Substitution |
| 5 lb | 2.830 mg | Tolerance Test - Modified Substitution |
| 3 lb | 2.665 mg | Tolerance Test - Modified Substitution |
| 2 lb | 2.545 mg | Tolerance Test - Modified Substitution |
| 1 lb | 1.713 mg | Tolerance Test - Modified Substitution |
| 0.5 lb | 2.665 mg | Tolerance Test - Modified Substitution |
| 0.3 lb | 0.118 mg | Tolerance Test - Modified Substitution |
| 0.25 lb | 0.098 mg | Tolerance Test - Modified Substitution |
| 0.2 lb | 0.083 mg | Tolerance Test - Modified Substitution |
| 0.1 lb | 0.072 mg | Tolerance Test - Modified Substitution |
| 0.05 lb | 0.033 mg | Tolerance Test - Modified Substitution |
| 0.03 lb | 0.047 mg | Tolerance Test - Modified Substitution |
| 0.02 lb | 0.033 mg | Tolerance Test - Modified Substitution |
| 0.01 lb | 0.008 mg | Tolerance Test - Modified Substitution |

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INDIANA DIVISION OF WEIGHTS AND MEASURES

| | | |
|---|---|---|
| 0.005 lb | 0.006 mg | Tolerance Test - Modified Substitution |
| 0.003 lb | 0.005 mg | Tolerance Test - Modified Substitution |
| 0.002 lb | 0.005 mg | Tolerance Test - Modified Substitution |
| 0.001 lb | 0.005 mg | Tolerance Test - Modified Substitution |
| 2 oz | 0.310 mg | Tolerance Test - Modified Substitution |
| 1 oz | 0.172 mg | Tolerance Test - Modified Substitution |
| 0.5 oz | 0.114 mg | Tolerance Test - Modified Substitution |
| 0.25 oz | 0.078 mg | Tolerance Test - Modified Substitution |
| 0.125 oz | 0.073 mg | Tolerance Test - Modified Substitution |
| 0.0625 oz | 0.088 mg | Tolerance Test - Modified Substitution |
| 0.03125 oz | 0.088 mg | Tolerance Test - Modified Substitution |
| 3 kg | 15.60 g | Tolerance Test - Direct Reading |
| 2 kg | 11.32 g | Tolerance Test - Direct Reading |
| 1 kg | 7.68 g | Tolerance Test - Direct Reading |
| 500 g | 6.46 g | Tolerance Test - Direct Reading |

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INDIANA DIVISION OF WEIGHTS AND MEASURES

| | | |
|---|---|---|
| 300 g | 6.20 g | Tolerance Test - Direct Reading |
| 200 g | 0.132 mg | Tolerance Test - Direct Reading |
| 100 g | 0.101 mg | Tolerance Test - Direct Reading |
| 50 g | 0.101 mg | Tolerance Test - Direct Reading |
| 30 g | 0.101 mg | Tolerance Test - Direct Reading |
| 20 g | 0.101 mg | Tolerance Test - Direct Reading |
| 10 g | 0.101 mg | Tolerance Test - Direct Reading |
| 5 g | 0.089 mg | Tolerance Test - Direct Reading |
| 3 g | 0.089 mg | Tolerance Test - Direct Reading |
| 2 g | 0.089 mg | Tolerance Test - Direct Reading |
| 1 g | 0.022 mg | Tolerance Test - Direct Reading |
| 500 mg | 0.020 mg | Tolerance Test - Direct Reading |
| 300 mg | 0.020 mg | Tolerance Test - Direct Reading |
| 200 mg | 0.020 mg | Tolerance Test - Direct Reading |
| 100 mg | 0.020 mg | Tolerance Test - Direct Reading |
| 50 mg | 0.020 mg | Tolerance Test - Direct Reading |
| 30 mg | 0.020 mg | Tolerance Test - Direct Reading |

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INDIANA DIVISION OF WEIGHTS AND MEASURES

| | | |
|---|---|---|
| 20 mg | 0.020 mg | Tolerance Test - Direct Reading |
| 10 mg | 0.020 mg | Tolerance Test - Direct Reading |
| 5 mg | 0.020 mg | Tolerance Test - Direct Reading |
| 3 mg | 0.020 mg | Tolerance Test - Direct Reading |
| 2 mg | 0.020 mg | Tolerance Test - Direct Reading |
| 1 mg | 0.020 mg | Tolerance Test - Direct Reading |
| 5 lb | 11.526 mg | Tolerance Test - Direct Reading |
| 3 lb | 7.118 mg | Tolerance Test - Direct Reading |
| 2 lb | 4.904 mg | Tolerance Test - Direct Reading |
| 1 lb | 3.103 mg | Tolerance Test - Direct Reading |
| 0.5 lb | 3.063 mg | Tolerance Test - Direct Reading |
| 0.3 lb | 0.107 mg | Tolerance Test - Direct Reading |
| 0.25 lb | 0.101 mg | Tolerance Test - Direct Reading |
| 0.2 lb | 0.101 mg | Tolerance Test - Direct Reading |
| 0.1 lb | 0.101 mg | Tolerance Test - Direct Reading |
| 0.05 lb | 0.101 mg | Tolerance Test - Direct Reading |

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INDIANA DIVISION OF WEIGHTS AND MEASURES

| | | |
|---|---|---|
| 0.03 lb | 0.101 mg | Tolerance Test - Direct Reading |
| 0.02 lb | 0.101 mg | Tolerance Test - Direct Reading |
| 0.01 lb | 0.089 mg | Tolerance Test - Direct Reading |
| 0.005 lb | 0.089 mg | Tolerance Test - Direct Reading |
| 0.003 lb | 0.089 mg | Tolerance Test - Direct Reading |
| 0.002 lb | 0.089 mg | Tolerance Test - Direct Reading |
| 0.001 lb | 0.089 mg | Tolerance Test - Direct Reading |
| 2 oz | 0.101 mg | Tolerance Test - Direct Reading |
| 1 oz | 0.101 mg | Tolerance Test - Direct Reading |
| 0.5 oz | 0.101 mg | Tolerance Test - Direct Reading |
| 0.25 oz | 0.101 mg | Tolerance Test - Direct Reading |
| 0.125 oz | 0.089 mg | Tolerance Test - Direct Reading |
| 0.0625 oz | 0.089 mg | Tolerance Test - Direct Reading |
| 0.03125 oz | 0.089 mg | Tolerance Test - Direct Reading |

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INDIANA DIVISION OF WEIGHTS AND MEASURES

*NVLAP Code:* 20/M12
Volume and Density

| *Range* | *Best Uncertainty (±)*[note 1] | *Remarks* |
|---|---|---|
| 5 gal | 0.14 $in^3$ | Gravimetric Method |
| 1 gill | 1.6 minim | Gravimetric Method |
| 25 ml | 0.136 ml | Gravimetric Method |
| 50 gal | 2.21 $in^3$ | Volumetric Transfer Method |
| 5 gal | 0.177 $in^3$ | Volumetric Transfer Method |
| 20 l | 3 026 ml | Volumetric Transfer Method |

1. Represents an expanded uncertainty using a coverage factor, k=2.

December 31, 2001
*Effective through*

David F. Alderman
*For the National Institute of Standards and Technology*

NVLAP-02S (11-95)





(See 'How To Use This Directory' on page 7.)

## INDEX E. LISTING OF CALIBRATION LABORATORIES BY NVLAP LAB CODE - continued

National Institute of Standards and Technology **NVLAP®** National Voluntary Laboratory Accreditation Program

ISO/IEC GUIDE 25:1990
ANSI/NCSL Z540-1-1994
ISO 9002:1987

### Scope of Accreditation

Page 1 of 1

CALIBRATION LABORATORIES — NVLAP LAB CODE 200459-0

TECHNI-CAL SERVICES OF ORANGE CTY, INC.
51 Peddler Hill Road
Monroe, NY 10950
Mr. John Tasca
Phone: 845-783-4235 Fax: 845-783-3573
E-Mail: techni@frontiernet.net

**OPTICAL RADIATION**

*NVLAP Code:* 20/O02
Color Temperature

| *Range in °Kelvin* | *Best Uncertainty (±) in °Kelvin*[note 1] |
|---|---|
| 2300 | 42 |
| 2856 | 54 |

1. Represents an expanded uncertainty using a coverage factor, k=2.

December 31, 2001
*Effective through*

David F. Alderman
*For the National Institute of Standards and Technology*

NVLAP-02S (11-95)

E171

# INDEX



## LISTING OF CHEMICAL CALIBRATION LABORATORIES BY NVLAP LAB CODE

NVLAP LAB CODE 200379-0

**Ultra Scientific, Inc.**

250 Smith Street
North Kingstown, RI 02852-7723
Contact: Mr. Edward F. Martz
Phone: 401-294-9400
Fax: 401-295-2330
E-Mail: emartz@ultrasci.com
URL: www.ultrasci.com

**Providers of Proficiency Testing**

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***USEPA WPCHEM*** | |
| 20/U29 | Minerals: Calcium, Magnesium, Potassium, and Sodium |
| 20/U30 | Minerals: Chloride, Fluoride, and Sulfate |
| 20/U34 | Volatile Halocarbon Compounds |
| 20/U35 | Volatile Aromatic Compounds |
| 20/U36 | Chlorinated Pesticides |
| 20/U37 | Chlordane |
| 20/U38 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Water |
| 20/U39 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Oil |
| 20/U42 | Total Alkalinity (as CaCO subscript 3) |
| 20/U43 | Total Hardness (as CaCO subscript 3) |
| 20/U44 | Total Dissolved Solids |
| 20/U48 | Specific Conductance |
| ***USEPA WPCHEM/DMRQACHEM*** | |
| 20/U28 | Trace Metals |
| 20/U31 | Nutrients |
| 20/U32 | Total Residual Chlorine |
| 20/U33 | Cyanide |
| 20/U40 | Total Phenolics |
| 20/U41 | Demands (Source: Glucose and glutamic acid) |
| 20/U45 | Non-Filterable Residue |
| 20/U46 | Oil and Grease |
| 20/U47 | pH |
| ***USEPA WSCHEM*** | |
| 20/U01 | Trace Metals |
| 20/U02 | Sodium |
| 20/U03 | Nitrate, Nitrite, Fluoride, and Orthophosphate |
| 20/U04 | Bromate, Bromide, Chlorate, and Chlorite |
| 20/U05 | Sulfate |
| 20/U06 | Residual Free Chlorine |
| 20/U07 | Cyanide |
| 20/U09 | Volatile Organic Compounds (VOCs) Group I |
| 20/U10 | Volatile Organic Compounds (VOCs) Group II |
| 20/U11 | Insecticides (Pesticides) |
| 20/U12 | Herbicides (Pesticides) |
| 20/U13 | Carbamate Pesticides |
| 20/U14 | Polycyclic Aromatic Hydrocarbon (PAH) |
| 20/U15 | Polychlorinated Biphenyls (PCBs/Aroclors) |
| 20/U16 | Toxaphene and Chlordane |
| 20/U17 | Dioxin (2, 3, 7, 8-TCDD) |
| 20/U18 | Adipate and Phthalate Esters |
| 20/U19 | Haloacetic Acids |
| 20/U20 | Chloral Hydrate |
| 20/U21 | Total Organic Carbon (TOC) |
| 20/U22 | Alkalinity (as CaCO subscript 3) |
| 20/U23 | Calcium Hardness (as CaCO subscript 3) |
| 20/U24 | Total Filterable Residue |
| 20/U25 | pH |
| 20/U26 | Turbidity |

NVLAP LAB CODE 200384-0

**Analytical Products Group, Inc.**

2730 Washington Boulevard
Belpre, OH 45714-1943
Contact: Mr. Thomas V. Coyner
Phone: 740-423-4200
Fax: 740-423-5588
E-Mail: info@apgqa.com
URL: http://www.APGQA.com

**Providers of Proficiency Testing**

Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***USEPA WPCHEM*** | |
| 20/U29 | Minerals: Calcium, Magnesium, Potassium, and Sodium |
| 20/U30 | Minerals: Chloride, Fluoride, and Sulfate |
| 20/U34 | Volatile Halocarbon Compounds |
| 20/U35 | Volatile Aromatic Compounds |
| 20/U36 | Chlorinated Pesticides |
| 20/U37 | Chlordane |
| 20/U38 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Water |
| 20/U39 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Oil |
| 20/U42 | Total Alkalinity (as CaCO subscript 3) |
| 20/U43 | Total Hardness (as CaCO subscript 3) |
| 20/U44 | Total Dissolved Solids |
| 20/U48 | Specific Conductance |
| ***USEPA WPCHEM/DMRQACHEM*** | |
| 20/U28 | Trace Metals |
| 20/U31 | Nutrients |
| 20/U32 | Total Residual Chlorine |
| 20/U33 | Cyanide |
| 20/U40 | Total Phenolics |
| 20/U41 | Demands (Source: Glucose and glutamic acid) |
| 20/U45 | Non-Filterable Residue |
| 20/U46 | Oil and Grease |
| 20/U47 | pH |
| ***USEPA WSCHEM*** | |
| 20/U01 | Trace Metals |
| 20/U02 | Sodium |
| 20/U03 | Nitrate, Nitrite, Fluoride, and Orthophosphate |
| 20/U04 | Bromate, Bromide, Chlorate, and Chlorite |
| 20/U05 | Sulfate |
| 20/U06 | Residual Free Chlorine |
| 20/U07 | Cyanide |
| 20/U09 | Volatile Organic Compounds (VOCs) Group I |
| 20/U10 | Volatile Organic Compounds (VOCs) Group II |
| 20/U11 | Insecticides (Pesticides) |
| 20/U12 | Herbicides (Pesticides) |
| 20/U13 | Carbamate Pesticides |
| 20/U14 | Polycyclic Aromatic Hydrocarbon (PAH) |



(See 'How To Use This Directory' on page 7.)

20/U15 Polychlorinated Biphenyls (PCBs/Aroclors)
20/U16 Toxaphene and Chlordane
20/U18 Adipate and Phthalate Esters
20/U19 Haloacetic Acids
20/U20 Chloral Hydrate
20/U21 Total Organic Carbon (TOC)
20/U22 Alkalinity (as CaCO subscript 3)
20/U23 Calcium Hardness (as CaCO subscript 3)
20/U24 Total Filterable Residue
20/U25 pH
20/U26 Turbidity

**NVLAP LAB CODE 200386-0**

## Environmental Resource Associates (ERA)

5540 Marshall Street
Arvada, CO 80002
Contact: Mr. Charles Wibby
Phone: 303-431-8454
Fax: 303-421-0159
E-Mail: cwibby@eraqc.com
URL: http://www.eraqc.com

### Providers of Proficiency Testing

Accreditation Valid Through: September 30, 2001

*NVLAP Code* *Designation*

*USEPA WPCHEM*

20/U29 Minerals: Calcium, Magnesium, Potassium, and Sodium
20/U30 Minerals: Chloride, Fluoride, and Sulfate
20/U34 Volatile Halocarbon Compounds
20/U35 Volatile Aromatic Compounds
20/U36 Chlorinated Pesticides
20/U37 Chlordane
20/U38 Polychlorinated Biphenyls (PCBs) (as Aroclors) in Water
20/U39 Polychlorinated Biphenyls (PCBs) (as Aroclors) in Oil
20/U42 Total Alkalinity (as CaCO subscript 3)
20/U43 Total Hardness (as CaCO subscript 3)
20/U44 Total Dissolved Solids
20/U48 Specific Conductance

*USEPA WPCHEM/DMRQACHEM*

20/U28 Trace Metals
20/U31 Nutrients
20/U32 Total Residual Chlorine
20/U33 Cyanide
20/U40 Total Phenolics
20/U41 Demands (Source: Glucose and glutamic acid)
20/U45 Non-Filterable Residue
20/U46 Oil and Grease
20/U47 pH

*USEPA WSCHEM*

20/U01 Trace Metals
20/U02 Sodium
20/U03 Nitrate, Nitrite, Fluoride, and Orthophosphate
20/U04 Bromate, Bromide, Chlorate, and Chlorite
20/U05 Sulfate
20/U06 Residual Free Chlorine
20/U07 Cyanide
20/U09 Volatile Organic Compounds (VOCs) Group I
20/U10 Volatile Organic Compounds (VOCs) Group II
20/U11 Insecticides (Pesticides)
20/U12 Herbicides (Pesticides)
20/U13 Carbamate Pesticides
20/U14 Polycyclic Aromatic Hydrocarbon (PAH)
20/U15 Polychlorinated Biphenyls (PCBs/Aroclors)
20/U16 Toxaphene and Chlordane
20/U18 Adipate and Phthalate Esters
20/U19 Haloacetic Acids
20/U20 Chloral Hydrate
20/U21 Total Organic Carbon (TOC)
20/U22 Alkalinity (as CaCO subscript 3)
20/U23 Calcium Hardness (as CaCO subscript 3)
20/U24 Total Filterable Residue
20/U25 pH
20/U26 Turbidity

*USEPA WSMICRO*

20/U27 Coliform (Presence/Absence)

**NVLAP LAB CODE 200387-0**

## NYS DOH Environmental Laboratory Approval Program

Empire State Plaza
P.O. Box 509
Albany, NY 12201-0509
Contact: Dr. Kenneth W. Jackson
Phone: 518-485-5570
Fax: 518-485-5568
E-Mail: jackson@wadsworth.org
URL: http://www.wadsworth.org/labcert/elap.html

### Providers of Proficiency Testing

Accreditation Valid Through: September 30, 2001

*NVLAP Code* *Designation*

*USEPA WPCHEM*

20/U29 Minerals: Calcium, Magnesium, Potassium, and Sodium
20/U30 Minerals: Chloride, Fluoride, and Sulfate
20/U34 Volatile Halocarbon Compounds
20/U35 Volatile Aromatic Compounds
20/U36 Chlorinated Pesticides
20/U37 Chlordane
20/U38 Polychlorinated Biphenyls (PCBs) (as Aroclors) in Water
20/U42 Total Alkalinity (as CaCO subscript 3)
20/U43 Total Hardness (as CaCO subscript 3)
20/U44 Total Dissolved Solids
20/U48 Specific Conductance

*USEPA WPCHEM/DMRQACHEM*

20/U28 Trace Metals
20/U31 Nutrients
20/U33 Cyanide
20/U40 Total Phenolics
20/U41 Demands (Source: Glucose and glutamic acid)
20/U45 Non-Filterable Residue
20/U46 Oil and Grease
20/U47 pH

*USEPA WSCHEM*

20/U01 Trace Metals (Note: Composite formulation of the PT Material for mercury does not conform



(See 'How To Use This Directory' on page 7.)

to the current USEPA Criteria Document, dated 12/30/1999.)
20/U02 Sodium
20/U03 Nitrate, Nitrite, Fluoride, and Orthophosphate
20/U04 Bromate, Bromide, Chlorate, and Chlorite
20/U05 Sulfate
20/U07 Cyanide
20/U08 Asbestos
20/U09 Volatile Organic Compounds (VOCs) Group I
20/U10 Volatile Organic Compounds (VOCs) Group II
20/U11 Insecticides (Pesticides)
20/U12 Herbicides (Pesticides)
20/U13 Carbamate Pesticides
20/U14 Polycyclic Aromatic Hydrocarbon (PAH)
20/U15 Polychlorinated Biphenyls (PCBs/Aroclors)
20/U16 Toxaphene and Chlordane
20/U17 Dioxin (2, 3, 7, 8-TCDD)
20/U18 Adipate and Phthalate Esters
20/U21 Total Organic Carbon (TOC)
20/U22 Alkalinity (as CaCO subscript 3)
20/U23 Calcium Hardness (as CaCO subscript 3)
20/U24 Total Filterable Residue
20/U25 pH

*USEPA WSMICRO*

20/U27 Coliform (Presence/Absence)

**NVLAP LAB CODE 200388-0**

### Chrisope Technologies, A Division of Remel

3941 Ryan Street
Lake Charles, LA 70605
Contact: Ms. Jody D. Moss
Phone: 800-256-4376 x236
Fax: 337-479-1006
E-Mail: jdmoss@remelinc.com

### Providers of Proficiency Testing

Accreditation Valid Through: September 30, 2001

*NVLAP*
*Code* *Designation*

*USEPA WSMICRO*

20/U27 Coliform (Presence/Absence)

**NVLAP LAB CODE 200389-0**

### AccuStandard, Inc.

125 Market Street
New Haven, CT 06513-3031
Contact: Mr. William McClain
Phone: 203-786-5290 x102
Fax: 203-786-5287
E-Mail: usa@accustandard.com
URL: http://www.accustandard.com

### Providers of Proficiency Testing

Accreditation Valid Through: September 30, 2001

*NVLAP*
*Code* *Designation*

*USEPA WPCHEM*

20/U29 Minerals: Calcium, Magnesium, Potassium, and Sodium
20/U30 Minerals: Chloride, Fluoride, and Sulfate
20/U34 Volatile Halocarbon Compounds
20/U35 Volatile Aromatic Compounds
20/U36 Chlorinated Pesticides
20/U37 Chlordane
20/U38 Polychlorinated Biphenyls (PCBs) (as Aroclors) in Water
20/U39 Polychlorinated Biphenyls (PCBs) (as Aroclors) in Oil
20/U42 Total Alkalinity (as CaCO subscript 3)
20/U43 Total Hardness (as CaCO subscript 3)
20/U44 Total Dissolved Solids
20/U48 Specific Conductance

*USEPA WPCHEM/DMRQACHEM*

20/U28 Trace Metals
20/U31 Nutrients
20/U32 Total Residual Chlorine
20/U33 Cyanide
20/U40 Total Phenolics
20/U41 Demands (Source: Glucose and glutamic acid)
20/U45 Non-Filterable Residue
20/U46 Oil and Grease
20/U47 pH

*USEPA WSCHEM*

20/U01 Trace Metals
20/U02 Sodium
20/U03 Nitrate, Nitrite, Fluoride, and Orthophosphate
20/U04 Bromate, Bromide, Chlorate, and Chlorite
20/U05 Sulfate
20/U06 Residual Free Chlorine
20/U07 Cyanide
20/U09 Volatile Organic Compounds (VOCs) Group I
20/U10 Volatile Organic Compounds (VOCs) Group II
20/U11 Insecticides (Pesticides)
20/U12 Herbicides (Pesticides)
20/U13 Carbamate Pesticides
20/U14 Polycyclic Aromatic Hydrocarbon (PAH)
20/U15 Polychlorinated Biphenyls (PCBs/Aroclors)
20/U16 Toxaphene and Chlordane
20/U17 Dioxin (2, 3, 7, 8-TCDD)
20/U18 Adipate and Phthalate Esters
20/U19 Haloacetic Acids
20/U20 Chloral Hydrate
20/U21 Total Organic Carbon (TOC)
20/U22 Alkalinity (as CaCO subscript 3)
20/U23 Calcium Hardness (as CaCO subscript 3)
20/U24 Total Filterable Residue
20/U25 pH
20/U26 Turbidity

**NVLAP LAB CODE 200390-0**

### Absolute Standards, Inc.

P.O. Box 5585
Hamden, CT 06518-0585
Contact: Mr. Stephen J. Arpie, M.S.
Phone: 203-281-2917
Fax: 203-281-2922
E-Mail: absolutest@aol.com
URL: http://www.absolutestandards.com


(See 'How To Use This Directory' on page 7.)

**Providers of Proficiency Testing**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***USEPA WPCHEM*** | |
| 20/U29 | Minerals: Calcium, Magnesium, Potassium, and Sodium |
| 20/U30 | Minerals: Chloride, Fluoride, and Sulfate |
| 20/U34 | Volatile Halocarbon Compounds |
| 20/U35 | Volatile Aromatic Compounds |
| 20/U36 | Chlorinated Pesticides |
| 20/U37 | Chlordane |
| 20/U38 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Water |
| 20/U39 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Oil |
| 20/U42 | Total Alkalinity (as CaCO subscript 3) |
| 20/U43 | Total Hardness (as CaCO subscript 3) |
| 20/U44 | Total Dissolved Solids |
| 20/U48 | Specific Conductance |
| ***USEPA WPCHEM/DMRQACHEM*** | |
| 20/U28 | Trace Metals |
| 20/U31 | Nutrients |
| 20/U32 | Total Residual Chlorine |
| 20/U33 | Cyanide |
| 20/U40 | Total Phenolics |
| 20/U41 | Demands (Source: Glucose and glutamic acid) |
| 20/U45 | Non-Filterable Residue |
| 20/U46 | Oil and Grease |
| 20/U47 | pH |
| ***USEPA WSCHEM*** | |
| 20/U01 | Trace Metals |
| 20/U02 | Sodium |
| 20/U03 | Nitrate, Nitrite, Fluoride, and Orthophosphate |
| 20/U04 | Bromate, Bromide, Chlorate, and Chlorite |
| 20/U05 | Sulfate |
| 20/U06 | Residual Free Chlorine |
| 20/U07 | Cyanide |
| 20/U09 | Volatile Organic Compounds (VOCs) Group I |
| 20/U10 | Volatile Organic Compounds (VOCs) Group II |
| 20/U11 | Insecticides (Pesticides) |
| 20/U12 | Herbicides (Pesticides) |
| 20/U13 | Carbamate Pesticides |
| 20/U14 | Polycyclic Aromatic Hydrocarbon (PAH) |
| 20/U15 | Polychlorinated Biphenyls (PCBs/Aroclors) |
| 20/U16 | Toxaphene and Chlordane |
| 20/U18 | Adipate and Phthalate Esters |
| 20/U19 | Haloacetic Acids |
| 20/U20 | Chloral Hydrate |
| 20/U21 | Total Organic Carbon (TOC) |
| 20/U22 | Alkalinity (as CaCO subscript 3) |
| 20/U23 | Calcium Hardness (as CaCO subscript 3) |
| 20/U24 | Total Filterable Residue |
| 20/U25 | pH |
| 20/U26 | Turbidity |

**NVLAP LAB CODE 200391-0**

## Microcheck, Inc.

142 Gould Road
Northfield, VT 05663
Contact: Dr. Michael G. Sinclair
Phone: 802-485-6600 X22
Fax: 802-485-6100
E-Mail: mike@microcheck.com
URL: http://www.microcheck.com

**Providers of Proficiency Testing**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***USEPA WSMICRO*** | |
| 20/U27 | Coliform (Presence/Absence) |

**NVLAP LAB CODE 200392-0**

## Spex Certiprep Inc.

203 Norcross Avenue
Metuchen, NJ 08840
Contact: Dr. Vanaja Sivakumar
Phone: 732-549-7144 x418
Fax: 732-494-1747
E-Mail: vsivakumar@spexcsp.com

**Providers of Proficiency Testing**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***USEPA WPCHEM*** | |
| 20/U29 | Minerals: Calcium, Magnesium, Potassium, and Sodium |
| 20/U30 | Minerals: Chloride, Fluoride, and Sulfate |
| 20/U42 | Total Alkalinity (as CaCO subscript 3) |
| 20/U43 | Total Hardness (as CaCO subscript 3) |
| 20/U44 | Total Dissolved Solids |
| 20/U48 | Specific Conductance |
| ***USEPA WPCHEM/DMRQACHEM*** | |
| 20/U28 | Trace Metals |
| 20/U31 | Nutrients |
| 20/U32 | Total Residual Chlorine |
| 20/U33 | Cyanide |
| 20/U40 | Total Phenolics |
| 20/U41 | Demands (Source: Glucose and glutamic acid) |
| 20/U45 | Non-Filterable Residue |
| 20/U46 | Oil and Grease |
| 20/U47 | pH |
| ***USEPA WSCHEM*** | |
| 20/U01 | Trace Metals |
| 20/U02 | Sodium |
| 20/U03 | Nitrate, Nitrite, Fluoride, and Orthophosphate |
| 20/U04 | Bromate, Bromide, Chlorate, and Chlorite |
| 20/U05 | Sulfate |
| 20/U06 | Residual Free Chlorine |
| 20/U07 | Cyanide |
| 20/U21 | Total Organic Carbon (TOC) |
| 20/U22 | Alkalinity (as CaCO subscript 3) |
| 20/U23 | Calcium Hardness (as CaCO subscript 3) |
| 20/U24 | Total Filterable Residue |



(See 'How To Use This Directory' on page 7.)

20/U25 pH
20/U26 Turbidity

**NVLAP LAB CODE 200393-0**

**Resource Technology Corporation (RTC)**
2931 Soldier Springs Road
P.O. Box 1346
Laramie, WY 82070
Contact: Mr. Robert D. Rucinski
Phone: 307-742-5452
Fax: 307-745-7936
E-Mail: RRucinski@RT-Corp.com
URL: http://www.rt-corp.com

**Providers of Proficiency Testing**
Accreditation Valid Through: March 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***USEPA WPCHEM*** | |
| 20/U29 | Minerals: Calcium, Magnesium, Potassium, and Sodium |
| 20/U30 | Minerals: Chloride, Fluoride, and Sulfate |
| 20/U42 | Total Alkalinity (as CaCO subscript 3) |
| 20/U43 | Total Hardness (as CaCO subscript 3) |
| 20/U44 | Total Dissolved Solids |
| 20/U48 | Specific Conductance |
| ***USEPA WPCHEM/DMRQACHEM*** | |
| 20/U28 | Trace Metals |
| 20/U31 | Nutrients |
| 20/U32 | Total Residual Chlorine |
| 20/U33 | Cyanide |
| 20/U40 | Total Phenolics |
| 20/U41 | Demands (Source: Glucose and glutamic acid) |
| 20/U45 | Non-Filterable Residue |
| 20/U46 | Oil and Grease |
| 20/U47 | pH |
| ***USEPA WSCHEM*** | |
| 20/U01 | Trace Metals |
| 20/U02 | Sodium |
| 20/U03 | Nitrate, Nitrite, Fluoride, and Orthophosphate |
| 20/U04 | Bromate, Bromide, Chlorate, and Chlorite |
| 20/U05 | Sulfate |
| 20/U06 | Residual Free Chlorine |
| 20/U07 | Cyanide |
| 20/U21 | Total Organic Carbon (TOC) |
| 20/U22 | Alkalinity (as CaCO subscript 3) |
| 20/U23 | Calcium Hardness (as CaCO subscript 3) |
| 20/U24 | Total Filterable Residue |
| 20/U25 | pH |
| 20/U26 | Turbidity |

**NVLAP LAB CODE 200395-0**

**Protocol Analytical Supplies, Inc.**
472 Lincoln Blvd.
Middlesex, NJ 08846
Contact: Mr. William H. Hahn, Jr.
Phone: 732-627-0500
Fax: 732-627-0979
E-Mail: bhahn@prostds.com

**Providers of Proficiency Testing**
Accreditation Valid Through: September 30, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***USEPA WPCHEM*** | |
| 20/U34 | Volatile Halocarbon Compounds |
| 20/U35 | Volatile Aromatic Compounds |
| 20/U36 | Chlorinated Pesticides |
| 20/U37 | Chlordane |
| 20/U38 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Water |
| 20/U39 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Oil |
| ***USEPA WSCHEM*** | |
| 20/U09 | Volatile Organic Compounds (VOCs) Group I |
| 20/U10 | Volatile Organic Compounds (VOCs) Group II |
| 20/U11 | Insecticides (Pesticides) |
| 20/U12 | Herbicides (Pesticides) |
| 20/U14 | Polycyclic Aromatic Hydrocarbon (PAH) |
| 20/U15 | Polychlorinated Biphenyls (PCBs/Aroclors) |
| 20/U16 | Toxaphene and Chlordane |

**NVLAP LAB CODE 200440-0**

**NSI Solutions, Inc.**
7517 Precision Dr., #101
Raleigh, NC 27617
Contact: Mr. Mark R. Hammersla
Phone: 919-957-9672
Fax: 919-957-7562
E-Mail: mhammersla@nsi-es.com
URL: http://www.nsi-es.com

**Providers of Proficiency Testing**
Accreditation Valid Through: December 31, 2001

| *NVLAP Code* | *Designation* |
|---|---|
| ***USEPA WPCHEM*** | |
| 20/U29 | Minerals: Calcium, Magnesium, Potassium, and Sodium |
| 20/U30 | Minerals: Chloride, Fluoride, and Sulfate |
| 20/U34 | Volatile Halocarbon Compounds |
| 20/U35 | Volatile Aromatic Compounds |
| 20/U36 | Chlorinated Pesticides |
| 20/U37 | Chlordane |
| 20/U38 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Water |
| 20/U39 | Polychlorinated Biphenyls (PCBs) (as Aroclors) in Oil |
| 20/U42 | Total Alkalinity (as CaCO subscript 3) |
| 20/U43 | Total Hardness (as CaCO subscript 3) |



(See 'How To Use This Directory' on page 7.)

20/U44 Total Dissolved Solids
20/U48 Specific Conductance

*USEPA WPCHEM/DMRQACHEM*

20/U28 Trace Metals
20/U31 Nutrients
20/U32 Total Residual Chlorine
20/U33 Cyanide
20/U40 Total Phenolics
20/U41 Demands (Source: Glucose and glutamic acid)
20/U45 Non-Filterable Residue
20/U46 Oil and Grease
20/U47 pH

*USEPA WSCHEM*

20/U01 Trace Metals
20/U02 Sodium
20/U03 Nitrate, Nitrite, Fluoride, and Orthophosphate
20/U05 Sulfate
20/U06 Residual Free Chlorine
20/U07 Cyanide
20/U09 Volatile Organic Compounds (VOCs) Group I
20/U10 Volatile Organic Compounds (VOCs) Group II
20/U11 Insecticides (Pesticides)
20/U14 Polycyclic Aromatic Hydrocarbon (PAH)
20/U15 Polychlorinated Biphenyls (PCBs/Aroclors)
20/U16 Toxaphene and Chlordane
20/U18 Adipate and Phthalate Esters
20/U21 Total Organic Carbon (TOC)
20/U22 Alkalinity (as CaCO subscript 3)
20/U23 Calcium Hardness (as CaCO subscript 3)
20/U24 Total Filterable Residue
20/U25 pH
20/U26 Turbidity

**NVLAP LAB CODE 200461-0**

### Andover Corporation

4 Commercial Drive
Salem, NH 03079-2800
Contact: Mr. Christopher A. Richards
Phone: 603-893-6888
Fax: 603-893-6508
E-Mail: crichards@andcorp.com
URL: http://www.andcorp.com

### NIST Traceable Reference Materials

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**NVLAP LAB CODE 200462-0**

### Thermo Spectronic

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Cambridge CB5 8HY
UNITED KINGDOM
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*Code* *Designation*

20/N01 Visible Absorbance

**NVLAP LAB CODE 200466-0**

### Optiglass Ltd.

42/54 Fowler Road
Hainault Essex IG6 3UT
UNITED KINGDOM
Contact: Mr. John P. Hammond
Phone: 44-208-500-1264
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E-Mail: TECH@optiglass.co.uk

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[1] At Boulder, CO 80303.
[2] Some elements at Boulder, CO.

DEPARTMENT OF COMMERCE
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY
NATIONAL VOLUNTARY LABORATORY ACCREDITATION PROGRAM (NVLAP)

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