



THE AMERICAN ASSOCIATION FOR
LABORATORY ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

DYTRAN INSTRUMENTS INC.

Chatsworth, CA

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and any additional program requirements in the field of calibration. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (*refer to joint ISO-ILAC-IAF Communiqué dated 18 June 2005*).



Presented this 22nd day of April 2008.

A handwritten signature in cursive script, reading "Peter Abney".

President
For the Accreditation Council
Certificate Number 2672.01
Valid to May 31, 2010

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005
& ANSI/NCSL Z540-1-1994

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CALIBRATION

Valid To: May 31, 2010

Certificate Number: 2672.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations¹:

I. Electrical

Parameter/Range	Frequency	Best Uncertainty ² (±)	Comments
AC Voltage ³	(20 to 50) Hz 50 Hz to 10 kHz	1.6 % of reading 0.53 % of rdg	Fluke 45 Multimeter

Parameter/Equipment	Range	Best Uncertainty ² (±)	Comments
Capacitance – @ 1 kHz	0.1 µF 0.01 µF 1000 pF	1 % of reading 1 % of reading 0.7 % of reading	Tenma 72-9 Z`14260
DC Voltage ³ – Measure	(0 to 30) V	0.11 % of rdg + 20 µV	Fluke 45 Multimeter

Parameter/Equipment	Range	Best Uncertainty ² (±)	Comments
Resistance ³ – Measure Fixed Points	(0 to 300) kΩ 300 kΩ to 3 MΩ (3 to 30) MΩ (30 to 300) MΩ	0.12 % of reading 0.13 % of reading 0.35 % of reading 2.0 % of reading	Fluke 45 Multimeter

II. Mechanical

Parameter/Equipment	Range	Best Uncertainty ² (±)	Comments
Acceleration Sensitivity – Frequency Response	1 Hz 0.25 g (2 to 20) Hz 1 g (20 to 100) Hz 1 g (100 to 2500) Hz 1 g (2500 to 10 000) Hz 1 g	2.1 % of reading 2.1 % of reading 2 % of reading 1.5 % of reading 2.8 % of reading	APS long-stroke shaker w/7500A3 Comparison, using vibration test systems shaker (VG 100Ca-6) w/3010M14
Acceleration Sensitivity Deviation due to Temperature	-55 °C to 270 °C 100 Hz, 1 g	4.3 % of reading	Labworks shaker w/ 3120A
Acceleration Amplitude Linearity Vibration (0 to 80) g	100Hz 300Hz 1000Hz	1.9 % of reading 1.8 % of reading 2.9 % of reading	Comparison, using Vibration Test Systems shaker (VG100Ca-6) w/3010M14

Parameter/Equipment	Range	Best Uncertainty ² (±)	Comments
Acoustic Pressure – Fixed Point	160 dB 1000 Hz	2.5 % of reading	Comparison to model 2013B in electromagnetic driver
Impulse Force	(0 to 1000) lbf (1000 to 5000) lbf	3.8 % of reading 1 % of reading	5868A load cell
Shock	(0 to 5000) g	3 % of reading	5868A load cell
Static Force	(0 to 50) lbf (100 to 1000) lbf (1000 to 10 000) lb (10 000 to 60 000) lb	0.7 % of rdg 1 % of rdg 1 % of rdg 1.2 % of rdg	Ring dynamometer
Static Pressure	(0 to 1000) psig (1000 to 15 000) psig	0.9 % of rdg 0.9 % of rdg	Twin seal pressure pump
Transverse Sensitivity	328 Hz, 1 g	5 % of rdg	CV395 spectrum analyzer

¹ This laboratory offers commercial calibration service.

² “Best Uncertainty” is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards of nearly ideal measuring equipment. Best uncertainties represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The best uncertainty of a specific calibration performed by the laboratory may be greater than the best uncertainty due to the behavior of the customer’s device and to influences from the circumstances of the specific calibration.

³ The measurands stated are generated with the Fluke 45 series of instruments. This capability is suitable for the calibration of the devices intended to measure the stated measurand in the ranges indicated. Best measurement uncertainties are expressed as either a specific value that covers the full range or as a fraction of the reading plus a fixed floor specification.