



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

APPLIED TEST SYSTEMS
 154 East Brook Lane
 Butler, PA 16002
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CALIBRATION

Valid To: May 31, 2018

Certificate Number: 2132.01

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

I. Mechanical

Parameter/Equipment	Range	CMC ² (±)	Comments
Force ³ – Tension	Up to 300 lbf Up to 500 lbf Up to 1200 lbf Up to 2000 lbf Up to 2500 lbf Up to 5000 lbf Up to 10 000 lbf Up to 12 000 lbf Up to 20 000 lbf Up to 60 000 lbf Up to 100 000 lbf	0.040 % of reading 0.070 % of reading 0.22 % of reading 0.11 % of reading 0.090 % of reading 0.080 % of reading 0.080 % of reading 0.11 % of reading 0.060 % of reading 0.090 % of reading 0.16 % of reading	ASTM E4 w/ dead weights, proving rings

Parameter/Equipment	Range	CMC ² (±)	Comments
Force ³ (cont) – Compression	Up to 300 lbf Up to 500 lbf Up to 1200 lbf Up to 2000 lbf Up to 2500 lbf Up to 5000 lbf Up to 10 000 lbf Up to 12 000 lbf Up to 20 000 lbf Up to 60 000 lbf Up to 100 000 lbf Up to 300 000 lbf	0.040 % of reading 0.070 % of reading 0.22 % of reading 0.11 % of reading 0.090 % of reading 0.080 % of reading 0.080 % of reading 0.11 % of reading 0.060 % of reading 0.10 % of reading 0.17 % of reading 0.13 % of reading	ASTM E4 w/ dead weights, proving rings
S Beam Load Cell Tension	(50 to 1500) lbf (1000 to 12 000) lbf	0.053 % of reading 0.026 % of reading	ASTM E4 and ISO 7500-2 w/ load cells
Tension	(35 to 1000) lbf (600 to 10 000) lbf (650 to 25 000) lbf	0.078 % of reading 0.028 % of reading 0.016 % of reading	
Compression	(26 to 1000) lbf (72 to 10 000) lbf (450 to 25 000) lbf	0.078 % of reading 0.026 % of reading 0.016 % of reading	
Vacuum, Pressure and Burst Systems ³	(15 to 100) kPa (2.00 to 2.15) MPa (100 to 500) psi (600 to 3000) psi	0.46 kPa 0.0025 MPa 0.34 psi 1.9 psi	ASME B40 with pressure gage
Alignment ³ – Course	20 % or Less	3.3 % of reading	ASTM E1012 with strain gage
Displacement ³	(0.0008 to 0.1) in (0.101 to 0.5) in (0.05 to 0.275) in (0 to 7) mm (0.4 to 6) in (10 to 152) mm	0.00020 in 0.00015 in 0.00025 in (0.0064 mm) 0.0022 in (0.056 mm)	ASTM E83 with micrometer Calipers and micrometers

Parameter/Equipment	Range	CMC ² (±)	Comments
Weights ³	(2 to 100) g	0.0013 g	ASTM E4, AASHTO T313
	(150 to 454) g	0.030 g	
	5 lb	0.00028 lb	
	10 lb	0.011 lb	
	(20 to 40) lb	0.012 lb	
Bending Beam Rheometer Cal Kit ³ –	Special Weights		ASTM E4, AASHTO T313
	2 g	0.0013 g	
	50 g	0.0018 g	AASHTO T313
	Step Gage	(0.05 to 0.275) in (0 to 7 mm)	
Compliant Beam	(0.4 to 6) in (10 to 152 mm)	0.0022 in (0.056 mm)	AASHTO T313

II. Thermodynamics

Parameter/Equipment	Range	CMC ² (±)	Comments
Temperature ³	(-40 to 180) °C	0.15 °C	Platinum RTD thermocouple
	(10 to 30) °C	0.28 °C	

¹ This laboratory offers commercial calibration service and field calibration service.

² Calibration and Measurement Capability Uncertainty (CMC) 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 or nearly ideal measuring equipment. CMCs represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

³ Field calibration service is available for this calibration and this laboratory meets A2LA R104 – *General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these calibrations. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the CMC found on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the actual uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.



Accredited Laboratory

A2LA has accredited

APPLIED TEST SYSTEMS

Butler, PA

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/NCSLI 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 April 2017*).



Presented this 13th day of April 2016.

A handwritten signature in blue ink, appearing to read "L. S. ...", positioned above a horizontal line.

Senior Director of Quality and Communications
For the Accreditation Council
Certificate Number 2132.01
Valid to May 31, 2018
Revised March 28, 2018

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