



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

U.S. ARMY TMDE SUPPORT CENTER ABERDEEN
 AMSAM-TMD-A-A
 Building 2482, Harford Boulevard
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CALIBRATION

Valid To: April 30, 2020

Certificate Number: 1115.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations^{1,6}:

I. Dimensional

Parameter/Equipment	Range	CMC ^{2,3} (±)	Comments
Levels/ Clinometers	Up to 45°	12 arcsecs	Gage blocks, sine bars
Calipers – Digital, Dial & Vernier ⁵	Up to 4 in (4 to 24) in	(5 + 5L) μin (3 + 5L) μin	Comparison to gage blocks
Micrometers ⁵	(0.05 to 4) in (4 to 20) in	(5 + 5L) μin (3 + 5L) μin	Comparison to gage blocks
Ring Gages ⁵	(0.275 to 8) in	(11 + 3.9D) μin	Pratt & Whitney Labmaster™, gage blocks & ring gages
Height Gages ⁵	Up to 20 in	(4 + 4L) μin	Comparison to gage blocks
Surface Plate Flatness	Up to 48 in x 96 in	(11 + 7.2√L) μin	Mahr 832 Note: CMC is to be no less than the acceptable closure error for the procedure

Parameter/Equipment	Range	CMC ^{2,3} (±)	Comments
Bore Gages, Intrimikes ⁵	(0.275 to 4.0) in	(11 + 3.8D) µin	Comparison to ring gages

II. Fluid Quantities

Parameter/Equipment	Range	CMC ^{2,4,7} (±)	Comments
Air Flowrate	1 cm ³ /m to 300 L/m	0.55 %	DHI Molbloc/Molbox system

III. Mechanical

Parameter/Range	Range	CMC ^{2,4,7} (±)	Comments
Force	(240 to 10 000) lbf	0.52 %	Tinius Olsen Super "L"
	(10 000 to 120 000) lbf	0.27 %	
Mass	Up to 500 mg	1.7 µg	Troemner Class 0 & 1 weights & precision balances
	500 mg to 5g	5.1 µg	
	(5 to 10) g	8.2 µg	
	(10 to 20) g	10 µg	
	(20 to 50) g	20 µg	
	(50 to 100) g	40 µg	
	(100 to 200) g	81 µg	
	(200 to 500) g	0.20 mg	
	500 g to 1 kg	0.40 mg	
	(1 to 2) kg	0.90 mg	
	(2 to 3) kg	1.3 mg	
	(3 to 5) kg	2.1 mg	
(5 to 10) kg	10 mg		
(10 to 20) kg	20 mg		
(20 to 25) kg	24 mg		

Parameter/Equipment	Range	CMC ^{2,7} (±)	Comments
Scales	(50 to 500) lb capacity	0.30 lb	Class 3 & 4 weights, class 6 & 7 cast iron grip handle weights & stainless steel weights
Balances	0.01 mg resolution 0.1 mg resolution 1 mg resolution 0.1 g resolution 1 g resolution	0.24 mg 0.31 mg 3.0 mg 0.13 g 0.58 g	Class 3 & 4 weights
Pressure	(0.5 to 10 000) psi	0.014 % of full scale of each range	DH Instruments RPM-3
Torque Wrenches ⁵	(20 to 200) in·lbf (20 to 200) ft·lbf (100 to 1000) ft·lbf	0.4 in lbf 0.4 ft lbf 2.1 ft lbf	A.K.O. TorqueMaster TSD 6000 calibration system

IV. Thermodynamic

Parameter/Equipment	Range	CMC ^{2,7} (±)	Comments
Temperature – Measuring Equipment	-80 °C -38 °C 0.01 °C 25 °C 75 °C 100 °C 232 °C 420 °C	0.0085 °C 0.0092 °C 0.0042 °C 0.0055 °C 0.0053 °C 0.0060 °C 0.0062 °C 0.0076 °C	Fluke 1594 Super-Thermometer with baths, Rosemount SPRTs, Jarrett A13-1519 TPW cell Hart Scientific 7080 bath Hart Scientific 7080 bath Triple point of water cell Hart Scientific 7012 bath Hart Scientific 6045 furnace Hart Scientific 6055 furnace Hart Scientific 6055 furnace Hart Scientific 6055 furnace
Relative Humidity	(10 to 95) % RH	0.90 % RH	Thunder Scientific humidity generator T2500S

¹ This laboratory does not offer commercial 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 In the statement of CMC, L is the numerical value of the nominal length of the device measured in inches; R is the numerical value of the resolution of the device in microinches; D is the numerical value of the nominal diameter of the device measured in inches.
- ⁴ In the statement of CMC, the value is defined as the percentage of reading unless otherwise noted.
- ⁵ The contributions from the "Best Existing Device" are not included in the CMC Claim.
- ⁶ This scope meets A2LA's *P112 Flexible Scope Policy*.
- ⁷ The type of instrument or material being calibrated is defined by the parameter. This indicates the laboratory is capable of calibrating instruments that measure or generate the values in the ranges indicated for the listed measurement parameter.



Accredited Laboratory

A2LA has accredited

U.S. ARMY TMDE SUPPORT CENTER ABERDEEN

Aberdeen Proving Ground, MD

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets R205 – Specific Requirements: Calibration Laboratory Accreditation Program. 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 26th day of September 2018.

A handwritten signature in blue ink, written over a horizontal line.

President and CEO
For the Accreditation Council
Certificate Number 1115.01
Valid to April 30, 2020

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