



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017
& ANSI/NCSL Z540-1-1994

UNITED STANDARDS LAB, INC.
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CALIBRATION

Valid To: March 31, 2025

Certificate Number: 2290.01

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 ^{2,4} (\pm)	Comments
Micrometers ³	Up to 36 in	(42 + 23L) μ in	Gage blocks
Calipers ³	Up to 60 in	(140 + 25L) μ in	Gage blocks
Gage Blocks	Up to 20 in	(4.0 + 2.2L) μ in	Mechanical comparator
Height Gages ³	Up to 24 in	(10 + 3.3L) μ in	Gage blocks
Indicators ³	Up to 4 in	(0.60R + 6.0L) μ in	Dial indicator checker, gage blocks
Micrometer Standards	Up to 24 in	(46 + 2.1L) μ in	Standard measuring machine
Optical Comparators ³ – Magnification Travel Squareness Angle	10 \times to 100 \times (4 to 12) in Up to 3 in 0 $^{\circ}$ to 360 $^{\circ}$	710 μ in (140 + 3.4L) μ in 170 μ in 2.3 minutes	Glass scale, gage blocks

Parameter/Equipment	Range	CMC ^{2, 4} (\pm)	Comments
Protractors ³	Up to 360°	4 minutes or 0.1° angular	Angle blocks
Pin Gages ³	Up to 1 in	30 μ in	P&W Supermicrometer TM , gage blocks
Master Plug Gages ³	Up to 6 in	(11 + 3L) μ in	P&W Supermicrometer TM , gage blocks
Plain Ring Gages	(0.04 to 10) in	(14 + 2.6L) μ in	Internal comparator, gage blocks
Profilometers ³ – Indirect Verification of Ra Measurement	120 μ in @ 0.03 in cut-off	5.0 μ in	Master specimens
Square and Angle Plates	Up to 15 in	71 μ in	Cylindrical square
Surface Plates ³ – Flatness	(6 × 6) in to (72 × 144) in	(30 + 10A) μ in	Autocollimator
Repeat Reading	Up to 0.002 in	28 μ in	Repeat-o-meter
Thread Wires	(4 to 80) pitch	19 μ in	Measuring machine, gage blocks
Thread Plugs ³ – Pitch Diameter (TPI 4-80)	Up to 10 in	(100 + 1.2L) μ in	P&W Supermicrometer TM , using 3-wire method
Major Diameter	Up to 10 in	(56 + 0.85L) μ in	
Thread Rings – Functional Diameter	Up to 1 in	300 μ in	Setting plugs
Minor Diameter	Up to 1 in	600 μ in	Plain plugs

II. Mechanical

Parameter/Equipment	Range	CMC ^{2,5} (\pm)	Comments
Balances ³	(1 to 220) g 230 g to 5 kg	(0.12 + 0.003X) mg (0.12 + 0.003X) mg	Class 2, 3 weights
Scales ³	(1 to 100) lbs (453.592 g to 45.3592 kg) (100 to 2000) lbs (45.3592 kg to 907.1847 kg)	(8.5 + 5X) mg (8.5 + 5X) mg	Class 6 weights
Indirect Verification of Rockwell Hardness and Rockwell Superficial Hardness Testers ³	HRBW: Low Med High HRC: Low Med High HR30N: Low Med High HR30TW: Low Med High	1.7 HRBW 1.3 HRBW 1.3 HRBW 1.1 HRC 0.95 HRC 0.89 HRC 1.3 HR30N 1.1 HR30N 1.0 HR30N 1.7 HR30TW 1.3 HR30TW 1.3 HR30TW	ASTM E18

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. 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.

⁴ In the statement of CMC, L is the numerical value of the nominal length of the device measured in inches, A is the area of the unit under test in square feet and R is the resolution of the device measured.

⁵ In the statement of CMC, X is the numerical value of the device measured in g or lb.

⁶ This scope meets A2LA's *P112 Flexible Scope Policy*.



Accredited Laboratory

A2LA has accredited

UNITED STANDARDS LAB, INC.

Bloomington, MN

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 the requirements of ANSI/NCSL Z540-1-1994 and 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 5th day of January 2023.

A blue ink signature of Mr. Trace McInturff, written over a horizontal line.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2290.01
Valid to March 31, 2025
Revised August 29, 2023

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