



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

CAPSTONE CALIBRATION  
 7016 Baker Blvd  
 Richland Hills, TX 76118  
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CALIBRATION

Valid To: January 31, 2026

Certificate Number: 1593.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following surface plate calibrations<sup>1, 5</sup>:

I. Dimensional

Parameter/Equipment	Range	CMC <sup>2, 4</sup> (±)	Comments
Granite Surface Plates <sup>3</sup> – Flatness	5 in to 30 ft	(10 + 0.74DL) μin	Autocollimator
Repeat Reading	5 in to 30 ft	23 μin	Repeat-o-meter (only valid in connection with flatness calibration)
Angle Plates – Squareness	Up to 24 in	(20 + 2.1L) μin	Comparison to master square
Parallelism	Up to 36 in	(10 + 1.5L) μin	Electronic indicator, surface plate & plug gage
Gage Blocks	Up to 4 in (4 to 20) in	(5 + 1.4L) μin (7 + 1.2L) μin	Master gage blocks, electronic amp & gage block comparator
Optical Flats – Flatness	Up to 5 in	4 μin	Master optical flat, monochromatic light & gage block comparator
Parallelism	Up to 5 in	4 μin	

Parameter/Equipment	Range	CMC <sup>2,4</sup> ( $\pm$ )	Comments
Straightness <sup>3</sup>	Up to 72 in	$(20 + 0.77L) \mu\text{in}$	Autocollimator
Autocollimators	Up to 10 arc-min	0.66 arc-sec	Gage blocks & sine bar
Calipers <sup>3</sup>	Up to 36 in (37 to 80) in	$(170 + 0.6R) \mu\text{in}$ $(390 + 0.6R) \mu\text{in}$	Gage blocks
Micrometers <sup>3</sup>	Up to 24 in	$(83 + 0.6R) \mu\text{in}$ $(180 + 0.6R) \mu\text{in}$	Gage blocks
Digital & Dial Indicators <sup>3</sup> – Up to 6 in	0.000 010 in resolution 0.000 020 in resolution 0.000 050 in resolution 0.000 100 in resolution 0.000 500 in resolution 0.001 000 in resolution	12 $\mu\text{in}$ 20 $\mu\text{in}$ 46 $\mu\text{in}$ 92 $\mu\text{in}$ 440 $\mu\text{in}$ 810 $\mu\text{in}$	Gage blocks, ULM
Height Gages <sup>3</sup>	Up to 48 in	$(310 + 0.6R) \mu\text{in}$	Gage blocks
High Resolution	Up to 48 in	$(130 + 0.6R) \mu\text{in}$	
Length Standards	Up to 60 in	$(20 + 3.7L) \mu\text{in}$	Gage blocks, electronic indicator & amplifier, ULM
Wires/Pins / Plug Gages & Outside Cylindrical Diameter	Up to 3 in	17 $\mu\text{in}$	ULM, gage blocks
Plain Rings & Inside Cylindrical Diameter	Up to 10 in	24 $\mu\text{in}$	Ring gage comparator, gage blocks
Thread Plugs – Pitch Diameter Major Diameter	Up to 10 in	140 $\mu\text{in}$ 17 $\mu\text{in}$	3 wire method ULM, gage blocks

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Optical Comparators –			
Linearity Magnification	Up to 12 in 10x to 100x	290 μin 47 μin	Glass magnification scale, gage ball fixture
Angle	30°, 45°, 60°, 90°	57 arc-sec	Angle blocks

## II. Mechanical

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Hardness Testers <sup>3</sup>	HRA (20 to 65) HRA (70 to 78) HRA (80 to 84) HRA  HRBW: (40 to 59) HRBW (60 to 79) HRBW (80 to 100) HRBW  HRC: (20 to 30) HRC (35 to 55) HRC (59 to 65) HRC  HREW (70 to 79) HREW (84 to 90) HREW (93 to 100) HREW  HRGW Low Range Medium Range High Range  HRHW (80 to 94) HRHW (96 to 100) HRHW  HRMW Low Range Medium Range High Range	2.0 HRA 2.0 HRA 2.0 HRA  2.1 HRBW 2.1 HRBW 2.0 HRBW  2.0 HRC 2.0 HRC 2.0 HRC  2.0 HREW 2.0 HREW 2.0 HREW  2.0 HRGW 2.0 HRGW 2.0 HRGW  2.0 HRHW 2.0 HRHW  2.0 HRMW 2.0 HRMW 2.0 HRMW	Test blocks, Indirect verification per ASTM E18

Parameter/Equipment	Range	CMC <sup>2</sup> (±)	Comments
Hardness Testers <sup>3</sup> (cont)	HR15N: (70 to 77) HR15N (78 to 88) HR15N (90 to 92) HR15N  HR30N: (42 to 50) HR30N (55 to 73) HR30N (77 to 82) HR30N  HR45N: (20 to 31) HR45N (37 to 61) HR45N (66 to 72) HR45N  HR15TW: (74 to 80) HR15TW (81 to 86) HR15TW (87 to 93) HR15TW  HR30TW: (43 to 56) HR30TW (57 to 69) HR30TW (70 to 83) HR30TW  HR45TW: (13 to 32) HR45TW (33 to 52) HR45TW (53 to 73) HR45TW	2.0 HR15N 2.1 HR15N 2.0 HR15N  2.1 HR30N 2.1 HR30N 2.1 HR30N  2.2 HR45N 2.0 HR45N 2.1 HR45N  2.1 HR15TW 2.0 HR15TW 2.0 HR15TW  2.0 HR30TW 2.0 HR30TW 2.0 HR30TW  2.1 HR45TW 2.1 HR45TW 2.2 HR45TW	Test blocks, Indirect verification per ASTM E18
Torque Wrenches <sup>3</sup>	10 lbf·in to 250 lbf·ft	0.92 % setting	Torque transducers

<sup>1</sup> This laboratory offers commercial and on-site calibration service.

<sup>2</sup> Calibration and Measurement Capability Uncertainties (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.

- <sup>3</sup> 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.
- <sup>4</sup> In the statement of best measurement uncertainty,  $DL$  is the numerical value of the nominal length in inches of the diagonal,  $L$  is the numerical value of the nominal length, and  $R$  is the numerical value of the resolution of the device in microinches.
- <sup>5</sup> This scope meets A2LA's *P112 Flexible Scope Policy*.



# Accredited Laboratory

A2LA has accredited

## CAPSTONE CALIBRATION

*Richland Hills, TX*

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 8<sup>th</sup> day of January 2024.

A blue ink signature of Trace McInturff.

Mr. Trace McInturff, Vice President, Accreditation Services  
For the Accreditation Council  
Certificate Number 1593.01  
Valid to January 31, 2026

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