



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

JONES INDUSTRIAL SERVICE
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CALIBRATION

Valid To: November 30, 2021

Certificate Number: 1440.01

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
Length Standards	Up to 24 in	(11 + 12L) μ in	ULM
Gage Blocks	Up to 4 in	(4 + 3L) μ in	Direct comparison
	Up to 20 in	(54 + 13L) μ in	ULM
Micrometers – Outside and Depth ³	Up to 30 in	(0.6R + 31L) μ in	Length standards and/or gage blocks
Calipers ³	Up to 40 in	(0.6R + 25L) μ in	Length standards and/or gage blocks
Height Gages ³	Up to 40 in	(60 + 17L) μ in	Length standards and/or gage blocks
Dial Indicators ³	Up to 1 in	(0.6R + 30L) μ in	Indicator calibrator
	Up to 6 in	(0.6R + 13L) μ in	Gage blocks
Test Indicators ³	Up to 0.1 in	(0.6R + 30L) μ in	Height master

Parameter/Equipment	Range	CMC ^{2, 4} (±)	Comments
OD Cylindrical Gages (Plugs, Pin and Disk)	Up to 10 in	(18 + 8L) μin	Direct comparison, ULM
Optical Comparator ³ – Length of Travel Magnification	Up to 12 in 5x to 100x	270 μin 390 μin	Glass scales Magnification overlay
Roughness Specimens, ISO Type C ³	(16 to 600) μin	4 μin	Federal pocket surf
Profilometer ³ – Indirect Verification of Ra Measurement	15 μin @ 0.03 in cut-off 120 μin @ 0.03 in cut-off	0.000 002 0.000 006	Roughness specimens, ISO Type C
Radius Gages	Up to 1 in	0.006 in	Optical comparator
Rules	(4 to 40) in	(0.0007 + 0.000 11L) in	Optical comparator
Thread Plug Gages – Pitch Diameter Major Diameter	(0.125 to 7) in and (4 to 40) TPI	100 μin	ULM Three wire method
Plain Ring Gages	(0.340 to 10) in (0.032 to 0.340) in	(11 + 21L) μin 14 μin	ULM ULM with electric touch probe, federal horizontal master comparator
Thread Wires	(4 to 40) TPI	11 μin	ULM
Spheres and Precision Balls	Up to 3 in	(10 + 10D) μin	ULM

Parameter/Equipment	Range	CMC ^{2,4} (±)	Comments
Parallels	Up to 36 in	65 μin	Electronic indicator and master gage blocks
Height Masters	(0.2 to 24) in	(28 + 10L) μin	Electronic indicators and gage blocks
Adjustable Thread Ring Gages – Functional Fit	(0.125 to 3) in	180 μin	Setting masters
Plain Taper Plugs – External Diameter All Tapers	(0.01 to 4) in	120 μin	CMM

II. Dimensional Testing/Calibration⁵

Parameter/Equipment	Range	CMC ^{2,4,7} (±)	Comments
1D Length – Measure	Up to 24 in	(11 + 12L) μin	ULM
	Up to 20 in	(32 + 2L) μin	CMM
Inspection of Test Fixtures, Attribute Gages and Parts	Up to 32 in	(420 + 8L) μin	CMM, optical comparator, hand tools
3-Dimensional Geometry – Measure	(16 x 20 x 16) in (400 x 500 x 400) mm	120 μin + 10 μin/in 3 μm + 10 μm/m	CMM

III. Mechanical

Parameter/Equipment	Range	CMC ² (±)	Comments
Torque Wrenches	Up to 260 ft·lbf	0.5 % of full scale	Torque calibrator

¹ This laboratory offers commercial dimensional testing/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.

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

⁵ This laboratory meets R205 – *Specific Requirements: Calibration Laboratory Accreditation Program* for the types of dimensional tests listed above and is considered equivalent to that of a calibration.

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.