



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

DIMENSIONAL MEASUREMENT, INC.
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 Wixom, MI 48393
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CALIBRATION

Valid To: December 31, 2018

Certificate Number: 2503.01

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

I. Dimensional

Parameter/Equipment	Range	CMC ^{2,4} (±)	Comments
Angle Gages	Up to 180°	26''	Vision system
Bore Gages (2-point) ³	Up to 100 mm	0.6R + 4.4 μm	Gage block comparison
Calipers ³	Up to 300 mm Up to 600 mm Up to 1000 mm	(9.1 + 0.02L) + 0.6R μm (9.1 + 0.02L) + 0.6R μm 23 + 0.6R μm	Gage block comparison
Depth Micrometers ³	Up to 300 mm	8.3 + 0.6R μm	Gage block comparison
Dial & Digital Indicators ⁵	Up to 25 mm Up to 60 mm	2.7 + 0.6R μm 2.2 + 0.6R μm	Indicator checker Gage block comparison
Electronic Amplifier	Up to 0.4 mm	0.28 μm	Gage block comparison
Feeler/Taper Gages ³	Up to 25 mm	1.9 μm	Digital micrometer

Parameter/Equipment	Range	CMC ^{2,4} (\pm)	Comments
Gage Balls – Diameter	Up to 100 mm	1.1 μm	Gage block and bench micrometer
Height Gages	Up to 965 mm	$(9.2 + 0.007L) + 0.6R$ μm	Reference bar, gage blocks
Height Gages ³	Up to 800 mm	$(15 + 0.025L) + 0.6R$ μm	Gage blocks
Height Masters	Up to 650 mm	$(0.36 + 0.005L) + 0.6R$ μm	Gage blocks, surface plate
Micrometers ³	Up to 300 mm (325 to 600) mm	$(0.86 + 0.0053L) + 0.6R$ μm $(5.4 + 0.01L) + 0.6R$ μm	Gage block comparison
Micrometer Standards	Up to 600 mm	$(2.8 + 0.003L)$ μm	Reference bar, gage blocks, amplifier
Micrometer Standards ³	Up to 600 mm	$(4.5 + 0.06L)$ μm	Reference bar, gage blocks, amplifier
Parallels – Flatness and Parallelism	Up to 1500 mm Up to 2500 mm	3.3 μm 5.9 μm	Surface plate, amplifier CMM
Pin and Plug Gages	Up to 25 mm (25 to 300) mm	0.9 μm 1.1 μm	Bench micrometer Bench micrometer
Pin and Plug Gages ³	Up to 25 mm	3.4 μm	Digital micrometer
Profilometer	$(0.4 \text{ to } 3.2)$ $\mu\text{m Ra}$	0.05 $\mu\text{m Ra}$	Roughness standard
Roughness Standard	Up to ≈ 6 $\mu\text{m Ra}$	$(0.045 + 0.0014A)$ $\mu\text{m Ra}$	Profilometer

Parameter/Equipment	Range	CMC ^{2,4} (±)	Comments	
Radius Gages	Up to 300 mm	12 µm	Vision system	
Step/Riser Blocks ³	Up to 600 mm	$(4.5 + 0.06L)$ µm	Reference bar, gage blocks, amplifier	
Scales/Rulers – Length	Up to 400 mm	$(3.1 + 0.007L)$ µm	Video system	
	Up to 2000 mm	$(24 + 0.0082L)$ µm	CMM w/ camera	
Square	Up to 800 mm	$(6.3 + 0.004L)$ µm	CMM	
Straight Edge – Straightness	Up to 1500 mm	3.3 µm	Surface plate, amplifier	
	Up to 2500 mm	5.9 µm	CMM	
Thread Plugs – Pitch Diameter	(1.5 to 25) mm	2.7 µm	Thread wires, bench micrometer	
	(25 to 300) mm	3.3 µm		
Vee Blocks –	Centrality	Up to 150 mm	3.2 µm	Amplifier comparison
	Parallelism	Up to (150 × 150) mm	3.2 µm	Surface plate
	Squareness	Up to 250 mm	3.2 µm	

II. Dimension Testing/Calibration¹

Parameter/Equipment	Range	CMC ^{2,4} (\pm)	Comments	
Length ⁵ – 1 D	Up to 965 mm	$(0.42 + 0.004L) \mu\text{m}$	Ref. bar comparison w/ amplifier	
	Up to 2 mm	0.4 μm	Amplifier	
	Up to 25 mm	0.57 μm	Bench micrometer	
	Up to 100 mm	0.84 μm	Bench micrometer	
	Up to 60 mm	5.6 μm	Bore gages	
	Up to 150 mm	33 μm	Caliper	
	Up to 600 mm	35 μm	Caliper	
	Up to 60 mm	4.6 μm	Digital indicator	
	Up to 25 mm	1.7 μm	Digital micrometer	
	25 to 100 mm	4.4 μm	Micrometers	
	2 D	Up to (300 × 300) mm	$(3.1 + 0.007L) \mu\text{m}$	Vision system
	3 D	Up to (1000 × 800 × 700) mm	$(2.2 + 0.005L) \mu\text{m}$	CMM (LH87)
		Up to (2000 × 1200 × 1000) mm	$(3.3 + 0.005L) \mu\text{m}$	CMM (LH1210)
3 D ³	Up to 3600 mm	110 μm	CMM (Faro arm Edge)	
	Up to 3600 mm	99 μm	CMM (Faro arm Prime)	
Surface Finish ⁵	$\approx 6 \mu\text{m } Ra$	$(0.045 + 0.014Ra) \mu\text{m } Ra$	Profilometer	
Surface Finish ^{3,5}	$\approx 6 \mu\text{m } Ra$	0.15 $\mu\text{m } Ra$	Portable profilometer	

¹ This laboratory offers commercial calibration/dimensional testing service and field calibration/dimensional testing 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 millimeters; A is the vertical amplitude in micro-meters; R is the numerical value of the resolution of the device; Ra is the numerical value of the nominal roughness of the surface measured in micrometers roughness.

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.



Accredited Laboratory

A2LA has accredited

DIMENSIONAL MEASUREMENT, INC.

Wixom, MI

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 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 8 January 2009*).

Presented this 1st day of November 2016.



A handwritten signature in blue ink, reading "Jim C. Bunt".

Senior Director of Quality and Communications
For the Accreditation Council
Certificate Number 2503.01
Valid to December 31, 2018

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