



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Ottawa Gage
1271 Lincoln Avenue
Holland, MI 49423

Fulfills the requirements of

ISO/IEC 17025:2017

In the fields of

CALIBRATION and DIMENSIONAL MEASUREMENT

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

A handwritten signature in black ink, appearing to read 'R. Douglas Leonard Jr.', is positioned above a horizontal line.

R. Douglas Leonard Jr., VP, PILR SBU
Expiry Date: 02 November 2023
Certificate Number: L1130-1



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
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).

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

Ottawa Gage
1271 Lincoln Avenue
Holland, MI 49423
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CALIBRATION AND DIMENSIONAL MEASUREMENT

Valid to: **November 2, 2023**

Certificate Number: **L1130-1**

CALIBRATION

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Cylindrical Plug Gages ²	Up to 11.75 in (11.75 to 23.5) in	(7.9 + 2.6D) μin (6.3 + 2.6D) μin	Universal Comparator, Master Gage Blocks
	Up to 22 in	(7.7 + 2.5D) μin	LabMaster Universal Measuring Machine
Cylindrical Ring Gages ²	Up to 4 in (4 to 18) in (18 to 24) in	(3.2 + 2.6D) μin (7.5 + 2.4D) μin (8.8 + 2.4D) μin	Universal Comparator, Height Comparator, Gage Blocks
	Up to 0.125 in (0.125 to 0.25) in (0.25 to 0.5) in (0.5 to 1) in (1 to 3) in (3 to 5) in (5 to 7) in (7 to 9) in (9 to 11) in (11 to 14) in	(7.6 + 3.3D) μin (6.4 + 3.3D) μin (10.3 + 3.3D) μin (6.4 + 3.3D) μin (6.6 + 3.3D) μin (6.4 + 3.3D) μin (7.8 + 3.3D) μin (7.9 + 3.3D) μin (8.1 + 3.3D) μin (9.5 + 3.3D) μin	LabMaster Universal Measuring Machine, Master Cylindrical Rings
Bar Flush Gages ²	Up to 24 in	(9.3 + 2.4L) μin	Surface Plate, Electronic Amplifier, Height Gage, Gage Blocks
Barrel Flush Gages ²	Up to 6 in	12.5 + 2.4L) μin	
Tapered Plug Gages ²	Up to 8 in	(69.1 + 2.4D) μin	Surface Plate, Gage Blocks, Micrometers, Gage Rolls

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Tapered Ring Gages ²	(0.062 to 3) in (3 to 10) in	(15 + 2.6D) μin (13.1 + 2.4D) μin	Surface Plate, Gage Blocks, Micrometers, Gage Rolls
Countersink Flush Pin Gages ²	Up to 4 in	(18.5 + 2.6L) μin	Gage Rolls, Micrometers, Electronic Amplifier, Height Gage, Surface Plate, Gage Blocks
Special Length Gages ²	Up to 1 in (1 to 3) in (3 to 5) in	(9.1 + 1.2L) μin (7.8 + 2.6L) μin (8 + 2.6L) μin	Universal Comparator, Gage Blocks

DIMENSIONAL MEASUREMENT

1 Dimensional

Parameter	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Dimensional Measurement 1D – Outside Diameter Measurement ²	Up to 1 in (> 1 to 4) in (> 4 to 23.5) in	(6.1 + 2.6D) μin (5.9 + 2.6D) μin (9 + 2.4D) μin	Height Master, Universal Comparator, Gage Blocks, Surface Plate, Electronic Amplifier, and Optical Comparator utilized as Reference Standards for Dimensional Measurements.
Dimensional Measurement 1D – Inside Diameter Measurement ²	(0.059 to 4) in (> 4 to 24) in	(5.9 + 2.6D) μin (9.2 + 2.4D) μin	
Dimensional Measurement 1D – Height Measurement ²	Up to 30 in	(7.8 + 2.6L) μin	

1 Dimensional

Parameter	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Dimensional Measurement 1D – Angle Measurement ²	Up to 46 °	14"	Sine Plate, Indicator, and V-Block utilized as Reference Standards for Dimensional Measurements.

2 Dimensional

Parameter	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Dimensional Measurement 2D – Radius Measurement	(0.005 to 0.336) in 20x Magnification (0.337 to 0.672) in 10x Magnification	620.5 μm 620.5 μm	Optical Comparator and Gage Rolls utilized as Reference Standards for Dimensional Measurements.

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 ($k=2$), corresponding to a confidence level of approximately 95%.

Notes:

1. On-site calibration service is available for this parameter, since on-site conditions are typically more variable than those in the laboratory, larger measurement uncertainties are expected on-site than what is reported on the accredited scope.
2. D = diameter in inches; L = length in inches; " = arc-second.
3. This scope is formatted as part of a single document including Certificate of Accreditation No. L1130-1.



R. Douglas Leonard Jr., VP, PILR SBU