



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

1Source Metrology Corp.
465 Pinebush Rd. Unit #2
Cambridge, Ontario, N1T 2J4

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.D.L.', is positioned above a horizontal line.

R. Douglas Leonard Jr., VP, PILR SBU

Expiry Date: 21 May 2023

Certificate Number: AD-2678



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

1Source Metrology Corp.

465 Pinebush Rd. Unit #2
Cambridge, Ontario, N1T 2J4
Bill Reilly
905-988-0165

CALIBRATION AND DIMENSIONAL MEASUREMENT

Valid to: **May 21, 2023**

Certificate Number: **AD-2678**

CALIBRATION

Length – Dimensional Metrology

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-) ²	Reference Standard, Method and/or Equipment
Coordinate Measuring Machines (CMMs) — CMMs Used for Measuring Linear Dimensions ¹	(10 to 1 010) mm	(1.3 + 0.004 4L) µm	ISO 10360-2 using Step Gauges as references
Coordinate Measuring Machines (CMMs) — CMMs Used for Measuring Linear Dimensions ¹	(10 to 5 000) mm	(1.5 + 0.004L) µm	ISO 10360-2 using Laser Interferometer and Gauge Block as references
Profile Projectors ¹ Length (X & Y axis) Squareness between X axis and Y axis Angle	(5 to 300) mm X/Y travel up to 100 mm 0° to 180°	(2.4 + 0.003L) µm 3.2 µm 0.017°	JIS B 7184:1999 using Glass Scales, squareness standard and protractor as references

Length – Dimensional Metrology

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-) ²	Reference Standard, Method and/or Equipment
Thread Plug Gauges Pitch Diameter Major Diameter	Up to 101.6 mm Up to 101.6 mm	$(1.7 + 0.06L) \mu\text{m}$ $(0.8 + 0.04L) \mu\text{m}$	ASME B1-16M-1984 (R2016) & ASME B1-2-1983 (R2007/R2017) using Pratt & Whitney Supermicrometer, Gauge Blocks and Thread Wires as references
Thread Ring Gauges	Up to 101.6 mm	8 μm	ASME B1-16M-1984 (R2016) & ASME B1-2-1983 (R2007/R2017) using Calibrated Master Set Plugs as references
Plain Plug/Pin Gauges	Up to 101.6 mm	$(0.8 + 0.03L) \mu\text{m}$	ASME B89-1-5-1998 (R2019) using Pratt & Whitney Supermicrometer and Gauge Blocks as references
Plain Ring Gauges	Up to 152.4 mm	$(0.7 + 0.05L) \mu\text{m}$	ASME B89.1.6-2002 (R2012) using Federal Horizontal Master Comparator and Gauge Blocks as references
Granite Surface Plates ¹ Overall Flatness Flatness of Local Area	Diagonal: Up to 6 000 mm Up to 0.5 mm	$(1.3 + 0.1D) \mu\text{m}$ 0.23 μm	Fed GGG-P-463c using Tesa TT20 & Autocollimator (<i>D</i> is the length of the diagonal in meters)
Calipers	(0 to 304.8) mm	$(2 + 0.01L) \mu\text{m} + 0.6R$	ASME B89.1.14-2018 using Gauge Blocks as references (R=gauge resolution in mm)
Outside Micrometers	(0 to 25.4) mm	$0.51 \mu\text{m} + 0.007L + 0.6R$	ASME B89.1.13 – 2013 using Gauge Blocks as references (R=gauge resolution in mm)
Depth Micrometers	(0 to 25.4) mm	$0.52 \mu\text{m} + 0.004L + 0.6R$	ASME B89.1.13 – 2013 using Gauge Blocks as references (R=gauge resolution in mm)
Height Gauges	(0 to 914.4) mm	$4.8 \mu\text{m} + 0.0067L + 0.6R$	JIS B 7517-2018 using gauge Blocks and/or Step Gauges as references (R=gauge resolution inmm)

Length – Dimensional Metrology

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-) ²	Reference Standard, Method and/or Equipment
Dial Indicators	(0 to 25.4) mm	1.3 μm + 0.0022L + 0.6R	ASME B89.1.10M - 2001(R2021) using Pratt & Whitney Supermicrometer as reference (R=gauge resolution in mm)
Test Indicators	(0 to 10) mm	1.3 μm + 0.01L + 0.6R	ASME B89.1.10M - 2001(R2021) using Pratt & Whitney Supermicrometer as reference (R=gauge resolution in mm)
Snap Gauges (Adjustable/Fixed)	(0 to 500) mm	(2.7 + 0.01L) μm	Internal procedure WI-25 using Gauge Blocks as reference and CMM as direct measurement

Mass and Mass Related

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
Indirect Verification of Rockwell Hardness Testers ¹	HRA: Low Medium High	0.48 HRA 0.54 HRA 0.35 HRA	Indirect verification method per ASTM E18
	HRC: Low Medium High	0.49 HRC 0.74 HRC 0.38 HRC	
Indirect Verification of Rockwell Hardness Testers ¹	HREW: Low Medium High	0.66 HREW 0.75 HREW 0.63 HREW	Indirect verification method per ASTM E18
	HRBW: Low Medium High	1.20 HRBW 0.81 HRBW 0.55 HRBW	

Mass and Mass Related

Parameter / Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method and/or Equipment
	HR15N: Low Medium High	0.49 HR15N 0.71 HR15N 0.31 HR15N	
	HR30TS: Low Medium High	0.83 HR30TS 0.68 HR30TS 0.55 HR30TS	
	HR30N: Low Medium High	0.49 HR30N 0.86 HR30N 0.40 HR30N	
	HR15TW: Low Medium High	0.61 HR15TW 0.47 HR15TW 0.58 HR15TW	
	HR30TW: Low Medium High	0.74 HR30TW 0.45 HR30TW 0.50 HR30TW	
	HR45N: Low Medium High	0.66 HR45N 0.82 HR45N 0.44 HR45N	
	HR45TW: Low Medium High	0.77 HR45TW 0.52 HR45TW 0.57 HR45TW	

DIMENSIONAL MEASUREMENT

3 Dimensional

Parameter	Range	Expanded Uncertainty of Measurement (+/-) ²	Reference Standard, Method and/or Equipment
Dimensional Measurement 3D	X: Up to 1200 mm Y: Up to 2 000 mm Z: Up to 1000 mm	$(4.2 + 0.03L) \mu\text{m}$	Coordinate Measuring Machine utilized as Reference Standard for Dimensional Measurement
Dimensional Measurement 3D	X: Up to 900 mm Y: Up to 1 500 mm Z: Up to 800 mm	$(3.2 + 0.03L) \mu\text{m}$	Coordinate Measuring Machine utilized as Reference Standard for Dimensional Measurement
Dimensional Measurement 3D	X: Up to 1000 mm Y: Up to 1000 mm Z: Up to 600 mm	$(2.5 + 0.03L) \mu\text{m}$	Coordinate Measuring Machine utilized as Reference Standard for Dimensional Measurement

Services performed at satellite location

20 Lightbeam Terrace, #8
 Brampton, ON
 L6Y 6H9
 Bill Reilly
 905-988-0165

DIMENSIONAL MEASUREMENT

3 Dimensional

Parameter	Range	Expanded Uncertainty of Measurement (+/-) ²	Reference Standard, Method and/or Equipment
Dimensional Measurement 3D	X: Up to 700 mm Y: Up to 1 000 mm Z: Up to 700 mm	(2.8 + 0.04L) μm	Coordinate Measuring Machine utilized as Reference Standard for Dimensional Measurement

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. *L* is the length of object under calibration or measurement in mm. *R* is the resolution of the object under calibration in μm.
3. This scope is formatted as part of a single document including the Certificate of Accreditation No. AD-2678.



R. Douglas Leonard Jr., VP, PILR SBU