



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Northern Gauge, Inc.
#400 – 280 Portage Close
Sherwood Park, Alberta, Canada T8H 2R6

Fulfills the requirements of

ISO/IEC 17025:2017

In the field of

CALIBRATION

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: 25 March 2023

Certificate Number: L2350



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

Northern Gauge, Inc.
 #400 – 280 Portage Close
 Sherwood Park, Alberta, Canada T8H 2R6
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 780-628-0844

CALIBRATION

Valid to: **March 25, 2023**

Certificate Number: **L2350**

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-) ²	Reference Standard, Method, and/or Equipment
Gauge Blocks: Central Length	(0.05 to 4) in	$(2.7 + 4.5L) \mu\text{in}$	ISO 3650/ASME B89.1.9 Octagon Precision Gauge Block Comparator & Master Gauge Blocks
Plain Plug Gauges	(0.1 to 7) in (0.20 to 7) in	$(46 + 2.4D) \mu\text{in}$ $(41 + 3.8D) \mu\text{in}$	ANSI/ASME B89.1.5: Trimos Horizon Premium Micura CMM
Plain Ring Gauges	(0.25 to 7) in (0.20 to 7) in	$(74 + 5.5D) \mu\text{in}$ $(41 + 3.8D) \mu\text{in}$	ANSI/ASME B89.1.6: Trimos Horizon Premium Micura CMM
Thread Plug Gauges: (4-80 TPI) Pitch Diameter Major Diameter	Diameter: (0.1 to 7) in	$(82 + 2D) \mu\text{in}$ $(46 + 2.4D) \mu\text{in}$	ANSI/ASME B1.1-B1.2, ANSI/ASME B1.5-B1.8 Trimos Horizon Premium
Thread Ring Gauges: (4-80 TPI) Pitch Diameter Major Diameter	Diameter: (0.25 to 7) in	$(74 + 10D) \mu\text{in}$ $(74 + 5.5D) \mu\text{in}$	ANSI/ASME B1.1-B1.2, ANSI/ASME B1.5-B1.8 Trimos Horizon Premium
NPT/NPTF Tapered Threads: Standoff	(0.062 5 to 6) in	0.000 6 in	ASME B1.20.1:2013 MAHR Digimar 816CL
API 5B/7-2 Tapered Threads: Standoff	(1 to 10.75) in	0.000 7 in	API 5B/API 7-2 MAHR Digimar 816CL
Rod Length Standards	(0.1 to 20) in	$(50 + 3.5L) \mu\text{in}$	Trimos Horizon Premium

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-) ²	Reference Standard, Method, and/or Equipment
Calipers - OD, ID and depth	(0.5 to 48) in	(580 + 18L) μin	Master gauge blocks
	(0.5 to 25.5) in	(620 + 23L) μin	Caliper Checker
Micrometers	(0.05 to 59) in	(59 + 22L) μin	Master gauge blocks
Dial/Digital Indicators	(0 to 3) in	38 μin	Master gauge blocks
	(0 to 3) in	55 μin	Trimos Horizon Premium
Height Gauges	(0 to 24) in	(150 + 3.2L) μin	Master gauge blocks
Lead Gauge / Ring Groove Setting Standards	(0 to 18) in	(47 + 4.6L) μin	API 5B & API 6A using CMM Micura
Universal Length Measuring Machines (ULM's) ¹	(0 to 20) in	(10 + 2.2L) μin	Renishaw XL-80 Laser Interferometer
Tape Measures & Ruler	Up to 300 in	(540 + 3.1L) + 11N μin	JIS B 7512 using Octagon Tape and Scale Measuring Machine N = number of resets of the 6 inch reference standard
Profile Projectors ¹ : Linear Accuracy Magnification Angle	Up to 8 in 10x, 20x & 50x 0° to 45°	210 μin 355 μin 0.05°	JIS B 7184:1999 using Master Glass Scale Angle Gauge Blocks
Thread Profile – Comparison Method	(2 to 20) pitch	500 μin	API 7-2 / API 5B ANSI B1.5, B1.8, B1.9 Thread Profile Overlays using Optical Comparator
Surface Plates ¹ : Flatness Overall Flatness on any Local Area	Length/Width/Diameter: Up to 48 in Any (250 mm x 250 mm)	90 μin 0.99 μm (39 μin)	ISO 8512-2 using: Electronic Level System

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Pneumatic Pressure Gages	(0 to 5 000) psig (0 to 20 000) psig (0 to 40 000) psig	10 psig 11 psig 53 psig	API 6D/ISO 14313:10.2.3 using ADDITEL Intelligent Pressure Modules
Pressure Transducers	(0 to 30 000) psig	39 psig	EURAMET CG-17 Additel Process Calibrator Additel Pressure Modules
Torque Wrenches	(20 to 100) lbf·in	2.3 % of reading	ISO 6789:2003 using Torque Transducers and Readout, or Torque Analyzer
	(20 to 100) lbf·ft	3 % of reading	
	(100 to 200) lbf·ft	3.4 % of reading	
	(200 to 1 000) lbf·ft	3 % of reading	

Electrical – DC / Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Voltage – Source	(0 to 0.33) V (0.33 to 3.3) V (3.3 to 33) V (33 to 330) V (330 to 1 000) V	0.004 6% of reading + 3 μ V 0.004 3% of reading + 5 μ V 0.004% of reading + 50 μ V 0.004% of reading + 500 μ V 0.004% of reading + 1.5 mV	EURAMET cg-15 Ver. 3 Fluke 5500A Multifunction Calibrator
DC Current - Source	(0 to 3.3) mA (3.3 to 33) mA (33 to 330) mA (0.33 to 2.2) A (2.2 to 11) A	0.009 9% of reading + 0.05 μ A 0.007 6% of reading + 0.25 μ A 0.007 8% of reading + 3.3 μ A 0.023% of reading + 44.0 μ A 0.046% of reading + 330 μ A	EURAMET cg-15 Ver. 3 Fluke 5500A Multifunction Calibrator

Electrical – DC / Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Resistance – Source	(0 to 11) Ω (11 to 33) Ω (33 to 110) Ω (110 to 330) Ω (330 to 1 100) Ω (1.1 to 3.3) k Ω (3.3 to 11) k Ω (11 to 33) k Ω (33 to 110) k Ω (110 to 330) k Ω (330 to 1 100) k Ω (1.1 to 3.3) M Ω (3.3 to 11) M Ω (11 to 33) M Ω (33 to 50) M Ω	0.055% of reading + 1.25 m Ω 0.041% of reading + 1.25 m Ω 0.004% of reading + 15 m Ω 0.006% of reading + 15 m Ω 0.006% of reading + 60 m Ω 0.007% of reading + 60 m Ω 0.005 8% of reading + 0.6 Ω 0.006 6% of reading + 0.6 Ω 0.007 3% of reading + 6.0 Ω 0.008 9% of reading + 6.0 Ω 0.010 5% of reading + 55 Ω 0.011 4% of reading + 55 Ω 0.045% of reading + 550 Ω 0.077% of reading + 550 Ω 0.39% of reading + 5.5 k Ω	EURAMET cg-15 Ver. 3 Fluke 5500A Multifunction Calibrator
DC Voltage – Measure	(0 to 10) V (10 to 500) V (500 to 1 000) V	0.30% of reading + 0.2 V 0.24% of reading + 5.3 V 0.23% of reading + 10.4 V	EURAMET cg-15 Ver. 3 Fluke 376 FC Clamp Meter
DC Current - Measure	(0 to 10) A (10 to 100) A (100 to 250) A (250 to 500) A	0.01% of reading + 0.4 A 0.30% of reading + 2.3 A 0.01% of reading + 5.3 A 0.03% of reading + 10.3 A	EURAMET cg-15 Ver. 3 Fluke 376 FC Clamp Meter
Welding Machines	(0 to 400) Amps DC (0 to 90) Volts DC (100 to 750) IPM Feed Rate	2.3% of reading ADC 1.3% of reading VDC 3.1 IPM	IEC 60974-14 Fluke 376 FC Clamp Meter Contact Tachometer

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 = length in inches, D = Diameter in inches.
3. This scope is formatted as part of a single document including Certificate of Accreditation No. L2350.



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