

CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

AV Gauge & Fixture Inc.

4000 Delduca Drive Oldcastle, ON NOR 1L0, Canada (and the satellite location listed on the scope)

Fulfills the requirements of

ISO/IEC 17025:2017

In the field of

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 <u>www.anab.org</u>.



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Jason Stine, Vice President

Expiry Date: 27 August 2026 Certificate Number: L2143-1

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

AV Gauge & Fixture Inc.

4000 Delduca Drive Oldcastle, ON NOR 1L0, Canada Steve St. Pierre 519-737-7677

DIMENSIONAL MEASUREMENT

Valid to: August 27, 2026

Certificate Number: L2143-1

1 Dimensional

Parameter	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Dimensional Measurement 1D	(0 to 2 <mark>5) mm</mark>	3.8 μm	Micrometer utilized as Reference Standard for Dimensional Measurement
	(0 to 150) mm	9.6 µm	Micrometer utilized as Reference Standard for Dimensional Measurement
	(0 to 300) mm	42 µm	Caliper utilized as Reference Standard for Dimensional Measurement
	(5 to 30) mm	5 μm	Inside Micrometer utilized as Reference Standard for Dimensional Measurement

3 Dimensional

Parameter	Range	Expanded Uncertainty of Measurement (+/-) ²	Reference Standard, Method, and/or Equipment
Dimensional Measurement 3D	X = (0 to 3 500) mm Y = (0 to 1 500) mm Z = (0 to 1 200) mm	(15 + 0.042 <i>L</i>) μm	Coordinate Measuring Machine utilized as Reference Standard for Dimensional Measurement





3 Dimensional

$\begin{array}{c} X = (0 \text{ to } 3 \ 000) \text{ mm} \\ Y = (0 \text{ to } 1 \ 200) \text{ mm} \\ Z = (0 \text{ to } 1 \ 200) \text{ mm} \end{array} $ $(29 + 0.037L) \mu \text{m} \\ X = (0 \text{ to } 2 \ 500) \text{ mm} $	
X = (0 to 2500) mm	Coordinate Measuring Machine utilized as Reference Standard for Dimensional Measurement
$ \begin{array}{c} Y = (0 \text{ to } 1\ 500) \text{ mm} \\ Z = (0 \text{ to } 1\ 200) \text{ mm} \end{array} (19 + 0.039L) \ \mu\text{m} \\ \end{array} $	
$ \begin{array}{l} X = (0 \text{ to } 2 \text{ 500}) \text{ mm} \\ Y = (0 \text{ to } 1 \text{ 500}) \text{ mm} \\ Z = (0 \text{ to } 1 \text{ 000}) \text{ mm} \end{array} $ (19 + 0.039L) μ m	
Dimensional Measurement 3D $X = (0 \text{ to } 2 \text{ 000}) \text{ mm}$ $Y = (0 \text{ to } 1 \text{ 200}) \text{ mm}$ $Z = (0 \text{ to } 1 \text{ 000}) \text{ mm}$ $(19 + 0.038L) \mu \text{m}$ Coordinate Measuring Mach utilized as Reference Standar Dimensional Measurement	
$ \begin{array}{c} X = (0 \text{ to } 2 \ 000) \text{ mm} \\ Y = (0 \text{ to } 1 \ 000) \text{ mm} \\ Z = (0 \text{ to } 800) \text{ mm} \end{array} $ (23 + 0.036L) μ m	
$ \begin{array}{c} X = (0 \text{ to } 1 \text{ 500}) \text{ mm} \\ Y = (0 \text{ to } 1 \text{ 000}) \text{ mm} \\ Z = (0 \text{ to } 800) \text{ mm} \end{array} $ (16 + 0.038L) μ m	
$ \begin{array}{c} X = (0 \text{ to } 1 \ 000) \text{ mm} \\ Y = (0 \text{ to } 700) \text{ mm} \\ Z = (0 \text{ to } 600) \text{ mm} \end{array} (16 + 0.034L) \mu \text{m} $	
(50 to 3 000) mm (66 + 0.029 <i>L</i>) μm Articulated Arm Coordina Measuring Machine utilized	Articulated Arm Coordinate easuring Machine utilized as
$(50 \text{ to } 2500) \text{ mm} \qquad (41 + 0.050L) \mu\text{m} \qquad \text{Reference Standard for Dimensional Measuremen}$	Reference Standard for Dimensional Measurement
$\frac{3D^{1}}{3D^{1}}$ (50 to 3 000) mm (50 to 3 000) mm (74 + 0.028L) µm (7	Articulated Arm Coordinate easuring Machine utilized as Reference Standard for Dimensional Measurement
(50 to 3 000) mm (78 + 0.038 <i>L</i>) μm Laser Tracker utilized as Reference Standard for Dimensional Measuremen	Laser Tracker utilized as Reference Standard for Dimensional Measurement



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Services performed at satellite location

AV Gauge & Fixture de Mexico

Euro Business Park, Unit #24 Autopista Mexico - Queretaro km 201.5 El Marques, Queretaro, C.P. 76240, Mexico

DIMENSIONAL MEASUREMENT

1 Dimensional			
Parameter	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Dimensional Measurement 1D	(0 to 25) mm	2.1 µm	Digital micrometer utilized as Reference Standard for Dimensional Measurement
	(0 to 25) mm (25 to 50) mm (50 to 75) mm	2.1 μm 2.2 μm 2.3 μm	Analog micrometer utilized as Reference Standard for Dimensional Measurement
	(0 to 2 <mark>00) mm</mark>	30 µm	Digital caliper utilized as Reference Standard for Dimensional Measurement

3 Dimensional

Parameter	Range	Expanded Uncertainty of Measurement (+/-) ²	Reference Standard, Method, and/or Equipment
Dimensional Measurement 3D	X = (0 to 2 000) mm $Y = (0 to 1 200) mm$ $Z = (0 to 1000) mm$	(16 + 0.047 <i>L</i>) μm	Coordinate Measuring Machine utilized as Reference Standard for Dimensional Measurement
Dimensional Measurement 3D ¹	(50 to 3 000) mm	(80 + 0.033 <i>L</i>) μm	Coordinate Measuring Arm 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 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 millimeters.
- 3. This scope is formatted as part of a single document including Certificate of Accreditation No. L2143-1.



Jason Stine, Vice President

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