



# CERTIFICATE OF ACCREDITATION

**The ANSI National Accreditation Board**

Hereby attests that

**Hexagon Manufacturing Intelligence, Inc.**  
**250 Circuit Drive**  
**North Kingstown, RI 02852**

(and the satellite location as listed on the scope)

Fulfills the requirements of

**ISO/IEC 17025:2017**

and national standard

**ANSI/NCSL Z540-1-1994 (R2002)**

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](http://www.anab.org).

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

R. Douglas Leonard Jr., VP, PILR SBU

Expiry Date: 31 July 2023  
Certificate Number: AC-1159



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 AND  
ANSI/NCSL Z540-1-1994 (R2002)**

**Hexagon Manufacturing Intelligence, Inc.**

250 Circuit Drive  
North Kingstown, RI 02852  
Maciej Fus 401-886-2535

**CALIBRATION**

Valid to: **July 31, 2023**

Certificate Number: **AC-1159**

**Length – Dimensional Metrology**

<b>Parameter / Equipment<sup>1</sup></b>	<b>Range</b>	<b>Expanded Uncertainty of Measurement (+/-)<sup>2</sup></b>	<b>Reference Standard, Method and/or Equipment</b>
CMMs used in scanning measuring mode: Form Measurement Error	Sphere Diameter (nominal): 25 mm	0.21 µm	ISO 10360-4 using test sphere
CMMs used in scanning measuring mode: Radius Deviation	Sphere Diameter (nominal): 25 mm	0.23 µm	ISO 10360-4 using test sphere
CMMs using single and multiple stylus contacting probing systems: Stylus Size Error	Sphere Diameter: (25 to 30) mm	0.29 µm	ISO 10360-5:2010 or ISO 10360-2:2001 using test sphere
CMMs using single and multiple stylus contacting probing systems: Stylus Probing Error (Form Error)	Sphere Diameter: (25 to 30) mm	0.21 µm	ISO 10360-5:2010, ISO 10360-2:2001 using test sphere
CMMs using single and multiple stylus contacting probing systems: Stylus Location Error	Sphere Diameter: (25 to 30) mm	0.21 µm	ISO 10360-5:2010 using test sphere

**Length – Dimensional Metrology**

Parameter / Equipment <sup>1</sup>	Range	Expanded Uncertainty of Measurement (+/-) <sup>2</sup>	Reference Standard, Method and/or Equipment
Coordinate Measuring Machines (CMMs) for Length Measurement  In bi-directional mode <sup>3</sup>	(20 to 1 540) mm	(0.21 + 0.33L) μm	ISO 10360-2:2001/2009 using:  Step Gages (Koba) w/ CTE certification;
	(20 to 1 540) mm	(0.21 + 0.67L) μm	Step Gages (Koba) w/o CTE certification;
	Up to 40 m	(0.22 + 0.49L) μm	Laser w/ weather station and gage block or test sphere;
	(100 to 1 200) mm	(0.23 + 0.83L) μm	Gage Blocks w/ CTE certification
Coordinate Measuring Machines (CMMs)  In uni-directional mode <sup>4</sup>  (Linear Displacement Accuracy)	(20 to 1 540) mm	(0.21 + 0.33L) μm	ASME B89.4.1-1997/2001 (Repeatability per Sec 5.3, Volumetric Performance per Sec 5.5.2, Linear Displacement Accuracy per Sec 5.4.2/5.4.3) using test sphere, ball bar and:
	(20 to 1 540) mm	(0.21 + 0.60L) μm	Step Gages (Koba) w/ CTE certification
	Up to 40 m	(0.2 + 0.49L) μm	Step Gages (Koba) w/o CTE certification  Laser w/ weather station
CMMs equipped with imaging probing systems: 2D Length Measurement Error	Up to 400 mm (400 to 850) mm	(0.21 + 1.7L) μm	ISO 10360-7 using glass scale
CMMs with optical distance sensors Probing Form Errors	Sphere Diameter (nominal): 25 mm	1.6 μm	ISO 10360-8 using Test sphere
CMMs with optical distance sensors Probing Form Errors	Flat Area: 160 mm x 160 mm	2.4 μm	ISO 10360-8 using Test flat
CMMs with optical distance sensors Probing Size Errors	Sphere Diameter (nominal): 25 mm	0.83 μm	ISO 10360-8 using Test sphere



ANSI National Accreditation Board

**Length – Dimensional Metrology**

Parameter / Equipment <sup>1</sup>	Range	Expanded Uncertainty of Measurement (+/-) <sup>2</sup>	Reference Standard, Method and/or Equipment
CMMs with optical distance sensors Articulating Location Error	Sphere Diameter (nominal): 25 mm	1.6 µm	ISO 10360-8 using Test sphere
CMMs with the axis of a rotary table as the fourth axis Four-axis errors of indication	Sphere Diameter (nominal): 25 mm	0.21 µm	ISO 10360-3 using two test spheres

**Services performed at Satellite location:**

**Hexagon Metrology S. de R.L. de C.V.**

Av. Rogelio Gonzalez Caballero #200-D  
Parque Industrial STIVA Aeropuerto

Apodaca NL, CP 66626

**Length – Dimensional Metrology**

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CMMs used in scanning measuring mode: Form Measurement Error	Sphere Diameter (nominal): 25 mm	0.21 µm	ISO 10360-4 using test sphere
CMMs used in scanning measuring mode: Radius Deviation	Sphere Diameter (nominal): 25 mm	0.23 µm	ISO 10360-4 using test sphere
CMMs using single and multiple stylus contacting probing systems: Stylus Size Error	Sphere Diameter: (25 to 30) mm	0.29 µm	ISO 10360-5:2010 or ISO 10360-2:2001 using test sphere
CMMs using single and multiple stylus contacting probing systems: Stylus Probing Error (Form Error)	Sphere Diameter: (25 to 30) mm	0.21 µm	ISO 10360-5:2010, ISO 10360-2:2001 using test sphere
CMMs using single and multiple stylus contacting probing systems: Stylus Location Error	Sphere Diameter: (25 to 30) mm	0.21 µm	ISO 10360-5:2010 using test sphere

**Length – Dimensional Metrology**

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	Up to 40 m	(0.22 + 0.49L) μm	Laser w/ weather station and gage block or test sphere;
	(100 to 1 200) mm	(0.23 + 0.83L) μm	Gage Blocks w/ CTE certification
Coordinate Measuring Machines (CMMs)  In uni-directional mode <sup>4</sup>  (Linear Displacement Accuracy)	(20 to 1 540) mm	(0.21 + 0.33L) μm	ASME B89.4.1-1997/2001 (Repeatability per Sec 5.3, Volumetric Performance per Sec 5.5.2, Linear Displacement Accuracy per Sec 5.4.2/5.4.3) using test sphere, ball bar and:
	(20 to 1 540) mm	(0.21 + 0.60L) μm	Step Gages (Koba) w/ CTE certification
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CMMs equipped with imaging probing systems: 2D Length Measurement Error	Up to 400 mm (400 to 850) mm	(0.21 + 1.7L) μm	ISO 10360-7 using glass scale
CMMs with optical distance sensors Probing Form Errors	Sphere Diameter (nominal): 25 mm	1.6 μm	ISO 10360-8 using Test sphere
CMMs with optical distance sensors Probing Form Errors	Flat Area: 160 mm x 160 mm	2.4 μm	ISO 10360-8 using Test flat
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**Length – Dimensional Metrology**

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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 ( $k=2$ ) unless otherwise indicated, corresponding to a confidence level of approximately 95%.

Notes:

1. On-site calibration service is available for these parameters, 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 unit of meter
3. Length measurement tests per ISO 10360-2;
4. Linear Displacement Accuracy (X, Y, Z axis), Volumetric Performance and Repeatability tests per ASME B89.4.1 – 1997/2001
5. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-1159.



R. Douglas Leonard Jr., VP, PILR SBU

