CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

HORIBA Instruments Incorporated
2890 John R Rd.
Troy, MI 48083
(and satellite location as shown on the scope)

Fulfills the requirements of

ISO/IEC 17025:2017

In the fields of

CALIBRATION and **TESTING**

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.

Jason Stine, Vice President

Expiry Date: 24 February 2026

Certificate Number: ACT-1312

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

HORIBA Instruments Incorporated

2890 John R Rd.
Troy, MI 48083
Marie Squier Phone: 248 689 9000
marie.squier@horiba.com www.hii.horiba.com

CALIBRATION AND TESTING

Valid to: **February 24, 2026** Certificate Number: **ACT-1312**

TESTING

Mechanical

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Radial Loading (force / strain) Fatigue and/or durability	Customer Supplied and/or Test Acceptance Document	Customer Supplied	Hydraulic Actuator up to 100,000 lbf / 2 500 με (micro-strain)
Axial Loading (force / strain) Fatigue and/or durability	Customer Supplied and/or Test Acceptance Document	Customer Supplied	Hydraulic Actuator up to 100,000 lbf / 2 500 με (micro-strain)
Torsional Loading Fatigue and/or durability	Customer Supplied and/or Test Acceptance Document	Customer Supplied	Rotary Hydraulic Actuation up to 5 000 lbf·ft; Dynamometer up to 5 000 pound-feet
Dynamic Loading (Force/Acceleration/ Strain) Fatigue and/or durability	Customer Supplied and/or Test Acceptance Document	Customer Supplied	Hydraulic Actuator up to 100 G/measure up to 500 G / 2 500 με (micro-strain)
Dynamic Torsional Loading Fatigue and/or durability	Customer Supplied and/or Test Acceptance Document	Customer Supplied	Rotary Hydraulic Actuator up to 2 500 lbf·ft. Dynamometer up to 5 000 lbf·ft
Static Pressure Fatigue and/or durability	Customer Supplied and/or Test Acceptance Document	Customer Supplied	Hydraulic Pressure up to 20 000 psi
Dynamic Pressure Fatigue and/or durability	Customer Supplied and/or Test Acceptance Document	Customer Supplied	Hydraulic Pressure up to 10 000 psi
Rotational Speed Fatigue and/or durability	Customer Supplied and/or Test Acceptance Document	Customer Supplied	Dynamometers/Motors up to 18 000 RPM
Linear Displacement Fatigue and/or durability	Customer Supplied and/or Test Acceptance Document	Customer Supplied	Hydraulic Actuator – up to 20 in / measure –up to 20 in

Mechanical

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Angular/Rotary Displacement Fatigue and/or durability	Customer Supplied and/or Test Acceptance Document	Customer Supplied	Encoder: +/- 2 880° Inclinometer: +/- 90° (Digital Gage)

Environmental Simulation

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Temperature Fatigue and/or durability	Customer Supplied and/or Test Acceptance Document	Customer Supplied	Thermal Chambers (-100 to 250) °F Natural Gas Burners up to 2 000 °F
Temperature and Humidity (Static and Dynamic) Fatigue and/or durability	Customer Supplied and/or Test Acceptance Document	Customer Supplied	Thermal Chamber Humidifier/Steam Generator (25 to 95) %RH

Services performed at satellite laboratory

5900 Hines Drive
Ann Arbor, MI 48108
Marie Squier Phone: 248 689 9000
marie.squier@horiba.com www.hii.horiba.com

CALIBRATION

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Air/Gas Flow [1]	(0.002 to 60) slpm	0.28 % of reading	Comparison to Nitrogen (N2), Molbox / Molbloc flow calibration system
Air/Gas Flow [1]	(0.002 to 60) slpm	0.28 % of reading	Comparison to Propane (C3H8), Molbox / Molbloc flow calibration system
Gas Analyzer Linearization [1]	(1 to 250 000) parts in 10^6	1.2 % Concentration	Comparison to Gas Divider, calibration gasses
Pressure [1]	Absolute (25 to 150) kPa Differential (-35 000 to 35 000) Pa	0.94 % of reading	Comparison to Absolute / differential pressure calibrator

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Temperature [1]	(0 to 650) deg C	0.68 % of reading	Comparison to Drywell temperature calibrator
Humidity [1]	(10 to 95) %RH	1.3 %RH	Comparison to Relative humidity calibrator

TESTING

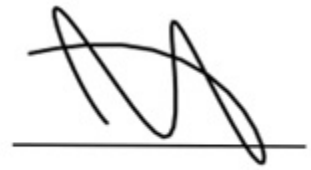
Mechanical

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Key Equipment or Technology
Analyzer Linearity [1]	40 CFR 1065/1066, EURO 6/7, Applicable work instruction or customer specific	Emissions / analytical systems	Gas divider, various calibration gas
Temperature Linearity [1]	40 CFR 1065/1066, EURO 6/7, Applicable work instruction or customer specific	Emissions / analytical systems	Drywell temperature calibrator
Humidity Linearity [1]	40 CFR 1065/1066, EURO 6/7, Applicable work instruction or customer specific	Emissions / analytical systems	Relative humidity calibrator
Pressure Linearity [1]	40 CFR 1065/ 1066, EURO 6/7, Applicable work instruction or customer specific	Emissions / analytical systems	Absolute / Differential pressure calibrator

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%.

Note:

1. On-site calibration or testing service may be 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. This scope is formatted as part of a single document including Certificate of Accreditation No. ACT-1312.



Jason Stine, Vice President