



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

**INSTITUTO PERUANO DE METROLOGIA E
INNOVACION**

**Jr. German Amezaga 242 Interior 202 Zona “B”
San Juan de Miraflores
Lima, Peru**

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.

Jason Stine, Vice President

Expiry Date: 13 December 2024

Certificate Number: AC-3158



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

INSTITUTO PERUANO DE METROLOGIA E INNOVACION

Jr. German Amezaga 242 Interior 202 Zona "B"
San Juan de Miraflores
Lima, Peru
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CALIBRATION

Valid to: December 13, 2024

Certificate Number: AC-3158

Acoustics and Vibration

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Sound Pressure Level – Sound Level Meters, Dosimeters	1 kHz		
	74 dB	0.43 dB	Hangzhou Aihua AWA6223 Class 1 Acoustic Calibrator
	84 dB	0.43 dB	
	94 dB	0.43 dB	
	104 dB	0.43 dB	

Chemical Quantities

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Conductivity Meters ³ (~ 25 °C)	100 µS/cm	2.5 µS/cm	Accredited Conductivity Solutions
	1 413 µS/cm	4.8 µS/cm	
	10 000 µS/cm	40 µS/cm	
pH Meters ³ (~ 25 °C)	4 pH	0.011 pH	Accredited pH Buffer Solutions
	7 pH	0.011 pH	
	10 pH	0.011 pH	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC High Current – Clamp Meters	(1 to 250) A	0.37 A	HANGZHONGHUANG ET030-F Multifunction Calibrator, 100-turn Current Coil
	(250 to 500) A	0.39 A	
	(500 to 1 000) A	0.46 A	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Current – Measuring Devices	(0 to 250) μ A (250 to 500) μ A (0.5 to 5) mA (5 to 25) mA (25 to 50) mA (50 to 250) mA (250 to 500) mA (0.5 to 5) A (5 to 10) A	77 nA 0.15 μ A 8.6 μ A 82 μ A 88 μ A 0.19 mA 0.23 mA 10 mA 12 mA	HANGZHONGHUANG ET030-F Multifunction Calibrator
DC Voltage – Measuring Devices	(0.5 to 500) mV (0.5 to 2.5) V (2.5 to 5) V (5 to 25) V (25 to 50) V (50 to 250) V (250 to 500) V (500 to 1 000) V	0.15 mV 5.8 mV 12 mV 14 mV 19 mV 74 mV 0.15 V 0.3 V	HANGZHONGHUANG ET030-F Multifunction Calibrator
DC Voltage – Sourcing Devices	(0.5 to 5) V (5 to 50) V	0.12 V 0.26 V	Fluke 289 Digital Multimeter
AC Current – Measuring Devices	60 Hz (50 to 250) μ A (250 to 500) μ A (0.5 to 5) mA (5 to 50) mA (50 to 500) mA (0 to 5) A (5 to 10) A	1.7 μ A 1.7 μ A 13 μ A 78 μ A 0.6 mA 13 mA 20 mA	HANGZHONGHUANG ET030-F Multifunction Calibrator
AC Voltage – Measuring Devices	60 Hz (50 to 250) mV (250 to 500) mV (0.5 to 5) V (5 to 25) V (25 to 250) V (250 to 500) V (500 to 1 000) V	0.3 mV 0.38 mV 20 mV 0.2 V 0.3 V 0.35 V 0.58 V	HANGZHONGHUANG ET030-F Multifunction Calibrator
Resistance – Source (Simulated – Fixed Points)	(10 to 500) Ω (1 to 20) k Ω	0.6 Ω 8.2 Ω	HANGZHONGHUANG ET030-F Multifunction Calibrator
Electrical Simulation of Thermocouple Indicating Devices ¹	Type K (-20 to 1 000) $^{\circ}$ C	0.63 $^{\circ}$ C	Fluke 726 Process Calibrator

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electromagnetic Field Meter (EFM)	(-10 to 10) G	0.76 G	Comparison to Reference Gauss Meter

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Calipers Outside Inside Depth	(0.5 to 270) mm 10 mm 10 mm	12 µm 8.3 µm 5.9 µm	ISO 3650 Grade 1 Gauge Blocks, Standard Ring Gauge, Surface Plate
Dial Indicators/Gauges	Up to 25 mm	3.2 µm	Dial Indicator Calibration Tester
Outside Micrometers	(2.5 to 25) mm	1.2 µm	ISO 3650 Grade 1 Ceramic Gauge Block Set
Depth Micrometers	Up to 25 mm	1.2 µm	ISO 3650 Grade 1 Gauge Block Set
Ultrasonic Thickness Gauges ³	6.25 mm 12.5 mm 18.75 mm 25 mm	24 µm 24 µm 24 µm 24 µm	Steel Stepped Wedge/Gauge

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Vacuum Gauges ¹	(-12 to 0) psi	0.43 psi	Comparison to Elitech Reference Vacuum Gauge
Hydraulic Gauge Pressure Gauges ¹	(0 to 4 500) psig (1 000 to 9 000) psig	4.1 psi 72 psi	Comparison to Reference Digital Pressure Gauge
Torque Tools	(5 to 10) N·m (10 to 50) N·m (50 to 150) N·m (150 to 250) N·m (250 to 350) N·m (350 to 500) N·m	0.69 N·m 1.3 N·m 3.5 N·m 5.7 N·m 7.3 N·m 12 N·m	ISO 6789:2003 using Torque Calibration System

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Air Flow Rate – Volumetric Flow Meters	(0.2 to 1) slpm (1 to 5) slpm	0.042 slpm 0.054 slpm	Comparison to BIOS DCL-ML Air Flowmeter
Water Flow Meters	(4.5 to 70) gal	0.45 gal	Comparison to Reference Water Flow Meter
Anemometers, Air Velocity Meters	(2 to 10) m/s	0.77 m/s	Wind Tunnel, Reference Anemometer

Photometry and Radiometry

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Light Meters	(50 to 500) lux (500 to 5 000) lux (5 000 to 10 000) lux (10 000 to 20 000) lux	1.1 % of reading 1 % of reading 1.1 % of reading 1.1 % of reading	Comparison to Reference Light Meter
UV-A Meters	(1 100 to 2 000) $\mu\text{W}/\text{cm}^2$ (2 000 to 2 700) $\mu\text{W}/\text{cm}^2$	3.5 % of reading 3.3 % of reading	Comparison to Reference UV Meter

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Humidity – Air Environment Conditions Measuring Instruments	(40 to 60) %RH	5.4 %RH	Comparison to Extech SD500 Thermo-hygrometer
Temperature – Air Environment Conditions Measuring Instruments	(25 to 30) °C	0.99 °C	Comparison to Extech SD500 Thermo-hygrometer

Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Stopwatches	(1 800 to 32 400) s	0.37 s	Comparison to Reference Stopwatch

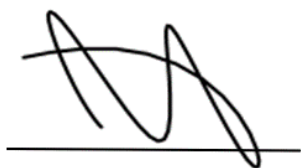
Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Centrifuges ² Rotational Velocity	(500 to 4 000) rpm	1.2 rpm	Comparison to Reference Optical 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. rpm = revolutions per minute.
3. The values presented on the Scope are Nominal values. The Actual values will be used at the time of calibration and the Measurement Uncertainty will reflect the Actual value.
4. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-3158.



Jason Stine, Vice President

