CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

National Association for Proficiency Testing

3470 Washington Dr., Suite 122
Eagan, MN 55122

Fulfills the requirements of

ISO/IEC 17043:2023

In the field of

PROFICIENCY TESTING PROVIDER

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: 14 July 2026

Certificate Number: AP-1873

This proficiency testing provider is accredited in accordance with the recognized International Standard ISO/IEC 17043:2023. This accreditation demonstrates technical competence for a defined scope and the operation of a proficiency testing provider quality management system.

SCOPE OF ACCREDITATION TO ISO/IEC 17043:2023

National Association for Proficiency Testing

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PROFICIENCY TEST PROVIDER

ISO/IEC 17043 Accreditation Granted: **14 July 2024**

Certificate Number: **AP-1873** Certificate Expiry Date: **14 July 2026**

Acoustics and Vibration

Description of PT Item/Artifact	Properties Measured	Range of Property	Expanded Uncertainty of PT Item/Artifact (+/-) (Including Appropriate units)	Procedure for Establishing Assigned Value
Accelerometer	Vibration	(1 to 10) g pk 10 Hz to 10 kHz (10 to 10 000) pC/g (1 to 10) g pk 10 Hz to 10 kHz (9.5 to 10.5) mV/g	(0.014 to 0.026) pC/g (0.08 to 0.13) mV/g	ISO 13528 Consensus values based on either expert laboratories or from participant results (Analyses based on selected dataset)
Sound Level Meter	Sound Level	(0.1 to 8) kHz (50 to 100) dB	(0.46 to 0.8) dB	

Electrical-DC/Low Frequency

Description of PT Item/Artifact	Properties Measured	Range of Property	Expanded Uncertainty of PT Item/Artifact (+/-) (Including Appropriate units)	Procedure for Establishing Assigned Value
Digital Multi Meter (Clamp-on)	DC Current	1 mA to 500 A	(54 to 95) µA	ISO 13528 Consensus values based on either expert laboratories or from participant results (Analyses based on selected dataset)
Digital Multi Meter	DC Current[1]	(1 to 5) mA	(56 to 98) µA	
Digital Multi Meter (Clamp-on)	AC Current	(50 to 400) Hz 100 mA to 500 A	(0.15 to 0.18) mA	
Digital Multi Meter	DC Voltage	100 mV to 1 000 V	6.8 µV to 45 µV	ISO 13528 Consensus values based on either expert laboratories or from participant results (Analyses based on selected dataset)
Digital Multi Meter	DC Voltage	10 V[1]	6 mV	
Digital Multi Meter	AC Voltage	50 Hz to 10 kHz 50 mV to 300 V	1.8 µV to 7.0 mV	
LCR	Capacitance	100 pF to 1 mF	0.021 pF to 7.0 µF	
LCR	Inductance	10 µH to 100 mH	(0.078 to 0.61) µH	
LCR	Impedance	0.5 kHz to 1 kHz 100 Ω to 1 MΩ	0.74 Ω to 681 k Ω	
Digital Multi Meter	Capacitance (Measure)	1 kHz (0.001 to 1) µF 100 pF to 1 mF	0.7 nF 0.7 nF	

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Electrical-DC/Low Frequency

Description of PT Item/Artifact	Properties Measured	Range of Property	Expanded Uncertainty of PT Item/Artifact (+/-) (Including Appropriate units)	Procedure for Establishing Assigned Value
Capacitor Standards	Capacitance (Source)	(0.001 to 0.5) µF	(0.15 to 60) pF	
Standard Inductor	Inductance (Source)	(100, 400) Hz, 1 kHz 500 µH to 200 mH	0.57 µH to 0.1mH	
Air Resister	Resistance (Source)	(1 Ω to 1 GΩ)	7.6 µΩ to 13 kΩ	
Oscilloscope	Vertical Amplitude (DC Gain) Analog Bandwidth Sample Rate & Time Delay Horizontal Time Markers Square-Wave Amplitude	5 mV/Div to 5 V/Div (20 to 200) MHz 3.5 V/div 250 ns/Div 5 ns/Div to 50 µs/Div 2 mV/Div to 200 mV/Div	(0.19 to 0.024) mV 0.36 V 0.27 ns/Div (0.043 to 0.24) ns (0.01 to .88) mV	
Process Calibrators	Temperature (Source – Simulation) Thermocouple	Types E, J, K, R, S, B, L, U, C, T (-250 to 1 500) °C	(0.43 to 0.48) °C	ISO 13528 Consensus values based on either expert laboratories or from participant results (Analyses based on selected dataset)
Process Calibrators	DC Current (Source)	(4 to 20) mA	(0.1 to 0.13) mA	
AC/DC Power Meter (Single Phase)	DC Current AC Current (60 Hz) PF Power	100 mA to 3 A (10 mA to 10) mA (0.5 to 1) (0.1 to 900) W	0.4 mW to 0.2 W	

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Electrical-DC/Low Frequency

Description of PT Item/Artifact	Properties Measured	Range of Property	Expanded Uncertainty of PT Item/Artifact (+/-) (Including Appropriate units)	Procedure for Establishing Assigned Value
DC Power Supply	Voltage (CV) Current (CC) PARD Line Regulation (CV) Load Regulation (CV) Line Regulation (CC) Load Regulation (CC)	(1 to 36) V up to 3 A up to 100 mVrms Up to 100 mVpk-pk up to 100 mV up to 100 mV up to 50 mA up to 50 mA	(0.030 to 0.17) V (0.0029 to 0.0052) A (0.082 to 0.21) mVrms (3.1 to 7.9) mVpk-pk (0.55 to 1.4) mV (7.3 to 18) mV (0.098 to 0.25) mA (0.63 to 1.6) mA	

Electrical-RF/Microwave

Description of PT Item/Artifact	Properties Measured	Range of Property	Expanded Uncertainty of PT Item/Artifact (+/-) (Including Appropriate units)	Procedure for Establishing Assigned Value
Power Meter & RF Power Sensor	Power 10 MHz to 18 GHz[1]	100 µW to 2 mW	(0.089 to 0.19) mW	ISO 13528 Consensus values based on either expert laboratories or from participant results (Analyses based on selected dataset)
Power Meter	RF Power Reference (50 MHz)	1 mW	6.6 µW	
RF Attenuator (3.5 mm)	dB Loss (Attenuation)	(1 to 26) GHz 20 dB	(0.039 to 0.086) dB	

Length-Dimensional Metrology

Description of PT Item/Artifact	Properties Measured	Range of Property	Expanded Uncertainty of PT Item/Artifact (+/-) (Including Appropriate units)	Procedure for Establishing Assigned Value
Gage Blocks	Length (Measure)	(0.05 to 4) in (3 to 20) in	(3.7 to 9.4) µin (6.7 to 47) µin	ISO 13528 Consensus values based on either expert laboratories or from participant results (Analyses based on selected dataset)
Digital Micrometers	Length, outside	(1 to 12) in	(67 to 78) µin	
Calipers	Length, outside	(1 to 12) in	(450 to 460) µin	

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Length-Dimensional Metrology

Description of PT Item/Artifact	Properties Measured	Range of Property	Expanded Uncertainty of PT Item/Artifact (+/-) (Including Appropriate units)	Procedure for Establishing Assigned Value
Dial Indicators	Length, Single Axis	(2.5 to 40) mm	(8.2 to 8.5) µm	
Height Gage	Height	(1 to 24) in	(0.000 9 to 0.0012 in)	
Class XXX Plain Plug	Diameter, outside	(1 to 4) in	(11 to 24) µin	
Thread Wire	Diameter, outside	(20, 40, 80) TPI	(12 to 18) µin	
Plain Plug	Roundness (Top, Middle, Bottom)	(0 to 0.5) µm	(0.08 to 0.092) µm	
Micrometer Length Standards	Length	(1 to 7) in	(28 to 53) µin	
Stage Micrometer	Length	(0.003 to 1.9) in	(40 to 190) µin	
Chrome-on-Glass Magnification checker	2D Length, Single Axis Width (Square) Diameter (Circle)	(1 to 6) in (20 to 140) mm (0.0625 to 1) in (2.5 to 10) mm (0.0125 to 0.5) in (1 to 25) mm	(95 to 145) µin (2.4 to 3.4) µm (85 to 102) µin (2.2 to 2.5) µm (83 to 129) µin (2.1 to 2.9) µm	
Protractor	Angle (Source)	(0 to 135) °	(0.091 to 0.099) °	
Angle Blocks	Angle (Measure)	(0.25 to 30) °	(0.002 to 0.005) °	
Plain Cylindrical Ring Gage	Diameter	(0.5 to 4) in	(12 to 20) uin	
Thread Plug	Simple Pitch Diameter Major Diameter	(0.5 to 1) in (0.5 to 1) in	(89 to 92) µin (34 to 35) µin	ISO 13528 Consensus values based on either expert laboratories or from participant results

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Length-Dimensional Metrology

Description of PT Item/Artifact	Properties Measured	Range of Property	Expanded Uncertainty of PT Item/Artifact (+/-) (Including Appropriate units)	Procedure for Establishing Assigned Value
CMM Inspection	3D X-Axis Y-Axis Diameter, inside Sphere Cone	(2 to 10) in (2 to 8) in (1 to 1.25) in (4 to 8) in (2 to 3) in	(330 to 410) µin (330 to 410) µin (340 to 360) µin (340 to 420) µin (370 to 410) µin	(Analyses based on selected dataset)

Mass and Mass Related

Description of PT Item/Artifact	Properties Measured	Range of Property	Expanded Uncertainty of PT Item/Artifact (+/-) (Including Appropriate units)	Procedure for Establishing Assigned Value
Mass Standards	Conventional Mass	(0.5 to 100) g (0.001 to 0.2) lb (0.5 to 10) lb	(1.2 to 22) µg 0.000 009 to 0.000 036 lb 0.000 11 to 0.001 4 lb	ISO 13528 Consensus values based on either expert laboratories or from participant results (Analyses based on selected dataset)
Pipette	Volume	50 µl to 1 ml	0.042 to 5.4 µL	
Vacuum Gages/Transducers	Pressure, Vacuum Pressure	(-10 to 30) psi (0 to 25) inHg (1 to 900) mmHg (5 to 25) inHg (10 to 10 000) psi	0.015 to 0.018 psi 0.014 to 0.023 inHg 0.072 to 0.15 mmHg 0.042 to 0.11 inHg (0.000 7 to 0.008 5) psi	
Torque Tools	Torque Wrench Torque Drivers	(20 to 100) lbf·ft (30 to 540) lbf·in (360 to 1 800) lbf·in (6 to 34) lbf·in	(0.089 to 0.35) lbf·in (0.53 to 2.25) lbf·in (1.8 to 5.2) lbf·in (0.11 to 0.58) lbf·in	
Torque Transducer	Applied Torque	(30 to 300) lbf in (180 to 1 800) lbf in	(0.08 to 0.47) lbf·in (0.21 to 1.56) lbf·in	
Force Gage	Force (Compression) Force (Tension)	(10 to 100) lbf (10 to 100) lbf	(0.005 to 0.072) lbf (0.005 to 0.072) lbf	

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Mass and Mass Related

Description of PT Item/Artifact	Properties Measured	Range of Property	Expanded Uncertainty of PT Item/Artifact (+/-) (Including Appropriate units)	Procedure for Establishing Assigned Value
Load Cell	Force (Compression) Force (Tension)	(100 to 1 000) lbf (2 500 to 25 000) lbf Up to 4.5 mV/V (100 to 1 000) lbf (2 500 to 25 000) lbf Up to 4.5 mV/V	(0.17 to 0.87) lbf (0.002 1 to 0.006 7) klbf (0.3 to 2) µV/V (0.17 to 0.87) lbf (0.002 1 to 0.006 7) klbf (0.3 to 2) µV/V	ISO 13528 Consensus values based on either expert laboratories or from participant results (Analyses based on selected dataset)
Durometers	Spring Force	Type A, D (20 to 80) Duro	(0.75 to 0.86) Duro	
Rockwell Hardness Blocks	Hardness	(30 to 100) HRBw (25 to 65) HRC	0.85 to 1.2 HRBw 0.6 to 0.7 HRC	

Thermodynamic

Description of PT Item/Artifact	Properties Measured	Range of Property	Expanded Uncertainty of PT Item/Artifact (+/-) (Including Appropriate units)	Procedure for Establishing Assigned Value
Thermometer (LIG)	Temperature	(-7 to 150) °C	(0.023 to 0.052) °C	ISO 13528 Consensus values based on either expert laboratories or from participant results (Analyses based on selected dataset)
Type S Thermocouple	Temperature	(1 000 to 2 000) °F	(1.3 to 1.5) °F	
Thermistor Probe	Temperature	(0 to 100) °C	(0.015 to 0.029) °C	
Thermometer (Digital)	Temperature	(-190 to 410) °C	(0.10 to 0.11) °C	
Thermometer (PRT)	Temperature	(-190 to 410) °C	(0.1 to 0.11) °C	
Wideband Infrared Thermometers	Temperature	λ = (8 to 14) µm (-20 to 750) °C	(0.75 to 4.3) °C	
Thermo-hygrometer	Humidity	(15 to 25) °C (10 to 97) %RH	(0.56 to 1.1) %RH	
Digital RTD	Temperature	(-75 to 150) °C	0.024 to 0.048 °C	

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Time and Frequency

Description of PT Item/Artifact	Properties Measured	Range of Property	Expanded Uncertainty of PT Item/Artifact (+/-) (Including Appropriate units)	Procedure for Establishing Assigned Value
Frequency Counter	Period	100 MHz	4.1 E^{-06} MHz	ISO 13528 Consensus values based on either expert laboratories or from participant results (Analyses based on selected dataset)
	Time	100 kHz to 10 MHz	9.2 $^{E-05}$ to 5.7 $^{E-08}$	
	Frequency/Time Base	10 MHz	5.74 $^{E-08}$	
Frequency Counter	Time Base Frequency	100 Hz to 10 MHz	7.6 $^{E-06}$ to 5.2 $^{E-07}$ MHz	
Tachometer	Rotational Speed	(500 to 40 000) RPM	0.21 to 0.58 RPM	
Stopwatch	Elapsed Time	(60 to 86 400) sec	0.028 to 0.32 sec	

Note:

1. Expanded Uncertainty of PT item may vary when using Consensus values based on participant results (Analyses based on selected dataset).

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