



# CERTIFICATE OF ACCREDITATION

## ANSI National Accreditation Board

11617 Coldwater Road, Fort Wayne, IN 46845 USA

This is to certify that

**NATIONAL ASSOCIATION for PROFICIENCY TESTING**  
**4445 W. 77<sup>th</sup> Street, Suite 212**  
**Edina, MN 55435**

has been assessed by ANAB and meets the requirements of international standard

**ISO/IEC 17043:2010**

while demonstrating technical competence in the field of

**PROFICIENCY TESTING PROVIDER**

Refer to the accompanying Scope of Accreditation for information regarding the types of activities to which this accreditation applies

AP-1873

Certificate Number

  
ANAB Approval

Certificate Valid Through: 07/14/2020  
Version No. 007 Issued: 06/10/2019





SCOPE OF ACCREDITATION TO ISO/IEC 17043:2010

National Association for Proficiency Testing

4445 W. 77th Street, Suite 212
Edina, MN 55435

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PROFICIENCY TEST PROVIDER

Valid to: July 14, 2020

Certificate Number: AP-1873

Acoustics and Vibration

Table with 5 columns: Description of PT Item/Artifact, Properties Measured, Range of Property, Expanded Uncertainty of PT Item/Artifact (+/-) (Including Appropriate units), Procedure for Establishing Assigned Value. Rows include Vibration Meters and Sound Level Meter.

Electrical-DC/Low Frequency

Table with 5 columns: Description of PT Item/Artifact, Properties Measured, Range of Property, Expanded Uncertainty of PT Item/Artifact (+/-) (Including Appropriate units), Procedure for Establishing Assigned Value. Row includes Digital Multi Meter.





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	Voltage	DC Voltage 100 mV to 1 000 V DC Voltage 10 V <sup>1</sup> AC Voltage 50 mV to 300 V @ 50 Hz to 10 kHz	6.78 E-06 to 4.51 E-05 1.81 E-05 to 0.007	Consensus value from expert laboratories
10 Volt DC Reference	Voltage	10 Volt	3.401 E-06	Consensus value from expert laboratories
Digital Multi Meter	Inductance	Inductance 1 mH to 10 H 100 μH to 100 mH <sup>1</sup> Impedance <sup>1</sup> 10 Ω to 1 MΩ @ 0.5 kHz to 1 kHz	5.36 E-05 to 9.51 E-05	Consensus value from expert laboratories
Digital Multi Meter	Capacitance	0.001 μF to 1 μF @ 1kHz 100 pF to 1 000 μF @ 1kHz <sup>1</sup>	0.000 7	Consensus value from expert laboratories
Capacitor Standards	Capacitance	0.001 to 0.5	1.49 E-07 to 6.01E-05	Consensus value from expert laboratories
Digital Multi Meter	Resistance	100 Ω to 10 MΩ	0.001 7 Ω to 0.000 4 MΩ	Consensus value from expert laboratories
Standard Inductor	Inductance	500 μH to 200 mH @ 100 Hz, 400 Hz and 1 KHz	1.5 μH to 0.2mH	Consensus value from expert laboratories
Air Resister	Resistance	1 Ω to 1 GΩ	7.57 E-06 Ω to 1.31 E-05 GΩ	Consensus value from expert laboratories





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
Oscilloscope	Oscilloscope Functions	DC Gain 5 mV to 5 V Analog Bandwidth 200 MHz to 20 MHz Sample Rate & Time Delay 250 ns/Div Time Marker 25 µsec/Div to 2.5 nsec/Div Square-Wave 200 mV/Div to 2 mV/Div	0.19 to 0.024  0.27  0.043 to 0.24  0.023 to 0.24	Consensus value from expert laboratories
Process Calibrators	Temperature  mA output	Process Calibrator Type E, J, K, R, S, B, L, U, C & T -250 °C to 1 500 °C  RTD -75 °C to 150 °C	0.43°C to 0.48°C  0.005 3 to 0.006 3  0.102 to 0.129	Consensus value from expert laboratories

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
Microwave Attenuators	Attenuation, AM/FM/PM modulation, power	Attenuation & Phase 20 db @ (1 to 26) GHz	0.039 to 0.094	Consensus value from expert laboratories



**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
RF Power Sensor	Attenuation, AM/FM/PM modulation, power	100 $\mu$ W to 2 mW @ 10 MHz to 18 GHz <sup>1</sup> 1 mW @ 50 MHz to 18 GHz	0.089 to 0.19	Consensus value from expert laboratories
RF Attenuator	dB Loss	1, 10, 18 & 26 GHz	0.039 to 0.086 dB	Consensus value from expert laboratories

**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	0.05 in to 4 in 3 in to 20 in	3.71E-06 to 9.41E-06 6.72E-06 to 4.69E-05	Consensus value from expert laboratories
Digital Micrometers	Length	1 in to 12 in	6.66E-05 to 7.81E-05	Consensus value from expert laboratories
Calipers	Length	1 in to 12 in	0.000 45 to 0.000 46	Consensus value from expert laboratories
Round Gage	Roundness	Top, Middle, Bottom	0.08 to 0.092	Consensus value from expert laboratories
CMM Inspection	X-Axis Y-Axis Diameter Sphere Cone	2 to 10 in 2 to 8 in 1 in to 1.25 in 4 in to 8 in 2 to 3 in	0.000 33 to 0.000 41 0.000 33 to 0.000 41 0.000 34 to 0.000 36 0.000 34 to 0.000 42 0.000 37 to 0.000 41	Consensus value from expert laboratories
Dial Indicators	Length	2.5 mm to 20 mm	0.008 2 to 0.008 5	Consensus value from expert laboratories
Height Gage	Length	1 in to 24 in	0.000 9 to 0.001 2	Consensus value from expert laboratories
Angle Blocks	Angle	9 inch and 18 inch	0.000 18 to 0.000 25	Consensus value from expert laboratories
Micrometer Length Standards	Length	1 in to 7 in	2.76E-05 to 5.31 E-05	Consensus value from expert laboratories
Stage Micrometer	Length	0.003 in to 1.90 in	4.02E-05 to 0.000 19	Consensus value from expert laboratories

**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
Glass Scale's	Length Square Circle	1 in to 3 in 0.05 in to 1 in 1 mm to 25 mm	8.05E-05 to 7.27E-05 0.002 to 8.49E-05 0.002 to 8.25E-05	Consensus value from expert laboratories
Protractor	Angle	0 to 135 degrees	0.091 to 0.099	Consensus value from expert laboratories
Plain Cylindrical Ring Gage	Roundness	0.5 to 4 in	12 uin to 20 uin	Consensus value from expert laboratories
Class XXX Plain Plug	Roundness	1 to 4 in	1.077E-05 to 2.35E-05	Consensus value from expert laboratories
Thread Plug	Pitch Diameter Form Major Truncated Form	0.5 to 1 in 0.5 to 1 in 0.5 to 1 in	8.94E-05 to 9.18E-05 3.42E-05 to 3.52E-05 3.51E-05 to 3.62E-05	Consensus value from expert laboratories
Thread Wire	Wire Diameter	TPI 20, 40, and 80	1.15E-05 to 1.81E-05	Consensus value from expert laboratories

**Mass**

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	True Mass	0.5 g to 100 g 0.001 lb to 0.2 lb 0.5 to 10 lb	0.000 0012 to 0.000 022 0.000 009 to 0.000 036 0.000 11 to 0.001 4	Consensus value from expert laboratories
Compound Gage	Pressure, vacuum	6.00 psi to 30 psi 10 inHg to 25 inHg	0.015 to 0.018 0.014 to 0.023	Consensus value from expert laboratories
Balances	Applied Mass	10 gram to 210 gram 0.5 lb to 20 lb	4.12E-06 to 3.97E-05 0.004 71 to 0.474	Consensus value from expert laboratories
Gauge	Pressure, vacuum	10 to 10 000 psi	0.000 7 to 0.008 5	Consensus value from expert laboratories
Pipette	Volume	0.20 µL to 1000.00 µL	0.042 to 5.411	Consensus value from expert laboratories
Vacuum Transducer	Pressure, vacuum	1 mmHg to 900 mmHg 5 inHg to 25 inHg	0.042 to 0.11	Consensus value from expert laboratories



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## Mass

Description of PT Item/Artifact	Properties Measured	Range of Property	Expanded Uncertainty of PT Item/Artifact (+/-) (Including Appropriate units)	Procedure for Establishing Assigned Value
Torque Wrenches	Torque Screwdrivers Bending Beam Adjustable Digital Wrench	6 in lb to 34 in lb 20 ft lb to 100 ft-lb 30 in lb to 540 in lb 360 in lb to 1 800 in lb	0.11 to 0.58 0.089 to 0.35 0.53 to 2.25 1.8 to 5.2	Consensus value from expert laboratories
Force Gage	Compression Tension	10 lbf to 100 lbf	0.005 to 0.072	Consensus value from expert laboratories
Load Cell	Compression Tension	100 to 1 000 lbf 2 500 to 25 000 lbf 2 500 to 25 000 lbf	0.24 to 1.25 0.000 3 mV/V to 0.002 mV/V 0.001 5 to 0.007 8	Consensus value from expert laboratories
Durometers	Type A & D – Displacement Measurements	20 point to 80 point	0.75 to 0.86	Consensus value from expert laboratories
Rockwell Hardness Specimens,	Test Blocks	30 to 100 HRBw 25 to 65 HRC	0.85 to 1.16 0.6 to 0.7	Consensus value from expert laboratories
Torque Transducer	Applied Torque	30 lb in to 300 lb in 180 lb in to 1 800 lb in	0.08 to 0.47 0.21 to 1.56	Consensus value from expert laboratories



**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
Thermometers	Temperature	Glass Thermometer -38 °C to 450 °C	0.023 to 0.052 1.29 to 1.54 0.015 to 0.029 0.04 to 0.06 0.10 to 0.11 0.25 0.75 to 4.28	Consensus value from expert laboratories
		Type S Thermocouple 1000 °F to 2000 °F		
		Thermistor Probe 0 °C to 100 °C		
		Digital Thermometer -20 °C to 100 °C		
		Platinum Resistance Thermometer -190 °C to 410 °C		
		DMM 105 °F IR -20 °C to 750 °C		
Humidity Sensor	Generate Measure	10%RH to 90 %RH 11%RH to 97%RH	0.56 to 0.95 0.91 to 1.14	Consensus value from expert laboratories
Digital RTD	Temperature	-75°C to 150 °C	0.024 to 0.048	Consensus value from expert laboratories

**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
Time Base(s)	Period, time, frequency	10 MHz	5.74E-08	Consensus value from expert laboratories
Frequency Standard	Time Base Frequency	100 Hz to 10 MHz	7.62E-06 to 5.19E-07	Consensus value from expert laboratories





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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
Tachometer	RPM	500 to 40 000 rpm	0.209 to 0.58	Consensus value from expert laboratories
Stopwatch	Time	60 sec to 86 400 sec	0.028 to 0.32	Consensus value from expert laboratories

Note:

1. This scope is formatted as part of a single document including Certificate of Accreditation No. AP-1873.



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Vice President

