



CERTIFICATE OF ACCREDITATION

ANSI-ASQ National Accreditation Board

500 Montgomery Street, Suite 625, Alexandria, VA 22314, 877-344-3044

This is to certify that

Precision Technical Services
2400 West Southern Avenue, Suite 104
Tempe, AZ 85282

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

ISO/IEC 17025:2005

and national standards

ANSI/NCSL Z540.3-2006 (R2013)

while demonstrating technical competence in the field of

CALIBRATION

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

L2272

Certificate Number


ANAB Approval

Certificate Valid: 01/25/2018-10/8/2019
Version No. 001 Issued: 01/25/2018



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. 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 17025:2005
AND ANSI/NCSL Z540.3-2006 (R2013)**

Precision Technical Services
2400 West Southern Avenue, Suite 104
Tempe, AZ 85282
Ken Cassidy
480-921-1021

CALIBRATION

Valid to: **October 8, 2019**

Certificate Number: **L2272**

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Current Measure	(0 to 20) mA	68 μ A	Precision DMM
Thermocouple Millivolt Simulation – Source			
Type E	(-250 to 1 000) °C	0.27 °C	Fluke 743B Process Calibrator
Type N	(-200 to 1 300) °C	0.37 °C	
Type J	(-210 to 1 200) °C	0.27 °C	
Type K	(-200 to 1 372) °C	0.37 °C	
Type T	(-250 to 400) °C	0.37 °C	
Type B	(600 to 1 820) °C	0.93 °C	
Type R	(-20 to 1 767) °C	1 °C	
Type S	(0 to 1 760) °C	1 °C	
Type C	(0 to 2 316) °C	0.71 °C	
Thermocouple Millivolt Simulation – Measure			
Type E	(-250 to 1 000) °C	0.37 °C	Fluke 743B Process Calibrator
Type N	(-200 to 1 300) °C	0.59 °C	
Type J	(-210 to 1 200) °C	0.37 °C	
Type K	(-200 to 1 372) °C	0.37 °C	
Type T	(-250 to 400) °C	1 °C	
Type B	(600 to 1 820) °C	1 °C	
Type R	(-20 to 1 767) °C	1.2 °C	
Type S	(0 to 1 760) °C	1 °C	
Type C	(0 to 2 316) °C	0.71 °C	
Voltage Measure	(0 to 10) V	1.7 mV	Precision DMM



Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-) ²	Reference Standard, Method, and/or Equipment
Gage Blocks	(0.004 to 1) in	3.1 μin	Laseruler
	(1 to 4) in	(0.26 + 3.1L) μin	
	(4 to 20) in	(1.6 + 2.25L) μin	Comparator
Cylindrical Pins, Plugs and Wires	(0.01 to 4) in	12 μin	Laseruler
Pin Gages – Class Z	(0.1 to 2) in	16 μin	Laser Micrometer
Plain Ring Gages	(0.1 to 12) in	(4 + 4.2L) μin	Ring Comparator
Thread Rings	(0.086 to 2.5) in	230 μin	Thread Setting Plugs
Thread Plugs Major Diameter Pitch Diameter	(0.05 to 4) in (4 to 80) tpi	21 μin 93 μin	Supermicrometer 3-Wire Method
Dial Bore Gages ¹ (0.0001 in Resolution)	(0.2 to 6) in	72 μin	Height Master
Calipers ¹	(0 to 6) in	290 μin	Gage Blocks
	(6 to 24) in	(320 + 18L) μin	
	(24 to 60) in	(530 + 1.1L) μin	
Outside Micrometer ¹	(0 to 4) in	(55 + 0.8L) μin	Gage Blocks
	(4 to 12) in	(75 + 2.5L) μin	
	(12 to 48) in	(71 + 5L) μin	
Micrometer Head	(0 to 2) in	25 μin	Laseruler
Depth Micrometers ¹	(0 to 12) in	130 μin	Depth Micrometer Calibrator
Inside Micrometers	(0.5 to 24) in	(52 + 6.3L) μin	Mitutoyo LH-600D
Dial Indicators ¹	(0 to 1) in	32 μin	Micrometer Head Linear Encoder
	(1 to 6) in	310 μin	



Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-) ²	Reference Standard, Method, and/or Equipment
Height Gages ¹	(0 to 40) in	(270 + 4.7L) μin	Gage Blocks Analog Comparator
Test Indicators ¹	(0 to 0.1) in	35 μin	Height Master
Intramic / Hole Micrometer ¹	(0.2 to 3.6) in	(90 + 1.9L) μin	Setting Ring Gages
Wire Crimpers ¹	(0.011 to 0.5) in	120 μin	Pin Gages Crimp Height Micrometer

Mass

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Pressure Gages – Analog	(0 to 150) inH ₂ O (0 to 100) psi (100 to 1 000) psi (1 000 to 10 000) psi (10 000 to 30 000) psi	0.018 inH ₂ O 0.032 psi 0.32 psi 3.2 psi 39 psi	Pressure Transducer
Pressure Transducers and Digital Gages	(0 to 150) inH ₂ O (0 to 100) psi (100 to 1 000) psi (1 000 to 10 000) psi	0.018 inH ₂ O 0.012 psi 0.12 psi 1.2 psi	Precision DMM
Vacuum Gages	(-14.7 to 0) psig	0.012 psi	Pressure Transducer
Torque Wrenches	(0.5 to 400) ozf·in (5 to 50) lbf·in (10 to 100) lbf·in (20 to 200) lbf·in (12.5 to 125) lbf·ft (25 to 250) lbf·ft (200 to 2 000) lbf·ft	0.26 % of reading 0.26 % of reading 0.26 % of reading 0.26 % of reading 0.26 % of reading 0.26 % of reading 0.26 % of reading	CDI Torque Transducers

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Relative Humidity	(10 to 95) %RH	0.66 %RH	Comparison to a Rotronic HF532 Indicator and Probe
Infrared Thermometers	50 °C 100 °C 200 °C 350 °C 500 °C	0.66 °C 1.6 °C 3.3 °C 5.8 °C 8.9 °C	Blackbody Calibrator $\lambda = (8 \text{ to } 14) \mu\text{m}$ $\epsilon = 0.95$ (non-selectable)
Temperature Measure	(-200 to 1 372) °C	1.3 °C	Process Calibrator and thermocouple
Uniformity Surveys	(-200 to 1 372) °C	1.3 °C	Datalogger and thermocouples per AMS 2750E and BAC 5621

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. L = length in inches.
3. This scope is formatted as part of a single document including Certificate of Accreditation No. L2272.



Vice President