



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Advanced Testing & Calibration Services

4412 Russell Road, Unit C

Mukilteo, WA 98275

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.

A handwritten signature in black ink, appearing to be 'J. Stine', is positioned above a horizontal line.

Jason Stine, Vice President

Expiry Date: 10 September 2027

Certificate Number: AC-3422



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

AND

ANSI/NCSL Z540-1-1994 (R2002)

Advanced Testing & Calibration Services

4412 Russell Road, Unit C
Mukilteo, WA 98275

Marc Wislen (425) 293-2503

CALIBRATION

ISO/IEC 17025 Accreditation Granted: **10 September 2025**

Certificate Number: **AC-3422**

Certificate Expiry Date: **10 September 2027**

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Voltage - Generate	(0.004 to 100) mV (0.1 to 1.0) V (1.0 to 10) V (10 to 100) V (100 to 1 000) V	9 μ V/V + 0.9 μ V 6.1 μ V/V + 1.4 μ V 6.2 μ V/V + 10 μ V 8.5 μ V/V + 101 μ V 8.5 μ V/V + 1004 μ V	Comparison to Fluke 5560A Multiproduct Calibrator
AC Voltage - Generate	(1.0 to 10) mV (10 to 100) mV (0.1 to 1.0) V (1.0 to 10) V (10 to 100) V (100 to 300) V (300 to 700) V	6 200 μ V/V + 30 μ V 1 600 μ V/V + 30 μ V 1 900 μ V/V + 75 μ V 1 900 μ V/V + 750 μ V 1 600 μ V/V + 20 mV 1 900 μ V/V + 75 mV 1 900 μ V/V + 75 mV	Comparison to Fluke 5560A Multiproduct Calibrator
DC Current - Source	(0.1 to 100) μ A (0.10 to 1.0) mA (1.0 to 10) mA (10 to 100) mA (0.1 to 1.0) A (1.0 to 2.0) A	97 μ A/A + 0.007 μ A 78 μ A/A + 0.016 μ A 78 μ A/A + 0.081 μ A 78 μ A/A + 0.81 μ A 120 μ A/A + 10.1 μ A 230 μ A/A + 151 μ A	Comparison to Fluke 5560A Multiproduct Calibrator

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current - Source ¹	3 Hz to 30 kHz (0.01 to 0.1) mA (0.1 to 1.0) mA (1.0 to 10) mA (10 to 100) mA (0.1 to 1.0) A	3 400 μ A/A + 1 μ A 4 000 μ A/A + 5 μ A 4 000 μ A/A + 10 μ A 4 000 μ A/A + 100 μ A 4 000 μ A/A + 300 μ A	Comparison to Fluke 5560A Multiproduct Calibrator
	3 Hz to 10 kHz (1.0 to 3.0) A (3.0 to 10.0) A	1 900 μ A/A + 600 μ A 2 100 μ A/A + 500 μ A	
Resistance - Source ¹	(0.1 to 10) Ω (10 to 100) Ω (0.1 to 1.0) k Ω (1.0 to 10) k Ω (10 to 100) k Ω (0.1 to 1.0) M Ω (1.0 to 10) M Ω (10 to 100) M Ω	19 $\mu\Omega/\Omega$ + 10 m Ω 19 $\mu\Omega/\Omega$ + 15 m Ω 19 $\mu\Omega/\Omega$ + 20 m Ω 19 $\mu\Omega/\Omega$ + 200 m Ω 19 $\mu\Omega/\Omega$ + 1 Ω 19 $\mu\Omega/\Omega$ + 10 Ω 27 $\mu\Omega/\Omega$ + 150 Ω 330 $\mu\Omega/\Omega$ + 2.5 k Ω	Comparison to Fluke 5560A Multiproduct Calibrator
Electrical Simulation of RTD Indicators - Source ¹	Pt 385, 100 Ω (-180 to 0) $^{\circ}$ C (0 to 360) $^{\circ}$ C (360 to 750) $^{\circ}$ C	0.04 $^{\circ}$ C 0.07 $^{\circ}$ C 0.18 $^{\circ}$ C	Comparison to Fluke 5560A Multiproduct Calibrator
	Pt 385, 1000 Ω (-180 to 0) $^{\circ}$ C (0 to 360) $^{\circ}$ C (360 to 750) $^{\circ}$ C	0.03 $^{\circ}$ C 0.04 $^{\circ}$ C 0.18 $^{\circ}$ C	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electrical Simulation of Thermocouple Indicating Devices – Source/Measure ¹	Type J		Comparison to Fluke 5560A Multiproduct Calibrator
	(-210 to -100) °C	0.09 °C	
	(-30 to 150) °C	0.09 °C	
	(150 to 760) °C	0.09 °C	
	(760 to 1 200) °C	0.09 °C	
	Type K		
	(-200 to -100) °C	0.09 °C	
	(-100 to -25) °C	0.09 °C	
	(-25 to 120) °C	0.09 °C	
	(120 to 1 000) °C	0.09 °C	
	(1 000 to 1 372) °C	0.09 °C	
	Type N		
	(-200 to -100) °C	0.09 °C	
	(-100 to -25) °C	0.09 °C	
	(-25 to 120) °C	0.09 °C	
	(120 to 410) °C	0.09 °C	
	(410 to 1 300) °C	0.09 °C	
	Type T		
	(-250 to -150) °C	0.09 °C	
	(-150 to 0) °C	0.09 °C	
	(0 to 120) °C	0.09 °C	
	(120 to 400) °C	0.09 °C	

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
System Accuracy Test ¹ (Ovens)	Type K		AMS 2750 Rev H
	(32 to 248) °F	1.7 °F	
	(248 to 1 832) °F	1.7 °F	
	(1 832 to 1 999) °F	1.7 °F	
	(1 999 to 2 300) ° F	3.5 °F	
	Type N		
Temperature Uniformity Survey ¹ (Ovens)	(32 to 770) °F	1.7 °F	AMS 2750 Rev H
	(770 to 1 999) °F	1.7 °F	
	(1 999 to 2 300) °F	3.5 °F	
	(32 to 248) °F	1.7 °F	
	(248 to 1 832) °F	1.7 °F	
	(1 832 to 1 999) °F	1.7 °F	
	(1 999 to 2 300) ° F	3.5 °F	

Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Frequency - Source ¹	(0.1 to 1.0) Hz	1.8 µHz/Hz + 2 µHz	Comparison to Fluke 5560A Multiproduct Calibrator
	(1.0 to 10) Hz	1.5 µHz/Hz + 14 µHz	
	(10 to 100) Hz	1.8 µHz/Hz + 106 µHz	
	(0.1 to 1.0) kHz	1.8 µHz/Hz + 1.1 mHz	
	(1.0 to 10) kHz	1.8 µHz/Hz + 10.6 mHz	
	(10 to 100) kHz	1.8 µHz/Hz + 100.2 mHz	
	(100 to 500) kHz	2.5 µHz/Hz + 25.4 mHz	

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. The CMC is highly dependent upon the resolution of the unit under test. The CMC presented here does not include the resolution of the unit under test. The resolution will be included in the reported measurement uncertainty at the time of calibration.



Jason Stine, Vice President

