



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Tescom Calibration
3317 El Salido Parkway
Cedar Park, TX 78613
(and satellite location listed on the scope)

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

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: 30 November 2027

Certificate Number: AC-1417



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)

Tescom Calibration

3317 El Salido Parkway

Cedar Park, TX 78613

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CALIBRATION

ISO/IEC 17025 Accreditation Granted: **29 August 2025**

Certificate Number: **AC-1417** Certificate Expiry Date: **20 November 2027**

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Voltage – Source ¹	(0 to 220) mV (0.22 to 2.2) V (2.2 to 11) V (11 to 22) V (22 to 220) V (220 to 1 100) V	7.7 μ V/V + 0.4 μ V 5.1 μ V/V + 0.7 μ V 3.6 μ V/V + 2.5 μ V 3.6 μ V/V + 4 μ V 5.1 μ V/V + 40 μ V 6.6 μ V/V + 0.4 mV	Comparison to Fluke 5720A Multiproduct Calibrator, Fluke 5725A Amplifier
DC Voltage – Measure ¹	(0 to 200) mV 200 mV to 2 V (2 to 20) V (20 to 200) V (200 to 1 000) V	5.1 μ V/V + 0.1 μ V 3.6 μ V/V + 0.4 μ V 3.6 μ V/V + 4 μ V 5.6 μ V/V + 40 μ V 5.6 μ V/V + 0.5 mV	Comparison to Fluke 8508A Opt. 01 8.5 Digit Multimeter
DC High Voltage – Measure ^{1,3}	(1 to 60) kV	1 mV/V	Comparison to Ross Engineering VD 60 High Voltage Divider, Fluke 8508A Opt. 01 8.5 Digit Multimeter

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Current – Source ¹	(0 to 220) μ A (0.22 to 2.2) mA (2.2 to 22) mA (22 to 100) mA (100 to 220) mA (0.22 to 1) A (1 to 2.2) A	41 μ A/A + 6 nA 36 μ A/A + 7 nA 36 μ A/A + 40 nA 46 μ A/A + 0.7 μ A 46 μ A/A + 0.7 μ A 82 μ A/A + 12 μ A 82 μ A/A + 12 μ A	Comparison to Fluke 5720A Multiproduct Calibrator
DC Current – Source ¹	(2.2 to 3) A	0.23 mA/A + 0.15 mA	Comparison to Fluke 5560A/1G Multiproduct Calibrator
DC Current – Source ¹	(3 to 20) A (20 to 100) A	80 μ A/A + 0.8 mA 82 μ A/A + 4 mA	Comparison to Fluke 5720A Multiproduct Calibrator, Fluke 52120A Amplifier
DC Current – Measure ¹	(0 to 200) μ A (0.2 to 2) mA (2 to 20) mA (20 to 200) mA (0.2 to 2) A (2 to 20) A	12 μ A/A + 0.4 nA 12 μ A/A + 4 nA 14 μ A/A + 40 nA 49 μ A/A + 0.8 μ A 0.19 mA/A + 16 μ A 0.41 mA/A + 0.4 mA	Comparison to Fluke 8508A Opt. 01 8.5 Digit Multimeter
DC Current – Measure ¹	(> 20 to 100) A	0.04 % of reading	Comparison to Fluke 8508A Opt. 01 8.5 Digit Multimeter with L & N 4361 Shunt
Inductance – Source ¹ (Simulation) 1 kHz 1 kHz 110 Hz 100 Hz 10 Hz 3 Hz 2 Hz	(13 to 120) μ H (> 0.12 to 1.2) mH (> 1.2 to 12) mH (> 12 to 120) mH (> 0.12 to 1.2) H (> 1.2 to 12) H (> 12 to 120) H	1.6 mH/H + 0.1 μ H 0.92 mH/H + 1 μ H 0.92 mH/H + 10 μ H 0.92 mH/H + 0.1 mH 1.2 mH/H + 1 mH 1.6 mH/H + 10 mH 1.9 mH/H + 0.1 H	Comparison to Fluke 5560A/1G Multiproduct Calibrator

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Capacitance – Source ^{1,3} (Simulation) 100 Hz to 10 kHz 150 Hz to 5 kHz 200 Hz to 1.3 kHz (2 to 310) Hz (0.5 to 110) Hz (0.5 to 40) Hz (0.1 to 11) Hz 30 mHz to 4 Hz 10 mHz to 1.3 Hz	(0.2 to 1.2) nF (> 1.2 to 12) nF (> 12 to 120) nF (> 0.12 to 1.2) μ F (> 1.2 to 12) μ F (> 12 to 120) μ F (> 0.12 to 1.2) mF (> 1.2 to 12) mF (> 12 to 120) mF	0.92 mF/F + 2 pF 0.92 mF/F + 5 pF 1 mF/F + 30 pF 1 mF/F + 0.3 nF 1 mF/F + 3 nF 1.2 mF/F + 25 nF 1.9 mF/F + 0.25 μ F 1.9 mF/F + 3 μ F 4 mF/F + 30 μ F	Comparison to Fluke 5560A/1G Multiproduct Calibrator
Resistance – Source ¹ (Fixed Artifacts)	1 Ω 1.9 Ω 10 Ω 19 Ω 100 Ω 190 Ω 1 k Ω 1.9 k Ω 10 k Ω 19 k Ω 100 k Ω 190 k Ω 1 M Ω 1.9 M Ω 10 M Ω 19 M Ω 100 M Ω	97 $\mu\Omega/\Omega$ 97 $\mu\Omega/\Omega$ 23 $\mu\Omega/\Omega$ 23 $\mu\Omega/\Omega$ 10 $\mu\Omega/\Omega$ 10 $\mu\Omega/\Omega$ 6.6 $\mu\Omega/\Omega$ 6.6 $\mu\Omega/\Omega$ 6.6 $\mu\Omega/\Omega$ 6.6 $\mu\Omega/\Omega$ 8.7 $\mu\Omega/\Omega$ 8.7 $\mu\Omega/\Omega$ 18 $\mu\Omega/\Omega$ 18 $\mu\Omega/\Omega$ 41 $\mu\Omega/\Omega$ 48 $\mu\Omega/\Omega$ 0.1 m Ω/Ω	Comparison to Fluke 5730A Multiproduct Calibrator
Resistance – Source ¹ (Simulation)	(0 to 12) Ω (> 12 to 120) Ω (> 0.12 to 1.2) k Ω (> 1.2 to 12) k Ω (> 12 to 120) k Ω (> 0.12 to 1.2) M Ω (> 1.2 to 12) M Ω (> 12 to 120) M Ω (0.12 to 1.2) G Ω	20 $\mu\Omega/\Omega$ + 1 m Ω 19 $\mu\Omega/\Omega$ + 1.4 m Ω 19 $\mu\Omega/\Omega$ + 2 m Ω 19 $\mu\Omega/\Omega$ + 20 m Ω 19 $\mu\Omega/\Omega$ + 0.2 Ω 19 $\mu\Omega/\Omega$ + 2 Ω 28 $\mu\Omega/\Omega$ + 50 Ω 0.34 m Ω/Ω + 3 k Ω 3.2 m Ω/Ω + 0.5 M Ω	Comparison to Fluke 5560A/1G Multiproduct Calibrator

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Resistance – Measure ¹	(0 to 2) Ω (2 to 20) Ω (20 to 200) Ω (0.2 to 2) k Ω (2 to 20) k Ω (20 to 200) k Ω (0.2 to 2) M Ω (2 to 20) M Ω (20 to 200) M Ω (0.2 to 2) G Ω	17 $\mu\Omega/\Omega$ + 4 $\mu\Omega$ 9.7 $\mu\Omega/\Omega$ + 14 $\mu\Omega$ 8.2 $\mu\Omega/\Omega$ + 50 $\mu\Omega$ 8.2 $\mu\Omega/\Omega$ + 0.5 m Ω 8.2 $\mu\Omega/\Omega$ + 5 m Ω 8.2 $\mu\Omega/\Omega$ + 50 m Ω 9.2 $\mu\Omega/\Omega$ + 1 Ω 20.4 $\mu\Omega/\Omega$ + 0.1 k Ω 0.12 m Ω/Ω + 10 k Ω 1.8 m Ω/Ω + 1 M Ω	Comparison to Fluke 8508A Opt. 01 8.5 Digit Multimeter
AC Voltage – Source ¹	Up to 2.2 mV (10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz (0.5 to 1) MHz (2.2 to 22) mV (10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz (0.5 to 1) MHz (22 to 220) mV (10 to 20) Hz (20 to 40) Hz 40 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (300 to 500) kHz (0.5 to 1) MHz	0.25 mV/V + 4 μ V 92 μ V/V + 4 μ V 82 μ V/V + 4 μ V 0.2 mV/V + 4 μ V 0.51 mV/V + 5 μ V 1.1 mV/V + 10 μ V 1.4 mV/V + 20 μ V 2.8 mV/V + 20 μ V 0.25 mV/V + 4 μ V 92 μ V/V + 4 μ V 82 μ V/V + 4 μ V 0.2 mV/V + 4 μ V 0.51 mV/V + 5 μ V 1.1 mV/V + 10 μ V 1.4 mV/V + 20 μ V 2.8 mV/V + 20 μ V 0.25 mV/V + 12 μ V 92 μ V/V + 7 μ V 58 μ V/V + 7 μ V 0.12 mV/V + 7 μ V 0.32 mV/V + 17 μ V 0.67 mV/V + 20 μ V 1.4 mV/V + 25 μ V 2.8 mV/V + 45 μ V	Comparison to Fluke 5720A Multiproduct Calibrator

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Source ¹	(0.22 to 2.2) V		Comparison to Fluke 5730A Multiproduct Calibrator
	(10 to 20) Hz	0.25 mV/V + 40 μ V	
	(20 to 40) Hz	92 μ V/V + 15 μ V	
	40 Hz to 20 kHz	43 μ V/V + 8 μ V	
	(20 to 50) kHz	68 μ V/V + 10 μ V	
	(50 to 100) kHz	87 μ V/V + 30 μ V	
	(100 to 300) kHz	0.34 mV/V + 80 μ V	
	(300 to 500) kHz	1 mV/V + 0.2 mV	
	(0.5 to 1) MHz	1.7 mV/V + 0.3 V	
	(2.2 to 22) V		
	(10 to 20) Hz	0.25 mV/V + 0.4 mV	
	(20 to 40) Hz	92 μ V/V + 0.15 mV	
	40 Hz to 20 kHz	43 μ V/V + 50 μ V	
	(20 to 50) kHz	68 μ V/V + 0.1 mV	
	(50 to 100) kHz	85 μ V/V + 0.2 mV	
	(100 to 300) kHz	0.26 mV/V + 0.6 mV	
	(300 to 500) kHz	1 mV/V + 2 mV	
	(0.5 to 1) MHz	1.5 mV/V + 3.2 mV	
	(22 to 220) V		
	(10 to 20) Hz	0.25 mV/V + 4 mV	
	(20 to 40) Hz	92 μ V/V + 1.5 mV	
AC Voltage – Source ¹	40 Hz to 20 kHz	53 μ V/V + 0.6 mV	Comparison to Fluke 5730A Multiproduct Calibrator, Fluke 5725A Amplifier
	(20 to 50) kHz	82 μ V/V + 1 mV	
	(50 to 100) kHz	0.15 mV/V + 2.5 mV	
	(100 to 300) kHz	0.92 mV/V + 16 mV	
	(300 to 500) kHz	4.5 mV/V + 40 mV	
	(0.5 to 1) MHz	8.2 mV/V + 80 mV	
	(220 to 750) V		
	(30 to 50) kHz	0.61 mV/V + 11 mV	
	(50 to 100) kHz	2.3 mV/V + 45 mV	
	(220 to 1 100) V		
	(15 to 50) Hz	0.31 mV/V + 16 mV	
	50 Hz to 1 kHz	72 μ V/V + 3.5 mV	
	40 Hz to 1 kHz	92 μ V/V + 4 mV	
	(1 to 20) kHz	0.17 mV/V + 6 mV	
	(20 to 30) kHz	0.61 mV/V + 11 mV	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Measure ¹	Up to 2.2 mV		Comparison to Fluke 5790A Opt. 03 AC Measurement Standard
	(10 to 20) Hz	0.13 % of reading + 1.3 μ V	
	(20 to 40) Hz	0.058 % of reading + 1.3 μ V	
	40 Hz to 20 kHz	0.033 % of reading + 1.3 μ V	
	(20 to 50) kHz	0.064 % of reading + 2 μ V	
	(50 to 100) kHz	0.093 % of reading + 2.5 μ V	
	(100 to 300) kHz	0.18 % of reading + 4 μ V	
	(300 to 500) kHz	0.2 % of reading + 8 μ V	
	500 kHz to 1 MHz	0.39 % of reading + 8 μ V	
	(2.2 to 7) mV		
	(10 to 20) Hz	0.066 % of reading + 1.3 μ V	
	(20 to 40) Hz	0.029 % of reading + 1.3 μ V	
	40 Hz to 20 kHz	0.016 % of reading + 1.3 μ V	
	(20 to 50) kHz	0.032 % of reading + 2 μ V	
	(50 to 100) kHz	0.047 % of reading + 2.5 μ V	
	(100 to 300) kHz	0.093 % of reading + 4 μ V	
	(300 to 500) kHz	0.11 % of reading + 8 μ V	
	500 kHz to 1 MHz	0.28 % of reading + 8 μ V	
	(7 to 22) mV		
	(10 to 20) Hz	0.022 % of reading + 1.3 μ V	
	(20 to 40) Hz	0.015 % of reading + 1.3 μ V	
	40 Hz to 20 kHz	0.009 % of reading + 1.3 μ V	
	(20 to 50) kHz	0.016 % of reading + 2 μ V	
	(50 to 100) kHz	0.024 % of reading + 2.5 μ V	
	(100 to 300) kHz	0.064 % of reading + 4 μ V	
	(300 to 500) kHz	0.078 % of reading + 8 μ V	
	500 kHz to 1 MHz	0.2 % of reading + 8 μ V	
	(22 to 70) mV		
	(10 to 20) Hz	0.019 % of reading + 1.5 μ V	
	(20 to 40) Hz	0.01 % of reading + 1.5 μ V	
	40 Hz to 20 kHz	0.005 % of reading + 1.5 μ V	
	(20 to 50) kHz	0.01 % of reading + 2 μ V	
	(50 to 100) kHz	0.02 % of reading + 2.5 μ V	
	(100 to 300) kHz	0.041 % of reading + 4 μ V	
	(300 to 500) kHz	0.053 % of reading + 8 μ V	
	500 kHz to 1 MHz	0.1 % of reading + 8 μ V	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Measure ¹	(70 to 220) mV		Comparison to Fluke 5790A Opt. 03 AC Measurement Standard
	(10 to 20) Hz	0.016 % of reading + 1.5 μ V	
	(20 to 40) Hz	0.007 % of reading + 1.5 μ V	
	40 Hz to 20 kHz	0.003 % of reading + 1.5 μ V	
	(20 to 50) kHz	0.006 % of reading + 2 μ V	
	(50 to 100) kHz	0.012 % of reading + 2.5 μ V	
	(100 to 300) kHz	0.022 % of reading + 4 μ V	
	(300 to 500) kHz	0.031 % of reading + 8 μ V	
	500 kHz to 1 MHz	0.093 % of reading + 8 μ V	
	(220 to 700) mV		
	(10 to 20) Hz	0.016 % of reading + 1.5 μ V	
	(20 to 40) Hz	0.006 % of reading + 1.5 μ V	
	40 Hz to 20 kHz	0.003 % of reading + 1.5 μ V	
	(20 to 50) kHz	0.004 % of reading + 2 μ V	
	(50 to 100) kHz	0.007 % of reading + 2.5 μ V	
	(100 to 300) kHz	0.016 % of reading + 4 μ V	
	(300 to 500) kHz	0.026 % of reading + 8 μ V	
	500 kHz to 1 MHz	0.093 % of reading + 8 μ V	
	(0.7 to 2.2) V		
	(10 to 20) Hz	0.016 % of reading	
	(20 to 40) Hz	0.005 % of reading	
	40 Hz to 20 kHz	0.002 % of reading	
	(20 to 50) kHz	0.004 % of reading	
	(50 to 100) kHz	0.006 % of reading	
	(100 to 300) kHz	0.016 % of reading	
	(300 to 500) kHz	0.024 % of reading	
	500 kHz to 1 MHz	0.093 % of reading	
	(2.2 to 7) V		
	(10 to 20) Hz	0.016 % of reading	
	(20 to 40) Hz	0.005 % of reading	
	40 Hz to 20 kHz	0.002 % of reading	
	(20 to 50) kHz	0.004 % of reading	
	(50 to 100) kHz	0.007 % of reading	
	(100 to 300) kHz	0.017 % of reading	
	(300 to 500) kHz	0.036 % of reading	
	500 kHz to 1 MHz	0.12 % of reading	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Measure ¹	(7 to 22) V		Comparison to Fluke 5790A Opt. 03 AC Measurement Standard
	(10 to 20) Hz	0.016 % of reading	
	(20 to 40) Hz	0.005 % of reading	
	40 Hz to 20 kHz	0.002 % of reading	
	(20 to 50) kHz	0.004 % of reading	
	(50 to 100) kHz	0.007 % of reading	
	(100 to 300) kHz	0.017 % of reading	
	(300 to 500) kHz	0.036 % of reading	
	500 kHz to 1 MHz	0.12 % of reading	
	(22 to 70) V		
	(10 to 20) Hz	0.016 % of reading	
	(20 to 40) Hz	0.006 % of reading	
	40 Hz to 20 kHz	0.003 % of reading	
	(20 to 50) kHz	0.005 % of reading	
	(50 to 100) kHz	0.009 % of reading	
	(100 to 300) kHz	0.017 % of reading	
	(300 to 500) kHz	0.04 % of reading	
	500 kHz to 1 MHz	0.12 % of reading	
	(70 to 220) V		
	(10 to 20) Hz	0.016 % of reading	
	(20 to 40) Hz	0.006 % of reading	
	40 Hz to 20 kHz	0.003 % of reading	
	(20 to 50) kHz	0.006 % of reading	
	(50 to 100) kHz	0.009 % of reading	
	(100 to 300) kHz	0.02 % of reading	
	(300 to 500) kHz	0.054 % of reading	
	(220 to 700) V		
	(10 to 20) Hz	0.016 % of reading	
	(20 to 40) Hz	0.009 % of reading	
	40 Hz to 20 kHz	0.004 % of reading	
	(20 to 50) kHz	0.012 % of reading	
	(50 to 100) kHz	0.066 % of reading	
	700 V to 1 kV		
	(10 to 20) Hz	0.016 % of reading	
	(20 to 40) Hz	0.009 % of reading	
	40 Hz to 20 kHz	0.003 % of reading	
	(20 to 50) kHz	0.012 % of reading	
	(50 to 100) kHz	0.066 % of reading	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC High Voltage – Measure ^{1,3}	(1 to 60) kV 60 Hz	5 mV/V	Comparison to Ross Engineering VD 60 High Voltage Divider, Fluke 8508A Opt. 01 8.5 Digit Multimeter
AC Current – Source ¹	Up to 220 μ A (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz 220 μ A to 2.2 mA (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (2.2 to 22) mA (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (22 to 220) mA (10 to 20) Hz (20 to 40) Hz 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz 220 mA to 2.2 A 20 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.26 mA/A + 16 nA 0.16 mA/A + 10 nA 0.11 mA/A + 8 nA 0.29 mA/A + 12 nA 1.1 mA/A + 65 nA 0.26 mA/A + 40 nA 0.16 mA/A + 35 nA 0.11 mA/A + 35 nA 0.2 mA/A + 0.11 μ A 1.1 mA/A + 0.65 μ A 0.26 mA/A + 0.4 μ A 0.16 mA/A + 0.35 μ A 0.11 mA/A + 0.35 μ A 0.2 mA/A + 0.55 μ A 1.1 mA/A + 5 μ A 0.26 mA/A + 4 μ A 0.16 mA/A + 3.5 μ A 0.11 mA/A + 2.5 μ A 0.2 mA/A + 3.5 μ A 1.1 mA/A + 10 μ A 0.25 mA/A + 35 μ A 0.46 mA/A + 80 μ A 7.1 mA/A + 0.16 mA	Comparison to Fluke 5730A Multiproduct Calibrator
AC Current – Source ¹	(2.2 to 11) A 40 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.47 mA/A + 0.17m μ A 0.97 mA/A + 0.38 mA 3.7 mA/A + 0.75 mA	Comparison to Fluke 5730A Multiproduct Calibrator, Fluke 5725A Amplifier

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current – Source ¹	(11 to 20) A		Comparison to Fluke 5720A Multiproduct Calibrator, Fluke 52120A Amplifier
	(10 to 65) Hz	0.13 mA/A + 9.4 mA	
	(65 to 300) Hz	0.24 mA/A + 9.4 mA	
	300 Hz to 1 kHz	0.8 mA/A + 9.4 mA	
	(1 to 3) kHz	2.4 mA/A + 31 mA	
	(3 to 6) kHz	7.9 mA/A + 62 mA	
	(6 to 10) kHz	24 mA/A + 94 mA	
	(20 to 120) A		
	(10 to 65) Hz	0.14 mA/A + 19 mA	
	(65 to 300) Hz	0.24 mA/A + 28 mA	
	300 Hz to 1 kHz	0.8 mA/A + 94 mA	
	(1 to 3) kHz	2.4 mA/A + 0.23 A	
	(3 to 6) kHz	7.9 mA/A + 0.42 A	
	(6 to 10) kHz	32 mA/A + 0.7 A	
AC Current – Measure ¹	Up to 200 μ A		Comparison to Fluke 8508A Opt. 01 8.5 Digit Multimeter
	10 Hz to 10 kHz	0.51 mA/A + 20 nA	
	(0.2 to 2) mA		
	10 Hz to 10 kHz	0.31 mA/A + 0.2 μ A	
	(2 to 20) mA		
	10 Hz to 10 kHz	0.31 mA/A + 2 μ A	
	(20 to 200) mA		
	10 Hz to 10 kHz	0.3 mA/A + 20 μ A	
	(0.2 to 2) A		
	10 Hz to 2 kHz	0.63 mA/A + 0.2 mA	
	(2 to 10) kHz	0.75 mA/A + 0.2 mA	
	(2 to 20) A		
	10 Hz to 2 kHz	0.84 mA/A + 2 mA	
	(2 to 10) kHz	2.6 mA/A + 2 mA	
AC Current Clamp-on Meters ¹	(1.65 to 16.5) A		Comparison to Fluke 5520A/SC 1100 Multiproduct Calibrator, Fluke 5500A/COIL 50-turn Coil
	(45 to 65) Hz	40 mA	
	(65 to 440) Hz	90 mA	
	(16.5 to 20) A		
	(45 to 65) Hz	80 mA	
	(65 to 440) Hz	0.17 A	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current Clamp-on Meters ¹	(20 to 100) A (50 to 65) Hz (65 to 400) Hz (100 to 1 000) A (50 to 65) Hz (65 to 400) Hz (1 000 to 6 000) A (50 to 65) Hz (65 to 400) Hz	90 mA 90 mA 0.29 A 0.29 A 3.4 A 3.5 A	Comparison to Fluke 5720A Multiproduct Calibrator, Fluke 52120A Amplifier, 6 kA Coil, or Fluke 5520A Multiproduct Calibrator, Fluke 5500A/COIL 50-turn Coil
Oscilloscopes ^{1,2} Amplitude – DC into 50 Ω Load into 1 M Ω Load Amplitude – Square Wave 10 Hz to 10 kHz into 50 Ω Load into 1 M Ω Load Amplitude – Leveled Sine Wave Flatness (Relative to 50 kHz) Amplitude – Leveled Sine (Absolute Amplitude) Time Marker into 50 Ω Load (Spike, Square Wave Spike, Square, 20 % Pulse Spike or Square Wave Square or Sine Wave) Edge Specs into 50 Ω Load Rise Time	Up to ± 6.6 V Up to ± 130 V 1 mVp-p to 6.6 Vp-p 1 mVp-p to 130 Vp-p 5 mV to 5.5 V 50 kHz to 100 MHz (100 to 300) MHz (300 to 600) MHz 4 mV to 3.5 V 600 MHz to 1.1 GHz 5 mV to 5.5 V 50 kHz Reference 50 ms to 5 s 100 ns to 20 ms (20 to 50) ns 10 ns (1 to 5) ns < 300 ps	1.9 mV/V + 40 μ V 0.39 mV/V + 40 μ V 1.9 mV/V + 40 μ V 0.9 mV/V + 40 μ V 16 mV/V + 0.1 mV 19 mV/V + 0.1 mV 33 mV/V + 0.1 mV 41 mV/V + 0.1 mV 15 mV/V + 0.3 mV (20 + 1 000t) μ s/s 2 μ s/s 2 μ s/s 2 μ s/s 2 μ s/s 7.5 ps	Comparison to Fluke 5520A/SC 1100 Multiproduct Calibrator

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 B (600 to 800) °C	0.35 °C	Comparison to Fluke 5560A/1G Multiproduct Calibrator
	(800 to 1 000) °C	0.27 °C	
	(1 000 to 1 550) °C	0.24 °C	
	(1 550 to 1 820) °C	0.26 °C	
	Type C (0 to 150) °C	0.19 °C	
	(150 to 650) °C	0.16 °C	
	(650 to 1 000) °C	0.2 °C	
	(1 000 to 1 800) °C	0.36 °C	
	(1 800 to 2 316) °C	0.62 °C	
	Type D (0 to 150) °C	0.19 °C	
	(150 to 650) °C	0.16 °C	
	(650 to 1 000) °C	0.2 °C	
	(1 000 to 1 800) °C	0.35 °C	
	(1 800 to 2 315) °C	0.62 °C	
	Type E (-250 to -100) °C	0.32 °C	
	(-100 to -25) °C	0.11 °C	
	(-25 to 350) °C	0.09 °C	
	(350 to 650) °C	0.12 °C	
	(650 to 1 000) °C	0.16 °C	
	Type G (0 to 150) °C	0.4 °C	
	(150 to 650) °C	0.27 °C	
	(650 to 1 000) °C	0.2 °C	
	(1 000 to 1 800) °C	0.34 °C	
	(1 800 to 2 315) °C	0.61 °C	
	Type J (-210 to -100) °C	0.19 °C	
	(-100 to -30) °C	0.1 °C	
	(-30 to 150) °C	0.09 °C	
	(150 to 760) °C	0.11 °C	
	(760 to 1 200) °C	0.16 °C	
	Type K (-200 to -100) °C	0.23 °C	
	(-100 to -25) °C	0.1 °C	
	(-25 to 120) °C	0.09 °C	
	(120 to 1 000) °C	0.16 °C	
	(1 000 to 1 372) °C	0.28 °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 L (-200 to -100) °C	0.25 °C	Comparison to Fluke 5560A/1G Multiproduct Calibrator
	(-100 to 800) °C	0.16 °C	
	(800 to 900) °C	0.09 °C	
	Type N (-200 to -100) °C	0.27 °C	
	(-100 to -25) °C	0.12 °C	
	(-25 to 120) °C	0.09 °C	
	(120 to 410) °C	0.09 °C	
	(410 to 1 300) °C	0.16 °C	
	Type R (0 to 250) °C	0.41 °C	
	(250 to 400) °C	0.24 °C	
	(400 to 1 000) °C	0.21 °C	
	(1 000 to 1 767) °C	0.27 °C	
	Type S (0 to 250) °C	0.34 °C	
	(250 to 1 000) °C	0.25 °C	
	(1 000 to 1 400) °C	0.26 °C	
	(1 400 to 1 767) °C	0.33 °C	
	Type T (-250 to -150) °C	0.48 °C	
	(-150 to 0) °C	0.16 °C	
	(0 to 120) °C	0.1 °C	
	(120 to 400) °C	0.09 °C	
	Type U (-200 to 0) °C	0.32 °C	
	(0 to 600) °C	0.09 °C	

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Dial/Digital Indicators ^{1,2}	Up to 1 in (1 to 2) in	33 μin 50 μin	Comparison to Gage Blocks
Outside Micrometers ^{1,2}	Up to 12 in	(57 + 9L) μin	Comparison to Gage Blocks
Calipers ^{1,2}	Up to 40 in	(520 + 6.9L) μin	Comparison to Gage Blocks

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Gage Blocks ²	Up to 12 in	$(6 + 0.73L) \mu\text{in}$	Direct measure using ULM, Master Gage Blocks
Length/Outside Diameter Measurements ²	Up to 12 in	$(7.7 + 0.66L) \mu\text{in}$	Direct measure using ULM, Master Gage Blocks
Ring Gages ²	(0.04 to 12) in	$(9 + 1.8L) \mu\text{in}$	Direct measure using ULM, Master Gage Blocks
External Thread Gages ² Major Diameter	(0.06 to 12) in	$(7.7 + 0.66L) \mu\text{in}$	Measurement with ULM and Master Gage Blocks with Thread Wires
Pitch Diameter	(4 to 80) TPI	$(110 + 1.1L) \mu\text{in}$	
Thread Ring Gages ² Functional Pitch Diameter	(0.06 to 6) in	$(110 + 1.1L) \mu\text{in}$	In accordance with ASME B1.2, Paragraph 5.1.1; the Ring is sized to a Plug with the Plug's Uncertainty Given. Class X or W Set Plugs to be used, as available.
Height Gages ^{1,2}	Up to 40 in	$(27 + 18L) \mu\text{in}$	Comparison to Master Gage Blocks
Protractors/Inclinometers ¹	Up to 90°	0.033°	Comparison to Angle Blocks
Precision Levels ¹	Level	23 μin	Comparison on Reference Plane
Universal Length Measurement Machines ^{1,2}			Comparison to
Length	(0.05 to 12) in	$(4.3 + 3.5L) \mu\text{in}$	Master Gage Blocks
Jaw Force	Up to 40 ozf	0.064 ozf	Force Gauge
Flatness	-	4.8 μin	Optical Flats
Parallelism	-	1.2 μin	Optical Parallels

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Force Measuring Systems, Load Cells ¹	(0.5 to 500) lbf (100 to 5 000) lbf (1 000 to 60 000) lbf	0.046 % of reading 0.056 % of reading + 0.13 lbf 0.056 % of reading + 1.5 lbf	Comparison to Reference Weights, Reference Load Cells
Pressure Measuring Devices (Gauge)	(-15 to 15.5) psig (12 to 600) psig (400 to 20 000) psig	0.000 8 % of reading + 0.000 15 psi 0.002 % of reading 0.017 % of reading	Comparison to Deadweight Tester
Pressure Measuring Devices (Absolute)	(0.7 to 30) psia (12 to 600) psia	0.007 3 psi 0.001 1 % of reading + 0.007 3 psi	Comparison to Deadweight Tester
Balances ^{1,4,5}	(1 to 500) mg 1 g 2 g 3 g 5 g 10 g 20 g 30 g 50 g 100 g 200 g 300 g 500 g 1 kg 2 kg 5 kg 10 kg 20 kg	12 µg 41 µg 41 µg 41 µg 41 µg 60 µg 89 µg 89 µg 0.14 mg 0.3 mg 0.6 mg 0.91 mg 1.5 mg 3 mg 6 mg 14 mg 0.24 g 0.48 g	ASTM E617 Class 1 through Class 4 weights and internal calibration procedure utilized for the calibration of the weighing system.
Scales ^{1,4,5} (0.5 to 10 000) lb	0.5 lb 1 lb 2 lb 5 lb 10 lb 20 lb 50 lb 100 lb	54 mg 84 mg 0.11 g 0.28 g 0.54 g 1.1 g 2.8 g 5.4 g	ASTM E617 Class 6, Class F weights and internal calibration procedure utilized for the calibration of the weighing system.
Torque Tools	(4 to 50) ozf·in (4 to 50) lbf·in (30 to 1 000) lbf·in (20 to 600) lbf·ft	0.9 % of reading 0.9 % of reading 0.8 % of reading 0.8 % of reading	Comparison to CDI 2000-400-02 Torque Calibration System

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Relative Humidity – Generate	(10 to 95) % RH	0.5 % RH	Comparison to Thunder Scientific 2500 Humidity Generator
Relative Humidity – Measure ¹	(10 to 90) % RH (> 90 to 95) % RH	1 % RH 1.7 % RH	Comparison to Vaisala MI70/HMP75 Temp/Humidity Probe/Indicator
Temperature – Source (Temperature Probes, Thermometers, etc.)	(-95 to -5) °C (-5 to 110) °C (110 to 140) °C (140 to 400) °C	0.007 °C 0.004 °C 0.006 °C 0.005 °C	Comparison to Liquid Bath, Drywells, Platinum Resistance Thermometer
Temperature – Measure ^{1,3}	(-196 to 400) °C	0.004 °C	Comparison to Platinum Resistance Thermometer

Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Frequency – Source (Sinewave)	10 mHz to 119.99 Hz (120 to 1 199.9) Hz (1.2 to 11.999) kHz (12 to 119.99) kHz (120 to 1 199.9) kHz (1.2 to 2) MHz	1.9 µHz/Hz 1.9 µHz/Hz 1.9 µHz/Hz 1.9 µHz/Hz 1.9 µHz/Hz 1.9 µHz/Hz	Comparison to Fluke 5560A/1G Multiproduct Calibrator (Main Output)
Frequency – Source (Sinewave)	(2 to 1 100) MHz	1.9 µHz/Hz	Comparison to Fluke 5560A/1G Multiproduct Calibrator (Scope Output)

Services Performed at Satellite Location

903 East Nakoma Dr., Suite 105

San Antonio, Texas 78216

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Dial/Digital Indicators ^{1,2}	Up to 1 in (1 to 2) in	33 µin 50 µin	Comparison to Gage Blocks
Outside Micrometers ^{1,2}	Up to 12 in	(70 + 1.8L) µin	Comparison to Gage Blocks
Calipers ^{1,2}	Up to 40 in	(638 + 15L) µin	Comparison to Gage Blocks
Length/Outside Diameter Measurements ²	Up to 12 in	(7.7 + 0.66L) µin	Direct measure using ULM, Master Gage Blocks
Height Gages ^{1,2}	Up to 40 in	(27 + 18L) µin	Comparison to Master Gage Blocks
Protractors/Inclinometers ¹	Up to 90°	0.033°	Comparison to Angle Blocks
Precision Levels ¹	Level	23 µin	Comparison on Reference Plane
Rulers, Length Measuring Scales ¹	Up to 80 in	0.015 in	Comparison to Master Ruler
Tape Measures ^{1,2}	Up to 40 ft	(0.019 + 0.000 029L) in	Comparison to Master Tape
Universal Length Measurement Machines ^{1,2}			Comparison to
Length	(0.05 to 12) in	(4.3 + 3.5L) µin	Master Gage Blocks
Jaw Force	Up to 40 ozf	0.064 ozf	Force Gauge
Flatness	-	4.8 µin	Optical Flats
Parallelism	-	1.2 µin	Optical Parallels

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Force Measuring Systems, Load Cells ¹	(0.5 to 500) lbf (100 to 5 000) lbf (1 000 to 60 000) lbf	0.046 % of reading 0.056 % of reading + 0.13 lbf 0.056 % of reading + 1.5 lbf	Comparison to Reference Weights, Reference Load Cells
Pressure Measuring Devices (Gauge)	(-15 to 15.5) psig (12 to 600) psig (400 to 20 000) psig	0.000 8 % of reading + 0.000 15 psi 0.002 % of reading 0.017 % of reading	Comparison to Deadweight Tester
Pressure Measuring Devices (Absolute)	(0.7 to 30) psia (12 to 600) psia	0.007 3 psi 0.001 1 % of reading + 0.007 3 psi	Comparison to Deadweight Tester
Balances ^{1,4,5}	(1 to 500) mg 1 g 2 g 3 g 5 g 10 g 20 g 30 g 50 g 100 g 200 g 300 g 500 g 1 kg 2 kg 5 kg 10 kg 20 kg	12 µg 41 µg 41 µg 41 µg 41 µg 60 µg 89 µg 89 µg 0.14 mg 0.3 mg 0.6 mg 0.91 mg 1.5 mg 3 mg 6 mg 14 mg 0.24 g 0.48 g	ASTM E617 Class 1 through Class 4 weights and internal calibration procedure utilized for the calibration of the weighing system.
Scales ^{1,4,5} (0.5 to 10 000) lb	0.5 lb 1 lb 2 lb 5 lb 10 lb 20 lb 50 lb 100 lb	54 mg 84 mg 0.11 g 0.28 g 0.54 g 1.1 g 2.8 g 5.4 g	ASTM E617 Class 6, Class F weights and internal calibration procedure utilized for the calibration of the weighing system.
Torque Tools	(4 to 50) ozf·in (4 to 50) lbf·in (30 to 1 000) lbf·in (20 to 600) lbf·ft	0.9 % of reading 0.9 % of reading 0.8 % of reading 0.8 % of reading	Comparison to CDI 2000-400-02 Torque Calibration System

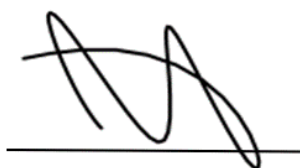
Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Relative Humidity – Measure ¹	(10 to 90) % RH (> 90 to 95) % RH	1 % RH 1.7 % RH	Comparison to Vaisala MI70/HMP75 Temp/Humidity Probe/Indicator
Temperature – Source (Temperature Probes, Thermometers, etc.)	(-95 to -5) °C (-5 to 110) °C (110 to 140) °C (140 to 400) °C	0.007 °C 0.004 °C 0.006 °C 0.005 °C	Comparison to Liquid Bath, Drywells, Platinum Resistance Thermometer
Temperature – Measure ^{1,3}	(-90 to 100) °C (100 to 200) °C (200 to 420) °C	0.043 °C 0.055 °C 0.091 °C	Comparison to Platinum Resistance Thermometer

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, t = time in seconds.
3. Uncertainties do not include possible contributions from a “best available” unit under test, and/or contributions due to repeatability. In these cases, these contributors will be included in reported expanded uncertainties at time of calibration.
4. The CMC for scales and balances 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.
5. CMC value is shown per applied mass of the corresponding nominal.
6. The legal entity of both locations is Aldinger Company dba Tescom.
7. Unless otherwise specified in the far-right hand column, the calibration method or procedure has been written internally.



Jason Stine, Vice President