



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Mobile Instrument Company, Inc.

745 Lakeside Drive

Mobile, AL 36693

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.

R. Douglas Leonard Jr., VP, PILR SBU

Expiry Date: 02 February 2024

Certificate Number: AC-2549



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

Mobile Instrument Company, Inc.

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CALIBRATION

Valid to: **February 2, 2024**

Certificate Number: **AC-2549**

Chemical Quantities

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
pH meters	4 pH 7 pH 10 pH	0.02 pH 0.02 pH 0.02 pH	Accredited pH Buffer Solutions
Conductivity Meters	10 μ S/cm 100 μ S/cm 1 413 μ S/cm 10 000 μ S/cm	1 μ S/cm 4.5 μ S/cm 16 μ S/cm 56 μ S/cm	Accredited Conductivity Solutions
Refractometers	10 °brix 40 °brix	0.016 °brix	Accredited Aqueous Solutions

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Voltage – Source ¹	Up to 330 mV 330 mV to 3.3 V (3.3 to 33) V (33 to 330) V (330 to 1 000) V	16 μ V/V + 1 μ V 8.7 μ V/V + 2 μ V 9.4 μ V/V + 20 μ V 14 μ V/V + 0.15 mV 14 μ V/V + 1.5 mV	Fluke 5520A Multiproduct Calibrator
DC Voltage – Measure	Up to 100 mV 100 mV to 1V (1 to 10) V (10 to 100) V (100 to 1 000) V	11 μ V/V + 0.3 μ V 12 μ V/V + 0.3 μ V 11 μ V/V + 0.5 μ V 12 μ V/V + 30 μ V 12 μ V/V + 0.1 mV	HP 3458A 8.5 Digit Multimeter



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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC High Voltage – Measure ¹	(0.5 to 150) kV	0.5 % of reading	HP 3458A Multimeter w/ High Voltage Inc. DVR-150 Divider
DC Current – Source ¹	Up to 330 μ A 330 μ A to 3.3 mA 3.3 mA to 33 mA 33 mA to 330 mA 330 mA to 1.1 A (1.1 to 3.0) A (3.0 to 11) A (11 to 20.5) A	120 μ A/A + 20 nA 78 μ A/A + 20 nA 78 μ A/A + 0.25 μ A 78 μ A/A + 2.5 μ A 0.16 mA/A + 40 μ A 0.3 mA/A + 40 μ A 0.39 mA/A + 0.5 mA 0.78 mA/A + 0.75 mA	Fluke 5520A Multiproduct Calibrator
DC Current – Measure	Up to 100 μ A (0.1 to 1) mA (1 to 10) mA (10 to 100) mA (0.1 to 1) A	26 μ A/A + 0.8 nA 26 μ A/A + 5 nA 26 μ A/A + 50 nA 43 μ A/A + 0.5 μ A 0.12 mA/A + 10 μ A	HP 3458A 8.5 Digit Multimeter
	(1 to 200) A	0.021 % reading	HP 3458A 8.5 Digit Multimeter, Ohm Labs CS-200 Current Shunt
	(200 to 1 000) A	0.26 % of reading	HP 3458A 8.5 Digit Multimeter, Ohm Labs CS-1000 Current Shunt
DC Current Clamp Meters ¹ (Toroidal)	(16.5 to 150) A (150 to 1 000) A	0.23 % reading + 17 mA 0.22 % reading + 88 mA	Fluke 5520A Multiproduct Calibrator, 50-turn Coil
DC Current Clamp Meters ¹ (Non-Toroidal)	(16.5 to 150) A (150 to 1 000) A	0.41 % reading + 0.14 A 0.46 % reading + 0.54 A	Fluke 5520A Multiproduct Calibrator, 50-turn Coil
Resistance – Source ¹	Up to 11 Ω (11 to 33) Ω (33 to 110) Ω (110 to 330) Ω (.33 to 1.1) k Ω (1.1 to 3.3) k Ω (3.3 to 11) k Ω (11 to 33) k Ω (33 to 110) k Ω	45 $\mu\Omega/\Omega$ + 1 m Ω 26 $\mu\Omega/\Omega$ + 1.5 m Ω 23 $\mu\Omega/\Omega$ + 1.4 m Ω 23 $\mu\Omega/\Omega$ + 2 m Ω 25 $\mu\Omega/\Omega$ + 2 m Ω 22 $\mu\Omega/\Omega$ + 20 m Ω 22 $\mu\Omega/\Omega$ + 20 m Ω 22 $\mu\Omega/\Omega$ + 0.2 Ω 24 $\mu\Omega/\Omega$ + 0.2 Ω	Fluke 5520A Multiproduct Calibrator



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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Resistance – Source ¹	(110 to 330) kΩ (0.33 to 1.1) MΩ (1.1 to 3.3) MΩ (3.3 to 11) MΩ (11 to 33) MΩ (33 to 110) MΩ (110 to 330) MΩ 330 MΩ to 1.1 GΩ	25 μΩ/Ω + 2 Ω 25 μΩ/Ω + 2 Ω 47 μΩ/Ω + 30 Ω 0.11 mΩ/Ω + 50 Ω 0.2 mΩ/Ω + 2.5 kΩ 0.39 mΩ/Ω + 3 kΩ 2.4 mΩ/Ω + 0.1 MΩ 12 mΩ/Ω + 0.5 MΩ	Fluke 5520A Multiproduct Calibrator
Resistance – Measure	Up to 1 Ω (1 to 10) Ω (10 to 100) Ω (100 to 1 000) Ω (1 to 10) kΩ (10 to 100) kΩ (100 to 1 000) kΩ (1 to 10) MΩ (10 to 100) MΩ (0.1 to 1) GΩ	73 μΩ/Ω + 2 μΩ 27 μΩ/Ω + 50 μΩ 16 μΩ/Ω + 0.5 mΩ 13 μΩ/Ω + 0.5 mΩ 14 μΩ/Ω + 5 mΩ 13 μΩ/Ω + 50 mΩ 19 μΩ/Ω + 2 Ω 54 μΩ/Ω + 0.1 kΩ 0.54 mΩ/Ω + 1 kΩ 6.3 mΩ/Ω + 10 kΩ	HP 3458A 8.5 Digit Multimeter
AC Voltage – Source ¹	(1 to 33) mV (10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz (33 to 330) mV (10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz 330 mV to 3.3 V (10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	0.65 mV/V + 6 μV 0.15 mV/V + 6 μV 0.18 mV/V + 6 μV 0.79 mV/V + 6 μV 2.8 mV/V + 12 μV 6.2 mV/V + 50 μV 0.24 mV/V + 8 μV 0.12 mV/V + 8 μV 0.13 mV/V + 8 μV 0.28 mV/V + 8 μV 0.62 mV/V + 32 μV 2 mV/V + 70 μV 0.24 mV/V + 50 μV 0.12 mV/V + 60 μV 0.15 mV/V + 60 μV 0.24 mV/V + 50 μV 0.55 mV/V + 0.13 mV 1.9 mV/V + 0.6 mV	Fluke 5520A Multiproduct Calibrator



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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Source ¹	(3.3 to 33) V		Fluke 5520A Multiproduct Calibrator
	(10 to 45) Hz	0.24 mV/V + 0.65 mV	
	45 Hz to 10 kHz	0.12 mV/V + 0.6 mV	
	(10 to 20) kHz	0.19 mV/V + 0.6 mV	
	(20 to 50) kHz	0.28 mV/V + 0.6 mV	
	(50 to 100) kHz	0.7 mV/V + 1.6 mV	
	(33 to 330) V		
	45 Hz to 1 kHz	0.15 mV/V + 2 mV	
	(1 to 10) kHz	0.16 mV/V + 6 mV	
	(10 to 20) kHz	0.2 mV/V + 6 mV	
	(20 to 50) kHz	0.24 mV/V + 6 mV	
	(50 to 100) kHz	1.6 mV/V + 50 mV	
	(330 to 1 020) V		
	45 Hz to 1 kHz	0.24 mV/V + 10 mV	
	(1 to 5) kHz	0.2 mV/V + 10 mV	
(5 to 10) kHz	0.24 mV/V + 10 mV		
AC Voltage – Measure	Up to 10 mV		HP 3458A 8.5 Digit Multimeter
	(1 to 40) Hz	0.031 % of reading + 3 μV	
	40 Hz to 1 kHz	0.022 % of reading + 1.1 μV	
	(1 to 20) kHz	0.031 % of reading + 1.1 μV	
	(20 to 50) kHz	0.1 % of reading + 1.1 μV	
	(50 to 100) kHz	0.5 % of reading + 1.1 μV	
	(100 to 300) kHz	4 % of reading + 2 μV	
	(10 to 100 mV)		
	(1 to 40) Hz	0.007 3 % of reading + 2 μV	
	40 Hz to 1 kHz	0.007 4 % of reading + 2 μV	
	(1 to 20) kHz	0.015 % of reading + 2 μV	
	(20 to 50) kHz	0.031 % of reading + 2 μV	
	(50 to 100) kHz	0.081 % of reading + 2 μV	
	(100 to 300) kHz	0.3 % of reading + 10 μV	
	(0.3 to 1) MHz	1 % of reading + 10 μV	
	100 mV to 1 V		
	(1 to 40) Hz	0.007 4 % of reading + 40 μV	
	40 Hz to 1 kHz	0.007 4 % of reading + 20 μV	
	(1 to 20) kHz	0.015 % of reading + 20 μV	
	(20 to 50) kHz	0.031 % of reading + 20 μV	
	(50 to 100) kHz	0.081 % of reading + 20 μV	
(100 to 300) kHz	0.3 % of reading + 0.1 mV		
300 kHz to 1 MHz	1 % of reading + 0.1 mV		

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Measure	1 to 10 V (1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz	0.007 3 % of reading + 0.4 mV 0.007 3 % of reading + 0.2 mV 0.015 % of reading + 0.2 mV 0.031 % of reading + 0.2 mV 0.081 % of reading + 0.2 mV 0.3 % of reading + 1 mV 1 % of reading + 1 mV	HP 3458A 8.5 Digit Multimeter
	(1 to 100) V 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (1 to 1 000) V 40 Hz to 1 kHz (1 to 20) kHz	0.021 % of reading + 2 mV 0.021 % of reading + 2 mV 0.036 % of reading + 2 mV 0.12 % of reading + 2 mV 0.4 % of reading + 10 mV 0.041 % of reading + 20 mV 0.061 % of reading + 20 mV	
AC High Voltage – Measure ¹	(1 to 100) kV 60 Hz	0.52 % of reading	HP 3458A 8.5 Digit Multimeter, High Voltage Inc. DVR- 150 Divider
AC Current – Source ¹	(29 to 330) μ A (10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	1.6 mA/A + 0.1 μ A 1.2 mA/A + 0.1 μ A 0.97 mA/A + 0.1 μ A 3.8 mA/A + 0.15 μ A 6.2 mA/A + 0.2 μ A 13 mA/A + 0.4 μ A	Fluke 5520A Multiproduct Calibrator
	(0.33 to 3.3) mA (10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz (3.3 to 33) mA (10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	1.6 mA/A + 0.15 μ A 0.97 mA/A + 0.15 μ A 0.78 mA/A + 0.1 μ A 1.6 mA/A + 0.2 μ A 3.9 mA/A + 0.3 μ A 7.8 mA/A + 0.6 μ A 1.4 mA/A + 2 μ A 0.7 mA/A + 2 μ A 0.32 mA/A + 2 μ A 0.62 mA/A + 2 μ A 1.6 mA/A + 3 μ A 3.1 mA/A + 4 μ A	



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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current – Source ¹	(33 to 330) mA (10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz (0.33 to 1.1) A (10 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (1.1 to 3) A (10 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (3 to 11) A (45 to 100) Hz 100 Hz to 1 kHz (1 to 5) kHz (11 to 20.5) A (45 to 100) Hz 100 Hz to 1 kHz (1 to 5) kHz	1.4 mA/A + 20 μA 0.7 mA/A + 20 μA 0.32 mA/A + 20 μA 0.78 mA/A + 50 μA 1.6 mA/A + 0.1 mA 3.1 mA/A + 0.2 mA 1.4 mA/A + 0.1 mA 0.4 mA/A + 0.1 mA 4.7 mA/A + 1 mA 20 mA/A + 5 mA 1.4 mA/A + 0.1 mA 0.47 mA/A + 0.1 mA 4.7 mA/A + 1 mA 20 mA/A + 5 mA 0.49 mA/A + 2 mA 0.78 mA/A + 2 mA 24 mA/A + 2 mA 0.94 mA/A + 5 mA 1.2 mA/A + 5 mA 24 mA/A + 5 mA	Fluke 5520A Multiproduct Calibrator
AC Current Clamp Meters ¹ (Toroidal)	(16.5 to 150) A (45 to 65) Hz (65 to 100) Hz (100 to 440) Hz (150 to 1 000) A (45 to 65) Hz (65 to 100) Hz (100 to 440) Hz	0.27 % reading + 30 mA 0.64 % reading + 27 mA 0.68 % reading + 32 mA 0.25 % reading + 0.34 A 0.63 % reading + 0.10 A 1.0 % reading + 0.11 A	Fluke 5520A Multi Product Calibrator w/ 50 Turn Coil
AC Current Clamp Meters ¹ (Non-Toroidal)	(16.5 to 150) A (45 to 65) Hz (65 to 100) Hz (100 to 440) Hz (150 to 1 000) A (45 to 65) Hz (65 to 100) Hz (100 to 440) Hz	0.48 % reading + 0.26 A 0.82 % reading + 0.26 A 0.85 % reading + 0.3 A 0.5 % reading + 1 A 0.82 % reading + 1 A 1.2 % reading + 1.2 A	Fluke 5520A Multi Product Calibrator w/ 50 Turn Coil



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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current – Measure ¹	Up to 100 μ A (10 to 20) Hz (20 to 45) Hz 45 Hz to 5 kHz	0.4 % of reading + 30 nA 0.16 % of reading + 30 nA 0.061 % of reading + 30 nA	HP 3458A 8.5 Digit Multimeter
AC Current – Measure	(0.1 to 1) mA (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 5 kHz (5 to 20) kHz (20 to 50) kHz (1 to 10) mA (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 5 kHz (5 to 20) kHz (20 to 50) kHz (10 to 100) mA (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 5 kHz (5 to 20) kHz (20 to 50) kHz (0.1 to 1) A (10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 5 Hz (5 to 20) kHz	0.4 % of reading + 0.2 μ A 0.16 % of reading + 0.2 μ A 0.062 % of reading + 0.2 μ A 0.031 % of reading + 0.2 μ A 0.061 % of reading + 0.2 μ A 0.4 % of reading + 0.4 μ A 0.4 % of reading + 2 μ A 0.16 % of reading + 2 μ A 0.061 % of reading + 2 μ A 0.031 % of reading + 2 μ A 0.061 % of reading + 2 μ A 0.4 % of reading + 4 μ A 0.4 % of reading + 20 μ A 0.16 % of reading + 20 μ A 0.061 % of reading + 20 μ A 0.031 % of reading + 20 μ A 0.061 % of reading + 20 μ A 0.4 % of reading + 40 μ A 0.4 % of reading + 0.2 mA 0.17 % of reading + 0.2 mA 0.081 % of reading + 0.2 mA 0.11 % of reading + 0.2 mA 0.3 % of reading + 0.2 mA	HP 3458A 8.5 Digit Multimeter
Capacitance – Source ¹	(0.19 to 3.3) nF DC to 3 kHz 10 Hz to 1 kHz (3.3 to 11) nF (11 to 33) nF (33 to 110) nF (110 to 330) nF	0.56 % of reading + 0.01 nF 0.25 % of reading + 0.01 nF 0.43 % of reading + 0.1 nF 0.28 % of reading + 0.1 nF 0.21 % of reading + 0.3 nF	Fluke 5520A Multiproduct Calibrator

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment		
Capacitance – Source ¹	(0.33 to 1.1) μ F (10 to 600) Hz	0.22 % of reading + 1 nF	Fluke 5520A Multiproduct Calibrator		
	(1.1 to 3.3) μ F (10 to 300) Hz	0.22 % of reading + 3 nF			
	(3.3 to 11) μ F (10 to 150) Hz	0.2 % of reading + 10 nF			
	(11 to 33) μ F (10 to 120) Hz	0.49 % of reading + 30 nF			
	(33 to 110) μ F (10 to 80) Hz	0.37 % of reading + 0.1 μ F			
	(110 to 330) μ F (DC to 50) Hz	0.4 % of reading + 0.3 μ F			
	(0.33 to 1.1) mF (DC to 20) Hz	0.36 % of reading + 1 μ F			
	(1.1 to 3.3) mF (DC to 6) Hz	0.35 % of reading + 3 μ F			
	(3.3 to 11) mF (DC to 2) Hz	0.35 % of reading + 10 μ F			
	Electrical Simulation of Thermocouple Indicating Devices – Source/Measure ¹	Type B (600 to 800) °C		0.35 °C	Fluke 5520A Multiproduct Calibrator
		(800 to 1 000) °C		0.27 °C	
(1 000 to 1 550) °C		0.26 °C			
(1 550 to 1 820) °C		0.29 °C			
Type E (-250 to -100v °C		0.41 °C			
(-100 to -25) °C		0.16 °C			
(-25 to 350) °C		0.15 °C			
(350 to 650) °C		0.17 °C			
(650 to 1 000) °C		0.2 °C			
Type J (-210 to -100) °C		0.24 °C			
(-100 to -30) °C		0.18 °C			
(-30 to 150) °C		0.13 °C			
(150 to 760) °C		0.18 °C			
(760 to 1 200) °C	0.2 °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 K		Fluke 5520A Multiproduct Calibrator
	(-200 to -100) °C	0.29 °C	
	(-100 to -25) °C	0.19 °C	
	(-25 to 120) °C	0.16 °C	
	(120 to 1 000) °C	0.23 °C	
	(1 000 to 1 372) °C	0.32 °C	
	Type N		
	(-200 to -100) °C	0.34 °C	
	(-100 to -25) °C	0.21 °C	
	(-25 to 120) °C	0.19 °C	
	(120 to 410) °C	0.17 °C	
	(410 to 1 300) °C	0.24 °C	
	Type R		
	(0 to 250) °C	0.49 °C	
	(250 to 400) °C	0.3 °C	
	(400 to 1 000) °C	0.28 °C	
(1 000 to 1 767) °C	0.33 °C		
Type S			
(0 to 250) °C	0.4 °C		
(250 to 1 000) °C	0.3 °C		
(1 000 to 1 400) °C	0.32 °C		
(1 400 to 1 767) °C	0.38 °C		
Type T			
(-250 to -150) °C	0.51 °C		
(-150 to 0) °C	0.24 °C		
(0 to 120) °C	0.18 °C		
(120 to 400) °C	0.16 °C		
Electrical Simulation of RTD Measuring Equipment – Source ¹	Pt 385, 100 Ω		Fluke 5520A Multiproduct Calibrator
	(-200 to 0) °C	0.04 °C	
	(0 to 100) °C	0.055 °C	
	(100 to 300) °C	0.071 °C	
	(300 to 400) °C	0.078 °C	
	(400 to 630) °C	0.094 °C	
	(630 to 800) °C	0.18 °C	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electrical Simulation of RTD Measuring Equipment – Source ¹	Pt 3926, 100 Ω		Fluke 5520A Multiproduct Calibrator
	(-200 to 0) °C	0.04 °C	
	(0 to 100) °C	0.055 °C	
	(100 to 300) °C	0.071 °C	
	(300 to 400) °C	0.078 °C	
	(400 to 630) °C	0.094 °C	
	Pt 3916, 100 Ω		
	(-200 to -190) °C	0.2 °C	
	(-190 to -80) °C	0.032 °C	
	(-80 to 0) °C	0.04 °C	
	(0 to 100) °C	0.047 °C	
	(100 to 260) °C	0.055 °C	
	(260 to 300) °C	0.063 °C	
	(300 to 400) °C	0.07 °C	
	(400 to 600) °C	0.078 °C	
	(600 to 630) °C	0.18 °C	
	Pt 385, 200 Ω		
	(-200 to 100) °C	0.032 °C	
	(100 to 260) °C	0.04 °C	
	(260 to 300) °C	0.094 °C	
	(300 to 400) °C	0.11 °C	
	(400 to 600) °C	0.11 °C	
	(600 to 630) °C	0.13 °C	
	Pt 385, 500 Ω		
	(-200 to -80) °C	0.032 °C	
	(-80 to 100) °C	0.04 °C	
	(100 to 260) °C	0.047 °C	
	(260 to 400) °C	0.063 °C	
(400 to 600) °C	0.071 °C		
(600 to 630) °C	0.086 °C		
Pt 385, 1000 Ω			
(-200 to 0) °C	0.024 °C		
(0 to 100) °C	0.032 °C		
(100 to 260) °C	0.041 °C		
(260 to 300) °C	0.047 °C		
(300 to 400) °C	0.055 °C		
(400 to 600) °C	0.056 °C		
(600 to 630) °C	0.18 °C		

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electrical Simulation of RTD Measuring Equipment – Source ¹	Ni 385, 120 Ω (-200 to 0) °C (0 to 100) °C (100 to 260) °C Cu 427, 10 Ω (-100 to 260) °C	0.063 °C 0.063 °C 0.11 °C 0.24 °C	Fluke 5520A Multiproduct Calibrator

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Calipers ^{1,2}	Up to 80 in	(248 + 8.6L) μin	Gage Blocks
Micrometers ^{1,2}	Up to 60 in	(19 + 13L) μin	Gage Blocks
Height Gages ²	Up to 24 in	(180 + 13L) μin	Gage Blocks
Length Standards ²	Up to 60 in	(13 + 3.7L) μin	Gage Blocks, Mu-checker
Dial Indicators ^{1,2}	Up to 5 in	(20 + 82L) μin	Gage Blocks
Rulers	Up to 40 in	0.005 8 in	Gage Blocks
Cylindrical Pins, Cylindrical Plugs ²	(0.011 to 10) in	(5 + 8.2L) μin	Pratt & Whitney ULM, Master Gage Blocks
Digital and Mechanical Protractors ²	Up to 90°	8.3"	Gage Blocks, Sine Plate
Bore Gages Micrometers ^{1,2}	Up to 20 in	(116 + 24L) μin	Cylindrical Ring Gages
Eddy Current Thickness Measurement Instruments ^{1,2} (Ferrous and Non-Ferrous)	(3, 10, 20, 40, 60) mils	0.13 mils	Coating Thickness Standards (Nominal Values within +/- 10 %)
Ultrasonic Thickness Instruments	Up to 1 in	580 μin	Gage Blocks
Cylindrical Ring Gages	Up to 13 in	(12 + 1.7L) μin	Pratt & Whitney ULM, Master Gage Blocks, Master Cylindrical Ring Gages

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Thread Plugs ² Major Diameter	Up to 12 in	(19 + 6.3L) μin	Pratt & Whitney ULM, Van Keuren Thread Wires, Master Gage Blocks
Pitch Diameter	Up to 12 in	(78 + 4.2L) μin	
Solid Thread Rings Pitch Diameter	Up to 10 in	110 μin	Pratt & Whitney ULM

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Scales and Balances ^{1,3}	Up to 410 g	0.26 mg	ASTM E617 Class 1 Weights and NIST HB 44 utilized in the calibration of the weighing system.
	(0.005 to 5 000) lb	0.017 % of applied load	NIST Class F Weights and NIST HB 44 utilized in the calibration of the weighing system.
Hydraulic Pressure Devices ¹	(200 to 20 200) psig	0.31 psi or 0.019 % of reading (whichever is greater)	Fluke P3116 Dead Weight Tester
	(30 to 30 000) psig (60 to 60 000) psig	33 psi 90 psi	Additel ADT680 Pressure Gauge, Heise CM Pressure Gauge
Pneumatic Pressure Devices ¹	Up to 30 psig	0.001 psi	Fluke PPC4/RPM4 Pressure Calibrator
	(30 to 100) psig	0.011 % of reading	Fluke PPC4/RPM4 Pressure Calibrator
	Up to 2 000 psig	0.012 % of reading	Fluke 6270 Pressure Controller
Pneumatic Vacuum Devices ¹	Down to -14.5 psiv	0.000 68 psi	Fluke PPC4/RPM4 Pressure Calibrator
Absolute Pressure Devices ¹	Up to 1 000 psia	0.012 % of reading	Fluke 6270 Pressure Controller
Torque Wrenches ¹	5 ozf-in to 2 000 lbf-ft	0.31 % of reading	CDI 2000 Torque Tester
Torque Analyzers, Torque Transducers	5 ozf-in to 2 000 lbf-ft	0.085 % of reading	NIST Class F Weights, Torque Arms/Wheels
Force (Tension and Compression)	(1 to 600) lbf	0.051 % of reading	NIST Class F Weights



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Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Force (Tension and Compression)	(50 to 2 000) lbf (200 to 10 000) lbf (500 to 50 000) lbf (2 000 to 100 000) lbf	0.011 % of reading 0.011 % of reading 0.011 % of reading 0.011 % of reading	Morehouse Universal Calibration Machine w/Load Cells
Rockwell Hardness Testers ¹	(40 to 59) HRBW (60 to 79) HRBW (80 to 100) HRBW (20 to 30) HRC (30 to 55) HRC (60 to 65) HRC (70 to 79) HREW (84 to 90) HREW (93 to 100) HREW	0.78 HRBW 0.76 HRBW 0.7 HRBW 0.52 HRC 0.53 HRC 0.5 HRC 0.68 HREW 0.66 HREW 0.63 HREW	Indirect verification method per ASTM E18 using Hardness Blocks.
Leeb Hardness ¹	744 HLD	9.6 HLD	Indirect verification method per ASTM A956 using Hardness Block.

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Temperature – Measure ^{1,2}	(-196 to 100) °C (100 to 400) °C (400 to 660) °C	0.034 °C 0.055 °C 0.068 °C	Fluke 1524 Indicator w/ 5615 or 5609 PRT
Temperature – Source ^{1,2,4}	(-35 to 100) °C (100 to 400) °C (400 to 660) °C	0.049 °C 0.061 °C 0.085 °C	Fluke 1524 Indicator w/ 5615 or 5609 PRT and Liquid Baths, Drywells
Humidity and Temperature – Source	(10 to 95) %RH (15 to 35) °C	0.61 %RH 0.13 °C	Thunder Scientific 2500 Environmental Chamber
Humidity and Temperature – Measure ¹	(10 to 90) %RH (18 to 28) °C	1.2 %RH 0.27 °C	Vaisala HM141/HMP46 Temperature/Humidity Indicator
Infrared Thermometers ¹	35 °C 100 °C 200 °C 350 °C 500 °C	0.53 °C 0.91 °C 1.3 °C 2.1 °C 2.9 °C	Fluke 4181 Infrared Calibrator (Flat Plate) $\lambda = (8 \text{ to } 14) \mu\text{m}$ $\epsilon = (0.9 \text{ to } 1)$

Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Frequency – Source ¹	0.01 Hz to 2 MHz	2.1 μ Hz/Hz + 5 μ Hz	Fluke 5520A Multiproduct Calibrator

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; " = arc-second; 1 mil = 0.001 inch.
3. 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.
4. Resolution of DUT may be different at the time of calibration and will be included in the Measurement Uncertainty (MU).
5. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-2549.



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