CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

Northeast Metrology Corp.
4490 Broadway
Depew, NY 14043

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the fields of

CALIBRATION and TESTING

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: 06 June 2028
Certificate Number: ACT-1116

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)

Northeast Metrology Corp.
4490 Broadway
Depew, NY 14043
Mike Moczerniak 716-827-3770 mike@nemcal.com

CALIBRATION AND TESTING

ISO/IEC 17025 Accreditation Granted: **20 May 2026**

Certificate Number: **ACT-1116** Certificate Expiry Date: **06 June 2028**

CALIBRATION

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Voltage – Source [1,2]	Up to 330 mV (0.33 to 3.3) V (3.3 to 33) V (33 to 330) V (330 to 1 020) V	7.1 µV 40 µV 0.4 mV 5.9 mV 20 mV	Comparison to Multiproduct Calibrator
DC Voltage – Measure [1,2]	Up to 200 mV (0.2 to 2) V (2 to 20) V (20 to 200) V (200 to 1 020) V	7.6 µV 37 µV 0.32 mV 7 mV 55 mV	Comparison to 8.5 Digit Multimeter
DC Current – Source [1,2]	Up to 330 µA (0.33 to 3.3) mA (3.3 to 33) mA (33 to 330) mA (0.33 to 1.1) A (1.1 to 11) A (11 to 20.5) A	72 nA 0.38 µA 3.5 µA 35 µA 0.61 mA 5.1 mA 24 mA	Comparison to Multiproduct Calibrator

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Current – Measure [1,2]	Up to 200 µA (0.2 to 2) mA (2 to 20) mA (20 to 200) mA (0.2 to 2) A	0.1 µA 0.99 µA 10 µA 0.13 mA 2.2 mA	Comparison to 8.5 Digit Multimeter
DC Current – Measure [1,2]	(2 to 10) A	16 mA	Comparison to 6.5 Digit Multimeter
DC Current – Measure [1,2]	(400 to 2 000) A	19 A	Comparison to Clamp-on Meter
AC Voltage – Source [1,2]	Up to 33 mV 10 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 (0.33 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 (3.3 to 33) V (10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz	 16 µV 15 µV 40 µV 0.13 mV 0.3 mV 0.13 mV 0.13 mV 73 µV 0.13 mV 0.28 mV 0.74 mV 1.3 mV 1.3 mV 0.72 mV 1.1 mV 2.3 mV 8.9 mV 9.1 mV 14 mV 9.6 mV 13 mV 32 mV	Comparison to 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 [1,2]	(33 to 330) V		Comparison to Multiproduct Calibrator
	(10 to 45) Hz	0.11 V	
	45 Hz to 10 kHz	73 mV	
	(10 to 20) kHz	97 mV	
	(20 to 50) kHz	0.11 V	
	(50 to 100) kHz	0.74 V	
	(330 V to 1 020) V		
	45 Hz to 5 kHz	0.26 V	
	(5 to 10) kHz	0.32 V	
AC Voltage – Measure [1,2]	Up to 200 mV		Comparison to 8.5 Digit Multimeter
	(20 to 50) Hz	1.6 mV	
	(50 to 100) Hz	0.21 mV	
	100 Hz to 10 kHz	99 µV	
	(10 to 30) kHz	0.11 mV	
	(30 to 50) kHz	0.76 mV	
	(50 to 100) kHz	1.9 µV	
	(100 to 200) kHz	5.1 mV	
	200 kHz to 2 MHz	13 mV	
	(0.22 to 2) V		
	(20 to 100) Hz	2.1 mV	
	100 Hz to 10 kHz	1 mV	
	(10 to 30) kHz	1.1 mV	
	(30 to 50) kHz	7.6 mV	
	(50 to 100) kHz	19 mV	
	(100 to 200) kHz	51 mV	
	200 kHz to 2 MHz	0.13 V	
	(2 to 20) V		
	(20 to 50) Hz	37 mV	
	50 Hz to 1 kHz	11 mV	
	(1 to 5) kHz	13 mV	
	(5 to 25) kHz	16 mV	
	(25 to 50) kHz	76 mV	
	(50 to 100) kHz	0.19 V	
	(20 to 200) V		
	(20 to 50) Hz	0.38 V	
	50 Hz to 1 kHz	0.12 V	
	(2 to 10) kHz	0.14 V	
	(10 to 30) kHz	0.17 V	
	(30 to 50) kHz	0.77 V	
	(50 to 100) kHz	1.9 V	

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Measure [1,2]	(200 to 750) V (20 to 50) Hz 50 Hz to 1 kHz (2 to 10) kHz (10 to 25) kHz	 1.5 V 1.1 V 1.2 V 1.4 V	Comparison to 8.5 Digit Multimeter
AC Current – Source [1,2]	(29 to 330) µA (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz (0.33 to 3.3) mA (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 (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz (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	 0.52 µA 0.52 µA 0.87 µA 2.6 µA 3.9 µA 3.2 µA 3.2 µA 5.2 µA 16 µA 18 µA 16 µA 16 µA 28 µA 68 µA 0.13 mA 0.63 mA 0.16 mA 0.16 mA 0.4 mA 0.75 mA 1.5 mA 0.69 mA 0.69 mA 7.8 mA 33 mA 1.9 mA 1.9 mA 19 mA 78 mA	Comparison to Multiproduct Calibrator

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Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current – Source [1,2]	(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	 8.7 mA 12 mA 0.3 A 31 mA 26 mA 0.62 A	Comparison to Multiproduct Calibrator
Resistance – Source [1,2] (Simulation)	Up to 11 Ω (11 to 33) Ω (33 to 110) Ω (110 to 330) Ω 330 Ω to 1.1 kΩ (1.1 to 3.3) kΩ (3.3 to 11) kΩ (11 to 33) kΩ (33 to 110) kΩ (110 to 330) kΩ 330 kΩ 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	1.7 mΩ 2.5 mΩ 4.8 mΩ 11 mΩ 33 mΩ 0.11 Ω 0.32 Ω 1.1 Ω 3.2 Ω 12 Ω 37 Ω 0.51 kΩ 0.5 kΩ 0.97 kΩ 62 kΩ 21 kΩ 6.4 MΩ	Comparison to Multiproduct Calibrator
Resistance – Measure [1,2]	Up to 20 Ω (20 to 200) Ω (0.2 to 2) kΩ (2 to 20) kΩ (20 to 200) kΩ (0.2 to 2) MΩ (2 to 20) MΩ (20 to 200) MΩ (0.2 to 1) GΩ	1.8 mΩ 8.2 mΩ 41 mΩ 0.44 Ω 6.5 Ω 0.11 kΩ 4.3 kΩ 1.9 MΩ 18 MΩ	Comparison to 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
Capacitance – Source [1,2] (Simulation)	(0.19 to 3.3) nF (3.3 to 11) nF (11 to 33) nF (110 to 330) nF (0.33 to 1.1) µF (1.1 to 3.3) µF (3.3 to 11) µF (11 to 33) µF (33 to 110) µF (110 to 330) µF (0.33 to 1.1) mF (1.1 to 3.3) mF (3.3 to 11) mF (11 to 33) mF (33 to 110) mF	14 pF 40 pF 0.13 nF 1.1 nF 4 nF 13 nF 40 nF 0.16 µF 0.64 µF 2.5 µF 8.1 µF 25 µF 57 µF 0.51 mF 1.4 mF	Comparison to Multiproduct Calibrator
Electrical Simulation of Thermocouple Indicating Devices [1]	Type E (-250 to -100) °C (-100 to -25) °C (-25 to 350) °C (350 to 650) °C (650 to 1 000) °C Type J (-210 to -100) °C (-100 to -30) °C (-30 to 150) °C (150 to 760) °C (760 to 1 200) °C Type K (-200 to -100) °C (-100 to -25) °C (-25 to 120) °C (120 to 1 000) °C (1 000 to 1 372) °C Type R (0 to 250) °C (250 to 400) °C (400 to 1 000) °C (1 000 to 1 767) °C	 0.88 °C 0.74 °C 0.73 °C 0.74 °C 0.75 °C 0.66 °C 0.62 °C 0.62 °C 0.62 °C 0.64 °C 0.68 °C 0.63 °C 0.62 °C 0.65 °C 0.72 °C 3.6 °C 3.6 °C 3.6 °C 3.6 °C	Comparison to Multiproduct Calibrator

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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electrical Simulation of Thermocouple Indicating Devices [1]	Type S (0 to 250) °C (250 to 1 000) °C (1 000 to 1 400) °C (1 400 to 1 767) °C Type T (-250 to -150) °C (150 to 0) °C (0 to 120) °C (120 to 400) °C	 3.6 °C 3.6 °C 3.6 °C 3.6 °C 0.87 °C 0.65 °C 0.62 °C 0.62 °C	Comparison to Multiproduct Calibrator

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Gage Blocks [3]	Up to 0.09 in (0.1 to 4) in (> 4 to 20) in	4 µin (2.6 + 1.8L) µin (0.5 + 2.1L) µin	Comparison to Grade 0 & 00 Gage Blocks, Gage Block Comparator
1D Measuring Machine [1] (lead screw)	Up to 1 in	8.6 µin	Comparison to Grade 0 Gage Blocks, Precision Ball, Oz Testers
Outside Micrometer [1,3] (5 µin resolution) (50 µin resolution) (100 µin resolution) (0.001 in resolution)	 Up to 1 in Up to 6 in Up to 40 in Up to 40 in	 8.8 µin (27 + 1.1L) µin (81 + 1.8L) µin (600 + 0.7L) µin	Comparison to Grade 0 Gage Blocks
Height Gage [1,3] (0.000 004 in resolution) (0.000 01 in resolution) (0.000 05 in resolution) (0.000 1 in resolution) (0.000 5 in resolution) (0.001 in resolution)	 Up to 38 in Up to 43 in Up to 43 in Up to 60 in Up to 60 in Up to 60 in	 (4.4 + 2.6L) µin (6.6 + 2.6L) µin (38 + 2.2L) µin (72 + 2L) µin (391 + 6.2L) µin (700 + 4.6L) µin	Comparison to Grade 0 Gage Blocks
Height Master [1]	Up to 12 in	65 µin	Comparison to Grade 0 Gage Blocks, Digital Indicator

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Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Plain Plug Gage [1,3]	Up to 8 in	(15 + 2*D*) µin	Comparison to Grade 0 Gage Blocks, P&W Supermicrometer®
Plain Ring Gage [1,3]	(0.04 to 8) in	(8.6 + 3.6*D*) µin	Comparison to Master Ring Gages, P&W Lab Master®
Thread Plug [1,3] Pitch Diameter Major Diameter	 (0.06 to 6) in (0.06 to 6) in	 (58 + 3.4*D*) µin (15 + 2*D*) µin	Comparison to Grade 0 Gage Blocks, P&W Supermicrometer®, Thread Wires
Thread Ring [1,3] Pitch Diameter Minor Diameter	 Up to 3 in (0.046 to 0.2) in (0.2 to 3) in	 (58 + 3.4*D*) µin (15 + 2*D*) µin (50 + 7.2*D*) µin	Comparison to Thread Setting Plug Pin Gages, Bore Micrometer
Tapered Pipe Thread Plug [1,3]	Up to 3 in	(130 + 1.5*D*) µin	Comparison to Thread Wires, Sine Block, P & W Supermicrometer®, Height Master, Indicator
Tapered Sine Block [1]	(0.062 5 to 3) in	71 µin	Comparison to 3/8 Gage Ball, P&W Supermicrometer®, Gage Blocks
Thread Measuring Wire [1]	(0.01 to 0.25) in (4 to 100) TPI	15.5 µin	Comparison to Class X Cylindrical Roll, P&W Supermicrometer®
Micrometer Standard [1,3]	Up to 6 in (6 to 20) in	(35 + 1.9*L*) µin (35 + 2.4*L*) µin	Grade 0 Gage Blocks, P&W Supermicrometer®
Calipers [1,3] (5 µin resolution) (0.001) in resolution	 Up to 60 in Up to 60 in	 (360 + 3.5*L*) µin (550 + 16.7*L*) µin	Comparison to Grade 0 Gage Blocks; Cylindrical Ring Gages
Test Indicator [1] (50 µin resolution) (100 µin resolution) (500 µin resolution) (0.001 in resolution)	 Up to 0.06 in Up to 0.06 in Up to 0.06 in Up to 0.06 in	 51 µin 95 µin 470 µin 730 µin	Comparison to Grade 0 Gage Blocks

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Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Plunger Indicator [1,3] (20 µin resolution) (50 µin resolution) (100 µin resolution) (0.001 in resolution)	 Up to 2 in Up to 2 in Up to 2 in Up to 2 in	 (18 + 4.4*L*) µin (44 + 6.4*L*) µin (72 + 2.2*L*) µin (700 + 22*L*) µin	Comparison to Grade 0 Gage Blocks
Surface Plates [1] Grades AA, A and B Overall Flatness Local Area Flatness (repeat reading)	 Up to 159 in*DL* Up to 0.001 6 in	 490 µin 18 µin	In accordance with ASME B89.3.7 using Precision Level System Repeat-O-Meter
Squares, Steps, Angle Plates [1]	Up to 18 in	170 µin	Comparison to Squareness Checker
Spheres [1]	Up to 1 in	36 µin	Comparison to Grade 0 Gage Blocks, P&W Supermicrometer®
Rulers	Up to 6 in	70 µin	Comparison to OGP Smart Scope
Steel Rules	Up to 48 in	250 µin	Comparison to Optical Comparator
Thickness / Feeler Gages	(0.001 to 0.2) in	14 µin	Comparison to Grade 0 Gage Blocks, P&W Supermicrometer®
Optical Comparators [1] Linearity Squareness Magnification	 Up to 12 in Up to 6 in 10X, 20X, 31.25X, 50X, 100 X	 (90 + 7.6*L*) µin 190 µin 76 µin	Comparisons to Glass Scale Square Magnification Checker
Protractors [3] (Digital and Mechanical)	Up to 90°	7.5″	Comparison to Angle Blocks, Surface Plate
Angle Measure [3]	Up to 90°	11″	Comparison to Gage Blocks, Surface Plate, Mu-Checker
Line Scales (Tape Measure and Rulers)	Up to 30 ft	0.036 in	Comparison to Laser Distance Meter

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Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Radius Gages (Leaf Type)	Up to 2 in	200 µin	Direct Measure using Optical Comparator.

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Pressure – Measure [1]	Up to 1 000 psig	3.2 psi	Comparison to Heise Gauge
Pressure – Source [1]	Up to 200 psig Up to 15 000 psig	0.25 psi 31 psi	Comparison to Pressure Calibrator, Deadweight Tester
Vacuum – Source [1]	(-30 to 0) inHg	0.017 inHg	Comparison to Manometer
Scales and Balances [1]	Up to 20 g	87 µg	ASTM E617 Class 1 Weights and internal calibration procedure utilized in the calibration of the weighing system.
Scales [1]	Up to 1 000 lb	1.3 lb	NIST Class F Weights and internal calibration procedure utilized in the calibration of the weighing system.
Durometers Spring Force Only Type A Type D	 Up to 8.05 N Up to 44.45 N	 0.06 N 0.27 N	Partial Verification per ASTM D2240 using Durocalibrator
Rockwell/Rockwell Superficial Hardness Testers [1,4,5]	62.1 HRA 71.1 HRA 81.8 HRA 46.5 HRC 45.4 HRC 65.9 HRC	0.31 HRA 0.2 HRA 0.28 HRA 0.45 HRC 0.37 HRC 0.32 HRC	Indirect Verification per ASTM E18 using Hardness Test Blocks.

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Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Rockwell/Rockwell Superficial Hardness Testers [1,4,5]	46.5 HRBw 62.2 HRBw 95.5 HRBw 90.2 HREw 89.7 HRFw 96.4 HRFw 101 HRFw 88.1 HRHw 70.1 HR15N 83.2 HR15N 91.8 HR15N 47.6 HR30N 64.5 HR30N 80.4 HR30N 72.8 HR15Tw 80.9 HR15Tw 91.8 HR15Tw 44.3 HR30Tw 62.4 HR30Tw 81.5 HR30Tw	0.37 HRBw 0.31 HRBw 0.45 HRBw 0.33 HREw 0.59 HRFw 0.5 HRFw 0.48 HRFw 0.42 HRHw 0.47 HR15N 0.43 HR15N 0.51 HR15N 0.34 HR30N 0.5 HR30N 0.53 HR30N 0.29 HR15Tw 0.32 HR15Tw 0.49 HR15Tw 0.6 HR30Tw 0.32 HR30Tw 0.31 HR30Tw	Indirect Verification per ASTM E18 using Hardness Test Blocks.
Vickers Hardness Testers [1,5]	HV 0.5 110 HV 460 HV 710 HV HV 1 110 HV 460 HV 710 HV	 3.4 HV 9.6 HV 13.7 HV 4.2 HV 7.9 HV 12 HV	Indirect Verification per ASTM E384 using Hardness Test Blocks.
Brinell Hardness Testers [1,5]	HBW 2.5 / 187.5 260 HBW 460 HBW	 26 HBW 27 HBW	Indirect Verification per ASTM E10 using Hardness Test Blocks.

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Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Brinell Hardness Testers [1,5]	HBW 5 / 750 260 HBW 460 HBW HBW 10 / 3 000 190 HBW 300 HBW 430 HBW	 6.9 HBW 12.4 HBW 2.6 HBW 4.5 HBW 8.2 HBW	Indirect Verification per ASTM E10 using Hardness Test Blocks.
Knoop Hardness Testers [1,5]	HK 0.1 130 HK 520 HK 770 HK HK 0.5 110 HK 460 HK 680 HK HK 1 110 HK 470 HK 680 HK	 5.4 HK 17.2 HK 21.3 HK 5 HK 13.1 HK 16.1 HK 4.5 HK 15 HK 18.1 HK	Indirect Verification per ASTM E384 using Hardness Test Blocks.
Torque Tools	(25 to 250) lbf·in (25 to 250) lbf·ft (100 to 1 000) lbf·ft	0.68 % of reading 0.67 % of reading 0.68 % of reading	Comparison to Norbar Torque Calibrator
Force – Compression and Tension [1]	(> 0 to 10) lbf (10 to 100) lbf	0.12 % of reading + 0.25 lbf 0.12 % of reading + 0.5 lbf	Comparison to NIST Class F Weights
Force – Compression and Tension [1]	(100 to 1 124) lbf (1 000 to 3 000) lbf (3 000 to 11 240) lbf (10 000 to 20 000) lbf (20 000 to 50 000) lbf	0.06 % of reading 0.05 % of reading 0.05 % of reading 0.002 % of reading 0.3 % of reading	Comparison to Load Cells
Force – Compression (Only)	(50 000 to 300 000) lbf	0.1 % of reading	Comparison to Load Cells

Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Temperature – Measure [1]	(-35 to 200) °C	0.08 °C	Comparison to Reference Thermometer with PRT

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Thermodynamic

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Humidity – Measure [1]	Up to 90 %RH	1.7 %RH	Comparison to Temperature/Humidity Indicator

Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Frequency – Measure [1]	(1.1 to 10) Hz (10 to 100) Hz 100 Hz to 1.1 kHz (1.1 to 10) kHz (10 to 100) kHz 100 kHz to 1.1 MHz (1.1 to 10) MHz (10 to 15) MHz	9.5 mHz 0.58 Hz 0.37 Hz 58 mHz 36 Hz 0.37 kHz 0.58 kHz 6 kHz	Comparison to 8.5 Digit Multimeter
Tachometers [3] (Non-Contact Type)	(30 to 500 000) rpm	2.5 rpm	Comparison to Nova-Strobe PBL Stroboscope
Stopwatches & Timers (Push Button)	Up to 24 hr	55 ms	Comparison to Bench Timer
Electric Timers (Pulse)	1 ms to 24 hr	4.5 µs	Comparison to Frequency Counter

TESTING

Mechanical

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Comments
Hardness – Rockwell and Superficial Scales	ASTM E18	Sintered and Wrought Products	Wilson Rockwell Hardness Tester, Rockwell Scales – A, B, C, E, F, G, & H Superficial Scales – T & N

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Mechanical

Specific Tests and/or Properties Measured	Specification, Standard, Method, or Test Technique	Items, Materials or Product Tested	Comments
Hardness – Brinell	ASTM E10	Sintered and Wrought Products	Newage Dyna Brinell HB500 to HB3 000
Microhardness – Vickers	ASTM E92	Sintered and Wrought Products	Mitutoyo MVK, Heavy Load Vickers (500 to 5 000) g
Microhardness – Knoop and Vickers	ASTM E384 ASTM B933	Sintered and Wrought Products	Buehler Micro Hardness Tester, Knoop Scale – (10 to 1 000) g Range Vickers Scale – (10 to 1 000) g Range

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. CMC for Electrical – DC/Low Frequency Calibrations do not include possible contributions to uncertainty from a "best available" unit under test.
3. L = length in inches; D = diameter in inches; DL = diagonal length in inches; rpm = revolutions per minute; ″ = arc-second.
4. The following statement is from the NIST recommended practice guide (Special Publication 960-5, page 60, section 8.3.3, paragraph 2) "Currently, there are no generally agreed upon U.S. or international methods for calculating the measurement uncertainty of a Rockwell hardness machine or the uncertainty in the certified value of standardized test blocks."
5. The value shown in the Range column is a Nominal value. The Actual value will be reported at the time of calibration along with the associated Measurement Uncertainty.
6. Unless otherwise specified in the far-right column above, the laboratory utilizes internally written calibration procedures in the process of calibrating the parameters listed in this document.

Jason Stine, Vice President

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