SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005

NORTHSTAR CALIBRATION, INC.
1045 26th Place NW
Owatonna, MN 55060
John Moorhouse Phone: 507 444 9111

CALIBRATION

Valid To: August 31, 2020 Certificate Number: 0462.02

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations[1, 9]:

I. Acoustical Quantities

Parameter/Equipment	Range	CMC[2] (±)	Comments
Sound Level Meters[3]	(94 to 114) dB	1.3 dB	Simpson 890-2 generator

II. Chemical Quantities

Parameter/Equipment	Range	CMC[2] (±)	Comments
Conductivity	100 µS 1000 µS 10000 µS	1.8 µS + 0.6*R* 10.2 µS + 0.6*R* 270 µS + 0.6*R*	Standard solutions

III. Dimensional

Parameter/Equipment	Range	CMC[2, 4] (±)	Comments
Gage Blocks	Ceramic Up to 4 in Steel Up to 4 in (4 to 20) in	 (3.5 + 2.2*L*) µin (2.9 + 1.3*L*) µin (3.7 + 1.7*L*) µin	Gage block comparator
Length Standards	Up to 24 in	(67 + 2.1*L*) µin	Standard measuring machine
Cylindrical Plugs	Up to 1.2 in (1.2 to 4.0) in (4.0 to 20.0)	(6.9 + 0.5*L*) µin (8.9 + 0.11*L*) µin (1.7*L* + 1.6) µin	Universal measuring machine (UMM)
Parameter/Equipment	Range	CMC[2, 4] (±)	Comments
Cylindrical Rings	(0.225 to 1.75) in (1.75 to 3.5) in (0.5 to 1.0) in (1.0 to 4.5) in (4.5 to 14.5) in	(2.1 + 11*L*) µin (4.6 + 6.8*L*) µin (5.7 + 0.16*L*) µin 5.8 µin (2.2 + 3.5*L*) µin	UMM
Threaded Plugs – Pitch Diameter Major Diameter	 Up to 6 in Up to 6 in	 (66 + 4.6*L*) µin (49 + 5.6*L*) µin	 Benchmic
Threaded Rings – Pitch Diameter Minor Diameter	 Up to 8 in (Vert) (8 to 14) in (Horz) Up to 4 in (0.275 to 4) in (4 to 8) in (0 to 0.150) in	 (75 + 6*L*) µin (71 + 5.6*L*) µin (200 + 8.6*L*) µin (160 + 11*L*) µin (210 + 1.2*L*) µin (13 + 44*L*) µin	 UMM UMM Setting plugs Tri-bore micrometer Precision height gage Cylindrical pin gages

Parameter/Equipment	Range	CMC[2, 4] (±)	Comments
Tapered Threaded Plugs –			
Pitch Diameter	Up to 3 in	130 µin	Benchmic
Notch Length	Up to 2 in	(210 + 0.2*L*) µin	Precision height gage
Tapered Threaded Rings –			
Pitch Diameter	Up to 3 in	140 µin	Set Plugs
Thickness of Ring	Up to 2 in	27 µin	Benchmic
Thread Wires	Up to 0.12 in	14 µin	UMM
Surface Plate[3] –			
Flatness	(17 to 43) in	(52 + 0.4*D*) µin	Planekator
	(17 to 43) in (50 to 160) in	(78 + 0.4*D*) µin (86 + 1.0*D*) µin	Electronic level
Repeat Readings	Up to 160 in	23 µin	Repeat-o-meter
Calipers[3]	Up to 120 in	(120 + 0.6*R* + 4*L*) µin	Gage blocks and cylindrical ring
Micrometers[3]	Up to 24 in	(67 + 0.6*R* + 9.6*L*) µin	Gage blocks
Indicators[3]	Up to 6 in	(60 + 0.6*R* + 10*L*) µin	Gage blocks
Height Gages[3]	Up to 24 in (24 to 40) in	(63 + 0.6*R* + 14*L*) µin (310 + 0.6*R* + 4*L*) µin	Gage blocks and amplifier
Optical Comparators[3] –			
Linear	Up to 12 in	(150 + 4.6*L*) µin	Glass scales, mag checker & balls
Angular	(0 to 360)º	0.05º	
Magnification	10X to 50X	0.0023 in	

Parameter/Equipment	Range	CMC[2, 4] (±)	Comments
Tape Measures, Pi Tapes, Steel Rules[3]	(0.5 to 18) ft (18 to 72) ft	(6900 + 5*L*) µin 0.013 in	Length fixture
Brinell Scopes[3] Microscopes[3] & Glass Line Reticles[3]	Up to 6 mm Up to 6 in	120 µm 190 µin	Ceramic scale Glass scale
Surface Finish Patch	Up to 250 µin	9.1 µin	Surface analyzer
Surface Finish Analyzer[3]	Up to 250 µin	7.2 µin	Surface finish patch
CMM[3] – Repeatability Linearity – Step Gage Laser Volumetric Bi-Directional	 Up to 48 in Up to 48 in Up to 240 in -- --	 62 µin 150 µin (0.47*L* + 5.5) µin (90 + 13*L*) µin 55 µin	 Master ball Step gage/laser Ball bar Gage block
Protractors	0° to 180°	7 minutes	Angle blocks, surface plate
Squares	(1 to 24) in	82 µin	Square, height gage, amplifier
Levels	(1 to 24) in	2 minutes	Sine plate, gage blocks, surface plate

IV. Dimensional Testing/Calibration[1]

Parameter/Equipment	Range	CMC[2, 4] (±)	Comments
1-Dimensional Measurement[7]	Up to 24 in	92 µin	Precision HG and amp
	Up to 24 in	(20 + 3.4*L*) µin	Benchmic
	Up to 20 in	(3.9 + 3.4*L*) µin	UMM
	Up to 6 in	(150 + 5.6*L*) µin	Optical comparator
	Up to 6 in	(930 + 160*L*) µin	Caliper
	Up to 1.25 in	(240 + 190*L*) µin	Cylindrical Pins
	Up to 2 in	750 µin	Indicator
	Up to 6 in	(120 + 20*L*) µin	Micrometer
6-way Probe			CMM
1-D	(1 to 28) in	(80 + 2.5*L*) µin	
2-D	(1 to 34) in	(83 + 3.5*L*) µin	
3-D	(1 to 42) in	(73 + 6.0*L*) µin	
EM2 Probe			
1-D	(1 to 28) in	(79 + 3.3*L*) µin	
2-D	(1 to 34) in	(82 + 5.0*L*) µin	
3-D	(1 to 42) in	(73 + 6.0*L*) µin	
SF Probe			
1-D	(1 to 28) in	(76 + 5.4*L*) µin	
2-D	(1 to 34) in	(89 + 2.6*L*) µin	
3-D	(1 to 42) in	(70 + 6.2*L*) µin	
1-Dimensional Measurement[3, 7]	Up to 4 in	(7.1 + 2.2*L*) µin	THV
	Up to 240 in	(5.5 + 0.47*L*) µin	Laser
Angular Measurement[7] (Includes Angle Blocks)	(0 to 180)°	(0.033 + 0.000 16*R*)°	Optical comparator
	(0 to 90)°	2’ 50”	Sine plate, gage blocks
Radius Measurement	Up to 2 in	(860 + 390*L*) µin	Optical comparator

V. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC[2, 4, 6] (±)	Comments
DC Voltage – Generate[3]	(0 to 3.3) V (3.3 to 33) V (33 to 1000) V	83 µV/V + 0.6*R* + 5.2 µV 90 µV/V + 0.6*R* + 29 µV 65 µV/V + 0.6*R* + 3.3 mV	Calibrator
DC Voltage – Measure[3]	(0 to 1) V (1 to 10) V (10 to 1000) V (1 to 10) kV	47 µV/V + 0.6*R* + 12 µV 46 µV/V + 0.6*R* + 51 µV 67 µV/V + 0.6*R* + 510 µV 0.015 % + 0.6*R* + 1.4 mV	Precision bench meter Precision bench meter with voltage divider
DC Current – Generate[3]	(0 to 33) mA (33 to 2.2) A (2.2 to 11) A (11 to 500) A	0.013 % + 0.6*R* + 1.9 µA 0.044 % + 0.6*R* + 38 µA 0.07 % + 0.6*R* + 440 µA 0.14 % + 0.6*R* + 2.3 mA	Calibrator Calibrator, 50 turn coil
DC Current – Measure[3]	(0 to 10) mA (10 to 100) mA (0.1 to 3) A	0.038 % + 0.6*R* + 6.8 µA 0.084 % + 0.6*R* + 2.2 µA 0.14 % + 0.6*R* + 34 µA	Precision bench meter
Resistance – Generate[3] Fixed Points	(0 to 330) kΩ (0.33 to 1.1) kΩ (1.1 to 11) kΩ (11 to 330) kΩ (0.33 to 3.3) MΩ (3.3 to 33) MΩ (33 to 330) MΩ 0.1 Ω 1.0 Ω 10.0 Ω 100.0 Ω 1.0 kΩ 10.0 kΩ 100.0 kΩ	0.011 % + 0.6*R* + 0.019 Ω 0.014 % + 0.6*R* + 0.021 Ω 0.039 % + 0.6*R* + 0.94 Ω 0.014 % + 0.6*R* + 11 Ω 0.018 % + 0.6*R* + 82 Ω 0.21 % + 0.6*R* + 570 Ω 0.62 % + 0.6*R* + 9.6 kΩ 17 µΩ + 0.6*R* 20 µΩ + 0.6*R* 120 µΩ + 0.6*R* 1.2 mΩ + 0.6*R* 12 mΩ + 0.6*R* 120 mΩ + 0.6*R* 1.2 Ω + 0.6*R*	Calibrator Standard resistors
Resistance – Measure[3]	(0 to 100) Ω (0.1 to 10) kΩ (10 to 1) MΩ (1 to 100) MΩ	0.12 % + 0.6*R* + 0.0049 Ω 0.011 % + 0.6*R* + 0.14 Ω 0.011 % + 0.6*R* + 16 Ω 0.93 % + 0.6*R* + 610 Ω	Precision bench meter

Parameter/Range	Frequency	CMC[2, 4, 6] (±)	Comments
AC Voltage – Measure[3]			
(0 to 1) V	(3 to 10) Hz (10 to 50) Hz (50 to 300) Hz	0.41 % + 0.6*R* + 55 µV 0.14 % + 0.6*R* + 57 µV 0.74 % + 0.6*R* + 52 µV	Precision bench meter
(1 to 750) V	(3 to 10) Hz (10 to 50) Hz (50 to 300) Hz	0.44 % + 0.6*R* + 31 mV 0.17 % + 0.6*R* + 42 mV 0.52 % + 0.6*R* + 130 mV	
(1 to 10) kV	60 Hz	(0.5 % + 0.6*R*) V	Voltage divider bench meter
AC Voltage – Generate[3]			
(0 to 3.3) V	(10 to 45) Hz 45 Hz to 20 kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	0.41 % + 0.6*R* + 16 µV 0.07 % + 0.6*R* + 1.2 mV 0.14 % + 0.6*R* + 16 mV 0.7 % + 0.6*R* + 31 mV 0.7 % + 0.6*R* + 3.1 mV	Calibrator
(33 to 330) V	45 Hz to 20 kHz	0.14 % + 0.6*R* + 160 mV	
(330 to 1020) V	45 Hz to 10 kHz	0.07 % + 0.6*R* + 36 mV	
AC Current – Measure[3]			
(0 to 1) A	(3 to 5) Hz (5 to 10) Hz 10 Hz to 5 kHz	0.12 % + 0.6*R* + 770 µA 0.33 % + 0.6*R* + 770 µA 0.091 % + 0.6*R* + 770 µA	Multimeter
(1 to 3) A	(3 to 5) Hz (5 to 10) Hz 10 Hz to 5 kHz	0.12 % + 0.6*R* + 4.8 mA 0.34 % + 0.6*R* + 4.4 mA 0.097 % + 0.6*R* + 4.8 mA	
(10 to 500) A	50 Hz to 1 kHz	0.2 % + 0.6*R* + 0.096 A	Multimeter, current clamp
(3 to 1000) A	50 Hz to 1 kHz	0.24 % + 0.6*R* + 0.032 A	Multimeter, shunt
Welders	DC Volt DC Amps	5.6 % + 0.6*R* + 0.55 mV 3.7 % + 0.6*R* mV	DMM, clamp meter, load bank

Parameter/Range	Frequency	CMC[2, 4, 6] (±)	Comments
AC Current – Generate[3]			
(0 to 2.2) A	(10 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.29 % + 0.6*R* + 400 µA 0.21 % + 0.6*R* + 370 µA 0.89 % + 0.6*R* + 380 µA 0.72 % + 0.6*R* + 70 uA	Calibrator
(2.2 to 11) A	(45 to 65) Hz (65 to 500) Hz 500 Hz to 1 kHz	0.14 % + 0.6*R* + 4.6 mA 0.15 % + 0.6*R* + 5.1 mA 0.30 % + 0.6*R* + 8.5 mA	Calibrator/ 50 turn coil
(10 to 500) A	(45 to 65) Hz	1.2 % + 0.6*R* + 480 mA	
Capacitance – Generate[3]			
(0.33 to 330) nF	50 Hz to 1 kHz	2.7 µF/F + 0.6*R* + 0.45 nF	Calibrator
(1.1 to 3.3) µF	50 Hz to 1 kHz	0.0037 µF/F + 0.6*R* + 4.4 µF	
(3.3 to 33) µF	(50 to 400) Hz	0.0045 µF/F + 0.6*R* + 38 µF	
(33 to 330) µF	(50 to 100) Hz	0.0077 µF/F + 0.6*R* + 360 µF	
(330 to 1.1) mF	(50 to 100) Hz	0.013 µF/F + 0.6*R* + 420 µF	
Fixed Points	1 nF 2 nF 3 nF 4 nF 5 nF 6 nF 7 nF 8 nF 9 nF 10 nF 20 nF 30 nF 40 nF 50 nF 60 nF 70 nF 80 nF 90 nF 100 nF 200 nF 300 nF 400 nF 500 nF 1 µF	900 µF/F + 0.6*R* 5.3 mF/F + 0.6*R* 3.7 mF/F + 0.6*R* 24 µF/F + 0.6*R* 3.7 mF/F + 0.6*R* 5.1 mF/F + 0.6*R* 33 mF/F + 0.6*R* 6.9 mF/F + 0.6*R* 6.9 mF/F + 0.6*R* 6.1 mF/F + 0.6*R* 51 mF/F + 0.6*R* 51 mf/F + 0.6*R* 61 mF/F + 0.6*R* 69 mF/F + 0.6*R* 110 mF/F + 0.6*R* 37 mF/F + 0.6*R* 76 mF/F + 0.6*R* 110 mF/F + 0.6*R* 96 mF/F + 0.6*R* 24 µF/F + 0.6*R* 24 µF/F + 0.6*R* 24 µF/F + 0.6*R* 24 µF/F + 0.6*R* 24 µF/F + 0.6*R*	Capacitor Set

Parameter/Range	Frequency	CMC2, 4, 6 (±)	Comments
Inductance – Generate			
Fixed Points	200 µH 2 mH 10 mH 20 mH 1 H	821 nH + 0.6*R* 1.6 µH + 0.6*R* 1.6 µH + 0.6*R* 1.3 µH + 0.6*R* 3.2 mH + 0.6*R*	Standard inductors
Oscilloscopes[3] –			
Level Sine Wave 50 kHz Reference	1 mV to 5.5 V(p-p)	2.0 % + 300 µV	Calibrator
Level Sine Flatness 5 mV to 5.5 V	50 kHz to 100 MHz (100 to 300) MHz (300 to 600) MHz	3.6 % + 300 µV 4.1 % + 300 µV 6.1 % + 330 µV	Relative to 50 kHz reference
Vertical Gain DC – Into 50 Ω Into 1 MΩ	 (0 to 6.6) V (0 to 130) V	 0.24 % + 400 µV 0.051 % + 400 µV	
Square Wave – Into 50 Ω Into 1 MΩ	 1 mV to 6.6 V(p-p) 1 mV to 130 V(p-p)	 0.24 % + 400 µV 0.10 % + 400 µV	
Time Marker Output Into 50 Ω	 5 s to 50 ms 20 ms to 2 ns In 5-2-1 sequence	 25 + 1000*t* µs/s 2.5 µs/s	 *t* = time in seconds
Pulse Rise Time 5 mV to 2.5 V(p-p)	 ≤350 ps	 +0/-120 ps	

Parameter/Equipment	Range	CMC[2, 6] (±)	Comments
Electrical Calibration of Thermocouple Indicating Devices[3] –			
Type J	-210 ºC to -100 ºC -100 ºC to 1200 ºC	0.34 ºC 0.26 ºC	Calibrator
Type K	-200 ºC to -100 ºC -100 ºC to 1000 ºC 1000 ºC to 1372 ºC	0.39 ºC 0.30 ºC 0.38 ºC	
Type T	-250 ºC to -150 ºC -150 ºC to 400 ºC	0.66 ºC 0.31 ºC	

VI. Mechanical

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Force[3] – Compression & Tension	Up to 250 lbf	0.20 % of reading	Precision weights
	Up to 1000 lbf	0.28 %	Load cells
	(1000 to 10 000) lbf Compression Tension	 0.018 % of reading 0.019 % of reading	
	mV Compression Tension	 0.018 % of reading 0.019 % of reading	
	(10 000 to 100 000) lbf Compression Tension	 0.019 % of reading 0.024 % of reading	
	mV Compression Tension	 0.017 % of reading 0.019 % of reading	
Durometers[3]	Up to 10 lbf	0.20 %	Scale or load cell

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Pressure/Vacuum Gauges[3] & Transducers[3]	(-14.7 to 100) psig (0 to 2000) psi (2000 to 10 000) psi	0.21 % full scale 0.1 % full scale + 0.028 psi 0.12 % full scale	Druck DPI 610 Dead weight tester
Torque Testers[3]	2 in·ozf to 100 in·lbf (10 to 250) ft·lbf (251 to 1500) ft·lbf	(0.059 + 0.000 70*A*) in·lbf (0.060 + 0.012*A*) ft·lbf (1.3 + 0.0070*A*) ft·lbf	Weights & radius arms *A* is applied torque
Torque Tools[3]	2 in·ozf to 100 ft·lbf 2 in·ozf to 250 ft·lbf (250 to 1000) ft·lbf	1.0 % 1.0 % 0.8 %	Torque tester
Mass (Weights)[3]	(1 to 500) g (1 to 10) lb (10.1 to 75) lb	1.2 mg 120 mg 0.0012 lb (550 mg)	520 g balance, weight sets Verification with Class 1, 4 and F weights, precision scale Precision scale, weight set
Scales and Balances[3]	1 g to 3 kg (3.1 to 25) kg (50 to 1000) lb (1001 to 5000) lb (5001 to 10 000) lb	(0.20 + 0.6*R*) g (1.0 + 0.6*R*) g (0.30 + 0.6*R*) lb (1.6 + 0.6*R*) lb (2.1 + 0.6*R*) lb	Verification with Class 1, 4 and F weights
Indirect Verification of Brinell Hardness Testers[3] – 10/500/15 10/3000/15	 Up to 225 HBW (226 to 650) HBW	 1.7 HBW 1.9 HBW	 Indirect verification method per ASTM E10 of Brinell hardness testers[3]

Parameter/Equipment	Range	CMC[2] (±)	Comments
Indirect Verification of Microindentation Hardness Testers (Knoop & Vickers)[3] –			
Knoop	(100 to 250) HK (251 to 650) HK > 650 HK	11 HK 33 HK 64 HK	Indirect verification method per ASTM E92
Vickers	(100 to 240) HV (241 to 600) HV > 600 HV	26 HV 75 HV 160 HV	
Indirect Verification of Rockwell and Rockwell Superficial Hardness Testers[3] –	HRA: Low Medium High HRBW: Low Medium High HRC: Low Medium High HR15N: Low Medium High HR30N: Low Medium High HR45N: Low Medium High HR15TW: Low Medium High	 1.4 HRA 1.4 HRA 1.5 HRA 1.9 HRBW 1.5 HRBW 1.0 HRBW 1.3 HRC 1.4 HRC 1.0 HRC 1.3 HR15N 1.2 HR15N 1.4 HR15N 1.9 HR30N 2.0 HR30N 1.8 HR30N 1.4 HR45N 1.4 HR45N 1.4 HT45N 1.5 HR15TW 1.5 HR15TW 1.7 HR15TW	ASTM E18

Parameter/Equipment	Range	CMC[2] (±)	Comments
Indirect Verification of Rockwell and Rockwell Superficial Hardness Testers[3] (cont)	HR30TW: Low Medium High HR45TW: Low Medium High	 1.9 HR30TW 2.0 HR30TW 1.8 HR30TW 2.0 HR45TW 1.7 HR45TW 1.7 HR45TW	ASTM E18

VII. Thermodynamics

Parameter/Equipment	Range	CMC[2, 4, 8] (±)	Comments
Infrared Thermometers[3]	(70 to 750) °F	(1.6 + 0.0022*R*) °F	Black body calibrator
Temperature – Generate	(-15 to 350) °C (5 to 600) °F	0.07 °C 0.13 °F	Drywell
Temperature – Measure	(-30 to 0) °C (-22 to 32) °F (0 to 100) °C (32 to 212) °F (100 to 260) °C (212 to 500) °F	0.047 °C 0.085 °F 0.048 °C 0.085 °F 0.058 °C 0.10 °F	SPRT

VII. Time & Frequency

Parameter/Equipment	Range	CMC[2, 8] (±)	Comments
Frequency – Generate	(0 to 12) kHz 12 kHz to 2 MHz 50 kHz to 600 MHz	28 µHz/Hz + 1.3 mHz 26 µHz/Hz + 16 mHz 2.7 µHz/Hz	Calibrator
Digital Tachometers	(0 to 12) kHz 12 kHz to 2 MHz 50 kHz to 600 MHz	28 µHz/Hz + 1.3 mHz 26 µHz/Hz + 16 mHz 2.7 µHz/Hz	Calibrator

Parameter/Equipment	Range	CMC[2, 8] (±)	Comments
Mechanical Tachometers	(0 to 12) kHz	28 µHz/Hz + 1.3 mHz	Calibrator
Frequency – Measure[3]	(0 to 160) MHz 40 MHz to 1.3 GHz	3.2 µHz/Hz 5.9 µHz/Hz	Counter
Timers[3]	(0 to 24) hrs	5.9 µs/s	Counter

---

[1] This laboratory offers commercial dimensional testing/calibration service and field calibration service.

[2] Calibration and Measurement Capability (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. CMCs represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

[3] Field calibration service is available for this calibration and this laboratory meets A2LA *R104 – General Requirements: Accreditation of Field Testing and Field Calibration Laboratories* for these calibrations. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the CMC found on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the actual uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.

[4] In the statement of CMC, *L* is the numerical value of the nominal length of the device measured in inches; *D* is the numerical value of the diagonal length of the device measured in inches; *R* is the resolution of the device under test.

[5] In the statement of CMC, % denotes percent of reading unless otherwise noted.

[6] The measurands stated are generated using the indicated instrument (see Comments). This capability is suitable for the calibration of the devices intended to measure the measurand in the ranges indicated. CMCs are expressed as either a specific value that covers the full range or as a fraction of the reading plus a fixed floor specification.

[7] This laboratory meets R205 – *Specific Requirements: Calibration Laboratory Accreditation Program* for the types of dimensional calibrations listed above. Accredited test reports issued containing appropriate statements of measurement results, measurement uncertainty, and traceability are considered equivalent to a "calibration" certificate.

[8] The type of instrument or material being calibrated is defined by the parameter. This indicates the laboratory is capable of calibrating instruments that measure or generate the values in the ranges indicated for the listed measurement parameter.

[9] This scope meets A2LA's *P112 Flexible Scope Policy*.

Accredited Laboratory

A2LA has accredited

NORTHSTAR CALIBRATION, INC.

Owatonna, MN

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets R205 – Specific Requirements: Calibration Laboratory Accreditation Program. 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*).

Presented this 28th day of June 2018.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 462.02
Valid to August 31, 2020
Revised November 22, 2019

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.