SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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CALIBRATION

Valid To: August 31, 2021 Certificate Number: 4286.04

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations[1, 6]:

I. Acoustics

Parameter/Range	Frequency	CMC[2, 5] (±)	Comments
Sound Level Meters and Dosimeters –			
Acoustic Calibration (94, 104, 114) dB re: 20 µPa	31.5 Hz	0.20 dB	Brüel & Kjær 4226
	63 Hz	0.20 dB	
	125 Hz	0.20 dB	
	250 Hz	0.15 dB	
	500 Hz	0.15 dB	
	1000 Hz	0.13 dB	
	2000 Hz	0.20 dB	
	4000 Hz	0.20 dB	
	8000 Hz	0.28 dB	
	12 500 Hz	0.51 dB	
	16 000 Hz	0.51 dB	
Electric Calibration (30 to 150) dB	(20 to 20 000) Hz	0.078 dB	Transmille 3041A

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Parameter/Equipment	Range	CMC[2] (±)	Comments
Acoustic Calibrator	94 dB 114 dB 94 dB to 1 kHz 114 dB to 1 kHz	0.20 dB 0.20 dB 0.24 Hz 0.24 Hz	Sound Level Meter Transmille 3041A

II. Chemical

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Conductivity Meters[3]	1 µS/cm 5 µS/cm 10 µS/cm 100 µS/cm 1000 µS/cm 1413 µS/cm 10 000 µS/cm 100 000 µS/cm	0.56 µS/cm 0.56 µS/cm 0.56 µS/cm 2.2 µS/cm 4.7 µS/cm 4.7 µS/cm 41 µS/cm 370 µS/cm	Conductivity standard solution
pH Meters[3]	4 pH Unit 7 pH Unit 10 pH Unit	0.012 pH Unit 0.012 pH Unit 0.012 pH Unit	pH buffer solution
Turbidity Meters[3]	(0 to 4000) NTU	1.5 % rdg	Stabilized Formazin turbidity standard

III. Dimensional

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Calipers[3] –			
Digital	Up to 450 mm	8.2 µm	Gauge blocks
Analog (Vernier)	Up to 450 mm	16 µm	
Analog (Dial)	Up to 200 mm (200 to 300) mm	8.2 µm 16 µm	
Depth Gages[3] –			
Digital	Up to 450 mm	5.8 µm	Gauge blocks
Analog (Vernier)	Up to 450 mm	12 µm	
Analog (Dial)	Up to 450 mm	5.8 µm	
Height Gauges[3] –			
Digital	Up to 450 mm	5.8 µm	Gauge blocks
Analog (Vernier)	Up to 450 mm	12 µm	
Analog (Dial)	Up to 450 mm	5.8 µm	
Optical and Stereo Microscopes, with Reticle[3]	Up to 400X Magnification	4.7 µm	Stage micrometer
Ultrasonic Thickness Gauges[3]	Up to 100 mm	0.58 µm	Gauge blocks

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Outside, Inside and Depth Micrometers, Indicators, Thickness Gauges[3] –			
Analog	Up to 25 mm	1.2 µm	Gauge blocks
	(25 to 50) mm	1.2 µm	
	(50 to 75) mm	1.2 µm	
	(75 to 100) mm	1.2 µm	
	(100 to 125) mm	1.7 µm	
	(125 to 150) mm	1.7 µm	
	(150 to 175) mm	1.7 µm	
	(175 to 200) mm	1.7 µm	
	(200 to 225) mm	1.7 µm	
	(225 to 250) mm	1.7 µm	
	(250 to 275) mm	1.7 µm	
	(275 to 300) mm	1.7 µm	
	(300 to 325) mm	1.7 µm	
	(325 to 350) mm	1.7 µm	
	(350 to 375) mm	1.8 µm	
	(375 to 400) mm	1.8 µm	
	(400 to 425) mm	1.8 µm	
	(425 to 450) mm	1.8 µm	
Digital	Up to 25 mm	0.58 µm	
	(25 to 50) mm	0.60 µm	
	(50 to 75) mm	0.60 µm	
	(75 to 100) mm	0.61 µm	
	(100 to 125) mm	0.61 µm	
	(125 to 150) mm	0.62 µm	
	(150 to 175) mm	0.67 µm	
	(175 to 200) mm	0.70 µm	
	(200 to 225) mm	0.70 µm	
	(225 to 250) mm	0.70 µm	
	(250 to 275) mm	0.72 µm	
	(275 to 300) mm	0.76 µm	
	(300 to 325) mm	0.76 µm	
	(325 to 350) mm	0.80 µm	
	(350 to 375) mm	0.83 µm	
	(375 to 400) mm	0.83 µm	
	(400 to 425) mm	0.87 µm	
	(425 to 450) mm	0.87 µm	

IV. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC[2, 5, 7] (±)	Comments
DC Voltage – Generate	(0.1 to 120) mV (0.12 to 1.2) V (1.2 to 12) V (12 to 120) V (120 to 1000) V	0.0050 mV 0.000 013 V 0.000 12 V 0.000 76 V 0.0083 V	Transmille 3041A
DC Current – Generate	(0.1 to 200) µA (0.2 to 1.2) mA (1.2 to 12) mA (12 to 120) mA (0.12 to 1.2) mA (1.2 to 12) A	0.0058 µA 0.000 17 mA 0.000 21 mA 0.0015 mA 0.098 mA 0.000 22 A	Transmille 3041A

Parameter/Range	Frequency	CMC[2, 5, 7] (±)	Comments
AC Voltage – Generate			
(20 to 120) mV	56 Hz	0.050 mV	Transmille 3041A
(20 to 120) mV	1 kHz	0.076 mV	
(0.12 to 1.2) V	56 Hz	0.000 22 V	
(0.12 to 1.2) V	1 kHz	0.000 34 V	
(1.2 to 12) V	56 Hz	0.000 82 V	
(1.2 to 12) V	1 kHz	0.0014 V	
(12 to 120) V	56 Hz	0.017 V	
(12 to 120) V	1 kHz	0.068 V	
(120 to 1000) V	56 Hz	0.080 V	
(120 to 1000) V	1 kHz	0.20 V	
AC Current – Generate			
(25 to 200) µA	40 Hz	0.43 µA	Transmille 3041A
(25 to 200) µA	56 Hz	0.37 µA	
(0.2 to 1.2) mA	40 Hz	0.96 µA	
(0.2 to 1.2) mA	56 Hz	0.57 µA	
(1.2 to 12) mA	40 Hz	0.0042 mA	
(1.2 to 12) mA	56 Hz	0.0015 mA	
(12 to 120) mA	40 Hz	0.036 mA	
(12 to 120) mA	56 Hz	0.014 mA	
(0.12 to 1.2) A	40 Hz	0.34 mA	
(0.12 to 1.2) A	56 Hz	0.79 mA	
(1.2 to 12) A	40 Hz	0.0038 A	
(1.2 to 12) A	56 Hz	0.0017 A	

Parameter/Range	Frequency	CMC[2, 5, 7] (±)	Comments
AC Current – Clamp On Meters			
Up to 100 A (>100 to 300) A (>300 to 500) A (>500 to 700) A (>700 to 1000) A	56 Hz	0.41 A 1.1 A 1.7 A 2.3 A 3.0 A	Transmille 3041A with EA015

Parameter/Equipment	Range	CMC[2, 5, 7] (±)	Comments
Resistance – Generate	1 Ω 10 Ω 100 Ω 1 kΩ 10 kΩ 100 kΩ 1 MΩ 10 MΩ 100 MΩ	0.0057 Ω 0.0064 Ω 0.0011 Ω 0.000 11 kΩ 0.0010 kΩ 0.0094 kΩ 0.000 20 MΩ 0.0055 MΩ 0.59 MΩ	Transmille 3041A
Insulation Resistance Meters –	Up to 1 MΩ	0.0024 MΩ	Transmille 3041A
Fixed Points	5 MΩ 10 MΩ 50 MΩ 100 MΩ 500 MΩ 1 GΩ 5 GΩ 10 GΩ 15 GΩ 20 GΩ	0.013 MΩ 0.12 MΩ 0.58 MΩ 1.2 MΩ 5.8 MΩ 0.012 GΩ 0.058 GΩ 0.12 GΩ 0.17 GΩ 0.24 GΩ	Standard Resistance Box
Thermocouple Simulators –			
Type J	(-20 to 760) °C	0.76 °C	Transmille 8080
Type K	(-20 to 1000) °C	1.0 °C	
Type R	(0 to 1000) °C	0.41 °C	
Type S	(0 to 1000) °C	0.37 °C	
Type T	(-20 to 400) °C	0.82 °C	

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Electrical Simulation of Temperature Indicators	(-20 to 1000) °C	0.37 °C	Transmille 3041A

V. Fluid Quantities

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Volume – Laboratory Glassware			
Single Volume Pipettes	0.5 ml 1 ml 2 ml 5 ml 10 ml 20 ml 25 ml 50 ml 100 ml	0.000 34 ml 0.000 59 ml 0.000 34 ml 0.000 94 ml 0.0011 ml 0.0014 ml 0.0014 ml 0.0016 ml 0.0026 ml	Gravimetric method
One-mark Volumetric Flasks	1 ml 2 ml 5 ml 10 ml 20 ml 25 ml 50 ml 100 ml 200 ml 250 ml 500 ml 1000 ml	0.0022 ml 0.0022 ml 0.0022 ml 0.0022 ml 0.0037 ml 0.0037 ml 0.0055 ml 0.0077 ml 0.012 ml 0.012 ml 0.017 ml 0.098 ml	
Graduated Pipettes	Up to 1 ml (> 1 to 25) ml	0.000 19 ml 0.0082 ml	
Graduated Measuring Cylinders	Up to 5 ml (> 5 to 10) ml (> 10 to 25) ml (> 25 to 50) ml (> 50 to 100) ml (> 100 to 250) ml (> 250 to 500) ml (> 500 to 1000) ml	0.000 20 ml 0.000 21 ml 0.000 28 ml 0.000 45 ml 0.000 45 ml 0.0047 ml 0.0051 ml 0.095 ml	

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Volume – Laboratory Glassware (cont)			
Burettes	Up to 10 ml (10 to 25) ml (25 to 50) ml (50 to 100) ml	0.0082 ml 0.020 ml 0.041 ml 0.082 ml	Gravimetric method
Pyknometers: Type 3 (Gay-Lussac), Type 5 (Hubbard), Type 6 (With Thermometer Coupled)	Up to 10 ml (> 10 to 25) ml (> 25 to 50) ml (> 50 to 100) ml	0.000 22 ml 0.000 37 ml 0.000 55 ml 0.000 77 ml	
Pyknometer Type 4 (Reischauer)	Up to 25 ml (> 25 to 50) ml (> 50 to 100) ml	0.000 45 ml 0.0055 ml 0.0077 ml	
Centrifuge Tube (6 in)	Up to 25 ml (> 25 to 50) ml (> 50 to 100) ml	0.0081 ml 0.0084 ml 0.013 ml	
Centrifuge Tube (8 in)	Up to 10 ml (> 10 to 25) ml (> 25 to 100) ml	0.0081 ml 0.0084 ml 0.013 ml	
Imhoff Cone	Up to 100 ml (> 100 to 1000) ml	0.095 ml 0.10 ml	
Beaker	Up to 10 ml (> 10 to 50) ml (> 50 to 100) ml (> 100 to 150) ml (> 150 to 200) ml (> 200 to 250) ml (> 250 to 500) ml (> 500 to 1000) ml	0.000 45 ml 0.0021 ml 0.0041 ml 0.0096 ml 0.012 ml 0.013 ml 0.042 ml 0.10 ml	
Water Trap	Up to 25 ml	0.0081 ml	

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Piston Operated Volumetric Apparatus–			
Piston Pipettes	(10 to 200) µl (> 200 to 500) µl (> 500 to 2000) µl (> 2000 to 5000) µl (> 5000 to 10 000) µl	0.052 µl 0.19 µl 0.19 µl 0.20 µl 0.23 µl	Gravimetric method
Piston Burettes	Up to 2 ml (> 2 to 5) ml (> 5 to 10) ml (> 10 to 25) ml (> 25 to 50) ml	0.000 19 ml 0.000 20 ml 0.000 23 ml 0.000 38 ml 0.000 68 ml	
Dispensers	Up to 0.5 ml (> 0.5 to 2) ml (> 2 to 5) ml (> 5 to 10) ml (> 10 to 25) ml (> 25 to 50) ml (> 50 to 100) ml	0.000 19 ml 0.000 19 ml 0.000 20 ml 0.000 23 ml 0.000 38 ml 0.000 68 ml 0.0013 ml	
Viscometer[3] –			
Rotational Devices	(5.711 to 621.1) cP (621.1 to 2859) cP (2859 to 6149) cP (6149 to 26 600) cP	0.29 % of reading 0.38 % of reading 0.38 % of reading 0.44 % of reading	Viscosity standard solution
Viscosity Cups[3] –			
Ford	(2, 3, 4, 5) Cups	0.16 %	Viscosity standard solution
Zahn	(1, 2, 3, 4, 5) Cups	0.16 %	
Shell	(1, 2, 3, 4, 5, 6) Cups	0.16 %	
Stein Hall	Stein Hall Cup	0.0058 s	

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Hydrometry: Specific Gravity (Relative Density) Hydrometers and Equivalent Values in Other Hydrometer Scales: Density (g/ml, g/cm³, kg/m³) (cont)			
Baumé Heavy Hydrometers	(0.0 to 30.0) °Bé Hy (30.0 to 50.0) °Bé Hy (50.0 to 70.0) °Bé Hy	0.021 °Bé Hy 0.043 °Bé Hy 0.025 °Bé Hy	Cuckow method
API Hydrometers and Thermo-hydrometers (API Scale for Petroleum Products)	(-1.0 to 11.0) °API (9.0 to 21.0) °API (19.0 to 31.0) °API (29.0 to 41.0) °API (39.0 to 51.0) °API (49.0 to 61.0) °API (59.0 to 71.0) °API (69.0 to 81.0) °API (79.0 to 91.0) °API (89.0 to 101.0) °API	0.011 °API 0.012 °API 0.016 °API 0.015 °API 0.018 °API 0.021 °API 0.024 °API 0.029 °API 0.034 °API 0.041 °API	
Lactometers (Quevenne Scale)	(15 to 40) °Q	0.090 °Q	
Flow Rate – Liquids			
Volumetric	Up to 70 l/min	0.58 %	Direct comparison with Coriolis reference standard

VI. Mechanical

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Mass –			
OIML Classes F1, F2 & M1	1 mg 2 mg 5 mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg 1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1 kg 2 kg	0.020 mg 0.020 mg 0.020 mg 0.025 mg 0.03 mg 0.04 mg 0.05 mg 0.06 mg 0.08 mg 0.030 mg 0.040 mg 0.050 mg 0.060 mg 0.080 mg 0.10 mg 0.16 mg 0.30 mg 2.5 mg 5 mg 10 mg	Class E2 weight set
OIML Classes M2 & M3	5 kg 10 kg 20 kg	250 mg 500 mg 1000 mg	Class M1 weight set
Scales and Balances[3]	(0 to 220) g (>220 to 1200) g (>1200 to 2500) g (>2500 to 6200) g (>6.2 to 30.1) kg (>30.1 to 1000) kg	0.020 mg 0.056 mg 0.068 mg 0.068 mg 0.50 g 0.35 kg	Standard weights
Torque Wrenches and Drivers	(0.013 to 813) N·m	1.8 % of reading	Torque transducers

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Pressure –			
Pneumatic (Including Pressure Modules and Pressure Switch)[3]	(-10 to 0) psi (-68.95 to 0) kPa	00.0068 psi + 0.062 % of reading	Additel ADT681, ADT914 digital pressure calibrator
	(0 to 270) psi (0 to 1861.58) kPa	0.0068 psi + 0.016 % of reading	
	(0 to 27) psi (0 to 186.16) kPa	0.058 psi + 0.22 % of reading	
	(0 to 97) psi (0 to 668.79) kPa	0.29 psi + 0.30 % of reading	
	(0 to 270) psi (0 to 1861.58) kPa	0.46 psi + 0.30 % of reading	
	(0 to 1000) psi (0 to 6894.76) kPa	0.061 psi + 0.0071 % of reading	
	(0 to 10000) psi (0 to 68947.59) kPa	0.046 psi + 0.0058 % of reading	
	(-21 to 0) inHg (-71.11 to 0) kPa	0.58 inHg + 0.22 % of reading	
Pneumatic[3]	(-10 to 0) psi (-68.95 to 0) kPa	0.0068 %	Additel ADT681 series digital pressure & vacuum gages with pumps
	(0 to 270) psi (0 to 1861.58) kPa	0.016 %	
	(0 to 27) psi (0 to 186.16) kPa	0.21 %	
	(0 to 97) psi (0 to 668.79) kPa	0.30 %	
	(0 to 270) psi (0 to 1861.58) kPa	0.30 %	
	(-21 to 0) inHg (-71.11 to 0) kPa	0.39 %	

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Centrifugues[3] –			
Rotational Speed	(240 to 599.9) rpm (>600 to 3700) rpm (>3700 to 7320) rpm (>7320 to 9959) rpm (>9959 to 9999) rpm (>9999 to 11 321) rpm (>11 321 to 13 809) rpm (>13 809 to 16 055) rpm (>16 055 to 18 146) rpm (>18 146 to 20 000) rpm	1.5 rpm 1.0 rpm 1.1 rpm 1.2 rpm 1.3 rpm 1.5 rpm 1.6 rpm 1.7 rpm 1.8 rpm 1.9 rpm	Digital tachometer

VII. Optical Quantities

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Spectrophotometers[3] –			
Absorbance	(0.29 to 1.53) A	0.0022 A	Neutral density glass filters
Transmittance	(2.979 to 12.407) % (20.1 to 26.93) % (42.7 to 51.3) %	0.046 % of Transmittance 0.18 % of Transmittance 0.19 % of Transmittance	
Spectrophotometers Filters –			
Absorbance	(0.29 to 1.53) A	0.0023 A	Standard spectrophotometer
Transmittance	(3.0 to 12.4) % (20.0 to 26.8) % (42.6 to 51.1) %	0.089 % of Transmittance 0.37 % of Transmittance 0.40 % of Transmittance	
Wavelength	(278 to 880) nm	0.1 nm	

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Spectrophotometer Wavelength[3, 4]	278.77 nm 287.35 nm 333.75 nm 347.55 nm 360.58 nm 381.53 nm 385.83 nm 418.62 nm 445.70 nm 453.48 nm 460.03 nm 473.70 nm 484.17 nm 536.48 nm 637.53 nm	0.09 nm 0.11 nm 0.10 nm 0.21 nm 0.10 nm 0.09 nm 0.11 nm 0.12 nm 0.10 nm 0.10 nm 0.12 nm 0.19 nm 0.17 nm 0.11 nm 0.21 nm	Holmium glass filter
	431.40 nm 440.18 nm 472.40 nm 513.27 nm 529.03 nm 573.22 nm 585.30 nm 629.17 nm 684.47 nm 740.47 nm 748.50 nm 807.20 nm 879.50 nm	0.09 nm 0.14 nm 0.09 nm 0.08 nm 0.14 nm 0.22 nm 0.59 nm 0.29 nm 0.10 nm 0.32 nm 0.10 nm 0.12 nm 0.29 nm	Didymium glass filter

VIII. Thermodynamics

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Liquid and Dry Baths (Dry Wells)[3]	(-25 to 50) °C (50 to 100) °C (100 to 200) °C (200 to 300) °C (300 to 400) °C (400 to 600) °C (600 to 1100) °C	0.029 °C 0.033 °C 0.053 °C 0.11 °C 0.16 °C 0.40 °C 1.5 °C	Reference RTD thermometers, thermistors, thermocouples

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Bi-metal Thermometers[3]	(-20 to 150) °C (150 to 250) °C (250 to 400) °C (400 to 550) °C	0.59 °C 1.17°C 2.9 °C 2.9 °C	Reference RTD thermometers and temperature blocks
Digital Thermometers[3]	(-20 to -5) °C (-5 to 25) °C (25 to 50) °C (50 to 75) °C (75 to 100) °C (100 to 150) °C (150 to 200) °C (200 to 400) °C (400 to 600) °C (600 to 1100) °C	0.064 °C 0.064 °C 0.064 °C 0.064 °C 0.064 °C 0.097 °C 0.15 °C 0.29 °C 1.1 °C 2.3 °C	Reference RTD thermometers and temperature blocks
Partial Immersion Liquid-In-Glass Thermometers	(-20 to 0) °C (0 to 25) °C (25 to 50) °C (50 to 70) °C (70 to 90) °C (90 to 110) °C (110 to 130) °C (130 to 150) °C (150 to 200) °C (200 to 250) °C (250 to 300) °C	0.086 °C 0.086 °C 0.086 °C 0.086 °C 0.086 °C 0.086 °C 0.10 °C 0.11 °C 0.16 °C 0.19 °C 0.21 °C	Reference RTD thermometers and temperature blocks
Infrared Temperature – Measuring Equipment	(>-15 to 0) °C (>0 to 50) °C (>50 to 120) °C (>120 to 200) °C (>200 to 300) °C (>300 to 450) °C (>450 to 500) °C	0.26 °C 0.63 °C 1.2 °C 1.3 °C 1.4 °C 2.4 °C 3.4 °C	Fluke 4180 black body Fluke 4181 black body

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Thermo-Hygrometers, Dataloggers and Heat Stress WBGT Meters*–			
Humidity[4]	(10 to 25) % RH (25 to 45) % RH (45 to 75) % RH (75 to 90) % RH	1.8 % 2.2 % 2.2 % 2.7 %	Reference thermo-hygrometer and climatic chamber
Temperature	(0 to 10) °C (10 to 20) °C (20 to 30) °C (30 to 40) °C (40 to 50) °C	0.35 °C 0.30 °C 0.67 °C 0.67 °C 1.0 °C	*Including Wet bulb, dry bulb, globe temperature, and dew point

IX. Time & Frequency

Parameter/Equipment	Range	CMC[2, 5] (±)	Comments
Stopwatches[3]	Up to 24 h	0.037 s/24h	Reference stopwatch
Non-Contact Tachometers	(240 to 9000) RPM (9001 to 9500) RPM (9501 to 10 000) RPM (10 001 to 20 000) RPM	1.0 RPM 1.1 RPM 1.2 RPM 1.3 RPM	Transmille 3041A and work station

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

[2] Calibration and Measurement Capability Uncertainty (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] CMC's for intermediate values are calculated using linear interpolation.

[5] The contributions from the "best existing device" are not included in the CMC claim.

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

[7] 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

Accredited Laboratory

A2LA has accredited

ELICROM PERU S.A.C.

Lima, PERU

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *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 10th day of October 2018.

Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 4286.04
Valid to August 31, 2021
Revised October 16, 2019

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