



# CERTIFICATE OF ACCREDITATION

*This is to attest that*

## **ALMEER TECHNICAL SERVICES – CALIBRATION LABORATORY**

P.O.BOX.9240; PLOT NOS: 100-104 &118; AREA 7  
EAST AHMADI 61003, STATE OF KUWAIT

### **Calibration Laboratory CL-154**

has met the requirements of AC204, *IAS Accreditation Criteria for Calibration Laboratories*, and has demonstrated compliance with ISO/IEC Standard 17025:2017, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation.

Effective Date January 30, 2023

Expiration Date January 1, 2025



A handwritten signature in black ink that reads 'Raj Nathan'.

**President**

# SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | [www.iasonline.org](http://www.iasonline.org)

## ALMEER TECHNICAL SERVICES – CALIBRATION LABORATORY

[www.almeer.com.kw](http://www.almeer.com.kw)

**Contact Name** Meer Farooq

**Contact Phone** + 965-1840-800 x225

Accredited to ISO/IEC 17025:2017

Effective Date January 30, 2023

### CALIBRATION AND MEASUREMENT CAPABILITY (CMC)\*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY <sup>1,2</sup> (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
<i>Dimensional</i>			
External Micrometer – Metric	Up to 25 mm 25 mm to 100 mm 100 mm to 300 mm 300 mm to 600 mm	2.0 µm 7.4 µm 10 µm 14 µm	Direct method by using Reference gauge blocks & Long gauge blocks BS 870
Calipers (Dial / Vernier / Digital)	0 mm to 600 mm 0 mm to 800mm 0 mm to 1000mm	7.5 µm 8 µm 14 µm	Direct method by using Reference gauge blocks & Long gauge blocks EN ISO 13385-1
Dial Gauge - Plunger Type	Up to 25 mm	2.0 µm	Direct method by using Dial Calibration Tester BS EN ISO 463 BS 907
Dial Gauge - Lever Type	0.01 mm to 0.2 mm	1.4 µm	Direct method by using Dial Calibration Tester BS 2795
Tape & Scale Calibrator	Up to 2000 mm	(4.2 + 3.8 L) µm L is in meters	Direct method by using Reference Gauge Blocks, Grade 0 Lever Type Dial Gauge (0.001 mm)
Measuring Tape & Scale	Up to 2000 mm 2001 mm to 10000 mm 10001 mm to 50000 mm	(11 + 3.2 L) µm (12.2 + 2.8 L) µm (29 + 1.2 L) µm L is in meters	Direct method by using Measuring Tape & Scale Calibrator

\* If information in this CMC is presented in non-SI units, the conversion factors stated in NIST Special Publication 811 "Guide for the Use of the International System of Units (SI)" apply.

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Inside Micrometer, Stick Micrometer	Up to 100 mm 100 mm to 300 mm 300 mm to 600 mm	7.0 µm 8.0 µm 9.0 µm	Direct method by using Inside micro checker, Reference Gauge Blocks and accessories BS 959
Depth Micrometer, Depth Gauge	Up to 300 mm 300 mm to 600 mm	6 µm 9 µm	Direct method by using Depth Micro Checker BS 6468 and BS 6365
Height Gauge	Up to 300 mm 300 mm to 600 mm	7 µm 8 µm	Direct method by using Caliper Checker
Feeler Gauge	0.03 mm to 1 mm	3 µm	Direct method by using Litematic High Accuracy Digital Measuring instrument & Digital micrometer
Jigs & Fixtures Linear Measurement	Up to 50 mm 50 mm to 500 mm	2 µm 5 µm	By comparison with linear and angular reference artefacts and optical comparator
Angular measurement	0° to 90°	4'	
Coating Thickness Gauge	Up to 1500 µm	3 µm	Direct method by using Precision Foil Set ASTM E376
Ultrasonic Thickness Gauge	2 mm to 100 mm	6 µm	Direct method by using Ultrasonic Test Samples BS EN 15317
Gauge Block	0.5 mm to 10 mm 10 mm to 25 mm 25 mm to 50 mm 50 mm to 75 mm 75 mm to 100 mm 100 mm to 150 mm	0.09 µm 0.11 µm 0.13 µm 0.16 µm 0.19 µm 0.23 µm	Comparison method by using Grade K and Grade 0 Gauge Block and Gauge Block Comparator BS EN ISO 3650
Optical Comparator <sup>5</sup> Linearity Angularity Magnification	50 mm to 250 mm 1° to 360° 10X to 100X	2.1 µm 4' 0.07 %	Comparison method by using Grade 0 Gauge Block, Steel Angle Gauge set and micro scale JIS B 7184
Sieves	50 µm to 500 µm	4 µm	Comparison method by using Optical comparator ISO3310-1 ASTM E11
Thread Profile Gauge Pitch Angle	0.5 mm to 100 mm 0° to 90°	6 µm 5'	Comparison method by using Optical comparator API SPEC 5B, API SPEC 7-2

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<b>Mechanical</b>			
Pneumatic Pressure Indicating Instruments <sup>5</sup>	0.2 bar to 30 bar	0.01 %	Direct method by using Dead Weight Tester EURAMET cg-17
Hydraulic Pressure Indicating Instruments <sup>5</sup>	10 bar to 800 bar 800 bar to 2700 bar	0.01 % 0.07 %	Direct method by using Dead Weight Tester EURAMET cg-17
Vacuum Indicating Instruments <sup>5</sup>	-1 bar to 0 bar	0.07 mbar	Comparison method by using Reference Pressure Test Gauge EURAMET cg-17
Pneumatic Pressure Indicating Instruments <sup>5</sup>	0 bar to 2 bar	0.32 mbar	Comparison method by using Reference Pressure Test Gauge EURAMET cg-17
Absolute pressure indicating instruments <sup>5</sup>	0 bar to 100 bar	0.016 % + 0.1 mbar	Comparison Method by using Advanced-Field process Calibrator and Communicator OIML R 97
Barometer <sup>5</sup>	700 mbar to 1200 mbar	0.6 mbar	Comparison Method by using Advanced Field Calibrator and Communicator OIML R 97
Pneumatic Dead Weight Tester	20 kPa to 5550 kPa	0.0025 %	Using Piston Gauge PC-7100/7600 By Cross Float Method EURAMET cg-3
Hydraulic Dead Weight Tester	400 kPa to 200 MPa	0.003 %	Using Piston Gauge PC-7300 By Cross Float Method EURAMET cg-3
Torque Wrench & Torque Tools	0.04 N·m to 2 N·m 2 N·m to 30 N·m 30 N·m to 60 N·m 60 N·m to 110 N·m 110 N·m to 700 N·m 700 N·m to 1500 N·m 1500 N·m to 3000 N·m 3000 N·m to 50000 N·m	0.01 N·m 0.2 N·m 0.35 N·m 0.44 N·m 1.9 N·m 6.3 N·m 15 N·m 0.7 %	Direct Method by using Torque Tool Tester ISO 6789-2
Tachometer (non-contact type)	60 rpm to 999.9 rpm 1000 rpm to 99999 rpm	0.08 rpm 1.0 rpm	Direct method by using Multifunction Calibrator ASTM F2046
Sound level meter	94 dB & 114 dB (1 kHz)	0.62 dB	Direct method by using Sound Level Calibrator BS EN 61672-1

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Rotational Speed, Centrifuge <sup>5</sup>	5 rpm to 5000 rpm	0.01 % + 1 rpm	Comparison Method by using Tachometer
Stroboscope	5 rpm to 15000 rpm	0.01 % + 1 rpm	Comparison Method by using Tachometer
Mass Calibration	1 mg to 20 mg 20 mg to 500 mg 1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 10 kg 20 kg 50 kg, 100 kg 200 kg	2.0 µg 4.8 µg 6 µg 7 µg 9 µg 15 µg 15 µg 25 µg 50 µg 0.10 mg 0.24 mg 0.48 mg 0.80 mg 2.7 mg 5.5 mg 12 mg 0.60 g 2.8 g	Comparison method by using Mass comparator & weighing balance & E1/F1 Class Weight set OIML R 111-1, ASTM E617
Pipettes	1 µL to 10 µL 10 µL to 100 µL 100 µL to 200 µL 200 µL to 500 µL 500 µL to 1000 µL 1 mL to 10 mL	0.13 µL 0.2 µL 0.4 µL 0.7 µL 1.5 µL 2 µL	Class E1 Weights & Micro Balances by comparison method ISO 8655-2 ISO 8655-6 ISO/TR 20461
Gravimetric Volume Calibration – (Laboratory Glassware, Density cup, Measuring Jar)	1 mL to 5 mL 5 mL to 25 mL 25 mL to 50 mL 50 mL to 100 mL 100 mL to 250 mL 250 mL to 500 mL 500 mL to 1000 mL 1 L to 2 L	2 µL 5 µL 7 µL 10 µL 25 µL 50 µL 110 µL 250 µL	Comparison Method by using Class F1 Weights and Weighing Instrument
Gravimetric Volume Calibration – Proving Tanks	2 L to 1000 L	0.015 %+0.12 mL	Comparison Method by using Class F1 Weights and Weighing Instrument NIST Handbook 105-3, OIML R 120, EURAMET cg 19
Mass/Volume Flow Meter <sup>5</sup>	10 m <sup>3</sup> /h to 1000 m <sup>3</sup> /h	0.02 %	Comparison method by using Small Volume Piston Prover

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Mass Flow Meter	1 kg/s to 1000 kg/s	0.05 %	Comparison Method by using Class F1 Weights and Weighing Instrument
Calibration of displacement provers by water draw method – Volumetric <sup>5</sup>	5 L to 200 L	0.04 %	Comparison Method by using Standard test measure API MPMS 4.9.1 API MPMS 4.9.2, API MPMS 12.2.4
Calibration of displacement provers by water draw method - Gravimetric	2 L to 600 L	0.04 %	Comparison Method by using Class F1 Weights and Weighing Instrument API MPMS 4.9.1, API MPMS 4.9.4
Analytical, Laboratory and Industrial Weighing Balances <sup>5</sup>	Up to 10 g 10 g to 100 g 100 g to 500 g 500 g to 1000 g 1 kg to 10 kg 10 kg to 35kg 35 kg to 500 kg 500 kg to 2000 kg	0.07 mg 0.14 mg 0.30 mg 0.75 mg 6.7 mg 0.08 g 3.2 g 8.0 g	Direct method by using Class E1, F1 and M1 Weights
Gas Flow Meter	0.2 L/min to 2 L/min 2 L/min to 500 L/min 467 L/min to 4670 L/min	0.21 % 0.44 % 0.8 %	Laminar Flow Element by Comparison method
Force – Load Cell (Tension)	1 N to 500 kN	0.47 %	Comparison Method by using Reference Ultra Precision Load Cell and Standard Weights
Force – Load Cell (Compression)	1 N to 500 kN	0.45 %	Comparison method by using Reference Ultra Precision Load Cell and Standard Weights
Vibration Meter Velocity Acceleration	(7 Hz to 10 kHz) Up to 196 m/s Up to 380 mm/s <sup>2</sup>	1.7 % 1.7 %	Direct method by using Portable Vibration Calibrator
<b>Thermal</b>			
Calibration Bath, Dry Block Calibrator	-80 °C to 400 °C 400 °C to 900 °C	0.04 °C 0.23 °C	Reference PRT Probe with Readout & Type R Thermocouple with DMM in comparison method (Single sensor method)
Liquid-in-Glass Thermometers	-40 °C to 150 °C 150 °C to 450 °C	0.06 °C 0.25 °C	Comparison Method by using Reference PRT probe with Readout

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IR Thermometer / Thermovision Camera / Pyrometer	-30 °C to 150 °C 150 °C to 700 °C 700 °C to 1000 °C	0.37 °C 2 °C 5 °C	Comparison Method by using Portable IR Calibrator & Blackbody Source
Temperature & Humidity indicating/ recording Instruments	10 % RH to 95 %RH 18 °C to 28 °C	1 %RH 0.2 °C	Direct Comparison by using Humidity Generator
Ovens, Incubators, Autoclave, Climatic Chambers, Freezers, Refrigerators, Furnace <sup>5</sup>	-18 °C to 100 °C 100 °C to 200 °C 200 °C to 700 °C 700 °C to 1200 °C	0.85 °C 1.5 °C 3.9 °C 3.3 °C	Comparison method by using sensor and Data Acquisition Unit (Single Sensor Method)
Temperature sensors with and without Indicator <sup>5</sup>	-196 °C -80 °C to -40 °C -40 °C to 140 °C 140 °C to 400 °C 400 °C to 700 °C 700 °C to 1450 °C	0.03 °C 0.02 °C 0.03 °C 0.07 °C 1.2 °C 3 °C	Reference PRT Probe with Readout & Type R Thermocouple with DMM in comparison method
<b>Electrical – DC/LF</b>			
Temperature Measurement by Electrical Simulation - Generate <sup>3,5</sup> Pt-100 Thermocouple Type K Type J	-200 °C to 600 °C -200 °C to 1200 °C -200 °C to 1200 °C	0.13 °C 0.41 °C 0.30 °C	By Direct Measurement using Multifunction Calibrator
Temperature Measurement by Electrical Simulation – Measure <sup>4,5</sup> Pt-100 Thermocouple Types K / J	-200 °C to 600 °C -200 °C to 1200 °C	0.06 °C 0.43 °C	Direct Measurement using Precision Thermometer Read out
DC Voltage – Generate <sup>3</sup>	Up to 100 mV Up to 1 V Up to 10 V Up to 100 V Up to 1000 V	2.4 μV 12 μV 120 μV 1.6 mV 16 mV	Multifunction Calibrator
AC Voltage - Generate <sup>3</sup>	(60 Hz) Up to 100 mV Up to 1 V Up to 10 V Up to 100 V Up to 1000 V	18 μV 160 μV 1.6 mV 16 mV 180 mV	Direct method by using Multifunction Calibrator

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AC Voltage - Generate <sup>3</sup> (continued)	(1 kHz)		Direct method by using Multifunction Calibrator
	Up to 100 mV	18 µV	
	Up to 1 V	160 µV	
	Up to 10 V	1.6 mV	
	Up to 100 V	16 mV	
	Up to 1000 V	180 mV	
	(10 kHz)		
	Up to 100 mV	18 µV	
	Up to 1 V	160 µV	
	Up to 10 V	1.6 mV	
	Up to 100 V	20 mV	
	Up to 1000 V	180 mV	
DC Current - Generate <sup>3</sup>	(100 kHz)		Direct Method by using Multifunction Calibrator
	Up to 100 mV	87 µV	
	Up to 1 V	640 µV	
	Up to 10 V	8.3 mV	
	Up to 100 V	190 mV	
AC Current – Generate <sup>3</sup>	Up to 10 µA	22 nA	Direct method by using Multifunction Calibrator
	Up to 100 µA	35 nA	
	Up to 1 mA	140 nA	
	Up to 10 mA	1.1 µA	
	Up to 100 mA	9.7 µA	
	Up to 1 A	190 µA	
	Up to 2.5 A	770 µA	
	Up to 10 A	4.4 mA	
	10 A to 20 A	16 mA	
	(60 Hz)		
	Up to 100 µA	180 nA	
	Up to 1 mA	890 nA	
	Up to 10 mA	4.7 µA	
	Up to 100 mA	47 µA	
	Up to 1 A	480 µA	
	Up to 2.5 A	1.2 mA	
	Up to 10 A	6.2 mA	
	10 A to 20 A	23 mA	
	(1 kHz)		
	Up to 100 µA	180 nA	
	Up to 1 mA	890 nA	
	Up to 10 mA	4.8 µA	
	Up to 100 mA	47 µA	
	Up to 1 A	480 µA	
Up to 2.5 A	1.2 mA		
Up to 10 A	9.3 mA		
10 A to 20 A	27 mA		



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AC Current – Generate <sup>3</sup> (continued)	(10 kHz) Up to 100 $\mu$ A Up to 1 mA Up to 10 mA Up to 100 mA Up to 1 A Up to 2.5 A	780 nA 8.2 $\mu$ A 48 $\mu$ A 480 $\mu$ A 23 mA 52 mA	Direct method by using Multifunction Calibrator
DC Resistance - Generate <sup>3</sup>	Up to 10 $\Omega$ Up to 100 $\Omega$ Up to 1 k $\Omega$ Up to 10 k $\Omega$ Up to 100 k $\Omega$ Up to 1 M $\Omega$ Up to 10 M $\Omega$ Up to 100 M $\Omega$	1.6 m $\Omega$ 4.3 m $\Omega$ 31 m $\Omega$ 310 m $\Omega$ 3.1 $\Omega$ 35 $\Omega$ 1.5 k $\Omega$ 53 k $\Omega$	Direct Method by using Multifunction Calibrator
Capacitance - Generate <sup>3,6</sup>	(10 Hz to 1 kHz) Up to 10 nF Up to 100 nF Up to 1 $\mu$ F Up to 10 $\mu$ F Up to 100 $\mu$ F  (0 Hz to 50 Hz) Up to 1000 $\mu$ F  (0 Hz to 2 Hz) Up to 10 mF  (0 Hz to 0.2 Hz) Up to 100 mF	36 pF 360 pF 3.7 nF 36 nF 560 nF  5.6 nF  56 $\mu$ F  1.2 $\mu$ F	Direct method by using Multifunction Calibrator
Frequency - Generate <sup>3</sup>	Up to 10 Hz 10 Hz to 100 Hz 100 Hz to 900 Hz 900 Hz to 5 kHz 5 kHz to 50 kHz 50 kHz to 500 kHz 500 kHz to 1 MHz 1 MHz to 10 MHz 10 MHz to 50 MHz 50 MHz to 100 MHz 100 MHz to 300 MHz	12 mHz 14 mHz 29 mHz 120 mHz 980 mHz 1.5 Hz 2 Hz 19 Hz 97 Hz 190 Hz 580 Hz	Direct measurement by using Multifunction Calibrator
DC Current Clamp	Up to 40 A Up to 100 A Up to 400 A Up to 750 A Up to 1000 A	340 mA 650 mA 2.5 A 4.4 A 5.7 A	By Direct Measurement using Multifunction Calibrator + Current Coil

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AC Current Clamp	(50 Hz) Up to 40 A Up to 100 A Up to 250 A Up to 400 A Up to 750 A Up to 1000 A	480 mA 830 mA 2.3 A 3.2 A 5.2 A 6.7 A	By Direct Measurement using Multifunction Calibrator + Current Coil
	(100 Hz) Up to 40 A Up to 100 A Up to 250 A Up to 400 A Up to 750 A Up to 1000 A	670 mA 1.3 A 3.4 A 4.9 A 8.5 A 11 A	
DC Voltage – Measure <sup>4,5</sup>	Up to 100 mV Up to 1 V Up to 10 V Up to 100 V Up to 1000 V	1.6 μV 7.7 μV 71 μV 860 μV 18 mV	Comparison method by using 8½ digit Digital Multimeter
AC Voltage – Measure <sup>4,5</sup>	(60 Hz) Up to 100 mV Up to 1 V Up to 10 V Up to 100 V Up to 750 V	70 μV 700 μV 7 mV 70 mV 760 mV	Comparison method by using 8½ digit Digital Multimeter
	(1 kHz) Up to 100 mV Up to 1 V Up to 10 V Up to 100 V Up to 750 V	30 μV 300 μV 3 mV 40 mV 650 mV	
	(100 kHz) Up to 100 mV Up to 1 V Up to 10 V Up to 100 V	680 μV 6.8 μV 68 mV 41 mV	
DC Current - Measure <sup>4,5</sup>	Up to 1 μA Up to 10 μA Up to 100 μA Up to 1 mA Up to 10 mA Up to 100 mA Up to 1 A	580 pA 630 pA 2.4 nA 21 nA 210 nA 3.6 μA 110 μA	Comparison method by using 8½ digit Digital Multimeter

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DC Current - Measure <sup>4,5</sup> (continued)	Up to 5 A Up to 10 A Up to 20 A	30 mA 45 mA 75 mA	Direct Method by using Multifunction Electrical Tester Calibrator
AC Current - Measure <sup>4,5</sup>	(60 Hz) Up to 100 µA Up to 1 mA Up to 10 mA Up to 100 mA Up to 1 A	90 nA 810 nA 8 µA 80 µA 1 mA	Comparison method by using 8½ digit Digital Multimeter
	(60 Hz) Up to 5 A Up to 10 A Up to 20 A	30 mA 45 mA 75 mA	Direct Method by using Multifunction Electrical Tester Calibrator
	(1 kHz) Up to 100 µA Up to 1 mA Up to 10 mA Up to 100 mA Up to 1 A	90 nA 500 nA 5 µA 50 µA 1.2 mA	Comparison method by using 8½ digit Digital Multimeter
	(1 kHz) Up to 5 A Up to 10 A Up to 20 A	30 mA 45 mA 75 mA	Direct Method by using Multifunction Electrical Tester Calibrator
DC Resistance - Measure <sup>4</sup>	50 µΩ to 1000 µΩ 1 mΩ to 200 mΩ 200 mΩ to 1 Ω	0.15 µΩ 0.03 mΩ 0.5 mΩ	Direct measurement (V/I= R) method by using Multiproduct Calibrator & DMM 6½
	1 Ω to 99 Ω 99 Ω to 999 Ω 0.999 kΩ to 10 kΩ 10 kΩ to 100 kΩ 100 kΩ to 1000 kΩ 1000 kΩ to 10 MΩ 10 MΩ to 100 MΩ 100 MΩ to 10 GΩ	6 mΩ 160 mΩ 260 mΩ 1.2 Ω 17 Ω 830 Ω 0.006 MΩ 0.006 GΩ	Comparison method by using 8½ digit Digital Multimeter
High Voltage AC/DC Measure <sup>4,5</sup>	(50 Hz) 1 kV to 25 kV 25 kV to 60 kV 60 kV to 120 kV	0.6 % 1.2 % 0.75 %	Direct measurement using High Voltage Divider and Digital Multimeter HV Probe Fluke 80k-40 with Fluke 5320A
	(DC) 1 kV to 40 kV 40 kV to 60 kV 60 kV to 120 kV	0.35 % 1.0 % 0.75 %	

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Insulation Resistance	(Up to 1 kV) 40 kΩ to 99.99 kΩ 0.1 MΩ to 0.999 MΩ 1 MΩ to 99 MΩ 0.1 GΩ to 10 GΩ 100 Fixed GΩ  (Up to 5 kV) 350 MΩ to 999 MΩ 1 GΩ to 9.9 GΩ 10 GΩ to 199.9 GΩ 200 GΩ to 999.9 GΩ	0.6 kΩ 0.004 MΩ 0.56 MΩ 0.09 GΩ 3.1 GΩ  9.3 MΩ 0.093 GΩ 3.8 GΩ 19 GΩ	Multifunction Electrical Tester Calibrator with HV Adaptor/ Resistance Multiplier
Low Voltage Resistance / Earth Tester	0.1 Ω to 4.99 Ω 5 Ω to 99.99 Ω 100 Ω to 999.9 Ω 1 kΩ to 10 kΩ	0.03 Ω 0.2 Ω 1.7 Ω 0.015 kΩ	Multifunction Electrical Tester Calibrator with HV Adaptor/ Resistance Multiplier
RCD Tester Trip Current Trip Time	3 mA to 3000 mA 10 ms to 5000 ms	1.2 % 0.03 % + 0.25 ms	Direct Method by using Multi-function Electrical tester Calibrator
Oscilloscope  DC Gain (50 Ω and 1 MΩ load)  Leveled Sine Wave  Time Marker	0 V to 6.6 V 0 V to 130 V  5 mV to 5.5 V p-p (50 Hz Reference) (50 kHz to 100 MHz) (100 MHz to 600 MHz)  50 ms to 5 s 20 ms to 100 ns 50 ns to 20 ns 10 ns 5 ns to 2 ns	0.35 % + 0.04 mV 0.35 % + 0.04 mV  3 % + 300 μV 4 % + 300 μV 6 % + 300 μV  0.25 ms 25 μs/s 25 μs/s 25 μs/s 25 μs/s	Direct measurement by using Multifunction calibration with scope option
Welding Machine- DC Current <sup>5</sup>	20 A to 50 A 50 A to 250 A 250 A to 500 A 500 A to 3000 A	0.2 A 2.7 A 4.7 A 3 A	Current Shunt & DMM 6½ by direct measurement.
AC Power & Energy <sup>5</sup> @ PF ±0.5 to 1 (1φ & 3 φ)	(40 Hz to 500 Hz) 5 V to 560 V, 1 mA to 120 A	0.07 %	Direct measurement by using 3-Phase Power Calibrator

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Micro Ohm Meter	50 $\mu\Omega$ 100 $\mu\Omega$ 150 $\mu\Omega$ 200 $\mu\Omega$ 0.5 m $\Omega$ 1.0 m $\Omega$ 1.5 m $\Omega$ 1.5 m $\Omega$ to 2.0 $\Omega$	0.45 % 0.25 % 0.15 % 0.1 % 0.05 % 0.03 % 0.02 % 0.02 %	Direct Method by using Micro Ohm Standard
<b>RF/Microwave and Electromagnetics</b>			
RF & Microwave Power - Generate <sup>3</sup>	(0.2kHz to 100 kHz) -048 dBm to +24 dBm  (0.1 MHz to 10 MHz) -048 dBm to +24 dBm -74 dBm to -48 dBm -94 dBm to -74 dBm  (10 MHz to 128 MHz) -048 dBm to +24 dBm -84 dBm to -48 dBm -94 dBm to -84 dBm -130 dBm to -94 dBm  (128 MHz to 300 MHz) -048 dBm to +20 dBm -74 dBm to -48 dBm -94 dBm to -74 dBm -130 dBm to -94 dBm  (0.3GHz to 1.4 GHz) -048 dBm to +20 dBm -84 dBm to -48 dBm -130 dBm to -84 dBm  (1.4 GHz to 4 GHz) -74 dBm to +14 dBm -94 dBm to -74 dBm -130 dBm to -94 dBm  (-100 dBm to +24 dBm) 1 kHz to 100 MHz 0.1 GHz to 1 GHz 1 GHz to 2.4 GHz 2.4 GHz to 80 GHz 8 GHz to 12 GHz 12 GHz to 18 GHz 18 GHz to 22 GHz 22 GHz to 26.5 GHz	0.04 dB  0.06 dB 0.25 dB 0.56 dB  0.06 dB 0.15 dB 0.36 dB 0.8 dB  0.09 dB 0.13 dB 0.53 dB 1.56 dB  0.25 dB 0.53 dB 1.6 dB  0.53 dB 1.6 dB 1.9 dB  0.043 % 0.57 % 0.70 % 0.88 % 1.0 % 1.2 % 1.6 % 2.5 %	Direct Method by using RF Reference Source Fluke 96270A/LL/HF

# SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

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MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY <sup>1,2</sup> (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
<b><i>Time and Frequency</i></b>			
Time Interval Measure <sup>4</sup> , Stopwatch	100 ms to 36000 s	0.04 s	Direct Method by using Counter
Frequency –Measure <sup>4</sup>	10 Hz to 350 MHz	0.001 %	Direct Method by using Counter
<b><i>Chemical</i></b>			
pH Meter <sup>5</sup>	4 pH 7 pH 10 pH	0.04 pH	Direct method by using Standard Reference Buffer Solution
Conductivity Meter <sup>5</sup>	1.413 mS/cm	0.04 mS/cm	Direct method by using Standard Reference Buffer Solution

<sup>1</sup>The uncertainty covered by the Calibration and Measurement Capability (CMC) is expressed as the expanded uncertainty having a coverage probability of approximately 95 %. It is the smallest measurement uncertainty that a laboratory can achieve within its scope of accreditation when performing calibrations of a best existing device. The measurement uncertainty reported on a calibration certificate may be greater than that provided in the CMC due to the behavior of the calibration item and other factors that may contribute to the uncertainty of a specific calibration.

<sup>2</sup>When uncertainty is stated in relative terms (such as percent, a multiplier expressed as a decimal fraction or in scientific notation), it is in relation to instrument reading or instrument output, as appropriate, unless otherwise indicated.

<sup>3</sup>Capability is suitable for the calibration of measuring devices in the stated ranges.

<sup>4</sup>Capability is suitable for the calibration of devices intended to generate the indicated quantity in the stated ranges.

<sup>5</sup>Also available as site calibration. Note that actual measurement uncertainties achievable at a customer's site can normally be expected to be larger than the uncertainties listed on this Scope of Accreditation.

<sup>6</sup>Stated uncertainties are valid for the ranges of frequencies given, but the actual frequency applied by the calibrator may be dependent on the measurement device under calibration.

p-p: peak to peak