



INTERNATIONAL  
ACCREDITATION  
SERVICE®

# CERTIFICATE OF ACCREDITATION

*This is to attest*

## ENERGY DISTRIBUTOR LAB FOR MEASUREMENT AND CALIBRATION

AL ARID DISTRICT - ABI JAAFAR AL BATTI STREET - P. O. BOX 226  
RIYADH, 11798, SAUDI ARABIA

### Calibration Laboratory CL-182

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.

Expiration Date November 1, 2026

Effective Date May 21, 2024



*International Accreditation Service*

Issued under the authority of IAS management

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# SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

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## ENERGY DISTRIBUTOR LAB FOR MEASUREMENT AND CALIBRATION

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*Accredited to ISO/IEC 17025:2017*

*Effective Date May 21, 2024*

### 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 <sup>3</sup>	0 mm to 300 mm	2.3 µm	Micrometer Checker, Slip Gauge Set Grade 0, Optical Parallel and Optical Flat EDLMC/CM/M/01
Internal Micrometer <sup>3</sup>	0 mm to 600 mm	4.3 µm	Micrometer Checker, Slip Gauge Set Grade 0, Optical Parallel and Optical Flat EDLMC/CM/M/01
Caliper <sup>3</sup> (External, Internal)	0 mm to 1000 mm	12 µm	Caliper Checker, Slip Gauge Set Grade 0, Optical Parallel EDLMC/CM/M/02
Height gauge <sup>3</sup>	0 mm to 1000 mm	12 µm	Caliper Checker, Slip Gauge Set Grade 0 EDLMC/CM/M/03
Thickness Gauge <sup>3</sup> (with dial Gauge)	0 mm to 5 mm 0 mm to 25 mm 0 mm to 50 mm	1.1 µm 7.8 µm 8.5 µm	Slip Gauge Set Grade 0 EDLMC/CM/M/04
Feeler Gauge <sup>3</sup>	0.01 mm to 2 mm	3.5 µm	Digital Micrometer EDLMC/CM/M/05
Bevel Protractor <sup>3</sup>	0° to 360°	10'	Angle Gauges EDLMC/CM/M/21
Dial Indicator <sup>3</sup>	0 mm to 25 mm	1.3 µm	Dial Indicator Calibrator EDLMC/CM/M/24

\* 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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Profile Projector <sup>3</sup> Linear Angular Magnification	Up to 200 mm Up to 360° 20 X	8 µm 0.02° 0.24 %	Reference Glass Ruler Gauge Block Angle Gauges Digital Caliper EDLMC/CM/M/26
Coating Thickness Masters & Standard Foils <sup>3</sup>	0.01 mm to 1 mm	3.5 µm	Digital Micrometer EDLMC/CM/M/06
Coating Thickness Gauge <sup>3</sup>	up to 1 mm	2.0 µm	Reference Coating Thickness Material EDLMC/CM/M/27
<i>Mechanical</i>			
Torque Wrench / Torque Device or Meter <sup>3</sup>	0.03 N·m to 2 N·m 2 N·m to 10 N·m 10 N·m to 27 N·m 27 N·m to 100 N·m 100 N·m to 2712 N·m	0.6 % 0.4 % 0.4 % 0.3 % 0.6 %	Precision Torque Calibrator Transducers with digital display as per ISO 6789 EDLMC/CM/M/07
Sound Level Meter <sup>3</sup>	114 dBA @ 1 kHz	0.65 dBA	Sound Level Calibrator EDLMC/CM/M/10
Pneumatic Pressure <sup>3</sup> Pressure and Vacuum Gauge (Dial/Digital) and Recorder / Pressure transducer / transmitter / Safety valve	-12 psi to -0.1 psi -0.1 psi to 0.1 psi 0.1 psi to 500 psi 500 psi to 1500 psi -33 mbar to -0.001 mbar -0.001 mbar to 0.001 mbar 0.001 mbar to 33 mbar	0.75 % 0.0075 psi 1.1 % 1.8 % 0.3 % 3.7 µbar 0.09 %	Reference Pressure Calibrator & Reference Pressure Generator EDLMC/CM/M/08
Hydraulic Pressure <sup>3</sup> Pressure and Vacuum Gauge (Dial/Digital) and Recorder / Pressure transducer / transmitter / Safety valve	100 kPa to 7000 kPa 7 MPa to 100 MPa	0.04 % 0.05 %	DWT Electronic Dead Weight Tester EDLMC/CM/M/08
	10 psi to 10000 psi	0.5 %	Reference Pressure Calibrator & Reference Pressure Generator EDLMC/CM/M/08
Portable Vacuum Gauges <sup>3</sup> (Teledyne Hastings)	0.1 mTorr to 100 mTorr (DV5)	18 %	Teledyne Hastings Vacuum Tube Reference Standards DV4, DV5 & DV6 EDLMC/CM/M/34
	1 mTorr to 1 Torr (DV6)	16 %	
	10 mTorr to 10 Torr (DV4)	16 %	
Weight Balance and Scales <sup>3</sup>	0 g to 320 g	0.59 mg	E2 Class Weights M1 Class Weights E2 Class Weights E2 Class Weights M1 Class Weights M2 Class Weights M2 Class Weights
	0 g to 320 g	3.5 mg	
	0 kg to 24 kg	100 mg	
	0 kg to 110 kg	12 g	
	0 kg to 150 kg	39 g	
	Up to 500 kg	2 kg	
	500 kg to 1000 kg	2.3 kg	

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	1000 kg to 9000 kg	3.1 kg	M2 Class Weights EDLMC/CM/M/09
Weights (For calibration of F2 and lower class weights)	1 mg 2 mg 5 mg 10 mg 20 mg 50 mg	0.01 mg 0.01 mg 0.01 mg 0.01 mg 0.014 mg 0.012 mg	Using E2, F1, F2, M1 Class Weights and Balance/ Comparator of readability 0.01 mg, 0.00001 g & 0.000001 kg as per OIML R111 using ABBA or Subdivision Method
Weights (For calibration of F1 and lower class weights)	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 5 kg 10 kg 20 kg	0.014 mg 0.015 mg 0.019 mg 0.017 mg 0.024 mg 0.014 mg 0.012 mg 0.016 mg 0.022 mg 0.023 mg 0.041 mg 0.1 mg 1.2 mg 3.7 mg 2.4 mg 4 mg 10 mg	
Force – Tension / Compression (Push/Pull Gauge) <sup>3</sup>	0 N to 2000 N 0 lbf to 500 lbf	1.4 N 0.32 lbf	Reference Force Gauge EDLMC/CM/M/29
Force – Tension <sup>3</sup>	0 kN to 10 kN 10 kN to 500 kN	0.13 % 0.10 %	Comparison with Reference Load Cell As per ISO 376 and OIML R65 (2006) EDLMC/CM/M/18
Force – Compression <sup>3</sup>	0 kN to 10 kN 10 kN to 500 kN	0.13 % 0.10 %	Comparison with Reference Load Cell As per ISO 376 and OIML R65 (2006) EDLMC/CM/M/18
Load cell-S Type & Dynamometer -Measure <sup>3</sup>	1 kN to 200 kN	0.65 %	Reference Load Cell EDLMC/CM/M/14
Durometer <sup>3</sup>	30 HA to 90 HA	2 HA	Standard Reference Blocks of Nominal Values 30 HA, 60 HA & 90 HA EDLMC/CM/M/30

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Fuel Dispensation By Volume <sup>3</sup> (at Site – in a gasoline station)	Petrol N91: 20 L Petrol N95: 20 L Diesel: 20 L	18 mL	Volumetric Standards for Petrol (N91 and N95) and Diesel EDLMC/CM/M/45
Anemometer <sup>3</sup>	For fixed values of: 492 ft/min 984 ft/min 1969 ft/min 2953 ft/min	4 %	Digital Airflow Meter (By Comparison) EDLMC/CM/M/31
Vibration Meter <sup>3</sup>	1 m/s <sup>2</sup> to 5 m/s <sup>2</sup> 5 m/s <sup>2</sup> to 10 m/s <sup>2</sup> 10 m/s <sup>2</sup> to 20 m/s <sup>2</sup>	0.1 m/s <sup>2</sup> 0.2 m/s <sup>2</sup> 0.6 m/s <sup>2</sup>	Vibration Generator EDLMC/CM/M/12
Hydrometer <sup>3</sup>	0.7 SG to 1 SG	0.0076 SG	Reference Hydrometer with Baume '10-70 Be' liquid EDLMC/CM/M/40
Liquid Flow Meter <sup>3</sup>	2 m <sup>3</sup> /h to 350 m <sup>3</sup> /h	2.2 %	Liquid Flow Meter Comparison Method GE PT878 S/N: GAA1547029 Ultrasonic Flow Meter EDLMC/CM/M/22
<b>Thermal</b>			
Temperature Controller / Indicator / Recorder with sensor / Glass Thermometer / Digital Thermometer / Thermocouple / Sensor / Temperature Gauge / Transmitter <sup>3</sup>	-45 °C to 140 °C 140 °C to 700 °C	0.07 °C 0.43 °C	Metrology Well EDLMC/CM/T/01
Infrared Thermometer / Pyrometer <sup>3</sup>	-25 °C to 150 °C 150 °C to 500 °C 500 °C to 980 °C	0.15 °C 0.38 °C 3.1 °C	Fluke 9133 IR Calibrator Fluke 9132 IR Calibrator Omega Black Body Radiation Source EDLMC/CM/T/03
Infrared Calibrator <sup>3</sup>	-30 °C to 0 °C 0 °C to 50 °C 50 °C to 250 °C 250 °C to 500 °C	0.32 °C 0.09 °C 0.50 °C 0.54 °C	Comparison with Reference PRT sensor/digital temp indicator as per Euramet cg-13 Version 3(02/2015) EDLMC/CM/T/06
Oven / Incubator / Freezer / Furnaces <sup>3</sup>	-50 °C to 1000 °C	1.2 °C	Reference Indicator with Sensor EDLMC/CM/T/02

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Dry Block Calibrator <sup>3</sup>	-45 °C to 140 °C 140 °C to 700 °C	0.13 °C 0.19 °C	Comparison with Reference PRT sensor/digital temp indicator as per Euramet cg-13 Version 3(02/2015) EDLMC/CM/T/06
Humidity Meter, Sensor with Indicator, Thermo-Hygrometer, Dry Bulb and Wet bulb Thermometer <sup>3</sup>	Ambient to 40 °C 20 %RH to 90 %RH	0.27 °C 1.2 %RH	Humidity Chamber, Reference Humidity Monitoring Device EDLMC/CM/T/04
Dew Point Meter <sup>3</sup>	- 50 °C to 20 °C	0.2 °C	Reference Dew Point Meter EDLMC/CM/T/05
RTD Pt 100 (Probe Calibration) <sup>3</sup>	-45 °C to 700 °C	0.19 °C	Reference Multimeter Temperature / Pressure Calibrator and Digital Thermometer Readout Metrology Well EDLMC/CM/T/01
<b>Electrical – DC/LF</b>			
DC Voltage – Source <sup>3,4</sup>	100 µV to 300 mV 300 mV to 3 V 3 V to 30 V 30 V to 300 V 300 V to 1000 V	5 µV/V + 1 µV 5 µV/V + 10 µV 7 µV/V + 100 µV 17 µV/V + 1 mV 15 µV/V + 5 mV	Multi-Function Calibrator by Direct Method EDLMC/CM/E/01
DC Current - Source <sup>3,4</sup>	100 nA to 300 µA 300 µA to 3 mA 3 mA to 30 mA 30 mA to 300 mA 300 mA to 3 A 3 A to 20 A 20 A to 1000 A	260 µA/A + 2 nA 690 µA/A + 20 nA 270 µA/A + 0.2 µA 160 µA/A + 2 µA 460 µA/A + 20 µA 3 mA/A + 200 µA 3.8 mA/A	Multi-Function Calibrator by Direct Method  EDLMC/CM/E/03  Multi-Function Calibrator by Direct Method with 2/10/50 Turn Current Coil
AC Voltage - Source <sup>3,4</sup>	100 mV to 330 mV (10 Hz to 45 Hz) (45 Hz to 1 kHz) (1 kHz to 10 kHz) (10 kHz to 20 kHz) (20 kHz to 50 kHz) (50 kHz to 100 kHz) (100 kHz to 500 kHz) (at 500 kHz)  330 mV to 3.3 V (10 Hz to 45 Hz) (45 Hz to 1 kHz) (1 kHz to 10 kHz)	0.93 % 0.93 % 0.93 % 0.93 % 0.93 % 0.95 % 0.33 % 0.33 %  0.035 % 0.018 % 0.018 %	Multi-Function Calibrator by Direct Method EDLMC/CM/E/02

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AC Voltage - Source <sup>3,4</sup> continued	(10 kHz to 20 kHz)	0.023 %	Multi-Function Calibrator by Direct Method
	(20 kHz to 50 kHz)	0.036 %	
	(50 kHz to 100 kHz)	0.084 %	
	(100 kHz to 500 kHz)	0.029 %	
	(at 500 kHz)	0.029 %	
	3.3 mV to 33 V		
	(10 Hz to 45 Hz)	0.036 %	
	(45 Hz to 1 kHz)	0.018 %	
	(1 kHz to 10 kHz)	0.018 %	
	(10 kHz to 20 kHz)	0.029 %	
	(20 kHz to 50 kHz)	0.042 %	
	(50 kHz to 100 kHz)	0.11 %	
	(at 100 kHz)	0.11 %	
	33 V to 330 V		
	(45 Hz to 1 kHz)	0.023 %	
	(1 kHz to 10 kHz)	0.025 %	
(10 kHz to 20 kHz)	0.028 %		
(20 kHz to 50 kHz)	0.036 %		
(50 kHz to 100 kHz)	0.24 %		
(at 100 kHz)	0.24 %		
330 V to 1020 V			
(45 Hz to 1 kHz)	0.036 %		
(1 kHz to 5 kHz)	0.030 %		
(5 kHz to 10 kHz)	0.036 %		
(at 10 kHz)	0.036 %		
AC Current - Source <sup>3,4</sup>	100 µA to 329 µA		Multi-Function Calibrator by Direct Method EDLMC/CM/E/04
	(10 Hz to 20 Hz)	0.46 %	
	(20 Hz to 45 Hz)	0.3 %	
	(45 Hz to 1 kHz)	0.27 %	
	(1 kHz to 5 kHz)	0.54 %	
	(5 kHz to 10 kHz)	1.2 %	
	(10 kHz to 30 kHz)	2.4 %	
	(at 30 kHz)	2.4 %	
	330 µA to 3.3 mA		
	(10 Hz to 20 Hz)	0.24 %	
	(20 Hz to 45 Hz)	0.15 %	
	(45 Hz to 1 kHz)	0.12 %	
	(1 kHz to 5 kHz)	0.24 %	
	(5 kHz to 10 kHz)	0.6 %	
	(10 kHz to 30 kHz)	1.2 %	
	(at 30 kHz)	1.2 %	



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AC Current - Source <sup>3,4</sup> continued	3.3 mA to 33 mA (10 Hz to 20 Hz)	0.22 %	Multi-Function Calibrator by Direct Method
	(20 Hz to 45 Hz)	0.11 %	
	(45 Hz to 1 kHz)	0.05 %	
	(1 kHz to 5 kHz)	0.12 %	
	(5 kHz to 10 kHz)	0.24 %	
	(10 kHz to 30 kHz)	0.48 %	
	(at 30 kHz)	0.48 %	
	33 mA to 330 mA (10 Hz to 20 Hz)	0.22 %	
	(20 Hz to 45 Hz)	0.11 %	
	(45 Hz to 1 kHz)	0.05 %	
	(1 kHz to 5 kHz)	0.12 %	
	(5 kHz to 10 kHz)	0.24 %	
	(10 kHz to 30 kHz)	0.48 %	
	(at 30 kHz)	0.48 %	
	330 mA to 1.1 A (10 Hz to 45 Hz)	0.22 %	
	(45 Hz to 1 kHz)	0.06 %	
	(1 kHz to 5 kHz)	0.72 %	
	(5 kHz to 10 kHz)	2.8 %	
	(at 10 kHz)	2.8 %	
	1.1 A to 3 A (10 Hz to 45 Hz)	0.22 %	
(45 Hz to 1 kHz)	0.072 %		
(1 kHz to 5 kHz)	0.72 %		
(5 kHz to 10 kHz)	2.8 %		
(at 10 kHz)	2.8 %		
3 A to 20 A (45 Hz to 100 Hz)	0.15 %		
(100 Hz to 1 kHz)	0.18 %		
(1 kHz to 5 kHz)	3.6 %		
(at 5 kHz)	3.6 %		
20 A to 1000 A (45 Hz to 1 kHz)	0.71 %	2/10/50 Turn Current Coil	
Frequency - Source <sup>3,4</sup>	0.3 Hz to 1200 kHz 1.2 MHz to 2 MHz	0.002 % 0.004 %	Multi-Function Calibrator by Direct Method EDLMC/CM/E/09
Capacitance – Source <sup>3,4</sup> (100 Hz to 1 kHz)	220 pF to 400 pF 0.6 nF to 330 nF	5 % 0.6 %	Multi-Function Calibrator by Direct Method



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	0.33 µF to 330 µF 0.33 mF to 110 mF	0.55 % 1.3 %	EDLMC/CM/E/06
Energy Meter <sup>3</sup> (50 Hz / 60 Hz)	1 Wh to 10 kWh 10 W to 10 kW 1 VA to 10 kVA 20 V to 300 V 500 mA to 100 A	0.75 Wh 0.17 % 0.17 % 0.011 % 0.054 %	Three Phase Reference Meter and Portable Power Source EDLMC/CM/E/35
Temperature Simulation – Measure/Source <sup>3</sup> (Temperature Indicator / Controller / Recorder / Test Kit / Universal Calibrator)			Multi-Function Calibrator or Process Calibrator
RTD – Pt 100	-200 °C to 800 °C	0.09 °C	EDLMC/CM/E/07
Thermocouples Type – B Type – E Type – J Type – K Type – L Type – N Type – R Type – S Type – T Type – U	600 °C to 1820 °C -250 °C to 1000 °C -210 °C to 1200 °C -200 °C to 1372 °C -200 °C to 900 °C -200 °C to 1300 °C 1 °C to 1767 °C 1 °C to 1767 °C -250 °C to 400 °C -200 °C to 600 °C	0.50 °C 0.57 °C 0.31 °C 0.48 °C 0.43 °C 0.46 °C 0.66 °C 0.56 °C 0.73 °C 0.65 °C	Multi-Function Calibrator or Process Calibrator EDLMC/CM/E/08
Oil Tester <sup>3</sup>	1 kV to 100 kV	0.6 kV	Oil Tester Reference Meter EDLMC/CM/E/28
AC Power – Source <sup>3,4</sup> (1-Phase, at UPF)	100 mW to 20 kW (60 Hz, 1 V to 1000 V) (500 Hz, 1 V to 1000 V) (1 kHz, 1 V to 1000 V)	0.9 % 0.9 % 0.9 %	Multifunction Calibrator 2/10/50 Turn Current Coil EDLMC/CM/E/30
AC Power – Measure <sup>3,5</sup> (1-Phase, at UPF)	500 mW to 5 kW (60 Hz, 120 V/240 V)	0.03 %	Reference Single Phase Meter EDLMC/CM/E/38
DC Power – Source <sup>3,4</sup>	100 mW to 1 W (1 V / 100 mA to 1 A) 1 W to 20 kW (1 V to 1 kV / 1 A to 20 A)	0.06 % 1.1 %	Multifunction Calibrator EDLMC/CM/E/29
DC Voltage – Measure <sup>3,5</sup>	1 mV to 10 mV 10 mV to 100 mV 100 mV to 100 V	0.013 % 0.0013 % 0.0007 %	Reference Digital Multimeter EDLMC/CM/E/10



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	100 V to 1000 V	0.00075 %	
	1000 V to 200 kV 200 kV to 300 kV	0.6 % 1.8 %	High Voltage Reference Meter EDLMC/CM/E/10
AC Voltage – Measure <sup>3,5</sup>	100 mV to 200 mV (1 Hz to 20 Hz) (20 Hz to 3 kHz) (3 kHz to 10 kHz) (10 kHz to 30 kHz) (30 kHz to 60 kHz) (60 kHz to 100 kHz)	0.036 % 0.022 % 0.022 % 0.046 % 0.12 % 0.12 %	Reference Digital Multimeter EDLMC/CM/E/11
AC Voltage – Measure <sup>3,5</sup> continued	200 mV to 2 V (1 Hz to 20 Hz) (20 Hz to 3 kHz) (3 kHz to 10 kHz) (10 kHz to 30 kHz) (30 kHz to 60 kHz) (60 kHz to 100 kHz)	0.03 % 0.019 % 0.019 % 0.019 % 0.045 % 0.1 %	Reference Digital Multimeter EDLMC/CM/E/11
	2 V to 20 V (1 Hz to 20 Hz) (20 Hz to 55 Hz) (55 Hz to 1 kHz) (1 kHz to 3 kHz) (3 kHz to 10 kHz) (10 kHz to 30 kHz) (30 kHz to 100 kHz) (100 kHz to 500 kHz) (500 kHz to 1 MHz)	0.025 % 0.015 % 0.012 % 0.011 % 0.01 % 0.015 % 0.081 % 0.48 % 2.2 %	
	20 V to 200 V (1 Hz to 20 Hz) (20 Hz to 55 Hz) (55 Hz to 1 kHz) (1 kHz to 3 kHz) (3 kHz to 10 kHz) (10 kHz to 30 kHz) (30 kHz to 60 kHz) (60 kHz to 100 kHz)	0.025 % 0.015 % 0.012 % 0.011 % 0.01 % 0.015 % 0.081 % 0.081 %	
	200 V to 1000 V (1 Hz to 55 Hz) (55 Hz to 1 kHz) (1 kHz to 3 kHz) (3 kHz to 10 kHz)	0.025 % 0.015 % 0.011 % 0.015 %	
	1 kV to 200 kV (60 Hz)	0.6 %	High Voltage Reference Meter EDLMC/CM/E/11



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	200 kV to 300 kV (60 Hz)	1.8 %	
DC Current – Measure <sup>3,5</sup>	1 nA to 10 mA 10 mA to 100 mA 100 mA to 1 A 1 A to 20 A	40 µA/A 20 µA/A 70 µA/A 500 µA/A	Reference Digital Multimeter EDLMC/CM/E/12
	20 A to 600 A 600 A to 1000 A	0.7 % 1.2 %	Current Shunts and Clamp Meter EDLMC/CM/E/12
AC Current - Measure <sup>3,5</sup> (up to 10 kHz)	10 µA to 20 A	0.3 %	Reference Digital Multimeter EDLMC/CM/E/13
AC Current - Measure <sup>3,5</sup> (50 Hz)	20 A to 600 A	0.7 %	Reference Multimeter with Reference Current Shunts EDLMC/CM/E/13
	600 A to 2000 A	1.2 %	Reference Clamp Meter EDLMC/CM/E/13
	2000 A to 6000 A	1.2 %	Reference Flexible Current Probe with Indicator EDLMC/CM/E/13
DC Resistance – Source <sup>3,4</sup>	1 Ω to 100 kΩ	1.1 %	Multifunction Calibrator & 4 Wire EDLMC/CM/E/05
	100 kΩ to 1 GΩ	1.8 %	Multifunction Calibrator & 2 Wire EDLMC/CM/E/05
	10 MΩ to 10 GΩ	1.2 %	Insulation Tester Calibrator EDLMC/CM/E/40
DC Resistance - Measure <sup>3,5</sup>	1 mΩ to 20 GΩ	0.22 %	Reference Digital Multimeter EDLMC/CM/E/14
Frequency – Measure <sup>3,5</sup>	10 Hz to 1 MHz	0.006 %	Reference Digital Multimeter EDLMC/CM/E/18
	1 MHz to 2 MHz	0.006 %	Universal Counter EDLMC/CM/E/18
Capacitance – Measure <sup>3,5</sup> (at 1 kHz)	100 pF to 10 µF 10 µF to 100 mF	0.8 % 2.8 %	Reference LCR Meter Reference Digital Multimeter EDLMC/CM/E/15
Inductance – Measure <sup>3,5</sup> (at 1 kHz)	100 µH to 1 mH 1 mH to 10 H	0.8 % 5.7 %	Reference LCR Meter EDLMC/CM/E/20

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MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY <sup>1,2</sup> (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Transformer Turn Ratio Meter <sup>3</sup>	0.8 R to 2000 R (at 8 V, 40 V, 80 V)	0.25 R	3 Phase TTR Calibration Standard EDLMC/CM/E/21
Current Transformer Analyzer <sup>3</sup>	CT RATIOS: 1, 5, 2000	0.02 %	Reference Current Transformer EDLMC/CM/E/22
<i>Time and Frequency</i>			
Stop Watch / Timer <sup>3</sup>	10 ms to 1 s	0.17 ms	Reference Electronic Timer EDLMC/CM/E/33
	1 s to 900 s	2 ms	Reference Stop Watch
Tachometer (Contact / Non-Contact) <sup>3</sup>	100 rpm to 12000 rpm	1.3 rpm	Tachometer Calibrator (Contact Type) EDLMC/CM/E/11
	100 rpm to 99000 rpm	2.4 rpm	Tachometer Calibrator (Non-Contact Type or Strobe) EDLMC/CM/M/11
<i>Optical Radiation</i>			
Lux/ Light/ Illumination Meter <sup>3</sup>	1 lux to 5 lux	5.5 %	Labsphere Luminance Source USS-800C-75R EDLMC/CM/M/13
	5 lux to 100 lux	1.7 %	
	100 lux to 200 lux	1.7 %	
	200 lux to 1000 lux	1.7 %	
	1000 lux to 2000 lux	2.1 %	
	2000 lux to 10000 lux	1.7 %	
10000 lux to 24000 lux	2.6 %		
Ultra Violet (UV) Meter <sup>3</sup>	0.01 mW/cm <sup>2</sup> to 1999.9 mW/cm <sup>2</sup>	5.8 %	Bachur & Associates UV Source and G & R Labs Reference Meter EDLMC/CM/M/17
Optical Power Meter <sup>3</sup>	1 nW to 1 mW (For wavelength = 1310 nm & 1550 nm)	1.0 mW	Reference Optical Power Meter and Optical Attenuator EDLMC/CM/E/25
Optical Time Domain Reflectometer (OTDR) <sup>3</sup>	(At 1310 nm, 1550 nm & 1650 nm) Up to 3 km 3 km to 25 km	0.36 m/km 0.14 m/km	Reference Optical Time Domain Reflectometer (OTDR) EDLMC/CM/E/27
Laser Source (Wavelength) <sup>3</sup>	1300 nm 1310 nm 1550 nm	1 nm 1 nm 1 nm	Optical Spectrum Analyzer EDLMC/CM/E/26
<i>Chemical/Gas</i>			

# SCOPE OF ACCREDITATION

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MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY <sup>1,2</sup> (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Gas Detector Analyzer <sup>3</sup> Hydrogen Sulfide Carbon Monoxide Methane Oxygen Hydrogen	0 ppm to 200 ppm 0 ppm to 1000 ppm 10 % to 100 % 5 % to 30 % 0 ppm to 1000 ppm	3.6 parts per 10 <sup>6</sup> 2.2 parts per 10 <sup>6</sup> 3.6 % 2.2 % 9.9 parts per 10 <sup>6</sup>	Reference Gas Mixture of H <sub>2</sub> S, CO, CH <sub>4</sub> , O <sub>2</sub> and H <sub>2</sub> EDLMC/CM/M/33
SF6 Gas Detector / Analyzer <sup>3</sup>	Dew Point - 50 °C to 20 °C	0.2 °C	Dew Point Mirror Standard EDLMC/CM/T/05
	Sulfur dioxide (SO <sub>2</sub> ) 9 ppm to 500 ppm  Sulfur hexafluoride 80 % to 100 %	3 % (of reported parts per 10 <sup>6</sup> )  2.0 % (of reported percentage)	Reference Gas EDLMC/CM/M/33
pH Meter <sup>3</sup>	4.00 pH 7.00 pH 10.00 pH	0.03 pH 0.03 pH 0.03 pH	4.00, 7.00 and 10.00 pH Certified Buffer Solutions <b>EDLMC/CM/M/15</b>
<b>Biomedical</b>			
Defibrillator (For Energy Calibration) <sup>3</sup>	1 J to 10 J 10 J to 50 J 50 J to 100 J 100 J to 170 J 170 J to 300 J	0.8 J 1.5 J 2.8 J 5.4 J 8.1 J	Electrical Safety Tester & Defibrillator Analyzer EDLMC/CM/B/10

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

SG = specific gravity  
UPF = unity power factor  
R = turn ratio  
ppm = parts per million  
HA = Shore Hardness Scale A

