



ACCREDITATION CERTIFICATE

LB-CAL-097

Emirates International Accreditation Centre

has accredited

METRIC CALIBRATION AND TESTING LABORATORY

Warehouse #12 | Maleeha Road | Industrial Area # 15 |

Sharjah | United Arab Emirates

In accordance with the requirements of

ISO/IEC 17025:2017

General requirements for the competence of testing and calibration laboratories

to undertake the calibration in the attached accreditation scope

This Accreditation is invalid without the attached accreditation scope and shall remain in force within the validity period

printed below, subject to continuing compliance with the requirements of the accreditation criteria.

Validity: 05-10-2026 to 16-08-2029

Initial Accreditation Date: 17-08-2023



Amina Ahmed Mohammed
CHIEF EXECUTIVE OFFICER



Accreditation Scope

LB-CAL-097

Metric Calibration and Testing Laboratory

Warehouse #12 | Maleeha Road | Industrial Area # 15

Date: 05-10-2026

Accreditation History			
Scope	Issue No.	Details	Date
Pressure, Electrical	06	Reissued to reflect the accreditation renewal along with extension in Electrical scope	05-10-2026
Temperature & Humidity, Torque	05		
Pressure, Electrical	05	Certificate validity was extended for six months from 17-08-2026 up to 16-02-2027	17-08-2026
Temperature & Humidity, Torque	04		
Pressure, Electrical	04	Re-issued due to the extension in scope for pressure and modification in 'Expanded Measurement Uncertainty (U @ k=2)' values under Electrical scope	20-10-2025
Pressure, Torque, Temperature & Humidity, Electrical	03	Re-issued due to a voluntary reduction in scope (removal of Mass and Balance from the accreditation scope)	06-01-2025
Pressure, Torque, Temperature & Humidity, Mass, Balance, Electrical	03	Re-issued due to changes in unifying pressure units from MPa to kPa and the removal of switches from the calibration instrument field under the pressure scope	07-08-2024
Pressure, Torque, Temperature & Humidity, Mass, Balance, Electrical	02	Modification in Scope's presentation	07-05-2024
Pressure, Torque, Temperature & Humidity, Mass, Balance, Electrical	01	Granted Accreditation from Emirates International Accreditation Centre	17-08-2023

Accreditation Scope

Pressure Calibration

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Metric Calibration and Testing Laboratory

Warehouse #12 | Maleeha Road | Industrial Area # 15

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Issue no.: 06

Date: 05-10-2026

Valid to: 16-08-2029

Calibration and Measurement Capability (CMC)				
Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Vacuum (Digital gauges ,Analogue gauges , Transmitters , Transducers , Differential Pressure.	Comparison method using MCL- QSD-CP-P-001 based upon DKD- R6-1 : 2014.	-100 kPa to 0 kPa	0.6 kPa	Laboratory Premises & Customer Permisses
Pneumatic (Digital gauges, Analogue gauges , Transmitters , Transducers ,Differential	Comparison method using MCL- QSD-CP-P-001 based upon DKD- R6-1 : 2014.	0 to 100 kPa	0.1 kPa	Laboratory Premises & Customer Permisses
Pneumatic (Digital gauges, Analogue gauges , Transmitters , Transducers ,Differential Pressure .	Comparison method using MCL- QSD-CP-P-001 based upon DKD- R6-1 : 2014.	> 0.1 MPa to 14 MPa	1.4 kPa	Laboratory Premises & Customer Permisses
Hydraulic (Digital gauges, Analogue gauges , Transmitters , Transducers , Differential Pressure)	Comparison method using MCL- QSD-CP-P-001 based upon DKD- R6-1 : 2014.	0 to 100 MPa	10 kPa	Laboratory Premises & Customer Permisses

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Hydraulic (Digital gauges, Analogue gauges , Transmitters , Transducers , Differential Pressure)	Comparison method using MCL- QSD-CP-P-001 based upon DKD- R6-1 : 2014.	> 100 MPa to 280 MPa	0.29 MPa	Laboratory Premises & Customer Permises

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Torque Calibration

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
TORQUE / Torque Wrench / Torque Screw Driver/Hand Torque Tool / Torque Spanner (Type-I & II All Classes)	METHOD -Comparison CRM USED - Torque Tranducer REFERENCE STANDARD.- ISO 6789- 1 , ISO 6789-2 INTERNAL PROCEDURE NUMBER - MCL-QSD- CP-TQ-001	0.2 N-m to 2 N-m	0.8 %	Laboratory
		2 N-m to 20 N-m	0.8 %	Laboratory
		20 N-m to 200 N-m	0.8 %	Laboratory
		200 N-m to 2000 N-m	0.8 %	Laboratory

Accreditation Scope

Temperature Humidity Calibration

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Calibration and Measurement Capability (CMC)				
Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Resistance Temperature Sensor with Display Unit	METHOD: Comparison with a reference RTD & R-Type thermocouple with indicator REFERENCE STANDARD: DKD-R- 5-1 INTERNAL PROCEDURE: MCL- QSD-CP-T-001	-80 °C to 250 °C	0.6 °C	Laboratory Premises
		250 °C to 600 °C	4 °C	
		600 °C to 850°C	5 °C	
Thermocouple with display unit (Base Metal / Noble Metal)	METHOD: Comparison with a reference RTD & R-Type thermocouple with indicator REFERENCE STANDARD: Euramet cg-8 INTERNAL PROCEDURE: MCL-QSD-CP-T-001	-80 °C to Ambient	1 °C	Laboratory Premises
		Ambient to 250 °C	2 °C	
		250 °C to 650 °C	5 °C	
		650 °C to 1200 °C	7 °C	
Resistance Temperature Sensor without display unit	METHOD: Comparison with a reference RTD & R-Type thermocouple with indicator REFERENCE STANDARD: DKD- R-5-1 INTERNAL PROCEDURE: MCL- QSD-CP-T-002	-80 °C to 250 °C	0.6°C	Laboratory Premises
		250 °C to 600 °C	4 °C	
		600 °C to 850°C	5 °C	
Platinum Resistance Thermometer with or without display unit	METHOD: Use of Ice Bath REFERENCE STANDARD: DKD- R-5-1 INTERNAL PROCEDURE: MCL-QSD-CP-T-001 and MCL- QSD-CP-T-002	0 °C	0.1 °C	Laboratory Premises

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Thermocouple without display unit (Base Metal / Noble Metal)	METHOD: Comparison with a reference RTD & R-Type thermocouple with indicator REFERENCE STANDARD: Euramet cg-8 INTERNAL PROCEDURE: MCL-QSD-CP-T-002	-80 °C to Ambient	1 °C	Laboratory Premises
		Ambient to 250 °C	2 °C	
		250 °C to 650 °C	5 °C	
		650 °C to 1200 °C	7 °C	
Dry Block Calibrator	METHOD: Comparison with a reference RTD & R-Type thermocouple with indicator REFERENCE STANDARD: Euramet cg-13 INTERNAL PROCEDURE: MCL- QSD-CP-T-006	.-90°C to Ambient	0.6 °C	Laboratory Premises and Customer permises
		Ambient to 1200 °C	4 °C	
Liquid Bath	METHOD: Comparison with a reference RTD INTERNAL PROCEDURE: MCL- QSD-CP-T-006	.-90 °C to 250 °C	0.4°C	Laboratory Premises and Customer
Environmnetal Chamber / Climatic Chamber / Temperature and Humidity Chambers (Single & Nine Point)	METHOD: Comparison with RTD (Class A) with indicator, and RH Probe REFERENCE STANDARD.-DKD- R5-7 OR EURAMET GUIDELINE NO: 20 INTERNAL PROCEDURE NUMBER - MCL-QSD-CP-T-004	10 °C to 60 °C	1.2 °C	Customer Premises
		20 % rh to 95 % rh (Single Point at Center)	7 %rh	

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Dry Oven, Freezer, Chiller, Refrigerator, Furnace, Hot Cabinet (Single Point)	METHOD: Comparison with a RTD (Class A) with indicator REFERENCE STANDARD: DKD- R5-7, EURAMET GUIDELINE NO: 20 INTERNAL PROCEDURE: MCL- QSD-CP-T-003	-90 °C to 400 °C	1.5 °C	Laboratory Premises and Customer permises
		400 °C to 1200 °C	5 °C	
Dry Oven, Freezer, Chiller, Refrigerator, Furnace, Hot Cabinet (9 Point)	METHOD: Comparison with 9 RTD's (Class A) with indicator REFERENCE STANDARD: DKD- R5-7, EURAMET GUIDELINE NO: 20 INTERNAL PROCEDURE: MCL- QSD-CP-T-004	-30 °C to 400 °C	2 °C	Laboratory Premises and Customer permises
Autoclave (Single Point)	METHOD: Comparison with a RTD (Class A) with indicator INTERNAL PROCEDURE: MCL- QSD-CP-T-003	110 °C to 140 °C	1 °C	Laboratory Premises and Customer
Autoclave (5 Point)	METHOD: Comparison with 5 RTD's (Class A) with indicator INTERNAL PROCEDURE: MCL- QSD-CP-T-004	110 °C to 140 °C	1.2 °C	Laboratory Premises and Customer permises
Air Temperature and Relative Humidity Meter	METHOD: Comparison with a RTD (Class A) with indicator and RH reference probe in a Humidity Chamber INTERNAL PROCEDURE: MCL- QSD-CP-T-009	10 °C to 45 °C	0.6°C	Laboratory Premises
		10 % rh to 95 % rh	4 %rh	

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Liquid in Glass Thermometer	METHOD: Comparison with a RTD (Class A) with indicator REFERENCE STANDARD: OIML R 133 INTERNAL PROCEDURE: MCL-	-10°C to Ambient	0.6°C	Laboratory Premises
		Ambient to 250°C	1 °C	
Temperature Gauge, Temperature Datalogger with Sensor (Paper, Paperless), Pen Type Thermometer	METHOD: Comparison with a reference RTD & R-Type thermocouple with indicator INTERNAL PROCEDURE: MCL- QSD-CP-T-001	-80 °C to Ambient	1 °C	Laboratory Premises
		Ambient to 250 °C	3 °C	
Temperature Gauge, Temperature Datalogger with Sensor (Paper, Paperless), Pen Type Thermometer	METHOD: Comparison with a reference RTD & R-Type thermocouple with indicator INTERNAL PROCEDURE: MCL- QSD-CP-T-001	250 °C to 650 °C	5 °C	Laboratory Premises
		650 °C to 1200 °C	7 °C	
Temperature Measuring Devices - Transmitter, Transducer, switch, Controller with Sensor's	METHOD: Comparison with a reference RTD & R-Type thermocouple with indicator INTERNAL PROCEDURE: MCL-QSD-CP-T-010	-80 °C to Ambient	1 °C	Laboratory Premises
		Ambient to 250 °C	3 °C	
		250 °C to 650 °C	5 °C	
		650 °C to 1200 °C	7 °C	



مركز الإمارات العالمي للاعتماد
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IR Thermometer	METHOD: Comparison with an IR thermometer using a Black Body Source REFERENCE STANDARD: ASTM-E2847-14	Ambient to 500 °C	5 °C	Laboratory Premises
	METHOD: Ice Cavity as reference Black Body Source REFERENCE STANDARD: ASTM E2847-14 INTERNAL PROCEDURE: MCL-QSD-CP-T-005	0 °C	1 °C	Laboratory Premises

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Calibration and Measurement Capability (CMC)				
Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Measuring Devices				
DC Voltage	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-001 (Technical Protocol) m= measured value	0 mV to 100 mV	0.006%*m+3.1 μV	Laboratory Premises & Customer Premises
		> 100 mV to 1 V	0.005%*m+9.2μV	
		> 1 V to 10 V	0.005 % *m+64 μV	
		> 10 V to 100 V	0.0055%*m+0.64 mV	
		> 100 V to 1000 V	0.0055%*m+6.2 mV	
AC Voltage (Frequency 10 Hz to 10 kHz)	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-001 (Technical Protocol) m= measured value	1 mV to 10 mV	0.10%*m+17 μV	Laboratory Premises & Customer Premises
		> 10 mV to 100 mV	0.030%*m+35 μV	
		> 100 mV to 1 V	0.030%*m+36 μV	
		> 1 V to 10 V	0.030%*m+0.62 mV	
		> 10 V to 100 V	0.080%*m+9.3 mV	
AC Voltage (Frequency 45 Hz to 8 kHz)		> 100 V to 1000 V	0.090%*m+78 mV	
DC Current	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-001 (Technical Protocol) m= measured value	0 μA to 100 μA	0.015%*m+16 nA	Laboratory Premises & Customer Premises
		> 100 μA to 1 mA	0.013%*m+0.05 μA	
		> 1 mA to 10 mA	0.010%*m+0.25μA	

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Calibration of Measuring Devices				
DC Current	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-001 (Technical Protocol) m= measured value	> 10 mA to 100 mA	0.010%*m+3.4 μ A	Laboratory Premises & Customer Premises
		> 100 mA to 400 mA	0.038%*m+70 μ A	
		> 400 mA to 1 A	0.038%*m+0.070 mA	
		> 1 A to 3 A	0.060%*m+0.43 mA	
		> 3A to 10 A	0.060%*m+0.86 mA	
		> 10 A to 20 A	0.060%*m+1.7 mA	
DC Current Clamp		> 20 A to 1000 A	0.26%*m+6.0 A	
Resistance (2 Wire and 4 Wire)	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-001 (Technical Protocol) m= measured value	0 Ω to 10 Ω	0.012%*m+0.091 m Ω	Laboratory Premises & Customer Premises
		> 10 Ω to 100 Ω	0.0090%*m+0.72m Ω	
		> 100 Ω to 1 k Ω	0.0090%*m+70m Ω	
		> 1k Ω to 10 k Ω	0.0090%*m+72 m Ω	
		> 10 k Ω to 100 k Ω	0.011%*m+0.72 Ω	

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Calibration of Measuring Devices				
Resistance (2 Wire and 4 Wire)	Direct Calibration using Fluke 5502A as a reference standard uisng MCL-QSD-CP-E-001 (Technical Protocol) m= measured value	> 100 kΩ to 1 MΩ	0.015%*m+13 Ω	Laboratory Premises & Customer Premises
		> 1 MΩ to 10 MΩ	0.060%*m+0.15 kΩ	
		> 10 MΩ to 100 MΩ	0.50%*m+7.7 kΩ	
		> 100 MΩ to 1000 MΩ	1.5%*m+0.39 MΩ	
AC Current (Frequency 10 Hz to 1 kHz)	Direct Calibration using Fluke 5502A as a reference standard uisng MCL-QSD-CP-E-001 (Technical Protocol) m= measured value	29 μA to 100 μA	0.13 %*m+0.11 μA	Laboratory Premises & Customer Premises
		> 100 μA to 1 mA	0.10%*m+0.42 μA	
		> 1 mA to 10 mA	0.040%*m+3.0 μA	
		> 10 mA to 100 mA	0.040%*m+83μA	
		> 100 mA to 400 mA	0.050%*m+0.26 mA	
		> 400 mA to 1 A	0.050%*m+0.25 mA	
		> 1 A to 3 A	0.050%*m+1.3 mA	

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Calibration of Measuring Devices				
AC Current (Frequency 45 Hz to 400 Hz)	Direct Calibration using Fluke 5502A as a reference standard using	> 3A to 10 A	0.10%*m+3.0 mA	Laboratory Premises & Customer Premises
		> 10 A to 20 A	0.15%*m+6.3 mA	
AC Current Clamp (Frequency 45 Hz to 400 Hz)	MCL-QSD-CP-E-001 (Technical Protocol) m= measured value	> 20 A to 1000 A	0.34%*m+6.0 A	
Capacitance	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-001 (Technical Protocol) m= measured value	220 pF to 399 pF	0.50%*m+7.7 pF	Laboratory Premises & Customer Premises
		>399 pF to 1 nF	0.50%*m+7.7 pF	
		> 1 nF to 10 nF	0.25%*m+13 pF	
		> 10 nF to 100 nF	0.25%*m+0.12 nF	
		> 100 nF to 1 µF	0.25%*m+1.3 nF	
		> 1 µF to 10 µF	0.25%*m+13 nF	
		> 10 µF to 100µF	0.45%*m+0.12µF	
		> 100 µF to 1 mF	0.45%*m+1.7 µF	
		> 1 mF to 10mF	0.45%*m+17µF	

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Calibration of Measuring Devices				
Frequency	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-001 (Technical Protocol) m= measured value	0.01 Hz to 1 Hz	0.0025%*m+0.78 mHz	Laboratory Premises & Customer Premises
		> 1 Hz to 10 Hz	0.0025%*m+0.78 mHz	
		> 10 Hz to 100 Hz	0.0025%*m+0.78 mHz	
		> 100 Hz to 500 Hz	0.0025%*m+0.78 mHz	
		> 500 Hz to 1 kHz	0.0025%*m+1.5 mHz	
		> 1 kHz to 10 kHz	0.0025%*m+9.2 mHz	
		> 10 kHz to 100 kHz	0.0025%*m+93 mHz	
		> 100 kHz to 1000 kHz	0.0025%*m+0.92 Hz	
Temperature Simulation RTD	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-003 (Technical Protocol)	-200 °C to -80 °C	0.04 °C	Laboratory Premises & Customer Premises
		> -80 °C to 0 °C	0.04 °C	
		> 0 °C to 100 °C	0.06 °C	
		> 100°C to 300°C	0.07 °C	

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Calibration of Measuring Devices				
Temperature Simulation RTD	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-003 (Technical Protocol)	> 300 °C to 400 °C	0.08 °C	Laboratory Premises & Customer Premises
		> 400 °C to 630 °C	0.09 °C	
		> 630 °C to 800 °C	0.18 °C	
Temperature Measuring Device (K- Type Thermocouple)	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-003 (Technical Protocol)	-200 °C to -100 °C	0.28 °C	Laboratory Premises & Customer Premises
		> -100 °C to -25 °C	0.18 °C	
		> -25 °C to 120 °C	0.16 °C	
		> 120°C to 1000°C	0.23 °C	
		> 1000 °C to 1372 °C	0.33 °C	
Temperature Measuring Device (J- Type Thermocouple)	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-003 (Technical Protocol)	-210 °C to -100 °C	0.24 °C	Laboratory Premises & Customer Premises
		> -100 °C to -30 °C	0.16 °C	
		> -30°C to 150 °C	0.15 °C	
		> 150°C to 760 °C	0.17 °C	
		> 760 °C to 1200 °C	0.21 °C	

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Calibration of Measuring Devices				
Temperature Measuring Device (N- Type Thermocouple)	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-003 (Technical Protocol)	-200 °C to -100 °C	0.34 °C	Laboratory Premises & Customer Premises
		> -100 °C to -25 °C	0.20 °C	
		> -25 °C to 120 °C	0.18 °C	
		> 120°C to 410 °C	0.18 °C	
		> 410 °C to 1300 °C	0.24 °C	
Temperature Measuring Device (R- Type Thermocouple)	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-003 (Technical Protocol)	0 °C to 250 °C	0.49 °C	Laboratory Premises & Customer Premises
		> 250 °C to 400 °C	0.32 °C	
		> 400 °C to 1000 °C	0.30 °C	
		> 1000 °C to 1767 °C	0.34 °C	
Temperature Measuring Device (S- Type Thermocouple)	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-003 (Technical Protocol)	0 °C to 250 °C	0.42 °C	Laboratory Premises & Customer Premises
		> 250 °C to 1000 °C	0.33 °C	
		> 1000 °C to 1400 °C	0.33 °C	
		> 1400 °C to 1767 °C	0.39 °C	

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Calibration of Measuring Devices				
Temperature Measuring Device (B- Type Thermocouple)	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-003 (Technical Protocol)	600°C to 800 °C	0.41 °C	Laboratory Premises & Customer Premises
		> 800 °C to 1000 °C	0.33 °C	
		> 1000 °C to 1550 °C	0.29 °C	
		> 1550 °C to 1820 °C	0.30 °C	
Temperature Measuring Device (C- Type Thermocouple)	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-003 (Technical Protocol)	0 °C to 150 °C	0.27 °C	Laboratory Premises & Customer Premises
		> 150 °C to 650 °C	0.24 °C	
		> 650 °C to 1000 °C	0.27 °C	
		> 1000°C to 1800 °C	0.41 °C	
		> 1800 °C to 2316°C	0.67°C	
Temperature Measuring Device (E- Type Thermocouple)	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-003 (Technical Protocol)	-250 °C to -100 °C	0.40°C	Laboratory Premises & Customer Premises
		> -100 °C to -25 °C	0.16°C	
		> -25 °C to 350 °C	0.15°C	
		> 350 °C to 650 °C	0.16°C	
		> 650 °C to 1000 °C	0.19°C	

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Calibration and Measurement Capability (CMC)				
Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Measuring Devices				
Temperature Measuring Device (L- Type Thermocouple)	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-003 (Technical Protocol)	-200 °C to -100 °C	0.31°C	Laboratory Premises & Customer Premises
		> -100 °C to 800 °C	0.23°C	
		> 800 °C to 900 °C	0.17°C	
Temperature Measuring Device (T- Type Thermocouple)	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-003 (Technical Protocol)	-250 °C to -150 °C	0.51°C	Laboratory Premises & Customer Premises
		> -150 °C to 0°C	0.22°C	
		> 0 °C to 120°C	0.16°C	
		> 120 °C to 400 °C	0.15°C	
Temperature Measuring Device (U- Type Thermocouple)	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-003 (Technical Protocol)	-200 °C to 0 °C	0.45°C	Laboratory Premises & Customer Premises
		> 0 °C to 600 °C	0.23°C	

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Calibration and Measurement Capability (CMC)				
Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Measuring Devices				
High Voltage Calibration of Measuring Devices AC Voltage (0.01 Hz to 60 Hz)- Calibration of High voltage Probe	Direct Calibration using Vitretek 4700 as a reference standard using MCL-QSD-CP-E-008 (Technical Protocol) m= measured value	1 kV to 10 kV	0.12%*m+0.15 kV	Laboratory Premises & Customer Premises
High Voltage Calibration of Measuring Devices AC Voltage (0.01 Hz to 60 Hz)- Calibration of High voltage Probe	Direct Calibration using Vitretek 4700 as a reference standard using MCL-QSD-CP-E-008 (Technical Protocol) m= measured value	> 10 kV to 75 kV	0.10%*m+1.2 kV	Laboratory Premises & Customer Premises
High Voltage Calibration of Measuring Devices DC Voltage - Calibration of High Voltage Probe	Direct Calibration using Vitretek 4700 as a reference standard using MCL-QSD-CP-E-008 (Technical Protocol) m= measured value	1 kV to 10 kV	0.030%*m+0.10 kV	Laboratory Premises & Customer Premises

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Measuring Devices				
High Voltage Calibration of Measuring Devices DC Voltage - Calibration of High Voltage Probe	Direct Calibration using Vitretek 4700 as a reference standard using MCL-QSD-CP-E-008 (Technical Protocol) m= measured value	> 10 kV to 100 kV	0.050%*m+1.0 kV	Laboratory Premises & Customer Premises
High Voltage Calibration of Measuring Devices AC Voltage - Calibration of High Voltage Probe	Direct Calibration using Fluke 80k-40 as a reference standard using MCL-QSD-CP-E-008 (Technical Protocol) m= measured value	0 kV to 28 kV	5.0%*m+1.2 kV	Laboratory Premises & Customer Premises
High Voltage Calibration of Measuring Devices DC Voltage - Calibration of High Voltage Probe	Direct Calibration using Fluke 80k-40 as a reference standard using MCL-QSD-CP-E-008 (Technical Protocol) m= measured value	0 kV to 40 kV	2.0%*m+1.0 kV	Laboratory Premises & Customer Premises

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Measuring Devices				
Insulation tester	Direct Calibration using Decade Resistance Box as a reference standard using MCL-QSD-CP-E- 004 (Technical Protocol) m= measured value	0 kΩ to 100 kΩ	0.10%*m+0.71 kΩ	Laboratory Premises & Customer Premises
		> 100 kΩ to 1 MΩ	0.10%*m+0.01 MΩ	
		> 1MΩ to 5 MΩ	0.10%*m+0.01 MΩ	
		> 5 MΩ to 10 MΩ	0.10%*m+0.01 MΩ	
		> 10 MΩ to 50 MΩ	1.0% *m+0.94 MΩ	
		> 50 MΩ to 100 MΩ	1.0%*m+0.94 MΩ	
		> 100 MΩ to 400 MΩ	1.0%*m+24 MΩ	
		> 400 MΩ to 1 GΩ	1.0%*m+24 MΩ	
		> 1 GΩ to 10 GΩ	1.0%*m+0.58 GΩ	
		> 10GΩ to 100 GΩ	1.0%*m+5.9 GΩ	

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Measuring Devices				
Energy meter (Digital & Analog) (Single Phase)	Direct Calibration using DRTS66 as a reference standard using MCL- QSD-CP-E-005 (Technical Protocol) m= measured value	*Voltage = 0 V to 600 V *Frequency = 45 Hz to 65 Hz *Current = 0 A to 128 A *Power Factor = 1 (Constant)	0.040%*m+5.0 Wh	Laboratory Premises & Customer Premises
Energy meter (Digital & Analog) (Three Phase)	Direct Calibration using DRTS66 as a reference standard using MCL- QSD-CP-E-006 (Technical Protocol) m= measured value	*Voltage = 0 V to 300 V *Frequency = 45 Hz to 65 Hz *Current = 0 A to 64 A *Power Factor = 1 (Constant)	0.040%*m+6.0 Wh	Laboratory Premises & Customer Premises
AC Power meter (Single Phase)	Direct Calibration using DRTS66 as a reference standard using MCL- QSD-CP-E-009 (Technical Protocol)	*Voltage = 0 V to 600 V *Frequency = 45 Hz to 65 Hz *Current = 0 A to 128 A *Power Factor = 1 (Constant)	0.040%*m+5.0 Wh	Laboratory Premises & Customer Premises
DC Power meter (Single Phase)	Direct Calibration using DRTS66 as a reference standard using MCL- QSD-CP-E-009 (Technical Protocol) m= measured value	*Voltage = 0 V to 600 V *Current = 0 A to 128 A	0.40%*m+5.0 W	Laboratory Premises & Customer Premises

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Measuring Devices				
AC Power meter (Three Phase)	Direct Calibration using DRTS66 as a reference standard using MCL- QSD-CP-E-009 (Technical Protocol) m= measured value	*Voltage = 0 V to 300 V *Frequency = 45 Hz to 65 Hz *Current = 0 A to 64 A *Power Factor = 1 (Constant)	0.040%*m+7.0 W	Laboratory Premises & Customer Premises
DC Power meter (Three Phase)	Direct Calibration using DRTS66 as a reference standard using MCL- QSD-CP-E-009 (Technical Protocol) m= measured value	*Voltage = 0 V to 300 V *Current = 0 A to 64 A *Power	0.40%*m+7.0 W	Laboratory Premises & Customer Premises
Inductance meter - LCR @ 1kHz	Comparison method using MCL-QSD-CP-E- 015 as standard procedures and reference indication box .	10 µH to 10 H	0.32%	Laboratory Premises & Customer Premises

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Measuring Devices				
Capacitance Measure - LCR @ 1kHz	Comparison method using MCL-QSD-CP-E- 15 as standard procedures and reference capacitance source	1 nF to 100 μ F	0.23%	Laboratory Premises & Customer Premises
Resistance Measure - LCR @ 1kHz	Comparison method using MCL-QSD-CP-E- 15 as standard procedures and reference resistance source	1 Ω to 10 k Ω	0.260%	Laboratory Premises & Customer Premises
Power Factor @ 50 Hz	Comparison method using MCL-QSD-CP-E- 017 as standard procedures and reference PQA	0 to 1 lead and lag	0.0081	Laboratory Premises & Customer Premises
Phase Angle @ 50 Hz	Comparison method using MCL-QSD-CP-E- 017 as standard procedures and reference PQA	0° to 360°	2.3°	Laboratory Premises & Customer Premises

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Measuring Devices				
AC Energy Meter Calibration Active energy	Comparison method using MCL-QSD-CP-E- 005 , 006 as standard procedures and reference PQA	(100 mA to 20 A) 20 Wh to 30 kWh (1 V to 1000 V) Time 1 hour Power Factor 1	0.26%	Laboratory Premises & Customer Premises
AC Energy Meter Calibration re-active energy	Comparison method using MCL-QSD-CP-E- 005 , 006 as standard procedures and reference PQA	(100 mA to 20 A) 20 VARh to 30 kVARh (1 V to 1000 V) Time 1 hour Power Factor 0	0.78%	Laboratory Premises & Customer Premises
Harmonics In Voltage & Current Up to 39 Order @ 50 Hz (First Harmonic 50 V to 250 V & 0.5A to 5A)	Comparison method using MCL-QSD-CP-E- 017 as standard procedures and reference PQA	2nd Order (1% to 40 %) to 39th Order (1% to 40%)	0.82%	Laboratory Premises & Customer Premises
Oscilloscope (DC Amplitude) (Vertical Axis Deflection Factor)	Comparison method using MCL-QSD-CP-E- 019 as standard procedures and reference MFC	1 mV to 120 V	0.85%	Laboratory Premises & Customer Premises

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Measuring Devices				
Oscilloscope (AC Amplitude) (Vertical Axis Deflection Factor) AC: 1 kHz Square Wave @ 1 Mohm	Comparison method using MCL-QSD-CP-E- 019 as standard procedures and reference MFC	1 mVpp to 120 Vpp	5.90%	Laboratory Premises & Customer Premises
Oscilloscope - Bandwidth	Comparison method using MCL-QSD-CP-E- 019 as standard procedures and reference MFC	25 MHz to 300 MHz	4.50%	Laboratory Premises & Customer Premises
Oscilloscope - Time Base (Horizontal Axis Deflection Factor)	Comparison method using MCL-QSD-CP-E- 019 as standard procedures and reference MFC	2 ns to 5 s	0.82%	Laboratory Premises & Customer Premises

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Measuring Devices				
Micro-ohm meter	Comparison method using MCL-QSD-CP-E- 014 as standard procedures and reference Micro-ohms box	10 $\mu\Omega$	0.022 $\mu\Omega$	Laboratory Premises & Customer Premises
		50 $\mu\Omega$	0.080 $\mu\Omega$	
		100 $\mu\Omega$	0.088 $\mu\Omega$	
		1 m Ω	1.2 $\mu\Omega$	
		10 m Ω	7.4 $\mu\Omega$	
		100 m Ω	94 $\mu\Omega$	
		1 Ω	0.84 m Ω	

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Sourcing Devices				
DC Voltage	METHOD - Direct CRM USED - Fluke 8846A REFERENCE STANDARD.- Euramet Cg-15 Ver 3.0. INTERNAL PROCEDURE NUMBER - MCL-QSD- CP-E-002 Where m= measured	0 mV to 100 mV	0.0037%*m+5.0 µV	Laboratory Premises & Customer Premises
		>100 mV to 1 V	0.0025%*m+0.028 mV	
		>1 V to 10 V	0.0024%*m+0.24 mV	
		>10 V to 100 V	0.0038%*m+2.9 mV	
		>100 V to 1000 V	0.0041%*m+17 mV	
AC Voltage (Frequency 10 Hz to 50 kHz)	METHOD - Direct CRM USED - Fluke 8846A REFERENCE STANDARD.- Euramet Cg-15 Ver 3.0. INTERNAL PROCEDURE NUMBER - MCL-QSD- CP-E-002 Where m= measured	5 mV to 10 mV	0.12%*m+9.1 µV	Laboratory Premises & Customer Premises
		> 10 mV to 100 mV	0.12%*m+58 µV	
		>100 mV to 1 V	0.12%*m+0.58 mV	
		>1 V to 10 V	0.12%*m+ 6.0 mV	
		>10 V to 100 V	0.12%*m+ 83 mV	
AC Voltage (Frequency 10 Hz to 10 kHz)	NUMBER - MCL-QSD- CP-E-002 Where m= measured	>100 V to 1000 V	0.060%*m+0.37 V	

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Sourcing Devices				
DC Current	METHOD - Direct CRM USED - Fluke 8846A REFERENCE STANDARD.- Euramet Cg-15 Ver 3.0. INTERNAL PROCEDURE NUMBER - MCL-QSD- CP-E-002 Where m= measured value	0 μ A to 100 μ A	0.050%*m+0.031 μ A	Laboratory Premises & Customer Premises
		> 100 μ A to 1 mA	0.050%*m+0.067 μ A	
		> 1 mA to 10 mA	0.050%*m+0.0030 mA	
		> 10 mA to 100 mA	0.050%*m+0.0090 mA	
		> 100 mA to 400 mA	0.050%*m+0.070 mA	
		> 400 mA to 1A	0.050%*m+0.27 mA	
		> 1 A to 3 A	0.10%*m+ 1.1 mA	
		> 3 A to 10 A	0.15%*m+ 1.5 mA	

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Sourcing Devices				
Resistance (2-wire or 4-wire) include Decade resistance box	METHOD - Direct CRM USED - Fluke 8846A REFERENCE STANDARD.- Euramet Cg-15 Ver 3.0. INTERNAL PROCEDURE NUMBER - MCL-QSD-CP-E-002 Where m= measured value	0 Ω to 10 Ω	0.010%*m+3.6 m Ω	Laboratory Premises & Customer Premises
		> 10 Ω to 100 Ω	0.010%*m+10 m Ω	
		> 100 Ω to 1k Ω	0.010%*m+0.021 Ω	
		> 1 k Ω to 10 k Ω	0.010%*m+0.26 Ω	
		> 10 k Ω to 100 k Ω	0.010%*m+2.6 Ω	
		> 100 k Ω to 1 M Ω	0.010%*m+0.025 k Ω	
		> 1 M Ω to 10 M Ω	0.040%*m+1.5 k Ω	
		> 10 M Ω to 100 M Ω	0.80%*m+45 k Ω	
		> 100 M Ω to 1000 M Ω	2.0%*m+3.2 M Ω	

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Sourcing Devices				
AC Current (Frequency 10 Hz to 10 kHz)	METHOD - Direct CRM USED - Fluke 8846A REFERENCE STANDARD.- Euramet Cg-15 Ver 3.0. INTERNAL PROCEDURE NUMBER - MCL-QSD- CP-E-002 Where m= measured	5 μ A to 100 μ A	0.35%*m+0.81 μ A	Laboratory Premises & Customer Premises
		> 100 μ A to 1 mA	0.20%*m+3.0 μ A	
		> 1 mA to 10 mA	0.35%*m+81 μ A	
		> 10 mA to 100 mA	0.20%*m+0.29 mA	
		> 100 mA to 400 mA	0.20%*m+3.4 mA	
		> 400 mA to 1A	0.35%*m+9.1 mA	
AC Current Frequency 10 Hz to 1 Capacitance	METHOD - Direct CRM USED - Fluke 8846A REFERENCE STANDARD.- Euramet Cg-15 Ver 3.0. INTERNAL PROCEDURE NUMBER - MCL-QSD- CP-E-002 Where m= measured value	> 1 A to 3 A	0.15%*m+2.6 mA	Laboratory Premises &
		> 3 A to 10 A	0.15%*m+7.1 mA	
		0 nF to 1 nF	2.0%*m+35 pF	Laboratory Premises & Customer Premises
		> 1 nF to 10 nF	1.0%*m+82 pF	
		> 10 nF to 100 nF	1.0%*m+0.78 nF	
		>100 nF to 1 μ F	1.0%*m+12 nF	
		> 1 μ F to 10 μ F	1.0%*m+98 nF	
		> 10 μ F to 100 μ F	1.0%*m+1.2 μ F	
		> 100 μ F to 1 mF	1.0%*m+13 μ F	
		> 1 mF to 10mF	1.0%*m+ 0.17 mF	

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Sourcing Devices				
Frequency	METHOD - Direct CRM USED - Fluke 8846A REFERENCE STANDARD.- Euramet Cg-15 Ver 3.0. INTERNAL PROCEDURE NUMBER - MCL-QSD- CP-E-002 Where m= measured	3 Hz to 5 Hz	0.10%*m+5.8 mHz	Laboratory Premises & Customer Premises
		> 5 Hz to 10 Hz	0.050%*m+5.8 mHz	
		> 10 Hz to 40 Hz	0.030%*m+5.8 mHz	
		> 40 Hz to 300 kHz	0.010%*m+1.2 Hz	
		> 300 kHz to 1000 kHz	0.01%*m+7.5 Hz	
Temperature Measuring Device (RTD)	METHOD - Direct CRM USED - Fluke 8846A REFERENCE STANDARD.- Euramet Cg-11 Ver 2.0 INTERNAL PROCEDURE NUMBER - MCL-QSD- CP-E-003	-200 °C to 800 °C	0.015 °C	Laboratory Premises & Customer Premises

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Sourcing Devices				
Temperature Measuring Device (K- Type Thermocouple)	Direct Calibration using Fluke 5502A as a reference standard using MCL-QSD-CP-E-003 (Technical Protocol)	-200 °C to -100 °C	0.27 °C	Laboratory Premises & Customer Premises
		> -100 °C to -25 °C	0.15 °C	
		> -25 °C to 120 °C	0.13 °C	
		> 120°C to 1000°C	0.21 °C	
		> 1000 °C to 1372 °C	0.32 °C	
Temperature Measuring Device (J- Type Thermocouple)		-210 °C to -100 °C	0.22 °C	
		> -100 °C to -30 °C	0.13 °C	
		> -30°C to 150 °C	0.12 °C	
		> 150°C to 760 °C	0.15 °C	
		> 760 °C to 1200 °C	0.19 °C	
Temperature Measuring Device (N- Type Thermocouple)		-200 °C to -100 °C	0.34 °C	
		> -100 °C to -25 °C	0.20 °C	
		> -25 °C to 120 °C	0.20 °C	
		> 120°C to 410 °C	0.21 °C	
		> 410 °C to 1300 °C	0.37 °C	

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Calibration of Sourcing Devices				
Temperature Measuring Device (R- Type Thermocouple)	Direct Calibration using Fluke 5502A as a reference standard uisng MCL-QSD-CP-E-003 (Technical Protocol)	0 °C to 250 °C	0.60 °C	Laboratory Premises & Customer Premises
		> 250 °C to 400 °C	0.55 °C	
		> 400 °C to 1000 °C	0.56 °C	
		> 1000 °C to 1767 °C	0.61 °C	
Temperature Measuring Device (S- Type Thermocouple)		0 °C to 250 °C	0.46 °C	
		> 250 °C to 1000 °C	0.56 °C	
		> 1000 °C to 1400 °C	0.59 °C	
		> 1400 °C to 1767 °C	0.65 °C	
		Temperature Measuring Device (B- Type Thermocouple)	600°C to 800 °C	
> 800 °C to 1000 °C			0.36 °C	
> 1000 °C to 1550 °C			0.34 °C	
> 1550 °C to 1820 °C			0.36 °C	
Temperature Measuring Device (C- Type Thermocouple)			0 °C to 150 °C	
		> 150 °C to 650 °C	0.22 °C	
		> 650 °C to 1000 °C	0.84 °C	
		> 1000°C to 1800 °C	0.43 °C	
		> 1800 °C to 2316°C	0.70 °C	

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Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Sourcing Devices				
Temperature Measuring Device (E- Type Thermocouple)	METHOD - Direct	-250 °C to -100 °C	0.40°C	Laboratory Premises & Customer Premises
	CRM USED - Fluke	> -100 °C to -25 °C	0.13°C	
	8846A	> -25 °C to 350 °C	0.14°C	
	REFERENCE	> 350 °C to 650 °C	0.16°C	
	STANDARD.- Euramet	> 650 °C to 1000 °C	0.18°C	
Cg-11 Ver 2.0				
INTERNAL PROCEDURE				
Temperature Measuring Device (L- Type Thermocouple)	NUMBER - MCL-QSD- CP-E-003	-200 °C to -100 °C	0.30°C	
		> -100 °C to 800 °C	0.20°C	
		> 800 °C to 900 °C	0.15°C	
Temperature Measuring Device (T- Type Thermocouple)		-250 °C to -150 °C	0.50°C	
		> -150 °C to 0°C	0.20°C	
		> 0 °C to 120°C	0.18°C	
		> 120 °C to 400 °C	0.22°C	
Temperature Measuring Device (U- Type Thermocouple)		-200 °C to 0 °C	0.44°C	
		> 0 °C to 600 °C	0.22°C	

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Calibration and Measurement Capability (CMC)				
Measured Quantity/ Calibration Instrument	Calibration Method	Range and Specification	Expanded Measurement Uncertainty (U @ k=2)	Location
Calibration of Sourcing Devices				
Decade Resistance box	METHOD - Direct method CRM USED - Fluke 1550C REFERENCE STANDARD.- SANAS - TG-02-02 INTERNAL PROCEDURE NUMBER - MCL-QSD- CP-E-007 Where m= measured value	0 kΩ to 250 kΩ	5.0%*m+6.1 kΩ	Laboratory Premises & Customer Premises
		> 250 kΩ to 1MΩ	5.0%*m+0.039 MΩ	
		> 1MΩ to 5MΩ	5%*m+0.021 MΩ	
		> 5MΩ to 10MΩ	5.0%*m+0.012 MΩ	
		> 10MΩ to 50MΩ	5.0%*m+0.21 MΩ	
		> 50MΩ to 100MΩ	5.0%*m+0.44 MΩ	Laboratory Premises & Customer Premises
		> 100MΩ to 400MΩ	5.0%*m+2.1 MΩ	
		> 400MΩ to 1 GΩ	5.0%*m+0.0090 GΩ	
		> 1 GΩ to 10 GΩ	5.0%*m+0.050 GΩ	
		> 10GΩ to 100 GΩ	5.0%*m+1.1 GΩ	
		> 100GΩ to 1TΩ	20%*m+17 GΩ	



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Calibration of Sourcing Devices				
High Voltage AC Voltage (50 Hz to 60Hz)- Calibration of High voltage Source	METHOD - Direct CRM USED - Vitrek 4700 REFERENCE STANDARD.- - IEC 60060:2010 INTERNAL PROCEDURE NUMBER - MCL-QSD- CP-E-008 Where m= measured value	0 kV to 10 kV	0.12%*m+0.020 kV	Laboratory Premises & Customer Premises

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Calibration of Sourcing Devices				
High Voltage AC Voltage (50 Hz to 60Hz)- Calibration of High voltage Source	METHOD - Direct CRM USED - Vitrek 4700 REFERENCE STANDARD.- - IEC 60060:2010 . INTERNAL PROCEDURE NUMBER - MCL-QSD- CP-E-008 Where m= measured value	> 10 kV to 100 kV	0.10%*m+1.6 kV	Laboratory Premises & Customer Premises
High Voltage DC Voltage - Calibration of High Voltage Source	METHOD - Direct CRM USED - Vitrek 4700 REFERENCE STANDARD.- - IEC 60060:2010 INTERNAL PROCEDURE NUMBER - MCL-QSD- CP-E-008 Where m= measured	1 kV to 10 kV	0.030%*m+0.19 kV	Laboratory Premises & Customer Premises
		> 10kV to 100 kV	0.050%*m+2.0 kV	Laboratory Premises & Customer Premises

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Calibration of Sourcing Devices				
High Voltage Calibration of Measuring Devices AC Voltage - Calibration of High Voltage Source	Direct Calibration using Fluke 80k-40 as a reference standard using MCL-QSD-CP-E-008 (Technical Protocol) Where m= measured value	0 kV to 28 kV	5.0%*m+1.2 kV	Laboratory Premises & Customer Premises
High Voltage Calibration of Measuring Devices DC Voltage - Calibration of High Voltage Source	Direct Calibration using Fluke 80k-40 as a reference standard using MCL-QSD-CP-E-008 (Technical Protocol) Where m= measured value	0 kV to 35 kV	1.0%*m+1.0 kV	Laboratory Premises & Customer Premises
High Voltage Calibration of Measuring Devices DC Voltage - Calibration of High Voltage Source	Direct Calibration using Fluke 80k-40 as a reference standard using MCL-QSD-CP-E-008 (Technical Protocol) Where m= measured value	> 35 to 40 kV	2.0%*m+1.0 kV	Laboratory Premises & Customer Premises

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Calibration of Sourcing Devices				
Inductance source @ 1kHz	Comparison method using MCL-QSD-CP-E- 015 as standard procedures and reference RLC meter.	1mH to 20 H	0.60%	Laboratory Premises & Customer Premises
Capacitance Source @ 1kHz	Comparison method using MCL-QSD-CP-E- 002 as standard procedures and reference RLC-meter	1 nF to 100 μ F	1.20%	Laboratory Premises & Customer Premises
AC Resistance Source @ 1 kHz	Comparison method using MCL-QSD-CP-E- 002 as standard procedures and reference RLC meter	1 Ω to 10 k Ω	0.710%	Laboratory Premises & Customer Premises
Micro-ohm box	Comparison method using MCL-QSD-CP-E- 014 as standard procedures and reference 6.5 multimeter and MFC	10 μ Ω to 1000 μ Ω	0.20%	Laboratory Premises & Customer Premises

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Calibration of Sourcing Devices				

CT ratio	Comparison method using MCL-QSD-CP-E- 010 as standard procedures and reference CT	Ratio 1000/5 A	0.9%	Laboratory Premises & Customer Premises
		Ratio up to 6000/1 A	0.8%	Laboratory Premises & Customer Premises
DC High Current	Comparison method using MCL-QSD-CP-E- 016 as standard procedures and reference shunt and 6.5 multimeter	10 A to 1000 A	1.10%	Laboratory Premises & Customer Premises



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Calibration of Sourcing Devices				
AC High Current @50 Hz	Comparison method using MCL-QSD-CP-E- 016 as standard procedures and reference shunt and 6.5 multimeter	10A to 1000 A	2.10%	Laboratory Premises & Customer Premises