Quality And Accreditation Institute

Centre for International Accreditation

(formerly Centre for Laboratory Accreditation)

Certificate of Accreditation

Master Labs for Technical Testing, Inspection, and Calibration Services

Shop No. 68, Building No. 1981, Road No. 1527, Block 115,
Hidd, Kingdom of Bahrain

has been assessed and accredited in accordance with the Standard

ISO/IEC 17025:2017

"General Requirements for the Competence of Testing and Calibration Laboratories"
In the field of

Calibration

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued compliance to the above standard & any other requirements specified by QAI.

QAI/CIA/CL/2024/0004

Valid from: **05 February 2024**

Valid until: **04 February 2026**

Dr. Bhupendra Kumar Rana
Chief Executive Officer

Prof. Vikram Kumar
Chair, CIA

User is advised to verify the current scope of accreditation by visiting our website: www.qai.org.in

Scope of Accreditation

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Accreditation Standard: ISO/IEC 17025:2017

Mechanical Discipline				
Sl. No.	**Measurand or Reference Material/ Type of Instrument or Material to be Calibrated or Measured/ Quantity Measured/ Instrument**	**Calibration or Measurement Method or Procedure**	**Measurement Range and Additional Parameters Where Applicable (Range and Frequency)**	**Calibration and Measurement Capability (CMC) (±)**
Dimension- At Permanent Laboratory				
1.	Caliper (Digital, Dial & Vernier) L.C. 0.01 mm & Coarser	ISO 13385-1:2011 DIN 862	0 to 300 mm	6.6 µm
2.	External Micrometer L.C. 0.001 mm & Coarser	ISO 3611:2010	0 to 25 mm	0.8 µm
3.	Height Gauge (Digital, Dial & Vernier) L.C. 0.01 & Coarser	ISO 13225:2012	0 to 300 mm	7.0 µm
4.	Dial Indicator-Plunger Type (Digital & Analogue) L.C. 0.01 mm & Coarser	ISO 463:2006	0 to 25 mm	0.8 µm
5.	Dial Thickness Gauge (Digital & Analogue) L.C. 0.01 mm & Coarser	ISO 463:2006 ASTM D4417-B	0 to 25 mm	6.6 µm
6.	Test Sieve	ISO 3310-1:2016	1 mm to 150 mm	33 µm
Acoustics- At Permanent Laboratory				
7.	Sound Level Meter	ANSI S1.4:1983	94 dB & 114 dB (1 kHz)	0.35 dB
Acceleration and Speed- At Permanent Laboratory				
8.	Non-Contact Tachometer	Comparison Method	2700 RPM to 10000 RPM 10000 RPM to 59500 RPM	0.01 % Rdg. 0.07 % Rdg.

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Volume- At Permanent Laboratory				
9.	Micropipette, Syringes, Pycnometers, Pipette & Burette	ISO 8655 – 6:2020 ISO 4787:2021	200 µl to 1 ml	0.01 ml
			1 ml to 10 ml	0.08 ml
			10 ml to 50 ml	0.16 ml
10.	Volumetric Cylinder, Beaker, Flask	ISO 4787:2021	1 ml to 10 ml	0.08 ml
			10 ml to 150 ml	0.18 ml
11.	Weights	OIML-R 111-1	20 mg (M1 and coarser)	0.14 mg
			50 mg (M1 and coarser)	0.14 mg
			100 mg (M1 and coarser)	0.14 mg
			200 mg (M1 and coarser)	0.14 mg
			500 mg (M1 and coarser)	0.14 mg
			1 g (M1 and coarser)	0.14 mg
			2g (M1 and coarser)	0.14 mg
			5 g (M1 and coarser)	0.14 mg
			10 g (M1 and coarser)	0.14 mg
			20 g (M1 and coarser)	0.14 mg
			50 g (M1 and coarser)	0.14 mg
			100 g (M1 and coarser)	0.26 mg
			200 g (M1 and coarser)	0.39 mg
			500 g (M3 and coarser)	8.0 mg
			1 kg (M2 and coarser)	11.3 mg
			2 kg (M2 and coarser)	156.00 mg
			5 kg (M2 and coarser)	156.03 mg

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			10 kg (M2 and coarser)	156.16 mg
Pressure & Vaccum- At Permanent Laboratory				
12.	Pressure Gauges, Chart Recorder	DKD R6-1: 2006 OIML R-101 BS EN 60873-2	0 to 10 bar	0.09 bar
			10 to 150 bar	0.59 bar
			150 to 500 bar	0.85 bar
			500 to 1500 bar	0.75 bar
13.	Pressure Calibrators, Pressure Transmitters	Euramet cg-17 V2.0	0 to 10 bar	0.09 bar
			10 to 150 bar	0.59 bar
			150 to 600 bar	0.85 bar
14.	Pressure Relief Valve, Pressure Switches	Comparison	0 to 10 bar	0.09 bar
			10 to 150 bar	0.59 bar
			150 to 600 bar	0.85 bar
Mass- At-Site				
15.	Analytical Balance, Precision Balance, Digital Balance (Class II)	OIML-R 76-1	1 mg to 500 mg	0.58 mg
			500 mg to 200 g	5.8 mg
16.	Digital Balance, Platform Balance (Class II)	OIML-R 76-1	200 g to 10 kg	0.06 g
17.	Digital Balance, Platform Balance (Class III)		10 kg to 30 kg	0.11 g
18.	Platform Balance, Batching Plants (Class III)	OIML-R 76-1	30 kg to 200 kg	9.6 g

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Acceleration & Speed- At-Site				
19.	Centrifuge Rotational Speed (Non-Contact)	Comparison	100 to 999 RPM	0.05%
			999 RPM to 90000 RPM	0.1%

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Electro Technical Discipline				
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At Site and At Permanent Laboratory				
1.	DC Voltage Source	Using Standard Multifunction Calibrator by Direct method	10mV-200mV	± 0.076 mV
			>200mV-20V	± 1.0 mV
			>20V-200V	± 0.076 V
			>200V-1000V	± 0.76 V
2.	AC Voltage Source @ 50Hz & 1KHZ)	Using Standard Multifunction Calibrator by Direct method	10mV-200mV	± 0.08 mV
			>200mV-20V	± 0.29 mV
			>20V-200V	± 0.077 V
			>200V-1000V	± 0.78 V
3.	DC Current Source	Using Standard Multifunction Calibrator by Direct method	0.2mA-20mA	± 0.06 mA
			>20mA-200mA	± 0.16 mA
			>200mA-2A	± 0.86 mA
			>2A-10A	± 0.008 A
			>10A-1000A	± 0.81 % of rdg
4.	AC Current Source @ 50Hz & 1KHz)	Using Standard Multifunction Calibrator by Direct method	0.2mA-20mA	± 0.07 mA
			>20mA-200mA	± 0.17 mA
			>200mA-2A	± 0.0062 A
			>2A-10A	± 0.014 A
			>10A-1000A	± 0.77 % of rdg
5.	DC Resistance Source	Using Decade Resistance box by Direct method	1Ω- 100Ω	± 0.07 Ω
			>100Ω- 1kΩ	± 0.76 Ω
			>1kΩ- 10kΩ	± 7.57 Ω
			>10kΩ- 100kΩ	± 7.57 Ω

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			>100kΩ- 1MΩ	± 0.03 kΩ
			>1MΩ- 10MΩ	± 0.35kΩ
			>10MΩ- 100MΩ	± 0.58 MΩ
6.	Capacitance Measure	Using Standard Multifunction Calibrator by Direct method	1 nF-10 nF	± 0.07 nF
			>10nF -100nF	± 0.11 nF
			1µF - 10µF	± 0.06 µF
7.	DC Voltage Measure	Using Digital Multimeter & Clamp meter by Direct method	1mV-200mV	± 0.08 mV
			>200mV-20V	± 0.76 mV
			>20V-200V	± 0.076 V
			>200V-1000V	± 0.76 V
8.	AC Voltage Measure @ 60Hz	Using Digital Mutltimeter & Clamp meter by Direct method	1V-10V	± 0.76 mV
			>10V-100V	± 0.078 V
			>100V-1000V	± 0.76 V
9.	DC Current Measure	Using Digital Multimeter & Clamp meter by Direct method	0.2mA-200mA	± 0.057 mA
			>200mA-2A	± 0.0076 A
			>2A-10A	± 0.008 A
			>10A-1000A	± 0.76 A
10.	AC Current Measure @ 60Hz	Using Digital Mutltimeter & Clamp meter by Direct method	0.2mA-200mA	± 0.07 mA
			>200mA-2A	± 0.006 A
			>2A-10A	± 0.01 A
			>10A-1000A	± 0.76 A

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11.	DC Resistance Measure	Using Digital Multi meter by Direct method	1Ω to 100 Ω	± 0.008 Ω
			>100 Ω to 1k Ω	± 0.00049 kΩ
			>1k Ω to 100kΩ	± 0.0049 kΩ
			>100k Ω to 1MΩ	± 0.049 kΩ
			>1MΩ to 100MΩ	± 0.018 MΩ

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Thermal Discipline				
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At Site and At Permanent Laboratory				
1.	Oven/Incubator/Furnace/ Furnace/ Chiller & Freezer of indicator with sensor	Using RTD Probe with Indicator by comparison method.	-30°C to 600°C	± 0.63 °C
2.	Digital thermometer/ RTD/ Thermocouple/ Temperature Transmitter/Recorder with sensor	Using Dry Block Calibrator by Direct method	-10°C to 150°C	± 0.64 °C
			>150°C to 600°C	± 2.52 °C

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Chemical and Gas Discipline				
Sl. No.	**Measurand or Reference Material/ Type of Instrument or Material to be Calibrated or Measured/ Quantity Measured/ Instrument**	**Calibration or Measurement Method or Procedure**	**Measurement Range and Additional Parameters Where Applicable (Range and Frequency)**	**Calibration and Measurement Capability (CMC) (±)**
At Permanent Laboratory				
1.	pH Meter	Using Standard pH buffer solution by Direct method	4pH to 10pH	± 0.03 pH
2.	Conductivity Meter	Using Standard Conductivity solution by Direct method	1.414 mS/cm	± 0.02 mS/cm
			12.83 mS/cm	± 0.18 mS/cm
3.	TDS Meter	Using Standard Conductivity solution by Direct method	392 ppm	± 3.5 ppm
At Site				
4.	Spectrophotometer (Absorbance calibration)	Using Standard Test Filter by Direct method	0.9965 to 1.0867 Abs	± 0.07 Abs
5.	Multi-Gas Detector	Using Standard gas calibration cylinder by Direct method	Methane-50% LEL	± 2.03 %
			O2-18%	± 2.0 %
			CO-100ppm	± 2.08 %
			H2S-25ppm	± 5.5 %