



# CERTIFICATE OF ACCREDITATION

*This is to attest that*

## **QATAR CALIBRATION SERVICES W.L.L.**

QP WEST SERVICES AREA GHUWAIRIYA, ST. IR#1  
DOHA, STATE OF QATAR

### **Calibration Laboratory CL-178**

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 10, 2023

Expiration Date July 1, 2024



A handwritten signature in black ink, reading 'Raj Nathan'.

**President**

# SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

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## QATAR CALIBRATION SERVICES W.L.L.

[www.qcal.com.qa](http://www.qcal.com.qa)

**Contact Name** Biju Davis

**Contact Phone** +974-40331741

*Accredited to ISO/IEC 17025:2017*

*Effective Date January 10, 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)
<b>Dimensional</b>			
Digital Caliper	0 mm to 150 mm 0 mm to 300 mm	0.018 mm 0.02 mm	Procedure: QCAL-CP-014 Grade '0' Metric Gauge Block set
Micrometer	0 mm to 25 mm	0.003 mm	Procedure: QCAL-CP-014 Gauge Block Set
Dial Gauge / Indicator	0 mm to 25 mm	0.003 mm	Procedure: QCAL-CP-014 Dial Calibration Tester
Orifice Plate			Procedure: QCAL-CP-010
Bore Diameter	12 mm to 1000 mm	0.013 mm	Grade '0' Metric gauge block set, Digimatic indicator
Bevel Angle	Up to 180°	5'	Digital protractor
Edge Thickness	0 mm to 25 mm	0.014 mm	Digital Depth Micrometer
Plate Thickness	0 mm to 25 mm	0.006 mm	Digital Micrometer
Plate Flatness	25 mm to 1000 mm	0.011 mm	Tool makers straight edges, Feeler Gauges
Concentricity	0 mm to 500 mm	0.26 mm	Vernier caliper
Orifice Edge Sharpness/Radius	0 mm to 1 mm	0.008 mm	Pin gauge, Foil impression tool, Microscope with still video camera
Plate Surface Roughness	0 mm to 1 mm	0.1 µm	Roughness standard with surface roughness tester
<b>Mechanical</b>			
Air Pressure	15 mbar to 1000 mbar	0.2 mbar	Procedure: QCAL-CP-007 Budenberg 551, Mass set

\* 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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Air Pressure continued	0.5 bar to 30 bar	3 mbar	Procedure: QCAL-CP-007 Budenberg 554, Mass set
	15 mbar to 1 bar	1 mbar	Beamex MC5 Calibrator
	1 bar to 20 bar 20 bar to 30 bar	8 mbar 15 mbar	Beamex MC5 Calibrator
Hydraulic Pressure	1 bar to 60 bar	7 mbar	Procedure: QCAL-CP-007 Budenberg 580 VHX Mass set Beamex MC5 Calibrator Beamex External Pressure module
	60 bar to 1400 bar	0.3 bar	
	1 bar to 60 bar	6 mbar	
	60 bar to 600 bar	0.6 bar	
Differential Pressure	10 mbar to 1000 mbar at 0 bar to 200 bar static pressure	0.07 mbar	Procedure: QCAL-CP-009 Budenberg 5501, Mass set
Manual Torque Wrench	30 N·m to 70 N·m	1 N·m	Procedure: QCAL-CP-011 Norbar Pro-test 1500 Torque Tester
	70 N·m to 140 N·m	1.9 N·m	
	140 N·m to 300 N·m	3.7 N·m	
	300 N·m to 600 N·m	12.5 N·m	
	600 N·m to 900 N·m	20.4 N·m	
	900 N·m to 1200 N·m	24.2 N·m	
Pipette	0.1 mL to 1 mL	14 µL	Procedure: QCAL-CP-025 Weighing balance with 0.1 mg readability
	1 mL to 10 mL	22 µL	
	10 mL to 20 mL	38 µL	
Anemometer, Fume hoods and AC ducts	0.5 m/s to 5 m/s	7 %	Procedure: QCAL-CP-026 Alnor RVA+, TSI Airflow LCA301, Rotating vane Anemometer, Extech 407123 Hot wire thermo anemometer
Weighing Balances and Scales	0 g to 10 g	0.6 mg	Procedure: QCAL-CP-013 OIML Class E2 weights OIML Class E2 weights OIML Class F2 weights OIML Class M1 weights OIML Class M2 weights OIML Class M2 weights
	10 g to 100 g	0.62 mg	
	100 g to 1 kg	1.1 g	
	1 kg to 30 kg	6 g	
	30 kg to 100 kg	80 g	
	100 kg to 300 kg	0.15 kg	
<b>Thermal</b>			
Thermometer	-50 °C to 125 °C	0.038 °C	Procedure: QCAL-CP-006 Isotech TTI – 7, Isotech Millik Digital Temperature Indicator used with PRT Probes
	125 °C to 250 °C	0.35 °C	
	250 °C to 650 °C	1.1 °C	

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Thermometer continued	-50 °C to 125 °C 125 °C to 250 °C 250 °C to 650 °C	0.71 °C 0.9 °C 1.7 °C	Beamex MC5 Calibrator with T/C Parobe T/C-001
Temperature Source	-50 °C to 125 °C 125 °C to 250 °C 250 °C to 650 °C	0.13 °C 0.35 °C 1.1 °C	Procedure: QCAL-CP-006 Isotech TTI – 7, Isotech Millik Digital Temperature Indicator used with PRT Probes
	-50 °C to 125 °C 125 °C to 250 °C 250 °C to 650 °C	0.71 °C 0.9 °C 1.7 °C	MC5 Calibrator With T/C Probe T/C-001
RTD	-50 °C to 125 °C 125 °C to 250 °C 250 °C to 650 °C	0.07 °C 0.4 °C 1.2 °C	Procedure: QCAL-CP-006 Isotech TTI – 7, Isotech Millik Digital Temperature Indicator used with PRT Probes
	-50 °C to 125 °C 125 °C to 250 °C 250 °C to 650 °C	0.2 °C 0.5 °C 1.6 °C	Beamex MC5 Calibrator with T/C Probe T/C-001
Thermocouple	-50 °C to 125 °C 125 °C to 250 °C 250 °C to 650 °C	0.8 °C 0.8 °C 1.4 °C	Procedure: QCAL-CP-006 Isotech TTI – 7, Isotech Millik Digital Temperature Indicator used with PRT Probes
	-50 °C to 125 °C 125 °C to 250 °C 250 °C to 650 °C	1 °C 1.2 °C 1.9 °C	Beamex MC5 Calibrator with T/C Probe T/C-001
<b>Electrical – DC/LF</b>			
DC Voltage Generate <sup>3</sup>	0 mV to 330 mV 0 V to 3.3 V 0 V to 33 V 30 V to 330 V 100 V to 1000 V	4 µV 40 µV 0.5 mV 6 mV 35 mV	Procedure: QCAL-CP-003 Fluke 5520 A Calibrator Fluke 5502 A Calibrator
AC Voltage Generate <sup>3</sup> @ 50 Hz	33 mV to 330 mV 0.33 V to 3.3 V 3.3 V to 33 V 33 V to 330 V 330 V to 1020 V	25 µV 0.2 mV 2 mV 20 mV 0.3 V	Procedure: QCAL-CP-004 Fluke 5520 A Calibrator Fluke 5502 A Calibrator
DC Current Generate <sup>3</sup>	0 mA to 3.3 mA 3.3 mA to 33 mA 33 mA to 330 mA 0.33 A to 1.1 A 1.1 A to 11 A 11 A to 20 A	0.5 µA 1.5 µA 9.8 µA 0.2 mA 1.5 mA 18 mA	Procedure: QCAL-CP-001 Fluke 5520 A Calibrator Fluke 5502 A Calibrator

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AC Current Generate <sup>3</sup> @ 50 Hz	33 µA to 3.3 mA 3.3 mA to 330 mA 0.33 A to 1.1 A 1.1 A to 11 A 11 A to 20 A	4 µA 12 µA 2 mA 15 mA 23 mA	Procedure: QCAL-CP-002 Fluke 5520 A Calibrator Fluke 5502 A Calibrator
Resistance Generate <sup>3</sup>	0 Ω to 11 Ω 11 Ω to 33 Ω 33 Ω to 110 Ω 110 Ω to 330 Ω 330 Ω to 1.1 kΩ 1.1 kΩ to 3.3 kΩ 3.3 kΩ to 11 kΩ 11 kΩ to 33 kΩ 33 kΩ to 110 kΩ 110 kΩ to 330 kΩ 330 kΩ to 1.1 MΩ 1.1 MΩ to 3.3 MΩ 3.3 MΩ to 11 MΩ	2.2 mΩ 2.5 mΩ 5.1 mΩ 20 mΩ 20 mΩ 0.1 Ω 0.5 Ω 0.95 Ω 4.1 Ω 12.8 Ω 85 Ω 570 Ω 1.92 kΩ	Procedure: QCAL-CP-005 Fluke 5520 A Calibrator Fluke 5502 A Calibrator
DC Current Generate into Toroidal Type Clampmeter	10 A to 15 A 15 A to 150 A 150 A to 1000 A	0.3 A 0.8 A 3.2 A	Procedure: QCAL-CP-001 Fluke 5520 A Calibrator Fluke 5502 A Calibrator
DC Current Generate into Non-Toroidal Type Clampmeter	10 A to 15 A 15 A to 150 A 150 A to 1000 A	0.3 A 1.2 A 6.3 A	Procedure: QCAL-CP-001 Fluke 5520 A Calibrator Fluke 5502 A Calibrator
AC Current Generate into Toroidal Type Clampmeter @ 45 Hz to 65 Hz	10 A to 15 A 15 A to 150 A 150 A to 1000 A	0.3 A 1.1 A 4.2 A	Procedure: QCAL-CP-002 Fluke 5520 A Calibrator Fluke 5502 A Calibrator
AC Current Generate into Non-Toroidal Type Clampmeter @ 45 Hz to 65 Hz	10 A to 15 A 15 A to 150 A 150 A to 1000 A	0.32 A 1.4 A 7.5 A	Procedure: QCAL-CP-002 Fluke 5520 A Calibrator Fluke 5502 A Calibrator
DC Voltage Measure <sup>4</sup>	0.1 V to 1 V 1 V to 10 V 10 V to 100 V 100 V to 1000 V	15 µV 0.2 mV 1.7 mV 45 mV	Procedure: QCAL-CP-003 Agilent 3458 A Digital Multimeter
AC Voltage Measure <sup>4</sup> @ 50 Hz	1 mV to 100 mV 0.1 V to 1 V 1 V to 10 V 10 V to 100 V 100 V to 700 V	0.015 mV 0.15 mV 1.7 mV 32 mV 0.4 V	Procedure: QCAL-CP-004 Agilent 3458 A Digital Multimeter
DC Current Measure <sup>4</sup>	5 µA to 10 µA 10 µA to 100 µA 0.1 mA to 1 mA 1 mA to 10 mA 10 mA to 100 mA 0.1 A to 1 A	1 nA 4.2 nA 40 nA 0.41 µA 6.2 µA 0.2 mA	Procedure: QCAL-CP-001 Agilent 3458 A Digital Multimeter

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AC Current Measure <sup>4</sup> @ 50 Hz	100 µA 1 mA 10 mA 100 mA 1 A	0.14 µA 0.8 µA 0.025 mA 0.3 mA 2.8 mA	Procedure: QCAL-CP-002 Agilent 3458 A Digital Multimeter
DC Resistance Measure <sup>4</sup>	10 Ω 100 Ω 1 kΩ 10 kΩ 100 kΩ 1 MΩ 10 MΩ 100 MΩ 1 GΩ	0.32 mΩ 2.4 mΩ 16 mΩ 21 mΩ 1.6 Ω 29 Ω 750 Ω 0.07 MΩ 7.3 MΩ	Procedure: QCAL-CP-005 Agilent 3458 A Digital Multimeter
Frequency Measure <sup>4</sup>	1 Hz to 100 Hz 100 Hz to 1 kHz 1 kHz to 10 kHz 10 kHz to 100 kHz 100 kHz to 3 MHz 3 MHz to 10 MHz	4.6 mHz 115 mHz 1.2 Hz 31 Hz 850 Hz 1.2 kHz	Procedure: QCAL-CP-020 Agilent 3458 A Digital Multimeter
Frequency Generate <sup>3</sup>	1 Hz to 10 Hz 10 Hz to 100 Hz 100 Hz to 1 kHz 1 kHz to 10 kHz 10 kHz to 100 kHz 100 kHz to 1 MHz 1 MHz to 2 MHz	7 mHz 60 mHz 80 mHz 750 mHz 7 Hz 80 Hz 750 Hz	Procedure: QCAL-CP-020 Fluke 5520 A Calibrator Fluke 5502 A Calibrator
Electrical Energy meter	0.01 kWh to 1 kWh	0.10 %	Procedure: QCAL-CP-022 Zera MT 320 Portable Reference Standard
<b>Chemical/Gas</b>			
pH Meter	4.00 pH 7.00 pH 10.00 pH	0.03 pH 0.031 pH 0.041 pH	Procedure: QCAL-CP-023 Standard buffer solutions
Conductivity meter	84 µS/cm 1413 µS/cm 12.88 mS/cm	0.8 µS/cm 15.0 µS/cm 0.14 mS/cm	Procedure: QCAL-CP-024 Standard buffer solutions

<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.

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<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.