



INTERNATIONAL
ACCREDITATION
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CERTIFICATE OF ACCREDITATION

This is to attest that

QATAR CALIBRATION SERVICES W.L.L.

QP WEST SERVICES AREA GHUWAI RIYA, ST. IR#1
RAS LAFFAN
DOHA
QATAR

Calibration Laboratory CL-178

has met the requirements of AC204, *IAS Accreditation Criteria for Calibration Laboratories*, and has demonstrated compliance with the ISO/IEC Standard 17025:2005, *General requirements for the competence of testing and calibration laboratories*. This organization is accredited to provide the services specified in the scope of accreditation maintained on the IAS website (www.iasonline.org).

This certificate is valid up to July 1, 2020

(See laboratory's scope of accreditation for fields of calibration and accredited calibration.)



This accreditation certificate supersedes any IAS accreditation bearing an earlier effective date. The certificate becomes invalid upon suspension, cancellation or revocation of accreditation. See www.iasonline.org for current accreditation information, or contact IAS at 562-364-8201.



C.P. Ramani, P.E., C.B.O
President



SCOPE OF ACCREDITATION

IAS Accreditation Number	CL-178
Accredited Entity	Qatar Calibration Services WLL, (QCAL)
Address	QP West Services Area Ghuwairiya, St IR #1 – Ras Laffan Doha, PO Box 16069, State of Qatar
Contact Name	Shreenivasa T R, Calibration Specialist
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Effective Date of Scope	February 23, 2017
Accreditation Standard	ISO/IEC 17025:2005

CALIBRATION AREA	RANGE & RESOLUTION	CALIBRATION & MEASUREMENT CAPABILITY ¹ (CMC) (±)	TECHNIQUE, REFERENCE STANDARD, EQUIPMENT
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<i>Electrical/DC/Low Frequency</i>			
DC Voltage Measure	0 to 330 mV/0.1 μ V	4 μ V	Fluke 5520 A Calibrator, Serial No.: 8125003 and 1636001
	0 to 3.3 V/1 μ V	40 μ V	
	0 to 33 V/10 μ V	0.5 mV	
	30 to 330 V/100 μ V	6 mV	
	100 to 1000 V/1000 μ V	35 mV	
AC Voltage @ 50 Hz Measure	33 mV to 330 mV/1 μ V	25 μ V	
	0.33 to 3.3 V/10 μ V	0.2 mV	
	3.3 to 33 V/100 μ V	2 mV	
	33 to 330 V/1 mV	20 mV	
	330 to 1020 V/10 mV	0.3 V	
DC Current Measure	0 to 3.3 mA/0.01 μ A	0.5 μ A	
	3.3 to 33 mA/0.1 μ A	1.5 μ A	
	33 to 330 mA/1 μ A	9.8 μ A	
	0.33 to 1.1 A/10 μ A	0.2 mA	
	1.1 to 11 A/100 μ A	1.5 mA	
	11 to 20 A/100 μ A	18 mA	
AC Current @ 50 Hz Measure	33 μ A to 3.3 mA/0.01 μ A	4 μ A	
	3.3 to 330 mA/0.1 μ A	12 μ A	
	0.33 to 1.1 A/10 μ A	2 mA	
	1.1 to 11 A/10 μ A	15 mA	
	11 to 20 A/100 μ A	23 mA	
Resistance Measure	0 to 11 Ω /0.0001 Ω	2.2 m Ω	Fluke 5520 A Calibrator, Serial No.: 8125003 and 1636001
	11 to 33 Ω /0.0001 Ω	2.5 m Ω	
	33 to 110 Ω /0.0001 Ω	5.1 m Ω	
	110 to 330 Ω /0.0001 Ω	20 m Ω	
	330 to 1.1 k Ω /0.001 Ω	20 m Ω	
	1.1 to 3.3 k Ω /0.001 Ω	0.1 Ω	
	3.3 to 11 k Ω /0.01 Ω	0.5 Ω	
	11 to 33 k Ω /0.01 Ω	0.95 Ω	
	33 to 110 k Ω /0.1 Ω	4.1 Ω	
	110 to 330 k Ω /0.1 Ω	12.8 Ω	
	330 to 1.1 M Ω /1 Ω	85 Ω	
	1.1 to 3.3 M Ω /1 Ω	570 Ω	
	3.3 to 11 M Ω /10 Ω	1.92 k Ω	
DC Current Measure in Toroidal Type Clampmeter	10 to 15 A/1 mA	0.3 A	
	15 to 150 A/10 mA	0.8 A	
	150 to 1000 A/100 mA	3.2 A	



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DC Current Measure in Non Toroidal Type Clampmeter	10 to 15 A/1 mA	0.3 A	Fluke 5520 A Calibrator, Serial No.: 8125003 and 1636001	
	15 to 150 A/10 mA	1.2 A		
	150 to 1000 A/100 mA	6.3 A		
AC Current Measure @ 45 Hz to 65 Hz in Toroidal Type Clampmeter	10 to 15 A/1 mA	0.3 A		
	15 to 150 A/10 mA	1.1 A		
	150 to 1000 A/100 mA	4.2 A		
AC Current Measure @ 45 Hz to 65 Hz in Non Toroidal Type Clampmeter	10 to 15 A/1 mA	0.32 A		
	15 to 150 A/10 mA	1.4 A		
	150 to 1000 A/100 mA	7.5 A		
DC Voltage Generation	0.1 to 1 V/10 nV	15 µV		Agilent 3458 A Digital Multimeter, Serial No.: US 28029259
	1 to 10 V/100 nV	0.2 mV		
	10 to 100 V/1 µV	1.7 mV		
	100 to 1000 V/10 µV	45 mV		
AC Voltage @ 50 Hz Generation	1 to 100 mV/10 nV	0.015 mV		
	0.1 to 1 V/100 nV	0.15 mV		
	1 to 10 V/1 µV	1.7 mV		
	10 to 100 V/10 µV	32 mV		
	100 to 700 V/100 µV	0.4 V		
DC Current Generation	5 to 10 µA/1 pA	1 nA		
	10 to 100 µA/10 pA	4.2 nA		
	0.1 to 1 mA/100 pA	40 nA		
	1 to 10 mA/1 nA	0.41 µA		
	10 to 100 mA/10 nA	6.2 µA		
	0.1 to 1 A/100 nA	0.2 mA		
AC Current @ 50 Hz Generation	100 µA/100 pA	0.14 µA		
	1 mA/1 nA	0.8 µA		
	10 mA/10 nA	0.025 mA		
	100 mA/100 nA	0.3 mA		
	1 A/1 µA	2.8 mA		
DC Resistance Generation	10 Ω/10 µΩ	0.32 mΩ		
	100 Ω/10 µΩ	2.4 mΩ		
	1 kΩ/100 µΩ	16 mΩ		
	10 kΩ/1 mΩ	21 mΩ		
	100 kΩ/10 mΩ	1.6 Ω		
	1 MΩ/100 mΩ	29 Ω		
	10 MΩ/1 Ω	750 Ω		
	100 MΩ/10 Ω	0.07 MΩ		
	1 GΩ/100 Ω	7.3 MΩ		
<i>Thermal</i>				
Thermometer	-50 to 125 °C / 0.01 °C	0.038 °C	Isotech TTI - 7 Digital Temperature	
	125 to 250 °C / 0.01 °C	0.35 °C	Indicator Serial No.: 062149	
	250 to 650 °C / 0.01 °C	1.1 °C	used with PRT Probes	
	-50 to 125 °C / 0.01 °C	0.71 °C	Sl. No.: 09AS127 and 241175/7	
	125 to 250 °C / 0.01 °C	0.9 °C	Beamex MC5 Calibrator Sl.	



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CALIBRATION AREA	RANGE & RESOLUTION	CALIBRATION & MEASUREMENT CAPABILITY ¹ (CMC) (±)	REFERENCE STANDARD/ EQUIPMENT
			No.: 25516655
Temperature Source	250 to 650°C / 0.01°C	1.7°C	With T/C Probe T/C-001
	-50 to 125°C / 0.01°C	0.13°C	Isotech TTI - 7 Digital Temperature
	125 to 250°C / 0.01°C	0.35°C	Indicator Serial No.: 062149
	250 to 650°C / 0.01°C	1.1°C	used with PRT Probes
	-50 to 125°C / 0.01°C	0.71°C	Sl. No.: 09AS127 & 241175/7
	125 to 250°C / 0.01°C	0.9°C	Beamex MC5 Calibrator Sl. No.: 25516655
	250 to 650°C / 0.01°C	1.7°C	With T/C Probe T/C-001
RTD	-50 to 125°C / 0.01°C	0.038°C of input Temperature & 0.02 Ω of output Resistance	Isotech TTI - 7 Digital Temperature Indicator Serial No.: 062149 used with PRT Probes
	125 to 250°C / 0.01°C	0.36°C of input Temperature & 0.026 Ω of output Resistance	Ser. No.: 09AS127 and 241175/7
	250 to 650°C / 0.01°C	1.1°C of input Temperature & 0.026 Ω of output Resistance	
	-50 to 125°C / 0.01°C	0.15°C of input temperature & 0.02 Ω of Output resistance	
	125 to 250°C / 0.01°C	0.43°C of input temperature & 0.026 Ω of Output resistance	
	250 to 650°C / 0.01°C	1.5°C of input temperature & 0.026 Ω of Output resistance	
Thermocouple	-50 to 125°C / 0.01°C	0.038°C of input Temperature & 0.02 mV of output Resistance	Isotech TTI - 7 Digital Temperature Indicator Serial No.: 062149 used with PRT Probes Sl. No.: 09AS127 and 241175/7
	125 to 250°C / 0.01°C	0.36°C of input Temperature & 0.026 mV of output Resistance	
	250 to 650°C / 0.01°C	1.1°C of input Temperature & 0.026 mV of output Voltage	
	-50 to 125°C / 0.01°C	0.71°C of input temperature & 0.02 mV of Output Voltage	Beamex MC5 Calibrator Sl. No.: 25516655 with T/C Probe T/C-001
	125 to 250°C / 0.01°C	0.9°C of input temperature & 0.02	



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	250 to 650 °C / 0.01 °C	mV of Output Voltage 1.7 °C of input temperature & 0.02 mV of Output Voltage	
<i>Mechanical</i>			
Air Pressure	15 to 1000 mbar / 5 mbar	0.2 mbar	Budenberg 551, Serial No.: 28798 Mass set Serial No.: A8620
	0.5 to 30 bar / 0.5 bar	3 mbar	Budenberg 554, Serial No.: 28799 Mass set Serial No.: A8621 & A8633
	15 mbar to 1 bar / 0.1 mbar	1 mbar	Beamex MC5 Calibrator Sl. No.: 25516655
	1 to 20 bar / 1 mbar	8 mbar	Beamex MC5 Calibrator Sl. No.: 20086330
	20 to 30 bar / 1 mbar	15 mbar	
Hydraulic Pressure	1 to 60 bar / 0.3 bar	7 mbar	Budenberg 580 VHX, Serial No.: 27306 Mass set Serial No.: A7036 to A7041
	60 to 1400 bar / 6 bar	0.3 bar	Beamex MC5 Calibrator Sl. No.: 25516655
	1 to 60 bar / 1 mbar	6 mbar	Beamex External Pressure module Sl. No.: 21840-2002
	60 to 600 bar / 0.01 bar	0.6 bar	
Differential Pressure	10 to 1000 mbar at 0 to 200 bar statics Pressure / 0.05 mbar	0.07 mbar	Budenberg 5501, Serial No.: 9412 Mass set serial No.: 4360, 4361, and 9413
<i>Dimensional</i>			
Digital Caliper	0 to 150 mm/0.01 mm	0.018 mm	Grade '0' Metric Gauge Block set Serial No.: 0905218, 0803505 and 1000890
	0 to 300 mm/0.01 mm	0.02 mm	
Micrometer	0 to 25 mm/0.001 mm	0.003 mm	
Dial Guage / Indicator	0 to 25 mm/0.001 mm	0.003 mm	Dial Calibration Tester Sl. No.: 000931407
Orifice Bore Diameter	12 to 1000 mm / 0.001 mm	0.013 mm	Grade'0' Metric gauge block set Serial No.: 905218 Digimatic indicator, Serial No.: 9002348
Bevel Angle		5 minutes of arc	Digital protractor, Serial No.: 86953
Orifice Edge Thickness		0.014 mm	Digital depth Micrometer, Serial No.: 803760
Plate Thickness		0.006 mm	Digital Micrometer, Serial. No.: 85073557
Plate Flatness		0.011 mm	Tool makers straight edges Serial. No.: MIT 15179, MIT 15180, MIT 15181, MIT



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			15182 Feeler Gauges, Sl. No.: 100467/2
Orifice Concentricity		0.26 mm	Vernier caliper, Sl. No.: 8394323, 1472
Orifice Edge Sharpness/Radius		0.008 mm	Pin gauge, Sl. No.: 54074/1, 54074/2 Foil impression tool Microscope with still video camera
Orifice Plate Surface Roughness		0.1 µm	Roughness standard, Sl. No.: 32911 with surface roughness tester
<i>Mass</i>			
Weighing Balances and Scales	0 g to 10 g/ 0.001 g	0.6 mg	OIML Class E2 weights
	10 g to 100 g/ 0.001 g	0.62 mg	OIML Class E2 weights
	100 g to 1 kg/ 0.01 g	1.1 g	OIML Class F2 weights
	1 kg to 30 kg / 1 g	6 g	OIML Class M1 weights
	30 kg to 100 kg / 0.01 kg	80 g	OIML Class M2 weights
	100 kg to 300 kg / 0.1 kg	0.15 kg	

*'Calibration and Measurement Capability' is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation (at a confidence level of 95% with a coverage factor of 2)