CERTIFICATE OF ACCREDITATION

This is to attest

QATAR ARMED FORCES CALIBRATION CENTER

PO BOX 24129
DOHA, QATAR

Calibration Laboratory CL-206

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 June 1, 2026
Effective Date July 7, 2025

IAS ACCREDITED

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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Accredited to ISO/IEC 17025:2017

Effective Date July 7, 2025

CALIBRATION AND MEASUREMENT CAPABILITY (CMC)*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Dimensional			
Gauge Blocks (Comparison Method)	0.5 mm to 10 mm 10 mm to 25 mm 25 mm to 50 mm 50 mm to 75 mm 75 mm to 100 mm	0.06 µm 0.07 µm 0.08 µm 0.09 µm 0.12 µm	Using Grade "K" Gauge Block and Comparator By Comparison Method (ISO 3650:1998 -CP/M/31)
Gauge Blocks, (Direct method)	0.5 mm to 10 mm 10 mm to 25 mm 25 mm to 50 mm 50 mm to 75 mm 75 mm to 100 mm	18 nm 19 nm 22 nm 27 nm 33 nm	Using Gauge Block Interfer-ometer by Direct method (GBI 300 User Manual & ISO 3650:1998)
Calipers	Up to 300 mm 300 mm to 500 mm 500 mm to 1000 mm	6.6 µm 7.8 µm 10.0 µm	Using Gauge Block and Set-ting Ring by direct method (ASME B89.1.14, CP/M/44)
External Micrometer	Up to 25 mm 25 mm to 50 mm 50 mm to 75 mm 75 mm to 100 mm	0.68 µm 0.72 µm 0.78 µm 0.88 µm	Using Gauge Block by direct method (ASME B89.1.13, CP/M/48)
Depth Micrometer	Up to 25 mm 25 mm to 50 mm 50 mm to 75 mm 75 mm to 100 mm	0.68 µm 0.72 µm 0.78 µm 0.88 µm	Using Gauge Block by direct method (ASME B89.1.13, CP/M/48)
LVDT Probe with Display Unit	Up to 25 mm 25 mm to 50 mm	0.18 µm 0.32 µm	Using Gauge Block by direct method (Sylvac 80 User Manual & CP/M/34)
Dial Indicators (Plunger)	Up to 1 mm 1 mm to 25 mm	0.75 µm 2.5 µm	Using LVDT Probe with Dial Calibration Bench by Direct method

** 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.*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
			(ASME B.89.1.10M, CP/M/07)
Dial Indicators (Lever)	Up to 1 mm	0.5 µm	Using LVDT Probe with Dial Calibration Bench by Direct method (ASME B.89.1.10M, CP/M/07)
Length Measuring Machine	Up to 100 mm 100 mm to 300 mm	0.08 µm 0.26 µm	Using Gauge Block by direct method (SIP MANUAL- 302M, CP/M/04)
Height Gauge	Up to 600 mm	0.74 µm	Using Gauge Block by direct method (JIS B 7517, CP/M/21)
Mechanical			
Load Cells with Indicator (Compression/Tension)	0.1 kN to 10 kN 10.1 kN to 100 kN 100.1 kN to 200 kN	0.0074 kN 0.046 kN 0.36 kN	Using Proving Rings by Comparison method (CP/M/42/2023 Rev.1)
Pressure Gauge - Hydraulic	5 bar to 50 bar 50 bar to100 bar 100 bar to150 bar 150 bar to 250 bar 250 bar to 600 bar 600 bar to 1600 bar	0.12 % 0.06 % 0.04 % 0.03 % 0.02 % 0.01 %	Using Oil Deadweight Tester DH5306 with 5 bar and 20 bar piston-cylinder assembly by Direct method (EURAMET / Calibration Guide No.17 Version 4.0 (04/2019))
Pressure Gauge - Pneumatic	1 bar to 5 bar 5 bar to10 bar 10 bar to 15 bar 15 bar to 20 bar 20 bar to 25 bar 25 bar to 50 bar 50 bar to 200 bar 200 bar to 300 bar 300 bar to 800 bar	0.12 % 0.06 % 0.04 % 0.03 % 0.04 % 0.02 % 0.01 % 0.009 % 0.005 %	Using Air Deadweight Tester DH5203 with 1 bar and 20 bar piston-cylinder assembly by Direct Method (EURAMET / Calibration Guide No.17 Version 4.0(04/2019)
Mass Standards	1 mg 2 mg 5 mg 10 mg 20 mg 50 mg 100 mg 200 mg 500 mg 1 g 2 g 5 g 10 g 20 g	0.003 mg 0.003 mg 0.003 mg 0.003 mg 0.003 mg 0.003 mg 0.003 mg 0.004 mg 0.004 mg 0.005 mg 0.0060 mg 0.008 mg 0.009 mg 0.011 mg	Using OIML Class E1, E2, F1 Weights and Comparator of readable resolution of 1µg by ABA Method (As per Standard OIML R-111) CP/M/45(Rev.0)/2021

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Mass Standards (continued)	50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 10 kg 20 kg	0.1 mg 0.1 mg 0.10 mg 0.3 mg 0.3 mg 0.5 mg 7 mg 7 mg 8 mg	Using OIML Class E1, E2, F1 Weights and Comparator of readable resolution of 0.1 mg by ABA Method (As per Standard OIML R-111) CP/M/45(Rev.0)/2021 Using OIML Class E1, E2, F1 Weights and Comparator of readable resolution of 5 mg by ABA Method (As per Standard OIML R-111) CP/M/45(Rev.0)/2021
Torque Measuring Device	1 N·m to 10 N·m 5 N·m to 50 N·m 50 N·m to 100 N·m 100 N·m to 500 N·m 500 N·m to 1000 N·m 1000 N-m to 5000 N.m	0.11 % 0.10 % 0.04 % 0.02 % 0.034 % 0.07 %	Using Standard Test Weights by Direct Method (BS 7882:2017, CP/M/43/2021 Rev.0)
Thermal			
PRT/RTD/Thermocouple with or without Indicator, Thermistor, Temperature Switch, Temperature Gauge, Thermometer, Temperature Recorder with Sensor	-65 °C to 0 °C 0 °C to 140 °C 140 °C to 600 °C 600 °C to 700 °C 700 °C to 1200 °C	0.012 °C 0.051 °C 0.051 °C 0.31 °C 3.0 °C	Using SPRT/ S Type Thermocouple with 8 1/2 DMM & Temperature Source by Comparison Method (EURAMET/ cg-8 & DKD-R5-1)
Infrared Thermometer, Pyrometer, Thermal Imager	50 °C to 200 °C 200 °C to 400 °C 400 °C to 500 °C	0.51 °C 1.0 °C 1.6 °C	Using Black Body Calibrator by Comparison Method (MSL Guide 22 Fluke 9132 User Manual)
Temperature Indicator & sensor for Oven/ Furnace/Bath/ Dry Block Calibrator/ Chamber etc. (Single Sensor Method)	-80 °C to 600 °C 600 °C to 700 °C 700 °C to 1200 °C	0.048 °C 0.31 °C 3.0 °C	Using SPRT/ S Type Thermocouple with 8½ DMM by Direct method (EURAMET/ cg-13 & DKD-R5-7)
Electrical – DC/LF			
DC Voltage – Generate[3] Fixed Points	1.018 V 10 V	1.1 µV/V 0.99 µV/V	Using Direct Voltage Standard (Fluke 732B) and 8½ DMM by Direct Method (Euramet EM-K8 of DC Voltage Ratio IEEE instrument and Measurement vol. 54, No.2 April 2005. User Manual)

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
DC Voltage –Measure[4]	1 mV to 220 mV 220 mV to 2.2V 2.2 V to 11 V 11 V to 22 V 22 V to 220 V 220 V to 1000 V	48 µV/V 7.4 µV/V 5 µV/V 7.1 µV/V 9.2 µV/V 9.2 µV/V	Using Direct Voltage Standard (Fluke 732B) and 8½ DMM by Direct Method (Euramet EM-K8 of DC Voltage Ratio IEEE instrument and Measurement vol. 54, No.2 April 2005. User Manual)
DC Voltage – Generate[3]	1 mV to 220 mV 220 mV to 2.2V 2.2 V to 11 V 11 V to 22 V 22 V to 220 V 220 V to 1000 V	400uV/V 9.5 µV/V 5.9 µV/V 5.2 µV/V 8.2 µV/V 9.4 µV/V	Using Multifunction Calibrator by Direct method.
Resistance - Generate[3] Fixed Points	0.001 Ω 0.01 Ω 0.1 Ω 1 Ω 10 Ω 100 Ω 1 kΩ 10 kΩ 100 kΩ 1 MΩ 10 MΩ	6.7 µΩ/Ω 6.4 µΩ/Ω 5.9 µΩ/Ω 4.3 µΩ/Ω 4.0 µΩ/Ω 3.8 µΩ/Ω 3.7 µΩ/Ω 3.3 µΩ/Ω 4.2 µΩ/Ω 8.2 µΩ/Ω 17 µΩ/Ω	Using Reference Resistors and 8½ DMM by Direct Method (APMP.EM-S12 Comparison of Standards for Calibration of Voltage, current and Resistance Nov. 2017 User Manual)

[1]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.

[2]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.

[3]Capability is suitable for the calibration of measuring devices in the stated ranges.

[4]Capability is suitable for the calibration of devices intended to generate the indicated quantity in the stated ranges.