CERTIFICATE OF ACCREDITATION

This is to attest

APEX NATIONAL INDUSTRIAL CALIBRATION CO. - AIC

SHOWROOM #14-15, PORT GATE BUILDING, KHALDIYA
DAMMAM 32221, SAUDI ARABIA

Calibration Laboratory CL-188

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 February 6, 2024

International Accreditation Service
Issued under the authority of IAS management

Visit www.iasonline.org for current accreditation information.

SCOPE OF ACCREDITATION

International Accreditation Service, Inc.

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APEX NATIONAL INDUSTRIAL CALIBRATION CO. - AIC

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Accredited to ISO/IEC 17025:2017 *Effective Date February 6, 2024*

CALIBRATION AND MEASUREMENT CAPABILITY (CMC)*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Dimensional			
Calipers (Vernier, dial and digital)	Up to 1000 mm	42 µm	Cliper Checker by Direct method Based on ASME-B89-1-14 (Work Instruction: MTE-WI-L05)
External Micrometer	Up to 100 mm	24 µm	Gauge Block Set Grade K by Direct Method Based on ASME B89.1.13 (Work Instruction: MTE-WI-L10)
Coating Thickness Gauge	20 µm to 2788 µm	3.1 µm	Standard Foils by Direct Method Based on BS EN ISO 16809 (Work Instruction MTE-WI-L23B)
Mechanical			
Pressure Measure Devices - Pneumatic (Pressure Gauge/Pressure transmitter) [5]	0 bar to 2 bar 2 bar to 40 bar	0.03 bar 0.08 bar	Pneumatic Pressure Calibrator by Direct Method Based on DKD – R (6-1) (Work Instruction: MTE-WI-M02)
Vacuum Gauge[5]	-0.85 bar to 20 bar	0.03 bar	Pneumatic Pressure Calibrator by Direct Method Based on DKD – R (6-1) (Work Instruction: MTE-WI-M02)
Pressure Measuring Devices - Hydraulic	30 psi to 3000 psi 3000 psi to 10000 psi	3.5 psi 2.6 psi	Pneumatic Pressure Calibrator 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)
(Pressure Gauge, Pressure Transmitter, Pressure Switch, Pressure Transducer) [5]	10000 psi to 15000 psi 15000 psi to 60000 psi	4.1 psi 36 psi	Based on DKD – R (6-1) (Work Instruction: MTE-WI-M02)
Torque Wrench	30 N·m to 400 N·m 400 N·m to 1500 N·m	2.8 N·m 4 N·m	Torque Wrence Calibartor (Torque Transducer Sensor) by Direct Method, Based on ISO6789 (Work Instruction MTE/WI/L01)
Analytical balance[5]	1 mg to 40 mg 40 mg to 100 mg 100 mg to 500 mg 500 mg to 1 g 1 g to 100 g 100 g to 1 kg	0.041 mg 0.12 mg 0.18 mg 0.14 mg 0.24 mg 0.35 g	Standard Weights class E1 by Direct Method Based on OIML R76-1 (Work Instruction for weighing Scale: MTE-WI-M11)
Electronic Balance[5]	1 kg to 60 kg 60 kg to 1200 kg 1200 kg to 3000 kg	0.01 kg 1.4 kg 2.1 kg	Standard Weights class F1 & M1 by Direct Method Based on OIML R76-1 (Work Instruction for weighing Scale: MTE-WI-M11)
Weights and Weights Set Class F2, M1 and M2	1 mg 2 mg 5 mg 10 mg 20 mg 50 mg 100 mg 500 mg 1 g 2 g 5 g 10 g 20 g 50 g 100 g 200 g 500 g 1 kg 2 kg 5 kg 10 kg 20 kg 50 kg	0.066 mg 0.066 mg 0.069 mg 0.069 mg 0.069 mg 0.066 mg 0.066 mg 0.092 mg 0.12 mg 0.12 mg 0.07 mg 0.14 mg 0.14 mg 0.14 mg 0.14 mg 0.38 mg 0.15 mg 0.14 g 0.15 g 0.14 g 6.1 g 6.1 g 6.1 g	Standard Weights Set class E1, F1 Class & Weighing Balance by Comparison Method (As (ABBA Method as per OIML R111-1 (work Instruction: MTE-WI-M06)
Thermal			

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Temperature Sensors with or Without Indicator, Temperature Gauge, Glass Thermometer[5]	-40 ˚C to 50 ˚C 50 °C to 650 ˚C 650 ˚C to 1200 ˚C	0.32 ˚C 0.34 ˚C 0.5 ˚C	Dry Block/ Liquid Bath by Direct method Based on Work Instruction: MTE-WI-T02B
IR Thermometer[5]	-20 ˚C to 50 ˚C 50 ˚C to 500 ˚C	0.34 ˚C 0.3 ˚C	Infrared (IR) Calibrator by Direct Method Based on ASTM E1934 - 99a (Work Instruction: MTE-WI-T14)
Oven, Autoclave, Furnace, Incubator Water Bath, Dry Block (Single Sensor Method) [5]	-40 ˚C to 50 ˚C 50 ˚C to 650 ˚C 650 ˚C to 1200 ˚C	0.32 ˚C 0.81 ˚C 0.75 ˚C	Temp Sensor with Indicator (single sensor method) By Direct method based on EURAMET cg-13 Version 3.0 (Work Instruction (MTE-WI-T05 & 5AA)
Electrical – DC/LF			
DC Voltage - Measure[4,5]	100 mV to 1 V 1 V to 1000 V	0.003 % 0.003 %	6½ Digit TRMS Multimeter By Direct Method Based on EURAMET CG-15, (Work Instruction (MTE-WI-E03)
DC Current – Measure[4,5]	100 µA to 100 mA 100 mA to 30 A	0.008 % 0.003 %	6½ Digit TRMS Multimeter By Direct Method Based on EURAMET CG-15, (Work Instruction (MTE-WI-E03)
Resistance - Measure[4,5]	100 Ω to 500 Ω 500 Ω to 1 kΩ 1 kΩ to 10 kΩ 10 kΩ to 100 kΩ 100 kΩ to 1 MΩ 1 MΩ to 10 MΩ	0.08 % 5.8 % 1.2 % 0.093 % 1.2 % 5.2 %	6½ Digit TRMS Multimeter By Direct Method Based on EURAMET CG-15 (Work Instruction (MTE-WI-E03)
AC Voltage - Measure[4,5]	@60 Hz 100 mV to 1 V 1 V to 750 V	 0.54 % 0.034 %	6½ Digit TRMS Multimeter By Direct Method Based on EURAMET CG-15 (Work Instruction (MTE-WI-E03)
AC Current - Measure[4, 5]	@60 Hz 100 mA to 1 A 1 A to 3 A	 0.97 % 0.098 %	6½ Digit TRMS Multimeter By Direct Method Based on EURAMET CG-15 (Work Instruction (MTE-WI-E03)
Frequency - Measure[4, 5]	3 Hz to 10 Hz 10 Hz to 400 Hz 400 Hz to 1000 Hz	0.008 Hz 0.02 Hz 0.058 Hz	6½ Digit TRMS Multimeter By Direct Method

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Frequency - Measure[4, 5] (cont'd.)	1 kHz to 5 kHz 5 kHz to 100 kHz 100 kHz to 300 kHz	0.1 kHz 0.16 kHz 0.17 kHz	Based on EURAMET CG-15 (Work Instruction (MTE-WI-E03)
DC Voltage Pulse - Measure[4, 5]	1 kV Pulse to 40 kV Pulse	0.5 %	DC High Voltage Meter By Direct Method Based on EURAMET CG-15 Work Instruction: MTE-WI-E03)
High Voltage - Measure[4, 5]	1 kV to 40 kV DC 1 kV to 25 kV AC @ 60 Hz	0.5 % 0.5 %	AC/DC High Voltage Probe with meter By Direct Method Based on EURAMET CG-15 (Work Instruction: MTE-WI-E03)
DC Voltage - Generate[3, 5]	330 mV to 1 V 1 V to 1000 V	0.06 % 0.05 %	Multifunction Electrical Calibrator & Precision Resistance Box. Based on EURAMET CG-15 v3 (Work Instruction (MTE-WI-E03)
DC Current - Generate[3, 5]	330 mA to 1 A 1 A to 11 A	0.31 % 0.08 %	
Resistance - Generate[3, 5]	0.001 Ω to 329.999 Ω 329.999 Ω to 329.999 kΩ 329.999 kΩ to 330 MΩ	0.003 % 0.02 % 0.04 %	
AC Voltage - Generate[3, 5]	30 mV to 329.999 mV (45 Hz to 10 kHz) 329.999 mV to 1 V (45 Hz to 1 kHz) 1 V to 1020.00 V (45 Hz to 1 kHz)	0.02 % 0.07 % 0.014 %	
AC Current- Generate[3, 5]	10 mA to 329.99 mA (45 Hz to 1 kHz) 329.99 mA to 11 A (45 Hz to 1 kHz)	0.18 % 0.8 %	
Capacitance- Generate[3, 5]	350 pF to 329.99 nF 329.99 nF to 329.99 µF 329.99 µF to 1.1 mF	0.19 % 0.19 % 0.19 %	
High Resistance - Generate[3, 5]	100 kΩ 100 MΩ 100 GΩ 1 TΩ	0.6 kΩ 0.6 MΩ 0.06 GΩ 0.006 TΩ	Resistance Box by Director Method Based on NIST Technical Note 1458, NIST Special Publication 250-46
Frequency - Generate[3, 5]	120 Hz to 100 kHz	0.007 %	Multifunction Electrical Calibrator Based on Work Instruction MTE-WI-E04)

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Temperature Simulation Thermocouple Type K[5]	-100 °C to 1000 °C	0.08 °C	Multifunction Electrical Calibrator Based on JSA-JIS-C-1602 (Work Instruction MTE-WI-T02)
Chemical and Gas			
Gas Detector	Hydrogen Sulfide 25 ppm and 50 ppm Carbon Monoxide 100 ppm Methane 2.5% (50% LEL) Oxygen 18%	6 % 5 % 2 % 2 %	Using Certified Reference Gas by Direct method. (Work Instruction for Multi-gas Detector (MTE-WI-M35)

[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.

[5] Also available as site calibration. Note that actual measurement uncertainties achievable at a customer's site can normally be expected to be larger than the uncertainties listed on this Scope of Accreditation.

Notes
FS = full scale
LEL= Lower Explosive Limit
ppm= parts per million