CERTIFICATE OF ACCREDITATION

This is to attest

APEX NATIONAL INDUSTRIAL CALIBRATION CO. - AIC

WORKSHOP #19, ROAD 120, FIRST INDUSTRIAL SUPPORT AREA
JUBAIL 35717, SAUDI ARABIA

Calibration Laboratory CL-248

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 January 1, 2027
Effective Date February 19, 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.

3060 Saturn Street, Suite 100, Brea, California 92821, U.S.A. | www.iasonline.org

APEX NATIONAL INDUSTRIAL CALIBRATION CO. - AIC

www.mteserv.com

Contact Name Julius Claus **Contact Phone** +966-540640379

Accredited to ISO/IEC 17025:2017 *Effective Date February 19, 2024*

CALIBRATION AND MEASUREMENT CAPABILITY (CMC)*

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
Dimensional			
Digital Caliper	0 mm to 500 mm 500 mm to 1000 mm	10 µm 13 µm	Aditya Caliper checker based on IS 3651, MTE/WI/L-05 Work Instruction for External Micrometer
External Micrometer	Up to 25 mm 25 to 100 mm	1.6 µm 8 µm	Aditya Grade K – Gauge Block Set; IS 2967, MTE/WI/L-10 Work Instruction for Caliper
Depth Caliper	0 mm to 300 mm	11 µm	Depth Micro Checker Based on ISO 4213, MTE/WI/L-07, Work Instruction for Depth-Caliper (Vernier, Dial, Digital)
Coating Thickness Gauge	23.3 µm to 2.965 mm	8.1 µm	Elcometer Precision Foils ASTM D6132 and ISO 2808, MTE/WI/L-23B Work Instruction for Coating Thickness Gauge
Mechanical			
Pneumatic Pressure Measuring Instruments	0.85 mbar to 400 mbar	0.006 % FS	Beamex Pressure pump, Pressure modules, MTE/WI/M-02 Work Instruction for Pressure & Vacuum Gauge
Pneumatic Vacuum Measuring Instruments	-1 bar to 20 bar	0.013 bar	Pressure Calibrator, Druck DPI 611, MTE/WI/M-02 Work Instruction for Pressure & Vacuum Gauge

** 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)
Hydraulic Pressure Measuring Instruments	40 bar to 400 bar	0.14 bar	Pressure Hand Pump with Pressure Gauge, IS 3624, MTE/WI/M-02 Work Instruction for Pressure & Vacuum Gauge
	0 psi to 30000 psi	3.8 psi	Dead weight tester Additel Pressure pump and Calibrators Aditya 949 with Eurotron P100 Pressure Indicator, IS 3624, MTE/WI/M-02 Work Instruction for Pressure & Vacuum Gauge
Torque Wrench	400 N·m to 1500 N·m	4 N·m	Norbar Torque 50676 bench along with the transducer sensors; ISO 6789, MTE/WI/L01 Work Instruction for Torque Wrench
	0 N·m to 400 N·m	3 N·m	
Thermal			
Thermo-hygrometer	Temperature: 20 °C to 30 °C Humidity: 40 %RH to 80 %RH	 0.84 °C 2 %RH	By Direct comparison with Reference Elcometer 319S Thermo-hygrometer
Temperature Measuring Instruments	-25 °C to 150 °C	0.41 °C	Temperature Bath, Fluke 9142, MTE/WI/T-02 Work Instruction for Thermocouple
	40 °C to 650 °C	0.33 °C	Temperature Bath, Fluke 9144, MTE/WI/T-02 Work Instruction for Thermocouple
Electrical – DC/LF			
DC Voltage – Measure[4]	0 mV to 100 mV 1 V to 1000 V	0.002 mV 0.06 V	High Precision Multimeter HP 34401A, MTE/W/E-03 Work Instruction for Digital Multimeter
DC Current – Measure[4]	0 mA to 100 mA 1 A to 3 A	0.012 mA 5 mA	High Precision Multimeter HP 34401A, MTE/W/E-03 Work Instruction for Digital Multimeter
DC Resistance – Measure[4]	0 kΩ to 100 kΩ 100 kΩ to 100 MΩ	0.0019 kΩ 0.024 MΩ	High Precision Multimeter HP 34401A, MTE/W/E-03 Work

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
			Instruction for Digital Multimeter
AC Voltage – Measure[4]	0 mV to 100 mV @ 60 Hz 0.1 V to 750 V @ 60 Hz	0.06 mV 0.04 V	High Precision Multimeter HP 34401A, MTE/W/E-03 Work Instruction for Digital Multimeter
AC Current – Measure[4]	Up to 3 A @ 60 Hz	0.2 A	High Precision Multimeter HP 34401A, MTE/W/E-03 Work Instruction for Digital Multimeter
Frequency – Measure[4]	40 Hz to 300 kHz	0.2 Hz	High Precision Multimeter HP 34401A, MTE/W/E-03 Work Instruction for Digital Multimeter
DC Voltage Pulse – Measure[4]	1 kV to 40 kV Pulse (up to 1 full cycle)	0.02 %	Jeep Voltage Meter, MTE/W/E-34 Work Instruction for Jeep Volt Meter
High Voltage – Measure[4]	1 kV to 40 kV DC 1 kV to 25 kV AC @ 60 Hz	0.05 % 0.05 %	High Voltage probe, MTE/W/E-17 Work Instruction for High Voltage Test Kit
DC Voltage – Generate[3]	0 mV to 329.999 mV 330 mV to 32.99999 V 33 V to 1000 V	0.01 mV 0.6 mV 7.8 mV	Fluke 5502A multifunction Calibrator, MTE/W/E-04 Work Instruction for Multifunction Calibrator
DC Current – Generate[3]	Up to 329.999 mA 330 mA to 1.09999 A 1.1 A to 2.99999 A 3 A to 10.9999 A	0.01 mA 0.04 mA 0.2 mA 5 mA	Fluke 5502A multifunction Calibrator, MTE/W/E-04 Work Instruction for Multifunction Calibrator
DC Resistance – Generate[3]	0 Ω to 329.999 Ω 330 Ω to 329.999 kΩ 330 kΩ to 1.09999 MΩ	0.014 Ω 0.014 kΩ 0.00014 MΩ	Fluke 5502A multifunction Calibrator, MTE/W/E-04 Work Instruction for Multifunction Calibrator
AC Voltage – Generate[3]	1.0 mV to 32.999 mV @ 1 kHz 0.33 V to 3.2999 V @ 60 Hz 3.3 V to 329.999 V @ 60 Hz 330 V to 1020.00 V @ 60 Hz	0.004 mV 0.8 mV 0.02 V 0.1 V	Fluke 5502A multifunction Calibrator, MTE/W/E-04 Work Instruction for Multifunction Calibrator
AC Current – Generate[3]	33 mA to 329.999 mA @ 60 Hz	0.1 mA	Fluke 5502A multifunction Calibrator, MTE/W/E-04 Work

MEASURED QUANTITY or DEVICE TYPE CALIBRATED	RANGE	UNCERTAINTY[1,2] (±)	CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL)
	0.3 A to 10.9999 A @ 60 Hz	0.3 A	Instruction for Multifunction Calibrator
Capacitance – Generate[3]	220.0 pF to 399.99 pF 0.4 nF to 329.99 nF 0.33 µF to 329.99 µF	0.19 % 0.19 % 0.19 %	Fluke 5502A multifunction Calibrator, MTE/W/E-04 Work Instruction for Multifunction Calibrator
Frequency – Generate[3]	0.01 Hz to 119.99 Hz 120.0 Hz to 1199.9 kHz 1.2 MHz to 2.000 MHz	0.007 %	Fluke 5502A multifunction Calibrator, MTE/W/E-04 Work Instruction for Multifunction Calibrator
High Resistance – Generate[3]	Up to 100 kΩ 100 kΩ to 100 MΩ 100 MΩ to 100 GΩ 100 GΩ to 1 TΩ	0.6 kΩ 0.6 MΩ 0.06 GΩ 0.006 TΩ	High voltage resistance box MTE/W/E-07 for Decade Resistance Box
Time and Frequency			
On-Line Flow Verification	0.1 m/s to 12 m/s	0.15 %	Clamp-On ultrasonic Flowmeter, Micronics PF330, MTE/W/F-01 Work Instruction of Liquid Flow Meters by Comparison Method
Flow Meters	0.6 m³/h to 50 m³/h 50 m³/h to 150 m³/h	0.04 % 0.03 %	Master Flowmeter, E+H Promass 300, MTE/W/F-01 Work Instruction of Liquid Flow Meters by Comparison Method

[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.

FS = full scale