# CERTIFICATE OF ACCREDITATION

*This is to attest that*

## UNIVERSAL INSPECTION CO. LTD,

ROAD 3419, BLOCK 334, BUILDING 655, AL MAHUZ
MANAMA, 334, KINGDOM OF BAHRAIN

**Calibration Laboratory CL-217**

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 February 1, 2023

Expiration Date February 1, 2025

***President***

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

## UNIVERSAL INSPECTION CO. LTD,

www.ui.com.sa

**Contact Name** Mr. Dinesh Kumar Kesavan **Contact Phone** +966-508836773

*Accredited to ISO/IEC 17025:2017* *Effective Date February 1, 2023*

**CALIBRATION AND MEASUREMENT CAPABILITY (CMC)***

| MEASURED QUANTITY or DEVICE TYPE CALIBRATED | RANGE | UNCERTAINTY[1,2] (±) | CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL) |
|---|---|---|---|
| ***Dimensional*** | | | |
| Vernier Caliper (Digital, Dial, Analog) | 0 mm to 600 mm | 0.040 mm | Using Caliper Checker & Length Bar as per JIS B 7507 |
| Height Gauge (Digital/Analog) | 0 mm to 600 mm | 0.12 mm | Using Caliper Checker & Length Bar as per JIS B 7517 |
| External Micrometer | 0 mm to 25 mm<br>25 mm to 50 mm | 0.002mm<br>0.004 mm | Using Gauge Blocks & Length Bars as per BS 870 |
| Plunger Dial Gauge, Lever Dial Gauge (Digital/Analog) | 0 mm to 25 mm | 0.006 mm | Using Dial Gauge Calibrator as per JIS B 7503 |
| ***Mechanical*** | | | |
| Universal Testing Machine (Compression only), Compression Testing Machine | 0 kN to 300 kN<br>400 kN to 800 kN | 0.95 kN<br>2.3 kN | Load Cell as per ISO 7500-1 |
| Torque Wrench | 0 N·m to 200 N·m<br>0 N·m to 1000 N·m | 12 N·m<br>9.2 N·m | Torque Wrench Calibration System as per ISO 6789 |
| Pressure Gauge / Pressure Transmitter (Hydraulic) | 0 psi to 15000 psi<br>0 psi to 25000 psi | 2.7 psi<br>3.8 psi | Dead Weight Tester<br>High Pressure / Hydraulic Calibration Pump<br>As per DKD R 6-1 & BS EN 837 |
| Pressure Gauge - Pneumatic | 0 bar to 50 bar | 0.031 bar | High Pressure Pneumatic Calibration Pump<br>as per BS EN 837 |
| Vacuum Gauge | -0.95 bar to 0 bar | 0.03 bar | By using Pressure Controller<br>Procedure - ISO 3567 |
| Sound Level Meter (1 kHz) | 114 dB | 0.99 dB | Sound Level Calibrator as per OIML R58 |

** 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) |
|---|---|---|---|
| ***Thermal*** | | | |
| Infrared Thermometer | 50 °C to 500 °C | 1.6 °C | Using Black Body Furnace (e=0.98) by Direct Method as per ASTM E2847 |
| Thermocouple Type K, Resistance Temperature Detector (RTD) Temperature Controller/Indicator with sensor, Temp. Recorder with sensor, Digital Data Logger with sensor, Thermometer with sensor, Temperature Transmitter | 50 °C to 600 °C | 1.0 °C | Using PRT with temp calibrator and Temperature Bath/ Dry block as per EURAMET-CG-11 |
| Thermohygrometer | 56 %RH to 80 %RH | 1.8 %RH | Using Humidity Calibrator as per NIST SP-250-83 |
| Temperature Bath, Oven, Furnace, Temperature Calibrator | 50 °C to 600 °C | 1.1 °C | Resistance Temperature Detector (RTD), S-Type Thermocouple and Temperature Calibrator, ASTM E145 |
| Electrical Simulation of Thermocouples – Measure and Source Mode K-Type | -200 °C to 1300 °C | 0.44 °C | Using Temperature Calibrator as per Euramet CG-11 |
| ***Electrical – DC/LF*** | | | |
| DC Voltage Source[3] | 0 µV to 20 mV<br>20 mV to 200 mV<br>200 mV to 2 V<br>2 V to 20 V<br>20 V to 240 V<br>240 V to 1000 V | 0.023 mV<br>0.036 mv<br>0.000094 V<br>0.0013 V<br>0.0097 V<br>0.16 V | Clarke-Hess 8080 Multifunction Calibrator, Procedure UIC/P/EDMM based on Euramet CG-15 |
| DC Voltage Measure[4] | 0 mV to 100 mV<br>100 mV to 1 V<br>1 V to 10 V<br>10 V to 100 V<br>100 V to 1000 V | 0.0092 mV<br>0.00051 V<br>0.00089 V<br>0.0056 V<br>0.073 V | Precision Multimeter Fluke 8846A, Procedure UIC/P/EVARS based on Euramet CG-15 |
| AC Voltage Source[3] (60 Hz) | 1 mV to 20 mV<br>20 mV to 200 mV<br>200 mV to 2 V<br>2 V to 20 V<br>20 V to 240 V<br>240 V to 1000 V | 0.081 mV<br>0.33 mV<br>0.0011 V<br>0.011 V<br>0.15 V<br>0.88 V | Clarke-Hess 8080 Multifunction Calibrator, Procedure UIC/P/EDMM based on Euramet CG-15 |
| AC Voltage Measure[4] (60 Hz) | 0 mV to 100 mV<br>100 mV to 1 V | 0.031 mV<br>0.027 V | Precision Multimeter Fluke 8846A, |

| MEASURED QUANTITY or DEVICE TYPE CALIBRATED | RANGE | UNCERTAINTY[1,2] (±) | CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL) |
|---|---|---|---|
| | 1 V to 10 V<br>10 V to 100 V<br>100 V to 1000 V | 0.0025 V<br>0.026 V<br>0.38 V | Procedure UIC/P/EVARS based on Euramet CG-15 |
| DC Current Source[3] | 1 µA to 200 µA<br>200 µA to 2 mA<br>2 mA to 20 mA<br>20 mA to 200 mA<br>200 mA to 2 A<br>2 A to 20 A | 0.037 µA<br>0.00066 mA<br>0.0072 mA<br>0.036 mA<br>0.00050 A<br>0.0090 A | Clarke-Hess 8080 Multifunction Calibrator, Procedure UIC/P/EDMM based on Euramet CG-15 |
| DC Current Measure[4] | 0 µA to 100 µA<br>100 µA to 1 mA<br>1 mA to 10 mA<br>10 mA to 100 mA<br>100 mA to 400 mA<br>400 mA to 1 A<br>1 A to 3 A<br>3 A to 10 A | 0.096 µA<br>0.00067 mA<br>0.0082 mA<br>0.065 mA<br>0.46 mA<br>0.00086 A<br>0.0014 A<br>0.0064 A | Precision Multimeter Fluke 8846A, Procedure UIC/P/EVARS based on Euramet CG-15 |
| AC Current Source[3] (60 Hz) | 1 µA to 200 µA<br>200 µA to 2 mA<br>2 mA to 20 mA<br>20 mA to 200 mA<br>200 mA to 2 A<br>2 A to 20 A | 0.63 µA<br>0.0050 mA<br>0.023 mA<br>0.48 mA<br>0.011 A<br>0.052 A | Clarke-Hess 8080 Multifunction Calibrator, Procedure UIC/P/EDMM based on Euramet CG-15 |
| AC Current Measure[4] (60 Hz) | 0 µA to 100 µA<br>100 µA to 1 mA<br>1 mA to 10 mA<br>10 mA to 100 mA<br>100 mA to 400 mA<br>400 mA to 1 A<br>1 A to 3 A<br>3 A to 10 A | 0.42 µA<br>0.0015 mA<br>0.012 mA<br>0.099 mA<br>0.25 mA<br>0.0031 A<br>0.0044 A<br>0.010 A | Precision Multimeter Fluke 8846A, Procedure UIC/P/EVARS based on Euramet CG-15 |
| DC Resistance Source[3] | 0 kΩ to 1 kΩ<br>1 kΩ to 10 kΩ<br>10 kΩ to 100 kΩ<br>100 kΩ to 1 MΩ<br>1 MΩ to 50 MΩ | 0.00035 kΩ<br>0.0035 kΩ<br>0.035 kΩ<br>0.0010 MΩ<br>0.018 MΩ | Clarke-Hess 8080 Multifunction Calibrator, Procedure UIC/P/EDMM based on Euramet CG-15 |
| DC Resistance Measure[4] | 1 kΩ to 10 kΩ<br>10 kΩ to 100 kΩ<br>100 kΩ to 1 MΩ<br>1 MΩ to 10 MΩ<br>10 MΩ to 50 MΩ | 0.0018 kΩ<br>3.6 kΩ<br>3.6 kΩ<br>0.023 MΩ<br>0.30 MΩ | Precision Multimeter Fluke 8846A, Procedure UIC/P/EVARS 2-wire method based on Euramet CG-15 |
| Holiday Detector | 0 V to 30 kV | 1.7 kV | AC/DC High Voltage Probe & High Voltage Divider, , ASTM D5162 |
| Pin Hole Detector | 0 V to 90 V | 0.012 V | Precision Multimeter, NACE RP0188-99, ASTM D5162 |

| MEASURED QUANTITY or DEVICE TYPE CALIBRATED | RANGE | UNCERTAINTY[1,2] (±) | CALIBRATION METHOD OR PROCEDURE, STANDARD EQUIPMENT (OPTIONAL) |
|---|---|---|---|
| Electric & Diesel Welding Machine | Up to 600 A | 3.9 A | ESAB Check Master 9000 as per BS EN 50504:2008 |
| ***Time and Frequency*** | | | |
| Tachometer (Contact) | 200 rpm to 1000 rpm<br>1000 rpm to 10000 rpm | 1.5 rpm<br>2.7 rpm | Tachometer Calibrator as per SANAS TR-45-01 |

[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.