Accreditation No: LAB 131

Awarded to

AL MEEZAN INDUSTRIAL METROLOGY SERVICES, 58, B-Block OPF Society, Lahore, Pakistan.

The scope of accreditation is in accordance with the standard specifications outlined in the following page(s) of this document. The accredited scope shall be visible and legible in areas such as customer service, sample-receiving section etc and shall not mislead its users.

The accreditation was first time granted on **16-01-2018** by Pakistan National Accreditation Council.

The laboratory complies with the requirements of **ISO/IEC 17025:2017.**

The accreditation requires regular surveillance, and is valid until **15-01-2027.**

The decision of accreditation made by Pakistan National Accreditation Council implies that the organization has been found to fulfill the requirements for accreditation within the scope.

The organization however, itself is responsible for the results of performed measurements/tests.

PAKISTAN NATIONAL ACCREDITATION COUNCIL

08-04-2024
Date

SD.
Director General

Calibration Laboratory.

Accreditation Scope of Al-Meezan Industrial Metrology Services, Lahore, Pakistan.

Permanent laboratory premises X

Field of measurement: Pressure Measurement and Sourcing			
Measured Quantity	**Range**	***Expanded Uncertainty (±)**	**Technique, Reference Standard, Equipment**
Pressure	-0.600 bar to 0.0000 bar	0.0005 ~ 0.001 bar	**SOP: DKDR6-1** **Reference standards** Dead Weight tester, Reference pressure gauges, Reference pressure loggers. **UUC** Pressure Gauge, transducers, recorders etc.
	0.0000 bar to 2.0000 bar	0.0003 ~ 0.0007 bar	
	2.001 bar to 6.000 bar	0.0010 ~ 0.0015 bar	
	6.001 bar to 60.000 bar	0.005 ~ 0.10 bar	
	60.100 bar to 1000.000 bar	0.10 ~ 0.15 bar	
Field of measurement: Temperature Measurement			
Temperature (Digital Thermometer)	-40.00 ºC to 150.00 ºC	0.05 ~ 0.07 ºC	**SOP: DKD R5-1** Reference Thermometer with Probe, Liquid Bath and Dry Block Calibrators.
	150.10 ºC to 300.00 ºC	0.10 ~ 0.16 ºC	
	300.10 ºC to 650.00 ºC	0.20 ~ 0.60 ºC	
Temperature (Liquid in Glass Thermometer)	-10.0 °C to 110.0 °C	0.30 ~ 0.50 °C	**SOP: ASTM E77** Digital Thermometer with probe, Liquid Bath and Dry Block Calibrators.
	110.1 °C to 350 °C	0.50 ~ 0.75 °C	
Temperature (Dial Gauge Thermometers)	-20.0 ºC to 110.0 ºC	0.50 ~ 0.70 ºC	**SOP: BSEN 13190** Digital Thermometer with probe, Dry Block Calibrators.
	110.1 ºC to 350.0 ºC	0.70 ~ 1.0 ºC	
Measured Quantity	**Range**	***Expanded Uncertainty (±)**	**Technique, Reference Standard, Equipment**
Temperature (Dry Block Calibrator)	20.00 ºC to 39.99 ºC	0.80 ~ 1.00 ºC	**SOP: EURAMET cg-13** Digital Thermometer with probe.
	40.00 ºC to 150.00 ºC	0.17 ~ 0.30 ºC	

	150.10 ºC to 300.00 ºC	0.20 ~ 0.30 ºC	
	300.1 ºC to 650.0 ºC	0.20 ~ 0.30 ºC	
Temperature (Temperature Bath)	-20.0 ºC to 95.0 ºC	0.1 ~ 0.2 ºC	**SOP: ASTM E2488-09** Digital Thermometer with probe.
Temperature (IR Thermometers)	50.0 ºC to 300.0 ºC 300.1 ºC to 500.0 ºC	0.5 ~ 1.0 ºC 0.5 ~ 1.0 ºC	**SOP: ASTM 2847-11** IR Temperature Calibrator
Field of measurement: Mass Measurement			
Mass *(F1 Class 1g ~ 500g)* *(F2 Class 1 mg ~ 20kg)*	1.00 mg to 500.00 mg	0.025 mg	**SOP: NIMT CP-301** E2 Class Masses, F1 Class Masses, High Precision Balances
	1.00000 g to 100.0000 g	0.000025 ~ 0.00010 g	
	100.0000 g to 200.0000 g	0.00010 ~ 0.00016 g	
	200.0000 g to 5000.00 g	0.006 ~ 0.020 g	
	10.000 kg to 20.000 kg	0.00010 ~ 0.00020 kg	

Measured Quantity	**Range**	***Expanded Uncertainty (±)**	**Technique, Reference Standard, Equipment**
Field of measurement: Volume Measurement			
Volume	1 mL	0.0010 mL	**SOP: ASTM E542-01** E2 Class Masses F1 Class Masses Analytical / Precision Weighing Scale **UUC:** Glassware & Other Volume Measuring / Dispensing Devices
	2 mL	0.0016 mL	
	5 mL	0.0040 mL	
	10 mL	0.0080 mL	
	25 mL	0.015 mL	
	25.1 mL to 100.0 mL	0.050 ~ 0.060 mL	
	100.1 mL to 250.0 mL	0.060 ~ 0.070 mL	
	250.1 mL to 500.0 mL	0.2 ~ 0.4 mL	
	500.1 mL to 1000.0 mL	0.4 ~ 0.6 mL	
Field of measurement: Electrical Measurement (Sourcing & Measurement)			
DC Voltage	1.00 mV to 999.00 mV	0.058 ~ 0.070 mV	**SOP: TM/LCP/E-01**

08-04-2024
Date

Sd.
Director

	1.000 V to 20.000 V	0.0010 ~ 0.010 V	Multiproduct Calibrator
	20.01 V to 100.00 V	0.010 ~ 0.060 V	
	100.1 V to 200.0 V	0.060 ~ 0.10 V	
	200.1 V to 500.0 V	0.060 ~ 0.10 V	
	500.1 V to 1000.0 V	0.58 ~ 1.0 V	
AC Voltage @ 50 Hz	1.00 mV to 999.00 mV	0.060 ~ 0.10 mV	**SOP: TM/LCP/E-01** Multiproduct Calibrator
	l.000 V to l0.000 V	0.0006 ~ 0.008 V	
	10.01V to 50.00 V	0.008 ~ 0.01 V	
	50.01 V to l00.0 V	0.095 ~ 0.10 V	
	100.1 V to 500.0 V	0.095 ~ 0.10 V	
	500.1 V to 1000.0 V	0.58 ~ 1.0 V	
DC Current	1.00 mA to 50.00 mA	0.0060 ~ 0.01 mA	**SOP: TM/LCP/E-01** Multiproduct Calibrator
	50.01 mA to 999.00 mA	0.060 ~ 0.10 mA	
	1.000 A to 5.000 A	0.0001 ~ 0.001 A	
	5.100 A to 10.00 A	0.001 ~ 0.008 A	
DC Current (Clamp On)	1.01 A to 10.00 A	0.001 ~ 0.0073 A	**SOP: TM/LCP/E-01** Multiproduct Calibrator
	10.01 A to 100.00 A	0.007 ~ 0.058 A	
	100.01 A to 400.00 A	0.058 ~ 0.10 A	
	400.01 A to 1000 A	0.577 ~ 1.0 A	
Measured Quantity	**Range**	***Expanded Uncertainty (±)**	**Technique, Reference Standard, Equipment**
AC Current @ 50 Hz	1.00 mA to 10.00 mA	0.0058 ~ 0.008 mA	**SOP: TM/LCP/E-01** Multiproduct Calibrator
	10.01 mA to 50.00 mA	0.0080 ~ 0.060 mA	
	50.01 mA to 999.00 mA	0.060 ~ 0.10 mA	
	1.000 A to 10.000 A	0.0006 ~ 0.001 A	
AC Current @ 50 Hz (Clamp On)	1.01 A to 10.000 A	0.001 ~ 0.06 A	**SOP: TM/LCP/E-01** Multiproduct Calibrator, Digital Clamp Meter
	10.01 A to 100.00 A	0.06 ~ 0.1 A	
	100.01 A to 400.00 A	0.06 ~ 0.1 A	
	400.01 A to 1000 A	0.57 ~ 1.0 A	
Resistance	1.00 Ω to 10.00 Ω	0.010 ~ 0.10 Ω	**SOP: TM/LCP/E-01** Multiproduct Calibrator
	10.01 Ω to 100.00 Ω	0.010 ~ 0.10 Ω	
	100.01 Ω to 1.000 kΩ	0.10 ~ 1.0 Ω	
	1.001 kΩ to 10.00 kΩ	0.0010 ~ 0.01 kΩ	
	10.00 kΩ to 100.00 kΩ	0.01 ~ 0.006 kΩ	
	0.1MΩ to 1 MΩ	0.000006 ~ 0.00058 MΩ	
	1.01 MΩ to 100 MΩ	0.00058 ~ 0.00060 MΩ	
RPM	1.0 RPM to 100.0 RPM	0.058 ~ 0.10 RPM	**SOP: TM/LCP/E-02** Multiproduct Calibrator,
	100.1 RPM to 2000.0 RPM	0.058 ~ 0.1 RPM	
	2000.1 RPM to 5000.0 RPM	0.058 ~ 0.1 RPM	

08-04-2024
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Sd.
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	5000.1 RPM to 10000 RPM	0.58 ~ 1.0 RPM	Frequency Counter and Frequency Generator Digital Tachometers **UUC:** Tachometers, etc.
	10000.1 RPM to 50000.0 RPM	0.58 ~ 1.0 RPM	
	50000.1 RPM to 99999 RPM	0.58 ~ 1.0 RPM	
Measured Quantity	**Range**	***Expanded Uncertainty (±)**	**Technique, Reference Standard, Equipment**
Capacitance	0.01nF to 1.0 nF	0.01 ~ 0.1 nF	**SOP: TM/LCP/E-01** Multiproduct Calibrator
	1.01 nF to 10.0 nF	0.01 ~ 0.1 nF	
	10.01 nF to 50.0 nF	0.08 ~ 0.1 nF	
	50.1 nF to 500 nF	0.60 ~ 1.0 nF	
	0.501 µF to 1.000 µF	0.0010 ~ 0.01 µF	
Insulation Resistance @ 1 kV & 5 kV	10.000 MΩ	0.060 MΩ	**SOP: TM/LCP/E-01** Insulation Tester Calibration Box and Insulation Tester
	100.00 MΩ	0.060 MΩ	
	1.001 GΩ	0.0007 GΩ	
	10.00 GΩ	0.0007 GΩ	
Field of Measurement: Electrical Measurement (Measuring)			
Source & Meter AC Hi Volts @50 Hz	0.5 kV to 8.0 kV	0.020 ~ 0.025 kV	***SOP: TM/LCP/E-05*** Precision HV Meter & Divider
	8.1 kV to 20.0 kV	0.020 ~ 0.054 kV	
	20.1 kV to 40.0 kV	0.05 ~ 0.10 kV	
Source & Meter DC Hi Volts	1.0 kV to 8.0 kV	0.060 ~ 0.10 kV	***SOP: TM/LCP/E-05*** Precision HV Meter & Divider
	8.1 kV to 15.0 kV	0.070 ~ 0.10 kV	
	15.1 kV to 28.0 kV	0.080 ~ 0.10 kV	
	28.1 kV to 40.0 kV	0.60 ~ 1.0 kV	
DC Current	0.500 mA to 200.000 mA	0.010 ~ 0.10 mA	**SOP: TM/LCP/E-01** 6 ½ & 4 ½ Digit DMM
	0.201 A to 3.000 A	0.00010 ~ 0.0010 A	
	3.001 to 10.00 A	0.003 ~ 0.010 A	
AC Current @50 Hz	0.500 mA to 200.00 mA	0.010 ~ 0.10 mA	**SOP: TM/LCP/E-01** 6 ½ & 4 ½ Digit DMM
	0.201 A to 3.000 A	0.00030 ~ 0.0010 A	
	3.001 to 10.00 A	0.003 ~ 0.01 A	
DC Volts	10.000 mV to 200.000 mV	0.0020 ~ 0.010 mV	**SOP: TM/LCP/E-01** 6 ½ Digit DMM
	0.2001 V to 20.000 V	0.00030 ~ 0.0030 V	
	20.001 V to 200.000 V	0.0030 ~ 0.0040 V	
	200.001 V to 1000.00 V	0.0040 ~ 0.0050 V	
AC Volts @50 Hz	10.000 mV to 200.00 mV	0.0020 ~ 0.010 mV	**SOP: TM/LCP/E-01**

	0.2001 V to 20.000 V	0.00050 ~ 0.003 V	6 ½ Digit DMM
	20.001 V to 200.000 V	0.0030 ~ 0.0050 V	
	200.001 V to 1000.000 V	0.0050 ~ 0.010 V	
Measured quantity	**Range**	***Expanded Uncertainty (±)**	**Technique, Reference Standard, Equipment**
Resistance (Measurement)	1.00 Ω to 100.00 Ω	0.010 ~ 0.060 Ω	**SOP: TM/LCP/E-01** 6 ½ Digit DMM
	1.000 kΩ to 100.00 kΩ	0.060 ~ 0.10 kΩ	
	1.000 MΩ to 100.00 MΩ	0.01 ~ 0.36 MΩ	
Field of Measurement; pH & Conductivity Measurement			
pH	4.00 pH to 10.01 pH	0.001 ~0.016 pH	**SOP: TM/LCP /ITS-09** Standard pH Buffers
Conductivity	1.413 mS	0.005 mS	**SOP: TM/LCP /ITS-010** Conductivity Buffers
	12.880 mS	0.052 mS	
Field of Measurement; Spectrophotometry			
Wavelength Accuracy, Transmittance, Absorbance	285.0 nm to 640.0 nm	0.076 ~0.10 nm	**SOP: ASTG-4 IANZ and AIMS-TM-WI-S-01** Spectronic Standard Filters
	8.10 % to 57.40 %T	0.0046 ~ 0.010 %T	
	0.240 A to 1.090 A	0.0034 ~ 0.010 A	
Field of Measurement; Dimension Measurement			
General Dimension Measurements Length, diameter, thickness & depth	1 mm to 25 mm	0.010 ~ 0.1 mm	**SOP: AIMS-TM-LCP-D-04** Micrometer, Dial Indicator, Vernier Calipers, Long Vernier caliper, Reference Steel Rule**,** Laser Distance Meter
	25.1 mm to 300 mm	0.012 ~ 0.1 mm	
	300.1 mm to 1 m	0.056 ~ 0.1 mm	
	1.1m to 50 m	1.10 ~ 1.50 mm	
Length & outer diameter	0.500 mm to 1.000 mm	1.42 ~ 1.50 µm	**SOP: umLTM SOP-05, 06 & 08** Gauge Block Set (Grade 0) Mic-check set Caliper check set
	1.1 mm to 30.00 mm	0.006 ~ 0.01 mm	
	0.100 mm to 50.00 mm	0.010 ~ 0.10 mm	
Field of Measurement; Dimension Measurement (Steel Rule and Meter Tape)			
Measured quantity	**Range**	***Expanded Uncertainty (±)**	**Technique, Reference Standard, Equipment**

Field of Measurement: RPM and Time			
RPM (Measurement)	5 RPM to 2000 RPM	0.11 ~ 0.80 RPM	**SOP: AIMS-TM-LCP-E-002** Digital Tachometers
	2001 RPM to 6000 RPM	1.0 ~ 1.5 RPM	
Time	1 s to 3600 s	0.50 ~ 1.0 s	**SOP: NIST 960-12** Digital Stopwatches, Frequency Counter and Frequency Generator

Scope of Calibration for Onsite [X]

Field of measurement: Pressure Measurement and Sourcing			
Measured Quantity	**Range**	***Expanded Uncertainty (±)**	**Technique, Reference Standard, Equipment**
Pressure	-0.600 bar to 0.0000 bar	0.0005 ~ 0.001 bar	**SOP: DKDR6-1** Dead Weight tester, Reference pressure gauges, reference pressure loggers
	0.0000 bar to 2.0000 bar	0.0003 ~ 0.0007 bar	
	2.100 bar to 6.000 bar	0.0010 ~ 0.0015 bar	
	6.100 bar to 60.000 bar	0.005 ~ 0.10 bar	
	60.100 bar to 700.000 bar	0.10 ~ 0.15 bar	
Field of measurement: Temperature Measurement			
Digital Temperature Indicator with sensor (Digital Thermometer)	-40.00 ºC to -39.99 ºC	0.75 ~ 0.80 ºC	**SOP: DKD R5-1** Reference Thermometer with probe, Dry Block Calibrators.
	-40.00 ºC to 150.00 ºC	0.05 ~ 0.07 ºC	
	150.10 ºC to 300.00 ºC	0.10 ~ 0.16 ºC	
	300.10 ºC to 650.00 ºC	0.20 ~ 0.60 ºC	
Liquid in Glass TM	-10.0 ºC to -40.0 ºC	0.75 ~ 0.85 ºC	**ASTM E77** Digital Thermometer with probe, Dry Block Calibrators.
	-40.0 °C to -10.0 °C	0.10 ~ 0.30 °C	
	-10.0 °C to 110.0 °C	0.30 ~ 0.50 °C	
	110 °C to 350 °C	0.50 ~ 0.75 °C	
Dial Gauge	-20.0 ºC to 110.0 ºC	0.50 ~ 0.70 ºC	**SOP: BSEN 13190**

08-04-2024
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Thermometers	110.1 ºC to 350.0 ºC	0.70 ~ 1.0 ºC	Digital Thermometer with probe, Dry Block Calibrators.
Measured quantity	**Range**	***Expanded Uncertainty (±)**	**Technique, Reference Standard, Equipment**
Temperature Bath	-20.0 ºC to 95.0 ºC	0.2 ºC ~ 0. 3 ºC	**SOP: ASTM E2488-09** Digital Thermometer with probe.
Environmental Chambers	-40.0 ºC to 300.0 ºC	0.75 ~ 0.50 ºC	**SOP: DKD-R 5-7** Digital Thermometer with probe, Multi-channel temperature logger/meter with probes and Wireless data loggers
Temperature Furnace	50.0 °C to 1100.0 ºC	0.5 ~ 1.1 ºC	**SOP: DMS2010:2010** Digital Thermometer with probe
Field of measurement: Mass Measurement			
Weight	0.0010 g to 220.0000 g	0.00025 ~ 0.001 g	**SOP: EURAMET cg-18** E2 Class Masses, F1 Class Masses, M1 Class Masses
	0.001 g to 420.000 g	0.001 ~ 0.01 g	
	0.010 g to 4.500 kg	0.010 ~ 0.1 g	
	0.010 g to 35.00 kg	0.10 ~ 1.0 g	
	36.00 g to 200.00 kg	0.030 ~ 0.05 kg	
Field of Measurement: pH & Conductivity Measurement			
pH	4.00 pH to 10.01 pH	0.001 ~0.016 pH	**SOP: TM/LCP /ITS-09** Standard pH Buffers
Conductivity	1.413 mS	0.005 mS	**SOP: TM/LCP /ITS-010** Conductivity Buffers
	12.880 mS	0.052 mS	
Measured quantity	**Range**	***Expanded Uncertainty (±)**	**Technique, Reference Standard, Equipment**
Field of Measurement; Spectrophotometry			

Wavelength Accuracy, Transmittance, Absorbance	285.0 nm to 640.0 nm	0.076 ~0.10 nm	**SOP: ASTG-4 IANZ and AIMS-TM-WI-S-01** Spectronic Standard Filters
	8.10 % to 57.40 %T	0.0046 ~ 0.010 %T	
	0.240 A to 1.090 A	0.0034 ~ 0.010 A	
Field of Measurement; General Dimension Measurement			
General Dimension Measurements Length, diameter & depth	1 mm to 25 mm	0.010 ~ 0.1 mm	**SOP: AIMS-TM-LCP-D-04** Micrometer, Dial Indicator, Vernier Calipers, Long Vernier caliper, Reference Steel Rule**,** Laser Distance Meter
	25.1 mm to 300 mm	0.012 ~ 0.1 mm	
	300.1 mm to 1.0 m	0.056 ~ 0.1 mm	
	1.1m to 50 m	1.10 ~ 1.5 mm	
Field of Measurement; RPM and Time			
RPM Measurement	5 RPM to 2000 RPM	0.11 ~ 0.80 RPM	**SOP: AIMS-TM-LCP-E-002** Digital Tachometers
	2001 RPM to 6000 RPM	1.0 ~ 1.5 RPM	
Time	1 s to 3600 s	0.50 ~ 1.0 s	**SOP: NIST 960-12** Digital Stopwatches, Frequency Counter and Frequency Generator
Field of Measurement: Electrical High Voltage and Current			
Source & Meter AC Hi Volts @50 Hz	0.5 kV to 8.0 kV	0.020 ~ 0.025 kV	***SOP: TM/LCP/E-05*** Precision HV Meter & Divider
	8.1 kV to 20.0 kV	0.020 ~ 0.054 kV	
	20.1 kV to 40.0 kV	0.05 ~ 0.10 kV	
Source & Meter DC Hi Volts	1.0 kV to 8.0 kV	0.060 ~ 0.10 kV	***SOP: TM/LCP/E-05*** Precision HV Meter & Divider

* **Expanded Uncertainty:**

- Expanded Uncertainty is the measurement uncertainty at a coverage probability of 95 %, which usually requires the use of a coverage factor of k = 2. This measurement uncertainty is a value for which the laboratory has been accredited using the procedure that was the subject of assessment. In certificates issued under its accreditation scope an accredited laboratory is not permitted to quote an uncertainty that is smaller than the published uncertainty for respective ranges as given above.

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