

	ACCREDITATION DOCUMENT	F-06/02 Issue Date: 18/08/2020 Rev. No: 09 LAB 131
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Accreditation No: LAB 131

Awarded to

**AL-MEEZAN INDUSTRIAL METROLOGY SERVICES
House No. 22, Block C, Sabzazar Scheme, 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 17025:2005**.

The accreditation requires regular surveillance, and is valid until **15-04-2021**.

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

15-01-2021

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Director General

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Calibration Laboratory.

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

Permanent laboratory premises

Field of measurement:			
Calibration Area	Range	*Expanded Uncertainty (±)	Technique, Reference Standard, Equipment
Pressure Measurement Pressure Gauges Transmitters and Recorders	-0.600 bar to 0.000 bar 0.001 bar to 6.800 bar 6.801 bar to 125.000 bar 125.01 bar to 500.00 bar 500.01 bar to 1000.0 bar	0.0010 bar 0.0010 bar 0.014 bar 0.020 to 0.050 bar 0.050 bar to 0.090 bar	SOP: DKDR6-1 P-005 Druck DPI610 P-002 Crystal XP2i P-001 BGH1200 Dead Weight Tester
Temperature Measurement Digital Thermometer	-20.00 °C to 100.00 °C 100.01 °C to 300.00 °C 300.1 °C to 400.0 °C 400.1 °C to 650.0 °C	0.080 °C 0.23 to 0.26 °C 0.50 °C 0.90 °C	SOP: DKD R5-1 T-001 Reference Thermometer WIKA CTR2000 with Temp Probe CPT5000 and Dry Block Calibrators Jofra T-007 ATC-155 B and T-043 Jofra ITC- 650 A.
Liquid in Glass TM	-10.0 °C to 100.0 °C	0.30 °C	SOP: ASTM E77
Dial Gauge Thermometers	0.0 °C to 100.0 °C 100.1 °C to 350.0 °C	0.34 °C 0.50 °C	SOP: BSEN 13190 T-001 Reference Thermometer WIKA CTR2000 with Temp Probe CPT5000 and Dry Block Calibrators T-007 Jofra ATC-155 B and T-043 Jofra ITC- 650 A.

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Dry Block Calibrator	-20.00 °C to 50.00 °C 50.01 °C to 150.00 °C 150.1 °C to 650.1 °C	0.17 °C 0.31 °C 0.28 °C	SOP: EURAMET cg-13 T-001 Reference Thermometer, WIKA CTR2000 with Temp Probe CPT5000.
Temperature Baths	30.0 °C to 45.1 °C 45.2 °C to 95 °C	0.34 °C 0.30 °C	SOP: ASTM E2488-09 T-002 Digital Thermometer AZ8822
Temperature Measurement Environmental Chambers	-40.0 °C to -20.0 °C -19.9 °C to 0.0 °C 0.1 °C to 10.0 °C 10.1 °C to 40.0 °C 40.1 °C to 100 °C 100.1 °C to 300 °C	3.0 °C 2.7 °C 2.6 °C 2.0 °C 1.1 °C 1.7 °C	SOP: DKD-R 5-7 T-003 Fluke Hydra II with Type K
Temperature Furnace	50.0 °C to 800.0 °C	1.5 °C	SOP: DMS2008:2010 T-015 Fluke 51 II DTM with 3mm SS TC
IR Thermometers	50.0 °C to 250.0 °C 250.1 °C to 500	0.40 °C 1.4 °C	SOP: ASTM 2847-11 T-012 WIKA CTI500 Black Body and Fluke Hi-Temp IR Thermometer
Weighing Scales Weighing Scales Class I and Below Accuracy Classes	0.0010 g to 220.0000 g	0.00030 g	SOP : EURAMET cg-18 M-001~8 E2 Class Mass
	0.001 to 420.000 g	0.0023 g	E2 Class Mass
	0.010 to 1.100 kg	0.0070 g	F1 Class Mass
	0.010 to 4.500 kg	0.016g	F1 Class Mass
	0.01 to 35.00 kg	0.30 g	F1 Class Mass
	500.00 g to 200.00 kg	2.0 g	F1 & M1 Class Mass
Masses	1.00 mg to 500.00 mg	0.060 mg	SOP: NIMT CP-301 M-001~8 E2 Class

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F1 Class & Below			Mass
	1.00000 g to 50.00000 g	0.000060 g	E2 Class Mass
	100.0000 g to 200.0000 g	0.00030 g	E2 Class Mass
	500.00 g to 1000.00 g	0.020 g	E2 and F1 Class
	2000.00 g	0.020 g	F1 Class weights
	5.0000 kg to 20.0000 kg	0.00011 kg	F1 Class weights
Volume Measures			SOP: ASTM E542-01
Pipette	1 mL	0.0010 mL	M-009 ~ 11 Class I Weighing Scale
	2 mL	0.0020 mL	
	5 mL	0.0040 mL	
	10 mL	0.0080 mL	
	25 mL	0.020 mL	
	50 mL	0.040 mL	
Burette	1.0 mL to 100.0 mL	0.040 mL	M-009 ~ 11 Class I Weighing Scale
Measuring Cylinder	10.00 mL to 100.00 mL	0.080 mL	M-009 ~ 11 Class I Weighing Scale
	250.00 mL to 1000.0 mL	1.2 mL	
Measuring Beaker	50 mL to 250 mL	0.20 mL	M-009 ~ 11 Class I Weighing Scale
Volumetric Flask	10 mL	0.0080 mL	M-009 ~ 11 Class I Weighing Scale
	25 ml	0.020 mL	
	50 mL	0.040 mL	
	100 mL	0.080 mL	
	250 mL	0.20 mL	
	500 mL	0.40 mL	
	1000 mL	0.80 mL	
Dimensional Measure			SOP: umLTM SOP-05~07
Outside Micrometer	0.500 mm to 25.000 mm	2.0 μ m	D-001 Vortex Gauge Block Set Vortex Gauge Block Set
Vernier Caliper	0.50 mm to 300.00 mm	0.010 mm	

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Dial Indicator	0.100 mm to 50.00 mm	0.010 mm	Vortex Gauge Block Set
Electrical (Generation)			
DC Voltage	1.00 mV to 200.00 mV 1.000 V to 10.000 V 10.01 V to 400.00 V 400.1 V to 1000.0 V	0.010 mV 0.0010 V 0.020 V 0.10 V	SOP: TM/LCP/E-01 E-001 Time Electronics 5025E Multiproduct Calibrator
AC Voltage @ 50 Hz	1.00 mV to 200.00 mV 1.000 V to 10.000 V 10.01 V to 400.00 V 400.1 V to 1000.0 V	0.060 mV 0.0010 V 0.030 V 0.10 V	SOP: TM/LCP/E-01 E-001 Time Electronics 5025E Multiproduct Calibrator
DC Current	1.00 mA to 200.00 mA 1.000 A to 10.000 A	0.070 mA 0.0030 A	SOP: TM/LCP/E-01 E-001 Time Electronics 5025E Multiproduct Calibrator
DC Current (Clamp On)	1.0 A to 600.0 A	0.10 A	Fluke 353
AC Current @ 50 Hz	1.00 mA to 200.00 mA 1.000 A to 10.000 A	0.010 mA 0.0070 A	SOP: TM/LCP/E-01 E-001 Time Electronics 5025E Multiproduct Calibrator
AC Current @ 50 Hz (Clamp On)	1.0 A to 600.0 A	0.10 A	E-005 Clamp Meter Fluke 353
Resistance	1.000 Ω to 100.00 Ω 1.000 k Ω to 100.00 k Ω 1.000 M Ω to 10.00 M Ω	0.020 Ω 0.060 k Ω 0.0060 M Ω	SOP: TM/LCP/E-01 E-001 Time Electronics 5025E Multiproduct Calibrator
			SOP: TM/LCP/E-04

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Frequency	1.00 Hz to 200.00 Hz 1.00 kHz to 200.00 kHz 0.2100 MHz to 2.0000 MHz	0.010 Hz 0.010 kHz 0.00010 MHz	E-001 Time Electronics 5025E Multiproduct Calibrator
RPM (Optical)	5.0 RPM to 100.0 RPM 100.1 RPM to 99999 RPM	0.060 RPM 0.60 RPM	SOP: TM/LCP/E-02 E-001 Time Electronics 5025E Multiproduct Calibrator
Capacitance	1.0 nF to 500.0 nF 05.000 µF to 1.000 µF	0.30 µF 0.0010 µF	SOP: TM/LCP/E-01 E-001 Time Electronics 5025E Multiproduct Calibrator
Insulation Resistance Sourcing @ 1 kV & 5 kV	10.000 MΩ 100.00 MΩ 1.001 GΩ 10.00 GΩ	0.080 MΩ 0.30 MΩ 0.0040 GΩ 0.030 GΩ	SOP: TM/LCP/E-01 E-003 Megger CB101 Insulation Resistance Box
Electrical Measurement			
AC Hi Volts @50 Hz DC Hi Volts	1.0 kV to 40.0 kV 1.0 kV to 40.1 kV	0.10 kV 0.10 kV	SOP: TM/LCP/E-05 E-021 & 02 Vitrek 4700 Precision HV Meter
DC Current TM/LCP/E-01	0.500 mA to 200.000 mA 0.5.0000 A to 3.0000 A	0.010 A 0.00010 A	SOP: TM/LCP/E-01 E-002 Agilent 34401A 6 ½ Digit DMM
AC Current @50 Hz	0.5.00 mA to 200.00 mA 0.5000 A to 3.0000 A	0.010 A 0.00030 A	SOP: TM/LCP/E-01 E-002 Agilent 34401A 6 ½ Digit DMM
DC Volts	10.000 mV to 200.000 mV	0.0020 mV	SOP: TM/LCP/E-01

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	0.5.0000 V to 20.0000 V	0.00030 V	E-002 Agilent 34401A 6 ½ Digit DMM
	20.001 V to 1000.000 V	0.0030 V	
AC Volts @50 Hz	10.000 mV to 200.00 mV 0.50000 V to 20.0000 V	0.0020 mV 0.00050 V	SOP: TM/LCP/E-01 E-002 Agilent 34401A 6 ½ Digit DMM
	20.001 V to 1000.000 V	0.0050 V	
Resistance Measurement	1.000 Ω to 100.00 Ω 1.000 kΩ to 100.00 kΩ 1.000 MΩ to 100.00 MΩ	0.010 Ω 0.060 kΩ 0.36 MΩ	SOP: TM/LCP/E-01 E-002 Agilent 34401A 6 ½ Digit DMM
Frequency @ 10 V	1 Hz to 50 Hz 50 Hz to 200 Hz 1 kHz to 200 kHz 1 MHz to 2 MHz	0.0010 Hz 0.010 Hz 0.010 kHz 0.00060 MHz	SOP: TM/LCP/E-04 E-002 Agilent 34401A 6 ½ Digit DMM
pH Meters	4.00 pH to 10.00 pH	0.012 pH	SOP: TM/LCP /ITS-09 ITS-009 pH Buffers HANNA
TDS/Conductivity Meters	1.413 mS 12.880 mS	0.0050 mS 0.050 mS	SOP: TM/LCP /ITS-010 ITS-010 Conductivity Buffers HANNA
Spectrophotometers			SOP: ASTG-4 IANZ
Wavelength Accuracy	285.0 nm to 640.0 nm	0.50 nm	ITS-011 Spectronic Standard Filters EMC Lab Germany
Transmittance	8.10 % to 57.40 %T	0.060 %T	
Absorbance	0.240 A to 1.090 A	0.020 A	

*capabilities are to be expressed as uncertainties (±) for a confidence probability of not less than 95%

Onsite Calibration

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Field of measurement:			
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Temperature Baths	30.0 °C to 45.1 °C 45.2 °C to 95 °C	0.34 °C 0.30 °C	SOP: ASTM E2488-09 T-002 Digital Thermometer AZ8822
Environmental Chambers	-40.0 °C to -20.0 °C -19.9 °C to 0.0 °C 0.1 °C to 10.0 °C 10.1 °C to 40.0 °C 40.1 °C to 100 °C 100.1 °C to 300 °C	3.0 °C 2.7 °C 2.6 °C 2.0 °C 1.1 °C 1.7 °C	SOP: DKD R5-7 T-003 Fluke Hydra Series II with 10 K- Type TC Probes
Temperature Furnace	50.0 °C to 800.0 °C	1.5 °C	SOP: DMS2008; 2010 T-015 Fluke 51 II DTM with 3mm SS TC
Weighing Scales	1.00 mg to 220.0000 g	0.00030 g	SOP: Euramet cg: 18
Class I and Below Accuracy Classes	1.0 mg to 420.000 g 1.000 g to 1.100 kg 1.000 g to 4.500 kg 100.0 g to 35.0000 kg 500.0 g to 200.00 kg	0.0023 g 0.0070 g 0.016g 0.30 g 2.0 g	M-001~8 E2 Class Mass E2 Class Mass F1 Class Mass F1 Class Mass F1 Class Mass F1 & M1 Class Mass
Electrical Measurement			SOP: TM/LCPE/E-05
AC Hi Volts (50 Hz)	1.0 kV to 40.0 kV	0.10 kV	E-021 & 22 Vitrek 4700
DC Hi Volts	1.0 kV to 40.0 kV	0.10 kV	Precision HV Meter
pH Meters	4.00 pH to 10.00 pH	0.12 pH	SOP : TM/LCP /ITS- 09

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			ITS-009 pH Buffers HANNA
TDS/Conductivity Meters	1.413 mS 12.880 mS	0.0050 mS 0.050 mS	SOP: TM/LCP /ITS-010 TS-010 Conductivity Buffers HANNA
Spectrophotometers			SOP : ASTG-4 IANZ
Wavelength Accuracy	285.1 nm to 640.0 nm	0.50 nm	ITS-011 Spectronic Standard Filters EMC Lab Germany
Transmittance	8.10 % to 57.40 %T	0.060 %T	
Absorbance	0.240 A to 1.090 A	0.020 A	

* **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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