

	<b>ACCREDITATION DOCUMENT</b>	<b>F-06/02 Issue Date: 10/08/15 Rev. No: 07 LAB 131</b>
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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 **15-01-2020**.

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**

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Date

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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:			
Measured quantity	Range	Calibration & Measurement Capability (CMC) expressed as an uncertainty ( ± )	Brief description of measurement and equipment used
<b>Pressure Measurement</b>	-0.6~0 bar	0.001 bar	<b>T-005</b> Druck DPI610
Pressure Gauges	0~6.8	0.001 bar	<b>P-002</b> Crystal XP2i
Transmitters and Recorders	6~125 bar	0.014 bar	<b>P-001</b> BGH1200 Dead Weight
<b>DKD R6-1</b>	125~500 bar	0.046 bar	Tester
	500~1000 bar	0.071 bar	
<b>Temperature Measure</b>			
Digital Thermometer	-20~150 C	0.08 C	<b>T-001</b> Reference Thermometer
<b>DKD R5-1</b>	150~300 C	0.17 C	WIKA CTR2000 with Temp Probe
	300~650 C	0.58 C	CPT5000 and Jofra <b>T-007</b>
	-10 C ~ 100 C	0.3 C	ATC155B and <b>T-009</b> ISO Tech 511
Liquid in Glass TM			Medusa-3
DMS2004: 2012	0~150 C	0.30 C	<b>T-001</b> Reference Thermometer
Dial Gauge Thermometers	150~350 C	0.30 C	WIKA CTR2000 with Temp Probe
<b>BSEN 13190</b>			CPT5000 and <b>T-007</b> Jofra
			ATC155B and Tecknow T-008 TC-
Dry Block Calibrator			600 Dry Block Calibrators.
Euromet cg;13	-20~50 C	0.16 C	<b>T-001</b> Reference Thermometer
	50~150 C	0.31 C	WIKA CTR2000 with Temp Probe

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Temperature Baths ASTM E2488-09	150~650 C Amb~95 C	0.2 C 0.13 C	CPT5000 <b>T-002</b> Digital Thermometer AZ8822
<b>Temperature Measure</b> Environmental Chambers DKD R5-7 Temperature Furnace DMS2008; 2010  IR Thermometers <b>ASTM 2847-11</b>  Electrical Simulation for Temperature Indicators RTD Pt100 TC Type "J" Type "K" Type "T" <b>Euromet cg; 11</b> <b>Weighing Scales</b> Weighing Scales Class I and Below Accuracy Classes Euramet cg; 18  <b>Masses</b> <b>NIMT CP-301</b>	-40~300 C  Amb~ 800 C  50~500 C  -200 C ~ 700 C 0 C ~ 800 C -200 C ~ 1200 C 0 C ~ 300 C  Up to 220 g Up to 420 g Up to 1.1 kg Up to 4.5 kg Up to 35 kg Up to 200 kg  2mg~500mg 1g~50 g 100g~200g	3.0 C  8.2 C  0.3 C  0.1 C 0.2 C 0.6~0.3 C 0.3 C  0.0003 g 0.002 g 0.007 g 0.016 g 0.3 g 11 g  0.06mg 0.00007g 0.0002g	<b>T-003</b> Fluke Hydra II with Type K  <b>T-015</b> Fluke 51 II DTM with 3mm SS TC  <b>T-012</b> WIKA CTI500 Black Body and Fluke Hi-Temp IR Thermometer  <b>E-001</b> TE 5025E Multiproduct Calibrator  <b>M-001~8</b> E2 Class Mass E2 Class Mass F1 Class Mass F1 Class Mass F1 Class Mass F1 & M1 Class Mass  <b>M-001~8</b> E2 Class Mass E2 Class Mass E2 Class Mass

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	500g~1000g	0.007g	E2 and F1 Class
	2000g	0.02g	F1 Class weights
	5kg~20kg	0.0001kg	F1 Class weights
<b>Torque Measurement</b> <b>IMEKO TC-030</b>	30~800 Nm	1.5 Nm	<b>TQ-001</b> Norbar Torque Tester 42230
<b>Volume Measures</b> <b>ASTM E542-1</b> Pipette	1 mL	0.001 mL	<b>M-009~11</b> Class I Weighing Scale
	2 mL	0.002 mL	Class I Weighing Scale
	5 mL	0.004 mL	Class I Weighing Scale
	10 mL	0.008 mL	Class I Weighing Scale
	25 mL	0.02 mL	
	50 mL	0.04 mL	
Burette	100 ~ 1000 mL	1.2 mL	Class I Weighing Scale
Measuring Cylinders	20~ 100 mL	0.08 mL	
Measuring Beakers	50~ 250 mL	0.20 mL	
Volumetric Flask	10 mL	0.008 mL	Class I Weighing Scale
	25 ml	0.02 mL	
	50 mL	0.04 mL	
	100 mL	0.08 mL	
	250 mL	0.18 mL	
	500 mL	0.40 mL	
	1000 mL	0.70 mL	
<b>Dimensional Measure</b> <b>umLTM SOP-05~07</b>			
Micrometre	Up to 25 mm	2 um	<b>D-001</b> Vertex Gauge Block Set
Vernier Callipers	Up to 300 mm	0.01 mm	Vertex Gauge Block Set
Dial Indicators	Up to 50 mm	0.01 mm	Vertex Gauge Block Set
<b>Electrical (Generation)</b>			
	1 mV~200 mV	0.01 mV	

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<b>TM/LCP/E-01</b> <b>DC Voltage</b>	1 V ~ 10 V 10 V ~ 400 V 400 V ~ 1000 V	0.001 V 0.02 V 0.1 V	<b>E-001 Time Electronics</b> 5025E Multiproduct Calibrator
<b>AC Voltage @ 50 Hz</b>	1 mV~200 mV 1V~10V 10V~400V 100V~1000V	0.06 mV 0.001 V 0.03 V 0.1 V	<b>E-001 Time Electronics</b> 5025E Multiproduct Calibrator
<b>DC Current</b>	1 mA~ 200 mA 1 A ~ 10 A	0.07 mA 0.003 A	<b>Time Electronics</b> 5025E Multiproduct Calibrator
<b>DC Clamp On</b>	1 A ~ 600 A	0.11 Amp	<b>Fluke 353</b>
<b>AC Current @ 50 Hz</b>	1 mA ~ 200 mA 1 A~10 A	0.4 mA 0.007 A	<b>Time Electronics</b> 5025E Multiproduct Electrical
<b>AC Clamp On</b>	1 A ~ 600 A	0.11 Amp	<b>Calibrator &amp; Fluke 353</b>
<b>Resistance</b>	1 Ω~100 Ω 1 k Ω~100 k Ω 1 MΩ~10 MΩ	0.02 Ω 0.06 kΩ 0.006 MΩ	<b>Time Electronics</b> 5025E Multiproduct Calibrator
<b>Frequency</b>	1 Hz~200 Hz 1 kHz~200 kHz 0.2 MHz~2 MHz	0.01 Hz 0.01 kHz 0.0001 MHz	<b>Time Electronics</b> 5025E Multiproduct Calibrator
<b>Frequency Counter</b>	100~500 kHz	0.007 kHz	<b>E-017 Function Generator HP</b>
<b>TM/LCP/E-04</b> <b>Frequency Generator</b>	1 MHz~100 MHz 100~500 kHz 1 MHz~200 MHz	0.00009 MHz 0.009 kHz 0.002 MHz	<b>8648C</b> <b>E-08 Universal Counter HP53132A</b>
<b>TM/LCP/E-04</b> <b>RPM (Optical)</b>	1~99999 RPM	0.5 RPM	<b>E-01 Time Electronics</b> 5025E Multiproduct C
<b>TM/LCP/E-02</b> <b>Capacitance</b>	1nF~500nF 0.5uF~1.0uF	0.3nF 0.001uF	<b>E-01 Time Electronics</b>

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<b>Insulation Resistance</b> <b>Sourcing @ 1 kV &amp; 5 kV</b> <b>TM/LCP/E-01</b>	10 MΩ 100 MΩ 1GΩ 10GΩ	0.08 MΩ 0.30 MΩ 0.004 GΩ 0.03 GΩ	5025E Multiproduct C  E-003 Meggar CB101 Insulation Resistance Box
<b>Electrical Measurement</b> <b>TM/LCP/E-05</b> <b>AC Hi Volts (50 Hz)</b> <b>DC Hi Volts</b>	1 kV~40 kV 1 kV~40 kV	0.1 kV 0.1 kV	E-021 & 02 Vitrek 4700 Precision HV Meter
<b>DC Current</b> <b>TM/LCP/E-01</b>	0.5 mA~200 mA 0.5 A~3 A	0.01 mA 0.0001 A	E-002 Agilent 34401A 6 ½ Digit DMM
<b>AC Current @ 50</b>	0.5 mA~200 mA 0.5 A~3 A	0.01 mA 0.0003 A	E-002 Agilent 34401A 6 ½ Digit DMM
<b>DC Volts</b>	10 mV~200 mV 0.5 V~ 20.0 V 20 V~1000 V	0.002 mV 0.0003 V 0.003 V	E-002 Agilent 34401A 6 ½ Digit DMM
<b>AC Volts @ 50 Hz</b>	10 mV~200 mV 0.5 V~20 V 20 V~1000 V	0.01 mV 0.0005 V 0.005 V	E-002 Agilent 34401A 6 ½ Digit DMM
<b>Resistance Measurement</b>	10 Ω~100 Ω 1kΩ~100kΩ 1MΩ~100MΩ	0.01 Ω 0.06 kΩ 0.3 MΩ	E-002 Agilent 34401A 6 ½ Digit DMM
<b>Frequency @ 10 V</b>	1 Hz~50 Hz 50 Hz~200 Hz 1 kHz~200 kHz 1 MHz~2 MHz	0.001 Hz 0.01 Hz 0.01 kHz 0.0006 MHz	Agilent 34401A 6 ½ Digit DMM
RTD Electronic Measure TC Electronic Measure K” TC Electronic Measure J”	-140 C~850 C -100 C~1200 C -50 C~700 C	0.02 C 0.2 C 0.2 C	E-002 Agilent 34401A 6 ½ Digit

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TC Electronic Measure B''	300 C~1800 C	0.3 C	DMM
TC Electronic Measure E''	-20 C~800 C	0.2 C	
TC Electronic Measure N''	0 C~1100 C	0.2 C	
TC Electronic Measure R''	0 C~1600 C	0.2 C	
TC Electronic Measure S''	0 C~1500 C	0.2 C	
TC Electronic Measure T''	-140 C~400 C	0.2 C	
<b>pH Meters</b> <b>TM/ITS-09</b>	4.0~10.0 pH	0.01 pH	ITS-009 pH Buffers HANNA
<b>TDS/Conductivity Meters</b> <b>TM/ITS-010</b>	1.4~12.8 mS	0.006~0.6 mS	ITS-010 Conductivity Buffers HANNA
<b>Spectrophotometers</b> <b>ASTG-4 IANZ</b>	285~640 nm	0.5nm	ITS-011 Spectronic Standard Filters EMC Lab Germany
Wave length Accuracy	10, 30 & 50%	0.02%	
Transmittance Absorbance	0.5 & 1.0	0.02	

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

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**Field of measurement:**

Measured quantity	Range	Calibration & Measurement Capability (CMC) expressed as an uncertainty ( $\pm$ )	Brief description of measurement and equipment used
Temperature Baths ASTM E2488-09	Amb~95 C	0.013 C	<b>T-002</b> Digital Thermometer AZ8822
Environmental Chambers DKD R5-7	-40~300 C	3.0 C	T-003 Fluke Hydra SeriesII with 10 K-Type TC Probes
Temperature Furnace DMS2008; 2010	Amb~800 C	8.2 C	<b>T-015</b> Fluke 51 II DTM with 3mm SS TC

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Weighing Scales	Up to 220 g	0.0003 g	M-001~8 E2 Class Mass
Class I and Below	Up to 420 g	0.002 g	E2 Class Mass
Accuracy Classes	Up to 1.1 kg	0.007 g	F1 Class Mass
Euromet cg; 18	Up to 4.5 kg	0.016 g	F1 Class Mass
	Up to 35 kg	0.3 g	F1 Class Mass
	Up to 200 kg	11 g	F1 & M1 Class Mass
<b>Electrical Measurement</b>			
TM/LCP/E-05			
<b>AC Hi Volts (50 Hz)</b>	1 kV~40 kV	0.1 kV	E-021 & 02 Vitrek 4700
<b>DC Hi Volts</b>	1 kV~40 kV	0.1 kV	Precision HV Meter
<b>pH Meters</b>			
	4.0~10.0 pH	0.1 pH	ITS-009 pH Buffers HANNA
TM/ITS-09			
<b>TDS/Conductivity</b>	1.4~12.8 mS	0.006~0.6 mS	ITS-010 Conductivity Buffers HANNA
<b>Meters</b>			
TM/ITS-010			
<b>Spectrophotometers</b>			
ASTG-4 IANZ			
Wave length Accuracy	285~640 nm	0.5nm	ITS-011 Spectronic Standard
Transmittance	10, 30 & 50%	0.02%	Filters EMC Lab Germany
Absorbance	0.5 & 1.0	0.02	

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