

	ACCREDITATION DOCUMENT	F-06/02 Issue Date: 10/08/15 Rev. No: 07 LAB 017
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Accreditation No: LAB 017

Awarded to

PMEL MRF PAC Kamra, Attock, 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 **28-10-2005** 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 **25-10-2018**.

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

Date

Director

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Calibration Laboratory:

Accreditation Scope of
PMEL, MRF, PAC Kamra, District Attock, Punjab, 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
Pressure	20 psi — 500 psi	±0.8psi	Dead Weight Tester Model 5020 ID No 505-234
	501 psi — 1000 psi	±1.4psi	
	1001 psi — 2000 psi	±1.8psi	
	2001 psi — 3000 psi	±2.6psi	
	3001 psi — 4000 psi	±3.0psi	
	4001 psi — 5000 psi	±3.4psi	
Temperature	-10°C — 110°C	± 0.8°C	Temperature Calibrator ID No 505-25 and Temp Bath Model MR-1 ID No 505-19
Torque	5 in lbs — 30 in lbs	±1.3 in lbs	Torque Wrench Tester Model TQTPR216 ID No 505-17 & Torque Wrench Tester Model TQTPC650 ID NO 505-22
	31 in lbs — 75 in lbs	±1.8 in lbs	
	76 in lbs — 200 in lbs	±2.1 in lbs	
	201 in lbs — 300 in lbs	±5.0 in lbs	
	301 in lbs — 600 in lbs	±13.1 in lbs	
	4 ft lbs — 24 ft lbs	±1.4 ft lbs	
	25 ft lbs — 50 ft lbs	±1.9 ft lbs	
	51 ft lbs — 100 ft lbs	±1.8 ft lbs	
	101 ft lbs — 200 ft lbs	±4.1ft lbs	
	201 ft lbs — 500 ft lbs	±5.9 ft lbs	

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Field of measurement:			
Measured quantity	Range	Calibration Measurement Capability (CMC) expressed as an uncertainty (±)	Brief description of measurement and equipment used
DC Voltage	10mv – 320mV	±0.0007 mV	Universal Calibration system Model 9100 ID No 505-179
	321mV – 3.2V	±0.00008 V	
	3.21V – 32V	±0.00029V	
	32.1V – 320V	±0.0030V	
	321V – 1000V	±0.008V	
AC Voltage	10mV – 320mV	±0.002mV	
	321mV – 3.2V	±0.00014V	
	3.21V – 32V	±0.002V	
	32.1V – 320V	±0.018V	
	321V – 1000V	±0.019V	
AC Current	10mA – 32mA	±0.0059mA	
	32.1mA – 320mA	±0.001mA	
	321mA – 3.2A	±0.00054A	
	3.21A – 20A	±0.00028A	
	21A – 100A	±0.1A	
	101A – 500A	±0.1A	
DC Current	10mA – 32mA	±0.00199mA	
	32.1mA – 320mA	±0.0009mA	
	321mA – 3.2A	±0.000040A	
	3.21A – 20A	±0.000145A	
	21A – 100A	±0.1A	
	101A – 500A	±0.1A	

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Field of measurement:

Measured quantity	Range	Calibration Measurement Capability (CMC) expressed as an uncertainty (±)	Brief description of measurement and equipment used
Resistance	10Ω – 40Ω	±0.00074Ω	Universal Calibration system Model 9100 ID No 505-179
	40Ω – 400Ω	±0.004Ω	
	400Ω – 4kΩ	±0.000036kΩ	
	4kΩ – 40kΩ	±0.00036kΩ	
	40kΩ – 400kΩ	±0.0223kΩ	
	400kΩ – 4MΩ	±0.000556MΩ	
	4MΩ – 40MΩ	±0.00990MΩ	
Insulation	1MΩ – 3MΩ	±0.1MΩ	Insulation Multimeter 209-86
	3MΩ – 30MΩ	±0.1MΩ	
	30MΩ – 300MΩ	±1MΩ	
	300MΩ – 2GΩ	±0.076GΩ	
Capacitance	10nF– 500nF	±1 nF	Insulation Multimeter 209-86
	501nF– 1μ F	±1nF	

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Measured quantity	Range	Calibration Measurement Capability (CMC) expressed as an uncertainty (±)	Brief description of measurement and equipment used
Dial Test Indicator	0.01mm — 10 mm	±0.001 mm	Dial Test Indicator Tester Model 865E ID No 505-13
Weight	1g – 200g	±0.0002g	Digital Weighing Scale ID No 505-218 & Weight Set ID No 505-10
Gauge Block Set	0.5mm — 100mm	±0.19µm	Gauge Block Testing Unit Model 826E & Gauge Block Set 00 grade 505-7
Outside Micrometer	0.5mm — 25mm	±0.001 mm	Gauge Block Sets Grade 0 (Mahr) ID No 505-184 Gauge Block Set 00 grade 505-7 (Mitutoyo)
Feeler Gauge	0.02mm— 1mm	±0.001 mm	Digital Micrometer ID No 505-99
Ring Gauge	10mm — 80 mm	±0.0005 mm	Measuring Machine Model 314B ID No 505-65

Date

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