

	ACCREDITATION DOCUMENT	F-06/02 Issue Date: 18/08/2020 Rev. No: 09 LAB 103
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Accreditation No: LAB 103

Awarded to

Advance Engineering & Research Organization (AERO) Calibration Lab, Lub Thatto Hassan Abdal, 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 **15-03-2016** 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 **14-03-2022**.

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

18-08-2020
Date

Sd
Director General

	ACCREDITATION DOCUMENT	F-06/02 Issue Date: 18/08/2020 Rev. No: 09 LAB 103
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Calibration Laboratory.

Accreditation Scope of AERO Calibration Lab Pakistan.

Permanent laboratory premises

FIELD OF MEASUREMENT: -			
Calibration Area	Range	*Expanded Uncertainty (±)	Technique, Reference Standard, Equipment
DC Voltage	0.00 to 329.9999 mV 330 mV to 3.299999 V 3.3 V to 32.99999 V 33 V to 329.99999 V 330 to 1020 V	0.00028 mV 0.0021 mV 0.00082 V 0.00012 V 0.0013 V	(Fluke Warranted MET/CAL Procedures) Reference Standard: Multiproduct Calibrator Fluke 5522A (A-020164-132)
AC Voltage	0.00 to 329.9999 mV @ 20 kHz 0.00 to 329.9999 mV @ 50 kHz 0.00 to 329.9999 mV @ 100 kHz 0.00 to 329.9999 mV @ 300 kHz 330 mV to 3.299999 V @ 20 kHz 330 mV to 3.299999 V @ 50 kHz 3.3 V to 32.99999 V @ 20 kHz 3.3 V to 32.99999 V @ 50 kHz 3.3 V to 32.99999 V @ 100 kHz 33 V to 329.9999 V @ 20 kHz 33 V to 329.9999 V @ 50 kHz 33 V to 329.9999 V @ 100 kHz 330 V to 1020 V @ 10 kHz	0.00064 mV 0.00068 mV 0.00077 mV 0.00077 mV 0.000018 V 0.000017 V 0.00026 V 0.00026 V 0.00031 V 0.0040 V 0.0040 V 0.0041 V 0.0038 V	(Fluke Warranted MET/CAL Procedures) Reference Standard: Multiproduct Calibrator Fluke 5522A (A-020164-132)
Resistance	0.00 to 32.9999 Ω 33 Ω to 329.9999 Ω 330 Ω to 3.2999 kΩ 3.3 kΩ to 32.99999 kΩ 33 kΩ to 329.9999 kΩ 330 kΩ to 3.299999 MΩ 3.3 MΩ to 32.99999 MΩ 33 MΩ to 109.9999 MΩ	0.00018 Ω 0.0058 Ω 0.000003 kΩ 0.000024 kΩ 0.00033 kΩ 0.000017 MΩ 0.00019 MΩ 0.010 MΩ	(Fluke Warranted MET/CAL Procedures) Reference Standard: Multiproduct Calibrator Fluke 5522A (A-020164-132)

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Frequency	0.01 Hz to 119.99 Hz 120 Hz to 1199.9 Hz 1.2 kHz to 119.99 kHz 120 kHz to 1199.9 kHz	0.00057 Hz 0.0056 Hz 0.0000031 kHz 0.00025 kHz	(Fluke Warranted MET/CAL Procedures) Reference Standard: Multiproduct Calibrator Fluke 5522A (A-020164-132)
Capacitance	3.3 nF to 32.9999 nF 33 nF to 329.999 nF 330 nF to 3.29999 uF 3.3 μF to 32.9999 μF 33 μF to 329.9999 μF 330 μF to 3.2999 mF 3.3 mF to 32.999 mF	0.015 nF 0.085 nF 0.0054 μF 0.0058 μF 0.52 μF 0.017 mF 0.26 mF	(Fluke Warranted MET/CAL Procedures) Reference Standard: Multiproduct Calibrator Fluke 5522A (A-020164-132)
DC Current	0 to 329.999 μA 330 μA to 3.29999 mA 3.3 mA to 329.999 mA 330 mA to 1.09999 A 1.1 A to 10.999 A	0.00077 μA 0.0061 μA 0.00033 mA 0.000073 A 0.0029 A	(Fluke Warranted MET/CAL Procedures) Reference Standard: Multiproduct Calibrator Fluke 5522A (A-020164-132)
AC Current	3 A to 10.6666 A @ 500 Hz 3 A to 10.9999 A @ 1 kHz 3 A to 10.9999 A @ 5 kHz 0.33 A to 1.09999 A @ 6 kHz 0.33 A to 1.09999 A @ 10 kHz 33 mA to 329.999 A @ 45 kHz 33 mA to 329.999 A @ 5 kHz 33 mA to 329.99 A @ 10 kHz 3.3 mA to 32.9999 A @ 10 kHz 3.3 mA to 32.9999 A @ 30 kHz 0.33 mA to 3.299999 A @ 5 Hz 0.33 mA to 3.299999 A @ 5 kHz	0.00090 A 0.00090 A 0.00091 A 0.000080 A 0.00010 A 0.00019 A 0.0000042 A 0.0000055 A 0.00049 mA 0.00070 mA 0.0024 mA 0.000051 A	(Fluke Warranted MET/CAL Procedures) Reference Standard: Multiproduct Calibrator Fluke 5522A (A-020164-132)
Temperature (Fluke Warranted MET/CAL Procedures)	-200 °C to 100 °C -100.1 °C to -25 °C -24.9 °C to 120 °C 120.1 °C to 1000 °C 1001 °C -1372 °C	0.38 °C 0.16 °C 0.03 °C 0.19 °C 0.31 °C	(Fluke Warranted MET/CAL Procedures) Reference Standard: Multiproduct Calibrator Fluke 5522A (A-020164-132)

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Frequency (Oscilloscope Option)	0.0 kHz to 50 KHz 50.01 KHz to 100 MHz 100.01 MHz to 300 MHz 300.01 MHz to 600 MHz	0.0000031 kHz 0.00033 kHz 0.0000033 MHz 0.0000057 MHz	(Fluke Warranted MET/CAL Procedures) Reference Standard: Multiproduct Calibrator Fluke 5522A (A-020164-132)
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*** 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.

18-08-2020
Date

Sd
Director