National Accreditation Board for Testing and Calibration Laboratories

(A Constituent Board of Quality Council of India)

SCOPE OF ACCREDITATION

Laboratory Name	INSTRULAB AERO & ALLIED SYSTEMS, 67, G.S.T ROAD,TAMBARAM SANATORIUM, CHENNAI, TAMIL NADU, INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	CC-2358	Page No. :	1 / 27
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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
Permanent Facility					
1	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Current @50Hz-1kHz	1 A to 10 A	0.175% to 0.249%	Using Fluke 8846A by Direct Method
2	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Current @50Hz-1kHz	33 µA to 1 A	0.265% to 0.175%	Using Fluke 8846A by Direct Method
3	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC High Current @50Hz	10 A to 100 A	0.845%	Using Shunt with DMM by V/I Method
4	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC High Voltage @50Hz	1 kV to 28 kV	7.61% to 6.42%	Using HV Probe with DMM by Direct Method
5	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage @50Hz - 1kHz	1 mV to 10 mV	4.65% to 0.533%	Using Fluke 8846A by Direct Method
6	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage @50Hz - 1kHz	10 mV to 1000 V	0.53% to 0.106%	Using Fluke 8846A by Direct Method

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7	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Capacitance @1kHz	1 nF to 1 µF	3.84% to 3.97%	Using LCRQ Meter by Direct Method
8	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Inductance@1kHz	100 µH to 1 H	1.20%	Using LCRQ Meter by Direct Method
9	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Current @ 45 Hz-1 kHz	2.99 A to 20 A	0.074% to 0.414%	Using Fluke 5522A MFC by Direct Method
10	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Current @ 45 Hz-1 kHz	3.29 mA to 329 mA	0.12% to 0.058%	Using Fluke 5522A MFC by Direct Method
11	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Current @ 45 Hz-1 kHz	329 mA to 2.99 A	0.058% to 0.074%	Using Fluke 5522A MFC by Direct Method
12	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Current @ 45 Hz-1 kHz	33 µA to 3.29 mA	0.53% to 0.12%	Using Fluke 5522A MFC by Direct Method

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13	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Current @ 50 Hz-400 Hz	20 A to 1000 A	0.513% to 0.32%	Using Fluke 5522A MFC with Current Coil by Direct Method
14	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Power Factor Single Phase @50Hz, 0.2PF to UPF (Lead/Lag) at 60V, 2A	0.2 PF to 1 PF	0.007PF	Using Fluke 5522A MFC by Direct Method
15	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Power Single Phase @50Hz, 0.2PF to UPF (Lead/Lag)	60 W(60V to 240V/1A to 20A) to 4800 W(60V to 240V/1A to 20A)	4.81% to 0.18%	Using Fluke 5522A MFC by Direct Method
16	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Voltage @45Hz - 1kHz	1 mV to 30 mV	0.90% to 0.05%	Using Fluke 5522A MFC by Direct Method
17	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Voltage @45Hz - 1kHz	30 mV to 300 V	0.05% to 0.024%	Using Fluke 5522A MFC by Direct Method
18	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Voltage @45Hz - 1kHz	300 V to 1000 V	0.024% to 0.039%	Using Fluke 5522A MFC by Direct Method

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19	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Voltage @50Hz	1 kV to 5 kV	4.20% to 3.70%	Using Aplab make HV Source
20	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Capacitance @100Hz	0.7 mF to 10 mF	0.31% to 0.35%	Using Fluke 5522A MFC by Direct Method
21	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Capacitance @1kHz	0.39 nF to 7 nF	2.22% to 0.31%	Using Fluke 5522A MFC by Direct Method
22	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Capacitance @1kHz	7 nF to 300 nF	0.31% to 0.35%	Using Fluke 5522A MFC by Direct Dethod
23	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Inductance @1kHz	100 µH to 1 H	1.14% to 1.26%	Using Decade Inductance Box
24	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	10 µA to 100 µA	0.35% to 0.088%	Using Fluke 8846A by Direct Method
25	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	100 µA to 100mA	0.088% to 0.064%	Using Fluke 8846A by Direct Method

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26	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	100mA to 10A	0.064% to 0.18%	Using Fluke 8846A by Direct Method
27	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC High Current	10 A to 100 A	0.832%	Using Shunt with DMM by V/I Method
28	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC High Voltage	1 kV to 40 kV	3.6% to 3.0%	Using HV Probe with DMM by Direct Method
29	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Low Resistance	1 mohm to 375 mohm	0.29%	Using Digital Micro-Ohm Meter by Direct Method
30	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Resistance	0.1 ohm to 1 ohm	3.50% to 0.358%	Using Fluke 8846A by Direct Method
31	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Resistance	1 Mohm to 100 Mohm	0.013% to 0.94%	Using Fluke 8846A by Direct Method
32	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Resistance	1 ohm to 10 ohm	0.358% to 0.046%	Using Fluke 8846A by Direct Method
33	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Resistance	10 ohm to 1 Mohm	0.046% to 0.013%	Using Fluke 8846A by Direct Method
34	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Resistance	100 MOhm to 1 Gohm	0.94% to 2.35%	Using Fluke 8846A by Direct Method
35	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Voltage	0.1 mV to 1 mV	5.04% to 0.51%	Using Fluke 8846A by Direct Method

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36	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Voltage	1 mV to 10 mV	0.408% to 0.045%	Using Fluke 8846A by Direct Method
37	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Voltage	10 mV to 1000 V	0.054% to 0.006%	Using Fluke 8846A by Direct Method
38	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Current	100 µA to 329 µA	0.041% to 0.024%	Using Fluke 5522A MFC by Direct Method
39	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Current	2.99 A to 20 A	0.049% to 0.177%	Using Fluke 5522A MFC by Direct Method
40	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Current	20 A to 1000 A	0.70% to 0.32%	Using Fluke 5522A MFC with Current Coil by Direct Method
41	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Current	329 µA to 329 mA	0.024% to 0.013%	Using Fluke 5522A MFC by Direct Method
42	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Current	329 mA to 2.99 A	0.013% to 0.049%	Using Fluke 5522A MFC by Direct Method
43	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Power	1 W(1V to 1000V/1A to 10A) to 10 kW(1V to 1000V/1A to 10A)	0.06% to 0.08%	Using Fluke 5522A MFC by Direct Method
44	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Resistance	0.01 ohm to 0.1 ohm	2.60% to 0.83%	Using Decade Resistance Box
45	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Resistance	0.1 ohm to 1 ohm	0.83% to 0.009%	Using Decade Resistance Box

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46	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Resistance	1 Gohm to 10 Gohm	1.75% to 2.44%	Using Decade Resistance Box
47	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Resistance	1 Ohm to 300 kohm	0.009% to 0.0041%	Using Fluke 5522A MFC by Direct Method
48	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Resistance	290 Mohm to 1 Gohm	0.35% to 1.75%	Using Decade Resistance Box
49	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Resistance	3 Mohm to 290 Mohm	0.0075% to 0.35%	Using Fluke 5522A MFC by Direct Method
50	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Resistance	300 kohm to 3 Mohm	0.0041% to 0.0075%	Using Fluke 5522A MFC by Direct Method
51	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Voltage	0.1 mV to 1 mV	1.3% to 0.13%	Using Fluke 5522A MFC by Direct Method
52	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Voltage	1 mV to 329 mV	0.13% to 0.003%	Using Fluke 5522A MFC by Direct Method
53	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Voltage	329 mV to 1000 V	0.003% to 0.008%	Using Fluke 5522A MFC by Direct Method
54	ELECTRO-TECHNICAL- ELECTRICAL EQUIPMENT (Source)	Oscilloscope Amplitude AC @ 1kHz with 1 Mohm Impedance	10 mV to 130 V	0.52% to 0.16%	Using Fluke 5522A MFC with Scope Option by Direct Method

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55	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Amplitude DC with 1 Mohm Impedance	1.25 mV to 130 V	3.96% to 0.06%	Using Fluke 5522A MFC with Scope Option by Direct Method
56	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Bandwidth	Upto 1.1 GHz	8.39%	Using Fluke 5522A MFC with Scope Option by Direct Method
57	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Time Base	2 ns to 5 s	0.239% to 0.58%	Using Fluke 5522A MFC with Scope Option by Direct Method
58	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	B Type Thermocouple	600 °C to 1820 °C	0.71°C	Using Fluke 8846A by Direct Method
59	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	E Type Thermocouple	-200 °C to 1200 °C	0.71°C	Using Fluke 8846A by Direct Method
60	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	J Type Thermocouple	-200 °C to 1200 °C	0.73°C	Using Fluke 8846A by Direct Method
61	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	K Type Thermocouple	-200 °C to 1370 °C	0.73°C to	Using Fluke 8846A by Direct Method

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62	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	N Type Thermocouple	-270 °C to 1300 °C	0.73°C	Using Fluke 8846A by Direct Method
63	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	R Type Thermocouple	5 °C to 1768 °C	0.98°C	Using Fluke 8846A by Direct Method
64	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	RTD Pt100	-200 °C to 800 °C	0.12°C	Using Fluke 8846A by Direct Method
65	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	S Type Thermocouple	5 °C to 1768 °C	0.98°C	Using Fluke 8846A by Direct Method
66	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	T Type Thermocouple	-100 °C to 400 °C	0.72°C	Using Fluke 8846A by Direct Method
67	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	B Type Thermocouple	600 °C to 1820 °C	0.81°C	Using Fluke 5522A MFC by Direct Method
68	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	E Type Thermocouple	-200 °C to 950 °C	0.70°C	Using Fluke 5522A MFC by Direct Method

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69	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	J Type Thermocouple	-200 °C to 1150 °C	0.71°C	Using Fluke 5522A MFC by Direct Method
70	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	K Type Thermocouple	-200 °C to 1370 °C	0.71°C	Using Fluke 5522A MFC by Direct Method
71	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	N Type Thermocouple	-100 °C to 1250 °C	0.71°C	Using Fluke 5522A MFC by Direct Method
72	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	R Type Thermocouple	5 °C to 1760 °C	0.72°C	Using Fluke 5522A MFC by Direct Method
73	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	RTD PT100	-200 °C to 800 °C	0.04°C	Using Fluke 5522A MFC by Direct Method
74	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	S Type Thermocouple	5 °C to 1760 °C	0.72°C	Using Fluke 5522A MFC by Direct Method
75	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	T Type Thermocouple	-100 °C to 350 °C	0.70°C	Using Fluke 5522A MFC by Direct Method
76	ELECTRO-TECHNICAL- TIME & FREQUENCY (Measure)	Frequency	1 MHz to 1.0 GHz	0.00023% to 0.00012%	Using Frequency Counter by Direct Method

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77	ELECTRO-TECHNICAL- TIME & FREQUENCY (Measure)	Frequency	10 Hz to 100 Hz	0.006%	Using Fluke 8846A and Frequency Counter by Direct Method
78	ELECTRO-TECHNICAL- TIME & FREQUENCY (Measure)	Frequency	100 Hz to 1 MHz	0.006% to 0.00023%	Using Fluke 8846A and Frequency Counter by Direct Method
79	ELECTRO-TECHNICAL- TIME & FREQUENCY (Measure)	Time Interval	10 s to 3600 s	0.28s to 2.2s	Using Digital Timer by Comparison Method
80	ELECTRO-TECHNICAL- TIME & FREQUENCY (Source)	Frequency	1 Hz to 100 Hz	0.0023% to 0.0021%	Using Function Generator
81	ELECTRO-TECHNICAL- TIME & FREQUENCY (Source)	Frequency	1 kHz to 1 MHz	0.0023% to %	Using Function Generator
82	ELECTRO-TECHNICAL- TIME & FREQUENCY (Source)	Frequency	1 MHz to 10 MHz	0.0023% to 0.002%	Using Function Generator
83	ELECTRO-TECHNICAL- TIME & FREQUENCY (Source)	Frequency	100 Hz to 1 kHz	0.0021% to 0.0023%	Using Function Generator
84	MECHANICAL-ACOUSTICS	Sound Level Indicator @1kHzResolution: 0.1dB	35 to 130dB	0.22dB	Using Sound Level Calibrator
85	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Bore Dial Gauge(Transmission Error Only)L.C:0.001 mm	up to 1 mm traverse	4.0µm	Using Electronic Dial Calibration Tester

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86	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Caliper (Vernier/Dial/Digital) L.C 0.01 mm	0 mm to 300 mm	9.6 µm	Using Slip Gauges, Long Slip Gauges & Caliper Checker
87	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Caliper (Vernier/Dial/Digital) L.C 0.01 mm	300 mm to 600 mm	13.1µm	Using Slip Gauges, Long Slip Gauges & Caliper Checker
88	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Caliper (Vernier/Dial/Digital) L.C 0.02 mm	0 mm to 300 mm	16.2 µm	Using Slip Gauges, Long Slip Gauges & Caliper Checker
89	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Caliper (Vernier/Dial/Digital) L.C 0.02 mm	300 mm to 600 mm	18.5 µm	Using Slip Gauges, Long Slip Gauges & Caliper Checker
90	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial Thickness GaugeL.C:0.001mm	0 mm to 10 mm	0.78µm	Using Slip Gauges
91	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial Thickness GaugeL.C:0.01mm	0 mm to 10 mm	5.8µm	Using Slip Gauges

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92	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Digital Protractor(Clinometer)L.C:0.1°	0 to 90 °	4.2 Arc min'	Using Angle Gauge Blocks(Grade "0")
93	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External MicrometerL.C: 0.001 mm	0 mm to 100 mm	0.8µm	Using Slip Gauges
94	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External MicrometerL.C: 0.001 mm	100 mm to 300 mm	1.8µm	Using Slip Gauges & Long Slip Gauges
95	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External MicrometerL.C: 0.01 mm	0 mm to 100 mm	5.8µm	Using Slip Gauges & Long Slip Gauges
96	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External MicrometerL.C: 0.01 mm	100 mm to 300 mm	6 µm	Using Slip Gauges & Long Slip Gauges
97	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Feeler Gauge	0.01 mm to 1 mm	2.0µm	Using Digital Micrometer

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98	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Height Gauge (Vernier/Dial/Digital) L.C 0.01 mm	0 to 300mm	9.9 µm	Using Slip Gauges, Long Slip Gauges & Caliper Checker
99	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Height Gauge (Vernier/Dial/Digital) L.C 0.01 mm	Upto to 600 mm	11.4 µm	Using Slip Gauges, Long Slip Gauges & Caliper Checker
100	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Height Gauge (Vernier/Dial/Digital) L.C 0.02 mm	0 mm to 600 mm	16.4µm	Using Slip Gauges, Long Slip Gauges & Caliper Checker
101	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Height Gauge (Vernier/Dial/Digital) L.C 0.02 mm	300 mm to 600 mm	18.3µm	Using Slip Gauges, Long Slip Gauges & Caliper Checker
102	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Lever Dial GaugeL.C :0.001mm	0 mm to 0.2 mm	1.5µm	Using Electronic Dial Calibration Tester
103	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Lever Dial GaugeL.C :0.01mm	0 mm to 0.8 mm	5.9µm	Using Electronic Dial Calibration Tester

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104	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plunger Dial GaugeL.C :0.001mm	0 mm to 10 mm	1.8 µm	Using Electronic Dial Calibration Tester
105	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plunger Dial GaugeL.C :0.01mm	0 mm to 10 mm	6.0µm	Using Electronic Dial Calibration Tester
106	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plunger Dial GaugeL.C :0.01mm	0 mm to 50 mm	6.0µm	Using Electronic Dial Calibration Tester
107	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Hydraulic Dial and Digital Pressure Gauges, Pressure Transmitters.	6.2 kg/sq.cm(6.08 bar) to 60 kg/ sq.cm(58.8 bar)	0.11%rdg	Using Hydraulic Dead Weight Tester as per DKD R-6-1
108	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Hydraulic Dial and Digital Pressure Gauges, Pressure Transmitters.	60 kg/sq.cm(58.8 bar) to 700 kg/sq.cm(686.5 bar)	0.28%rdg	Using Hydraulic Dead Weight Tester as per DKD R-6-1
109	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Pneumatic Dial and Digital Pressure Gauges, Pressure Transmitters.	0 bar to 100 bar	0.23%rdg	Using Digital Pressure Indicator with Pneumatic Pump as per DKD R-6-1
110	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Pneumatic Dial and Digital Pressure Gauges, Pressure Transmitters.	0 bar to 14 bar	0.60%rdg	Using Digital Pressure Indicator with Pneumatic Pump as per DKD R-6-1

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111	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Pneumatic Dial and Digital Pressure Gauges, Pressure Transmitters.	0 bar-abs to 0.2 bar-abs	0.58%rdg	Using Digital Absolute Pressure Indicator with Pneumatic Pump as per DKD R-6-1
112	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Pneumatic Dial and Digital Pressure Gauges, Pressure Transmitters.	0 bar-abs to 2 bar-abs	1.47%rdg	Using Digital Absolute Pressure Indicator with Pneumatic Pump as per DKD R-6-1
113	MECHANICAL-PRESSURE INDICATING DEVICES	Vacuum - Dial and Digital Pressure Gauges, Pressure Transmitters.	- 0.95 bar to 0 bar	1.47%rdg	Using Digital Vacuum Indicator with Vacuum Pump as per DKD R-6-1

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
Site Facility					
1	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Current @50Hz-1kHz	1 A to 10 A	0.175% to 0.249%	Using Fluke 8846A by Direct Method
2	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Current @50Hz-1kHz	33 µA to 1 A	0.265% to 0.175%	Using Fluke 8846A by Direct Method
3	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC High Current @50Hz	10 A to 100 A	0.845%	Using Shunt with DMM by V/I Method
4	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC High Voltage @50Hz	1 kV to 28 kV	7.61% to 6.42%	Using HV Probe with DMM by Direct Method
5	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage @50Hz - 1kHz	1 mV to 10 mV	4.65% to 0.533%	Using Fluke 8846A by Direct Method
6	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage @50Hz - 1kHz	10 mV to 1000 V	0.53% to 0.106%	Using Fluke 8846A by Direct Method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
7	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Capacitance @1kHz	1 nF to 1 µF	3.84% to 3.97%	Using LCRQ Meter by Direct Method
8	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Inductance@1kHz	100 µH to 1 H	1.20%	Using LCRQ Meter by Direct Method
9	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Current @ 45 Hz-1 kHz	2.99 A to 20 A	0.074% to 0.414%	Using Fluke 5522A MFC by Direct Method
10	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Current @ 45 Hz-1 kHz	3.29 mA to 329 mA	0.12% to 0.058%	Using Fluke 5522A MFC by Direct Method
11	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Current @ 45 Hz-1 kHz	329 mA to 2.99 A	0.058% to 0.074%	Using Fluke 5522A MFC by Direct Method
12	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Current @ 45 Hz-1 kHz	33 µA to 3.29 mA	0.53% to 0.12%	Using Fluke 5522A MFC by Direct Method

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13	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Current @ 50 Hz-400 Hz	20 A to 1000 A	0.513% to 0.32%	Using Fluke 5522A MFC with Current Coil by Direct Method
14	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Power Factor Single Phase @50Hz, 0.2PF to UPF (Lead/Lag) at 60V, 2A	0.2 PF to 1 PF	0.007PF	Using Fluke 5522A MFC by Direct Method
15	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Power Single Phase @50Hz, 0.2PF to UPF (Lead/Lag)	60 W(60V to 240V/1A to 20A) to 4800 W(60V to 240V/1A to 20A)	4.81% to 0.18%	Using Fluke 5522A MFC by Direct Method
16	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Voltage @45Hz - 1kHz	1 mV to 30 mV	0.90% to 0.05%	Using Fluke 5522A MFC by Direct Method
17	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Voltage @45Hz - 1kHz	30 mV to 300 V	0.05% to 0.024%	Using Fluke 5522A MFC by Direct Method
18	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Voltage @45Hz - 1kHz	300 V to 1000 V	0.024% to 0.039%	Using Fluke 5522A MFC by Direct Method

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19	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Voltage @50Hz	1 kV to 5 kV	4.20% to 3.70%	Using Aplab make HV Source
20	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Capacitance @100Hz	0.7 mF to 10 mF	0.31% to 0.35%	Using Fluke 5522A MFC by Direct Method
21	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Capacitance @1kHz	0.39 nF to 7 nF	2.22% to 0.31%	Using Fluke 5522A MFC by Direct Method
22	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Capacitance @1kHz	7 nF to 300 nF	0.31% to 0.35%	Using Fluke 5522A MFC by Direct Dethod
23	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Inductance @1kHz	100 µH to 1 H	1.14% to 1.26%	Using Decade Inductance Box
24	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	10 µA to 100 µA	0.35% to 0.088%	Using Fluke 8846A by Direct Method
25	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	100 µA to 100mA	0.088% to 0.064%	Using Fluke 8846A by Direct Method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
26	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	100mA to 10A	0.064% to 0.18%	Using Fluke 8846A by Direct Method
27	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC High Current	10 A to 100 A	0.832%	Using Shunt with DMM by V/I Method
28	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC High Voltage	1 kV to 40 kV	3.6% to 3.0%	Using HV Probe with DMM by Direct Method
29	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Low Resistance	1 mohm to 375 mohm	0.29%	Using Digital Micro-Ohm Meter by Direct Method
30	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Resistance	0.1 ohm to 1 ohm	3.50% to 0.358%	Using Fluke 8846A by Direct Method
31	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Resistance	1 Mohm to 100 Mohm	0.013% to 0.94%	Using Fluke 8846A by Direct Method
32	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Resistance	1 ohm to 10 ohm	0.358% to 0.046%	Using Fluke 8846A by Direct Method
33	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Resistance	10 ohm to 1 Mohm	0.046% to 0.013%	Using Fluke 8846A by Direct Method
34	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Resistance	100 MOhm to 1 Gohm	0.94% to 2.35%	Using Fluke 8846A by Direct Method
35	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Voltage	0.1 mV to 1 mV	5.04% to 0.51%	Using Fluke 8846A by Direct Method

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36	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Voltage	1 mV to 10 mV	0.408% to 0.045%	Using Fluke 8846A by Direct Method
37	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Voltage	10 mV to 1000 V	0.054% to 0.006%	Using Fluke 8846A by Direct Method
38	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Current	100 µA to 329 µA	0.041% to 0.024%	Using Fluke 5522A MFC by Direct Method
39	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Current	2.99 A to 20 A	0.049% to 0.177%	Using Fluke 5522A MFC by Direct Method
40	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Current	20 A to 1000 A	0.70% to 0.32%	Using Fluke 5522A MFC with Current Coil by Direct Method
41	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Current	329 µA to 329 mA	0.024% to 0.013%	Using Fluke 5522A MFC by Direct Method
42	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Current	329 mA to 2.99 A	0.013% to 0.049%	Using Fluke 5522A MFC by Direct Method
43	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Power	1 W(1V to 1000V/1A to 10A) to 10 kW(1V to 1000V/1A to 10A)	0.06% to 0.08%	Using Fluke 5522A MFC by Direct Method
44	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Resistance	0.01 ohm to 0.1 ohm	2.60% to 0.83%	Using Decade Resistance Box
45	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Resistance	0.1 ohm to 1 ohm	0.83% to 0.009%	Using Decade Resistance Box

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46	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Resistance	1 Gohm to 10 Gohm	1.75% to 2.44%	Using Decade Resistance Box
47	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Resistance	1 Ohm to 300 kohm	0.009% to 0.0041%	Using Fluke 5522A MFC by Direct Method
48	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Resistance	290 Mohm to 1 Gohm	0.35% to 1.75%	Using Decade Resistance Box
49	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Resistance	3 Mohm to 290 Mohm	0.0075% to 0.35%	Using Fluke 5522A MFC by Direct Method
50	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Resistance	300 kohm to 3 Mohm	0.0041% to 0.0075%	Using Fluke 5522A MFC by Direct Method
51	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Voltage	0.1 mV to 1 mV	1.3% to 0.13%	Using Fluke 5522A MFC by Direct Method
52	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Voltage	1 mV to 329 mV	0.13% to 0.003%	Using Fluke 5522A MFC by Direct Method
53	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Voltage	329 mV to 1000 V	0.003% to 0.008%	Using Fluke 5522A MFC by Direct Method
54	ELECTRO-TECHNICAL- ELECTRICAL EQUIPMENT (Source)	Oscilloscope Amplitude AC @ 1kHz with 1 Mohm Impedance	10 mV to 130 V	0.52% to 0.16%	Using Fluke 5522A MFC with Scope Option by Direct Method

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55	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Amplitude DC with 1 Mohm Impedance	1.25 mV to 130 V	3.96% to 0.06%	Using Fluke 5522A MFC with Scope Option by Direct Method
56	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Bandwidth	Upto 1.1 GHz	8.39%	Using Fluke 5522A MFC with Scope Option by Direct Method
57	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Time Base	2 ns to 5 s	0.239% to 0.58%	Using Fluke 5522A MFC with Scope Option by Direct Method
58	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	B Type Thermocouple	600 °C to 1820 °C	0.71°C	Using Fluke 8846A by Direct Method
59	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	E Type Thermocouple	-200 °C to 1200 °C	0.71°C	Using Fluke 8846A by Direct Method
60	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	J Type Thermocouple	-200 °C to 1200 °C	0.73°C	Using Fluke 8846A by Direct Method
61	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	K Type Thermocouple	-200 °C to 1370 °C	0.73°C to	Using Fluke 8846A by Direct Method

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62	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	N Type Thermocouple	-270 °C to 1300 °C	0.73°C	Using Fluke 8846A by Direct Method
63	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	R Type Thermocouple	5 °C to 1768 °C	0.98°C	Using Fluke 8846A by Direct Method
64	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	RTD Pt100	-200 °C to 800 °C	0.12°C	Using Fluke 8846A by Direct Method
65	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	S Type Thermocouple	5 °C to 1768 °C	0.98°C	Using Fluke 8846A by Direct Method
66	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	T Type Thermocouple	-100 °C to 400 °C	0.72°C	Using Fluke 8846A by Direct Method
67	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	B Type Thermocouple	600 °C to 1820 °C	0.81°C	Using Fluke 5522A MFC by Direct Method
68	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	E Type Thermocouple	-200 °C to 950 °C	0.70°C	Using Fluke 5522A MFC by Direct Method

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69	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	J Type Thermocouple	-200 °C to 1150 °C	0.71°C	Using Fluke 5522A MFC by Direct Method
70	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	K Type Thermocouple	-200 °C to 1370 °C	0.71°C	Using Fluke 5522A MFC by Direct Method
71	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	N Type Thermocouple	-100 °C to 1250 °C	0.71°C	Using Fluke 5522A MFC by Direct Method
72	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	R Type Thermocouple	5 °C to 1760 °C	0.72°C	Using Fluke 5522A MFC by Direct Method
73	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	RTD PT100	-200 °C to 800 °C	0.04°C	Using Fluke 5522A MFC by Direct Method
74	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	S Type Thermocouple	5 °C to 1760 °C	0.72°C	Using Fluke 5522A MFC by Direct Method
75	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	T Type Thermocouple	-100 °C to 350 °C	0.70°C	Using Fluke 5522A MFC by Direct Method
76	ELECTRO-TECHNICAL- TIME & FREQUENCY (Measure)	Frequency	1 MHz to 1.0 GHz	0.00023% to 0.00012%	Using Frequency Counter by Direct Method

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77	ELECTRO-TECHNICAL- TIME & FREQUENCY (Measure)	Frequency	10 Hz to 100 Hz	0.006%	Using Fluke 8846A and Frequency Counter by Direct Method
78	ELECTRO-TECHNICAL- TIME & FREQUENCY (Measure)	Frequency	100 Hz to 1 MHz	0.006% to 0.00023%	Using Fluke 8846A and Frequency Counter by Direct Method
79	ELECTRO-TECHNICAL- TIME & FREQUENCY (Measure)	Time Interval	10 s to 3600 s	0.28s to 2.2s	Using Digital Timer by Comparison Method
80	ELECTRO-TECHNICAL- TIME & FREQUENCY (Source)	Frequency	1 Hz to 100 Hz	0.0023% to 0.0021%	Using Function Generator
81	ELECTRO-TECHNICAL- TIME & FREQUENCY (Source)	Frequency	1 kHz to 1 MHz	0.0023% to %	Using Function Generator
82	ELECTRO-TECHNICAL- TIME & FREQUENCY (Source)	Frequency	1 MHz to 10 MHz	0.0023% to 0.002%	Using Function Generator
83	ELECTRO-TECHNICAL- TIME & FREQUENCY (Source)	Frequency	100 Hz to 1 kHz	0.0021% to 0.0023%	Using Function Generator