National Accreditation Board for Testing and Calibration Laboratories

(A Constituent Board of Quality Council of India)

SCOPE OF ACCREDITATION

Laboratory Name	AUTOCAL SOLUTIONS PVT LTD, B-80, MIDC, SATPUR, NASHIK, MAHARASHTRA, INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	CC-2052	Page No. :	1 / 78
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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 Active Energy- 1 / 3 Phase UPF 50Hz	240V/1A to 240V/5A @ UPF , 50 Hz.	0.60%	Using 3Ph4W Energy meter by Comparison Method
2	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Active Power-1 Phase UPF to 0.2PF-50Hz 110V to 230 V & 1A to 10A	0.1 kW to 2.3 kW	4.66% to 0.24%	Using 3Ph4W Energy meter by Comparison Method
3	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Current 100 Hz to 1kHz	0.1 mA to 1 mA	0.13% to 0.065%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
4	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Current 100 Hz to 5kHz	1 mA to 1 A	0.065% to 0.15%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
5	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Current 50 Hz to 100Hz	0.01 mA to 100 mA	0.53% to 0.10%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
6	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Current 50 Hz to 100Hz	100 mA to 1 A	0.10% to 0.15%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method

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7	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Current 50 Hz to 5kHz	1 A to 10 A	0.15 % to 0.30 %	Using Fluke 8846A 6½ DMM with shunt by Direct/Comparison method
8	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Current 50 Hz to 5kHz	10 A to 20 A	0.15% to 0.65%	Using Agilent 3458A 8 ½ DMM with 30A Shunt by Direct/Comparison method
9	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC High Current - 50 Hz	20 A to 6000 A	0.35%%	Using Std CT with Fluke 8846A 6½ DMM by comparison Method
10	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC High Voltage 50Hz	1 kV to 10 kV	5.78%	Using HV Probe with DMM by comparison method
11	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Resistance	0.1 ohm to 100 kohm	0.42% to 0.15%	Using Fluke PM 6304 RCl meter by comparison Method
12	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage 50Hz to 20kHz	700 V to 1000 V	0.10%	Using Agilent 8846 A 6½ DMM by Direct/Comparison method

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13	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage 1kHz to 20 kHz	1 mV to 10 mV	0.52% to 0.09%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
14	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage 1kHz to 20 kHz	10 mV to 500 V	0.09% to 0.075%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
15	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage 1kHz to 20 kHz	10 mV to 10 V	0.09%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
16	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage 20kHz to 50 kHz	1 mV to 10 mV	0.70% to 0.16%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
17	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage 20kHz to 50 kHz	10 mV to 100 mV	0.16% to 0.09%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
18	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage 20kHz to 50 kHz	100 mV to 100 V	0.09% to 0.045%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method

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19	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage 50 Hz to 1 kHz	1 mV to 10 mV	1.10% to 0.056%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
20	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage 50 Hz to 1 kHz	10 mV to 10 V	0.056% to 0.012%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
21	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage 50 Hz to 1 kHz	10 V to 700 V	0.012% to 0.05%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
22	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Capacitance 100 Hz	1000 nF to 100 uF	0.14% to 0.17%	Using Fluke PM 6304 RLC meter by comparison Method
23	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Capacitance 1kHz	100 pF to 1000 nF	0.23% to 0.14%	Using Fluke PM 6304 RLC meter by comparison Method
24	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Inductance 1KHz	100 µH to 10 H	0.38% to 0.14%	Using Fluke PM 6304 RLC Meter by comparison Method

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25	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Power factor	0.01 PF to 1 PF	0.001PF to 0.02PF	Using oscilloscope by direct method
26	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Power factor @50 Hz	0.2 PF to 1 PF	0.01PF	Using 3Ph/4W Energy meter by comparison method
27	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Transformer Turn Ratio meter	0.8 ratio to 2200 ratio	0.21% to 0.25%	Using Transformer Turn Ratio Calibrator
28	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Active Power -50Hz @ 0.20 PF30V to 480V0.1A to 20A	600 mW to 1.920 kW	1.03% to 1.04%	Using Mulifunction calibrator Fluke 5522A By direct method
29	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Active Power -50Hz @ 0.50 PF30V to 480V0.1A to 20A	1.50 W to 4.80 kW	0.37% to 0.39%	Using Mulifunction calibrator Fluke 5522A By direct method
30	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Active Power -50Hz @ 0.80 PF30V to 480V0.1A to 20A	2.4 W to 7.680 kW	0.17% to 0.234%	Using Mulifunction calibrator Fluke 5522A By direct method

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31	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Active Power -50Hz UPF30V to 480V0.001A to 0.1A	0.03 W to 3 W	0.24% to 0.08%	Using Mulifunction calibrator Fluke 5522A By direct method
32	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Active Power -50Hz UPF30V to 480V0.1A to 20A	3 W to 9.60 kW	0.08% to 0.18%	Using Mulifunction calibrator Fluke 5522A By direct method
33	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Capacitance -1kHz	1 µF to 600 µF	0.35%	Using High Capacitance Box By Direct Method
34	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Capacitance -1kHz	1 nF to 10 nF	1.73% to 0.41%	Using Multifuction Calibrator Fluke 5522A by Direct method
35	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Capacitance -1kHz	10 nF to 100 µF	0.40% to 0.65%	Using Mulifunction calibrator Fluke 5522A By direct method
36	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Capacitance -1kHz	100 µF to 1 mF	1.53%% to 1.55%	Using Mulifunction calibrator Fluke 9100 By direct method

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37	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Capacitance -1kHz	100 pF to 1 µF	0.60%	Using Discrete Capacitance Box By Direct Method
38	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (10 Hz to 45 Hz)	100 µA to 3 A	0.24% to 0.21%	Using Mulifunction calibrator Flue 5522A By direct method
39	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (10 Hz to 45 Hz)	30 µA to 100 µA	0.64% to 0.24%	Using Mulifunction calibrator Flue 5522A By direct method
40	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (1kHz to 5 kHz)	1 A to 20 A	0.81% to 3.49%	Using Mulifunction calibrator Flue 5522A By direct method
41	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (1kHz to 5 kHz)	100 mA to 1 A	0.17% to 0.81%	Using Mulifunction calibrator Flue 5522A By direct method
42	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (1kHz to 5 kHz)	30 µA to 100 mA	0.94% to 0.17%	Using Mulifunction calibrator Flue 5522A By direct method

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43	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (45 Hz to 1kHz)	10 A to 20 A	0.09% to 0.16%	Using Mulifunction calibrator Flue 5522A By direct method
44	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (45 Hz to 1kHz)	30 µA to 10 A	0.57% to 0.09%	Using Mulifunction calibrator Flue 5522A By direct method
45	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (50 Hz)	20 A to 1000 A	0.90% to 0.81%	Using Mulifunction calibrator Flue 5522A with current coil By direct method
46	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (5kHz to 10 kHz)	1 A to 3 A	1.15% to 3.46%	Using Mulifunction calibrator Flue 5522A By direct method
47	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (5kHz to 10 kHz)	100 mA to 1 A	0.35% to 1.15%	Using Mulifunction calibrator Flue 5522A By direct method
48	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (5kHz to 10 kHz)	30 µA to 100 mA	1.70% to 0.35%	Using Mulifunction calibrator Flue 5522A By direct method

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49	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current Harmonics	1 @ 5A to 39 @ 5A	0.77% to 2.27%	Using Mulifunction calibrator Fluke 5522A By direct method @5A
50	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Inductance -1kHz	0.1 mH to 5 H	1.16% to 1.27%	Using Discrete Std Inductance Box By Direct method
51	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Power Factor 50 Hz (Lead /Lag)	0.01 PF to 1 PF	0.003PF	Using Mulifunction calibrator Fluke 5522A By direct method 50Hz
52	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Resistance	100 Mohm to 1000 Mohm	0.062% to 1.82%	Using Multifuction Calibrator Fluke 5522A by Direct method
53	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage (10 k Hz to 50 kHz)	3 mV to 329 V	0.39% to 0.046%	Using Mulifunction calibrator Flue 5522A By direct method
54	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage (100kHz to 500kHz)	3 mV to 3 V	2.85% to 0.32%	Using Mulifunction calibrator Flue 5522A By direct method

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55	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage (10Hz to 45Hz)	3 mV to 32 V	0.32% to 0.037%	Using Mulifunction calibrator Flue 5522A By direct method
56	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage (20kHz to 50kHz)	100 mV to 300 V	0.058% to 0.04%	Using Mulifunction calibrator Flue 5522A By direct method
57	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage (20kHz to 50kHz)	3 mV to 100 mV	0.42% to 0.058%	Using Mulifunction calibrator Flue 5522A By direct method
58	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage (45 Hz to 10kHz)	1 mV to 100 mV	0.96% to 0.028%	Using Mulifunction calibrator Flue 5522A By direct method
59	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage (45 Hz to 10kHz)	100 mV to 1000 V	0.028% to 0.037%	Using Mulifunction calibrator Flue 5522A By direct method
60	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage (50 kHz to 100 kHz)	3 mV to 329 V	0.90% to 0.27%	Using Mulifunction calibrator Flue 5522A By direct method

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61	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage Harmonics @ 60 V	1 st order to 39 th order	0.77% to 2.35%	Using Mulifunction calibrator Fluke 5522A By direct method
62	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	0.01 mA to 0.1 mA	0.007% to 0.004%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
63	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	0.1 mA to 100 mA	0.004% to 0.005%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
64	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	1 A to 10 A	0.08% to 0.19%	Using Fluke 8846 6½ DMM with 30A Shunt by Direct/Comparison method
65	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	10 A to 20 A	0.19% to 0.37%	Using Fluke 8846A 6½ DMM with Shunt by Direct/Comparison method
66	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	100 mA to 1 A	0.005% to 0.014%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
67	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	20 A to 200 A	0.36% to 0.75%	Using Fluke 8846 6½ DMM with Shunt by Direct/Comparison method
68	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC High Voltage	1 kV to 10 kV	3.19%	Using HV probe with DMM by comparison Method

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69	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC High Voltage	10 kV to 20 kV	3.19%	Using HV probe with DMM by comparison Method
70	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Voltage	0.1 mV to 1 mV	0.68% to 0.038%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
71	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Voltage	1 V to 1000 V	0.0012% to 0.0014%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
72	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Voltage	1 mV to 1 V	0.038% to 0.0012%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
73	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	Resistance	1 Mohm to 100 Mohm	0.003% to 0.065%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
74	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	Resistance	1 ohm to 10 ohm	0.099% to 0.004%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
75	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	Resistance	10 ohm to 100 kohm	0.0029% to 0.0022%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
76	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	Resistance	10 m ohm to 100 m ohm	1.25% to 0.66%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method

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77	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	Resistance	100 k ohm to 1 M ohm	0.0022% to 0.003%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
78	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	Resistance	100 Mohm to 1 Gohm	0.065% to 0.6%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
79	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	Resistance	100 mohm to 1 ohm	0.66% to 0.035%	Using Agilent 3458A 8 ½ DMM by Direct/Comparison method
80	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Current	1 µA to 10 µA	2.45% to 0.25%	Using Mulifunction calibrator Flue 5522A By direct method
81	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC current	1 A to 10 A	0.028% to 0.064%	Using Mulifunction calibrator Flue 5522A By direct method
82	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC current	10 µA to 100 mA	0.25% to 0.016%	Using Mulifunction calibrator Fluke 5522A By direct method
83	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC current	10 A to 20 A	0.064% to 0.12%	Using Mulifunction calibrator Flue 5522A By direct method
84	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC current	100 mA to 1 A	0.016% to 0.028%	Using Mulifunction calibrator Flue 5522A By direct method
85	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC current	20 A to 1000 A	0.82% to 0.71%	Using Mulifunction calibrator Flue 5522A with Current Coil By Direct Method

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86	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Voltage	0.1 mV to 1 mV	1.5% to 0.24%	Using Mulifunction calibrator Flue 5522A By direct method
87	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Voltage	1 mV to 100 mV	0.24% to 0.0039%	Using Mulifunction calibrator Flue 5522A By direct method
88	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Voltage	10 V to 1000 V	0.0019% to 0.0025%	Using Mulifunction calibrator Flue 5522A By direct method
89	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Voltage	100 mV to 10 V	0.0039% to 0.0018%	Using Mulifunction calibrator Flue 5522A By direct method
90	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance	0.1 Mohm to 10 Mohm	0.82% to 0.58%	Using High stability Decade Megaohm Box Vaiseshika 8400HV by direct Method
91	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance	1 Gohm to 100 Gohm	1.38 % to 2.32 %	Using High stability Decade Megaohm Box 8400 HV by direct Method
92	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance	1 Mohm to 100 Mohm	0.0043% to 0.062%	Using Multifuction Calibrator Fluke 5522A by Direct method
93	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance	1 ohm to 10 kohm	0.061%	Using High Precision Decade Resistsnce Box Vaiseshika 7400 by direct Method
94	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance	10 Mohm to 1 Gohm	0.58% to 1.38%	Using High stability Decade Megaohm Box Vaiseshika 8400 by direct Method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
95	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance	100 Gohm to 1 Tohm	2.32% to 3.50%	Using High stability Decade Megaohm Box 8400 HV by direct Method
96	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance	100 mohm to 1 Mohm	1.52 % to 0.0043 %	Using Multifuction Calibrator Fluke 5522A by Direct method
97	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance (4wire)	10 mohm to 100 mohm	5.77% to 1.52%	Using Multifuction calibrator Fluke 5522A By Direct Method
98	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance (Micro-ohm Meters)	1 mohm @ 31.6A	0.12 %	Using Micro ohm calibrator Vaiseshika 9409-CAL by direct Method
99	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance (Micro-ohm Meters)	10 mohm @10A	0.06 %	Using Micro ohm calibrator Vaiseshika 9409-CAL by direct Method
100	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance (Micro-ohm Meters)	10µohm to 100µohm @ 200 A	4.33 % to 1.07 %	Using Micro ohm calibrator Vaiseshika 9409-CAL by direct Method
101	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance (Micro-ohm Meters)	100 mohm @3.16A	0.03 %	Using Micro ohm calibrator Vaiseshika 9409-CAL by direct Method
102	ELECTRO-TECHNICAL- ELECTRICAL EQUIPMENT (Measure)	CT Burden (1A & 5A)	1 VA to 50 VA	1.80% to 1.84%	Using Eltel Bridge(AITTS-98) by Direct Method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
103	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Measure)	CT Phase Error 50Hz	3000A/1A & 5 A to 6000A/1A & 5 A	2.25min	Using Std CT 0.05 & Eltel Bridge(AITTS-98) byComparison Method
104	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Measure)	CT Phase Error 50Hz	5A/1 & 5 A to 3200A/1 & 5 A	0.85min	Using Std CT 0.005 & Eltel Bridge(AITTS-98) byComparison Method
105	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Measure)	CT Ratio Error 50Hz	3000A /1A & 5 A to 6000A /1A & 5A A	0.084%	Using Std CT 0.05 & Eltel Bridge(AITTS-98) byComparison Method
106	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Measure)	CT Ratio Error 50Hz	5A /1 & 5A to 3200A /1 & 5A	0.015%	Using Std CT 0.005 & Eltel Bridge(AITTS-98) byComparison Method
107	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Measure)	PT Burden (63.5V & 110V)	2.5 VA to 200 VA	1.25%	Using Eltel Bridge(AITTS-98) by Direct Method
108	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Bandwidth 3dB	50 kHz to 1 GHz	2.43% to 6.03%	Using Multifunction Calibrator Fluke 5522A Direct Method
109	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope DC Amplitude 1Mohm output	8 mV to 100 V	0.64% to 0.060%	Using Multifunction Calibrator Fluke 5522A Direct Method

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110	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Time Base	1 nS to 5 S	0.076% to 0.58%	Using Multifunction Calibrator Fluke 5522A Direct Method
111	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope AC Amplitude 1 Mohm output @1kHz (Vpp)	8 mV to 100 V	0.98% to 0.12%	Using Multifunction Calibrator Fluke 5522A Direct Method
112	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator/Record/Controller) RTD PT-100	-200 ºC to 850 ºC	0.013ºC to 0.026°C	Using Agilent 3458A 8 ½ DMM using ITS-90 scale for ohm to °C conversion Method by Direct Method
113	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator/Record/Controller) B - Type	600 °C to 1820 °C	0.21°C to 0.38°C	Using Agilent 3458A 8 ½ DMM using ITS-90 scale for mV to °C conversion Method by Direct Method
114	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator/Record/Controller) C - Type	10 °C to 1820 °C	0.03°C to 0.13°C	Using Agilent 3458A 8 ½ DMM using ITS-90 scale for mV to °C conversion Method by Direct Method
115	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator/Record/Controller) E Type	-250 °C to 1000 °C	0.124°C to 0.078°C	Using Agilent 3458A 8 ½ DMM using ITS-90 scale for mV to °C conversion Method by Direct Metho
116	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator/Record/Controller) J Type	-210 °C to 1200 °C	0.05°C to 0.10°C	Using Agilent 3458A 8 ½ DMM using ITS-90 scale for mV to °C conversion Method by Direct Metho

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
117	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator/Record/Controller) K Type	-200 °C to 1372 °C	0.063°C to 0.15°C	Using Agilent 3458A 8 ½ DMM using ITS-90 scale for mV to °C conversion Method by Direct Method
118	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator/Record/Controller) L - Type	-200 °C to 900 °C	0.02°C to 0.03°C	Using Agilent 3458A 8 ½ DMM using ITS-90 scale for mV to °C conversion Method by Direct Method
119	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator/Record/Controller) N Type	-200 °C to 1300 °C	0.089°C to 0.13°C	Using Agilent 3458A 8 ½ DMM using ITS-90 scale for mV to °C conversion Method by Direct Metho
120	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator/Record/Controller) R - Type	0 °C to 1767 °C	0.12°C to 0.36°C	Using Agilent 3458A 8 ½ DMM using ITS-90 scale for mV to °C conversion Method by Direct Method
121	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator/Record/Controller) S - Type	0 °C to 1767 °C	0.12°C to 0.42°C	Using Agilent 3458A 8 ½ DMM using ITS-90 scale for mV to °C conversion Method by Direct Metho
122	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator/Record/Controller) T- Type	-250 °C to 400 °C	0.16°C to 0.12°C	Using Agilent 3458A 8 ½ DMM using ITS-90 scale for mV to °C conversion Method by Direct Metho

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
123	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator/Record/Controller) U - Type	-200 °C to 600 °C	0.02°C to 0.06°C	Using Agilent 3458A 8 ½ DMM using ITS-90 scale for mV to °C conversion Method by Direct Method
124	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	B Type	600 °C to 1820 °C	0.21°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method
125	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	C Type	0 °C to 2316 °C	0.07°C to 0.09°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method
126	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	E Type	-250 °C to 1000 °C	0.33°C to 0.017°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method
127	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	J Type	-210 °C to 1200 °C	0.10°C to 0.09°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method
128	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	K -Type	-200 °C to 1372 °C	0.13°C to 0.09°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
129	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	L Type	-200 °C to 900 °C	0.06°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method
130	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	N Type	-200 °C to 1300 °C	0.14°C to 0.09°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method
131	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	R Type	0 °C to 1767 °C	0.31°C to 0.15°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method
132	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	RTD (Pt 100)(2 /4 wire)	-200 °C to 800 °C	0.06°C to 0.27°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for ohm to °C conversion Method
133	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	S Type	0 °C to 1767 °C	0.30°C to 0.17°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method
134	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	T Type	-250 °C to 400 °C	0.22°C to 0.07°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
135	ELECTRO-TECHNICAL- TIME & FREQUENCY (Measure)	Frequency	1 Hz to 1 GHz	0.010% to 0.006%	Using High Resolution counter by Direct method
136	ELECTRO-TECHNICAL- TIME & FREQUENCY (Measure)	Time	30 min to 24 Hrs	2.32Sec to 6Sec	Using digital Stop Watch By conparison Method
137	ELECTRO-TECHNICAL- TIME & FREQUENCY (Measure)	Time	6 sec to 30 min	0.20S to 2.32S	Using Digital Stop Watch By comparison Method
138	ELECTRO-TECHNICAL- TIME & FREQUENCY (Source)	Frequency	1 Hz to 10 Hz	0.0059% to 0.0008%	Using Multifuction Calibrator Fluke 5522A by Direct method
139	ELECTRO-TECHNICAL- TIME & FREQUENCY (Source)	Frequency	10 Hz to 1 MHz	0.0007% to 0.003%	Using Mulifunction calibrator Fluke 5522A By direct method
140	ELECTRO-TECHNICAL- TIME & FREQUENCY (Source)	Frequency	100 kHz to 1 GHz	0.007% to 0.0003 %	Using Signal generator HP By Direct method
141	ELECTRO-TECHNICAL- TIME & FREQUENCY (Source)	Time & Period	2 nS to 5 S	1.17% to 0.001%	Using Mulifunction calibrator Flue 5522A By direct method
142	MECHANICAL-ACCELERATION AND SPEED	RPM Indicator / Centrifuge	100 to 5000 rpm	1 rpm to 3.5rpm	Using Digital Tachometer By comparison Method
143	MECHANICAL-ACCELERATION AND SPEED	RPM Indicator / Centrifuge	5000 to 10000 RPM	3.5 rpm to 33.0rpm	Using Digital Tachometer By comparison Method

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144	MECHANICAL-ACCELERATION AND SPEED	Tachometer , Calibrator (Non contact Type)	100 to 1000 rpm	0.2rpm to 1.9rpm	Using Digital Tachometer & RPM Calibrator By comparison Method
145	MECHANICAL-ACCELERATION AND SPEED	Tachometer , Calibrator (Non contact Type)	1000 rpm to 10000 rpm	1.9rpm to 14.8rpm	Using Digital Tachometer & RPM Calibrator By comparison Method
146	MECHANICAL-ACCELERATION AND SPEED	Tachometer , Calibrator (Non contact Type)	10000 rpm to 50000 rpm	14.74 rpm to 32.72 rpm	Using Digital Tachometer & RPM Calibrator By comparison Method
147	MECHANICAL-ACCELERATION AND SPEED	Tachometer , Calibrator (Non contact Type)	50000 to 100000 rpm	33rpm to 61.0rpm	Using Digital Tachometer & RPM Calibrator By comparison Method
148	MECHANICAL-ACCELERATION AND SPEED	Tachometer , Calibrator (contact Type)	100 rpm to 1000 rpm	1.0rpm to 2.2rpm	Using Digital Tachometer & RPM Calibrator By comparison Method
149	MECHANICAL-ACCELERATION AND SPEED	Tachometer , Calibrator (contact Type)	1000 rpm to 5000 rpm	2.2rpm to 4.0rpm	Using Digital Tachometer & RPM Calibrator By comparison Method
150	MECHANICAL-ACOUSTICS	Sound Level Meter	94 dBA & 114 dBA	2.4dBA	using Sound level Calibrator by comparison
151	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Bevel protractor LC: 5 min	0 ° to 30-45-60-90 °	4 Min	Using Angle set

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152	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Bore gauge with Dial for Transmission Accuracy LC: 1µm	0 to 2 mm	0.9µm	Using ULM
153	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Caliper (Vernier/Dial/Digital)	0 to 1000 mm	19µm	Using Caliper checker
154	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Coating Thickness gauge	0.010 mm to 0.684 mm	12.7µm	Using Master foils
155	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Cylindrical Measuring pins	0.1 mm to 20 mm	0.8µm	Using ULM
156	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Depth Caliper (vernier/Dial/Digital) LC; 10µm	0 to 300 mm	9.4µm	Using Caliper checker ,gauge Block set,Surface Plate
157	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Depth Micrometer LC :10µm	0 to 300 mm	8.4µm	Using Slip Gauge set & Mic Check set

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
158	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial Calibrator Tester LC: 0.001mm	0 to 25 mm	1.4µm	Using LVDT Probe , Slip Gauge block
159	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial Gauge (Lever Type) LC: 1µm	0 to 0.8 mm	0.9µm	Using ULM
160	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial Gauge (plunger Type) LC; 1µm	0 to 25 mm	2.15µm	Using Dial Calibration Tetser
161	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial Gauge (plunger Type) LC; 1µm	0 mm to 10 mm	0.90 µm	Using ULM
162	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial Gauge (plunger Type) LC: 10µm	0 mm to 10 mm	5.80 µm	Using ULM
163	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial thickness Gauge LC: 10 µm	0 to 10 mm	7.0µm	Using slip gauge set

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164	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial thickness Gauge LC; 1µm	0 to 1 mm	1.4µm	using slip gauge set
165	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External micrometer (Inclusive of Point,Blade,Ball,Flange ,Groove, Disc, V-anvil type) LC: 1µm	0 to 100 mm	2.2µm	Using mic Check set & slip Gauge set
166	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External Micrometer (Inclusive of Point,Blade,Ball,Flange ,Groove, Disc, V-anvil type) LC; 10µm	> 100 to 500 mm	9.9µm	Using Mic Check Set & long Slip set
167	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Feeler gauge	0.05 to 1 mm	1.3µm	Using Electronic Comparator
168	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Height gauge (Vernier/Dial/Digital) LC; 10µm	0 to 1000 mm	19µm	Using caliper Checker, Surface Plate
169	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Measuring Scale 0.5/1 mm	0 to 1000 mm	119µm	Using Tape & scale Measuring Machine

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170	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Measuring Tape 0.5/1 mm	0 to 50000 mm	119sqrt(L/1000) µm L is in Mtr	Using Tape & scale Measuring machine
171	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Micrometer Setting Standard/ setting Rods	100 to 300 mm	5.0µm	Using Slip gauge set & LVDT Probe
172	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Micrometer Setting Standard/ setting Rods	25 to 100 mm	1.9µm	Using Slip gauge set & LVDT Probe
173	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Micrometer Setting Standard/ setting Rods	300 to 475 mm	7.8µm	Using Slip gauge set & LVDT Probe
174	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain Plug Gauge	100 to 300 mm	4.6µm	Using ULM
175	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain Plug Gauge	3 to 100 mm	1.7µm	Using ULM

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176	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain Ring Gauge	100 to 300 mm	3.4µm	Using ULM
177	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain Ring Gauge	3 to 100 mm	2.7µm	Using ULM
178	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Snap Gauge	3 to 50 mm	2.6µm	Using ULM
179	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Snap Gauge	50 to 160 mm	3.5µm	Using ULM
180	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Standard Foils	0 to 1.2 mm	1.3µm	Using LVDT Probe
181	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Measuring Wires	0.17 mm to 6.35 mm	1.3µm	Using Slip Gauge Set & Electronic Probe with DRO

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182	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Plug Gauge (Effective Diameter)	100 mm to 300 mm	4.7µm	Using ULM , Setting Disc , Standard Wires
183	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Plug Gauge (Effective Diameter)	3 mm to 100 mm	1.3µm	Using ULM , Setting Disc , Standard Wires
184	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Ring Gauge (Effective Diameter)	100 mm to 200 mm	3.4µm	Using ULM , Setting Ring
185	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Ring Gauge (Effective Diameter)	200 mm to 300 mm	3.4µm	Using ULM , Setting Ring
186	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Ring Gauge (Effective Diameter)	3 mm to 100 mm	2.7µm	Using ULM , Setting Ring
187	MECHANICAL-PRESSURE INDICATING DEVICES	Absolute Pressure Gauge,/Digital / Analog / Pressure Gauge, Pressure Transmitter, Pressure Switch, Barometer	0.1 to 35(Abs) bar	0.022bar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
188	MECHANICAL-PRESSURE INDICATING DEVICES	Absolute Pressure Gauge,/Digital / Analog / Pressure Gauge,Pressure Transmitter, Pressure Switch, Barometer	0.1 to 7 (Abs) bar	0.008bar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1
189	MECHANICAL-PRESSURE INDICATING DEVICES	Absolute Pressure Gauge,/Digital / Analog / Pressure Gauge,Vacuum Gauge , Vacuum Indicator, Vacuum Transmitter, Pressure Transmitter, Pressure Switch, Barometer	60 to 110 (Abs) kPa	0.266kPa	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1
190	MECHANICAL-PRESSURE INDICATING DEVICES	Digital / Analog Pressure Gauge, Indicator ,Manometer, Magnehelic Gauge,Differential Pressure Transmitter,Pressure Switches	0 to 200(g) mbar	0.27mbar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1
191	MECHANICAL-PRESSURE INDICATING DEVICES	Digital / Analog Pressure Gauge, Indicator ,Manometer, Magnehelic Gauge,Differential Pressure Transmitter,Pressure Switches	-12.5 mbar to 12.5(g) mbar	0.037mbar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
192	MECHANICAL-PRESSURE INDICATING DEVICES	Digital / Analog Pressure Gauge, Indicator ,Manometer, Magnehelic Gauge,Differential Pressure Transmitter,Pressure Switches	-2.5 mbar to 2.5 (g) mbar	0.014mbar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1
193	MECHANICAL-PRESSURE INDICATING DEVICES	Digital / Analog Pressure Gauge, Indicator ,Manometer, Magnehelic Gauge,Differential Pressure Transmitter,Pressure Switches	-25 to 25(g) mbar	0.029mbar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1
194	MECHANICAL-PRESSURE INDICATING DEVICES	Digital / Analog / Vacuum Gauge, Indicator, Vacuum Transmitter	-0.93 bar to 0 bar	0.007bar	Using Digital Vacuum gauge with Pneumatic Pump DKD-R-6-2
195	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Hydraulic Digital / Analog Pressure Gauge, Indicator, Pressure Transmitter,Pressure Switches	0 to 70 bar	0.020bar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1
196	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure HydraulicDigital / Analog Pressure Gauge, Indicator, Pressure Transmitter,Pressure Switches	0 to 350 bar	0.15bar	Digital Pressure Indicator with Hydraulic Pump DKD -R-6-1

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
197	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure HydraulicDigital / Analog Pressure Gauge, Indicator, Pressure Transmitter,Pressure Switches	0 bar to 700 bar	0.19bar	Digital Pressure Indicator with Hydraulic Pump DKD -R-6-1
198	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Pneumatic Digital / Analog Pressure Gauge, Indicator, Pressure Transmitter,Pressure Switches	0 to 2 bar	0.001 bar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1
199	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Pneumatic Digital / Analog Pressure Gauge, Indicator, Pressure Transmitter,Pressure Switches	0 to 20 bar	0.008bar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1
200	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Pneumatic Digital / Analog Pressure Gauge, Indicator, Pressure Transmitter,Pressure Switches	0 bar to 35 bar	0.011bar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1
201	MECHANICAL-VOLUME	Measuring Cylinder/Volumetric Flask/Graduated Jar/Can, etc.	1000 ml	0.68ml	Using standard weights of accuracy class F1 , Precision Balance (d=0.001g,d=0.01g) & distilled water of known Density by Gravimetric method based on ISO 4787

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
202	MECHANICAL-VOLUME	Measuring Cylinder/Volumetric Flask/Graduated Jar/Can, etc.	2000 ml	0.68ml	Using standard weights of accuracy class F1 , Precision Balance (d=0.001g,d=0.01g) & distilled water of known Density by Gravimetric method based on ISO 4787
203	MECHANICAL-VOLUME	Measuring Cylinder/Volumetric Flask/Graduated Jar/Can, etc.	500 ml	0.20ml	Using standard weights of accuracy class F1 , Precision Balance (d=1 mg) & distilled water of known Density by Gravimetric method based on ISO 4787
204	MECHANICAL-VOLUME	Micro-Pipette	1 µl to 50 µl	0.52µl	Using Precision Balance (d=0.001mg capacity 5g) & distilled water of known Density by Gravimetric method based on ISO 8655
205	MECHANICAL-VOLUME	Micro-Pipette	50 µl to 10000 µl	5µl	Using Precision Balance (d=0.001mg capacity 5g, d=0.01mg capacity 210g) & distilled water of known Density by Gravimetric method based on ISO 8655

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
206	MECHANICAL-VOLUME	Pipette/ Burette, Measuring Cylinder /Volumetric Flask/Graduated Jar/Can,etc	1 ml	0.33µl	Using standard weights of accuracy class E1 , Precision Balance (d=0.001mg,d=0.01mg d=0.1mg) & distilled water of known Density by Gravimetric method based on ISO 4787
207	MECHANICAL-VOLUME	Pipette/ Burette, Measuring Cylinder /Volumetric Flask/Graduated Jar/Can,etc	10 ml	0.57µl	Using standard weights of accuracy class E1 , Precision Balance (d=0.001mg,d=0.01mg d=0.1mg) & distilled water of known Density by Gravimetric method based on ISO 4787
208	MECHANICAL-VOLUME	Pipette/ Burette, Measuring Cylinder /Volumetric Flask/Graduated Jar/Can,etc	100 ml	0.20ml	Using standard weights of accuracy class E1 , Precision Balance (d=1mg) & distilled water of known Density by Gravimetric method based on ISO 4787
209	MECHANICAL-VOLUME	Pipette/ Burette, Measuring Cylinder /Volumetric Flask/Graduated Jar/Can,etc	2 ml	0.33µl	Using standard weights of accuracy class E1 , Precision Balance (d=0.001mg,d=0.01mg d=0.1mg) & distilled water of known Density by Gravimetric method based on ISO 4787

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
210	MECHANICAL-VOLUME	Pipette/ Burette, Measuring Cylinder /Volumetric Flask/Graduated Jar/Can,etc	20 ml	1.1µl	Using standard weights of accuracy class E1 , Precision Balance (d=0.001mg,d=0.01mg d=0.1mg) & distilled water of known Density by Gravimetric method based on ISO 4787
211	MECHANICAL-VOLUME	Pipette/ Burette, Measuring Cylinder /Volumetric Flask/Graduated Jar/Can,etc	200 ml	0.2ml	Using standard weights of accuracy class E1 , Precision Balance (d=1mg) & distilled water of known Density by Gravimetric method based on ISO 4787
212	MECHANICAL-VOLUME	Pipette/ Burette, Measuring Cylinder /Volumetric Flask/Graduated Jar/Can,etc	5 ml	0.33µl	Using standard weights of accuracy class E1 , Precision Balance (d=0.001mg,d=0.01mg d=0.1mg) & distilled water of known Density by Gravimetric method based on ISO 4787
213	MECHANICAL-VOLUME	Pipette/ Burette, Measuring Cylinder /Volumetric Flask/Graduated Jar/Can,etc	50 ml	0.048ml	Using standard weights of accuracy class E1 , Precision Balance (d=1mg) & distilled water of known Density by Gravimetric method based on ISO 4787

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
214	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Machine Readability d = 1 mg	0 kg to 20 kg	10mg	Using weights of accuracy class E1 & E 2 procedure based on OIML R-76 (2006)
215	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Machine Readability d =0.1 mg	Upto 2300 g	0.78mg	Using weights of accuracy class E1 & E 2 procedure based on OIML R-76 (2006)
216	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Machine Readability d =0.1g	0 kg to 35 kg	0.26g	Using weights of accuracy class E 2 procedure based on OIML R-76 (2006)
217	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Machine Readability d=0.001mg	0 g to 5 g	0.005mg	Using weights of accuracy class E1 procedure based on OIML R-76 (2006)
218	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Machine Readability d=0.01mg	Upto 200 g	0.06mg	Using weights of accuracy class E1 procedure based on OIML R-76 (2006)
219	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	1 g	0.0032mg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
220	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	1 kg	0.31mg	Using weight of accuracy class E2 for F1 weights & coarser with precision balance 2.3kg/0.0001g By substitution method ABBA weighing cycle procedure base on OIML R-111-2004
221	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	10 g	0.011mg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004
222	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	10 kg	3.5mg	Using weight of accuracy class E2 for F1 weights & coarser with precision balance 23 kg/0.001g By substitution method ABBA weighing cycle procedure base on OIML R-111-2004

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
223	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	10 mg	0.002mg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004
224	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	100 g	0.022mg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
225	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	100 mg	0.002mg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004
226	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	2 g	0.004mg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004
227	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	2 kg	0.81mg	Using weight of accuracy class E2 for F1 weights & coarser with precision balance 2.3kg/0.0001g By substitution method ABBA weighing cycle procedure base on OIML R-111-2004

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228	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	20 g	0.015mg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004
229	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	20 kg	8mg	Using weight of accuracy class E2 for F1 weights & coarser with precision balance 23 kg/0.001g By substitution method ABBA weighing cycle procedure base on OIML R-111-2004
230	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	20 mg	0.002mgmg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
231	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	200 g	0.034mg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004
232	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	200 mg	0.002mg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004

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233	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	5 g	0.005mg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004
234	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	5 kg	2.3mg	Using weight of accuracy class E2 for F1 weights & coarser with precision balance 23 kg/0.001g By substitution method ABBA weighing cycle procedure base on OIML R-111-2004
235	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	50 g	0.022mg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
236	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	50 mg	0.002mg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004
237	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	500 g	0.14mg	Using weight of accuracy class E1 for E2 weights & coarser with precision balance 2.3kg/0.0001g by substitution method ABBA weighing cycle procedure base on OIML R-111-2004
238	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	500 mg	0.003mg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004

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239	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	1 mg	0.002mg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004
240	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	2 mg	0.002mg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
241	MECHANICAL-WEIGHTS	Weights (Conventional Mass)	5 mg	0.002mg	Using weight of accuracy class E1, 1mg to 200g for calibration of E2 class weights & coarser with precision balance 5g/0.001mg & capacity 210g/0.01mg By substitution method ABBA weighing cycle procedure base on OIML R-111-2004
242	THERMAL- SPECIFIC HEAT & HUMIDITY	Humidity calibrator,Generator,environmental chamber at single point	10 to 90%RH @25°C	0.48%RH	Using RH & Temp. Probe with Indicator By Comparison Method
243	THERMAL- SPECIFIC HEAT & HUMIDITY	Humidity sensor with indicator, Transmitter with sensor, Hygrometers, Humidity data loggers with sensors	10% to 90% @25°C	0.52%RH	Using RH Generator and RH & Temp. Probe with Indicator By Comparison Method
244	THERMAL- SPECIFIC HEAT & HUMIDITY	Temperature Humidity sensor with indicator, Transmitter with sensor, ThermoHygrometers, Temperature Humidity data loggers with sensors	10 °C to 50°C @50%RH	0.35°C	Using RH & Temp. Probe with Indicator By Comparison Method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
245	THERMAL-TEMPERATURE	Data Logger, Temp.indicator with sensor, Hygrometer, Temp Transmitter with indicator	-25 °C to 28 °C	0.82°C	PRT with Precision Scanner & Negative temp chamber By Comparison Method
246	THERMAL-TEMPERATURE	Glass,Dial, DigitalThermometer	100 °C to 250 °C	0.08°C	PRT with Precision Scanner & Liquid Bath By Comparison Method
247	THERMAL-TEMPERATURE	Glass,Dial, DigitalThermometer	-80 °C to 100 °C	0.08°C	PRT with Precision Scanner & Liquid Bath By Comparison Method
248	THERMAL-TEMPERATURE	Non Contact type Infrared Thermometers , Pyrometers	0 °C to 100 °C	2.07°C	Using Std IR sensor with Indicator By comparison Method
249	THERMAL-TEMPERATURE	RTD,/PRT/TC Sensor with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor, Recorder with sensor ,Thermistor with temp Indicator.	(-)80 °C to 0 °C	0.046°C	PRT with Precision Scanner & Liquid Bath By Comparison Method
250	THERMAL-TEMPERATURE	RTD,/PRT/TC Sensor with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor, Recorder with sensor ,Thermistor with temp Indicator.	0 °C to 100 °C	0.049°C	Using PRT with Precision Scanner & Dry Bath By Comparison Method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
251	THERMAL-TEMPERATURE	RTD,/PRT/TC Sensor with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor, Recorder with sensor ,Thermistor with temp Indicator.	0 °C to 140 °C	0.07°C	PRT with Precision Scanner & Dry Bath By Comparison Method
252	THERMAL-TEMPERATURE	RTD,/PRT/TC Sensor with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor, Recorder with sensor ,Thermistor with temp Indicator.	100 °C to 200 °C	0.062°C	PRT with Precision Scanner & Liquid Bath By Comparison Method
253	THERMAL-TEMPERATURE	RTD,/PRT/TC Sensor with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor, Recorder with sensor ,Thermistor with temp Indicator.	140 °C to 660 °C	0.24°C	Using PRT with Precision Scanner & Dry Bath By Comparison Method
254	THERMAL-TEMPERATURE	RTD,/PRT/TC Sensor with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor, Recorder with sensor ,Thermistor with temp Indicator.	200 °C to 250 °C	0.07°C	PRT with Precision Scanner & Liquid Bath By Comparison Method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
255	THERMAL-TEMPERATURE	RTD,/PRT/TC Sensor with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor, Recorder with sensor ,Thermistor with temp Indicator.	-95 °C to 0 °C	0.07°C	Using PRT with Precision Scanner & Dry Bath By Comparison Method
256	THERMAL-TEMPERATURE	Temp.Indicator with sensor of Deep Freezer,Oven,Chamber ,Incubators,Oil Bath,Dry well cooling Cabinet,	-95 °C to 0 °C	0.017°C to 0.042°C	Using PRT with Precision Scanner single position calibration
257	THERMAL-TEMPERATURE	Temp.Indicator with sensor of Deep Freezer,Oven,Chamber ,Incubators,Oil Bath,Dry well cooling Cabinet, Muffle Furnace .	0 °C to 660 °C	0.042°C to 0.052°C	Using PRT with Precision Scanner single position calibration
258	THERMAL-TEMPERATURE	Temp.Indicator with sensor of Deep Freezer,Oven,Chamber ,Incubators,Oil Bath,Dry well cooling Cabinet, Muffle Furnace .	1100 °C to 1200 °C	2.583°C	Using R-Type Thermocouple with Precision Scanner single position calibration

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
259	THERMAL-TEMPERATURE	Temp.Indicator with sensor of Deep Freezer,Oven,Chamber ,Incubators,Oil Bath,Dry well cooling Cabinet, Muffle Furnace .	600 °C to 800 °C	1.58°C	Using R-Type Thermocouple with Precision Scanner single position calibration
260	THERMAL-TEMPERATURE	Temp.Indicator with sensor of Deep Freezer,Oven,Chamber ,Incubators,Oil Bath,Dry well cooling Cabinet, Muffle Furnace .	800 °C to 1100 °C	1.8°C	Using R-Type Thermocouple with Precision Scanner single position calibration
261	THERMAL-TEMPERATURE	Thermocouple with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor	1100 °C to 1200 °C	1.892°C to 2.583°C	Using R-Type Thermocouple with Precision scanner & furnace By Comparison Method
262	THERMAL-TEMPERATURE	Thermocouple with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor	800 °C to 1100 °C	1.93°C	Using R-Type Thermocouple with Precision scanner & furnace By Comparison Method
263	THERMAL-TEMPERATURE	Thermocouple with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor ,Thermistor with temp Indicator.	600 °C to 800 °C	1.77°C	Using R-Type Thermocouple with Precision scanner & furnace By Comparison Method

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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 ACTIVE ENERGY 3PHASE /4 WIRE	240V/1A to 240V/5A @ UPF , 50 Hz.	0.94%	using Power Quality & Energy Analyser by comparison method
2	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC ACTIVE POWER	2.4 kW to 230 kW Voltage: 120 to 230VAC, Current:100A to 1000A AC andUPF , 0.2, 0.5, 0.8 Lead , Lag	1.20%	Using Power Quality & Energy Analyser By comparison Method
3	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Current 50 Hz to 5kHz	1 A to 10 A	0.15 % to 0.30 %	Using Fluke 8846A 6½ DMM with shunt by Direct/Comparison method
4	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Current - 50 Hz to 1 kHz	10 A to 20 A	0.27% to 0.65%	Using Fluke 8846A 6½ DMM with 30A Shunt Direct method
5	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Current - 50 Hz to 1 kHz	100 µA to 10 A	0.09% to 0.19%	Using Fluke 8846A 6½ DMM Direct method
6	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Current - 50 Hz to 1 kHz	30 µA to 100 µA	0.62% to 0.16%	Using Fluke 8846A 6½ DMM Direct method

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Site Facility					
7	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC High Current - 50 Hz	20 A to 6000 A	0.35%%	Using Std CT with Fluke 8846A 6½ DMM by comparison Method
8	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC High Voltage 50Hz	1 kV to 10 kV	5.78%	Using HV probe with DMM by comparison Method
9	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC High Voltage 50Hz	10 kV to 100 kV	3.57%	Using HV Divider with DMM by comparison Method
10	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage 50Hz to 1KHz	0.1 mV to 1 mV	4.75% to 0.42%	Using Fluke 8846A 6½ DMM Direct method
11	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage 50Hz to 1KHz	1 mV to 10 mV	0.42% to 0.53%	Using Fluke 8846A 6½ DMM Direct method
12	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage 50Hz to 1KHz	10 mV to 10 V	0.54% to 0.12%	Using Fluke 8846A 6½ DMM Direct method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
Site Facility					
13	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage 50Hz to 1KHz	10 V to 1000 V	0.12% to 0.10%	Using Fluke 8846A 6½ DMM Direct method
14	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC Voltage @ 1kHz to 50 kHz	50 mV to 100 V	0.27% to 0.33%	Using Fluke 8846A 6½ DMM Direct method
15	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Capacitance 100 Hz	100 µF to 10 mF	0.13%	Using RCL meter Fluke PM6304 by direct method
16	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Capacitance 1kHz	100 pF to 100 µF	0.23% to 0.12%	Using RCL meter Fluke PM6304 by direct method
17	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Impulse Voltage (-ve & +ve Peak)	1.2 V to 100 V and 1.2µsec to 100µsec	2.80%	Using RF HV probe with Oscilloscope by comparison Method
18	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Impulse Voltage (-ve & +ve Peak)	100 V to 10 kV	2.80%	Using RF HV probe with Oscilloscope by comparison Method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
Site Facility					
19	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Inductance 1kHz	100 µH to 10 H	0.38% to 0.14%	Using RLC Fluke PM6304 meter by Direct /comparison Method
20	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Power factor	0.01 PF to 1 PF	0.001PF to 0.02PF	Using oscilloscope by direct method
21	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	POWER FACTOR	UPF to 0.20 PF	0.035PF	Using Power Quality & Energy Analyser By comparison Method
22	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Resistance AC	0.1 ohm to 100 kohm	0.12% to 0.15%	Using Fluke PM 6304 RCL meter by comparison Method
23	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	Transformer Turn Ratio meter	0.8 ratio to 2200 ratio	0.21% to 0.25%	Using Transformer Turn Ratio Calibrator
24	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Active Power -50Hz @ 0.20 PF30V to 480V0.1A to 20A	600 mW to 1.920 kW	1.03% to 1.04%	Using Mulifunction calibrator Fluke 5522A By direct method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
Site Facility					
25	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Active Power -50Hz @ 0.50 PF30V to 480V0.1A to 20A	1.50 W to 4.80 kW	0.37% to 0.39%	Using Mulifunction calibrator Fluke 5522A By direct method
26	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Active Power -50Hz @ 0.80 PF30V to 480V0.1A to 20A	2.4 W to 7.680 kW	0.17% to 0.234%	Using Mulifunction calibrator Fluke 5522A By direct method
27	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Active Power -50Hz UPF30V to 480V0.001A to 0.1A	0.03 W to 3 W	0.24% to 0.08%	Using Mulifunction calibrator Fluke 5522A By direct method
28	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC Active Power -50Hz UPF30V to 480V0.1A to 20A	3 W to 9.60 kW	0.08% to 0.18%	Using Mulifunction calibrator Fluke 5522A By direct method
29	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Capacitance -1kHz	1 µF to 600 µF	0.35%	Using High Capacitance Box By Direct Method
30	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Capacitance -1kHz	1 nF to 10 nF	1.73% to 0.41%	Using Multifuction Calibrator Fluke 5522A by Direct method

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Site Facility					
31	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Capacitance -1kHz	10 nF to 100 µF	0.40% to 0.65%	Using Mulifunction calibrator Fluke 5522A By direct method
32	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Capacitance -1kHz	100 µF to 1 mF	1.53%% to 1.55%	Using Mulifunction calibrator Fluke 9100 By direct method
33	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Capacitance -1kHz	100 pF to 1 µF	0.60%	Using Discrete Capacitance Box By Direct Method
34	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (10 Hz to 45 Hz)	100 µA to 3 A	0.24% to 0.21%	Using Mulifunction calibrator Flue 5522A By direct method
35	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (10 Hz to 45 Hz)	30 µA to 100 µA	0.64% to 0.24%	Using Mulifunction calibrator Flue 5522A By direct method
36	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (1kHz to 5 kHz)	1 A to 20 A	0.81% to 3.49%	Using Mulifunction calibrator Flue 5522A By direct method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
Site Facility					
37	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (1kHz to 5 kHz)	100 mA to 1 A	0.17% to 0.81%	Using Mulifunction calibrator Flue 5522A By direct method
38	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (1kHz to 5 kHz)	30 µA to 100 mA	0.94% to 0.17%	Using Mulifunction calibrator Flue 5522A By direct method
39	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (45 Hz to 1kHz)	10 A to 20 A	0.09% to 0.16%	Using Mulifunction calibrator Flue 5522A By direct method
40	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (45 Hz to 1kHz)	30 µA to 10 A	0.57% to 0.09%	Using Mulifunction calibrator Flue 5522A By direct method
41	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (50 Hz)	20 A to 1000 A	0.90% to 0.81%	Using Mulifunction calibrator Flue 5522A with current coil By direct method
42	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (5kHz to 10 kHz)	1 A to 3 A	1.15% to 3.46%	Using Mulifunction calibrator Flue 5522A By direct method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
Site Facility					
43	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (5kHz to 10 kHz)	100 mA to 1 A	0.35% to 1.15%	Using Mulifunction calibrator Flue 5522A By direct method
44	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current (5kHz to 10 kHz)	30 µA to 100 mA	1.70% to 0.35%	Using Mulifunction calibrator Flue 5522A By direct method
45	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Current Harmonics	1 @ 5A to 39 @ 5A	0.77% to 2.27%	Using Mulifunction calibrator Fluke 5522A By direct method @5A
46	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Inductance -1kHz	0.1 mH to 5 H	1.16% to 1.27%	Using Discrete Std Inductance Box By Direct method
47	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Power Factor 50 Hz (Lead /Lag)	0.01 PF to 1 PF	0.003PF	Using Mulifunction calibrator Fluke 5522A By direct method 50Hz
48	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Resistance	100 Mohm to 1000 Mohm	0.062% to 1.82%	Using Multifuction Calibrator Fluke 5522A by Direct method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
Site Facility					
49	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage (10 k Hz to 50 kHz)	3 mV to 329 V	0.39% to 0.046%	Using Mulifunction calibrator Flue 5522A By direct method
50	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage (100kHz to 500kHz)	3 mV to 3 V	2.85% to 0.32%	Using Mulifunction calibrator Flue 5522A By direct method
51	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage (10Hz to 45Hz)	3 mV to 32 V	0.32% to 0.037%	Using Mulifunction calibrator Flue 5522A By direct method
52	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage (20kHz to 50kHz)	100 mV to 300 V	0.058% to 0.04%	Using Mulifunction calibrator Flue 5522A By direct method
53	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage (20kHz to 50kHz)	3 mV to 100 mV	0.42% to 0.058%	Using Mulifunction calibrator Flue 5522A By direct method
54	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage (45 Hz to 10kHz)	1 mV to 100 mV	0.96% to 0.028%	Using Mulifunction calibrator Flue 5522A By direct method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
Site Facility					
55	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage (45 Hz to 10kHz)	100 mV to 1000 V	0.028% to 0.037%	Using Mulifunction calibrator Flue 5522A By direct method
56	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	Voltage (50 kHz to 100 kHz)	3 mV to 329 V	0.90% to 0.27%	Using Mulifunction calibrator Flue 5522A By direct method
57	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	1 A to 10 A	0.08% to 0.19%	Using Fluke 8846A 6½ DMM Direct method
58	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	10 µA to 1 A	0.35% to 0.081%	Using Fluke 8846A 6½ DMM with by Direct method
59	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	10 A to 20 A	0.19% to 0.37%	Using Fluke 8846A 6½ DMM with 30A Shunt Direct method
60	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	20 A to 750 A	0.36% to 0.75%	Using Std shunt with Fluke 8846A 6½ DMM Direct method
61	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC High Voltage	1 kV to 10 kV	3.20%	Using HV probe with DMM by comparison Method
62	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC High Voltage	10 kV to 40 kV	3.20%	Using HV probe with DMM by comparison Method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
Site Facility					
63	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Voltage	0.1 mV to 1 mV	4.25% to 0.43%	Using Fluke 8846A 6½ DMM Direct method
64	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Voltage	1 mV to 1000 V	0.42% to 0.006%	Using Fluke 8846A 6½ DMM by Direct method
65	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	Resistance	0.1 ohm to 1 ohm	3.48% to 0.36%	Using Fluke 8846A 6½ DMM Direct method
66	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	Resistance	1 Mohm to 10 Mohm	0.013% to 0.05%	Using Fluke 8846A 6½ DMM Direct method
67	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	Resistance	1 ohm to 1 Mohm	0.36% to 0.01%	Using Fluke 8846A 6½ DMM Direct method
68	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	Resistance	10 Mohm to 100 Mohm	0.05% to 0.93%	Using Fluke 8846A 6½ DMM Direct method
69	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	Resistance	100 Mohm to 1000 Mohm	0.93% to 2.34%	Using Fluke 8846A 6½ DMM Direct method
70	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Current	1 µA to 10 µA	2.45% to 0.25%	Using Mulifunction calibrator Flue 5522A By direct method
71	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC current	1 A to 10 A	0.028% to 0.064%	Using Mulifunction calibrator Flue 5522A By direct method
72	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC current	10 µA to 100 mA	0.25% to 0.016%	Using Mulifunction calibrator Fluke 5522A By direct method

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Site Facility					
73	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC current	10 A to 20 A	0.064% to 0.12%	Using Mulifunction calibrator Flue 5522A By direct method
74	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC current	100 mA to 1 A	0.016% to 0.028%	Using Mulifunction calibrator Flue 5522A By direct method
75	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC current	20 A to 1000 A	0.82% to 0.71%	Using Mulifunction calibrator Flue 5522A with Current Coil By Direct Method
76	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Voltage	0.1 mV to 1 mV	1.5% to 0.24%	Using Mulifunction calibrator Flue 5522A By direct method
77	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Voltage	1 mV to 100 mV	0.24% to 0.0039%	Using Mulifunction calibrator Flue 5522A By direct method
78	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Voltage	10 V to 1000 V	0.0019% to 0.0025%	Using Mulifunction calibrator Flue 5522A By direct method
79	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	DC Voltage	100 mV to 10 V	0.0039% to 0.0018%	Using Mulifunction calibrator Flue 5522A By direct method
80	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance	0.1 Mohm to 10 Mohm	0.82% to 0.58%	Using High stability Decade Megaohm Box Vaiseshika 8400HV by direct Method
81	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance	1 Gohm to 100 Gohm	1.38 % to 2.32 %	Using High stability Decade Megaohm Box 8400 HV by direct Method

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Site Facility					
82	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance	1 Mohm to 100 Mohm	0.0043% to 0.062%	Using Multifuction Calibrator Fluke 5522A by Direct method
83	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance	1 ohm to 10 kohm	0.061%	Using High Precision Decade Resistsnce Box Vaiseshika 7400 by direct Method
84	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance	10 Mohm to 1 Gohm	0.58% to 1.38%	Using High stability Decade Megaohm Box Vaiseshika 8400 by direct Method
85	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance	100 Gohm to 1 Tohm	2.32% to 3.50%	Using High stability Decade Megaohm Box 8400 HV by direct Method
86	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance	100 mohm to 1 Mohm	1.52 % to 0.0043 %	Using Multifuction Calibrator Fluke 5522A by Direct method
87	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance (4wire)	10 mohm to 100 mohm	5.77% to 1.52%	Using Multifuction calibrator Fluke 5522A By Direct Method
88	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance (Micro-ohm Meters)	1 mohm @ 31.6A	0.12 %	Using Micro ohm calibrator Vaiseshika 9409-CAL by direct Method
89	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance (Micro-ohm Meters)	10 mohm @10A	0.06 %	Using Micro ohm calibrator Vaiseshika 9409-CAL by direct Method

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Site Facility					
90	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance (Micro-ohm Meters)	10µohm to 100µohm @ 200 A	4.33 % to 1.07 %	Using Micro ohm calibrator Vaiseshika 9409-CAL by direct Method
91	ELECTRO-TECHNICAL- DIRECT CURRENT (Source)	Resistance (Micro-ohm Meters)	100 mohm @3.16A	0.03 %	Using Micro ohm calibrator Vaiseshika 9409-CAL by direct Method
92	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Measure)	CT Burden (1A/5A)	1.25 VA to 50 VA	1.32% to 1.38%	Using Eltel Bridge AITTS-98 by Direct Method
93	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Measure)	CT Phase Error	3000A /1A & 5 A to 6000A / 1A & 5 A	2.25min	Using Std CT 0.05 & Eltel Bridge(AITTS-98) byComparison Method
94	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Measure)	CT Phase Error	5A/1A & 5 A to 3200A/1A & 5 A	1.04min	Using Std CT 0.05 & Eltel Bridge AITTS-98 Direct/comparison Method
95	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Measure)	CT Ratio Error	3000A / 1A & 5 A to 6000A / 1A & 5 A	0.084%	Using Std CT 0.05 & Eltel Bridge AITTS-98 Direct/comparison Method

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Site Facility					
96	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Measure)	CT Ratio Error	5A / 1A & 5 A to 3200A / 1A & 5 A	0.059%	Using Std CT 0.05 & Eltel Bridge AITTS-98 Direct/comparison Method
97	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Measure)	PT Burden (63.5 / 110V)	2.5 VA to 200 VA	1.25%	Using Eltel Bridge AITTS-98 by Direct Method
98	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Bandwidth 3dB	50 kHz to 1 GHz	2.43% to 6.03%	Using Multifunction Calibrator Fluke 5522A Direct Method
99	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope DC Amplitude 1Mohm output	8 mV to 100 V	0.64% to 0.060%	Using Multifunction Calibrator Fluke 5522A Direct Method
100	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope Time Base	1 nS to 5 S	0.076% to 0.58%	Using Multifunction Calibrator Fluke 5522A Direct Method
101	ELECTRO-TECHNICAL-ELECTRICAL EQUIPMENT (Source)	Oscilloscope AC Amplitude 1 Mohm output @1kHz (Vpp)	8 mV to 100 V	0.98% to 0.12%	Using Multifunction Calibrator Fluke 5522A Direct Method
102	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Indicator/Recorder/Controller/ScannerB -Type	600 °C to 1820 °C	1.41°C to 0.61°C	Using Fluke 8846A 6½ DMM using e for ITS-90 scale mV to °C conversion Method by Direct Method

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Site Facility					
103	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Indicator/Recorder/Controller/ScannerC -Type	10 °C to 1820 °C	0.30°C to 0.31°C	Using Fluke 8846A 6½ DMM using e for ITS-90 scale mV to °C conversion Method by Direct Method
104	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Indicator/Recorder/Controller/ScannerE -Type	-250 °C to 1000 °C	0.094°C to 0.10°C	Using Fluke 8846A 6½ DMM using e for ITS-90 scale mV to °C conversion Method by Direct Method
105	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Indicator/Recorder/Controller/ScannerJ -Type	-210 °C to 1200 °C	0.096°C to 0.12°C	Using Fluke 8846A 6½ DMM using e for ITS-90 scale mV to °C conversion Method by Direct Method
106	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Indicator/Recorder/Controller/ScannerK-Type	-200 °C to 1372 °C	0.15°C to 0.19°C	Using Fluke 8846A 6½ DMM using e for ITS-90 scale mV to °C conversion Method by Direct Method
107	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Indicator/Recorder/Controller/ScannerL -Type	-200 °C to 900 °C	0.09°C to 0.11°C	Using Fluke 8846A 6½ DMM using e for ITS-90 scale mV to °C conversion Method by Direct Method
108	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Indicator/Recorder/Controller/ScannerN -Type	-200 °C to 1300 °C	0.19°C to 0.17°C	Using Fluke 8846A 6½ DMM using e for ITS-90 scale mV to °C conversion Method by Direct Method

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Site Facility					
109	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Indicator/Recorder/Controller/ScannerR -Type	-40 °C to 1767 °C	0.88°C to 0.42°C	Using Fluke 8846A 6½ DMM using e for ITS-90 scale mV to °C conversion Method by Direct Method
110	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Indicator/Recorder/Controller/ScannerRTD (PT-100)	-200 °C to 850 °C	0.10°C to 0.12°C	Using Fluke 8846A 6½ DMM using e forITS-90 scale ohm to °C conversion Method by Direct Method
111	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Indicator/Recorder/Controller/ScannerS -Type	-40 °C to 1767 °C	0.86°C to 0.46°C	Using Fluke 8846A 6½ DMM using e for ITS-90 scale mV to °C conversion Method by Direct Method
112	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Indicator/Recorder/Controller/ScannerT -Type	-250 °C to 400 °C	0.15°C to 0.10°C	Using Fluke 8846A 6½ DMM using e for ITS-90 scale mV to °C conversion Method by Direct Method
113	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Indicator/Recorder/Controller/ScannerU -Type	-200 °C to 600 °C	0.09°C to 0.11°C	Using Fluke 8846A 6½ DMM using e for ITS-90 scale mV to °C conversion Method by Direct Method
114	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	B Type	600 °C to 1820 °C	0.21°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method

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Site Facility					
115	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	C Type	0 °C to 2316 °C	0.07°C to 0.09°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method
116	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	E Type	-250 °C to 1000 °C	0.33°C to 0.017°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method
117	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	J Type	-210 °C to 1200 °C	0.10°C to 0.09°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method
118	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	K -Type	-200 °C to 1372 °C	0.13°C to 0.09°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method
119	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	L Type	-200 °C to 900 °C	0.06°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method
120	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	N Type	-200 °C to 1300 °C	0.14°C to 0.09°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method

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Site Facility					
121	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	R Type	0 °C to 1767 °C	0.31°C to 0.15°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method
122	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	RTD (Pt 100)(2 /4 wire)	-200 °C to 800 °C	0.06°C to 0.27°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for ohm to °C conversion Method
123	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	S Type	0 °C to 1767 °C	0.30°C to 0.17°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method
124	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	T Type	-250 °C to 400 °C	0.22°C to 0.07°C	Using Multifunction Calibrator Fluke 5522A Direct /using ITS-90 scale for mV to °C conversion Method
125	ELECTRO-TECHNICAL- TIME & FREQUENCY (Measure)	Frequency	1 Hz to 1 GHz	0.0082% to 0.006%	Using High resolution counter By direct method
126	ELECTRO-TECHNICAL- TIME & FREQUENCY (Measure)	Time	30 min to 24 Hrs	2.32S to 6S	Using Digital Stop Watch By comparison Method

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Site Facility					
127	ELECTRO-TECHNICAL- TIME & FREQUENCY (Measure)	Time	6 S to 30 min	0.2S to 2.32S	Using Digital Stop Watch By comparison Method
128	ELECTRO-TECHNICAL- TIME & FREQUENCY (Source)	Frequency	1 Hz to 10 Hz	0.0059% to 0.0008%	Using Multifuction Calibrator Fluke 5522A by Direct method
129	ELECTRO-TECHNICAL- TIME & FREQUENCY (Source)	Frequency	10 Hz to 1 MHz	0.0007% to 0.003%	Using Mulifunction calibrator Fluke 5522A By direct method
130	ELECTRO-TECHNICAL- TIME & FREQUENCY (Source)	Frequency	100 kHz to 1 GHz	0.007% to 0.0003 %	Using Signal generator HP By Direct method
131	ELECTRO-TECHNICAL- TIME & FREQUENCY (Source)	Time & Period	2 nS to 5 S	1.17% to 0.001%	Using Mulifunction calibrator Flue 5522A By direct method
132	MECHANICAL-ACCELERATION AND SPEED	RPM Indicator / Centrifuge	100 to 5000 rpm	1 rpm to 3.5rpm	Using Digital Tachometer By comparison Method
133	MECHANICAL-ACCELERATION AND SPEED	RPM Indicator / Centrifuge	5000 to 10000 RPM	3.5 rpm to 33.0rpm	Using Digital Tachometer By comparison Method
134	MECHANICAL-ACCELERATION AND SPEED	Tachometer , Calibrator (Non contact Type)	100 to 1000 rpm	0.2rpm to 1.9rpm	Using Digital Tachometer & RPM Calibrator By comparison Method
135	MECHANICAL-ACCELERATION AND SPEED	Tachometer , Calibrator (Non contact Type)	1000 rpm to 10000 rpm	1.9rpm to 14.8rpm	Using Digital Tachometer & RPM Calibrator By comparison Method

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
Site Facility					
136	MECHANICAL-ACCELERATION AND SPEED	Tachometer , Calibrator (Non contact Type)	10000 rpm to 50000 rpm	14.74 rpm to 32.72 rpm	Using Digital Tachometer & RPM Calibrator By comparison Method
137	MECHANICAL-ACCELERATION AND SPEED	Tachometer , Calibrator (Non contact Type)	50000 to 100000 rpm	33rpm to 61.0rpm	Using Digital Tachometer & RPM Calibrator By comparison Method
138	MECHANICAL-ACCELERATION AND SPEED	Tachometer , Calibrator (contact Type)	100 rpm to 1000 rpm	1.0rpm to 2.2rpm	Using Digital Tachometer & RPM Calibrator By comparison Method
139	MECHANICAL-ACCELERATION AND SPEED	Tachometer , Calibrator (contact Type)	1000 rpm to 5000 rpm	2.2rpm to 4.0rpm	Using Digital Tachometer & RPM Calibrator By comparison Method
140	MECHANICAL-ACOUSTICS	Sound Level Meter	94 dBA & 114 dBA	2.4dBA	using Sound level Calibrator by comparison
141	MECHANICAL-PRESSURE INDICATING DEVICES	Absolute Pressure Gauge,/Digital / Analog / Pressure Gauge, Pressure Transmitter, Pressure Switch, Barometer	0.1 to 35(Abs) bar	0.022bar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1
142	MECHANICAL-PRESSURE INDICATING DEVICES	Absolute Pressure Gauge,/Digital / Analog / Pressure Gauge,Pressure Transmitter, Pressure Switch, Barometer	0.1 to 7 (Abs) bar	0.008bar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1

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Site Facility					
143	MECHANICAL-PRESSURE INDICATING DEVICES	Absolute Pressure Gauge,/Digital / Analog / Pressure Gauge,Vacuum Gauge , Vacuum Indicator, Vacuum Transmitter, Pressure Transmitter, Pressure Switch, Barometer	60 to 110 (Abs) kPa	0.266kPa	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1
144	MECHANICAL-PRESSURE INDICATING DEVICES	Digital / Analog Pressure Gauge, Indicator ,Manometer, Magnehelic Gauge,Differential Pressure Transmitter,Pressure Switches	0 to 200(g) mbar	0.27mbar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1
145	MECHANICAL-PRESSURE INDICATING DEVICES	Digital / Analog Pressure Gauge, Indicator ,Manometer, Magnehelic Gauge,Differential Pressure Transmitter,Pressure Switches	-12.5 mbar to 12.5(g) mbar	0.037mbar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
Site Facility					
146	MECHANICAL-PRESSURE INDICATING DEVICES	Digital / Analog Pressure Gauge, Indicator ,Manometer, Magnehelic Gauge,Differential Pressure Transmitter,Pressure Switches	-2.5 mbar to 2.5 (g) mbar	0.014mbar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1
147	MECHANICAL-PRESSURE INDICATING DEVICES	Digital / Analog Pressure Gauge, Indicator ,Manometer, Magnehelic Gauge,Differential Pressure Transmitter,Pressure Switches	-25 to 25(g) mbar	0.029mbar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1
148	MECHANICAL-PRESSURE INDICATING DEVICES	Digital / Analog / Vacuum Gauge, Indicator, Vacuum Transmitter	-0.93 bar to 0 bar	0.007bar	Using Digital Vacuum gauge with Pneumatic Pump DKD-R-6-2
149	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Hydraulic Digital / Analog Pressure Gauge, Indicator, Pressure Transmitter,Pressure Switches	0 to 70 bar	0.020bar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1

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Site Facility					
150	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure HydraulicDigital / Analog Pressure Gauge, Indicator, Pressure Transmitter,Pressure Switches	0 to 350 bar	0.15bar	Digital Pressure Indicator with Hydraulic Pump DKD -R-6-1
151	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure HydraulicDigital / Analog Pressure Gauge, Indicator, Pressure Transmitter,Pressure Switches	0 bar to 700 bar	0.19bar	Digital Pressure Indicator with Hydraulic Pump DKD -R-6-1
152	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Pneumatic Digital / Analog Pressure Gauge, Indicator, Pressure Transmitter,Pressure Switches	0 to 2 bar	0.001 bar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1
153	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Pneumatic Digital / Analog Pressure Gauge, Indicator, Pressure Transmitter,Pressure Switches	0 to 20 bar	0.008bar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1
154	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Pneumatic Digital / Analog Pressure Gauge, Indicator, Pressure Transmitter,Pressure Switches	0 bar to 35 bar	0.011bar	Digital Pressure Indicator with Pneumatic Pump DKD -R-6-1

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Site Facility					
155	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Machine Readability d = 1 mg	0 kg to 20 kg	10mg	Using weights of accuracy class E1 & E 2 procedure based on OIML R-76 (2006)
156	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Machine Readability d =0.1 mg	Upto 2300 g	0.78mg	Using weights of accuracy class E1 & E 2 procedure based on OIML R-76 (2006)
157	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Machine Readability d =0.1g	0 kg to 35 kg	0.26g	Using weights of accuracy class E 2 procedure based on OIML R-76 (2006)
158	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Machine Readability d =10 g	Upto 200 kg	11g	Using Weights of Accuracy class F1 , Procedure based on OIML R-76(2006)
159	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Machine Readability d=0.001mg	0 g to 5 g	0.005mg	Using weights of accuracy class E1 procedure based on OIML R-76 (2006)
160	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Machine Readability d=0.01mg	Upto 200 g	0.06mg	Using weights of accuracy class E1 procedure based on OIML R-76 (2006)
161	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Machine Readability d=50 g	Upto 400 kg	43g	Using Weights of Accuracy class F1 , Procedure based on OIML R-76(2006)

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Site Facility					
162	THERMAL- SPECIFIC HEAT & HUMIDITY	Humidity calibrator,Generator,environmental chamber at single point	10 to 90%RH @25°C	0.48%RH	Using RH & Temp. Probe with Indicator By Comparison Method
163	THERMAL- SPECIFIC HEAT & HUMIDITY	Humidity sensor with indicator, Transmitter with sensor, Hygrometers, Humidity data loggers with sensors	10% to 90% @25°C	0.52%RH	Using RH Generator and RH & Temp. Probe with Indicator By Comparison Method
164	THERMAL- SPECIFIC HEAT & HUMIDITY	Temperature Humidity sensor with indicator, Transmitter with sensor, ThermoHygrometers, Temperature Humidity data loggers with sensors	10 °C to 50°C @50%RH	0.35°C	Using RH & Temp. Probe with Indicator By Comparison Method
165	THERMAL- TEMPERATURE	Environmental Chamber, Cold Rooms,Storage Room,Deep Freezer,Dry Well, Cooling Cabinet	-80 °C to 300 °C	1.85°C	Using RTD PT-100 Sensors with recorder (Min Nine) Multi position Calibration
166	THERMAL- TEMPERATURE	RTD,/PRT/TC Sensor with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor, Recorder with sensor ,Thermistor with temp Indicator.	(-)80 °C to 0 °C	0.046°C	PRT with Precision Scanner & Liquid Bath By Comparison Method

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Site Facility					
167	THERMAL-TEMPERATURE	RTD,/PRT/TC Sensor with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor, Recorder with sensor ,Thermistor with temp Indicator.	0 °C to 100 °C	0.049°C	Using PRT with Precision Scanner & Dry Bath By Comparison Method
168	THERMAL-TEMPERATURE	RTD,/PRT/TC Sensor with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor, Recorder with sensor ,Thermistor with temp Indicator.	0 °C to 140 °C	0.07°C	PRT with Precision Scanner & Dry Bath By Comparison Method
169	THERMAL-TEMPERATURE	RTD,/PRT/TC Sensor with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor, Recorder with sensor ,Thermistor with temp Indicator.	100 °C to 200 °C	0.062°C	PRT with Precision Scanner & Liquid Bath By Comparison Method
170	THERMAL-TEMPERATURE	RTD,/PRT/TC Sensor with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor, Recorder with sensor ,Thermistor with temp Indicator.	140 °C to 660 °C	0.24°C	Using PRT with Precision Scanner & Dry Bath By Comparison Method

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Site Facility					
171	THERMAL-TEMPERATURE	RTD,/PRT/TC Sensor with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor, Recorder with sensor ,Thermistor with temp Indicator.	200 °C to 250 °C	0.07°C	PRT with Precision Scanner & Liquid Bath By Comparison Method
172	THERMAL-TEMPERATURE	RTD,/PRT/TC Sensor with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor, Recorder with sensor ,Thermistor with temp Indicator.	-95 °C to 0 °C	0.07°C	Using PRT with Precision Scanner & Dry Bath By Comparison Method
173	THERMAL-TEMPERATURE	Temp.Indicator with sensor of Deep Freezer,Oven,Chamber ,Incubators,Oil Bath,Dry well cooling Cabinet,	-95 °C to 0 °C	0.017°C to 0.042°C	Using PRT with Precision Scanner single position calibration
174	THERMAL-TEMPERATURE	Temp.Indicator with sensor of Deep Freezer,Oven,Chamber ,Incubators,Oil Bath,Dry well cooling Cabinet, Muffle Furnace .	0 °C to 660 °C	0.042°C to 0.052°C	Using PRT with Precision Scanner single position calibration

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S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
Site Facility					
175	THERMAL-TEMPERATURE	Temp.Indicator with sensor of Deep Freezer,Oven,Chamber ,Incubators,Oil Bath,Dry well cooling Cabinet, Muffle Furnace .	1100 °C to 1200 °C	2.583°C	Using R-Type Thermocouple with Precision Scanner single position calibration
176	THERMAL-TEMPERATURE	Temp.Indicator with sensor of Deep Freezer,Oven,Chamber ,Incubators,Oil Bath,Dry well cooling Cabinet, Muffle Furnace .	600 °C to 800 °C	1.58°C	Using R-Type Thermocouple with Precision Scanner single position calibration
177	THERMAL-TEMPERATURE	Temp.Indicator with sensor of Deep Freezer,Oven,Chamber ,Incubators,Oil Bath,Dry well cooling Cabinet, Muffle Furnace .	800 °C to 1100 °C	1.8°C	Using R-Type Thermocouple with Precision Scanner single position calibration
178	THERMAL-TEMPERATURE	Thermocouple with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor	1100 °C to 1200 °C	1.892°C to 2.583°C	Using R-Type Thermocouple with Precision scanner & furnace By Comparison Method

SCOPE OF ACCREDITATION

Laboratory Name	AUTOCAL SOLUTIONS PVT LTD, B-80, MIDC, SATPUR, NASHIK, MAHARASHTRA, INDIA		
Accreditation Standard	ISO/IEC 17025:2017		
Certificate Number	CC-2052	Page No. :	78 / 78
Validity	26/04/2019 to 25/04/2021	Last Amended on	-

S.No	Discipline / Group	Quantity Measured/ Instrument	Range / Frequency	* Calibration Measurement Capability(±)	Remarks
Site Facility					
179	THERMAL-TEMPERATURE	Thermocouple with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor	800 °C to 1100 °C	1.93°C	Using R-Type Thermocouple with Precision scanner & furnace By Comparison Method
180	THERMAL-TEMPERATURE	Thermocouple with & Without Indicators , Digital thermometer,Temp Transmitter with Sensor ,Thermistor with temp Indicator.	600 °C to 800 °C	1.77°C	Using R-Type Thermocouple with Precision scanner & furnace By Comparison Method

* CMCs represent expanded uncertainties expressed at approximately the 95% level of confidence, using a coverage factor of k = 2.