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Laboratory Name :	CAL LABS PRIVATE LIMITED, 204 & 211 GAYATRI APARTMENTS, MAIN ROAD , TRIMULGHERRY X ROADS, RANGA REDDY, SECUNDERABAD, HYDERABAD, TELANGANA, INDIA		
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S.No	Discipline / Group	Measurand or Reference Material/Type of instrument or material to be calibrated or measured / Quantity Measured /Instrument	Calibration or Measurement Method or procedure	Measurement range and additional parameters where applicable(Range and Frequency)	* Calibration and Measurement Capability(CMC)(±)
Permanent Facility					
1	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @ 45Hz to 1kHz	Using 8½ DMM by Direct Method:	0.200 A to 2 A	0.04 % to 0.092 %
2	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @ 45Hz to 1kHz	Using 8½ DMM by Direct Method	0.200 mA to 200 mA	0.042 % to 0.04 %
3	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @ 45Hz to 1kHz	Using 8½ DMM by Direct Method	2 A to 20 A	0.092 % to 0.108 %
4	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @ 45Hz to 1kHz	Using 8½ DMM by Direct Method	30 µA to 200 µA	0.11 % to 0.042 %

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5	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @ 50Hz	Using AC/DC Shunt with 6½ DMM by VI Method	20 A to 200 A	1.14 % to 0.98 %
6	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @ 50Hz	Using AC/DC Shunt with 6½ DMM by VI Method	200 A to 600 A	0.98 % to 1.33 %
7	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Power (50V to 600V, 100mA to 20A, UPF, 45Hz to 65Hz)	Using Power Meter by Direct Method	6 kW to 10 kW	0.26% to 0.96%
8	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Power (50V to 600V, 100mA to 20A, 45Hz to 65Hz, UPF)	Using Power Meter by Direct Method	1 kW to 6 kW	0.25 % to 0.26 %
9	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Power (50V to 600V, 100mA to 20A, UPF, 45Hz to 65Hz)	Using Power Meter by Direct Method	5 W to 1 kW	0.20 % to 0.25 %

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10	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage 50Hz	HV Probe with DMM	1 kV to 10 kV	2.70%
11	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @ 10kHz to 100kHz	using 8½ DMM by Direct Method	100 mV to 100 V	0.018 % to 0.085 %
12	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @ 45Hz to 10kHz	Using 8½ DMM by Direct Method	20 V to 1000 V	0.052 % to 0.019 %
13	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @ 45Hz to 10kHz	Using 8½ DMM by Direct Method	200 mV to 20 V	0.027 % to 0.052 %
14	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @ 55Hz to 1kHz	Using 8½ DMM by Direct Method	1 mV to 10 mV	0.48 % to 0.059 %

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15	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @45Hz to 10kHz	Using 8½ DMM by Direct Method	10 mV to 200 mV	0.059 % to 0.027 %
16	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @ 50Hz	Using HV Divider with Indicator by direct method	10 kV to 40 kV	1.25%
17	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance @ 100 Hz	Using Precision LCR Meter by Direct Method	10 µF to 100 µF	0.11 % to 1.30 %
18	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance @100 Hz	Using Precision LCR Meter by Direct Method	1 µF to 10 µF	0.10 % to 0.11 %
19	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance @100 Hz	Using Precision LCR Meter by Direct Method	100 µF to 1000 µF	1.30%

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20	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance @1kHz	Using Precision LCR Meter by Direct Method	100 pF to 1 µF	0.10%
21	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Power Factor (45Hz to 65Hz, 10V to 600V, 0.1A to 20A, Lead to Lag)	Using Power Meter by Direct Method	0.2 PF to 0.5 PF	0.0067 PF to 0.0075 PF
22	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Power Factor (45Hz to 65Hz, 10V to 600V, 0.1A to 20A, Lead to Lag)	Using Power Meter by Direct Method	0.5 PF to 0.8 PF	0.0075 PF to 0.0079 PF
23	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Power Factor (45Hz to 65Hz, 10V to 600V, 0.1A to 20A, Lead to Lag)	Using Power Meter by Direct Method	0.8 PF to 1 PF	0.0079 PF to 0.0078 PF
24	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 45Hz to 1kHz	Using Multi Product Calibrator by Direct Method	10 mA to 300 mA	0.089 % to 0.06 %

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25	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 45Hz to 1kHz	Using Multi Product Calibrator by Direct Method	100 µA to 10 mA	0.28 % to 0.089 %
26	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 45Hz to 1kHz	Using Multi Product Calibrator by Direct Method	30 µA to 100 µA	0.53 % to 0.28 %
27	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 45Hz to 65Hz	Using Multi Product Calibrator with Current Coil by Direct Method	20 A to 500 A	1.19 % to 1.05 %
28	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 45Hz to 65Hz	Using MultiProduct Calibrator with Current Coil by Direct Method	500 A to 1000 A	1.05 % to 0.55 %
29	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @45Hz to 1kHz	Using Multi Product Calibrator by Direct Method	1A to 20A	0.07 % to 0.20 %
30	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @45Hz to 1kHz	Using Multi Product Calibrator by Direct Method	300 mA to 1 A	0.06 % to 0.07 %

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31	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Energy (50V to 500V, 1A to 5A, 45Hz to 65Hz, UPF)	Using Three Phase Energy Calibrator by direct method	2 A to 5 A	0.35%
32	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (10V to 1000V, 10mA to 20A, 0.8PF, 50Hz)	Using Multi Product Calibrator by Direct Method	9.6 W to 8 kW	0.190%
33	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (10V to 1000V, 10mA to 20A, UPF, 50Hz)	Using Multi-Product Calibrator by direct method	1.2 kW to 10 kW	0.116%
34	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (10V to 1000V , 10mA to 20A, UPF , 50Hz)	Using Multi Product Calibrator by Direct Method	10 kW to 20 kW	0.10 % to 0.18 %
35	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (10V to 1000V, 10mA to 20A , UPF, 50Hz)	Using Multi Product Calibrator by Direct Method	1.2 W to 1.2 kW	0.095 % to 0.116 %
36	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (10V to 1000V, 10mA to 20A, 0.2PF, 50Hz)	Using Multi Product Calibrator by Direct Method	2.4 W to 4 kW	1.06%

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37	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (10V to 1000V, 10mA to 20A, 0.5PF , 50Hz)	Using Multi Product Calibrator by Direct Method	2.4 kW to 10 kW	0.40%
38	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (10V to 1000V, 10mA to 20A, 0.8PF, 50Hz)	Using Multi Product Calibrator by Direct Method	8 kW to 16 kW	0.23%
39	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (10V to 600V, 10mA to 20A, 0.5PF, 50Hz)	Using Multi Product Calibrator by Direct Method	6 W to 2.4 kW	0.37%
40	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @ 100kHz to 450kHz	Using Multi Product Calibrator by Direct Method	1 V to 3 V	0.19 % to 0.31 %
41	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @ 10kHz to 100kHz	Using Multi Product Calibrator by Direct Method	1 mV to 10 mV	2.16 % to 0.56 %
42	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @ 45Hz to 10 kHz	Using Multi Product Calibrator by Direct Method	10 mV to 100 mV	0.10 % to 0.034 %

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43	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @ 45Hz to 10kHz	Using Multi Product Calibrator by Direct Method	1 mV to 10 mV	0.78 % to 0.10 %
44	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @ 45Hz to 10kHz	Using Multi Product Calibrator by Direct Method	100 mV to 10 V	0.034 % to 0.031 %
45	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @ 45Hz to 8kHz	Using Multi Product Calibrator by Direct Method	10 V to 1000 V	0.031 % to 0.04 %
46	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @100kHz to 450kHz	Using Multi Product Calibrator by Direct Method	10 mV to 100 mV	1.54 % to 0.34 %
47	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @100kHz to 450kHz	Using Multi Product Calibrator by Direct Method	100 mV to 1 V	0.34 % to 0.19 %
48	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @10kHz to 100kHz	Using Multi Product Calibrator by Direct Method	1 V to 100 V	0.10 % to 0.29 %

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49	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @10kHz to 100kHz	Using Multi Product Calibrator by Direct Method	10 mV to 100 mV	0.56 % to 0.15 %
50	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @10kHz to 100kHz	Using Multi Product Calibrator by Direct Method	100 mV to 1 V	0.15 % to 0.10 %
51	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @100Hz	Using Multi Product Calibrator by Direct Method	1 µF to 100 µF	0.10 % to 0.64 %
52	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @100Hz	Using Multi Product Calibrator by Direct Method	100 nF to 1 µF	0.41 % to 0.10 %
53	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @1kHz	Using Multi Product Calibrator by Direct Method	1 nF to 100 nF	1.74 % to 0.41 %
54	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @1kHz	Using Multi Product Calibrator by Direct Method	220 pF to 1 nF	6.28 % to 1.74 %

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55	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Inductance @1kHz	Using Standard Decade Inductance Box by Direct method	100 µH to 10 H	1.16%
56	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Power Factor (45Hz to 65Hz, 50V - 500V, 1A - 20A)	Using Multi Product Calibrator by Direct Method	0.2 PF to 1 PF	0.002PF
57	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source,Measure)	Inductance 1 KHz	Precision LCR Meter by Direct Method	100 µH to 10 H	0.12%
58	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 8½ DMM by Direct Method	1 µA to 100 µA	0.048 % to 0.0021 %
59	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 8½ DMM by Direct Method	100 µA to 20 mA	0.0021 % to 0.003 %

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60	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 8½ DMM by Direct Method	2 A to 20 A	0.067 % to 0.072 %
61	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using DC Shunt with 6½ DMM by VI method	20 A to 200 A	0.72%
62	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using DC Shunt with 6 ½ DMM by VI method	200 A to 500 A	0.72 % to 0.83 %
63	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 8½ DMM by Direct Method	200mA to 2 A	0.029 % to 0.067 %
64	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 8½ DMM by Direct Method	20mA to 200mA	0.003% to 0.029%
65	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Power 10V to 200V 100mA to 5A	Power Meter by Direct Method	1 W to 1 kW	0.40 % to 0.47 %

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66	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Power (200 V to 500V, 5A to 20A)	Using Power Meter by Direct Method	1 kW to 10 kW	0.47 % to 0.42 %
67	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using 8½ DMM by Direct Method	0.1 ohm to 10 kohm	0.0063 % to 0.0009 %
68	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using 8½ DMM by Direct Method	1 Gohm to 20 Gohm	0.04 % to 0.15 %
69	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using DMM, Multiproduct calibrator by V/I method	1 mohm to 100 mohm	0.06 % to 0.03 %
70	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using DMM, Multiproduct calibrator by V/I method	10 µohm to 1 mohm	0.12 % to 0.06 %
71	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using 8½ DMM by Direct Method	10 kohm to 10 Mohm	0.0009 % to 0.0015 %

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72	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using 8½ DMM by Direct Method	10 Mohm to 1 Gohm	0.0015 % to 0.04 %
73	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Resistance	Using DMM, Multiproduct calibrator by V/I method	100 mohm to 1 ohm	0.03 % to 0.01 %
74	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 8½ DMM by Direct Method	(-)10 mV to (-)20 V	0.0016 % to 0.0005 %
75	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using HV Probe with DMM by comparison method	0.5 kV to 10.0 kV	1.74 % to 2.5 %
76	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 8½ DMM by Direct Method	1 mV to 10 mV	0.013 % to 0.0018 %
77	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using HV Probe with DMM by comparison method	10 kV to 40 kV	2.50%

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78	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 8½ DMM by Direct Method	10 mV to 200 mV	0.0018 % to 0.0005 %
79	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 8½ DMM by Direct Method	200 mV to 1000 V	0.0005 % to 0.0007 %
80	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi-Product Calibrator by Direct Method	1 µA to 10 µA	2.33 % to 0.25 %
81	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi-Product Calibrator by Direct Method	1 A to 20 A	0.028 % to 0.061 %
82	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi-Product Calibrator by Direct Method	1 mA to 100 mA	0.017 % to 0.015 %
83	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi-Product Calibrator by Direct Method	10 µA to 100 µA	0.25 % to 0.041 %

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84	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi-Product Calibrator by Direct Method	100 µA to 1 mA	0.041 % to 0.017 %
85	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi-Product Calibrator by Direct Method	100 mA to 1 A	0.015 % to 0.028 %
86	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi-Product Calibrator with Current Coil by Direct Method	20 A to 500 A	0.91 % to 0.87 %
87	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi-Product Calibrator with Current Coil by Direct Method	500 A to 1000 A	0.87 % to 0.58 %
88	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Power (100V to 200V, 10mA to 500mA)	Using Multi-Product Calibrator by direct method	1 W to 100 W	0.064%
89	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Power (200V to 500V, 5A to 20A)	Using Multi-Product Calibrator with Power Meter by direct method	1 kW to 10 kW	0.081%

SCOPE OF ACCREDITATION

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90	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Power (200V, 500mA to 5A)	Using Multi-Product Calibrator by direct method	100 W to 1 kW	0.028 % to 0.081 %
91	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi-Product Calibrator by Direct Method	(-)10 mV to 1 mV	0.015 % to 0.13 %
92	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi-Product Calibrator by Direct Method	1 mV to 10 mV	0.13 % to 0.014 %
93	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi-Product Calibrator by Direct Method	10 mV to 100 mV	0.036 % to 0.0036 %
94	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi-Product Calibrator by Direct Method	100 mV to 1000 V	0.0036 % to 0.0025 %
95	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using High Precision Decade Resistance Box by Direct Method	0.01 ohm to 0.1 ohm	1.39 % to 0.25 %

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96	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using High Precision Decade Resistance Box by Direct Method	0.1 ohm to 1 ohm	0.25 % to 0.031 %
97	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Low Resistance Standard by Direct Method	1 mohm	0.15%
98	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi-Product Calibrator by Direct Method	1 Mohm to 10 Mohm	0.005 % to 0.016 %
99	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Low Resistance Standard by Direct Method	1 ohm	0.10%
100	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using High Precision Decade Resistance Box by Direct Method	1 ohm to 10 ohm	0.031 % to 0.023 %
101	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi-Product Calibrator by Direct Method	1 ohm to 10 ohm	0.128 % to 0.016 %

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102	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using High Value Decade Megaohm Box by Direct Method	1 Tohm to 10 Tohm	4.58 % to 6.75 %
103	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Low Resistance Standard by Direct Method	10 µohm	5.78%
104	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi-Product Calibrator by Direct Method	10 Mohm to 100 Mohm	0.016 % to 0.063 %
105	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi-Product Calibrator by Direct Method	10 ohm to 100 ohm	0.016 % to 0.005 %
106	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Low Resistance Standard by Direct Method	10.0 mohm	0.11%
107	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Low Resistance Standard by Direct Method	100 µohm	0.15%

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108	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi-Product Calibrator by Direct Method	100 kohm to 1 Mohm	0.0037 % to 0.005 %
109	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Low Resistance Standard by Direct Method	100 mohm	0.11%
110	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi-Product Calibrator Direct Method	100 Mohm to 1000 Mohm	0.063 % to 1.79 %
111	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi-Product Calibrator by Direct Method	100 ohm to 100 kohm	0.005 % to 0.0037 %
112	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using High Precision Decade Resistance Box by Direct Method	10ohm to 100ohm	0.05%
113	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Low Resistance Standard by Direct Method	50 µohm	0.30%

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114	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance @ 10kV	Using High Value Decade Megaohm Box by Direct Method	1 Gohm to 10 Gohm	1.41%
115	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance @10 kV	Using High Value Decade Megaohm Box by Direct Method	10 Gohm to 100 Gohm	1.41 % to 2.81 %
116	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance @10 kV	Using High Value Decade Megaohm Box by Direct Method	100 Gohm to 1 Tohm	2.81 % to 4.58 %
117	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	RTD Type	Using Multi-Product Calibrator by direct Method	(-)200 °C to 800 °C	0.28°C
118	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple B-Type	Using Multi-Product Calibrator by Direct Method	600 °C to 1820 °C	0.50°C
119	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple E-Type	Using Multi-Product Calibrator by Direct Method	(-)250 °C to 1000 °C	0.60°C

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120	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple J-Type	Using Multi-Product Calibrator by Direct Method	(-)210 °C to 1200 °C	0.35°C
121	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple K-Type	Using Multi-Product Calibrator by Direct Method	(-)200 °C to 1372 °C	0.49°C
122	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple N-Type	Using Multi-Product Calibrator by Direct Method	(-)200 °C to 1300 °C	0.35°C
123	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple R-Type	Using Multi-Product Calibrator by Direct Method	0 °C to 1767 °C	0.67°C
124	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple S-Type	Using Multi-Product Calibrator by Direct Method	0 °C to 1767 °C	0.56°C
125	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple T-Type	Using Multi-Product Calibrator by Direct Method	(-)250 °C to 400 °C	0.22°C

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126	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	RTD Type	Using Multi-Product Calibrator by Direct Method	(-)200 °C to 800 °C	0.08°C
127	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple B-Type	Using Multi-Product Calibrator by Direct Method	600 °C to 1820 °C	0.41°C
128	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple E-Type	Using Multi-Product Calibrator by Direct Method	(-)250 °C to 1000 °C	0.29°C
129	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple J-Type	Using Multi-Product Calibrator by Direct Method	(-)210 °C to 1200 °C	0.31°C
130	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple K-Type	Using Multi-Product Calibrator by Direct Method	(-)200 °C to 1372 °C	0.46°C
131	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple R-Type	Using Multi-Product Calibrator by Direct Method	0 °C to 1767 °C	0.49°C

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132	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple S-Type	Using Multi-Product Calibrator by Direct Method	0 °C to 1767 °C	0.56°C
133	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple T-Type	Using Multi-Product Calibrator by Direct Method	(-)250 °C to 400 °C	0.65°C
134	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple N-Type	Using Multi-Product Calibrator by Direct Method	(-)200 °C to 1300 °C	0.49°C
135	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using Frequency counter by Direct Method	1 MHz to 5 MHz	0.0014 % to 0.0029 %
136	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using 8½ DMM by Direct Method	10 Hz to 100 Hz	0.012% to 0.0014%
137	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using 8½ DMM by Direct Method	100 Hz to 1 MHz	0.0014 % to 0.0023%

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138	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using DMM by Direct Method	3 Hz to 10 Hz	0.94 % to 0.12 %
139	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using Frequency Counter by Direct Method	5.0 MHz to 1100.0 MHz	0.0029%
140	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Time	Using Time Interval Calibrator by Comparison Method	1 s to 600 s	0.012 s to 1.62 s
141	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Time	Using Time Interval Calibrator by Comparison Method	1800 s to 86400 s	1.634s to 77.75s
142	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Time	Using Time Interval Calibrator by Comparison Method	600 s to 1800 s	1.62 s to 1.634 s
143	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Using Multi Product Calibrator by Direct Method	1 Hz to 10 Hz	0.434 % to 0.0003 %

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144	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Using Programmable Synthesizer by Direct Method	1 MHz to 500 MHz	0.006 % to 0.0002 %
145	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Using Multi Product Calibrator by Direct Method	10 Hz to 1 MHz	0.0003 % to 0.006 %
146	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Using Programmable Synthesizer by Direct Method	500 MHz to 1200 MHz	0.0002 % to 0.00016 %
147	FLUID FLOW-FLOW MEASURING DEVICES	Anemometer / Air Velocity Meter	Using Reference Anemometer and Wind Tunnel by Comparison Method	0.2 m/s to 1 m/s	0.046m/s
148	FLUID FLOW-FLOW MEASURING DEVICES	Anemometer / Air Velocity Meter	Using Reference Anemometer and Wind Tunnel by Comparison Method	1 m/s to 10 m/s	0.196m/s
149	FLUID FLOW-FLOW MEASURING DEVICES	Anemometer / Air Velocity Meter	Using Reference Anemometer and Wind Tunnel by Comparison Method	10 m/s to 20 m/s	0.392m/s

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150	MECHANICAL-ACCELERATION AND SPEED	Centrifuge, Strobometer,Stirrers , RPM Indicator/ Speed Indicator , Tachometer Calibrator, RPM Generator	Using Digital Contact & Non-Contact Tachometer by Comparison method as per SANS TR 45-01	>1000 rpm to 10000 rpm	0.02%
151	MECHANICAL-ACCELERATION AND SPEED	Centrifuge, Strobometer,Stirrers , RPM Indicator/ Speed Indicator , Tachometer Calibrator, RPM Generator	Using Digital Non-Contact Tachometer by Comparison method as per SANS TR 45-01	>30000 rpm to 100000 rpm	0.01%
152	MECHANICAL-ACCELERATION AND SPEED	Centrifuge, Strobometer,Stirrers , RPM Indicator/ Speed Indicator , Tachometer Calibrator, RPM Generator	Using Digital Contact & Non-Contact Tachometer by Comparison method as per SANS TR 45-01	10 rpm to 100 rpm	0.31%
153	MECHANICAL-ACCELERATION AND SPEED	Centrifuge, Strobometer,Stirrers , RPM Indicator/ Speed Indicator , Tachometer Calibrator, RPM Generator	Using Digital Contact & Non-Contact Tachometer by Comparison method as per SANS TR 45-01	100 rpm to 1000 rpm	0.08%

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154	MECHANICAL-ACCELERATION AND SPEED	Centrifuge, Strobometer,Stirrers , RPM Indicator/ Speed Indicator , Tachometer Calibrator, RPM Generator	Using Digital Non-Contact Tachometer by Comparison method as per SANS TR 45-01	10000 rpm to 30000 rpm	0.02%
155	MECHANICAL-ACCELERATION AND SPEED	Centrifuge, Strobometer,Stirrers , RPM Indicator/ Speed Indicator , Tachometer Calibrator, RPM Generator	Using Digital Tachometer by Comparison method as per SANS TR 45-01	5 rpm to 10 rpm	0.14%
156	MECHANICAL-ACCELERATION AND SPEED	Non-Contact Tachometer	Using Digital Contact / Non-Contact Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	>100 rpm to 1000 rpm	0.08%
157	MECHANICAL-ACCELERATION AND SPEED	Non-Contact Tachometer	Using Digital Non-Contact Tachometer by Comparison method as per SANS TR 45-01	>1000 rpm to 10000 rpm	0.02%

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158	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Contact Type)	Using Digital Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	5 rpm to 10 rpm	1.23%
159	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Non-Contact Type)	Using Digital Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	>30000 rpm to 100000 rpm	0.01%
160	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Contact Type)	Using Digital Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	>1000 rpm to 8000 rpm	0.08%
161	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Contact Type)	Using Digital Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	10 rpm to 50 rpm	0.63%

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162	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Contact Type)	Using Digital Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	>50 rpm to 1000 rpm	0.08%
163	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Non-Contact Type)	Using Digital Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	10 rpm to 100 rpm	0.34%
164	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Non-Contact Type)	Using Digital Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	10000 rpm to 30000 rpm	0.02%
165	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Non-Contact Type)	Using Digital Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	5 rpm to 10 rpm	0.19%
166	MECHANICAL-ACOUSTICS	Sound Level Meter @ 1 kHz	Using Sound Level Calibrator as per OIML R58	114 dB	0.91dB

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167	MECHANICAL-ACOUSTICS	Sound Level Meter @ 1 kHz	Using Sound Level Calibrator by direct method as per OIML R58	94 dB	0.91dB
168	MECHANICAL-PRESSURE INDICATING DEVICES	(Pneumatic Medium) Pressure Gauge, Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter, Pressure Transducer, Pressure Switch, Pressure Recorder	Using Pressure Indicator with Digital Multimeter by Comparison Method as per DKD R 6-1	0 to 7 bar	0.021bar
169	MECHANICAL-PRESSURE INDICATING DEVICES	(Pneumatic Medium) Pressure Gauge, Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter, Pressure Transducer, Pressure Switch, Pressure Recorder	Using Dead Weight Tester with Digital Multimeter by Comparison Method as per DKD R 6-1	0.5 bar to 7.0 bar	0.041% rdg

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S.No	Discipline / Group	Measurand or Reference Material/Type of instrument or material to be calibrated or measured / Quantity Measured /Instrument	Calibration or Measurement Method or procedure	Measurement range and additional parameters where applicable(Range and Frequency)	* Calibration and Measurement Capability(CMC)(±)
170	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure and Vacuum Pressure Gauge Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter,Pressure Transducer, Pressure Switch, Pressure Recorder (Pneumatic Medium)	Using Digital Manometer with Digital Multimeter by Comparison Method as per DKD R 6-1	(-)20 mbar to 0	0.014mbar
171	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure and Vacuum Pressure Gauge Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter,Pressure Transducer, Pressure Switch, Pressure Recorder (Pneumatic Medium)	Using Digital Manometer with Digital Multimeter by Comparison Method as per DKD R 6-1	(-)700 mbar to (-)50 mbar	0.19mbar

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172	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure and Vacuum Pressure Gauge Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter,Pressure Transducer, Pressure Switch, Pressure Recorder (Pneumatic Medium)	Using Digital Manometer with Digital Multimeter with Digital Multimeter by Comparison Method as per DKD R 6-1	0 to 20 mbar	0.018mbar
173	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure and Vacuum Pressure Gauge Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter,Pressure Transducer, Pressure Switch, Pressure Recorder (Pneumatic Medium)	Using Digital Manometer with Digital Multimeter by Comparison Method as per DKD R 6-1	0 to 50 mbar	0.018mbar

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174	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure and Vacuum Pressure Gauge Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter,Pressure Transducer, Pressure Switch, Pressure Recorder (Pneumatic Medium)	Using Pressure Indicator with Digital Multimeter by Comparison Method as per DKD R 6-1	0 to 700 mbar	1.19mbar
175	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure and Vacuum Pressure Gauge Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter,Pressure Transducer, Pressure Switch, Pressure Recorder (Pneumatic Medium)	Using Digital Manometer with Digital Multimeter by Comparison Method as per DKD R 6-1	(-)50 mbar to (-)20 mbar	0.085mbar

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176	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Gauge, Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter, Pressure Transducer, Pressure Switch, Pressure Recorder (Pneumatic Medium)	Using Pressure Indicator with Digital Multimeter by Comparison Method as per DKD R 6-1	0 to 25 bar	0.015bar
177	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Gauge, Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter, Pressure Transducer, Pressure Switch, Pressure Recorder (Pneumatic Medium)	Using Dead Weight Tester with Digital Multimeter by Comparison Method as per DKD R 6-1	7 bar to 35 bar	0.08% rdg

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178	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Gauge, Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Pressure Transducer, Pressure Switch, Pressure Recorder (Hydraulic Medium)	Using Pressure Indicator with Digital Multimeter by Comparison Method as per DKD R 6-1	0 to 1000 bar	1.2bar
179	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Gauge, Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Pressure Transducer, Pressure Switch, Pressure Recorder (Hydraulic Medium)	Using Pressure Indicator and Digital Multimeter by Comparison Method as per DKD R 6-1	0 to 700 bar	0.42bar
180	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Gauge, Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Pressure Transducer, Pressure Switch, Pressure Recorder (Medium : Hydraulic)	Using Dead Weight Tester with Digital Multimeter by Comparison Method as per DKD R 6-1	35 bar to 700 bar	0.017% rdg

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181	MECHANICAL-PRESSURE INDICATING DEVICES	Vacuum Gauges, Vacuum Indicator, Vacuum Calibrator, Diff.Vacuum Transmitter, Vacuum Transmitter,Vacuum Transducer, Vacuum Switch,Vacuum Manometer	Using Vacuum Indicator with Digital Multimeter by Comparison Method as per DKD R 6-1	(-)0.85 bar to 0	0.0032bar
182	MECHANICAL-WEIGHING SCALE AND BALANCE	Electronic balance-Class I and coarser (Readability: 0.1g)	Using E2 Class standard reference weights as per OIML R 76-1	0.2 g to 2200 g	9.76mg
183	MECHANICAL-WEIGHING SCALE AND BALANCE	Electronic balance-Class I and coarser (Readability: 0.1mg)	Using E2 Class standard reference weights as per OIML R 76-1	1 mg to 220 g	0.446mg
184	MECHANICAL-WEIGHING SCALE AND BALANCE	Electronic balance-Class III and coarser (Readability: 0.1 g)	Using E2 & F1 Class standard reference weights as per OIML R 76-1	10 g to 20 kg	151.2mg
185	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using F1 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	1 kg	10.25mg

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186	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	1 mg	0.082mg
187	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	10 g	0.084mg
188	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using F1 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	10 kg	96.85mg
189	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	10 mg	0.084mg
190	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg)as per OIML R 111-1	100 g	0.097mg
191	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	100 mg	0.085mg

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192	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	2 g	0.083mg
193	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using F1 standard reference weights Electronic balance (Readability :10mg) as per OIML R 111-1	2 kg	8.70mg
194	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	2 mg	0.084mg
195	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	20 g	0.089mg
196	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using F1 standard reference weights Electronic balance (Readability :100mg) as per OIML R 111-1	20 Kg	109.74mg

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197	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	20 mg	0.084mg
198	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	200 g	0.13mg
199	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg)as pert OIML R 111-1	200 mg	0.104mg
200	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	5 g	0.086mg
201	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	5 mg	0.084mg

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202	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	50 g	0.088mg
203	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	50 mg	0.094mg
204	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using F1 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	500 g	10.06mg
205	MECHANICAL-WEIGHTS	Weights (M1 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	500 mg	0.143mg
206	MECHANICAL-WEIGHTS	Weights (M2 class and Coarser)	Using E2 standard reference weights Electronic balance (Readability :0.1mg) as per OIML R 111-1	1 g	0.0759mg
207	MECHANICAL-WEIGHTS	Weights (M2 class and Coarser)	Using F1 standard reference weights Electronic balance (Readability : 10mg) as per OIML R 111-1	5 kg	91.24mg

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208	OPTICAL-OPTICAL	Illuminance Meter	Using Light Source and Lux meter by Comparison Method	100 Lux to 19950 Lux	4%
209	THERMAL-SPECIFIC HEAT & HUMIDITY	Indicator with Sensor of Humidity Chamber, Environmental Chamber	Using Standard Humidity Indicator with Probe By Comparison Method	10 °C to 50 °C @50 %rh	0.33°C
210	THERMAL-SPECIFIC HEAT & HUMIDITY	Indicator with Sensor of Humidity Chamber, Environmental Chamber	Using Standard Humidity Indicator with Probe By Comparison Method	20 %rh to 95 %rh @25°C	0.90%rh
211	THERMAL-SPECIFIC HEAT & HUMIDITY	Thermo Hygrometers,Humidity sensor with Indicator & Portable Data Logger	Using Standard Humidity Indicator with Probe , Humidity Chamber By Comparison Method	10°C to 50 °C @ 50 %rh	0.33°C
212	THERMAL-SPECIFIC HEAT & HUMIDITY	Thermo Hygrometers,Humidity sensor with Indicator & Portable Data Logger	Using Standard Humidity Indicator with Probe, Humidity Chamber By Comparison Method	20 %rh to 90 %rh @ 25°C	0.92 %rh
213	THERMAL-TEMPERATURE	Black body source / Calibrator	Using IR Thermometer (emissivity: 0.95) by comparison method	(-)20°C to 50°C	1.06°C

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214	THERMAL-TEMPERATURE	Black body source / Calibrator	Using IR Thermometer (emissivity: 0.95) by comparison method	50 °C to 500 °C	2.21°C
215	THERMAL-TEMPERATURE	Indicator with Sensor of Liquid bath, Furnace, Oven, Freezer, Dry block Bath, Environmental Chamber (single position)	Using PRT Sensor with High Precision Thermometer by comparison method	(-)100 °C to 140 °C	0.15°C
216	THERMAL-TEMPERATURE	Indicator with Sensor of Liquid bath, Furnace, Oven, Dry block Bath (single position)	Using PRT sensor with High Precision Thermometer by comparison method	140 °C to 650 °C	0.20°C
217	THERMAL-TEMPERATURE	Indicator with Sensor of Furnace, Oven, Dry block Bath (single position)	Using Temperature Sensor with High Precision Thermometer by comparison method	650 °C to 1200 °C	1.71°C
218	THERMAL-TEMPERATURE	IR Thermometer, Pyrometer	Using Black body source with IR Thermometer (emissivity: 0.95) by comparison method	(-)20 °C to 50 °C	1.06°C

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219	THERMAL-TEMPERATURE	IR Thermometer, Pyrometer	Using Black body source with IR Thermometer (emissivity: 0.95) by comparison method	50 °C to 500 °C	2.21°C
220	THERMAL-TEMPERATURE	Liquid in Glass Thermometer	Using PRT Sensor with High Precision Thermometer, Liquid bath by comparison method	(-)10 °C to 250	0.57°C
221	THERMAL-TEMPERATURE	RTDs, Thermocouples, Temperature Gauges, Temperature Recorder/ Controller/ Indicator, Transmitters with Sensor	Using PRT sensor with High Precision Thermometer, 6½ Digit DMM by comparison method	(-)100 °C to 140 °C	0.11°C
222	THERMAL-TEMPERATURE	RTDs, Thermocouples, Temperature Gauges, Temperature Recorder/ Controller/ Indicator, Transmitters with Sensor	Using PRT sensor with High Precision Thermometer, 6½ Digit DMM by comparison method	140 °C to 650 °C	0.19°C

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223	THERMAL-TEMPERATURE	Thermocouples, Temperature Gauges, Temperature Recorder/ Controller/ Indicator, Transmitters with Sensor	Using Semi Standard Thermocouple, High Precision Thermometer, 6½ Digit DMM by comparison method	650 °C to 1200 °C	1.81°C

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Site Facility					
1	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @ 45Hz to 1kHz	Using 8½ DMM by Direct Method:	0.200 A to 2 A	0.04 % to 0.092 %
2	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @ 45Hz to 1kHz	Using 8½ DMM by Direct Method	0.200 mA to 200 mA	0.042 % to 0.04 %
3	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @ 45Hz to 1kHz	Using 8½ DMM by Direct Method	2 A to 20 A	0.092 % to 0.108 %
4	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @ 45Hz to 1kHz	Using 8½ DMM by Direct Method	30 µA to 200 µA	0.11 % to 0.042 %

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5	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @ 50Hz	Using AC/DC Shunt with 6½ DMM by VI Method	20 A to 200 A	1.14 % to 0.98 %
6	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current @ 50Hz	Using AC/DC Shunt with 6½ DMM by VI Method	200 A to 600 A	0.98 % to 1.33 %
7	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Power (50V to 600V, 100mA to 20A, UPF, 45Hz to 65Hz)	Using Power Meter by Direct Method	6 kW to 10 kW	0.26% to 0.96%
8	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Power (50V to 600V, 100mA to 20A, 45Hz to 65Hz, UPF)	Using Power Meter by Direct Method	1 kW to 6 kW	0.25 % to 0.26 %
9	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Power (50V to 600V, 100mA to 20A, UPF, 45Hz to 65Hz)	Using Power Meter by Direct Method	5 W to 1 kW	0.20 % to 0.25 %

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10	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage 50Hz	HV Probe with DMM	1 kV to 10 kV	2.70%
11	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage 50Hz	HV Divider with Indicator	10 kV to 100 kV	0.76 % to 0.73 %
12	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @ 10kHz to 100kHz	using 8½ DMM by Direct Method	100 mV to 100 V	0.018 % to 0.085 %
13	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @ 45Hz to 10kHz	Using 8½ DMM by Direct Method	20 V to 1000 V	0.052 % to 0.019 %
14	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @ 45Hz to 10kHz	Using 8½ DMM by Direct Method	200 mV to 20 V	0.027 % to 0.052 %

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15	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @ 55Hz to 1kHz	Using 8½ DMM by Direct Method	1 mV to 10 mV	0.48 % to 0.059 %
16	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @45Hz to 10kHz	Using 8½ DMM by Direct Method	10 mV to 200 mV	0.059 % to 0.027 %
17	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @ 50Hz	Using HV Divider with Indicator by direct method	10 kV to 40 kV	1.25%
18	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance @ 100 Hz	Using Precision LCR Meter by Direct Method	10 µF to 100 µF	0.11 % to 1.30 %
19	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance @100 Hz	Using Precision LCR Meter by Direct Method	1 µF to 10 µF	0.10 % to 0.11 %

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20	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance @100 Hz	Using Precision LCR Meter by Direct Method	100 µF to 1000 µF	1.30%
21	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance @1kHz	Using Precision LCR Meter by Direct Method	100 pF to 1 µF	0.10%
22	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Power Factor (45Hz to 65Hz, 10V to 600V, 0.1A to 20A, Lead to Lag)	Using Power Meter by Direct Method	0.2 PF to 0.5 PF	0.0067 PF to 0.0075 PF
23	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Power Factor (45Hz to 65Hz, 10V to 600V, 0.1A to 20A, Lead to Lag)	Using Power Meter by Direct Method	0.5 PF to 0.8 PF	0.0075 PF to 0.0079 PF
24	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Power Factor (45Hz to 65Hz, 10V to 600V, 0.1A to 20A, Lead to Lag)	Using Power Meter by Direct Method	0.8 PF to 1 PF	0.0079 PF to 0.0078 PF

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25	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 45Hz to 1kHz	Using Multi Product Calibrator by Direct Method	10 mA to 300 mA	0.089 % to 0.06 %
26	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 45Hz to 1kHz	Using Multi Product Calibrator by Direct Method	100 µA to 10 mA	0.28 % to 0.089 %
27	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 45Hz to 1kHz	Using Multi Product Calibrator by Direct Method	30 µA to 100 µA	0.53 % to 0.28 %
28	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 45Hz to 65Hz	Using Multi Product Calibrator with Current Coil by Direct Method	20 A to 500 A	1.19 % to 1.05 %
29	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 45Hz to 65Hz	Using MultiProduct Calibrator with Current Coil by Direct Method	500 A to 1000 A	1.05 % to 0.55 %
30	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @45Hz to 1kHz	Using Multi Product Calibrator by Direct Method	1A to 20A	0.07 % to 0.20 %

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31	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @45Hz to 1kHz	Using Multi Product Calibrator by Direct Method	300 mA to 1 A	0.06 % to 0.07 %
32	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Energy (50V to 500V, 1A to 5A, 45Hz to 65Hz, UPF)	Using Three Phase Energy Calibrator by direct method	2 A to 5 A	0.35%
33	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (10V to 1000V, 10mA to 20A, 0.8PF, 50Hz)	Using Multi Product Calibrator by Direct Method	9.6 W to 8 kW	0.190%
34	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (10V to 1000V, 10mA to 20A, UPF, 50Hz)	Using Multi-Product Calibrator by direct method	1.2 kW to 10 kW	0.116%
35	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (10V to 1000V , 10mA to 20A, UPF , 50Hz)	Using Multi Product Calibrator by Direct Method	10 kW to 20 kW	0.10 % to 0.18 %
36	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (10V to 1000V, 10mA to 20A , UPF, 50Hz)	Using Multi Product Calibrator by Direct Method	1.2 W to 1.2 kW	0.095 % to 0.116 %

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37	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (10V to 1000V, 10mA to 20A, 0.2PF, 50Hz)	Using Multi Product Calibrator by Direct Method	2.4 W to 4 kW	1.06%
38	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (10V to 1000V, 10mA to 20A, 0.5PF , 50Hz)	Using Multi Product Calibrator by Direct Method	2.4 kW to 10 kW	0.40%
39	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (10V to 1000V, 10mA to 20A, 0.8PF, 50Hz)	Using Multi Product Calibrator by Direct Method	8 kW to 16 kW	0.23%
40	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (10V to 600V, 10mA to 20A, 0.5PF, 50Hz)	Using Multi Product Calibrator by Direct Method	6 W to 2.4 kW	0.37%
41	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @ 100kHz to 450kHz	Using Multi Product Calibrator by Direct Method	1 V to 3 V	0.19 % to 0.31 %
42	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @ 10kHz to 100kHz	Using Multi Product Calibrator by Direct Method	1 mV to 10 mV	2.16 % to 0.56 %

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43	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @ 45Hz to 10 kHz	Using Multi Product Calibrator by Direct Method	10 mV to 100 mV	0.10 % to 0.034 %
44	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @ 45Hz to 10kHz	Using Multi Product Calibrator by Direct Method	1 mV to 10 mV	0.78 % to 0.10 %
45	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @ 45Hz to 10kHz	Using Multi Product Calibrator by Direct Method	100 mV to 10 V	0.034 % to 0.031 %
46	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @ 45Hz to 8kHz	Using Multi Product Calibrator by Direct Method	10 V to 1000 V	0.031 % to 0.04 %
47	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @100kHz to 450kHz	Using Multi Product Calibrator by Direct Method	10 mV to 100 mV	1.54 % to 0.34 %
48	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @100kHz to 450kHz	Using Multi Product Calibrator by Direct Method	100 mV to 1 V	0.34 % to 0.19 %

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49	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @10kHz to 100kHz	Using Multi Product Calibrator by Direct Method	1 V to 100 V	0.10 % to 0.29 %
50	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @10kHz to 100kHz	Using Multi Product Calibrator by Direct Method	10 mV to 100 mV	0.56 % to 0.15 %
51	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage @10kHz to 100kHz	Using Multi Product Calibrator by Direct Method	100 mV to 1 V	0.15 % to 0.10 %
52	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @100Hz	Using Multi Product Calibrator by Direct Method	1 µF to 100 µF	0.10 % to 0.64 %
53	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @100Hz	Using Multi Product Calibrator by Direct Method	100 nF to 1 µF	0.41 % to 0.10 %
54	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @1kHz	Using Multi Product Calibrator by Direct Method	1 nF to 100 nF	1.74 % to 0.41 %

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55	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance @1kHz	Using Multi Product Calibrator by Direct Method	220 pF to 1 nF	6.28 % to 1.74 %
56	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Inductance @1kHz	Using Standard Decade Inductance Box by Direct method	100 µH to 10 H	1.16%
57	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Power Factor (45Hz to 65Hz, 50V - 500V, 1A - 20A)	Using Multi Product Calibrator by Direct Method	0.2 PF to 1 PF	0.002PF
58	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source,Measure)	Inductance 1 KHz	Precision LCR Meter by Direct Method	100 µH to 10 H	0.12%
59	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using DC Shunt with 6½ DMM by VI method	20 A to 200 A	0.72%

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60	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using DC Shunt with 6 ½ DMM by VI method	200 A to 500 A	0.72 % to 0.83 %
61	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Power 10V to 200V 100mA to 5A	Power Meter by Direct Method	1 W to 1 kW	0.40 % to 0.47 %
62	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Power (200 V to 500V, 5A to 20A)	Using Power Meter by Direct Method	1 kW to 10 kW	0.47 % to 0.42 %
63	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using HV Probe with DMM by comparison method	0.5 kV to 10.0 kV	1.74 % to 2.5 %
64	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using HV Probe with DMM by comparison method	10 kV to 40 kV	2.50%
65	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi-Product Calibrator by Direct Method	1 µA to 10 µA	2.33 % to 0.25 %

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66	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi-Product Calibrator by Direct Method	1 A to 20 A	0.028 % to 0.061 %
67	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi-Product Calibrator by Direct Method	1 mA to 100 mA	0.017 % to 0.015 %
68	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi-Product Calibrator by Direct Method	10 µA to 100 µA	0.25 % to 0.041 %
69	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi-Product Calibrator by Direct Method	100 µA to 1 mA	0.041 % to 0.017 %
70	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi-Product Calibrator by Direct Method	100 mA to 1 A	0.015 % to 0.028 %
71	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi-Product Calibrator with Current Coil by Direct Method	20 A to 500 A	0.91 % to 0.87 %

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72	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi-Product Calibrator with Current Coil by Direct Method	500 A to 1000 A	0.87 % to 0.58 %
73	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Power (100V to 200V, 10mA to 500mA)	Using Multi-Product Calibrator by direct method	1 W to 100 W	0.064%
74	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Power (200V to 500V, 5A to 20A)	Using Multi-Product Calibrator with Power Meter by direct method	1 kW to 10 kW	0.081%
75	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Power (200V, 500mA to 5A)	Using Multi-Product Calibrator by direct method	100 W to 1 kW	0.028 % to 0.081 %
76	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi-Product Calibrator by Direct Method	(-)10 mV to 1 mV	0.015 % to 0.13 %
77	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi-Product Calibrator by Direct Method	1 mV to 10 mV	0.13 % to 0.014 %

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78	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi-Product Calibrator by Direct Method	10 mV to 100 mV	0.036 % to 0.0036 %
79	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi-Product Calibrator by Direct Method	100 mV to 1000 V	0.0036 % to 0.0025 %
80	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using High Precision Decade Resistance Box by Direct Method	0.01 ohm to 0.1 ohm	1.39 % to 0.25 %
81	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using High Precision Decade Resistance Box by Direct Method	0.1 ohm to 1 ohm	0.25 % to 0.031 %
82	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Low Resistance Standard by Direct Method	1 mohm	0.15%
83	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi-Product Calibrator by Direct Method	1 Mohm to 10 Mohm	0.005 % to 0.016 %

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84	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Low Resistance Standard by Direct Method	1 ohm	0.10%
85	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using High Precision Decade Resistance Box by Direct Method	1 ohm to 10 ohm	0.031 % to 0.023 %
86	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi-Product Calibrator by Direct Method	1 ohm to 10 ohm	0.128 % to 0.016 %
87	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using High Value Decade Megaohm Box by Direct Method	1 Tohm to 10 Tohm	4.58 % to 6.75 %
88	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Low Resistance Standard by Direct Method	10 µohm	5.78%
89	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi-Product Calibrator by Direct Method	10 Mohm to 100 Mohm	0.016 % to 0.063 %

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90	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi-Product Calibrator by Direct Method	10 ohm to 100 ohm	0.016 % to 0.005 %
91	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Low Resistance Standard by Direct Method	10.0 mohm	0.11%
92	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Low Resistance Standard by Direct Method	100 µohm	0.15%
93	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi-Product Calibrator by Direct Method	100 kohm to 1 Mohm	0.0037 % to 0.005 %
94	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Low Resistance Standard by Direct Method	100 mohm	0.11%
95	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi-Product Calibrator Direct Method	100 Mohm to 1000 Mohm	0.063 % to 1.79 %

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96	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi-Product Calibrator by Direct Method	100 ohm to 100 kohm	0.005 % to 0.0037 %
97	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using High Precision Decade Resistance Box by Direct Method	10ohm to 100ohm	0.05%
98	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Low Resistance Standard by Direct Method	50 µohm	0.30%
99	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance @ 10kV	Using High Value Decade Megaohm Box by Direct Method	1 Gohm to 10 Gohm	1.41%
100	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance @10 kV	Using High Value Decade Megaohm Box by Direct Method	10 Gohm to 100 Gohm	1.41 % to 2.81 %
101	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance @10 kV	Using High Value Decade Megaohm Box by Direct Method	100 Gohm to 1 Tohm	2.81 % to 4.58 %

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102	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	RTD Type	Using Multi-Product Calibrator by direct Method	(-)200 °C to 800 °C	0.28°C
103	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple B-Type	Using Multi-Product Calibrator by Direct Method	600 °C to 1820 °C	0.50°C
104	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple E-Type	Using Multi-Product Calibrator by Direct Method	(-)250 °C to 1000 °C	0.60°C
105	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple J-Type	Using Multi-Product Calibrator by Direct Method	(-)210 °C to 1200 °C	0.35°C
106	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple K-Type	Using Multi-Product Calibrator by Direct Method	(-)200 °C to 1372 °C	0.49°C
107	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple N-Type	Using Multi-Product Calibrator by Direct Method	(-)200 °C to 1300 °C	0.35°C

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108	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple R-Type	Using Multi-Product Calibrator by Direct Method	0 °C to 1767 °C	0.67°C
109	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple S-Type	Using Multi-Product Calibrator by Direct Method	0 °C to 1767 °C	0.56°C
110	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Thermocouple T-Type	Using Multi-Product Calibrator by Direct Method	(-)250 °C to 400 °C	0.22°C
111	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	RTD Type	Using Multi-Product Calibrator by Direct Method	(-)200 °C to 800 °C	0.08°C
112	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple B-Type	Using Multi-Product Calibrator by Direct Method	600 °C to 1820 °C	0.41°C
113	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple E-Type	Using Multi-Product Calibrator by Direct Method	(-)250 °C to 1000 °C	0.29°C

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114	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple J-Type	Using Multi-Product Calibrator by Direct Method	(-)210 °C to 1200 °C	0.31°C
115	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple K-Type	Using Multi-Product Calibrator by Direct Method	(-)200 °C to 1372 °C	0.46°C
116	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple R-Type	Using Multi-Product Calibrator by Direct Method	0 °C to 1767 °C	0.49°C
117	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple S-Type	Using Multi-Product Calibrator by Direct Method	0 °C to 1767 °C	0.56°C
118	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple T-Type	Using Multi-Product Calibrator by Direct Method	(-)250 °C to 400 °C	0.65°C
119	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Thermocouple N-Type	Using Multi-Product Calibrator by Direct Method	(-)200 °C to 1300 °C	0.49°C

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120	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using Frequency counter by Direct Method	1 MHz to 5 MHz	0.0014 % to 0.0029 %
121	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using 8½ DMM by Direct Method	10 Hz to 100 Hz	0.012% to 0.0014%
122	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using 8½ DMM by Direct Method	100 Hz to 1 MHz	0.0014 % to 0.0023%
123	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using DMM by Direct Method	3 Hz to 10 Hz	0.94 % to 0.12 %
124	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using Frequency Counter by Direct Method	5.0 MHz to 1100.0 MHz	0.0029%
125	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Time	Using Time Interval Calibrator by Comparison Method	1 s to 600 s	0.012 s to 1.62 s

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126	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Time	Using Time Interval Calibrator by Comparison Method	1800 s to 86400 s	1.634s to 77.75s
127	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Time	Using Time Interval Calibrator by Comparison Method	600 s to 1800 s	1.62 s to 1.634 s
128	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Using Multi Product Calibrator by Direct Method	1 Hz to 10 Hz	0.434 % to 0.0003 %
129	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Using Programmable Synthesizer by Direct Method	1 MHz to 500 MHz	0.006 % to 0.0002 %
130	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Using Multi Product Calibrator by Direct Method	10 Hz to 1 MHz	0.0003 % to 0.006 %
131	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Using Programmable Synthesizer by Direct Method	500 MHz to 1200 MHz	0.0002 % to 0.00016 %

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132	MECHANICAL-ACCELERATION AND SPEED	Centrifuge, Strobometer,Stirrers , RPM Indicator/ Speed Indicator , Tachometer Calibrator, RPM Generator	Using Digital Contact & Non-Contact Tachometer by Comparison method as per SANS TR 45-01	>1000 rpm to 10000 rpm	0.02%
133	MECHANICAL-ACCELERATION AND SPEED	Centrifuge, Strobometer,Stirrers , RPM Indicator/ Speed Indicator , Tachometer Calibrator, RPM Generator	Using Digital Non-Contact Tachometer by Comparison method as per SANS TR 45-01	>30000 rpm to 100000 rpm	0.01%
134	MECHANICAL-ACCELERATION AND SPEED	Centrifuge, Strobometer,Stirrers , RPM Indicator/ Speed Indicator , Tachometer Calibrator, RPM Generator	Using Digital Contact & Non-Contact Tachometer by Comparison method as per SANS TR 45-01	10 rpm to 100 rpm	0.31%
135	MECHANICAL-ACCELERATION AND SPEED	Centrifuge, Strobometer,Stirrers , RPM Indicator/ Speed Indicator , Tachometer Calibrator, RPM Generator	Using Digital Contact & Non-Contact Tachometer by Comparison method as per SANS TR 45-01	100 rpm to 1000 rpm	0.08%

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136	MECHANICAL-ACCELERATION AND SPEED	Centrifuge, Strobometer,Stirrers , RPM Indicator/ Speed Indicator , Tachometer Calibrator, RPM Generator	Using Digital Non-Contact Tachometer by Comparison method as per SANS TR 45-01	10000 rpm to 30000 rpm	0.02%
137	MECHANICAL-ACCELERATION AND SPEED	Centrifuge, Strobometer,Stirrers , RPM Indicator/ Speed Indicator , Tachometer Calibrator, RPM Generator	Using Digital Tachometer by Comparison method as per SANS TR 45-01	5 rpm to 10 rpm	0.14%
138	MECHANICAL-ACCELERATION AND SPEED	Non-Contact Tachometer	Using Digital Contact / Non-Contact Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	>100 rpm to 1000 rpm	0.08%
139	MECHANICAL-ACCELERATION AND SPEED	Non-Contact Tachometer	Using Digital Non-Contact Tachometer by Comparison method as per SANS TR 45-01	>1000 rpm to 10000 rpm	0.02%

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140	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Contact Type)	Using Digital Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	5 rpm to 10 rpm	1.23%
141	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Non-Contact Type)	Using Digital Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	>30000 rpm to 100000 rpm	0.01%
142	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Contact Type)	Using Digital Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	>1000 rpm to 8000 rpm	0.08%
143	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Contact Type)	Using Digital Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	10 rpm to 50 rpm	0.63%

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144	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Contact Type)	Using Digital Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	>50 rpm to 1000 rpm	0.08%
145	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Non-Contact Type)	Using Digital Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	10 rpm to 100 rpm	0.34%
146	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Non-Contact Type)	Using Digital Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	10000 rpm to 30000 rpm	0.02%
147	MECHANICAL-ACCELERATION AND SPEED	Tachometer (Non-Contact Type)	Using Digital Tachometer with Tachometer Cal Source by Comparison method as per SANS TR 45-01	5 rpm to 10 rpm	0.19%
148	MECHANICAL-ACOUSTICS	Sound Level Meter @ 1 kHz	Using Sound Level Calibrator as per OIML R58	114 dB	0.91dB

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149	MECHANICAL-ACOUSTICS	Sound Level Meter @ 1 kHz	Using Sound Level Calibrator by direct method as per OIML R58	94 dB	0.91dB
150	MECHANICAL-PRESSURE INDICATING DEVICES	(Pneumatic Medium) Pressure Gauge, Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter, Pressure Transducer, Pressure Switch, Pressure Recorder	Using Pressure Indicator with Digital Multimeter by Comparison Method as per DKD R 6-1	0 to 7 bar	0.021bar
151	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure and Vacuum Pressure Gauge Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter,Pressure Transducer, Pressure Switch, Pressure Recorder (Pneumatic Medium)	Using Digital Manometer with Digital Multimeter by Comparison Method as per DKD R 6-1	(-)20 mbar to 0	0.014mbar

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152	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure and Vacuum Pressure Gauge Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter,Pressure Transducer, Pressure Switch, Pressure Recorder (Pneumatic Medium)	Using Digital Manometer with Digital Multimeter by Comparison Method as per DKD R 6-1	(-)700 mbar to (-)50 mbar	0.19mbar
153	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure and Vacuum Pressure Gauge Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter,Pressure Transducer, Pressure Switch, Pressure Recorder (Pneumatic Medium)	Using Digital Manometer with Digital Multimeter with Digital Multimeter by Comparison Method as per DKD R 6-1	0 to 20 mbar	0.018mbar

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154	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure and Vacuum Pressure Gauge Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter,Pressure Transducer, Pressure Switch, Pressure Recorder (Pneumatic Medium)	Using Digital Manometer with Digital Multimeter by Comparison Method as per DKD R 6-1	0 to 50 mbar	0.018mbar
155	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure and Vacuum Pressure Gauge Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter,Pressure Transducer, Pressure Switch, Pressure Recorder (Pneumatic Medium)	Using Pressure Indicator with Digital Multimeter by Comparison Method as per DKD R 6-1	0 to 700 mbar	1.19mbar

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156	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure and Vacuum Pressure Gauge Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter,Pressure Transducer, Pressure Switch, Pressure Recorder (Pneumatic Medium)	Using Digital Manometer with Digital Multimeter by Comparison Method as per DKD R 6-1	(-)50 mbar to (-)20 mbar	0.085mbar
157	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Gauge, Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Diff.Pressure Transmitter, Pressure Transducer, Pressure Switch, Pressure Recorder (Pneumatic Medium)	Using Pressure Indicator with Digital Multimeter by Comparison Method as per DKD R 6-1	0 to 25 bar	0.015bar

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158	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Gauge, Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Pressure Transducer, Pressure Switch, Pressure Recorder (Hydraulic Medium)	Using Pressure Indicator with Digital Multimeter by Comparison Method as per DKD R 6-1	0 to 1000 bar	1.2bar
159	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure Gauge, Pressure Indicator, Pressure Calibrator, Pressure Transmitter, Pressure Transducer, Pressure Switch, Pressure Recorder (Hydraulic Medium)	Using Pressure Indicator and Digital Multimeter by Comparison Method as per DKD R 6-1	0 to 700 bar	0.42bar
160	MECHANICAL-PRESSURE INDICATING DEVICES	Vacuum Gauges, Vacuum Indicator, Vacuum Calibrator, Diff.Vacuum Transmitter, Vacuum Transmitter,Vacuum Transducer, Vacuum Switch,Vacuum Manometer	Using Vacuum Indicator with Digital Multimeter by Comparison Method as per DKD R 6-1	(-)0.85 bar to 0	0.0032bar

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161	MECHANICAL-WEIGHING SCALE AND BALANCE	Electronic balance-Class I and coarser (Readability: 0.1g)	Using E2 Class standard reference weights as per OIML R 76-1	0.2 g to 2200 g	9.76mg
162	MECHANICAL-WEIGHING SCALE AND BALANCE	Electronic balance-Class I and coarser (Readability: 0.1mg)	Using E2 Class standard reference weights as per OIML R 76-1	1 mg to 220 g	0.446mg
163	MECHANICAL-WEIGHING SCALE AND BALANCE	Electronic balance-Class III and coarser (Readability: 0.1 g)	Using E2 & F1 Class standard reference weights as per OIML R 76-1	10 g to 20 kg	151.2mg
164	MECHANICAL-WEIGHING SCALE AND BALANCE	Electronic balance-Class IIII and coarser (Readability: 50 g)	Using F1 and M1 Class standard reference weights as per OIML R 76-1	1 kg to 300 kg	302.23g
165	THERMAL-SPECIFIC HEAT & HUMIDITY	Indicator with Sensor of Humidity Chamber, Environmental Chamber	Using Standard Humidity Indicator with Probe By Comparison Method	10 °C to 50 °C @50 %rh	0.33°C
166	THERMAL-SPECIFIC HEAT & HUMIDITY	Indicator with Sensor of Humidity Chamber, Environmental Chamber	Using Standard Humidity Indicator with Probe By Comparison Method	20 %rh to 95 %rh @25°C	0.90%rh

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167	THERMAL-SPECIFIC HEAT & HUMIDITY	Thermo Hygrometers,Humidity sensor with Indicator & Portable Data Logger	Using Standard Humidity Indicator with Probe , Humidity Chamber By Comparison Method	10°C to 50 °C @ 50 %rh	0.33°C
168	THERMAL-SPECIFIC HEAT & HUMIDITY	Thermo Hygrometers,Humidity sensor with Indicator & Portable Data Logger	Using Standard Humidity Indicator with Probe, Humidity Chamber By Comparison Method	20 %rh to 90 %rh @ 25°C	0.92 %rh
169	THERMAL-TEMPERATURE	Black body source / Calibrator	Using IR Thermometer (emissivity: 0.95) by comparison method	(-)20°C to 50°C	1.06°C
170	THERMAL-TEMPERATURE	Black body source / Calibrator	Using IR Thermometer (emissivity: 0.95) by comparison method	50 °C to 500 °C	2.21°C
171	THERMAL-TEMPERATURE	Indicator with Sensor of Liquid bath, Furnace, Oven, Freezer, Dry block Bath, Environmental Chamber (single position)	Using PRT Sensor with High Precision Thermometer by comparison method	(-)100 °C to 140 °C	0.15°C

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172	THERMAL-TEMPERATURE	Indicator with Sensor of Liquid bath, Furnace, Oven, Dry block Bath (single position)	Using PRT sensor with High Precision Thermometer by comparison method	140 °C to 650 °C	0.20°C
173	THERMAL-TEMPERATURE	Indicator with Sensor of Furnace, Oven, Dry block Bath (single position)	Using Temperature Sensor with High Precision Thermometer by comparison method	650 °C to 1200 °C	1.71°C
174	THERMAL-TEMPERATURE	IR Thermometer, Pyrometer	Using Black body source with IR Thermometer (emissivity: 0.95) by comparison method	(-)20 °C to 50 °C	1.06°C
175	THERMAL-TEMPERATURE	IR Thermometer, Pyrometer	Using Black body source with IR Thermometer (emissivity: 0.95) by comparison method	50 °C to 500 °C	2.21°C
176	THERMAL-TEMPERATURE	Liquid in Glass Thermometer	Using PRT Sensor with High Precision Thermometer, Liquid bath by comparison method	(-)10 °C to 250	0.57°C

SCOPE OF ACCREDITATION

Laboratory Name :	CAL LABS PRIVATE LIMITED, 204 & 211 GAYATRI APARTMENTS, MAIN ROAD , TRIMULGHERRY X ROADS, RANGA REDDY, SECUNDERABAD, HYDERABAD, TELANGANA, INDIA
Accreditation Standard	ISO/IEC 17025:2017
Certificate Number	CC-3650
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S.No	Discipline / Group	Measurand or Reference Material/Type of instrument or material to be calibrated or measured / Quantity Measured /Instrument	Calibration or Measurement Method or procedure	Measurement range and additional parameters where applicable(Range and Frequency)	* Calibration and Measurement Capability(CMC)(±)
177	THERMAL-TEMPERATURE	RTDs, Thermocouples, Temperature Gauges, Temperature Recorder/ Controller/ Indicator, Transmitters with Sensor	Using PRT sensor with High Precision Thermometer, 6½ Digit DMM by comparison method	(-)100 °C to 140 °C	0.11°C
178	THERMAL-TEMPERATURE	RTDs, Thermocouples, Temperature Gauges, Temperature Recorder/ Controller/ Indicator, Transmitters with Sensor	Using PRT sensor with High Precision Thermometer, 6½ Digit DMM by comparison method	140 °C to 650 °C	0.19°C
179	THERMAL-TEMPERATURE	Thermocouples, Temperature Gauges, Temperature Recorder/ Controller/ Indicator, Transmitters with Sensor	Using Semi Standard Thermocouple, High Precision Thermometer, 6½ Digit DMM by comparison method	650 °C to 1200 °C	1.81°C

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