



# National Accreditation Board for Testing and Calibration Laboratories

## SCOPE OF ACCREDITATION

**Laboratory Name :**

ROOTS METROLOGY & TESTING LABORATORY (A UNIT OF ROOTS INDUSTRIES INDIA LIMITED), NO.37, FIRST MAIN ROAD, SIDCO INDUSTRIAL ESTATE, THIRUMAZHISAI, CHENNAI, THIRUVALLUR, TAMIL NADU, INDIA

**Accreditation Standard**

ISO/IEC 17025:2017

**Certificate Number**

CC-2201

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**Validity**

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**Last Amended on**

20/04/2021

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@50 Hz	Using 6½ Digit Multimeter 8261A by Direct Method	0.1 mA to 1 mA	0.58 % to 0.34 %
2	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current@50 Hz	Using 6½ Digit Multimeter 8261A by Direct Method	1 A to 10 A	0.62 % to 0.26 %
3	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current@50 Hz	Using 6½ Digit Multimeter 8261A by Direct Method	1 mA to 10 mA	0.34 % to 0.25 %
4	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current@50 Hz	Using 6½ Digit Multimeter 8261A by Direct Method	10 mA to 1 A	0.25 % to 0.62 %



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5	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC High Voltage@50 Hz	Using High Voltage Probe with DMM Fluke by Direct Method	0.5 kV to 5 kV	3.52%
6	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC High Voltage@50 Hz	Using High Voltage Probe with DMM Fluke by Direct Method	5 kV to 28 kV	3.52 % to 4.06 %
7	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage@50 Hz	Using 6½ Digit Multimeter 8261A by Direct Method	1 mV to 10 mV	5.1 % to 0.57 %
8	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage@50 Hz	Using 6½ Digit Multimeter 8261A by Direct Method	1 V to 10 V	0.46 % to 0.41 %
9	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage@50 Hz	Using 6½ Digit Multimeter 8261A by Direct Method	10 mV to 1 V	0.57 % to 0.46 %



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10	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage@50 Hz	Using 6½ Digit Multimeter 8261A by Direct Method	10 V to 750 V	0.41 % to 0.1 %
11	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50Hz	Using Multi product calibrator Fluke 5502A with Current Coil Fluke 5500 by Direct Method	10 A to 100 A	0.79 % to 0.73 %
12	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50Hz	Using Multi product calibrator Fluke 5502A with Current Coil Fluke 5500 by Direct Method	100 A to 1000 A	0.73 % to 0.38 %
13	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50Hz to 1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	1 A to 10 A	0.073 % to 0.105 %
14	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50Hz to 1kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	1 mA to 100 mA	0.15 % to 0.069 %





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15	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50Hz to 1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	10 A to 20 A	0.105 % to 0.175 %
16	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50Hz to 1kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	100 µA to 1 mA	0.27 % to 0.15 %
17	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50Hz to 1kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	100 mA to 1 A	0.069 % to 0.073 %
18	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50Hz to 1kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	30 µA to 100 µA	0.53 % to 0.27 %
19	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (50 Hz @0.2 Lag) Voltage : 120 V to 240 V, Current : 0.1 to 20 A	Using Multi product calibrator Fluke 5502A by Direct Method	2.4 W to 960 W	5.39 % to 1.72 %
20	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (50 Hz @0.5 Lag) Voltage : 120 V to 240 V, Current : 0.1 to 20 A	Using Multi product calibrator Fluke 5502A by Direct Method	6 W to 2.4 kW	5.36 % to 1.03 %



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21	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (50 Hz @0.8 Lead) Voltage : 120 V to 240 V, Current : 0.1 to 20 A	Using Multi product calibrator Fluke 5502A by Direct Method	9.6 W to 3.84 kW	1.3 % to 0.26 %
22	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (50 Hz @Unity) Voltage : 120 V to 240 V, Current : 0.1 to 20 A	Using Multi product calibrator Fluke 5502A by Direct Method	12 W to 4.8 kW	0.19 % to 0.22 %
23	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage@50 Hz to 1 kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	100 V to 1000 V	0.074 % to 0.11 %
24	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage@50 Hz to 10 kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	1 mV to 10 mV	2.59 % to 1.01 %
25	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage@50 Hz to 10 kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	1 V to 10 V	0.058 % to 0.047 %
26	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Voltage@50 Hz to 10 kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	10 mV to 100 mV	1.01 % to 0.115 %



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27	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	AC Voltage@50 Hz to 10 kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	10 V to 100 V	0.047 % to 0.074 %
28	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	AC Voltage@50 Hz to 10 kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	100 mV to 1 V	0.115 % to 0.058 %
29	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance@1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	1 $\mu$ F to 10 $\mu$ F	0.423 % to 0.421 %
30	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance@1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	1 mF to 100 mF	0.647 % to 2.73 %
31	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance@1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	1 nF to 100 nF	1.74 % to 0.42 %
32	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance@1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	10 $\mu$ F to 100 $\mu$ F	0.421 % to 0.65 %





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33	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance@1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	100 $\mu$ F to 1 mF	0.65%
34	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance@1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	100 nF to 1 $\mu$ F	0.42 % to 0.423 %
35	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Capacitance@1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	330 pF to 1 nF	4.08 % to 1.74 %
36	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	Power Factor	Using Multi product calibrator Fluke 5502A by Direct Method	50 Hz 0.2 to Unity (Lag & Lead)	0.011 PF to 0.001 PF
37	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 6½ Digit Multimeter 8261A by Direct Method	1 $\mu$ A to 10 $\mu$ A	2.95 % to 0.35 %
38	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 6½ Digit Multimeter 8261A by Direct Method	1 A to 10 A	0.14 % to 0.21 %



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39	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 6½ Digit Multimeter 8261A by Direct Method	1 mA to 10 mA	0.067 % to 0.081 %
40	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 6½ Digit Multimeter 8261A by Direct Method	10 µA to 1 mA	0.35 % to 0.067 %
41	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 6½ Digit Multimeter 8261A by Direct Method	10 mA to 1 A	0.081 % to 0.14 %
42	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC High Voltage	Using High Voltage Probe Fluke with DMM Rishabh by Direct Method	0.5 kV to 5 kV	2.56 % to 2.32 %
43	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC High Voltage	Using High Voltage Probe Fluke with DMM Rishabh by Direct Method	5 kV to 35 kV	2.32%
44	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 6½ Digit Multimeter 8261A by Direct Method	1 mV to 10 mV	0.502 % to 0.055 %





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45	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 6½ Digit Multimeter 8261A by Direct Method	1 V to 10 V	0.032 % to 0.016 %
46	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 6½ Digit Multimeter 8261A by Direct Method	10 mV to 1 V	0.055 % to 0.032 %
47	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 6½ Digit Multimeter 8261A by Direct Method	10 V to 100 V	0.016 % to 0.022 %
48	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 6½ Digit Multimeter 8261A by Direct Method	100 V to 1000 V	0.022 % to 0.012 %
49	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using 6½ Digit Multimeter 8261A by Direct Method	0.1 Mohm to 1 Mohm	0.025%
50	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using 6½ Digit Multimeter 8261A by Direct Method	1 kohm to 10 kohm	0.016%



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51	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using 6½ Digit Multimeter 8261A by Direct Method	1 Mohm to 10 Mohm	0.025 % to 0.076 %
52	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using 6½ Digit Multimeter 8261A by Direct Method	1 ohm to 10 ohm	0.51 % to 0.061 %
53	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using 6½ Digit Multimeter 8261A by Direct Method	10 kohm to 0.1 Mohm	0.016 % to 0.025 %
54	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using 6½ Digit Multimeter 8261A by Direct Method	10 Mohm to 100 Mohm	0.076 % to 0.94 %
55	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using 6½ Digit Multimeter 8261A by Direct Method	10 ohm to 1 kohm	0.061 % to 0.016 %
56	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A by Direct Method	1 µA to 10 µA	2.33 % to 0.25 %



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57	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A by Direct Method	1 A to 10 A	0.095 % to 0.078 %
58	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A by Direct Method	1 mA to 10 mA	0.021 % to 0.019 %
59	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A by Direct Method	10 $\mu$ A to 100 $\mu$ A	0.25 % to 0.041 %
60	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A with Current Coil Fluke 5500 by Direct Method	10 A to 100 A	0.93 % to 0.33 %
61	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A by Direct Method	10 A to 20 A	0.078 % to 0.22 %
62	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A by Direct Method	10 mA to 100 mA	0.019 % to 0.018 %





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63	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A by Direct Method	100 $\mu$ A to 1 mA	0.041 % to 0.021 %
64	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A with Current Coil Fluke 5500 by Direct Method	100 A to 1000 A	0.33%
65	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A by Direct Method	100 mA to 1 A	0.018 % to 0.095 %
66	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi Product Calibrator Fluke 5502A by Direct Method	0.5 mV to 1 mV	0.716 % to 0.36 %
67	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi Product Calibrator Fluke 5502A by Direct Method	1 mV to 10 mV	0.36 % to 0.043 %
68	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi Product Calibrator Fluke 5502A by Direct Method	10 mV to 100 mV	0.043 % to 0.011 %



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69	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi Product Calibrator Fluke 5502A by Direct Method	100 mV to 100 V	0.011 % to 0.01 %
70	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi Product Calibrator Fluke 5502A by Direct Method	100 V to 1000 V	0.01 % to 0.012 %
71	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Inductance	Using Decade Inductance Box Beetech DIB-5D by Direct Method	10 mH to 10 H	1.16%
72	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Inductance	Using Decade Inductance Box Beetech DIB-5D by Direct Method	100 µH to 10 mH	1.16%
73	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi Product Calibrator Fluke 5502A, High Precision Decade Resistance Box By Direct Method	1 kohm to 100 kohm	0.015 % to 0.017 %



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74	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using High stability Decade Meg ohm Box By Direct Method	1 Gohm to 100 Gohm	0.61 % to 5.86 %
75	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi Product Calibrator Fluke 5502A, High stability Decade Meg ohm Box By Direct Method	1 Mohm to 1000 Mohm	0.021 % to 1.8 %
76	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi Product Calibrator Fluke 5502A, High Precision Decade Resistance Box By Direct Method	1 ohm to 10 ohm	1.17 % to 0.15 %
77	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi Product Calibrator Fluke 5502A, High stability Decade Meg ohm Box By Direct Method	10 ohm to 1 kohm	0.150 % to 0.015 %
78	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using 4 Wire Low Resistance Standard Zeal ZMLRJ by Direct Method, discrete values	10 mohm to 1 ohm	0.147 %, to 0.14 %





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79	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi Product Calibrator Fluke 5502A, High stability Decade Meg ohm Box By Direct Method	100 kohm to 1 Mohm	0.017 % to 0.021 %
80	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using 4 Wire Low Resistance Standard Zeal ZMLRJ by Direct Method discrete values	100 µohm to 1 mohm	0.37 % to 0.165 %
81	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator, Controller and Recorder) - E-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator by Direct Method	-200 °C to 1000 °C	0.58°C
82	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator, Controller and Recorder) - J-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator by Direct Method	-200 °C to 1200 °C	0.36°C
83	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator, Controller and Recorder) - K-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator by Direct Method	-200 °C to 1370 °C	0.47°C



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84	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator, Controller and Recorder) - N-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator by Direct Method	-200 °C to 1300 °C	0.47°C
85	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator, Controller and Recorder) - R-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	5 °C to 1750 °C	0.8°C
86	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator, Controller and Recorder) - S-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	5 °C to 1750 °C	0.81°C
87	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator, Controller and Recorder) - T-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 400 °C	0.73°C
88	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator, Controller and Recorder) -RTD-PT100	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 800 °C	0.36°C



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89	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation ( Indicator, Controller and Recorder) B-Type Thermocouple	Using Multi product calibrator Fluke 5502A /Multi Function Calibrator (Beamex) MC2 by Direct Method	600 °C to 1800 °C	1.26°C
90	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation ( Indicator, Controller and Recorder) L - Type Thermocouple	Using Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 900 °C	0.35°C
91	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation ( Indicator, Controller and Recorder) U - Type Thermocouple	Using Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 400 °C	0.35°C
92	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - B-Type Thermocouple	Using Multi product calibrator Fluke 5502A /Multi Function Calibrator (Beamex) MC2 by Direct Method	600 °C to 1800 °C	0.71°C
93	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - E-Type Thermocouple	Using Multi product calibrator Fluke 5502A /Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 1000 °C	0.58°C





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94	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - J - Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 1200 °C	0.32°C
95	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - K- Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 1370 °C	0.46°C
96	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - N- Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 1300 °C	0.47°C
97	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - R- Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator by Direct Method	5 °C to 1750 °C	0.7°C
98	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - RTD- PT100	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 800 °C	0.27°C



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99	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - S-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	5 °C to 1750 °C	0.81°C
100	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - T-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 400 °C	0.73°C
101	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - L-Type Thermocouple	Using Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 900 °C	0.30°C
102	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - U-Type Thermocouple	Using Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 600 °C	0.47°C
103	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using 6½ Digit Multimeter GW-Instek-8261A by Direct Method	10 Hz to 300 kHz	1.17 % to 0.013 %



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104	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Time Interval Meter / Timer / Stop Watch (Analog/ Digital)	Using Digital Time Interval Meter By Comparison Method	1 s to 3600 s	0.59 s to 0.98 s
105	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Time Interval Meter / Timer / Stop Watch (Analog/ Digital)	Using Digital Time Interval Meter By Comparison Method	3600 s to 86400 s	0.98 s to 5.08 s
106	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Using Multi product calibrator Fluke 5502A by Direct Method	1 Hz to 1 MHz	0.12%
107	MECHANICAL-ACCELERATION AND SPEED	Centrifuge/ Stirrers/RPM Indicators (Non Contact Type)	Using Digital Tachometer By Comparison Method	10RPM to 30000RPM	0.59 RPM to 5.86RPM
108	MECHANICAL-ACCELERATION AND SPEED	Digital Tachometers (Contact Type)	Using Digital Tachometer and source By Comparison Method	10 rpm to 15000 rpm	0.68 rpm to 3.94 rpm
109	MECHANICAL-ACCELERATION AND SPEED	Digital Tachometers/RPM Indicators/RPM Source/Calibrators/Stroboscope (Non Contact Type)	Using Digital Tachometer By Comparison Method	10 rpm to 90000 rpm	0.59 rpm to 5.86 rpm





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110	MECHANICAL-ACOUSTICS	Noise/Sound Level Meter	Using Sound Level Calibrator By Direct Method as per IS 15575 / OIML-R-58	94 and 114 dB	0.26dB
111	MECHANICAL-DENSITY AND VISCOSITY	Hydrometers	Using Hydrometer of resolution : 0.0005 g/ml and Appropriate liquid by Comparison Method as per Archimedes Principle based on IS 3104	0.600 g/ml to 1.600 g/ml	0.0015g/ml
112	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Bevel Protractor (Digital/Analog) L.C.: 5 Min	Using Vision Measuring System by Comparison Method	0 ° to 360 °	2.92 arc min
113	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Bore Gauge (Transmission only) Span Diameter 1.5mm to 600mm L.C.: 0.001 mm	Using Universal Length Measuring System by Comparison Method	Up to 1.5 mm	0.8µm
114	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Bore Micrometer - Three Point (Analog / Digital)	Using Master Setting Ring gauges which is calibrated by Universal Length Measuring System by Comparison Method	>100 mm to 150 mm	2.2µm



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115	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Bore Micrometer - Three Point (Analog / Digital) L. C. 1 µm	Using Master Setting Ring gauges which is calibrated by Universal Length Measuring System by Comparison Method	2.5 mm to 100 mm	3.4µm
116	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Caliper (Vernier/Digital/Dial) L.C.: 0.01 mm	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	0 to 1000 mm	8.9µm
117	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Caliper (Vernier/Digital/Dial) L.C.: 0.01 mm	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	0 to 300 mm	6.9µm
118	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Caliper (Vernier/Digital/Dial) L.C.: 0.01 mm	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	0 to 600 mm	7.4µm
119	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Coating Thickness Gauge L.C.: 1 µm	Using Standard Foils by Comparison Method	>20 µm to 2000 µm	1.5µm



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120	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Coating Thickness Foil	Using Universal Length Measuring System by Comparison Method	0.01 to 2.0 mm	0.6µm
121	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Coating Thickness Gauge L.C.: 0.1 µm	Using Standard Foils by Comparison Method	0 to 20 µm	0.6µm
122	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Combination Set / Degree Protractor L.C.: 1°	Using Vision Measuring System by Comparison Method	0 ° to 180 °	35 arc sec
123	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Cube Mould (Linear)	Using Digital Caliper as per IS 10086 by Comparison Method	Up to 150 mm	23.7µm
124	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Cylindrical Measuring Pins (Grade "0" and Coarser)	Using Universal Length Measuring System by Comparison Method	Up to 20 mm	0.5µm





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125	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Cylindrical Setting Master (Diameter Only)	Using Universal Length Measuring System by Comparison Method	0 to 100 mm	0.6µm
126	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Depth Gauge (Vernier/Digital/Dial/ Hook) L.C. : 0.01 mm	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	0 to 300 mm	6.8µm
127	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Depth Gauge (Vernier/Digital/Dial/ Hook) L.C. : 0.01 mm	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	0 to 600 mm	9.6µm
128	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Depth Micrometer (Analog/Digital) L.C.: 0.001 mm	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	0 to 300 mm	3.3µm
129	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial Calibration Tester L.C.: 0.001 mm	Using Universal Length Measuring System by Comparison Method	0 to 25 mm	1.1µm



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130	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial Caliper Gauge L.C.: 0.01 mm	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	2.5 to 100 mm	5.9µm
131	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Electronic Probe/ LVDT System / Digital Indicator L.C.: 0.1 µm	Using Universal Length Measuring System by Comparison Method	0 to 25 mm	0.6µm
132	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Engineer's Square / Granite Square - parallelism - Squareness	Using height measuring system by comparison method	0 to 300 mm	5.7µm
133	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External Micrometer (Mechanical/Digital) L.C.: 0.001 mm	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	>100 mm to 300 mm	2.4µm
134	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External Micrometer (Mechanical/Digital) L.C.: 0.001 mm	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	>300 mm to 500 mm	3.3µm



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135	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External Micrometer (Mechanical/Digital) L.C.: 0.001 mm	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	0 to 100 mm	1.1µm
136	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External Micrometer (Mechanical/Digital) L.C.: 0.001 mm	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	>500 mm to 1000 mm	7.2µm
137	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Feeler Gauge / Thickness Standard	Using Digital Micrometer by Comparison Method	Up to 1 mm	1.2µm
138	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Fillet Gauge - Angular	Using Vision Measuring System by Comparison Method	Up to 50 mm	3.1 arc sec
139	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Fillet Gauge - Linear	Using Vision Measuring System by comparison method	Up to 50 mm	2.7µm





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140	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Flush Pin Gauge	Using Height Measuring System by Comparison Method	0 to 70 mm	6.5µm
141	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Gear Tooth Caliper (Vernier/Digital/Dial) L.C.: 0.01mm	Using Gauge Blocks by Comparison Method	0 to 50 mm	6.7µm
142	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Height Gauge (Vernier/Digital/Dial) L.C.: 0.01 mm	Using Height Measuring System and Long Gauge Blocks by Comparison Method	0 to 1000 mm	9.1µm
143	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Height Gauge (Vernier/Digital/Dial) L.C.: 0.01 mm	Using Height Measuring System and Long Gauge Blocks by Comparison Method	0 to 600 mm	9.2µm
144	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Inside/Groove Micrometer / L.C.: 0.01 mm	Using Gauge Block and Gauge Block accessory by Comparison Method	5 mm to 100 mm	5.9µm



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145	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Internal /Stick Micrometer L.C.: 0.01 mm	Universal Length Measuring / Height Measuring System by Comparison Method	25 mm to 300 mm	5.8µm
146	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Lever Type Dial Gauge L.C.: 0.001 mm	Using Universal Length Measuring System by Comparison Method	0 to 0.14 mm	0.77µm
147	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Lever Type Dial Gauge L.C.: 0.01 mm	Using Universal Length Measuring System by Comparison Method	0 to 1.2 mm	5.9µm
148	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Limit Gauges - Angle	Using Height Measuring System / Co-ordinate measuring machine / Vision Measuring Machine by Comparison Method	0 ° to 360 °	17 arc sec



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149	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Limit Gauges - Height / Depth / Length / Width	Using Height Measuring System / Co-ordinate measuring machine / Universal Length Measuring System / Vision Measuring Machine by Comparison Method	Up to 100 mm	6.7µm
150	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Measuring Scale L.C. 0.5 mm	Using Tape & Scale Calibrator by Comparison Method	0 to 1000 mm	288.9vL (Where L in "m")µm
151	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Measuring Tape L.C. 0.5 mm	Using Tape & Scale Calibrator by Comparison Method	0 to 30 m	577.5vL ( Where L in "m")µm
152	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Micrometer Setting Rod	Using Universal Length Measuring System / Height Measuring System and Long Gauge Blocks by Comparison Method	>500 mm to 1000 mm	5.6µm





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153	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Micrometer Head L.C.: 0.0001 mm	Using Universal Length Measuring System by Comparison Method	0 to 25 mm	1.2µm
154	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Micrometer Setting Rod	Using Universal Length Measuring System / Height Measuring System and Long Gauge Blocks by Comparison Method	>100 mm to 500 mm	3.2µm
155	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Micrometer Setting Rod	Using Universal Length Measuring System / Height Measuring System and Long Gauge Blocks by Comparison Method	25 mm to 100 mm	0.7µm
156	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Pie Tape L.C. 0.1 mm	Using Tape & Scale Calibrator by comparison method	Up to 1.2 M	577.5vL ( Where L in "m")µm



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157	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Pistol Caliper / OD Caliper L.C.: 0.1 mm	Using Gauge Blocks by Comparison Method	0 to 100 mm	57.9µm
158	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain / Setting Ring Gauge	Using Universal Length Measuring System by Comparison Method	>100 mm to 200 mm	2.4µm
159	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain / Setting Ring Gauge	Using Universal Length Measuring System by Comparison Method	>200 mm to 300 mm	3.0µm
160	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain / Setting Ring Gauge	Using Universal Length Measuring System by Comparison Method	3 mm to 100 mm	1.8µm
161	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain Plug Gauge	Using Universal Length Measuring System by Comparison Method	>100 mm to 200 mm	2.1µm



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162	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain Plug Gauge	Using Universal Length Measuring System by Comparison Method	>200 mm to 400 mm	4.7µm
163	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain Plug Gauge	Using Universal Length Measuring System by Comparison Method	1 mm to 100 mm	0.6µm
164	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plunger Type Dial/ Digital Gauge L.C.: 0.001 mm	Using Universal Length Measuring System by Comparison Method	0 to 25 mm	0.8µm
165	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plunger Type Dial/ Digital Gauge L.C.: 0.01 mm	Using Universal Length Measuring System by Comparison Method	0 to 100 mm	5.9µm
166	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Radius Gauge	Using Vision Measuring System by Comparison Method	Up to 25 mm	12.7µm





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167	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Sine Bar /Sine Centers (parallelism)	Using Angle Gauge Block/ Co-ordinate Measuring machine/ by Comparison Method	Up to 150 mm	5.7 $\mu$ m
168	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Slip Gauge Accessories (Flatness only)	Using Optical Parallel by Comparison Method	Up to 100 mm	1.0 $\mu$ m
169	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Snap Gauge (Plain/Adjustable)	Using Gauge Block and Gauge Block accessory by Comparison Method	100 mm to 200 mm	2.5 $\mu$ m
170	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Snap Gauge (Plain/Adjustable)	Using Gauge Block and Gauge Block accessory by Comparison Method	2 mm to 100 mm	2.0 $\mu$ m
171	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Snap Micrometer L.C.: 0.001 mm	Using Gauge Block by Comparison Method	0 to 100 mm	2.1 $\mu$ m



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172	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Taper Scale	Using Vision Measuring System by Comparison Method	Up to 15 mm	8.3µm
173	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Taper Thread Plug Gauge( Effective diameter)	Using Universal Length Measuring System by Comparison Method	Up to 100 mm	0.9µm
174	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Taper Thread Ring Gauge( Effective diameter)	Using Universal Length Measuring System by Comparison Method	8 mm to 100 mm	1.8µm
175	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Test Sieves	Using Vision Measuring System by Comparison Method	4 mm to 10 mm	7.9µm
176	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Test Sieves	Using Vision Measuring System by Comparison Method	Up to 4 mm	8.5µm



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177	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Test Sieves(Perforated Plate / Wire Cloth)	Using Vision Measuring System by Comparison Method	10 mm to 100 mm	41.1µm
178	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thickness Gauge (Digital/Dial) L.C.: 0.001 mm	Using Gauge Blocks by Comparison Method	0 to 25 mm	0.7µm
179	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Measuring Cylinders	Using Universal Length Measuring System by Comparison Method	0.17 mm to 5 mm	0.4µm
180	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Pitch Gauge	Using Vision Measuring System by Comparison Method	0.2 mm to 7.0 mm	5.0µm
181	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Plug Gauge(Major/Effective diameter)	Using Universal Length Measuring System by Comparison Method	>100 mm to 200 mm	4.7µm





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182	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Plug Gauge(Major/Effective diameter)	Using Universal Length Measuring System by Comparison Method	>200 mm to 400 mm	4.7µm
183	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Plug Gauge(Major/Effective diameter)	Using Universal Length Measuring System by Comparison Method	0 to 100 mm	0.8µm
184	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Ring Gauge(Effective diameter)	Using Universal Length Measuring System by Comparison Method	>90 mm to 200 mm	2.2µm
185	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Ring Gauge(Effective diameter)	Using Universal Length Measuring System by Comparison Method	3 mm to 90 mm	1.4µm
186	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Tubular /Stick Micrometer L.C.: 0.01 mm	Universal Length Measuring / Height Measuring System/ Long Gauge block by Comparison Method	300 mm to 1000 mm	11.3µm



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187	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Ultrasonic Thickness Gauge L.C. : 0.01 mm	Using Slip Gauges by Comparison Method	0 to 100 mm	7.9µm
188	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	V-Block (Symmetry, Parallelism, Flatness & Perpendicularity)	Using height measuring system & mandrel by Comparison Method	Up to 150 mm	5.7µm
189	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Width/Gap Gauge	Using Universal Length Measuring System by Comparison Method	>100 mm to 300 mm	6.0µm
190	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Width/Gap Gauge	Using Universal Length Measuring System by Comparison Method	Up to 100 mm	1µm
191	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Caliper Checker	Using Height Measuring System by Comparison Method	0 to 600 mm	± 0.25 + (L/275) µm where L in mm



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192	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Co-Ordinate Measuring Machine Resolution: 0.0001mm	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	0 to 1000 mm	$\pm 0.85 + (L/200)\mu\text{m}$ Where "L" in mm
193	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Height Measuring System L.C.: 0.0001 mm	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	0 to 1000 mm	$\pm 0.25 + (L/180)\mu\text{m}$ Where "L" in mm
194	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Height Measuring System L.C.: 0.0001 mm	Using Laser Interferometer by comparison method:	0 to 1000 mm	$\pm 0.60 + (L/2000)\mu\text{m}$ Where "L" in mm
195	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Length Measuring Machine - Horizontal / Vertical (Linear axis ) L.C 0.0001 mm	Using Laser Interferometer by comparison method:	0 to 3000 mm	$\pm 0.12 + (L/1810)\mu\text{m}$ Where "L" in mm
196	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector/ Tool Maker Microscope/ Vision Measuring Machine - Linear L.C : 0.1 $\mu\text{m}$	Using Glass Calibration Grid / Angle Graticule by Comparison Method	400mm x 400 mm	3.05 $\mu\text{m}$
197	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector/ Tool Maker Microscope/ Vision Measuring Machine- Angular L.C : 1Arc sec	Using Glass Calibration Grid / Angle Graticule by Comparison Method	0 ° to 360 °	20.16arc sec





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198	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector/ Tool Maker Microscope/ Vision Measuring Machine- Magnification	Using Glass Calibration Grid / Angle Graticule / Digital Vernier Caliper by Comparison Method	10 X to 100 X	0.25%
199	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector/ Vision Measuring Machine - Linear L.C : 0.0001mm	Using Laser Interferometer by comparison method	400mm x 400 mm	± 0.15 + (L/3640)µm Where "L" in mm
200	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Scale & Tape Measuring Machine / Calibrator L.C : 0.001 mm	Using Slip Gauges & Long Slip Gauges by Comparison Method	Up to 1000 mm	± 0.66 + (L/195)µm Where "L" in mm
201	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Scale & Tape Measuring Machine/ Calibrator L.C : 0.001 mm	Using Laser interferometer by comparison method	0 to 1000 mm	± 0.65 + (L/4350)µm where L is in mm
202	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Spirit Level- Sensitivity : 0.01 mm/m ( Type 1 & 2 & 3 )	Using Electronic Level / Height Measuring System by Comparison Method	Up to 300 mm	0.007mm/m
203	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Surface Plate (Granite /Cast Iron)	Using Electronic Level by Comparison Method	3500mm X 2600 mm	±0.49 x Sqrt((L+W)/150)µm where L is length in mm



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204	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Universal Length Measuring System / Metroscope L.C : 0.00001mm	Using Laser Interferometer by comparison method	0 to 100 mm	± 0.08 + (L/5000)μm Where "L" in mm
205	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Universal Length Measuring System / Metroscope L.C : 0.00001mm	Using Laser Interferometer by comparison method	100 to 1000 mm	± 0.10 + (L/2000)μm Where "L" in mm
206	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Universal Length Measuring System / Metroscope L.C : 0.00001mm	Using Laser Interferometer by comparison method	1000 to 3000 mm	± 0.60 + (L/2565)μm Where "L" in mm
207	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Universal Length Measuring System L.C.: 0.0001 mm (Absolute)	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	0 to 100 mm	± 0.25 + (L/170)μm Where "L" in mm
208	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Universal Length Measuring System L.C.: 0.0001 mm (Differential)	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	100 mm to 600 mm	± 0.85 + (L/225)μm Where "L" in mm
209	MECHANICAL-DUROMETER	Durometers / Shore Hardness Tester Shore A	Using Durometer Calibrator As per ASTM D2240-05	10 Shore A to 100 Shore A	1.0Shore A
210	MECHANICAL-DUROMETER	Durometers / Shore Hardness Tester Shore D	Using Durometer Calibrator As per ASTM D2240-05	10Shore D to 100 Shore D	1.0Shore D



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211	MECHANICAL-MOBILE FORCE MEASURING SYSTEM	Force Gauge / Push Pull Gauge	Using Newtonian Weights And frame fixture VDI/VDE 2624- part2.1	100N to 1000N	1.39N
212	MECHANICAL-MOBILE FORCE MEASURING SYSTEM	Force Gauge / Push Pull Gauge	Using Newtonian Weights And frame fixture VDI/VDE 2624- part2.1	10N to 100N	0.1 N
213	MECHANICAL-PRESSURE INDICATING DEVICES	Absolute Pressure (Pneumatic) (Absolute Pressure Gauges/Barometers / Manometers)	Using Standard Digital Barometer by Comparison Method as per OIML-R-97	300 mbar to 1100 mbar	0.68mbar
214	MECHANICAL-PRESSURE INDICATING DEVICES	Dial & Digital Vacuum Gauges, Transducers/ Transmitters, Switches	Using Standard Digital Vacuum Calibrator by Comparison Method as per DKD-R-6-2	-0.95 bar to 0 bar	0.0012bar
215	MECHANICAL-PRESSURE INDICATING DEVICES	Hydraulic :- Dial & Digital Pressure Gauges, Pressure Calibrators, Pressure Transmitters/Transducers	Using Standard Digital Pressure Calibrator with external sensor by Comparison Method as per DKD-R-6-1	0 to 700 bar	0.087bar
216	MECHANICAL-PRESSURE INDICATING DEVICES	Low Pressure (Pneumatic) (Magnetic Gauges, Manometer, Low Pressure/Vacuum Gauges, Calibrators)	Using Standard Digital Pressure calibrator by Comparison Method as per DKD-R-6-1/2	0 to 700 mbar	0.12mbar





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217	MECHANICAL-PRESSURE INDICATING DEVICES	Low Pressure (Pneumatic) (Maghnelic Gauges, Manometer, Barometer, Low Pressure Gauges/Vacuum, Calibrators, Pressure Transmitter, Differential Pressure Gauge)	Using Standard Digital Pressure / Vacuum calibrator by Comparison Method as per DKD-R-6-1/2	-1 bar to 2 bar	0.70mbar
218	MECHANICAL-PRESSURE INDICATING DEVICES	Low Pressure (Pneumatic) (Maghnelic Gauges, Manometer, Low Pressure Gauges/Vacuum, Calibrators, Differential Pressure Gauge)	Using Differential Pressure Calibrator By Comparison Method as per DKD R-6-1 /2	-10 kPa to 10 kPa	0.01kPa
219	MECHANICAL-PRESSURE INDICATING DEVICES	Low Pressure (Pneumatic) (Maghnelic Gauges, Manometer, Low Pressure Gauges/Vacuum, Calibrators, Differential Pressure Gauge)	Using Differential Pressure Calibrator By Comparison Method as per DKD R-6-1 /2	-245 Pa to 245 Pa	1.2Pa



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220	MECHANICAL-PRESSURE INDICATING DEVICES	Low Pressure (Pneumatic) (Maghnelic Gauges, Manometer, Low Pressure/Vacuum Gauges)Calibrators	Using Standard Digital Pressure / Vacuum calibrator by Comparison Method as per DKD-R-6-1/2	-700 mbar to 0 mbar	0.61mbar
221	MECHANICAL-PRESSURE INDICATING DEVICES	Pneumatic - Dial & Digital Pressure Gauges, Pressure Calibrators, Pressure Switches, Pressure Transmitters/Transducers	Using Standard Digital Pressure Calibrator by Comparison Method as per DKD-R-6-1	0 to 20 bar	0.003bar
222	MECHANICAL-TORQUE GENERATING DEVICES	Torque Generating Devices Type I-Classes Type II-Classes	Torque Transducer with indicator and Torque Wrench Calibrator using IS16906-2018	1 Nm to 10 Nm	4.88%
223	MECHANICAL-TORQUE GENERATING DEVICES	Torque Generating Devices Type I-Classes Type II-Classes	Torque Transducer with indicator and Torque Wrench Calibrator using IS16906-2018	100 Nm to 1000 Nm	1.25%
224	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	1 mg	0.01mg



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225	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E2 Class Standard Weight & Electronic Balance (Readability 1 mg)	1000g	1mg
226	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	100g	0.1mg
227	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	100mg	0.01mg
228	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	10g	0.01mg





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229	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	10mg	0.01mg
230	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	1g	0.01mg
231	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	2 g	0.01mg
232	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	20 g	0.012mg



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233	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	200 mg	0.01mg
234	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	200g	0.1mg
235	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	20mg	0.01mg
236	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	2mg	0.01mg



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237	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	50 g	0.02mg
238	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	500 mg	0.011mg
239	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E2 Class Standard Weight & Electronic Balance (Readability 1 mg)	500g	1mg
240	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	50mg	0.01mg





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241	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	5g	0.01mg
242	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F1 & Coarser)	Using E1 Class Standard Weights and Electronic Weighing Balance (Readability: 0.01 mg upto 82 g / 0.1 mg above)	5mg	0.01mg
243	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F2 & Coarser)	Using F1 Class Standard Weight & Electronic Balance (Readability 0.1g)	10kg	100mg
244	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F2 & Coarser)	Using F1 Class Standard Weight & Electronic Balance (Readability 0.1g)	20kg	100mg
245	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F2 & Coarser)	Using F1 Class Standard Weight & Electronic Balance (Readability 10 mg)	2kg	10mg
246	MECHANICAL-WEIGHTS	Mass - Weights (Accuracy Class F2 & Coarser)	Using F1 Class Standard Weight & Electronic Balance (Readability 10 mg)	5kg	10mg



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247	THERMAL-SPECIFIC HEAT & HUMIDITY	Thermo-Hygrometers (Analog/Digital), Humidity Indicator, Humidity Sensors, Humidity Data Loggers, Humidity Transmitters	Using Temperature & Humidity Generator, SSPRT with 6½ DMM by Comparison Method	10 °C to 50 °C @ 50%RH	0.21°C
248	THERMAL-SPECIFIC HEAT & HUMIDITY	Thermo-Hygrometers (Analog/Digital), Humidity Indicator, Humidity Sensors, Hygrographs, Humidity Data Loggers, Humidity Transmitters	Using Digital Temperature & Humidity Indicator with Sensor, Temperature & Humidity Generator by Comparison method	20 %RH to 95 %RH @25°C	0.97%RH
249	THERMAL-TEMPERATURE	Liquid-In-Glass Thermometers	Using SSPRT Sensor with 6.5 Digit Multimeter indicator in Hot Bath by Comparison Method	50 °C to 250 °C	0.55°C
250	THERMAL-TEMPERATURE	Liquid-In-Glass Thermometers	Using SSPRT Sensor with 6.5 Digit Multimeter indicator in Cold Bath by Comparison Method	-80 °C to 50 °C	0.55°C



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251	THERMAL-TEMPERATURE	Non-Contact Type Thermometer (Infrared Thermometer / Digital Pyrometer /Thermal Imager )	Using Infrared Thermometer & Black Body Source (Emissivity: 0.94 ) By comparison method	50 °C to 500 °C	1.17°C
252	THERMAL-TEMPERATURE	Oven, Deep Freezer, Refrigerator, Fluid Bath, Low Temperature Bath, Autoclave / incubator for industrial purpose only (Single Position)	Using 4-Wire RTD Sensor with Multi Function Calibrator indicator(Beamex) MC2 by Comparison Method	-80 °C to 50 °C	0.29°C
253	THERMAL-TEMPERATURE	Oven, Fluid Bath, Low Temperature Bath, Dry Block Calibrators, Autoclave / incubator for industrial purpose only. (Single Position)	Using 4-Wire RTD Sensor with Multi Function Calibrator indicator (Beamex) MC2 by comparison Method	50 °C to 250 °C	0.14°C
254	THERMAL-TEMPERATURE	Oven, Furnace, Dry Block Furnace, Dry Block Calibrators,(Single Position) for industrial purpose only	S-Type Thermocouple with indicator / Multi Function Calibrator (Beamex) MC2 by comparison Method	250 °C to 1200 °C	1.60°C





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255	THERMAL-TEMPERATURE	RTD's, Thermocouples With or Without indicator/ Controllers, Temperature Indicator With Sensor, Data Logger With Sensor, Temperature Transmitter/Switch, Temperature Transducer with indicators.	Using SSPRT Sensor with 6.5 Digit Multimeter indicator in Dry Block Calibrator by Comparison Method	250 °C to 650 °C	0.21°C
256	THERMAL-TEMPERATURE	RTD's, Thermocouples With & Without indicator/ Controllers, Temperature Indicator With Sensor, Temperature Gauge, Data Logger With Sensor, Temperature Transmitter/Switch, Temperature Transducer with indicators	Using SSPRT Sensor with 6.5 Digit Multimeter indicator Cold Bath by Comparison Method	-80 °C to 50 °C	0.21°C



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257	THERMAL-TEMPERATURE	RTD's, Thermocouples With & Without indicator/ Controllers, Temperature Indicator With Sensor, Temperature Gauge, Data Logger With Sensor, Temperature Transmitter/Switch, Temperature Transducer with indicators.	Using SSPRT Sensor with 6.5 Digit Multimeter indicator in Hot Bath by Comparison Method	50 °C to 250 °C	0.21°C
258	THERMAL-TEMPERATURE	Thermocouples With & Without indicator/ Controllers, Temperature Indicator With Sensor, Data Logger With Sensor, Temperature Transmitter/Switch, Temperature Transducer with indicators.	S-type Thermocouple with Multi Function Calibrator (Beamex) MC2 in Dry Block Calibrators by Comparison Method	650 °C to 1200 °C	1.57°C



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Site Facility					
1	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current@50 Hz	Using 6½ Digit Multimeter 8261A by Direct Method	0.1 mA to 1 mA	0.58 % to 0.34 %
2	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current@50 Hz	Using 6½ Digit Multimeter 8261A by Direct Method	1 A to 10 A	0.62 % to 0.26 %
3	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current@50 Hz	Using 6½ Digit Multimeter 8261A by Direct Method	1 mA to 10 mA	0.34 % to 0.25 %
4	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Current@50 Hz	Using 6½ Digit Multimeter 8261A by Direct Method	10 mA to 1 A	0.25 % to 0.62 %





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5	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC High Voltage@50 Hz	Using High Voltage Probe with DMM Fluke by Direct Method	0.5 kV to 5 kV	3.52%
6	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC High Voltage@50 Hz	Using High Voltage Probe with DMM Fluke by Direct Method	5 kV to 28 kV	3.52 % to 4.06 %
7	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage@50 Hz	Using 6½ Digit Multimeter 8261A by Direct Method	1 mV to 10 mV	5.1 % to 0.57 %
8	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage@50 Hz	Using 6½ Digit Multimeter 8261A by Direct Method	1 V to 10 V	0.46 % to 0.41 %
9	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage@50 Hz	Using 6½ Digit Multimeter 8261A by Direct Method	10 mV to 1 V	0.57 % to 0.46 %



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10	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage@50 Hz	Using 6½ Digit Multimeter 8261A by Direct Method	10 V to 750 V	0.41 % to 0.1 %
11	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50Hz	Using Multi product calibrator Fluke 5502A with Current Coil Fluke 5500 by Direct Method	10 A to 100 A	0.79 % to 0.73 %
12	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50Hz	Using Multi product calibrator Fluke 5502A with Current Coil Fluke 5500 by Direct Method	100 A to 1000 A	0.73 % to 0.38 %
13	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50Hz to 1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	1 A to 10 A	0.073 % to 0.105 %
14	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50Hz to 1kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	1 mA to 100 mA	0.15 % to 0.069 %



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15	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50Hz to 1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	10 A to 20 A	0.105 % to 0.175 %
16	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50Hz to 1kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	100 µA to 1 mA	0.27 % to 0.15 %
17	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50Hz to 1kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	100 mA to 1 A	0.069 % to 0.073 %
18	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Current @ 50Hz to 1kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	30 µA to 100 µA	0.53 % to 0.27 %
19	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (50 Hz @0.2 Lag) Voltage : 120 V to 240 V, Current : 0.1 to 20 A	Using Multi product calibrator Fluke 5502A by Direct Method	2.4 W to 960 W	5.39 % to 1.72 %
20	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Source)	AC Power (50 Hz @0.5 Lag) Voltage : 120 V to 240 V, Current : 0.1 to 20 A	Using Multi product calibrator Fluke 5502A by Direct Method	6 W to 2.4 kW	5.36 % to 1.03 %





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21	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	AC Power (50 Hz @0.8 Lead) Voltage : 120 V to 240 V, Current : 0.1 to 20 A	Using Multi product calibrator Fluke 5502A by Direct Method	9.6 W to 3.84 kW	1.3 % to 0.26 %
22	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	AC Power (50 Hz @Unity) Voltage : 120 V to 240 V, Current : 0.1 to 20 A	Using Multi product calibrator Fluke 5502A by Direct Method	12 W to 4.8 kW	0.19 % to 0.22 %
23	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	AC Voltage@50 Hz to 1 kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	100 V to 1000 V	0.074 % to 0.11 %
24	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	AC Voltage@50 Hz to 10 kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	1 mV to 10 mV	2.59 % to 1.01 %
25	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	AC Voltage@50 Hz to 10 kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	1 V to 10 V	0.058 % to 0.047 %
26	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	AC Voltage@50 Hz to 10 kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	10 mV to 100 mV	1.01 % to 0.115 %



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27	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	AC Voltage@50 Hz to 10 kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	10 V to 100 V	0.047 % to 0.074 %
28	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	AC Voltage@50 Hz to 10 kHz	Using Multi Product Calibrator Fluke 5502A by Direct Method	100 mV to 1 V	0.115 % to 0.058 %
29	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance@1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	1 µF to 10 µF	0.423 % to 0.421 %
30	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance@1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	1 mF to 100 mF	0.647 % to 2.73 %
31	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance@1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	1 nF to 100 nF	1.74 % to 0.42 %
32	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance@1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	10 µF to 100 µF	0.421 % to 0.65 %



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33	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance@1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	100 $\mu$ F to 1 mF	0.65%
34	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance@1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	100 nF to 1 $\mu$ F	0.42 % to 0.423 %
35	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance@1kHz	Using Multi product calibrator Fluke 5502A by Direct Method	330 pF to 1 nF	4.08 % to 1.74 %
36	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Power Factor	Using Multi product calibrator Fluke 5502A by Direct Method	50 Hz 0.2 to Unity (Lag & Lead)	0.011 PF to 0.001 PF
37	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	Using 6½ Digit Multimeter 8261A by Direct Method	1 $\mu$ A to 10 $\mu$ A	2.95 % to 0.35 %
38	ELECTRO-TECHNICAL- DIRECT CURRENT (Measure)	DC Current	Using 6½ Digit Multimeter 8261A by Direct Method	1 A to 10 A	0.14 % to 0.21 %





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39	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 6½ Digit Multimeter 8261A by Direct Method	1 mA to 10 mA	0.067 % to 0.081 %
40	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 6½ Digit Multimeter 8261A by Direct Method	10 µA to 1 mA	0.35 % to 0.067 %
41	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Current	Using 6½ Digit Multimeter 8261A by Direct Method	10 mA to 1 A	0.081 % to 0.14 %
42	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC High Voltage	Using High Voltage Probe Fluke with DMM Rishabh by Direct Method	0.5 kV to 5 kV	2.56 % to 2.32 %
43	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC High Voltage	Using High Voltage Probe Fluke with DMM Rishabh by Direct Method	5 kV to 35 kV	2.32%
44	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 6½ Digit Multimeter 8261A by Direct Method	1 mV to 10 mV	0.502 % to 0.055 %



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45	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 6½ Digit Multimeter 8261A by Direct Method	1 V to 10 V	0.032 % to 0.016 %
46	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 6½ Digit Multimeter 8261A by Direct Method	10 mV to 1 V	0.055 % to 0.032 %
47	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 6½ Digit Multimeter 8261A by Direct Method	10 V to 100 V	0.016 % to 0.022 %
48	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC Voltage	Using 6½ Digit Multimeter 8261A by Direct Method	100 V to 1000 V	0.022 % to 0.012 %
49	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using 6½ Digit Multimeter 8261A by Direct Method	0.1 Mohm to 1 Mohm	0.025%
50	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using 6½ Digit Multimeter 8261A by Direct Method	1 kohm to 10 kohm	0.016%



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51	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using 6½ Digit Multimeter 8261A by Direct Method	1 Mohm to 10 Mohm	0.025 % to 0.076 %
52	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using 6½ Digit Multimeter 8261A by Direct Method	1 ohm to 10 ohm	0.51 % to 0.061 %
53	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using 6½ Digit Multimeter 8261A by Direct Method	10 kohm to 0.1 Mohm	0.016 % to 0.025 %
54	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using 6½ Digit Multimeter 8261A by Direct Method	10 Mohm to 100 Mohm	0.076 % to 0.94 %
55	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	Resistance	Using 6½ Digit Multimeter 8261A by Direct Method	10 ohm to 1 kohm	0.061 % to 0.016 %
56	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A by Direct Method	1 µA to 10 µA	2.33 % to 0.25 %





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57	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A by Direct Method	1 A to 10 A	0.095 % to 0.078 %
58	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A by Direct Method	1 mA to 10 mA	0.021 % to 0.019 %
59	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A by Direct Method	10 µA to 100 µA	0.25 % to 0.041 %
60	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A with Current Coil Fluke 5500 by Direct Method	10 A to 100 A	0.93 % to 0.33 %
61	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A by Direct Method	10 A to 20 A	0.078 % to 0.22 %
62	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A by Direct Method	10 mA to 100 mA	0.019 % to 0.018 %



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63	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A by Direct Method	100 $\mu$ A to 1 mA	0.041 % to 0.021 %
64	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A with Current Coil Fluke 5500 by Direct Method	100 A to 1000 A	0.33%
65	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Current	Using Multi Product Calibrator Fluke 5502A by Direct Method	100 mA to 1 A	0.018 % to 0.095 %
66	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi Product Calibrator Fluke 5502A by Direct Method	0.5 mV to 1 mV	0.716 % to 0.36 %
67	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi Product Calibrator Fluke 5502A by Direct Method	1 mV to 10 mV	0.36 % to 0.043 %
68	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi Product Calibrator Fluke 5502A by Direct Method	10 mV to 100 mV	0.043 % to 0.011 %



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69	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi Product Calibrator Fluke 5502A by Direct Method	100 mV to 100 V	0.011 % to 0.01 %
70	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC Voltage	Using Multi Product Calibrator Fluke 5502A by Direct Method	100 V to 1000 V	0.01 % to 0.012 %
71	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Inductance	Using Decade Inductance Box Beetech DIB-5D by Direct Method	10 mH to 10 H	1.16%
72	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Inductance	Using Decade Inductance Box Beetech DIB-5D by Direct Method	100 µH to 10 mH	1.16%
73	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi Product Calibrator Fluke 5502A, High Precision Decade Resistance Box By Direct Method	1 kohm to 100 kohm	0.015 % to 0.017 %





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74	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using High stability Decade Meg ohm Box By Direct Method	1 Gohm to 100 Gohm	0.61 % to 5.86 %
75	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi Product Calibrator Fluke 5502A, High stability Decade Meg ohm Box By Direct Method	1 Mohm to 1000 Mohm	0.021 % to 1.8 %
76	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi Product Calibrator Fluke 5502A, High Precision Decade Resistance Box By Direct Method	1 ohm to 10 ohm	1.17 % to 0.15 %
77	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi Product Calibrator Fluke 5502A, High stability Decade Meg ohm Box By Direct Method	10 ohm to 1 kohm	0.150 % to 0.015 %
78	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using 4 Wire Low Resistance Standard Zeal ZMLRJ by Direct Method, discrete values	10 mohm to 1 ohm	0.147 %, to 0.14 %



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79	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using Multi Product Calibrator Fluke 5502A, High stability Decade Meg ohm Box By Direct Method	100 kohm to 1 Mohm	0.017 % to 0.021 %
80	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	Resistance	Using 4 Wire Low Resistance Standard Zeal ZMLRJ by Direct Method discrete values	100 µohm to 1 mohm	0.37 % to 0.165 %
81	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator, Controller and Recorder) - E-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator by Direct Method	-200 °C to 1000 °C	0.58°C
82	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator, Controller and Recorder) - J-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator by Direct Method	-200 °C to 1200 °C	0.36°C
83	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator, Controller and Recorder) - K-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator by Direct Method	-200 °C to 1370 °C	0.47°C



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84	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator, Controller and Recorder) - N-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator by Direct Method	-200 °C to 1300 °C	0.47°C
85	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator, Controller and Recorder) - R-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	5 °C to 1750 °C	0.8°C
86	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator, Controller and Recorder) - S-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	5 °C to 1750 °C	0.81°C
87	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator, Controller and Recorder) - T-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 400 °C	0.73°C
88	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation (Indicator, Controller and Recorder) -RTD-PT100	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 800 °C	0.36°C





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89	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation ( Indicator, Controller and Recorder) B-Type Thermocouple	Using Multi product calibrator Fluke 5502A /Multi Function Calibrator (Beamex) MC2 by Direct Method	600 °C to 1800 °C	1.26°C
90	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation ( Indicator, Controller and Recorder) L - Type Thermocouple	Using Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 900 °C	0.35°C
91	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	Temperature Simulation ( Indicator, Controller and Recorder) U - Type Thermocouple	Using Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 400 °C	0.35°C
92	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - B-Type Thermocouple	Using Multi product calibrator Fluke 5502A /Multi Function Calibrator (Beamex) MC2 by Direct Method	600 °C to 1800 °C	0.71°C
93	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - E-Type Thermocouple	Using Multi product calibrator Fluke 5502A /Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 1000 °C	0.58°C



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94	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - J - Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 1200 °C	0.32°C
95	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - K- Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 1370 °C	0.46°C
96	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - N- Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 1300 °C	0.47°C
97	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - R- Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator by Direct Method	5 °C to 1750 °C	0.7°C
98	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - RTD- PT100	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 800 °C	0.27°C



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99	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - S-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	5 °C to 1750 °C	0.81°C
100	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - T-Type Thermocouple	Using Multi product calibrator Fluke 5502A / Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 400 °C	0.73°C
101	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - L-Type Thermocouple	Using Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 900 °C	0.30°C
102	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	Temperature Simulation ( Indicator, Controller and Recorder) - U-Type Thermocouple	Using Multi Function Calibrator (Beamex) MC2 by Direct Method	-200 °C to 600 °C	0.47°C
103	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Frequency	Using 6½ Digit Multimeter GW-Instek-8261A by Direct Method	10 Hz to 300 kHz	1.17 % to 0.013 %





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104	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Time Interval Meter / Timer / Stop Watch (Analog/ Digital)	Using Digital Time Interval Meter By Comparison Method	1 s to 3600 s	0.59 s to 0.98 s
105	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Time Interval Meter / Timer / Stop Watch (Analog/ Digital)	Using Digital Time Interval Meter By Comparison Method	3600 s to 86400 s	0.98 s to 5.08 s
106	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	Frequency	Using Multi product calibrator Fluke 5502A by Direct Method	1 Hz to 1 MHz	0.12%
107	MECHANICAL-ACCELERATION AND SPEED	Centrifuge/ Stirrers/RPM Indicators (Non Contact Type)	Using Digital Tachometer By Comparison Method	10RPM to 30000RPM	0.59 RPM to 5.86RPM
108	MECHANICAL-ACCELERATION AND SPEED	Digital Tachometers (Contact Type)	Using Digital Tachometer and source By Comparison Method	10 rpm to 15000 rpm	0.68 rpm to 3.94 rpm
109	MECHANICAL-ACCELERATION AND SPEED	Digital Tachometers/RPM Indicators/RPM Source/Calibrators/Stroboscope (Non Contact Type)	Using Digital Tachometer By Comparison Method	10 rpm to 90000 rpm	0.59 rpm to 5.86 rpm



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110	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Cube Mould (Linear)	Using Digital Caliper as per IS 10086 by Comparison Method	Up to 150 mm	23.7µm
111	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Height Gauge (Vernier/Digital/Dial) L.C.: 0.01 mm	Using Height Measuring System and Long Gauge Blocks by Comparison Method	0 to 1000 mm	9.1µm
112	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Height Gauge (Vernier/Digital/Dial) L.C.: 0.01 mm	Using Height Measuring System and Long Gauge Blocks by Comparison Method	0 to 600 mm	9.2µm
113	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	CNC Machine Tools (Positioning Accuracy Only)	Using Laser Interferometer by comparison method	0 to 10000 mm	± 0.65 + (L/1885)µm where L is in mm
114	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Co-Ordinate Measuring Machine Resolution: 0.0001mm	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	0 to 1000 mm	± 0.85 + (L/200)µm Where "L" in mm
115	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Height Measuring System L.C.: 0.0001 mm	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	0 to 1000 mm	± 0.25 + (L/180)µm Where "L" in mm



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116	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Height Measuring System L.C.: 0.0001 mm	Using Laser Interferometer by comparison method:	0 to 1000 mm	± 0.60 + (L/2000)μm Where "L" in mm
117	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Length Measuring Machine - Horizontal / Vertical (Linear axis ) L.C 0.0001 mm	Using Laser Interferometer by comparison method:	0 to 3000 mm	± 0.12 + (L/1810)μm Where "L" in mm
118	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector/ Tool Maker Microscope/ Vision Measuring Machine - Linear L.C : 0.1μm	Using Glass Calibration Grid / Angle Graticule by Comparison Method	400mm x 400 mm	3.05μm
119	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector/ Tool Maker Microscope/ Vision Measuring Machine- Angular L.C : 1Arc sec	Using Glass Calibration Grid / Angle Graticule by Comparison Method	0 ° to 360 °	20.16arc sec
120	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector/ Tool Maker Microscope/ Vision Measuring Machine- Magnification	Using Glass Calibration Grid / Angle Graticule / Digital Vernier Caliper by Comparison Method	10 X to 100 X	0.25%
121	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Profile Projector/ Vision Measuring Machine - Linear L.C : 0.0001mm	Using Laser Interferometer by comparison method	400mm x 400 mm	± 0.15 + (L/3640)μm Where "L" in mm





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122	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Scale & Tape Measuring Machine / Calibrator L.C : 0.001 mm	Using Slip Gauges & Long Slip Gauges by Comparison Method	Up to 1000 mm	± 0.66 + (L/195)μm Where "L" in mm
123	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Scale & Tape Measuring Machine/ Calibrator L.C : 0.001 mm	Using Laser interferometer by comparison method	0 to 1000 mm	± 0.65 + (L/4350)μm where L is in mm
124	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Surface Plate (Granite /Cast Iron)	Using Electronic Level by Comparison Method	3500mm X 2600 mm	±0.49 x Sqrt((L+W)/150)μm where L is length in mm
125	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Universal Length Measuring System / Metroscope L.C : 0.00001mm	Using Laser Interferometer by comparison method	0 to 100 mm	± 0.08 + (L/5000)μm Where "L" in mm
126	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Universal Length Measuring System / Metroscope L.C : 0.00001mm	Using Laser Interferometer by comparison method	100 to 1000 mm	± 0.10 + (L/2000)μm Where "L" in mm
127	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Universal Length Measuring System / Metroscope L.C : 0.00001mm	Using Laser Interferometer by comparison method	1000 to 3000 mm	± 0.60 + (L/2565)μm Where "L" in mm
128	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Universal Length Measuring System L.C.: 0.0001 mm (Absolute)	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	0 to 100 mm	± 0.25 + (L/170)μm Where "L" in mm



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129	MECHANICAL-DIMENSION (PRECISION INSTRUMENTS)	Universal Length Measuring System L.C.: 0.0001 mm (Differential)	Using Gauge Blocks and Long Gauge Blocks by Comparison Method	100 mm to 600 mm	$\pm 0.85 + (L/225)\mu\text{m}$ Where "L" in mm
130	MECHANICAL-PRESSURE INDICATING DEVICES	Absolute Pressure (Pneumatic) (Absolute Pressure Gauges/Barometers / Manometers)	Using Standard Digital Barometer by Comparison Method as per OIML-R-97	300 mbar to 1100 mbar	0.68mbar
131	MECHANICAL-PRESSURE INDICATING DEVICES	Dial & Digital Vacuum Gauges, Transducers/ Transmitters, Switches	Using Standard Digital Vacuum Calibrator by Comparison Method as per DKD-R-6-2	-0.95 bar to 0 bar	0.0012bar
132	MECHANICAL-PRESSURE INDICATING DEVICES	Hydraulic :- Dial & Digital Pressure Gauges, Pressure Calibrators, Pressure Transmitters/Transducers	Using Standard Digital Pressure Calibrator with external sensor by Comparison Method as per DKD-R-6-1	0 to 700 bar	0.087bar
133	MECHANICAL-PRESSURE INDICATING DEVICES	Low Pressure (Pneumatic) (Magnetic Gauges, Manometer, Low Pressure/Vacuum Gauges, Calibrators)	Using Standard Digital Pressure calibrator by Comparison Method as per DKD-R-6-1/2	0 to 700 mbar	0.12mbar



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134	MECHANICAL-PRESSURE INDICATING DEVICES	Low Pressure (Pneumatic) (Maghnelic Gauges, Manometer, Barometer, Low Pressure Gauges/Vacuum, Calibrators, Pressure Transmitter, Differential Pressure Gauge)	Using Standard Digital Pressure / Vacuum calibrator by Comparison Method as per DKD-R-6-1/2	-1 bar to 2 bar	0.70mbar
135	MECHANICAL-PRESSURE INDICATING DEVICES	Low Pressure (Pneumatic) (Maghnelic Gauges, Manometer, Low Pressure Gauges/Vacuum, Calibrators, Differential Pressure Gauge)	Using Differential Pressure Calibrator By Comparison Method as per DKD R-6-1 /2	-10 kPa to 10 kPa	0.01kPa
136	MECHANICAL-PRESSURE INDICATING DEVICES	Low Pressure (Pneumatic) (Maghnelic Gauges, Manometer, Low Pressure Gauges/Vacuum, Calibrators, Differential Pressure Gauge)	Using Differential Pressure Calibrator By Comparison Method as per DKD R-6-1 /2	-245 Pa to 245 Pa	1.2Pa





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137	MECHANICAL-PRESSURE INDICATING DEVICES	Low Pressure (Pneumatic) (Maghnelic Gauges, Manometer, Low Pressure/Vacuum Gauges)Calibrators	Using Standard Digital Pressure / Vacuum calibrator by Comparison Method as per DKD-R-6-1/2	-700 mbar to 0 mbar	0.61mbar
138	MECHANICAL-PRESSURE INDICATING DEVICES	Pneumatic - Dial & Digital Pressure Gauges, Pressure Calibrators, Pressure Switches, Pressure Transmitters/Transducers	Using Standard Digital Pressure Calibrator by Comparison Method as per DKD-R-6-1	0 to 20 bar	0.003bar
139	MECHANICAL-UTM, TENSION CREEP AND TORSION TESTING MACHINE	Universal Testing Machine in Compression / Compression Testing Machine (CTM)	Using Master Load Cell As per IS 1828( Part -1)/ ISO 7500	1 kN to 10 kN	0.33%
140	MECHANICAL-UTM, TENSION CREEP AND TORSION TESTING MACHINE	Universal Testing Machine in Compression / Compression Testing Machine (CTM)	Using Master Load Cell As per IS 1828( Part -1)/ ISO 7500	10 kN to 100 kN	0.48%
141	MECHANICAL-UTM, TENSION CREEP AND TORSION TESTING MACHINE	Universal Testing Machine in Compression / Compression Testing Machine (CTM)	Using Master Load Cell As per IS 1828( Part -1)/ ISO 7500	100 kN to 500 kN	0.25%



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142	MECHANICAL-UTM, TENSION CREEP AND TORSION TESTING MACHINE	Universal Testing Machine in Compression / Compression Testing Machine (CTM)	Using Master Load Cell As per IS 1828( Part -1)/ ISO 7500	200 N to 1 kN	0.33%
143	MECHANICAL-UTM, TENSION CREEP AND TORSION TESTING MACHINE	Universal Testing Machine in Tension / Tensile Testing Machine(TTM)	Using Master Load Cell As per IS 1828( Part -1)/ ISO 7500	1 kN to 10 kN	0.26%
144	MECHANICAL-UTM, TENSION CREEP AND TORSION TESTING MACHINE	Universal Testing Machine in Tension / Tensile Testing Machine(TTM)	Using Master Load Cell As per IS 1828( Part -1)/ ISO 7500	10 kN to 100 kN	0.48%
145	MECHANICAL-UTM, TENSION CREEP AND TORSION TESTING MACHINE	Universal Testing Machine in Tension / Tensile Testing Machine(TTM)	Using Master Load Cell As per IS 1828( Part -1)/ ISO 7500	100 kN to 500 kN	0.25%
146	MECHANICAL-UTM, TENSION CREEP AND TORSION TESTING MACHINE	Universal Testing Machine in Tension / Tensile Testing Machine(TTM)	Using Master Load Cell As per IS 1828( Part -1)/ ISO 7500	100 N to 1 kN	0.33%



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147	MECHANICAL-WEIGHING SCALE AND BALANCE	Calibration of Electronic Weighing Balance Class I and Coarser d = 0.01 mg and Coarser	Using Standard Weights (E1 Class) & Calibration of Electronic Weighing Balance of Class I and Coarser as per OIML R-76-1	1 mg to 80 g	0.02mg
148	MECHANICAL-WEIGHING SCALE AND BALANCE	Calibration of Electronic Weighing Balance Class I and Coarser d = 0.1 mg and Coarser	Using Standard Weights (E1 Class) & Calibration of Electronic Weighing Balance of Class I and Coarser as per OIML R-76-1	10 mg to 220 g	0.1mg
149	MECHANICAL-WEIGHING SCALE AND BALANCE	Calibration of Electronic Weighing Balance Class II and Coarser d = 0.1g and Coarser	Using F1 Class Standard Weights as per OIML R 76	100mg to 35 kg	1g
150	MECHANICAL-WEIGHING SCALE AND BALANCE	Calibration of Electronic Weighing Balance Class II and Coarser d = 1 mg and Coarser	Using E2 Class Standard Weights as per OIML R 76	10 mg to 1 kg	1mg
151	MECHANICAL-WEIGHING SCALE AND BALANCE	Calibration of Electronic Weighing Balance Class II and Coarser d = 10 mg and Coarser	Using F1 Class Standard Weights as per OIML R 76	50mg to 6.1 kg	11mg





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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)(±)
152	MECHANICAL-WEIGHING SCALE AND BALANCE	Calibration of Electronic Weighing Balance Class IV and Coarser d = 10 g and Coarser	Using M1 Class Standard Weights as per OIML R 76	500 g to 300 kg	10g
153	MECHANICAL-WEIGHING SCALE AND BALANCE	Calibration of Electronic Weighing Balance Class IV and Coarser d = 100 g and Coarser	Using M1 Class Standard Weights as per OIML R 76	500 g to 1000 kg	100g
154	MECHANICAL-WEIGHING SCALE AND BALANCE	Calibration of Electronic Weighing Balance Class IV and Coarser d = 200 g and Coarser	Using M1 Class Standard Weights as per OIML R 76	1kg to 3000 kg	940g
155	THERMAL-SPECIFIC HEAT & HUMIDITY	Humidity By Spatial Mapping for Humidity & Temperature Chamber/ Environmental Chamber/Climatic Chamber (Minimum 9 Sensors)	Using temperature & Humidity Transmitters with Recorder by Comparison method (Multi position)	20 %RH to 95 %RH @ 25 °C	2.5%RH



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156	THERMAL-SPECIFIC HEAT & HUMIDITY	Indicator with sensor of Humidity & Temperature Chamber/ Environmental Chamber/Climatic Chamber/ Temperature & Humidity Indicators	Using Digital Temperature & Humidity Indicator with Sensor at single point by Comparison method	20 %RH to 95 %RH @ 20 °C to 50 °C	1.02%RH
157	THERMAL-TEMPERATURE	Multi position Spatial Mapping of Thermal Chamber/ Oven/ Fluid Bath/ Refrigerator/ Deep Freezer/Cold Room, Autoclave / incubator with minimum 9 sensor for industrial applications.	Using Multiple RTD Sensors (9Nos) with Paperless Recorder by Comparison Method	-80 °C to 250 °C	2.28°C
158	THERMAL-TEMPERATURE	Non-Contact Type Thermometer (Infrared Thermometer / Digital Pyrometer /Thermal Imager )	Using Infrared Thermometer & Black Body Source (Emissivity: 0.94 ) By comparison method	50 °C to 500 °C	1.17°C



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159	THERMAL-TEMPERATURE	Oven, Deep Freezer, Refrigerator, Fluid Bath, Low Temperature Bath, Autoclave / incubator for industrial purpose only (Single Position)	Using 4-Wire RTD Sensor with Multi Function Calibrator indicator(Beamex) MC2 by Comparison Method	-80 °C to 50 °C	0.29°C
160	THERMAL-TEMPERATURE	Oven, Fluid Bath, Low Temperature Bath, Dry Block Calibrators, Autoclave / incubator for industrial purpose only. (Single Position)	Using 4-Wire RTD Sensor with Multi Function Calibrator indicator (Beamex) MC2 by comparison Method	50 °C to 250 °C	0.14°C
161	THERMAL-TEMPERATURE	Oven, Furnace, Dry Block Furnace, Dry Block Calibrators,(Single Position) for industrial purpose only	S-Type Thermocouple with indicator / Multi Function Calibrator (Beamex) MC2 by comparison Method	250 °C to 1200 °C	1.60°C





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162	THERMAL-TEMPERATURE	RTD's, Thermocouples With or Without indicator/ Controllers, Temperature Indicator With Sensor, Data Logger With Sensor, Temperature Transmitter/Switch, Temperature Transducer with indicators.	Using SSPRT Sensor with 6.5 Digit Multimeter indicator in Dry Block Calibrator by Comparison Method	250 °C to 650 °C	0.21°C
163	THERMAL-TEMPERATURE	RTD's, Thermocouples With & Without indicator/ Controllers, Temperature Indicator With Sensor, Temperature Gauge, Data Logger With Sensor, Temperature Transmitter/Switch, Temperature Transducer with indicators	Using SSPRT Sensor with 6.5 Digit Multimeter indicator Cold Bath by Comparison Method	-80 °C to 50 °C	0.21°C



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164	THERMAL-TEMPERATURE	RTD's, Thermocouples With & Without indicator/ Controllers, Temperature Indicator With Sensor, Temperature Gauge, Data Logger With Sensor, Temperature Transmitter/Switch, Temperature Transducer with indicators.	Using SSPRT Sensor with 6.5 Digit Multimeter indicator in Hot Bath by Comparison Method	50 °C to 250 °C	0.21°C
165	THERMAL-TEMPERATURE	Spatial Mapping of Thermal Chamber, Furnace, Oven.( Minimum 9 Sensors) by Multi position Mapping for industrial purpose only.	Using Multiple N-Type Thermocouple(Minimum 9 Sensors) with Paperless Recorder by Comparison Method	250 °C to 1200 °C	3.42°C



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166	THERMAL-TEMPERATURE	Thermocouples With & Without indicator/ Controllers, Temperature Indicator With Sensor, Data Logger With Sensor, Temperature Transmitter/Switch, Temperature Transducer with indicators.	S-type Thermocouple with Multi Function Calibrator (Beamex) MC2 in Dry Block Calibrators by Comparison Method	650 °C to 1200 °C	1.57°C

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