



National Accreditation Board for  
Testing and Calibration Laboratories

**CERTIFICATE OF ACCREDITATION**

**R&D INSTRUMENT SERVICES**

has been assessed and accredited in accordance with the standard

**ISO/IEC 17025:2017**

**"General Requirements for the Competence of Testing &  
Calibration Laboratories"**

for its facilities at

#5, NATESAN NAGAR, ALAPAKKAM, CHENNAI, KANCHIPURAM, TAMIL NADU, INDIA

in the field of

**CALIBRATION**

Certificate Number: CC-2828

Issue Date: 17/11/2020

Valid Until:

16/11/2022

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.

(To see the scope of accreditation of this laboratory, you may also visit NABL website [www.nabl-india.org](http://www.nabl-india.org))

Name of Legal Identity : R&D INSTRUMENT SERVICES

Signed for and on behalf of NABL



N. Venkateswaran  
Chief Executive Officer



# National Accreditation Board for Testing and Calibration Laboratories

## SCOPE OF ACCREDITATION

**Laboratory Name :**

R&D INSTRUMENT SERVICES, #5, NATESAN NAGAR, ALAPAKKAM, CHENNAI,  
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**Last Amended on**

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S.No	Discipline / Group	Measurand or Reference Material/Type of instrument or material to be calibrated or measured / Quantity Measured /Instrum	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 @ 50Hz	Using Digital Multimeter Agilent 34401 A by Direct Method	1 A to 2 A	0.17 % to 0.28 %
2	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC CURRENT @ 50Hz	Using Digital Multimeter Agilent 34401 A by Direct Method	100 mA to 1 A	0.58 % to 0.17 %
3	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC VOLTAGE @ 50Hz - 10kHz	Using Digital Multimeter Agilent 34401A by Direct Method	1 V to 10 V	0.10%
4	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC VOLTAGE @ 50Hz - 10kHz	Using Digital Multimeter Agilent 34401 A by Direct Method	10 mV to 100 mV	0.54 % to 0.12 %



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5	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC VOLTAGE @ 50Hz - 10kHz	Using Digital Multimeter Agilent 34401 A by Direct Method	10 V to 100 V	0.10%
6	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC VOLTAGE @ 50Hz - 10kHz	Using Digital Multimeter Agilent 34401 A by Direct Method	100 mV to 1 V	0.12 % to 0.10 %
7	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC VOLTAGE @ 50Hz - 10kHz	Using Digital Multimeter Agilent 34401 A by Direct Method	100 V to 750 V	0.10 % to 0.11 %
8	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 µA to 100 µA	4.2 % to 1.6 %
9	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 µA to 200 µA	1.6 % to 1.4 %





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10	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	2 A to 20 A	0.6 % to 0.32 %
11	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	2 mA to 20 mA	0.7 % to 0.5 %
12	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	20 mA to 200 mA	0.5%
13	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 µA to 2 mA	1.4 % to 0.7 %
14	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 1kHz	Using Multi Product Calibrator Transmilke 3041 by Direct Method	200 mA to 2 A	0.5 % to 0.62 %
15	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 µA to 100 µA	3.1 % to 0.4 %



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16	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 µA to 200 µA	0.4 % to 0.24 %
17	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 & Clamp Coil by Direct Method	100 A to 1000 A	0.31 % to 0.30 %
18	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	2 A to 20 A	0.12 % to 0.08 %
19	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	2 mA to 20 mA	0.11%
20	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 & Clamp Coil by Direct Method	20 A to 100 A	0.76 % to 0.31 %
21	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	20 mA to 200 mA	0.11%



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22	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 µA to 2 mA	0.24 % to 0.11 %
23	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 mA to 2 A	0.10 % to 0.12 %
24	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 5kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 mA to 200 mA	0.7 % to 0.51 %
25	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 5kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 mA to 2 A	0.51 % to 0.62 %
26	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 100kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 mV to 200 mV	1.18 % to 0.38 %
27	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 100kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	2 V to 20 V	0.40%





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28	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 100kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 mV to 2 V	0.38 % to 0.40 %
29	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 mV to 200 mV	0.41 % to 0.10 %
30	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	2 V to 20 V	0.08 % to 0.07 %
31	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	20 V to 200 V	0.07 % to 0.10 %
32	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 mV to 2 V	0.10 % to 0.08 %
33	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 V to 1000 V	0.10 % to 0.19 %



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34	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 20kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 mV to 200 mV	0.59 % to 0.37 %
35	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 20kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	2 V to 20 V	0.40%
36	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 20kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	20 V to 100 V	0.11 % to 0.13 %
37	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 20kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 mV to 2 V	0.37 % to 0.40 %
38	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 mV to 200 mV	0.28 % to 0.05 %
39	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	2 V to 20 V	0.04%





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40	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	20 V to 200 V	0.04 % to 0.10 %
41	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 mV to 2 V	0.05 % to 0.04 %
42	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 V to 700 V	0.10 % to 0.05 %
43	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	700 V to 1000 V	0.05 % to 0.10 %
44	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	CAPACITANCE@ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	1 $\mu$ F	0.47%
45	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	CAPACITANCE@ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	1 nF	0.68%



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46	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	CAPACITANCE@ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 $\mu$ F	0.7%
47	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	CAPACITANCE@ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 nF	0.33%
48	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	CAPACITANCE@ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 $\mu$ F	0.7%
49	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	CAPACITANCE@ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 nF	0.31%
50	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	CAPACITANCE@ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	20 nF	0.47%
51	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	CAPACITANCE@ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	50 nF	0.32%



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52	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	INDUCTANCE @ 1kHz	Using Decade Inductance Box by Direct Method	1 mH to 10 H	1.6%
53	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC CURRENT	Using Digital Multimeter Fluke 8845 A (0.1mA)and Precision Calibrator Fluke 7526 A in measure mode by Direct Method	0.1 mA to 1 mA	0.13%
54	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC CURRENT	Using Digital Multimeter Agilent 34401 A by Direct Method	1 A to 2 A	0.12 % to 0.17 %
55	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC CURRENT	Using Precision Calibrator Fluke 7526 A in measure mode by Direct Method	1 mA to 25 mA	0.13 % to 0.02 %
56	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC CURRENT	Using Digital Multimeter Agilent 34401 A by Direct Method	100 mA to 1 A	0.064 % to 0.13 %





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57	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC CURRENT	Using Digital Multimeter Fluke 8845 A by Direct Method	2 A to 10 A	0.17 % to 0.32 %
58	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC CURRENT	Using Digital Multimeter Agilent 34491A above 50 mA and Precision Calibrator Fluke 7526 A in measure mode by Direct Method	25 mA to 100 mA	0.02 % to 0.064 %
59	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC VOLTAGE	Using Digital Multimeter Agilent 34401 A by Direct Method	1 mV to 100 mV	0.41 % to 0.01 %
60	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC VOLTAGE	Using Digital Multimeter Agilent 34401 A by Direct Method	1 V to 10 V	0.006 % to 0.005 %
61	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC VOLTAGE	Using Digital Multimeter Agilent 34401 A by Direct Method	10 V to 100 V	0.005 % to 0.006 %



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62	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC VOLTAGE	Using Digital Multimeter Agilent 34401 A by Direct Method	100 mV to 1 V	0.01 % to 0.006 %
63	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC VOLTAGE	Using Digital Multimeter Agilent 34401 A by Direct Method	100 V to 1000 V	0.0064%
64	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	RESISTANCE	Using Digital Multimeter Agilent 34401 A by Direct Method	1 kohm to 10 kohm	0.013%
65	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	RESISTANCE	Using Digital Multimeter Agilent 34401 A by Direct Method	1 Mohm to 10 Mohm	0.013 % to 0.047 %
66	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	RESISTANCE	Using Digital Multimeter Agilent 34401 A by Direct Method	1 ohm to 100 ohm	0.47 % to 0.016 %
67	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	RESISTANCE	Using Digital Multimeter Agilent 34401 A by Direct Method	10 kohm to 100 kohm	0.013%



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68	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	RESISTANCE	Using Digital Multimeter Agilent 34401 A by Direct Method	10 Mohm to 100 Mohm	0.047 % to 0.94 %
69	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	RESISTANCE	Using Digital Multimeter Agilent 34401 A by Direct Method	100 kohm to 1 Mohm	0.013%
70	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	RESISTANCE	Using Digital Multimeter 34401A by Direct Method	100 ohm to 1 kohm	0.016 % to 0.013 %
71	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC CURRENT	Using Multi Product Calibrator Transmille 3041 by Direct Method	1 A to 20 A	0.014 % to 0.10 %
72	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC CURRENT	Using Multi Product Calibrator Transmille 3041 by Direct Method	1 mA to 10 mA	0.015 % to 0.009 %
73	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC CURRENT	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 mA to 100 mA	0.009 % to 0.009 %





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74	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC CURRENT	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 $\mu$ A to 1 mA	0.09 % to 0.015 %
75	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC CURRENT	Using Multi Product Calibrator Transmille 3041 & Clamp Coil by Direct Method	100 A to 1000 A	0.31%
76	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC CURRENT	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 mA to 1 A	0.009 % to 0.014 %
77	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC CURRENT	Using Multi Product Calibrator Transmille 3041 & Clamp Coil by Direct Method	20 A to 100 A	0.76 % to 0.31 %
78	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Using Multi Product Calibrator Transmille 3041 by Direct Method	1 mV to 10 mV	0.36 % to 0.04 %
79	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Using Multi Product Calibrator Transmille 3041 by Direct Method	1 V to 10 V	0.004 % to 0.003 %



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80	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 mV to 100 mV	0.04 % to 0.007 %
81	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Using Multi Product Calibrator Transmilke 3041 by Direct Method	10 V to 100 V	0.003 % to 0.004 %
82	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 mV to 1 V	0.007 % to 0.004 %
83	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Using Multi Product Calibrator Transmille calibrator by Direct Method	100 V to 1000 V	0.004%
84	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Decade Resistance Box 7400 and Multi product calibrator Transmille 3041 by Direct Method	0.1 ohm to 1 ohm	0.95 % to 0.11 %



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85	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Decade Resistance Box 8400 by Direct Method	1 Gohm to 100 Gohm	1.01 % to 1.7 %
86	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Multi product calibrator Transmille 3041 by Direct Method	1 Mohm to 10 Mohm	0.03%
87	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Decade Resistance Box 7400 and Multi product calibrator Transmille 3041 by Direct Method	1 ohm to 10 ohm	0.11 % to 0.06 %
88	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Decade Resistance Box 7400 and Multi product calibrator Transmille 3041 by Direct Method	10 kohm to 100 kohm	0.06%
89	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Decade Resistance Box 8400 and Multi product calibrator by Direct Method	10 Mohm to 100 Mohm	0.03 % to 0.6 %





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90	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Decade Resistance Box 7400 and Multi product calibrator Transmille 3041 by Direct Method	10 ohm to 10 kohm	0.06%
91	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Decade Resistance Box 8400 by Direct Method	100 Gohm to 1 Tohm	1.7 % to 3.12 %
92	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Multi product calibrator Transmille 3041 by Direct Method	100 kohm to 1 Mohm	0.06 % to 0.03 %
93	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Decade Resistance Box 8400 by Direct Method	100 Mohm to 1 Gohm	0.6 % to 1.01 %
94	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	B-Type Thermocouple	Using Precision Calibrator Fluke 7526 by Direct Method	600 °C to 1820 °C	0.41°C



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95	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	E-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 1000 °C	0.29°C
96	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	J-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-210 °C to 1200 °C	0.17°C
97	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	K-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 1360 °C	0.19°C
98	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	N-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 1300 °C	0.27°C
99	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	PT-100 (385)	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 800 °C	0.052°C
100	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	PT-1000 (385)	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 630 °C	0.04°C



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101	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	PT-500 (385)	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 630 °C	0.06°C
102	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	R-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	0 °C to 1760 °C	0.45°C
103	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	S-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	0 °C to 1760 °C	0.44°C
104	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	T-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 400 °C	0.19°C
105	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	B-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	600 °C to 1820 °C	0.41°C
106	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	E-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 1000 °C	0.15°C





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107	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	J-Type Thermocouple	Using Precision Calibrator Fluke 7526 by Direct Method	-210 °C to 1200 °C	0.17°C
108	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	K-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 1360 °C	0.20°C
109	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	N-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 1300 °C	0.28°C
110	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	PT-100 (385)	Using Precision Calibrator Fluke 7526 by Direct Method	-200 °C to 800 °C	0.09°C
111	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	PT-1000 (385)	Using Precision Calibrator Fluke 7526 by Direct Method	-200 °C to 630 °C	0.11°C
112	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	PT-500 (385)	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 630 °C	0.20°C



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113	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	R-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	0 °C to 1760 °C	0.47°C
114	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	S-Type Thermocouple	Using Precision Calibrator Fluke 7526A by Direct Method	0 °C to 1760 °C	0.46°C
115	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	T-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 400 °C	0.20°C
116	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	FREQUENCY	Using Digital Multimeter Agilent 34401 A by Direct Method	1 kHz to 10 kHz	0.06 % to 0.013 %
117	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	FREQUENCY	Using Digital Multimeter Agilent 34401 A by Direct Method	10 kHz to 100 kHz	0.013 % to 0.012 %
118	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	FREQUENCY	Using Digital Multimeter Agilent 34401 A by Direct Method	100 Hz to 1 kHz	0.06%



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119	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	FREQUENCY	Using Digital Multimeter Agilent 34401 A by Direct Method	100 kHz to 300 kHz	0.012%
120	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	FREQUENCY	Using Digital Multimeter Agilent 34401A by Direct Method	3 Hz to 100 Hz	1.93 % to 0.06 %
121	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	TIME INTERVAL	Using Timer by Comparison Method	1 Sec to 10 Sec	4.12 % to 1.23 %
122	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	TIME INTERVAL	Using Timer by Comparison Method	10 Hr to 24 Hr	0.018 % to 0.028 %
123	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	TIME INTERVAL	Using Timer by Comparison Method	10 Sec to 100 Sec	1.23 % to 0.33 %
124	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	TIME INTERVAL	Using Timer by Comparison Method	100 Sec to 1000 Sec	0.33 % to 0.04 %





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125	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	TIME INTERVAL	Using Timer by Comparison Method	1000 Sec to 2 Hr	0.04 % to 0.016 %
126	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	TIME INTERVAL	Using Timer by Comparison Method	2 Hr to 10 Hr	0.016 % to 0.018 %
127	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	FREQUENCY	Using Multi Product Calibrator Transmille 3041 by Direct Method	1 kHz to 10 kHz	0.002%
128	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	FREQUENCY	Using Multi Product Calibrator Transmille 3041 by Direct Method	1 MHz to 10 MHz	0.06%
129	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	FREQUENCY	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 Hz to 100 Hz	0.006 % to 0.003 %
130	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	FREQUENCY	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 kHz to 100 kHz	0.002%



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131	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	FREQUENCY	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 Hz to 1 kHz	0.003 % to 0.002 %
132	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	FREQUENCY	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 kHz to 300 kHz	0.002%
133	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	FREQUENCY	Using Multi Product Calibrator Transmilke 3041 by Direct Method	300 kHz to 1 MHz	0.002 % to 0.06 %
134	MECHANICAL-ACCELERATION AND SPEED	Contact Tachometer	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	10 rpm to 100 rpm	0.54rpm
135	MECHANICAL-ACCELERATION AND SPEED	Contact Tachometer	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	100 rpm to 4000 rpm	4.0rpm
136	MECHANICAL-ACCELERATION AND SPEED	Non-Contact Tachometer	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	10 rpm to 100 rpm	0.54rpm



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137	MECHANICAL-ACCELERATION AND SPEED	Non-Contact Tachometer	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	100 rpm to 1000 rpm	4.0rpm
138	MECHANICAL-ACCELERATION AND SPEED	Non-Contact Tachometer	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	1000 rpm to 10000 rpm	4.0rpm
139	MECHANICAL-ACCELERATION AND SPEED	Non-Contact Tachometer	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	10000 rpm to 30000 rpm	11.2rpm
140	MECHANICAL-ACCELERATION AND SPEED	Non-Contact Tachometer	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	30000 rpm to 60000 rpm	16.0rpm
141	MECHANICAL-ACCELERATION AND SPEED	Speed / RPM / Tachometer Calibrator, Source	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	10 rpm to 100 rpm	0.54rpm
142	MECHANICAL-ACCELERATION AND SPEED	Speed / RPM / Tachometer Calibrator, Source	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	100 rpm to 1000 rpm	4.0rpm





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143	MECHANICAL-ACCELERATION AND SPEED	Speed / RPM / Tachometer Calibrator, Source	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	1000 rpm to 10000 rpm	4.0rpm
144	MECHANICAL-ACCELERATION AND SPEED	Speed / RPM / Tachometer Calibrator, Source	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	10000 rpm to 30000 rpm	11.2rpm
145	MECHANICAL-ACCELERATION AND SPEED	Speed / RPM / Tachometer Calibrator, Source	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	30000 rpm to 60000 rpm	16.0rpm
146	MECHANICAL-ACOUSTICS	Sound Level meter	Using Sound Level Calibrator by Direct Method as per IS 15575 (Part-2)	114 dB@ 1kHz	0.30dB
147	MECHANICAL-ACOUSTICS	Sound Level meter	Using Sound Level Calibrator by Direct Method as per IS 15575 (Part-2)	94 dB @ 1kHz	0.30dB
148	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Bevel Protractor L.C.: 1 Arc min	Using Profile Projector as per IS 4239	upto 180 °	7Arc min



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149	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Bore Dial Gauge (Only Transmission Error) L.C.: 0.001 mm	Using Electronic Dial Calibration Tester as per WI/RD/ML/09	upto 1.2 mm	4.4µm
150	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Calipers (Vernier / Dial / Electronic) L.C.: 0.01 mm	Using Caliper Checker as per IS 3651	0 mm to 600 mm	10.8µm
151	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Coating Thickness Gauge	Using Standard Foils as per WI/RD/ML/27	25 µm to 3000 µm	5µm
152	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Combination Set L.C.: 1 °	Using Profile Projector by WI/RD/ML/22	upto 180 °	7Arc min
153	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Depth Gauge (Vernier / Dial / Electronic) L.C.: 0.01 mm	Using Gauge Blocks as per IS 4213	0 mm to 300 mm	10.1µm



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154	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Depth Micrometer L.C.: 0.01 mm	Using Gauge Blocks as per IS 2967	0 mm to 300 mm	6.1µm
155	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Dial Thickness Gauge L.C.: 0.01 mm	Using Gauge Blocks as per IS 2092	0 mm to 10 mm	2.9µm
156	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External Micrometer L.C.: 0.001 mm	Using Gauge Blocks and Long Gauge Blocks as per IS 2967	0 mm to 100 mm	2.9µm
157	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	External Micrometer L.C.: 0.01 mm	Using Gauge Blocks and Long Gauge Blocks as per IS 2967	0 mm to 300 mm	8.0µm
158	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Feeler Gauge	Using Digital Micrometer as per IS 3179	0.05 mm to 1 mm	3.1µm





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159	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Height Gauge (Vernier / Dial / Electronic) L.C.: 0.01 mm	Using Caliper Checker as per IS 2921	0 mm to 600 mm	11.5µm
160	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Internal Micrometer (Stick type) L.C.: 0.01 mm	Using Gauge Blocks and Gauge Block Accessories as per IS 2966	50 mm to 250 mm	5.2µm
161	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Lever Dial Gauge L.C.: 0.01 mm	Using Electronic Dial Calibration Tester as per IS 11498	upto 2 mm	2.3µm
162	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Micrometer Setting Standard	Using Gauge Blocks and Electronic dial calibration tester as per WI/RD/ML/16	200 mm to 300 mm	5.9µm
163	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Micrometer Setting Standard	Using Gauge Blocks and Electronic dial calibration tester as per WI/RD/ML/16	25 mm to 200 mm	5.4µm



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164	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain Plug Gauge	Using Gauge Blocks and Electronic dial calibration tester as per IS 3455	upto 100 mm	4.1µm
165	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plain Snap / Gap Gauge	Using Gauge Blocks as per IS 3455	2.5 mm to 100 mm	1.5µm
166	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plunger Dial Gauge L.C.: 0.001 mm	Using Gauge Blocks and Electronic Dial Calibration Tester as per IS 2092	0 mm to 25 mm	2.4µm
167	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Plunger Dial Gauge L.C.: 0.01 mm	Using Gauge Blocks and Electronic Dial Calibration Tester as per IS 2092	0 mm to 50 mm	2.5µm
168	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Radius Gauge	Using Profile Projector as per IS 5273	0.5 mm to 40 mm	8.0µm



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169	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Slip Gauge Accessories (Measuring jaw - Nominal size, Parallelism & Flatness)	Using Gauge Blocks,Electronic Dial Calibration Tester and Optical Flat as per IS 4440	1 mm to 25 mm	3.9µm
170	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Test Sieves	Using Profile Projector as per IS 460 (Part 1, 2, 3)	0.032 mm to 10 mm	7.5µm
171	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Pitch Gauge-Angle	Using Profile Projector as per IS 4211	upto 60 °	6.8Arc min
172	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Thread Pitch Gauge-Linear	Using Profile Projector as per IS 4211	0.4 mm to 10 mm	7.1µm
173	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Ultrasonic Thickness Gauge	Using Gauge Blocks and Long Gauge Blocks as per WI/RD/ML/26	upto 100 mm	9µm





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174	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Weld Fillet Gauge	Using Profile Projector as per WI/RD/ML/24	upto 50 mm	6.6µm
175	MECHANICAL-DIMENSION (BASIC MEASURING INSTRUMENT, GAUGE ETC.)	Wire Gauge	Using Profile Projector as per WI/RD/ML/25	0.2 mm to 10 mm	6.0µm
176	MECHANICAL-PRESSURE BALANCE OR DEAD WEIGHT TESTER	Pressure (Hydraulic) Dead Weight Testers	Using Hydraulic Dead Weight Tester by Comparison Method through cross float as per EURAMET cg-3	20 bar to 1200 bar	0.012% rdg
177	MECHANICAL-PRESSURE BALANCE OR DEAD WEIGHT TESTER	Pressure (Hydraulic) Dead Weight Testers	Using Hydraulic Dead Weight Tester by Comparison Method through cross float as per EURAMET cg-3	3.5 bar to 35 bar	0.012% rdg



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178	MECHANICAL-PRESSURE INDICATING DEVICES	Absolute Pressure Analog / Digital, Pressure Gauges, Pressure Transmitter with / without Indicator, Pressure Switches, Pressure Calibrators, Manometer, Barometer	Using Absolute Pressure Calibrator by Comparison Method as per DKD R-6-1	0.15 bar (abs) to 2 bar (abs)	0.9mbar (abs)
179	MECHANICAL-PRESSURE INDICATING DEVICES	Pneumatic Pressure Pressure Gauges, Magnehelic/ photohelic gauge, Pressure Indicators / Controllers / Transmitters / Switches, Manometer	Using Digital Pressure controller by Comparison Method as per DKD R-6-1	-200 mbar to 200 mbar	0.04% rdg
180	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure (Hydraulic) Analog / Digital, Pressure Gauges, Pressure Transmitter with / without Indicator, Pressure Switches, Pressure Calibrators	Using Hydraulic Dead Weight Tester by Direct Method as per DKD R-6-1	1 bar to 40 bar	0.013% rdg



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181	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure (Hydraulic) Analog / Digital, Pressure Gauges, Pressure Transmitter with / without Indicator, Pressure Switches, Pressure Calibrators	Using Digital Pressure Indicator by Comparison Method as per DKD R-6-1	1200 bar to 1400 bar	0.055%rdg
182	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure (Hydraulic) Analog / Digital, Pressure Gauges, Pressure Transmitter with / without Indicator, Pressure Switches, Pressure Calibrators	Using Hydraulic Dead Weight Tester by Direct Method as per DKD R-6-1	20 bar to 1200 bar	0.013% rdg
183	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure (Pneumatic) Analog / Digital, Pressure Gauges, Pressure Transmitter with / without Indicator, Pressure Switches, Pressure Calibrators, Manometers	Using Pneumatic Dead Weight Tester by Direct Method as per DKD R-6-1	0.2 bar to 35 bar	0.011% rdg





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184	MECHANICAL-PRESSURE INDICATING DEVICES	Vacuum Analog / Digital, Vacuum Gauges, Vacuum Transmitter with / without Indicator, Vacuum Switches, Vacuum Calibrators, Manometer	Using Pneumatic Dead Weight Tester by Direct Method as per DKD R-6-1	-30 mbar to -1000 mbar	0.013% rdg
185	MECHANICAL-VOLUME	Glasswares (Pipette / Burette / Standard Flask / Conical Flask / Beaker / Measuring Cylinder / Measuring Jar)	Using Weighing Balance with readability 0.1 mg by Gravimetric Method as per ISO 4787	>42 ml to 50 ml	3.2 µl
186	MECHANICAL-VOLUME	Glasswares (Pipette / Burette / Standard Flask / Conical Flask / Beaker / Measuring Cylinder / Measuring Jar)	Using Weighing Balance with readability 0.01mg by Gravimetric Method as per ISO 4787	1 ml to 10 ml	1.29µl
187	MECHANICAL-VOLUME	Glasswares (Pipette / Burette / Standard Flask / Conical Flask / Beaker / Measuring Cylinder / Measuring Jar)	Using Weighing Balance with readability 0.01 mg by Gravimetric Method as per ISO 4787	10 ml to 20 ml	1.3µl



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188	MECHANICAL-VOLUME	Glasswares (Pipette / Burette / Standard Flask / Conical Flask / Beaker / Measuring Cylinder / Measuring Jar)	Using Weighing Balance with readability 0.01 mg by Gravimetric Method as per ISO 4787	20 ml to 42 ml	3.2µl
189	MECHANICAL-VOLUME	Glasswares (Pipette / Burette / Standard Flask / Conical Flask / Beaker / Measuring Cylinder / Measuring Jar)	Using Weighing Balance with readability 0.1 mg by Gravimetric Method as per ISO 4787	50 ml to 100 ml	6.4µl
190	MECHANICAL-VOLUME	Micropipette	Using Weighing Balance with readability 0.01 mg by Gravimetric Method as per ISO 8655-6	1 ml to 10 ml	3.6µl
191	MECHANICAL-VOLUME	Micropipette	Using Weighing Balance with readability 0.01 mg by Gravimetric Method as per ISO 8655-6	10 µl to 100 µl	0.11µl
192	MECHANICAL-VOLUME	Micropipette	Using Weighing Balance with readability 0.01 mg by Gravimetric Method as per ISO 8655-6	100 µl to 1000 µl	0.18µl



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193	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Scale and Balance Readability : 0.01 mg	Using Standard Weights of E1 class as per OIML R-76	0 g to 42 g	0.04mg
194	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Scale and Balance Readability : 0.1 mg	Using Standard Weights of E1 class as per OIML R-76	upto 210 g	0.17mg
195	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.01mg by ABBA method as per OIML R-111-1	1 g	0.014mg
196	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.01mg by ABBA method as per OIML R-111-1	1 mg	0.0092mg
197	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.01 mg by ABBA method as per OIML R-111-1	10 g	0.014mg





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198	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.01 mg by ABBA method as per OIML R-111-1	10 mg	0.0098mg
199	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.1 mg by ABBA method as per OIML R-111-1	100 g	0.091mg
200	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.01 mg by ABBA method as per OIML R-111-1	100 mg	0.0095mg
201	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.01 mg by ABBA method as per OIML R-111-1	2 g	0.013mg



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202	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.01 mg by ABBA method as per OIML R-111-1	2 mg	0.0092mg
203	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.01 mg by ABBA method as per OIML R-111-1	20 g	0.015mg
204	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.01 mg by ABBA method as per OIML R-111-1	20 mg	0.0098mg
205	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.1 mg by ABBA method as per OIML R-111-1	200 g	0.11mg



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206	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.01 mg by ABBA method as per OIML R-111-1	200 mg	0.0092mg
207	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.01 mg by ABBA method as per OIML R-111-1	5 g	0.013mg
208	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.01 mg by ABBA method as per OIML R-111-1	5 mg	0.0094mg
209	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.1 mg by ABBA method as per OIML R-111-1	50 g	0.089mg





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210	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.01 mg by ABBA method as per OIML R-111-1	50 mg	0.0093mg
211	MECHANICAL-WEIGHTS	Mass F1 Class weights and Coarser	Using Standard Weights of E1 class and Weighing Balance with readability 0.01 mg by ABBA method as per OIML R-111-1	500 mg	0.0097mg
212	THERMAL-SPECIFIC HEAT & HUMIDITY	Analog / Digital Thermo hygrometers / Thermo hygrographs / Humidity Sensors / Data loggers / Transmitters @ 25 °C	Using Standard Humidity Indicator with Sensor, Humidity Chamber by Comparison Method	20 %RH to 90 %RH	1.3%RH
213	THERMAL-SPECIFIC HEAT & HUMIDITY	Analog / Digital Thermo hygrometers / Thermo hygrographs / Humidity Sensors / Data loggers / Transmitters @ 50°C	Using Standard Humidity Indicator with Sensor, Humidity Chamber by Comparison Method	30 %RH	1.3%RH



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214	THERMAL-SPECIFIC HEAT & HUMIDITY	Temperature of Analog / Digital Thermo hygrometers / Thermo hygrographs / Humidity Sensors / Data loggers / Transmitters @ 50 %RH	Using Standard Humidity Indicator with Sensor, Humidity Chamber by Comparison Method	20 °C to 50 °C	0.25°C
215	THERMAL-SPECIFIC HEAT & HUMIDITY	Temperature of Analog / Digital Thermo hygrometers / Thermo hygrographs / Humidity Sensors / Data loggers / Transmitters @ 80 %RH	Using Standard Humidity Indicator with Sensor, Humidity Chamber by Comparison Method	10°C	0.2°C
216	THERMAL-TEMPERATURE	Black Body Source, Emissivity : 0.95	Using Standard IR Thermometer by Comparison Method	50 °C to 500 °C	3.0°C
217	THERMAL-TEMPERATURE	Glass Thermometer	Using Standard RTD, Liquid bath, and Digital Multimeter by Comparison Method	>90 °C to 250 °C	0.4°C
218	THERMAL-TEMPERATURE	Glass Thermometer	Using Standard RTD, Liquid bath, and Digital Multimeter by Comparison Method	0 °C to 90 °C	0.16°C



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219	THERMAL-TEMPERATURE	Liquid-in-glass Thermometer	Using Standard RTD, Liquid bath, and Digital Multimeter by Comparison Method	-85 °C to 0 °C	0.4°C
220	THERMAL-TEMPERATURE	Non-Contact Thermometer, IR Thermometer, Pyrometer	Using Standard IR Thermometer and Black Body Source by Comparison Method	50 °C to 500 °C	3.0°C
221	THERMAL-TEMPERATURE	RTD's, Thermistors, Thermocouples, Temperature gauges, Digital Thermometers, Temperature Indicator with sensors, Temperature switches, Temperature transmitter	Using Standard RTD, Liquid bath, Temp source: Dry block calibrator, Precision Process Calibrator and Digital Multimeter by Comparison Method	>50 °C to 650 °C	0.18°C





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222	THERMAL-TEMPERATURE	RTD's, Thermistors, Thermocouples, Temperature gauges, Digital Thermometers, Temperature Indicator with sensors, Temperature switches, Temperature transmitter	Using Standard RTD, Liquid Nitrogen Cylinder, and Digital Multimeter by Comparison Method	-196 °C	0.10°C
223	THERMAL-TEMPERATURE	RTD's, Thermistors, Thermocouples, Temperature gauges, Digital Thermometers, Temperature Indicator with sensors, Temperature switches, Temperature transmitter	Using Standard RTD, Thermocouple, Temp source: Liquid bath(-85°C to 25°C), Temp source: Dry block calibrator (>25°C to 50°C), Precision Process Calibrator and Digital Multimeter by Comparison Method	-85 °C to 50 °C	0.16°C
224	THERMAL-TEMPERATURE	Temperature Indicator of Bath, Dry Block Calibrator	Using Standard RTD, Thermocouple, Precision Process Calibrator and Digital Multimeter by Comparison Method	>50 °C to 650 °C	0.20°C



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S.No	Discipline / Group	Measurand or Reference Material/Type of instrument or material to be calibrated or measured / Quantity Measured / Instrum	Calibration or Measurement Method or procedure	Measurement range and additional parameters where applicable(Range and Frequency)	* Calibration and Measurement Capability(CMC)(±)
225	THERMAL-TEMPERATURE	Temperature Indicator of Bath, Dry Block Calibrator	Using Standard Thermocouple, Precision Process Calibrator and Digital Multimeter by Comparison Method	>650 °C to 1200 °C	1.7°C
226	THERMAL-TEMPERATURE	Temperature Indicator of Bath, Dry Block Calibrator	Using Standard RTD, Thermocouple, Precision Process Calibrator and Digital Multimeter by Comparison Method	-85 °C to 50 °C	0.16°C
227	THERMAL-TEMPERATURE	Thermocouples, Temperature gauges, Digital Thermometers, Temperature Indicator with sensors, Temperature switches, Temperature transmitter	Using Standard Thermocouple, Dry block calibrator, Precision Process Calibrator and Digital Multimeter by Comparison Method	650 °C to 1200 °C	1.7°C



# National Accreditation Board for Testing and Calibration Laboratories

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<b>Laboratory Name :</b>	R&D INSTRUMENT SERVICES, #5, NATESAN NAGAR, ALAPAKKAM, CHENNAI, KANCHIPURAM, TAMIL NADU, 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 /Instrum	Calibration or Measurement Method or procedure	Measurement range and additional parameters where applicable(Range and Frequency)	* Calibration and Measurement Capability(CMC)(±)
Site Facility					
1	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC CURRENT @ 50Hz	Using Digital Multimeter Agilent 34401 A by Direct Method	1 A to 2 A	0.17 % to 0.28 %
2	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC CURRENT @ 50Hz	Using Digital Multimeter Agilent 34401 A by Direct Method	100 mA to 1 A	0.58 % to 0.17 %
3	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC VOLTAGE @ 50Hz - 10kHz	Using Digital Multimeter Agilent 34401A by Direct Method	1 V to 10 V	0.10%
4	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC VOLTAGE @ 50Hz - 10kHz	Using Digital Multimeter Agilent 34401 A by Direct Method	10 mV to 100 mV	0.54 % to 0.12 %





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5	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC VOLTAGE @ 50Hz - 10kHz	Using Digital Multimeter Agilent 34401 A by Direct Method	10 V to 100 V	0.10%
6	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC VOLTAGE @ 50Hz - 10kHz	Using Digital Multimeter Agilent 34401 A by Direct Method	100 mV to 1 V	0.12 % to 0.10 %
7	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Measure)	AC VOLTAGE @ 50Hz - 10kHz	Using Digital Multimeter Agilent 34401 A by Direct Method	100 V to 750 V	0.10 % to 0.11 %
8	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 µA to 100 µA	4.2 % to 1.6 %
9	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 µA to 200 µA	1.6 % to 1.4 %



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10	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	2 A to 20 A	0.6 % to 0.32 %
11	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	2 mA to 20 mA	0.7 % to 0.5 %
12	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	20 mA to 200 mA	0.5%
13	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 µA to 2 mA	1.4 % to 0.7 %
14	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 1kHz	Using Multi Product Calibrator Transmilke 3041 by Direct Method	200 mA to 2 A	0.5 % to 0.62 %
15	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 µA to 100 µA	3.1 % to 0.4 %



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16	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 µA to 200 µA	0.4 % to 0.24 %
17	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 & Clamp Coil by Direct Method	100 A to 1000 A	0.31 % to 0.30 %
18	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	2 A to 20 A	0.12 % to 0.08 %
19	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	2 mA to 20 mA	0.11%
20	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 & Clamp Coil by Direct Method	20 A to 100 A	0.76 % to 0.31 %
21	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	20 mA to 200 mA	0.11%





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22	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 µA to 2 mA	0.24 % to 0.11 %
23	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 mA to 2 A	0.10 % to 0.12 %
24	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 5kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 mA to 200 mA	0.7 % to 0.51 %
25	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC CURRENT @ 5kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 mA to 2 A	0.51 % to 0.62 %
26	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 100kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 mV to 200 mV	1.18 % to 0.38 %
27	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 100kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	2 V to 20 V	0.40%



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28	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 100kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 mV to 2 V	0.38 % to 0.40 %
29	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 mV to 200 mV	0.41 % to 0.10 %
30	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	2 V to 20 V	0.08 % to 0.07 %
31	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	20 V to 200 V	0.07 % to 0.10 %
32	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 mV to 2 V	0.10 % to 0.08 %
33	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 V to 1000 V	0.10 % to 0.19 %



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34	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 20kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 mV to 200 mV	0.59 % to 0.37 %
35	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 20kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	2 V to 20 V	0.40%
36	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 20kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	20 V to 100 V	0.11 % to 0.13 %
37	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 20kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 mV to 2 V	0.37 % to 0.40 %
38	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 mV to 200 mV	0.28 % to 0.05 %
39	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	2 V to 20 V	0.04%





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40	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	20 V to 200 V	0.04 % to 0.10 %
41	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 mV to 2 V	0.05 % to 0.04 %
42	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	200 V to 700 V	0.10 % to 0.05 %
43	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	AC VOLTAGE @ 50Hz	Using Multi Product Calibrator Transmille 3041 by Direct Method	700 V to 1000 V	0.05 % to 0.10 %
44	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	CAPACITANCE@ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	1 $\mu$ F	0.47%
45	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	CAPACITANCE@ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	1 nF	0.68%



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46	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	CAPACITANCE@ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 µF	0.7%
47	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	CAPACITANCE@ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 nF	0.33%
48	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	CAPACITANCE@ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 µF	0.7%
49	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	CAPACITANCE@ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 nF	0.31%
50	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	CAPACITANCE@ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	20 nF	0.47%
51	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	CAPACITANCE@ 1kHz	Using Multi Product Calibrator Transmille 3041 by Direct Method	50 nF	0.32%



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52	ELECTRO-TECHNICAL-ALTERNATING CURRENT (< 1 GHZ) (Source)	INDUCTANCE @ 1kHz	Using Decade Inductance Box by Direct Method	1 mH to 10 H	1.6%
53	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC CURRENT	Using Digital Multimeter Fluke 8845 A (0.1mA)and Precision Calibrator Fluke 7526 A in measure mode by Direct Method	0.1 mA to 1 mA	0.13%
54	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC CURRENT	Using Digital Multimeter Agilent 34401 A by Direct Method	1 A to 2 A	0.12 % to 0.17 %
55	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC CURRENT	Using Precision Calibrator Fluke 7526 A in measure mode by Direct Method	1 mA to 25 mA	0.13 % to 0.02 %
56	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC CURRENT	Using Digital Multimeter Agilent 34401 A by Direct Method	100 mA to 1 A	0.064 % to 0.13 %





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57	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC CURRENT	Using Digital Multimeter Fluke 8845 A by Direct Method	2 A to 10 A	0.17 % to 0.32 %
58	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC CURRENT	Using Digital Multimeter Agilent 34491A above 50 mA and Precision Calibrator Fluke 7526 A in measure mode by Direct Method	25 mA to 100 mA	0.02 % to 0.064 %
59	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC VOLTAGE	Using Digital Multimeter Agilent 34401 A by Direct Method	1 mV to 100 mV	0.41 % to 0.01 %
60	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC VOLTAGE	Using Digital Multimeter Agilent 34401 A by Direct Method	1 V to 10 V	0.006 % to 0.005 %
61	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC VOLTAGE	Using Digital Multimeter Agilent 34401 A by Direct Method	10 V to 100 V	0.005 % to 0.006 %



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62	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC VOLTAGE	Using Digital Multimeter Agilent 34401 A by Direct Method	100 mV to 1 V	0.01 % to 0.006 %
63	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	DC VOLTAGE	Using Digital Multimeter Agilent 34401 A by Direct Method	100 V to 1000 V	0.0064%
64	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	RESISTANCE	Using Digital Multimeter Agilent 34401 A by Direct Method	1 kohm to 10 kohm	0.013%
65	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	RESISTANCE	Using Digital Multimeter Agilent 34401 A by Direct Method	1 Mohm to 10 Mohm	0.013 % to 0.047 %
66	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	RESISTANCE	Using Digital Multimeter Agilent 34401 A by Direct Method	1 ohm to 100 ohm	0.47 % to 0.016 %
67	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	RESISTANCE	Using Digital Multimeter Agilent 34401 A by Direct Method	10 kohm to 100 kohm	0.013%



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68	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	RESISTANCE	Using Digital Multimeter Agilent 34401 A by Direct Method	10 Mohm to 100 Mohm	0.047 % to 0.94 %
69	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	RESISTANCE	Using Digital Multimeter Agilent 34401 A by Direct Method	100 kohm to 1 Mohm	0.013%
70	ELECTRO-TECHNICAL-DIRECT CURRENT (Measure)	RESISTANCE	Using Digital Multimeter 34401A by Direct Method	100 ohm to 1 kohm	0.016 % to 0.013 %
71	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC CURRENT	Using Multi Product Calibrator Transmille 3041 by Direct Method	1 A to 20 A	0.014 % to 0.10 %
72	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC CURRENT	Using Multi Product Calibrator Transmille 3041 by Direct Method	1 mA to 10 mA	0.015 % to 0.009 %
73	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC CURRENT	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 mA to 100 mA	0.009 % to 0.009 %





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74	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC CURRENT	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 $\mu$ A to 1 mA	0.09 % to 0.015 %
75	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC CURRENT	Using Multi Product Calibrator Transmille 3041 & Clamp Coil by Direct Method	100 A to 1000 A	0.31%
76	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC CURRENT	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 mA to 1 A	0.009 % to 0.014 %
77	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC CURRENT	Using Multi Product Calibrator Transmille 3041 & Clamp Coil by Direct Method	20 A to 100 A	0.76 % to 0.31 %
78	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Using Multi Product Calibrator Transmille 3041 by Direct Method	1 mV to 10 mV	0.36 % to 0.04 %
79	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Using Multi Product Calibrator Transmille 3041 by Direct Method	1 V to 10 V	0.004 % to 0.003 %



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80	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 mV to 100 mV	0.04 % to 0.007 %
81	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Using Multi Product Calibrator Transmilke 3041 by Direct Method	10 V to 100 V	0.003 % to 0.004 %
82	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 mV to 1 V	0.007 % to 0.004 %
83	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	DC VOLTAGE	Using Multi Product Calibrator Transmille calibrator by Direct Method	100 V to 1000 V	0.004%
84	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Decade Resistance Box 7400 and Multi product calibrator Transmille 3041 by Direct Method	0.1 ohm to 1 ohm	0.95 % to 0.11 %



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85	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Decade Resistance Box 8400 by Direct Method	1 Gohm to 100 Gohm	1.01 % to 1.7 %
86	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Multi product calibrator Transmille 3041 by Direct Method	1 Mohm to 10 Mohm	0.03%
87	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Decade Resistance Box 7400 and Multi product calibrator Transmille 3041 by Direct Method	1 ohm to 10 ohm	0.11 % to 0.06 %
88	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Decade Resistance Box 7400 and Multi product calibrator Transmille 3041 by Direct Method	10 kohm to 100 kohm	0.06%
89	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Decade Resistance Box 8400 and Multi product calibrator by Direct Method	10 Mohm to 100 Mohm	0.03 % to 0.6 %





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90	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Decade Resistance Box 7400 and Multi product calibrator Transmille 3041 by Direct Method	10 ohm to 10 kohm	0.06%
91	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Decade Resistance Box 8400 by Direct Method	100 Gohm to 1 Tohm	1.7 % to 3.12 %
92	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Multi product calibrator Transmille 3041 by Direct Method	100 kohm to 1 Mohm	0.06 % to 0.03 %
93	ELECTRO-TECHNICAL-DIRECT CURRENT (Source)	RESISTANCE	Using Decade Resistance Box 8400 by Direct Method	100 Mohm to 1 Gohm	0.6 % to 1.01 %
94	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	B-Type Thermocouple	Using Precision Calibrator Fluke 7526 by Direct Method	600 °C to 1820 °C	0.41°C



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95	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	E-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 1000 °C	0.29°C
96	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	J-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-210 °C to 1200 °C	0.17°C
97	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	K-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 1360 °C	0.19°C
98	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	N-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 1300 °C	0.27°C
99	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	PT-100 (385)	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 800 °C	0.052°C
100	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	PT-1000 (385)	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 630 °C	0.04°C



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101	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	PT-500 (385)	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 630 °C	0.06°C
102	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	R-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	0 °C to 1760 °C	0.45°C
103	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	S-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	0 °C to 1760 °C	0.44°C
104	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Measure)	T-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 400 °C	0.19°C
105	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	B-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	600 °C to 1820 °C	0.41°C
106	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	E-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 1000 °C	0.15°C





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107	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	J-Type Thermocouple	Using Precision Calibrator Fluke 7526 by Direct Method	-210 °C to 1200 °C	0.17°C
108	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	K-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 1360 °C	0.20°C
109	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	N-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 1300 °C	0.28°C
110	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	PT-100 (385)	Using Precision Calibrator Fluke 7526 by Direct Method	-200 °C to 800 °C	0.09°C
111	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	PT-1000 (385)	Using Precision Calibrator Fluke 7526 by Direct Method	-200 °C to 630 °C	0.11°C
112	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	PT-500 (385)	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 630 °C	0.20°C



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113	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	R-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	0 °C to 1760 °C	0.47°C
114	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	S-Type Thermocouple	Using Precision Calibrator Fluke 7526A by Direct Method	0 °C to 1760 °C	0.46°C
115	ELECTRO-TECHNICAL-TEMPERATURE SIMULATION (Source)	T-Type Thermocouple	Using Precision Calibrator Fluke 7526 A by Direct Method	-200 °C to 400 °C	0.20°C
116	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	FREQUENCY	Using Digital Multimeter Agilent 34401 A by Direct Method	1 kHz to 10 kHz	0.06 % to 0.013 %
117	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	FREQUENCY	Using Digital Multimeter Agilent 34401 A by Direct Method	10 kHz to 100 kHz	0.013 % to 0.012 %
118	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	FREQUENCY	Using Digital Multimeter Agilent 34401 A by Direct Method	100 Hz to 1 kHz	0.06%



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119	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	FREQUENCY	Using Digital Multimeter Agilent 34401 A by Direct Method	100 kHz to 300 kHz	0.012%
120	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	FREQUENCY	Using Digital Multimeter Agilent 34401A by Direct Method	3 Hz to 100 Hz	1.93 % to 0.06 %
121	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	TIME INTERVAL	Using Timer by Comparison Method	1 Sec to 10 Sec	4.12 % to 1.23 %
122	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	TIME INTERVAL	Using Timer by Comparison Method	10 Hr to 24 Hr	0.018 % to 0.028 %
123	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	TIME INTERVAL	Using Timer by Comparison Method	10 Sec to 100 Sec	1.23 % to 0.33 %
124	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	TIME INTERVAL	Using Timer by Comparison Method	100 Sec to 1000 Sec	0.33 % to 0.04 %





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125	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	TIME INTERVAL	Using Timer by Comparison Method	1000 Sec to 2 Hr	0.04 % to 0.016 %
126	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	TIME INTERVAL	Using Timer by Comparison Method	2 Hr to 10 Hr	0.016 % to 0.018 %
127	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	FREQUENCY	Using Multi Product Calibrator Transmille 3041 by Direct Method	1 kHz to 10 kHz	0.002%
128	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	FREQUENCY	Using Multi Product Calibrator Transmille 3041 by Direct Method	1 MHz to 10 MHz	0.06%
129	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	FREQUENCY	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 Hz to 100 Hz	0.006 % to 0.003 %
130	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	FREQUENCY	Using Multi Product Calibrator Transmille 3041 by Direct Method	10 kHz to 100 kHz	0.002%



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131	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	FREQUENCY	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 Hz to 1 kHz	0.003 % to 0.002 %
132	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	FREQUENCY	Using Multi Product Calibrator Transmille 3041 by Direct Method	100 kHz to 300 kHz	0.002%
133	ELECTRO-TECHNICAL-TIME & FREQUENCY (Source)	FREQUENCY	Using Multi Product Calibrator Transmilke 3041 by Direct Method	300 kHz to 1 MHz	0.002 % to 0.06 %
134	FLUID FLOW-FLOW MEASURING DEVICES	Volumetric Flow rate (Medium -Water)	Using Ultrasonic Flow meter by Comparison Method	3 m3/hr to 160 m3/hr	1.70%
135	MECHANICAL-ACCELERATION AND SPEED	Contact Tachometer	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	10 rpm to 100 rpm	0.54rpm
136	MECHANICAL-ACCELERATION AND SPEED	Contact Tachometer	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	100 rpm to 4000 rpm	4.0rpm



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137	MECHANICAL-ACCELERATION AND SPEED	Non-Contact Tachometer	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	10 rpm to 100 rpm	0.54rpm
138	MECHANICAL-ACCELERATION AND SPEED	Non-Contact Tachometer	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	100 rpm to 1000 rpm	4.0rpm
139	MECHANICAL-ACCELERATION AND SPEED	Non-Contact Tachometer	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	1000 rpm to 10000 rpm	4.0rpm
140	MECHANICAL-ACCELERATION AND SPEED	Non-Contact Tachometer	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	10000 rpm to 30000 rpm	11.2rpm
141	MECHANICAL-ACCELERATION AND SPEED	Non-Contact Tachometer	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	30000 rpm to 60000 rpm	16.0rpm
142	MECHANICAL-ACCELERATION AND SPEED	Speed / RPM / Indicator, Centrifuge	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	10 rpm to 100 rpm	0.54rpm





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143	MECHANICAL-ACCELERATION AND SPEED	Speed / RPM / Indicator, Centrifuge	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	100 rpm to 3000 rpm	4.0rpm
144	MECHANICAL-ACCELERATION AND SPEED	Speed / RPM / Tachometer Calibrator, Source	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	10 rpm to 100 rpm	0.54rpm
145	MECHANICAL-ACCELERATION AND SPEED	Speed / RPM / Tachometer Calibrator, Source	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	100 rpm to 1000 rpm	4.0rpm
146	MECHANICAL-ACCELERATION AND SPEED	Speed / RPM / Tachometer Calibrator, Source	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	1000 rpm to 10000 rpm	4.0rpm
147	MECHANICAL-ACCELERATION AND SPEED	Speed / RPM / Tachometer Calibrator, Source	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	10000 rpm to 30000 rpm	11.2rpm
148	MECHANICAL-ACCELERATION AND SPEED	Speed / RPM / Tachometer Calibrator, Source	Using Standard Tachometer by Comparison Method, VFD Source as per SANAS TR 45-02	30000 rpm to 60000 rpm	16.0rpm



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149	MECHANICAL-PRESSURE INDICATING DEVICES	Absolute Pressure Analog / Digital, Pressure Gauges, Pressure Transmitter with / without Indicator, Pressure Switches, Pressure Calibrators, Manometer, Barometer	Using Absolute Pressure Calibrator by Comparison Method as per DKD R-6-1	0.15 bar (abs) to 2 bar (abs)	0.9mbar (abs)
150	MECHANICAL-PRESSURE INDICATING DEVICES	Pneumatic Pressure Pressure Gauges, Magnehelic/ photohelic gauge, Pressure Indicators / Controllers / Transmitters / Switches, Manometer	Using Digital Pressure controller by Comparison Method as per DKD R-6-1	-200 mbar to 200 mbar	0.07% rdg
151	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure (Hydraulic) Analog / Digital, Pressure Gauges, Pressure Transmitter with / without Indicator, Pressure Switches, Pressure Calibrators	Using Pressure Calibrator by Comparison Method as per DKD R-6-1	0 bar to 700 bar	0.023% rdg



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152	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure (Hydraulic) Analog / Digital, Pressure Gauges, Pressure Transmitter with / without Indicator, Pressure Switches, Pressure Calibrators	Using Digital Pressure Indicator by Comparison Method as per DKD R-6-1	700 bar to 1400 bar	0.055% rdg
153	MECHANICAL-PRESSURE INDICATING DEVICES	Pressure (Pneumatic) Analog / Digital, Pressure Gauges, Pressure Transmitter with / without Indicator, Pressure Switches, Pressure Calibrators, Manometer	Using Pressure Calibrator by Comparison Method as per DKD R-6-1	0 bar to 35 bar	0.04% rdg
154	MECHANICAL-PRESSURE INDICATING DEVICES	Vacuum Analog / Digital, Vacuum Gauges, Vacuum Transmitter with / without Indicator, Vacuum Switches, Vacuum Calibrators, Manometer	Using Pressure Calibrator by Comparison Method as per DKD R-6-1	0 mbar to -1000 mbar	0.08% rdg
155	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Scale and Balance Readability : 0.01 mg	Using Standard Weights of E1 class as per OIML R-76	0 g to 42 g	0.04mg





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S.No	Discipline / Group	Measurand or Reference Material/Type of instrument or material to be calibrated or measured / Quantity Measured / Instrum	Calibration or Measurement Method or procedure	Measurement range and additional parameters where applicable(Range and Frequency)	* Calibration and Measurement Capability(CMC)(±)
156	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Scale and Balance Readability : 0.1 mg	Using Standard Weights of E1 class as per OIML R-76	upto 210 g	0.17mg
157	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Scale and Balance Readability : 1 g	Using Standard Weights of F1, & F2 class as per OIML R-76	upto 52 kg	0.72g
158	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Scale and Balance Readability : 1 mg	Using Standard Weights of E1 & E2 class as per OIML R-76	upto 620 g	2.0mg
159	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Scale and Balance Readability : 10 g	Using Standard Weights of F2 & M1 class as per OIML R-76	upto 100 kg	6.7g
160	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Scale and Balance Readability : 100 mg	Using Standard Weights of E1, E2 & F1 class as per OIML R-76	upto 6.2 kg	59mg
161	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Scale and Balance Readability : 20/50 g	Using Standard Weights of F2 & M1 class as per OIML R-76	upto 300 kg	40g
162	MECHANICAL-WEIGHING SCALE AND BALANCE	Weighing Scale and Balance Readability : 500 mg	Using Standard Weights of E1, E2 & F1 class as per OIML R-76	upto 22 kg	294mg



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163	THERMAL-SPECIFIC HEAT & HUMIDITY	Analog / Digital Thermo hygrometers / Thermo hygrographs / Humidity Sensors / Data loggers / Transmitters @ 25 °C	Using Standard Humidity Indicator with Sensor, Saturated Salt Solution by Comparison Method	55 %RH	1.2%RH
164	THERMAL-SPECIFIC HEAT & HUMIDITY	Analog / Digital Thermo hygrometers / Thermo hygrographs / Humidity Sensors / Data loggers / Transmitters @ 25 °C	Using Standard Humidity Indicator with Sensor, Saturated Salt Solution by Comparison Method	75 %RH	1.2%RH
165	THERMAL-SPECIFIC HEAT & HUMIDITY	Analog / Digital Thermo hygrometers / Thermo hygrographs / Humidity Sensors / Data loggers / Transmitters @ 25 °C	Using Standard Humidity Indicator with Sensor, Saturated Salt Solution by Comparison Method	8 %RH	1.2%RH



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166	THERMAL-SPECIFIC HEAT & HUMIDITY	Analog / Digital Thermo hygrometers / Thermo hygrographs / Humidity Sensors / Data loggers / Transmitters @ 25 °C	Using Standard Humidity Indicator with Sensor, Saturated Salt Solution by Comparison Method	84 %RH	1.2%RH
167	THERMAL-SPECIFIC HEAT & HUMIDITY	Analog / Digital Thermo hygrometers / Thermo hygrographs / Humidity Sensors / Data loggers / Transmitters @ 80 %RH	Using Standard Humidity Indicator with Sensor, Temperature Chamber by Comparison Method	10 °C	0.2°C
168	THERMAL-SPECIFIC HEAT & HUMIDITY	Humidity by Spatial Mapping : Environmental Chamber and Humidity enclosures @ 25 °C	Using Humidity Data Logger with Sensor by Comparison Method	20 %RH to 90%RH	3.5%RH
169	THERMAL-SPECIFIC HEAT & HUMIDITY	Humidity Indicator / Controller / Recorder with Sensor of Humidity Chamber, Environmental Chamber (Single Position Calibration) @ 25°C	Using Standard Humidity Indicator with Sensor by Comparison Method	20 %RH to 90% RH	1.2%RH





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170	THERMAL-SPECIFIC HEAT & HUMIDITY	Temperature of Analog / Digital Thermo hygrometers / Thermo hygrographs / Humidity Sensors / Data loggers / Transmitters @ 50 %RH	Using Standard Humidity Indicator with Sensor, Temperature Chamber by Comparison Method	20 °C to 50 °C	0.25°C
171	THERMAL-TEMPERATURE	Black Body Source, Emissivity : 0.95	Using Standard IR Thermometer by Comparison Method	50 °C to 500 °C	3.0°C
172	THERMAL-TEMPERATURE	Non-Contact Thermometer, IR Thermometer, Pyrometer	Using Standard IR Thermometer and Black Body Source by Comparison Method	50 °C to 500 °C	3.0°C
173	THERMAL-TEMPERATURE	RTD's, Thermistors, Thermocouples, Temperature gauges, Digital Thermometers, Temperature Indicator with sensors, Temperature switches, Temperature transmitter	Using Standard RTD, Liquid bath, Temp source: Dry block calibrator, Precision Process Calibrator and Digital Multimeter by Comparison Method	>50 °C to 650 °C	0.18°C



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174	THERMAL-TEMPERATURE	RTD's, Thermistors, Thermocouples, Temperature gauges, Digital Thermometers, Temperature Indicator with sensors, Temperature switches, Temperature transmitter	Using Standard RTD, Liquid Nitrogen Cylinder, and Digital Multimeter by Comparison Method	-196 °C	0.10°C
175	THERMAL-TEMPERATURE	RTD's, Thermistors, Thermocouples, Temperature gauges, Digital Thermometers, Temperature Indicator with sensors, Temperature switches, Temperature transmitter	Using Standard RTD, Thermocouple, Temp source: Liquid bath(-85°C to 25°C), Temp source: Dry block calibrator (>25°C to 50°C), Precision Process Calibrator and Digital Multimeter by Comparison Method	-85 °C to 50 °C	0.16°C
176	THERMAL-TEMPERATURE	Temperature by Spatial Mapping : Furnace	Using Standard Thermocouple and Datalogger by Comparison Method	>1000 °C to 1200 °C	4.43°C



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177	THERMAL-TEMPERATURE	Temperature by Spatial Mapping : Ovens, Furnace,	Using Standard Thermocouple and Datalogger by Comparison Method	>250 °C to 1000 °C	4.0°C
178	THERMAL-TEMPERATURE	Temperature by Spatial Mapping : Ovens, Incubator (for Non-Medical Applications), Furnace, Bath, Environmental Chamber	Using Standard Thermocouple and Datalogger by Comparison Method	50 °C to 250 °C	2.7°C
179	THERMAL-TEMPERATURE	Temperature by Spatial Mapping :Freezer, Ovens, Incubator (for Non-Medical Applications), Bath, Environmental Chamber, Cold Room and Temperature enclosures	Using Standard Thermocouples with minimum 9 sensors and Datalogger by Comparison Method	-85 °C to 50 °C	1.65°C
180	THERMAL-TEMPERATURE	Temperature Indicator / Controller / Recorder with Sensor of Furnace, Bath (Single Position Calibration)	Using Standard RTD, Thermocouple, Precision Process Calibrator and Digital Multimeter by Comparison Method	>650 °C to 1200 °C	1.85°C





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181	THERMAL-TEMPERATURE	Temperature Indicator / Controller / Recorder with Sensor of Freezer, Oven, Incubator, Furnace, Bath, Environmental Chamber, Cold Room, autoclave (Single Position Calibration)	Using Standard RTD, Thermocouple, Precision Process Calibrator and Digital Multimeter by Comparison Method	-85 °C to 50 °C	0.19°C
182	THERMAL-TEMPERATURE	Temperature Indicator / Controller / Recorder with Sensor of Oven, Furnace, Bath, Environmental Chamber, autoclave (Single Position Calibration)	Using Standard RTD, Thermocouple, Precision Process Calibrator and Digital Multimeter by Comparison Method	>50 °C to 650 °C	0.32°C
183	THERMAL-TEMPERATURE	Temperature Indicator of Bath, Dry Block Calibrator	Using Standard RTD, Thermocouple, Precision Process Calibrator and Digital Multimeter by Comparison Method	>50 °C to 650 °C	0.20°C



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184	THERMAL-TEMPERATURE	Temperature Indicator of Bath, Dry Block Calibrator	Using Standard Thermocouple, Precision Process Calibrator and Digital Multimeter by Comparison Method	>650 °C to 1200 °C	1.7°C
185	THERMAL-TEMPERATURE	Temperature Indicator of Bath, Dry Block Calibrator	Using Standard RTD, Thermocouple, Precision Process Calibrator and Digital Multimeter by Comparison Method	-85 °C to 50 °C	0.16°C
186	THERMAL-TEMPERATURE	Thermocouples, Temperature gauges, Digital Thermometers, Temperature Indicator with sensors, Temperature switches, Temperature transmitter	Using Standard Thermocouple, Dry block calibrator, Precision Process Calibrator and Digital Multimeter by Comparison Method	650 °C to 1200 °C	1.7°C

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