



National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name : SUDUTT ELECTRICAL TESTING LABORATORY (OPC) PRIVATE LIMITED, SHED NO-11, 12, SURVEY NO-35, 0, GOTRI ROAD, GAYATRI PARTY PLOT, GOTRI, VADODARA, VADODARA, GUJARAT, INDIA

Accreditation Standard ISO/IEC 17025:2017

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Validity 22/03/2025 to 20/08/2026 **Last Amended on** 01/09/2025

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 Voltage @ 50 Hz	Using standard PT with indicating meter or HV Divider by Direct Method	500 V to 10 kV	1.6 %
2	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance @ 1 kV to 10 kV @ 50 Hz	Using Capacitance & Tan delta bridge and standard capacitor by Comparison method	50 pF to 1000 pF	0.28 %
3	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance @ 1 kV to 10 kV @ 50 Hz	Using Capacitance & tan delta bridge by Direct Method	50 pF to 1000 pF	0.28 %
4	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance @ 1 kV to 5 kV @ 50 Hz	Using Capacitance & Tan delta bridge and standard capacitor by Comparison method	1000 pF to 30 nF	0.28 % to 0.39 %



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5	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Measure)	Capacitance @ 1 kV to 5 kV @ 50 Hz	Using Capacitance & tan delta bridge by Direct Method	1000 pF to 30 nF	0.28 % to 0.39 %
6	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Measure)	Capacitance Up to 10 kV @ 50 Hz	Using Capacitance and Tan d Bridge By Comparison Method	50 pF to 1000 pF	0.62 %
7	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Measure)	Capacitance Up to 10 kV @ 50 Hz	Using Capacitance And Tan d Bridge By Direct Method	50 pF, 100 pF, 1000 pF	0.65 %
8	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Measure)	Tan delta @ 1 kV to 5 kV @ 50 Hz	Using Capacitance & Tan delta bridge and standard Capacitor with tan delta by Comparison method	0.001 % to 3 %	0.000089 to 0.0000995
9	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Measure)	Tan delta @ 5 kV to 10 kV @ 50 Hz	Using Capacitance & Tan delta bridge and standard Capacitor with tan delta by Comparison method:	3 % to 10 %	0.0000995 to 0.0009609



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10	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Tan delta point upto 10 kVA @ 50 Hz	Using Standard capacitor with tan delta point by direct method	0.05 % to 5 %	0.0006 tan delta
11	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance Up to 10 kV @ 50 Hz	Using Standard Capacitor By Direct Method	25 pF to 1000 nF	0.3 %
12	ELECTRO-TECHNICAL- ELECTRICAL EQUIPMENT (Measure)	DC Voltage	Using Resistive Voltage Divider With kV Meter by Direct method	1 kV to 50 kV	2.1 %
13	ELECTRO-TECHNICAL- EMI/ EMC (Measure)	Scale Factor (Impulse Voltage Divider / Probe)	Using Unit Step Generator with oscilloscope as per IEC 60060-2 by Comparison method	10 Vp to 1000 Vp	0.6 %
14	ELECTRO-TECHNICAL- EMI/ EMC (Measure)	Voltage & Time (Impulse Measuring System)	Using Reference Impulse Calibrator as per IEC 61083 By Direct Method	LI : 80 Vp to 1000 Vp, T1 : 0.84 μs, T2 : 60 μs	V : 0.76 %, T1 : 1.7 %, T2 : 1.7 %
15	ELECTRO-TECHNICAL- EMI/ EMC (Measure)	Voltage & Time (Impulse Measuring System)	Using Reference Impulse Calibrator & Digital Oscilloscope as per IEC 61083 By Comparison Method	LIC : 100 Vp to 1000 Vp, Chopped Time Tc : 0.5 μs	V : 0.76 %, Tc : 1.7 %



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16	ELECTRO-TECHNICAL-EMI/ EMC (Source)	Scale Factor (Impulse Voltage Divider / Probe)	Using Reference Impulse Calibrator with oscilloscope as per IEC 60060- 2, IEC 61180, IS 2071 Part 1 By Direct method	1 Ratio to 10000 Ratio	0.9 %
17	ELECTRO-TECHNICAL-EMI/ EMC (Source)	Voltage & Time (Impulse Measuring System)	Using Reference Impulse Calibrator as per IEC 61083 By Direct Method	SI : 50 Vp to 1000 Vp, T1 : 20 µs, T2 : 4000 µs	Vp : 0.76 %, T1 : 1.7 %, T2 : 1.7 %
18	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Voltage & Time (PD pulse)	Using ResistanceBox With Digital Oscilloscope By Comparison Method as per IS/IEC 60270	1 pC to 10000 pC	2.5 %



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Site Facility					
1	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC High Voltage @ 50 Hz	Using standard HV Divider with kV meter By Direct Method	2 kV to 200 kV	1.8 %
2	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	AC Voltage @ 50 Hz	Using standard PT with indicating meter or HV Divider by Direct Method	500 V to 10 kV	1.6 %
3	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance @ 1 kV to 10 kV @ 50 Hz	Using Capacitance & Tan delta bridge and standard capacitor by Comparison method	50 pF to 1000 pF	0.28 %
4	ELECTRO-TECHNICAL-Alternating Current (< 1 GHz) (Measure)	Capacitance @ 1 kV to 10 kV @ 50 Hz	Using Capacitance & tan delta bridge by Direct Method	50 pF to 1000 pF	0.28 %



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6	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Measure)	Capacitance @ 1 kV to 5 kV @ 50 Hz	Using Capacitance & tan delta bridge by Direct Method	1000 pF to 30 nF	0.28 % to 0.39 %
7	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Measure)	Capacitance Up to 10 kV @ 50 Hz	Using Capacitance and Tan d Bridge By Comparison Method	50 pF to 1000 pF	0.62 %
8	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Measure)	Capacitance Up to 10 kV @ 50 Hz	Using Capacitance And Tan d Bridge By Direct Method	50 pF, 100 pF, 1000 pF	0.65 %
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10	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Measure)	Tan delta @ 5 kV to 10 kV @ 50 Hz	Using Capacitance & Tan delta bridge and standard Capacitor with tan delta by Comparison method:	3 % to 10 %	0.0000995 to 0.0009609
11	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Tan delta point upto 10 kVA @ 50 Hz	Using Standard capacitor with tan delta point by direct method	0.05 % to 5 %	0.0006 tan delta
12	ELECTRO-TECHNICAL- Alternating Current (< 1 GHz) (Source)	Capacitance Up to 10 kV @ 50 Hz	Using Standard Capacitor By Direct Method	25 pF to 1000 nF	0.3 %
13	ELECTRO-TECHNICAL- ELECTRICAL EQUIPMENT (Measure)	DC Voltage	Using Resistive Voltage Divider With kV Meter by Direct method	1 kV to 50 kV	2.1 %
14	ELECTRO-TECHNICAL- EMI/ EMC (Measure)	Ratio (Impulse Measuring System)	Using Impulse Analyzer with Impulse Voltage Divider as per IEC 60060-2, IEC 61180, IS:2071 Part 1 by Direct Method	1 kVp to 500 kVp	1.41 %



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15	ELECTRO-TECHNICAL-EMI/ EMC (Measure)	Scale Factor (Impulse Voltage Divider / Probe)	Using Unit Step Generator with oscilloscope as per IEC 60060-2 by Comparison method	10 Vp to 1000 Vp	0.6 %
16	ELECTRO-TECHNICAL-EMI/ EMC (Measure)	Voltage & Time (Impulse Measuring System)	Using Reference Impulse Calibrator as per IEC 61083 By Direct Method	LI : 80 Vp to 1000 Vp, T1 : 0.84 μ s, T2 : 60 μ s	V : 0.76 %, T1 : 1.7 %, T2 : 1.7 %
17	ELECTRO-TECHNICAL-EMI/ EMC (Measure)	Voltage & Time (Impulse Measuring System)	Using Reference Impulse Calibrator & Digital Oscilloscope as per IEC 61083 By Comparison Method	LIC : 100 Vp to 1000 Vp, Chopped Time Tc : 0.5 μ s	V : 0.76 %, Tc : 1.7 %
18	ELECTRO-TECHNICAL-EMI/ EMC (Source)	Scale Factor (Impulse Voltage Divider / Probe)	Using Reference Impulse Calibrator with oscilloscope as per IEC 60060- 2, IEC 61180, IS 2071 Part 1 By Direct method	1 Ratio to 10000 Ratio	0.9 %
19	ELECTRO-TECHNICAL-EMI/ EMC (Source)	Voltage & Time (Impulse Measuring System)	Using Reference Impulse Calibrator as per IEC 61083 By Direct Method	SI : 50 Vp to 1000 Vp, T1 : 20 μ s, T2 : 4000 μ s	Vp : 0.76 %, T1 : 1.7 %, T2 : 1.7 %
20	ELECTRO-TECHNICAL-TIME & FREQUENCY (Measure)	Voltage & Time (PD pulse)	Using ResistanceBox With Digital Oscilloscope By Comparison Method as per IS/IEC 60270	1 pC to 10000 pC	2.5 %



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

