National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name : UHV TEST LAB, TBEA ENERGY (INDIA) PRIVATE LIMITED, TBEA GREEN ENERGY PARK NATIONAL HIGHWAY NO. 8, VILLAGE MIYAGAM, KARJAN, VADODARA, GUJARAT, INDIA

Accreditation Standard ISO/IEC 17025:2017

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Validity 16/05/2022 to 15/05/2024 **Last Amended on** 13/10/2022

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
1	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA , 765 kV	Induced voltage test with partial discharge measurement (IVPD)	IS 2026-3 : 2018 / IEC 60076-3:2013+AMD1:2018 / IEEE C57.12.90
2	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA , 765 kV	Induced voltage test with partial discharge measurement (IVPD) / Line Terminal AC withstand test(LTAC) / Induced Voltage Withstand test(IVW)	IS 2026-3 : 2018 / IEC 60076-3:2013+AMD1:2018 / IEEE C57.12.90
3	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA , 765 kV	Switching Impulse Test (SI)	IS 2026-3 : 2018 / IEC 60076-3:2013+AMD1:2018 / IEC 60076-4 : 2002 / IEEE C57.12.90
4	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA 765 kV	Load Loss Measurement	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEEE C57.12.90
5	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA , 765 kV	Measurement of transfer surge during switching Impulse	IS 2026-3 : 2018 / IEC 60076-3:2013 +AMD1
6	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA 765 kV	Impedance Measurement	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEEE C57.12.90
7	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Measurement of CT Ratio	IEC 60076-1
8	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Measurement of Excitation Current at low voltage	CBIP manual Pub. No. 317
9	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Measurement of Impedance at low voltage	CBIP manual Pub. No. 317
10	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Measurement of Insulation Resistance	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEEE C57.12.90
11	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Measurement of Voltage Ratio	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEEE C57.12.90
12	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Measurement of Zero-Sequence Impedance	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEC 60076-6 : 2007 / IEEE C57.12.90
13	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	AC withstand Voltage test of Auxiliary Wiring(AuxW) & Core-Frame assembly	CBIP manual Pub. No. 317-2013 / IEC 60076-3:2013+AMD1
14	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Applied voltage Test	IS 2026-3 : 2018 / IEC 60076-3:2013+AMD1:2018 / IEEE C57.12.90

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15	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Lightning Impulse Test (LI,LIC,LIN)	IS 2026-3 : 2018 / IEC 60076-3:2013+AMD1:2018 / IEC 60076-4 : 2002 / IEEE C57.12.90
16	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Measurement Of Acoustic Sound Level	IS 2026-10 : 2009 / IEC 60076-10 : 2016 / IEEE C57.12.90 : 2021 / NEEMA TR 1
17	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Measurement of Capacitance of Winding and bushing	IEC 60076-1 : 2011 / IEEE C57.12.90
18	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Measurement of current Harmonics	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEEE C57.12.00
19	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Measurement of dissipation factor(tan delta) of the insulation system capacitance.	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEEE C57.12.90
20	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Measurement of No Load Loss	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEEE C57.12.90
21	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Measurement Of Power Taken by Fan & Pumps	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEEE C57.12.00
22	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Measurement of transfer surge during lightning Impulse	IS 2026-3 : 2018 / IEC 60076-3:2013+AMD1
23	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Measurement of Winding Resistance	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEEE C57.12.90
24	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	SFRA Test	IS 2026-18 : 2018 / IEC-60076 18
25	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Temperature Rise test	IS 2026-2 : 2010 / IEC 60076-2 : 2011 / IEEE C57.12.90
26	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Tests on on-load tap changer	IS 2026-1 : 2011 / IEC 60076-1 2011 / IEEE C57.12.00
27	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Thermo vision Scanning of Transformer	CBIP manual Pub. No. 317
28	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765 kV	Vector Group and Polarity check	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEEE C57.12.00
29	ELECTRICAL- INDUCTORS & TRANSFORMERS	Auto Transformers up to 2400MVA, 765kV	Magnetic balance test	CBIP manual Pub. No. 317
30	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400 MVA, 765 kV	Measurement of CT Ratio	IEC 60076-1
31	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400 MVA, 765 kV	Vector Group and Polarity check	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEEE C57.12.00

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32	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400 MVA, 765 kV	Load Loss measurement	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEEE C57.12.90
33	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400 MVA, 765 kV	Measurement of dissipation factor(tan delta) of the insulation system capacitance.	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEEE C57.12.90
34	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400 MVA, 765 kV	Measurement of no load loss	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEEE C57.12.90
35	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400 MVA, 765 kV	Measurement of Transfer Surge during lightning Impulse	IS 2026-3 : 2018 / IEC 60076-3:2013+AMD1
36	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA , 765 kV	Induced voltage test with partial discharge measurement (IVPD)	IS 2026-3 : 2018 / IEC 60076-3:2013+AMD1: 2018 / IEEE C57.12.90
37	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA , 765 kV	Switching Impulse Test (SI)	IS 2026-3 : 2018 / IEC 60076-3:2013+AMD1:2018 / IEC 60076-4 : 2002 / IEEE C57.12.90
38	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	AC withstand test of auxiliary wiring(AuxW) & core-frame assembly	CBIP manual Pub. No. 317-2013 / IEC 60076-3:2013+AMD1
39	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Applied voltage Test	IS 2026-3 : 2018 / IEC 60076-3:2013+AMD1:2018 / IEEE C57.12.90
40	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Impedance Measurement	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEEE C57.12.90
41	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Lightning Impulse Test (LI,LIC,LIN)	IS 2026-3 : 2018 / IEC 60076-3:2013+AMD1:2018 / IEEE C57.12.90
42	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Measurement of acoustic sound level	IS 2026-10 : 2009 / IEC 60076-10 : 2016 / IEEE C57.12.90 : 2021 / NEEMA TR 1
43	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Measurement of Capacitance of winding and bushing	IEC 60076-1 : 2011 / IEEE C57.12.90
44	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Measurement of current harmonics	IS 2026-1 : 2011 / IEC 60076-1 : 2011 / IEEE C57.12.00
45	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Measurement of excitation current at low voltage	CBIP manual Pub. No. 317
46	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Measurement of Impedance at low voltage	CBIP manual Pub. No. 317

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47	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Measurement of insulation resistance	IS 2026-1 : 2011+ RA 2021 / IEC 60076-1 : 2011 / IEEE C57.12.90
48	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Measurement of power taken by fan & pump	IS 2026-1 : 2011+ RA 2021 / IEC 60076-1 : 2011 / IEEE C57.12.00
49	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Measurement of transfer surge during switching Impulse	IS 2026-3 : 2018 / IEC 60076-3:2013 +AMD1
50	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Measurement of Voltage Ratio	IS 2026-1 : 2011 + RA 2021 / IEC 60076-1 : 2011 / IEEE C57.12.90
51	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Measurement of Winding Resistance	IS 2026-1 : 2011+ RA 2021 / IEC 60076-1 : 2011 / IEEE C57.12.90
52	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Measurement of Zero-Sequence Impedance.	IS 2026-1 : 2011 +RA2021/ IEC 60076-1 : 2011 / IEEE C57.12.90
53	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	SFRA Test	IS 2026-18 : 2018 / IEC-60076-18
54	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Temperature Rise test	IS 2026-2 : 2010 +RA 2020/ IEC 60076-2 : 2011 / IEEE C57.12.90
55	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Tests on on-load tap changer	IS 2026-1 : 2011 + RA 2021 / IEC 60076-1: 2011 / IEEE C57.12.00
56	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765 kV	Thermo vision Scanning of Transformer	CBIP manual Pub. No. 317
57	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765kV	Induced voltage test with partial discharge measurement (IVPD) / Line Terminal AC withstand test(LTAC) / Induced voltage withstand test (IVW)	IS 2026-3 : 2018 / IEC 60076-3:2013+AMD1: 2018 / IEEE C57.12.90
58	ELECTRICAL- INDUCTORS & TRANSFORMERS	Power Transformers up to 2400MVA, 765kV	Magnetic balance test	CBIP manual Pub. No. 317
59	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	AC withstand voltage test of Auxiliary Wiring(AuxW) & Core-Frame assembly	CBIP manual Pub. No. 317-2013 / IEC 60076-3:2013+AMD1
60	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Induced Over Voltage with partial discharge measurement (IVPD)	IS 2026-6 : 2017 / IEC 60076-6

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61	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Induced Over Voltage with partial discharge measurement (IVPD) / Line Terminal AC withstand test(LTAC) / Induced voltage withstand test(IVW)	IS 2026-6 : 2017 / IEC 60076-6
62	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Lightning Impulse Test (LI,LIC,LIN)	IS 2026-6 : 2017 / IEC 60076-6
63	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Measurement Of Acoustic Sound Level	IS 2026-6 : 2017 / IEC 60076-6
64	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Measurement of Capacitance of winding and bushing	IS 2026-6 : 2017 / IEC 60076-6
65	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Measurement of CT Ratio	IEC 60076-1
66	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Measurement of current harmonics	IS 2026-6 : 2017 / IEC 60076-6
67	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Measurement of dissipation factor(tan delta) of the insulation system capacitance.	IS 2026-6 : 2017 / IEC 60076-6
68	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Measurement of Insulation Resistance	IS 2026-6 : 2017 / IEC 60076-6
69	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Measurement of Losses	IS 2026-6 : 2017 / IEC 60076-6
70	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Measurement Of Power Taken By Fan & Pump	IS 2026-6 : 2017 / IEC 60076-6
71	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Measurement of reactance at low voltage	CBIP manual Pub. No. 317
72	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Measurement of Vibration	IS 2026-6 : 2017 / IEC 60076-6
73	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Measurement of Winding Resistance	IS 2026-6 : 2017 / IEC 60076-6
74	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Measurement of Zero-Sequence Impedance	IS 2026-6 : 2017 / IEC 60076-6
75	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	SFRA Test	IS 2026-18 : 2018 / IEC-60076 : 18
76	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Stress & Strain	IS 2026-6 : 2017 / IEC 60076-6
77	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Switching Impulse Test (SI)	IS 2026-6 : 2017 / IEC 60076-6

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78	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Temperature Rise test	IS 2026-6 : 2017 / IEC 60076-6
79	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV	Thermo vision Scanning of Reactor	CBIP manual Pub. No. 317
80	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV.	Measurement of Reactance / Mutual Reactance on three-phase reactor	IS 2026-6 : 2017 / IEC 60076-6
81	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV.	Applied voltage Test	IS 2026-6 : 2017 / IEC 60076-6
82	ELECTRICAL- INDUCTORS & TRANSFORMERS	Reactor up to 300 MVAr, 765 kV.	Measurement of Magnetization Characteristic(Knee point voltage)	IS 2026-6 : 2017 / IEC 60076-6
83	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Di-Electric materia	Dissolve Gas Analysis carbon monoxide (CO)	IS 9434 : 2019/ IS 10593:2018 / IEC 60599:2015 / IEC 60567:2011 / IEEE C57.104
84	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Di-Electric material	Dissolved Gas Analysis Test Ethylene (C2H4)	IS 9434 : 2019/ IS 10593:2018 / IEC 60599:2015 / IEC 60567:2011 / IEEE C57.104
85	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Di-Electric material	Electrical strength (Breakdown Voltage)	IS 6792 : 2017 / IEC 60156
86	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Di-Electric material	Dielectric dissipation factor (Tan Delta)	IS 6262 : 1971 RA 2021 / IEC 60247
87	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Di-Electric material	Dissolved Gas Analysis Test Ethane (C2H6)	IS 9434 : 2019/ IS 10593:2018 / IEC 60599:2015 / IEC 60567:2011 / IEEE C57.104
88	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Di-Electric material	Dissolved Gas Analysis Acetylene (C2H2)	IS 9434 : 2019/ IS 10593:2018 / IEC 60599:2015 / IEC 60567:2011 / IEEE C57.104
89	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Di-electric Material	Dissolved Gas Analysis Carbon Dioxide (CO2)	IS 9434 : 2019/ IS 10593:2018 / IEC 60599:2015 / IEC 60567:2011 / IEEE C57.104
90	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Di-Electric material	Dissolved Gas Analysis Methane (CH4)	IS 9434 : 2019/ IS 10593:2018 / IEC 60599:2015 / IEC 60567:2011 /IEEE C57.104
91	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Di-Electric material	Specific Resistance (Resistivity)	IS 6103 : 1971 RA 2001 / IEC 60247

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92	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Di-Electric material	Water Content	IS 13567 : 2018 / IEC 60814
93	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Di-Electric materials	Interfacial tension (IFT)	IS 6104 :1971 RA 2021 / ASTM D 971
94	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Di-electric Materials	Dissolved Gas Analysis Test (DGA) Hydrogen (H2)	IS 9434 : 2019 / IS 10593 : 2018 / IEC 60599 : 2015 / IEC 60567 : 2011 / IEEE C57.104
95	ELECTRICAL- INSULATING MATERIALS & INSULATORS	Liquid Di-electric Materials	Measurement of Counting and Sizing Particles in Insulating Liquids	ISO 4406 : 2021 / IS 13236 : 2013 +RA 2018/ IEC 60970