

Laboratory Transformer Testing Laboratory, Tesla Transformers Global Pvt. Ltd.,
30-B, Industrial Area, Govindpura, Bhopal, Madhya Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-8131

Page 1 of 3

Validity 26.11.2018 to 25.11.2020

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
-----	----------------------------	-------------------------	---	--

ELECTRICAL TESTING

I.	INDUCTORS & TRANSFORMERS			
1.	Oil Filled Power and Distribution Transformers (up to 8 MVA, 33 kV, 50 Hz)	Insulation Resistance	IS 2026 (Part 1) Clause 10.1.3 IEC 60076 (Part 1) Clause 11.1.2.2.(b) IS 1180 (Part 1) Clause 21.2 (e)	10.1 MΩ to 985 GΩ @ 500 V _{DC} @ 1000 V _{DC} @ 2500 V _{DC} @ 5000 V _{DC}
		Vector Group	IS 2026 (Part 1) Clause 10.3 IS 1180 (Part 1) Clause 21.2 (b) IEC 60076 (Part 1) Clause 11.3	1 V to 440 V
		Ratio and Polarity Check	IS 2026 (Part 1) Clause 10.3 IS 1180 (Part 1) Clause 21.2 (b) IEC 60076 (Part 1) Clause 11.3	0.9996 to 200
		Winding Resistance	IS 2026 (Part 1) Clause 10.2 IS 1180 (Part 1) Clause 21.2 (a) IEC 60076 (Part 1) Clause 11.2	2 mΩ to 2000 Ω
		No Load Loss and Magnetizing Current	IS 2026 (Part 1) Clause 10.5 IS 1180 (Part 1) Clause 21.2 (d) IEC 60076 (Part 1) Clause 11.5	1 mA to 10 A 1 V to 22000 V 50 W to 220 kW

Laboratory Transformer Testing Laboratory, Tesla Transformers Global Pvt. Ltd.,
30-B, Industrial Area, Govindpura, Bhopal, Madhya Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-8131

Page 2 of 3

Validity 26.11.2018 to 25.11.2020

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Load Loss & Impedance Measurement	IS 2026 (Part 1) Clause 10.4 IS 1180 (Part 1) Clause 21.2 (C) IEC 60076 (Part 1) Clause 11.4	1 V to 3300 V 1 mA to 300 A 50 W to 990 kW
		Induced Over Voltage Withstand Test	IS 2026 (Part 3) Clause 12 IEC 60076 (Part 3) Clause 7.3.1.1 (b) IS 1180 (Part 1) Clause 21.2 (f)	4.2 kV to 100 kV
		Separate Source voltage withstand test	IS 2026 (Part 3) Clause 11 IEC 60076 (Part 3) Clause 7.3.1.1 (a) IS 1180 (Part 1) Clause 21.2 (g)	4.2 kV to 100 kV
		Magnetic Balance	CBIP Manual Publication No. 317	2.01 V to 961 V
		Capacitance & Tan Delta	IS 2026 (Part 1) Clause 10.1.3 (j) IEC 60076 (Part 1) Clause 11.1.2.2 (b)	1 % to 100 % 100 pF to 1 µF
		Harmonics of No Load Current	IS 2026 (Part 1) Clause 10.6 IEC 60076 (Part 1) Clause 11.1.2.2 (e)	1 st to 25 th Harmonic 1 mA to 10 A
		Zero Phase Sequence Impedance	IS 2026 (Part 1) Clause 10.7 IEC 60076 (Part 1) Clause 11.6	1 mA to 300 A 1 V to 3300 V
		Overexcitation Test	IEC 60076 (Part 1) Clause 10.5 IS 1180 (Part 1) Clause 7.9.1	1 mA TO 10 A 1 V to 22000 V

Naveen Jangra
Convenor

Anuja Anand
Program Manager

Laboratory Transformer Testing Laboratory, Tesla Transformers Global Pvt. Ltd.,
30-B, Industrial Area, Govindpura, Bhopal, Madhya Pradesh

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-8131

Page 3 of 3

Validity 26.11.2018 to 25.11.2020

Last Amended on --

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Temperature Rise Test	IS 2026 (Part 2) Clause 5.2 IS1180 (Part 1) Clause 21.3 (b) IEC 60076 (Part 1) Clause 11.1.3 (a)	1 A to 300 A 1 V to 3300 V 1 W to 990 kW 0.7 °C to 150 °C
		On-load Tap-changer	IS 2026 (Part 1) Clause 10.8.1 IEC 60076 (Part 1) Clause 10.8	Qualitative
		Breakdown Voltage Test of Oil	IS 6792, IS1180 (Part 1) Clause 21.4 (e)	10.5 kV _{AC} to 99.9 kV _{AC}
		Pressure Test	IS 1180 (Part 1) Clause 21.2 (h) CBIP Manual PUB .317	0 to 2 kg/cm ²
		Vacuum Test	IS 1180 (Part 1) Clause 21.3 (d) CBIP Manual PUB.317	(-) 100 mmHg to (-) 700 mmHg

Naveen Jangra
Convenor

Anuja Anand
Program Manager