

Laboratory	Transformer Testing Laboratory, Bharat Heavy Electricals Limited, Jhansi, Uttar Pradesh		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Electrical Testing	Issue Date	21.07.2015
Certificate Number	T-3506	Valid Until	20.07.2017
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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
I. INDUCTORS & TRANSFORMERS				
1.	Transformer 10 MVA to 315 MVA Upto 400 kV	Voltage ratio measurement	IS 2026 (Part 1): 2011 Cl. No.10.3 IEC 60076 (Part 1): 2011-04 Cl. No. 11.3	1 to 1000
		Verification of vector group	IS 2026 (Part 1): 2011 Cl. No.10.3 IEC 60076 (Part 1): 2011-04 Cl. No. 11.3	Qualitative
		Check of Polarity	IS 2026 (Part 1): 2011 Cl. No.10.3 IEC 60076 (Part 1): 2011-04 Cl. No. 11.3	Qualitative
		Winding Resistance Measurement with Temperature	IS 2026 (Part 1): 2011 Cl. No. 10.2 IEC 60076 (Part 1): 2011-04 Cl. No. 11.2	1 mΩ to 10 Ω
		Insulation Resistance Measurement	IS 2026 (Part 1): 2011 Cl. No. 10.1.3 (j) IEC 60076 (Part 1): 2011-04 Cl. No. 11.1.2.1 (j)	1 MΩ to 150 GΩ
		Capacitance Tan Delta Measurement	IS 2026 (Part 1): 2011 Cl. No. 10.1.3 (b, j) IEC 60076 (Part 1): 2011-04 Cl. No. 11.1.2.2(a, b)	1 pF to 100 nF 0.01 % to 10 %

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	Transformer 10 MVA to 315 MVA Upto 400 kV	Measurement of no load loss	IS 2026 (Part 1): 2011 Cl. No. 10.5 IEC 60076 (Part 1): 2011-04 Cl. No. 11.5	1 kW to 250 kW
		Measurement of Load loss	IS 2026 (Part 1): 2011 Cl. No. 10.4 IEC 60076 (Part 1): 2011-04 Cl. No. 11.4	10 kW to 850 kW
		Measurement of impedance	IS 2026 (Part 1): 2011 Cl. No. 10.4 IEC 60076 (Part 1): 2011-04 Cl. No. 11.4	1 % to 100 %
		Induced over Voltage Test/ IVW	IS 2026 (Part 3): 2011 IEC 60076 (Part 3): 2013-07 Cl. No. 11.2	10 kV to 650 kV
		Power Frequency Voltage withstand Test/ Applied Voltage Test	IS 2026 (Part 3): 2011 Cl. No. 11 IEC 60076 (Part 3): 2013-07 Cl. No. 10	10 kV to 395 kV
		Partial Discharge Measurement/ACSD Test/ ACLD Test/ IVPD /LTAC	IS 2026 (Part 3): 2011 Cl. No. 12 IEC 60076 (Part 3): 2013-07 Cl. No. 11.3	10 pC to 1000 pC
		Measurement of Zero Phase Sequence Impedance	IS 2026 (Part 1): 2011 Cl. No. 10.7 IEC 60076 (Part 1): 2011-04 Cl. No. 11.1.4	1 % to 100 %

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	Transformer 10 MVA to 315 MVA Upto 400 kV	Lightning impulse Voltage withstand Test	IS 2026 (Part 3): 2011 Cl. No. 13 IEC 60076 (Part 3): 2013 Cl. No. 13.2	50 kV to 1600 kVp
		Lightning impulse Test (Chopped wave)	IS 2026 (Part 3): 2011 Cl. No. 13 IEC 60076 (Part 3): 2013 Cl. No. 13.2	50 kV to 1600 kVp
		Switching impulse Voltage withstand Test	IS 2026 (Part 3): 2011 Cl. No. 15 IEC 60076 (Part 3): 2013 Cl. No. 14	325 kVp to 1600 kVp
		Temperature rise Test	IS 2026 (Part 2): 2011 IEC 60076 (Part 2): 2001-02	Upto 1000 kW Upto 2000 A 10 °C Min to 60 °C Max
		Measurement of Power taken by fan & Pump / cooler	IS 2026 (Part 1): 2011 Cl. No. 10.1.3 (h) IEC 60076 (Part 1): 2001-02 Cl. No. 11.1.3 (d)	1 kW to 50 kW
		Measurement of Noise level	IS 2026 (Part 10): 2011 IEC 60076 (Part 10): 2000	40 dB to 130 dB
		Measurement of Magnetizing Current	CBIP-317: 2013	1 mA to 50 A
		Measurement of Magnetic balance	CBIP -317: 2013	1 V to 500 V

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	Transformer 10 MVA to 315 MVA Upto 400 kV	RSO measurement	IEC 60076 (Part 3): 2013 Cl. No. 13.3.3	Qualitative (50 V _{pk} to 70 V _{pk})
		SFRA	IEC 60060 (Part 1): 1989	10 Hz to 10 MHz

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