

Laboratory **Bharti Automation Pvt. Ltd. (A Testing Division), Plot No-354, Sector-7, IMT Manesar, Gurgaon, Haryana**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7253**

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Validity **18.05.2018 to 17.05.2020**

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

I.	MEASURING INSTRUMENTS - ELECTRICAL AND ELECTRONIC (STATIC) ENERGY METERS			
1.	ac Static Watt hour Smart Meter (Class 0.2, 0.5 & 2)	Impulse Voltage	Cl.12.7.6.2 of IS 13779 IS 14697 IS 15884 IEC 62052-11 BS EN 62052-11	Up to 10 kV 1.2/50 μs
		AC High Voltage	Cl.12.7.6.3 of IS 13779 IS 14697 IS 15884 IEC 62052-11 BSN 62052-11	Qualitative
		Insulation Resistance	Cl.12.7.6.4 of IS 13779 IS 14697 IS 15884 IEC 62052-11 BS EN 62052-11	Up to 100 MΩ 500 V DC
		Dry heat	Cl.12.6.1 of IS 13779 IS 14697 IS 15884 IEC 62052-11 BS EN 62052-11	Ambient to 180 °C
		Cold	Cl.12.6.2 of IS 13779 IS 14697 IS 15884 IEC 62052-11 BS EN 62052-11	(-)45 °C to Ambient

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		Damp heat cyclic test.	Cl.12.6.3 of IS 13779 IS14697 IS 15884 IEC 62052-11 BS EN 62052-11	Ambient to 80 ⁰ C 20 % R.H to 99 % R.H
		Spring hammer	Cl.12.3.3 of IS 13779 IS 14697 IS 15884 IEC 62052-11 BS EN 62052-11	0.20 Nm, 0.22 Nm, 0.35 Nm, 0.50 Nm, 0.70 Nm, 1.00 Nm
		Protection against dust and water	Cl.12.5 of IS 13779 IS 14697 IS 15884 IEC 62052-11 BS EN 62052-11	Qualitative (IP 51 to IP 54)
		Resistance to heat and fire	Cl.12.4 of IS 13779 IS 14697 IS 15884 IEC 62052-11 BS EN 62052-11	Up to 1000 °C
II.	SAFETY TESTING FACILITY			
1.	Household and electrical appliances	Marking and Instruction Durability of Marking	CL. 07 IS 302 IEC 60335-1 EN 60335-1	Qualitative
		Protection against electric shock	Cl:8.1.1, 8.1.2, 8.1.3, 8.1.5 & 8.2 IS 302: 2008 IEC 60335-1: 2010 EN 60335-1: 2012	Qualitative (2.3 mm at 40mm)

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		Power Input and Current	CL. 10 IS 302 IEC 60335-1 EN 60335-1	100 V to 300 V ac at 50 Hz 0.1 A to 20 A 250 W to 4500 W
		Heating/ temperature Rise	CL. 11 IS 302 IEC 60335-1 EN 60335-1	20 °C to 400 °C 1 μΩ to 1.999 kΩ Upto 350 V(ac)
		Leakage Current and Electric Strength at Operating Temp.	CL. 13 IS 302 IEC 60335-1 EN 60335-1	1.2 kV to 5 kV ac 10 μA to 1999 μA 1 mA to 10 mA
		Moisture Resistance (Humidity Treatment)	CL. 15 IS 302 IEC 60335-1 EN 60335-1 IS 9000(part- 4) IEC 60068-2-78	25 °C to 50 °C 85 % to 95 %
		Overload Protection of Transformer and associated Circuit	CL. 17 IS 302 IEC 60335-1 EN 60335-1	100 V to 300 V ac 25°C to 200 °C 1 μΩ to 1.999 kΩ
		Abnormal Operation	CL. 19 IS 302 IEC 60335-1 EN 60335-1	1.2 kV to 5 kV ac 0.1 A to 20 A 100 V to 300 V dc. 25 °C to 200 °C 1 μΩ to 1.999 kΩ
		Stability test & Mechanical hazards	CL. 20, IS 302 IEC 60335-1 EN 60335-1	Qualitative (Inclined Plane 10° to 30°)
		Mechanical strength	CL. 21 IS 302 IEC 60335-1 EN 60335-1	Qualitative (1 N to 200 N) 0.1 Nm to 2.5 Nm)

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		Construction	CL 22.11 , 22.12 IS 302: 2008 IEC 60335-1: 2010 EN 60335-1: 2012	0.5N at 2Nm 0.5 mm at 100mm
		Internal Wiring	CL. 23 IS 302 IEC 60335-1 EN 60335-1	1 mm to 300 mm 1.2 kV to 5 kV AC 1 mA to 100 mA
		Supply connection and external flexible cords	CL. 25.14 IS 302 IEC 60335-1 EN 60335-1	1 mm to 300 mm 1.2 kV to 10 kV AC Upto 100 mA Upto 2.5 Nm
		Provision for Earthing	CL. 27.5 IS 302 IEC 60335-1 EN 60335-1	10 A to 25 A 0.1 V to 12 V 1 μΩ to 1.999 kΩ
		Screws and connections	CL. 28.1 IS 302 IEC 60335-1 EN 60335-1	1 mm to 300 mm 0.1 Nm to 2.5 Nm
		Clearance and creepage Distances	CL. 29 IS 302 IEC 60335-1 EN 60335-1	1 N to 200 N 1 mm to 300 mm 100 V to 500 V 0.1 A to 2 A
		Resistance to heat and Fire	CL. 30 IS 302 IEC 60335-1 EN 60335-1	25 °C to 200 °C Upto 24 Hrs 550 °C to 960 °C
		Ingress of protection (Degrees)	IS 13947: 2004 IS/IEC 60529: 2001 IEC 60947: 2007 IS/IEC60034-5:2000 IS 9000:1981 (Part XII) QM 333/Issue-2:2010	IP 1X, 2X, 3X, 4X, 5X,6X IP X1, X2, X3, X4, X5, X6, X7, X8

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		Dry Heat	IS 9000(part-3/sec.1 to 5) IEC 60068- 2-2 QM 333/Issue-2	Ambient to 200 °C and Rate of Rise 1°C/min
		Thermal Shock	IEC60068-2-14 , IS:9000 (part-14/sec 2)-, QM 333/Issue-2	(-)60 °C to Ambient temperature 25 °C to 300 °C
		Damp Heat Steady State(Humidity)	IEC60068-2-78 , IS:9000 (Part4) QM 333/Issue-2	Qualitative (25 °C to 50 °C 85 % R.H to 95 % R.H
		Drop & Topple	IS 9000(Part VII –Sec 3&4) QM 333/Issue-2	Qualitative (1 N to 2000 N Drop height 25, 50 mm)
2.	Electrical Toys	Marking and Instructions	IS 15644 Cl. 7 IEC 62115: Cl. 7	Qualitative
		Electric Strength at room Temp.	IS 15644 Cl. 12 IEC 62115 Cl. 12	Qualitative (Upto 500V 0.01 s to 900 s)
		Components	IS 15644 Cl. 16 IEC 62115 Cl. 16	Qualitative (Upto 10 A dc Upto 10 A ac)
		Screws and connections	IS 15644 Cl. 17 IEC 62115 Cl. 17	Upto 100 mm Upto 2.5 N m
		Clearance and Creepage Distances	IS 15644 Cl. 18 IEC 62115 Cl. 18	Upto 100 mm
III.	LAMPS, LUMINARIES AND ACCESSORIES			
1.	Fixed General Purpose LED Luminaries LED Luminaries for Road and Street lighting LED Flood Lights	Marking	IS 10322-1 IEC 60598-1, Cl. No. 3	Qualitative
		Construction	IS 10322-1 IEC 60598-1 Cl. No. 4	Qualitative
		External and Internal Wiring	IS 10322-1 IEC 60598-1 Cl. No. 5	Qualitative (0.01 mm to 10 mm)

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		Provision for Earthing	IS 10322-1 IEC 60598-1 Cl. No. 6	10 A to 25 A Upto 12 V 1 $\mu\Omega$ to 1.999 k Ω
		Protection Against Electric Shock	IS 10322-1 IEC 60598-1 Cl. No. 8	Qualitative (0.1 V AC to 42.4 VAC 0.1 Vdc to 60 Vdc)
		Resistance to Dust and Moisture	IS 10322-1 IEC 60598-1 Cl. No. 9	Qualitative (1XC to 6X X1 to X8)
		Insulation Resistance	IS 10322-1 IEC 60598-1 Cl. No. 15	2 M Ω to 10000 M Ω 500 Vdc
		Electric Strength	IS 10322-1 IEC 60598-1 Cl. No. 15	Qualitative (Upto 5 kV)
		Creepage Distance & Clearance	IS 10322-1 IEC 60598-1 Cl. No. 11	Upto 300 mm
		Endurance Test and Thermal Test	IS 10322-1 IEC 60598-1 Cl. No.12	Ambient to 45 °C
		Resistance to Heat, Fire and Tracking	IS 10322-1 IEC 60598-1 Cl. No. 13	Qualitative (Upto 200 °C Upto 24 Hr 0-960 °C Upto 600 V Upto 2 A (Tracking Index))
		Screw Terminals	IS 10322-1 IEC 60598-1 Cl. No. 14	Upto 200 N 0.1 N to 2.5 N
		Screw Less Terminals and electrical connections	IS 10322-1 IEC 60598-1 Cl. No. 15	Upto 1000 N 0.1 N to 2.5 N Upto 200 °C Upto 24 Hr

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2.	Self-Ballasted Led Lamps For General Lighting Services	Marking	CI No: 5 of IS 16102-1	Qualitative
		Interchangeability Test	CI No: 6 Of IS 16102-1	Qualitative (0.01 mm to 300mm 1 N to 500 N 0.001kg to10 kg 0.75 N-m to10 N-m)
		Protection Against Electric Shock	CI No : 7 of IS 16102-1	Qualitative (Upto 10 N 0.001 Vac to 50 V ac 0.1 kV AC to 10 kV AC 0.1 kV DC to 10 kV DC 1 mA to 250 mA Time: 1s to 99s 2 MΩ to 10000 MΩ 500V DC 0.01s to 9000s)
		Insulation Resistance	IS 16102-1 CI No: 8	2 MΩ to 10000 MΩ 500V DC
		Electric Strength After Humidity treatment	IS 16102-1 CI No: 8	0.1 kV AC to 10 kV AC 0.1 kV DC to 10 kV DC
		Mechanical strength	CI No: 9, IS 16102-1	0.5 Nm to 10 Nm
		Cap temperature rise	CI No: 10 of IS16102-1	Qualitative (0.001 Vac to 50 Vac 25 °C to 200 °C)
		Resistance to Heat	CI No: 11 of IS16102-1	Qualitative (Upto 20N 0.01 mm to 300mm 25°C to 180°C 0.01s to 9000 s)
		Resistance to Flame and ignition	CI No: 12 of IS16102-1	Qualitative (550 °C to 960 °C 0.01 s to 9000 s)

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		Fault Conditions	CI No: 13 of IS 16102-1	Qualitative (001 Vac to 300 Vac 0.0001 mA to 20 mA 0.00001 kW to 6 kW 25 °C to 200 °C 0.001 Vac to 50 Vac 0.1 kV AC to 10 kV AC 0.1 kV DC to 10 kV DC 1 mA to 250 mA 1 s to 99 s 2 MΩ to 10000 MΩ 500 V DC)
		Creepage Distance & Clearance	CI No: 14 IS 16102-1	0.01 mm to 300mm
2.	Self-Ballasted Lamps For General Lighting Services	Marking	CI No: 6 of IS 15111-1 IEC 60968	Qualitative
		Interchangeability Test	CI No: 7 of IS 15111-1 IEC 60968	Qualitative (0.01 mm to 300mm 1 N to 500 N 0.001kg to10 kg 0.75 N-m to10 N-m)
		Protection Against Electric Shock	CI No: 8 of IS 15111-1 IEC 60968	Qualitative (Upto 10 N 0.001 Vac to 50 V ac 0.1 kV AC to 10 kV AC 0.1 kV DC to 10 kV DC 1 mA to 250 mA Time: 1s to 99s 2 MΩ to 10000 MΩ 500V DC 0.01s to 9000 s)

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		Insulation Resistance	CI No: 9 of IS 15111-1 IEC 60968	1 MΩ to 100 x 10 ⁶ MΩ 500V DC
		Electric Strength After Humidity treatment		Qualitative (0.1 kV AC to 10 kV AC 0.1 kV DC to 10 kV DC)
		Mechanical strength	CI No: 10 of IS 15111-1 IEC 60968	Qualitative (Bending moment 1 Nm to 10 Nm Torsion Test Unit 0.5 Nm to 10 Nm 0.001 Vac to 50 Vac)
		Cap temperature rise	CI No: 11 of IS 15111-1 IEC 60968	Qualitative (25 °C to 200 °C)
		Resistance to Heat	CI No: 12 of IS 15111-1 IEC 60968	Ball pressure : 20N 0.01 mm to 300mm 25°C to 180°C Time : 0.01s to 9000s Qualitative
		Resistance to Flame and ignition	CI No: 13 of IS 15111-1 IEC 60968 IS 11000(Part2/Sec1)	Qualitative (550 °C to 960 °C 0.01 s to 9000 s)
		Fault Conditions	CI No: 14 of IS 15111-1 IEC 60968	Qualitative (001 Vac to 300 Vac 0.0001 mA to 20 mA 0.00001 to 6 kW 25 °C to 200 °C 0.001 Vac to 50 Vac 0.1 kV AC to 10 kV AC 0.1 kV DC to 10 kV DC 1 mA to 250 mA 1 s to 99s 1 MΩ to 100x10 ⁶ MΩ 500 V DC

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		Creepage Distance & Clearance	CI No: 14 IS 16102-1	0.01 mm to 300 mm
3.	“Safety of lamp Control gear d.c or a.c Supplied Electronic control gear for LED Modules	Marking	CI7 of IS 15885(Part1)	Qualitative
		Protection Against Accidental contact with live parts	CI 10 of IS 15885(Part1) IS 10322-5	Upto 200 N 0.1 N to 2.5 N
		Terminals	CI 8 of IS 15885(Part1)	10 A to 25 A Upto 12 V 1 $\mu\Omega$ to 1.999 k Ω
		Provision for Protective Earthing	CI 9 of IS 15885(Part1)	15 °C to 85 °C 25 % to 99 % 1 Vdc to 500 Vdc
		Moisture Resistance	CI 11 of IS 15885(Part1)	Qualitative (2 M Ω to 10000 M Ω 1 s to 600 s)
		Electric Strength	CI 12 of IS 15885(Part1)	Upto 300 V
		Thermal Endurance Test For Windings of Ballasts	CI 13 of IS 15885(Part1)	20 °C to 200 °C
		Fault Condition	CI 14 of IS 15885(Part1) IS 5921-1/IS 15382-3/ IS 13730-0-1	1 Vdc 500 Vdc 2 M Ω to 10000 M Ω
		Construction	CI 15 IS 15885(Part1)	Qualitative
		Clearance and Creepage Distances	CI 16 of IS15885(Part1) IS10322-1	Upto 200 N Upto 300 mm Upto 600 V Upto 2 A (Tracking Index)
	Screws, Current carrying parts and connections	CI 17 of IS 15885(Part1) IS 10322	Qualitative (Upto 300 mm Uto 2.5 Nm)	
	Resistance to heat, Fire and Tracking	CI 18 of IS 15885(Part1) IS 10322-4 IS 5921-1 IS 11000-2-1 IS 11000-2-2	Qualitative (Upto 200 0C Upto 24 Hr Upto 960 °C Upto 600 V Upto 2 A)	

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		Resistance to corrosion	Cl 19 of IS 15885(Part1) IS 10322-1	Qualitative
IV.	CABLE AND ACCESSORIES			
1.	PVC Insulated Unsheathed and Sheathed Cables/Cords with Rigid and Flexible conductor for Rated Voltage Up to and including 450/750V	Annealing	IS 10810 (Pt-1)	Dia : Upto 200 mm Elong.: Upto 300 mm
		Tensile	IS 10810 (Pt-2)	Upto 10 kN
		Wrapping	IS 10810 (Pt-3)	Qualitative
		Conductor Resistance	IS 10810(Pt-5) IEC 60227-2	1 $\mu\Omega$ to 1.999 k Ω 0.2 $\mu\Omega$ to 11 Ω
		Thickness of Insulation and Sheath	IS 10810(Pt-6) IEC 60227-2	Upto 25 mm 0.01 to 150 mm
		Tensile strength and elongation at breakage of sheath	IS 10810(Pt-7) IEC 60811-1-1	Upto 1000 N 0.01 mm to 300 mm
		Loss of Mass	IS 10810(Pt-10), IEC 60811-409	Ambient to 160 °C 0.01 mg to 100 g
		Thermal ageing in air	IS 10810(Pt-11) IEC 60811-1-2	Upto to 200 °C Upto 1000 N
		Hot deformation test	IS 10810 (Pt-15) IEC 60811-508	Upto 200 °C
		Heat shock test	IS 10810(Pt-14) IEC 60811-509	Upto 200 °C
		High voltage test (water immersion)	IS 10810(Pt-45) IEC 60227-2	Upto 10 kV AC Upto 33 kV AC Upto 10 kV DC Upto 100 °C
		High voltage test (Room temp.)	IS 10810(Pt-45) IEC 60227-2	Upto 33 kV AC
		Insulation Resistance	IS 10810(Pt-43) IEC 60227-2	100,250,500,1000 Vdc 10 M Ω to 100X10 ⁶ M Ω 1 s to 600 s
		Thermal stability test	IS 10810(Pt-60) IEC 60811-405	Ambient to 250 °C Upto 24 Hr

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	Including 1100V	Hot Set	IS 10810(Pt-30) IEC 60811-507	Ambient to 200 °C Upto 300 mm
	Cross-linked Polyethylene	Shrinkage	IS 10810(Pt-12) IEC 60811-502	Ambient to 200 °C Upto 300 mm
	Insulated Thermoplastic Sheathed Cables Specification.	Cold bend	IS 10810 (Pt-20) IEC 60811-504	(-)40°C to 0°C
	For Working Voltage from 3.3kV Up to and Including 33kV	Cold impact test	IS 10810 (Pt-21) IEC 60811-506	(-)40°C to 0°C
		Water absorption test (gravimetric)	IS 10810(Pt-33) IEC 60811-402	Upto 200 °C Upto 200 g
		Additional ageing test	IS 694 (Cl 16.6)	Ambient to 180 °C
	Cables for motor vehicles	Dimension of Armor	IS 10810(Pt-36)	Dia: Upto 200 mm Curvature: 7.5 mm to 12 mm
	Aerial bunched Cables for voltages up to and including 1100V	Elongation for armor	IS 10810(Pt-37)	1000N, 10KN, 100KN 0.01 mm to 300 mm
		Winding Test for Galvanized Steel Strips for Armoring	IS 10810 (Pt-39)	Qualitative
	Elastomer insulated cables part-2 for working voltage from 3.3Kv up to and including 33 kv	Resistivity test	Cl no. 9 of IS 1897 Cl no. 9 of IS 5082	0.01 % to 110 % IACS
		Resistance, Conductance of Armor	IS 10810(Pt-42)	1 μΩ to 1.999 kΩ 0.2 μΩ to 11 Ω
		conductivity test	Cl no. 9 of IS 1897 Cl no. 9 of IS 5082	0.01 - 110 % IACS By Copper Sulphate Solution
	Elastomer insulated cables for working voltage up to and including 1100 V	Uniformity of Zinc Coating	IS 10810(Pt-40)	Qualitative
		Mass of Zinc Coating	IS 10810(Pt-41)	Upto 200 g Upto 5 mm Upto 300 mm
	Flexible cables for lifts and other flexible connections	Torsion (For Round Wire only)	IS10810(Pt-38)	Upto 999 turns
		Capacitance test	Cl.16 of IS 2465	1 pF to 10 μF
		Ozone resistance test for ignition cables	Cl.17 of IS 2465	Upto 33 kV AC

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		Effect of heat on flexibility for ignition cables	Cl.18 of IS 2465	Ambient to 200 °C Upto 33 kV AC
		Effect of oil on ignition cables	Cl.19 of IS 2465	
		Effect of lubricating oil, Brake fluid, Diesel and petrol for general wiring cables	Cl.20 of IS 2465	
		Bending test on completed cables	Cl.11.4 of IS 14255	Qualitative
		Diameter of Aluminum & Galvanized steel wire	Table 1,2 & 3 Cl. 8.1.1of IS 398(P-2)	Upto 25 mm
		Conductor resistance at 20°C	Table 1 ,3, & Cl. 13.6 IS 398 (P-2)	1μΩ to 1.99 kΩ 0.2 μΩ to 11 Ω
		Breaking load and elongation	Table 1,2 & Cl. 13.3, IS 398 (P-2)	Upto 100 kN
2.	Aluminum conductor for overhead transmission purposes, Aluminum Stranded Conductors Aluminum conductor for overhead transmission purposes, Aluminum Conductors, Galvanizes Steel Reinforced Aluminum conductor for	Freedom from defects	Cl. 7.1 of IS: 398 (P-2)	Qualitative
		Lay ratio	Cl. 13.4 & Table 4 of IS 398 (P-2) Cl. 13.8	Upto 25 mm Upto 300 mm
		Ductility	Cl.13.4 IS 398 (P-2)	Upto 50 kN
		Torsion test	Cl. 13.4.1 IS 398 (P-2)	Qualitative
		Wrapping test Aluminum wire	Cl .13.5.1 of IS 398 (P-2)	Qualitative
		Galvanized steel wire	Cl .13.5.2 of IS 398 (P-2)	Qualitative
		Galvanizing	Cl. 13.7 of IS 398 (P-2)	Upto 200 g

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	<p>overhead transmission purposes, Aluminum Conductors, Aluminized Steel Reinforced)</p> <p>Aluminum conductor for overhead transmission purposes, Aluminum alloy stranded Conductors</p> <p>Aluminum conductor for overhead transmission purposes, Aluminum Conductors, Galvanizes Steel Reinforced for Extra High Voltages</p>			
V.	TRANSMISSION LINE EQUIPMENT AND ACCESSORIES			
1.	Current Transformer Upto 11 kV class	Verification of Terminal Marking and Polarity	IS 16227 PART 1 IEC 61869-1	Qualitative
		Power frequency dry withstand tests on Secondary Windings	IS 16227 PART 1 IEC 61869-1 IS 16227 PART 2 IEC 61869-2	Upto 3 kV

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Sector-7, IMT Manesar, Gurgaon, Haryana**

Accreditation Standard **ISO/IEC 17025: 2005**

Certificate Number **TC-7253**

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Validity **18.05.2018 to 17.05.2020**

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
2.	Potential Transformer Upto 11 kV class	Verification of Terminal Marking and Polarity	IS 16227 PART 1 IEC 61869-1	Qualitative
		Power frequency dry withstand tests on Secondary Windings	IS 16227 PART 1 IEC 61869-1 IS 16227 PART 3 IEC 61869-3	Upto 3 kV

Ravi Johri
Convenor

Alok Jain
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ELECTRONICS TESTING

I.	DOMESTIC ELECTRONIC APPLIANCES & ACCESSORIES			
1.	Plasma/ LCD/ LED Televisions	Markings and Instructions	IEC 60065 Cl.5 IS 616 Cl.5	Qualitative
		Heating under normal operating conditions	IEC 60065, Cl.7 IS 616, Cl.7	25 °C to 300 °C
		Hygroscopic materials	IEC 60065, Cl.8.3 IS 616, Cl.8.3	Qualitative
		Winding insulation test	IEC 60065, Cl.8.8 IS 616, Cl.8.8	10 V to 10 kV AC/DC 10 s to 900 s
		External forces - windows & covers	IEC 60065, Cl.8.13, 8.14 IS 616, Cl.8.13, 8.14	1 N to 30 N 1 s to 10 s
		Internal forces	IEC 60065, Cl.8.15 IS 616, Cl.8.15	1 N to 2 N
		Determination of hazardous live parts	IEC 60065, Cl.9.1.1.1 IS 616, Cl.9.1.1.1	1 Vrms/Vdc to 300 Vrms/Vdc 0.1 mA to 5 mA
		Protection against electric shock - Terminals	IEC60065, Cl.9, 9.1.1.2, 9.2 IS616, Cl.9, 9.1.1.2, 9.2	1 N to 30 N
		Preset controls	IEC 60065, Cl.9.1.5 IS 616, Cl.9.1.5	1 mm to 30 mm 1N to 100 N
		Withdrawal of main plug	IEC 60065, Cl.9.1.6 IS 616, Cl.9.1.6	0.1 to 600V Peak / DC 0.1 s to 10 s
		Resistance to external force	IEC 60065, Cl.9.1.7 IS 616, Cl.9.1.7	1N to 10 N 1 s to 60 s
		Surge test	IEC 60065, Cl.10.1 IS 616, Cl.10.1	1 kVpeak to 12 kVpeak
		Humidity treatment	IEC 60065, Cl.10.2 IS 616, Cl.10.2	28 °C to 50 °C 90 RH to 95% RH
		Insulation resistance	IEC 60065, Cl.10.3 IS 616, Cl.10.3	100 Vdc to 1000 Vdc 2.32 MΩ to 160X10 ³ MΩ

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		Dielectric strength	IEC 60065, Cl.10.3 IS 616, Cl.10.3	1Vac to 10 kV ac 1 Vdc to 10 kV dc
		Heating under Fault conditions	IEC 60065, Cl.11.1 IS 616, Cl.11.2	25 °C to 300 °C
		Mechanical strength - Bump	IEC 60065, Cl.12.1.1 IS 616, Cl.12.1.1	0.1 cm to 5 cm
		Mechanical strength - Impact	IEC 60065, Cl.12.1.3 IS 616, Cl.12.1.3 IEC 60065, Cl.12.1.4 IS 616, Cl.12.1.4	0.1 J to 3.5 J 0.1 m to 1.3 m
		Drop test	IEC 60065, Cl.12.1.4 IS 616, Cl.12.1.4	0.1 m to 1.3 m
		Mechanical strength - Stress relief	IEC 60065, Cl.12.1.5 IS 616, Cl.12.1.5	1 °C to 100 °C
		Remote control device held in hand	IEC 60065, Cl.12.3 IS 616, Cl.12.3	Qualitative
		Antenna coaxial sockets Mounted on apparatus	IEC 60065, Cl.12.3 IS 616, Cl.12.5	0.1 J to 50 J
		Determination of operating voltage	IEC 60065, Cl.13.2 IS 616, Cl.13.2	1 Vrms/Vdc to 1000 Vrms/Vdc
		Creepage and Clearance distances Strain relief test	IEC 60065, Cl.13.3, 13.4 IS 616, Cl.13.3, 13.4	1 mm to 300 mm
		Torque test on screw terminals	IEC 60065, Cl.16.5 IS 616, Cl.16.5	1 N to 10N 1 Nm to 2.5 Nm
		Torque test on covers	IEC 60065, Cl.17.1 IS 616, Cl.17.1	1 mm to 6 mm 1 Nm to 5 Nm
		Stability test	IEC 60065, Cl.19.1 IS 616, Cl.19.1	Qualitative
		Vertical force stability	IEC 60065, Cl.19.2 IS 616, Cl.19.2	1 cm to 75 cm 1 N to 100 N
		Horizontal force stability	IEC60065, Cl.19.3 IS 616, Cl.19.3	1 N to 250 N 0.1 m to 3 m
		Wall Or Ceiling Or Equipment Rack Mounting Test	IEC60065, Cl.19.6 IS 616, Cl.19.6	1 N to 200 N 1 Nm to 50 Nm

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Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Resistance to Fire	IEC 60065, Cl.20, Annex G IS616, Cl.20, Annex G	500 °C to 960 °C Upto 50 mm
2.	Computers, Laptops, Mobile Phones, Tablets, Phablets, Printers, Monitors, Keyboards, Mouses, Modems, Wireless Routers scanners, Cameras)	Input Current	IEC 60950-1, IS 13252-1, Cl. 1.6	100 Vac 300 Vac Upto 30 Vdc 0.001 A AC/DC to 10 A AC/DC 1W to 500 W
		Markings and Instructions	IEC 60950-1, IS 13252-1, Cl.1.7	Qualitative (Upto 600 s)
		Access to energized parts	IEC 60950-1, IS 13252-1(Cl. 2.1.1.1)	Qualitative
		Energy Hazard	IEC 60950-1, IS 13252-1, Cl 2.1.1.5	100 to 600 V AC, Upto 30A
		Plug discharge	IEC 60950-1, IS 13252-1 (Cl. 2.1.1.7)	0.5 V to 500 Vrms 1µs to 10 s
		SELV Reliability	IEC 60950-1, IS 13252-1 (Cl. 2.2)	2 Vac to 600 Vac 0.1 A to 30 A
		Humidity conditioning	IEC 60950-1, IS 13252-1(Cl. 2.9.2)	20 °C to 60 °C 40% RH to 96% RH
		Clearances, Creepage distance and distances through insulation	IEC 60950-1, IS 13252-1 (Cl. 2.10)	0.01 mm to 300 mm
		Current rating & over current protection	IEC 60950-1 IS 13252-1 (Cl. 3.1.1)	0.1 A to 30 A
		Cord anchorage and strain relief	IEC 60950-1, IS 13252-1 (Cl. 3.2.6)	25 °C to 300 °C
		Cord guards	IEC 60950-1, IS 13252-1 (Cl. 3.2.8)	1 N to 500 N
		Physical Requirements - Stability	IEC 60950-1, IS 13252-1 (Cl. 4.1)	Upto 30°
		Mechanical Strength	IEC 60950-1, IS 13252-1 (Cl. 4.2)	1 N to 800N 25 °C to 300 °C 2 kg to 100 kg
	Handles and manual controls	IEC 60950-1, IS 13252-1 (Cl. 4.3.2)	Upto 500 N	

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		Direct plug-in equipment	IEC 60950-1, IS 13252-1 (Cl.4.3.6)	Qualitative
		Protection against hazardous moving parts	IEC 60950-1, IS 13252-1 (Cl.4.4)	Qualitative
		Thermal requirements	IEC 60950-1, IS 13252-1 (Cl.4.5)	Up to 300 VAC (6kVA) Up to 425 VDC (3kVA) 45 to 500 Hz 25°C to 200 °C
		Openings of Enclosure	IEC 60950-1, IS 13252-1 (Cl. 4.6)	0.01 mm to 100 mm
		Touch current and protective conductor current	IEC 60950-1, IS 13252-1 (Cl. 5.1)	5 µA to 10 mA
		Electric strength	IEC 60950-1, IS 13252-1, Cl. 5.2	0.1 kV to 10 kV
		Protection from hazardous voltages	IEC 60950-1, IS 13252-1, Cl. 6.1.1	1 V DC to 60 V DC 1 V AC to 42.4 V AC
		Separation of the telecommunication network from Earth	IEC 60950-1, IS 13252-1 Cl. 6.1.2	0.1 kV to 10 kV
		Impulse test	IEC 60950-1, IS 13252-1 Cl. 6.2.2.1	0.1 kV to 10 kV (1.2/50µs) 0.1 kV to 12 kV (10/700µs)
		Steady state test	IEC 60950-1, IS 13252-1 Cl. 6.2.2.2	0.1 kV to 10 kV
		Compliance criteria	IEC 60950-1+ A1+ A2, IS 13252-1+A1+A2, Cl. 6.2.2.3	0.1 kV to 10 kV AC 2MΩ to 160X10 ³ MΩ
		Voltage Surge Test	IEC 60950-1+ A1+ A2, IS 13252-1 +A1+ A2, Cl. 7.4.2	0.1 kV to 12 kV
		Impulse test	IEC 60950-1+ A1+ A2, IS 13252-1: +A1+ A2 Cl. 7.4.3	0.1 kV to 10 kV (1.2/50µs) 0.1 kV to 12 kV (10/700µs)

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