Laboratory	**Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi**
Accreditation Standard	**ISO/IEC 17025: 2005**
Certificate Number	**TC-6563** **Page 1 of 43**
Validity	**29.09.2018 to 28.09.2020** **Last Amended on 05.08.2019**

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.	**LAMPS, LUMINARIES AND ACCESSORIES**			
1.	**Self-ballasted LED lamps for general purposes lighting services** **- Safety Requirements**	Verification of Marking	IS 16102 (Part 1) IEC 62560 Cl.5	Qualitative
		Interchangeability	IS 16102 (Part 1) IEC 62560 Cl.6	Qualitative
		Protection Against Accidental Contact With Live Parts	IS 16102 (Part 1) IEC 62560 Cl.7	0.1 N to 15 N Qualitative 40 V to 75 V 1 MΩ to 6 MΩ
		Insulation Resistance And Electric Strength Test After Humidity Treatment	IS 16102 (Part 1) IEC 62560 Cl.8	Qualitative 0.1 °C to 55 °C 20 % to 96 % RH 1 MΩ to 6 MΩ 0.01 kV to 5 kV 5 mA to 250 mA
		Mechanical Strength	IS 16102 (Part 1) IEC 62560 Cl.9	Up to 3 Nm
		Cap Temperature Rise	IS 16102 (Part 1) IEC 62560 Cl.10	0.1 °C to 180 °C 0.1 V to 300 V
		Resistance To Heat - Ball Pressure	IS 16102 (Part 1) IEC 62560 Cl.11	20 N 0.1 °C to 150 °C 0.001 mm to 4 mm
		Resistance To Flame And Ignition	IS 16102 (Part 1) IEC 62560 Cl.12	1 °C to 975 °C 0.01 mm to 150 mm 0.1 s to 60 s
		Fault Conditions	IS 16102 (Part 1) IEC 62560 Cl.13	0.01 W to 5000 W 0.001 A to 20 A 0.01 V to 600 V 0.1 °C to 180 °C
		Creepage Distances	IS 16102 (Part 1)	0.01 mm to 100 mm

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		And Clearances	IEC 62560 Cl.14	
2.	**Safety of Lamp Control gear Particular requirements DC or AC supplied Electronic Control gear for LED Modules**	Classification	IS 15885 (Part 2/Sec 13) IEC 61347-2-13 Cl.6	Qualitative
		Verification of Marking	IS 15885 (Part 2/Sec 13) IEC 61347-2-13 Cl. 7	Qualitative
		Protection Against Accidental Contact With Live Parts	IS 15885 (Part 2/Sec 13) IEC 61347-2-13 Cl. 8	0.1 N to 75 N Qualitative
		Terminals	IS 15885 (Part 2/Sec 13) IEC 61347-2-13 Cl.9	0.01 mm to 50 mm 0.001 mm to 5 mm 0.5 Nm to 5 Nm 0.1 N to 75 N
		Provision For Protective Earthing	IS 15885 (Part 2/Sec 13) IEC 61347-2-13 Cl.10	0.01 V to 9.99 V 0.01 A to 50 A 0.1 s to 60 s
		Moisture Resistance And Insulation	IS 15885 (Part 2/Sec 13) IEC 61347-2-13 Cl.11	0.1 °C to 50 °C 20 % to 95 % RH 1 MΩ to 6 MΩ
		Electric Strength	IS 15885 (Part 2/Sec 13) IEC 61347-2-13 Cl.12	0.01 kV to 5 kV 5 mA to 250 mA
		Fault Conditions	IS 15885 (part2/Sec 13) IEC 61347-2-13 Cl.14	0.1 °C to 200 °C 1 MΩ to 6 MΩ
		Transformer Heating	IS 15885 (Part 2/Sec 13) IEC 61347-2-13 Cl.15	0.1 V to 1000 V DC/AC 0 .001 Ω to 11.11 MΩ Ambient to 135 °C
		Normal Operation	IS 15885 (Part 2/Sec 13) IEC 61347-2-13 Cl.15.1	0.01 W to 5000 W 0.001 A to 20 A 0.01 V to 600 V 0.1 °C to 200 °C
		Abnormal Operation	IS 15885 (Part 2/Sec 13) IEC 61347-2-13 Cl.15.2	0.01 W to 5000 W 0.001 A to 20 A 0.1 V to 600 V 0.1 s to 60 s
		Construction	IS 15885 (Part 2/Sec 13)	1 MΩ to 6 MΩ

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IEC 61347-2-13 Cl.16	
		Creepage Distances And Clearances	IS 15885 (Part 2/Sec 13) IEC 61347-2-13 Cl.17	0.01 mm to 100 mm
		Screws, Current-Carrying Parts And Connections	IS 15885 (Part 2/Sec 13) IEC 61347-2-13 Cl.18	0.01 mm to 100 mm 0.5 Nm to 5 Nm 0.1 N to 45 N
		Resistance To Heat, Fire And Tracking	IS 15885 (Part 2/Sec 13) IEC 61347-2-13 Cl.19	Qualitative 20 N (Ball Pressure) 0.1 °C to 150 °C 0.001 mm to 4 mm 1 °C to 975 °C 0.1 V to 600 V 0.5 A
		Resistance To Corrosion	IS 15885 (Part 2/Sec 13) IEC 61347-2-13 Cl. 20	Qualitative
3.	**Fixed General Purpose Luminaries**	Classification Of Luminaries	IS 10322 (Part 5/ Sec 1) IEC 60598-2-1 Cl.5	Qualitative
		Verification of Marking	IS 10322 (Part 5/ Sec 1) IEC 60598-2 Cl.6	Qualitative
		Construction	IS 10322 (Part 5/ Sec 1) IEC 60598-2-1 Cl.7	Qualitative
			IS 10322 (Part 1) Cl. 4.4 IEC 60598-1 Cl. 4.4	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.5 IEC 60598-1 Cl. 4.5	Qualitative
			IS 10322 (Part 1) Cl. 4.6 IEC 60598-1 Cl. 4.6	0.01 mm to 150 mm
			IS 10322 (Part 1) Cl. 4.7 IEC 60598-1 Cl. 4.7	0.01 mm to 150 mm 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
			IS 10322 (Part 1) Cl. 4.9 IEC 60598-1 Cl. 4.9	25 ºC to 200 ºC
			IS 10322 (Part 1) Cl. 4.10 IEC 60598-1 Cl. 4.10	Φ 3 mm 15 mm
			IS 10322 (Part 1) IEC 60598-1 Cl.4.11.6	0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IS 10322 (Part 1) Cl. 4.12 IEC 60598-1 Cl. 4.12	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.13 IEC 60598-1 Cl.4.13	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.14 IEC 60598-1 Cl. 4.14	0.1 N to 75 N
			IS 10322 (Part 1) Cl. 4.15 IEC 60598-1 Cl. 4.15	0.01 mm to 150 mm
			IS 10322 (Part 1) Cl. 4.16 IEC 60598-1 Cl. 4.16	0.01 mm to 150 mm
			IS 10322 (Part 1) Cl. 4.17 IEC 60598-1 Cl. 4.17	IPX1 to IPX8
			IS 10322 (Part 1) Cl.4.18 IEC 60598-1 Cl. 4.18	Qualitative
			IS 10322 (Part 1) Cl.4.20 IEC 60598-1 Cl. 4.20	5Hz to 35 Hz Amplitude:32mm Peak to peak 35Hz to 3kHz 15g at 100Kg max
			IS 10322 (Part 1) Cl.4.22 IEC 60598-1 Cl. 4.22	(-) 100 °C to 1350 °C
			IS 10322 (Part 1) Cl.4.26 IEC 60598-1 Cl. 4.26	0.01 mm to 150 mm
		Creepage Distance And Clearance	IS 10322 (Part 5/ Sec 1) IEC 60598-2-1 Cl. 8	0.01 mm to 100 mm 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
		Provision For Earthing	IS 10322 (Part 5/ Sec 1) IEC 60598-2-1 Cl. 9	0.01 V to 9.99 V 0.01 A to 50 A
		Terminals	IS 10322 (Part 5/ Sec 1) IEC 60598-2-1 Cl.10	Qualitative
		External And Internal Wiring	IS 10322 (Part 5/ Sec 1) IEC 60598-2-1 Cl. 11	0.001 mm to 0.75 mm 0.01 mm to 30 mm 0.1 N to 120 N
		Protection Against Electric Shock	IS 10322 (Part 5/ Sec 1) IEC 60598-2-1 Cl. 12	0.01 mm to 30 mm 0.1 s to 60 s

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
				0.1 N to 15 N 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
		Endurance Test and Thermal Test	IS 10322 (Part 5/ Sec 1) IEC 60598-2-1 Cl. 13	Qualitative Ambient to 60 °C 15 °C to 110 °C
		Resistance to Dust and moisture	IS 10322 (Part 5/ Sec 1) IEC 60598-2-1 Cl. 14	Qualitative IPX1 to IPX8
		Insulation Resistance and Electric Strength	IS 10322 (Part 5/ Sec 1) IEC 60598-2-1 Cl. 15	Up to 5 kV 5 mA to 250 mA 1 MΩ to 6 MΩ
		Resistance to Heat, Fire and Tracking	IS 10322 (Part 5/ Sec 1) IEC 60598-2-1 Cl. 16	0.1 °C to 187.5 °C Ambient to 975 °C 0.1 s to 60 s Ambient-1000 ºC Up to 600 Vac Up to 5 Aac Up to 99.99 s
4.	**Recessed Luminaires**	Verification of Marking	IS 10322 (Part 5/Sec 2) Cl. 6 IEC 60598-2-2	Qualitative
		Construction	IS 10322 (Part 5/ Sec 2) IEC 60598-2-2 Cl.7	
			IS 10322 (Part 1) Cl. 4.4 IEC 60598-1 Cl. 4.4	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.5 IEC 60598-1 Cl. 4.5	Qualitative
			IS 10322 (Part 1) IEC 60598-1 Cl.4.11.6	0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
			IS 10322 (Part 1) Cl. 4.12 IEC 60598-1 Cl. 4.12	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.13 IEC 60598-1 Cl.4.13	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.14 IEC 60598-1 Cl. 4.14	0.1 N to 75 N
			IS 10322 (Part 1) Cl.4.18	Qualitative

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IEC 60598-1 Cl. 4.18	
			IS 10322 (Part 1) Cl.4.20 IEC 60598-1 Cl. 4.20	5Hz to 35 Hz Amplitude:32mm Peak to peak 35Hz to 3kHz 15g at 100Kg max
		Creepage Distance and Clearance	IS 10322 (Part 5/Sec 2) IEC 60598-2-2 Cl. 8	0.01 mm to 100 mm
		Provision for Earthing	IS 10322 (Part 5/Sec 2) IEC 60598-2-2 Cl. 9	0.01 V to 9.99 V 0.01 A to 50 A
		Terminals	IS 10322 (Part 5/Sec 2) IEC 60598-2-2 Cl.10	0.01 mm to 100 mm 0.001 mm to 10.245 mm 0.1 N to 150 N 0.1 s to 60 s 0.1 °C to 187.5 °C 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
		External and Internal Wiring	IS 10322 (Part 5/Sec 2) IEC 60598-2-2 Cl. 11	0.001 mm to 0.75 mm 0.01 mm to 30 mm 0.1 N to 120 N
		Protection Against Electric Shock	IS 10322 (Part 5/Sec 2) IEC 60598-2-2 Cl. 12	Qualitative
		Endurance and Thermal	IS 10322 (Part 5/Sec 2) IEC 60598-2-2 Cl. 13	0.01 W to 5000 W 0.001 A to 20 A 0.01 V to 600 V 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac 0.1 °C to 375 °C 15 °C to 110 °C
		Resistance to Dust and moisture	IS 10322 (Part 5/Sec 2) IEC 60598-2-2 Cl. 14	0.001 mm to 3.75 mm 0.01 mm to 225 mm 0.1 N to 4.5 N 0.1 s to 60 s
		Insulation Resistance and Electric Strength	IS 10322 (Part 5/Sec 2) IEC 60598-2-2 Cl. 15	Qualitative 1 MΩ to 6 MΩ

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
				0.01 kV to 5 kV 5 mA to 250 mA
		Resistance to Heat, Fire and Tracking	IS 10322 (Part 5/Sec 2) IEC 60598-2-2 Cl. 16	0.1 °C to 187.5 °C Ambient to 975 °C 0.1 s to 60 s 0.01 mm to 300 mm Up to 600 Vac Up to 5 Aac Up to 99.99 s
5.	**Luminaires for road and street lighting**	Verification of Marking	IS 10322 (Part 5/ Sec 3) IEC 60598-2-3 Cl.6	Qualitative
		Construction	IS 10322 (part 5/ Sec 3)/ IEC 60598-2-3 Cl.7	
			IS 10322 (Part 1) Cl. 4.4 IEC 60598-1 Cl. 4.4	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.5 IEC 60598-1 Cl. 4.5	Qualitative
			IS 10322 (Part 1) IEC 60598-1 Cl.4.11.6	0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
			IS 10322 (Part 1) Cl. 4.12 IEC 60598-1 Cl. 4.12	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.13 IEC 60598-1 Cl.4.13	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.14 IEC 60598-1 Cl. 4.14	0.1 N to 75 N
			IS 10322 (Part 1) Cl.4.18 IEC 60598-1 Cl. 4.18	Qualitative
			IS 10322 (Part 1) Cl.4.20 IEC 60598-1 Cl. 4.20	5Hz to 35 Hz Amplitude:32mm Peak to peak 35Hz to 3kHz 15g at 100Kg max
		Creepage Distance and Clearance	IS 10322 (Part 5/ Sec 3) IEC 60598-2-3 Cl. 8	0.01 mm to 100 mm
		Provision for Earthing	IS 10322 (Part 5/ Sec 3)	0.01 V to 9.99 V

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IEC 60598-2-3 Cl. 9	0.01 A to 50 A
		Terminals	IS 10322 (Part 5/ Sec 3) IEC 60598-2-3 Cl.10	0.01 mm to 100 mm 0.001 mm to 10.245 mm 0.1 N to 150 N 0.1 s to 60 s 0.1 °C to 187.5 °C 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
		External and Internal Wiring	IS 10322 (Part 5/ Sec 3) IEC 60598-2-3 Cl. 11	0.001 mm to 0.75 mm 0.01 mm to 30 mm 0.1 N to 115 N
		Protection Against Electric Shock	IS 10322 (Part 5/ Sec 3) IEC 60598-2-3 Cl. 12	0.01 mm to 30 mm 0.1 s to 60 s 0.1 N to 15 N 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
		Endurance and Thermal	IS 10322 (Part 5/ Sec 3) IEC 60598-2-3 Cl. 13	0.01 W to 5000 W 0.001 A to 20 A 0.01 V to 600 V 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac (-) 100 °C to 375 °C 15 °C to 110 °C
		Resistance to Dust and moisture	IS 10322 (Part 5/ Sec 3) IEC 60598-2-3 Cl. 14	0.001 mm to 3.75 mm 0.01 mm to 225 mm 0.1 N to 4.5 N 0.1 s to 60 s
		Insulation Resistance and Electric Strength	IS 10322 (Part 5/ Sec 3) IEC 60598-2-3 Cl. 15	0.01 kV to 5 kV 5 mA to 250 mA 1 MΩ to 6 MΩ
		Resistance to Heat, Fire and Tracking	IS 10322 (Part 5/ Sec 3) IEC 60598-2-3 Cl. 16	0.1 °C to 187.5 °C Ambient to 975 °C 0.1 s to 60 s 0.01 mm to 300 mm Up to 600 Vac Up to 5 Aac

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
				Up to 99.99 s
6.	**Floodlights**	Verification of Marking	IS 10322 (Part 5/ Sec 5) IEC 60598-2-5 Cl.6	Qualitative
		Construction	IS 10322 (part 5/ Sec 5) IEC 60598-2-5 Cl.7	Qualitative
			IS 10322 (Part 1) Cl. 4.4 IEC 60598-1 Cl. 4.4	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.5 IEC 60598-1 Cl.4.5	Qualitative
			IS 10322 (Part 1) IEC 60598-1 Cl.4.11.6	0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
			IS 10322 (Part 1) Cl. 4.12 IEC 60598-1 Cl. 4.12	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.13 IEC 60598-1 Cl.4.13	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.14 IEC 60598-1 Cl. 4.14	0.1 N to 75 N
			IS 10322 (Part 1) Cl.4.18 IEC 60598-1 Cl. 4.18	Qualitative
			IS 10322 (Part 1) Cl.4.20 IEC 60598-1 Cl. 4.20	5Hz to 35 Hz Amplitude:32mm Peak to peak 35Hz to 3kHz 15g at 100Kg max
		Creepage Distance and Clearance	IS 10322 (Part 5/ Sec 5) IEC 60598-2-5 Cl. 8	0.01 mm to 100 mm
		Provision for Earthing	IS 10322 (Part 5/ Sec 5) IEC 60598-2-5 Cl. 9	0.01 V to 9.99 V 0.01 A to 50 A
		Terminals	IS 10322 (Part 5/ Sec 5) IEC 60598-2-5 Cl.10	0.01 mm to 100 mm 0.001 mm to 0.245 mm 0.1 N to 150 N 0.1 s to 60 s 0.1 °C to 187.5 °C 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		External and Internal Wiring	IS 10322 (Part 5/ Sec 5) IEC 60598-2-5 Cl. 11	0.001 mm to 0.75 mm 0.01 mm to 30 mm 0.001 m to 5 m 0.1 N to 115 N
		Protection Against Electric Shock	IS 10322 (Part 5/ Sec 5) IEC 60598-2-5 Cl. 12	0.01 mm to 30 mm 0.1 s to 60 s 0.1 N to 15 N 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
		Endurance and Thermal	IS 10322 (Part 5/ Sec 5) IEC 60598-2-5 Cl. 13	0.01 W to 5000 W 0.001 A to 20 A 0.01 V to 600 V 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac (-) 100 °C to 375 °C Ambient to 60 °C 15 °C to 110 °C
		Resistance to Dust and moisture	IS 10322 (Part 5/ Sec 5) IEC 60598-2-5 Cl. 14	0.001 mm to 3.75 mm 0.01 mm to 225 mm 0.1 N to 4.5 N 0.1 s to 60 s
		Insulation Resistance and Electric Strength	IS 10322 (Part 5/ Sec 5) IEC 60598-2-5 Cl. 15	0.01 kV to 5 kV 5 mA to 250 mA 1 MΩ to 6 MΩ
		Resistance to Heat, Fire and Tracking	IS 10322 (Part 5/ Sec 5) IEC 60598-2-5 Cl. 16	0.1 °C to 187.5 °C Ambient to 975 °C 0.1 s to 60 s 0.01 mm to 300 mm 0.1 N to 115 N Up to 600 Vac Up to 5 Aac Up to 99.99 s
7.	**Hand lamps**	Verification of Marking	IS 10322 (Part 5/ Sec 6) IEC 60598-2-8 Cl.6	Qualitative
		Construction	IS 10322 (part 5/ Sec 6) IEC 60598-2-8 Cl.7	Qualitative

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IS 10322 (Part 1) Cl. 4.4 IEC 60598-1 Cl. 4.4	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.5 IEC 60598-1 Cl. 4.5	Qualitative
			IS 10322 (Part 1) IEC 60598-1 Cl.4.11.6	0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
			IS 10322 (Part 1) Cl. 4.12 IEC 60598-1 Cl. 4.12	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.13 IEC 60598-1 Cl.4.13	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.14 IEC 60598-1 Cl. 4.14	0.1 N to 75 N
			IS 10322 (Part 1) Cl.4.18 IEC 60598-1 Cl. 4.18	Qualitative
			IS 10322 (Part 1) Cl.4.20 IEC 60598-1 Cl. 4.20	5Hz to 35 Hz Amplitude:32mm Peak to peak 35Hz to 3kHz 15g at 100Kg max
		Creepage Distance and Clearance	IS 10322 (Part 5/ Sec 6) IEC 60598-2-8 Cl. 8	0.01 mm to 100 mm
		Provision for Earthing	IS 10322 (Part 5/ Sec 6) IEC 60598-2-8 Cl. 9	0.01 V to 9.99 V 0.01 A to 50 A
		Terminals	IS 10322 (Part 5/ Sec 6) IEC 60598-2-8 Cl.10	0.01 mm to 100 mm 0.001 mm to 0.245 mm 0.1 N to 150 N 0.1 s to 60 s 0.1 °C to 187.5 °C 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
		External and Internal Wiring	IS 10322 (Part 5/ Sec 6) IEC 60598-2-8 Cl. 11	0.001 mm to 0.75 mm 0.01 mm to 30 mm 0.001 m to 5 m 0.1 N to 115 N
		Protection Against Electric Shock	IS 10322 (Part 5/ Sec 6) IEC 60598-2-8 Cl. 12	0.01 mm to 30 mm 0.1 s to 60 s

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
				0.1 N to 15 N 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
		Endurance and Thermal	IS 10322 (Part 5/ Sec 6) IEC 60598-2-8 Cl. 13	0.01 W to 5000 W 0.001 A to 20 A 0.01 V to 600 V 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac (-) 100 °C to 375 °C Ambient to 60 °C 15 °C to 110 °C
		Resistance to Dust and moisture	IS 10322 (Part 5/ Sec 6) IEC 60598-2-8 Cl. 14	0.001 mm to 3.75 mm 0.01 mm to 225 mm 0.1 N to 4.5 N 0.1 s to 60 s
		Insulation Resistance and Electric Strength	IS 10322 (Part 5/ Sec 6) IEC 60598-2-8 Cl. 15	0.01 kV to 5 kV 5 mA to 250 mA 1 MΩ to 6 MΩ
		Resistance to Heat, Fire and Tracking	IS 10322 (Part 5/ Sec 6) IEC 60598-2-8 Cl. 16	0.1 °C to 187.5 °C Ambient to 975 °C 0.1 s to 60 s 0.01 mm to 300 mm 0.1 N to 115 N Up to 600 Vac Up to 5 Aac Up to 99.99 s
8.	**Lighting Chains**	Verification of Marking	IS 10322 (Part 5/ Sec 7) IEC 60598-2-20 Cl.6	Qualitative
		Construction	IS 10322 (part 5/ Sec 7) IEC 60598-2-20 Cl.7	Qualitative
			IS 10322 (Part 1) Cl. 4.4 IEC 60598-1 Cl. 4.4	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.5	Qualitative
			IEC 60598-1 Cl. 4.5	
			IS 10322 (Part 1) IEC 60598-1 Cl.4.11.6	0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IS 10322 (Part 1) Cl. 4.12 IEC 60598-1 Cl. 4.12	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.13 IEC 60598-1 Cl.4.13	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.14 IEC 60598-1 Cl. 4.14	0.1 N to 75 N
			IS 10322 (Part 1) Cl.4.18 IEC 60598-1 Cl. 4.18	Qualitative
			IS 10322 (Part 1) Cl.4.20 IEC 60598-1 Cl. 4.20	5Hz to 35 Hz Amplitude:32mm Peak to peak 35Hz to 3kHz 15g at 100Kg max
		Creepage Distance and Clearance	IS 10322 (Part 5/ Sec 7) IEC 60598-2-20 Cl. 8	0.01 mm to 100 mm
		Provision for Earthing	IS 10322 (Part 5/ Sec 7) IEC 60598-2-20 Cl. 9	0.01 V to 9.99 V 0.01 A to 50 A
		Terminals	IS 10322 (Part 5/ Sec 7) IEC 60598-2-20 Cl.10	0.01 mm to 100 mm 0.001 mm to 10.245 mm 0.1 N to 150 N 0.1 s to 60 s 0.1 °C to 187.5 °C 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
		External and Internal Wiring	IS 10322 (Part 5/ Sec 7) IEC 60598-2-20 Cl. 11	0.001 mm to 0.75 mm 0.01 mm to 30 mm 0.001 m to 5 m 0.1 N to 115 N
		Protection Against Electric Shock	IS 10322 (Part 5/ Sec 7) IEC 60598-2-20 Cl. 12	0.01 mm to 30 mm 0.1 s to 60 s 0.1 N to 15 N 0.001 Vdc to 1000 Vdc

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
				0.001 Vac to 1000 Vac
		Endurance and Thermal	IS 10322 (Part 5/ Sec 7) IEC 60598-2-20 Cl. 13	Qualitative Ambient to 60 °C 15 °C to 110 °C
		Resistance to Dust and moisture	IS 10322 (Part 5/ Sec 7) IEC 60598-2-20 Cl. 14	Qualitative IPX1 to IPX6
		Insulation Resistance and Electric Strength	IS 10322 (Part 5/ Sec 7) IEC 60598-2-20 Cl. 15	Up to 5 kV 5 mA to 250 mA 1 MΩ to 6 MΩ
		Resistance to Heat, Fire and Tracking	IS 10322 (Part 5/ Sec 7) IEC 60598-2-20 Cl. 16	0.1 °C to 187.5 °C Ambient to 975 °C 0.1 s to 60 s 0.01 mm to 300 mm 0.1 N to 115 N Up to 600 Vac Up to 5 Aac Up to 99.99 s
9.	**Emergency Lighting**	Verification of Marking	IS 10322 (Part 5/ Sec 8) IEC 60598-2-22 Cl.6	Qualitative
		Construction	IS 10322 (Part 5/ Sec 8) IEC 60598-2-22 Cl.7	Qualitative
			IS 10322 (Part 1) Cl. 4.4 IEC 60598-1 Cl. 4.4	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.5 IEC 60598-1 Cl. 4.5	Qualitative
			IS10322 (Part 1) IEC 60598-1 Cl.4.11.6	0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
			IS 10322 (Part 1) Cl. 4.12 IEC 60598-1 Cl. 4.12	1 Nm to 5 Nm

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IS 10322 (Part 1) Cl. 4.13 IEC 60598-1 Cl.4.13	1 Nm to 5 Nm
			IS 10322 (Part 1) Cl. 4.14 IEC 60598-1 Cl. 4.14	0.1 N to 75 N
			IS 10322 (Part 1) Cl.4.18 IEC 60598-1 Cl. 4.18	Qualitative
			IS 10322 (Part 1) Cl.4.20 IEC 60598-1 Cl. 4.20	5Hz to 35 Hz Amplitude:32mm Peak to peak 35Hz to 3kHz 15g at 100Kg max
		Creepage Distance and Clearance	IS 10322 (Part 5/ Sec 8) IEC 60598-2-22 Cl. 8	0.01 mm to 100 mm
		Provision for Earthing	IS 10322 (Part 5/ Sec 8) IEC 60598-2-22 Cl. 9	0.01 V to 9.99 V 0.01 A to 50 A
		Terminals	IS 10322 (Part 5/ Sec 8) IEC 60598-2-22 Cl.10	0.01 mm to 100 mm 0.001 mm to 10.245 mm 0.1 N to 150 N 0.1 s to 60 s 0.1 °C to 187.5 °C 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
		External and Internal Wiring	IS 10322 (Part 5/ Sec 8) IEC 60598-2-22 Cl. 11	0.001 mm to 0.75 mm 0.01 mm to 30 mm 0.001 m to 5 m 0.1 N to 115 N
		Protection Against Electric Shock	IS 10322 (Part 5/ Sec 8) IEC 60598-2-22 Cl. 12	0.01 mm to 30 mm 0.1 s to 60 s 0.1 N to 15 N 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac
		Endurance and	IS 10322 (Part 5/ Sec 8)	0.01 W to 5000 W

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Thermal	IEC 60598-2-22 Cl. 13	0.001 A to 20 A 0.01 V to 600 V 0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac (-) 100 °C to 375 °C 15 °C to 110 °C
		Resistance to Dust and moisture	IS 10322 (Part 5/ Sec 8) IEC 60598-2-22 Cl. 14	0.001 mm to 3.75 mm 0.01 mm to 225 mm 0.1 N to 4.5 N 0.1 s to 60 s
		Insulation Resistance and Electric Strength	IS 10322 (Part 5/ Sec 8) IEC 60598-2-22 Cl. 15	0.01 kV to 5 kV 5 mA to 250 mA 1 MΩ to 6 MΩ
		Resistance to Heat, Fire and Tracking	IS 10322 (Part 5/ Sec 8) IEC 60598-2-22 Cl. 16	0.1 °C to 187.5 °C Ambient to 975 °C 0.1 s to 60 s 0.01 mm to 300 mm 0.1 N to 115 N Up to 600 Vac Up to 5 Aac Up to 99.99 s
		Battery Charges for self contained emergency Luminaires	IS 10322 (Part 5/ Sec 8) IEC 60598-2-22 Cl. 20	0.01 W to 5000 W 0.001 A to 20 A 0.01 V to 600 V
10.	**Self-ballasted lamps for general lighting services** **Safety Requirement**	Verification of Verification of Marking	IS 15111 (Part 1) Cl.6	Qualitative
		Interchangeability	IS 15111 (Part 1) Cl.7	Qualitative
		Protection against electric shock	IS 15111 (Part 1) Cl.8	0.1 N to 15 N 40 V to 75 V Qualitative 1 MΩ to 6 MΩ
		Insulation resistance and electric strength after humidity	IS 15111 (Part 1) Cl.9	0.1 °C to 55 °C 20 % to 96 % RH 1 MΩ to 6 MΩ

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		treatment		0.01 kV to 5 kV 5 mA to 250 mA 0.1 s to 60 s
		Mechanical strength	IS 15111 (Part 1) Cl.10	Up to 3 Nm Qualitative
		Cap temperature rise	IS 15111 (Part 1) Cl.11	0.1 °C to 180 °C 0.1 V to 300 V
		Resistance to heat	IS 15111 (Part 1) Cl.12	20 N 0.1 °C to 150 °C 0.001 mm to 4 mm
		Resistance to flame and ignition	IS 15111 (Part 1) Cl.13	Qualitative 1 °C to 975 °C 0.1 s to 60 s
		Fault conditions	IS 15111 (Part 1) Cl.14	0.01 W to 5000 W 0.001 A to 20 A 0.01 V to 600 V 0.1 °C to 180 °C
11.	**DC or AC supplied Electronic Control gear for LED Modules Particular requirements**	Verification of Marking	IS 16104 Cl. 6	Qualitative
		Output voltage and current	IS 16104 Cl. 7	1W-5000W 1A-20A 1V-600V
		Total circuit power	IS 16104 Cl.8	1W-5000W 1A-20A 1V-600V
		Circuit power factor	IS 16104 Cl.9	1W-5000W 1A-20A 1V-600V
		Supply current	IS 16104 Cl.10	1W-5000W 1A-20A 1V-600V
		Operational tests for abnormal conditions	IS 16104 Cl.12	1W-5000W 1A-20A 1V-600V
II.	**ENVIRONMENTAL TEST FACILITY**			

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
1.	**Degrees of Protection Provided by Enclosures (IP Code)**	Verification of Marking	IS/IEC 60529 Cl.10	Qualitative
		Degrees of protection against access to hazardous parts and solid foreign objects	IS/IEC 60529 Cl.5.0 Table 1,2 &5, Cl.12 &13	Φ 50mm, 100mm length Φ 12mm, 80mm length Φ 2.5mm, 100mm length Φ 1mm, 100mm length 0.01 mm to 300 mm Up to 40 °C 60% to 96 % RH
		Degrees of protection against ingress of water	IS/IEC 60529 Cl.6.0 Table 3 and Cl.14.0	Spray:120^0, 60^0 from vertical; 360^0 , 180^0 from vertical, and 90^0 , 45^0 from vertical, flow rate:0.07l/ min Up to 99.9mins Up to 21 Kg/cm^2
				Diameter: 6.3mm
				Diameter: 12.5mm
				1.5-15 LPM, 3-4Kg/cm2
				10-120LPM,3-4Kg/cm^2
				Up to 4 bar Up to 50 °C
				0.1 s to 60 s
				1 mm to 5000 mm
		Degrees of protection against access to hazardous parts indicated by the additional letter (A,B,C,D)	IS/IEC 60529 Cl.7.0,Cl.15.0 & Table 4	Φ 50mm, 100mm length Φ 12mm, 80mm length Φ 2.5mm, 100mm length Φ 1mm, 100mm length 0.01 mm to 300 mm
		Degrees of protection against access to hazardous parts indicated by the first characteristics numeral	IS/IEC 60529 Cl.12, Table 6	Φ 50mm, 100mm length Φ 12mm, 80mm length Φ 2.5mm, 100mm length Φ 1mm, 100mm length 1 N to 500 N 0.01 mm to 300 mm

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Degrees of protection against solid foreign objects indicated by the first characteristics numeral	IS/IEC 60529 Cl.13 , Table 7	Φ 50mm, 100mm length Φ 12mm, 80mm length Φ 2.5mm, 100mm length Φ 1mm, 100mm length 0.01 mm to 300 mm Up to 40 °C 60% to 96 % RH 1 N to 500 N
III.	**BATTERIES**			
1.	**Batteries Secondary cells and batteries containing alkaline or other non-acid Electrolytes-Safety requirements for portable sealed secondary cells, and for batteries made from them, for use in portable applications**	Specific requirements & tests (nickel systems) General safety considerations	IS 16046 IEC 62133 Cl. 5.1	Qualitative
		Insulation and wiring	IS 16046 IEC 62133 Cl. 5.2	1 MΩ to 7.5 MΩ 100 Vdc to 500 Vdc
		Venting	IS 16046 IEC 62133 Cl. 5.3	Qualitative
		Temperature/voltage/ current management	IS 16046 IEC 62133 Cl. 5.4	Qualitative
		Terminal contacts	IS 16046 IEC 62133 Cl. 5.5	Qualitative
		Assembly of cells into batteries	IS 16046 IEC 62133 Cl. 5.6	Qualitative
		Charging procedure for test purposes	IS 16046 IEC 62133 Cl.7.1	1 V to 16 V 0.5 A to 15 A
		Continuous low rate charging	IS 16046 IEC 62133 Cl. 7.2.1	1 V to 16 V 0.5 A to 15 A
		Vibration	IS 16046 IEC 62133 Cl. 7.2.2	Freq:10-55Hz 0.76 mm to 1.52 mm
		Moulded case stress at high ambient temperature	IS 16046 IEC 62133 Cl. 7.2.3	Ambient to 100 ºC
		Temperature cycle	IS 16046	(-) 20 °C to 100 °C

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IEC 62133 Cl. 7.2.4	
		Incorrect installation	IS 16046 IEC 62133 Cl. 7.3.1	Up to 1Ω 0.1 °C to 100 °C
		External short circuit	IS 16046 IEC 62133 Cl. 7.3.2	Ambient to 100 °C 1 mΩ to 100 mΩ
		Free fall	IS 16046 IEC 62133 Cl. 7.3.3	Qualitative
		Mechanical shock	IS 16046 IEC 62133 Cl. 7.3.4	75 g to 175 g Up to 3 mS
		Thermal abuse	IS 16046 IEC 62133 Cl. 7.3.5	1 °C to 130 °C
		Crush	IS 16046 IEC 62133 Cl. 7.3.6	Up to 20 kN 1 Vdc to 24 Vdc 0.1 mm to 50 mm
		Low pressure	IS 16046 IEC 62133 Cl. 7.3.7	20 °C 10 kPa to 11.6 kPa
		Over charging of battery	IS 16046 IEC 62133 Cl. 7.3.8	1 V to 16 V 1 A to 15 A
		Forced discharge (cell)	IS 16046 IEC 62133 Cl. 7.3.9	1 V to 16 V 0.1 A to 15 A
		Specific requirements & tests (lithium systems) Charging procedure for test purpose	IS 16046 IEC 62133 Cl. 8.1	1 V to 16 V 0.5 A to 15 A
		Continuous low rate charging	IS 16046 IEC 62133 Cl. 8.2.1	1 V to 16 V 0.5 A to 15 A
		Moulded case stress at high ambient temperature	IS 16046 IEC 62133 Cl. 8.2.2	Ambient to 100 ºC
		External short circuit (cell)	IS 16046 IEC 62133 Cl. 8.3.1	Ambient to 100 °C 1 mΩ to 100 mΩ
		External short circuit (battery)	IS 16046 IEC 62133 Cl. 8.3.2	80mΩ ±20mΩ 0.01 Vdc to 19.99 Vdc Up to 199 A

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
				Ambient to 100 °C 1 mΩ to 100 mΩ
		Free fall	IS 16046 IEC 62133 Cl. 8.3.3	Qualitative
		Thermal abuse	IS 16046 IEC 62133 Cl. 8.3.4	1 °C to 130 °C
		Crush	IS 16046 IEC 62133 Cl. 8.3.5	Up to 20 kN 1 Vdc to 24 Vdc 0.1 mm to 50 mm
		Over charging of battery	IS 16046 IEC 62133 Cl. 8.3.6	1 V to 16 V 1A to 15 A
		Forced discharge (cell)	IS 16046 IEC 62133 Cl. 8.3.7	1 V to 16 V 0.1 A to 15 A
		Information for safety	IS 16046 IEC 62133 Cl. 9	Qualitative
		Verification of Marking	IS 16046 IEC 62133 Cl. 10	Qualitative
		Verification of Packaging	IS 16046 IEC 62133 Cl. 11	Qualitative
2.	**Secondary cells and batteries containing alkaline or other non-acid electrolytes-** **Secondary lithium cells and batteries for portable applications**	Cell designation and marking	IS 16047 IEC 61960 Cl. 5	0.01 mm to 100 mm
		Charging procedure for test purposes	IS 16047 IEC 61960 Cl. 7.2	1 V to 16 V 0.5 A to 15 A
		Discharge performance	IS 16047 IEC 61960 Cl. 7.3	1 V to 16 V 0.5 A to 15 A
		Charge (Capacity) retention and recovery	IS 16047 IEC 61960 Cl. 7.4	1 V to 16 V 0.5 A to 15 A
		Charge (Capacity) recovery after long term storage	IS 16047 IEC 61960 Cl. 7.5	1 V to 16 V 0.5 A to 15 A
		Endurance in cycles	IS 16047 IEC 61960 Cl. 7.6	1 V to 16 V 0.5 A to 15 A
		Battery internal resistance	IS 16047 IEC 61960 Cl. 7.7	1 V to 16 V 0.5 A to 15 A

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
3.	**Secondary Cells And Batteries Containing Alkaline Or Other Non-Acid Electrolytes Safety Requirements For Portable Sealed Secondary Cells, And Batteries Made From Them, For Use In Portable Applications** **- Nickel Systems**	General Safety Considerations	IS 16046 (Part 1) IEC 62133-1 Cl. 5	Qualitative
		Insulation And Wiring	IS 16046 (Part 1) IEC 62133-1 Cl. 5.2	1 MΩ to 7.5MΩ 10 Vdc to 500 Vdc
		Venting	IS 16046 (Part 1) IEC 62133-1 Cl. 5.3	Qualitative
		Temperature, Voltage And Current Management	IS 16046 (Part 1) IEC 62133-1 Cl. 5.4	Qualitative
		Terminal Contacts	IS 16046 (Part 1) IEC 62133-1 Cl. 5.5	Qualitative
		Assembly Of Cells Into Batteries	IS 16046 (Part 1) IEC 62133-1 Cl. 5.6	Qualitative
		Quality Plan	IS 16046 (Part 1) IEC 62133-1 Cl. 5.7	Qualitative
		Type Test And Sample Size	IS 16046 (Part 1) IEC 62133-1 Cl. 6	Qualitative
		Charging Procedure For Test Purposes	IS 16046 (Part 1) IEC 62133-1 Cl.7.1	20 mV to 16 V 0.5 V to 25V 0.1 Vdc to 100 Vdc 20 mA to 16 A 0.1 A to 450 A 0.1 Adc to 50 Adc DC
		Continuous Low Rate Charging	IS 16046 (Part 1) IEC 62133-1 Cl. 7.2.1	5 channel 0.01 V to 5 V 0.01 A to 10 A max. CC/CV 0.5 V to 5 V 3.5 A to 40 A
		Vibration	IS 16046 (Part 1) IEC 62133-1 Cl. 7.2.2	Frequency 3000 Hz Up to 180g_n
		Case Stress At High Ambient Temperature (Batteries)	IS 16046 (Part 1) IEC 62133-1 Cl. 7.2.3	Ambient to 200 ºC
		Temperature Cycling	IS 16046 (Part 1) IEC 62133-1 Cl. 7.2.4	(-) 20°C to 75°C

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Incorrect Installation (Cells)	IS 16046 (Part 1) IEC 62133-1 Cl. 7.3.1	1 ohm
		External Short Circuit	IS 16046 (Part 1) IEC 62133-1 Cl. 7.3.2	60 mΩ to 100 mΩ
		Free Fall	IS 16046 (Part 1) IEC 62133-1 Cl. 7.3.3	Qualitative
		Mechanical Shock (Crash Hazard)	IS 16046 (Part 1) IEC 62133-1 Cl. 7.3.4	Up to 180g_n,
		Thermal Abuse (Cells)	IS 16046 (Part 1) IEC 62133-1 Cl. 7.3.5	Ambient to 150°C with ramp rate of 5°C ± 3°C
		Crushing Of Cells	IS 16046 (Part 1) IEC 62133-1 Cl. 7.3.6	0.01 Vdc to 24V DC 0.1 mm to 50 mm 0.01 kN to 20 kN
		Low Pressure (Cells)	IS 16046 (Part 1) IEC 62133-1 Cl. 7.3.7	100 kPa to 5 kPa
		Over Charge	IS 16046 (Part 1) IEC 62133-1 Cl. 7.3.8	20 mV to 16 V 0.5V to 25 V 0.1 Vdc to 100 Vdc 20 mA to 16 A 0.1 A to 450 A 0.1 Adc to 50 Adc
		Forced Discharge (Cells)	IS 16046 (Part 1) IEC 62133-1 Cl. 7.3.9	0.01 V to 7 V 10 mA to 16 A 0.01 V to 5 V 16 A to 250 A
		Information For Safety	IS 16046 (Part 1) IEC 62133-1 Cl. 8	Qualitative
		Marking	IS 16046 (Part 1) IEC 62133-1 Cl. 9)	Qualitative
		Packaging	IS 16046 (Part 1) IEC 62133-1 Cl. 10)	Qualitative
4.	**Secondary Cells and Batteries Containing Alkaline Or Other**	General Safety Considerations	IS 16046 (Part 2) IEC 62133-2 Cl. 5	Qualitative
		Insulation And Wiring	IS 16046 (Part 2) IEC 62133-2 Cl. 5.2	0.01 MΩ to 2 GΩ 50 Vdc,100 Vdc,250

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Non-Acid Electrolytes Safety Requirements For Portable Sealed Secondary Cells, And Batteries Made From Them, For Use In Portable Applications **- Lithium Systems**			Vdc,500 Vdc, 1000 Vdc 30 s, 60 s, 90 s,120 s
		Venting	IS 16046 (Part 2) IEC 62133-2 Cl. 5.3	Qualitative
		Temperature, Voltage And Current Management	IS 16046 (Part 2) IEC 62133-2 Cl. 5.4	Qualitative
		Terminal Contacts	IS 16046 (Part 2) IEC 62133-2 Cl. 5.5	Qualitative
		Assembly Of Cells Into Batteries	IS 16046 (Part 2) IEC 62133-2 Cl. 5.6	Qualitative
		Quality Plan	IS 16046 (Part 2) IEC 62133-2 Cl. 5.7	Qualitative
		Battery Safety Components	IS 16046 (Part 2) IEC 62133-2 Cl. 5.8	Qualitative
		Type Test And Sample Size	IS 16046 (Part 2) IEC 62133-1 Cl. 6	Qualitative
		Charging Procedure For Test Purposes (First Procedure)	IS 16046 (Part 2) IEC 62133-2 Cl.7.1.1	20 mV to 16 V 0.5V to 25 V 0.1 Vdc to 100 Vdc 20 mA to 16 A 0.1 A to 450 A 0.1 Adc to 50 Adc
		Charging Procedure For Test Purposes (Second Procedure)	IS 16046 (Part 2) IEC 62133-2 Cl.7.1.2	20 mV to 16 V 0.5 V to 25 V 0.1 Vdc to 100 Vdc 20 mA to 16 A 0.1 A to 450 A 0.1 Adc to 50 Adc
		Continuous Charging At Constant Voltage(Cells)	IS 16046 (Part 2) IEC 62133-2 Cl. 7.2.1	5 channel 0.01 V to 5 V 0.01 A to 10 A max. CC/CV 0.5 V to 5 V 3.5 A to 40 A
		Case Stress At High	IS 16046 (Part 2)	Ambient to 200 ºC

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Ambient Temperature (Batteries)	IEC 62133-2 Cl. 7.2.2)	
		External Short Circuit (Cell)	IS 16046 (Part 2) IEC 62133-2 Cl. 7.3.1	60 mΩ to 100 mΩ
		External Short Circuit (Battery)	IS 16046 (Part 2) IEC 62133-2 Cl. 7.3.2	60 mΩ to 100 mΩ
		Free Fall	IS 16046 (Part 2) IEC 62133-2 Cl. 7.3.3	Qualitative
		Thermal Abuse (Cells)	IS 16046 (Part 2) IEC 62133-2 Cl. 7.3.4	Ambient to 150 °C with ramp rate of 5°C ± 3°C
		Crush (Cells)	IS 16046 (Part 2) IEC 62133-2 Cl. 7.3.5	0.01 Vdc to 24 Vdc 0.1mm to 50 mm 0.01 kN to 20 kN
		Over Charging Of Battery	IS 16046 (Part 2) IEC 62133-2 Cl. 7.3.6	20 mV to 16 V 0.5 V to 25 V 0.1 Vdc to 100 Vdc 20 mA to 16 A 0.1 A to 450 A 0.1 Adc to 50 Adc DC
		Forced Discharge (Cells)	IS 16046 (Part 2) IEC 62133-2 Cl. 7.3.7	0.01 V to 7 V 20 mA to 16 A 0.01 V to 5 V 16 A to 250 A
		Mechanical Tests (Batteries)	IS 16046 (Part 2) IEC 62133-2 Cl. 7.3.8	3000 Hz Upto 20 gn Upto 180 gn 6 ms
		Information For Safety	IS 16046 (Part 2) IEC 62133-2 Cl. 8	Qualitative
		Marking	IS 16046 (Part 2) IEC 62133-2 Cl. 9	Qualitative
		Packaging	IS 16046 (Part 2) IEC 62133-2 Cl. 10	Qualitative
5.	**Secondary Cells And Batteries Containing**	Cell Designation And Marking	IS 16047 (Part 3) IEC 61960-3 Cl. 5	0.01mm to 300mm
		Examples Of Cells	IS 16047 (Part 3)	Qualitative

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Alkaline Or Other Non-Acid Electrolytes-Secondary Lithium Cells And Batteries For Portable Applications **- Prismatic and cylindrical lithium secondary cells , and batteries made from them**		IEC 61960-3 Cl. 6	
		Electrical Tests General	IS 16047 (Part 3) IEC 61960-3 Cl. 7.1	Qualitative
		Charging Procedure For Test Purposes	IS 16047 (Part 3) IEC 61960-3 Cl. 7.2	20 mV to 16 V 20 mA to 16 A
		Discharge Performance At 20 °C (Rated Capacity)	IS 16047 (Part 3) IEC 61960-3 Cl. 7.3.1	20 mV to 16 V 20 mA to 16 A
		Discharge Performance At - 20 °C (Rated Capacity)	IS 16047 (Part 3) IEC 61960-3 Cl. 7.3.2	20 mV to 16 V 20 mA to 16 A (-) 20°C to 75°C
		High Rate Discharge Performance At 20 °C	IS 16047 (Part 3) IEC 61960-3 Cl. 7.3.3	20 mV to 16 V 20 mA to 16 A
		Charge (Capacity) Retention And Recovery	IS 16047 (Part 3) IEC 61960-3 Cl. 7.4	20 mV to 16 V 20 mA to 16 A
		Charge (Capacity) Recovery After Long Term Storage	IS 16047 (Part 3) IEC 61960-3 Cl. 7.5	20 mV to 16 V 20 mA to 16 A Ambient to 200 º C
		Endurance In Cycles	IS 16047 (Part 3) IEC 61960-3 Cl. 7.6	20 mV to 16 V 20 mA to 16 A
		Battery Internal Resistance	IS 16047 (Part 3) IEC 61960-3 Cl. 7.7	300 mΩ to 8 Ω 20 mV at 1 KHz
		Electrostatic Discharge	IS 16047 (Part 3) IEC 61960-3 Cl. 7.8	2 kV to 8 kV 2 kV to 20 kV Positive/Negative
		Test Protocol And Conditions For Type Approval	IS 16047 (Part 3) IEC 61960-3 Cl.8	Qualitative
IV.	**SAFETY TEST FACILITY**			
1.	**Safety of Electric Toys**	Verification of Marking	IS 15644 IEC 62115 Cl. 7	Qualitative
		Power input	IS 15644 IEC 62115 Cl. 8	0.01 W to 5000 W 0.001 A to 20 A 0.01 V to 600 V

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
				(-) 100 °C to 1350 °C
		Heating and abnormal operation	IS 15644 IEC 62115 Cl. 9	(-) 100 °C to 1350 °C 0.01 mm to 100 mm 0.1 s to 60 s 0.01 W to 5000 W 0.001 A to 20 A 0.01 V to 600 V Qualitative
		Electric strength at operating temperature	IS 15644 IEC 62115 Cl. 10	0.1 °C to 150 °C 0.01 kV to 5 kV 5 mA to 250 mA 0.1 s to 60 s
		Moisture resistance	IS 15644 IEC 62115 Cl. 11	0.01 mm to 300 mm Up to 40 °C 60 % to 96 % RH 0.1 s to 60 s 0.01 kV to 5 kV 5 mA to 250 mA
		Electric strength at room temperature	IS 15644 IEC 62115 Cl. 12	0.01 kV to 5 kV 5 mA to 250 mA 0.1 s to 60 s
		Mechanical strength	IS 15644 IEC 62115 Cl. 13	0.7J
		Construction	IS 15644 IEC 62115 Cl. 14	0.01 mm to 150 mm 0.1 N to 150 N 0.1 s to 60 s 0.01 W to 5000 W 0.001 A to 20 A 0.01 V to 600 V
		Protection of cords and wires	IS 15644 IEC 62115 Cl. 15	0.01 mm to 5 mm
		Components - Qualitative Only carried out for Certified components	IS 15644 IEC 62115 Cl. 16	Qualitative
		Screws and	IS 15644	0.01 mm to 5 mm

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		connections	IEC 62115 Cl. 17	0.01 mm to 15 mm 0.1 Nm to 1.2 Nm 1 Nm to 6 Nm
		Clearances and Creepage Distances	IS 15644 IEC 62115 Cl. 18	0.01 mm to 5 mm
		Resistance to heat and fire	IS 15644 IEC 62115 Cl. 19	20 N 0.1 °C to 150 °C 1 °C to 975 °C 0.1 s to 60 s 0.01 mm to 100 mm

ELECTRONICS TESTING

I.	DOMESTIC ELECTRONIC APPLIANCES & ACCESSORIES			
1.	**Household Electrical Appliances - Laptop/ Notebook Computers, Scanners,**	Average Reading Method - Standby Power	IEC 62301 (2nd Edition) Cl. 5.3.3	0.01 W to 20000 W 0.01 V to 1000 V 0.0001 A to 20 A
				0.1 s to 60 s

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Printers, copiers, Fax Machine and Multi Function Devices			
2.	**Audio Video and related Equipment - Television**	Conditions for television sets on average method	IEC 62087 (3rd Edition) Cl.11	0.01 W to 20000 W 0.01 V to 1000 V 0.0001 A to 20 A
				0.001 cd/m^2 to 1999k cd/m^2
				0.1 s to 60 s
3.	**Electronic Appliances & Accessories** **Safety of Household and Similar Electrical Appliances particular Requirements** **Microwave Oven**	Verification of Marking And Instructions	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 7	Qualitative 0.01 mm to 4.5 mm
		Protection Against Access To Live Parts	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 8	Qualitative 0.1 N to 75 N
		Power Input And Current	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 10	0.01 W to 5000 W 0.001 A to 20 A
		Heating	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 11	0.1 °C to 400 °C
		Leakage Current And Electric Strength At Operating Temperature	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 13	0.1 mA to 5.25 mA 0.1 V to 270 V
		Transient Over-Voltages	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 14	Up to 15 kV 1.2/50µs
		Moisture Resistance	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 15	Qualitative
		Leakage Current And Electric Strength	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 16	Qualitative 0.01 kV to 5 kV 5 mA to 250 mA
		Overload Protection Of Transformer And Associated Circuit	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 17	0.01 W to 5000 W 0.001 A to 20 A 0.1 V to 375 V 0.1 °C to 337.5 °C
		Endurance	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 18	Qualitative 0.01 mW/cm^2 to

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
				7.5 mW/cm^2
		Abnormal Operation	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 19	0.1 °C to 400 °C
		Stability And Mechanical Hazards	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 20	Qualitative
		Mechanical Strength	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 21	Qualitative 0.1 N to 45.75 N 0.01 mm to 15 mm
		Construction	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 22	Qualitative 0.01 mW/cm^2 to 7.5 mW/cm^2 0.01 mm to 50 mm
		Internal Wiring	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 23	Qualitative
		Components - Visual Tests For Certified Components Only	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 24	Qualitative
		Supply Connection And External Flexible Cords	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 25	Qualitative 0.01 mm to 43.5 mm 0.1 N to 150 N
		Terminal For External Conductors	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 26	Qualitative 0.01 mm to 15 mm
		Provision For Earthing	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 27	0.01 V to 9.99 V 0.01 A to 50 A
		Screws And Connections	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 28	Qualitative 0.01 mm to 7.5 mm
		Clearances, Creepage Distances And Solid Insulation	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 29	0.01 mm to 100 mm
		Resistance To Heat And Fire	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 30	20 N 0.1 °C to 150 °C 1 °C to 975 °C
		Resistance To Rusting	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 31	Qualitative 0.1 °C to 400 °C

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Radiation Toxicity And Similar Hazards	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 32	0.01 mW/cm^2 to 7.5 mW/cm^2
4.	**Electronic Appliances & Accessories** **Safety of Household and Similar Electrical Appliances** **Particular Requirements** **Clocks**	Verification of Marking And Instructions	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 7	Qualitative 0.01 mm to 4.5 mm
		Protection Against Access To Live Parts	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 8	Qualitative 0.1 N to 75 N
		Power Input And Current	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 10	0.01 W to 5000 W 0.001 A to 20 A
		Heating - Test Corner	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 11	0.1 °C to 400 °C
		Leakage Current And Electric Strength At Operating Temperature	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 13	0.01 kV to 5 kV 5 mA to 250 mA
		Transient Over-Voltages	IS 302 (Part 2/Sec 26) IEC 60335-2-25 Cl. No. 14	Up to 15 kV 1.2/50µs
		Moisture Resistance	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 15	Qualitative
		Leakage Current And Electric Strength	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 16	Qualitative 0.01 kV to 5 kV 5 mA to 250 mA
		Overload Protection Of Transformers And Associated Circuits	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 17	0.01 W to 5000 W 0.001 A to 20 A 0.1 V to 375 V 0.1 °C to 337.5 °C
		Abnormal Operation	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 19	0.1 °C to 400 °C
		Stability And Mechanical Hazards	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 20	Qualitative
		Mechanical Strength	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 21	Qualitative 0.1 N to 45 N 0.01 mm to 15 mm

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Construction	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 22	Qualitative 0.01 mW/cm^2 to 7.5 mW/cm^2 0.01 mm to 75 mm
		Internal Wiring	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 23	Qualitative
		Components - Visual Test For Certified Components Only	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 24	Qualitative
		Supply Connection And External Flexible Cords	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 25	0.01 mm to 43.5 mm 0.1 N to 150 N Qualitative
		Terminal For External Conductors	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 26	Qualitative 0.01 mm to 15 mm
		Provision For Earthing	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 27	0.01 V to 9.99 V 0.01 A to 50 A
		Screws And Connections	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 28	Qualitative 0.01 mm to 15 mm
		Clearances, Creepage Distances And Solid Insulation	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 29	0.01 mm to 100 mm 0.1 V to 600 V 0.5 A
		Resistance To Heat And Fire	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 30	20 N 0.1 °C to 150 °C 1 °C to 975 °C
		Resistance To Rusting	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 31	Qualitative 0.1 °C to 400 °C
		Radiation Toxicity And Similar Hazards	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 32	0.01 mW/cm^2 to 7.5 mW/cm^2
II.	**AUDIO EQUIPMENT**			
1.	**Audio, Video and Similar Electronic appliances**	Verification of Verification of Marking & Instructions	IS 616 IEC 60065 Cl. No. 5.0	Qualitative

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	- Safety Requirement **Electronics Games (video) Electronic Musical Systems up to 200W Plasma/LCD/LED Televisions Power Adaptors for Audio, Video & similar electronics apparatus**	Heating Under Normal Operating Conditions	IS 616 IEC 60065 Cl. No. 7.0	1 °C to 300 °C
		Constructional Requirements With Regard To The Protection Against Electric Shock	IS 616 IEC 60065 Cl. No. 8.0	Qualitative Vibration: Freq:10Hz to 55Hz Amplitude:0.35mm Sweep rate 1 Octave/min 50 N to 150 N Ambient to 200 ºC
		Electrical Shock Hazard Under Normal Operating Conditions	IS 616 IEC 60065 Cl. No. 9.0	50 N to 100 N 30 µA to 10 mA
		Insulation Requirements	IS 616 IEC 60065 Cl. No. 10.0	10 Vdc to 500 Vdc 2 MΩ to 200 MΩ Qualitative
		Fault Conditions	IS 616 IEC 60065 Cl. No. 11.0	1 °C to 350 °C
		Mechanical Strength	IS 616 IEC 60065 Cl. No. 12.0	Qualitative Vibration: Freq:10Hz to 55Hz Amplitude:0.35mm Sweep rate 1 Octave/min 0.5J to 5.0J Steel ball 500gms & 50±1mm dia
		Clearances And Creepage Distances	IS 616 IEC 60065 Cl. No. 13.0	2 mm to 100 mm 50 N to 100 N
		Components - Qualitative Only carried out for Certified components	IS 616 IEC 60065 Cl. No. 14.0	Qualitative
		Terminals	IS 616 IEC 60065 Cl. No. 15.0	Qualitative 0.010 V to 1000 V 0.01 A to 10 A 2 mm to 100 mm 50 N to 100 N

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		External Flexible Cords	IS 616 IEC 60065 Cl. No. 16.0	2 mm to 100 mm
		Electrical Connections & Mechanical Fixing	IS 616 IEC 60065 Cl. No. 17.0	Qualitative
		Stability & Mechanical Hazards	IS 616 IEC 60065 Cl. No. 19.1 to 19.4	Qualitative
			IS 616 IEC 60065 Cl. No. 19.5.1	
			IS 616 IEC 60065 Cl. No. 19.6	
			IS 616 IEC 60065 Cl.No.19.7	0.01 s to 24 hrs 0.1 Nm to 1.2 Nm 1 Nm to 6 Nm
		Resistance to Fire	IS 616 IEC 60065 Cl. No. 20	Ambient to 150°C Ambient to 975°C 0.01 mm to 100 mm 0.1 s to 60 s
III.	**IT EQUIPMENT**			
1.	**Automatic data processing M/c Laptop/notebook/ Tablet Printers/Plotters Scanners Set top box Telephone answering M/c Visual display Units videos Monitors Wireless Key boards Cash registers**	Components - Qualitative Only Carried Out For Certified Components	IS 13252 (Part 1) IEC 60950-1 Cl. No. 1.5	Qualitative
		Power Interface	IS 13252 (Part 1) IEC 60950-1 Cl. No. 1.6	1 W to 5000 W 1 A to 20 A 10 V to 600 V
		Verification of Marking And Instructions	IS 13252 (Part 1) IEC 60950-1 Cl. No. 1.7	Qualitative
		Protection From Electric Shock And Energy Hazards	IS 13252 (Part 1) IEC 60950-1 Cl. No. 2.1	Qualitative 10 N to 75 N 0.01 mm to 10 mm
		SELV Circuits	IS 13252 (Part 1) IEC 60950-1 Cl. No. 2.2	0.01 Vdc to 180 Vdc 5 Vac to 400 Vac

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Copying Machines /Duplicators Passport read Point of sales terminals Power banks for use in portable applications Smart card reader Mobile phones Power adaptors for IT equipments CCTV Recorders CCTV cameras	TNV Circuits	IS 13252 (Part 1) IEC 60950-1 Cl. No. 2.3	Qualitative
		Limited Current Circuits	IS 13252 (Part 1) IEC 60950-1 Cl. No. 2.4	0.5 mA to 100 mA
		Limited Power Sources	IS 13252 (Part 1) IEC 60950-1 Cl. No. 2.5	1 W to 5000 W 1 A to 20 A 10 V to 600 V
		Provision For Earthing & Bonding	IS 13252 (Part 1) IEC 60950-1 Cl. No. 2.6	0.01 V to 9.99 V 0.01 A to 50 A
		Over current And Earth Fault Protection In Primary Circuit	IS 13252 (Part 1) IEC 60950-1 Cl. No. 2.7	Qualitative
		Electrical Insulation	IS 13252 (Part 1) IEC 60950-1 Cl. No. 2.9	1 MΩ to 6 MΩ
		Clearances, Creepage Distances And Distance Through Insulation	IS 13252 (Part 1) IEC 60950-1 Cl. No. 2.10	2 mm to 100 mm
		Wiring Connections & Supply	IS 13252 (Part 1) IEC 60950-1 Cl. No. 3.1	Qualitative
		Connections To Mains Supply	IS 13252 (Part 1) IEC 60950-1 Cl. No. 3.2	0.1 mm to 40 mm 10 N to 150 N
		Wiring Terminals For External Conductors	IS 13252 (Part 1) IEC 60950-1 Cl. No. 3.3	0.001 mm to 9 mm
		Disconnections From The Mains Supply	IS 13252 (Part 1) IEC 60950-1 Cl. No. 3.4	Qualitative
		Interconnection Of Equipment	IS 13252 (Part 1) IEC 60950-1 Cl. No. 3.5	Qualitative
		Stability	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.1	100 N to 500 N Qualitative
		Mechanical Strength	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.2	50 N to 300 N
		Steady Force 10 N	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.2.2	50 N to 300 N
		Steady Force 30 N	IS 13252 (Part 1)	50 N to 300 N

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IEC 60950-1 Cl. No. 4.2.3	
		Steady Force 250 N	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.2.4	50 N to 300 N
		Impact To Enclosure	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.2.5	Qualitative
		Drop	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.2.6	Qualitative
		Stress Relief	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.2.7	Ambient to 105 °C
		High Pressure Lamps	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.2.9	Qualitative
		Wall Or Ceiling Mounted Equipment	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.2.10	50 N to 300 N
		Edges And Corners	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.3.1	Qualitative
		Handles And Manual Controls	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.3.2	1 N to 75 N
		Adjustable controls	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.3.3	Qualitative
		Securing of parts	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.3.4	Qualitative
		Connection by plugs and sockets	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.3.5	Qualitative
		Direct Plug-In Equipment	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.3.6	Qualitative
		Heating elements in earthed equipment	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.3.7	Qualitative
		Batteries	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.3.8	0.01 Vdc to 16 Vdc
		Protection Against Hazardous Moving Parts	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.4	1 N to 50 N 2.5 rpm to 999999 rpm
		Thermal Requirements	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.5	Ambient to 350 °C 0.001 Ω to 11.11 MΩ
		Opening In Enclosure	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.6	Ambient to 150°C 0.01 mm to 7.5 mm

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	IS 13252 (Part 1) IEC 60950-1 Cl. No. 4.7	Ambient to 975°C 0.01 mm to 100 mm 0.1 s to 60 s
		Touch Current & Protective Conductor Current	IS 13252 (Part 1) IEC 60950-1 Cl. No. 5.1	0.1 mA to 5.25 mA 0.1 V to 270 V
		Electric Strength	IS 13252 (Part 1) IEC 60950-1 Cl. No. 5.2	0.01 kV to 5 kV 5 mA to 250 mA
		Abnormal Operating And Fault Conditions	IS 13252 (Part 1) IEC 60950-1 Cl. No. 5.3	Ambient to 400 ºC
		Connection to telecomm. network	IS 13252 (Part 1) IEC 60950-1 Cl. No. 6.0	Qualitative
		Connection To Cable Distribution System	IS 13252 (Part 1) IEC 60950-1 Cl. No. 7.0	Qualitative
IV.	**POWER SUPPLIES AND STABILIZERS**			
1.	**Power supplies and stabilizers** **Uninterruptible power systems (UPS) General and safety requirements for UPS** **Up to 5 kVA Single Phase**	Power Interfaces	IS 16242 (Part 1) IEC 62040-1 Cl. No. 4.6 /RD	1 W to 500 W 30 mA to 20 A 10 V to 800 V
		General	IS 16242 (Part 1) IEC 62040-1 Cl. No. 4.7.1/RD	Qualitative
		Power Rating	IS 16242 (Part 1) IEC 62040-1 Cl. No. 4.7.2 /RD	Qualitative
		High Leakage Current	IS 16242 (Part 1) IEC 62040-1 Cl. No. 4.7.13 /RD	0.1 mA to 25 mA
		Battery	IS 16242 (Part 1) IEC 62040-1 Cl. No. 4.7.20/RD	Qualitative
		Protection Against Electric Shock And Energy Hazards	IS 16242 (Part 1) IEC 62040-1 Cl. No. 5.1.1,5.1.2,5.1.3, 5.1.4,5.1.5/RD	Qualitative

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Safety extra low voltage Circuits-SELV	IS 16242 (Part 1) IEC 62040-1 Cl. No. 5.2.1/RD	0.01 Vdc to 180 Vdc 5 Vac to 400 Vac
		Telephone network voltage Circuits-TNV	IS 16242 (Part 1) IEC 62040-1:2008 Cl. No. 5.2.2/ RD	Qualitative
		Limited Current Circuits	IS 16242 (Part 1) IEC 62040-1 Cl. No. 5.2.3/RD	0.5 mA to 100 mA
		External Signaling Circuits	IS 16242 (Part 1) IEC 62040-1/Cl. No. 5.2.4/ RD	Qualitative
		Limited Power Source	IS 16242 (Part 1) IEC 62040-1 Cl. No. 5.2.5/ RD	1 W to 500 W 30 mA to 20 A 10 V to 800 V
		Protective earthing and bonding	IS 16242 (Part 1) IEC 62040-1 Cl. No. 5.3 /RD	0.01 mm to 100 mm Ambient to 500ºC
		A.C. and D.C. Power Isolation	IS 16242 (Part 1) IEC 62040-1/Cl. No. 5.4/RD	Qualitative
		Over current and earth fault protection	IS 16242 (Part 1) IEC 62040-1 Cl. No. 5.5	Qualitative
		Protection of personnel -Safety interlocks	IS 16242 (Part 1) IEC 62040-1(Cl. No. 5.6)	Qualitative
		Clearances , Creepage Distances And Distance Through Insulation	IS 16242 (Part 1) IEC 62040-1 Cl. No. 5.7/RD	2 mm to 100 mm
		Wiring, Connection and Supply General	IS 16242 (Part 1) IEC 62040-1 Cl. No. 6.1/RD	Qualitative
		General provisions for connection to power	IS 16242 (Part 1) IEC 62040-1 Cl. No. 6.2.1	Qualitative
		Wiring terminals for external power conductors	IS 16242 (Part 1) IEC 62040-1 Cl. No. 6.3	2 mm to 100 mm
		Stability	IS 16242 (Part 1) IEC 62040-1/Cl. No. 7.2/RD	Qualitative

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Mechanical strength	IS 16242 (Part 1) IEC 62040-1 Cl. No. 7.3	10 N to 300 N
		Construction details	IS 16242 (Part 1) IEC 62040-1 Cl. No.7.4/RD	2 mm to 50 mm 10 N to 75 N Ambient to 350 °C
		Resistance to fire	IS 16242 (Part 1) IEC 62040-1 Cl. No. 7.5/RD	Ambient to 975°C 0.01 mm to 100 mm 0.1 s to 60 s
		Battery Location	IS 16242 (Part 1) IEC 62040-1 Cl. No. 7.6)/RD	0.1 mA to 5.25 mA 0.1 V to 270 V
		Temperature rise	IS 16242 (Part 1) IEC 62040-1 Cl. No. 7.7/RD	Ambient to 350 °C
		General provision for earth leakage	IS 16242 (Part 1) IEC 62040-1 Cl. No. 8.1/RD	0.1 mA to 5.25 mA 0.1 V to 270 V
		Electric strength	IS 16242 (Part 1) IEC 62040-1 Cl. No.8.2/RD	0.01 kV to 5 kV 5 mA to 250 mA
		Abnormal Operating and fault Condition	IS 16242 (Part 1) IEC 62040-1 Cl. No. 8.3/RD	Ambient to 400°C 0.001 Ω to 11.11 MΩ
		Connection to telecommunication networks	IS 16242 (Part 1) IEC 62040-1 Cl. No.9/RD	10 N to 50 N Qualitative
V.	**ENVIRONMENTAL TEST FACILITY**			
1.	**Electronics Products**	Low Temperature (Cold) Cycle	SD:QM-333 Section 3, Test No. 1	2.7 ft X 2.7 ft X 2.7 ft (-) 40 ºC to Ambient
		High Temperature (Dry Heat) Cycle	SD:QM-333 Section 3, Test No. 2	2 ft X 2ft X 2ft Ambient to 200 °C
		Tropical Exposure (Damp Heat) Cycle	SD:QM-333 Section 3, Test No. 3	6.3 ft X 6.11 ft X 4.2 ft Ambient to 60 ºC 25 % to 96 % RH
		Rapid temperature cycling	SD: QM-333 Section 3, Test No. 4	2.7 ft X 2.7 ft X 2.7 ft (-) 40 ºC to Ambient 2 ft X 2 ft X 2 ft Ambient to 200 ºC

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Damp Heat (Steady State)	SD:QM-333 Section 3 Test No. 5	6.3 ft X 6.11 ft X 4.2 ft (-) 60 ºC to Ambient Up to 96% RH
		Vibration	SD:QM-333 Section 3, Test No. 6	5Hz to 35 Hz Amplitude:32mm Peak to peak 35Hz to 3kHz 15*g* at 100kg max
		Sealing - Gas Tightness High altitude	SD:QM-333 Section 3, Test No. 7	(-) 100 kPa to 5 kPa
		Water Immersion	SD:QM-333 Section 3, Test No. 8	Up to 4 bar Up to 50 °C
		Corrosion salt	SD:QM-333 Section 3, Test No. 9	1m x 1m x 1m Up to 99 % RH Up to 60 °C
		Drop	SD:QM-333 Section 3, Test No. 10	Qualitative
		Topple	SD:QM-333 Section 3,Test No. 11	Qualitative
		Fall	SD:QM-333 Section 3, Test No. 12	Qualitative
		Bump Road ability	SD:QM-333 Section 3, Test No. 13	40*g*
		Rain	SD:QM-333 Section 3, Test No. 14	Qualitative
		Dust	SD:QM-333 Section 3, Test No. 15	1m x 1m x 1m (-) 10 °C to 70 ºC 20% to 99% RH
		Change of Temperature	IS 9000 (Part XIV/Sec II)	2.7 ft X 2.7 ft X 2.7 ft (-) 40 ºC to Ambient 2ft X 2ft X 2ft Ambient to 200°C
		Salt Mist	IS 9000 (Part XI) Procedure 3	1m x 1m x 1m Up to 99 % RH Up to 60 °C

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		Dust	IS 9000 (part XII)	1m x 1m x 1m (-) 10 °C to 70 °C 20 % to 99 % RH
		Bump	IS 9000 (part VII/ Sec 2)	Freq-3000 Hz Amplitude:42mm peak to peak Sensitivity ; 10.36mV/g
		Cold	IS 9000 (Part II/Sec 1 to 4) IEC 60068-2-2	2.7 ft X 2.7 ft X 2.7 ft (-) 40 ºC to Ambient
		Dry Heat	IS 9000 (Part III/Sec 1 to 5) IEC 60068-2-1	2 ft X 2ft X 2ft Ambient to 200 °C
		Damp Heat	IS 9000 (part IV) IS 9000 (Part V/Sec 1 and 2)/IEC 60068-2-30	6.3 ft X 6.11 ft X 4.2 ft Ambient to 60 ºC Up to 96 % RH
		Vibration - sinusoidal	IS 9000 (Part VIII) IEC 60068-2-6	Freq-3000 Hz Amplitude:42mm peak to peak Sensitivity ; 10.36mV/g
VI.	**ELECTRONIC COMPONENTS AND EQUIPMENT SUB ASSESMBLIES**			
1.	**Mobile Phone Handsets** **-Indian Language support for Mobile Phones -Specific Requirements**	Inputting and display of all the characters in English, Hindi and additional (third) Indian official language	IS 16333 (Part 3) Cl. 5.1	Qualitative
		Message Readability - 22 Indian official languages	IS 16333 (Part 3) Cl. 5.2	Qualitative

MECHANICAL TESTING

I.	**TOYS AND SIMILAR PRODUCTS**			
1.	**Safety of Toys**	Small Parts	IS 9873 (Part 1) ISO 8124-3 Cl. 4.4,5.24,5.2	Qualitative

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	- Safety Aspects Related to Mechanical and Physical Properties	Shape, size and strength of certain toys	IS 9873 (Part 1) ISO 8124-3 Cl. 4.5,5.3, 5.4, 5.24, 5.24.6.3,5.5,5.6	Qualitative
		Edges	IS 9873 (Part 1) ISO 8124-3 Cl. 4.6,5.8, 5.24,5.24.7, 5.24.5,5.24.6.1	Qualitative
		Points	IS 9873 (Part 1) ISO 8124-3 Cl. 4.7,5.9	Qualitative
		Projections	IS 9873 (Part 1) ISO 8124-3 Cl. 4.8,5.24	Qualitative
		Folding mechanisms	IS 9873 (Part 1) ISO 8124-3 Cl. 4.12, 5.22.2, 5.22.3	Qualitative
		Holes, clearances and accessibility of mechanisms	IS 9873 (Part 1) ISO 8124-3 Cl. 4.13,5.7	Qualitative
		Stability and overload requirements	IS 9873 (Part 1) ISO 8124-3 Cl. 4.15,5.12.2, 5.12.3, 5.12.4,5.12.5,5.12.6	Qualitative
		Enclosures	IS 9873 (Part 1) ISO 8124-3 Cl. 4.16, 5.13.2.2	Qualitative
		Simulated protective equipment, such as helmets, hats and goggles	IS 9873 (Part 1) ISO 8124-3 Cl. 4.17,5.14	Qualitative
		Projectile toys	IS 9873 (Part 1) ISO 8124-3 Cl. 4.18,5.15.1	Qualitative
		Rotors and propellers	IS 9873 (Part 1) ISO 8124-3 Cl. 4.19,5.35	Qualitative
		Aquatic toys	IS 9873 (Part 1) ISO 8124-3 Cl. 4.20	Qualitative
		Toys containing a heat source	IS 9873 (Part 1) ISO 8124-3 Cl. 4.24,5.18	Qualitative
		Mouth-actuated toys	IS 9873 (Part 1)	Qualitative

Sl.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			ISO 8124-3 Cl. 4.26,5.20	
		Toy scooters	IS 9873 (Part 1) ISO 8124-3 Cl. 4.30, 5.26, 5.12.2	Qualitative
		Magnet and magnetic components	IS 9873 (Part 1) ISO 8124-3 Cl. 4.31,5.33	Qualitative
2.	**Safety of Toys** **- Swings, Slides and Similar Activity Toys for Indoor and Outdoor Family Domestic Use**	Barriers	IS 9873 (Part 4) ISO 8124-4 Cl. 4.2, 6.5.1, 6.3	Qualitative
		Rung ladders, Stepladders and stairways	IS 9873 (Part 4) ISO 8124-4 Cl. 4.3	Qualitative
		Entrapments	IS 9873 (Part 4) ISO 8124-4 Cl. 4.4,6.5.1,6.5.2.3,6.6	Qualitative
		Stability of activity toys other than slides, swings and toys with crossbeams	IS 9873 (Part 4) ISO 8124-4 Cl. 4.5, 6.1.1, 6.1.2	Qualitative
		Slides	IS 9873 (Part 4) ISO 8124-4 Cl. 4.6,6.1.3	Qualitative
		Swings	IS 9873 (Part 4) ISO 8124-4 Cl. 4.7,6.2.2	Qualitative
		Carousels and rocking toys	IS 9873 (Part 4) ISO 8124-4 Cl. 4.9, 6.1.1, 6.2.1	Qualitative