Laboratory Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Last Amended on 05.08.2019

Page 1 of 43

	1	1		
SI.	Product / Material	Specific Test	Test Method Specification	Range of Testing /
	of Test	Performed	against which tests are	Limits of Detection
			performed	

ELECTRICAL TESTING

I.	LAMPS, LUMINAF	RIES AND		
1.	Self-ballasted LED lamps for general purposes	Verification of Marking	IS 16102 (Part 1) IEC 62560 Cl.5	Qualitative
	lighting services	Interchangeability	IS 16102 (Part 1) IEC 62560 Cl.6	Qualitative
	- Safety Requirements	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 CI.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

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

ISO/IEC 17025: 2005 Accreditation Standard

Certificate Number TC-6563 Page 2 of 43

Validity		29.09.2018 to 28.09	9.2020 Last Ame	Last Amended on 05.08.2019	
SI.	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 CI.14		
2.	Safety of Lamp Control gear	Classification	IS 15885 (Part 2/Sec 13) IEC 61347-2-13 Cl.6	Qualitative	
	Particular requirements	Verification of Marking	IS 15885 (Part 2/Sec 13) IEC 61347-2-13 Cl. 7	Qualitative	
	DC or AC supplied Electronic Control	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	
	gear for LED Modules	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	

Sreeram Pinnamaraju Convenor

Labauatau.	Metrix Teet Labe Diet No.		Anna Dhana II Dalhi
Laboratory	Matrix lest Labs, Plot No.	28, Badii Industrial A	Area, Phase-II, Deini

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Page 3 of 43

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

Laboratory	Matrix Test Labs, Plot No. 2	8, Badli Industrial Area,	Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Last Amended on 05.08.2019

Page 4 of 43

SI.	Product / Material	Specific Test	Test Method Specification	Range of Testing /
	of Test	Performed	against which tests are	Limits of Detection
			performed	
			IS 10322 (Part 1) Cl. 4.12	1 Nm to 5 Nm
			IEC 60598-1 Cl. 4.12	
			IS 10322 (Part 1) Cl. 4.13	1 Nm to 5 Nm
			IEC 60598-1 CI.4.13	
			IS 10322 (Part 1) Cl. 4.14	0.1 N to 75 N
			IEC 60598-1 Cl. 4.14	
			IS 10322 (Part 1) Cl. 4.15	0.01 mm to 150 mm
			IEC 60598-1 Cl. 4.15	
			IS 10322 (Part 1) Cl. 4.16	0.01 mm to 150 mm
			IEC 60598-1 Cl. 4.16	
			IS 10322 (Part 1) Cl. 4.17	IPX1 to IPX8
			IEC 60598-1 Cl. 4.17	
			IS 10322 (Part 1) Cl.4.18	Qualitative
			IEC 60598-1 Cl. 4.18	
			IS 10322 (Part 1) CI.4.20	5HZ to 35 HZ
			IEC 60598-1 CI. 4.20	Amplitude:32mm
				15g at 100Kg may
			IS 10322 (Part 1) CL / 22	() 100 °C to 1350 °C
			IEC 60598-1 CL 4 22	(-) 100 C 10 1330 C
			IS 10322 (Part 1) CL4 26	0.01 mm to 150 mm
			IEC 60598-1 CI 4 26	
		Creepage Distance And	IS 10322 (Part 5/ Sec 1)	0.01 mm to 100 mm
		Clearance	IEC 60598-2-1 Cl. 8	0.001 Vdc to 1000 Vdc
				0.001 Vac to 1000 Vac
		Provision For Earthing	IS 10322 (Part 5/ Sec 1)	0.01 V to 9.99 V
			IEC 60598-2-1 Cl. 9	0.01 A to 50 A
		Terminals	IS 10322 (Part 5/ Sec 1)	Qualitative
			IEC 60598-2-1 CI.10	
		External And Internal	IS 10322 (Part 5/ Sec 1)	0.001 mm to 0.75 mm
		Wiring	IEC 60598-2-1 Cl. 11	0.01 mm to 30 mm
				0.1 N to 120 N
		Protection Against	IS 10322 (Part 5/ Sec 1)	0.01 mm to 30 mm
		Electric Shock	IEC 60598-2-1 Cl. 12	0.1 s to 60 s

Sreeram Pinnamaraju Convenor Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Laboratory

Validity

29.09.2018 to 28.09.2020

Last Amended on 05.08.2019

Page 5 of 43

SI.	Product / Material	Specific Test	Test Method Specification	Range of Testing /
	of Test	Performed	against which tests are	Limits of Detection
			performed	
				0.1 N to 15 N
				0.001 Vdc to 1000 Vdc
				0.001 Vac to 1000 Vac
		Fudunan as Task and	10 40202 (Dart 5/ 0 4)	Qualitativa
		Endurance lest and	IS 10322 (Part 5/ Sec 1)	Qualitative
		memiai iest	IEC 00090-2-1 Cl. 13	15 °C to 110 °C
		Resistance to Dust and	IS 10322 (Part 5/ Sec 1)	Qualitative
		moisture	IEC 60598-2-1 Cl. 14	IPX1 to IPX8
		Insulation Resistance	IS 10322 (Part 5/ Sec 1)	Up to 5 kV
		and Electric Strength	IEC 60598-2-1 Cl. 15	5 mA to 250 mA
				1 M Ω to 6 M Ω
		Resistance to Heat,	IS 10322 (Part 5/ Sec 1)	0.1 °C to 187.5 °C
		Fire and Tracking	IEC 60598-2-1 Cl. 16	Ambient to 975 °C
				0.1 S to 60 S
				Lin to 600 Vac
				Up to 5 Aac
				Up to 99.99 s
4.	Recessed	Verification of Marking	IS 10322 (Part 5/Sec 2)	Qualitative
	Luminaires	_	CI. 6 IEC 60598-2-2	
		Construction	IS 10322 (Part 5/ Sec 2)	
			IEC 60598-2-2 Cl.7	
			IS 10322 (Part 1) Cl. 4.4	1 Nm to 5 Nm
			IEC 60598-1 Cl. 4.4	
			IS 10322 (Part 1) Cl. 4.5	Qualitative
			IEC 00396-1 Cl. 4.5	0.001 V/dc to 1000 V/dc
			IEC 60598-1 CI 4 11 6	0.001 Vac to 1000 Vac
			IS 10322 (Part 1) CI 4 12	1 Nm to 5 Nm
			IEC 60598-1 Cl. 4.12	
			IS 10322 (Part 1) Cl. 4.13	1 Nm to 5 Nm
			IEC 60598-1 CI.4.13	
			IS 10322 (Part 1) Cl. 4.14	0.1 N to 75 N
			IEC 60598-1 Cl. 4.14	
			IS 10322 (Part 1) Cl.4.18	Qualitative

Laboratory	Matrix Test Labs. Plot No.	28. Badli Industrial A	rea. Phase-II. Delhi
		Eo, Buan madoliai A	

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Last Amended on 05.08.2019

Page 6 of 43

SI.	Product / Material	Specific Test	Test Method Specification	Range of Testing /
	of Test	Performed	against which tests are	Limits of Detection
			IS 10322 (Part 1) CI 4 20	5Hz to 35 Hz
			IEC 60598-1 Cl. 4.20	Amplitude:32mm
				Peak to peak
				35Hz to 3kHz
				15g at 100Kg max
		Creepage Distance and	IS 10322 (Part 5/Sec 2)	0.01 mm to 100 mm
		Provision for Earthing	IEC 00396-2-2 Cl. 6	0.01 V to 0.00 V
		FIOUSION IOF LATTING	IEC 60598-2-2 CL 9	$0.01 \times 10 9.99 \times 1000$
		Terminals	IS 10322 (Part 5/Sec 2)	0.01 mm to 100 mm
		Terriniais	IEC 60598-2-2 CI 10	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	IS 10322 (Part 5/Sec 2)	0.001 mm to 0.75 mm
		Wiring	IEC 60598-2-2 Cl. 11	0.01 mm to 30 mm
		Drate stiens Americant	10, 10200 (Dart 5/0 0)	0.1 N to 120 N
		Electric Shock	IEC 60598-2-2 Cl. 12	Qualitative
		Endurance and	IS 10322 (Part 5/Sec 2)	0.01 W to 5000 W
		Thermal	IEC 60598-2-2 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
				0.1 C to 375 C
		Resistance to Dust and	IS 10322 (Part 5/Sec 2)	0.001 mm to 3.75 mm
		moisture	IEC 60598-2-2 CL 14	0.01 mm to 225 mm
				0.1 N to 4.5 N
				0.1 s to 60 s
		Insulation Resistance	IS 10322 (Part 5/Sec 2)	Qualitative
		and Electric Strength	IEC 60598-2-2 Cl. 15	1 MΩ to 6 MΩ

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Page 7 of 43 Last Amended on 05.08.2019

SI.	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	Verification of Marking	IS 10322 (Part 5/ Sec 3) IEC 60598-2-3 Cl.6	Qualitative
	lighting	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 CI.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
		Creenade Distance and	IS 10322 (Part 5/ Sec 3)	15g at 100Kg max
		Clearance	IEC 60598-2-3 Cl. 8	
		Frovision for Earthing	13 10322 (Part 5/ Sec 3)	U.U I V to 9.99 V

Laboratory	Matrix Test L	abs, Plot No. 2	8, Badli Industrial Area	Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Page 8 of 43 Last Amended on 05.08.2019

SI.	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

Laboratory	Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Last Amended on 05.08.2019

Page 9 of 43

J I.	Product / Material	Specific lest	Test Method Specification	Range of Testing /
	of Test	Performed	against which tests are	Limits of Detection
			performed	
				Up to 99.99 s
6.	Floodlights	Verification of Marking	IS 10322 (Part 5/ Sec 5)	Qualitative
		_	IEC 60598-2-5 CI.6	
		Construction	IS 10322 (part 5/ Sec 5)	Qualitative
			IEC 60598-2-5 CI.7	
			IS 10322 (Part 1) Cl. 4.4	1 Nm to 5 Nm
			IEC 60598-1 Cl. 4.4	
			IS 10322 (Part 1) Cl. 4.5	Qualitative
			IEC 60598-1 CI.4.5	
			15 10322 (Part 1)	0.001 Vac to 1000 Vac
			IS 10322 (Port 1) CL 4 12	1 Nm to 5 Nm
			IEC 60598-1 CL 4 12	
			IS 10322 (Part 1) CI 4 13	1 Nm to 5 Nm
			IEC 60598-1 CL4.13	
			IS 10322 (Part 1) Cl. 4.14	0.1 N to 75 N
			IEC 60598-1 Cl. 4.14	
			IS 10322 (Part 1) Cl.4.18	Qualitative
			IEC 60598-1 Cl. 4.18	
			IS 10322 (Part 1) Cl.4.20	5Hz to 35 Hz
			IEC 60598-1 Cl. 4.20	Amplitude:32mm
				Peak to peak
				35Hz to 3kHz
				15g at 100Kg max
		Creepage Distance and	IS 10322 (Part 5/ Sec 5)	0.01 mm to 100 mm
		Dravision for Forthing	IEC 00598-2-5 Cl. 8	0.01) (to 0.00) (
		Provision for Earthing	IS 10322 (Part 5/ Sec 5)	
		Turning	10.40000 (Dut 5/ 0 5)	0.01 A to 50 A
		Terminais	IS 10322 (Part 5/ Sec 5)	0.01 mm to 100 mm
			IEC 60598-2-5 CI.10	0.1 N to 150 N
				0.1 °C to 187.5 °C
				0.001 Vdc to 1000 Vdc
				0.001 Vac to 1000 Vac

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi ISO/IEC 17025: 2005 TC-6563

Certificate Number Validity

29.09.2018 to 28.09.2020

Specific Test

. Performed

Last Amended on 05.08.2019

Range of Testing /

Limits of Detection

			performed	
		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

Page 10 of 43

Accreditation Standard

of Test

Product / Material

Laboratory

SI.

Test Method Specification

against which tests are

Laboratory	Matrix Test Labs, Plot No. 28, Badli	Industrial Area, Phase-II, Delhi
Accreditation Standard	ISO/IEC 17025: 2005	
Certificate Number	TC-6563	Page 11 of 43

Validity

29.09.2018 to 28.09.2020

SI.	Product / Material	Specific Test	Test Method Specification	Range of Testing /
	of Test	Performed	against which tests are performed	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	Qualitative
			IS 10322 (Part 1) IEC 60598-1 CI 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
		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

Laboratory Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Page 12 of 43 Last Amended on 05.08.2019

81	Product / Material	Specific Test	Test Method Specification	Range of Testing /
5 1.	of Test	Performed	against which tests are	Limits of Detection
			performed	
				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 6)	0.01 W to 5000 W
		Thermal	IEC 60598-2-8 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
				Ambient to 60 °C
				15 °C to 110 °C
		Resistance to Dust and	IS 10322 (Part 5/ Sec 6)	0.001 mm to 3.75 mm
		moisture	IEC 60598-2-8 Cl. 14	0.01 mm to 225 mm
				0.1 N to 4.5 N
				0.1 s to 60 s
		Insulation Resistance	IS 10322 (Part 5/ Sec 6)	0.01 kV to 5 kV
		and Electric Strength	IEC 60598-2-8 Cl. 15	5 mA to 250 mA
				1 MΩ to 6 MΩ
		Resistance to Heat,	IS 10322 (Part 5/ Sec 6)	0.1 °C to 187.5 °C
		Fire and Tracking	IEC 60598-2-8 Cl. 16	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)	Qualitative
		O a matrix atian	IEC 60598-2-20 Cl.6	Qualitativa
		Construction		Qualitative
			IEC 60598-2-20 CI.7	1 Nue to 5 Nue
			IS 10322 (Part 1) Cl. 4.4	
			IS 10322 (Part 1) CL 4.5	Qualitative
			IEC 60598-1 CL 4 5	Quantative
			IS 10322 (Part 1)	0.001 Vdc to 1000 Vdc
			IEC 60598-1 CI 4 11 6	0.001 Vac to 1000 Vac
1	1	1	120 00000-1 01.4.11.0	

LaboratoryMatrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, DelhiAccreditation StandardISO/IEC 17025: 2005Certificate NumberTC-6563Page 13 of 43

Validity

29.09.2018 to 28.09.2020

SI.	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

Laboratory Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Last Amended on 05.08.2019

Page 14 of 43

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

Laboratory Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Last Amended on 05.08.2019

Page 15 of 43

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are	Range of Testing / Limits of Detection
			performed	
			IS 10322 (Part 1) Cl.	1 Nm to 5 Nm
			4.13	
			IEC 60598-1 Cl.4.13	
			IS 10322 (Part 1) Cl.	0.1 N to 75 N
			4.14	
			IEC 60598-1 Cl. 4.14	
			IS 10322 (Part 1) Cl.4.18	Qualitative
			IEC 60598-1 Cl. 4.18	
			IS 10322 (Part 1) Cl.4.20	5Hz to 35 Hz
			IEC 60598-1 Cl. 4.20	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)	0.01 V to 9.99 V
		5	IEC 60598-2-22 Cl. 9	0.01 A to 50 A
		Terminals	IS 10322 (Part 5/ Sec 8)	0.01 mm to 100 mm
			IEC 60598-2-22 CI.10	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 Vac to 1000 Vac
		External and Internal	IS 10322 (Part 5/ Sec 8)	0.001 vac to 1000 vac
		Wiring	IEC 60598-2-22 CL 11	0.01 mm to 30 mm
		g		0.001 m to 5 m
				0.1 N to 115 N
		Protection Against	IS 10322 (Part 5/ Sec 8)	0.01 mm to 30 mm
		Electric Shock	IEC 60598-2-22 Cl. 12	0.1 s to 60 s
				0.1 N to 15 N
				0.001 Vdc to 1000 Vdc
		Endurance and	IS 10222 (Dart 5/ Sec. 9)	
1		Endurance and	10 10322 (Part 5/ Sec 8)	

		Fire and Tracking	IEC 60598-2-22 Cl. 16	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	IS 10322 (Part 5/ Sec 8)	0.01 W to 5000 W
		contained emergency	IEC 60598-2-22 Cl. 20	0.001 A to 20 A 0.01 V to 600 V
10.	Self-ballasted lamps for general lighting services	Verification of Verification of Marking	IS 15111 (Part 1) Cl.6	Qualitative
	Safaty	Interchangeability	IS 15111 (Part 1) Cl.7	Qualitative
	Requirement f	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

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Product / Material

of Test

Validity

SI.

Laboratory

29.09.2018 to 28.09.2020

Resistance to Dust and

Insulation Resistance

and Electric Strength

Resistance to Heat,

Specific Test

Performed

Thermal

moisture

Last Amended on 05.08.2019

Range of Testing /

0.001 A to 20 A

0.01 V to 600 V

Limits of Detection

0.001 Vdc to 1000 Vdc 0.001 Vac to 1000 Vac (-) 100 °C to 375 °C 15 °C to 110 °C

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

0.01 kV to 5 kV

5 mA to 250 mA 1 M Ω to 6 M Ω

0.1 °C to 187.5 °C

Page 16 of 43

Test Method Specification

against which tests are

IEC 60598-2-22 Cl. 13

IS 10322 (Part 5/ Sec 8)

IS 10322 (Part 5/ Sec 8)

IS 10322 (Part 5/ Sec 8)

IEC 60598-2-22 Cl. 15

IEC 60598-2-22 Cl. 14

performed

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Laboratory Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Page 17 of 43 Last Amended on 05.08.2019

SI.	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	Verification of Marking	IS 16104 Cl. 6	Qualitative
	supplied Electronic Control gear for LED	Output voltage and current	IS 16104 Cl. 7	1W-5000W 1A-20A 1V-600V
	Modules Particular requirements	Total circuit power	IS 16104 CI.8	1W-5000W 1A-20A 1V-600V
		Circuit power factor	IS 16104 Cl.9	1W-5000W 1A-20A 1V-600V
		Supply current	IS 16104 CI.10	1W-5000W 1A-20A 1V-600V
		Operational tests for abnormal conditions	IS 16104 CI.12	1W-5000W 1A-20A 1V-600V
11.	ENVIRONMENTAL	TEST FACILITY	1	

Laboratory Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Page 18 of 43

SI.	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 Degrees of protection against access to hazardous parts and solid foreign objects	IS/IEC 60529 CI.10 IS/IEC 60529 CI.5.0 Table 1,2 &5, CI.12 &13	Qualitative 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/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) Degrees of protection against access to hazardous parts indicated by the first	IS/IEC 60529 CI.7.0,CI.15.0 & Table 4 IS/IEC 60529 CI.12, Table 6	Φ 50mm, 100mm length Φ 12mm, 80mm length Φ 2.5mm, 100mm length Φ 1mm, 100mm length 0.01 mm to 300 mm Φ 50mm, 100mm length Φ 12mm, 80mm length Φ 2.5mm, 100mm length Φ 1mm, 100mm length Φ 1mm, 100mm length
		characteristics numeral		0.01 mm to 300 mm

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Page 19 of 43

SI.	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 CI.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	Specific requirements & tests (nickel systems) General safety considerations	IS 16046 IEC 62133 Cl. 5.1	Qualitative
	non-acid Electrolytes-	Insulation and wiring	IS 16046 IEC 62133 Cl. 5.2	1 MΩ to 7.5 MΩ 100 Vdc to 500 Vdc
	Safety requirements for	Venting	IS 16046 IEC 62133 Cl. 5.3	Qualitative
	portable sealed secondary cells,	Temperature/voltage/ current management	IS 16046 IEC 62133 Cl. 5.4	Qualitative
	and for batteries made from them,	Terminal contacts	IS 16046 IEC 62133 Cl. 5.5	Qualitative
	portable	Assembly of cells into batteries	IS 16046 IEC 62133 Cl. 5.6	Qualitative
	applications	Charging procedure for test purposes	IS 16046 IEC 62133 CI.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 °C
		Temperature cycle	IS 16046	(-) 20 °C to 100 °C

Validity

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

29.09.2018 to 28.09.2020

Page 20 of 43

Last Amended on 05.08.2019

SI.	Product / Material	Specific Test	Test Method Specification	Range of Testing /
	of Test	Performed	against which tests are	Limits of Detection
			performed	
			IEC 62133 Cl. 7.2.4	
		Incorrect installation	IS 16046	Up to 1Ω
			IEC 62133 Cl. 7.3.1	0.1 °C to 100 °C
		External short circuit	IS 16046	Ambient to 100 °C
			IEC 62133 Cl. 7.3.2	1 mΩ to 100 mΩ
		Free fall	IS 16046	Qualitative
			IEC 62133 Cl. 7.3.3	
		Mechanical shock	IS 16046	75 g to 175 g
			IEC 62133 Cl. 7.3.4	Up to 3 mS
		Thermal abuse	IS 16046	1 °C to 130 °C
			IEC 62133 Cl. 7.3.5	
		Crush	IS 16046	Up to 20 kN
			IEC 62133 Cl. 7.3.6	1 Vdc to 24 Vdc
				0.1 mm to 50 mm
		Low pressure	IS 16046	20 °C
			IEC 62133 Cl. 7.3.7	10 kPa to 11.6 kPa
		Over charging of	IS 16046	1 V to 16 V
		battery	IEC 62133 Cl. 7.3.8	1 A to 15 A
		Forced discharge (cell)	IS 16046	1 V to 16 V
			IEC 62133 Cl. 7.3.9	0.1 A to 15 A
		Specific requirements &	IS 16046	1 V to 16 V
		tests	IEC 62133 Cl. 8.1	0.5 A to 15 A
		(lithium systems)		
		Charging procedure for		
		test purpose	10, 100,10	
		Continuous low rate	IS 16046	1 V to 16 V
		charging	IEC 62133 Cl. 8.2.1	0.5 A to 15 A
		Moulded case stress at	IS 16046	Ambient to 100 °C
		nign ambient	IEC 62133 Cl. 8.2.2	
			10,10040	
				Amplent to 100 °C
		Cutornal abort aire::it		
				0.01 Vdo to 10.00 Vdo
		(Dattery)	IEC 02133 CI. 0.3.2	U.UT VUC IO 19.99 VUC
1				

Sreeram Pinnamaraju Convenor

Validity

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

29.09.2018 to 28.09.2020

recovery after long term

Endurance in cycles

Battery internal

resistance

storage

Page 21 of 43

Last Amended on 05.08.2019

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

IEC 61960 Cl. 7.5

IEC 61960 Cl. 7.6

IEC 61960 Cl. 7.7

IS 16047

IS 16047

for portable

applications

0.5 A to 15 A

1 V to 16 V

0.5 A to 15 A

1 V to 16 V

0.5 A to 15 A

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Page 22 of 43

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are	Range of Testing / Limits of Detection
			performed	
3.	Secondary Cells	General Safety	IS 16046 (Part 1)	Qualitative
	And Batteries	Considerations	IEC 62133-1 Cl. 5	
	Containing	Insulation And Wiring	IS 16046 (Part 1)	1 MΩ to 7.5MΩ
	Alkaline Or Other	_	IEC 62133-1 Cl. 5.2	10 Vdc to 500 Vdc
	Non-Acid	Venting	IS 16046 (Part 1)	Qualitative
	Electrolytes	_	IEC 62133-1 Cl. 5.3	
	Safety	Temperature, Voltage	IS 16046 (Part 1)	Qualitative
	Requirements For	And Current	IEC 62133-1 Cl. 5.4	
	Portable	Management		
	Sealed Secondary	Terminal Contacts	IS 16046 (Part 1)	Qualitative
	Cells, And		IEC 62133-1 Cl. 5.5	
	Batteries Made	Assembly Of Cells Into	IS 16046 (Part 1)	Qualitative
	From Them, For	Batteries	IEC 62133-1 Cl. 5.6	
	Use In Portable	Quality Plan	IS 16046 (Part 1)	Qualitative
	Applications		IEC 62133-1 Cl. 5.7	
		Type Test And Sample	IS 16046 (Part 1)	Qualitative
	- Nickel Systems	Size	IEC 62133-1 Cl. 6	
		Charging Procedure	IS 16046 (Part 1)	20 mV to 16 V
		For Test Purposes	IEC 62133-1 CI.7.1	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	IS 16046 (Part 1)	5 channel
		Charging	IEC 62133-1 Cl. 7.2.1	0.01 V to 5 V
		5 5		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)	Frequency 3000 Hz
			IEC 62133-1 Cl. 7.2.2	Up to 180g
<u> </u>		Case Stress At High	IS 16046 (Part 1)	Ambient to 200 °C
		Ambient Temperature	IEC 62133-1 Cl. 7.2.3	
		(Batteries)		
		Temperature Cycling	IS 16046 (Part 1)	(-) 20°C to 75°C
			IEC 62133-1 Cl. 7.2.4	

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Page 23 of 43

SI.	Product / Material	Specific Test	Test Method Specification	Range of Testing /
	of lest	Performed	performed	Limits of Detection
		Incorrect Installation	IS 16046 (Part 1)	1 ohm
		(Cells)	IEC 62133-1 Cl. 7.3.1	
		External Short Circuit	IS 16046 (Part 1)	60 mΩ to 100 mΩ
			IEC 62133-1 Cl. 7.3.2	
		Free Fall	IS 16046 (Part 1)	Qualitative
			IEC 62133-1 Cl. 7.3.3	
		Mechanical Shock	IS 16046 (Part 1)	Up to 180g _{n,}
		(Crash Hazard)	IEC 62133-1 Cl. 7.3.4	
		Thermal Abuse (Cells)	IS 16046 (Part 1)	Ambient to 150°C with
			IEC 62133-1 Cl. 7.3.5	ramp rate of 5°C ± 3°C
		Crushing Of Cells	IS 16046 (Part 1)	0.01 Vdc to 24V DC
			IEC 62133-1 Cl. 7.3.6	0.1 mm to 50 mm
				0.01 kN to 20 kN
		Low Pressure (Cells)	IS 16046 (Part 1)	100 kPa to 5 kPa
			IEC 62133-1 Cl. 7.3.7	
		Over Charge	IS 16046 (Part 1)	20 mV to 16 V
			IEC 62133-1 Cl. 7.3.8	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	IS 16046 (Part 1)	0.01 V to 7 V
		(Cells)	IEC 62133-1 Cl. 7.3.9	10 mA to 16 A
		Information For Orfett		16 A to 250 A
		Information For Safety	15 10040 (Part 1)	Qualitative
		Marking	IS 160/6 (Port 1)	Qualitativo
		Marking	IEC 62133-1 CL 9)	Qualitative
		Packaging	IS 16046 (Part 1)	Qualitative
		1 dokuging	IEC 62133-1 CL 10)	Quantative
4.	Secondary Cells	General Safety	IS 16046 (Part 2)	Qualitative
	and Batteries	Considerations	IEC 62133-2 Cl. 5	
	Containing	Insulation And Wiring	IS 16046 (Part 2)	0.01 MΩ to 2 GΩ
	Alkaline Or Other		IEC 62133-2 Cl. 5.2	50 Vdc,100 Vdc,250

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

ISO/IEC 17025: 2005 Accreditation Standard

Certificate Number TC-6563

29.09.2018 to 28.09.2020

Page 24 of 43

SI.	Product / Material	Specific Test	Test Method Specification	Range of Testing /
	of Test	Performed	against which tests are	Limits of Detection
			performed	
	Non-Acid			Vdc,500 Vdc, 1000 Vdc
	Electrolytes			30 s, 60 s, 90 s,120 s
	Safety	Venting	IS 16046 (Part 2)	Qualitative
	Requirements For	-	IEC 62133-2 Cl. 5.3	
	Portable	Temperature, Voltage	IS 16046 (Part 2)	Qualitative
	Sealed Secondary	And Current	IEC 62133-2 Cl. 5.4	
	Cells, And	Management		
	Batteries Made	Terminal Contacts	IS 16046 (Part 2)	Qualitative
	From Them, For		IEC 62133-2 Cl. 5.5	
	Use In Portable	Assembly Of Cells Into	IS 16046 (Part 2)	Qualitative
	Applications	Batteries	IEC 62133-2 Cl. 5.6	
		Quality Plan	IS 16046 (Part 2)	Qualitative
	- Lithium Systems		IEC 62133-2 Cl. 5.7	
		Battery Safety	IS 16046 (Part 2)	Qualitative
		Components	IEC 62133-2 Cl. 5.8	
		Type Test And Sample	IS 16046 (Part 2)	Qualitative
		Size	IEC 62133-1 Cl. 6	
		Charging Procedure	IS 16046 (Part 2)	20 mV to 16 V
		For Test Purposes	IEC 62133-2 CI.7.1.1	0.5V to 25 V
		(First Procedure)		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	IS 16046 (Part 2)	20 mV to 16 V
		For Test Purposes	IEC 62133-2 CI.7.1.2	0.5 V to 25 V
		(Second Procedure)		
				20 mA to 16 A
				0.1 A to 450 A
		Continuous Charging At	IS 16046 (Port 2)	U. I AUC IO DU AUC
			10040 (Part 2)	3 channel 0.01 V to 5 V
			IEC 02133-2 CI. 1.2.1	$0.01 \times 10.5 \text{ v}$
				0.5 V to 5 V
				35Δ to 40Δ
		Case Stress At High	IS 16046 (Part 2)	Ambient to 200 °C
		Case Oliess Al High		

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Page 25 of 43

SI.	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	Cell Designation And Marking	IS 16047 (Part 3) IEC 61960-3 Cl. 5	0.01mm to 300mm
	Containing	Examples Of Cells	IS 16047 (Part 3)	Qualitative

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

29.09.2018 to 28.09.2020

Page 26 of 43

Validity

SI.	Product / Material	Specific Test	Test Method Specification	Range of Testing /
	of Test	Performed	against which tests are	Limits of Detection
			performed	
	Alkaline Or Other		IEC 61960-3 Cl. 6	
	Non-Acid	Electrical Tests	IS 16047 (Part 3)	Qualitative
	Electrolytes-	General	IEC 61960-3 Cl. 7.1	
	Secondary	Charging Procedure	IS 16047 (Part 3)	20 mV to 16 V
	Lithium Cells And	For Test Purposes	IEC 61960-3 Cl. 7.2	20 mA to 16 A
	Batteries For	Discharge Performance	IS 16047 (Part 3)	20 mV to 16 V
	Portable	At 20 °C (Rated	IEC 61960-3 Cl. 7.3.1	20 mA to 16 A
	Applications	Capacity)		
		Discharge Performance	IS 16047 (Part 3)	20 mV to 16 V
	- Prismatic and	At - 20 °C (Rated	IEC 61960-3 Cl. 7.3.2	20 mA to 16 A
	cylindrical lithium	Capacity)		(-) 20°C to 75°C
	secondary cells ,	High Rate Discharge	IS 16047 (Part 3)	20 mV to 16 V
	and batteries	Performance At 20 °C	IEC 61960-3 Cl. 7.3.3	20 mA to 16 A
	made from them	Charge (Capacity)	IS 16047 (Part 3)	20 mV to 16 V
		Retention And	IEC 61960-3 Cl. 7.4	20 mA to 16 A
		Recovery		
		Charge (Capacity)	IS 16047 (Part 3)	20 mV to 16 V
		Recovery After Long	IEC 61960-3 Cl. 7.5	20 mA to 16 A
		Term Storage		Ambient to 200 ° C
		Endurance In Cycles	IS 16047 (Part 3)	20 mV to 16 V
			IEC 61960-3 Cl. 7.6	20 mA to 16 A
		Battery Internal	IS 16047 (Part 3)	300 mΩ to 8 Ω
		Resistance	IEC 61960-3 Cl. 7.7	20 mV at 1 KHz
		Electrostatic Discharge	IS 16047 (Part 3)	2 kV to 8 kV
			IEC 61960-3 Cl. 7.8	2 kV to 20 kV
				Positive/Negative
		Test Protocol And	IS 16047 (Part 3)	Qualitative
		Conditions For Type	IEC 61960-3 CI.8	
		Approval		
11/				
IV.	SAFELY LEST FAC			
1.	Safety of Electric	Verification of Marking	IS 15644 IEC 62115 Cl. 7	Qualitative
	Toys	Power input	IS 15644	0.01 W to 5000 W
		-	IEC 62115 Cl. 8	0.001 A to 20 A
				0.01 V to 600 V

Laboratory Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Last Amended on 05.08.2019

Page 27 of 43

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are	Range of Testing / Limits of Detection
1			performed	
			10.45044	(-) 100 °C to 1350 °C
		Heating and abnormal	15 15644	(-) 100 °C to 1350 °C
		operation	IEC 62115 Cl. 9	0.01 mm to 100 mm
				0.1 S to 60 S
				0.001 A to 20 A
			10 45044	
		Electric strength at		
		operating temperature	IEC 62115 CI. 10	0.01 KV to $5 KV$
				5 mA to 250 mA
			10 45044	
		Moisture resistance		
			IEC 02113 CI. 11	
				0.1510005
				5 mA to $250 mA$
		Electric strength at	19 15644	
				5 m to 250 m
		room temperature	IEC 02113 CI. 12	0 1 s to 60 s
		Mechanical strength	19 15644	0.1 \$ 10 00 \$
			IEC 62115 CL 13	0.75
		Construction	IS 15644	0.01 mm to 150 mm
		Construction	IEC 62115 CL 14	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	IS 15644	0.01 mm to 5 mm
		wires	IEC 62115 Cl. 15	
		Components	IS 15644	Qualitative
		- Qualitative Only	IEC 62115 Cl. 16	
		carried out for Certified		
		components		
		Screws and	IS 15644	0.01 mm to 5 mm

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

SI.	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

Ι.	DOMESTIC ELEC	CTRONIC 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

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Page 29 of 43

SI.	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	Verification of Marking And Instructions Protection Against	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 7 IS 302 (Part 2/Sec 25)	Qualitative 0.01 mm to 4.5 mm Qualitative
	Safety of Household and Similar Electrical	Access to Live Parts Power Input And Current	IEC 60335-2-25 Cl. No. 8 IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 10	0.1 N to 75 N 0.01 W to 5000 W 0.001 A to 20 A
	Appliances particular Requirements	Leakage Current And	IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 11 IS 302 (Part 2/Sec 25) IEC 60335-2-25 Cl. No. 13	0.1 °C to 400 °C 0.1 mA to 5.25 mA 0.1 V to 270 V
	Microwave Oven	Operating Temperature		
		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

Validity

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

29.09.2018 to 28.09.2020

Page 30 of 43

SI.	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

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Last Amended on 05.08.2019

Page 31 of 43

SI.	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	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
	Safety of Household and Similar Electrical	Protection Against Access To Live Parts Power Input And	IS 302 (Part 2/Sec 26) IEC 60335-2-26 Cl. No. 8 IS 302 (Part 2/Sec 26)	Qualitative 0.1 N to 75 N 0.01 W to 5000 W
	Appliances Particular	Current Heating - Test Corner	IEC 60335-2-26 CI. No. 10 IS 302 (Part 2/Sec 26) IEC 60335-2-26 CI. No. 11	0.001 A to 20 A 0.1 °C to 400 °C
	Requirements Clocks	Electric Strength At Operating	IEC 60335-2-26 Cl. No. 13	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

Validity

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

29.09.2018 to 28.09.2020

Page 32 of 43

SI.	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

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Page 33 of 43

SI.	Product / Material	Specific Test	Test Method Specification	Range of Testing /
	of Test	Performed	against which tests are	Limits of Detection
 	0-6-6-			
	- Safety Boguiromont	Heating Under Normal		1 °C to 300 °C
l	Requirement		IS 616	Qualitative
		Requirements With	IEC 60065 CL No. 8.0	Vibration:
	Electronics	Regard To The		Freq:10Hz to 55Hz
	Games (video)	Protection Against		Amplitude:0.35mm
	Electronic	Electric Shock		Sweep rate 1 Octave/min
	Musical Systems			50 N to 150 N
	up to 200W			Ambient to 200 °C
	Plasma/LCD/LED	Electrical Shock	IS 616	50 N to 100 N
	Televisions	Hazard Under Normal	IEC 60065 Cl. No. 9.0	30 µA to 10 mA
	Power Adaptors	Operating Conditions		-
	for Audio, Video &	Insulation	IS 616	10 Vdc to 500 Vdc
	similar electronics	Requirements	IEC 60065 Cl. No. 10.0	2 MΩ to 200 MΩ
	apparatus			Qualitative
		Fault Conditions	IS 616 IEC 60065 Cl. No. 11.0	1 °C to 350 °C
		Mechanical Strength	IS 616	Qualitative Vibration:
			IEC 60065 Cl. No. 12.0	Freq:10Hz to 55Hz
				Amplitude:0.35mm
				Sweep rate 1 Octave/min
				0.5J to 5.0J
				Steel ball 500gms &
		Clearances And	IS 616	2 mm to 100 mm
		Creepage Distances	IEC 60065 Cl. No. 13.0	50 N to 100 N
		Components	IS 616	Qualitative
		- Qualitative Only	IEC 60065 Cl. No. 14.0	
		carried out for Certified		
		components		
		Terminals	IS 616	Qualitative
			IEC 60065 CL No. 15 0	0.010 V to 1000 V
				0.01 A to 10 A
				2 mm to 100 mm
				50 N to 100 N

Laboratory	Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Page 34 of 43

SI.	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 IS 616 IEC 60065 Cl. No. 19.5.1 IS 616 IEC 60065 Cl. No. 19.6	Qualitative
			IEC 60065 Cl.No.19.7	0.01 S to 24 ms 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	Components - Qualitative Only Carried Out For Certified Components	IS 13252 (Part 1) IEC 60950-1 Cl. No. 1.5	Qualitative
	Printers/Plotters Scanners Set top box	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
	Telephone answering M/c Visual display	Verification of Marking And Instructions	IS 13252 (Part 1) IEC 60950-1 Cl. No. 1.7	Qualitative
	Units videos Monitors Wireless Key	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
	boards Cash registers	SELV Circuits	IS 13252 (Part 1) IEC 60950-1 Cl. No. 2.2	0.01 Vdc to 180 Vdc 5 Vac to 400 Vac

Validity

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

29.09.2018 to 28.09.2020

Page 35 of 43

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are	Range of Testing / Limits of Detection
	Copying Machines	TNV Circuits	IS 13252 (Part 1) IEC 60950-1 Cl. No. 2.3	Qualitative
	/Duplicators Passport read	Limited Current Circuits	IS 13252 (Part 1) IEC 60950-1 Cl. No. 2.4	0.5 mA to 100 mA
	Point of sales terminals Power banks for	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
	use in portable applications	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
	Mobile phones Power adaptors	Over current And Earth Fault Protection In Primary Circuit	IS 13252 (Part 1) IEC 60950-1 Cl. No. 2.7	Qualitative
	for IT equipments CCTV Recorders	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

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

29.09.2018 to 28.09.2020

Page 36 of 43

Validity 29.09.20

Last Amended on 05.08.2019

SI.	Product / Material	Specific Test	Test Method Specification	Range of Testing /
	of Test	Performed	against which tests are	Limits of Detection
			performed	
			IEC 60950-1 Cl. No. 4.2.3	
		Steady Force 250 N	IS 13252 (Part 1)	50 N to 300 N
			IEC 60950-1 Cl. No. 4.2.4	
		Impact To	IS 13252 (Part 1)	Qualitative
		Enclosure	IEC 60950-1 Cl. No. 4.2.5	
		Drop	IS 13252 (Part 1)	Qualitative
			IEC 60950-1 Cl. No. 4.2.6	
		Stress Relief	IS 13252 (Part 1)	Ambient to 105 °C
			IEC 60950-1 Cl. No. 4.2.7	
		High Pressure Lamps	IS 13252 (Part 1)	Qualitative
			IEC 60950-1 Cl. No. 4.2.9	
		Wall Or Ceiling	IS 13252 (Part 1)	50 N to 300 N
		Mounted Equipment	IEC 60950-1 Cl. No. 4.2.10	
		Edges And Corners	IS 13252 (Part 1)	Qualitative
			IEC 60950-1 Cl. No. 4.3.1	
		Handles And Manual	IS 13252 (Part 1)	1 N to 75 N
		Controls	IEC 60950-1 Cl. No. 4.3.2	
		Adjustable controls	IS 13252 (Part 1)	Qualitative
			IEC 60950-1 Cl. No. 4.3.3	
		Securing of parts	IS 13252 (Part 1)	Qualitative
		Connection by pluga	IEC 60950-1 CI. NO. 4.3.4	Qualitativa
		connection by plugs	15 13252 (Part 1)	Qualitative
		Direct Dlug In	IEC 00950-1 Cl. No. 4.5.5	Qualitativa
		Direct Flug-III	IS 13232 (Fait 1)	Qualitative
		Heating elements in	IS 13252 (Part 1)	Qualitative
		earthed equipment	$IEC 60950_1 CI No 4.3.7$	Qualitative
		Batteries	IS 13252 (Part 1)	0.01.Vdc to 16.Vdc
		Datteries	IEC 60950-1 CL No. 4.3.8	
		Protection Against	IS 13252 (Part 1)	1 N to 50 N
		Hazardous Moving	IEC 60950-1 Cl. No. 4.4	2.5 rpm to 999999 rpm
		Parts		p.
		Thermal Requirements	IS 13252 (Part 1)	Ambient to 350 °C
			IEC 60950-1 Cl. No. 4.5	0.001 Ω to 11.11 MΩ
		Opening In Enclosure	IS 13252 (Part 1)	Ambient to 150°C
			IEC 60950-1 Cl. No. 4.6	0.01 mm to 7.5 mm

Sreeram Pinnamaraju Convenor Nitan Garg Program Manager

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Product / Material

Validity

SI.

29.09.2018 to 28.09.2020

Specific Test

Page 37 of 43

Last Amended on 05.08.2019

Test Method SpecificationRange of Testing /against which tests areLimits of Detectionperformed

	of lest	Performed	performed	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 °C
		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	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
	Uninterruptible power systems (UPS)	General	IS 16242 (Part 1) IEC 62040-1 Cl. No. 4.7.1/RD	Qualitative
	General and safety requirements for	Power Rating	IS 16242 (Part 1) IEC 62040-1 Cl. No. 4.7.2 /RD	Qualitative
	UPS Up to 5 kVA	High Leakage Current	IS 16242 (Part 1) IEC 62040-1 Cl. No. 4.7.13 /RD	0.1 mA to 25 mA
	Single Phase	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

Validity

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

29.09.2018 to 28.09.2020

Page 38 of 43

SI.	Product / Material	Specific Test	Test Method Specification	Range of Testing /
	of Test	Performed	against which tests are	Limits of Detection
			performed	
		Safety extra low	IS 16242 (Part 1)	0.01 Vdc to 180 Vdc
		voltage Circuits-SELV	IEC 62040-1	5 Vac to 400 Vac
			Cl. No. 5.2.1/RD	
		Telephone network	IS 16242 (Part 1)	Qualitative
		voltage Circuits-TNV	IEC 62040-1:2008	
			Cl. No. 5.2.2/ RD	
		Limited Current Circuits	IS 16242 (Part 1)	0.5 mA to 100 mA
			IEC 62040-1	
			Cl. No. 5.2.3/RD	
		External Signaling	IS 16242 (Part 1) IEC	Qualitative
		Circuits	62040-1/Cl. No. 5.2.4/ RD	
		Limited Power Source	IS 16242 (Part 1)	1 W to 500 W
			IEC 62040-1 Cl. No. 5.2.5/	30 mA to 20 A
			RD	10 V to 800 V
		Protective earthing and	IS 16242 (Part 1)	0.01 mm to 100 mm
		bonding	IEC 62040-1	Ambient to 500°C
			CI. No. 5.3 /RD	0
		A.C. and D.C. Power	IS 16242 (Part 1) IEC	Qualitative
		Isolation	62040-1/CI. No. 5.4/RD	
		Over current and earth	IS 16242 (Part 1)	Qualitative
		fault protection	IEC 62040-1 Cl. No. 5.5	
		Protection of personnel	IS 16242 (Part 1)	Qualitative
			1EC 62040-1(Cl. No. 5.6)	0 mans to 100 mans
		Clearances, Creepage		2 mm to 100 mm
		Distances And	IEC 62040-1 CI. NO. 5.7/RD	
		Wiring Connection and	IS 16242 (Part 1)	Qualitative
		Supply General	I = 10242 (Fart T)	Qualitative
		General provisions for	IS 162/2 (Part 1)	Qualitative
		connection to power	IEC 62040-1 CI No 6 2 1	
		Wiring terminals for	IS 16242 (Part 1)	2 mm to 100 mm
		external power	IEC 62040-1 CL No. 6.3	
		conductors		
		Stability	IS 16242 (Part 1) IEC	Qualitative
			62040-1/Cl. No. 7.2/RD	

Validity

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

29.09.2018 to 28.09.2020

Page 39 of 43

SI.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
<u> </u>		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 °C 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 °C 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 °C to Ambient 2 ft X 2 ft X 2 ft Ambient to 200 °C

Validity

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

29.09.

29.09.2018 to 28.09.2020

Last Amended on 05.08.2019

Page 40 of 43

SI.	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 °C 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 15g 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 <i>g</i>
		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 °C 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 °C 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

Sreeram Pinnamaraju Convenor

Laboratory	Matrix Test Labs, Plot No	. 28, Badli Industrial Area	, Phase-II, Delhi
	,	,	, ,

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Last Amended on 05.08.2019

Page 41 of 43

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

MECHANICAL TESTING

Ι.	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

Validity

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

29.09.2018 to 28.09.2020

Page 42 of 43

Last Amended on 05.08.2019

SI.	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	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
	Physical Properties	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

Convenor

Matrix Test Labs, Plot No. 28, Badli Industrial Area, Phase-II, Delhi

Accreditation Standard ISO/IEC 17025: 2005

Certificate Number TC-6563

Validity

29.09.2018 to 28.09.2020

Page 43 of 43

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