Laboratory	**UL India Lab, UL India Pvt. Ltd., Laboratory Building, Kalyani Platina Campus, Sy. No. 129/4, EPIP Zone, Phase-II, Whitefield, Bangalore, Karnataka** **Location 1: Laboratory Building, Kalyani Platina Campus, Sy. No. 129/4, EPIP Zone, Phase-II, Whitefield, Bangalore, Karnataka** **Location 2: OAK Building, Kalyani Platina Campus, Sy. No 129/4, EPIP Zone, Phase-II , Whitefield, Bangalore, Karnataka**
Accreditation Standard	**ISO/IEC 17025: 2005**

Discipline	**Electronics Testing**	**Issue Date**	**05.08.2016**
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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
		LOCATION: 1		
I.	**ENVIRONMENTAL TESTING**			
1.	**Environmental Testing of Electronics & Electrical Items**	Low Temperature (Cold) Test	QM333 Issue. 2: 1998	25 °C to (-)65 °C 1000 mmW x 800 mmD x 1000 mmH 3048 mmW x 3658 mmD x 2388 mmH 1829 mmW x 1829 mmD x 2388 mmH
		High Temperature (Dry) Heat	QM333 Issue. 2: 1998	30 °C to 150 °C 1000 mmW x 800 mmD x 1000 mmH 3048 mmW x 3658 mmD x 2388 mmH 1829 mmW x 1829 mmD x 2388 mmH
		Rapid Temperature Cycle (2 chamber method)	QM333 Issue. 2: 1998	(-)65°C to 150 °C 1000 mmW x 800 mmD x 1000 mmH 3048 mmW x 3658 mmD x 2388 mmH 1829 mmW x 1829 mmD x 2388 mmH

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Environmental Testing of Electronics & Electrical Items	Water Immersion Test	QM333 Issue. 2: 1998	15 °C to 35 °C
		Corrosion (Salt)	QM333 Issue. 2: 1998	35 °C, 95 % RH
		Drop Test	QM333 Issue. 2: 1998	10 mm to 2000 mm, 45°
		Toppling Test	QM333 Issue. 2: 1998	10 mm to 2000 mm
		Fall Test	QM333 Issue. 2: 1998	10 mm to 2000 mm
		Cold Test	EN/IEC 60068-2-1: 2007	25 °C to (-)65 °C 1000 mmW x 800 mmD x 1000 mmH 3048 mmW x 3658 mmD x 2388 mmH 1829 mmW x 1829 mmD x 2388 mmH
		Dry Heat	EN/IEC 60068-2-2: 2007	30 °C to 150 °C 1000 mmW x 800 mmD x 1000 mmH 3048 mmW x 3658 mmD x 2388 mmH 1829 mmW x 1829 mmD x 2388 mmH

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Environmental Testing of Electronics & Electrical Items	Salt Mist Test	IEC 60068-2-11, (3rd Edition): 1981	25 °C to 35 °C, 95 %Rh 2160 mmW x 980 mm D x 1320 mmH
		Change of Temperature (Test Na) (2 chamber method)	IEC 60068-2-14 (6th Edition): 2009	(-)65°C to 150°C 1000 mmW x 800 mmD x 1000 mmH 3048 mmW x 3658 mmD x 2388 mmH 1829 mmW x 1829 mmD x 2388 mmH
		Damp heat, cyclic (Test Db)	IEC 60068-2-30,(3rd Edition): 2005-08	22 °C to 55 °C, 35 % to 95 % Rh 1000 mmW x 800 mmD x 1000 mmH 3048 mmW x 3658 mmD x 2388 mmH 1829 mmW x 1829 mmD x 2388 mmH

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Environmental Testing of Electronics & Electrical Items	Salt Mist, Cyclic,	IEC 60068-2-52, (2nd Edition): 1996	25 °C to 35 °C, 95 %Rh
		Test Kb (sodium chloride solution)		2160 mmW x 980 mmD x 1320 mmH
		Water – IPX1 to IP X7 Degrees of Protection): provided by enclosures	IEC 60529: 2013-08, (Edition 2.2) 1+ Corr. 3	IPX1 to IP X7 Qualitative
		Dust- IP 1 x to IP 6 x	IEC 60529: 2013-08,	IP 1 x to IP 6 x
		Degrees of Protection): provided by enclosures	(Edition 2.2) 1+Corr. 3	Qualitative
		Damp Heat, steady state	IEC 60068-2-78 (2nd Edition): 2012-10	30 °C to 40 °C, 35 % to 95 % Rh
				1000 mmW x 800 mmD x 1000 mmH
				3048 mmW x 3658 mmD x 2388 mmH
				1829 mmW x 1829 mmD x 2388 mmH

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
II.	**INFORMATION TECHNOLOGY EQUIPMENTS**			
1.	**Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box**	Input Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 1.6.2)	1.5 V to 300 VAC/DC 1 mA to 20 A AC/DC
		Thermal requirement	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 4.5.1)	20 °C to 400 °C
		Overload of operator accessible Parts	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 5.3.7)	1 W to 330 W(max) 0.1 s to 1 hr
		Humidity conditioning	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 2.9.1)	93 % to 95 % RH 20 °C to 100 °C Qualitative
		Electric strength Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 5.2.2)	50 V to 10 kV AC/DC 1 s to 900 s
		Touch current Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 5.1)	0.1 mA to 5 mA
		Abnormal operation Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 5.3.1)	25 °C to 400 °C Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box	Capacitance discharge Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 2.1.1.7)	0.1 V to 800 V Peak / DC 5 s
		Limited power source measurement Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 2.5)	1 W to 330 W(max) 0.1 s to 1 hr
		Working voltage determination	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 2.10.2)	1 V to 1000 V rms/V DC
		Protective bonding Test II	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 2.6.3.4)	0.01 Ω to 0.3 Ω 5 s to 600 s 1 A to 60 A
		Limited current circuit measurements	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 2.4.1)	0.1 mA to 5 mA
		Limitation of touch current to a telecommunication and cable distribution system	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 5.1.8.1)	0.1 mA to 5 mA
		Requirement of separation between telecommunication network from earth	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 6.1.2)	1 V to 2 kV AC/DC 1-900 s
		Steady force Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 4.2.1)	0.1 s to 1 hr 1 N to 900 N Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box	Impact Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 4.2.5)	1 mm to 3000 mm 500 g
		Strain relief Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 3.2.6)	0.1 s to 1 hr 1 N to 60 N Qualitative
		Cord guard Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 3.2.8)	5 ° to 90 ° 15.5 mm to 25 mm
		Hazardous moving Parts Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 4.4.2)	Test finger - Figure 2A Qualitative
		Stability Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 4.1)	5 º to 60 º Qualitative
		Durability of marking Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 1.7.11)	Qualitative (Visual inspection)
		Stress relief Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 4.2.7)	25°C to 150 °C Qualitative
		Drop Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 4.2.6)	1 mm to 3000 mm Qualitative

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III.	**AUDIO/ VIDEO COMPONENTS AND PRODUCTS**			
1.	**Power adaptor, Televisions, Optical Disc Players, Amplifier, Electronic Musical System**	Humidity treatment	EN/IEC 60065: 2005, Clause. 10.2 IS 616: 2010, Clause. 10.2	28 °C to 50 °C 90 % to 95 % RH Qualitative
IV.	**ELECTRO-MEDICAL EQUIPMENTS**			
1.	**Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment**	Document Review	IEC 60601-1-6 (3rd Edition): 2010	Qualitative

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	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Environmental Test conditions of transport and storage	IEC 60601-1-11 (1st Edition): 2010 Sub-Clause. 4.2.1	(-)25 °C to (+)70 °C 90 % to 95 % RH
		Environmental Test operation condition	IEC 60601-1-11 (1st Edition): 2010 Sub-Clause. 4.2.2	(+)5 °C to (+)40 °C 15 % to 95 %
		Harmful Ingress of Liquids Test	IEC 60601-1-11 (1st Edition): 2010 Sub-Clause. 8.3	IP22 1 N to 30 N 150 Tilt Flow rate 3 mm/min 2.5 min IP21 1 to 30 N Enclosures on turn table Flow rate 1 mm/min 10 min
		Free Fall Test	IEC 60601-1-11 (1st Edition): 2010 Sub Clause: 10.1.3d	1 m 2 falls from specified altitude. for mass ≤ 1 kg, 0.25 m for mass > 1 kg and ≤ 10 kg, 0.1 m for mass > 10 kg and ≤ 50 kg, 0.05 m for mass > 50 kg, 0.01 m.

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
2.	**Ambulatory electrocardiographic systems**	Drop Impact Test	IEC 60601-2-47 (2nd Edition): 2012 Sub-Clause. 201.15.3.4.2	10 mm to 2000 mm, 45 °
		Linearity and dynamic range	IEC 60601-2-47 (2nd Edition): 2012 Sub Clause. 201.12.4.4.101	(±)300 mV DC, 0.5 mV to 5mV, 0.4 Hz to 40 Hz
		Input Impedance	IEC 60601-2-47 (2nd Edition): 2012 Sub Clause. 201.12.4.4.102	1 mV to 300 mV DC 0.67 Hz to 40 Hz
		Common Mode Rejection	IEC 60601-2-47 (2nd Edition): 2012 Sub Clause. 201.12.4.4.103	1 mm to 300 mm, 50 Hz to 60 Hz
		Gain Accuracy	IEC 60601-2-47 (2nd Edition): 2012 Sub Clause. 201.12.4.4.104	1 l/min to 350 l/min
		Multichannel Crosstalk	IEC 60601-2-47 (2nd Edition): 2012 Sub Clause. 201.12.4.4.107	0.5 mV to 2.5 mV, 0 .1 mm to 1 mm 1 Hz to 30 Hz
		Frequency Response	IEC 60601-2-47 (2nd Edition): 2012 Sub Clause. 201.12.4.4.108	1 Hz to 40 Hz, 0.1 mV to 1 mV, 1 mm to 300 mm

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Ambulatory electrocardiographic systems	Function In the Presence of Pacemaker Pulses	IEC 60601-2-47 (2nd Edition): 2012 Sub Clause. 201.12.4.4.109	2 mV to 500 mV, 2 ms
		Timing Accuracy	IEC 60601-2-47 (2nd Edition): 2012 Sub Clause. 201.12.4.4.110	Qualitative
		GAIN Settings and Switching	IEC 60601-2-47 (2nd Edition): 2012 Sub Clause. 201.12.4.4.111	1 mm to 30 mm
3.	**Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment**	Power input Test	UL 60601-1 (1st Edition): 2003 Revision 2006 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995 (Clause. 7.1)	1 mA to 20 A max 2000 W
		Voltage limitation Test	UL 60601-1 (1st Edition): 2003 Revision 2006 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995 (Clause. 15)	0.1 V to 800 V peak
		Earthing and potential equalization Test	UL 60601-1 (1st Edition): 2003 Revision 2006 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995 (Clause. 18 f)	0.001 Ω to 0.3 Ω , 1 s to 600 s

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	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Dielectric voltage withstand Test	UL 60601-1 (1st Edition): 2003 Revision 2006 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995 (Clause. 20.4)	10 V to 10 kV AC/DC 10 s to 900 s 1 mA to 100 mA
		Leakage current Test	UL 60601-1 (1st Edition): 2003 Revision 2006 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995 (Clause. 19)	0.1 mV to 1000 mV
		Temperature Test	UL 60601-1 (1st Edition): 2003 Revision 2006 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995 (Clause. 42)	17 °C to 400 °C
		Humidity conditioning Test	UL 60601-1 (1st Edition): 2003 Revision 2006 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995 (Clause. 44.5)	93 %RH to 95 % RH Minus: 20 °C to 100 °C
		Abnormal operations and fault conditions Test	UL 60601-1 (1st Edition): 2003 Revision 2006 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995 (Clause. 52)	17 °C to 400 °C

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	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Marking durability Test	UL 60601-1 (1st Edition): 2003 Revision 2006 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995 (Clause. 6.1)	0.1 s to 60 s
		Enclosure mechanical strength	UL 60601-1 (1st Edition): 2003 Revision 2006 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995 (Clause. 21a,b)	0.2 J to 1.0 J 1 N to 200 N
		Stability and transportability Test	UL 60601-1 (1st Edition): 2003 Revision 2006 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995 (Clause. 24)	1 ° to 15 °
		Ball pressure Test	UL 60601-1 (1st Edition): 2003 Revision 2006 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995 (Clause. 59.2)	17 °C to 150 °C 0.01 mm to 10 mm
		Legibility of Markings	IEC 60601-1 (3rd Edition): 2005 Amd 1: 2012, Clause. 7.1.2 IS 13450 (Part 1): 2008, Clause. 7.1.2	100 lx to 1500 lx

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	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Voltage mismatch	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 7.2.6 IS 13450 (Part 1): 2008, Clause. 7.2.6	1 V to 440 VAC 0.5 V to 24 VDC
		Shorting one MOP	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 8.1b IS 13450 (Part 1): 2008, Clause. 8.1b	Qualitative
		Incorrect Polarity	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 8.2.2 IS 13450 (Part 1): 2008, Clause. 8.2.2	Qualitative
		Patient Lead Connection	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 8.5.2.3 IS 13450 (Part 1): 2008, Clause. 8.5.2.3	0.2 mm to 300 mm 0.06 kV to 10 kV 0.02 - 50N
		Working Voltage Measurement	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 8.5.4 IS 13450 (Part 1): 2008, Clause. 8.5.4	20 V to 1000 Vrms/VDC

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	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Thermal Cycling for spaces filled with insulating material,	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 8.9.5 IS 13450 (Part 1): 2008, Clause. 8.9.5	20 °C to 100 °C
		Temperature and Overload Control Device	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 15.4.2.1 IS 13450 (Part 1): 2008, Clause. 15.4.2.1	10 to 200 Cycle
		Reverse Battery Connection/Overcharging by inspection	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 15.4.3 IS 13450 (Part 1): 2008, Clause. 15.4.3	Qualitative
		Transformer Short Circuit	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 15. 5.1.2 IS 13450 (Part 1): 2008, Clause. 15. 5.1.2	1 °C to 400 °C 0.1 kV to 10 kV AC/DC
		Transformer Overload	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 15.5.1.3 IS 13450 (Part 1): 2008, Clause. 15.5.1.3	1 °C to 400 °C 0.1 kV to 10 kV AC/DC
		Transformer Dielectric Voltage Withstand	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 15.5.2 IS 13450 (Part 1): 2008, Clause. 15.5.2	0.1 kV to 10 kV AC

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	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	ME System Leakage Current	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 16.6.1 IS 13450 (Part 1): 2008, Clause. 16.6.1	0.1 mA to 1.000 mA
		Limitation of Voltage, Current or Power	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 8.4.2 IS 13450 (Part 1): 2008, Clause. 8.4.2	0.1 V to 60 V 0.1 V to 800 VA 1 mA to 20 A max
		Defib-Proof Applied Parts	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 8.5.5 IS 13450 (Part 1): 2008	1 kV to 5 kV AC/DC
		Defib-Proof Applied Parts, Energy Reduction	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 8.5.5.2 IS 13450 (Part 1): 2008, Clause. 8.5.5.2	1 kV to 5 kV AC/DC
		Stability and transportability Test	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 9.4.2 IS 13450 (Part 1): 2008	1 ° to 15 ° 0.36 N to 800N
		Cord Anchorage	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 8.11.3.5 IS 13450 (Part 1): 2008, Clause. 8.11.3.5	0.36 N to 100 N 0.139 mm to 300 mm 0.03 Nm to 1 Nm

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	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Cord Bending	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 8.11.3.6 IS 13450 (Part 1): 2008, Clause. 8.11.3.6	0.13 mm to 300 mm, 0.2 kg to 5 kg 1 ° to 45 °
		Measurement of Gaps(Trapping Zones)	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 9.2.2.2 IS 13450 (Part 1): 2008, Clause. 9.2.2.2	0.13 mm to 300 mm
		Mobile Equipment Force for Propulsion	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 9.4.2.4.2 IS 13450 (Part 1): 2008	0 .36 N to 500 N 0.79 s to 600 s 1 m to 3 m 1 mm to 4 mm
		Mobile Equipment Over a Threshold	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 9.4.2.4.3 IS 13450 (Part 1): 2008, Clause. 9.4.2.4.3	5 s to 600 s 1 mm to 80 mm
		Instability from Unwanted Lateral Movement (Including Sliding),	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 9.4.3.1 IS 13450 (Part 1): 2008, Clause. 9.4.3.1	1 ° to 10 ° 1 mm to 300 mm

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	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Instability Excluding Transport	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 9.4.3.2 IS 13450 (Part 1): 2008, Clause. 9.4.3.2	1 ° to 10 ° 1 mm to 300 mm 1 N to 150 N
		Handle Loading	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 9.4.4 IS 13450 (Part 1): 2008, Clause. 9.4.4	5 s to 600 s 1 N to 500 N 1 kg to 100 kg
		Mechanical Strength- Patient Support System	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 9.8.3.1 IS 13450 (Part 1): 2008, Clause. 9.8.3.1	1 kg to 270 kg
		Mechanical Strength – Foot Rest	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 9.8.3.2 IS 13450 (Part 1): 2008, Clause. 9.8.3.2	1 kg to 135 kg
		Mechanical Strength – Dynamic Forces	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 9.8.3.3 IS 13450 (Part 1): 2008, Clause. 9.8.3.3	1 kg to 270 kg

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	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Suspension system w/Safety Devices Loading	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 9.8.4 IS 13450 (Part 1): 2008, Clause. 9.8.4	1 kg to 100 kg
		Harmful Ingress	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 11.6.5 IS 13450 (Part 1): 2008, Clause. 11.6.5	1 mm to 300 mm, 0.1 s to 1 hr
		Cleaning and Disinfection of ME Equipment’s and ME Systems	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 11.6.6 IS 13450 (Part 1): 2008, Clause. 11.6.6	0.1 kV to 10 kV AC/DC
		Actuating Parts of Control of ME Equipment	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 15.4.6 IS 13450 (Part 1): 2008, Clause. 15.4.6	1 N to 100 N 0.2 Nm to 6 Nm
		Cord – Connected Foot Operated Control Devices	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 15.4.7.1 IS 13450 (Part 1): 2008, Clause. 15.4.7.1	1 N to 1350 N

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Short Circuiting in Lieu of Spacing	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 8.9.2 IS 13450 (Part 1): 2008, 8.9.2	Qualitative (Visual Inspection)
		Overflow	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 11.6.2 IS 13450 (Part 1): 2008, Clause. 11.6.2	1 ° to 10 ° 1 V to 10 V 1 kV to 10 kVAC 5 s to 600 s
		Spillage	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 11.6.3 IS 13450 (Part 1): 2008, Clause. 11.6.3	1 V to 10 V 1 kV to 10 kVAC 1 ml to 200 ml.
		Leakage	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 11.6.4 IS 13450 (Part 1): 2008, Clause. 11.6.4	1 ml to 200 ml
		Acoustic Energy Measurement	IEC 60601-1 (3rd Edition): 2005 Amd. 1: 2012, Clause. 9.6.2.1 IS 13450 (Part 1): 2008, Clause. 9.6.2.1	2 dB to 100 dB
		Power input Test	IEC 60601-1 (3rd Edition): 2005 IS 13450 (Part 1): 1994 IS 13450 (Part 1): 2008 (Clause. 4.11)	1 mA to 20 A max 10 s to 900 s

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Voltage or Charge Limitation	IEC 60601-1 (3rd Edition): 2005 IS13450 (Part 1): 2008 (Clause. 8.4.3)	0.1 V to 800 V peak
		Impedance and Current Carrying Capability	IEC 60601-1 (3rd Edition): 2005 IS13450 (Part 1): 2008 (Clause. 8.6.4a)	0.001 Ω to 0.3 Ω , 1 s to 600 s
		Dielectric voltage withstand Test	IEC 60601-1 (3rd Edition): 2005 IS13450 (Part 1): 2008 (Clause. 8.8)	10 V to 10 kV AC/DC 10 s to 900 s
		Leakage current Test	IEC 60601-1 (3rd Edition): 2005 IS13450 (Part 1): 2008 (Clause. 8.7)	0.1 mA to 1000 mA
		Temperature Test	IEC 60601-1 (3rd Edition): 2005 IS13450 (Part 1): 2008 (Clause. 11)	17 °C to 400 °C
		Marking durability Test	IEC 60601-1 (3rd Edition): 2005 IS13450 (Part 1): 2008 (Clause. 7.1.3)	0.1 s to 60 s
		Humidity conditioning Test	IEC 60601-1 (3rd Edition): 2005 IS13450 (Part 1): 2008 (Clause. 5.7)	93 %RH to 95 % RH 20 °C to 100 °C

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Interruption power supply Test	IEC 60601-1 (3rd Edition): 2005 IS13450 (Part 1): 2008 (Clause. 11.8)	Qualitative (Visual Inspection)
		Abnormal operations and fault conditions Test	IEC 60601-1 (3rd Edition): 2005 IS13450 (Part 1): 2008 (Clause. 13)	17 °C to 400 °C
		Enclosure mechanical strength	IEC 60601-1 (3rd Edition): 2005 IS 13450 (Part 1): 2008 (Clause. 15.3)	10 g to 80 kgf 0.1 s to 1 hr
		Instability Hazards	IEC 60601-1 (3rd Edition): 2005 IS 13450 (Part 1): 2008 (Clause. 9.4.3)	0.1 ° to 15 °
		Ball pressure Test	IEC 60601-1 (3rd Edition): 2005 IS 13450 (Part 1): 2008 (Clause. 8.8.4.1)	0.1 °C to 150 °C 0.01 mm to 10 mm
		Defibrillation-Proof Applied Parts	IS 13450 (Part 1): 1994, Clause. 17 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 17 UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 17	1 kV to 5 kV AC/DC

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Handle Loading Test	IS 13450 (Part 1): 1994, Clause. 21 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 21 UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 21	5 s to 600 s 1 N to 500 N 1 kg to 100 kg
		Mechanical Strength - Patient Support System	IS13450 (Part 1): 1994, Clause. 21.3 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 21.3 UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 21.3	1 kg to 270 kg (min)
		Mechanical Strength - Foot Rests/Chairs	IS 13450 (Part 1): 1994, Clause. 21.3 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 21.3 UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 21.3	1 kg to 135 kg (min) 5 s to 600 s

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Drop Impact Test	IS 13450 (Part 1): 1994, Clause. 21.5 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 21.5 UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 21.5	1 m
		Rough Handling – Drop Test	IS13450 (Part 1): 1994, Clause. 21.6 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 21.6 UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 21.6	1 mm to 50 mm
		Rough Handling – Roll Off Step Test	IS 13450 (Part 1): 1994, Clause. 21.6 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 21.6 UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 21.6	5 s to 600 s 1 m to 3 m 1 mm to 4 mm

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Suspension System With Safety Devices Loading Test	IS 13450 (Part 1): 1994, Clause. 28.3 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 28.3 UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 28.3	1 kg to 100 kg
		Suspension Systems without Safety Device Loading Test	IS 13450 (Part 1): 1994, Clause. 28.4 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 28.4 UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 28.4	1 kg to 100 kg
		Harmful Ingress of Liquids Test	IS13450 (Part 1): 1994, Clause. 44.6 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 44.6 UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 44.6	(0.1 kg to 7 kg)/cm^2

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Overflow, Spillage, Leakage, Cleaning, Disinfection, Harmful Ingress Of Liquids,	IS13450 (Part 1): 1994, Clause. 44 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 44 UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 44	(0.1 kg to 7 kg)/ cm^2
		Actuating Parts of Controls	UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 56.10 IS 13450 (Part 1): 1994, Clause. 56.10 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 56.10	1 N to 100 N 1 Nm to 6 Nm
		Cord Connected Foot Switch Test	UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 56.11 IS13450 (Part 1): 1994, Clause. 56.11 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 56.11	1 kg to 135 kg (min) 5 s to 600 s

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Cord Anchorages,	UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 57.4 IS 13450 (Part 1): 1994, Clause. 57.4 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 57.4	1 N to 100 N 1 mm to 300 mm 1 Nm to 0.35 Nm
		Cord Bending	UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 57.4 IS 13450 (Part 1): 1994, Clause. 57.4 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 57.4	1 mm to 300 mm, 1 kg to 5 kg 1 ° to 45 °
		Transformer Overload and Short-Circuit Tests,	UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 57.9.1 IS 13450 (Part 1) Clause. 57.9.1 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 57.9.1	1 °C ~ 400 °C 1 kV to 10 kV AC/DC

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Applied Electromagnetic radiation equipment; Applied Current/Energy Equipment; Ultrasound Equipment; Cardio, Vascular and Pulmonary Equipment; General Medical Equipment; Patient-monitoring Equipment	Transformer Dielectric Voltage Withstand	UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 57.9.4 IS 13450 (Part 1): 1994, Clause. 57.9.4 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 57.9.4	1 kV to 10 kV AC/DC
		Interruption of Power Supply	UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 56.7 IS 13450 (Part 1): 1994, Clause. 49 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 49	1 s to 30 s
		Reversed Battery Connection by inspection	UL 60601-1 (1st Edition): 2003 Revision 2006, Clause. 56.7 IS13450 (Part 1): 1994, Clause. 56.7 IEC 60601-1 (2nd Edition): 1988 AM 1: 1991, AM 2: 1995, Clause. 56.7	1 V to 440 VAC 0.5 V to 24 VDC

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
4.	**Medical electrical beds**	Instability excluding transport	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010 Clause. 201.9.4.2.2	3 N to 3000 N 1 mm to 50 mm
		Instability from horizontal and vertical forces	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010 Clause. 201.9.4.2.3	3 N to 1100 N 1 mm to 50 mm
		Force for propulsion	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010 Clause. 201.9.4.2.4.2	3 N to 500 N
		Movement over a threshold	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010 Clause. 201.9.4.2.4.3	1 mm to 100 mm 0.1 m/s to 0.8 m/s
		Instability in transport	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010 Clause. 201.9.4.3.1	1 mm to 100 mm 1 ° to 10 °
		Audible acoustic energy	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010 Clause. 201.9.6.2.1	2 dB to 100 dB
		Static forces due to loading from persons	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010 Clause. 201.9.8.3.2	3 N to 4000 N
		Ingress of water	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010 Clause. 201.11.6.5.101	1 mm to 300 mm, 0.1 s to 1 hr

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Medical electrical beds	Rough handling Test	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010 Clause. 201.15.3.5	0.4 m/s
		Limitation of movement	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010 Clause. 201.15.4.6.2	1 ° to 90 °
		Mechanical strength	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010 Clause201.15.4.7.1	3 N to 1350 N 5 s to 1 min
		Head/foot board assembly	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010 Clause. 201.15.4.101	5 s to 1 min
		The effect of impacts to the mattress support platform	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010	20 kg
		The effect of loading on the edge of the – Mattress Support Platform	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010	3 N to 750 N 1 mm to 300 mm
		Patient Entrapment in Non-Moving Parts	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010 Clause. 201.9.1.101	1 mm to 500 mm

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Medical electrical beds	Trapping Zone- Gaps	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010 Clause. 201.9.2.2.2 & 201.9.2.2.3	1 mm to 300 mm
		Continuous Activation:	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010 Clause. 201.9.2.2.5	Qualitative
		Interruption of the power supply/Supply Mains to me Equipment	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010 Clause. 201.11.8	1 s to 30s
		Range of Adjustment of Moveable Sections of the Mattress Support Platform	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010	1 ° to 180 °
		Dimensions for Handles and Pedals	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010	1 mm to 100 mm
		Operating Forces for Handles And Pedals	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010	3 N to 300 N
		Combination of Medical Bed And Mobile Hoists ,	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010	1 mm to 300 mm
		Combination Of Medical Bed And Mattress	IEC 60601-2-52 (1st Edition): 2009 Corr. 1: 2010	1 mm to 20 mm

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
5.	**Pulse oximeter Equipment**	Additional requirements for ingress of water or (Particulate matter into	DS/EN ISO 80601-2-61 (1st Edition): 2011	1 mm to 300 mm, 0.1 s to 1 hr
		ME equipment or ME system)	Clause. 201.11.6.5.101	
		Settings and data storage following short interruptions or automatic switchover	DS/EN ISO 80601-2-61 (1st Edition): 2011 Clause. 201.11.8.101.2	5 s to 30 s
		Detection of pulse oximeter probe faults and probe cable extender faults	DS/EN ISO 80601-2-61 (1st Edition): 2011 Clause. 201.13.101	Qualitative
6.	**Electrocardiographic monitoring Equipment**	Defibrillation protection-common mode Test	IEC 60601-2-27 (3rd Edition): 2011 Clause. 201.8.5.5.1	1 kV to 5 kV AC/DC
		Differential mode Test	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.8.5.5.1	1 kV to 5 kV AC/DC
		Ingress of water or (Particulate matter into ME Equipment and ME System)	IEC 60601-2-27 (3rd Edition): 2011 Clause. 201.11.6.5	1 mm to 300 mm, 0.1 s to 1 hr
		Interruption): of the power supply / supply mains to ME Equipment	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.11.8	1 s to 30 s

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electrocardiographic monitoring Equipment	Accuracy of signal reproduction	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.12.1.101.1	1 mm to 24 mm, 0.1 mV to 2 mV, 1 Hz to 20 Hz
		Input dynamic range and differential offset voltage	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.12.1.101.2	(±)300 mV DC
		Input impedance	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.12.1.101.3	1 mV to 300 mV DC 0.67 Hz to 40 Hz
		Input Noise	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.12.1.101.4	1 min to 30 min, 1 mm to 10 mm
		Multichannel crosstalk	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.12.1.101.5	0.5 mV to 2.5 mV, 0 .1 mm to 1 mm 1 Hz to 30 Hz
		GAIN control and stability	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.12.1.101.6	1 mm to 30 mm
		Sweep speed	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.12.1.101.7	1 mm to 30 mm

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electrocardiographic monitoring Equipment	Frequency and impulse response	IEC 60601-2-27 (3rd Edition): 2011, Clause. 2 01.12.1.101.8	0.67 Hz to 40 Hz, 0.1 mV to 1 mV, 1 mm to 300 mm
		Gain Indicator	IEC 60601-2-27 (3rd Edition): 2011, Clause2 01.12.1.101.9	1 mm to 300 mm
		Common mode rejection	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.12.1.101.10	1 mm to 300 mm, 50 Hz to 60 Hz
		Baseline reset	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.12.1.101.11	0.1 V to 1 V, 10 Hz
		Pacemaker pulse display capability	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.12.1.101.12	2 mV to 700 mV
		Rejection of pacemaker pulses	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.12.1.101.13	0.1 ms to 2 ms 2 mV to 700 mV
		Synchronizing pulse for cardio version	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.12.1.101.14	1 ms to 35 ms
		Heart rate range, accuracy, and QRS detection range	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.12.1.101.15	1 l/min to 350 l/min
		Channel height and aspect ratio	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.12.1.101.16	0.1 Hz to 1 Hz, 0.1 mV to 1 mV, 1 mm to 300 mm

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electrocardiographic monitoring Equipment	Tall T-wave rejection capability	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.12.1.101.17	1 ms to 100 ms, 0.1 mV to 1 mV, 1 m to 300 mm
		Electrodes and Patient Cables	IEC 60601-2-27 (3rd Edition): 2011, Clause. 201.15.3.4.101	0.6 m to 1 m
		Time to alarm for heart rate alarm conditions	IEC 60601-2-27 (3rd Edition): 2011, Clause. 208.6.6.2.103	1 s to 20 s
		Technical alarm condition indicating inoperable ME equipment	IEC 60601-2-27 (3rd Edition): 2011, Clause. 208.6.6.2.104	(-)5 V to (+)5 V 1 s to 20 s
7.	**Electrically operated Hospital beds**	Mechanical Strength – Bed System: Sub-Clause	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 21.3.101	3 N to 3000 N
		Mechanical Strength – Lifting Pole: Sub-Clause	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 21.3.102	0.1 min to 2 min 3 N to 1000 N
		Mechanical Strength – Wall Impact	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 21.6	1 m/s to 60 m/s 1 kg to 500 kg

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electrically operated Hospital beds	Mechanical Strength - End Panel Test Sub Clause	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 21.6.101	3 N to 450 N 1 mm^2 to 700 mm^2 1 s to 35 s
		Mechanical Strength - Threshold Test Sub Clause	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 21.4, 21.6.102	1 mm to 100 mm 0.4 m/s
		Moving (Parts - Exposed Squeezing (Pinch) and Shearing Point Sub Clause.	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 22.2.101	1 mm to 200 mm
		Moving (Parts Bed Function Deactivation) Control Sub Clause.	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 22.2.102	Qualitative (Visual Inspection)
		Moving (Parts - Electric Powered Movement - Momentary Switches Sub Clause)	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 22.4.101	Qualitative (Visual Inspection)
		Surfaces Corners (Edges - Patient Entrapment)	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 23.101, Ref. 28.4.102	1 mm to 500 mm
		Stability In Normal Use - Lateral Stability, Longitudinal Stability Sub Clause.	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 24.3 AA	3 N to 3000 N

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electrically operated Hospital beds	Stability in Normal use Stability With Lifting Pole	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 24.3 bb	3 N to 1100 N
		Stability In Normal use Castor Locking	IEC 60601-2-38: 1996 + Amd. 1: 1999 , Clause. 24.4	1 ° to 10 ° 2 mm to 100 mm
		Vibration and Noise - Noise of Bed < 65db(A)	IEC 60601-2-38: 1996 + Amd. 1: 1999 , Clause26.101	2 dB to 100 dB
		Suspended Bed 2X SWL Masses	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 28.4.2 & 28.4.3	3 N to 4000 N 1 Min to 60 Min
		Suspended Masses Accessories 2X SWL	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 28.4.101	3 N to 4000 N 1 Min to 60 Min
		Suspended Masses Side Rail Strength	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 28.4.102/103	1 s to 30 s 1 to 10 Times
		Abnormal Operation & Fault Conditions Back Rest, Trendelenburg	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 52.5.102, 54.101	Qualitative (Visual Inspection)

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electrically operated Hospital beds	Components & General Assembly Head Panel Removal (No Tools) –	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 56.1.101	Qualitative (Visual Inspection)
		Components & General Assembly - Designated 'C' Angle > 90°	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 56.10(C)AA	1 ° to 180 °
		Components & General Assembly - Power Supply Cord Suspension	IEC 60601-2-38: 1996 + Amd. 1: 1999 Clause. 56.101 AA	1 m to 5 m
		Moving (Parts -Bed Function Deactivation Control)	IEC 60601-2-38: 1996 + Amd. 1: 1999, Clause. 22.2.102	Qualitative (Visual inspection)
8.	**Multifunction patient monitor Equipment**	Part Leakage Current	IEC 60601-2-49 (2nd Edition): 2011-02 Clause. 201.8.7.1.101	0.1 μA to 1000 μA
		Ingress of water or (Particulate matter into Medical Equipment and Medical Systems	IEC 60601-2-49 (2nd Edition): 2011-02 Clause. 201.11.6.5	Up to 7kg/cm^{2}
		Interruption): of the power supply / Supply Mains to Medical Equipment	IEC 60601-2-49 (2nd Edition): 2011-02 Clause. 201.11.8	5 s to 30 s

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
9.	**Electro-cardiograph equipment**	Defibrillation protection	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.8.5.5.1	1 kV to 5 kV AC/DC
		Requirements for amplitude measurements	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.12.1.101.2	0.5 mV to 10 mV
		Requirements for absolute interval and wave duration measurements	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.12.1.101.3.1	1 ms to 30 ms
		Requirements for interval measurements on biological ECG	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.12.1.101.3.2	1 ms to 30 ms
		Indication of inoperable Electrocardiograph	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.12.4.101	(-)5 V to (+)5 VDC 1 Hz to 10 Hz 1 mV to 5 mV
		Goldberger and Wilson Leads	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.12.4.102.3.2	0.5 mV to 10 mV
		Recovery time	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.12.4.102.4	1 mV to 300 mVDC, 1 min to 3 min
		Input impedance	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.12.4.103	1 mV to 100 mV (sine wave) 1 mV to 300 mV DC 0.67 Hz to 40 Hz

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electro-cardiograph equipment	Common Mode Rejection	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.12.4.105.1	1 V to 10 Vrms, 1 Hz to 60 Hz (±)300 mV DC
		Overload tolerance	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.12.4.105.2	0.02 V to 2V, 1 min to 5 min
		Noise Level	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.12.4.106.1	1 s to 10 s 0.01 mm to 1 mm
		Channel crosstalk	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.12.4.106.2	1 mV to 2.5 mV, 0.01 mm to 1 mm 1 Hz to 30 Hz
		Low frequency (impulse) response	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.12.4.107.1.1.2	0.03 mV to 0.3 mV
		Test with calibration ECGS	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.12.4.107.1.2	2.0 - 5mV
		Linearity and dynamic range	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.12.4.107.2	± 300mV DC, 0.5 mV to 5 mV, 0.4 -40Hz

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electro-cardiograph equipment	Recording speed	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.12.4.108.3.2	0.015- 100 mm
		Use with cardiac pacemakers	IEC 60601-2-25 (2nd Edition): 2011 Clause. 201.12.4.109	2 mV to 500 mV, 0.1 to 2 ms
10.	**X-Ray Equipment**	Measurement of first HALF-VALUE LAYER	IEC 60601-1-3 (2nd Edition): 2008 Amd.1: 2013 Clause. 7.1A IS 13450 (Part 1/ Sec 3): 2014 Clause. 7.1A	0.1 mmAl to 10 mmAl, 0.01 mGy to 10 Gy
		Measurement of the thickness of aluminium resulting in the same first Half-Value Layer in accordance with Table 3	IEC 60601-1-3 (2nd Edition): 2008 Amd. 1: 2013 Clause. 7.5 IS 13450 (Part 1/ Sec 3): 2014 Clause. 7.5	0.1 mmAl to 10 mmAl
		Measurement of first Half-Value Layer Under Narrow Beam Conditions With X-Ray Equipment Operating At X-Ray Tube Voltages In Table 3 At Corr. Esponding Loading Factors In Normal Use	IEC 60601-1-3 (2nd Edition): 2008 Amd. 1: 2013 Clause. 7.6 IS 13450 (Part 1/ Sec 3): 2014 Clause. 7.6	0.1 mmAl - 10 mmAl

Laboratory	**UL India Lab, UL India Pvt. Ltd., Laboratory Building, Kalyani Platina Campus, Sy. No. 129/4, EPIP Zone, Phase-II, Whitefield, Bangalore, Karnataka** **Location 1: Laboratory Building, Kalyani Platina Campus, Sy. No. 129/4, EPIP Zone, Phase-II, Whitefield, Bangalore, Karnataka** **Location 2: OAK Building, Kalyani Platina Campus, Sy. No 129/4, EPIP Zone, Phase-II , Whitefield, Bangalore, Karnataka**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Discipline	**Electronics Testing**	**Issue Date**	**05.08.2016**
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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	X-Ray Equipment	Measurement of Focal Spot To Image Receptor Distance In Selected Configurations And Settings Of Equipment	IEC 60601-1-3 (2nd Edition): 2008 Amd. 1: 2013 Clause. 8.5.2 IS 13450 (Part 1/ Sec 3): 2014 Clause. 8.5.2	1 m to 3 m
		Measurement Of Leakage Radiation In The Loading State	IEC 60601-1-3 (2nd Edition): 2008 Amd. 1: 2013 Clause. 12.4 IS 13450 (Part 1/ Sec 3): 2014 Clause. 12.4	0.001 µGy/h to 1000 µGy/h
		Measurement Of Leakage Radiation When Not In The Loading State	IEC 60601-1-3 (2nd Edition): 2008 Amd. 1: 2013 Clause. 12.5 IS 13450 (Part 1/ Sec 3): 2014 Clause. 12.5	0.001 µGy/h to 100µGy/h
		Stray Radiation Of X-Ray Equipment	IEC 60601-1-3 (2nd Edition): 2008 Amd. 1: 2013 Clause. 13.6A IS 13450 (Part 1/ Sec 3): 2014 Clause. 13.6A	0.01 mGy to 1000 mGy
		Limits Of Air Kerma In One Hr	IEC 60601-1-3 (2nd Edition): 2008; Amd. 1: 2013 Clause. 13.6B IS 13450 (Part 1/ Sec 3): 2014 Clause. 13.6B	0.01 mGy to 1000 mGy

Mandeep Kumar **Convenor**	**N. Venkateswaran** **Program Manager**

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
11.	**Computed tomography Equipment**	Limitation of voltage, current or energy	IEC 60601-2-44 (3rd Edition): 2009 Corr. 1: 2009 Amd. 1: 2012 Clause. 201.8.4	0.1 V to 800 V peak
		Leakage Currents And Patient Auxiliary Currents	IEC 60601-2-44 (3rd Edition): 2009 Corr. 1: 2009 Amd. 1: 2012 Clause. 201.8.7	0.1 mA to 1000 mA
		Linear Movements Of The Patient Support And Gantry	IEC 60601-2-44 (3rd Edition): 2009 Corr. 1: 2009 Amd. 1: 2012 Clause. 201.9.2.4.101.3	0.13 mm to 300 mm
		Reproducibility Of The Radiation Output	IEC 60601-2-44 (3rd Edition): 2009 Corr. 1: 2009 Amd. 1: 2012 Clause. 203.6.3.2	0.01 mGy to 1000 mGy
		Test For Half-Value Layer	IEC 60601-2-44 (3rd Edition): 2009 Corr. 1: 2009 Amd. 1: 2012 Clause. 203.7.6	0.1 mmAl to 10 mmAl
		Protection Against Residual Radiation	IEC 60601-2-44 (3rd Edition): 2009 Corr. 1: 2009 Amd. 1: 2012 Clause. 203.11	0.01 mGy to 1000 mGy

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Computed tomography Equipment	Protection Against Stray Radiation	IEC 60601-2-44 (3rd Edition): 2009 Corr. 1: 2009 Amd. 1: 2012 Clause. 203.13	0.01 mGy to 1000 mGy
		CTDI100	IEC 60601-2-44 (3rd Edition): 2009 Corr. 1: 2009 Amd. 1: 2012 Clause. 203.109.1	0.01 mGy to 1000 mGy
		CTDI free air	IEC 60601-2-44 (3rd Edition): 2009 Corr. 1: 2009 Amd. 1: 2012 Clause. 203.109.2	0.01 mGy to 1000 mGy
12.	**X-ray equipment for interventional procedures**	Ingress of water or (Particulate matter into ME Equipment and ME Systems (Footswitches)	IEC 60601-2-43 (2nd Edition): 2010 Clause. 201.11.6.5.101	1 mm to 300 mm, 0.1 s to 1 hr
		Dosimetric indications	IEC 60601-2-43 (2nd Edition): 2010 Clause. 203.6.4.5	0.01 mGy to 1000 mGy
		Range Of Air Kerma Rates In Radioscopy	IEC 60601-2-43 (2nd Edition): 2010 Clause. 203.6.101	0.01 mGy/h to 1000 mGy/h
		Correspondence Between X-Ray Field And Effective Image Reception Area	IEC 60601-2-43 (2nd Edition): 2010 Clause. 203.8.5.3 IEC 60601-2-54 (3rd Edition): 2009 Corr. 1: 2010 Clause. 203.8.5.3	1 m to 3 m

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	X-ray equipment for interventional procedures	Designated Significant Zones Of Occupancy	IEC 60601-2-43 (2nd Edition): 2010 Clause. 203.13.4	0.001 µGy/h to 1000 µGy/h, 0.598 m to 3 m
13.	**X-ray Equipment for Radiography and Radioscopy**	Leakage Currents And Patient Auxiliary Currents	IEC 60601-2-54 (1st Edition): 2009 Corr. 1: 2010 Clause. 201.8.7 IS 13450 (Part 2/Sec 54): 2016 Clause. 201.8.7	0.1 mA to 1000 mA
		Reproducibility Of Radiation Output In Radiography	IEC 60601-2-54 (1st Edition): 2009 Corr. 1: 2010 Clause. 203.6.3.2.101 IS 13450 (Part 2/Sec 54): 2016 Clause. 203.6.3.2.101	0.01 mGy to 1000 mGy
		Linearity And Constancy In Radiography	IEC 60601-2-54, (1st Edition): 2009 Corr. 1: 2010 Clause. 203.6.3.2.102 IS 13450 (Part 2/Sec 54): 2016 Clause. 203.6.3.2.102	0.01 mGy to 1000 mGy
		Accuracy Of X-Ray Tube Voltage	IEC 60601-2-54, (1st Edition): 2009 Corr. 1: 2010 Clause. 203.6.4.3.104.30 IS 13450 (Part 2/Sec 54): 2016 Clause. 203.6.4.3.104.30	35 kVp to 120 kVp

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	X-ray Equipment for Radiography and Radioscopy	Accuracy Of X-Ray Tube Current	IEC 60601-2-54(1st Edition): 2009 Corr. 1: 2010 Clause. 203.6.4.3.104.4 IS 13450 (Part 2/Sec 54): 2016 Clause. 203.6.4.3.104.4	0.1 mA to 500 mA
		Accuracy Of Loading Time	IEC 60601-2-54(1st Edition): 2009 Corr. 1: 2010 Clause. 203.6.4.3.104.5 IS 13450 (Part 2/Sec 54): 2016 Clause. 203.6.4.3.104.5	1 ms to 30 ms
		Accuracy Of Current Time Product	IEC 60601-2-54, (1st Edition): 2009 Corr. 1: 2010 Clause. 203.6.4.3.104.6 IS 13450 (Part 2/Sec 54): 2016 Clause. 203.6.4.3.104.6	0.1 mA to 500 mA, 1 ms to 30 ms
		Speed Of Movement(S)	IEC 60601-2-54, (1st Edition): 2009 Corr. 1: 2010 Clause. 201.9.2.2.6 IS 13450 (Part 2/Sec 54): 2016 Clause. 201.9.2.2.6	1 mm to 300 mm
		Attenuation Of The X-Ray Beam Between The Patient And The X-Ray Image Receptor	IEC 60601-2-54, (1st Edition): 2009 Corr. 1: 2010 Clause. 203.10.1 IS 13450 (Part 2/Sec 54): 2016 Clause. 203.10.1	0.1 mmAl to 10 mmAl

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	X-ray Equipment for Radiography and Radioscopy	Determining the attenuation of Residual Radiation	IEC 60601-2-54, (1st Edition): 2009 Corr. 1: 2010 Clause. 203.11.102 IS 13450 (Part 2/Sec 54): 2016 Clause. 203.11.102	0.001 µGy/h to 1000 µGy/h
		Stray Radiation In Significant Zones Of Occupancy	IEC 60601-2-54, (1st Edition): 2009 Corr. 1: 2010 Clause. 203.13.4.101 IS 13450 (Part 2/Sec 54): 2016 Clause. 203.13.4.101	0.01 mGy to 1000 mGy
14.	**Dental intra-oral X-ray Equipment**	Leakage Currents And Patient Auxiliary Currents	IEC 60601-2-65, (1st Edition): 2012 Clause. 201.8.7 IS 13450 (Part 2/Sec 65): 2016 Clause. 201.8.7	0.1 mA to 1000 mA
		Protection Against Excessive Temperatures Of X-Ray Monoblock Assemblies	IEC 60601-2-65, (1st Edition): 2012 Clause. 201.11.101 IS 13450 (Part 2/Sec 65): 2016 Clause. 201.11.101	20 °C to 400 °C
		Adjustment Of Radiation Dose And Radiation Quality	IEC 60601-2-65, (1st Edition): 2012 Clause. 203.6.3.1 IS 13450 (Part 2/Sec 65): 2016 Clause. 203.6.3.1	0.01 mGy to 1000 mGy

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Dental intra-oral X-ray Equipment	Linearity Of Air Kerma	IEC 60601-2-65, (1st Edition): 2012 Clause. 203.6.3.1.101 IS 13450 (Part 2/Sec 65): 2016 Clause. 203.6.3.1.101	0.01 mGy to 1000 mGy
		Coefficient Of Variation Of The Air Kerma	IEC 60601-2-65, (1st Edition): 2012 Clause. 203.6.3.2.101 IS 13450 (Part 2/Sec 65): 2016 Clause. 203.6.3.2.101	0.01 mGy to 1000 mGy
		Accuracy Of X-Ray Tube Voltage	IEC 60601-2-65, (1st Edition): 2012 Clause. 203.6.4.3.102.2 IS 13450 (Part 2/Sec 65): 2016 Clause. 203.6.4.3.102.2	0.01 kVp to 150 kVp
		Accuracy Of X-Ray Tube Current	IEC 60601-2-65, (1st Edition): 2012 Clause. 203.6.4.3.102.3 IS 13450 (Part 2/Sec 65): 2016 Clause. 203.6.4.3.102.3	0.1 mA to 500 mA
		Accuracy Of Irradiation Time	IEC 60601-2-65, (1st Edition): 2012 Clause. 203.6.4.3.102.4 IS 13450 (Part 2/Sec 65): 2016 Clause. 203.6.4.3.102.4	1 ms to 30 ms

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Dental intra-oral X-ray Equipment	Dosimetric indications	IEC 60601-2-65 (1st Edition): 2012 Clause. 203.6.4.5 IS 13450 (Part 2/Sec 65): 2016 Clause. 203.6.4.5	0.01 mGy to 1000 mGy
		Half-Value Layers And Total Filtration In X-Ray Equipment	IEC 60601-2-65(1st Edition): 2012 Clause. 203.7.1 IS 13450 (Part 2/Sec 65): 2016 Clause. 203.7.1	0.1 mmAl to 10 mmAl, 0.01 mGy to 10 Gy
		Positioning Of The Patient And Restriction Of The Irradiated Area	IEC 60601-2-65, (1st Edition): 2012 Clause. 203.8.5.4 IS 13450 (Part 2/Sec 65): 2016 Clause. 203.8.5.4	1 mm to 300 mm
		Protection Against Residual Radiation	IEC 60601-2-65, (1st Edition): 2012 Clause. 203.11 IS 13450 (Part 2/Sec 65): 2016 Clause. 203.11	0.001 µGy/h to 1000 µGy/h
		Leakage Radiation In The Loading State	IEC 60601-2-65, (1st Edition): 2012 Clause. 203.12.4 IS 13450 (Part 2/Sec 65): 2016 Clause. 203.12.4	0.001 µGy/h to 1000 µGy/h

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
15.	**X-ray tube assemblies for medical diagnosis**	Maximum temperature during NORMAL USE	IEC 60601-2-28 (2nd Edition): 2010 Clause. 201.11.1.1	20 °C to 400 °C
16.	**Radiotherapy Simulator Equipment**	Allowable values	IEC 60601-2-29 (3rd Edition): 2008 Clause. 201.8.7.3	0.1 mA to 1000 mA
		Angular movements	IEC 60601-2-29 (3rd Edition): 2008 Clause. 201.9.2.2.6.102	1° to 90 °
		Linear movements	IEC 60601-2-29 (3rd Edition): 2008 Clause. 201.9.2.2.6.103	1 ° to 90 °
		Accuracy of positioning	IEC 60601-2-29 (3rd Edition): 2008 Clause. 201.9.2.3.102	1 mm to 300 mm, 0.1 s to 1 hr
17.	**Photovoltaic**			
a.	**Thin-film terrestrial photovoltaic (PV) modules - Design qualification and type approval**	Visual inspection	IEC 61646 (2nd Edition): 2008-05, Clause. 10.1	1 lux to 2000 lux ,
		Maximum power determination	IEC 61646 (2nd Edition): 2008-05. Clause. 10.2 IEC 60904-9, IEC 60904-6, IEC 60904-1, IEC 60891	250 V, 24 A

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Thin-film terrestrial photovoltaic (PV) modules - Design qualification and type approval	Insulation Test	IEC 61646 (2nd Edition): 2008-05. Clause. 10.3	1 Vdc to 1 kVdc, 1 kΩ to 5000 MΩ
		Wet leakage current Test	IEC 61646 (2nd Edition): 2008-05. Clause. 10.15	1 Vdc to 1 kVdc, 1 kΩ to 5000 MΩ
		Measurement of temperature coefficients	IEC 61646 (2nd Edition): 2008-05. Clause. 10.4 IEC 60904-10, IEC 60904-9, IEC 60904-1.	Low – 10 °C High – 100 °C 250 V, 24 A
		Measurement of nominal operating cell temperature (NOCT)	IEC 61646 (2nd Edition): 2008-05. Clause. 10.5	Tilt angle: 45 ° 250 V, 24 A Outdoor Testing
		Performance at STC and NOCT	IEC 61646 (2ndEdition): 2008-05. Clause. 10.6 IEC 60904-9, IEC 60904-1.	Low – 10 °C High – 100 °C Voltage:- 250 V Current:- 25 A
		Performance at low irradiance	IEC 61646 (2nd Edition): 2008-05. Clause. 10.7 IEC 60904-9, IEC 60904-1	25 °C 250 V, 24 A
		Outdoor exposure Test	IEC 61646 (2nd Edition): 2008-05. Clause. 10.8 IEC 60721-2-1.	60 kWh/m^2 Tilt angle 45 ° 600 V ac

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Thin-film terrestrial photovoltaic (PV) modules - Design qualification and type approval	Hot-spot endurance Test	IEC 61646 (2nd Edition): 2008-05. Clause. 10.9 IEC 60904-9, IEC 60904-1.	25 °C, 250 V, 24 A
		UV preconditioning Test	IEC 61646 (2nd Edition): 2008-05. Clause. 10.10	60 °C ± 5 °C UVA – 15 kWh/m^2 UVB – 3 % to 10 % of UVA
		Thermal cycling Test	IEC 61646 (2nd Edition): 2008-05. Clause. 10.11	(-)65 °C to 150 °C RH 35 % to 95 %
		Humidity-freeze Test	IEC 61646 (2nd Edition): 2008-05. Clause. 10.12	(-)65 °C to 150 °C, RH = 35 % to 95 %
		Damp heat Test	IEC 61646 (2nd Edition): 2008-05. Clause. 10.13	20 °C to 85 °C, RH= 85 %
		Robustness of terminations Test	IEC 61646 (2nd Edition): 2008-05. Clause. 10.14	200 Nm
		Mechanical load Test	IEC 61646 (2nd Edition): 2008-05. Clause. 10.16	2400 Pa 5400 Pa
		Hail Test	IEC 61646 (2nd Edition): 2008-05. Clause. 10.17	Ice ball = 25 mm diameter, Mass= 7.53 g, Velocity = 23 m/s.

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Thin-film terrestrial photovoltaic (PV) modules - Design qualification and type approval	Bypass diode thermal Test	IEC 61646 (2nd Edition): 2008-05. Clause. 10.18	10 °C to 75 °C , Current – 30 A
		Light Soaking	IEC 61646 (2nd Edition): 2008-05. Clause. 10.19	NA
b.	**Crystalline silicon terrestrial photovoltaic (PV) modules - Design qualification and type approval**	Preconditioning	IEC 61215 (2nd Edition): 2005-04	5.5 kWhrs/m^2
		Visual inspection	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.1) IEC 61730 (1st Edition): 2004-10 (Clause. 10.1, MST 01) IS 14286 (1st Edition): 1995-11 (Clause. 10.1)	1 lux to 2000 lux
		Maximum power determination / Voltage , current and power measurements Test	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.2) UL 1703 (3rd Edition): 2002-15 (Clause. 20) IS 14286, (1st Edition): 1995-11 (Clause. 10.2)	250 V, 24 A

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Crystalline silicon terrestrial photovoltaic (PV) modules - Design qualification and type approval	Insulation Test	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.3) IS 14286 (1st Edition): 1995-11 (Clause. 10.3)	1 V to 10 kV ac/dc 1 V to 1000 Vdc, 1 kΩ to 5000 MΩ
		Wet leakage current Test	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.15) IEC 61730 (1st Edition): 2004-10 (Clause. 10.15, MST 17) IS 14286, (1st Edition): 1995-11, Clause. 10.15	1 Vdc to 1000 Vdc 1 kΩ to 5000 MΩ
		Measurement of temperature coefficients	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.4) IS 14286, (1st Edition): 1995-11 (Clause. 10.4)	25 °C to 100 °C 250 V, 24 A
		Measurement of nominal operating cell temperature (NOCT)	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.5) IS 14286, (1st Edition): 1995-11, Clause. 10.5	Tilt angle: 45 ° 250 V, 24 A 25 °C to 100 °C
		Performance at STC and NOCT	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.6) IS 14286, (1st Edition): 1995-11 (Clause. 10.6)	30 °C to 100 °C 250 V, 24 A

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Crystalline silicon terrestrial photovoltaic (PV) modules - Design qualification and type approval	Performance at low irradiance	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.7) IS 14286 (1st Edition): 1995-11 (Clause. 10.7)	250 V, 24 A
		Outdoor exposure Test	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.8) IS 14286, (1st Edition): 1995-11 (Clause. 10.8)	Tilt angle: 45 ° 60 kWh/m^2 600 V ac 10 A ac
		Hot-spot endurance Test	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.9) IS 14286 (1st Edition): 1995-11 (Clause. 10.9) IEC 61730-2 (Edition 1.1): 2012-11, MST 22	250 V, 24 A
		Thermal cycling Test	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.11) IEC 61730 (1st Edition): 2004-10 MST 51 IS 14286 (1st Edition): 1995-11 (Clause. 10.11) UL 1703 (3rd Edition): 2002-03 (Clause. 35)	(-)65 °C to 150 °C

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Crystalline silicon terrestrial photovoltaic (PV) modules - Design qualification and type approval	Humidity-freeze Test	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.12) IEC 61730 (1st Edition): 2004-10 MST 52 UL 1703 (3rd Edition): 2002-03 (Clause. 36) IS 14286 (1st Edition): 1995-11 (Clause. 10.12)	(-)65 °C to 150 °C, 35 % Rh to 95 %Rh
		Damp heat Test	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.13) IEC 61730 (1st Edition): 2004-10 MST 53 IS 14286 (1st Edition): 1995-11 (Clause. 10.13)	20 °C to 150 °C, 35 %Rh to 85 % Rh
		UV preconditioning Test	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.10) IEC 61730 (1st Edition): 2004-10 MST 54 IS 14286 (1st Edition): 1995-11 (Clause. 10.10)	60 °C (±)5 °C., UVA – 15 kWh/m^2 UVB – 3 % to 10 % of UVA
		Bypass diode thermal Test	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.18) IEC 61730 (1st Edition): 2004-10 MST 25 IS 14286 (1st Edition): 1995-11 (Clause. 10.18)	10 °C to 75 °C , 0.1 A to 60 A dc

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Crystalline silicon terrestrial photovoltaic (PV) modules - Design qualification and type approval	Partial discharge Test	IEC 61730 (1st Edition): 2004-10 Clause. 11.1 MST 15	1Vdc to 10 kV dc 2.5 pC to 50 pC
		Impulse voltage Test	IEC 61730 (1st Edition): 2004-10 (Clause. 10.5 MST 14)	1 kV to 10 kV dc
		Accessibility Test	IEC 61730 (1st Edition): 2004-10 (Clause. 10.2 MST 11)	
		Cut susceptibility Test	IEC 61730 (1st Edition): 2004-10 (Clause. 10.3 MST 12)	
		Temperature Test	IEC 61730 (1st Edition): 2004-10 (Clause. 10.7 MST 21) UL 1703 (3rd Edition): 2002-03 (Clause. 19)	20 °C to 200 °C Irradiance < 700 W/m^2
		Leakage Current Test	UL 1703 (3rd Edition): 2002-03 (Clause. 21)	1000 Vdc Resistor- 500 Ω
		Cut Test	UL 1703 (3rd Edition): 2002-03 (Clause. 24)	
		Bonding Path resistance Test / Ground continuity Test	IEC 61730 (Edition 1.1): 2012-11 (Clause. 10.4) MST 13 UL 1703 (3rd Edition): 2002-03 (Clause. 25)	1 A to 20 A

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Crystalline silicon terrestrial photovoltaic (PV) modules - Design qualification and type approval	Dielectric Withstand Test	UL 1703 (3rd Edition): 2002-03 (Clause. 26) IEC 61730 (Edition 1.1): 2012-11 (Clause. 10.6) MST 16	1 Vdc to 10 kVdc 10 s to 900 s
		Wet Insulation-Resistance Test	UL 1703 (3rd Edition): 2002-03 (Clause. 27)	1 Vdc to 1000 Vdc 1 kΩ to 5000 MΩ
		Reverse Current Overload Test	UL 1703 (3rd Edition): 2002-03 (Clause. 28) IEC 61730 (Edition 1.1): 2012-11 (Clause. 10.9 MST 26)	1 A to 30 A dc
		Hot-Spot Endurance Test	UL 1703 (3rd Edition): 2002-03 (Clause. 39)	NA
		Mechanical load Test	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.16) IEC 61730 (1st Edition): 2004-10 (Clause. 10.16) IS 14286 (1st Edition): 1995-11 (Clause. 18)	2400 Pa 5400 Pa

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Crystalline silicon terrestrial photovoltaic (PV) modules - Design qualification and type approval	Hail Test	IEC 61215 (2nd Edition): 2005-04 (Clause. 10.17) IS 14286 (1st Edition): 1995-11 (Clause. 21)	Ice ball = 25 mm diameter, Mass = 7.53g, Velocity = 23 m/s
		Module breakage Test	IEC 61730 (1st Edition): 2004-10 (Clause. MST 32)	Impactor = 45.5 kg 300 mm to 3000 mm
		Strain Relief Test	UL 1703 (3rd Edition): 2002-03 (Clause. 22)	Load = 20 lb
		Push Test	UL 1703 (3rd Edition): 2002-03 (Clause. 23)	20 lb (89 N) force applied by a 1/2-in (12.7 mm) diameter steel rod 2. A 4 lb (17.8 N) force applied by a 1/16-in (1.6 mm) diameter steel rod
		Terminal Torque Test	UL 1703 (3rd Edition): 2002-03 (Clause. 29)	1 Nm to 200 Nm
		Impact Test	UL 1703 (3rd Edition): 2002-03 (Clause. 30)	50 mm Dia, 1.18 lb (535 g)
		Water Spray Test	UL 1703 (3rd Edition): 2002-03 (Clause. 33)	10 Psi

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
c.	**Solar Photovoltaic modules, power conversion units and equipment which are intended for Corrosive environment**	Salt Mist Test	IEC 61701 (1st Edition): 1995-03 (Clause. 4)	25°C to 50°C 95% RH
			IEC 61701 (2nd Edition): 2011-12 IEC 60068-2-52 (2nd Edition): 1996	2000 l
			IEC 60068-2-11 (3rd Edition): 1981 (Clause. 4)	40°C, 95 % RH Size: W =1.82 m, D =1.82 m H = 2.38 m
d.	**Photovoltaic Systems -Power Conditioners - Procedure for measuring Efficiency (Stand Alone Inverter & Grid Tie Inverter)**	Efficiency	IEC 61683 (1st Edition): 1999-11	Resistive load till 50 kW and 0.8 PF of Inductive load till 50 kVA. Capacitive load till 50 kVA 5 V to 1000 V dc 200 mA to 100 A dc 60 W to 30 kW
e.	**Utility-Interconnected Photovoltaic Inverters-Test Procedure of Islanding Prevention Measures (Grid Tie Inverter)**	Test procedure to evaluate the Performance of Islanding Prevention Measures used with Utility-Interconnected PV systems / Un-intentional Islanding Test	IEC 62116 (Edition 2.0): 2014 IEEE 1547.1: 2005, Clause. 5.7	1 V to 1000 V dc 200 mA to 100 A dc 1.5 V to 1000 V 6 A to 200 A, RLC Load: R = 54.3 kW L = 54.3 kVA C = 54.3 kVA

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
f.	**Test Procedure for Equipment Interconnecting Distributed Resources with Electric Power Systems**	Temperature stability	IEEE 1547.1: 2005, Sec 5.1	RLC Load: R = 54.3 kW L = 54.3 kVA C = 54.3 kVA 6 A to 200 A, ac/dc 15 V to 1000 V, ac/dc 200 mA to 50 A, 3.0000 W to 150.00 kW 15 V to 1000 V ac/dc 5 mA to 65 A ac/dc 5 V to 1000 V dc 200 mA to 100 A dc
		Over/Under Voltage Test for Response to Abnormal Voltage Conditions	IEC 61727 (2ndEdition): 2004, Clause:- 5.2 IEEE 1547.1: 2005, Sec 5.2	150/300 V ac
		Over/Under frequency Response to abnormal frequency conditions	IEC 61727 (2nd Edition): 2004, Clause. 5.2 IEEE 1547: 2005 Sec 5.3	16/819 Hz
		Synchronization	IEEE 1547.1: 2005 Sec 5.4	1 to 30 kVA
		Limitation of dc Injection for Inverters without Interconnection transformers/dc Injection	IEEE 1547.1: 2005, Sec 5.6, IEC 61727 (2nd Edition): 2004 Clause. 4.4	1 to 30 kVA

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Test Procedure for Equipment Interconnecting Distributed Resources with Electric Power Systems	Reconnect following abnormal condition disconnect or Response to Utility Recovery	IEEE 1547.1: 2005, Clause. 5.10 IEC 61727 (2nd Edition): 2004, Clause. 5.4	1 to 50 kVA
		Harmonics &Waveform Distortion	IEC 61727 (2nd Edition): 2004-12, Clause: 4.6 IEEE 1547.1- 2005, Sec 5.11	1 to 50 kVA
		Flicker	IEC 61727 (2nd Edition): 2004, Clause: 4.3 IEEE 1547.1: 2005, Sec 5.12,	1 to 50 kVA
		Dielectric Test for Paralleling device	IEEE 1547.1: 2005, Sec 5.5.3	1 to 50 kVA
g.	**Balance-of-Systems Components for Photovoltaic Systems-Design Qualification Natural Environments (Solar Photovoltaic Charge Controller)**	Visual Inspection	As per MNRE Guidelines for Solar Charge Controller Testing with reference to clauses from IEC 62093 Clause. 11.1, Clause. 11.2, Clause. 11.3.1.2, Clause. 11.4, Clause. 11.6, Clause. 11.2.1.2.3.1, Clause. 11.2.1.2.3.3, Clause. 11.3.1.1	Upto 2 kW, 40 V dc
		Functioning Tests		
		Voltage Drop Test		Upto max 10 V.
		Insulation Test		500 V, 100 MΩ
		Protection Against Mechanical Impact(IK-code)		0.7 Nm
		Determination of End of Charge Voltages		7.1 V to 35.5 V

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Balance-of-Systems Components for Photovoltaic Systems-Design Qualification Natural Environments (Solar Photovoltaic Charge Controller)	Determination of Low Charge disconnect and Reconnect Voltages		5.1 V to 35.7 V
		Temperature Compensation for Thresholds		7.1 V to 35.5 V Temperature for all ranges defined in standard.
		Cold Test (Type Ad)	IEC 60068-2-1 Environmental Testing – (Part 2 to 1): Tests – Test A: COLD Edition 6 Date. 2007/03/01	Test Conditions: (-)10 °C (±) 3 °C for 2 hr.
		Rapid change of temperature with prescribed time of transfer:	IEC 60068-2-14 Environmental Testing – (Part 2 to 14): Tests – Test N: CHANGE OF TEMPERATURE - Edition): 6 - Issue Date 2009/01/01	Test Conditions: (-)5 °C & (+)55 °C (±)3 °C
		Dry Heat Test (Type Bd)	IEC 60068-2-2 Environmental Testing – (Part 2 to 2): Tests – Test B: DRY HEAT - Edition): 5 - Issue Date 2007/07/01	Test Conditions: (+)55 °C (±)2 °C
		Damp Heat (Type Db Variant 1)	IEC 60068-2-30 Environmental Testing (Part 2 to 30): Tests – Test DB: DAMP HEAT, CYCLIC (12 H + 12 H CYCLE) – (Edition 3) Date. 2005/08/01	Test Conditions: Temperature: 25 °C to 55 °C (±)2 °C, variant 1, Humidity: 93(±)3 % RH

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
18.	**Measuring Instruments**			
a.	**Electronic Equipment – Digital millimeter, digital power meter, clamp meter, digital ammeter, Digital voltmeter, Digital panel power meter**	Protective impedance Test	UL 61010-1 (2nd Edition) 2005-07-22. CAN/CSA C22.2 No. 61010-1, (2nd Edition): 004-07, IEC 61010-1: 2010, (3rd Edition) (Clause. 4.4.2.2) IEC 61010-2-030: 2010, (1st Edition). (Clause. 101.3.3)	20 to 400 °C
		Input Test	UL 61010-1 (2nd Edition): 2005-07-22. CAN/CSA C22.2 No. 61010-1, (2nd Edition):004-07, IEC 61010-1: 2010, (3rd Edition) (Clause. 5.1.3)	0.1 V to 600 V AC 10 A max 0.1 V to 600 V DC
		Temperature Test	UL 61010-1 (2nd Edition): 2005-07-22. CAN/CSA –C22.2 No. 61010-1, (2nd Edition): 004-07, IEC 61010-1: 2010 (3rd Edition) (Clause. 10.1-10.4)	20 to 400 °C Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electronic Equipment – Digital millimeter, digital power meter, clamp meter, digital ammeter, Digital voltmeter, Digital panel power meter	Humidity conditioning	UL 61010-1 (2nd Edition): 2005-07-22. CAN/CSA –C22.2 No. 61010-1, (2nd Edition): 004-07, IEC 61010-1: 2010, (3rd Edition) (Clause. 6.8.2)	50 % RH to 98 % RH (-)20 °C to100 °C Qualitative
		Dielectric voltage withstand Test	UL 61010-1 (2nd Edition): 2005-07-22. CAN/CSA –C22.2 No. 61010-1, (2nd Edition): 004-07, IEC 61010-1: 2010, (3rd Edition) (Clause. 6.8)	10 V to 10 kV AC/DC 10 s to 900 s Qualitative
		Permissible limits Test	UL 61010-1 (2nd Edition): 2005-07-22. CAN/CSA –C22.2 No. 61010-1, (2nd Edition): 004-07, IEC 61010-1: 2010, (3rd Edition) (Clause. 6.3)	0.1 V to 300 V AC/DC
		Transformer overload Test	UL 61010-1 (2nd Edition): 2005-07-22. CAN/CSA –C22.2 No. 61010-1, (2nd Edition): 004-07, IEC 61010-1: 2010, (3rd Edition) (Clause. 4.4.2.7.3)	20 to 400 °C Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electronic Equipment – Digital millimeter, digital power meter, clamp meter, digital ammeter, Digital voltmeter, Digital panel power meter	Transformer short circuit Test	UL 61010-1 (2nd Edition): 2005-07-22. CAN/CSA –C22.2 No. 61010-1, (2nd Edition): 004-07, IEC 61010-1: 2010, (3rd Edition) (Clause. 4.4.2.7.2)	1 to 600 V 1 to 1000 V AC/DC 20 to 400 °C
		Insulation between circuits	UL 61010-1 (2nd Edition): 2005-07-22. CAN/CSA –C22.2 No. 61010-1, (2nd Edition): 004-07, IEC 61010-1: 2010, (3rd Edition) (Clause. 4.4.2.12)	1 to 600 V 1 to 1000 V AC/DC 20 to 400 °C
		Output abnormal Test	UL 61010-1 (2nd Edition): 2005-07-22. CAN/CSA-C22.2 No. 61010-1, (2nd Edition): 004-07, IEC 61010-1: 2010, (3rd Edition) (Clause. 4.4.2.8)	600 V 1 to 1000 V AC/DC 20 to 400 °C
		Applied force Test	UL 61010-1 (2nd Edition): 005-07-22. CAN/CSA –C22.2 No. 61010-1, (2nd Edition): 004-07, IEC 61010-1: 2010, (3rd Edition) (Clause. 6.2.2)	1 to 50 kg Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electronic Equipment – Digital millimeter, digital power meter, clamp meter, digital ammeter, Digital voltmeter, Digital panel power meter	Ball pressure Test	UL 61010-1 (2nd Edition): 005-07-22. CAN/CSA-C22.2 No. 61010-1, (2nd Edition): 004-07, IEC 61010-1: 2010, (3rd Edition) (Clause. 10.5.3)	20 to 150 °C 0.01 mm to 10 mm Qualitative
		Static rigidity Test	UL 61010-1 (2nd Edition): 005-07-22. CAN/CSA-C22.2 No. 61010-1, (2nd Edition): 004-07, IEC 61010-1: 2010, (3rd Edition) (Clause. 8.2.1)	1 to 50 kg 20 to 150 °C Qualitative
		Strength of Handle Test	UL 61010-1 (2nd Edition): 2005-07-22. CAN/CSA-C22.2 No. 61010-1, (2nd Edition): 004-07, IEC 61010-1: 2010, (3rd Edition) (Clause. 7.5)	10 g to 80 kgs 0.1 s to 1 hr Qualitative
		Mechanical abuse Test	UL 61010-1 (2nd Edition): 2005-07-22. CAN/CSA –C22.2 No. 61010-1, (2nd Edition): 004-07, IEC 61010-1: 2010, (3rd Edition) (Clause. 10.5.2)	1 Nm to 6.78 Nm Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Electronic Equipment – Digital millimeter, digital power meter, clamp meter, digital ammeter, Digital voltmeter, Digital panel power meter	Impulse voltage Test	IEC 61010-2-030: 2010, (1.0 Edition) (Clause. 14.101)	Upto 15 kV, 1.2/50 µs Impulse Qualitative
		Current measuring circuit Test	IEC 61010-2-030: 2010, (Edition 1.0) (Clause. 14.101)	Upto 200 A AC single phase AC Single Phase 50 Hz Continuous
19.	**Electrical & electronics products (IFM modules, Storages, servers)**	Sine and random vibration Test, Qualitative	IEC 60068-2-6: 2007 IEC 60068-2-64: 2008	Frequency – 5 Hz to 2300 Hz. Acceleration level: 0.3 g to 100 g for Frequency from 5 Hz to 2300 Hz, 0.1 g to 100 g for Frequency from 5 Hz to 600 Hz} for weight Upto 3.5 kg. 0.1 g to 50 g (P-P). 5 Hz to 600 Hz for weight Upto 3.5 kg. 0.1 g to 50 g (P-P). 0.3 g to 6 g for weight Upto 400 kg. Displacement Upto 50.8 mm Frequency – 5 Hz to 2300 Hz.
	Cabinets, Racks, Sub racks, Chassis	Sine and random vibration Test, Qualitative	IEC 61587-1: 2011 IEC 62052-11: 2003	
	Printed circuit boards	Sine and random vibration	IEC 60065: 2014 IEC 62133: 2002	
	Aerospace products (signal trackers, Navigation sensors, voice receivers, Timers)	Sine and random vibration	MIL-STD-810G: 2008 (Method 514.6C-I)	
		Sine and random vibration	MIL STD 810F: 2000 Method 514.5(514.6C-1)	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Consumer products (Amplifier,Mosfet transistors,luminaires)	Sine and random vibration	MIL STD 883E: 1997 Method 2007.2, 2002 & 2026 MIL STD 202G: 2002 Method 201A (2.4.1-Part 1)	Acceleration level: {0.3 g to 100 g for Frequency from 5 Hz to 2300 Hz, 0.1 g to 100 g for Frequency from 5 Hz to 600 Hz} for weight Upto 3.5 kg. 0.1 g to 50 g (P-P). 5 Hz to 600 Hz} for weight Upto 3.5 kg. 0.1 g to 50 g(P-P). 0.3 g to 6 g for weight Upto 400 kg. Displacement Upto 50.8 mm
	Railway mounted and railway transporting products(AC and exhaust fan)	Random vibration	IEC 61373: 2010	Range
	Batteries and Cells phones, Laptops, Power banks	Sine vibration	UN38.3 (Edition 6): 2015 (38.3.4.3)	7Hz: 200Hz-7Hz,Disp(0.8 mm-1.6 mm)Acceleration 8g

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
20.	**Power adaptors , inverters,Energy meters, Signal control receivers Motors, TV's, laptops, Mobile phones aerospace products (signal trackers, Navigation sensors, voice receivers, Timers)**	Shock Test (Electro dynamic shaker)-Half sine, rectangular, Trapezoidal, Final peak saw tooth, Initial saw tooth.	IEC 60068-2-27: 2008 IEC 61587-1: 2011 IEC 62052-11: 2003 IEC 62052-11: 2003 MIL-STD-810G: 2008, Method 514.6 MIL STD 810F: 2000 Method 514.5 MIL STD 202G: 2002 Method 201A	Acceleration level-35 g, 11 ms, 1 g, 50 ms.
	Railway mounted and railway transporting Products(AC and exhaust fan)	Shock Test (Electro dynamic shaker)-Half sine, rectangular, Trapezoidal, Final peak saw tooth, Initial saw tooth	IEC 61373: 2010	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	PCB mounted Electrical & electronics Products(Energy meters, Control receivers Mobile phones, TV, scanner, Battery chargers) Racks& Chassis	Mechanical Shock-Half sine, Trapezoidal, saw tooth, Qualitative	IEC 60068-2-27: 2008 IEC 62052-11: 2003 IEC 61587-1: 2011	Half sine pulse range: 600 g to 3 ms; 20 g, (-)35 ms. Trapezoidal pulse range: 75 g to 10 ms; 10 g to 50 ms. Max specimen weight: 50 kg. Table size: (25 x 25)cm
	Batteries and Cells	Mechanical Shock-Half sine, Trapezoidal , saw tooth, Qualitative	UN38.3(Edition 6): 2015	
21.	**Spares & Assemblies mounted in Defense/ Military/ Aerospace(signal trackers, Navigation sensors,voice receivers,Timers) Locomotive Transport vehicles mounted products (AC, exhaust fan, Diesel filters, ECU)**	Mechanical Shock-Half sine, Trapezoidal , saw tooth, Qualitative	MIL-STD-810G: 2008, Method 516.6 MIL STD 810F: 2000 Method 516.5 MIL STD 883E: 1997 Method 2002.3	Half sine pulse range: 600 g to 3 ms; 20 g, (-)35 ms. Trapezoidal pulse range: 75g-10ms; 10 g to 50 ms. Max specimen weight: 50 kg. Table size: (25 x 25)cm

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			MIL STD 202G: 2002 Method 213 B	
	Railway mounted and railway transporting Products(AC and exhaust fan)	Mechanical Shock-Half sine, Trapezoidal , saw tooth, Qualitative	IEC 61373: 2010	
22.	**Batteries & Cells, Spares and assemblies in aircraft (signal trackers, Navigation sensors,voice receivers,Timers). Helicopters and manned aerospace vehicles(Amplifier Mosfet transistors, Luminaires)**	Altitude Test Qualitative	IEC 60068-2-13-1994 IEC 60721-1: 2002 (1.3) IEC 62133: 2002 MIL STD 810F: 2000 Method 500.4-1 MIL-STD-810F: 2000 Method 507.4	Altitude range: Pressure Upto 25,800 m,10 mbar
		Combined cold/low air pressure Tests-Qualitative	IEC 60068-2-40-1983 MIL-STD-810F: 2000 Method 500.4-1 MIL-STD-810G: 2008 Method 500.5-1 MIL-STD-810G: 2008 Method 520.3	Altitude range: Pressure Upto 19,000 m, 5.3 kPa. Temperature range: Upto (-) 40 °C.

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
V.	**EMI/EMC AND ESD TESTING**			
1.	**EMI/EMC and ESD Testing EMI-EMC Testing : Electrical and Electronic Instrument**	Conducted Emission Test (CE)	IEC 60601-1-2 (Edition 3.0): (2007-03) IEC 60601-1-2 (Edition 4.0) (2014-04) IEC 61000-6-3 (2nd Edition)-1 (2011-02) IEC 61000-6-4 (2nd Edition)-1 (2011-02) IEC 61326-1 (2nd Edition)-0 (2012-07) IEC 62040-2 (2nd Edition)-0 (2005-10) IEC 62052-11 (Edition 1.0) (2003-02) IEC 60034-1 (Edition 12.0): (2010-02) CISPR 11: 2015/Amd. 1: 2016 CISPR 11: 2015/Amd. 1: 2016 CISPR 14-1 (Edition 5.0): (2005-11) CISPR 14-1 (Edition 5.1): (2009-02) CISPR 14-1 (Edition 5.2): (2011-11) CISPR 15 (Edition 8): (2013-05) CISPR 22 (Edition 6.0): (2008-09) EN 55011: 2010	Frequency Range: 9 kHz to 30 MHz Current limitation): of Max 16 A for 1Phase Max 25 A for 3 Phase

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			EN 50121-3-2: 2015 EN 55014-1: 2006+ Amd. 2: 2011 EN 55015: 2006+ Amd. 2: 2009 EN 55015: 2013 EN 55022: 2010/AC 2011 EN 60601-1-2: 2007/AC: 2010 EN 61000-6-3: 2007/A1: 2011 EN 61000-6-4: 2007/A1: 2011 EN 61326-1: 2013 EN 62040-2: 2006 EN 62052-11: 2003 EN 50121-4: 2006 CFR 2010 Title 47 Vol.1 (Part 15) CFR 2010 Title 47 Vol.1 (Part 18) IS 16102-2, Clause. 16.1 IS 6873-5 IS 13779: 1999 (RA 2009) IS 6842: 1997 IS 14697: 1999, (RA 2009)	
		Radiated Electromagnetic Disturbances	CISPR 15 (Edition 7.2): (2009-01) Clause. 4.4.1 EN 55015: 2006+ Amd. 2: 2009 Clause. 4.4.1 IS 16102-2, Clause. 16.1 IS 6873-5	Frequency Range: 9 kHz to 30 MHz

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	EMI/EMC and ESD Testing EMI-EMC Testing : Electrical and Electronic Instrument	Harmonic Current Emission Test	IEC 61000-3-2 (Edition 4): (2014-05) IEC 60601-1-2 (Edition 3.0): (2007-03) IEC 60601-1-2 (Edition 4.0): (2014-02) IEC 61000-6-3 (Edition 2.1): (2011-02) IEC 61326-1 (Edition 2.0): (2012-07) EN 60601-1-2: 2007/AC: 2010 EN 61000-3-2: 2006 Amd. 2: 2009 EN 61000-3-2: 2014 EN 61000-6-3: 2007 Amd. 1: 2011 EN 61326-1: 2013	Current limitation: 16 A, 1phase upto 40th Harmonic Line to Neutral Voltage: 100 to 120 & 220 V to 250 V Frequency 50 Hz/60 Hz
		Voltage Fluctuation & Flicker Test	IEC 61000-3-3 (Edition 3.0): (2013-05) IEC 60601-1-2 (Edition 3.0): (2007-03) IEC 60601-1-2 (Edition 4.0): (2014-02) IEC 61000-6-3 (Edition 2.1): (2011-02) IEC 61326-1 (Edition 2.0): (2012-07) EN 60601-1-2: 2007/AC: 2010 EN 61000-3-3: 2008 EN 61000-3-3: 2013	Current limitation): 16 A Single Phase Line to Neutral Voltage: 100 to 120 & 220 V to 250 V

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	EMI/EMC and ESD Testing EMI-EMC Testing : Electrical and Electronic Instrument	Voltage Fluctuation & Flicker Test	EN 61000-6-3: 2007, Amd. 1: 2011 EN 61326-1: 2013	Current limitation): 16 A Single Phase Line to Neutral Voltage: 100 to 120 & 220 V to 250 V
		Electrostatic Discharge Immunity Test	IEC 61000-4-2 (Edition 2.0): (2008-12) IEC 60601-1-2 (Edition 3.0): (2007-03) IEC 60601-1-2 (Edition 4.0): (2014-02) IEC 61000-6-1 (2nd Edition)-0 (2005-03) IEC 61000-6-2 (Edition 2.0) (2005-01) IEC 61326-1 (2nd Edition)-0 (2012-07) IEC 62040-2 (2nd Edition)-0 (2005-10) IEC 62052-11 (Edition 1.0): (2003-02) IEC 61547 (Edition 2.0): 2009-06 CISPR 14-2(Edition 2.0) : 2015 RLV CISPR 24 (Edition 2.0): (2010-08) EN 61000-4-2: 2009 EN 50121-3-2: 2015 EN 50121-4: 2006	Voltage Range: Air discharge: 0.2 kV to 16 kV Contact Discharge: 0.2 kV to 10 kV

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	EMI/EMC and ESD Testing EMI-EMC Testing : Electrical and Electronic Instrument	Electrostatic Discharge Immunity Test	EN 55014-2: 1997/ Amd. 2: 2008 EN 55024: 2010 EN 60601-1-2: 2007/AC: 2010 EN 61000-6-1: 2007 EN 61000-6-2: 2005 EN 61326-1: 2013 EN 62040-2: 2006 EN 62052-11: 2003 EN 61547: 2009 IS 13779: 1999 (RA 2009) IS 14697: 1999 (RA 2009)	Voltage Range: Air discharge: 0.2 kV to 16 kV Contact Discharge: 0.2 kV to 10 kV
		Electrical Fast Transient (EFT) / Burst Immunity Test	IEC 61000-4-4 (Edition 3.0): (2012-04) IEC 60601-1-2 (Edition 3.0): (2007-03) IEC 60601-1-2 (Edition 4.0): (2014-02) IEC 61000-6-1 (2nd Edition): (2005-03) IEC 61000-6-2 (2nd Edition): (2005-01) IEC 61326-1 (2nd Edition): (2012-07) IEC 62040-2 (2nd Edition): (2005-10) IEC 62052-11 (Edition 1.0): (2003-02) IEC 61547: 2009 CISPR 14-2(Edition 2.0):	Current limitation: Max 16 A for 1 phase Max 32 A for 3 Phase Voltage Limitations: 0.2 kV to 4 kV for 3Ph Max: 0.2 kV to 5.5 kV for 1Ph

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	EMI/EMC and ESD Testing EMI-EMC Testing : Electrical and Electronic Instrument	Electrical Fast Transient (EFT) / Burst Immunity Test	2015 RLV CISPR 24 (2nd Edition): (2010-08) EN 61000-4-4: 2012 EN 55014-2: 1997/ Amd. 2: 2008 EN 55024: 2010 EN 60601-1-2: 2007/AC 2010 EN 61000-6-1: 2007 EN 61000-6-2: 2005 EN 50121-3-2: 2015 EN 50121-4: 2006 EN 61326-1: 2013 EN 62040-2: 2006 EN 62052-11: 2003 EN 61547: 2009 IS 13779: 1999 (RA 2009) IS 14697: 1999 (RA 2009)	Current limitation: Max 16 A for 1 phase Max 32 A for 3 Phase Voltage Limitations: 0.2 kV to 4 kV for 3Ph Max: 0.2 kV to 5.5 kV for 1Ph
		Surge Immunity Test	IEC 61000-4-5 (Edition 3.0): (2014-05) IEC 60601-1-2 (Edition 3.0): (2007-03) IEC 60601-1-2 (Edition 4.0): (2014-02) IEC 61000-6-1 (2nd Edition): (2005-03) IEC 61000-6-2 (2nd Edition): (2005-01) IEC 61326-1 (2nd Edition): (2012-07)	Max 16 A for 1phase Max 32 A for 3 Phase Voltage Rage : 0.25 kV to 6.0 kV for 1 Ph 0.25 kV to 6.0 kV for 3 Ph

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
			IEC 62040-2 (2nd Edition): (2005-10) IEC 62052-11 (Edition 1.0): (2003-02) IEC 61547: 2009 CISPR 14-2(Edition 2.0): 2015 RLV CISPR 24 (2nd Edition): (2010-08) EN 61000-4-5: 2006 EN 61000-4-5: 2014 EN 55014-2: 1997/ Amd. 2: 2008 EN 55024: 2010 EN 60601-1-2: 2007/AC 2010 EN 61000-6-1: 2007 EN 61000-6-2: 2005 EN 50121-3-2: 2015 EN 50121-4: 2006 EN 61326-1: 2013 EN 62040-2: 2006 EN 62052-11: 2003 EN 61547: 2009	

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	EMI/EMC and ESD Testing EMI-EMC Testing : Electrical and Electronic Instrument	Conducted RF Immunity Test	IEC 61000-4-6 (Edition 4.0): (2013-10) IEC 60601-1-2 (Edition 3.0): (2007-03) IEC 60601-1-2 (Edition 4.0): (2014-02) IEC 61000-6-1 (2nd Edition): (2005-03) IEC 61000-6-2 (2nd Edition): (2005-01) IEC 61326-1 (2nd Edition): (2012-07) IEC 62040-2 (2nd Edition): (2005-10) IEC 62052-11 (Edition 1.0): (2003-02) IEC 61547: 2009 CISPR 14-2(Edition 2.0): 2015 RLV CISPR 24 (2nd Edition): (2010-08) EN 61000-4-6: 2009 EN 61000-4-6: 2014 EN 50121-3-2: 2015 EN 50121-4: 2006 EN 55014-2: 1997/ Amd. 2: 2008 EN 55024: 2010 EN 60601-1-2: 2007/AC 2010 EN 61000-6-1: 2007 EN 61000-6-2: 2005	150 kHz to 230 MHz 1 Vrms to 10 Vrms CDN Method Power 150 kHz to 230 MHz 1 Vrms to 10 Vrms, EM Clamp Method for I/O Lines.

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	EMI/EMC and ESD Testing EMI-EMC Testing : Electrical and Electronic Instrument	Conducted RF Immunity Test	EN 61326-1: 2013 EN 62040-2: 2006 EN 62052-11: 2003 EN 61547: 2009	150 kHz to 230 MHz 1 Vrms to 10 Vrms CDN Method Power 150 kHz to 230 MHz 1 Vrms to 10 Vrms, EM Clamp Method for I/O Lines.
		Power Frequency Magnetic Field Immunity Test	IEC 61000-4-8 (2nd Edition): (2009-09) IEC 60601-1-2 (Edition 3.0): (2007-03) IEC 60601-1-2 (Edition 4.0): (2014-02) IEC 61000-6-1 (2nd Edition): (2005-03) IEC 61000-6-2 (2nd Edition): (2005-01) IEC 61326-1 (2nd Edition): (2012-07) IEC 62040-2 (2nd Edition): (2005-10) IEC 61547 2009 CISPR 24 (2nd Edition): (2010-08) EN 61000-4-8: 2010 EN 55024: 2010 EN 60601-1-2: 2007/AC 2010 EN 61000-6-1: 2007 EN 61000-6-2: 2005 EN 61326-1: 2013	1 A/m to 30 A/m 50 Hz/60 Hz Continuous field

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	EMI/EMC and ESD Testing EMI-EMC Testing : Electrical and Electronic Instrument	Power Frequency Magnetic Field Immunity Test	EN 62040-2: 2006 EN 61547: 2009	1 A/m to 30 A/m 50 Hz/60 Hz Continuous field
		Voltage Dips, Short Interruption & Voltage variations Immunity Test	IEC 61000-4-11 (2nd Edition): (2004-03) IEC 60601-1-2 (Edition 3.0): (2007-03) IEC 60601-1-2 (Edition 4.0) (2014-02) IEC 61000-6-1 (2nd Edition): (2005-03) IEC 61000-6-2 (2nd Edition): (2005-01) IEC 61326-1 (2nd Edition): (2012-07) IEC 62052-11 (Edition 1.0): (2003-02) IEC 61547: 2009 CISPR 14-2(Edition 2.0): 2015 Rlv CISPR 24 (2nd Edition): (2010-08) EN 61000-4-11: 2004 EN 55014-2: 1997 Amd. 2: 2008 EN 55024: 2010 EN 60601-1-2: 2007/ AC. 2010 EN 61000-6-1: 2007 EN 61000-6-2: 2005	Single Phase Current limitation): Max 16 A Voltage range : 0.1 to 250 V

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	EMI/EMC and ESD Testing EMI-EMC Testing : Electrical and Electronic Instrument	Voltage Dips, Short Interruption & Voltage variations Immunity Test	EN 61326-1: 2013 EN 62040-2: 2006 EN 62052-11: 2003 EN 61547: 2009	Single Phase Current limitation): Max 16 A Voltage range : 0.1 to 250 V
		Ring wave Immunity Test	IEC 61000-4-12: 2006 EN 61000-4-12: 2006	Current limitation of 16 A for 1 phase 32 A for 3 Phase Max: 6.6 kV

LOCATION: 2

I. INFORMATION TECHNOLOGY EQUIPMENTS

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
1.	**Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box**	Input Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 1.6.2)	1.5 V to 300 VAC/DC 1 mA to 20 A AC/DC
		Thermal requirement	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 4.5.1)	20 °C to 400 °C
		Overload of operator accessible Parts	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 5.3.7)	1 W to 330 W(max) 0.1 s to 1 hr
		Humidity conditioning	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 2.9.1)	93 % to 95 % RH 20 °C to 100 °C Qualitative
		Electric strength Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 5.2.2)	50 V to 10 kV AC/DC 1 s to 900 s
		Touch current Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 5.1)	0.1 mA to 5 mA
		Abnormal operation Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 5.3.1)	25 °C to 400 °C Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box	Capacitance discharge Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 2.1.1.7)	0.1 V to 800 V Peak / DC 5 s
		Limited power source measurement Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 2.5)	1 W to 330 W(max) 0.1 s to 1 hr
		Working voltage determination	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 2.10.2)	1 V to 1000 V rms/V DC
		Protective bonding Test II	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 2.6.3.4)	0.01 Ω to 0.3 Ω 5 s to 600 s 1 A to 60 A
		Limited current circuit measurements	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 2.4.1)	0.1 mA to 5 mA
		Limitation of touch current to a telecommunication and cable distribution system	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 5.1.8.1)	0.1 mA to 5 mA
		Requirement of separation between telecommunication network from earth	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 6.1.2)	1 V to 2 kV AC/DC 1-900 s
		Steady force Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 4.2.1)	0.1 s to 1 hr 1 N to 900 N Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box	Impact Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 4.2.5)	1 mm to 3000 mm 500 g
		Strain relief Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 3.2.6)	0.1 s to 1 hr 1 N to 60 N Qualitative
		Cord guard Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 3.2.8)	5 ° to 90 ° 15.5 mm to 25 mm
		Hazardous moving Parts Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 4.4.2)	Test finger - Figure 2A Qualitative
		Stability Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 4.1)	5 º to 60 º Qualitative
		Durability of marking Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 1.7.11)	Qualitative (Visual inspection)
		Stress relief Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 4.2.7)	25°C to 150 °C Qualitative
		Drop Test	IS 13252 (Part 1): 2010 + Amd. 1: 2013 +Amd. 2: 2015 (Clause. 4.2.6)	1 mm to 3000 mm Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box	Input Test	UL 60950-1 (2nd Edition):2007 CSA C22.2 No. 60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 ((2nd Edition):2005+ Amd. 1 Date. 2009-12-01 (Clause. 1.6.2) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1: 2001 (1st Edition) (Clause. 1.6.2)	1.5 V to 300 VAC 1.5 V to 300 VDC 0.5 mA to 20 A AC/DC
		Thermal requirement	UL 60950-1 (2nd Edition): 2007 CSA C22.2 No.60950-1 2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005-12-01 + Amd.1 Date. 2009-12-01(Clause. 4.5.1) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1(1st Edition): 2001 (Clause. 4.5.1)	20 °C to 400 °C Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box	Output overload Test	UL 60950-1 (2nd Edition): 2007/03/27 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005/12/01+ Amd. 1 Date. 2009-12-01 (Clause. 5.3.7) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1 (1st Edition): 2001	1 W to 330 W(max) 0.1 s to 1 hr
		Dielectric strength Test	UL 60950-1 (2nd Edition): 2007/03/27 CSA C22.2 No.60950-1 (2nd Edition) Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005/12/01 + Amd.1 Date. 2009-12-01 (Clause. 5.2.2) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1(1st Edition): 2001 (Clause. 5.2)	50 V to 10 kV AC/DC 1 s to 900 s Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box	Touch current Test	UL 60950-1 (2nd Edition): 2007 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005 + Amd. 1 Date. 2009-12-01 (Clause. 5.1) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1 (1st Edition): 2001 (Clause. 5.1)	0.1 mA to 5 mA
		Output short circuit Test	UL 60950-1 (2nd Edition): 2007/03/27 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005/12/01 + Amd. 1 Date. 2009-12-01 (Clause. 5.3.7) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1 (1st Edition): 2001 (Clause. 5.3.7)	20 °C to 400 °C Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box	Abnormal operation Test	UL 60950-1 (2nd Edition): 2007/03/27 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005 + Amd. 1 Date. 2009-12-01 (Clause. 5.3.3) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1(1st Edition): 2001 (Clause. 5.3.1)	20 °C to 400 °C Qualitative
		Component failure Test	UL 60950-1 (2nd Edition): 2007/03/27 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005/12/01 + Amd. 1 Date. 2009-12-01 (Clause. 5.3.1) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1 (1st Edition):2001 (Clause. 5.3.1)	25 °C to 400 °C Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box	SELV reliability Test	UL 60950-1 (2nd Edition): 2007/03/27 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005/12/01 + Amd. 1 Date. 2009-12-01 (Clause. 2.2.2) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1 (1st Edition): 2001 (Clause. 2.2.2)	0.1 V to 90 V Peak
		Max. V, VA, A measurement Test	UL 60950-1 (2nd Edition): 2007/03/27 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1: (2nd Edition):2005-12-01+ Amd.1 Date. 2009-12-01 (Clause. 1.2.2.1) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1: 2001 (1st Edition) (Clause. 1.2.2.1)	0.1 V to 80 V 0.1 VA to 800 VA 1 mA to 20 A max

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box	Capacitance discharge Test	UL 60950-1 (2nd Edition):2007 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005 + Amd.1 Date. 2009-12-01 (Clause. 2.1.1.7) UL 60950-1 (1st Edition): 2006/ CSA C22.2 No.60950-1-03/ IEC 60950-1 (1st Edition): 2001 (Clause. 2.1.1.7)	0.1 V to 800 V Peak / DC 5 s
		Energy hazard measurement Test	UL 60950-1 (2nd Edition):2007/03/27 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005/12/01 + Amd.1 Date. 2009-12-01 (Clause. 2.1.1.8) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1: 2001 (1st Edition): (Clause. 2.1.1.8)	0.1 V to 800 V Peak 0.1 s to 10 s

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box	Limited power source measurement Test	UL 60950-1 (2nd Edition): 2007/03/27 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005/12/01 + Amd.1 Date. 2009-12-01 (Clause. 2.5) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1 (1st Edition): 2001 (Clause. 2.5)	1 W to 330 W(max) 0.1 s to 1 hr
		Working voltage measurement Test	UL 60950-1 (2nd Edition): 2007/03/27 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005-12-01+ Amd.1 Date. 2009-12-01 (Clause. 2.10.2) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1: 2001 (1st Edition): (Clause. 2.10.2)	1 V to 1000 V rms/VDC

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box	Transformer and wire insulation electric strength Test	UL 60950-1 (2nd Edition): 2007 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005/12/01 + Amd.1 Date. 2009-12-01 (Clause. 2.10.5.13) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1: 2001 (1st Edition): (Clause. 2.10.5.13)	10 V to 10 kV AC/DC 1 s to 900 s Qualitative
		Steady force Test	UL 60950-1 (2nd Edition): 2007 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition):2005/12/01 + Amd.1 Date. 2009-12-01 (Clause. 4.2.1) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1 (1st Edition): 2001 (Clause. 4.2.1)	0.1 s to 1 hr 1 N to 900 N Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box	Impact Test	UL 60950-1 (2nd Edition): 2007 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005/12/01 + Amd.1 Date. 2009-12-01 (Clause. 4.2.5) UL 60950-1 (1st Edition): 2006/07/07 CSA C 22.2 No.60950-1-03/ IEC 60950-1 (1st Edition): 2001 (Clause. 4.2.5)	50 mm Dia 500 g Qualitative
		Stress relief Test	UL 60950-1 (2nd Edition): 2007 CSA C22.2 No.60950-1 (2nd Edition) Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005/12/01 + Amd.1 Date. 2009-12-01 (Clause. 4.2.7) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1(1st Edition): 2001 (Clause. 4.2.7)	25 °C to 150 °C Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
2.	**Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box (Thermoplastic, Thermoset, Composite Material)**	Ball pressure Test	UL 60950-1 (2nd Edition): 2007 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005/12/01+ Amd.1 Date. 2009-12-01 (Clause. 4.5.5) UL 60950-1 (1st Edition): 2006 /CSA C22.2 No.60950-1-03/ IEC 60950-1(1st Edition): 2001 (Clause. 4.5.5)	Loading Device Diameter 5 mm, 20 N max 0.01 mm to 10 mm 0.1 hr to 1 hr Qualitative
		Accessible connector overload Test	UL 60950-1 (2nd Edition): 2007 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005/12/01 + Amd.1 Date. 2009-12-01 (Clause. 5.3.7) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1 (1st Edition): 2001 (Clause. 5.3.7)	1 W to 330 W(max) 0.1 s to 1 hr Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box (Thermoplastic, Thermoset, Composite Material)	Earthing Test	UL 60950-1 (2nd Edition): 2007 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005/12/01 + Amd.1 Date. 2009-12-01 (Clause. 2.6.3.4) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1 (1st Edition): 2001 (Clause. 2.6.3.4)	0.001 Ω to 0.3 Ω 5 s to 600 s 0.1 A to 60A
		Limited power source measurement Test	UL 60950-1 (2nd Edition): 2007 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005/12/01 + Amd.1 Date. 2009-12-01 (Clause. 2.5) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1 (1st Edition): 2001 (Clause. 2.5)	1 W to 330 W(max) 0.1 s to 1 hr

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptors, Mobile Phone, Cash Register, Point of Sale Terminal, Copying Machine, Franking Machine, Passport reader, Computer Systems, Monitors, Printers, Scanners, Keyboards, Telephones & Automatic Data Processing Machine, Setup Box (Thermoplastic, Thermoset, Composite Material)	Stability Test	UL 60950-1 (2nd Edition): 2007 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005/12/01 + Amd.1 Date. 2009-12-01 (Clause. 4.1) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1 (1st Edition): 2001(Clause. 4.1)	5 ° to 90 ° Qualitative
		Component failure Test	UL 60950-1 (2nd Edition): 2007 CSA C22.2 No.60950-1 (2nd Edition): Date. 2007/03/27 IEC 60950-1 (2nd Edition): 2005/12/01 + Amd.1 Date. 2009-12-01 (Clause. 5.3.1) UL 60950-1 (1st Edition): 2006/07/07 CSA C22.2 No.60950-1-03/ IEC 60950-1 (1st Edition): 2001 (Clause. 5.3.1)	(-)100 °C to 400 °C

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
3.	**Desktop Computer, Notebook computers, Tablets, Small-scale servers, Thin Client, Workstations and Monitors**	Off mode	ENERGY STAR Computer Test Method, Version 6.1 UUT preparation shall be performed according to IEC 62623 (Edition 1.0): 2012-10, Section 5.2: Test Setup	0.1 Wh to 500Wh 5 s to 15 min
		Sleep Mode	ENERGY STAR Computer Test Method, Sleep Mode power shall be measured according to IEC 62623 (Edition 1.0): 2012 10, Section 5.3.3: Measuring Sleep Mode	0.1 Wh to 500Wh 5 s to 15 min
		Idle State	ENERGY STAR Computer Test Method, Long Idle Mode power shall be measured according to IEC 62623 (Edition 1.0): 2012-10, (Section 5.3.4): Measuring Long Idle Mode;	0.1 Wh to 500 Wh 5 s to 15 min
		Active State	ENERGY STAR Computer Test Method, Short Idle Mode power shall be measured according to IEC 62623 (Edition 1.0): 2012-10, (Section 5.3.5): Measuring Short Idle Mode	0.1 Wh to 500 Wh 5 s to 15 min

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Desktop Computer, Notebook computers, Tablets, Small-scale servers, Thin Client, Workstations and Monitors	Idle State	ENERGY STAR Test Method for Computer Servers, Off Mode power shall be measured according to IEC 62623 (Edition 1.0): 2012-10, (Section 5.3.2): Measuring Off Mode	0.1 Wh to 500 Wh 5 s to 15 min
		Full Load	ENERGY STAR Test Method for Computer Servers, ENERGY STAR Program Requirements Product Specification for Computer Servers, Version 1.1, Appendix A	0.1 Wh to 500 Wh 5 s to 10 min
4.	**Energy efficiency of Internal/ External AC-DC and DC-DC Power supplies**	Active Mode power consumption): for single Output power supply	Generalized Test Protocol for calculating the Energy Efficiency of Internal AC-DC and DC-DC Power supplies: Revision 6.4.2, 22nd October 2008 & Revision 6.5, July 07, 2010. according to IEC 62623 (Edition 1.0): 2012-10 Test Method for Calculating the Energy Efficiency of Single-Voltage External Ac-Dc and AC-AC Power Supplies August 11, 2004.	0.1 Wh to 500 Wh 5 s to 10 min

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Energy efficiency of Internal/ External AC-DC and DC-DC Power supplies	Active Mode power consumption for multiple Output power supply	Generalized Test Protocol for calculating the Energy Efficiency of Internal AC-DC and DC-DC Power supplies: Revision 6.4.2, 22nd October 2008 & Revision 6.5, July 07, 2010. According to IEC 62623 (Edition 1.0): 2012-10 Test Method for Calculating the Energy Efficiency of Single-Voltage External AC-DC and AC-AC Power Supplies August 11, 2004	0.1 Wh to 500 Wh 5 s to 10 min
		Standby Mode Power consumption	Generalized Test Protocol for calculating the Energy Efficiency of Internal AC-DC and DC-DC Power supplies: Revision 6.4.2, 22nd October 2008 & Revision 6.5, July 07, 2010.according to IEC 62623 (Edition 1.0): 2012-10 Test Method for Calculating the Energy Efficiency of Single-Voltage External AC-DC and AC-AC Power Supplies August 11, 2004	0.1 Wh to 500 Wh 5 s to 10 min

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
II.	**AUDIO/ VIDEO COMPONENTS AND PRODUCTS**			
1.	**House Hold Electronic Appliances – CRT TV; LCD; Plasma displays**	Standby power measurement	IEC 62301 (Edition 2): 2011-01 IS 13384 (Part 1): 1992 IS 13384 (Part 2): 1997	0.1 Wh to 500 Wh
		On mode Power measurement	IEC 62087 (Edition 3): 2011-04 IS 13384 (Part 1): 1992 IS 13384 (Part 2): 1997	0.1 Wh to 500 Wh
2.	**Power adaptor, Televisions, Optical Disc Players, Amplifier, Electronic Musical System**	Normal operating conditions – Input Test	EN/IEC 60065: 2005, Clause. 4.2 IS 616: 2010 Clause. 4.2	1.5 V to 300 VAC 1.5 V to 300 VDC 0.5 mA to 20 A AC/DC
		Marking Legibility	EN/IEC 60065: 2005, Clause. 5 IS 616: 2010, Clause. 5	0.1 s to 600 s Qualitative
		Heating under normal operating conditions	EN/IEC 60065: 2005, Clause. 7 IS 616: 2010, Clause. 7	Upto 400 °C Qualitative
		Hygroscopic materials	EN/IEC 60065: 2005, Clause. 8.3 IS 616: 2010, Clause. 8.3	42 °C 90 % to 95 % Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptor, Televisions, Optical Disc Players, Amplifier, Electronic Musical System	Winding insulation Test	EN/IEC 60065: 2005, Clause. 8.8 IS 616: 2010, Clause. 8.8	10 V to 10 kV AC/DC 10 s to 900 s Qualitative
		External forces – windows & covers	EN/IEC 60065: 2005, Clause. 8.13, 8.14 IS 616: 2010, Clause. 8.13, 8.14	1 N to 50 N 1 S to 10 S Qualitative
		Internal forces	EN/IEC 60065: 2005, Clause. 8.15 IS 616: 2010, Clause. 8.15	1 N to 2 N Qualitative
		Determination of hazardous live Parts	EN/IEC 60065: 2005, Clause. 9.1.1.1 IS 616: 2010, Clause. 9.1.1.1	1 V to 300 V rms/Vdc 0.1 mA to 5 mA
		Protection): against electric shock - Accessibility	EN/IEC 60065: 2005, Clause. 9, 9.1.1.2, 9.2 IS 616: 2010, Clause. 9, 9.1.1.2, 9.2	1 N to 3 N 1 N to 22 N Qualitative
		Protection against electric shock – Opening in enclosure	EN/IEC 60065: 2005, Clause. 9.1.3 IS 616: 2010, Clause. 9.1.3	Test probe (4 mm x 100 mm) Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptor, Televisions, Optical Disc Players, Amplifier, Electronic Musical System	Protection against electric shock – Terminals	EN/IEC 60065: 2005, Clause. 9.1.4 IS 616: 2010, Clause. 9.1.4	1 mm to 30 mm 1 N to 11 N Qualitative
		Preset controls	EN/IEC 60065: 2005, Clause. 9.1.5 IS 616: 2010, Clause. 9.1.5	1 N to 150 N Qualitative
		Withdrawal of main plug	EN/IEC 60065: 2005, Clause. 9.1.6 IS 616: 2010, Clause. 9.1.6	0.1 V to 800 V Peak / DC 0.1 s to 10 s
		Resistance to external forces	EN/IEC 60065: 2005, Clause. 9.1.7 IS 616: 2010, Clause. 9.1.7	1 N to 250 N 1 s to 600 s Qualitative
		Surge Test	EN/IEC 60065: 2005, Clause. 10.1 IS 616: 2010, Clause. 10.1	1 kV to 10 kV peak Qualitative
		Humidity treatment	EN/IEC 60065: 2005, Clause. 10.2 IS 616: 2010, Clause. 10.2	28 °C to 50 °C 90 % to 95 % RH Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptor, Televisions, Optical Disc Players, Amplifier, Electronic Musical System	Insulation resistance	EN/IEC 60065: 2005, Clause. 10.3 IS 616: 2010, Clause. 10.3	1 V to 500 VDC 1 s to 600 s 0.05 MΩ to 2000 MΩ
		Dielectric strength	EN/IEC 60065: 2005, Clause. 10.3 IS 616: 2010, Clause. 10.3	1 V to 10 kV AC/DC 1 s to 900 s Qualitative
		Fault conditions Tests	EN/IEC 60065: 2005, Clause. 11 IS 616: 2010, Clause. 11	1 V to 400 V(peak) AC 1 V to 20 V DC 1 °C to 400 °C Qualitative
		Mechanical strength – Bump	EN/IEC 60065: 2005, Clause. 12.1.1 IS 616: 2010, Clause. 12.1.1	0.1 cm to 5 cm Qualitative
		Mechanical strength – Impact	EN/IEC 60065: 2005, Clause. 12.1.3 IS 616: 2010, Clause. 12.1.3	0.2 J to 1 J 0.1 m to 1 m Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptor, Televisions, Optical Disc Players, Amplifier, Electronic Musical System	Drop Test	EN/IEC 60065: 2005, Clause. 12.1.4 IS 616: 2010, Clause. 12.1.4	0.1 m to 1 m Qualitative
		Mechanical strength – Stress relief	EN/IEC 60065: 2005, Clause. 12.1.5 IS 616: 2010, Clause. 12.1.5	1 °C to 350 °C Qualitative
		Torque Test – Rod antenna	EN/IEC 60065: 2005, Clause. 12.6 IS 616: 2010, Clause. 12.6	1 N to 20 N 1 s to 600 s Qualitative
		Creepage and Clearance distances	EN/IEC 60065: 2005, Clause. 13 IS 616: 2010, Clause. 13	1 mm to 150 mm
		Determination of operating voltage	EN/IEC 60065: 2005, Clause. 13.2 IS 616: 2010, Clause. 13.2	1 V to 1000 V rms/VDC
		Component - Resistors	EN/IEC 60065: 2005, Clause. 14.1 IS 616: 2010, Clause. 14.1	40 (±)2 °C 90 % to 96 % RH 1 kV to 10 kV AC

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptor, Televisions, Optical Disc Players, Amplifier, Electronic Musical System	Provisions for protective resistance	EN/IEC 60065: 2005, Clause. 15.2 IS 616: 2010, Clause. 15.2	0.001 Ω to 0.3 Ω 5 s to 600 s 0.1 A to 60 A
		Strain relief Test	EN/IEC 60065: 2005, Clause. 16.5 IS 616: 2010, Clause. 16.5	1 N to 40 N 1 Nm to 25 Nm 1 s to 600 s Qualitative
		Torque Test on screw terminals	EN/IEC 60065: 2005, Clause. 17.1 IS 616: 2010, Clause. 17.1	1 mm to 6 mm 1 Nm to 2.5 Nm Qualitative
		Torque Test on covers	EN/IEC 60065: 2005, Clause. 17.7 IS 616: 2010, Clause. 17.7	1 N to 10 N 1 Nm to 2.5 Nm Qualitative
		Stability Test	EN/IEC 60065: 2005, Clause. 19.1 IS 616: 2010, Clause. 19.1	1 ° to 10 ° angle Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Power adaptor, Televisions, Optical Disc Players, Amplifier, Electronic Musical System	Vertical force stability	EN/IEC 60065: 2005, Clause. 19.2 IS 616: 2010, Clause. 19.2	1 cm to 75 cm 1 N to 100 N Qualitative
		Horizontal force stability	EN/IEC 60065: 2005, Clause. 19.3 IS 616: 2010, Clause. 19.3	1 N to 250 N 0.1 m to 3 m Qualitative
		Wall Or Ceiling Or Equipment Rack Mounting Test	EN/IEC 60065: 2005, Clause. 19.6 IS 616: 2010, Clause. 19.6	1 kg to 100 kg 1 s to 600 s Qualitative
		Resistance to Heat, Fire and Tracking (Glow wire Test)	EN/IEC 60065: 2005, Clause. 20, Annexure. G IS 616: 2010, Clause. 20, Annexure. G	Upto 850 °C Qualitative
		Resistance to Heat, Fire and Tracking (Needle flame)	EN/IEC 60065: 2005, Clause. 20, Annexure. G IS 616: 2010, Clause. 20, Annexure. G	1 min to 1 hr 2 mm,12 mm 100 °C to 700 °C Qualitative
		Resistance to Heat, Fire and Tracking (Flame Test)	EN/IEC 60065: 2005, Clause. 20, Annexure. G	1 mm to 50 mm Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
3.	**Secondary cells & Batteries**			
a.	**Lithium Ion cells & batteries, Ni-MH cells & batteries**	Insulation and wiring	IS 16046: 2015 Rev 1 (Clause. 5.2)	5 MΩ at 500 VDC for 60 s
		Low-rate charging	IS 16046: 2015 Rev 1 (Clause. 7.2.1)	0.50 V to 60 V / 0.30 A to 25 A Qualitative
		Vibration	IS 16046: 2015 Rev 1 (Clause. 7.2.2)	10 Hz to 60 Hz/ 5 Hz to 2300 Hz Amplitude-1.6 mm (P-P)/50.8 mm(P-P) 0.19 g to 4.6 g Acceleration Qualitative
		Moulded case stress at high ambient temperature (Batteries)	IS 16046: 2015 Rev 1 (Clause. 7.2.3)	20 °C to 350 °C Qualitative
		Temperature cycling	IS 16046: 2015 Rev 1 (Clause. 7.2.4)	150 °C to (-)40 °C Qualitative
		External short circuit	IS 16046: 2015 Rev 1 (Clause. 7.3.2)	0.1 mΩ to 2000 Ω Qualitative

S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Lithium Ion cells & batteries, Ni-MH cells & batteries	Free fall	IS 16046: 2015 Rev 1 (Clause. 7.3.3)	100 mm to 1000 mm Qualitative
		Mechanical shock(Crash hazard)	IS 16046: 2015 Rev 1 (Clause. 7.3.4)	1 g to 200 g, 5 Hz to 5000 Hz Qualitative
		Overcharge	IS 16046: 2015 Rev 1 (Clause. 7.3.8)	0.50 V to 60 V/ 0.30 A to 20A Qualitative
		Charging-2nd procedure	IS 16046: 2015 Rev 1 (Clause. 8.1.2)	0.50 V to 60 V/ 0.30 A to 20 A Qualitative
		Incorrect installation	IS 16046: 2015 Rev 1 (Clause. 7.3.1)	Resistor of 1 Ω Qualitative
		Thermal abuse(Cells)	IS 16046: 2015 Rev 1 (Clause. 7.3.5)	20 °C to 200 °C Qualitative
		Forced discharge(Cell)	IS 16046: 2015 Rev 1 (Clause. 7.3.9)	0.50 V to 60 V/ 0.30 A to 20 A Qualitative
		Transport Tests	UN38.3 (6th Edition), 2015	

Laboratory	**UL India Lab, UL India Pvt. Ltd., Laboratory Building, Kalyani Platina Campus, Sy. No. 129/4, EPIP Zone, Phase-II, Whitefield, Bangalore, Karnataka** **Location 1: Laboratory Building, Kalyani Platina Campus, Sy. No. 129/4, EPIP Zone, Phase-II, Whitefield, Bangalore, Karnataka** **Location 2: OAK Building, Kalyani Platina Campus, Sy. No 129/4, EPIP Zone, Phase-II , Whitefield, Bangalore, Karnataka**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Discipline	**Electronics Testing**	**Issue Date**	**05.08.2016**
Certificate Number	**T-1432**	**Valid Until**	**04.08.2018**
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S. No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
	Lithium Ion cells & batteries, Ni-MH cells & batteries	T1 : Altitude Simulation	UN 38.3 Clause. 4.1	10 mBar to 930 mBar Qualitative
		T2 : Thermal Test	UN 38.3 Clause. 4.2	150 °C to (-)40 °C Qualitative
		T3 : Vibration	UN 38.3 Clause. 4.3	5 Hz to 2300 Hz Amplitude 0.1 mm to 50.8 mm (P-P) Qualitative
		T4 : Shock	UN 38.3 Clause. 4.4	1 g to 200 g, 5 Hz to 5000 Hz Qualitative
		T5 : External Short Circuit	UN 38.3 Clause. 4.5	0.1 mΩ to 2000 Ω Qualitative
		T6 (a) : Impact & (Crush)	UN 38.3 Clause. 4.6	200 Nw to 18 kNw Qualitative
		T7 : Over Charge	UN 38.3 Clause. 4.7	0.50 V to 60 V/ 0.30 A to 20 A Qualitative
		T8 : Forced Discharge	UN 38.3 Clause. 4.8	0.50 V to 60 V/ 0.30 A to 20 A Qualitative

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