



## LIST OF TESTS CARRIED OUT BY LABORATORY

Sl.	Specific tests / types of tests Performed	Specification, standard (method) or technique used (and referring collateral standards)	Range of testing/ Limit of detection
1.	Ground Bond Test (On-Site and at Permanent facility)	BS EN 60204 - 1 : 2006 + A1: 2009, BS EN 61010 - 1 : 2010 IEC 60601 - 1 : 2012 Edition 3.1, IEC 61439-1 Ed. 2.0 B:2011 IEC 60335 - 1 : 2013 : Edition 5.1, EN 60950 - 1: 2006 + A2: 2013. IEC 62040-1:2013 IEC 62109-1:2010 IS 302-1:2008 IS 1356-1:1972 IS 13450-1:2008 IS 13252-1:2010 ISO 11197:2016	3Aac-33Aac 10mΩ-650mΩ
2.	Insulation Resistance (On-Site and at Permanent facility)		50V – 1kVdc 1MΩ - 9999 MΩ
3.	Di-electric Withstand Test A.C Withstand Test D.C Withstand Test Power frequency Test (On-Site and at Permanent facility)		Vdc: 0.100 kV – 6 kVdc Vac: 0.100 kV – 5kVac 3.00 A – 33.00 A
4.	Temperature Rise Test (On-Site and at Permanent facility)		IR:- -18 °C to +450 °C Data Logger:- 0 - 100°C
5.	Residual Voltage Measurement / Voltage Measurement (On-Site and at Permanent facility)		Voltage: (0 to 600) V a.c. Frequency: (50 to 60) Hz
6.	Leakage Current Test		DC / AC :50 μA/500 μA/5 mA/50 mA
7.	Humidity Pre-conditioning		Temperature : (-10 to 130) °C, Humidity : (10 to 96) %RH Size : 500 mm * 600 mm * 620 mm (L*B*H)
8.	Durability Of Marking		Petroleum Spirit Isopropyl Alcohol Methylated Spirit Ethanol
9.	Sound Level Measurement		Lp : 30 ~ 130 dB (A) 30 ~ 130 dB (F) 35 ~ 130 dB (C)
10.	Creepage & Clearance		0 – 150 mm
11.	Impact Test		500 g ± 25 gm Ball
12.	Ball Pressure Test	BS EN 61010 - 1 : 2010, EN 60950 - 1 : 2006 + A2 : 2013 IEC 60335 - 1 : 2013 : Edition 5.1 IEC 60601 – 1 : 2012 Edition 3.1 IS 302-1:2008 IS 13252-1:2010 IS 13450-1:2008	20N
13.	Glow Wire Test	BS EN 61010 - 1 : 2010, EN 60950 - 1 : 2006 + A2 : 2013 IEC 62040-1:2013 IEC 60335 - 1 : 2013 : Edition 5.1 IEC 60601 – 1 : 2012 Edition 3.1, IEC 61439-1:2011 IEC 62109-1:2010 IS 302-1:2008 IS 13252-1:2010	(1-960)°C 1N
14.	Accessibility Test with Jointed Finger Probe	BS EN 61010 - 1 : 2010, EN 60950 - 1 : 2006 + A2 : 2013 IEC 60601 – 1 : 2012 Edition 3.1 IEC 60335 - 1 : 2013 : Edition 5.1	φ 12mm Length : 80mm ; Force : 10 N
15.	Accessibility Test with Test Pin Probe	BS EN 61010 - 1 : 2010, EN 60950 - 1 : 2006 + A2 : 2013 IEC 60601 – 1 : 2012 Edition 3.1,	φ 1.0 mm Length : 100mm ; Force : 1 N
16.	Accessibility Test with Rigid Finger Probe	BS EN 61010 - 1 : 2010, EN 60950 - 1 : 2006 + A2 : 2013 IEC 60601 – 1 : 2012 Edition 3.1	Force : 50 N
17.	Accessibility Test with Test Rod	IEC 60601 – 1 : 2012 Edition 3.1	φ 2.5 mm Length : 100mm ; Force : 3 N



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18.	Accessibility Test with Test Hook	IEC 60601 – 1 : 2012 Edition 3.1	Force : 50 N
19.	Angle Measurement	BS EN 60204 – 1 : 2006 + A1: 2009 IEC 62040-1:2013 IEC 60601-1:2005+A1:2012 IEC 60335-1:2010+A1 2013+A2 2016 BS EN 61010 - 1 : 2010 EN 60950 - 1 : 2006 + A2 : 2013 IS 302-1:2008 IS 13252-1:2010 IS 13450-1:2008 IS 13450-1:2008	0-90°
20.	Drop test	BS EN 61010-1,Ed 3 : 2010 EN 60950-1 : 2006 + A1 : 2006 + A2 : 2013 IEC 60601-1 : 2012 Edition 3.1 IEC 62109-1:2010, IS 13252-1:2010 IS 13450-1:2008, ISO 11197:2016	50mm Thick Density :> 800 Kg/m3
21.	Paint Adhesive Test	ASTM D3359	-
22.	Corrosion Test	ASTM B117 IEC 60068-2-11 ED 3 : 1981	-
23.	Steady Force Test	EN 60950-1:2006+A1:2006+A2:2013 IEC 62040-1:2013 IS 13252-1:2010	1N to 50N
24.	Mould Stress relief Test	EN 60950-1:2006+A1:2006+A2:2013 IEC 62040-1:2013 IEC 60601-1:2005+A1:2012 IS 13450-1:2008, ISO 11197:2016 IEC 62109-1:2010, IEC 62109-1:2010	(-10 to 150)°C
25.	Access probe Test	IEC 62109-1:2010, IEC 62109-2:2011	Force : 1N – 50 N/ 0V - 50 Vac
26.	Power Input	IEC 60601-1:2005+A1:2012 IEC 62109-1, IEC 62109-2	- 0-600Vac, 0-10Aac 0-310V, 0 - 2.1A, 0 - 20 A
27.	Push Test	ISO 11197, IEC 60601-1	0 – 100kg
28.	Needle Flame Test	IEC 60695-11-5	-
29.	Impulse Withstand Test	IEC 61439-1, IEC 61010-1, IEC 60335-1,IEC 60730 etc.	(0 to 12) kV (0-600)V
30.	Weight/ Load Application Test	IEC 60601-1, IEC 60730-1 etc.	Up to 281 Kg
31.	Torque Test	IEC 60335-1, IEC 61010-1	( 0.3 to 12) N/m
32.	Tensile safety Factor Test	IEC 60601-1	Up to 281 Kg
33.	Pull tester	IEC 60601-1, IEC 61010-1.	25 times pull with weight(30 to 100)N
34.	Twist test	IEC 60601-1, IEC 61010-1.	Torque applied (0.1 to 0.35)Nm
35.	Accuracy of Oxygen concentration & Accuracy of Oxygen flow	ISO 80601-2-69	Oxygen concentration (21-100)% Flow (-200 to 300)L Pressure (-25 to 150) cmH <sub>2</sub> O Temperature (5 to 40)°C
36.	Volume control inflation type & Pressure control inflation type	ISO 80601-2-12	Oxygen concentration (21-100)% Volume (0.01 to 10)L Pressure (-25 to 150) cmH <sub>2</sub> O Time (0.01 -30) sec Frequency (1 -1500) bpm
37.	Stability test	IEC 60601-1, IEC 61010-1, IEC 60335-1, IEC 62109-1, IEC 60950-1,IEC 60950-1, IS 13252, IS 13450-1, ISO 11197, IEC 62040-1,IEC 62477-1	Angle 10° and rotation 360°. (0-360) °
38.	Flexion test	IEC 60947-1, IEC 60884-1	130 continuous revolution of 10rpm ± 2rpm.



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39.	IP X3 & IPX4 spray nozzle	IEC 60529-1	121 holes of 0.5mm dia, with pressure of 50 to 150Kpa(0.5 bar to 1.5 bar)
40.	Pulse parameter, Output amplitude & limitations of output parameters	IEC 60601-2-10	Voltage: (0 to 300)V ac Frequency : (50 to 60)Hz
41.	Supply voltage fluctuation	IEC 60601-2-10	Voltage: (0 to 310)V ac/dc
42.	Electrode	IEC 60601-2-10 & IEC 60601-2-2	(0 to 15)minutes
43.	Rough handling test	IEC 60601-1	40mm Thick ness, 7 X 3 (L X W) feet
44.	Movement over threshold (over balance)	IEC 60601-1	10 X 80 (H X L) mm
45.	Attachment of terminal block	IEC 60947-1, IEC 60947-7-1	(1, 2.8, 5.7, 12.8 & 20.5) mm thickness rod.
46.	Pull out test	IEC 60947-1, IEC 60947-7-1.	Puling force is applied
47.	Mechanical strength test	IEC 60947-1	Tightening and loosening
48.	Active accessory saline preconditioning	IEC 60601-2-2	Saline Water preconditioning
49.	CQM Test		(0 -450) $\Omega$
50.	Neuromuscular stimulation		(0 -9999) M $\Omega$ , (0 – 50) G $\Omega$
51.	Thermals effects of HF leakage current		(0 – 5500) mA
52.	Active accessory mains frequency Dielectric Strength		(0 – 5.0) kV a.c., (0 – 6.0) kV d.c.
53.	Interruption of power supply		0.0 to 500W
54.	Monotonicity of power control		0.0 to 500W
55.	Accuracy of maximum output voltage		10kVp-p
56.	NE Cord Attachment		(0 to 650) m $\Omega$