



# NABL

## National Accreditation Board for Testing and Calibration Laboratories

(An Autonomous Body under Department of Science & Technology, Govt. of India)

### **CERTIFICATE OF ACCREDITATION**

## **ELECTRONICS REGIONAL TEST LABORATORY (WEST)**

has been assessed and accredited in accordance with the standard

**ISO/IEC 17025:2005**

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

Plot No. F7&8, MIDC Area, Andheri (East), Mumbai, Maharashtra

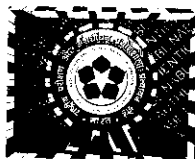
in the discipline of

**ELECTRONICS TESTING**

(To see the scope of accreditation of this laboratory, you may also visit NABL website [www.nabl-india.org](http://www.nabl-india.org))

**Certificate Number** T-0134

**Issue Date** 18/12/2014



**Valid Until** 17/12/2016

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the additional requirements of NABL.

Signed for and on behalf of NABL

N. Venkateswaran  
Program Manager

Anil Relia  
Director

Prof. Ashutosh Sharma  
Chairman



# रा.प्र.प्र.बो.

## राष्ट्रीय परीक्षण और अंशशोधन प्रयोगशाला प्रत्यायन बोर्ड

(विज्ञान एवं प्रौद्योगिकी विभाग, भारत सरकार के अधीन स्वायत्तशासी निकाय)

### प्रत्यायन प्रमाण-पत्र

## इलेक्ट्रॉनिकी क्षेत्रीय परीक्षण प्रयोगशाला (पश्चिम)

का मूल्यांकन और प्रत्यायन निम्न मानक के अनुसार

आई.एस.ओ./आई.ई.सी. 17025:2005

“परीक्षण एवं अंशशोधन प्रयोगशालाओं की सक्षमता की सामान्य अपेक्षाएँ”

मुम्बई, महाराष्ट्र

में स्थित इसकी सुविधाओं के लिए

## इलेक्ट्रॉनिक्स परीक्षण

के विषय क्षेत्र में किया गया।

(इस प्रयोगशाला के प्रत्यायन के विषय क्षेत्र की जानकारी एन ए बी एल वेबसाइट [www.nabl-india.org](http://www.nabl-india.org) से भी प्राप्त कर सकते हैं)

प्रमाण-पत्र संख्या प -0134

जारी करने की तिथि 18/12/2014



वैधता की तिथि 17/12/2016

यह प्रमाण-पत्र उपर्युक्त मानक तथा राष्ट्रीय परीक्षण और अंशशोधन प्रयोगशाला प्रत्यायन बोर्ड की अतिरिक्त अपेक्षाओं का निरंतर संतोषप्रद अनुपालन किए जाने पर अनुबंध में निर्दिष्टानुसार प्रत्यायन के क्षेत्र के लिए वैध रहेगा।

रा.प्र.प्र.बो. की ओर से हस्ताक्षरित

एन. वेंकटेश्वर

अनिल रेलिया

आशुतोष शर्मा

एन. वेंकटेश्वर  
कार्यक्रम पवन्धक

अनिल रेलिया  
निदेशक

प्रो. आशुतोष शर्मा  
अध्यक्ष



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## SCOPE OF ACCREDITATION

Laboratory	Electronics Regional Test Laboratory (West), Plot No. F 7 & 8, MIDC Area, Andheri (East), Mumbai, Maharashtra		
Accreditation Standard	ISO/IEC 17025: 2005		
Discipline	Electronics Testing	Issue Date	18.12.2014
Certificate Number	T-0134	Valid Until	17.12.2016
Last Amended on	09.02.2015	Page	1 of 22

S.No.	Product / Material of Test	Specific Test Performed	Test Method Specification against which tests are performed	Range of Testing / Limits of Detection
<b>I.</b>	<b>EMI TEST FACILITY</b>			
1	Industrial, Scientific, Medical equipment, Household appliances  Lighting appliances  UPS  Laboratory equipment  Information technology equipment  Process control and allied equipment	Conducted Emission (Continuous)	IEC/CISPR 11 (2010), IEC/CISPR 14-1(2011), IS 13779(2003), IEC 14697(2004) IEC/CISPR 15(2013) IEC 62040-2(2005) IEC 61326-1(2012) IEC/CISPR 22(2008) IEC 61000-6-3(2011) IEC 61000-6-4(2011)	9 kHz to 30 MHz (-)135 dBm to + 30 dBm Single phase: 230/240 Vac, Input current: 200 A Three Phase: 380/440 Vac, Input current: 200A Phase
2.	Industrial, Scientific, Medical equipment, Household appliances  Lighting appliances  UPS  Laboratory equipment	Radiated Emission	IEC/CISPR 11(2010) IEC/CISPR 14-1(2011) IEC 62040-2(2005) IEC 61326-1(2012) IEC/CISPR 22(2008) IEC 61000-6-3(2010) IEC 61000-6-4(2010)	30 MHz to 1.5 GHz (-)135 dBm to + 30 dBm Single Phase: 230/240 Vac, Input current: 200 A, Three Phase: 380/440 Vac, Input current: 200 A /Phase

Prachi Kukreti  
Convenor

N. Venkateswaran  
Program Manager



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	Information technology equipment Process control and allied equipment	Radiated Emission	IEC/CISPR 11(2010) IEC/CISPR 14-1(2011) IEC 62040-2(2005) IEC 61326-1(2012) IEC/CISPR 22(2008) IEC 61000-6-3(2010) IEC 61000-6-4(2010)	30 MHz to 1.5 GHz (-)135 dBm to + 30 dBm Single Phase: 230/240 Vac, Input current: 200 A, Three Phase: 380/440 Vac, Input current: 200 A /Phase
3.	Household electrical, electronic appliances	Disturbance power	CISPR 14-1(2011) IS 13779: 2003 IEC 14697 (2004)	30 MHz to 1000 MHz (-)35 dBm to + 30 dBm Single /Three Phase:240/440Vac, Input current: 200 A & 200 A/Phase
4.	Industrial, Scientific, Medical equipment, Household appliances, Lighting equipment, Information technology equipment, Process control and allied equipment	Current harmonic emissions  Voltage fluctuations and Flicker  Electrical Fast Transient / Burst on power lines and I / O data and control lines	IEC 61000-3-2 (2009)  IEC 61000-3-3 (2013)  IEC 61000-4-4 (2010) IEC 61000-6-1(2005) IEC 61000-6-2 (2005) IEC 61326-1(2012) CISPR 24(2010) IS 13779: 2004	220 to 240 VAC 50 Hz 16 A Upto 50 <sup>th</sup> harmonic of nominal current  Input Voltage : 220 to 240 VAC 50 Hz 16 A  0.5 kV to 4.0 kV 2.5 kHz to 5 kHz/100 kHz Rise time of pulse : 5 ns Pulse duration : 50 ns

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	<b>Industrial, Scientific, Medical equipment, Household appliances, Lighting equipment, Information technology equipment, Process control and allied equipment</b>	Electrostatic discharge	IEC 61000-4-2 (2008) IEC 61000-6-1(2005) IEC 61000-6-2 (2005) IEC 61326-1(2012) CISPR 24 (2010) IS 13779: 2004	Pulse amplitude : Air discharge: 0 to 15 kV Contact discharge: 0 to 8 kV Pulse Polarity: +ve/-vc
		Radiated susceptibility	IEC 61000-4-3 (2010) IEC 61000-6-1(2005) IEC 61000-6-2(2005) IEC 61326-1(2012) CISPR 24(2010) IS 13779: 2004	80 MHz to 1000 MHz 1 V/m to 20 V/m
		Conducted susceptibility	IEC 61000-4-6(2013) IEC 61000-6-1 (2005) IEC 61000-6-2(2005) IEC 61326-1(2012) CISPR 24 (2010)	150 kHz to 80 MHz & 150kHz to 230 MHz 1 V to 30 V
		Surge on power lines and I/O data and control lines	IEC 61000-4-5(2005) IEC 61000-6-1(2005) IEC 61000-6-2 (2005) IEC 61326-1(2012) CISPR 14-2(2008) CISPR 24 (2010)	Upto 6 kV Upto 3 kA 1.2/50us/8/20us
		Power frequency magnetic field	IEC 61000-4-8(2009) IEC 61000-6-1(2005) IEC 61000-6-2,(2005) IEC 61326-1(2012) CISPR 24(2010)	1 A/m to 1000 A/m

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	Industrial, Scientific, Medical equipment, Household appliances, Lighting equipment, Information technology equipment, Process control and allied equipment	Voltage dips / Voltage interruptions	IEC 61000-4-11 (2004) IEC 61000-6-3(2010) IEC 61000-6-4(2010) CISPR 24(2010) IEC 61326-1 (2012)c	1.5 ms to 500 ms 100 %
5.	Industrial Process control and allied equipment	1 MHz Damped Sinusoidal	IEC 61000-4-18 (2011)	2 s to 10 s Upto 2.75 kV
<b>II. ENVIRONMENTAL TEST FACILITY</b>				
1.	Electrical & Electronic items and related materials	Dry heat	IS 9000 ( Part 3): 1977 (RA 2004) IEC : 60068-2-2(2007-ed-5) JSS : 50101 (1996) JSS : 55555 (2000) QM 333 : (2010) IEC 60571 : 2006	Ambient to 250 °C Work space: (1 M X 1M X 1M) (2M X 2M X 2M) (0.8 M X 0.5M X 0.6M)
		Cold	IS 9000 ( Part 2): 1977 (RA 2004) IEC : 60068-2-1(2007-ed-6) JSS : 50101 (1996) JSS : 55555 (2000) QM 333 : (1998) IEC 60571 : 2006	Ambient to (-)70 °C

*Prachi*

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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
	<b>Electrical &amp; Electronic items and related materials</b>	Damp heat(Cyclic) Work space:	IS 9000 ( Part 5): 1981 (RA 2004) IEC : 60068-2-30(2007-ed-3) JSS : 50101 (1996) JSS : 55555 (2000) QM 333 : (2010) IEC 60571 : 2006.	25 °C to 85 °C 20 % RH to 98 % RH (1 M X 1M X 1M) (2M X 2M X 2M) (0.8 M X 0.5M X 0.6M)
		Damp heat(Steady State) Work space: (1 M X 1M X 1M) (2M X 2M X 2M) (0.8 M X 0.5M X 0.6M)	IS 9000 ( Part 4): 1979 (RA 2004) IEC : 60068-2-78(2001-08) JSS : 50101 (1996) JSS : 55555 (2000) QM 333 : (2010)	25 °C to 85 °C 20 % RH to 98 % RH
		Composite Temp / Humidity test (moisture resistance) Work space:	IS 9000 (Part 6): 1978 (RA 2004) IEC : 60068-2-38 (2009-ed-2) JSS : 50101 (1996)	(-)10 °C to 65 °C 20 % RH to 95 % RH (1 M X 1M X 1M) (2M X 2M X 2M) (0.8 M X 0.5M X 0.6M)
		Temperature Cycling / Thermal Shock	IS 9000 ( Part 14): 1988 (RA 2004) IEC : 60068-2-14(2009-ed-6) JSS : 50101 (1996) JSS : 55555 (2000) QM 333 : (2010)	(-)70 °C to 200 °C Work space: (1 M X 1M X 1M) (2M X 2M X 2M) (0.8 M X 0.5M X 0.6M) Thermal shock: Work space: (0.45 M X 0.35 M X 0.35 M)

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N. Venkateswaran  
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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
	Electrical & Electronic items and related materials	Salt Spray	IS 9000 ( Part 11): 1983 (RA 2004) IEC : 60068-2-11(1981) JSS : 50101 (1996) JSS : 55555 (2000) IEC : 60571 : 2006. QM 333 : (2010)	Ambient to 55 °C Work space: (1.6 M X 0.7 M X 0.65 M)
		Vibration Sine / Random Test	IS 9000 ( Part 8): 1981 (RA 2006) IEC : 60068-2-6/64(2008-ed-4) JSS : 50101 (1996) JSS : 55555 (2000) QM 333 : (2010) IEC : 60571 : 2006	5 Hz to 2500 Hz 50.0 mm 50 g (bare table) 100 Hz to 900 Hz 50.0 mm 80 g (bare table)
		Bump Test	IS 9000 ( Part 7): 1979 (RA 2004) IEC : 60068-2-29(1987) JSS : 50101 (1996) JSS : 55555 (2000) QM 333 : (2010)	10 g to 40 g
		Shock Test	IS 9000 (Part 7):1979 IEC : 60068-2-27(2008) JSS : 50101 (1996) JSS : 55555 (2000) QM 333 : (2010) IEC : 60571 : 2006	15 g to 100 g (Half sine)
		Tropical Exposure	JSS : 55555 (2000)	Ambient to 75 °C 95 % RH Work space: (1 M X 1M X 1M) (2M X 2M X 2M)

  
Prachi Kukreti  
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N. Venkateswaran  
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2.	Electrical & Electronic items	Driving Rain Test	IS 9000 (Part 16):1983 (RA 2004) JSS : 55555 (2000)	Ambient temp 450 L/ h at 200 kPa (Work space: 600 mm diameter)
		Dust Test	IS 9000 (Part 12): 1981 (RA 2004) IEC : 60529 : (2001) JSS : 50101 (1996) JSS : 55555 (2000)	Temp : (35 -- 40)° C Humidity not more Than 50 % RH Work space: (1 M X 1M X 1M)
		Degree of Protection	IEC : 60947-1,AD3.2 , 2001-12 IEC : 60529 : (2001) IS : 4691 (1985) R 2004 IS 12063: 1987 (RA 2004)	Qualitative (IP IX to IP 6X IP XI to IP X7) Work space: (1 M X 1M X 1M)

### III. SAFETY TESTING

1.	Household and similar electrical appliances	Power input & current	IEC- 60335-1:2010-05 5 <sup>th</sup> ed. Part -2-2:2009-12 Part -2-7:2012-03 Part -2-8:2008-09 Part -2-10:2008-07 Part -2-14:2008-09 Part -2-17:2012-03 Part -2-21:2009-04 Part -2-24:2010-02, Part -2-26:2008-07, Part -2-29:2010-03, Part -2-35:2006-11, Part -2-40:2005-07, Part -2-41:2010-03, Part -2-73:2009-11, Part -2-74:2009-11, Part -2-79:2012-02 Part -2-80:2008-09	Upto 600 V a.c Upto 20A Upto 1 kHz P.F:- 0-1  Upto 600 V a.c Upto 20A Upto 1 kHz P.F:- 0-1
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*Frachi*  
 Frachi Kukreti  
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*N. Venkateswaran*  
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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
2.	Measurement, control and laboratory equipment	Marking & documentation	IEC- 61010-1: 2010-06, 3 <sup>rd</sup> ED.	Upto 600 V a.c Upto 20A Upto 1 kHz P.F:- 0-1
	Audio, Video and similar electronic apparatus	Marking & documentation	IEC- 60065:2011-02 ed. 7.2, IS 616:2010	Upto 600 V a.c Upto 20A Upto 1 kHz P.F:- 0-1
3.	Information Technology equipment	Power interface	IEC- 60950-1: 2013, 2.2 edition 2.2 IS 13252:2010 + A1:2013	Upto 600 V a.c Upto 20A Upto 1 kHz P.F:- 0-1
4.	Transformer	Change of input voltage setting	IEC 61558-1 ed. 2.1 2009-04	Upto 600 V a.c Upto 20A Upto 1 kHz P.F:- 0-1
5.	Household and similar electrical appliances	Power input & current	IEC- 60335-1:2010-05 5 <sup>th</sup> ed. Part -2-2:2009-12 Part -2-7:2012-03 Part -2-8:2008-09 Part -2-10:2008-07 Part -2-14:2008-09 Part -2-17:2012-03 Part -2-21:2009-04 Part -2-24:2010-02, Part -2-26:2008-07, Part -2-29:2010-03, Part -2-35:2006-11, Part -2-40:2005-07, Part -2-41:2010-03, Part -2-73:2009-11, Part -2-74:2009-11, Part -2-79:2012-02 Part -2-80:2008-09	Upto 600 V a.c Upto 20A Upto 1 kHz P.F:- 0-1

*Frachi*

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6.	Measurement, control and laboratory equipment	Marking & documentation	IEC- 61010-1: 2010-06, 3 <sup>rd</sup> ED.	Upto 600 V a.c Upto 20A Upto 1 kHz P.F:- 0-1
	Audio, Video and similar electronic apparatus	Marking & documentation	IEC- 60065:2011-02 ed. 7.2, IS 616:2010	Upto 600 V a.c Upto 20A Upto 1 kHz P.F:- 0-1
7.	Information Technology equipment	Power interface	IEC- 60950-1: 2013, 2.2 edition 2.2 IS 13252:2010 + A1:2013	Upto 600 V a.c Upto 20A Upto 1 kHz P.F:- 0-1
8.	Transformer	Change of input voltage setting	IEC 61558-1 ed. 2.1 2009-04	Upto 600 V a.c Upto 20A Upto 1 kHz P.F:- 0-1
9.	Household and similar electrical appliances	Power input & current	IEC- 60335-1:2010-05, 5 <sup>th</sup> ed. Part -2-2:2009-12 Part -2-7:2012-03 Part -2-8:2008-09 Part -2-10:2008-07 Part -2-14:2008-09 Part -2-17:2012-03 Part -2-21:2009-04 Part -2-24:2010-02 Part -2-26:2008-07 Part -2-29:2010-03 Part -2-35:2006-11 Part -2-40:2005-07 Part -2-41:2010-03	Upto 600 V a.c Up to 20A Upto 1kHz Power Factor: 0-1

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	Household and similar electrical appliances	Power input & current	Part -2-73:2009-11 Part -2-74:2009-11 Part -2-79:2012-02 Part -2-80:2008-09	Upto 600 V a.c Up to 20A Upto 1kHz Power Factor: 0-1
10.	Measurement, control and laboratory equipment	Marking	IEC- 61010-1: 2010-06, 3 <sup>rd</sup> ED.	
	Audio, Video and similar electronic apparatus	Marking	IEC- 60065:2011-02 ed. 7.2 IS 616: 2010	
11.	Information Technology equipment	Power Interface	IEC- 60950-1: 2013, 2.2 edition 2.2 IS 13252: 2010 + A1:2013	
	Transformer	Change of input voltage setting	IEC 61558-1 ed. 2.1 2009-04 Upto 600 V a.c Up to 20A Upto 1kHz Power Factor: 0-1	Upto 600 V a.c Up to 20A Upto 1kHz Power Factor: 0-1  Upto 600 V a.c Up to 20A Upto 1kHz Power Factor: 0-1  Upto 600 V a.c Up to 20A Upto 1kHz Power Factor: 0-1  Upto 600 V a.c Up to 20A Upto 1kHz Power Factor: 0-1

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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
12.	Household and similar electrical appliances	Heating	IEC- 60335-1:2010-05, 5 <sup>th</sup> ed. Part -2-2:2009-12 Part 2-7:2012-03 Part -2-8:2008-09 Part -2-10:2008-07 Part -2-14:2008-09 Part -2-17:2012-03 Part -2-21:2009-04 Part -2-24:2010-02 Part -2-26:2008-07 Part -2-29:2010-03 Part -2-35:2006-11 Part -2-40:2005-07 Part -2-41:2010-03 Part -2-73:2009-11 Part -2-74:2009-11 Part -2-79:2012-02 Part -2-80:2008-09	25 °C to 400 °C
	Transformer	Heating	IEC 61558-1 ed. 2.1 2009-04	25 °C to 400 °C
13.	Measurement, control and laboratory equipment	Equipment temperature limits & resistance to heat	IEC- 61010-1: 2010-06, 3 <sup>RD</sup> ed.	25 °C to 400 °C
14.	Audio, Video and similar electronic apparatus	Heating under normal operating condition & under fault condition	IEC- 60065:2011-02, ed. 7.2, IS 616: 2010	25 °C to 400 °C
15.	Information Technology equipment	Thermal requirement	IEC- 60950-1: 2013, 2.2 edition 2.2 IS 13252: 2010 + A1:2013	25 °C to 400 °C

*Prachi*

Prachi Kukreti  
Convenor

*N. Venkateswaran*

N. Venkateswaran  
Program Manager



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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
16.	Household and similar electrical appliances	Provision for protective Earthing	IEC- 60335-1:2010-05, 5 <sup>th</sup> ed. Part -2-2:2009-12 Part 2-7:2012-03 Part -2-8:2008-09 Part -2-10:2008-07 Part -2-14:2008-09 Part -2-17:2012-03 Part -2-21:2009-04 Part -2-24:2010-02 Part -2-26:2008-07 Part -2-29:2010-03 Part -2-35:2006-11 Part -2-40:2005-07 Part -2-41:2010-03 Part -2-73:2009-11 Part -2-74:2009-11 Part -2-79:2012-02 Part -2-80:2008-09	10 mΩ to 100 mΩ
17.	Measurement, control and laboratory equipment	Impedance of protective Bonding	IEC- 61010-1: 2010-06, 3 <sup>RD</sup> ed.	10 mΩ to 100 mΩ
18.	Audio, Video and similar electronic apparatus	Provision for protective Earthing	IEC- 60065:2011-02, ed. 7.2, IS 616: 2010	10 mΩ to 100 mΩ
	Transformer	Provision for protective earthing	IEC 61558-1 ed. 2.1 2009-04	10 mΩ to 100 mΩ
19.	Information Technology equipment	Resistance to Earthing Conductor	IEC- 60950-1: 2013, 2.2 edition 2.2 IS 13252: 2010 + A1:2013	10 mΩ to 100 mΩ

Prachi Kukreti  
Convenor

N. Venkateswaran  
Program Manager



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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
20.	Household and similar electrical appliances	Electric strength test	IEC- 60335-1:2010-05, 5 <sup>th</sup> ed. Part -2-2:2009-12 Part 2-7:2012-03 Part -2-8:2008-09 Part -2-10:2008-07 Part -2-14:2008-09 Part -2-17:2012-03 Part -2-21:2009-04 Part -2-24:2010-02 Part -2-26:2008-07 Part -2-29:2010-03 Part -2-35:2006-11 Part -2-40:2005-07 Part -2-41:2010-03 Part -2-73:2009-11 Part -2-74:2009-11 Part -2-79:2012-02 Part -2-80:2008-09	Upto 5 kV AC Upto 6 kV DC
21.	Information Technology equipment	Electric strength test	IEC- 60950-1: 2013, 2.2 edition 2.2 IS 13252:2010 + A1:2013	Upto 5 kV AC Upto 6 kV DC
22.	Measurement, control and laboratory equipment	Voltage Test	IEC- 61010-1: 2010-06, 3 <sup>RD</sup> ed.	Upto 5 kV AC Upto 6 kV DC
	Electrical safety machine	Voltage Test	IEC-60204-1:2009-02,Ed 5.1	Upto 5 kV AC Upto 6 kV DC
23.	Audio, Video and similar electronic apparatus	Dielectric strength test	IEC- 60065:2011-02, ed. 7.2, IS 616: 2010	Upto 5 kV AC Upto 6 kV DC

  
Prachi Kukreti  
Convenor

  
N. Venkateswaran  
Program Manager



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	Transformer	Dielectric Strength test	IEC 61558-1 ed. 2.1 2009-04	Upto 5 kV AC Upto 6 kV DC
24.	Household and similar electrical appliances	Protection against access to live parts C. no 8.1.4	IEC- 60335-1:2010-05, 5 <sup>th</sup> ed. Part -2-2:2009-12 Part 2-7:2012-03 Part -2-8:2008-09 Part -2-10:2008-07 Part -2-14:2008-09 Part -2-17:2012-03 Part -2-21:2009-04 Part -2-24:2010-02 Part -2-26:2008-07 Part -2-29:2010-03 Part -2-35:2006-11 Part -2-40:2005-07 Part -2-41:2010-03 Part -2-73:2009-11 Part -2-74:2009-11 Part -2-79:2012-02 Part -2-80:2008-09	Upto 100 mA
25.	Measurement, control and laboratory equipment	Limit values for accessible parts	IEC- 61010-1: 2010-06, 3 <sup>RD</sup> ed.	Upto 100 mA
26.	Audio, Video and similar electronic apparatus	Touch current	[ IEC- 60065:2011-02, ed. 7.2, IS 616:2010	Upto 100 mA
	Information Technology equipment	Touch Current	IEC- 60950-1: 2013, 2.2 edition 2.2 IS 13252:2010 + A1:2013	Upto 100 mA

Prachi Kukreti  
Convenor

N. Venkateswaran  
Program Manager





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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
	Transformer	Touch Current	IEC 61558-1 ed. 2.1 2009-04	Upto 100 mA
27.	Household and similar electrical appliances	Construction	IEC- 60335-1:2010-05, 5 <sup>th</sup> ed. Part -2-2:2009-12 Part 2-7:2012-03 Part -2-8:2008-09 Part -2-10:2008-07 Part -2-14:2008-09 Part -2-17:2012-03 Part -2-21:2009-04 Part -2-24:2010-02 Part -2-26:2008-07 Part -2-29:2010-03 Part -2-35:2006-11 Part -2-40:2005-07 Part -2-41:2010-03 Part -2-73:2009-11 Part -2-74:2009-11 Part -2-79:2012-02 Part -2-80:2008-09	200 mV/Div
28.	Measurement, control and laboratory equipment	Plugs & Connectors	IEC- 61010-1: 2010-06, 3 <sup>RD</sup> ed.	200 mV/Div
29.	Audio, Video and similar electronic products	Withdrawal of mains plug	IEC- 60065:2011-02, ed. 7.2, IS 616: 2010	200 mV/Div
30.	Information Technology products	Discharge of capacitors	IEC- 60950-1: 2013, 2.2 edition IS 13252: 2010 + A1:2013	200 mV/Div

  
Prachi Kukreti  
Convenor

  
N. Venkateswaran  
Program Manager



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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
31.	Transformer	Protection against hazardous electric discharge.	IEC 61558-1 ed. 2.1 2009-04	200 mV/Div
32.	Audio, Video and similar electronic apparatus	Surge Test	IEC- 60065,:2011-02, ed. 7.2 IS 616:2010	0.5 kV to 12 kV
33.	Audio, Video and similar electronic apparatus	Insulation Resistance	IEC- 60065,:2011-02, ed. 7.2 IS 616:2010	1 M $\Omega$ to 1 G $\Omega$
	Electrical safety machine	Insulation Resistance	IEC-60204-1:2009-02,Ed 5.1	1 M $\Omega$ to 1 G $\Omega$
	Transformer	Insulation Resistance	IEC 61558-1 ed. 2.1 2009-04	1 M $\Omega$ to 1 G $\Omega$
34.	Household and similar electrical appliances	Creepage and Clearance	IEC- 60335-1:2010-05, 5 <sup>th</sup> ed. Part -2-2:2009-12 Part 2-7:2012-03 Part -2-8:2008-09 Part -2-10:2008-07 Part -2-14:2008-09 Part -2-17:2012-03 Part -2-21:2009-04 Part -2-24:2010-02 Part -2-26:2008-07 Part -2-29:2010-03 Part -2-35:2006-11 Part -2-40:2005-07 Part -2-41:2010-03 Part -2-73:2009-11 Part -2-74:2009-11 Part -2-79:2012-02 Part -2-80:2008-09	0.5 mm to 10 cm

  
Prachi Kukreti  
Convenor

  
N. Venkateswaran  
Program Manager



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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
	Audio, Video and similar electronic apparatus	Clearances and Creepage Distances	IEC- 60065:2011-02, ed. 7.2 IS 616: 2010	0.5 mm to 10 cm
	Information Technology equipment	Creepage and Clearance	IEC- 60950-1: 2013, 2.2 edition IS 13252:2010 + A1:2013	0.5 mm to 10 cm
35.	Measurement, control and laboratory equipment	Insulation Requirements	IEC- 61010-1: 2010-06, 3 <sup>RD</sup> ED.	0.5 mm to 10 cm
36.	Transformer	Creepage Distances, Clearances and Distances through insulation	IEC 61558-1 ed. 2.1 2009-04	0.5 mm to 10 cm
37.	Household and similar electrical appliances	Stability test	IEC- 60335-1:2010-05, 5 <sup>th</sup> ed. Part -2-2:2009-12 Part 2-7:2012-03	10° & 20°
	Household and similar electrical appliances	Stability test	Part -2-8:2008-09 Part -2-10:2008-07 Part -2-14:2008-09 Part -2-17:2012-03 Part -2-21:2009-04 Part -2-24:2010-02 Part -2-26:2008-07 Part -2-29:2010-03 Part -2-35:2006-11 Part -2-40:2005-07 Part -2-41:2010-03 Part -2-73:2009-11 Part -2-74:2009-11 Part -2-79:2012-02 Part -2-80:2008-09	10° & 20°

Prachi Kukreti  
Convenor

N. Venkateswaran  
Program Manager



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	Measurement, control and laboratory equipment	Stability test	IEC- 61010-1: 2010-06, 3 <sup>RD</sup> ED.	10° & 20°
	Audio, Video and similar electronic apparatus	Stability test	IEC- 60065:2011-02, ed. 7.2 IS 616: 2010	10° & 20°
	Information Technology equipment	Stability test	IEC- 60950-1: 2013, 2.2 ed. 2.2 IS 13252:2010 + A1:2013	10° & 20°
	Transformer	Stability test	IEC 61558-1 ed. 2.1 2009-04	10° & 20°
38.	Household and similar electrical appliances	Mechanical Strength	IEC- 60335-1:2010-05, 5 <sup>th</sup> ed. Part -2-2:2009-12 Part -2-7:2012-03 Part -2-8:2008-09	0.5 J to 5 J
	Household and similar electrical appliances	Mechanical Strength	Part -2-10:2008-07 Part -2-14:2008-09 Part -2-17:2012-03 Part -2-21:2009-04, Part -2-24:2010-02 Part -2-26:2008-07 Part -2-29:2010-03 Part -2-35:2006-11 Part -2-40:2005-07 Part -2-41:2010-03 Part -2-73:2009-11 Part -2-74:2009-11 Part -2-79:2012-02 Part -2-80:2008-09	0.5 J to 5 J

Prachi Kukreti  
Convenor

N. Venkateswaran  
Program Manager



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	Transformer	Mechanical Strength	IEC 61558-1 ed. 2.1 2009-04	0.5 J to 5 J
39.	Measurement, control and laboratory equipment	Impact test	IEC- 61010-1: 2010-06, 3 <sup>RD</sup> ed.	0.5 J to 5 J
	Audio, Video and similar electronic apparatus	Impact test	IEC- 60065:2011-02, ed. 7.2, IS 616:2010	0.5 J to 5 J
	Information Technology equipment	Impact test	IEC- 60950-1: 2013, 2.2 edition 2.2 IS 13252:2010 + A1:2013	0.5 J to 5 J
40.	Household and similar electrical appliances	Protection against access to live parts.	IEC- 60335-1:2010-05, 5 <sup>th</sup> ed. Part -2-2:2009-12 Part 2-7:2012-03 Part -2-8:2008-09 Part -2-10:2008-07 Part -2-14:2008-09 Part -2-17:2012-03 Part -2-21:2009-04 Part -2-24:2010-02 Part -2-26:2008-07 Part -2-29:2010-03 Part -2-35:2006-11 Part -2-40:2005-07 Part -2-41:2010-03 Part -2-73:2009-11 Part -2-74:2009-11 Part -2-79:2012-02 Part -2-80:2008-09	Upto 250 N

*Prachi*

Prachi Kukreti  
Convenor

*N. Venkateswaran*

N. Venkateswaran  
Program Manager



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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
41.	Measurement, control and laboratory equipment	Determination of accessible test	IEC- 61010-1: 2010-06, 3 <sup>RD</sup> ED.	Upto 250 N
42.	Audio, Video and similar electronic apparatus	Determination of accessible test	IEC- 60065:2011-02, ed. 7.2, IS 616:2010	Upto 250 N
43.	Information Technology equipment	Access to Energy Hazard	IEC- 60950-1: 2013, 2.2 edition 2.2 IS 13252:2010 + A1:2013	Upto 250 N
44.	Transformer	Accessibility to hazardous live parts.	IEC 61558-1 ed. 2.1 2009-04	Upto 250 N
45.	Household and similar electrical appliances	Resistance to Heat	IEC- 60335-1:2010-05, 5 <sup>th</sup> ed. Part -2-2:2009-12 Part 2-7:2012-03 Part -2-8:2008-09 Part -2-10:2008-07 Part -2-14:2008-09	5 mm
	Household and similar electrical appliances	Resistance to Heat	Part -2-17:2012-03 Part -2-21:2009-04 Part -2-24:2010-02 Part -2-26:2008-07 Part -2-29:2010-03 Part -2-35:2006-11 Part -2-40:2005-07 Part -2-41:2010-03 Part -2-73:2009-11 Part -2-74:2009-11 Part -2-79:2012-02 Part -2-80:2008-09	5 mm

Frachi Kukreti  
Convenor

N. Venkateswaran  
Program Manager



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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
	Transformer	Resistance to Heat	IEC 61558-1 ed. 2.1 2009-04	5 mm
	Measurement, control and laboratory equipment	Resistance to Heat	IEC- 61010-1: 2010-06, 3 <sup>RD</sup> ed.	5 mm
46.	Information Technology equipment	Resistance to abnormal Heat	IEC- 60950-1: 2013, 2.2 edition 2.2 IS 13252:2010 + A1:2013	5 mm
47.	Household and similar electrical appliances	Transient over voltages	IEC- 60335-1:2010-05, 5 <sup>th</sup> ed. Part -2-2:2009-12 Part 2-7:2012-03 Part -2-8:2008-09 Part -2-10:2008-07 Part -2-14:2008-09 Part -2-17:2012-03 Part -2-21:2009-04 Part -2-24:2010-02 Part -2-26:2008-07 Part -2-29:2010-03 Part -2-35:2006-11 Part -2-40:2005-07 Part -2-41:2010-03 Part -2-73:2009-11 Part -2-74:2009-11 Part -2-79:2012-02 Part -2-80:2008-09	0.5 kV to 12 kV
48.	Measurement, control and laboratory equipment	Impulse voltage withstand test.	IEC- 61010-1: 2010-06, 3 <sup>RD</sup> ed.	0.5 kV to 12 kV

Prachi Kukreti  
Convenor

N. Venkateswaran  
Program Manager



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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
49.	Information Technology equipment	Impulse Test	IEC- 60950-1: 2013, 2.2 edition 2.2 IS 13252: 2010 + A1:2013	0.5 kV to 12 kV
50.	Measurement, control and laboratory equipment	Sound level	IEC- 61010-1: 2010-06, 3 <sup>RD</sup> ED.	0 to 80 dBA
51.	Audio, Video and similar electronic products.	Ionizing radiation	IEC- 60065:2011-02, ed. 7.2, IS 616: 2010	Upto 100 mR/h

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Prachi Kukreti  
Convenor

  
N. Venkateswaran  
Program Manager