SUMMARY OF TEST REPORT NO : **19691318 001** *Dated: 13.05.2015*	*Number of pages in test report: Page 1 to 87*
TEST FORMAT AS PER IS 13252 (Part 1): 2010 + A1: 2013	
Name of Manufacturer	: **GlobTek (Suzhou) Co., Ltd.**
Product	: **ITE POWER SUPPLY (Power Adaptors for IT Equipments)**
Model(s)	: **GT-81081-6012-T3, GT-81081-6014-0.8-T3, GT-81081-6015-T3**
4.Model differences provided (if applicable)	: *Yes* ☒ *or No* ☐ *or N/A* ☐
5.Model differences verified as per Deity Guidelines for series formulation	: *Yes* ☒ *or No* ☐ *or N/A* ☐
6.Test Result: See below	

PART A: GENERAL

Sl. No.	TEST REQUIREMENT	CLAUSE	VERDICT	Remarks
1.	Components	1.5	P	
2.	Power Interface	1.6	P	
3.	Markings and Instructions	1.7	P	

PART B: PROTECTION FROM HAZARDS

Sl. No.	TEST REQUIREMENT	CLAUSE	VERDICT	Remarks
1.	Protection from electric shock and energy hazards	2.1	P	
2.	SELV circuits	2.2	P	
3.	TNV circuits	2.3	N/A	
4.	Limited current circuits	2.4	P	
5.	Limited power sources	2.5	P	
6.	Provisions for earthing and bonding	2.6	P	
7.	Overcurrent for earth fault protection in primary circuits	2.7	P	
8.	Safety interlocks	2.8	N/A	
9.	Electrical insulation	2.9	P	
10	Clearances, creepage distances and distances through insulation	2.10	P	

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

PART C: WIRING, CONNECTIONS AND PHYSICAL REQUIREMENTS

Sl. No.	TEST REQUIREMENT	CLAUSE	VERDICT	Remarks
1	General	3.1	P	
2	Connection to a mains supply	3.2	P	
3	Wiring terminals for connection of external conductors	3.3	N/A	
4	Disconnection from the mains supply	3.4	P	
5	Interconnection of equipment	3.5	P	
6	Stability	4.1	N/A	
7	Mechanical strength	4.2	P	
8	Design and construction	4.3	P	
9	Protection against hazardous moving parts	4.4	N/A	
10	Thermal requirements	4.5	P	
11	Openings in enclosures	4.6	N/A	
12	Resistance to fire	4.7	P	

PART D: ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS

Sl. No.	TEST REQUIREMENT	CLAUSE	VERDICT	Remarks
1.	Touch current and protective conductor current	5.1	P	
2.	Electric strength	5.2	P	
3.	Abnormal operating and fault conditions	5.3	P	

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

PART E: CONNECTION TO TELECOM AND CABLED DISTRIBUTION SYSTEM

Sl. No.	TEST REQUIREMENT	CLAUSE	VERDICT	Remarks
1.	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment	6.1	N/A	
2.	Protection of equipment users from over voltages on telecommunication networks	6.2	N/A	
3.	Protection of the telecommunication wiring system from overheating	6.3	N/A	
4	Connection to cable distribution systems - General	7.1	N/A	
5	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment	7.2	N/A	
6.	Protection of equipment users from overvoltages on the cable distribution system	7.3	N/A	
7	Insulation between primary circuits and cable distribution systems	7.4	N/A	

General Information:

1. The conformity certificates of critical components are verified to ensure complete compliance of apparatus under test and details regarding harmonized IEC standards (where IEC standards are not available) are also provided in the list of critical component.

Abbreviations: P = Pass N/A = Not Applicable

CONCLUSION:

I, hereby, undertake that the verdict stated in the test reports for all the tests matches with the test results.

1. Sample meets all relevant requirements of IS 13252 (Part 1): 2010 + A1: 2013. *Yes* ☒ *or No* ☐
2. Sample fails to meet the following test requirements: *Yes* ☐ *or No* ☒

Date: 13.05.2015

(Signature of Authorized person with Stamp)

TÜVRheinland®

Test Report No.:	**19691318 001**		*Page 1 of 87*
		Issue Date:	13.05.2015
Manufacturer:	**GlobTek (Suzhou) Co., Ltd.** Building 4, No. 76, Jinling East Road, Suzhou Industrial Park, Jiangsu 215021, P.R. China		
Test item:	**ITE POWER SUPPLY (Power Adaptors for IT Equipments)**		
Identification:	**GT-81081-6012-T3** **GT-81081-6014-0.8-T3** **GT-81081-6015-T3**	*Serial No.:*	**RoHS000003111/15** **RoHS000006111/15** **RoHS000009111/15**
Receipt No.:	**1803069383**	*Date of receipt:*	**16.03.2015**
Testing laboratory and its address:	**TÜV Rheinland (India) Pvt Ltd.** 82/A, West Wing, 3rd Main Road, Electronic City Phase 1, Bangalore – 560 100		
Test specification:	**IS 13252 (Part 1): 2010 + A1: 2013 /** **IEC 60950-1: 2005 + A1: 2009**		
Test Result:	*The test item passed the test specification(s).*		
Other Aspects: - This report consists of 87 pages and the attachment.			

Tested by:	**Approved by / Authorized Signatory:**	**Issued by:**
	TÜV Rheinland (India) Pvt. Ltd. * Bangalore - 560 100 *	
Srinivas Mayya / Senior Engineer	**Basavaraj Angadi / Senior Manager**	**Basavaraj Angadi / Senior Manager**
Date: 13.05.2015	**Date: 13.05.2015**	**Date: 13.05.2015**

TÜVRheinland®

TEST REPORT

IS 13252 (Part 1): 2010 + A1: 2013 / IEC 60950-1: 2005 + A1: 2009

Information technology equipment – Safety –

Part 1: General requirements

"Power Adaptors for IT Equipments "

Report Reference No.	:	19691318 001
Date of issue	:	(see cover page)
Total number of pages		(see cover page)
Testing Laboratory	:	**TÜV Rheinland (India) Pvt Ltd.**
Address	:	82/A, West Wing, 3rd Main Road, Electronic City Phase 1, Bangalore – 560 100
Manufacturer's name	:	**GlobTek (Suzhou) Co., Ltd.**
Address	:	Building 4, No. 76, Jinling East Road, Suzhou Industrial Park, Jiangsu 215021, P.R. China
Test specification:		
Standard	:	**IS 13252 (Part 1): 2010 + A1: 2013 / IEC 60950-1: 2005 + A1: 2009**
Test procedure	:	Compliance Report
Non-standard test method	:	N/A
Test Report Form No.	:	BIS_IT/PA_IS13252_V1.2
Test Report Form(s) Originator	:	Bureau of Indian Standards
Master TRF	:	15/04/2015
Test item description	:	**ITE POWER SUPPLY (Power Adaptors for IT Equipments)**
Trade Mark	:	GlobTek, Inc.
Model/Type reference	:	**GT-81081-6012-T3, GT-81081-6014-0.8-T3 ,GT-81081-6015-T3**
Ratings	:	INPUT: 100-240V~, 1.5A, 50/60Hz. OUTPUT: 12V⎓ 5.0A for GT-81081-6012-T3, 13.2V⎓4.5A for GT-81081-6014-0.8-T3, 15V⎓ 4A for GT-81081-6015-T3
Other Documents submitted	:	Please refer to Table – List of Attachments at Page No. 07

Tested by:	Approved by / Authorized Signatory:	Issued by:
	TÜV Rheinland (India) Pvt. Ltd. Bangalore	
Srinivas Mayya / Senior Engineer	Basavaraj Angadi / Senior Manager	Basavaraj Angadi / Senior Manager
Date: 13.05.2015	Date: 13.05.2015	Date: 13.05.205

Test Code	Description	Measurement/ testing	Total No. of tests	Total no. of applicable tests/ Req.	No. of tests/ Req. passed	Page No.
EL 2100	General Requirements	Components (Cl.1.5)	15	08	08	12
EL 2101	General Requirements	Power interface (Cl.1.6)	05	04	04	14
EL 2102	Marking Requirements	Marking & instructions(Cl.1.7)	35	14	14	15
EL 2103	Electrical safety	Protection from electric shock and energy hazards (Cl.2.1)	14	07	07	18
EL 2104	Electrical safety	SELV Circuits (Cl.2.2)	04	04	04	20
EL 2105	Electrical safety	TNV Circuits (Cl.2.3)	10	00	00	21
EL 2106	Electrical safety	Limited current circuits (Cl.2.4)	04	04	04	22
EL 2107	Electrical safety	Limited Power sources (Cl.2.5)	07	03	03	23
EL 2108	Electrical safety	Provisions for earthing and bonding (Cl.2.6)	17	04	04	24
EL 2109	Electrical safety	Overcurrent and earth fault protection in primary circuits (Cl.2.7)	07	05	05	26
EL 2110	Electrical safety	Safety Interlocks (Cl.2.8)	13	00	00	27
EL 2111	Electrical safety	Electrical Insulation (Cl.2.9)	05	05	05	28
EL 2112	Electrical safety	Clearances, Creepage distances and distances through insulation (Cl.2.10)	59	27	27	29
EL 2113	Wiring	Wiring, connections and supply (Cl.3)	11	07	07	33
EL 2114	Wiring	Connection to a main supply (Cl.3.2)	14	05	05	34
EL 2115	Wiring	Wiring terminals for connection of external conductors (Cl.3.3)	09	00	00	36
EL 2116	Wiring	Disconnection for the main supply (Cl.3.4)	11	04	04	37
EL 2117	Wiring	Interconnection of equipment (Cl.3.5)	05	04	04	38
EL 2118	Mechanical properties	Stability (Cl.4.1)	05	01	01	39

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

EL 2119	Mechanical properties	Mechanical strength (Cl.4.2)	13	05	05	40
EL 2120	Mechanical properties	Design and construction (Cl.4.3)	24	06	06	41
EL 2121	Mechanical properties	Protection against hazardous moving parts (Cl.4.4)	13	00	00	43
EL 2122	Thermal Properties	Thermal requirements (Cl.4.5)	05	05	05	44
EL 2123	Mechanical properties	Openings in Enclosures (Cl.4.6)	17	00	00	45
EL 2124	Fire Safety	Resistance to fire (Cl.4.7)	21	07	07	47
EL 2125	Insulating properties	Electrical requirements and simulated abnormal conditions(Cl.5),5.1	17	00	00	45
EL 2126	Insulating properties	Electric Strength (Cl.5.2)	03	03	03	53
EL 2127	Insulating properties	Abnormal operating and fault conditions (Cl.5.3)	11	07	07	54
EL 2128	Communicating connection	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment(Cl.6.1)	04	00	00	55
EL 2129	Communicating connection	Protection of equipment users from overvoltages on telecommunication networks (Cl.6.2)	06	00	00	56
EL 2130	Communicating connection	Protection of the telecommunication wiring system from overheating (Cl.6.3)	05	00	00	57
EL 2131	Connection to cable distribution systems	Connection to cable distribution systems (Cl.7)	06	00	00	59
EL 2132	Fire safety	Tests for resistance to heat and fire (Annex A)	20	00	00	60
EL 2133	Insulating properties	Motor tests under abnormal conditions (Annex B)	19	00	00	62
EL 2134	Electrical Safety	Transformers (Annex C)	03	03	03	64

EL 2135	Electrical Safety	Table of electrochemical potentials (Annex J)	01	00	00	65
EL 2136	General Requirements	Thermal controls (Annex K)	07	00	00	66
EL 2137	General Requirements	Normal load conditions for some types of electrical business equipment (Annex L)	08	02	02	67
EL 2138	Electrical Safety	Criteria for telephone ringing signals (Annex M)	13	00	00	68
EL 2139	General Requirements	Voltage dependent resistors (VDRs) (Annex Q)	01	01	01	69
EL 2140	Radiation safety	Ultraviolet light conditioning test (Annex Y)	05	00	00	70
EL 2141	Electrical Safety	Evaluation of integrated circuit (IC) current limiters (Annex CC)	03	00	00	71
EL 2142	Electrical Safety	Requirements for the mounting means of rack-mounted equipment (Annex DD)	04	00	00	72

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

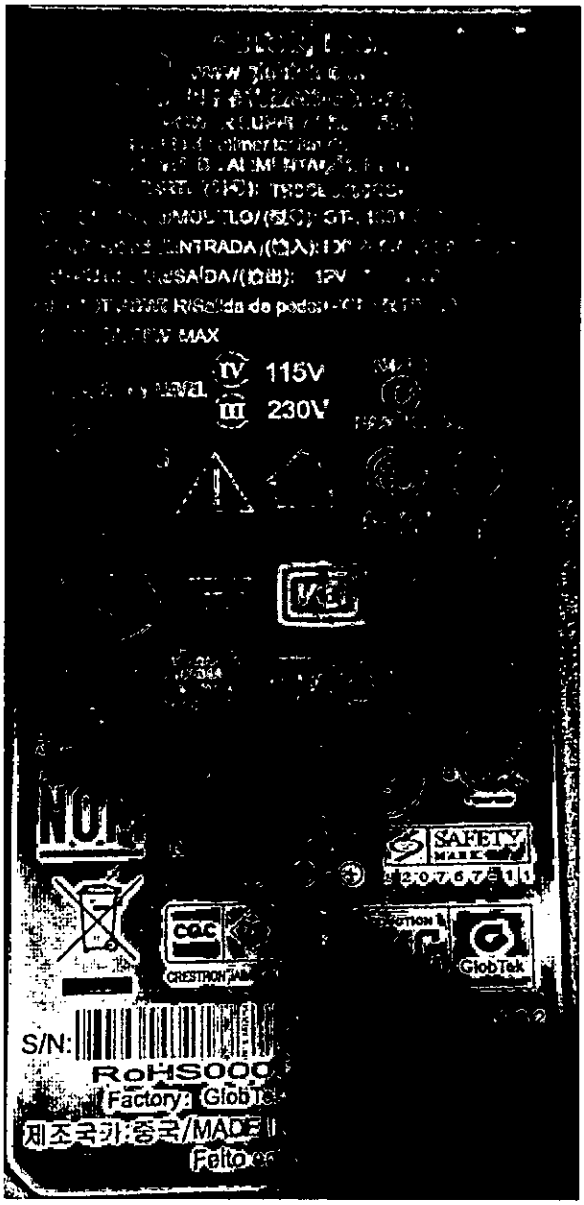
.....

(Approving Authority)

Copy of marking plate:

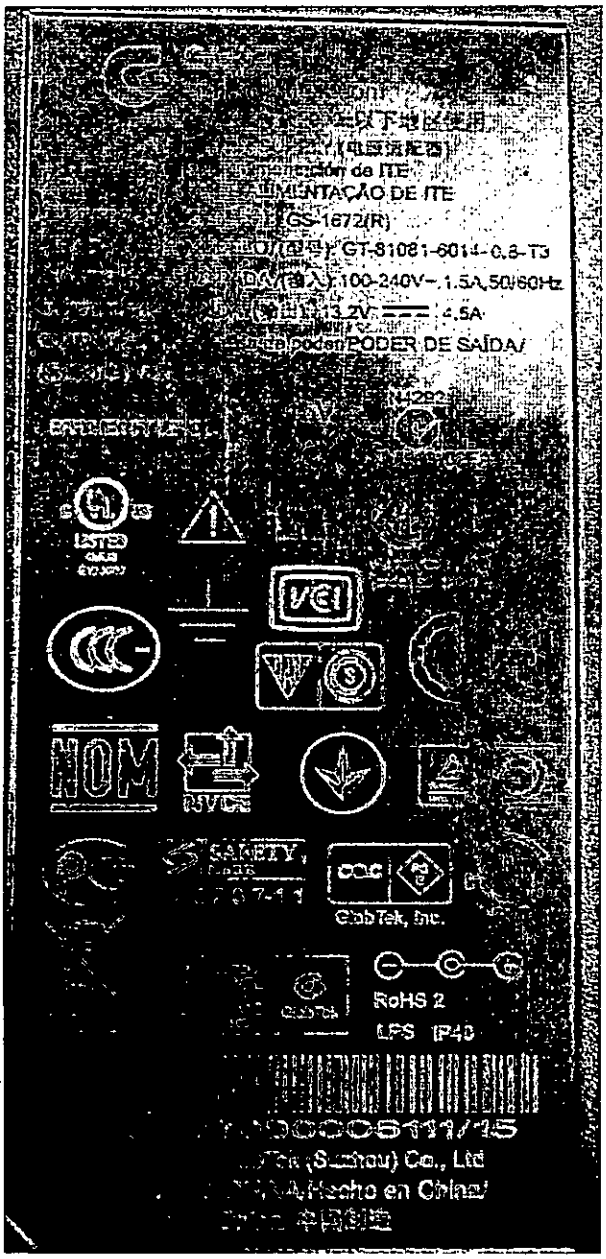
Copy of marking label:

GT-81081-6012-T3

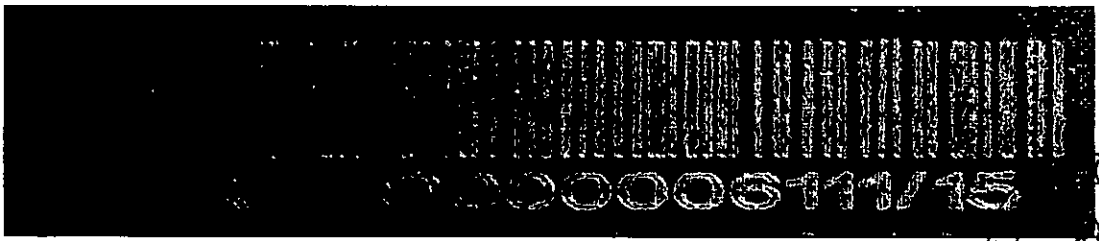


Serial No:

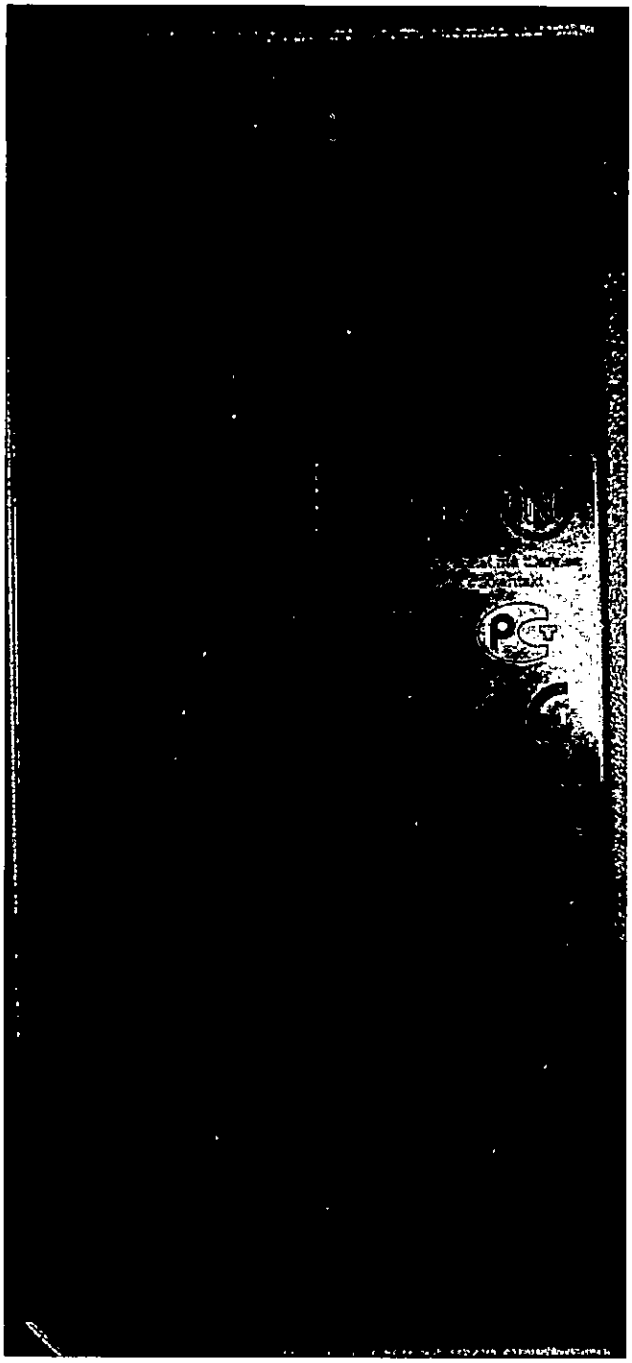
GT-81081-6014-0.8-T3



Serial No:



GT-81081-6015-T3



Serial No :

[redacted]

Trade Mark :

GlobTek, Inc.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

Table – List of Attachments

Attachment No.	Attachment Description	No. of pages in Attachment
Attachment – 1	Photo Document	19

General remarks:

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

Possible test case verdicts:

- test case does not apply to the test object ..... : N/A
- test object does meet the requirement ..... : P (Pass)
- test object does not meet the requirement ..... : F (Fail)

Testing ..... :

Date of receipt of test item ..... : 16.03.2015

Date(s) of performance of tests ..... : 16.03.2015 to 10.04.2015

Laboratory conditions ..... :

Ambient Temperature ..... : 25°C ± 4°C

Ambient Humidity ..... : 45% rh to 70% rh

TÜV Rheinland (India) Pvt. Ltd. * Bangalore - 560 100 *

Test item particulars :	
Equipment mobility :	☒ movable ☐ hand-held ☐ transportable ☐ stationary ☐ for building-in ☐ direct plug-in
Connection to the mains :	☒ pluggable equipment [x] type A [] type B ☐ permanent connection ☒ detachable power supply cord ☐ non-detachable power supply cord ☐ not directly connected to the mains
Operating condition :	☒ continuous ☐ rated operating / resting time:
Access location :	☒ operator accessible ☐ restricted access location
Over voltage category (OVC) :	☐ OVC I ☒ OVC II ☐ OVC III ☐ OVC IV ☐ other:
Mains supply tolerance (%) or absolute mains supply values :	-10%, +6%
Class of equipment :	☒ Class I(ClassI equipment with Class II construction) ☐ Class II ☐ Class III ☐ Not classified
Considered current rating (A) :	16A (for India)
Pollution degree (PD) :	☐ PD 1 ☒ PD 2 ☐ PD 3
IP protection class :	IP20
Altitude during operation (m) :	< 2000m
Altitude of test laboratory (m) :	<2000m
Mass of equipment (kg) :	0.27kg

Abbreviations that may be used throughout this test report:

PE/PB :	protective earth/protective bonding	Pri :	primary
CB :	circuit breaker	sec :	secondary
(SW)PS :	(switching) power supply	gnd :	ground
HV :	high voltage	I/O :	input/output
PCB :	printed circuit (wiring) board	ii :	installation instruction
TIW :	triple insulated wire	PSU :	Power Supply Unit

B/I : built-in application (compliance shall be guarantee in host equipment)

F/B/S/R : Functional/Basic/Supplementary/Reinforced Insulation

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

General product information:

1) Application details / Description of the product:

The product ITE POWER SUPPLY is a Class I Power Adapter intended to use for general office environment.

All tests are performed at 50Hz, which is the Standard System Frequency in India as per National Electrical Code

Max. specified ambient temperature (°C).....: 40°C

2) Differences between the models:

The models described in below tables are same rated input voltage and Current, Same Class of construction, Same PCB design layout. The only difference in terms of output current listed in below table. Under these condition the product is been tested.

Model / Item	GT-81081-6012-T3	GT-81081-6014-0.8-T3	GT-81081-6015-T3
Input Rating	100-240V~ 1.5A, 50/60Hz		
Output Rating	12V⎓ 5.0A	13.2V⎓4.5A	15V⎓ 4A

Model No. tested with-in the family series : All tests are performed on model GT-81081-6015-T3

3) Options:

The equipment was tested without any optional accessory installed. Hence, this report does not cover parameters that are influenced by the installation of optional accessory that might affect safety in the meaning of this standard.

Tests relating to General Requirements

EL 2100 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
1.5	Components*	EL 2100-00	Verification of approvals with due correlation between the components used and the approval certificates submitted (Please see the table 1.5.1)	P
1.5.2	Evaluation and testing of components	EL 2100-01	Components, which are certified for IEC and/or national standards, are checked for correct applications and use in accordance with its rating.	P
1.5.3	Thermal controls	EL 2100-02	No thermal controls used	N/A
1.5.4	Transformers	EL 2100-03	Adequate protection against overload provided (see Annex C)	P
1.5.5	Interconnecting cables*	EL 2100-04	Interconnecting output cable to other device is carrying only SELV on an energy level below 240 VA.	P
1.5.6	Capacitors bridging insulation *	EL 2100-05	Type CX1 and CX2 capacitors are used between used between lines, type CY1 and CY2 are used between line to.secondary, Complies with IEC 60384-14.(see appended table 1.5.1)	P
1.5.7	Resistors bridging insulation		See below	N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation*	EL 2100-06	No resistors bridging basic, functional or supplementary insulations.	N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	EL 2100-07	No such construction	N/A
1.5.7.3	Resistors bridging double insulation or reinforced insulation between the a.c. mains supply and circuits connected to an antenna or coaxial cable	EL 2100-08	No such construction	N/A
1.5.8	Components in equipment for IT power distribution systems*	EL 2100-09	Not applied for IT power system	N/A
1.5.9	Surge suppressors		Complies	P
1.5.9.1	General*	EL 2100-10	Complies	P
1.5.9.2	Protection of VDRs*	EL 2100-11	See below	P
1.5.9.3	Bridging of functional insulation by a VDR*	EL 2100-12	Certified VDR (MOV1) connected between line and neutral, located after fuse F1.	P
1.5.9.4	Bridging of basic insulation by a VDR*	EL 2100-13	No such construction	N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR*	EL 2100-14	No such construction	N/A

*- Total number of Requirements to be observed / inspected = 10
Total No of applicable Requirement = 06
No of Requirements for which the sample passed = 06

Total number of tests to be conducted = 05
Total No of applicable Tests = 02
No. of tests for which the sample passed = 02

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore 560 100

.....

(Approving Authority)

Tests relating to Electrical Safety

EL 2101 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
1.6	Power interface*	EL 2101-00	Complies	P
1.6.1	AC power distribution systems*	EL 2101-01	TN-S	P
1.6.2	Input current	EL 2101-02	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment*	EL 2101-03	Not hand-held equipment.	N/A
1.6.4	Neutral conductor *	EL 2101-04	Neutral is insulated from earth with basic insulation through the equipment. Components connected between neutral and earth is rated the same as for line to earth.	P

*- Total number of Requirements to be observed / inspected = 04
Total No of applicable Requirement = 03
No of Requirements for which the sample passed = 03

Total number of tests to be conducted = 01
Total No of applicable Tests = 01
No. of tests for which the sample passed = 01

Certificate (India) certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 076

.....

(Approving Authority)

Tests relating to Marking Requirements **EL 2102 – V1.2**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
1.7	Marking and instructions*	EL 2102-00	Complies	P
1.7.1	Power rating and identification markings		See below.	P
1.7.1.1	Power rating marking*	EL 2102-01	The required marking is located on the outside surface of the equipment	P
	Multiple mains supply connections*.....	EL 2102-02	Single supply connection.	N/A
	Rated voltage(s) or voltage ranges(s) (V)*.....	EL 2102-03	100-240V~	P
	Symbol for nature of supply, for d.c. only*	EL 2102-04	Ac supply.	N/A
	Rated frequency or rated frequency range (Hz) *.....	EL 2102-05	50/60Hz	P
	Rated current (mA or A)*	EL 2102-06	1.5A.	P
1.7.1.2	Identification markings*	EL 2102-07	See below.	P
	Manufacturer's name or trade-mark or identification mark *	EL 2102-08	Trademark: GlobTek, Inc.	P
	Model identification or type reference *	EL 2102-09	**GT-81081-6012-T3** **GT-81081-6014-0.8-T3** **GT-81081-6015-T3**	P
	Symbol for Class II equipment only*	EL 2102-10	Class I equipment	N/A
	Other markings and symbols*	EL 2102-11	Other markings and symbols do not give rise to misunderstanding.	P
1.7.2	Safety instructions and marking*	EL 2102-12	Complies	P
1.7.2.2	Disconnect devices*	EL 2102-13	Appliance inlet used.	P
1.7.2.3	Overcurrent protective devices*	EL 2102-14	Appliance inlet used. Pluggable equipment type A.	N/A
1.7.2.4	IT power distribution systems*	EL 2102-15	Equipment not intended for IT power systems.	N/A
1.7.2.5	Operator access with a tool*	EL 2102-16	No operator accessible area which needs to be accessed by use of tool.	N/A
1.7.2.6	Ozone*	EL 2102-17	The equipment not containing ozone.	N/A
1.7.3	Short duty cycles*	EL 2102-18	Continuous operation.	N/A
1.7.4	Supply voltage adjustment*	EL 2102-19	No supply voltage adjustment.	N/A
1.7.5	Power outlets on the equipment*	EL 2102-20	No power outlets provided.	N/A

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

Tests relating to Marking Requirements

EL 2102 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) Fuse(s) shall clearly and adequately marked with fuse number and rating*.	EL 2102-21	Fuses are clearly and adequately marked with fuse numbers and ratings. F1: T3.15A, 250Vac	P
1.7.7	Wiring terminals		See below	P
1.7.7.1	Protective earthing and bonding terminals*	EL 2102-22	Appliance inlet used.	P
1.7.7.2	Terminals for a.c. mains supply conductors*	EL 2102-23	No such terminal are used	N/A
1.7.7.3	Terminals for d.c. mains supply conductors*	EL 2102-24	Not connected to DC mains supply.	N/A
1.7.8	Controls and indicators		See below	P
1.7.8.1	Identification, location and marking *:	EL 2102-25	No safety relevant indicators, switches and controls provided.	N/A
1.7.8.2	Colours*	EL 2102-26	No colors involved affecting safety.	N/A
1.7.8.3	Symbols according to IEC 60417*:	EL 2102-27	No such symbols used.	N/A
1.7.8.4	Markings using figures* :	EL 2102-28	Not used.	N/A
1.7.9	Isolation of multiple power sources*	EL 2102-29	Single supply connection.	N/A
1.7.10	Thermostats and other regulating devices*	EL 2102-30	No such thermostats or the like.	N/A
1.7.11	Durability	EL 2102-31	After the test the marking is still legible; it is not easily possible to remove the marking sticker and show no curling.	P
1.7.12	Removable parts*	EL 2102-32	No markings placed on removable parts.	N/A
1.7.13	Replaceable batteries*	EL 2102-33	No battery	N/A
	Language(s)		See above	-
1.7.14	Equipment for restricted access locations*	EL 2102-34	Not intended for restricted access location.	N/A

*- Total number of Requirements to be observed / inspected = 34
Total No of applicable Requirement = 13
No of Requirements for which the sample passed = 13

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

Total number of tests to be conducted = 01
Total No of applicable Tests = 01
No. of tests for which the sample passed: 01

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

.....

(Approving Authority)

Tests relating to Electrical Safety

EL 2103 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.1	Protection from electric shock and energy hazards*	EL 2103-00	Complies	P
2.1.1	Protection in operator access areas*	EL 2103-01	No operator access to energized parts	P
2.1.1.1	Access to energized parts	EL 2103-02	Operator cannot contact any hazardous bare parts or parts with only basic insulation to hazardous voltage.No ELV circuits.	P
	Test by inspection		No openings in enclosure.	P
	Test with test finger (Figure 2A)		As above.	N/A
	Test with test pin (Figure 2B)		As above.	N/A
	Test with test probe (Figure 2C)		No TNV	N/A
2.1.1.2	Battery compartments *	EL 2103-03	No battery compartment.	N/A
2.1.1.3	Access to ELV wiring	EL 2103-04	No ELV circuits.	N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)		As above	—
2.1.1.4	Access to hazardous voltage circuit wiring	EL 2103-05	Not accessible to operator.	P
2.1.1.5	Energy hazards :	EL 2103-06	Energy not exceeding 240VA between any two points in output connector of secondary circuit.	P
2.1.1.6	Manual controls	EL 2103-07	No manual controls	N/A
2.1.1.7	Discharge of capacitors in equipment		Complies	P
	Measured voltage (V); time-constant (s).....	EL 2103-08	See appended table 2.1.1.7	P
2.1.1.8	Energy hazards – d.c. mains supply		No d.c. mains supply.	N/A
	a) Capacitor connected to the d.c. mains supply	EL 2103-09	As above	N/A
	b) Internal battery connected to the d.c. mains supply	EL 2103-10	As above	N/A
2.1.1.9	Audio amplifiers to be tested according to IEC 60065, cl. 9.1.1.....	EL 2103-11	Not provided	N/A
2.1.2	Protection in service access areas	EL 2103-12	Bare parts carrying hazardous voltage or energy levels are located	P

Tests relating to Electrical Safety **EL 2103 – V1.2**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
			or guarded properly to avoid unintentional contact and bridging.	
2.1.3	Protection in restricted access locations	EL 2103-13	Not intended to be installed in a restricted access location.	N/A

*- Total number of Requirements to be observed / inspected = 03
Total No of applicable Requirement = 02
No of Requirements for which the sample passed = 02

Total number of tests to be conducted = 11
Total No of applicable Tests = 05
No. of tests for which the sample passed: 05

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. * Bangalore - 560 108 *

.....

(Approving Authority)

Tests relating to Electrical Safety

EL 2104 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.2	SELV circuits*	EL 2104-00	Complies Voltage limits of 2.2.2 and 2.2.3 are not exceeded	P
2.2.2	Voltages under normal conditions	EL 2104-01	All accessible voltages are less than 42.4 V peak or 60Vdc and are classified as SELV circuits.	P
2.2.3	Voltages under fault conditions	EL 2104-02	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71V peak and 120Vdc were not exceeding.	P
2.2.4	Connection of SELV circuits to other circuits* :	EL 2104-03	SELV circuits are only connected to other secondary circuits.	P

*- Total number of Requirements to be observed / inspected = 02
Total No of applicable Requirement = 02
No of Requirements for which the sample passed = 02

Total number of tests to be conducted : 02
Total No of applicable Tests = 02
No. of tests for which the sample passed: 02

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 001

.....

(Approving Authority)

Tests relating to Electrical Safety **EL 2105 – V1.2**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.3	TNV circuits*	EL 2105-00	No TNV circuits.	N/A
2.3.1	Limits : a)Continuous voltages, combination of AC and DC values, are such that : $\frac{U_{ac}}{71} + \frac{U_{dc}}{120} \leq 1$	EL 2105-01	As above.	N/A
	b) Type of TNV circuits: TNV-1/TNV-2/TNV-3	EL 2105-02	As above.	N/A
2.3.2	Separation from other circuits and from accessible parts*	EL 2105-03	As above.	N/A
2.3.2.2	Protection by basic insulation	EL 2105-04	As above.	N/A
2.3.2.3	Protection by earthing	EL 2105-05	As above.	N/A
2.3.2.4	Protection by other constructions	EL 2105-06	As above.	N/A
2.3.3	Separation from hazardous voltages	EL 2105-07	As above.	N/A
2.3.4	Connection of TNV circuits to other circuits	EL 2105-08	As above.	N/A
2.3.5	Test for operating voltages generated externally	EL 2105-09	As above.	N/A

*- Total number of Requirements to be observed / inspected = 02
Total No of applicable Requirement = 00
No of Requirements for which the sample passed: 00

Total number of tests to be conducted : 08
Total No of applicable Tests = 00
No. of tests for which the sample passed: 00

Certificate is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

.....

(Approving Authority)

Tests relating to Electrical Safety

EL 2106 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.4	Limited current circuits *	EL 2106-00	No limited current circuits accessible at the operator access area.	P
2.4.1	General requirements	EL 2106-01	As above.	P
2.4.2	Limit values	EL 2106-02	As above.	P
2.4.3	Connection of limited current circuits to other circuits*	EL 2106-03	The limited current circuit is supplied from SELV circuits.	P

*- Total number of Requirements to be observed / inspected = 02
Total No of applicable Requirement = 02
No of Requirements for which the sample passed = 02

Total number of tests to be conducted = 02
Total No of applicable Tests = 02
No. of tests for which the sample passed = 02

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore 560 100

.....

(Approving Authority)

Tests relating to Electrical Safety **EL 2107 – V1.2**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.5	Limited power sources *	EL 2107-00	See below	P
	a) Inherently limited output	EL 2107-01	Not inherently limited output.	N/A
	b) Impedance limited output	EL 2107-02	Not Impedance limited output	N/A
	c) Regulating network limited output under normal operating and single fault condition Use of integrated circuit (IC) current limiters	EL 2107-03	A regulating network limits the output in compliance with table 2B both under normal operating conditions and after any single fault. No integrated circuit current limiters used.	P
	d) Overcurrent protective device limited output	EL 2107-04	No Overcurrent protective devices.	N/A
	Max. output voltage (V), Max. output current (A), Max. apparent power (VA)	EL 2107-05	See appended table 2.5	P
	Current rating of overcurrent protective device (A)	EL 2107-06	No Overcurrent protective devices.	N/A

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 01
No of Requirements for which the sample passed = 01

Total number of tests to be conducted : 06
Total No of applicable Tests = 02
No. of tests for which the sample passed: 02

Certificate is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

.....

(Approving Authority)

Tests relating to Electrical Safety

EL 2108 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.6	Provisions for earthing and bonding*	EL 2108-00	See below	P
2.6.1	Protective earthing	EL 2108-01	One green/yellow wire is hooked-in and soldered to the PE pin of the appliance inlet and reliable fixed to PCB by solder and solder pin.	P
2.6.2	Functional earthing : The Functional earthing either separated from hazardous voltages by double- or reinforced insulation or safely connected to Protective Bonding Conductor.*	EL 2108-02	Secondary functional earthing is separated to primary by reinforced or double insulation.	P
2.6.3	Protective earthing and protective bonding conductors*		Protective earthing conductor only in approved appliance inlet.	P
2.6.3.2	Size of protective earthing conductors	EL 2108-03	See below	P
	Rated current (A), cross-sectional area (mm2), AWG.....		1.5A, 3x 0.75mm^2	P
2.6.3.3	Size of protective bonding conductors	EL 2108-04	No protective bonding conductors.	N/A
	Rated current (A), cross-sectional area (mm2), AWG		As above.	N/A
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min)	EL 2108-05	As above.	N/A
2.6.3.5	Colour of insulation*.....	EL 2108-06	As above.	N/A
2.6.4	Terminals		As above.	N/A
2.6.4.2	Protective earthing and bonding terminals : Rated current(A), Type, Nominal thread diameter (mm)	EL 2108-07	As above.	N/A
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors*	EL 2108-08	As above.	N/A
2.6.5	Integrity of protective earthing*		As above.	N/A
2.6.5.1	Interconnection of equipment*	EL 2108-09	As above.	N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors*	EL 2108-10	As above.	N/A
2.6.5.3	Disconnection of protective earth*	EL 2108-11	As above.	N/A

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

2.6.5.4	Parts that can be removed by an operator*	EL 2108-12	As above.	N/A
2.6.5.5	Parts removed during servicing*	EL 2108-13	As above.	N/A
2.6.5.6	Corrosion resistance*	EL 2108-14	As above.	N/A
2.6.5.7	Screws for protective bonding*	EL 2108-15	As above.	N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system*	EL 2108-16	As above.	N/A

*- Total number of Requirements to be observed / inspected = 12
Total No of applicable Requirement = 02
No of Requirements for which the sample passed = 02

Total number of tests to be conducted : 05
Total No of applicable Tests = 02
No. of tests for which the sample passed: 02

Certificate is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 058

.....
(Approving Authority)

Tests relating to Electrical Safety

EL 2109 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.7	Overcurrent and earth fault protection in primary circuits*	EL 2109-00	Complies	P
2.7.1	Basic requirements: The built-in device fuse provides overcurrent protection. OR The equipment is protected by the built-in circuit breaker.*	EL 2109-01	The built-in fuse provides overcurrent protection.	P
	Instructions when protection relies on building installation		Neither pluggable equipment type B nor permanent connection.	N/A
2.7.2	Faults not simulated in 5.3.7*	EL 2109-02	Considered.	P
2.7.3	Short-circuit backup protection	EL 2109-03	Pluggable equipment type A, the building installation is considered as providing short circuit protection.	P
2.7.4	Number and location of protective devices	EL 2109-04	Overcurrent protection by one built-in fuse.	P
2.7.5	Protection by several devices*	EL 2109-05	Protection by one built in fuse.	N/A
2.7.6	Warning to service personnel*	EL 2109-06	No service required.	N/A

*- Total number of Requirements to be observed / inspected = 05
Total No of applicable Requirement = 03
No of Requirements for which the sample passed = 03

Total number of tests to be conducted = 02
Total No of applicable Tests = 02
No. of tests for which the sample passed: 02

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore

.....

(Approving Authority)

Tests relating to Electrical Safety **EL 2110 – V1.2**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.8	Safety Interlocks*	EL 2110-00	No safety interlock provided.	N/A
2.8.1	General principles*	EL 2110-01	As above	N/A
2.8.2	Protection requirements	EL 2110-02	As above	N/A
2.8.3	Inadvertent reactivation	EL 2110-03	As above	N/A
2.8.4	Fail-safe operation	EL 2110-04	As above	N/A
2.8.5	Moving parts	EL 2110-05	As above	N/A
2.8.6	Overriding*	EL 2110-06	As above	N/A
2.8.7	Switches, relays and their related circuits	EL 2110-07	As above	N/A
2.8.7.1	Separation distances for contact gaps and their related circuits	EL 2110-08	As above	N/A
2.8.7.2	Overload test	EL 2110-09	As above	N/A
2.8.7.3	Endurance test	EL 2110-10	As above	N/A
2.8.7.4	Electric strength test	EL 2110-11	As above	N/A
2.8.8	Mechanical actuators	EL 2110-12	As above	N/A

*- Total number of Requirements to be observed / inspected = 03
Total No of applicable Requirement = 00
No of Requirements for which the sample passed: 00

Total number of tests to be conducted : 10
Total No of applicable Tests = 00
No. of tests for which the sample passed: 00

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 048

.....
(Approving Authority)

Tests relating to Electrical Safety

EL 2111 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.9	Electrical insulation*	EL 2111-00	Complies	P
2.9.1	Properties of insulating materials*	EL 2111-01	Natural rubber, asbestos or hygroscopic materials are not used.	P
2.9.2	Humidity conditioning	EL 2111-02	Humidity treatment conducted for 48h.	P
	Relative Humidity : 93% ±3%, Temperature: t between 20°C to 30°C (t±2°C) Duration : 48 hours		93%, 25°C	—
2.9.3	Grade of insulation*	EL 2111-03	Kind of insulation and working voltage considered.	P
2.9.4	Separation from hazardous voltages*	EL 2111-04	See below:	P
	Method(s) used		Method 1: a	—

*- Total number of Requirements to be observed / inspected = 04
Total No of applicable Requirement = 04
No of Requirements for which the sample passed: 04

Total number of tests to be conducted : 01
Total No of applicable Tests = 01
No. of tests for which the sample passed: 01

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 105

.....
(Approving Authority)

Tests relating to Electrical Safety **EL 2112 – V1.2**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
2.10	Clearances, creepage distances and distances through Insulation*	EL 2112-00	Complies	P
2.10.1.1	Frequency *	EL 2112-01	Considered.	P
2.10.1.2	Pollution degrees*	EL 2112-02	Pollution degree 2.	P
2.10.1.3	Reduced values for functional insulation	EL 2112-03	Considered. See sub clause 5.3.4	P
2.10.1.4	Intervening unconnected conductive parts	EL 2112-04	Complies	P
2.10.1.5	Insulation with varying dimensions	EL 2112-05	No such construction used.	N/A
2.10.1.6	Special separation requirements	EL 2112-06	Special separation not used.	N/A
2.10.1.7	Insulation in circuits generating starting pulses	EL 2112-07	No such construction used.	N/A
2.10.2	Determination of working voltage	EL 2112-08	The r.m.s. and the peak voltages were measured on all sources of the switching power supply. (see appeded table 2.10.2)	P
2.10.2.2	RMS working voltage	EL 2112-09	(see appeded table 2.10.2)	P
2.10.2.3	Peak working voltage	EL 2112-10	(see appeded table 2.10.2)	P
2.10.3	Clearances	EL 2112-11	Complies	P
2.10.3.2	Mains transient voltages*		Normal transient levels considered.	P
	a) AC mains supply *	EL 2112-12	2500V considered	P
	b) Earthed d.c. mains supplies* ..	EL 2112-13	No connection to dc mains.	N/A
	c) Unearthed d.c. mains supplies*	EL 2112-14	No connection to dc mains.	N/A
	d) Battery operation*	EL 2112-15	No such battery operation.	N/A
2.10.3.3	Clearances in primary circuits	EL 2112-16	(see appended table 2.10.3/.4)	P
2.10.3.4	Clearances in secondary circuits	EL 2112-17	Sub-clause 5.3.4 considered.	P
2.10.3.5	Clearances in circuits having starting pulses	EL 2112-18	No discharge lamp used.	N/A
2.10.3.6	Transients from a.c. mains supply	EL 2112-19	Normal transient voltage considered (overvoltage category II for primary circuit).	P
2.10.3.7	Transients from d.c. mains supply	EL 2112-20	No d.c. mains	N/A

TÜV Rheinland (India) Pvt. Ltd. * Bangalore - 560 100 *

2.10.3.8	Transients from telecommunication networks and cable distribution systems	EL 2112-21	No TNV network.	N/A
2.10.3.9	Measurement of transient voltage levels		Normal transient levels considered. See clause 2.10.3.6	N/A
	a) Transients from a mains supply	EL 2112-22	As above	N/A
	For an a.c. mains supply		As above	N/A
	For a d.c. mains supply		As above	N/A
	b) Transients from a telecommunication network	EL 2112-23	As above	N/A
2.10.4	Creepage distances*	EL 2112-24	Complies. (See appended table 2.10.3/.4)	P
2.10.4.2	Material group and comparative tracking index : CTI tests*	EL 2112-25	Material group IIIa/b is assumed to be used.	P
2.10.4.3	Minimum creepage distances	EL 2112-26	(see appended table 2.10.3/.4)	P
2.10.5	Solid insulation		Compliance has been checked within the application of the unit.	P
2.10.5.2	Distances through insulation	EL 2112-27	As above.	P
2.10.5.3	Insulating compound as solid insulation	EL 2112-28	As above.	P
2.10.5.4	Semiconductor devices	EL 2112-29	No semiconductor devices.	N/A
2.10.5.5.	Cemented joints	EL 2112-30	No such construction used.	N/A
2.10.5.6	Thin sheet material – General	EL 2112-31	Complies. See below	P
2.10.5.7	Separable thin sheet material	EL 2112-32	Used in transformer T1.	P
2.10.5.8	Non-separable thin sheet material	EL 2112-33	No such material used	N/A
2.10.5.9	Thin sheet material – standard test procedure	EL 2112-34	Not used.	N/A
	Electric strength test as per Cl.5.2.2		As above	—
2.10.5.10	Thin sheet material – alternative test procedure	EL 2112-35	Complies Electric strength test applied to each layer.	P
	Electric strength test as per Cl.5.2.2		(see appended table 5.2)	—
2.10.5.11	Insulation in wound components	EL 2112-36	Triple insulated wire used for secondary windings in the transformer T1 has separate approval.	P
2.10.5.12	Wire in wound components		TIW used in transformer T1.	P
	If Peak Working voltage >71 V		(see appended table 2.10.2)	
	a) Basic insulation not under stress	EL 2112-37	Complies.	P

	b) Basic, supplementary, reinforced insulation	EL 2112-38	Complies.	P
	c) Compliance with Annex U	EL 2112-39	Approved triple insulated wire used.	P
	d) Where two winding wires in contact inside wound component; angle between 45° and 90°	EL 2112-40	Adequate construction. Insulation tape provided for all windings of Transformer (T1) to protect against mechanical stress.	P
2.10.5.13	Wire with solvent-based enamel in wound components		Not used.	N/A
	a) Electric strength test (Type test as per Cl.5.2.2)	EL 2112-41	As above	N/A
	b) Electric Strength test (Routine test as per Cl.5.2.2)	EL 2112-42	As above	N/A
2.10.5.14	Additional insulation in wound components		No such construction applied	N/A
	If Peak Working Voltage >71V		As above	N/A
	a) Basic insulation not under stress	EL 2112-43	As above	N/A
	b) Supplementary, reinforced insulation	EL 2112-44	As above	N/A
2.10.6	Construction of printed boards*		Refer below:	P
2.10.6.1	Uncoated printed boards	EL 2112-45	(see appended table 2.10.3/.4)	P
2.10.6.2	Coated printed boards	EL 2112-46	No coated printed boards.	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board	EL 2112-47	Not used to provide supplementary or double/reinforced insulation.	N/A
2.10.6.4	Insulation between conductors on different layers of a printed board*		Not used to provide supplementary or double/reinforced insulation.	N/A
	a) Minimum Thickness of insulation: 0.4mm or	EL 2112-48	As above	N/A
	b) Confirm with one of the specification and pass the relevant tests as per Table 2R	EL 2112-49	As above	N/A
2.10.7	Component external terminations	EL 2112-50	No such components.	N/A
2.10.8	Tests on coated printed boards and coated components		Coating not provided as part of insulation system.	N/A
2.10.8.1	Sample preparation and preliminary inspection*	EL 2112-51	As above	N/A
2.10.8.2	Thermal conditioning	EL 2112-52	As above	N/A
2.10.8.3	Electric strength test	EL 2112-53	As above	N/A
2.10.8.4	Abrasion resistance test	EL 2112-54	As above	N/A
2.10.9	Thermal cycling	EL 2112-55	As above	N/A

2.10.10	Test for Pollution Degree 1 environment and insulating compound	EL 2112-56	No such construction.	N/A
2.10.11	Tests for semiconductor devices and cemented joints	EL 2112-57	Certified Optocoupler used	N/A
2.10.12	Enclosed and sealed parts	EL 2112-58	No sealed components	N/A

*- Total number of Requirements to be observed / inspected = 10
Total No of applicable Requirement = 06
No of Requirements for which the sample passed = 06

Total number of tests to be conducted : 49
Total No of applicable Tests = 21
No. of tests for which the sample passed: 21

Certificate/Itis certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. * Bangalore - 560 100

.....

(Approving Authority)

Tests relating to Wiring

EL 2113 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
3.0	Wiring, connections and supply*	EL 2113-00	Complies	P
3.1.1	Current rating and overcurrent protection	EL 2113-01	Cross-sectional area of wires used is adequate for rated current of EUT.	P
3.1.2	Protection against mechanical damage*	EL 2113-02	Wireways is smmoth and free from sharp edges. Wires do not touch sharp edges which could damage the insulation and cause hazards.	P
3.1.3	Securing of internal wiring*	EL 2113-03	The internal wires are secured by soldering pins or glue so that loosening of the terminal connections is unlikely.	P
3.1.4	Insulation of conductors	EL 2113-04	The insulation of the individual conductors is suitable for the application and the working voltage.	P
3.1.5	Beads and ceramic insulators	EL 2113-05	Not used.	N/A
3.1.6	Screws for electrical contact pressure*	EL 2113-06	No screws used for electrical connection.	N/A
3.1.7	Insulating materials in electrical connections*	EL 2113-07	No contact pressure through insulating material.	P
3.1.8	Self-tapping and spaced thread screws*	EL 2113-08	No screws used	N/A
3.1.9	Termination of conductors : 10 N pull test	EL 2113-09	Conductors suitably terminated. Creepage and clearances maintained. Second securing for soldered terminators provided. 10N applied to relevant conductors.	P
3.1.10	Sleeving on wiring*	EL 2113-10	Not used.	N/A

*- Total number of Requirements to be observed / inspected = 07
Total No of applicable Requirement = 04
No of Requirements for which the sample passed = 04

Total number of tests to be conducted = 04
Total No of applicable Tests = 03
No. of tests for which the sample passed = 03

Certificate (Indus) is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 099

.....
(Approving Authority)

Tests relating to Wiring

EL 2114 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
3.2	Connection to a mains supply*	EL 2114-00	Complies	P
3.2.1	Means of connection		Refer below:	P
3.2.1.1	Connection to an a.c. mains supply*	EL 2114-01	Appliance inlet for connecting to a detachable power supply cord set.	P
3.2.1.2	Connection to a d.c. mains supply*	EL 2114-02	Not connected to d.c. mains supply	N/A
3.2.2	Multiple supply connections	EL 2114-03	No multiple supply connection.	N/A
3.2.3	Permanently connected equipment	EL 2114-04	Not a permanent connected equipment	N/A
3.2.4	Appliance inlets: complies with IEC 60309 or IEC 60320 and is located at the rear of the unit.	EL 2114-05	The appliance inlet complied with IEC 60320-1; the connector inserted without difficulty and not supporting the equipment on a flat surface	P
3.2.5	Power supply cords		See below	P
3.2.5.1	AC power supply cords	EL 2114-06	Complies	P
	Rated current (A), cross-sectional area (mm^2), AWG		Rated 1.5A, 3x0.75mm^2	P
3.2.5.2	DC power supply cords*	EL 2114-07	No such construction	N/A
3.2.6	Cord anchorages and strain relief		Appliance inlet used.	N/A
	Mass of the equipment: Pull Force (N):	EL 2114-08	As above	N/A
	b) Longitudinal displacement: 2 mm (Max)	EL 2114-09	As above	N/A
3.2.7	Protection against mechanical damage	EL 2114-10	No sharp points or cutting edges that may damage the power supply cord.	P
3.2.8	Cord guards		No cord guard provided.	N/A
	a) Diameter or minor dimension D (mm) : Test mass (g) :	EL 2114-11	As above	N/A
	b) Radius of curvature of cord : 1.5 D (Min)	EL 2114-12	As above	N/A
3.2.9	Supply wiring space	EL 2114-13	Not permanent connection or non-detachable power cord type.	N/A

*- Total number of Requirements to be observed / inspected = 04
Total No of applicable Requirement = 02
No of Requirements for which the sample passed = 02

TÜV Rheinland (India) Pvt. Ltd. * Bangalore - 560 100 *

Total number of tests to be conducted = 10
Total No of applicable Tests = 03
No. of tests for which the sample passed = 03

Certificate is hereby certified that the above tests were performed and found to be passing in the requirement tested.

.....

(Approving Authority)

Tests relating to Wiring

EL 2115 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
3.3	Wiring terminals for connection of external conductors*	EL 2115-00	No terminals, appliance inlet and detachable power supply cord used.	N/A
3.3.1	Wiring terminals*	EL 2115-01	As above	N/A
3.3.2	Connection of non-detachable power supply cords	EL 2115-02	As above	N/A
3.3.3	Screw terminals*	EL 2115-03	As above	N/A
3.3.4	Conductor sizes to be connected	EL 2115-04	As above	N/A
	Rated current (A), cord/cable type, cross-sectional area (mm2)		As above	N/A
3.3.5	Wiring terminal sizes	EL 2115-05	As above	N/A
	Rated current (A), type, nominal thread diameter (mm)		As above	N/A
3.3.6	Wiring terminal design	EL 2115-06	As above	N/A
3.3.7	Grouping of wiring terminals*	EL 2115-07	As above	N/A
3.3.8	Stranded wire	EL 2115-08	As above	N/A

*- Total number of Requirements to be observed / inspected = 04
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 05
Total No of applicable Tests = 00
No. of tests for which the sample passed = 00

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore

.....

(Approving Authority)

Tests relating to Wiring

EL 2116 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
3.4	Disconnection from the mains supply*	EL 2116-00	Complies	P
3.4.2	Disconnect devices*	EL 2116-01	AC inlet act as disconnect device.	P
3.4.3	Permanently connected equipment*	EL 2116-02	Not permanently connected equipment.	N/A
3.4.4	Parts which remain energized*	EL 2116-03	No parts remain energized	P
3.4.5	Switches in flexible cords*	EL 2116-04	No switch in flexible cord.	N/A
3.4.6	Number of poles - single-phase and d.c. equipment*	EL 2116-05	The disconnect device disconnects both poles simultaneously.	P
3.4.7	Number of poles - three-phase equipment*	EL 2116-06	Single phase equipment.	N/A
3.4.8	Switches as disconnect devices*	EL 2116-07	Switch not used.	N/A
3.4.9	Plugs as disconnect devices*	EL 2116-08	Appliance inlet used.	N/A
3.4.10	Interconnected equipment*	EL 2116-09	No such interconnection.	N/A
3.4.11	Multiple power sources*	EL 2116-10	Single supply connection	N/A

*- Total number of Requirements to be observed / inspected = 11
Total No of applicable Requirement = 04
No of Requirements for which the sample passed = 04

Total number of tests to be conducted = 00
Total No of applicable Tests = 00
No. of tests for which the sample passed = 00

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 076

.....

(Approving Authority)

Tests relating to Wiring

EL 2117 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
3.5	Interconnection of equipment*	EL 2117-00	Complies	P
3.5.1	General requirements*	EL 2117-01	See below	P
3.5.2	Types of interconnection circuits*	EL 2117-02	Interconnection circuits of SELV through the secondary output connector.	P
3.5.3	ELV circuits as interconnection circuits *	EL 2117-03	No ELV interconnection circuits.	N/A
3.5.4	Data ports for additional equipment	EL 2117-04	Supplied from limited power source. (see appended table 2.5)	P

*- Total number of Requirements to be observed / inspected = 04
Total No of applicable Requirement = 03
No of Requirements for which the sample passed = 03

Total number of tests to be conducted = 01
Total No of applicable Tests = 01
No. of tests for which the sample passed = 01

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

.....

(Approving Authority)

Tests relating to Mechanical Properties

EL 2118 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
4	PHYSICAL REQUIREMENTS*	EL 2118-00	Complies	P
4.1	Stability	EL 2118-01	As below	N/A
	a)A unit having a mass of 7 kg or more shall not fall over when tilted to an angle of 10° from its normal upright position.	EL 2118-02	Mass of the equipment is less than 7kg.	N/A
	b) A floor-standing unit having a mass of 25 kg or more shall not fall over when a force equal to 20 % of the weight of the unit, but not more than 250 N, is applied in any direction except upwards, at a height not exceeding 2 m from the floor.	EL 2118-03	As above	N/A
	c) A floor-standing unit shall not fall over when a constant downward force of 800 N is applied at the point of maximum moment to any horizontal surface of at least 125 mm by at least 200 mm, at a height up to 1 m from the floor.	EL 2118-04	As above	N/A

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 01
No of Requirements for which the sample passed = 01

Total number of tests to be conducted =04
Total No of applicable Tests = 00
No. of tests for which the sample passed = 00

Certificate is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

.....

(Approving Authority)

Tests relating to Mechanical Properties

EL 2119 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
4.2	Mechanical Strength	EL 2119-00	See below	P
4.2.1	General		Complies	P
	For Rack-mounted equipment	EL 2119-01	Not a rack mounted equipment.	N/A
4.2.2	Steady force test, 10 N	EL 2119-02	Applied to relevant parts no hazards	P
4.2.3	Steady force test, 30 N	EL 2119-03	No doors or removable covers.	N/A
4.2.4	Steady force test, 250 N	EL 2119-04	250N applied to outer enclosure.	P
4.2.5	Impact test	EL 2119-05	Transportable equipment.	N/A
	a) Fall test as per Fig. 4A	EL 2119-06	As above	N/A
	b) Swing test as per Fig. 4A	EL 2119-07	As above	N/A
4.2.6	Drop test; height (mm) :	EL 2119-08	Dropped from a height of 1000mm, No hazardous parts were accessible after the test. Test was performed on all sides of the enclosure.	P
4.2.7	Stress relief test	EL 2119-09	After 7 hours at temperature of 87.9°C and cooling down to room temperature, no shrinkage, and distortion or loosening any enclosure part was noticeable on equipment	P
4.2.8	Cathode Ray Tubes	EL 2119-10	No CRT provided.	N/A
4.2.9	High Pressure Lamps*	EL 2119-11	No high pressure lamps provided.	N/A
4.2.10	Wall or ceiling mounted equipment	EL 2119-12	The equipment is not wall or ceiling mounted equipment.	N/A

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 12
Total No of applicable Tests = 05
No. of tests for which the sample passed = 05
Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

.....

(Approving Authority)

Tests relating to Mechanical Properties **EL 2120 – V1.2**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
4.3	Design and Construction*	EL 2120-00	Complies	P
4.3.1	Edges and corners*	EL 2120-01	All edges and corners are rounded and /or smoothed.	P
4.3.2	Handles and manual controls; force (N)	EL 2120-02	No handles or controls provided.	N/A
4.3.3	Adjustable controls	EL 2120-03	Full range circuit, No voltage adjustment necessary.	N/A
4.3.4	Securing of parts	EL 2120-04	Electrical and mechanical connections can be expected to withstand usual mechanical stress. No loosening of parts impairing safety as per relevant requirement of standard.	P
4.3.5	Connections by Plugs and Sockets*	EL 2120-05	In operator and service access areas, mismatching is prevented by incompatible form of location.	P
4.3.6	Direct plug-in equipment	EL 2120-06	The equipment is not direct plug-in equipment.	N/A
4.3.7	Heating elements in earthed equipment*	EL 2120-07	No heating elements provided.	N/A
4.3.8	Batteries		No batteries provided.	N/A
	a) Overcharging of a rechargeable battery	EL 2120-08	As above	N/A
	b) Unintentional charging of a non-rechargeable battery	EL 2120-09	As above	N/A
	c) Reverse charging of a rechargeable battery	EL 2120-10	As above	N/A
	d) Excessive discharging rate for any battery	EL 2120-11	As above	N/A
	e) Electric strength as per Cl.5.3.9.2	EL 2120-12	As above	N/A
4.3.9	Oil & grease*	EL 2120-13	Insulation not in contact with oil or grease.	N/A
4.3.10	Dust, powders, liquids and gases	EL 2120-14	Equipment in intended use not considered to be exposed to these.	N/A
4.3.11	Containers for liquids or gases	EL 2120-15	No container for liquid or gas provided	N/A
4.3.12	Flammable liquids	EL 2120-16	No flammable liquids provided.	N/A
4.3.13	Radiation		See below	P
4.3.13.2	Ionizing radiation	EL 2120-17	No ionizing radiation.	N/A
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	EL 2120-18	No ultraviolet (UV) radiation.	N/A

4.3.13.4	Human exposure to ultraviolet (UV) radiation	EL 2120-19	As above.	N/A
4.3.13.5	Lasers (including laser diodes) and LED's:	EL 2120-20	No Lasers. LED used for functional indication.	P
4.3.13.5.1	Lasers (including laser diodes) For laser see IEC 60825-1, respective part as applicable.	EL 2120-21	No laser.	N/A
	Laser class		As above	N/A
4.3.13.5.2	Light emitting diodes (LED's)	EL 2120-22	LED used for functional indication only	P
4.3.13.6	Other types*	EL 2120-23	No other types used.	N/A

*- Total number of Requirements to be observed / inspected = 06
Total No of applicable Requirement = 03
No of Requirements for which the sample passed = 03

Total number of tests to be conducted = 18
Total No of applicable Tests = 03
No. of tests for which the sample passed = 03

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore

.....
(Approving Authority)

Tests relating to Mechanical Properties **EL 2121 – V1.2**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
4.4	Protection against hazardous moving parts	EL 2121-00	No hazardous moving parts within the equipment.	N/A
4.4.2	Protection in operator access areas	EL 2121-01	As above	N/A
	Household and home/office document/media shredders		As above	N/A
4.4.3	Protection in restricted access locations *	EL 2121-02	As above	N/A
4.4.4	Protection in service access areas*	EL 2121-03	As above	N/A
4.4.5	Protection against moving fan blades	EL 2121-04	As above	N/A
4.4.5.1	General*	EL 2121-05	As above	N/A
	Not considered likely to cause pain or injury. a)……:	EL 2121-06	As above	N/A
	Is considered likely to cause pain, not injury. b)	EL 2121-07	As above	N/A
	Considered likely to cause injury. c)……:	EL 2121-08	As above	N/A
4.4.5.2	Protection for users*	EL 2121-09	As above	N/A
	Use of symbol or warning*	EL 2121-10	As above	N/A
4.4.5.3	Protection for service persons*	EL 2121-11	As above	N/A
	Use of symbol or warning *	EL 2121-12	As above	N/A

*- Total number of Requirements to be observed / inspected = 07
Total No of applicable Requirement = 00
No of Requirements for which the sample passed: 00

Total number of tests to be conducted : 06
Total No of applicable Tests = 00
No. of tests for which the sample passed: 00

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560

……
(Approving Authority)

Tests relating to Thermal Properties

EL 2122 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
4.5	Thermal Requirements*	EL 2122-00	Complies	P
4.5.2	Temperature tests under normal load condition as per Cl.1.4.5	EL 2122-01	(see appended table 4.5)	P
4.5.3	Temperature limits for materials*	EL 2122-02	(see appended table 4.5)	P
4.5.4	Touch temperature limits*	EL 2122-03	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat	EL 2122-04	(see appended table 4.5.5)	P

*- Total number of Requirements to be observed / inspected = 03
Total No of applicable Requirement = 03
No of Requirements for which the sample passed: 03

Total number of tests to be conducted : 02
Total No of applicable Tests = 02
No. of tests for which the sample passed: 02

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore

.....

(Approving Authority)

Tests relating to Mechanical Properties

EL 2123 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
4.6	Openings in enclosures*	EL 2123-00	No opening	N/A
4.6.1	Top and side openings	EL 2123-01	As above	N/A
	Dimensions (mm)		As above	N/A
4.6.2	Bottoms of fire enclosures :	EL 2123-02	As above	N/A
	Construction of the bottom, dimensions (mm) :		As above	N/A
4.6.3	Doors or covers in fire enclosures*	EL 2123-03	As above	N/A
4.6.4	Openings in transportable equipment		As above	N/A
4.6.4.1	Constructional design measures	EL 2123-04	As above	N/A
	Dimensions (mm)		As above	N/A
4.6.4.2	Evaluation measures for larger openings	EL 2123-05	As above	N/A
4.6.4.3	Use of metallized parts	EL 2123-06	As above	N/A
4.6.5	Adhesives for constructional purposes: Compliance is checked by examination of the construction and of the available data. If such data is not available, compliance is checked by the following tests.	EL 2123-07	As above	N/A
	a)Temperature Conditioning at : 100 °C ± 2 °C for one week; or 90 °C ± 2 °C for three weeks; or 82 °C ± 2 °C for eight weeks.	EL 2123-08	As above	N/A
	After temperature conditioning b) Leave the sample between 20°C to 30°C for 1 hour	EL 2123-09	As above	N/A
	c) Place the sample at -40°C±2°C for 4 hours	EL 2123-10	As above	N/A
	d) Remove and allow the sample to come to any convenient temperature between 20 °C and 30 °C for 8 h;	EL 2123-11	As above	N/A
	e) Place the sample in a cabinet at 91 % to 95 % relative humidity for 72 h;	EL 2123-12	As above	N/A

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

	f) Remove the sample and leave it at any convenient temperature between 20 °C and 30 °C for 1 h;	EL 2123-13	As above	N/A
	g) Place the sample in an oven at the temperature used for the temperature conditioning for 4 h;	EL 2123-14	As above	N/A
	h) Remove the sample and allow it to reach any convenient temperature between 20 °C; and 30 °C for 8 h.	EL 2123-15	As above	N/A
	i) The sample is then immediately subjected to the tests of Cl.4.2 as applicable.	EL 2123-16	As above	N/A

*- Total number of Requirements to be observed / inspected = 02
Total No of applicable Requirement = 00
No of Requirements for which the sample passed: 00

Total number of tests to be conducted : 15
Total No of applicable Tests = 00
No. of tests for which the sample passed: 00

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 105

.....
(Approving Authority)

Tests relating to Fire Safety

EL 2124 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
4.7	Resistance to fire*	EL 2124-00	Complies	P
4.7.1	Reducing the risk of ignition and spread of flame		Materials with required flammability classes are used. Safety relevant components used within their rating. Electrical parts are not likely to ignite nearby materials. For temperatures see 4.5.1	P
	Method 1, selection and application of components wiring and materials OR	EL 2124-01	(see appended table 1.5.1)	P
	Method 2, application of all of simulated fault condition tests	EL 2124-02	Method 1 considered	N/A
4.7.2	Conditions for a fire enclosure*		See below	P
4.7.2.1	Parts requiring a fire enclosure*	EL 2124-03	With having the following parts: • Components in Primary • Component in Secondary • Insulated wiring The fire enclosure is required.	P
4.7.2.2	Parts not requiring a fire enclosure	EL 2124-04	No such parts.	N/A
4.7.3	Materials*		See below	P
4.7.3.1	General*		Materials with the required flammability classes are used	P
	a)Class of material used*	EL 2124-05	(see appended table 1.5.1)	P
	b) Where HB40 CLASS MATERIAL, HB75 CLASS MATERIAL or HBF CLASS FOAMED MATERIAL, is required, material passing the glow-wire test at 550 °C according to IEC 60695-2-11 is acceptable as an alternative.	EL 2124-06	No such type of material used	N/A
	c) Where it is not practical to protect components against overheating under fault conditions, the components shall be mounted on V-1 CLASS MATERIAL. Additionally, such components shall be separated from material of a class lower than V-1 CLASS MATERIAL by at least 13 mm of air, or by a solid barrier of V-1 CLASS MATERIAL.	EL 2124-07	(see appended table 1.5.1)	P

4.7.3.2	Materials for fire enclosures		Complies	P
	a) For MOVABLE EQUIPMENT having a total mass not exceeding 18 kg, the material of a FIRE ENCLOSURE, in the thinnest significant wall thickness used, shall be of V-1 CLASS MATERIAL or shall pass the test of Clause A.2.	EL 2124-08	(see appended table 1.5.1)	P
	b) For MOVABLE EQUIPMENT having a total mass exceeding 18 kg and for all STATIONARY EQUIPMENT, the material of a FIRE ENCLOSURE, in the thinnest significant wall thickness used, shall be of 5VB CLASS MATERIAL or shall pass the test of Clause A.1.	EL 2124-09	Not exceeding 18kg.	N/A
	c) Materials for components that fill an opening in a FIRE ENCLOSURE, and that are intended to be mounted in this opening shall : be of V-1 CLASS MATERIAL; or pass the tests of Clause A.2; or comply with the flammability requirements of the relevant IEC component standard	EL 2124-10	No such construction.	N/A
	d) Plastic materials of a FIRE ENCLOSURE shall be located more than 13 mm through air from arcing parts such as unenclosed commutators and unenclosed switch contacts.	EL 2124-11	No such construction.	N/A
4.7.3.3	Materials for components and other parts outside fire enclosures *		No part outside fire enclosure.	N/A
	a) Materials shall be of : – HB75 CLASS MATERIAL if the thinnest significant thickness of this material is < 3 mm, or – HB40 CLASS MATERIAL if the thinnest significant thickness of this material is ≥ 3 mm, or – HBF CLASS FOAMED MATERIAL.*	EL 2124-12	As above	N/A

	b) Connectors shall comply with one of the following: – be made of V-2 CLASS MATERIAL; or – pass the tests of Clause A.2; or – comply with the flammability requirements of the relevant IEC component standard; or – be mounted on V-1 CLASS MATERIAL and be of a small size; or – be located in a SECONDARY CIRCUIT supplied by a power source that is limited to a maximum of 15 VA (see 1.4.11) under normal operating conditions and after a single fault in the equipment (see 1.4.14).	EL 2124-13	As above	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures		Internal components except small parts are flammability class V-2 or better.	P
	a) Inside FIRE ENCLOSURES, materials for components and other parts shall comply with one of the following: – be of V-2 CLASS MATERIAL or HF-2 CLASS FOAMED MATERIAL; or – pass the flammability test described in Clause A.2; or – meet the flammability requirements of a relevant IEC component standard that includes such requirements.	EL 2124-14	(see appended table 1.5.1)	P
4.7.3.5	Materials for air filter assemblies : Air filter assemblies shall be constructed of V-2 CLASS MATERIAL, or HF-2 CLASS FOAMED MATERIAL.	EL 2124-15	No air filters provided.	N/A
4.7.3.6	Materials used in high-voltage components		No high voltage components(>4KV Components)	N/A

	a) High-voltage components operating at peak-to-peak voltages exceeding 4 kV shall either be of V-2 CLASS MATERIAL, or HF-2 CLASS FOAMED MATERIAL, or comply with 14.4 of IEC 60065 or pass the needle flame test according to IEC 60695-11-5.	EL 2124-16	As above	N/A
	b) Compliance is checked by inspection of the equipment and material data sheets and, if necessary, by – the tests for V-2 CLASS MATERIAL or HF-2 CLASS FOAMED MATERIAL; or – the test described in 14.4 of IEC 60065; or – the needle flame test according to IEC 60695-11-5.	EL 2124-17	As above	N/A
	c) In addition to above, the following details apply, referring to clauses of IEC 60695-11-5: Clause 7 - Severities	EL 2124-18	As above	N/A
	Clause 8 - Conditioning	EL 2124-19	As above	N/A
	Clause 11 - Evaluation of test results	EL 2124-20	As above	N/A

*- Total number of Requirements to be observed / inspected = 04
Total No of applicable Requirement = 03
No of Requirements for which the sample passed: 03

Total number of tests to be conducted : 17
Total No of applicable Tests = 04
No. of tests for which the sample passed: 04

Certificated / certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 105

.....
(Approving Authority)

Tests relating to Insulating Properties

EL 2125 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
5.0	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS*	EL 2125-00	Complies	P
5.1	Touch current and protective conductor current*	EL 2125-01	Test conducted in accordance with 5.1.2 to 5.1.6	P
5.1.2	Configuration of equipment under test (EUT)*		See below:	P
5.1.2.1	Single connection to an a.c. mains supply*	EL 2125-02	Single supply, independently tested	P
5.1.2.2	Redundant multiple connections to an a.c. mains supply*	EL 2125-03	Single phase equipment	N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply	EL 2125-04	No simultaneous multiple connections	N/A
5.1.3	Test circuit	EL 2125-05	As per figure 5A	P
5.1.4	Application of measuring instrument	EL 2125-06	As per Annex D	P
5.1.5	Test procedure	EL 2125-07	Complies	P
5.1.6	Test measurements		See below	P
	a) Value of voltage, U2 measured using the instrument as per Fig. D.1	EL 2125-08	See appended table 5.1.6	--
	b) Measured touch current (mA) :	EL 2125-09	See appended table 5.1.6	--
	c) Calculated value of TOUCH CURRENT (A) = U2 / 500	EL 2125-10	See appended table 5.1.6	--
	d) Max. protective conductor current =5% of Input current	EL 2125-11	See cl. 5.1.7 below	--
5.1.7	Equipment with touch current exceeding 3.5 mA	EL 2125-12	Touch current does not exceed 3.5mA	N/A
5.1.7.2	Simultaneous multiple connections to the supply	EL 2125-13	Single supply equipment	N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	EL 2125-14	No TNV circuits	N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system	EL 2125-15	As above	N/A

	Supply voltage (V)		As above	—
	Measured touch current (mA)		As above	—
	Max. allowed touch current (mA)		As above	—
5.1.8.2	Summation of touch currents from telecommunication networks	EL 2125-16	As above	N/A
	a) EUT with earthed telecommunication ports :		As above	N/A
	b) EUT whose telecommunication ports have no reference to protective earth		As above	N/A

*- Total number of Requirements to be observed / inspected = 04
Total No of applicable Requirement = 03
No of Requirements for which the sample passed = 03

Total number of tests to be conducted = 13
Total No of applicable Tests = 03
No. of tests for which the sample passed = 03

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore 100

.....

(Approving Authority)

Tests relating to Insulating Properties

EL 2126 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
5.2	Electric strength*	EL 2126-00	Complies	P
5.2.1	General*	EL 2126-01	(see appended table 5.2)	P
5.2.2	Test procedure		Table 5B used. (see appended table 5.2)	P
	a) The test voltages for electric strength for the appropriate grade of insulation (FUNCTIONAL INSULATION if required by 5.3.4 b), BASIC INSULATION, SUPPLEMENTARY INSULATION or REINFORCED INSULATION] are as specified in either: – Table 5B using the PEAK WORKING VOLTAGE (U), as determined in 2.10.2; or – Table 5C using the REQUIRED WITHSTAND VOLTAGE, as determined in G.4.	EL 2126-02	As above.	P

*- Total number of Requirements to be observed / inspected = 02
Total No of applicable Requirement = 02
No of Requirements for which the sample passed = 02

Total number of tests to be conducted = 01
Total No of applicable Tests = 01
No. of tests for which the sample passed = 01

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TUV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

.....

(Approving Authority)

Tests relating to Insulating Properties

EL 2127 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
5.3	Abnormal operating and fault conditions	EL 2127-00	Complies. (See appended table 5.3)	P
5.3.1	Protection against overload and abnormal operation	EL 2127-01	Complies. (see appended table 5.3)	P
5.3.2	Motors	EL 2127-02	No motors used.	N/A
5.3.3	Transformers	EL 2127-03	Adequate protection against overload provided. (See Annex)	P
5.3.4	Functional insulation	EL 2127-04	Short circuit tests. (see appended table 5.3)	P
5.3.5	Electromechanical components	EL 2127-05	No electromechanical component provided.	N/A
5.3.6	Audio amplifiers in ITE	EL 2127-06	No such circuit used	N/A
5.3.7	Simulation of faults	EL 2127-07	(see appended table 5.3)	P
5.3.8	Unattended equipment	EL 2127-08	No such equipment	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions*		Complies	P
5.3.9.1	During the tests	EL 2127-09	No fire propagated beyond the equipment. No molten metal was emitted	P
5.3.9.2	After the tests	EL 2127-10	After test, the EUT still complies with the relevant requirements of this standard.	P

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed: 00

Total number of tests to be conducted : 11
Total No of applicable Tests = 07
No. of tests for which the sample passed: 07

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 076

.....

(Approving Authority)

Tests relating to Communicating Connection **EL 2128 – V1.2**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
6.1	Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment	EL 2128-00	No TNV circuits.	N/A
6.1.1	Protection from hazardous voltages	EL 2128-01	As above	N/A
6.1.2	Separation of the telecommunication network from earth*		As above	N/A
6.1.2.1	Requirements: a)Supply voltage (V) b)Current in the test circuit (mA)	EL 2128-02	As above	N/A
6.1.2.2	Exclusions	EL 2128-03	As above	N/A

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed: 00

Total number of tests to be conducted : 04
Total No of applicable Tests = 00
No. of tests for which the sample passed: 00

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 093

.....

(Approving Authority)

Tests relating to Communicating Connection **EL 2129 – V1.2**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
6.2	Protection of equipment users from overvoltages on telecommunication networks*	EL 2129-00	No TNV circuits.	N/A
6.2.1	Separation requirements	EL 2129-01	As above	N/A
6.2.2	Electric strength test procedure	EL 2129-02	As above	N/A
6.2.2.1	Impulse test	EL 2129-03	As above	N/A
6.2.2.2	Steady-state test	EL 2129-04	As above	N/A
6.2.2.3	Compliance criteria	EL 2129-05	As above	N/A

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 00
No of Requirements for which the sample passed: 00

Total number of tests to be conducted : 05
Total No of applicable Tests = 00
No. of tests for which the sample passed: 00

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 080

.....

(Approving Authority)

Tests relating to Communicating Connection **EL 2130 – V1.2**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
6.3	Protection of the telecommunication wiring system from overheating	EL 2130-00	No TNV circuits	N/A
	a)If current limiting is due to the inherent impedance of the power source, the output current into any resistive load, including a short-circuit, is measured. The current limit shall not be exceeded after 60 s of test. Max. output current (A)	EL 2130-01	As above	N/A
	b) If current limiting is provided by an overcurrent protective device having a specified time/current characteristic: – the time/current characteristic shall show that a current equal to 110 % of the current limit will be interrupted within 60 min; and	EL 2130-02	As above	N/A
	c) the output current into any resistive load, including a short-circuit, with the overcurrent protective device bypassed, measured after 60 s of test, shall not exceed 1 000/U, where U is the output voltage measured in accordance with 1.4.5 with all load circuits disconnected.	EL 2130-03	As above	N/A

	d) If current limiting is provided by an overcurrent protective device that does not have a specified time/current characteristic: – the output current into any resistive load, including a short-circuit, shall not exceed the current limit after 60 s of test; and – the output current into any resistive load, including a short-circuit, with the overcurrent protective device bypassed, measured after 60 s of test, shall not exceed 1 000/U, where U is the output voltage measured in accordance with 1.4.5 with all load circuits disconnected.	EL 2130-04	As above	N/A

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed: 00

Total number of tests to be conducted : 05
Total No of applicable Tests = 00
No. of tests for which the sample passed: 00

Certification: It is certified that the above tests were performed and found to be passing in the requirement tested.

.....
(Approving Authority)

Tests relating to Connection to cable distribution system **EL 2131 – V1.2**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
7	Connection to cable distribution systems*	EL-2131-00	Not connected to cable distribution system.	N/A
7.1	General requirements*	EL 2131-01	As above	N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment	EL 2131-02	As above	N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system	EL 2131-03	As above	N/A
7.4	Insulation between primary circuits and cable distribution systems		As above	N/A
7.4.2	Voltage surge test	EL 2131-04	As above	N/A
7.4.3	Impulse test	EL 2131-05	As above	N/A

*- Total number of Requirements to be observed / inspected = 02
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 04
Total No of applicable Tests = 00
No. of tests for which the sample passed = 00

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

.....
(Approving Authority)

Tests relating to Fire Safety

EL 2132 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE	EL 2132-00	Flammability data were taken from available literature.	N/A
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)	EL 2132-01	As above	N/A
A.1.1	Samples.....	EL 2132-02	As above	—
	Wall thickness (mm)		As above	—
A.1.2	Conditioning of samples; temperature (°C)	EL 2132-03	As above	N/A
A.1.3	Mounting of samples	EL 2132-04	As above	N/A
A.1.4	Test flame (see IEC 60695-11-3)	EL 2132-05	As above	N/A
	Flame A, B, C or D		As above	–
A.1.5	Test procedure	EL 2132-06	As above	N/A
A.1.6	Compliance criteria	EL 2132-07	As above	N/A
	Sample 1 burning time (s).....		As above	—
	Sample 2 burning time (s).....		As above	—
	Sample 3 burning time (s).....		As above	—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)	EL 2132-08	As above	N/A
A.2.1	Samples, material.....	EL 2132-09	As above	—
	Wall thickness (mm)		As above	—
A.2.2	Conditioning of samples; temperature (°C)	EL 2132-10	As above	N/A
A.2.3	Mounting of samples	EL 2132-11	As above	N/A
A.2.4	Test flame (see IEC 60695-11-4)	EL 2132-12	As above	N/A
	Flame A, B or C		As above	
A.2.5	Test procedure	EL 2132-13	As above	N/A
A.2.6	Compliance criteria	EL 2132-14	As above	N/A

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

Tests relating to Fire Safety

EL 2132 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
	Sample 1 burning time (s).....		As above	—
	Sample 2 burning time (s).....		As above	—
	Sample 3 burning time (s).....		As above	—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9	EL 2132-15	As above	N/A
	Sample 1 burning time (s).....		As above	—
	Sample 2 burning time (s).....		As above	—
	Sample 3 burning time (s).....		As above	—
A.3	Hot flaming oil test (see 4.6.2)	EL 2132-16	As above	N/A
A.3.1	Mounting of samples	EL 2132-17	As above	N/A
A.3.2	Test procedure	EL 2132-18	As above	N/A
A.3.3	Compliance criterion	EL 2132-19	As above	N/A

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted : 20
Total No of applicable Tests = 00
No. of tests for which the sample passed: 00

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 099

.....

(Approving Authority)

Tests relating to Insulation Properties

EL 2133 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)	EL 2133-00	No motor used.	N/A
B.1	General requirements	EL 2133-01	As above	N/A
	Position		As above	—
	Manufacturer		As above	—
	Type		As above	—
	Rated values		As above	—
B.2	Test conditions	EL 2133-02	As above	N/A
B.3	Maximum temperatures	EL 2133-03	As above	N/A
B.4	Running overload test	EL 2133-04	As above	N/A
B.5	Locked-rotor overload test	EL 2133-05	As above	N/A
	Test duration (days)		As above	—
	Electric strength test: test voltage (V)		As above	—
B.6	Running overload test for d.c. motors in secondary circuits	EL 2133-06	As above	N/A
B.6.1	General	EL 2133-07	As above	N/A
B.6.2	Test procedure	EL 2133-08	As above	N/A
B.6.3	Alternative test procedure	EL 2133-09	As above	N/A
B.6.4	Electric strength test; test voltage (V)	EL 2133-10	As above	N/A
B.7	Locked-rotor overload test for d.c. motors in secondary circuits	EL 2133-11	As above	N/A
B.7.1	General	EL 2133-12	As above	N/A
B.7.2	Test procedure	EL 2133-13	As above	N/A
B.7.3	Alternative test procedure	EL 2133-14	As above	N/A
B.7.4	Electric strength test; test voltage (V)	EL 2133-15	As above	N/A
B.8	Test for motors with capacitors	EL 2133-16	As above	N/A
B.9	Test for three-phase motors	EL 2133-17	As above	N/A
B.10	Test for series motors	EL 2133-18	As above	N/A
	Operating voltage (V)			—

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed = 00

Total number of tests to be conducted = 19
Total No of applicable Tests = 00
No. of tests for which the sample passed = 00

Certificate is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 076

.....

(Approving Authority)

Tests relating to Electrical Safety

EL 2134 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)*	EL 2134-00	Complies	P
	Position		Pri – sec transformer: T1	—
	Manufacturer		(see appended table 1.5.1)	—
	Type		(see appended table 1.5.1)	—
	Rated values		(see appended table 1.5.1)	—
	Method of protection		Inherent protection.	—
C.1	Overload test	EL 2134-01	See appended table 5.3	P
C.2	Insulation	EL 2134-02	See appended table 2.10.5	P
	Protection from displacement of windings :		Adequate construction; for further details, see appended table 2.10.3/4.	P

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 01
No of Requirements for which the sample passed: 01

Total number of tests to be conducted : 02
Total No of applicable Tests = 02
No. of tests for which the sample passed: 02

Certificate is to certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560

.....

(Approving Authority)

Tests relating to Electrical Safety

EL 2135 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)*	EL 2135-00	No relevant parts present	N/A
	Metal(s) used		As above	—

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 00
No of Requirements for which the sample passed: 00

Total number of tests to be conducted : 00
Total No of applicable Tests = 00
No. of tests for which the sample passed: 00

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

.....

(Approving Authority)

Tests relating to General Requirement **EL 2136 – V1.2**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)*	EL 2136-00	No thermal controls	N/A
K.1	Making and breaking capacity	EL 2136-01	As above	N/A
K.2	Thermostat reliability; operating voltage (V)	EL 2136-02	As above	N/A
K.3	Thermostat endurance test; operating voltage (V)	EL 2136-03	As above	N/A
K.4	Temperature limiter endurance; operating voltage (V)	EL 2136-04	As above	N/A
K.5	Thermal cut-out reliability	EL 2136-05	As above	N/A
K.6	Stability of operation	EL 2136-06	As above	N/A

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 00
No of Requirements for which the sample passed: 00

Total number of tests to be conducted : 06
Total No of applicable Tests = 00
No. of tests for which the sample passed: 00

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 105

.....
(Approving Authority)

Tests relating to General Requirement **EL 2137 – V1.2**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
L	ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)*	EL 2137-00	Complies	P
L.1	Typewriters*	EL 2137-01	Not a Typewriters	N/A
L.2	Adding machines and cash registers*	EL 2137-02	Neither an adding machine nor a cash register.	N/A
L.3	Erasers*	EL 2137-03	Not an eraser.	N/A
L.4	Pencil sharpeners*	EL 2137-04	Not pencil sharpeners.	N/A
L.5	Duplicators and copy machines*	EL 2137-05	Not a duplicators and copy machines	N/A
L.6	Motor-operated files*	EL 2137-06	Not motor-operated files.	N/A
L.7	Other business equipment*	EL 2137-07	ITE POWER SUPPLY. Maximum Normal Load of operation	P

*- Total number of Requirements to be observed / inspected = 08
Total No of applicable Requirement = 02
No of Requirements for which the sample passed = 02

Total number of tests to be conducted : 00
Total No of applicable Tests = 00
No. of tests for which the sample passed: 00

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

.....

(Approving Authority)

Tests relating to Electrical Safety

EL 2138 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)	EL 2138-00	Does not generate telephone ringing signals.	N/A
M.1	Introduction*	EL 2138-01	As above	N/A
M.2	Method A	EL 2138-02	As above	N/A
M.3	Method B	EL 2138-03	As above	N/A
M.3.1	Ringing signal	EL 2138-04	As above	N/A
M.3.1.1	Frequency (Hz)	EL 2138-05	As above	—
M.3.1.2	Voltage (V)	EL 2138-06	As above	—
M.3.1.3	Cadence; time (s), voltage (V) ...	EL 2138-07	As above	—
M.3.1.4	Single fault current (mA)	EL 2138-08	As above	—
M.3.2	Tripping device and monitoring voltage	EL 2138-09	As above	N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage	EL 2138-10	As above	N/A
M.3.2.2	Tripping device	EL 2138-11	As above	N/A
M.3.2.3	Monitoring voltage (V)	EL 2138-12	As above	N/A

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 00
No of Requirements for which the sample passed: 00

Total number of tests to be conducted : 12
Total No of applicable Tests = 00
No. of tests for which the sample passed: 00

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. * Bangalore - 560 100

.....

(Approving Authority)

Tests relating to General Requirements **EL 2139 – V1.2**

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
Q	ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)	EL 2139-00	Certified VDR used. (see appended table 1.5.1)	P
	a) Preferred climatic categories .		As above	P
	b) Maximum continuous voltage		As above	P
	c) Pulse current		As above	P

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed: 00

Total number of tests to be conducted : 01
Total No of applicable Tests = 01
No. of tests for which the sample passed: 01

Certificate is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. * Bangalore - 97 *

.....

(Approving Authority)

Tests relating to Radiation Safety

EL 2140 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
Y	ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)	EL 2140-00	Not used	N/A
Y.1	Test apparatus	EL 2140-01	As above	N/A
Y.2	Mounting of test samples	EL 2140-02	As above	N/A
Y.3	Carbon-arc light-exposure apparatus	EL 2140-03	As above	N/A
Y.4	Xenon-arc light exposure apparatus	EL 2140-04	As above	N/A

*- Total number of Requirements to be observed / inspected = 00
Total No of applicable Requirement = 00
No of Requirements for which the sample passed: 00

Total number of tests to be conducted : 05
Total No of applicable Tests = 00
No. of tests for which the sample passed: 00

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

TÜV Rheinland (India) Pvt. Ltd. * Bangalore - 560 058 *

.....
(Approving Authority)

Tests relating to Electrical Safety

EL 2141 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
CC.1	Evaluation of integrated circuit (IC) current limiters*	EL 2141-00	No such construction	N/A
CC.2	Test program 1.....:	EL 2141-01	As above	N/A
CC.3	Test program 2.....:	EL 2141-02	As above	N/A

*- Total number of Requirements to be observed / inspected = 01
Total No of applicable Requirement = 00
No of Requirements for which the sample passed: 00

Total number of tests to be conducted : 02
Total No of applicable Tests = 00
No. of tests for which the sample passed: 00

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

.....

(Approving Authority)

Tests relating to Mechanical Properties

EL 2142 – V1.2

Cl. No.	Test / Requirement name	Test Code	Test result/ observation	Verdict
DD	Requirements for the mounting means of rack-mounted equipment*	EL 2142-00	Not a rack mounted equipment	N/A
DD.2	Mechanical strength test, variable N.....:	EL 2142-01	As above	N/A
DD.3	Mechanical strength test, 250N, including end stops.....:	EL 2142-02	As above	N/A
DD.4	Compliance*.....:	EL 2142-03	As above	N/A

*- Total number of Requirements to be observed / inspected = 02
Total No of applicable Requirement = 00
No of Requirements for which the sample passed: 00

Total number of tests to be conducted : 02
Total No of applicable Tests = 00
No. of tests for which the sample passed: 00

Certificate: It is certified that the above tests were performed and found to be passing in the requirement tested.

.....

(Approving Authority)

1.5.1	TABLE: List of components				P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity
Plug on Power Cord	I-Sheng Electronics (KunShan) Co. Ltd	SP-81A	10A , 250V	IS 1293	IS CM/L-4035847
Alternate	Longwell Company Song Gang Factory	LP67	250V, 10A	IS 1293	ISI CM/L-4009947
Cable on Power Cord	I-Sheng Electronics (KunShan) Co. Ltd	CIRCULAR	3×0.75mm^2	IS 694	ISI CM/L-4035746
Alternate	Longwell Company Song Gang Factory	PVC insulated cable	3X0.75mm^2	IS 694	ISI CM/L-4009846
Appliance inlet	Inalways Corporation	0711	Min. 250Vac; Min. 2.5A	IEC/EN 60320-1	ENEC 2010083
Alternative	Rich Bay Co., Ltd.	R-301	Min. 250Vac; Min. 2.5A	IEC/EN 60320-1	VDE 40030228
Alternative	Sun Fair Electric Wire & Cable (HK)	S-03	Min. 250Vac; Min. 2.5A	IEC/EN 60320-1	VDE 40034447
Alternative	TECX-UNIONS Technology	TU-301, TU-301-SP	Min. 250Vac; Min. 2.5A	IEC/EN 60320-1	VDE 40025582
Alternative	Zhejiang Leci Electronics Co., Ltd.	DB-14	Min. 250Vac; Min. 2.5A	IEC/EN 60320-1	VDE 40032137
Enclosure	SABIC INNOVATIVE PLASTICS US L L C	SE100, SE100X, SE1, SE1X, HF500R, CX7211, C2950, EXCY0098	Min. 2.0mm Thick; flame class: Min V-0	UL 94	UL E45329
Alternative	TEIJIN LIMITED RESIN AND PLASTIC	LN-1250P, LN-1250G	Min. 2.0mm Thick; flame class: Min V-0	UL 94	UL E50075
Alternative	CHI MEI CORPORATION	PA-765A, PC-540	Min. 2.0mm Thick; flame class: Min V-0	UL 94	UL E56070
PCB	SHANGHAI AREX PRECISION ELECTRONIC CO LTD	02V0, 04V0	Max Oper Temp: 130°C; Flame Class: V-0	UL 94	UL E186016

TÜV Rheinland (India) Pvt. Ltd. * Bangalore - 560 100 *

Alternative	WALEX ELECTRONIC (WUXI) CO LTD	T2A, T4, T2	Max Oper Temp: 130°C; Flame Class: V-0	UL 94	UL E154355
Alternative	YUANMAN PRINTED CIRCUIT CO LTD	TA	Max Oper Temp: 130°C; Flame Class: V-0	UL 94	UL E74757
Alternative	SUZHOU XINKE ELECTRONICS CO LTD	KB, XK-2	Max Oper Temp: 130°C; Flame Class: V-0	UL 94	UL E231590
Alternative	KUNSHAN CITY HUA SHENG CIRCUIT BOARD CO LTD	HS-S	Max Oper Temp: 130°C; Flame Class: V-0	UL 94	UL E229877
Alternative	SUZHOU CITY YILIHUA ELECTRONICS CO LTD	YLH-1	Max Oper Temp: 130°C; Flame Class: V-0	UL 94	UL E251781
Alternative	SHENZHEN TONGCHUANGXIN ELECTRONICS CO LTD	TCX	Max Oper Temp: 130°C; Flame Class: V-0	UL 94	UL E250336
Alternative	PACIFIC WIN INDUSTRIAL LTD	PW-02, PW-03	Max Oper Temp: 130°C; Flame Class: V-0	UL 94	UL E250336
Fuse (F1)	Conquer Electronics.	MST	T3.15A, 250V	IEC/EN 60127-1, IEC/EN 60127-3	VDE 40017118
Alternative	Conquer Electronics.	MET	T3.15A, 250V	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40017157
Alternative	Ever Island Electric Co Ltd & Walter Electric	2010	T3.15A, 250V	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40018781
Alternative	Bel Fuse Ltd.	RST	T3.15A, 250V	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40011144
Alternative	Cooper Bussmann Inc.	SS-5	T3.15A, 250V	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40020046
Alternative	Shenzhen Lanson Electronics	SMT	T3.15A, 250V	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40012592
Alternative	Sunny East Enterprise Co. Ltd.	CFD	T3.15A, 250V	IEC/EN 60127-1 IEC/EN 60127-3	VDE 40030246
Varistor (VR1)	TKS	TVR10471K, TVR14471K	min 300Vac(rms), 85°C ,V-0	IEC 61051-2 IEC 60950-1	VDE 0150[illegible]

Varistor (VR1)	TKS	TVR10471K, TVR14471K	min 300Vac(rms), 85°C ,V-0	IEC 61051-2 IEC 60950-1	VDE 005944
Alternative	Centra	10D471K, 14D471K	min 300Vac(rms), 85°C ,V-0	IEC 61051-2 IEC 60950-1	VDE40008220
Alternative	JOYIN	SVR10D471K, SVR14D471K	min 300Vac(rms), 85°C ,V-0	IEC 61051-2 IEC 60950-1	VDE 005937
Alternative	Success Electronics Co Ltd	SVR10D471K , SVR14D471K	min 300Vac(rms), 85°C ,V-0	IEC 61051-2 IEC 60950-1	VDE 40030401
Alternative	Walsin	VZ14D471K	min 300Vac(rms), 85°C ,V-0	IEC 61051-2 IEC 60950-1	VDE 5932
Alternative	CERAMATE	GNR10D471K GNR14D471K	min 300Vac(rms), 85°C ,V-0	IEC 61051-2 IEC 60950-1	VDE 40031745
Alternative	Brightking	14D471K 10D471K	min 300Vac(rms), 85°C ,V-0	IEC 61051-2 IEC 60950-1	VDE 40027827
X2 capacitor (CX1, CX2) X2 Type (CX1= Max 0.47uF, CX2=Max.0.15 uF)	Cheng Tung Industrial Co., Ltd.	CTX	AC 250V ,100°C	IEC/EN 60384-14	VDE 40026382
Alternative	Ultra Tech Xiphi Enterprise Co. Ltd.	HQX	AC 250V ,100°C	IEC/EN 60384-14	VDE 40015608
Alternative	Dain	MPX, NPX	AC 250V ,100°C	IEC/EN 60384-14	VDE 40018798
Alternative	Sinhua Electronics (Shanghai) Co. Ltd.	MPX	AC 250V ,100°C	IEC/EN 60384-14	VDE 40014686
Alternative	Jiangsu Xinghua Huayu Electronics Co., Ltd.	MPX	AC 250V ,100°C	IEC/EN 60384-14	VDE 40022417
Extruded tube for heat sink	Shenzhen Woer Heat-Shrinkable Material Co Ltd	RSFR, RSFR-H, RSFR-HPF	600V, 125°C	IEC/EN 60950-1 UL 224	UL E203950
Alternative	Qifurui Electronics Co., Ltd.	QFR-h	600V, 125°C	IEC/EN 60950-1 UL 224	UL E225897

Alternative	Dongguan Salipt Co., Ltd.	SALIPT S-901-300, SALIPT S-901-600	Min. 300V, 125°C	IEC/EN 60950-1 UL 224	UL E209436
Alternative	Guangzhou Kaiheng Enterprise Group	K-2 (+), K-2 (CB)	Min. 300V, 125°C	IEC/EN 60950-1 UL 224	UL E214175
Alternative	Changyuan Electronics (Shenzhen) Co., Ltd.	CB-HFT	Min. 300V, 125°C	IEC/EN 60950-1 UL 224	UL E180908
Internal wire	Kunshan New Zhicheng Electronics Technologies Co Ltd	1185, 1015, 1007	Min. 18 AWG, Min. 300 V, Min. 80°C	UL 758	UL E237831
Alternative	Zhuang Shan Chuan Electrical Products (Kunshan) Co Ltd	1185, 1015, 1007	Min. 18 AWG, Min. 300 V, Min. 80°C	UL 758	UL E333601
Alternative	Dongguan Chuantai Wire Products Co Ltd	1185 , 1015, 1007	Min. 18 AWG, Min. 300 V, Min. 80°C	UL 758	UL E315628
Alternative	Yong Hao Electrical Industry Co Ltd	1185, 1015, 1007	Min. 18 AWG, Min. 300 V, Min. 80°C	UL 758	UL E240426
Alternative	Dongguan Cooperation Wire & Cable Co Ltd	1185, 1015, 1007	Min. 18 AWG, Min. 300 V, Min. 80°C	UL 758	UL E204204
Alternative	Sheng Yu Enterprises Co Ltd	1185 , 1015, 1007	Min. 18 AWG, Min. 300 V, Min. 80°C	UL 758	UL E219726
Alternative	Suzhou Hongmeng Electronic Co Ltd	1185, 1015, 1007	Min. 18 AWG, Min. 300 V, Min. 80°C	UL 758	UL E315421
Alternative	Suzhou Yemao Electronic Co Ltd	1185, 1015, 1007	Min. 18 AWG, Min. 300 V, Min. 80°C	UL 758	UL E353532
Y2 capacitor (CY1, CY2) Y2 Type (CY1 ,CY2 = Max 2200pF)	TDK Corporation, Capacitors Group	CS, CD	Min. 250Vac, Min. 125°C	IEC/EN 60384 - 14	VDE 124321
Alternative	Walsin Technology Corp.	AH, AC	Min. 250Vac, Min. 125°C ,	IEC/EN 60384-14	VDE 40001804
Alternative	Jyh Chung Electronic Co., Ltd.	JN, JY	Min. 250Vac, Min. 125°C ,	IEC/EN 60384-14	VDE [illegible]326

Alternative	Murata Mfg. Co., Ltd.	KH, KX	Min. 250Vac, Min. 125°C ,	IEC/EN 60384-14	VDE 40002831
Alternative	Success Electronics Co., Ltd.	SE, SB, SF	Min. 250Vac, Min. 125°C ,,	IEC/EN 60384-14	VDE 40016621
Alternative	Welson Industrial Co., Ltd.	WD	Min. 250Vac, Min. 125°C ,	IEC/EN 60384-14	VDE 115455
Alternative	HAOHUA ELECTRONIC CO.	CT7	Min. 250Vac, Min. 125°C ,	IEC/EN 60384-14	VDE 40013601
Alternative	Capatronics Electronics (Kunshan) Co., Ltd.	Y5V	Min. 250Vac, Min. 125°C ,	IEC/EN 60384-14	VDE 40013317
Alternative	Jerro Electronics Corp.	JX,JY	Min. 250Vac, Min. 125°C ,	IEC/EN 60384-14	VDE 40032158
Bridging capacitor (CY3)	TDK	CD	Max. 3300pF, Min. 250Vac, Y1 type, Min. 125°C	IEC/EN 60384 - 14	VDE 124321
Alternative	Walsin Technology Corp.	AH	Max. 3300pF, Min. 250Vac, Y1 type, Min. 125°C	IEC/EN 60384 - 14	VDE 40001804
Alternative	Jyh Chung Electronic Co., Ltd.	JN	Max. 3300pF, Min. 250Vac, Y1 type, Min. 125°C	IEC/EN 60384 - 14	VDE 123326
Alternative	Murata Mfg. Co., Ltd.	KX	Max. 3300pF, Min. 250Vac, Y1 type, Min. 125°C	IEC/EN 60384 - 14	VDE 40002831
Alternative	Success Electronics Co., Ltd.	SB, SE	Max. 3300pF, Min. 250Vac, Y1 type, Min. 125°C	IEC/EN 60384 - 14	VDE 40016621
Alternative	Welson Industrial Co., Ltd.	WD	Max. 3300pF, Min. 250Vac, Y1 type, Min. 125°C	IEC/EN 60384 - 14	VDE 115455
Alternative	Jerro Electronics Corp.	JX	Max. 3300pF, Min. 250Vac, Y1 type, Min. 125°C	IEC/EN 60384 - 14	VDE 40032158
Optocoupler (U4)	Lite-On Technology Corporation	LTV-817	Min. 100°C	IEC/EN 60950-1 IEC 60747-5-2	VDE 40018248

Alternative	Cosmo	K1010, KP1010	Min. 100°C	IEC/EN 60950-1 IEC 60747-5-2	VDE 101347
Alternative	Fairchild	H11A817B	Min. 100°C	IEC/EN 60950-1 IEC 60747-5-2	VDE 40026857
Alternative	Everlight	EL817	Min. 100°C	IEC/EN 60950-1 IEC 60747-5-2	VDE 132249
Alternative	Bright	BPC-817 , BPC-817M , BPC-817S	Min. 100°C	IEC/EN 60950-1 IEC 60747-5-2	VDE 40007240
Choke (LF1)	GlobTek / BOAM / HAOPUWEI / H EJIA	30R022058-00F	130°C Min.	IS 13252 (Part 1): 2010 + A1: 2013	Test with Equipment
Choke (LF3)	GlobTek / BOAM / HAOPUWEI/ H EJIA	30R200010-00F	130°C Min.	IS 13252 (Part 1): 2010 + A1: 2013	Test with Equipment
Transformer (T1)	DeeVan Enterprise Co., Ltd./ GlobTek, / BOAM/ HAOPUWEI / HEJIA	90E266016-00F for GT-81081-6015-T3 & GT-81081-6014-0.8-T3, 90E266012-00F for GT-81081-6012-T3	Class B	IS 13252 (Part 1): 2010 + A1: 2013	Test with Equipment
Bobbin used in T1	SUMITOMO BAKELITE CO LTD	PM-9820, PM-9830	Phenolic, 150°C, V-0	UL 94	UL E41429
Alternative	CHANG CHUN PLASTICS CO LTD	T375J, T373J	Phenolic, 150°C, V-0	UL 94	UL E59481
Alternative	Hitachi	CP-J-8800	Phenolic, 150°C, V-0	UL 94	UL E42956
Insulation tape used in t1	3M	1350F-1, 1350T-1, 1350-1	130°C	UL 510	UL E17385
Alternative	BONDTEC PACIFIC CO LTD	370S	130°C	UL 510	UL E175868
Alternative	YAHUA	PZ series, CT series	130°C	UL 510	UL E165111
Alternative	SYMBIO INC	35660Y	130°C	UL 510	UL E50292
Alternative	JINGJIANG JINGYI ADHESIVE PRODUCT CO LTD	JY25-A	130°C	UL 510	UL E246950
Alternative	Liang Yi	LY-XX series and LY-20	130°C	UL 510	UL E246820

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

Triple winding Wire used in T1	Great Leoflon Industrial Co., Ltd.	TRW(B)	130°C	IEC/EN 60950-1	VDE 136581
Alternative	Furukawa Electric Co., Ltd.	TEX-E, TEX-B	130°C	IEC/EN 60950-1	VDE 40032438
Alternative	TOTOKU ELECTRIC CO LTD	TIW-E	130°C	UL 746A	UL E166483
Alternative	COSMOLINK	TIW-M	130°C	IEC/EN 60950-1	VDE 138053
Output cord	ZHUANG SHAN CHUAN ELECTRICAL PRODUCTS (KUNSHAN) CO LTD	1185 (or) 2464 (or) 2468	Min. 24AWG, 300V, 80°C	UL 758	UL E333601
Alternate	GLOBTEK INC	1185 (or) 2464 (or) 2468	Min. 24AWG, 300V, 80°C	UL 758	UL E464257
Alternate	KUNSHAN NEW ZHICHENG ELECTRONICS TECHNOLOGIES CO LTD	1185 (or) 2464 (or) 2468	Min. 24AWG, 300V, 80°C	UL 758	UL E237831
Alternate	KUNSHAN XINGHONGMENG ELECTRONIC CO LTD	1185 (or) 2464 (or) 2468	Min. 24AWG, 300V, 80°C	UL 758	UL E315421
Alternate	SUZHOU YEMAO ELECTRONIC CO LTD	1185 (or) 2464 (or) 2468	Min. 24AWG, 300V, 80°C	UL 758	UL E353532
Alternate	JHI WEI ELECTRIC WIRE & CABLE CO LTD	SPT-1(or) SPT-2	Min. 24AWG, 300V, 105°C	UL 758	UL E157718
Alternate	ZHUANG SHAN CHUAN ELECTRICAL PRODUCTS (KUNSHAN) CO LTD	SPT-1(or) SPT-2	Min. 24AWG, 300V, 105°C	UL 758	UL E333536
Supplementary Information:					

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

1.6.2	TABLE: Electrical data (in normal conditions)					P
GT-81081-6015-T3						
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
100	1.169	1.5	70.7	–	–	Maximum Normal load
240	0.640	1.5	69.3	–	–	Maximum Normal load
GT-81081-6014-0.8-T3						
100	1.156	1.5	69.9	–	–	Maximum Normal load
240	0.630	1.5	68.6	–	–	Maximum Normal load
GT-81081-6012-T3						
100	0.857	1.5	51.49	–	–	Maximum Normal load
240	0.475	1.5	50.10	–	–	Maximum Normal load
Supplementary information:						

2.1.1.7	TABLE: Discharge test				P
Condition	τ calculated (s)	τ measured (s)	t U→ 0V (s)	Comments	
GT-81081-6015-T3					
Appliance inlet terminals or Plug of power supply cord	–	–	–	Vo= 366V, 37% of Vo =135.4V Voltage after 1 sec. =20 V	
GT-81081-6014-0.8-T3					
Appliance inlet terminals or Plug of power supply cord	–	–	–	Vo= 366V, 37% of Vo =135.4 V Voltage after 1 sec. =12 V	
GT-81081-6012-T3					
Appliance inlet terminals or Plug of power supply cord	–	–	–	Vo= 366V, 37% of Vo =135.5 V Voltage after 1 sec. =12 V	

2.5	TABLE: Limited power source measurement		P
	Limits	Measured	Verdict
Circuit output tested for GT-81081-6015-T3:			
According to Table 2B/2C (normal condition) Uoc (V): 12.01			
current (in A)	8	6.41	P
apparent power (in VA)	100	76.98	P
Circuit output tested for GT-81081-6014-0.8-T3:			

According to Table 2B/2C (normal condition) Uoc (V): 13.21			
current (in A)	8	6.19	P
apparent power (in VA)	100	81.76	P
Circuit output tested for GT-81081-6012-T3:			
According to Table 2B/2C (normal condition) Uoc (V): 15.08			
current (in A)	8	5.06	P
apparent power (in VA)	100	76.0	P
Supplementary information:			

2.10.2	Table: Working voltage measurement			P
Location		RMS voltage (V)	Peak voltage (V)	Comments
Line – Neutral		238.93	332	–
Transformer T1 Pin(1 – F)		219.68	396	–
Transformer T1 Pin(1 –S)		215.45	388	–
Transformer T1 Pin(3 –F)		215.87	336	–
Transformer T1 Pin(3 –S)		211.96	376	–
Transformer T1 Pin(4 –F)		219.75	344	–
Transformer T1 Pin(4 –S)		219.78	352	–
Transformer T1 Pin(6 –F)		219.59	352	–
Transformer T1 Pin(6 –S)		219.12	392	–
Capacitor (CY3)		219.48	344	–
Optocoupler U1 Pin (1 – 3)		222.61	356	–
Optocoupler U1 Pin (1 – 4)		222.15	356	–
Optocoupler U1 Pin (2 – 3)		222.50	356	–
Optocoupler U1 Pin (2 – 4)		222.47	356	–
Supplementary information:				

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Functional:						
Line - Neutral	<420	<250	1.5	5.2	2.0	5.2
Reinforced						
Transformer T1 Pri – sec	<420	<250	4.0	10.0	5.0	10.0
CY3 Pri - Sec	<420	<250	4.0	8.02	5.0	8.02

TÜV Rheinland (India) Pvt. Ltd. * Bangalore - 560 100 *

Optocoupler Pri-Sec	<420	<250	4.0	7.62	5.0	7.62
Supplementary information:						

2.10.5	TABLE: Distance through insulation measurements				P
Distance through insulation (DTI) at/of:	U peak (V)	U r.m.s. (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Reinforced:					
Plastic enclosure	<420	<250	3000	0.4	2.0
Supplementary information:					

4.5	TABLE: Temperature rise measurements	P

Temperatures were measured according cl. 1.4.5. Test in condition A and B at continuous normal operation as for power input measurements of table 1.6 resulted in highest temperature values.
Temperatures are calculated according cl. 1.4.12.3 with regard to the maximum ambient operation temperature of 40°C (T_{ma}), as specified by the manufacturer.

GT-81081-6015-T3:

test voltage(s) (V):		A: 90 Vac, 50 Hz	B: 254.4 Vac, 50Hz
t_{amb1} (°C):	A: 25.1 B: 24.8	t_{amb2} (°C):	A: 24.8 B: 23.7

Temperature of part/at (measured with thermocouples)	Measured temperature at T_{amb}		Calculated temperature at T_{ma}		Allowed T_{max} (°C)
	A T (°C)	B T (°C)	A T (°C)	B T (°C)	
Appliance Inlet	48.9	42.4	64.1	58.7	70
Sheath of Cord	24.9	24.1	40.1	40.4	75
Inductor LF1 Coil	83.8	64.0	99.0	80.3	120
Inductor LF3 Coil	71.8	60.1	87.0	76.4	120
Capacitor CX1	69.8	61.2	85.0	77.5	100
Bulk Capacitor C1	76.9	67.8	92.1	84.1	105
Capacitor CY1	79.5	74.8	94.7	91.1	125
PCB Near Optocoupler U4	85.5	83.8	100.7	100.1	130
Transformer T1 Coil	86.1	83.7	101.3	100.0	110
Internal wire	62.8	61.2	78.0	77.5	80
Capacitor CY3	81.4	74.0	96.6	90.3	125
Side Plastic Enclosure	61.9	60.3	77.1	76.6	95
Top Plastic Enclosure	50.1	49.8	65.3	66.1	95
Bottom plastic enclosure	62.7	60.4	77.9	76.7	95
Supplementary information:					

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

GT-81081-6014-0 8-T3:						
test voltage(s) (V):		A: 90 Vac, 50Hz		B: 254.4 Vac, 50Hz		
t_{amb1} (°C):	A: 24.2 B: 25.5	t_{amb2} (°C):		A: 25.4		B: 24.5
Temperature of part/at: (measured with thermocouples)		Measured temperature at T_{amb}		Calculated temperature at T_{ma}		
		A T (°C)	B T (°C)	A T (°C)	B T (°C)	Allowed T_{max} (°C)
Appliance Inlet		44.1	40.3	58.7	55.8	70
Sheath of Cord		25.1	24.8	39.7	40.3	75
Inductor LF1		63.3	50.9	77.9	66.4	120
Inductor LF3		58.8	51.5	73.4	67.0	120
Capacitor CX1		56.1	51.5	70.7	67.0	100
Bulk Capacitor C1		59.5	57.4	74.1	72.9	105
Capacitor CY1		61.2	56.4	75.8	71.9	125
PCB Near Optocoupler U4		63.5	62.4	78.1	77.9	130
Transformer T1 Coil		65.7	67.0	80.3	82.5	110
Internal wire		54.5	47.8	69.1	63.3	80
Capacitor CY3		50.0	45.1	64.6	60.6	125
Side Plastic Enclosure		40.3	38.4	54.9	53.9	95
Top Plastic Enclosure		43.9	40.6	58.5	56.1	95
Bottom plastic enclosure		41.9	39.8	56.5	55.3	95
Supplementary information:						
GT-81081-6012-T3:						
test voltage(s) (V):		A: 90 Vac, 50 Hz		B: 254.4 Vac, 50Hz		
t_{amb1} (°C):	A: 24.5 B: 24.2	t_{amb2} (°C):		A: 23.8		B: 24.0
Temperature of part/at: (measured with thermocouples)		Measured temperature at T_{amb}		Calculated temperature at T_{ma}		Allowed T_{max} (°C)
		A T (°C)	B T (°C)	A T (°C)	B T (°C)	
Appliance Inlet		41.4	37.4	57.6	53.4	70
Sheath of Cord		24.4	24.8	40.6	40.8	75
Inductor LF1		58.1	46.7	74.3	62.7	120
Inductor LF3		52.9	46.2	69.1	62.2	120
Capacitor CX1		51.5	47.1	67.7	63.1	100
Bulk Capacitor C1		56.4	50.8	72.6	66.8	105
Capacitor CY1		53.7	50.7	69.9	66.7	125
PCB Near Optocoupler U4		56.9	55.1	73.1	71.1	130

TÜV Rheinland (India) Pvt. Ltd. Bangalore - 560 100

Transformer T1 Coil	58.9	59.1	75.1	75.1	110
Internal wire	53.0	47.2	69.2	63.2	80
Capacitor CY3	47.5	39.3	63.7	55.3	125
Side Plastic Enclosure	40.9	39.3	57.1	55.3	95
Top Plastic Enclosure	38.9	38.2	55.1	54.2	95
Bottom plastic enclosure	38.3	38.2	54.5	54.2	95
Supplementary information:					

4.5.5	TABLE: Ball pressure test of thermoplastic parts		P
	Allowed impression diameter (mm) ..... :	≤ 2 mm	–

Part	Test temperature (°C)	Impression diameter (mm)
Plastic enclosure	125	0.8
Supplementary information:		

5.1.6	TABLE: Touch current and protective conductor current measurement				P
	Test voltage (V)..... :	AC 254.4 V, 50 Hz			
Measurement location (Terminal A connected to :)	Polarity (normal) [mA] Switch: ON	Polarity (reverse) [mA] Switch: ON	Limit (mA)	Comments	
GT-81081-6015-T3					
Primary to PE ("e" = opened)	0.05	0.05	3.5	–	
Plastic enclosure ("e" = close)	0.01	0.01	0.25	–	
GT-81081-6014-0.8-T3					
Primary to PE ("e" = opened)	0.06	0.06	3.5	–	
Plastic enclosure ("e" = close)	0.02	0.02	0.25	–	
GT-81081-6012-T3					
Primary to PE ("e" = opened)	0.06	0.05	3.5	–	
Plastic enclosure ("e" = close)	0.01	0.01	0.25	–	
Supplementary information:					

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests		P
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Basic :			
Primary To Earth	AC	1500	No
Reinforced:			
Primary to Plastic Enclosure	AC	3000	No
T1 : Primary to Secondary	AC	3000	No
T1: Core to Secondary	AC	3000	No
One layer of Insulation tape	AC	3000	No
Supplementary information:			

5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C) ..... :	See below	
	Power source for EUT: Manufacturer, model/type, output rating ..... :	See appended table 1.5.1	

GT-81081-6015-T3

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
15Vdc Output	Short	254.4	2hrs	–	–	EUT shutdown immediately. No abnormalities observed. No hazards. After removal of fault EUT continues to work normally. **Ambient temp.:25.1°C**
15Vdc Output	overload	254.4	2hrs	–	–	Maximum value of Cut-off current is 3.5A. Maximum stabilized current: 3.1A EUT continues to work normally. **Ambient temp.:23.6°C**
Transformer Output Pin (S-F)	Overload	254.4	5hrs	–	–	Maximum value of Cut-off current is 3.5A. Maximum stabilized current: 3.1A EUT continues to work normally. **Ambient temp.:24.2°C**
Optocoupler(U4) Pin (1 – 2)	Short	254.4	1hr	–	–	EUT shutdown immediately. No abnormalities observed. No hazards. After removal of fault EUT continues to work normally. **Ambient temp.:24.4°C**

Optocoupler(U4) Pin (3 – 4)	Short	254.4	2hrs	--	–	The output of EUT is zero. No abnormal in temperature No hazard. After removal of fault EUT worked normally **Ambient temp.:24.6°C**
Transformer T1 Pin (4 – 6)	Short	254.4	2hrs	--	–	EUT shutdown immediately. No abnormalities observed. No hazards. After removal of fault EUT continues to work normally. **Ambient temp.:24.0°C**
Transformer T1 Pin (F – S)	Short	254.4	2 hrs.	--	–	EUT shutdown immediately. No abnormalities observed. No hazards. After removal of fault EUT continues to work normally. **Ambient temp.:24.6°C**
Capacitor C9	Short	254.4	2hrs	--	–	EUT shutdown immediately. No abnormalities observed. No hazards. After removal of fault EUT continues to work normally. **Ambient Temp.: 24.6 °C**
BD1	Short	254.4	<1sec	--	–	Fuse opened immediately, No hazards. **Ambient Temp.: 24.3 °C**
Q1 (D-S)	Short	254.4	<1sec	--	–	Fuse opened immediately, No hazards. **Ambient Temp.: 25.1 °C**
Q1 (D-G)	Short	254.4	<1sec	--	–	Fuse opened immediately, No hazards. **Ambient Temp.: 25.2 °C**
Q1 (G-S)	Short	254.4	2hrs	--	--	EUT shutdown immediately. No abnormalities observed. No hazards. After removal of fault EUT continues to work normally. **Ambient Temp.: 26.1 °C**
D5	Short	254.4	<1sec	--	--	Fuse opened immediately, No hazards. **Ambient Temp.: 25.1 °C**
Optocoupler(U4) Pin 3	Open	254.4	1hr	--	--	EUT shutdown immediately. No abnormalities observed. No hazards. After removal of fault EUT continues to work normally. **Ambient Temp.: 25.2 °C**
Capacitor C9	Short	254.4	2hrs	--	–	EUT shutdown immediately. No abnormalities observed. No hazards. After removal of fault EUT continues to work normally. **Ambient Temp.: 26.1 °C**

GT-81081-6012-T3						
12Vdc Output	Overload	254.4	3hrs	--	--	Maximum value of Cut-off current is 3.4A. Maximum stabilized current: 2.9A **Ambient temp.:25.1°C**
Transformer Output Pin (S-F)	Overload	254.4	4hrs	--	--	Maximum value of Cut-off current is 3.41A. Maximum stabilized current:2.86A **Ambient temp.:24.2°C**
12Vdc Output	Short	254.4	2hrs	--	--	EUT shutdown immediately. No abnormalities observed. No hazards. After removal of fault EUT continues to work normally. **Ambient temp.:24.1°C**
Transformer T1 Pin (4 – 6)	Short	254.4	2hrs	--	--	EUT shutdown immediately. No abnormalities observed. No hazards. After removal of fault EUT continues to work normally. **Ambient temp.:24.2°C**
GT-81081-6014-0.8-T3						
13.2Vdc Output	Short	254.4	2hrs	--	--	EUT shutdown immediately. No abnormalities observed. No hazards. After removal of fault EUT continues to work normally. **Ambient temp.:25.1°C**
13.2Vdc Output	Overload	254.4	2hrs	--	--	Maximum value of Cut-off current is 3.8A. Maximum stabilized current: 3.3A **Ambient temp.:24.2°C**
Transformer Output Pin (S-F)	Overload	254.4	4hrs	--	--	Maximum value of Cut-off current is 3.8A. Maximum stabilized current: 3.3A. **Ambient temp.:24.2°C**
Transformer T1 Pin (4 – 6)	Short	254.4	2hrs	--	--	EUT shutdown immediately. No abnormalities observed. No hazards. After removal of fault EUT continues to work normally. **Ambient temp.:25.0°C**
Supplementary information:						

End of test report

TÜV Rheinland (India) Pvt. Ltd. * Bangalore - 560 100 *

TÜVRheinland®

Attachment – 01

PHOTO DOCUMENTATION

GlobTek (Suzhou) Co., Ltd.

for

ITE POWER SUPPLY
(Power Adaptors for IT Equipments)
GT-81081-6012-T3
GT-81081-6014-0.8-T3
GT-81081-6015-T3

This documentation consists of 18 pages (excluding this cover page).

TÜV Rheinland India Pvt. Ltd.,
Products
Approved

TÜV Rheinland India Pvt. Ltd. * Bangalore - 560 100 *