

IEC SYSTEM FOR MUTUAL RECOGNITION OF TEST CERTIFICATES FOR ELECTRICAL EQUIPMENT  
(IECEE) CB SCHEME

## CB TEST CERTIFICATE

Product

AC/DC ADAPTER

Name and address of the applicant

Delta Electronics, Inc.  
3, Tungyuan Road,  
Chungli Industrial Zone, Taoyuan City 32063 Taiwan

Name and address of the manufacturer

Delta Electronics, Inc.  
3, Tungyuan Road,  
Chungli Industrial Zone, Taoyuan City 32063 Taiwan

Name and address of the factory

See additional page(s)

Ratings and principal characteristics

Input : AC 100-240V; 1.5A; 50-60Hz; Class II  
Output : DC +19V/3.42A; +19.5V/3.33A; +20V/3.25A

Trademark (if any)

Trademark of DELTA ELECTRONICS, INC.

Customer's Testing Facility (CTF) Stage used

CTF Stage 1

Model / Type Ref.

ADP-65JH AX (X = B, C, D)

Additional information (if necessary may  
also be reported on page 2)Additionally evaluated to EN 62368-1:2014+A11:2017.  
For model differences, refer to the test reportA sample of the product was tested and  
found to be in conformity withIEC 62368-1:2014  
See Test Report for National DifferencesAs shown in the Test Report Ref. No. which  
forms part of this Certificate

50333479 001

This CB Test Certificate is issued by the National Certification Body



TÜVRheinland®

TÜV Rheinland Japan Ltd.  
Global Technology Assessment Center  
4-25-2 Kita-Yamata, Tsuzuki-ku  
Yokohama 224-0021 Japan  
Phone + 81 45 914-3888  
Fax + 81 45 914-3354  
Mail: info@jpn.tuv.com  
Web: www.tuv.com

Date: 16.01.2020

Signature:

Dipl.-Ing. Th. Illing


1. Delta Electronics (Jiangsu) Ltd.  
215200, No.1688, Jiangxing East Road,  
Wujiang Economic and Technological  
Development Zone, Suzhou City,  
Jiangsu Province, P. R. China
2. Delta Electronics (Thailand)  
Public Co., Ltd.  
909 Soi 9 Moo 4, Bangpoo Industrial  
Estate (E.P.Z.), Pattana 1 Road  
Tambol Phraksa, Amphur Muang, Samutprakarn 10280, Thailand
3. Delta Electronics Power  
(Dongguan) Co., Ltd.  
Delta Industrial Estate,  
Xincheng District, Shijie Town,  
Dongguan, Guangdong 523308, P. R. China

**Additional information (if necessary)**  
**Information complémentaire (si nécessaire)**

Report Ref. No.: 50333479 001

Date: 16.01.2020

Signature:

  
Dipl.-Ing. Th. Zilling

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(IECEE) CB SCHEME

## CB TEST CERTIFICATE

Product

AC ADAPTER

Name and address of the applicant

Delta Electronics, Inc.  
3, Tungyuan Road,  
Chungli Industrial Zone, Taoyuan City 32063 Taiwan

Name and address of the manufacturer

Delta Electronics, Inc.  
3, Tungyuan Road,  
Chungli Industrial Zone, Taoyuan City 32063 Taiwan

Name and address of the factory

See additional page(s)

Ratings and principal characteristics

Input : AC 100-240V; 1.5A; 50-60Hz; Class II  
Output : DC +19V/3.42A

Trademark (if any)

Trademark of FUJITSU LIMITED

Customer's Testing Facility (CTF) Stage used

CTF Stage 1

Model / Type Ref.

ADP-65JH AB

Additional information (if necessary may  
also be reported on page 2)

Additionally evaluated to EN 62368-1:2014+A11:2017.

A sample of the product was tested and  
found to be in conformity withIEC 62368-1:2014  
See Test Report for National DifferencesAs shown in the Test Report Ref. No. which  
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Global Technology Assessment Center  
4-25-2 Kita-Yamata, Tsuzuki-ku  
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Mail: info@jpn.tuv.com  
Web: www.tuv.com

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Signature:

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1. Delta Electronics (Jiangsu) Ltd.  
215200, No.1688, Jiangxing East Road,  
Wujiang Economic and Technological  
Development Zone, Suzhou City,  
Jiangsu Province, P. R. China
2. Delta Electronics (Thailand)  
Public Co., Ltd.  
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Dongguan, Guangdong 523308, P. R. China

**Additional information (if necessary)**  
**Information complémentaire (si nécessaire)**

Report Ref. No.: 50333479 001

Date: 16.01.2020

Signature:

  
Dipl.-Ing. Th. Illing





Test Report issued under the responsibility of:



<b>TEST REPORT</b> <b>IEC 62368-1</b> <b>Audio/video, information and communication technology equipment</b> <b>Part 1: Safety requirements</b>	
<b>Report Number</b> .....	50333479 001
<b>Date of issue</b> .....	15 January, 2020
<b>Total number of pages</b> .....	81
<b>Applicant's name</b> .....	Delta Electronics, Inc.
<b>Address</b> .....	3 Tungyuan Road, Chungli Industrial Zone, Taoyuan City 32063, Taiwan
<b>Test specification:</b>	
Standard .....	IEC 62368-1:2014 (Second Edition)
Test procedure .....	CB Scheme
Non-standard test method .....	N/A
<b>Test Report Form No.</b> .....	IEC62368_1B
Test Report Form(s) Originator .....	UL(US)
Master TRF .....	2014-03
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<b>General disclaimer:</b> 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 CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.	

Test Item description .....	1. AC/DC ADAPTER 2. AC ADAPTER
Trade Mark .....	See Table below.
Manufacturer .....	Same as applicant.
Model/Type reference .....	1. ADP-65JH AX (X = B, C, D) 2. ADP-65JH AB
Ratings .....	See Table below.

Item No.	Trade Mark	Model/Type reference	Ratings – AC Input	Ratings – DC Output
1.	DELTA ELECTRONICS, INC.	ADP-65JH AX (X = B)	100-240V~, 1.5A, 50-60Hz	+19V, 3.42A
		ADP-65JH AX (X = C)		+19.5V, 3.33A
		ADP-65JH AX (X = D)		+20V, 3.25A
2.	FUJITSU LIMITED	ADP-65JH AB		+19V, 3.42A

Testing procedure and testing location:		
<input type="checkbox"/>	CB Testing Laboratory:	TÜV Rheinland Taiwan Ltd., Taichung Branch No. 9, Ln. 36, Sec. 3, Minsheng Road, Daya District, Taichung City 428, Taiwan, Chinese Taipei
Testing location/ address .....		CTF stage 1 procedure used. For address of testing location see "Testing procedure: CTF Stage 1" below
Tested by (name, function + signature) .....		
Approved by (name, function + signature) ..		
<input checked="" type="checkbox"/>	Testing procedure: CTF Stage 1	
Testing location/ address.....		Delta Electronics, Inc. 3 Tungyuan Road, Chungli Industrial Zone, Taoyuan <b>City</b> 32063 Taiwan
Tested by (name, function + signature) .....		Leo Wu / Project Handler 
Approved by (name, function + signature) ..		Jason Liu / Reviewer 
<input type="checkbox"/>	Testing procedure: CTF Stage 2	
Testing location/ address.....		
Tested by (name, function + signature) .....		
Witnessed by (name, function + signature) ..		
Approved by (name, function + signature) ..		
<input type="checkbox"/>	Testing procedure: CTF Stage 3	
<input type="checkbox"/>	Testing procedure: CTF Stage 4	
Testing location/ address.....		
Tested by (name, function + signature) .....		
Approved by (name, function + signature) ..		
Supervised by (name, function + signature):		

**List of Attachments (including a total number of pages in each attachment):**

- National Differences (24 pages)
- Photo Documentation (7 pages)
- ATTACHMENT (included test results and specifications)

Total number of pages in each attachment is indicated in each individual attachment.

**Summary of testing:**

This CB standard updated test report is based on the previous IEC 60950-1:2005+A1:2009+A2:2013 CB test report issued by NCB TÜV Rheinland Japan, details as below:

Test report number	Certificate number	Testing procedure
11042691 001	JPTUV-065898 (DELTA ELECTRONICS, INC.) JPTUV-065900 (TOSHIBA) JPTUV-065901 (FUJITSU) JPTUV-065902 (ASUS) JPTUV-065903 (FUJITSU LIMITED)	CBTL

Components certificate validity have been checked and updated. In addition, applicant and factories address have been updated as well.

No technical changes have been made except for:

- Deletion of below models:  
ADP-65JH CX (X=B, C, D) (trademark: DELTA ELECTRONICS, INC.)  
PA3714U-1ACA (trademark: TOSHIBA)  
ADP-65JH AD (trademark: FUJITSU)  
ADP-65JH AB (trademark: ASUS)
- Deletion of alternative circuit construction employing PCB type ADP-65JH BBT.
- Deletion of alternative construction 2 and alternative construction 3 for PCB type ADP-65JH DBA, including its components T1 type MV-NB9009 and MV-MP11004, FL1 type CR-10-NB31, and FL2 type HFV-NB9125.
- Addition of factory:  
Delta Electronics Power (Dongguan) Co., Ltd.
- Update of marking label.

Following additional tests and evaluations per the requirements of the new standard and/or considered necessary due to construction change were conducted in this report:

- Check and update certificate validity of critical components (Cl. 4.1.2),
- Steady State Voltage and Current conditions (Cl. 5.2.2.2),
- Contact requirements (Cl. 5.3.2.2),
- Highest working frequency measurement (Cl. 5.4.1.8),
- Stored discharge on capacitors (Cl. 5.5.2.2),
- Electrical power source (PS) measurements for classification (Cl. 6.2.2),
- Simulated abnormal operating and single fault conditions (Cl. 6.3, 6.4, B.3, B.4),
- Thermal burn test (Cl. 9).

Except stated above, all test data are derived from original CB test report. However partly test results were derived from model ADP-65JH CB to represent model ADP-65JH AB and model ADP-65JH CD to represent ADP-65JH AD.

**Tests performed (name of test and test**

**Testing location:**



<p><b>clause):</b> All applicable tests as described in Test Case and Measurement Sections were performed.</p> <ul style="list-style-type: none"> <li>• The test samples are pre-production without serial numbers.</li> <li>• Unless otherwise specified, all tests were conducted on maximum rated output as detailed in Table B.2.5.</li> <li>• CTF Stage 1 laboratory includes all applicable clauses for testing to IEC 62368-1:2014 (Second Edition).</li> <li>• The decision rule of conformity of this test report is following the requirements of the requested standard in this test report, and agreed among testing laboratory and manufacturer (applicant) to exclude the consideration of Measurement Uncertainty.</li> <li>• During testing the fuse F1 source of manufacturer: Walter Electronic Co Ltd., type: 2010, rating: AC 250V, T3.15AL was used.</li> <li>• All tests were conducted on model ADP-65JH AB with FL1 type CR-10-NB014 and FL2 type LF-R16-NB009 to represent other similar models, if not otherwise stated.</li> <li>• The equipment are also tested and comply with clause Annex Q.1 as limited power sources.</li> </ul>	<p>Unless otherwise indicated, all tests were performed at the location stated in "Testing procedure and testing location".</p>
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<p><b>Summary of compliance with National Differences:</b> <b>List of countries addressed:</b> <u>Summary of compliance with National Differences to IEC 62368-1:2014 (Second Edition) and EN 62368-1:2014 (for explanation of codes see below):</u></p> <p>EU Group Differences, EU Special National Conditions, DK, US, JP.</p> <p>Explanation of used codes: DK=Denmark, US=United States of America, JP=Japan.</p> <p><input checked="" type="checkbox"/> <b>The product fulfils the requirements of <u>EN 62368-1:2014</u>.</b>  <input checked="" type="checkbox"/> <b>The product fulfils the requirements of <u>EN 62368-1:2014 + A11:2017</u></b></p> <p>For National Differences see corresponding Attachment.</p>
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**Copy of marking plate:**

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

 <b>DELTA ELECTRONICS, INC.</b> 台达电子工业股份有限公司 台達電子工業股份有限公司		 	
<b>AC/DC ADAPTER</b> (电源适配器/交換式電源供應器)			
<b>MODEL (型号/型號) : ADP-65JH AB</b>			
<b>INPUT (輸入/輸入) : 100-240 V ~ 1.5 A 50-60 Hz</b>			
<b>OUTPUT (輸出/輸出) : 19 V = 3.42 A</b>			
<b>PRECAUCION PARA USO CON EQUIPOS DE TECNOLOGIA DE LA INFORMACION</b> 仅适用于海拔2000m以下地区安全使用			
<b>S/N.:</b> [Blank Box]		Manufacturer : Delta Electronics, Inc. 3 Tungyuan Road, Chungli Industrial Zone, Taoyuan County 32063, Taiwan.	
<b>C.C.:</b> [Blank Box]		<input type="checkbox"/>	
<b>REV.:</b> [Blank Box]		<b>DCWP</b> ~	

 <b>DELTA ELECTRONICS, INC.</b> 台达电子工业股份有限公司 台達電子工業股份有限公司		 	
<b>AC/DC ADAPTER</b> (电源适配器/交換式電源供應器)			
<b>MODEL (型号/型號) : ADP-65JH AC</b>			
<b>INPUT (輸入/輸入) : 100-240 V ~ 1.5 A 50-60 Hz</b>			
<b>OUTPUT (輸出/輸出) : 19.5 V = 3.33 A</b>			
<b>PRECAUCION PARA USO CON EQUIPOS DE TECNOLOGIA DE LA INFORMACION</b> 仅适用于海拔2000m以下地区安全使用			
<b>S/N.:</b> [Blank Box]		Manufacturer : Delta Electronics, Inc. 3 Tungyuan Road, Chungli Industrial Zone, Taoyuan County 32063, Taiwan.	
<b>C.C.:</b> [Blank Box]		<input type="checkbox"/>	
<b>REV.:</b> [Blank Box]		<b>DCWP</b> ~	

 <b>DELTA ELECTRONICS, INC.</b> 台达电子工业股份有限公司 台達電子工業股份有限公司			
<b>AC/DC ADAPTER (电源适配器/交换式电源供应器)</b>			
<b>MODEL (型号/型号): ADP-65JH AD</b>			
<b>INPUT (输入/输入): 100-240 V ~ 1.5 A 50-60 Hz</b>			
<b>OUTPUT (输出/输出): 20 V --- 3.25 A</b>			
<b>PRECAUCION PARA USO CON EQUIPOS DE TECNOLOGIA DE LA INFORMACION</b> 仅适用于海拔2000m以下地区安全使用			
<b>S/N.:</b> <div style="border: 1px solid black; width: 350px; height: 60px; margin-top: 5px;"></div>		<b>Manufacturer: Delta Electronics, Inc.</b> 3 Tungyuan Road, Chungli Industrial Zone, Taoyuan County 32063, Taiwan.	
		<input type="checkbox"/>	
		<b>C.C.:</b>	
		<b>REV.:</b>	
		 	
		 <b>DCWP</b>	~

<b>AC ADAPTER (电源适配器/交换式电源供应器)</b>		<b>FUJITSU LIMITED</b>	
<b>Fujitsu Technology Solutions part number: S26113-E623-V55-02</b>			
<b>MODEL (型号/型号): ADP-65JH AB LPS</b>			
<b>INPUT (输入/输入): 100-240V ~ 1.5A 50-60Hz</b>			
<b>OUTPUT (输出/输出): 19V --- 3.42A</b>			
<b>Contact address in EU:</b> Fujitsu Technology Solutions GmbH Mies-van-der-Rohe-Strasse 8, 80807 Munich, Germany Consumo de energia: 74.22 Wh En modo de espera: 0.19 Wh Manufacturer: Delta Electronics, Inc. 3 Tungyuan Road, Chungli Industrial Zone, Taoyuan County 32063, Taiwan.			
*使用中表面が熱くなることがあります。 *落下させた衝撃を与えないでください。 製造商: 台达电子工业股份有限公司		<input type="checkbox"/>	
		<b>製造地: 中国/製造地: 中国</b> <b>MADE IN CHINA DCWP</b>	
仅适用于海拔2000m以下地区安全使用		<b>S/N:</b>	
		<b>C.C.:</b>	
		<b>REV.:</b>	

TEST ITEM PARTICULARS:	
Classification of use by.....:	<input checked="" type="checkbox"/> Ordinary person <input type="checkbox"/> Instructed person <input type="checkbox"/> Skilled person <input checked="" type="checkbox"/> Children likely to be present
Supply Connection .....	<input checked="" type="checkbox"/> AC Mains <input type="checkbox"/> DC Mains <input type="checkbox"/> External Circuit - not Mains connected - <input type="checkbox"/> ES1 <input type="checkbox"/> ES2 <input type="checkbox"/> ES3
Supply % Tolerance .....	<input checked="" type="checkbox"/> +10%/-10% <input type="checkbox"/> +20%/-15% <input type="checkbox"/> +15 %/-15 % <input type="checkbox"/> None
Supply Connection – Type .....	<input checked="" type="checkbox"/> pluggable equipment type A - <input type="checkbox"/> non-detachable supply cord <input checked="" type="checkbox"/> appliance coupler <input type="checkbox"/> direct plug-in <input type="checkbox"/> mating connector <input type="checkbox"/> pluggable equipment type B - <input type="checkbox"/> non-detachable supply cord <input type="checkbox"/> appliance coupler <input type="checkbox"/> permanent connection <input type="checkbox"/> mating connector <input type="checkbox"/> other:_____
Considered current rating of protective device as part of building or equipment installation .....	16 A, 13 A (GB) or 20 A (US and Canada) (for building) Installation location: <input checked="" type="checkbox"/> building; <input type="checkbox"/> equipment
Equipment mobility .....	<input checked="" type="checkbox"/> movable <input type="checkbox"/> hand-held <input checked="" type="checkbox"/> transportable <input type="checkbox"/> stationary <input type="checkbox"/> for building-in <input type="checkbox"/> direct plug-in <input type="checkbox"/> rack-mounting <input type="checkbox"/> wall-mounted
Over voltage category (OVC) .....	<input type="checkbox"/> OVC I <input checked="" type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV <input type="checkbox"/> other: _____
Class of equipment .....	<input type="checkbox"/> Class I <input checked="" type="checkbox"/> Class II <input type="checkbox"/> Class III
Access location .....	<input type="checkbox"/> restricted access location <input checked="" type="checkbox"/> N/A
Pollution degree (PD) .....	<input type="checkbox"/> PD 1 <input checked="" type="checkbox"/> PD 2 <input type="checkbox"/> PD 3
Manufacturer's specified maximum operating ambient .....	(See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)
IP protection class .....	<input checked="" type="checkbox"/> IP20 <input type="checkbox"/> IP____
Power Systems .....	<input checked="" type="checkbox"/> TN <input type="checkbox"/> TT <input checked="" type="checkbox"/> IT - 230 V L-L
Altitude during operation (m) .....	<input type="checkbox"/> 2000 m or less <input checked="" type="checkbox"/> Up to 3048 m
Altitude of test laboratory (m) .....	<input checked="" type="checkbox"/> 2000 m or less <input type="checkbox"/> _____ m
Mass of equipment (kg) .....	<input checked="" type="checkbox"/> Approximately 0.21
<b>POSSIBLE TEST CASE VERDICTS:</b>	

- 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)
<b>TESTING:</b>	(yyyy-mm-dd)
Date of receipt of test item .....	2019-10-29
Date (s) of performance of tests .....	2019-12-09 to 2019-12-18
<b>GENERAL REMARKS:</b>	
<p>"(See Enclosure #)" refers to additional information appended to the report.          "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</p>	
<b>Manufacturer's Declaration per sub-clause 4.2.5 of IEC60335-1:</b>	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....	<input checked="" type="checkbox"/> <b>Yes</b> <input type="checkbox"/> <b>Not applicable</b>
<b>When differences exist; they shall be identified in the General product information section.</b>	
<b>Name and address of factory (ies)..... :</b>	<ul style="list-style-type: none"> <li>• <b>Delta Electronics (Jiangsu) Ltd.</b> 215200, No.1688, Jiangxing East Road, Wujiang Economic and Technological Development Zone, Suzhou City, Jiangsu Province, P. R. China</li> <li>• <b>Delta Electronics Power (Dongguan) Co., Ltd.</b> Delta Industrial Estate, <b>Xincheng District</b>, Shijie Town, <b>Dongguan, Guangdong</b> 523308, P.R. China</li> <li>• <b>Delta Electronics (Thailand) Public Co., Ltd.</b> 909 Soi 9 Moo 4, Bangpoo Industrial Estate (E.P.Z.), Pattana 1 <b>Road</b>, Tambol Phraksa, Amphur Muang, Samutprakarn 10280, Thailand</li> </ul>
<b>GENERAL PRODUCT INFORMATION:</b>	
<p><b>Product Description –</b>          The equipment has following features:          The equipment is a switching mode power supply intended for general use with audio/video, information and communication technology equipment in the scope of this standard.          The adapter's enclosure is secured by ultrasonic welding.</p>	
<p><b>Markings of fuse –</b>          The fuse is located within the equipment and not replaceable by an ordinary person or an instructed person.          The fuse marking is marked on PCB near fuse : F1 T 3.15A L / 250V</p>	

**Additional application considerations – (Considerations used to test a component or sub-assembly) –**

The power supply cord set was not evaluated together with the apparatus.

A suitable certified power supply cord set has to be added in the country where the apparatus is sold.

**Definition of variable(s):**

Variable:	Range of variable:	Content:
For model ADP-65JH AX		
<b>X</b>	B, C, D	Denote different output rating. See table " <b>Model Differences</b> " for details.

**Model Differences**

Model	Trademark	PCB	IC32	Output	R133, R134
ADP-65JH AB	DELTA, FUJITSU LIMITED	ADP-65JH DBA	DAP-013F (Auto-recovery)	19V / 3.42A	R133= 76.8k $\Omega$ , R134= 11.5k $\Omega$
ADP-65JH AC	DELTA			19.5V / 3.33A	R133= 78.7k $\Omega$ , R134= 11.3k $\Omega$
ADP-65JH AD	DELTA			20V / 3.25A	R133= 71.5k $\Omega$ , R134= 10k $\Omega$

Choke FL1 alternative source list:

Type	CR-10-NB014	LFV-NB9267	LFV-NB10092
Inductance ( $\mu$ H)	251 MIN	251 MIN	416.5 +/- 20%
DCR ( $m\Omega$ )	40 MAX	34.5 +/- 20%	40 MAX
Turns, TS	14	14	14
Wire gauge, $\varnothing$	0.37	0.37	0.37

Choke FL2 alternative source list:

Type	LF-R16-NB009	HFV-NB9266
Inductance ( $\mu$ H)	13.07 to 45.03	16.3 + 50% / -20%
DCR ( $m\Omega$ )	15 MAX	11.5 +/- 20%
Turns, TS	60	55
Wire gauge, $\varnothing$	0.5	0.5

<b>ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:</b>	
(Note 1: Identify the following six (6) energy source forms based on the origin of the energy.) (Note 2: The identified classification e.g., ES2, TS1, should be with respect to its ability to cause pain or injury on the body or its ability to ignite a combustible material. Any energy source can be declared Class 3 as a worse case classification e.g. PS3, ES3.)	
<b>Electrically-caused injury (Clause 5):</b> (Note: Identify type of source, list sub-assembly or circuit designation and corresponding energy source classification) Example: +5 V dc input	
ES1	
Source of electrical energy	Corresponding classification (ES)
Accessible pins of appliance inlet after disconnection of a connector	ES3
Primary circuits	ES3
Secondary circuit before secondary rectifier circuit	ES2
Output circuit (connector)	ES1
<b>Electrically-caused fire (Clause 6):</b> (Note: List sub-assembly or circuit designation and corresponding energy source classification) Example: Battery pack (maximum 85 watts):	
PS2	
Source of power or PIS	Corresponding classification (PS)
All circuits except for output circuits mentioned below	PS3
Output circuit (connector)	PS2
Indicating LED	PS1
<b>Injury caused by hazardous substances (Clause 7)</b> (Note: Specify hazardous chemicals, whether produces ozone or other chemical construction not addressed as part of the component evaluation.) Example: Liquid in filled component	
Glycol	
Source of hazardous substances	Corresponding chemical
N/A	N/A
<b>Mechanically-caused injury (Clause 8)</b> (Note: List moving part(s), fan, special installations, etc. & corresponding MS classification based on Table 35.) Example: Wall mount unit	
MS2	
Source of kinetic/mechanical energy	Corresponding classification (MS)
Sharp edges and corners	MS1
Equipment mass (< 7 kg)	MS1
<b>Thermal burn injury (Clause 9)</b> (Note: Identify the surface or support, and corresponding energy source classification based on type of part, location, operating temperature and contact time in Table 38.) Example: Hand-held scanner – thermoplastic enclosure	
TS1	
Source of thermal energy	Corresponding classification (TS)
Plastic enclosure outside	TS1 (< 77 °C)
Output cord / output connector	As above.



<b>Radiation (Clause 10)</b> (Note: List the types of radiation present in the product and the corresponding energy source classification.) Example: DVD – Class 1 Laser Product RS1	
Type of radiation	Corresponding classification (RS)
Indicating LED	RS1

ENERGY SOURCE DIAGRAM
Indicate which energy sources are included in the energy source diagram. Insert diagram below
See OVERVIEW OF EMPLOYED SAFEGUARDS mentioned down below.
<input type="checkbox"/> ES <input type="checkbox"/> PS <input type="checkbox"/> MS <input type="checkbox"/> TS <input type="checkbox"/> RS

OVERVIEW OF EMPLOYED SAFEGUARDS				
Clause	Possible Hazard			
5.1	Electrically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (ES3: Primary Filter circuit)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	ES3: X-capacitors connected between L and N  ES3: Accessible pins of appliance inlet after mains disconnection	N/A	N/A	(See appended table 5.5.2.2)
Ordinary	ES3: Primary circuits	N/A	N/A	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)
Ordinary (See appended table in “ <b>ATTACHMENT</b> ” for evaluation of voltage limiting components and corresponding classification (ES))	ES2: Secondary circuits before secondary rectifier circuit (Separated from ES3 mains by double or reinforced insulation)	Secondary rectifier circuit	N/A	N/A
Ordinary	ES1: Output connector	N/A	N/A	N/A
6.1	Electrically-caused fire			
Material part (e.g. mouse enclosure)	Energy Source (PS2: 100 Watt circuit)	Safeguards		
		Basic	Supplementary	Reinforced
Plastic enclosure	PS3: > 100 Watt circuit (Primary circuits)  PS2: ≤ 100 Watt circuit (Secondary circuits)	See below and 6.3.1 (a)	Equipment safeguard (control of fire spread, flammability rated V-0)	N/A

Combustible materials within equipment fire enclosure	PS3: > 100 Watt circuit (Primary circuits) PS2: ≤ 100 Watt circuit (Secondary circuits)	Equipment safeguards (no ignition occurs and no such temp. attained specified in 6.3.1 (a))	Equipment safeguards (e.g. min rated V-1 PWB, combustible material rated V-2 min., fire enclosure, see 6.4.5 and 6.4.6)	N/A
Internal wiring material	PS3: > 100 Watt circuit (Primary circuits)	See above and 6.3.1 (a)	Equipment safeguards (rated VW-1, see 6.5)	N/A
External wiring material	PS2: ≤ 100 Watt circuit (Secondary circuits)	See above and 6.3.1 (a)	Equipment safeguards (rated VW-1, see 6.5)	N/A
Output connector of outside enclosure	PS2: ≤ 100 Watt circuit (Secondary circuits)	See above and subclause 6.3.1 (a)	Equipment safeguards (at least rated V-2 class material for connector, see 6.4.5 and 6.4.6)	N/A
7.1	Injury caused by hazardous substances			
Body Part (e.g., skilled)	Energy Source (hazardous material)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	N/A	N/A	N/A
8.1	Mechanically-caused injury			
Body Part (e.g. Ordinary)	Energy Source (MS3: High Pressure Lamp)	Safeguards		
		Basic	Supplementary	Reinforced (Enclosure)
Ordinary	MS1: Sharp edges and corners	N/A	N/A	N/A
Ordinary	MS1: Equipment mass (< 7 kg)	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	TS1: Accessible plastic enclosure / output cord and output connector	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
Ordinary	RS1: Indicating LED	N/A	N/A	N/A

Supplementary information:

(1) See attached energy source diagram for additional details.

(2) "N" – Normal Condition; "A" – Abnormal Condition; "S" – Single Fault.

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Clause	Requirement + Test	Result - Remark	Verdict
<b>4</b>	<b>GENERAL REQUIREMENTS</b>		<b>P</b>
4.1.1	Acceptance of materials, components and subassemblies	(See appended table 4.1.2)	P
4.1.2	Use of components	Components which are certified to IEC and/or national standards are used correctly within their ratings.  Components not covered by IEC standards are tested under the conditions present in the equipment.	P
4.1.3	Equipment design and construction	No accessible part which could cause injury.	P
4.1.15	Markings and instructions .....	(See Annex F)	P
4.4.4	Safeguard robustness	See below.	P
4.4.4.2	Steady force tests .....	(See Annex T.2, T.4 and T.5)	P
4.4.4.3	Drop tests .....	For the all sources of plastic enclosure material listed in "List of critical components" are tested for top and bottom side, and flank sides.  (See Annex T.7).	P
4.4.4.4	Impact tests .....	For the all sources of plastic enclosure material listed in "List of critical components" are tested for top and bottom side, and flank sides.  (See Annex T.6).	P
4.4.4.5	Internal accessible safeguard enclosure and barrier tests .....	No internal enclosure.	N/A
4.4.4.6	Glass Impact tests.....	No such glass is used.	N/A
4.4.4.7	Thermoplastic material tests .....	For the all sources material listed "List of critical components" are tested for a period of 7 hours.  (See Annex T.8)	P
4.4.4.8	Air comprising a safeguard .....	(See Annex T)	P
4.4.4.9	Accessibility and safeguard effectiveness	No damaged.  Except for PS3, class 3 energy sources cannot become accessible to an ordinary person or to an instructed person, and all other safeguards remain effective during and after above tests.	P
4.5	Explosion	No explosion occurs during normal/abnormal operation and single fault conditions.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.6	Fixing of conductors	See below.	P
4.6.1	Fix conductors not to defeat a safeguard	Internal wires are secured via soldering and glue so that a loosening of the terminal connection is unlikely.	P
4.6.2	10 N force test applied to .....	10N force test performed for all relevant conductors. No hazards caused hereby.	P
4.7	Equipment for direct insertion into mains socket - outlets	The equipment is not for direct insertion into mains socket-outlets.	N/A
4.7.2	Mains plug part complies with the relevant standard .....		N/A
4.7.3	Torque (Nm) .....		N/A
4.8	Products containing coin/button cell batteries	No lithium coin/button batteries are used.	N/A
4.8.2	Instructional safeguard		N/A
4.8.3	Battery Compartment Construction		N/A
	Means to reduce the possibility of children removing the battery .....		—
4.8.4	Battery Compartment Mechanical Tests .....		N/A
4.8.5	Battery Accessibility		N/A
4.9	Likelihood of fire or shock due to entry of conductive object .....	No openings are provided at all. (See Annex P)	P

<b>5</b>	<b>ELECTRICALLY-CAUSED INJURY</b>		<b>P</b>
5.2.1	Electrical energy source classifications .....	(See appended table 5.2)	P
5.2.2	ES1, ES2 and ES3 limits	See below.	P
5.2.2.2	Steady-state voltage and current .....	(See appended table 5.2)	P
5.2.2.3	Capacitance limits .....	See subclause 5.2.2.2.	P
5.2.2.4	Single pulse limits .....	No such single pulse with the equipment.	N/A
5.2.2.5	Limits for repetitive pulses .....	No such repetitive pulses with the equipment.	N/A
5.2.2.6	Ringing signals .....	No such ringing signals with the equipment.	N/A
5.2.2.7	Audio signals .....	No such audio signals with the equipment.	N/A
5.3	Protection against electrical energy sources	(See appended table "OVERVIEW OF EMPLOYED SAFEGUARDS")	P
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons	See above.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.2.1	Accessibility to electrical energy sources and safeguards	ES2 or ES3 source cannot be accessed by ordinary persons and ES3 source cannot accessed by instructed persons.  Double or reinforced safeguard is provided between ES2 or ES3 and ordinary persons or instructed persons.	P
5.3.2.2	Contact requirements	See below.	P
	a) Test with test probe from Annex V ..... :	The test probe cannot access the hazardous live parts. (See Annex V).	P
	b) Electric strength test potential (V)..... :	See below.	N/A
	c) Air gap (mm) ..... :	No openings are provided at all.	P
5.3.2.4	Terminals for connecting stripped wire	No such terminals intended to be used by ordinary persons.	N/A
5.4	Insulation materials and requirements		P
5.4.1.2	Properties of insulating material	The choice and application have taken into account as specified in this Clause 5 and Annex T except natural rubber, hygroscopic materials or asbestos are not used as insulation.	P
5.4.1.3	Humidity conditioning ..... :	See subclause 5.4.8.	P
5.4.1.4	Maximum operating temperature for insulating materials ..... :	(See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
5.4.1.5	Pollution degree..... :	See Pollution Degree addressed in section "TEST ITEM PARTICULARS"	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound	See above.	N/A
5.4.1.5.3	Thermal cycling	See above.	N/A
5.4.1.6	Insulation in transformers with varying dimensions	No such transformers within the equipment.	N/A
5.4.1.7	Insulation in circuits generating starting pulses	No such circuits within the equipment.	N/A
5.4.1.8	Determination of working voltage	(See appended table 5.4.1.8 in "ATTACHMENT" for working voltage measurement)	P
5.4.1.9	Insulating surfaces	The plastic enclosure is provided and considered.	P
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted	See below.	P
5.4.1.10.2	Vicat softening temperature ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.1.10.3	Ball pressure .....	Phenolic materials used are accepted without test due to its physical characteristics is clear from examination. (Other material see appended table 5.4.1.10.3)	P
5.4.2	Clearances	See below.	P
5.4.2.2	Determining clearance using peak working voltage	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.2.3	Determining clearance using required withstand voltage .....	(See appended table 5.4.2.3)	P
	a) a.c. mains transient voltage .....	2500 V <sub>peak</sub> .	—
	b) d.c. mains transient voltage .....		—
	c) external circuit transient voltage .....		—
	d) transient voltage determined by measurement :		—
5.4.2.4	Determining the adequacy of a clearance using an electric strength test	Not applicable.	N/A
5.4.2.5	Multiplication factors for clearances and test voltages.....	The required clearance is multiplied by the Table 17 required altitude correction factor according to specified operation altitude. (See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.3	Creepage distances .....	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.3.1	General	See below.	P
5.4.3.3	Material Group .....	Material group IIIb is assumed.	—
5.4.4	Solid insulation	See below.	P
5.4.4.2	Minimum distance through insulation .....	(See appended table 5.4.4.2, 5.4.4.5 c), 5.4.4.9)	P
5.4.4.3	Insulation compound forming solid insulation	Certified sources of optocoupler are used.	P
5.4.4.4	Solid insulation in semiconductor devices	Certified sources of optocoupler are used.	P
5.4.4.5	Cemented joints	(See appended table 5.4.2.2, 5.4.2.4 and 5.4.3)	P
5.4.4.6	Thin sheet material	See below.	P
5.4.4.6.1	General requirements		P
5.4.4.6.2	Separable thin sheet material	(See appended table 5.4.9)	P
	Number of layers (pcs) .....	2 minimum.	P
5.4.4.6.3	Non-separable thin sheet material	(See appended table 5.4.9)	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.4.6.4	Standard test procedure for non-separable thin sheet material .....	(See appended table 5.4.9)	N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components	See clause G.5 and G.6.	P
5.4.4.9	Solid insulation at frequencies >30 kHz .....	(See appended table 5.4.4.9 and 5.4.9)	P
5.4.5	Antenna terminal insulation	No antenna used.	N/A
5.4.5.1	General		N/A
5.4.5.2	Voltage surge test		N/A
	Insulation resistance (MΩ).....		—
5.4.6	Insulation of internal wire as part of supplementary safeguard .....	No insulation of internal wires provided as a part of supplementary safeguard.	N/A
5.4.7	Tests for semiconductor components and for cemented joints	Certified sources of optocoupler are used.	P
5.4.8	Humidity conditioning		P
	Relative humidity (%).....	95 %	—
	Temperature (°C) .....	40 °C	—
	Duration (h) .....	120 h	—
5.4.9	Electric strength test .....	(See appended table 5.4.9)	P
5.4.9.1	Test procedure for a solid insulation type test	Compliance was checked immediately following temperature test in subclause 5.4.1.4.	P
5.4.9.2	Test procedure for routine tests	No routine tests under consideration this time.	N/A
5.4.10	Protection against transient voltages between external circuit	No such external circuits.	N/A
5.4.10.1	Parts and circuits separated from external circuits		N/A
5.4.10.2	Test methods		N/A
5.4.10.2.1	General		N/A
5.4.10.2.2	Impulse test .....		N/A
5.4.10.2.3	Steady-state test.....		N/A
5.4.11	Insulation between external circuits and earthed circuitry .....	No such external circuit within the equipment.	N/A
5.4.11.1	Exceptions to separation between external circuits and earth	No such external circuit within the equipment.	N/A
5.4.11.2	Requirements		N/A
	Rated operating voltage $U_{op}$ (V).....		—
	Nominal voltage $U_{peak}$ (V).....		—
	Max increase due to variation $U_{sp}$ .....		—



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Clause	Requirement + Test	Result - Remark	Verdict
	Max increase due to ageing $\Delta U_{sa}$ .....		—
	$U_{op} = U_{peak} + \Delta U_{sp} + \Delta U_{sa}$ .....		—
5.5	Components as safeguards		
5.5.1	General	See the following details.	P
5.5.2	Capacitors and RC units	Approved X-Capacitor and Y-Capacitor are provided.	P
5.5.2.1	General requirement	See below.	P
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector.....	(See appended table 5.5.2.2)	P
5.5.3	Transformers	(See Annex G.5.3)	P
5.5.4	Optocouplers	(See subclause 5.4 or Annex G.12)	P
5.5.5	Relays	No relays provided.	N/A
5.5.6	Resistors	Bleeder resistors are served as safeguard but not across any insulations, no energy hazards between appliance inlet access terminal and ordinary person, see clause 5.2.2.3.	P
5.5.7	SPD's	No such SPD provided between mains and earth.	N/A
5.5.7.1	Use of an SPD connected to reliable earthing		N/A
5.5.7.2	Use of an SPD between mains and protective earth		N/A
5.5.8	Insulation between the mains and external circuit consisting of a coaxial cable .....	No such external circuits.	N/A
5.6	Protective conductor		
5.6.2	Requirement for protective conductors	Class II equipment.	N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A
5.6.3	Requirement for protective earthing conductors	Class II equipment.	N/A
	Protective earthing conductor size (mm <sup>2</sup> ) .....		—
5.6.4	Requirement for protective bonding conductors	Class II equipment.	N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm <sup>2</sup> ).....		—
	Protective current rating (A) .....		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors	Class II equipment.	N/A
5.6.5.1	Requirement		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Conductor size (mm <sup>2</sup> ), nominal thread diameter (mm). ....:		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system	Class II equipment.	N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance ( $\Omega$ ) .....		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		P
5.7.2	Measuring devices and networks	Figure 4 of IEC 60990 was used in determining of the limit of ES1. Figure 5 of IEC 60990 was used in determining of the limit of ES2.	P
5.7.2.1	Measurement of touch current .....	(See appended tables 5.2.2.2)	P
5.7.2.2	Measurement of prospective touch voltage	See above.	P
5.7.3	Equipment set-up, supply connections and earth connections	Clause 4, 5.3 and 5.4 of IEC 60990:1999 are applied.	P
	System of interconnected equipment (separate connections/single connection) .....	Single equipment.	—
	Multiple connections to mains (one connection at a time/simultaneous connections) .....	Single connection.	—
5.7.4	Earthed conductive accessible parts .....	Class II equipment.	N/A
5.7.5	Protective conductor current	Class II equipment.	N/A
	Supply Voltage (V).....:		—
	Measured current (mA).....:		—
	Instructional Safeguard.....:		N/A
5.7.6	Prospective touch voltage and touch current due to external circuits	No external circuits.	N/A
5.7.6.1	Touch current from coaxial cables		N/A
5.7.6.2	Prospective touch voltage and touch current from external circuits		N/A
5.7.7	Summation of touch currents from external circuits	No external circuits.	N/A
	a) Equipment with earthed external circuits Measured current (mA).....:		N/A
	b) Equipment whose external circuits are not referenced to earth. Measured current (mA) ...:		N/A
<b>6</b>	<b>ELECTRICALLY- CAUSED FIRE</b>		<b>P</b>
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
6.2.2	Power source circuit classifications	PS (power source) classification determined by measuring the maximum power in Figure 34 and Figure 35 for load and power source circuits.	P
6.2.2.1	General	See the following details.	P
6.2.2.2	Power measurement for worst-case load fault. :	(See appended table 6.2.2)	P
6.2.2.3	Power measurement for worst-case power source fault ..... :	See below.	P
6.2.2.4	PS1 ..... :	See below.	P
6.2.2.5	PS2 ..... :	See below.	P
6.2.2.6	PS3 ..... :	(See appended table 6.2.2)	P
6.2.3	Classification of potential ignition sources	See the following details.	P
6.2.3.1	Arcing PIS ..... :	Except for appliance inlet complied with IEC 60320-1, other components located within the equipment are not considered as arcing PIS.	P
6.2.3.2	Resistive PIS ..... :	The available power exceeding 15 W and no further test is considered necessary. (See appended table 6.2.3.2)	P
6.3	Safeguards against fire under normal operating and abnormal operating conditions		P
6.3.1 (a)	No ignition and attainable temperature value less than 90 % defined by ISO 871 or less than 300 °C for unknown materials ..... :	No ignition and such temperature attained within the plastic fire enclosure. (See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
6.3.1 (b)	Combustible materials outside fire enclosure	No such materials are used.	N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Method by control fire spread.	P
6.4.2	Reduction of the likelihood of ignition under single fault conditions in PS1 circuits		N/A
6.4.3	Reduction of the likelihood of ignition under single fault conditions in PS2 and PS3 circuits		N/A
6.4.3.1	General		N/A
6.4.3.2	Supplementary Safeguards		N/A
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions ..... :	Single fault conditions applied. (See appended table B.3 & B.4)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Special conditions for temperature limited by fuse	Fuse opened within 1 second, and with a current immediately reaches more than 2.1 time the current rating of the fuse passed through.	P
6.4.4	Control of fire spread in PS1 circuits	PS3 circuits inside as worst case.	N/A
6.4.5	Control of fire spread in PS2 circuits	See below.	P
6.4.5.2	Supplementary safeguards .....	<p>Compliance detailed as follows:</p> <ul style="list-style-type: none"> <li>- <u>Printed board</u>: rated min. V-1 class material;</li> <li>- <u>Wire insulation and tubing</u>: complying with Clause 6.</li> <li>- <u>All other components</u>: at least V-2 except for mounted on min. V-1 class material or small parts of combustible material.</li> <li>- <u>Transformer</u>: complying with G.5.3.</li> <li>- <u>Mains fuse</u> : using protective device that complies with G3.4.</li> <li>- <u>Components associated with the mains</u> : comply with the relevant IEC component standards and requirements of this standard.</li> <li>- <u>Single fault conditions as specified in 6.4.3.3</u>: Not ignite during testing for the conditions of clause B.4.</li> </ul> <p>(See appended tables 4.1.2 and Annex G)</p>	P
6.4.6	Control of fire spread in PS3 circuit	In addition to compliance of subclause 6.4.5, a fire enclosure of subclause 6.4.8 is provided with the equipment.	P
6.4.7	Separation of combustible materials from a PIS	See the following details.	N/A
6.4.7.1	General .....	(See appended tables 6.2.3.1 and 6.2.3.2)	N/A
6.4.7.2	Separation by distance	All components and combustible materials other than small parts are either rated at least V-2 class material or mounted on PCB material with rated min. V-1 class material.	N/A
6.4.7.3	Separation by a fire barrier	See above.	N/A
6.4.8	Fire enclosures and fire barriers	Equipment enclosure was evaluated as a fire enclosure.	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.8.1	Fire enclosure and fire barrier material properties	See the following details.	P
6.4.8.2.1	Requirements for a fire barrier	No fire barrier is used.	N/A
6.4.8.2.2	Requirements for a fire enclosure	Equipment fire enclosure was made of min. V-0 class material.	P
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier	See the following details.	P
6.4.8.3.1	Fire enclosure and fire barrier openings	No openings are provided.	P
6.4.8.3.2	Fire barrier dimensions	No fire barrier is used.	N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....	No top openings are provided.	P
	Needle Flame test	Equipment fire enclosure was made of minimum V-0 class material.	N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....	No bottom openings are provided.	P
	Flammability tests for the bottom of a fire enclosure .....	No such consideration.	N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c) .....	No such door or cover can be opened by ordinary persons.	N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating .....	The plastic enclosure rated minimum V-0 class material is considered as fire enclosure.	P
6.5	Internal and external wiring		P
6.5.1	Requirements	The material of VW-1 on internal or external wiring were considered compliance equivalent to IEC/TS 60695-11-21 relevant standards.	P
6.5.2	Cross-sectional area (mm <sup>2</sup> ) .....	See above.	—
6.5.3	Requirements for interconnection to building wiring .....	No such interconnection to building wiring.	N/A
6.6	Safeguards against fire due to connection to additional equipment	See below.	P
	External port limited to PS2 or complies with Clause Q.1	Output complies with limited power source. (See Annex Q.1).	P

<b>7</b>	<b>INJURY CAUSED BY HAZARDOUS SUBSTANCES</b>		N/A
7.2	Reduction of exposure to hazardous substances	No hazardous chemicals within the equipment.	N/A
7.3	Ozone exposure	No ozone production within the equipment.	N/A
7.4	Use of personal safeguards (PPE)	No such consideration.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Personal safeguards and instructions .....	See above.	—
7.5	Use of instructional safeguards and instructions	No chemical-caused injuries, the instruction safeguard was not required.	N/A
	Instructional safeguard (ISO 7010) .....	(See Annex F)	—
7.6	Batteries .....	No batteries are used.	N/A

<b>8</b>	<b>MECHANICALLY-CAUSED INJURY</b>		<b>P</b>
8.1	General	See the following details.	P
8.2	Mechanical energy source classifications	Sharp edges and corners, classified as MS1. Equipment of mass < 7 kg, classified as MS1.	P
8.3	Safeguards against mechanical energy sources	See above.	N/A
8.4	Safeguards against parts with sharp edges and corners	Accessible edges and corners of the equipment are rounded and are classified as MS1.	P
8.4.1	Safeguards	See above.	N/A
8.5	Safeguards against moving parts	No moving parts within the equipment.	N/A
8.5.1	MS2 or MS3 part required to be accessible for the function of the equipment		N/A
8.5.2	Instructional Safeguard .....		—
8.5.4	Special categories of equipment comprising moving parts		N/A
8.5.4.1	Large data storage equipment		N/A
8.5.4.2	Equipment having electromechanical device for destruction of media		N/A
8.5.4.2.1	Safeguards and Safety Interlocks.....		N/A
8.5.4.2.2	Instructional safeguards against moving parts		N/A
	Instructional Safeguard .....		—
8.5.4.2.3	Disconnection from the supply		N/A
8.5.4.2.4	Probe type and force (N).....		N/A
8.5.5	High Pressure Lamps		N/A
8.5.5.1	Energy Source Classification		N/A
8.5.5.2	High Pressure Lamp Explosion Test .....		N/A
8.6	Stability	See the following details.	N/A
8.6.1	Product classification	Equipment of mass < 7 kg, classified as MS1. No stability requirement.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructional Safeguard .....	No instructional safeguard is considered as necessary.	—
8.6.2	Static stability	Equipment of mass < 7 kg, classified as MS1. No stability requirement.	N/A
8.6.2.2	Static stability test		N/A
	Applied Force.....		—
8.6.2.3	Downward Force Test		N/A
8.6.3	Relocation stability test		N/A
	Unit configuration during 10° tilt .....		—
8.6.4	Glass slide test		N/A
8.6.5	Horizontal force test (Applied Force) .....		N/A
	Position of feet or movable parts .....		—
8.7	Equipment mounted to wall or ceiling	The equipment is not mounted to wall or ceiling.	N/A
8.7.1	Mounting Means (Length of screws (mm) and mounting surface) .....		N/A
8.7.2	Direction and applied force .....		N/A
8.8	Handles strength	No such handles.	N/A
8.8.1	Classification		N/A
8.8.2	Applied Force .....		N/A
8.9	Wheels or casters attachment requirements	No such wheels or casters within the equipment.	N/A
8.9.1	Classification		N/A
8.9.2	Applied force.....		—
8.10	Carts, stands and similar carriers	No such devices are provided within the equipment.	N/A
8.10.1	General		N/A
8.10.2	Marking and instructions		N/A
	Instructional Safeguard .....		—
8.10.3	Cart, stand or carrier loading test and compliance		N/A
	Applied force.....		—
8.10.4	Cart, stand or carrier impact test		N/A
8.10.5	Mechanical stability		N/A
	Applied horizontal force (N).....		—
8.10.6	Thermoplastic temperature stability (°C) .....		N/A
8.11	Mounting means for rack mounted equipment	The equipment is not intended to be rack mounted.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable <i>N</i> ..... :		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas ..... :	No such devices are provided within the equipment.	N/A
	Button/Ball diameter (mm) ..... :	See above.	—

<b>9</b>	<b>THERMAL BURN INJURY</b>		<b>P</b>
9.2	Thermal energy source classifications	All accessible surfaces are classified as TS1. (See appended table 5.4.1.4, 6.3.2, 9.0, B.2.6)	P
9.3	Safeguard against thermal energy sources	See above.	P
9.4	Requirements for safeguards		P
9.4.1	Equipment safeguard	See above.	P
9.4.2	Instructional safeguard ..... :	See above.	N/A

<b>10</b>	<b>RADIATION</b>		<b>P</b>
10.2	Radiation energy source classification	See below.	P
10.2.1	General classification	The following parts are considered as RS1 without tests: - LED Indicator	P
10.3	Protection against laser radiation	No such radiation generated from the equipment.	N/A
	Laser radiation that exists equipment:		—
	Normal, abnormal, single-fault ..... :		N/A
	Instructional safeguard ..... :		—
	Tool..... :		—
10.4	Protection against visible, infrared, and UV radiation	No such radiation generated from the equipment.	N/A
10.4.1	General		N/A
10.4.1.a)	RS3 for Ordinary and instructed persons ..... :		N/A
10.4.1.b)	RS3 accessible to a skilled person ..... :		N/A
	Personal safeguard (PPE) instructional safeguard ..... :		—
10.4.1.c)	Equipment visible, IR, UV does not exceed RS1..... :		N/A
10.4.1.d)	Normal, abnormal, single-fault conditions ..... :		N/A



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Clause	Requirement + Test	Result - Remark	Verdict
10.4.1.e)	Enclosure material employed as safeguard is opaque..... :		N/A
10.4.1.f)	UV attenuation..... :		N/A
10.4.1.g)	Materials resistant to degradation UV ..... :		N/A
10.4.1.h)	Enclosure containment of optical radiation ..... :		N/A
10.4.1.i)	Exempt Group under normal operating conditions ..... :		N/A
10.4.2	Instructional safeguard ..... :		N/A
10.5	Protection against x-radiation	No such x-radiation generated from the equipment.	N/A
10.5.1	X- radiation energy source that exists equipment..... :		N/A
	Normal, abnormal, single fault conditions		N/A
	Equipment safeguards ..... :		N/A
	Instructional safeguard for skilled person..... :		N/A
10.5.3	Most unfavourable supply voltage to give maximum radiation ..... :		—
	Abnormal and single-fault condition ..... :		N/A
	Maximum radiation (pA/kg) ..... :		N/A
10.6	Protection against acoustic energy sources	No such consideration for the purpose of personal music players.	N/A
10.6.1	General		N/A
10.6.2	Classification		N/A
	Acoustic output, dB(A)..... :		N/A
	Output voltage, unweighted r.m.s. .... :		N/A
10.6.4	Protection of persons		N/A
	Instructional safeguards ..... :		N/A
	Equipment safeguard prevent ordinary person to RS2..... :		—
	Means to actively inform user of increase sound pressure..... :		—
	Equipment safeguard prevent ordinary person to RS2..... :		—
10.6.5	Requirements for listening devices (headphones, earphones, etc.)		N/A
10.6.5.1	Corded passive listening devices with analog input		N/A
	Input voltage with 94 dB(A) $L_{Aeq}$ acoustic pressure output ..... :		—
10.6.5.2	Corded listening devices with digital input		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Maximum dB(A)..... :		—
10.6.5.3	Cordless listening device		N/A
	Maximum dB(A)..... :		—

<b>B</b>	<b>NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS</b>		P
B.2	Normal Operating Conditions	See the following details.	P
B.2.1	General requirements.....:	(See TEST ITEM PARTICULARS and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers .....	Not such equipment.	N/A
B.2.3	Supply voltage and tolerances	See Supply % Tolerance in section "TEST ITEM PARTICULARS".	P
B.2.5	Input test.....:	(See appended table B.2.5)	P
B.3	Simulated abnormal operating conditions		P
B.3.1	General requirements.....:	(See appended table B.3)	P
B.3.2	Covering of ventilation openings	No ventilation openings are provided.	N/A
B.3.3	D.C. mains polarity test	The equipment is not connected to a D.C. mains.	N/A
B.3.4	Setting of voltage selector .....	No setting of voltage selector within the equipment.	N/A
B.3.5	Maximum load at output terminals .....	(See appended table B.3)	P
B.3.6	Reverse battery polarity	No battery within the equipment.	N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.	Not such equipment.	N/A
B.3.8	Safeguards functional during and after abnormal operating conditions	All safeguards remained effectively.	P
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited .....	(See appended table B.4)	P
B.4.3	Motor tests	No motor within the equipment.	N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature .....	See above.	N/A
B.4.4	Short circuit of functional insulation	Circuits before fuse are in compliance with clearance and creepage distance requirements, others are verified by short-circuit tests. See the following for details.	P

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Clause	Requirement + Test	Result - Remark	Verdict
B.4.4.1	Short circuit of clearances for functional insulation	(See appended table B.4)	P
B.4.4.2	Short circuit of creepage distances for functional insulation	(See appended table B.4)	P
B.4.4.3	Short circuit of functional insulation on coated printed boards	No coated printed boards within the equipment.	N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	(See appended table B.4)	P
B.4.6	Short circuit or disconnect of passive components	(See appended table B.4)	P
B.4.7	Continuous operation of components	The equipment is continuous operating type and no such components intended for short time operation or intermittent operation.	N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	(See appended table B.4)	P
B.4.9	Battery charging under single fault conditions .:	No battery involved in the equipment.	N/A

<b>C</b>	<b>UV RADIATION</b>		N/A
C.1	Protection of materials in equipment from UV radiation	No such UV generated from the equipment.	N/A
C.1.2	Requirements		N/A
C.1.3	Test method		N/A
C.2	UV light conditioning test		N/A
C.2.1	Test apparatus		N/A
C.2.2	Mounting of test samples		N/A
C.2.3	Carbon-arc light-exposure apparatus		N/A
C.2.4	Xenon-arc light exposure apparatus		N/A

<b>D</b>	<b>TEST GENERATORS</b>		N/A
D.1	Impulse test generators	No such consideration.	N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A

<b>E</b>	<b>TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS</b>		N/A
E.1	Audio amplifier normal operating conditions	Not such equipment.	N/A
	Audio signal voltage (V) .....		—
	Rated load impedance ( $\Omega$ ) .....		—
E.2	Audio amplifier abnormal operating conditions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

<b>F</b>	<b>EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS</b>		<b>P</b>
F.1	General requirements	See the following details.	P
	Instructions – Language .....	English and German. The other languages will be provided during the national approval.	—
F.2	Letter symbols and graphical symbols	See the following details.	P
F.2.1	Letter symbols according to IEC 60027-1		N/A
F.2.2	Graphic symbols IEC, ISO or manufacturer specific	Graphical symbols are complied with IEC 60417, ISO 3864-2, ISO 7000 or ISO 7010, or manufacturer specific.	P
F.3	Equipment markings		P
F.3.1	Equipment marking locations	Equipment marking is located on the exterior surface and is easily visible.	P
F.3.2	Equipment identification markings	See the following details.	P
F.3.2.1	Manufacturer identification .....	See copy of marking plate.	—
F.3.2.2	Model identification .....	See copy of marking plate.	—
F.3.3	Equipment rating markings	See the following details.	P
F.3.3.1	Equipment with direct connection to mains	The equipment is connected to AC mains supply.	P
F.3.3.2	Equipment without direct connection to mains	See above.	N/A
F.3.3.3	Nature of supply voltage.....	“Hz” or “~” used to specify the nature of the supply voltage. See copy of marking plate.	—
F.3.3.4	Rated voltage .....	See copy of marking plate.	—
F.3.3.4	Rated frequency .....	See copy of marking plate.	—
F.3.3.6	Rated current or rated power .....	See copy of marking plate.	—
F.3.3.7	Equipment with multiple supply connections	Only one supply connection.	N/A
F.3.4	Voltage setting device	No such devices within the equipment.	N/A
F.3.5	Terminals and operating devices	See below.	P
F.3.5.1	Mains appliance outlet and socket-outlet markings .....	No such devices within the equipment.	N/A
F.3.5.2	Switch position identification marking .....	No such switch within the equipment.	N/A
F.3.5.3	Replacement fuse identification and rating markings .....	(See GENERAL PRODUCT INFORMATION)	P

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.4	Replacement battery identification marking .....	No such battery within the equipment.	N/A
F.3.5.5	Terminal marking location	See markings specified in F.3.6.1 and F.3.6.2.2 is not placed on removable parts such as screws.	P
F.3.6	Equipment markings related to equipment classification	See the following details.	P
F.3.6.1	Class I Equipment	See the following details.	N/A
F.3.6.1.1	Protective earthing conductor terminal	Class II equipment.	N/A
F.3.6.1.2	Neutral conductor terminal	The equipment is not permanently connected equipment.	N/A
F.3.6.1.3	Protective bonding conductor terminals	Class II equipment.	N/A
F.3.6.2	Class II equipment (IEC 60417-5172)	Class II equipment. See copy of marking plate.	P
F.3.6.2.1	Class II equipment with or without functional earth	See above.	N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking	See above.	N/A
F.3.7	Equipment IP rating marking .....	This equipment is classified as IP 20.	—
F.3.8	External power supply output marking	See copy of marking plate.	P
F.3.9	Durability, legibility and permanence of marking	See the following details.	P
F.3.10	Test for permanence of markings	The marking plate was subjected to the permanence of marking test.  The marking plate was rubbed with cloth soaked with water for 15 s and then again for 15 s with the cloth soaked with petroleum spirit.  After each test, there was no damage to the marking plate.  The marking on the label did not fade.  There was no curling of the marking plate and removed by hand.	P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking	The accessibility of equipment was evaluated by using test probe of Figure V.1.	P
	b) Instructions given for installation or initial use	Relevant safety caution texts and installation instruction are available.	P

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Clause	Requirement + Test	Result - Remark	Verdict
	c) Equipment intended to be fastened in place	No such consideration.	N/A
	d) Equipment intended for use only in restricted access area	The equipment is not such type equipment.	N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1	Not audio equipment.	N/A
	f) Protective earthing employed as safeguard	Class II equipment.	N/A
	g) Protective earthing conductor current exceeding ES2 limits	Class II equipment.	N/A
	h) Symbols used on equipment	No such consideration.	N/A
	i) Permanently connected equipment not provided with all-pole mains switch	The equipment is not a permanently connected equipment.	N/A
	j) Replaceable components or modules providing safeguard function	The required information for fuse is marked adjacent to the fuse. See subclause F.3.5.3 for details.	P
F.5	Instructional safeguards	No instructional safeguard is considered as necessary.	N/A
	Where "instructional safeguard" is referenced in the test report it specifies the required elements, location of marking and/or instruction	No instructional safeguard required in the equipment.	N/A

<b>G</b>	<b>COMPONENTS</b>		<b>P</b>
<b>G.1</b>	<b>Switches</b>		N/A
G.1.1	General requirements	No such switch as disconnect devices are provided within the equipment.	N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
<b>G.2</b>	<b>Relays</b>		N/A
G.2.1	General requirements	No such relay is provided within the equipment.	N/A
G.2.2	Overload test		N/A
G.2.3	Relay controlling connectors supply power		N/A
G.2.4	Mains relay, modified as stated in G.2		N/A
<b>G.3</b>	<b>Protection Devices</b>		<b>P</b>
G.3.1	Thermal cut-offs	No thermal cut-off is provided within the equipment.	N/A
G.3.1.1a) &b)	Thermal cut-outs separately approved according to IEC 60730 with conditions indicated in a) & b)		N/A
G.3.1.1c)	Thermal cut-outs tested as part of the equipment as indicated in c)		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.3.1.2	Thermal cut-off connections maintained and secure		N/A
G.3.2	Thermal links		N/A
G.3.2.1a)	Thermal links separately tested with IEC 60691	No thermal link is provided within the equipment.	N/A
G.3.2.1b)	Thermal links tested as part of the equipment		N/A
	Aging hours (H) .....		—
	Single Fault Condition .....		—
	Test Voltage (V) and Insulation Resistance ( $\Omega$ ) .....		—
G.3.3	PTC Thermistors	No PTC thermistor is provided within the equipment.	N/A
G.3.4	Overcurrent protection devices	All sources of fuse complied with IEC 60127.	P
G.3.5	Safeguards components not mentioned in G.3.1 to G.3.5		N/A
G.3.5.1	Non-resettable devices suitably rated and marking provided	No such component.	N/A
G.3.5.2	Single faults conditions.....	(See appended table B.4)	N/A
<b>G.4</b>	<b>Connectors</b>		P
G.4.1	Spacings	The appliance inlet complied with IEC 60320-1.	P
G.4.2	Mains connector configuration .....	See above.	P
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely	No misconnection likely.	P
<b>G.5</b>	<b>Wound Components</b>		P
G.5.1	Wire insulation in wound components.....	See Annex J.	P
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°	The tubing and insulation tape are provided for all windings of transformer to protect against mechanical stress.	P
G.5.1.2 b)	Construction subject to routine testing	Approved triple insulated wire is used in winding of transformer.	N/A
G.5.2	Endurance test on wound components	Approved triple insulated wire is used in winding of transformer.	N/A
G.5.2.1	General test requirements		N/A
G.5.2.2	Heat run test		N/A
	Time (s) .....		—
	Temperature (°C) .....		—
G.5.2.3	Wound Components supplied by mains		N/A
<b>G.5.3</b>	<b>Transformers</b>		P

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1) .....	The isolating transformer meets the requirements given in subclauses G.5.3.2 and G.5.3.3.	P
	Position .....	(See appended table 4.1.2)	—
	Method of protection .....	(See appended table B.3 & B.4)	—
G.5.3.2	Insulation	Double or reinforced insulation.	P
	Protection from displacement of windings.....	The end-turn of each winding is fixed by insulating tape.	—
G.5.3.3	Overload test .....	(See appended table B.3 & B.4)	P
G.5.3.3.1	Test conditions	Tested in the complete equipment.	P
G.5.3.3.2	Winding Temperatures testing in the unit	(See appended table B.3 & B.4)	P
G.5.3.3.3	Winding Temperatures - Alternative test method	Alternative test method was not considered.	N/A
<b>G.5.4</b>	<b>Motors</b>		N/A
G.5.4.1	General requirements	No motors within the equipment.	N/A
	Position .....		—
G.5.4.2	Test conditions		N/A
G.5.4.3	Running overload test		N/A
G.5.4.4	Locked-rotor overload test		N/A
	Test duration (days) .....		—
G.5.4.5	Running overload test for d.c. motors in secondary circuits		N/A
G.5.4.5.2	Tested in the unit		N/A
	Electric strength test (V) .....		—
G.5.4.5.3	Tested on the Bench - Alternative test method; test time (h) .....		N/A
	Electric strength test (V) .....		—
G.5.4.6	Locked-rotor overload test for d.c. motors in secondary circuits		N/A
G.5.4.6.2	Tested in the unit		N/A
	Maximum Temperature .....		N/A
	Electric strength test (V) .....		N/A
G.5.4.6.3	Tested on the bench - Alternative test method; test time (h) .....		N/A
	Electric strength test (V) .....		N/A
G.5.4.7	Motors with capacitors		N/A
G.5.4.8	Three-phase motors		N/A
G.5.4.9	Series motors		N/A
	Operating voltage .....		—



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Clause	Requirement + Test	Result - Remark	Verdict
<b>G.6</b>	<b>Wire Insulation</b>		P
G.6.1	General	The triple insulated wire is used as reinforced safeguard in the transformer that complied with Annex J.	P
G.6.2	Solvent-based enamel wiring insulation	Insulation is not relied on solvent-based enamel.	N/A
<b>G.7</b>	<b>Mains supply cords</b>		P
G.7.1	General requirements	Approved appliance inlet is used.	N/A
	Type.....:		—
	Rated current (A).....:		—
	Cross-sectional area (mm <sup>2</sup> ), (AWG).....:		—
G.7.2	Compliance and test method		N/A
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords		N/A
G.7.3.2	Cord strain relief		N/A
G.7.3.2.1	Requirements	Tested for DC output cord by the client's request.	P
	Strain relief test force (N) .....	30 N. Displacement measured 0.1 mm.	—
G.7.3.2.2	Strain relief mechanism failure		N/A
G.7.3.2.3	Cord sheath or jacket position, distance (mm):		—
G.7.3.2.4	Strain relief comprised of polymeric material		N/A
G.7.4	Cord Entry .....		N/A
G.7.5	Non-detachable cord bend protection		N/A
G.7.5.1	Requirements		N/A
G.7.5.2	Mass (g) .....		—
	Diameter (m).....:		—
	Temperature (°C) .....		—
G.7.6	Supply wiring space		N/A
G.7.6.2	Stranded wire		N/A
G.7.6.2.1	Test with 8 mm strand		N/A
<b>G.8</b>	<b>Varistors</b>		N/A
G.8.1	General requirements	No such varistors used.	N/A
G.8.2	Safeguard against shock		N/A
G.8.3	Safeguard against fire		N/A
G.8.3.2	Varistor overload test .....		N/A
G.8.3.3	Temporary overvoltage .....		N/A
<b>G.9</b>	<b>Integrated Circuit (IC) Current Limiters</b>		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.9.1 a)	Manufacturer defines limit at max. 5A.	No IC current limiters are provided within the equipment.	N/A
G.9.1 b)	Limiters do not have manual operator or reset		N/A
G.9.1 c)	Supply source does not exceed 250 VA .....		—
G.9.1 d)	IC limiter output current (max. 5A) .....		—
G.9.1 e)	Manufacturers' defined drift .....		—
G.9.2	Test Program 1		N/A
G.9.3	Test Program 2		N/A
G.9.4	Test Program 3		N/A
<b>G.10</b>	<b>Resistors</b>		P
G.10.1	General requirements	See the following details.	P
G.10.2	Resistor test	The approved resistors are used were complied with the damp heat test according to IEC 60068-2-78. (See appended table 4.1.2).	P
G.10.3	Test for resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable		N/A
G.10.3.1	General requirements		N/A
G.10.3.2	Voltage surge test		N/A
G.10.3.3	Impulse test		N/A
<b>G.11</b>	<b>Capacitor and RC units</b>		P
G.11.1	General requirements	The X-Capacitor and the Y-Capacitor are used as safeguard and complied with IEC/EN 60384-14. (See appended table 4.1.2).	P
G.11.2	Conditioning of capacitors and RC units	At least 21 days at $40 \pm 2$ °C and $93 \pm 3$ % RH.	P
G.11.3	Rules for selecting capacitors	The selection followed with tables G.9 and G.12.	P
<b>G.12</b>	<b>Optocouplers</b>		P
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....	The optocoupler is used in the equipment and complied with IEC/EN 60747-5-5 and IEC 60950-1 or the requirements of 5.4. (See appended table 4.1.2).	P
	Type test voltage $V_{ini}$ .....	See above.	—
	Routine test voltage, $V_{ini,b}$ .....	See above.	—
<b>G.13</b>	<b>Printed boards</b>		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
G.13.1	General requirements	See the following details.	P
G.13.2	Uncoated printed boards	The insulation between conductors on the outer surfaces of an uncoated printed board complied with the minimum clearance and creepage requirements.	P
G.13.3	Coated printed boards	No coated printed board is provided within the equipment.	N/A
G.13.4	Insulation between conductors on the same inner surface	Sufficient safety distance provided.	N/A
	Compliance with cemented joint requirements (Specify construction) .....		—
G.13.5	Insulation between conductors on different surfaces	See below.	P
	Distance through insulation .....	(See appended table 4.1.2)	P
	Number of insulation layers (pcs) .....	Double sided PCB used.	—
G.13.6	Tests on coated printed boards		N/A
G.13.6.1	Sample preparation and preliminary inspection		N/A
G.13.6.2a)	Thermal conditioning		N/A
G.13.6.2b)	Electric strength test		N/A
G.13.6.2c)	Abrasion resistance test		N/A
<b>G.14</b>	<b>Coating on components terminals</b>		N/A
G.14.1	Requirements .....	No coating on components terminals.	N/A
<b>G.15</b>	<b>Liquid filled components</b>		N/A
G.15.1	General requirements	No such components are provided within the equipment.	N/A
G.15.2	Requirements		N/A
G.15.3	Compliance and test methods		N/A
G.15.3.1	Hydrostatic pressure test		N/A
G.15.3.2	Creep resistance test		N/A
G.15.3.3	Tubing and fittings compatibility test		N/A
G.15.3.4	Vibration test		N/A
G.15.3.5	Thermal cycling test		N/A
G.15.3.6	Force test		N/A
G.15.4	Compliance		N/A
<b>G.16</b>	<b>IC including capacitor discharge function (ICX)</b>		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
b)	Impulse test using circuit 2 with $U_c =$ to transient voltage .....		N/A
C1)	Application of ac voltage at 110% of rated voltage for 2.5 minutes		N/A
C2)	Test voltage .....		—
D1)	10,000 cycles on and off using capacitor with smallest capacitance and a resistor with largest resistance specified by manufacturer		N/A
D2)	Capacitance .....		—
D3)	Resistance .....		—

H	CRITERIA FOR TELEPHONE RINGING SIGNALS		N/A
H.1	General	No telephone ringing signal generated within the equipment.	N/A
H.2	Method A		N/A
H.3	Method B		N/A
H.3.1	Ringing signal		N/A
H.3.1.1	Frequency (Hz) .....		—
H.3.1.2	Voltage (V) .....		—
H.3.1.3	Cadence; time (s) and voltage (V) .....		—
H.3.1.4	Single fault current (mA):.....		—
H.3.2	Tripping device and monitoring voltage .....		N/A
H.3.2.1	Conditions for use of a tripping device or a monitoring voltage complied with		N/A
H.3.2.2	Tripping device		N/A
H.3.2.3	Monitoring voltage (V) .....		—

J	INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION		P
	General requirements	The triple insulated wire is used as reinforced safeguard in the transformer that had been evaluated with Annex J. (See appended table 4.1.2)	P

K	SAFETY INTERLOCKS		N/A
K.1	General requirements	No safety interlock is provided within the equipment.	N/A
K.2	Components of safety interlock safeguard mechanism .....		N/A
K.3	Inadvertent change of operating mode		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
K.4	Interlock safeguard override		N/A
K.5	Fail-safe		N/A
	Compliance.....:		N/A
K.6	Mechanically operated safety interlocks		N/A
K.6.1	Endurance requirement		N/A
K.6.2	Compliance and Test method .....:		N/A
K.7	Interlock circuit isolation		N/A
K.7.1	Separation distance for contact gaps & interlock circuit elements (type and circuit location) .....:		N/A
K.7.2	Overload test, Current (A) .....:		N/A
K.7.3	Endurance test		N/A
K.7.4	Electric strength test .....:		N/A

L	DISCONNECT DEVICES		P
L.1	General requirements	The appliance coupler is considered as disconnect device.	P
L.2	Permanently connected equipment	The equipment is not permanently connected equipment.	N/A
L.3	Parts that remain energized	When the equipment is disconnected from mains, no remaining parts at hazardous voltage in the equipment.	P
L.4	Single phase equipment	The disconnect device disconnects both poles simultaneously.	P
L.5	Three-phase equipment	The equipment is single phase equipment.	N/A
L.6	Switches as disconnect devices	No such switch is provided on the equipment.	N/A
L.7	Plugs as disconnect devices	The appliance coupler is considered as disconnect device.	N/A
L.8	Multiple power sources	Only one a.c. mains connection.	N/A

M	EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS		N/A
M.1	General requirements	No such battery within the equipment.	N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A
M.2.2	Compliance and test method (identify method).		N/A
M.3	Protection circuits		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.3.1	Requirements		N/A
M.3.2	Tests		N/A
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery		N/A
M.3.3	Compliance .....		N/A
M.4	Additional safeguards for equipment containing secondary lithium battery		N/A
M.4.1	General		N/A
M.4.2	Charging safeguards		N/A
M.4.2.1	Charging operating limits		N/A
M.4.2.2a)	Charging voltage, current and temperature .....		—
M.4.2.2 b)	Single faults in charging circuitry .....		—
M.4.3	Fire Enclosure		N/A
M.4.4	Endurance of equipment containing a secondary lithium battery		N/A
M.4.4.2	Preparation		N/A
M.4.4.3	Drop and charge/discharge function tests		N/A
	Drop		N/A
	Charge		N/A
	Discharge		N/A
M.4.4.4	Charge-discharge cycle test		N/A
M.4.4.5	Result of charge-discharge cycle test		N/A
M.5	Risk of burn due to short circuit during carrying		N/A
M.5.1	Requirement		N/A
M.5.2	Compliance and Test Method (Test of P.2.3)		N/A
M.6	Prevention of short circuits and protection from other effects of electric current		N/A
M.6.1	Short circuits		N/A
M.6.1.1	General requirements		N/A
M.6.1.2	Test method to simulate an internal fault		N/A
M.6.1.3	Compliance (Specify M.6.1.2 or alternative method) .....		N/A
M.6.2	Leakage current (mA) .....		N/A
M.7	Risk of explosion from lead acid and NiCd batteries		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.7.1	Ventilation preventing explosive gas concentration		N/A
M.7.2	Compliance and test method		N/A
M.8	Protection against internal ignition from external spark sources of lead acid batteries		N/A
M.8.1	General requirements		N/A
M.8.2	Test method		N/A
M.8.2.1	General requirements		N/A
M.8.2.2	Estimation of hypothetical volume $V_z$ (m <sup>3</sup> /s) ...:		—
M.8.2.3	Correction factors .....		—
M.8.2.4	Calculation of distance $d$ (mm) .....		—
M.9	Preventing electrolyte spillage		N/A
M.9.1	Protection from electrolyte spillage		N/A
M.9.2	Tray for preventing electrolyte spillage		N/A
M.10	Instructions to prevent reasonably foreseeable misuse (Determination of compliance: inspection, data review; or abnormal testing) .....		N/A

<b>N</b>	<b>ELECTROCHEMICAL POTENTIALS</b>		<b>P</b>
	Metal(s) used.....:	Complied, the combined electrochemical potential < 0.6 V.	—

<b>O</b>	<b>MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES</b>		<b>P</b>
	Figures O.1 to O.20 of this Annex applied .....	Considered.	—

<b>P</b>	<b>SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS</b>		<b>P</b>
P.1	General requirements	See the following details.	P
P.2.2	Safeguards against entry of foreign object	See below.	P
	Location and Dimensions (mm) .....	No openings are provided at all.	—
P.2.3	Safeguard against the consequences of entry of foreign object		P
P.2.3.1	Safeguards against the entry of a foreign object		P
	Openings in transportable equipment	No openings are provided at all.	P
	Transportable equipment with metalized plastic parts .....		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
P.2.3.2	Openings in transportable equipment in relation to metallized parts of a barrier or enclosure (identification of supplementary safeguard) .....		N/A
P.3	Safeguards against spillage of internal liquids	No such consideration.	N/A
P.3.1	General requirements		N/A
P.3.2	Determination of spillage consequences		N/A
P.3.3	Spillage safeguards		N/A
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts	No such construction.	N/A
P.4.2 a)	Conditioning testing		N/A
	T <sub>c</sub> (°C) .....		—
	T <sub>r</sub> (°C) .....		—
	T <sub>a</sub> (°C) .....		—
P.4.2 b)	Abrasion testing .....		N/A
P.4.2 c)	Mechanical strength testing .....		N/A

Q	CIRCUITS INTENDED FOR INTERCONNECTION WITH BUILDING WIRING		P
Q.1	Limited power sources	The output is complying with LPS.	P
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output	See below.	P
	- Regulating network limited output under normal operating and simulated single fault condition	(See appended table Annex Q.1)	P
Q.1.1 c)	Overcurrent protective device limited output		N/A
Q.1.1 d)	IC current limiter complying with G.9		N/A
Q.1.2	Compliance and test method	Complying with Table Q.1.	P
Q.2	Test for external circuits – paired conductor cable	No such circuit within the equipment.	N/A
	Maximum output current (A) .....	See above.	—
	Current limiting method .....	See above.	—

R	LIMITED SHORT CIRCUIT TEST		N/A
R.1	General requirements	No such consideration.	N/A
R.2	Determination of the overcurrent protective device and circuit		N/A
R.3	Test method Supply voltage (V) and short-circuit current (A)). .....		N/A



IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>S</b>	<b>TESTS FOR RESISTANCE TO HEAT AND FIRE</b>		N/A
S.1	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W	The fire enclosure was made of rated minimum V-0 class material.	N/A
	Samples, material.....:		—
	Wall thickness (mm) .....		—
	Conditioning (°C) .....		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	- Material not consumed completely		N/A
	- Material extinguishes within 30s		N/A
	- No burning of layer or wrapping tissue		N/A
S.2	Flammability test for fire enclosure and fire barrier integrity		N/A
	Samples, material.....:		—
	Wall thickness (mm) .....		—
	Conditioning (°C) .....		—
	Test flame according to IEC 60695-11-5 with conditions as set out		N/A
	Test specimen does not show any additional hole		N/A
S.3	Flammability test for the bottom of a fire enclosure		N/A
	Samples, material.....:		—
	Wall thickness (mm) .....		—
	Cheesecloth did not ignite		N/A
S.4	Flammability classification of materials		N/A
S.5	Flammability test for fire enclosures and fire barrier materials of equipment where the steady state power does not exceed 4 000 W		N/A
	Samples, material.....:		—
	Wall thickness (mm) .....		—
	Conditioning (test condition), (°C) .....		—
	Test flame according to IEC 60695-11-20 with conditions as set out		N/A
	After every test specimen was not consumed completely		N/A
	After fifth flame application, flame extinguished within 1 min		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
<b>T</b>	<b>MECHANICAL STRENGTH TESTS</b>		<b>P</b>
T.1	General requirements	See the following details.	P
T.2	Steady force test, 10 N .....	10 N applied to all components other than the parts serving as an enclosure.	P
T.3	Steady force test, 30 N .....	No internal enclosure. (See appended table T.2, T.3, T.4, T.5)	N/A
T.4	Steady force test, 100 N .....	Instead by subclause T.5. (See appended table T.2, T.3, T.4, T.5)	P
T.5	Steady force test, 250 N .....	No damaged. Except for PS3, class 3 energy sources cannot become accessible to an ordinary person or to an instructed person, and all other safeguards remain effective during and after subjected 250 N. (See appended table T.2, T.3, T.4, T.5)	P
T.6	Enclosure impact test	No damaged. Except for PS3, class 3 energy sources cannot become accessible to an ordinary person or to an instructed person, and all other safeguards remain effective during and after subjected impact test. (See appended table T.6, T.9)	P
	Fall test	A 500 g steel sphere ball fell freely from rest through a vertical distance of 1300 mm onto the sample.	P
	Swing test	By fall test above.	P
T.7	Drop test .....	Complete equipment was dropped onto a horizontal surface from the height of 1000 mm for three times. No damaged. Except for PS3, class 3 energy sources cannot become accessible to an ordinary person or to an instructed person, and all other safeguards remain effective during and after subjected drop test. (See appended table T.7)	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
T.8	Stress relief test.....:	No damaged. Except for PS3, class 3 energy sources cannot become accessible to an ordinary person or to an instructed person, and all other safeguards remain effective during and after subjected stress relief test. (See appended table T.8)	P
T.9	Impact Test (glass)	No such glass is provided within the equipment.	N/A
T.9.1	General requirements		N/A
T.9.2	Impact test and compliance		N/A
	Impact energy (J) .....		—
	Height (m) .....		—
T.10	Glass fragmentation test .....	See subclause 4.4.4.9.	N/A
T.11	Test for telescoping or rod antennas	No such antennas are provided within the equipment.	N/A
	Torque value (Nm) .....		—

<b>U</b>	<b>MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFFECTS OF IMPLSION</b>		N/A
U.1	General requirements	No CRT is provided within the equipment.	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen .....		N/A

<b>V</b>	<b>DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)</b>		P
V.1	Accessible parts of equipment	Following the probes test specified in this Annex except for Figures V.3, V.4 and V.5 are not suitable.	P
V.2	Accessible part criterion	No live parts can be accessible.	P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.1.2	TABLE: List of critical components					P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity <sup>1.</sup>	
<b>Critical components</b>	--	--	--	--	--	
Enclosure Material	SABIC INNOVATIVE PLASTICS B V	Lexan 945	V-0, 120°C, 1.5mm min. thick	UL 94	UL	
	SABIC INNOVATIVE PLASTICS JAPAN L L C	Lexan 945	V-0, 120°C, 1.5mm min. thick	UL 94	UL	
	SABIC INNOVATIVE PLASTICS US L L C	Lexan 945	V-0, 120°C, 1.5mm min. thick	UL 94	UL	
	BAYER MATERIAL SCIENCE LTD	Makrolon 6485	V-0, 115°C, 1.5mm min. thick	UL 94	UL	
	BAYER MATERIALSCIENCE AG	Makrolon 6485	V-0, 115°C, 1.5mm min. thick	UL 94	UL	
	BAYER MATERIALSCIENCE L L C	Makrolon 6485	V-0, 115°C, 1.5mm min. thick	UL 94	UL	
	BAYER THAI CO LTD	Makrolon 6485	V-0, 115°C, 1.5mm min. thick	UL 94	UL	
Appliance Inlet	DELTA ELECTRONICS , INC.	SK-1022M	2.5A, 250Vac, 70°C	IEC/EN 60320-1, UL 498	VDE, N, S, FI, UL	
Fuse (F1)	LITTELFUSE WICKMANN WERKE	392	T3.15AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248	VDE, UL	
	CONQUER ELECTRONICS CO LTD	MST	T3.15AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248	VDE, UL	
	BEL FUSE INC	RST	T3.15AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248	VDE, UL	

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	EVER ISLAND ELECTRIC CO LTD & WALTER ELECTRIC	2010	T3.15AL, 250Vac	IEC/EN 60127-1, IEC/EN 60127-3, UL 248	VDE, UL
Choke (FL1)	DELTA ELECTRONICS, INC.	CR-10-NB014	130°C	--	--
	DELTA ELECTRONICS, INC.	LFV-NB9267	130°C	--	--
- Triple insulated wire (of FL1)	FURUKAWA ELECTRIC CO LTD	TEX-E	Min. 130°C	IEC/EN 60950-1, UL 2353	TÜV, UL
	TOTOKU ELECTRIC CO LTD	TIW-2	Min. 130°C	IEC/EN 60950-1, UL 2353	TÜV, UL
	TOTOKU ELECTRIC CO LTD	TIW-3	Min. 155°C	IEC/EN 60950-1, UL 2353	TÜV, UL
	TOTOKU ELECTRIC CO LTD	TIW-E	Min. 155°C	IEC/EN 60950-1, UL 2353	TÜV, UL
Choke (FL1)	Delta Electronics, Inc.	LFV-NB10092	130°C	--	--
- Triple insulated wire (of FL1)	Furukawa Electric Co., Ltd.	TEX-E	130°C	IEC/EN 60950-1, UL 2353	VDE, UL
	Furukawa Electric Co., Ltd.	TEX-ELZ	130°C	IEC/EN 60950-1, UL 2353	TÜV, UL
	Furukawa Electric Co., Ltd.	TEX-ECEW3	130°C	IEC/EN 60950-1, UL 2353	TÜV, UL
	Totoku Electric Co., Ltd.	TIW-3 (VDE) TIW-3X (UL)	155°C	IEC/EN 60950-1, UL 2353	TÜV, UL
	Totoku Electric Co., Ltd.	TIW-3LZ (VDE) TIW-3LZX (UL)	155°C	IEC/EN 60950-1, UL 2353	TÜV, UL
	Totoku Electric Co., Ltd.	TIW-2 (VDE) TIW-2X (UL)	130°C	IEC/EN 60950-1, UL 2353	TÜV, UL
	Totoku Electric Co., Ltd.	TIW-2LZ (VDE) TIW-2LZX (UL)	130°C	IEC/EN 60950-1, UL 2353	TÜV, UL

IEC 62368-1					
Clause	Requirement + Test			Result - Remark	Verdict
Choke (FL2)	DELTA ELECTRONICS, INC.	LF-R16-NB009	130°C	--	--
	DELTA ELECTRONICS, INC.	HFV-NB9266	130°C	--	--
X-Capacitor (CX1) (0.33μF used for Bleeder Resistors (R1, R2)= 1.5MΩ only) (0.47μF used for Bleeder Resistors (R1, R2)= 1MΩ only)	ARCOTRONIC S SPA	R.46	0.33μF or 0.47μF max., 250V ac, 110°C X1 or X2 type.	<b>IEC/EN 60384 - 14: 2013 +A1, UL 60384-14</b>	VDE, UL
	Hua Jung Components Co., Ltd.	MKP	0.33μF or 0.47μF max., 250V ac, 110°C, X1 or X2 type.	<b>IEC/EN 60384 - 14: 2013 +A1, UL 60384-14</b>	VDE, UL
	OKAYA ELECTRIC INDUSTRIES Co., Ltd.	LE	0.33μF or 0.47μF max., 250V ac, 110°C, X1 or X2 type.	<b>IEC/EN 60384 - 14: 2013 +A1, UL 60384-14</b>	VDE, UL
	EPCOS ELECTRONIC COMPONENTS S A	B3292	0.33μF or 0.47μF max., 250V ac, 105°C, X1 or X2 type.	<b>IEC/EN 60384 - 14: 2013 +A1, UL 60384-14</b>	VDE, UL
	EUROPTRONIC (TAIWAN) INDUSTRIAL Cor.	MPX	0.33μF or 0.47μF max., 250V ac, 105°C, X1 or X2 type.	<b>IEC/EN 60384 - 14: 2013 +A1, UL 60384-14</b>	VDE, UL
Bridging Capacitor (CY1)	MURATA MFG Co., Ltd.	KX	680pF max., 250Vac min. Y1 type, 125°C	<b>IEC/EN 60384 - 14: 2013 +A1, UL 60384-14</b>	VDE, UL
	WALSIN TECHNOLOGY CORP	AH	680pF max., 250Vac min. Y1 type, 125°C	<b>IEC/EN 60384 - 14: 2013 +A1, UL 60384-14</b>	VDE, UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	HOLY STONE ENTERPRISE Co., Ltd.	SDC	680pF max., 250Vac min. Y1 type, 125°C	IEC/EN 60384 - 14: 2013 +A1, UL 60384-14	VDE, UL
Bridging Resistors (R13, R14, R15, R16)	KAMAYA	RVC32	9.1MΩ, 1/4W, SMD type, distance between terminals 1.26mm	IEC/EN 60950-1, clause 1.5.7.2	Tested with this appliance by ITS (TP10030283-ETS)
	TA-I	RH series	9.1MΩ, 1/4W, SMD type, distance between terminals 1.26mm	IEC/EN 60950-1, clause 1.5.7.2	Tested with this appliance by ITS (TP09080029-ETS)
	Cyntec	HVR16S	9.1MΩ, 1/4W, SMD type, distance between terminals 1.26mm	IEC/EN 60950-1, clause 1.5.7.2	Tested with this appliance by ITS (TP09070226-ETS)
Thermistor (NTC31)	UPPERMOST	TDC05D447	470kΩ at 25°C	UL 1434	UL
	THINKING	TTC-series	470kΩ at 25°C	UL 1434	UL
Transformer (T1)	Delta Electronic, Inc. <b>See *Note</b>	MV-NB8309	Class B (UL system MP-130I)	Applicable parts acc. to IEC/EN 60950-1 IEC/EN 62368-1 IEC/EN 60085	Tested with this appliance
- Bobbin (of T1)	Sumitomo Bakelite Co. Ltd.	PM-9820, PM-9630	V-0, 150°C	UL 94	UL
- Triple insulated wire (of T1)	Furukawa Electric Co., Ltd.	TEX-E	130°C	IEC/EN 60950-1, IEC 60065, EN 60065, UL 2353	VDE, UL

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	Totoku Electric Co., Ltd.	TIW-3 (for TÜV), TIW-3X (for UL), TIW-3LZ (for TÜV), TIW-3LZX (for UL)	155°C	IEC/EN 60950-1, UL 2353	TÜV, UL
	Totoku Electric Co., Ltd.	TIW-2 (for TÜV), TIW-2X (for UL), TIW-2LZ (for TÜV), TIW-2LZX (for UL), TIW-2S (for TÜV), TIW-2SX (for UL)	130°C	IEC/EN 60950-1, UL 2353	TÜV, UL
Optocoupler (IC32)	SHARP CORP ELECTRONIC COMPONENTS GROUP	PC123	dti= 0.7 mm, ext= 8.0 mm, int= 5.0 mm, isolation: AC 3000V, T= 110°C	IEC/EN 60950-1, UL 1577, <b>IEC/EN 60747-5-5</b>	UL, VDE
	VISHAY SEMICONDUCTOR GMBH	TCET1114(G)	dti= 0.7 mm, ext= 8.1 mm, int= 4.3 mm, isolation: AC 3000V, T= 110°C	IEC/EN 60950-1, UL 1577, <b>IEC/EN 60747-5-5</b>	UL, VDE
	RENESAS	PS2561BL1-1	dti= 0.4 mm, ext= 7.0 mm, int= 4.0 mm, isolation: AC 3000V, T= 120°C	IEC/EN 60950-1, UL 1577, <b>IEC/EN 60747-5-5</b>	UL, VDE
	COSMO ELECTRONICS CORP	K1010	dti.= 0.5mm, int. cr.= 5.3mm, ext. dcr= 8.0 mm, isolation: AC 3000V, 115°C	IEC/EN 60950-1, UL 1577, <b>IEC/EN 60747-5-5</b>	UL, VDE



IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	Everlight Electrical Co., Ltd.	EL816	dti = 0.5mm, ext. dcr. = 7.7mm, int. dcr. = 6.0mm, isolation: AC 5000V, 110°C	IEC/EN 60950-1, UL 1577, <b>IEC/EN 60747-5-5</b>	UL, VDE
Mylar Sheet (between PWB and EMI Shield)	SABIC INNOVATIVE PLASTICS US L L C	FR25A	Min. 0.43mm thick, V-0, 125°C	UL 94, UL746C	UL
	SABIC INNOVATIVE PLASTIC CHINA CO LTD	FR25A	Min. 0.43mm thick, V-0, 125°C	UL 94, UL746C	UL
	Sabic Innovative Plastics US L L C	FR1	Min. 0.43mm thick, V-0, 120°C	UL 94, UL746C	UL
	Sabic Innovative Plastics China Co., Ltd.	FR1	Min. 0.43mm thick, V-0, 120°C	UL 94, UL746C	UL
	Sun Delta	VS520	Min. 0.43mm thick, V-0, 130°C	UL 94, UL746C	UL
Insulation Tape (for HS2, C102, C103)	3M	1350T-3 (three layer composite tape)	130°C	IEC 60950-1, cl. 2.10.5.8, 2.10.5.9, Annex AA UL 510	Type tested by TÜV Rheinland test report no. 11013987 001 UL
	3M	1350F-1, 2 layers	130°C	UL 510	UL
Mylar Sheet (between PCB and EMI Shield)	Sichuan Dongfang insulating Material Co., Ltd.	DFR117ECO	V-0, 130°C, 0.4mm thickness min.	UL 94, UL746C	UL
Bleeder Resistors (R1, R2)	TA-I TECHNOLOGY CO., LTD.	RH12	1.5Mohm max. or 1.0Mohm max., 1/4W,	(1) IEC/EN 60065, cl 14.1 a) and b)	(1) Type tested by Semko, Ref. No. ETS-070191

IEC 62368-1					
Clause	Requirement + Test		Result - Remark		Verdict
	Taiwan Kamaya Electric co., Ltd	RVC32	1.5Mohm max. or 1.0Mohm max.,1/4W,	(1) IEC/EN 60065, cl 14.1 a) and b)	(1) Type tested by Intertek, Ref. No. TP08020140-ETS(R1)
	PROSPERITY DIELECTRICS CO LTD	FVS06	1.5Mohm max. or 1.0Mohm max.,1/4W,	(1) IEC/EN 60065, cl 14.1 a) and b)	(1) Type tested by UL, Ref. No. E358325-A1-UL
Functional component	--	--	--	--	--
Bridging Diode (BD1)	Interchangeable	Interchangeable	800V, 2-4A	--	--
Electrolytic Capacitor (C1)	Interchangeable	Interchangeable	82-120μF, 400-450V, 105°C	--	--
Electrolytic Capacitors (C31, C102, C103)	Interchangeable	Interchangeable	105°C min.	--	--
Transistor (Q1)	Interchangeable	Interchangeable	600V, 9.5-13A	--	--
PCB	Interchangeable	Interchangeable	Min. V-0, 130°C	--	--
Output Cord (VO/GND)	Interchangeable	Interchangeable	30V min., 18AWG min., 80 degree C min., VW-1 or FT-1	UL 758	UL
L/N wires	Interchangeable	Interchangeable	VW-1, 300V, 125 degree C, 20AWG min.	UL 758	UL
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039. <b>*Note:</b> Isolating Transformer plant: Delta Electronics (Wuhu) Co., Ltd.; Delta Electronics (Chen Zhou) Co., Ltd. Delta Electronics (Thailand) Public Co., Ltd.; Delta Electronics (Jiangsu) Co., Ltd.					
4.8.4, 4.8.5	TABLE: Lithium coin/button cell batteries mechanical tests				N/A
(The following mechanical tests are conducted in the sequence noted.)					

IEC 62368-1			
Clause	Requirement + Test		Verdict
4.8.4.2	TABLE: Stress Relief test		—
Part	Material	Oven Temperature (°C)	Comments
4.8.4.3	TABLE: Battery replacement test		—
Battery part no. ....			—
Battery Installation/withdrawal		Battery Installation/Removal Cycle	Comments
		1	
		2	
		3	
		4	
		5	
		6	
		8	
		9	
		10	
4.8.4.4	TABLE: Drop test		—
Impact Area	Drop Distance	Drop No.	Observations
		1	
		2	
		3	
4.8.4.5	TABLE: Impact		—
Impacts per surface	Surface tested	Impact energy (Nm)	Comments
4.8.4.6	TABLE: Crush test		—
Test position	Surface tested	Crushing Force (N)	Duration force applied (s)
Supplementary information:			

4.8.5	TABLE: Lithium coin/button cell batteries mechanical test result			N/A
Test position	Surface tested	Force (N)	Duration force applied (s)	
Supplementary information:				

5.2	TABLE: Classification of electrical energy sources			P
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IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
5.2.2.2 – Steady State Voltage and Current conditions							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				U (Vrms or Vpk)	I (Apk or Arms)	Hz	
1.	264 Vac 60 Hz	19Vdc Output <b>(Tested model: ADP-65JH AB)</b>	Normal	19.4 Vpk	--	--	ES1
			Abnormal	19.4 Vpk	--	--	
			Single fault – SC/OC (See table B.4 for details. Only least favorable value recorded)	19.4 Vpk	--	--	
2.	264 Vac 60 Hz	19.5Vdc output <b>(Tested model: ADP-65JH AC)</b>	Normal	19.9 Vpk	--	--	ES1
			Abnormal	19.9 Vpk	--	--	
			Single fault – SC/OC (See table B.4 for details. Only least favorable value recorded)	19.9 Vpk	--	--	
3.	264 Vac 60 Hz	20Vdc output <b>(Tested model: ADP-65JH AD)</b>	Normal	20.3 Vpk	--	--	ES1
			Abnormal	20.3 Vpk	--	--	
			Single fault – SC/OC (See table B.4 for details. Only least favorable value recorded)	20.3 Vpk	--	--	
4.	264 Vac 60 Hz	Secondary RTN	Normal	--	0.14 mApk	--	ES1
			Abnormal	--	0.14 mApk	--	

IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
			Single fault – SC/OC (See table B.4 for details. Only least favorable value recorded)	--	0.18 mApk	--	
5.	264 Vac 60 Hz	Plastic enclosure	Normal	--	0.01 mApk	--	ES1
			Abnormal	--	0.01 mApk	--	
			Single fault – SC/OC (See table B.4 for details. Only least favorable value recorded)	--	0.01 mApk	--	
5.2.2.3 - Capacitance Limits							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class	
				Capacitance, nF	Upk (V)		
1	264 Vac 60 Hz	Between Line and Neutral	Normal	CX1 = 0.47 uF, or CX1 = 0.33 uF (nominal, tolernace +20%)	374	ES3	
			Abnormal	--	--		
			Single fault – SC/OC	--	--		
5.2.2.4 - Single Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
			Normal				
			Abnormal				
			Single fault – SC/OC				
5.2.2.5 - Repetitive Pulses							
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters			ES Class
				Duration (ms)	Upk (V)	Ipk (mA)	
			Normal				
			Abnormal				
			Single fault – SC/OC				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

## Test Conditions:

Normal – No load or normal load condition.

Abnormal – See table B.3 for details.

Supplementary information: SC = Short-circuited, OC = Open-circuited

## Overall capacity:

CY1= 680pF;

R13, R14, R15, R16= 9.1MΩ

Single fault for 5.2.2.2 – Steady State Voltage and Current conditions was conducted with below taken into account, if any

- functional earth disconnected, and/or

- bridging resistors fault condition.

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements					P
	Supply voltage (V) .....	1. 100V-10%, 60Hz 2. 240V+10%, 50Hz  See Table B.2.5 for details of load condition. Test position: A: Label side upward B: Label side downward C: flank side of HS2 upward D: flank side of HS2 downward				—
	Ambient T <sub>min</sub> (°C) .....	--				—
	Ambient T <sub>max</sub> (°C) .....	See below				—
	Tma (°C) .....	Manufacturer's specified maximum operating ambient: + 40				—
Maximum measured temperature T of part/at:		T (°C)				Allowed T <sub>max</sub> (°C)
Tested model ADP-65JH AB						
Test voltage	1.	1.	1.	1.	2.	--
Max. ambient temperature (Tma)	40	40	40	40	40	--
T1 coil (Class 130)	102	103	101	102	101	110
T1 core (Class 130)	93	93	91	92	91	110
IC32 body	97	98	96	98	99	100
Appliance Inlet L pin	66	66	65	65	60	70
FL1 coil	88	89	86	89	75	130
FL2 coil	103	104	101	102	87	130
CX1 near FL2	94	95	92	93	86	100

IEC 62368-1						
Clause	Requirement + Test		Result - Remark			Verdict
C1 near FL2	99	99	97	98	91	105
C31 near T1	99	100	97	99	99	105
C102 near T1	86	87	86	86	85	105
C103 near T1	96	96	94	95	94	105
PCB near Q1 and HS1	94	95	93	93	92	130
Internal enclosure top side near T1	87	88	85	86	85	115
External enclosure top side near T1	78	77	95	95	75	--
Internal enclosure bottom side near T1	81	84	80	81	82	115
External enclosure bottom side near T1	72	77	73	74	76	--
--	--	--	--	--	--	--
Test voltage	--	1.	--	--	--	--
1.Ambient	--	20.5	--	--	--	--
2.T1 coil	--	71.6	--	--	--	110
14.External enclosure top side near T1	--	56.3	--	--	--	77
16.External enclosure bottom side near T1	--	53.0	--	--	--	77
Test position	--	Label down	--	--	--	--
<b>Tested model ADP-65JH AD</b>						
Test voltage	1.	1.	1.	1.	2.	--
Ambient temperature during test (Tamb)	40.0	39.3	38.2	38.5	38.5	--
Max. ambient temperature (Tma)	40.0	40.0	40.0	40.0	40.0	--
T1 coil (Class 130)	97.0	96.8	97.7	98.5	95.5	110
T1 core (Class 130)	90.7	90.5	91.2	92.4	89.3	110
IC32 body	93.7	93.9	94.5	95.2	92.8	100
C1 near FL2	90.2	90.5	90.7	91.7	84.8	105
Between C102 and C103 near T1	88.5	88.6	89.5	90.4	87.4	105
Internal enclosure top side near T1	82.5	82.7	82.7	83.9	80.8	115
External enclosure top side near T1	70.9	71.2	70.7	70.9	71.4	--
Internal enclosure bottom side near T1	83.9	83.5	84.1	85.0	81.9	115
External enclosure bottom side near T1	73.5	70.6	72.8	73.7	70.1	--
Test position	A	B	C	D	B	--

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

The temperatures were measured under the worse case normal mode defined in table B.2.5.

Temperature limits are calculated as follows:

Winding components providing safety isolation:

Class B →  $T_{max} = 120 - 10 = 110\text{ }^{\circ}\text{C}$

The results of touch temperatures in single fault and abnormal conditions are addressed in table B.3 & B.4.

Temperature T of winding:	$t_1$ ( $^{\circ}\text{C}$ )	$R_1$ ( $\Omega$ )	$t_2$ ( $^{\circ}\text{C}$ )	$R_2$ ( $\Omega$ )	T ( $^{\circ}\text{C}$ )	Allowed $T_{max}$ ( $^{\circ}\text{C}$ )	Insulation class
--	--	--	--	--	--	--	--

Supplementary information:

Note 1:  $T_{ma}$  should be considered as directed by applicable requirement.

Note 2:  $T_{ma}$  is not included in assessment of Touch Temperatures (Clause 9).

5.4.1.10.2	TABLE: Vicat softening temperature of thermoplastics			N/A
Penetration (mm) .....				—
Object/ Part No./Material		Manufacturer/trademark	T softening (°C)	
Supplementary information:				

5.4.1.10.3	TABLE: Ball pressure test of thermoplastics			P
Allowed impression diameter (mm) ..... :			≤ 2 mm	—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)	
Supplementary information:				
Phenolic materials used are accepted without test due to its physical characteristics is clear from examination.				

<b>5.4.2.2, 5.4.2.4 and 5.4.3</b>	<b>TABLE: Minimum Clearances/Creepage distance</b>						P
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz) <sup>1</sup>	Required cl (mm)	cl (mm) <sup>2</sup>	Required cr (mm) <sub>3</sub>	cr (mm)
Functional:							
Primary of opposite polarity at appliance inlet	420	250	--	1.5 (1.15 * 1.27) 1.8 (1.15 * 1.5) for 5.4.2.3	4.0	2.5	4.0



IEC 62368-1							
Clause	Requirement + Test			Result - Remark			Verdict
Under the fuse	420	250	--	1.5 (1.15 * 1.27) 1.8 (1.15 * 1.5) for 5.4.2.3	3.0	2.5	3.0
Reinforced:							
<b>Primary components (with 10 N) or trace to user accessible parts (enclosure outside) (RI)</b>	<b>420</b>	<b>250</b>	<b>--</b>	<b>3.0 (1.15 * 2.54) 3.5 (1.15 * 3.0) for 5.4.2.3</b>	<b>See below</b>	<b>5.0</b>	<b>See below</b>
- Primary shield to outside accessible parts					5.2		5.2
- "N" trace to outside accessible parts					6.3		6.3
<b>Primary components (with 10 N) to secondary components (with 10 N) (RI)</b>	<b>420</b>	<b>250</b>	<b>--</b>	<b>3.0 (1.15 * 2.54) 3.5 (1.15 * 3.0) for 5.4.2.3</b>	<b>See below</b>	<b>5.0</b>	<b>See below</b>
- C31 to HS2					9.5		9.5
- T1 primary core to C102	568	266			10.0	5.4	10.0
<b>Primary components (with 10 N) / traces to secondary traces (RI)</b>	<b>420</b>	<b>250</b>	<b>--</b>	<b>3.0 (1.15 * 2.54) 3.5 (1.15 * 3.0) for 5.4.2.3</b>	<b>See below</b>	<b>5.0</b>	<b>See below</b>
- Under CY1					7.2		7.2
- Between terminations of R13+R14+R15+R16 (each has 2mm)					5.0		5.0
- Under IC31					8.2		8.2
- Under T1	568	266			15.0	5.4	15.0
Supplementary information:							
Note 1: Only for frequency above 30 kHz.							
Note 2: See table 5.4.2.4 if this is based on electric strength test.							
Note 3: Provide Material Group							
<ul style="list-style-type: none"> <li>FI= Functional insulation, BI= Basic insulation, SI= Supplementary insulation, RI= Reinforced insulation.</li> </ul>							

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
	<ul style="list-style-type: none"> <li>For clearances and creepages did not describe as above were far less than limit.</li> <li>The working voltage is considered not more than 250V rms and 420V peak, if not otherwise specified.</li> <li>Slot dimension 6.0mm by 1.2mm under inlet wire connections, 6.0mm by 1.2mm under F1, 4.7mm by 1.2mm between C31 (-) and T1, 3.8mm by 1.2mm between inlet wire connection (L) and FL2.</li> <li>Creepage and clearance distance under R13, R14, R15, R16 resistors with each 1.26mm.</li> <li>Tubed components: R9, FG-wire to secondary.</li> <li>Glued components: D1, CY1, C1, FL2, C31 FG-wire between T1 and Q1.</li> <li>On layer plastic insulation material at least 0.4mm thick is provided inside the primary shield providing functional insulation to primary PCB solder side and providing reinforced insulation to secondary.</li> <li>Three layers composite insulation tape used in following parts: <ul style="list-style-type: none"> <li>- wrapped on secondary heatsink HS2 maintaining reinforced insulation from the heatsink to surrounding primary components and parts start from secondary side with overlapping of 8.2mm at primary side.</li> <li>- glued inside primary shield maintaining reinforced insulation to secondary side.</li> <li>- glued on C102, C103 to T1.</li> </ul> </li> <li>A metal shield is provided, consisting of three parts connected to primary.</li> <li>The bottom part of the metal shield is insulated to the solder side of the PCB and to the secondary side with the mentioned insulating plastic sheet. On the two top parts of the shield three layer insulation tape provides reinforced insulation to secondary.</li> <li>The correction factors of clearance is 1.15, specified in table A. 2 of IEC 60664-1 for altitude 3048 meters.</li> </ul>		

5.4.2.3	TABLE: Minimum Clearances distances using required withstand voltage			P
	Overvoltage Category (OV):			*)
	Pollution Degree:			**)
Clearance distanced between:		Required withstand voltage	Required cl (mm)	Measured cl (mm)
See table 5.4.2.2, 5.4.2.4 and 5.4.3 for locations (FI)		2500	1.8 (1.15 * 1.5)	See table 5.4.2.2, 5.4.2.4 and 5.4.3 for measurements
See table 5.4.2.2, 5.4.2.4 and 5.4.3 for locations (BI)		2500	1.8 (1.15 * 1.5)	See table 5.4.2.2, 5.4.2.4 and 5.4.3 for measurements
See table 5.4.2.2, 5.4.2.4 and 5.4.3 for locations (SI)		2500	1.8 (1.15 * 1.5)	See table 5.4.2.2, 5.4.2.4 and 5.4.3 for measurements
See table 5.4.2.2, 5.4.2.4 and 5.4.3 for locations (RI)		2500	3.5 (1.15 * 3.0)	See table 5.4.2.2, 5.4.2.4 and 5.4.3 for measurements
Supplementary information: See table 5.4.2.2, 5.4.2.4 and 5.4.3 for correction factors of clearance used. *) See Over voltage category (OVC) in section “TEST ITEM PARTICULARS” for details. ) See Pollution Degree addressed in section “TEST ITEM PARTICULARS” for details.				

<b>5.4.2.4</b>	<b>TABLE: Clearances based on electric strength test</b>	<b>N/A</b>
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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Test voltage applied between:	Required cl (mm)	Test voltage (kV) peak / r.m.s. / d.c.	Breakdown Yes / No
Supplementary information:			

<b>5.4.4.2, 5.4.4.5 c) 5.4.4.9</b>	<b>TABLE: Distance through insulation measurements</b>					P
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)	
Optocoupler (reinforced insulation)	420	>30	See table 4.1.2	0.4	See table 4.1.2	
Plastic Enclosure (reinforced insulation)	420	>30	See table 4.1.2	0.4	See table 4.1.2	
Insulator (reinforced insulation)	420	>30	See table 4.1.2	0.4	See table 4.1.2	
Supplementary information:						

<b>5.4.9</b>	<b>TABLE: Electric strength tests</b>				P
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No		
Functional:					
Between the two ends of fuse while opened (for all sources)	DC	2500	No		
Line to Neutral (fuse disconnected)	DC	2500	No		
Basic/supplementary:					
--	--	--	--		
Reinforced:					
Unit: primary to secondary	DC	4000	No		
Unit: primary to plastic enclosure wrapped with metal foil	DC	4000	No		
Transformer (T1): primary winding to secondary winding	DC	4000	No		
Transformer (T1): core to secondary winding	DC	4000	No		
One layer of insulation tape	DC	4000	No		
Optocoupler: primary to secondary	DC	4000	No		
Insulator	DC	4000	No		
Routine Tests:	--	--	--		

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:

Note 1: For details refer to appended table 4.1.2.

Note 2: Non-separable, using standard procedure 150 % of Utest, if applicable.

Unless otherwise specified, tests applied for all sources in Table 4.1.2.

5.5.2.2	TABLE: Stored discharge on capacitors					P
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds) (Vpeak)	ES Classification	
X-capacitors installed for testing are: CX1 = 0.47 uF						
<input checked="" type="checkbox"/> bleeding resistor rating: R1= R2= 1 Mohm						
<input type="checkbox"/> Additional test for ICX: None						
264 Vac, 60 Hz	Phase to Neutral	N fuse in	No switch	36	ES1	
264 Vac, 60 Hz	Phase to Neutral	S fuse in BD1 open	No switch	40	ES1	
X-capacitors installed for testing are: CX1 = 0.33 uF						
<input checked="" type="checkbox"/> bleeding resistor rating: R1= R2= 1.5 Mohm						
<input type="checkbox"/> Additional test for ICX: None						
264 Vac, 60 Hz	Phase to Neutral	N fuse in	No switch	38	ES1	
264 Vac, 60 Hz	Phase to Neutral	S fuse in BD1 open	No switch	42	ES1	
Supplementary information:						
Notes:						
A. Test Location:						
Phase to Neutral; Phase to Phase; Phase to Earth; and/or Neutral to Earth.						
B. Operating condition abbreviations:						
N – Normal operating condition (e.g., normal operation, or open fuse); S – Single fault condition.						

<b>5.6.6.2</b>	<b>TABLE: Resistance of protective conductors and terminations</b>				<b>N/A</b>
Accessible part	Test current (A)	Duration (min)	Voltage drop (V)	Resistance (mΩ)	
Supplementary information:					

<b>5.7.2.2, 5.7.4</b>	<b>TABLE: Earthed accessible conductive part</b>	<b>N/A</b>
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IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
Supply voltage .....		Vac	—
Location		Test conditions specified in 6.1 of IEC 60990 or Fault Condition No in IEC 60990 clause 6.2.2.1 through 6.2.2.8, except for 6.2.2.7	Touch current (mA)
		1	
		2*	
		3	
		4	
		5	
		6	
		8	
Supplementary information:			
Notes:			
[1] Supply voltage is the anticipated maximum Touch Voltage.			
[2] Earthed neutral conductor [Voltage differences less than 1% or more].			
[3] Specify method used for measurement as described in IEC 60990 subclause 4.3.			
[4] IEC60990, subclause 6.2.2.7, Fault 7 not applicable.			
[5] (*) IEC60990, subclause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.			

6.2.2		TABLE: Electrical power sources (PS) measurements for classification				P
Source	Description	Measurement	Max Power after 3 s	Max Power after 5 s <sup>*)</sup>	PS Classification	
Tested model ADP-65JH AD						
20Vdc output	Output overloaded	Power (W) :	92.8	92.8	PS2	
		V <sub>A</sub> (V) :	20.2	20.2		
		I <sub>A</sub> (A) :	4.75	4.75		
Tested model ADP 65JH AB						
19Vdc output	Output overloaded	Power (W) :	89.4	89.4	PS2	
		V <sub>A</sub> (V) :	19.2	19.2		
		I <sub>A</sub> (A) :	4.8	4.8		
Supplementary information:						
(*) Measurement taken only when limits at 3 seconds exceed PS1 limits.						
Note: The worst case is considered at the power measurement for worst-case fault.						
Maximum voltage and current at load or no-load recorded.						

6.2.3.1	TABLE: Determination of Potential Ignition Sources (Arcing PIS)	N/A
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IEC 62368-1				
Clause	Requirement + Test		Result - Remark	Verdict
Location	Open circuit voltage After 3 s ( $V_p$ )	Measured r.m.s current ( $I_{rms}$ )	Calculated value ( $V_p \times I_{rms}$ )	Arcing PIS? Yes / No
Supplementary information: All components located within the EUT are considered as arcing PIS. An Arcing PIS requires a minimum of 50 V (peak) a.c. or d.c. An Arcing PIS is established when the product of the open circuit voltage ( $V_p$ ) and normal operating condition rms current ( $I_{rms}$ ) is greater than 15.				

6.2.3.2	TABLE: Determination of Potential Ignition Sources (Resistive PIS)					N/A
Circuit Location (x-y)	Operating Condition (Normal / Describe Single Fault)	Measured wattage or VA During first 30 s (W / VA)	Measured wattage or VA After 30 s (W / VA)	Protective Circuit, Regulator, or PTC Operated? Yes / No (Comment)	Resistive PIS? Yes/No	
Supplementary information: All components located within the EUT are considered as resistive PIS. A combination of voltmeter, VA and ammeter IA may be used instead of a wattmeter. If a separate voltmeter and ammeter are used, the product of ( $VA \times IA$ ) is used to determine Resistive PIS classification. A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, <u>or</u> (b) under single fault conditions has either a power exceeding 100 W measured immediately after the introduction of the fault if electronic circuits, regulators or PTC devices are used, or has an available power exceeding 15 W measured 30 s after introduction of the fault.						

8.5.5	TABLE: High Pressure Lamp		N/A
Description	Values	Energy Source Classification	
Lamp type .....		—	
Manufacturer.....		—	
Cat no. ....		—	
Pressure (cold) (MPa) .....		MS_	
Pressure (operating) (MPa).....		MS_	
Operating time (minutes).....		—	
Explosion method .....		—	
Max particle length escaping enclosure (mm). :		MS_	
Max particle length beyond 1 m (mm) .....		MS_	
Overall result .....			
Supplementary information:			

B.2.5	TABLE: Input test	P
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IEC 62368-1							
Clause	Requirement + Test				Result - Remark		Verdict
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No.	I fuse (A)	Condition/status
<b>Tested model ADP-65H AB</b>							
90	1.38	--	74.4	--	F1	1.38	Max. Normal load at 50Hz
90	1.41	--	74.6	--	F1	1.41	Max. Normal load at 60Hz
100	1.27	1.5	73.9	--	F1	1.27	Max. Normal load at 50Hz
100	1.30	1.5	73.9	--	F1	1.30	Max. Normal load at 60Hz
240	0.75	1.5	73.4	--	F1	0.75	Max. Normal load at 50Hz
240	0.77	1.5	73.2	--	F1	0.77	Max. Normal load at 60Hz
264	0.71	--	73.8	--	F1	0.71	Max. Normal load at 50Hz
264	0.72	--	74.1	--	F1	0.72	Max. Normal load at 60Hz
<b>Tested model ADP-65JH AC</b>							
90	1.38	--	74.4	--	F1	1.38	Max. Normal load at 50Hz
90	1.41	--	74.6	--	F1	1.41	Max. Normal load at 60Hz
100	1.27	1.5	73.9	--	F1	1.27	Max. Normal load at 50Hz
100	1.30	1.5	73.9	--	F1	1.30	Max. Normal load at 60Hz
240	0.75	1.5	73.4	--	F1	0.75	Max. Normal load at 50Hz
240	0.77	1.5	73.2	--	F1	0.77	Max. Normal load at 60Hz
264	0.71	--	73.8	--	F1	0.71	Max. Normal load at 50Hz
264	0.72	--	74.1	--	F1	0.72	Max. Normal load at 60Hz
<b>Tested model ADP-65JH AD</b>							
90	1.38	--	73.9	--	F1	1.38	Max. Normal load at 50Hz
90	1.40	--	73.9	--	F1	1.40	Max. Normal load at 60Hz
100	1.27	1.5	73.3	--	F1	1.27	Max. Normal load at 50Hz
100	1.30	1.5	73.4	--	F1	1.30	Max. Normal load at 60Hz
240	0.76	1.5	72.9	--	F1	0.76	Max. Normal load at 50Hz
240	0.77	1.5	72.7	--	F1	0.77	Max. Normal load at 60Hz
264	0.71	--	73.3	--	F1	0.71	Max. Normal load at 50Hz
264	0.72	--	73.2	--	F1	0.72	Max. Normal load at 60Hz
Supplementary information:							
Measurements did not exceed the rated current by more than 10%.							

B.3	TABLE: Abnormal operating condition tests	P
Ambient temperature (°C) .....	25 °C, if not specified	—
Power source for EUT: Manufacturer, model/type, output rating .....	--	—

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
Component No.	Abnormal condition / Fault condition	Supply voltage, (V)	Test time (ms)	Fuse No.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
<b>Tested model ADP-65JH AB</b>								
Output	s-c	240	5 min	F1	0.12	--	--	Input: 0.30W, output: shutdown, no hazard.
Output	overloaded	264	22.6h	F1	0.79 ~ 0.00	→	→	NB, NC, NT. I/P=102.30W ~ 0.00W Output overloaded up to 5.00A before All output foldback Highest temperature at: 1. Ambient= 24.5degC 14.External enclosure top side near T1= 68.1degC 16.External enclosure bottom side near T1= 64.5degC No hazards.
Output	o-l	240	8.5h	F1	0.03	→	→	Input:1.0~104W, output: foldback. Imax before foldback: 1.07A Max temp:T1 coil= 118°C, T1 core= 109°C, IC31= 112°C, Ambient= 33°C, no hazard.
<b>Tested model ADP-65JH AD</b>								
Output	o-l	264	18h	F1	--	→	→	Output overloaded up to 4.7A fold-back. Highest temperature at T1 winding =108°C, Ambient =21.5°C. No hazards.
Output	s-c	264	0.5h	F1	0.03	--	--	Output shutdown. Temperature stable at T1 winding =29.8°C, Ambient =26.2°C. No hazards.



IEC 62368-1								
Clause	Requirement + Test					Result - Remark		Verdict
T1 pin (1-2)	s-c	264	1.5h	F1	0.03	→	→	Output shutdown immediately. Temperature stable at T1 winding =28.2°C, Ambient =25.4°C. No hazards.
<p>Supplementary information: Test table is provided to record abnormal including Thermal burn injury.</p> <ul style="list-style-type: none"> <li>The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; besides, all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions.</li> <li>The test result shown no Class 1 or 2 energy source become Class 3 level during and after single fault condition.</li> <li>The overloaded condition is according to annex G.5.3.3.</li> <li>Accessible parts (@ ta = 25°C) = 87 °C (plastic)</li> <li>The following key and corresponding comments may be used to describe the final results.</li> </ul> <div style="display: flex; justify-content: space-between;"> <div> <p>NB - No indication of dielectric breakdown</p> <p>YB - Dielectric breakdown (indicate time and location)</p> <p>NC - Cheesecloth remained intact</p> <p>I/P - Input</p> <p>O/P - Output</p> <p>NI - No ignition</p> <p>BT - Circuit Breaker Trip</p> </div> <div> <p>YC - Cheesecloth charred or flamed</p> <p>NT - Tissue paper remained intact</p> <p>YT - Tissue paper charred or flamed</p> <p>@ - It indicated that those denoted tests were repeated 2 times (totally 3 times) and get the same test results.</p> <p>AR - All accessible parts remained within their classified energy levels</p> <p>LC - Load condition</p> <p>AR - All accessible parts remained within their classified energy levels</p> </div> </div> <ul style="list-style-type: none"> <li>See Table B.2.5 for details of load condition.</li> </ul>								

B.4 TABLE: Fault condition tests								P
Ambient temperature (°C) .....					25 °C, if not specified			—
Power source for EUT: Manufacturer, model/type, output rating .....					--			—
Component No.	Fault condition	Supply voltage, (V)	Test time (ms)	Fuse No.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
<b>Tested model ADP-65JH AB</b>								
FL1	s-c	240	1s	F1	--	--	--	Input: F1 open, breaker trip output: no output, no hazard.

IEC 62368-1								
Clause	Requirement + Test				Result - Remark			Verdict
FL2	s-c	240	1s	F1	--	--	--	Input: F1 open, breaker trip output: no output, no hazard.
BD1 AC-+	s-c	240	1s	F1	--	--	--	Input: F1 open, breaker trip output: no output, components damaged: BD1, no hazard.
BD1 AC--	s-c	240	1s	F1	--	--	--	Input: F1 open, breaker trip output: no output, components damaged: BD1, no hazard.
C1	s-c	240	1s	F1	--	--	--	Input: F1 open, breaker trip output: no output, components damaged: BD1, no hazard.
C31	s-c	240	5 min	F1	0.12	--	--	Input: 0.30W, output: shutdown, no hazard.
Q1 (G-S)	s-c	240	5 min	F1	0.12	--	--	Input: 0.30W, output: shutdown, no hazard.
Q1 (G-D)	s-c	240	1s	F1	--	--	--	Input: F1 open, output: no output, components damaged: BD1, Q1, R9, R32, no hazard.
Q1 (D-S)	s-c	240	1s	F1	--	--	--	Input: F1 open, breaker trip output: no output, components damaged: BD1, Q1, R9, R32, no hazard.
IC32 pin (1-2)	s-c	240	5 min	F1	0.12	--	--	Input: 0.30W Output: shutdown, no hazard.
IC32 pin (3-4)	s-c	240	5 min	F1	0.12	--	--	Input: 0.30W Output: shutdown, no hazard.
IC32 pin (3)	o-c	240	5 min	F1	0.12	--	--	Input: 0.30W Output: shutdown, no hazard.

IEC 62368-1								
Clause	Requirement + Test					Result - Remark		Verdict
T1 pin (1-2)	s-c	240	5 min	F1	0.12	--	--	Input: 0.40W Output: shutdown, no hazard.
T1 pin (3-4)	s-c	240	5 min	F1	0.12	--	--	Input: 0.40W Output: shutdown, no hazard.
T1 pin (A-B)	s-c	240	5 min	F1	0.12	--	--	Input: 0.30W, output: shutdown, no hazard.
D101	s-c	240	5 min	F1	0.12	--	--	Input: 0.30W Output: shutdown, no hazard.
IC31 pin 6 to pin 14	s-c	240	5 min	F1	0.12	--	--	Input: 0.30W output: shutdown, components damaged: R3, no hazard.
IC31 pin 10 to pin 14	s-c	240	1s	F1	--	--	--	Input: F1 open, breaker trip output: no output, components damaged: R3, no hazard.
<b>Tested model ADP-65JH AD</b>								
T1 pin (3-4)	s-c	264	5min.	F1	0.03	--	--	Output shutdown immediately. Temperature No hazards.
T1 pin (A-B)	s-c	264	5min.	F1	0.03	--	--	Output shutdown immediately. Temperature No hazards.
D101	s-c	264	5min.	F1	0.03	--	--	Output shutdown immediately. Temperature No hazards.
Supplementary information: <ul style="list-style-type: none"> <li>The test result shown all safeguards remained effective and didn't lead to a single fault condition during abnormal operating condition; besides, all safeguards complied with applicable requirements in this standard after restoration of normal operating conditions.</li> <li>The test result shown no Class 1 or 2 energy source become Class 3 level during and after single fault condition.</li> <li>For fuse opened condition, carried out for all sources of fuse.</li> <li>For test results with fuse opened condition have been repeated twice (three tests total) for all sources of fuse with the same outcome.</li> <li>The following key and corresponding comments may be used to describe the final results. In fault column, s-c=short-circuited, o-c=open-circuited, o-l=over-loaded.</li> <li>See Table B.2.5 for details of load condition.</li> </ul>								

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict

Annex M	TABLE: Batteries								N/A	
The tests of Annex M are applicable only when appropriate battery data is not available									N/A	
Is it possible to install the battery in a reverse polarity position? .....									N/A	
	Non-rechargeable batteries			Rechargeable batteries						
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging		
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	
Max. current during normal condition										
Max. current during fault condition										
Test results:									Verdict	
- Chemical leaks									N/A	
- Explosion of the battery									N/A	
- Emission of flame or expulsion of molten metal									N/A	
- Electric strength tests of equipment after completion of tests									N/A	
Supplementary information:										

Annex M.4	Table: Additional safeguards for equipment containing secondary lithium batteries					N/A
Battery/Cell No.	Test conditions	Measurements			Observation	
		U	I (A)	Temp (C)		
	Normal					
	Abnormal					
	Single fault –SC/OC					
	Normal					
	Abnormal					
	Single fault – SC/OC					
Supplementary Information:						
Battery identification	Charging at T <sub>lowest</sub> (°C)	Observation	Charging at T <sub>highest</sub> (°C)	Observation		
Supplementary Information:						

IEC 62368-1						
Clause	Requirement + Test	Result - Remark			Verdict	
Annex Q.1	TABLE: Circuits intended for interconnection with building wiring (LPS)					P
Note: Measured UOC (V) with all load circuits disconnected: See below.						
Output Circuit	Components	U <sub>oc</sub> (Vdc)	I <sub>sc</sub> (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
Tested model ADP 65JH AB						
As above	Normal condition	19.28V	4.5	≤8	84.3	≤100
As above	Single fault at R9 o-c	--	0 (Output shut down when apply fault)	≤8	0 (Output shut down when apply fault)	≤100
As above	Single fault at R36 o-c	--	0 (Output shut down when apply fault)	≤8	0 (Output shut down when apply fault)	≤100
As above	Single fault at R9 s-c	19.28V	5.0	≤8	93.2	≤100
As above	Single fault at R36 s-c	19.28V	4.4	≤8	82.4	≤100
As above	Single fault at IC32 pin 1 to pin 2 s-c	--	0 (Output shut down when apply fault)	≤8	0 (Output shut down when apply fault)	≤100
As above	Single fault at IC32 pin 3 to pin 4 s-c	--	0 (Output shut down when apply fault)	≤8	0 (Output shut down when apply fault)	≤100
Tested model ADP 65JH AD						
As above	Normal condition	20.15V	4.4	≤8	86.3	≤100
As above	Single fault at R9 o-c	--	0 (Output shut down when apply fault)	≤8	0 (Output shut down when apply fault)	≤100
As above	Single fault at R36 o-c	--	0 (Output shut down when apply fault)	≤8	0 (Output shut down when apply fault)	≤100
As above	Single fault at R9 s-c	20.15V	4.8	≤8	92.7	≤100
As above	Single fault at R36 s-c	20.15V	4.3	≤8	83.5	≤100
As above	Single fault at IC32 pin 1 to pin 2 s-c	--	0 (Output shut down when apply fault)	≤8	0 (Output shut down when apply fault)	≤100

IEC 62368-1						
Clause	Requirement + Test		Result - Remark			Verdict
As above	Single fault at IC32 pin 3 to pin 4 s-c	--	0 (Output shut down when apply fault)	≤8	0 (Output shut down when apply fault)	≤100
As above	Single fault at IC32 pin 3 o-c	--	0 (Output shut down when apply fault)	≤8	0 (Output shut down when apply fault)	≤100
Supplementary information: s-c = Short-circuited; o-c = Open-circuited. Test voltage: 240V, 60Hz.						

T.2, T.3, T.4, T.5	TABLE: Steady force test					P
Part/Location	Material	Thickness (mm)	Force (N)	Test duration (sec)	Observation	
Enclosure/ Top side	See appended table 4.1.2	See appended table 4.1.2	250	5	Not damaged.	
Enclosure/ Flank sides	See appended table 4.1.2	See appended table 4.1.2	250	5	Not damaged.	
Enclosure/ Bottom side	See appended table 4.1.2	See appended table 4.1.2	250	5	Not damaged.	
Supplementary information: Containing all sources during the test. For details refer to appended table 4.1.2.						

T.6, T.9		TABLE: Impact tests			P
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation	
Enclosure/ Top side	See appended table 4.1.2	See appended table 4.1.2	1300	Not damaged.	
Enclosure/ Flank sides	See appended table 4.1.2	See appended table 4.1.2	1300	Not damaged.	
Enclosure/ Bottom side	See appended table 4.1.2	See appended table 4.1.2	1300	Not damaged.	
Supplementary information: Containing all sources during the test. For details refer to appended table 4.1.2.					

T.7	TABLE: Drop tests				P
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IEC 62368-1				
Clause	Requirement + Test		Result - Remark	Verdict
Part/Location	Material	Thickness (mm)	Drop height (mm)	Observation
Enclosure/ Top side	See appended table 4.1.2	See appended table 4.1.2	1000	Not damaged.
Enclosure/ Flank sides	See appended table 4.1.2	See appended table 4.1.2	1000	Not damaged.
Enclosure/ Bottom side	See appended table 4.1.2	See appended table 4.1.2	1000	Not damaged.
Supplementary information: Containing all sources during the test. For details refer to appended table 4.1.2.				

T.8	TABLE: Stress relief test				P
Part/Location	Material	Thickness (mm)	Oven temperature (°C)	Duration (h)	Observation
Plastic Enclosure (for all sources)	Plastic	See appended table 4.1.2	105	7	No damaged, the hazardous live parts cannot be touched.
Supplementary information: Containing all sources during the test. For details refer to appended table 4.1.2.					

**List of test equipment used:**

All applicable tests were conducted before equipment's calibration due date.

Instr. Code	Instrument I.D.	Instrument Type	Range Used Or	Make and Model	Calibration Date	
					Last	Due
See attachments attached behind all test datasheet for details.						
3	E18-1641	DC Load	80V/60A	Chroma, 6334	2018-12-20	2019-12-19
5	E18-2103	DC Load	80V/60A	Chroma, 6334	2018-07-23	2020-07-23
40	E18-1566	AC converter	300V/200A/4KW 45Hz~500Hz	EXTECH 6400	2019-04-02	2020-04-01
42	E18-1530	AC converter	300V/125A 45Hz~120Hz	IDRC CIF- 1530AP	N.C	N.C
48	E18-0964	AC Voltage converter	300V/19A	Toptek, TK-2020	N.C	N.C
52	E18-T147	AC Voltage converter	300V/10A	Toptek, TK-2010	N.C	N.C
73	E09-231	Power Meter (CF=3)	(A) 500V/10A (B) 500V/3A (C) 500V/0.3A	Chroma, 2100	2019-03-07	2020-03-06
77	E09-237	Power Meter (CF=2)	(A)300V/20A (B)300V/10A (C)300V/5A	PRODIDIT, 4010A	2019-05-02	2020-05-01
82	E10-1761	Temp. collector	(J) J-type: -150°C - 1200°C (T) T-type: -100°C - 400°C	Agilent,34970A	2019-08-15	2020-08-14
94	E07-1067	Oscilloscope	300MHS 2.5GS/s	Tektronix,TDS303 2C	2019-06-25	2020-06-24
98	E12-210	Withstanding Voltage Tester	10KV (>500VA)	KiKusui, Tos5101	2019-08-13	2020-02-12
99	E26-064	Touch Current Tester	0-10mA	EXTECH 7630	2019-08-12	2020-08-11
106	E20-329	High Voltage Probe	20kV DC / 40kV pk / 100M ohm / 3.0pF	Tektronix P6015A	2019-05-11	2020-05-10
109	E24-715	Thermo- Hygrometer	30-90%RH/ ~ 15-50°C	DICKSON,TM320	2019-03-08	2020-03-07
112	E08-087	Timer	0-99 Min	Timer	2019-07-05	2020-07-04
120	E22-825 (Lab)	Caliper	150mm/6in	Mitutoyo Digmatic	2019-07-31	2020-07-30
E	TF-02	Capacitance Discharge Test Fixture	N/A	DELTA	N.C	N.C
O	N/A	Cheese cloth	39.2 g/m <sup>2</sup>	ED&D ,ACC-01	N.C	N.C



P	N/A	Tissue paper	20.5 g/m <sup>2</sup>	ED&D,ATP-01	N.C	N.C
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Clause	Requirement + Test	Result - Remark	Verdict
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5.4.1.8	Table: working voltage measurement			P
Location		RMS voltage (V)	Peak voltage (V)	Comments
Tested model ADP-65JH AB				
T1 pin 1 to pin A	204	345	At maximum rated load.	
T1 pin 1 to pin B, GND	209	390	At maximum rated load.	
T1 pin 2 to pin A	201	360	At maximum rated load.	
T1 pin 2 to pin B, GND	198	340	At maximum rated load.	
T1 pin 3 to pin A	203	400	At maximum rated load.	
T1 pin 3 to pin B, GND	207	340	At maximum rated load.	
T1 pin 4 to pin A	245	510	At maximum rated load.	
T1 pin 4 to pin B, GND	266*	545*	At maximum rated load.	
Tested model ADP-65JH AD				
T1 pin 1 to pin A	191	364	At maximum rated load.	
T1 pin 1 to pin B, GND	193	356	At maximum rated load.	
T1 pin 2 to pin A	193	384	At maximum rated load.	
T1 pin 2 to pin B, GND	191	352	At maximum rated load.	
T1 pin 3 to pin A	199	416	At maximum rated load.	
T1 pin 3 to pin B, GND	196	404	At maximum rated load.	
T1 pin 4 to pin A	240	564	At maximum rated load.	
T1 pin 4 to pin B, GND	259*	568*	At maximum rated load.	
T1 pin 4 to pin B (Input voltage 100Vac/60Hz)	147	372	At maximum rated load.	
supplementary information				
The unit was connected to AC 240V, 50Hz. An asterisk indicates the highest measured working voltage. Highest Transformer Switching Frequency: 91 kHz				

5.1	TABLE: evaluation of voltage limiting components in SELV circuits			P
Component (measured between)		max. voltage (V) (normal operation)		Voltage Limiting Components
		V peak	V d.c.	
Tested model ADP-65JH AD				
T1 pin A – B (GND)		64.0	--	At maximum rated load.
		47.2	--	After C101.
		--	20.8	After D101, R101, R105, R102

# ATTACHMENT

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Clause	Requirement + Test	Result - Remark	Verdict
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)	
Tested model ADP-65JH AD			
R101 (s-c)		20.2V (Normal operation after short circuit of the voltage limiting component R101)	
D101 (s-c)		0V (output shutdown immediately after short circuit of the voltage limiting component D101)	
Tested model ADP 65JH AB			
R101 (s-c)		19.0V (Normal operation after short circuit of the voltage limiting component R101)	
D101 (s-c)		0V (output shutdown immediately after short circuit of the voltage limiting component D101)	
supplementary information			
Test voltage 240V, 60Hz s-c=Short circuit			

Clause	Requirement + Test	Result - Remark	Verdict
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G.5.3.2		TABLE: Transformers					P
Loc.	Tested insulation	Working voltage peak / V (5.4.1.8)	Working voltage rms / V (5.4.1.8)	Required electric strength (5.4.9)	Required clearance / mm (5.4.2)	Required creepage distance / mm (5.4.3)	Required distance thr. insul. (5.4.4)
T1	Primary to secondary (RI)	568	266	See 5.4.9	3.0 (1.15 * 2.54) for 5.4.2.2 3.5 (1.15 * 3.0) for 5.4.2.3	5.4	Min. 2 layers, 0.4 mm or TIW
As above	Primary to core (OP)	--	--	--	--	--	--
As above	Secondary to core (RI)	568	266	See 5.4.9	3.0 (1.15 * 2.54) for 5.4.2.2 3.5 (1.15 * 3.0) for 5.4.2.3	5.4	Min. 2 layers, 0.4 mm or TIW
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
As above	Primary winding to secondary winding (RI)			See 5.4.9	--	--	TIW
As above	Primary core to secondary winding exits (RI)			--	--	--	TIW
As above	Primary winding to core (OP)			See 5.4.9	--	--	--
As above	Primary part and secondary part (RI)			See 5.4.9	12.0	12.0	--
As above	Primary part and core (OP)			--	--	--	--
As above	Secondary part and core (RI)			See 5.4.9	12.0	12.0	--
As above	Secondary part and primary winding (RI)			See 5.4.9	12.0	12.0	--
Supplementary information:							
The transformer manufactured by each factory passed the test and the result is the same. TIW denotes Triple Insulated Wire.							

G.5.3.2	TABLE: Transformers	P
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## ATTACHMENT

Clause	Requirement + Test	Result - Remark	Verdict
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T1, Type: MV-NB8309

Construction:

Concentric windings on a 3132011 bobbin with RM10/18.6 size core. The core is considered as primary. A 31725061 cup-shaped transformer base is used to provide reinforced insulation to the transformer bottom and transformer sides. Material for transformer bobbin and transformer base is phenolic with a minimum thickness of 0.49mm. The primary windings are separated in two parts, one located as inner winding and the other as outer winding. There are two layers of insulation tape wound around the outer side of primary winding. One layer of insulation tape is provided between the windings. At bottom core there are two layers of foldback tape with overlapping of 3.0mm at secondary side. One primary shield is provided between inner primary and secondary winding. The shields are connected to pin 2. certified triple insulated wire is used for secondary windings. The winding ends for the secondary winding are provided with PTFE tubing.

Pin numbers:

- Primary/input pins: 4 – X - 3 , 1 – 2, shields to pin 2
- Secondary/output pins: A – B

IEC62368_1B - ATTACHMENT																																										
Clause	Requirement + Test			Result - Remark		Verdict																																				
<div>ATTACHMENT TO TEST REPORT</div> <div>IEC 62368-1</div> <div>EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES</div> <div>(Audio/video, information and communication technology equipment - Part 1: Safety requirements)</div> <div>Differences according to.....: EN 62368-1:2014+A11:2017</div> <div>Attachment Form No. ....: EU_GD_IEC62368_1B_II</div> <div>Attachment Originator .....: Nemko AS</div> <div>Master Attachment .....: Date 2017-09-22</div> <div>Copyright © 2017 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.</div>																																										
	CENELEC COMMON MODIFICATIONS (EN)					P																																				
	Clauses, subclauses, notes, tables, figures and annexes which are additional to those in IEC 62368-1:2014 are prefixed "Z".					P																																				
CONTENTS	<b>Add</b> the following annexes: Annex ZA (normative)                      Normative references to international publications with their corresponding European publications Annex ZB (normative)                      Special national conditions Annex ZC (informative)                      A-deviations Annex ZD (informative)                      IEC and CENELEC code designations for flexible cords					P																																				
	<b>Delete</b> all the "country" notes in the reference document (IEC 62368-1:2014) according to the following list: <table><tr><td>0.2.1</td><td>Note</td><td>1</td><td>Note 3</td><td>4.1.15</td><td>Note</td></tr><tr><td>4.7.3</td><td>Note 1 and 2</td><td>5.2.2.2</td><td>Note</td><td>5.4.2.3.2.2 Table 13</td><td>Note c</td></tr><tr><td>5.4.2.3.2.4</td><td>Note 1 and 3</td><td>5.4.2.5</td><td>Note 2</td><td>5.4.5.1</td><td>Note</td></tr><tr><td>5.5.2.1</td><td>Note</td><td>5.5.6</td><td>Note</td><td>5.6.4.2.1</td><td>Note 2 and 3</td></tr><tr><td>5.7.5</td><td>Note</td><td>5.7.6.1</td><td>Note 1 and 2</td><td>10.2.1 Table 39</td><td>Note 2, 3 and 4</td></tr><tr><td>10.5.3</td><td>Note 2</td><td>10.6.2.1</td><td>Note 3</td><td>F.3.3.6</td><td>Note 3</td></tr></table>					0.2.1	Note	1	Note 3	4.1.15	Note	4.7.3	Note 1 and 2	5.2.2.2	Note	5.4.2.3.2.2 Table 13	Note c	5.4.2.3.2.4	Note 1 and 3	5.4.2.5	Note 2	5.4.5.1	Note	5.5.2.1	Note	5.5.6	Note	5.6.4.2.1	Note 2 and 3	5.7.5	Note	5.7.6.1	Note 1 and 2	10.2.1 Table 39	Note 2, 3 and 4	10.5.3	Note 2	10.6.2.1	Note 3	F.3.3.6	Note 3	P
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	For special national conditions, see Annex ZB.					P																																				
1	<b>Add</b> the following note: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2011/65/EU.					P																																				

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.Z1	<p><b>Add</b> the following new subclause after 4.9:</p> <p>To protect against excessive current, short-circuits and earth faults in circuits connected to an a.c. <b>mains</b>, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c):</p> <p>a) except as detailed in b) and c), protective devices necessary to comply with the requirements of B.3.1 and B.4 shall be included as parts of the equipment;</p> <p>b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation;</p> <p>c) it is permitted for <b>pluggable equipment type B</b> or <b>permanently connected equipment</b>, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for <b>pluggable equipment type A</b> the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.</p>		P
5.4.2.3.2.4	<p><b>Add</b> the following to the end of this subclause:</p> <p>The requirement for interconnection with <b>external circuit</b> is in addition given in EN 50491-3:2009.</p>	No external circuits.	N/A
10.2.1	<p>Add the following to <sup>c)</sup> and <sup>d)</sup> in table 39:</p> <p>For additional requirements, see 10.5.1.</p>	No such radiation from the equipment.	N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.1	<p><b>Add</b> the following after the first paragraph:  <i>For RS 1 compliance is checked by measurement under the following conditions:</i>  <i>In addition to the normal operating conditions, all controls adjustable from the outside by hand, by any object such as a tool or a coin, and those internal adjustments or presets which are not locked in a reliable manner, are adjusted so as to give maximum radiation whilst maintaining an intelligible picture for 1 h, at the end of which the measurement is made.</i></p> <p>NOTE Z1 Soldered joints and paint lockings are examples of adequate locking.</p> <p><i>The dose-rate is determined by means of a radiation monitor with an effective area of 10 cm<sup>2</sup>, at any point 10 cm from the outer surface of the apparatus.</i></p> <p><i>Moreover, the measurement shall be made under fault conditions causing an increase of the high-voltage, provided an intelligible picture is maintained for 1 h, at the end of which the measurement is made.</i></p> <p><i>For RS1, the dose-rate shall not exceed 1 µSv/h taking account of the background level.</i></p> <p>NOTE Z2 These values appear in Directive 96/29/Euratom of 13 May 1996.</p>	No x-radiations.	N/A
10.6.1	<p><b>Add</b> the following paragraph to the end of the subclause:  EN 71-1:2011, 4.20 and the related tests methods and measurement distances apply.</p>	No such consideration for the purpose of personal music players.	N/A
10.Z1	<p><b>Add</b> the following new subclause after 10.6.5.  <b>10.Z1 Non-ionizing radiation from radio frequencies in the range 0 to 300 GHz</b>  The amount of non-ionizing radiation is regulated by European Council Recommendation 1999/519/EC of 12 July 1999 on the limitation of exposure of the general public to electromagnetic fields (0 Hz to 300 GHz).  For intentional radiators, ICNIRP guidelines should be taken into account for Limiting Exposure to Time-Varying Electric, Magnetic, and Electromagnetic Fields (up to 300 GHz). For hand-held and body-mounted devices, attention is drawn to EN 50360 and EN 50566</p>		N/A



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.7.1	<b>Add</b> the following note: NOTE Z1 The harmonized code designations corresponding to the IEC cord types are given in Annex ZD.		P
Bibliography	<b>Add</b> the following standards: <b>Add</b> the following notes for the standards indicated: IEC 60130-9 NOTE Harmonized as EN 60130-9. IEC 60269-2 NOTE Harmonized as HD 60269-2. IEC 60309-1 NOTE Harmonized as EN 60309-1. IEC 60364 NOTE some parts harmonized in HD 384/HD 60364 series. IEC 60601-2-4 NOTE Harmonized as EN 60601-2-4. IEC 60664-5 NOTE Harmonized as EN 60664-5. IEC 61032:1997 NOTE Harmonized as EN 61032:1998 (not modified). IEC 61508-1 NOTE Harmonized as EN 61508-1. IEC 61558-2-1 NOTE Harmonized as EN 61558-2-1. IEC 61558-2-4 NOTE Harmonized as EN 61558-2-4. IEC 61558-2-6 NOTE Harmonized as EN 61558-2-6. IEC 61643-1 NOTE Harmonized as EN 61643-1. IEC 61643-21 NOTE Harmonized as EN 61643-21. IEC 61643-311 NOTE Harmonized as EN 61643-311. IEC 61643-321 NOTE Harmonized as EN 61643-321. IEC 61643-331 NOTE Harmonized as EN 61643-331.		P
<b>ZB</b>	<b>ANNEX ZB, SPECIAL NATIONAL CONDITIONS (EN)</b>		P
4.1.15	<b>Denmark, Finland, Norway and Sweden</b> To the end of the subclause the following is added: <b>Class I pluggable equipment type A</b> intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and <b>accessible</b> parts, have a marking stating that the equipment shall be connected to an earthed <b>mains</b> socket-outlet. The marking text in the applicable countries shall be as follows: In <b>Denmark</b> : "Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord." In <b>Finland</b> : "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In <b>Norway</b> : "Apparatet må tilkoples jordet stikkontakt" In <b>Sweden</b> : "Apparaten skall anslutas till jordat uttag"	The marking text must be provided when marketed in applicable countries.	N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	<b>United Kingdom</b> To the end of the subclause the following is added: The torque test is performed using a socket-outlet complying with BS 1363, and the plug part shall be assessed to the relevant clauses of BS 1363. Also see Annex G.4.2 of this annex	The equipment is not direct plug-in equipment.	N/A
5.2.2.2	<b>Denmark</b> After the 2nd paragraph add the following: A warning (marking <b>safeguard</b> ) for high <b>touch current</b> is required if the <b>touch current</b> exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high touch current.	N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.4.11.1 and Annex G	<p><b>Finland and Sweden</b></p> <p>To the end of the subclause the following is added: For separation of the telecommunication network from earth the following is applicable: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either</p> <ul style="list-style-type: none"> <li>• two layers of thin sheet material, each of which shall pass the electric strength test below, or</li> <li>• one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.</li> </ul> <p>If this insulation forms part of a semiconductor component (e.g. an optocoupler), there is no distance through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that clearances and creepage distances do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition</p> <ul style="list-style-type: none"> <li>• passes the tests and inspection criteria of 5.4.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 5.4.9 shall be performed using 1,5 kV), and</li> <li>• is subject to routine testing for electric strength during manufacturing, using a test voltage of 1,5kV.</li> </ul> <p>It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2.</p> <p>A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions:</p> <ul style="list-style-type: none"> <li>• the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in 5.4.11;</li> <li>• the additional testing shall be performed on all the test specimens as described in EN 60384-14;</li> </ul> <p>the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.</p>	No TNV circuits.	N/A
5.5.2.1	<p><b>Norway</b></p> <p>After the 3rd paragraph the following is added: Due to the IT power system used, capacitors are required to be rated for the applicable line-to-line voltage (230 V).</p>	Considered.	P

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.5.6	<b>Finland, Norway and Sweden</b> To the end of the subclause the following is added: Resistors used as <b>basic safeguard</b> or bridging <b>basic insulation</b> in <b>class I pluggable equipment type A</b> shall comply with G.10.1 and the test of G.10.2.	No such resistors.	N/A
5.6.1	<b>Denmark</b> <b>Add</b> to the end of the subclause Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment. <i>Justification:</i> In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.	Considered.	P
5.6.4.2.1	<b>Ireland and United Kingdom</b> After the indent for <b>pluggable equipment type A</b> , the following is added: – the <b>protective current rating</b> is taken to be 13 A, this being the largest rating of fuse used in the <b>mains</b> plug.	Considered.	P
5.6.5.1	To the second paragraph the following is added: The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current over 10 A and up to and including 13 A is: 1,25 mm <sup>2</sup> to 1,5 mm <sup>2</sup> in cross-sectional area.	See above.	N/A
5.7.5	<b>Denmark</b> To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the <b>protective conductor current</b> exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	No high protective conductor current.	N/A
5.7.6.1	<b>Norway and Sweden</b> To the end of the subclause the following is added: The screen of the television distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation needs to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which	Not such system.	N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	<p>may be provided by a retailer, for example.</p> <p>The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in:</p> <p>“Apparatus connected to the protective earthing of the building installation through the mains connection or through other apparatus with a connection to protective earthing – and to a television distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a television distribution system therefore has to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)”</p> <p>NOTE In Norway, due to regulation for CATV-installations, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min.</p> <p>Translation to Norwegian (the Swedish text will also be accepted in Norway):</p> <p>“Apparater som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et koaksialbasert kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av apparater til kabel-TV nett installeres en galvanisk isolator mellom apparatet og kabel-TV nettet.”</p> <p>Translation to Swedish:</p> <p>“Apparater som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av apparaten till kabel-TV nät galvanisk isolator finnas mellan apparaten och kabel-TV nätet.”.</p>		
5.7.6.2	<p><b>Denmark</b></p> <p>To the end of the subclause the following is added:</p> <p>The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA .</p>	No external circuits.	N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
B.3.1 and B.4	<p><b>Ireland and United Kingdom</b></p> <p>The following is applicable:</p> <p>To protect against excessive currents and short-circuits in the primary circuit of <b>direct plug-in equipment</b>, tests according to Annexes B.3.1 and B.4 shall be conducted using an external miniature circuit breaker complying with EN 60898-1, Type B, rated 32A. If the equipment does not pass these tests, suitable protective devices shall be included as an integral part of the <b>direct plug-in equipment</b>, until the requirements of Annexes B.3.1 and B.4 are met</p>	The equipment is not direct plug-in equipment.	N/A
G.4.2	<p><b>Denmark</b></p> <p>To the end of the subclause the following is added:</p> <p>Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011.</p> <p>CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a.</p> <p>If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2.</p> <p>Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a.</p> <p>Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c.</p> <p>Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a</p> <p><i>Justification:</i> Heavy Current Regulations, Section 6c</p>	The power supply cord has not been checked, see GENERAL PRODUCT INFORMATION.	N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
G.4.2	<b>United Kingdom</b> To the end of the subclause the following is added: The plug part of direct plug-in equipment shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16, and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.	The equipment is not direct plug-in equipment.	N/A
G.7.1	<b>United Kingdom</b> To the first paragraph the following is added: Equipment which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord shall be fitted with a 'standard plug' in accordance with the Plugs and Sockets etc (Safety) Regulations 1994, Statutory Instrument 1994 No. 1768, unless exempted by those regulations. NOTE "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.	The power supply cord has not been checked, see GENERAL PRODUCT INFORMATION.	N/A
G.7.1	<b>Ireland</b> To the first paragraph the following is added: Apparatus which is fitted with a flexible cable or cord shall be provided with a plug in accordance with Statutory Instrument 525: 1997, "13 A Plugs and Conversion Adapters for Domestic Use Regulations: 1997. S.I. 525 provides for the recognition of a standard of another Member State which is equivalent to the relevant Irish Standard	The power supply cord has not been checked, see GENERAL PRODUCT INFORMATION.	N/A
G.7.2	<b>Ireland and United Kingdom</b> To the first paragraph the following is added: A power supply cord with a conductor of 1,25 mm <sup>2</sup> is allowed for equipment which is rated over 10 A and up to and including 13 A.	The power supply cord has not been checked, see GENERAL PRODUCT INFORMATION.	N/A
<b>ZC</b>	<b>ANNEX ZC, NATIONAL DEVIATIONS (EN)</b>		<b>P</b>

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
10.5.2	<p><b>Germany</b></p> <p>The following requirement applies: For the operation of any cathode ray tube intended for the display of visual images operating at an acceleration voltage exceeding 40 kV, authorization is required, or application of type approval (Bauartzulassung) and marking.</p> <p><i>Justification:</i> German ministerial decree against ionizing radiation (Röntgenverordnung), in force since 2002-07-01, implementing the European Directive 96/29/EURATOM.</p> <p><b>NOTE</b> Contact address: Physikalisch-Technische Bundesanstalt, Bundesallee 100, D-38116 Braunschweig, Tel.: Int +49-531-592-6320, Internet: <a href="http://www.ptb.de">http://www.ptb.de</a></p>	No CRT within the equipment.	N/A



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<p align="center"><b>ATTACHMENT TO TEST REPORT IEC 62368-1</b>  <b>DENMARK NATIONAL DIFFERENCES</b>          Audio/video, information and communication technology equipment –          Part 1: Safety requirements</p>			
<b>Differences according to</b> .....: DS/EN 62368-1:2014			
<b>Attachment Form No.</b> .....: DK_ND_IEC62368_1B			
<b>Attachment Originator</b> .....: UL (Demko)			
<b>Master Attachment</b> .....: 2014-10			
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	National Differences		P
4.1.15	<p>To the end of the subclause the following is added:</p> <p>Class I pluggable equipment type A intended for connection to other equipment or a network shall, if safety relies on connection to reliable earthing or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment shall be connected to an earthed mains socket-outlet.</p> <p>The marking text in the applicable countries shall be as follows:</p> <p>“Apparatets stikprop skal tilsluttes en stikkontakt med jord som giver forbindelse til stikproppens jord.”</p>	The marking text must be provided when marketed in Denmark.	N/A
5.2.2.2	<p>After the 2nd paragraph add the following:</p> <p>A warning (marking safeguard) for high touch current is required if the touch current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.</p>	Added.	N/A
5.6.1	<p>Add to the end of the subclause:</p> <p>Due to many existing installations where the socket-outlets can be protected with fuses with higher rating than the rating of the socket-outlets the protection for pluggable equipment type A shall be an integral part of the equipment.</p> <p>Justification:</p> <p>In Denmark an existing 13 A socket outlet can be protected by a 20 A fuse.</p>	<p>Added.</p> <p>No socket outlet is provided.</p>	N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
5.7.5	To the end of the subclause the following is added: The installation instruction shall be affixed to the equipment if the protective conductor current exceeds the limits of 3,5 mA a.c. or 10 mA d.c.	Added.	N/A
5.7.6.2	To the end of the subclause the following is added: The warning (marking safeguard) for high touch current is required if the touch current or the protective current exceed the limits of 3,5 mA.	Added.	N/A
G.4.2	To the end of the subclause the following is added: Supply cords of single phase appliances having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1:2011. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Mains socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance DS 60884-2-D1:2011 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with Standard Sheet DKA 1-3a or DKA 1-1c. Mains socket-outlets with earth shall be in compliance with DS 60884-2-D1:2011 Standard Sheet DK 1-3a, DK 1-1c, DK1-1d, DK 1-5a or DK 1-7a Justification: Heavy Current Regulations, Section 6c	Added.	N/A

IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<p align="center"><b>ATTACHMENT TO TEST REPORT IEC 62368-1 2<sup>th</sup> Ed.</b>  <b>U.S.A. NATIONAL DIFFERENCES</b>          Audio/video, information and communication technology equipment – Part 1: Safety requirements</p>			
<b>Differences according to</b> .....: CSA/UL 62368-1:2014			
<b>Attachment Form No.</b> .....: US&CA_ND_IEC623681B			
<b>Attachment Originator</b> .....: UL(US)			
<b>Master Attachment</b> .....: Date 2015-06			
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<p align="center"><b>IEC 62368-1 - US and Canadian National Differences</b>  <b>Special National Conditions based on Regulations and Other National Differences</b></p>			
1.1	All equipment is to be designed to allow installation according to the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2. Also, for such equipment marked or otherwise identified, installation is allowed per the Standard for the Protection of Information Technology Equipment, ANSI/NFPA 75.	In accordance with the National Electrical Code (NEC) and the Canadian Electrical Code (CEC) part 1 CAN/CSA C22.1, ANSI/NFPA 70, and unless marked or otherwise identified, the Standard for Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.	P
1.4	Additional requirements apply to some forms of power distribution equipment, including sub-assemblies.	Considered.	P
4.1.17	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g., DP, CL2) specified in the NEC.	Not exceeding 3.05 m.	N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC generally are required to have special construction features and identification markings.	Overall acceptance has to be evaluated during the national approval process.	N/A
4.8	Lithium coin / button cell batteries have modified special construction and performance requirements.	No such parts.	N/A

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5.6.3	Protective earthing conductors comply with the minimum conductor sizes in Table G.5, except as required by Table G.7ADV.1 for cord connected equipment, or Annex DVH for permanently connected equipment	An appliance inlet provided that is connected by an approved appliance coupler serves as main protective earthing terminal. No power supply cord is provided.	N/A
5.7.7	Equipment intended to receive telecommunication ringing signals complies with a special touch current measurement tests.	No TNV circuits within the equipment.	N/A
6.5.1	PS3 wiring outside a fire enclosure complies with single fault testing in B.4, or be current limited per one of the permitted methods.	No such parts.	N/A
Annex F (F.3.3.8)	Output terminals provided for supply of other equipment, except mains, supply are marked with a maximum rating or references to which equipment it is permitted to be connected.	The DC output connector is provided. See copy of marking plate.	P
Annex G (G.7.1)	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	The equipment is not permanent connection equipment.	N/A
Annex G (G.7.3)	Power supply cords are required to have attachment plugs rated not less than 125 percent of the rated current of the equipment.	The power supply cord has not been checked, see GENERAL PRODUCT INFORMATION.	N/A
	Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.	See above.	N/A
Annex G (G.7.5)	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Power supply cords are required to be no longer than 4.5 m in length if used in ITE Rooms.	See above.	N/A
Annex H.2	Continuous ringing signals under normal operating conditions up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.	No TNV circuits within the equipment.	N/A
Annex H.4	For circuits with other than ringing signals and with voltages exceeding 42.4 V <sub>peak</sub> or 60 V d.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.	No TNV circuits within the equipment.	N/A
Annex M	Battery packs for stationary applications comply with special component requirements.	No such parts.	N/A

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Annex DVA (1)	Equipment intended for use in spaces used for environmental air are subjected to special flammability requirements for heat and visible smoke release.	The equipment not intended to be used within such environments.	N/A
	For ITE room applications, automated information storage systems with combustible media greater than 0.76 m <sup>3</sup> (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	Not such equipment.	N/A
	Consumer products designed or intended primarily for children 12 years of age or younger are subject to additional requirements in accordance with U.S. & Canadian Regulations.	The equipment is not for children used.	N/A
	Baby monitors additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.	Not a baby monitors.	N/A
Annex DVA (5.6.3)	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Considered.	P
Annex DVA (6.3)	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.	No flammable liquids within the equipment.	N/A
Annex DVA (6.4.8)	For ITE room applications, enclosures with combustible material measuring greater than 0.9 m <sup>2</sup> (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less. For equipment with the same dimensions for other applications, an external surface that is not a fire enclosure requires a min. flammability classification of V-1.	No such application.	N/A
Annex DVA (10.3.1)	Equipment with lasers meets the U.S. Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No such parts.	N/A
Annex DVA (10.5.1)	Equipment that produces ionizing radiation complies with the U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No such parts.	N/A
Annex DVA (F.3.3.3)	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings. Additional considerations apply for voltage ratings that exceed the attachment cap rating or are lower than the "Normal Operating Condition" in Table 2 of CAN/CSA C22.2 No. 235."	Single phase only.	N/A

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Annex DVA (F.3.3.5)	Equipment identified for ITE (computer) room installation is marked with the rated current	Not such application.	N/A
Annex DVA (G.1)	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position	No such parts.	N/A
Annex DVA (G.3.4)	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is required for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No standard supply outlets, receptacles, medium-base or smaller lampholders are provided.	N/A
Annex DVA (G.4.2)	Equipment with isolated ground (earthing) receptacles complies with NEC 250.146(D) and CEC 10-112 and 10-906(8).	No such parts.	N/A
Annex DVA (G.4.3)	Where a fuse is used to provide Class 2 or Class 3 current limiting, it is not operator-accessible unless it is non- interchangeable.	No such parts.	N/A
Annex DVA (G.5.3)	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, require special transformer overcurrent protection.	No such parts.	N/A
Annex DVA (G.5.4)	Motor control devices are required for cord-connected equipment with a mains-connected motor if the equipment is rated more than 12 A, or if the equipment has a nominal voltage rating greater than 120 V, or if the motor is rated more than 1/3 hp (locked rotor current over 43 A).	No such parts.	N/A
Annex DVA (Annex M)	For ITE room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the ITE room remote power-off circuit.	Not such application.	N/A
Annex DVA (Q)	Wiring terminals intended to supply Class 2 outputs according to the NEC or CEC Part 1 are marked with the voltage rating and "Class 2" or equivalent; marking is located adjacent to the terminals and visible during wiring.	Not applicable for the equipment.	N/A
Annex DVB (1)	Additional requirements apply for equipment used for entertainment purposes intended for installation in general patient care areas of health care facilities.	Not such application.	N/A
Annex DVC (1)	Additional requirements apply for equipment intended for mounting under kitchen cabinets.	Not such application.	N/A

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Annex DVE (4.1.1)	Some equipment, components, sub-assemblies and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (U.S. and Canadian) component or material requirements. Components required to comply include: appliance couplers, attachment plugs, battery back-up systems, battery packs, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultra-capacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), ground-fault current interrupters, interconnecting cables, data storage equipment, printed wiring, protectors for communications circuits, receptacles, surge protective devices, vehicle battery adapters, wire connectors, and wire and cables.	UL approved components are used. Refer to table 4.1.2 of IEC 62368-1 test report for details.	P
Annex DVH	Equipment for permanent connection to the mains supply is subjected to additional requirements.	The equipment is not permanently connected equipment.	N/A
Annex DVH (DVH.1)	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains are in accordance with the NEC/CEC.	The equipment is pluggable equipment type A.	N/A
Annex DVH (DVH.3.2)	Terminals for permanent wiring, including protective earthing terminals, are suitable for U.S./Canadian wire gauge sizes, rated 125 percent of the equipment rating, and are specially marked when specified.	No terminals for permanent wiring.	N/A
Annex DVH (DVH.3.2)	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm <sup>2</sup> ).	No wire binding screws.	N/A
Annex DVH (DVH.4)	Permanently connected equipment is required to have a suitable wiring compartment and wire bending space.	The equipment is not permanently connected equipment.	N/A
Annex DVH (DVH 5.5)	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment, complies with special earthing, wiring, marking and installation instruction requirements.	The equipment not connected to a centralized d.c. power system.	N/A



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Annex DVI (6.7 )	Equipment intended for connection to telecommunication network outside plant cable is required to be protected against overvoltage from power line crosses.	No TNV circuits within the equipment.	N/A
Annex DVJ (10.6.1 )	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.	No TNV circuits within the equipment.	N/A



IEC62368_1B - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

<b>ATTACHMENT TO TEST REPORT</b> <b>IEC 62368-1</b> <b>(JAPAN) NATIONAL DIFFERENCES</b> (Audio/video, information and communication technology equipment – Part 1: Safety requirements)			
<b>Differences according to</b> ..... J62368-1 (H30)			
<b>Attachment Form No.</b> ..... JP_ND_IEC62368_1B			
<b>Attachment Originator</b> ..... UL (JP)			
<b>Master Attachment</b> ..... Date 2018-11-22			
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	National Differences		—
4.1.2	Where the component, or a characteristic of a component, is a safeguard or a part of a safeguard, components shall comply with the requirements of this standard or, where specified in a requirements clause, with the safety aspects of the relevant JIS component standards or IEC component standards, or components shall have properties equivalent to or better than these.		P
5.6.1	Mains socket-outlet and appliance outlet shall comply with Clause G.4.2A if they are incorporated as part of the equipment.	No mains socket-outlet and appliance outlet.	N/A
5.6.2.1	Mains connection of class 0I equipment: Instructional safeguard in accordance with Clause F.3.6.1A; Mains plug having a lead wire for protective earthing connection of class 0I equipment; Independent main protective earthing terminal installed by ordinary person.	Not class 0I equipment.	N/A
5.6.2.2	This requirement does not apply to internal conductor of the cord set that is covered by the sheath of mains cord and is formed together with mains plug and appliance connector.	No mains cords provided.	N/A

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5.6.3	In case of class 0I equipment using power supply cord having two conductors (no earthing conductor), the conductor of protective earthing lead wire shall comply with either of the following: – use of annealed copper wire with 1.6 mm diameter or corrosion-inhibiting metal wire having size and strength that are equivalent to or more than the above copper wire – single core cord or single core cable with 1.25 mm <sup>2</sup> or more cross-sectional area	Not class 0I equipment.	N/A
5.7.3	For class 0I equipment that is provided with mains socket-outlet in the configuration as specified in JIS C 8282 series or JIS C 8303, or otherwise being considered to comply with relevant regulations, or that is provided with mains appliance outlet as specified in JIS C 8283-2-2 for the purpose of interconnection, the measurement is conducted on the system of the interconnected equipment having a single connection to the mains.	Not class 0I equipment.	N/A
5.7.4	In case of class 0I equipment, touch current shall not exceed 1.41 mA peak or for sinusoidal wave, 1.0 mA r.m.s. when measured using the network specified in Figure 4 of IEC 60990.	Not class 0I equipment.	N/A
6.4.3.3	A fuse complying with JIS C 6575 series or a fuse having equivalent characteristics shall open within 1 s.  For Class A fuse of JIS C 6575, replace “2.1 times” by “1.35 times” and in case of Class B fuse of JIS C 6575, replace “2.1 times” by “1.6 times”. A fuse not complying with JIS C 6575 series shall be tested with the breaking capacity taken into account.	See main test report.	P
8.5.4.2.1	Only three-phase stationary equipment rated more than 200 V ac can be considered as being for use in locations where children are not likely to be present, when complying with Clause F.4.	Not three-phase stationary equipment.	N/A

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8.5.4.2.2	For equipment installed where children may be present, an instructional safeguard shall be provided by easily understandable wording in accordance with Clause F.5, except that element 3 is optional.		N/A
8.5.4.2.4	The media destruction device is tested according to Clause V.1.2 with applicable jointed test probes to the opening. And then the wedge probe per Figure V.4 shall not contact any moving part.		N/A
8.5.4.2.5	The wedge probe of Figure V.4 and applicable jointed test probes specified in Clause V.1.2 shall not contact any moving part. Instructional safeguard shall not be used instead of equipment safeguard for preventing access to hazardous moving parts.		N/A
9.2.6, Table 38	Handles, Knobs, grips, etc. and external surfaces either held, touched or worn against the body in normal use (> 1 min) <sup>b,c</sup>	See main test report.	P
F.3.5.1	Instructional safeguard of class 0I equipment in accordance with Clause F.5 when a mains socket-outlet as specified in JIS C 8282 series, JIS C 8303 or relevant regulation to which class I equipment can be connected is provided in accordance with Clause G.4.2A except for the cases where the socket-outlet is accessible only to skilled persons.	Not class 0I equipment.	N/A
F.3.5.3	If the fuse is necessary for the safeguard function, the symbols indicating pre-arcing time-current characteristic.	Not replaceable.	N/A
F.3.6.1A	Marking for class 0I equipment The requirements of Clauses F.3.6.1.1 and F.3.6.1.3 shall be applied to class 0I equipment. For class 0I equipment, a marking of instructions and instructional safeguard shall be provided regarding the earthing connection.	Not class 0I equipment.	N/A
F.3.6.2.1	Symbols, IEC 60417-5172 (2003-02) or IEC 60417-6092 (2011-10), shall not be used for class I equipment or class 0I equipment.	Such symbols not used for class I equipment or class 0I equipment.	P

IEC62368_1B - ATTACHMENT			
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F.4	<p>Instruction for audio equipment with terminals classified as ES3 in accordance with Table E.1, and for other equipment with terminals marked in accordance with F.3.6.1 and F.3.6.1A.</p> <p>Installation instruction for the protective earthing connection for class 0I equipment provided with independent main protective earthing terminal, where the cord for the protective earthing connection is not provided within the package for the equipment.</p>	Not class 0I equipment.	N/A
G.3.2.1	The thermal link when tested as a separate component, shall comply with the requirements of JIS C 6691 or have properties equivalent to or better than that.	No thermal link is provided within the equipment.	N/A
G.3.4	<p>Except for devices covered by Clause G.3.5, overcurrent protective devices used as a safeguard shall comply with the relevant part of JIS C 6575 (corresponding to IEC60127) or shall have equivalent characteristics.</p> <p>If there are no applicable IEC standards, overcurrent protective devices used as a safeguard shall comply with their applicable IEC standards.</p>	All sources of fuse complied with IEC 60127.	P
G.4.1	This requirement is not applicable to Clauses G.4.2 and G.4.2A.	Not applicable.	N/A
G.4.2	<p>Mains connector shall comply with JIS C 8282 series, JIS C 8283 series, JIS C 8285, JIS C 8303 or IEC 60309 series.</p> <p>Mains plugs and socket-outlets shall comply with JIS C 8282 series, JIS C 8303, IEC 60309 series, or have equivalent or better performance.</p> <p>A power supply cord set provided with appliance connector that can fit appliance inlet complying with JIS C 8283-1 shall comply with JIS C 8286.</p> <p>Construction preventing mechanical stress not to transmit to the soldering part of inlet terminal.</p> <p>Consideration for an equipment rated not more than 125 V provided with Type C14 and C18 appliance coupler complying with JIS C 8283 series.</p>	No mechanical stress transmitted.	P

IEC62368_1B - ATTACHMENT			
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G.4.2A	Mains socket-outlet and interconnection coupler provided with the class II, class I and class 0I equipment respectively.	No mains socket-outlet and interconnection coupler	N/A
G.7.1	A mains supply cord need not include the protective earthing conductor for class 0I equipment provided with independent protective earthing conductor.	Not class 0I equipment.	N/A
G.8.3.3	Withstand $1,71 \times 1,1 \times U_0$ for 5 s.		N/A



Product: 1. AC/DC ADAPTER; 2. AC ADAPTER

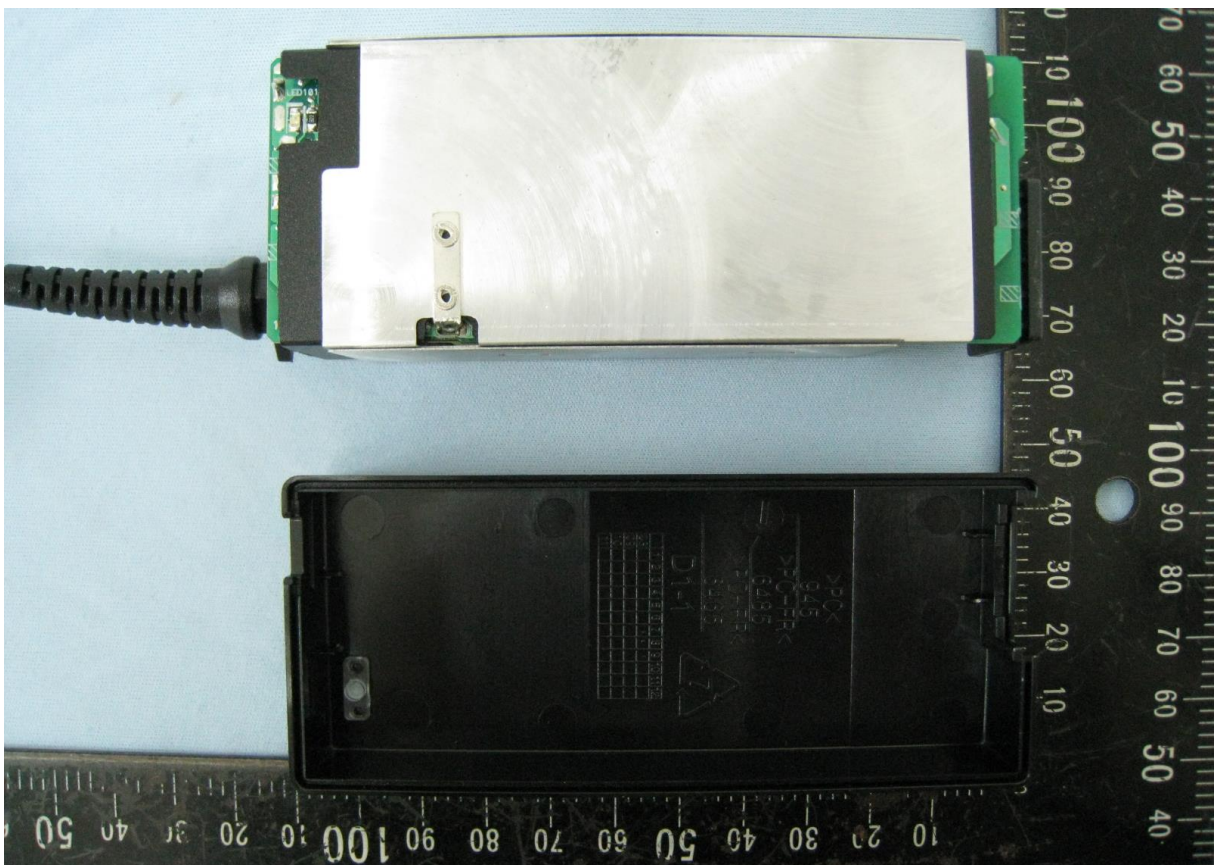
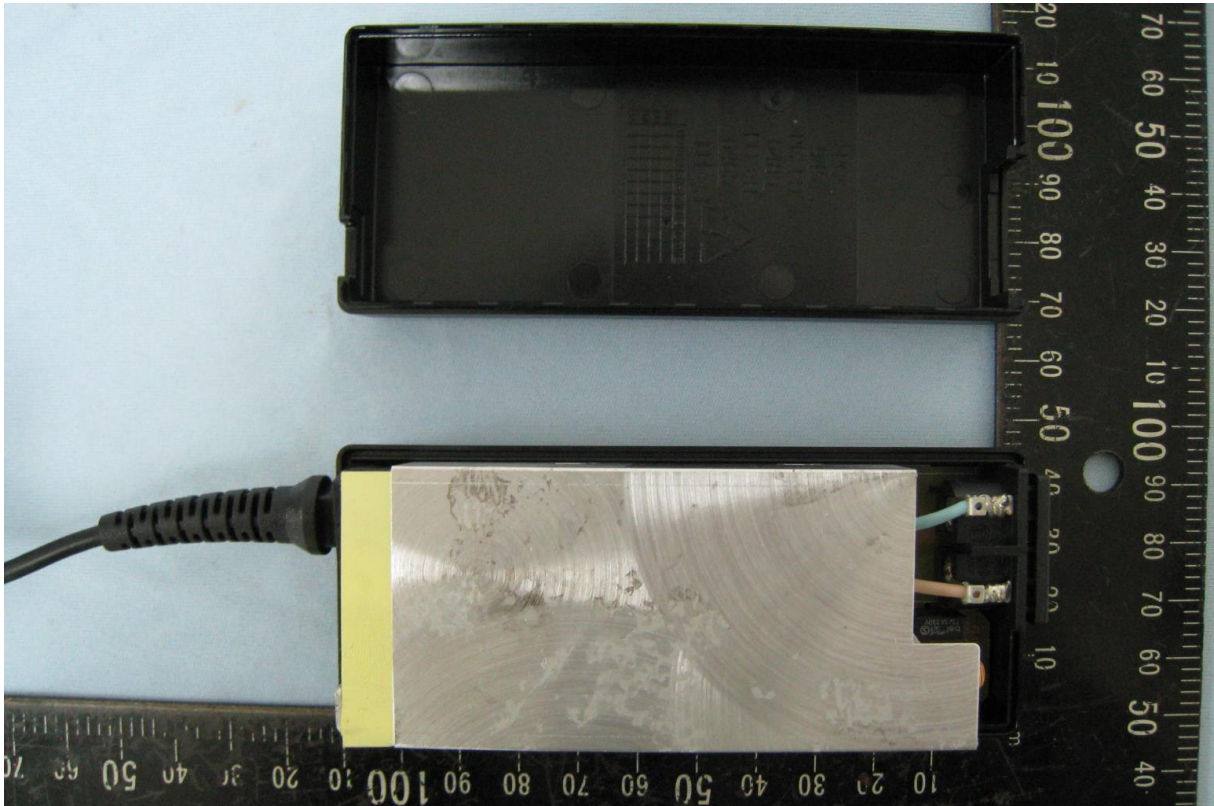
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Product: 1. AC/DC ADAPTER; 2. AC ADAPTER

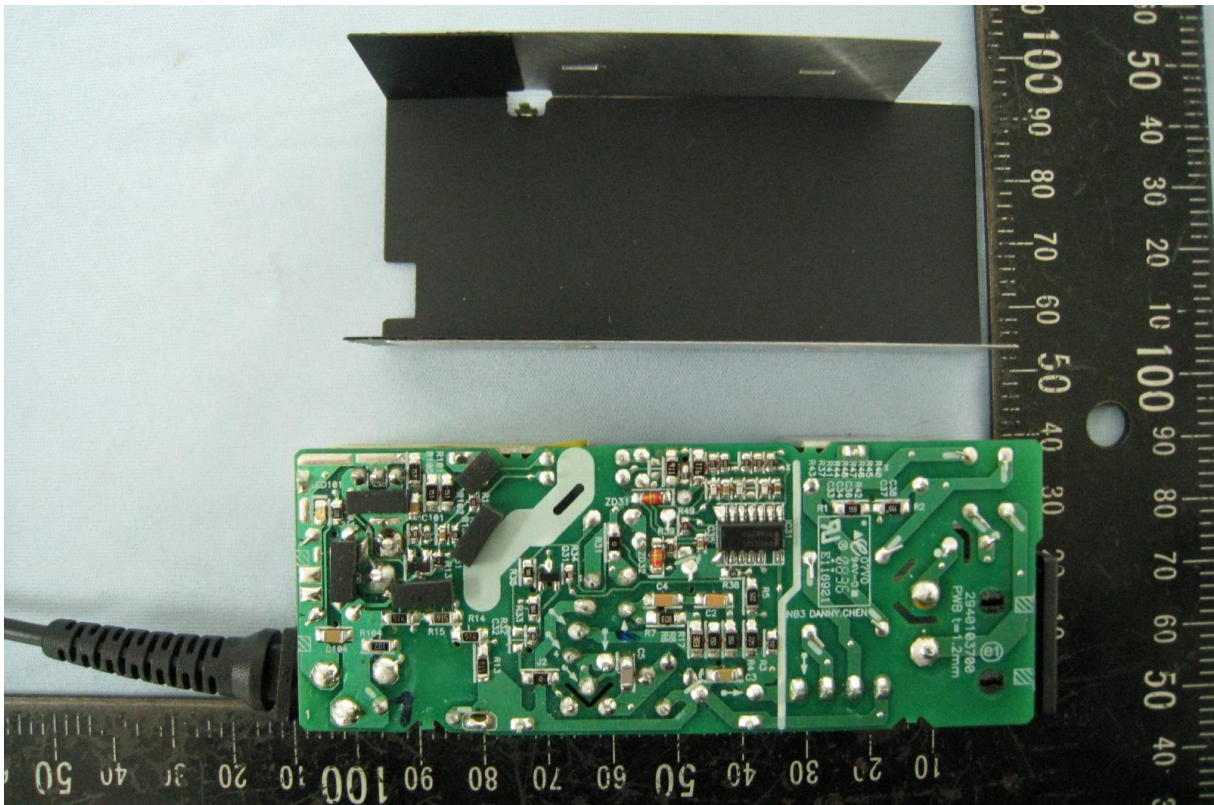
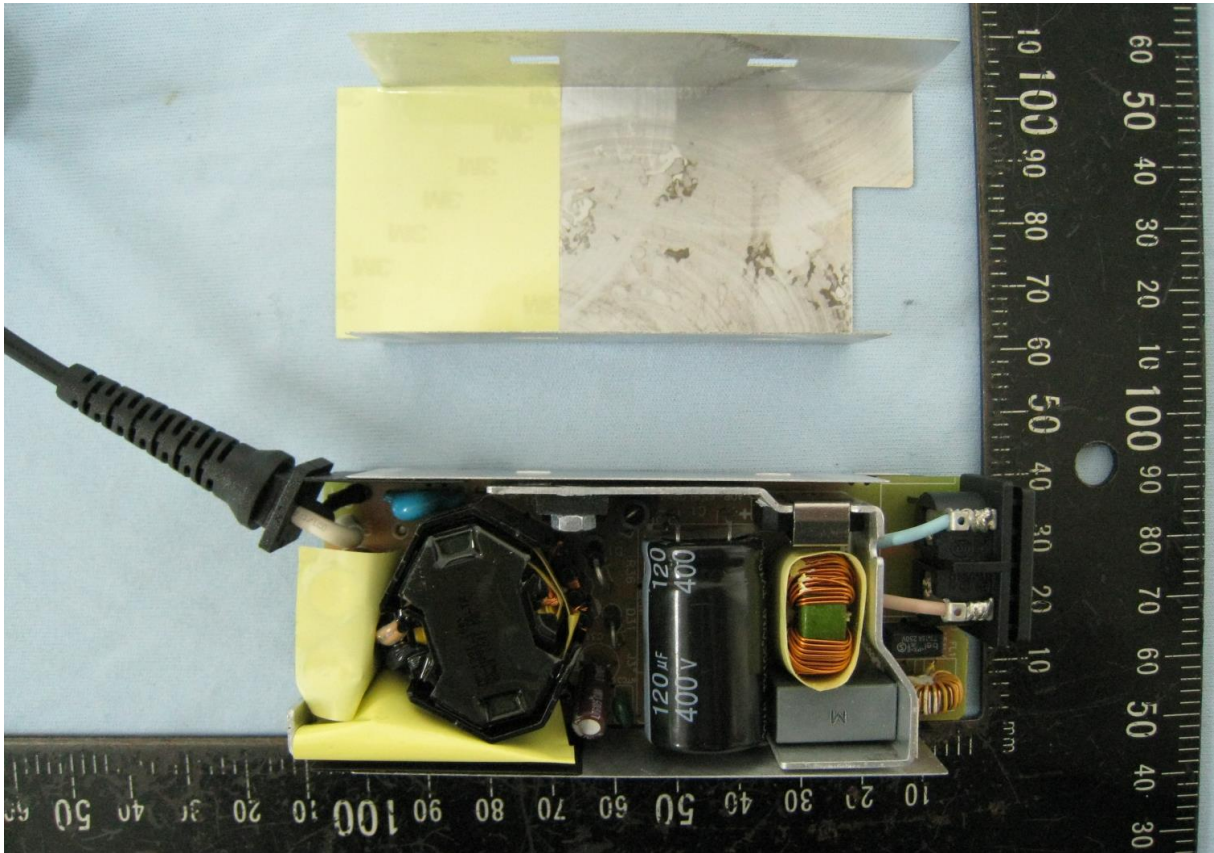
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Product: 1. AC/DC ADAPTER; 2. AC ADAPTER

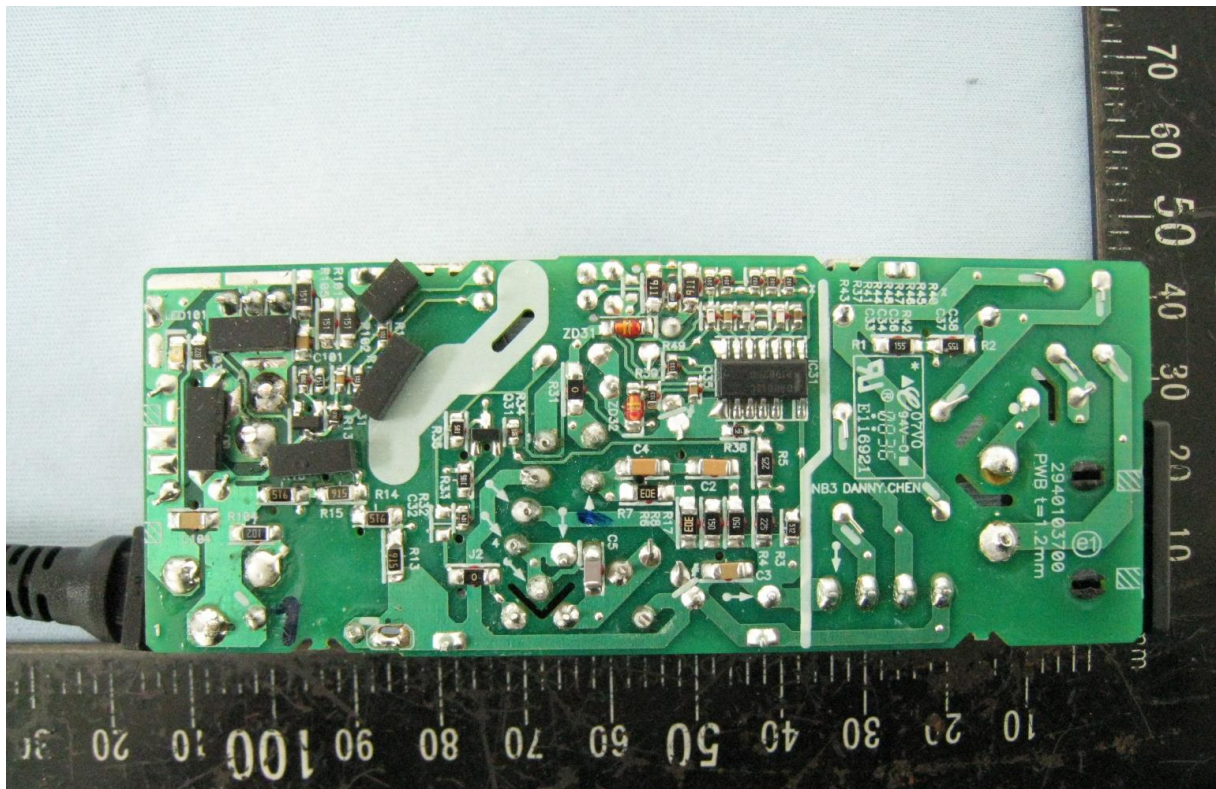
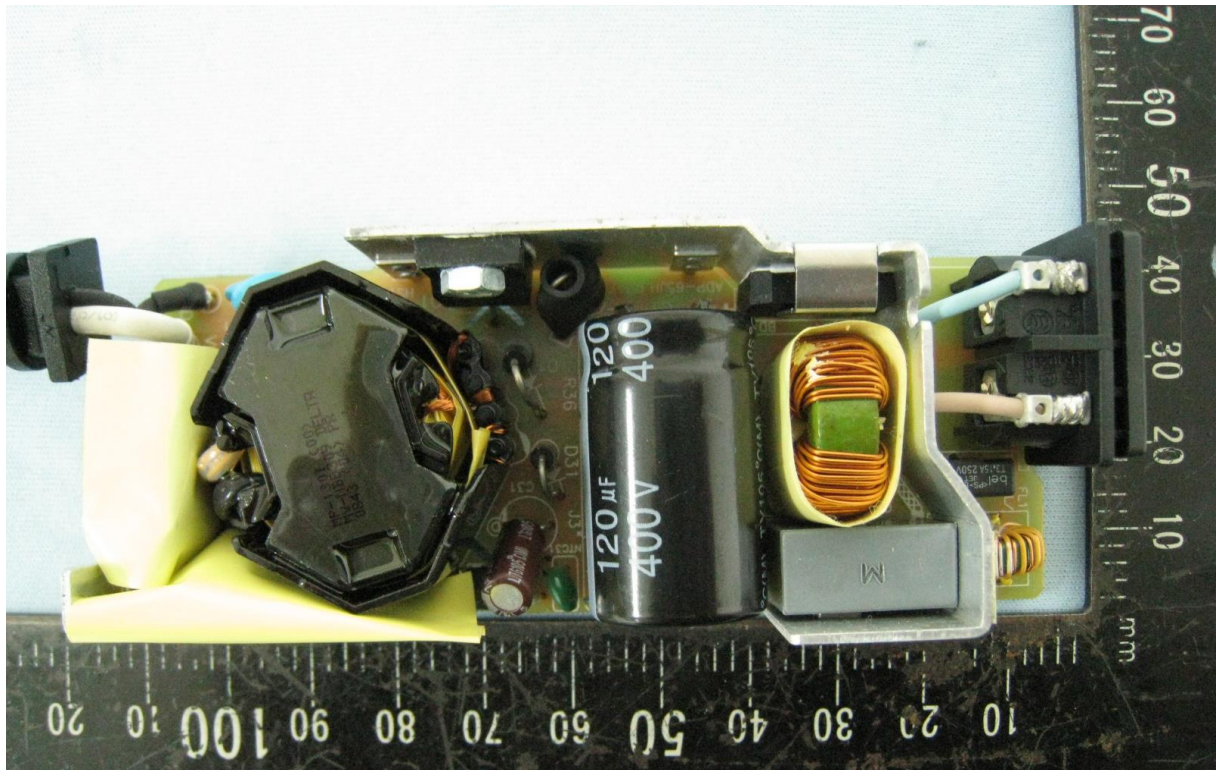
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Product: 1. AC/DC ADAPTER; 2. AC ADAPTER

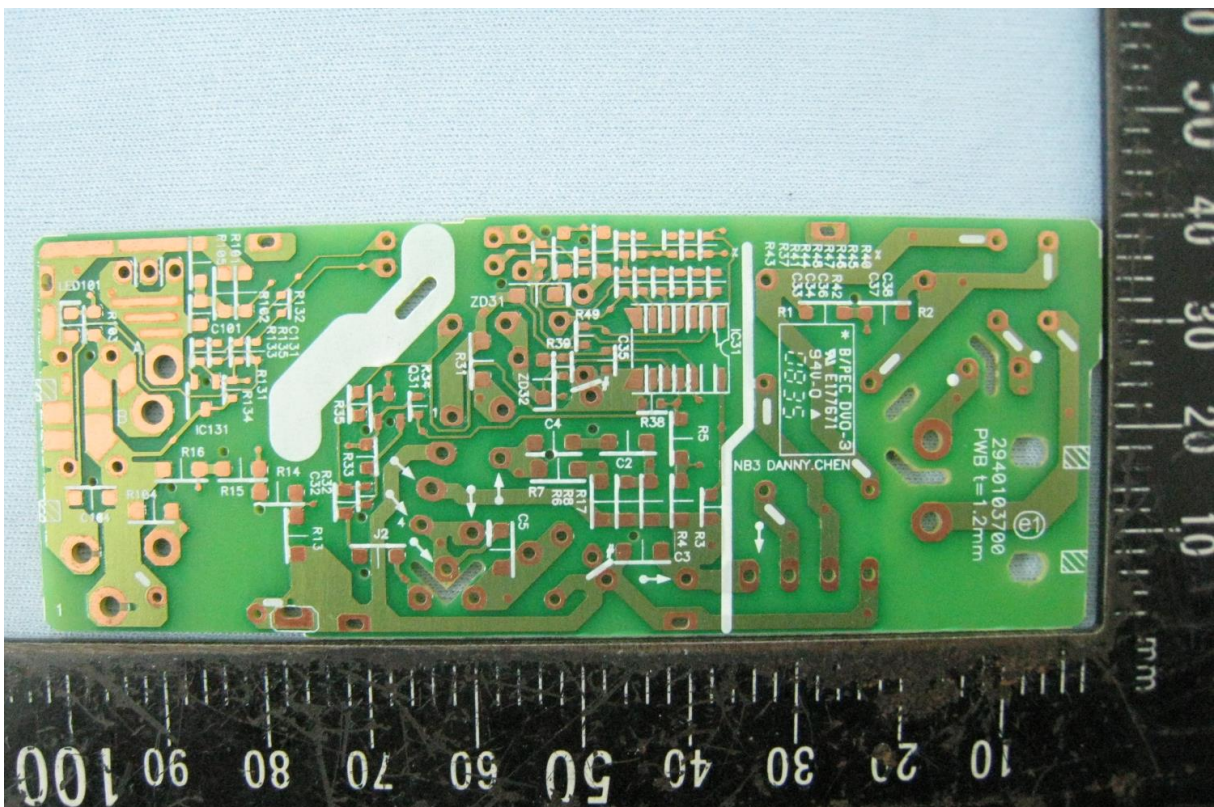
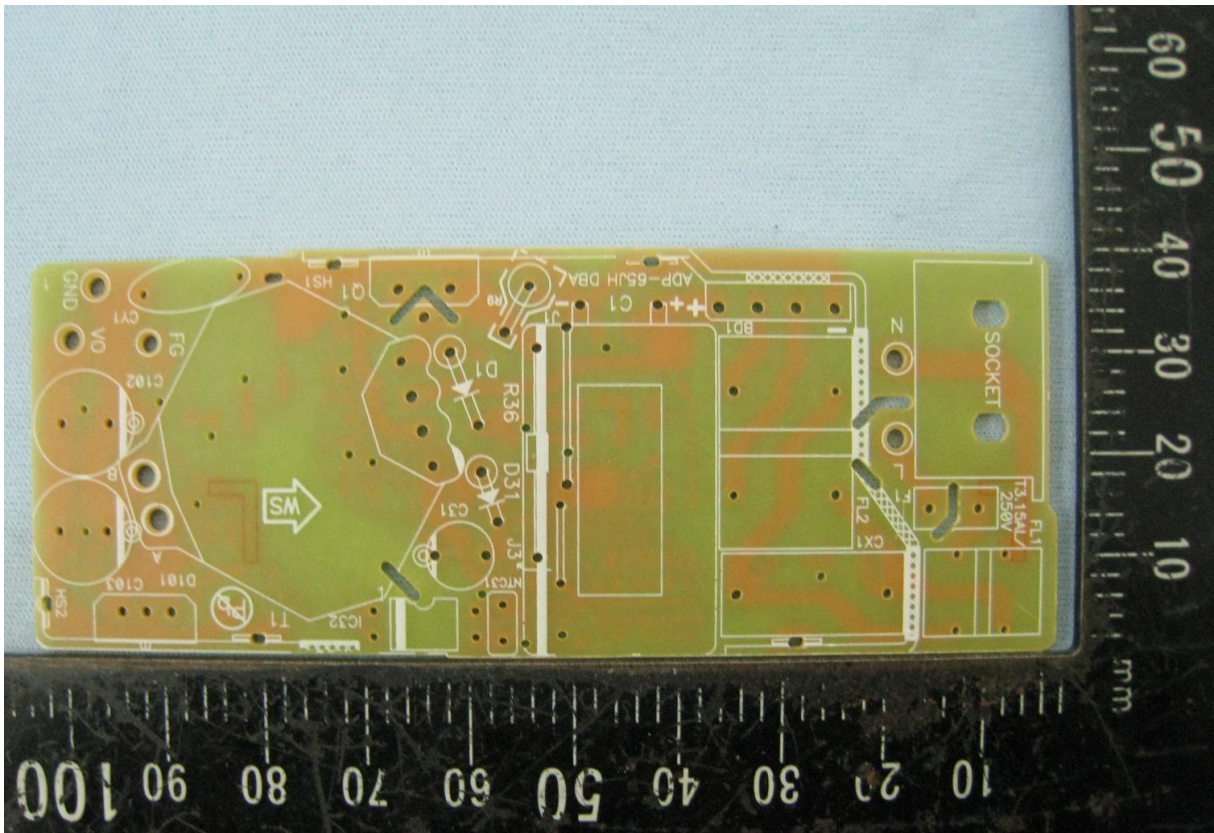
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Product: 1. AC/DC ADAPTER; 2. AC ADAPTER

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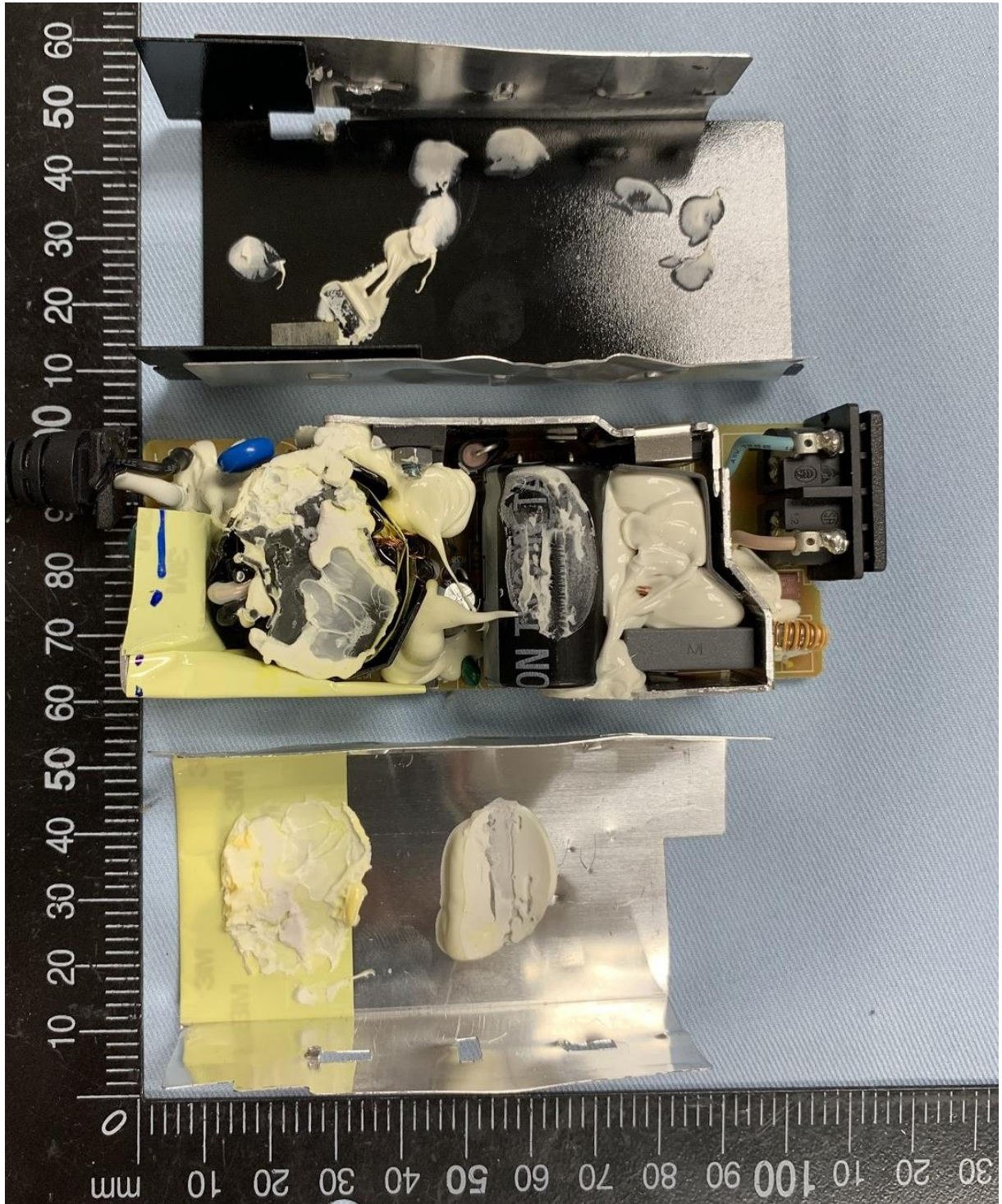




Product: 1. AC/DC ADAPTER; 2. AC ADAPTER

Type Designation: 1. ADP-65JH AX (X = B, C, D); 2. ADP-65JH AB

Glued sample





Product: 1. AC/DC ADAPTER; 2. AC ADAPTER

Type Designation: 1. ADP-65JH AX (X = B, C, D); 2. ADP-65JH AB

