



Ref. Certif. No.

JPTUV-007126

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

SYSTEME CEI D'ACCEPTATION MUTUELLE DE  
CERTIFICATS D'ESSAIS DES EQUIPEMENTS  
ELECTRIQUES (IECEE) METHODE OC

## CB TEST CERTIFICATE CERTIFICAT D'ESSAI OC

Product  
Produit

Industrial Computer

Name and address of the applicant  
Nom et adresse du demandeur

Advantech Co., Ltd.  
4F, No. 108-3, Ming Chuan Rd.  
Hsin Tien City, Taipei Hsien 231 Taiwan

Name and address of the manufacturer  
Nom et adresse du fabricant

Advantech Co., Ltd.  
4F, No. 108-3, Ming Chuan Rd.  
Hsin Tien City, Taipei Hsien 231 Taiwan

Name and address of the factory  
Nom et adresse de l'usine

(See appendix for factories information)

Rating and principal characteristics  
Valeurs nominales et caractéristiques principales

Input Rating : AC 115/230V, 60/50Hz, 10/5A  
Protection Class: I

ADVANTECH

Trade mark (if any)  
Marque de fabrique (si elle existe)

AWS-8248XXX-XXX , AWS-8420XXX-XXX  
(X = 0-9, A-Z or blank)

Model/type Ref.  
Ref. de type

For differences between the models, refer to the test report

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

A sample of the product was tested and found  
to be in conformity with  
Un échantillon de ce produit a été essayé et a été  
considéré conforme à la

IEC 60950:1999  
inclusive CENELEC Common Modifications  
National differences see test report

As shown in the Test Report Ref. No. which forms part  
of this Certificate  
Comme indiqué dans le Rapport d'essais numéro de  
référence qui constitue une partie de ce Certificat

12006589 001

This CB Test Certificate is issued by the National Certification Body  
Ce Certificat d'essai OC est établi par l'Organisme National de Certification



TÜV Rheinland  
Berlin Brandenburg

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Signature:

Dipl.-Ing. W. Herlitschke

Date: 16.10.2003

**TÜV Rheinland Japan Ltd.**

Member of TÜV Rheinland Berlin Brandenburg Group

Appendix to CB Certificate JPTUV-007126  
Report Number: 12006589 001

PAGE 1 OF 1

Name and address of the manufacturer

Advantech Co., Ltd.  
4F, No. 108-3, Ming Chuan Rd.  
Hsin Tien City, Taipei Hsien 231  
Taiwan

Name and address of the factory(ies)

Advantech Co., Ltd.

Fl.5, No.1, Lane 169, Kang-Ning St.  
Xi-Zhi, Taipei Hsien 221  
Taiwan

ADVANTECH CO., LTD.

3rd FL, NO. 10  
LANE 130, MING CHUAN RD  
HSIN-TIEN, TAIPEI HSIEN, 231  
Taiwan

SUPERIOR CO., LTD.

TIENSONG AREA, QINGXING TOWN  
DONGGUAN GUANGDONG  
P.R. China

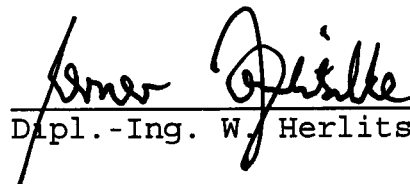
ADVANTECH CO., LTD.

NO. 600, HAN-PU ROAD, YU-SHAN  
KUN-SHAN JIANGSU  
P.R. China

Beijing Yan Hua Xing Ye Electronic Science & Technology Co., Ltd

No.7, 6th Street, Shang Di Zone  
Haidian District, Beijing  
P.R. China

Date: 16.10.2003



Dipl.-Ing. W. Herlitschke

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Yokohama Head Office

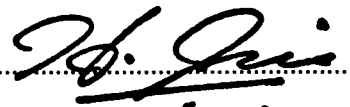

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<b>TEST REPORT</b> <b>IEC 60950 and/or EN 60950</b> <b>Safety of information technology equipment</b>	
Report reference No .....	<12006589 001>
Tested by (printed name and signature) .....	H. Irie 
Approved by (printed name and signature) .....	M. Teng 
Date of issue .....	October 15, 2003
Testing Laboratory Name .....	TÜV Rheinland Japan Ltd., Yokohama Laboratory
Address .....	Festo Bldg. 5F, 1-26-10 Hayabuchi, Tsuzuki-ku, Yokohama 224-0025, Japan
Testing location .....	CBTL <input checked="" type="checkbox"/> CCATL <input type="checkbox"/> SMT <input type="checkbox"/> TMP <input type="checkbox"/>
Address .....	Same as above.
Applicant's Name .....	Advantech Co., Ltd.
Address .....	4 <sup>th</sup> Fl., 108-3 Ming-Chuan Rd., Hsin Tien City, Taipei Hsien Taiwn
<b>Test specification</b> Standard ..... IEC 60950:1999 + Corr. Jan. 2000 EN 60950:2000 + Corr. Feb. 2002 Test procedure ..... CB-scheme Procedure deviation ..... Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Israel, Italy, The Netherlands, Norway, Portugal, Slovakia, Spain, Sweden, Switzerland, Ukraine Non-standard test method ..... N.A.	
Test Report Form No. .... IECEN60950A TRF originator ..... SGS Fimko Ltd Master TRF ..... dated 2003-03 Copyright © 2003 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved. This publication may be produced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context	
Test item description ..... Industrial Computer Manufacturer ..... Same as applicant Trademark ..... ADVANTECH Model and/or type reference ..... AWS-8248XXX-XXX, AWS-8420XXX-XXX (X=0-9, A-Z or blank) Serial number ..... Pre-product samples without serial numbers Rating(s) ..... 115/230Vac, 60/50Hz, 10/5A	

**Particulars: test item vs. test requirements**

Equipment mobility .....: Movable equipment: AWS-8248XXX-XXX  
 Stationary equipment: AWS-8420XXX-XXX

Operating condition .....: Continuous operation

Mains supply tolerance (%).....: -10%, +10%

Tested for IT power systems .....: Yes

IT testing, phase-phase voltage (V) .....: 230V (for Norway)

Class of equipment .....: I

Mass of equipment (kg) .....: 1. 13.8 kg for AWS-8248XXX-XXX  
 2. 21.8 kg for AWS-8420XXX-XXX

Protection against ingress of water .....: IPX0

**Test case verdicts**

Test case does not apply to the test object.....: **N**(.A.)

Test item does meet the requirement .....: **P**(ass)

Test item does not meet the requirement .....: **F**(ail)

**Testing**

Date of receipt of test item .....: October 2003

Date(s) of performance of test .....: October 2003

**General remarks**

**"This report is not valid as a CB Test Report unless appended to a CB Test Certificate issued by a NCB, in accordance with IEC 60950-1".**

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

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

"(see remark #)" refers to a remark appended to the report.

"(see Annex #)" refers to an annex appended to the report.

Throughout this report a point is used as the decimal separator.

**Comments**

Factories:

1. Advantech Co., Ltd.  
5Fl., No. 1, Lane 169, Kang-Ning Street, Xi-Zhi City, Taipei Hsien 221, Taiwan
2. Advantech Co., Ltd.  
3<sup>rd</sup> Fl., 10 Lane 130, Ming Chuan Rd., Hsin-Tien, Taipei Hsien 231, Taiwan.
3. Superior Co., Ltd.  
Tiensong Area, Qingxing Town, Dongguan, Guangdong, China.
4. Advantech Co., Ltd.  
No. 600, Han-Pu Road, Yu-Shan, Kun-Shan, Jiang Su, China.
5. Beijing Yan Hua Xing Ye Electronic Science & Technology Co., Ltd.  
No. 7, 6<sup>th</sup> Street, Shang Di Zone, Haidian District, Beijing, P.R. China

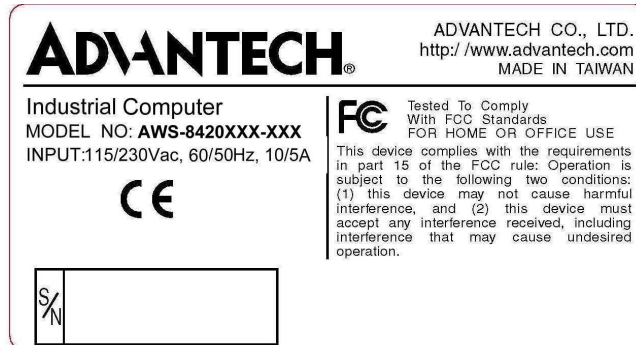
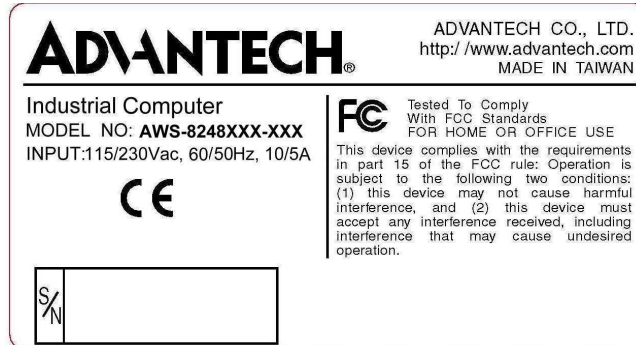
Brief description of test sample:

The equipment models AWS-8248XXX-XXX and AWS-8420XXX-are industrial computers for general office use. The prefix X denotes 0-9, A-Z or blank for marking purpose. Both models are similar except for LCD panel, DC/AC inverter, metal case dimensions and system fan difference. Detail refers to appended tables for test results.

The internal switching power supplies are CB scheme approved products, which were evaluated according to IEC 60950:1999 by Nemko or TÜV, for details information see appended table 1.5.1.

- The unit provided maximum 7 sets of Hard Disk Drives.
- The unit provided either CD-ROM or FDD as optional.
- The unit provided 2 DC fans for system and CPU each.
- The USB ports have been evaluated complying with Limited Power Source.
- The maximum operation ambient temperature was specified of 40°C by manufacture.
- The sources of storage device are listed in table 1.5.1, however the acceptance should be given during final national approval.

## Copy of marking plate(s):



IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
1	GENERAL		<b>P</b>
1.5	Components		<b>P</b>
1.5.1	Comply with IEC 60950 or relevant component standard	Components, which were found to affect safety aspects, comply with the requirements of this standard or within the safety aspects of the relevant IEC component standards (see appended table 1.5.1).	<b>P</b>
1.5.2	Evaluation and testing 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.	<b>P</b>
	Dimensions (mm) of mains plug for direct plug-in :	Not direct plug-in type.	<b>N</b>
	Torque and pull test of mains plug for direct plug-in; torque (Nm); pull (N)..... :	dto.	<b>N</b>
1.5.3	Thermal controls	No thermal control.	<b>N</b>
1.5.4	Transformers	Transformer in approved SPS.	<b>P</b>
1.5.5	Interconnecting cables	No interconnecting cables.	<b>N</b>
1.5.6	Capacitors in primary circuits .....	In approved SPS.	<b>P</b>
1.5.7	Double or reinforced insulation bridged by components		<b>N</b>
1.5.7.1	Bridging capacitors		<b>N</b>
1.5.7.2	Bridging resistors		<b>N</b>
1.5.7.3	Accessible parts		<b>N</b>
1.5.8	Components in equipment for IT power systems	Approved SPS used.	<b>P</b>
1.6	Power interface		<b>P</b>
1.6.1	AC power distribution systems	TN power system. IT power system for Norway only.	<b>P</b>
1.6.2	Input current	Highest load according to 1.2.2.1 for this equipment is CD-Rom or FDD and max. 1 set of HDD permanently access, the dummy loads of 2.5W in each USB connection, and a dummy load of 5Vdc/10W to represent each	<b>P</b>

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
		slots on unit main board (maximum to 7 slots). The operator can connect additional options like a parallel printer or a serial device. The output power of max. 0.5W is considered to be negligible. (see appended table)	
1.6.3	Voltage limit of hand-held equipment	This appliance is not hand-held equipment.	<b>N</b>
1.6.4	Neutral conductor	In approved SPS.	<b>P</b>

1.7	Marking and instructions		<b>P</b>
1.7.1	Power rating	See below.	<b>P</b>
	Rated voltage(s) or voltage range(s) (V) .....	115/230Vac	<b>P</b>
	Symbol for nature of supply for d.c. ....	Mains from AC source	<b>N</b>
	Rated frequency or frequency range (Hz) .....	60/50Hz	<b>P</b>
	Rated current (A) .....	10/5A	<b>P</b>
	Manufacturer's name/Trademark .....	ADVANTECH CO., LTD./ADVANTECH	<b>P</b>
	Type/model .....	AWS-8248XXX-XXX and AWS-8420XXX-XXX (X=0-9, A-Z or blank)	<b>P</b>
	Symbol of Class II .....	Class I equipment.	<b>N</b>
	Other symbols .....	Additional symbols or markings do not give rise to misunderstanding.	<b>P</b>
	Certification marks .....	See copy of the marking plate for the other marks.	<b>N</b>
1.7.2	Safety instructions	The installation guide contains information for operation, installation, servicing, transport, storage and technical data. Marking of Laser Class 1 for laser product (CD-ROM) was adhered on component itself.	<b>P</b>
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	<b>N</b>
1.7.4	Supply voltage adjustment .....		<b>N</b>



IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
1.7.5	Power outlets on the equipment .....		<b>N</b>
1.7.6	Fuse identification .....		<b>N</b>
1.7.7	Wiring terminals	See below.	<b>N</b>
1.7.7.1	Protective earthing and bonding terminals	Appliance inlet used.	<b>N</b>
1.7.7.2	Terminal for a.c. mains supply conductors	The equipment with appliance inlet, which is intended to use the detachable type power supply cord.	<b>N</b>
1.7.8	Controls and indicators	See below.	<b>N</b>
1.7.8.1	Identification, location and marking .....	The marking and indication of the power switch or functional switch is located that indication of function clearly.	<b>P</b>
1.7.8.2	Colours .....	No safety relevant controls or indicators.	<b>N</b>
1.7.8.3	Symbols according to IEC 60417 .....	The switch on front panel with symbol according to IEC 60417, No. 5009 (line half inside circle).	<b>P</b>
1.7.8.4	Markings using figures .....	No indicators for different positions.	<b>N</b>
1.7.9	Isolation of multiple power sources .....	Only one main supply.	<b>N</b>
1.7.10	IT power system	Should be evaluated when national approval.	<b>N</b>
1.7.11	Thermostats and other regulating devices	No adjustable thermostat.	<b>N</b>
1.7.12	Language .....	Installation guide and marking in English and German. Other language would be provided when national approval.	—
1.7.13	Durability	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15s and then again for 15s with the cloth soaked with petroleum spirit.  After this test there was no damage to the label. The marking on the label did not fade. There was no curling nor lifting of the label edge.	<b>P</b>

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
1.7.14	Removable parts	No required markings placed on removable parts.	<b>N</b>
1.7.15	Replaceable batteries	Lithium battery for real time clock is exchangeable. Warning sentence printed in manual.	<b>P</b>
	Language.....:	English	—
1.7.16	Operator access with a tool.....:	All areas containing hazards are inaccessible to the operator.	<b>N</b>
1.7.17	Equipment for restricted access locations.....:	The Safety Information contains a statement describing the equipment is only for installation in a restricted access location.	<b>P</b>

2	PROTECTION FROM HAZARDS		<b>P</b>
2.1	Protection from electric shock and energy hazards		<b>P</b>
2.1.1	Protection in operator access areas		<b>P</b>
2.1.1.1	Access to energized parts	The construction of the outer metal enclosure prevents the accessibility to any parts with only basic insulation to ELV or hazardous voltage with the test pin or test finger.	<b>P</b>
	Test by inspection .....		<b>P</b>
	Test with test finger .....		<b>P</b>
	Test with test pin .....		<b>P</b>
	Test with test probe .....	Not applied.	<b>N</b>
2.1.1.2	Battery compartments .....	No battery compartment.	<b>N</b>
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	<b>N</b>
	Working voltage (V); distance (mm) through insulation		—
2.1.1.4	Access to hazardous voltage circuit wiring		<b>N</b>
2.1.1.5	Energy hazards .....		<b>N</b>
2.1.1.6	Manual controls		<b>N</b>
2.1.1.7	Discharge of capacitors in the primary circuit		<b>N</b>
	Time-constant (s); measured voltage (V) .....		—

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
2.1.2	Protection in service access areas	No maintenance works in operation mode necessary.	<b>N</b>
2.1.3	Protection in restricted access locations	The unit is not intended to be used in restricted locations.	<b>N</b>

2.2	SELV circuits		<b>P</b>
2.2.1	General requirements	See below.	<b>P</b>
2.2.2	Voltages under normal conditions (V) .....	Between any SELV circuits 42.4V peak or 60VDC are not exceeded	<b>P</b>
2.2.3	Voltages under fault conditions (V) .....	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71V peak and 120V DC were not exceed and SELV limits not for longer than 0.2 seconds.	<b>P</b>
2.2.3.1	Separation by double or reinforced insulation (method 1)	In approved SPS.	<b>P</b>
2.2.3.2	Separation by earthed screen (method 2)	In approved SPS.	<b>P</b>
2.2.3.3	Protection by earthing of the SELV circuit (method 3)		<b>N</b>
2.2.4	Connection of SELV circuits to other circuits .....	See 2.2.2 and 2.2.3. No direct connection between SELV and any primary circuits.	<b>N</b>

2.3	TNV circuits		<b>N</b>
2.3.1	Limits		<b>N</b>
	Type of TNV circuits .....		—
2.3.2	Separation from other circuits and from accessible parts		<b>N</b>
	Insulation employed .....		—
2.3.3	Separation from hazardous voltages		<b>N</b>
	Insulation employed .....		—
2.3.4	Connection of TNV circuits to other circuits		<b>N</b>
	Insulation employed .....		—
2.3.5	Test for operating voltages generated externally		<b>N</b>

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
2.4	Limited current circuits		<b>P</b>
2.4.1	General requirements		<b>P</b>
2.4.2	Limit values	See appended table 2.4.	<b>P</b>
	Frequency (Hz)..... :	dto	—
	Measured current (mA) ..... :	dto	—
	Measured voltage (V) ..... :	450<U<15k (0.98kV max.)	—
	Measured capacitance (μF) ..... :	< 0.1 μF (0.0254μC < 45μC)	—
2.4.3	Connection of limited current circuits to other circuits		<b>P</b>

2.5	Limited power sources <i>Measured for USB port only.</i>		<b>P</b>
	Inherently limited output		<b>N</b>
	Impedance limited output		<b>N</b>
	Overcurrent protective device limited output		<b>N</b>
	Regulating network limited output under normal operating and single fault condition	Output in compliance with the limits of table 2B. For test results refer to appended table 2.5	<b>P</b>
	Regulating network limited output under normal operating conditions and overcurrent protective device limited output under single fault condition		<b>N</b>
	Output voltage (V), output current (A), apparent power (VA) ..... :	See appended table.	—
	Current rating of overcurrent protective device (A)		—

2.6	Provisions for earthing and bonding		<b>P</b>
2.6.1	Protective earthing	In approved SPS.	<b>P</b>
2.6.2	Functional earthing	Secondary functional earthing is connected to protectively earthed conductive part that separated from primary by basic insulation.	<b>P</b>
2.6.3	Protective earthing and protective bonding conductors	See below.	<b>P</b>
2.6.3.1	Size of protective earthing conductors	No power supply cord provided.	<b>N</b>
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG ..... :		—

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
2.6.3.2	Size of protective bonding conductors	In compliance with 2.6.3.3.	<b>P</b>
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG ..... :		—
2.6.3.3	Rated current (A), type and nominal thread diameter (mm) ..... :	Rated current 10A, see below.	<b>N</b>
	Resistance (Ω) of earthing conductors and their terminations, test current (A) ..... :	Resistance <0.1Ω, see table 2.6.3.3 for details.	<b>P</b>
2.6.3.4	Colour of insulation..... :	No green/yellow wire used except in approved SPS.	<b>P</b>
2.6.4	Terminals	See below.	<b>P</b>
2.6.4.1	Protective earthing and bonding terminals	Appliance inlet used.	<b>N</b>
	Rated current (A), type and nominal thread diameter (mm) ..... :	Not a permanently connected equipment.	—
2.6.4.2	Separation of the protective earthing conductor from protective bonding conductors	In approved SPS.	<b>P</b>
2.6.5	Integrity of protective earthing	See below.	<b>P</b>
2.6.5.1	Interconnection of equipment	This unit has its own earthing connection. Any other units connected via the output shall be provided SELV only. The equipment does not comprise class I and class II.	<b>P</b>
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switch or overcurrent protective device in protective earthing or bonding conductor.	<b>P</b>
2.6.5.3	Disconnection of protective earth	Appliance inlet provided.	<b>P</b>
2.6.5.4	Parts that can be removed by an operator	Plug or inlet, earthing connected before and disconnected after hazardous voltage. No other operator removable parts.	<b>P</b>
2.6.5.5	Parts removed during servicing	It is not necessary to disconnect earthing except for the removing of the earthed part itself.	<b>P</b>
2.6.5.6	Corrosion resistance	All safety earthing connections in compliance with Annex J.	<b>P</b>
2.6.5.7	Screws for protective bonding	No screw for protective bonding.	<b>N</b>
2.6.5.8	Reliance on telecommunication network		<b>P</b>

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
2.7	Overcurrent and earth fault protection in primary circuits		<b>P</b>
2.7.1	Basic requirements	Equipment relies on 16A rated fuse or circuit breaker of the wall outlet installation protection of the building installation in regard to L to N short circuit. Over current protection is provided in approved SPS.	<b>P</b>
	Instructions when protection relies on building installation	The protection devices are well dimensioned and mounted.	<b>P</b>
2.7.2	Faults not covered in 5.3 (EN 60950: Void)	Pluggable equipment type A, the building installation is considered as providing short circuit backup protection.	<b>P</b>
2.7.3	Short-circuit backup protection	Over current protection provided in approved SPS.	<b>P</b>
2.7.4	Number and location of protective devices ..... :	In approved SPS.	<b>N</b>
2.7.5	Protection by several devices		<b>N</b>
2.7.6	Warning to service personnel..... :		<b>N</b>
2.8	Safety interlocks		<b>N</b>
2.8.1	General principles		<b>N</b>
2.8.2	Protection requirements		<b>N</b>
2.8.3	Inadvertent reactivation		<b>N</b>
2.8.4	Fail-safe operation		<b>N</b>
2.8.5	Interlocks with moving parts		<b>N</b>
2.8.6	Overriding an interlock		<b>N</b>
2.8.7	Switches and relays in interlock systems		<b>N</b>
2.8.7.1	Contact gaps (mm) ..... :		<b>N</b>
2.8.7.2	Overload test		<b>N</b>
2.8.7.3	Endurance test		<b>N</b>
2.8.7.4	Electric strength test (V)		<b>N</b>
2.8.8	Mechanical actuators		<b>N</b>
2.9	Electrical insulation		<b>P</b>

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used.	<b>P</b>
2.9.2	Humidity conditioning	40°C, 95% R.H., Total time elapsed: 120h	<b>P</b>
2.9.3	Requirements for insulation	Please refer to 5.2, 2.10 and 4.5.1.	<b>P</b>
2.9.4	Insulation parameters	Both parameters were considered.	<b>P</b>
2.9.5	Categories of insulation	The adequate levels of safety insulation is provided and maintained to comply with the requirements of this standard.	<b>P</b>

2.10	Clearances, creepage distances and distances through insulation		<b>P</b>
2.10.1	General	See 2.10.3, 2.10.4, 2.10.5.	<b>P</b>
2.10.2	Determination of working voltage	The rms and the peak voltage of the appliance is mains voltage 230V max. The unit was connected to a 240V TN power system.	<b>P</b>
2.10.3	Clearances	See below.	<b>P</b>
2.10.3.1	General	Considered.	<b>P</b>
2.10.3.2	Clearances in primary circuits	In approved SPS.	<b>P</b>
2.10.3.3	Clearances in secondary circuits	See 5.3.4.	<b>N</b>
2.10.3.4	Measurement of transient levels	No transient voltage across the clearance lower than normal.	<b>N</b>
2.10.4	Creepage distances	In approved SPS.	<b>N</b>
	CTI tests .....	CTI rating for all materials of min. 100.	—
2.10.5	Solid insulation		<b>N</b>
2.10.5.1	Minimum distance through insulation		<b>N</b>
2.10.5.2	Thin sheet material		<b>N</b>
	Number of layers (pcs) .....		—
	Electric strength test		—
2.10.5.3	Printed boards .....		<b>N</b>
	Distance through insulation		<b>N</b>

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
	Electric strength test for thin sheet insulating material		—
	Number of layers (pcs) .....		<b>N</b>
2.10.5.4	Wound components .....		<b>N</b>
	Number of layers (pcs) .....		<b>N</b>
	Two wires in contact inside component; angle between 45° and 90°		<b>N</b>
2.10.6	Coated printed boards		<b>N</b>
2.10.6.1	General		<b>N</b>
2.10.6.2	Sample preparation and preliminary inspection ..		<b>N</b>
2.10.6.3	Thermal cycling .....		<b>N</b>
2.10.6.4	Thermal ageing (°C) .....		<b>N</b>
2.10.6.5	Electric strength test		—
2.10.6.6	Abrasion resistance test .....		<b>N</b>
	Electric strength test		—
2.10.7	Enclosed and sealed parts .....	No hermetically sealed component.	<b>N</b>
	Temperature $T_1=T_2 = T_{mra} - T_{amb} + 10K$ (°C) .....		<b>N</b>
2.10.8	Spacings filled by insulating compound .....		<b>N</b>
	Electric strength test		—
2.10.9	Component external terminations		<b>N</b>
2.10.10	Insulation with varying dimensions	No reduction applied for.	<b>N</b>

3	WIRING, CONNECTIONS AND SUPPLY		<b>P</b>
3.1	General		<b>P</b>
3.1.1	Current rating and overcurrent protection	All internal wires are UL recognized wiring which is PVC insulated, rated VW-1, minimum 80°C. Internal wiring gauge is suitable for current intended to be carried.  No internal wire for primary power distribution.	<b>P</b>
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges, which could damage the insulation.	<b>P</b>



IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
3.1.3	Securing of internal wiring	The internal wiring is secured by solder pins, cable tie or tubing so that loosening of the terminal connections is unlikely.	<b>P</b>
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage. For the insulation material see 3.1.1.	<b>P</b>
3.1.5	Beads and ceramic insulators	Not used.	<b>N</b>
3.1.6	Screws for electrical contact pressure	Screws engage at least two complete threads into the metal enclosure. No screws of insulating material are used for electrical connections, or where supplementary or reinforced insulation could be impaired by a metal screws replacement.	<b>P</b>
3.1.7	Non-metallic materials in electrical connections	All current carrying connections are metal to metal.	<b>P</b>
3.1.8	Self-tapping and spaced thread screws	No self- tapping or spaced thread screws used.	<b>P</b>
3.1.9	Termination of conductors	All conductors are reliably secured.	<b>P</b>
	10 N pull test	Complied.	<b>P</b>
3.1.10	Sleeving on wiring	No sleeving used as supplementary insulation.	<b>N</b>

3.2	Connection to a.c. mains supplies		<b>P</b>
3.2.1	Means of connection	Appliance inlet.	<b>P</b>
3.2.2	Multiple supply connections	Separate inlets are provided for different circuits. Supply inlets are interchangeable and intended to connect to identical power system, no hazards could be created.	<b>P</b>
3.2.3	Permanently connected equipment	Not a permanently connected equipment.	<b>N</b>
	Number of conductors, diameter (mm) of cable and conduits .....	dto	—

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
3.2.4	Appliance inlets	The appliance inlet complies with IEC 60320. The power cord can be inserted without difficulties and does not support the unit.	<b>P</b>
3.2.5	Power supply cords		<b>N</b>
	Type..... :		—
	Rated current (A), cross-sectional area (mm <sup>2</sup> ), AWG..... :		—
3.2.6	Cord anchorages and strain relief		<b>N</b>
	Mass of equipment (kg), pull (N) ..... :		—
	Longitudinal displacement (mm) ..... :		—
3.2.7	Protection against mechanical damage	No parts under this unit likely to damage the power supply cord. No sharp edge.	<b>P</b>
3.2.8	Cord guards	No cord guard.	<b>N</b>
	D (mm); test mass (g) ..... :	dto	—
	Radius of curvature of cord (mm)..... :	dto	—
3.2.9	Supply wiring space		<b>N</b>
3.3	Wiring terminals for connection of external conductors		<b>N</b>
3.3.1	Wiring terminals		<b>N</b>
3.3.2	Connection of non-detachable power supply cords		<b>N</b>
3.3.3	Screw terminals		<b>N</b>
3.3.4	Rated current (A), cord/cable type, cross-sectional area (mm <sup>2</sup> ) ..... :		<b>N</b>
3.3.5	Rated current (A), type and nominal thread diameter (mm) ..... :		<b>N</b>
3.3.6	Wiring terminals design		<b>N</b>
3.3.7	Grouping of wiring terminals		<b>N</b>
3.3.8	Stranded wire		<b>N</b>
3.4	Disconnection from the a.c. mains supply		<b>P</b>
3.4.1	General requirement	Disconnect device provided.	<b>P</b>
3.4.2	Disconnect devices	Appliance inlet.	<b>P</b>
3.4.3	Permanently connected equipment	Not a permanently connected	<b>N</b>

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
		equipment.	
3.4.4	Parts which remain energized	When plug or inlet is disconnected no remaining parts with hazardous voltage in the equipment	<b>P</b>
3.4.5	Switches in flexible cords		<b>N</b>
3.4.6	Single-phase equipment	The power cord plug or inlet disconnects both poles simultaneously.	<b>P</b>
3.4.7	Three-phase equipment	Single phase.	<b>N</b>
3.4.8	Switches as disconnect devices		<b>N</b>
3.4.9	Plugs as disconnect devices		<b>N</b>
3.4.10	Interconnected equipment	Interconnection to other devices by secondary output cable only.	<b>N</b>
3.4.11	Multiple power sources	Marking provided, see copy of marking plate.	<b>P</b>
3.5	Interconnection of equipment		<b>P</b>
3.5.1	General requirements	See below.	<b>P</b>
3.5.2	Types of interconnection circuits.....:	Interconnection circuits of SELV through the connectors. No ELV interconnection circuits.	<b>P</b>
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection	<b>N</b>
4	PHYSICAL REQUIREMENTS		<b>P</b>
4.1	Stability		<b>P</b>
	Angle of 10°	This appliance is of a stable mechanical construction and does not overbalance when tilted to an angle of 10° from its normal upright position.	<b>P</b>
	Test: force (N) .....	Equipment is not a floorstanding unit.	<b>N</b>
4.2	Mechanical strength		<b>P</b>
4.2.1	General	See below. After tests, unit complied with 2.1.1, 2.6.1, 2.10 and 4.4.1.	<b>P</b>

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
4.2.2	Steady force test, 10 N	10N applied to components other than parts serving as an enclosure.	<b>P</b>
4.2.3	Steady force test, 30 N	30N applied to internal enclosure. No energy or other hazards.	<b>P</b>
4.2.4	Steady force test, 250 N	250N applied to outer enclosure. No energy or other hazards.	<b>P</b>
4.2.5	Impact test	No hazard as result from steel sphere ball impact test.	<b>P</b>
4.2.6	Drop test		<b>N</b>
4.2.7	Stress relief	Hazardous voltages are contained in the approved SPS. As the SPS is complete enclosed by an earthed metal enclosure, which meets the requirements of 2.1.2, the oven test is not considered to be necessary.	<b>N</b>
4.2.8	Cathode ray tubes	No CRT.	—
	Picture tube separately certified..... :		<b>N</b>
4.2.9	High pressure lamps	No high pressure lamp.	<b>N</b>
4.2.10	Wall or ceiling mounted equipment; force (N) ....:		<b>N</b>

4.3	Design and construction		<b>P</b>
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	<b>P</b>
4.3.2	Handles and manual controls; force (N) .....:		<b>N</b>
4.3.3	Adjustable controls	None that would cause hazard.	<b>N</b>
4.3.4	Securing of parts	Electrical and mechanical connections and parts expected to withstand usual mechanical stress.	<b>P</b>
4.3.5	Connection of plugs and sockets	In operator and service area, mismatch of connectors were prevented by incompatible form or location.	<b>P</b>
4.3.6	Direct plug-in equipment	Not direct plug-in type.	<b>N</b>
	Torque (Nm) .....:		—

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
4.3.7	Heating elements in earthed equipment	No heating element.	<b>N</b>
4.3.8	Batteries	For RTC battery: a) Prevent from force charging by internal circuit. b) Reverse polarity installation is prevented by compartment design.	<b>P</b>
4.3.9	Oil and grease	No oil or grease.	<b>N</b>
4.3.10	Dust, powders, liquids and gases	Equipment in intended use not considered to be exposed to these.	<b>P</b>
4.3.11	Containers for liquids or gases	No container for liquid or gas.	<b>N</b>
4.3.12	Flammable liquids .....	No flammable liquid.	<b>N</b>
	Quantity of liquid (l) .....		<b>N</b>
	Flash point (°C) .....		<b>N</b>
4.3.13	Radiation; type of radiation .....	See below.	<b>P</b>
	Equipment using lasers	The LED energy is far below the limit of LED class 1 if LED used in equipment. Certified CD-ROM used.	<b>P</b>

4.4	Protection against hazardous moving parts		<b>P</b>
4.4.1	General	See below.	<b>P</b>
4.4.2	Protection in operator access areas	No operator access areas.	<b>N</b>
4.4.3	Protection in restricted access locations	See below.	<b>P</b>
4.4.4	Protection in service access areas	Unintentional contact with hazardous moving parts is unlikely during servicing operations according to service instructions.	<b>P</b>

4.5	Thermal requirements		<b>P</b>
4.5.1	Temperature rises	See appended table 4.5.1.	<b>P</b>
	Normal load condition per Annex L .....	Tested accordingly.	<b>P</b>
4.5.2	Resistance to abnormal heat	In approved SPS.	<b>N</b>

4.6	Openings in enclosures		<b>P</b>
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IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
4.6.1	Top and side openings	No hazardous parts within 5° projectary area.	<b>P</b>
	Dimensions (mm) ..... :	(see appended table)	—
4.6.2	Bottoms of fire enclosures	No hazardous parts within 5° projectary area.	<b>P</b>
	Construction of the bottom ..... :	(see appended table)	—
4.6.3	Doors or covers in fire enclosures		<b>N</b>
4.6.4	Openings in transportable equipment		<b>N</b>
4.6.5	Adhesives for constructional purposes		<b>N</b>
	Conditioning temperature/time :		—

4.7	Resistance to fire		<b>P</b>
4.7.1	Reducing the risk of ignition and spread of flame	Use of materials with the required flammability classes.	<b>P</b>
4.7.2	Conditions for a fire enclosure	See below.	<b>P</b>
4.7.2.1	Parts requiring a fire enclosure	With having the following parts: <ul style="list-style-type: none"> <li>· components in secondary (not supplied by LPS)</li> <li>· components having unenclosed arcing parts at hazardous voltage or energy level</li> <li>· insulated wiring</li> </ul> the fire enclosure is required.	<b>P</b>
4.7.2.2	Parts not requiring a fire enclosure		<b>N</b>
4.7.3	Materials		<b>P</b>
4.7.3.1	General	See appended table 1.5.1 for PCB.	<b>P</b>
4.7.3.2	Materials for fire enclosures	Metal enclosure.	<b>N</b>
4.7.3.3	Materials for components and other parts outside fire enclosures	Front bezel is decorative parts with material HB min.	<b>P</b>
4.7.3.4	Materials for components and other parts inside fire enclosures	Internal components except small parts are V-2 or better.	<b>P</b>
4.7.3.5	Materials for air filter assemblies	No air filter assemblies.	<b>N</b>
4.7.3.6	Materials used in high-voltage components	No high voltage component.	<b>N</b>

5	ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS	<b>P</b>
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IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
5.1	Touch current and protective conductor current		<b>P</b>
5.1.1	General	See sub-clauses 5.1.2 to 5.1.6.	<b>P</b>
5.1.2	Equipment under test (EUT)	EUT has only one mains connection.	<b>P</b>
5.1.3	Test circuit	Using figure 5A.	<b>P</b>
5.1.4	Application of measuring instrument	Using measuring instrument in annex D.	<b>P</b>
5.1.5	Test procedure	The touch current was measured from primary to earth.	<b>P</b>
5.1.6	Test measurements	See below.	<b>P</b>
	Test voltage (V) .....	See appended table 5.1.6.	—
	Measured current (mA) .....	See appended table 5.1.6.	—
	Max. allowed current (mA) .....	See appended table 5.1.6.	—
5.1.7	Equipment with touch current exceeding 3.5 mA .....	Touch current does not exceed 3.5mA.	<b>N</b>
5.1.8	Touch currents to and from telecommunication networks		<b>N</b>
5.1.8.1	Limitation of the touch current to a telecommunication network		<b>N</b>
	Test voltage (V) .....		—
	Measured current (mA) .....		—
	Max. allowed current (mA) .....		—
5.1.8.2	Summation of touch currents from telecommunication networks.....		<b>N</b>

5.2	Electric strength		<b>P</b>
5.2.1	General	(see appended table 5.2)	<b>P</b>
5.2.2	Test procedure	(see appended table 5.2)	<b>P</b>

5.3	Abnormal operating and fault conditions		<b>P</b>
5.3.1	Protection against overload and abnormal operation	See below.	<b>P</b>
5.3.2	Motors	Approved DC fan used.	<b>P</b>
5.3.3	Transformers	In approved SPS.	<b>N</b>

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
5.3.4	Functional insulation..... :	Short-circuit test, results see appended table 5.3.	<b>P</b>
5.3.5	Electromechanical components	No electromechanical component other than motor provided.	<b>N</b>
5.3.6	Simulation of faults	Faults in primary and secondary components and operational insulation were already considered during the approval of the SPS.  Ventilation blocked and DC fan locked test: Results see appended table.  No hazard by operating buttons and controls not in accordance with the instructions.	<b>P</b>
5.3.7	Unattended equipment	Neither thermostat or temperature limiter nor thermal cut-out provided.	<b>N</b>
5.3.8	Compliance criteria for abnormal operating and fault conditions	Neither fire occurred nor molten metal was emitted. Electric strength test primary to secondary and primary to earth were passed.	<b>P</b>

6	CONNECTION TO TELECOMMUNICATION NETWORKS		<b>N</b>
6.1	Protection of telecommunication network service personnel, and users of other equipment connected to the network, from hazards in the equipment		<b>N</b>
6.1.1	Protection from hazardous voltages		<b>N</b>
6.1.2	Separation of the telecommunication network from earth		<b>N</b>
6.1.2.1	Requirements		<b>N</b>
	Test voltage (V) .....		—
	Current in the test circuit (mA) .....		—
6.1.2.2	Exclusions .....		<b>N</b>

6.2	Protection of equipment users from overvoltages on telecommunication networks		<b>N</b>
6.2.1	Separation requirements		<b>N</b>
6.2.2	Electric strength test procedure		<b>N</b>
6.2.2.1	Impulse test		<b>N</b>



IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
6.2.2.2	Steady-state test		<b>N</b>
6.2.2.3	Compliance criteria		<b>N</b>

6.3	Protection of telecommunication wiring system from overheating		<b>N</b>
	Max. output current (A) .....		—
	Current limiting method.....		—

A	ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE		<b>N</b>
A.1	Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)		<b>N</b>
A.1.1	Samples		—
	Wall thickness (mm) .....		—
A.1.2	Conditioning of samples; temperature (°C) .....		<b>N</b>
A.1.3	Mounting of samples.....		<b>N</b>
A.1.4	Test flame		<b>N</b>
A.1.5	Test procedure		<b>N</b>
A.1.6	Compliance criteria		<b>N</b>
	Sample 1 burning time (s).....		—
	Sample 2 burning time (s).....		—
	Sample 3 burning time (s).....		—
A.2	Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)		<b>N</b>
A.2.1	Samples		—
	Wall thickness (mm) .....		—
A.2.6	Compliance criteria		<b>N</b>
	Sample 1 burning time (s).....		—
	Sample 2 burning time (s).....		—
	Sample 3 burning time (s).....		—
A.2.7	Alternative test acc. to IEC 60695-2-2, cl. 4, 8		<b>N</b>
	Sample 1 burning time (s).....		—
	Sample 2 burning time (s).....		—
	Sample 3 burning time (s).....		—
A.3	High current arcing ignition test (see 4.7.3.2)		<b>N</b>

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
A.3.1	Samples		—
	Wall thickness (mm) .....		—
A.3.5	Compliance criteria		<b>N</b>
	Sample 1 number of arcs to ignition (pcs) .....		—
	Sample 2 number of arcs to ignition (pcs) .....		—
	Sample 3 number of arcs to ignition (pcs) .....		—
	Sample 4 number of arcs to ignition (pcs) .....		—
	Sample 5 number of arcs to ignition (pcs) .....		—
A.4	Hot wire ignition test (see 4.7.3.2)		<b>N</b>
A.4.1	Samples		—
	Wall thickness (mm) .....		—
A.4.5	Compliance criteria		<b>N</b>
	Sample 1 ignition time (s) .....		—
	Sample 2 ignition time (s) .....		—
	Sample 3 ignition time (s) .....		—
	Sample 4 ignition time (s) .....		—
	Sample 5 ignition time (s) .....		—
A.5	Hot flaming oil test (see 4.6.2)		<b>N</b>
A.6	Flammability tests for classifying materials V-0, V-1 or V-2		<b>N</b>
A.6.1	Samples		—
	Wall thickness (mm) .....		—
A.6.5	Compliance criteria		<b>N</b>
A.6.6	Permitted retest		<b>N</b>
A.7	Flammability test for classifying foamed materials HF-1, HF-2 or HFB		<b>N</b>
A.7.1	Sample		—
	Wall thickness (mm) .....		—
A.7.4	Compliance criteria		<b>N</b>
A.7.5	Compliance criteria, HF-2		<b>N</b>
A.7.6	Compliance criteria, HF-1		<b>N</b>
A.7.7	Compliance criteria, HBF		<b>N</b>
A.7.8	Permitted retest, HF-1 or HF-2		<b>N</b>
A.7.9	Permitted retest, HBF		<b>N</b>
A.8	Flammability test for classifying materials HB		<b>N</b>

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
A.8.1	Samples		—
	Sample thickness (mm) .....		—
A.8.2	Conditioning of samples; temperature (°C) .....		N
A.8.4	Test procedure		N
A.8.5	Compliance criteria		N
A.8.6	Permitted retest		N
A.9	Flammability test for classifying materials 5V		N
A.9.1	Samples		—
	Sample thickness (mm) .....		—
A.9.4	Test procedure, test bars		N
A.9.5	Test procedure, test plaques		N
A.9.6	Compliance criteria .....		N
A.9.7	Permitted retest		N
A.10	Stress relief conditioning (see 4.2.7)		N
	Temperature (°C).....		—

B	ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS		N
B.1	General requirements		N
	Position .....		—
	Manufacturer .....		—
	Type .....		—
	Rated values .....		—
B.2	Test conditions		N
B.3	Maximum temperatures		N
B.4	Running overload test		N
B.5	Locked-rotor overload test		N
	Test duration (days) .....		—
	Electric strength test: test voltage (V) .....		—
B.6	Running overload test for DC motors in secondary circuits		N
B.7	Locked-rotor overload test for DC motors in secondary circuits		N
B.7.1	Test procedure		N
B.7.2	Alternative test procedure; test time (h) .....		N

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
B.7.3	Electric strength test		<b>N</b>
B.8	Test for motors with capacitors		<b>N</b>
B.9	Test for three-phase motors		<b>N</b>
B.10	Test for series motors		<b>N</b>
	Operating voltage (V) .....		—

C	ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)		<b>N</b>
	Position .....		—
	Manufacturer .....		—
	Type .....		—
	Rated values .....		—
C.1	Overload test		<b>N</b>
C.2	Insulation		<b>N</b>

G	ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES <i>The alternative method is not considered.</i>		<b>N</b>
G.1	Summary of the procedure for determining minimum clearances		<b>N</b>
G.2	Determination of mains transient voltage (V) .....		<b>N</b>
G.3	Determination of telecommunication network transient voltage (V).....		<b>N</b>
G.4	Determination of required withstand voltage (V) .:		<b>N</b>
G.5	Measurement of transient levels (V) .....		<b>N</b>
G.6	Determination of minimum clearances .....		<b>N</b>

H	ANNEX H, IONIZING RADIATION (see 4.3.13)		<b>N</b>
	Ionizing radiation		<b>N</b>
	Measured radiation (mR/h) .....		—
	Measured high-voltage (kV) .....		—
	Measured focus voltage (kV) .....		—
	CRT markings .....		—



J	ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)		<b>P</b>
	Metal used .....		—

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict

K	ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.7)		N
K.1	Making and breaking capacity		N
K.2	Thermostat reliability; operating voltage (V) ..... :		N
K.3	Thermostat endurance test; operating voltage (V) ..... :		N
K.4	Temperature limiter endurance; operating voltage (V) ..... :		N
K.5	Thermal cut-out reliability		N
K.6	Stability of operation		N

M	ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)		N
M.2	Method A		N
M.3	Method B		N
M.3.1	Ringling signal		N
M.3.1.1	Frequency (Hz) ..... :		N
M.3.1.2	Voltage (V) ..... :		N
M.3.1.3	Cadence; time (s), voltage (V) ..... :		N
M.3.1.4	Single fault current (mA) ..... :		N
M.3.2	Tripping device and monitoring voltage ..... :		N
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N
M.3.2.2	Tripping device		N
M.3.2.3	Monitoring voltage (V) ..... :		N

U	ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4).		N
	Separate test report		N

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
	<b>SPECIAL NATIONAL CONDITIONS AND NATIONAL DEVIATIONS</b> S = Special National Condition, A = National Deviation (A-deviation), C = CENELEC Common Modification, F = other information		<b>P</b>
	C: delete all the "country" notes that appear on the following pages of the reference document (IEC 60950:1999): 85, 91, 99, 103, 117, 119, 123, 125, 149, 171, 213, 215, 219, 251, 283, 325, 327, 331, 333 and 407	Deleted.	<b>P</b>
1.2.4.1	S (DK): certain types of Class I appliances (see subclause 3.2.1) may be provided with a plug not establishing earthing continuity when inserted into Danish socket-outlets	No power cord provided.	<b>N</b>
1.5.1	A (CH, SE): add the following: NOTE: Switches containing mercury such as thermostats, relays and level controllers are not allowed	No such switch.	<b>N</b>
1.5.8	S (NO): due to the IT power system used (see annex V, figure V.7), capacitors are required to be rated for the applicable phase-to phase voltage (230 V)	Rated accordingly.	<b>P</b>
1.7.2	S (NO): class I pluggable equipment type A intended for connection to other equipment or a communication network shall, if safety relies on connection to protective earth, require a marking stating that the equipment must be connected to an earthed mains socket outlet	No power cord provided.	<b>N</b>
	S (SE): if the separation between the mains and SELV terminal relies upon connection to the safety earth, the apparatus shall have a marking stating that it must be connected to an earthed mains socket-outlet.  The marking text shall be in Swedish and as follows: "Apparaten skall anslutas till jordat uttag när den ansluts till ett nätverk."	Dto.	<b>N</b>
	A (DK): supply cords of Class I equipment, which are delivered without a plug must be provided with a visible tag with the following text: "Vigtigt! Lederen med grøn/gul isolation må kun tilsluttes en klemme mærket  eller  (IEC 417, No. 5019 eller IEC 417, No. 5017)." If essential for the safety of the equipment, the tag must in addition be provided with a diagram, which shows the connection of the other conductors, or be provided with the following text:	Dto.	<b>N</b>

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Clause	Requirement – Test	Result – Remark	Verdict
	"For tilslutning af de øvrige ledere, se medfølgende installationsvejledning."		
1.7.5	S (DK): socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment	No socket-outlets.	<b>N</b>
	A (DK): Class II equipment shall not be fitted with socket-outlets for providing power to other equipment	Dto.	<b>N</b>
1.7.12	A (DE): (Gesetz über technische Arbeitsmittel (Gerätesicherheitsgesetz) [Law on technical labour equipment {Equipment safety law}], of 23 <sup>rd</sup> October 1992, Article 3, 3 <sup>rd</sup> paragraph, 2 <sup>nd</sup> sentence, together with the "Allgemeine Verwaltungsvorschrift zur Durchführung des Zweiten Abschnitts des Gerätesicherheitsgesetzes" [General administrative regulation on the execution of the Second Section of the Equipment safety law], of 10 <sup>th</sup> January 1996, article 2, 4 <sup>th</sup> paragraph item 2)  Directions for use with rules to prevent certain hazards for (among others) maintenance of the technical labour equipment, also for imported technical labour equipment shall be written in the German language.  NOTE: Of this requirement, rules for use even only by service personnel are not exempted	Directions for use with rules to prevent certain hazards for maintenance of the technical labour equipment, also for imported technical labour equipment is written in the German language.	<b>P</b>
1.7.15	A (CH): (Ordinance on environmentally hazardous substances SR 814.013) Annex 4.10 of SR 814.013 applies for batteries	To be evaluated in national approval.	<b>N</b>
	F (ALL): warning texts for lithium batteries	See IEC60950 report.	<b>P</b>
	Languages .....	See IEC60950 report.	—
2.2.4	S (NO): requirements according to this annex, sub-clauses 1.7.2 and 6.1.2.1 apply	No TNV.	<b>N</b>
2.3.2	S (NO): requirements according to this annex, sub-clause 6.1.2.1 apply	No TNV.	<b>N</b>
2.3.3	S (NO): requirements according to this annex, sub-clause 6.1.2.1 apply	No TNV.	<b>N</b>
2.3.4	S (NO): requirements according to this annex, sub-clauses 1.7.2 and 6.1.2.1 apply	No TNV.	<b>N</b>
2.7.1	C: replace the subclause as follows:  Basic requirements  To protect against excessive current, short circuits and earth faults in primary circuits, protective devices shall be included either as integral parts	Replaced.	<b>N</b>

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
	<p>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 5.3 shall be included as integral 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 pluggable equipment type B or permanently connected equipment, 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 instruction.</p> <p>If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for pluggable equipment type A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet</p>		
2.7.2	C: This subclause has been declared 'void'	Declared.	<b>P</b>
2.10.3.1	S (NO): due to the IT power distribution system used (see annex V, figure V.7), the a.c. mains supply voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault	Considered.	<b>P</b>
3.2.1	<p>S (CH): supply cords of equipment having a rated current not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 884-1 and one of the following dimensions sheets:</p> <ul style="list-style-type: none"> <li>- SEV 6532-2:1991: plug type 15, 3P+N+PE 250/400 V, 10 A</li> <li>- SEV 6533-2:1991: plug type 11, L+N 250 V, 10 A</li> <li>- SEV 6534-2:1991: plug type 12, L+N+PE 250 V, 10 A</li> </ul> <p>In general, EN 60 309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: - SEV 5932-2:1998: plug type 25, 3L+N+PE 230/400 V, 16 A - SEV 5933-2:1998: plug type 21, L+N 250 V, 16 A</p> <ul style="list-style-type: none"> <li>- SEV 5934-2:1998: plug type 23, L+N+PE 250 V,</li> </ul>	No power cord provided.	<b>N</b>



IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
	16 A		
	<p>S (DK): supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to the Heavy Current Regulations Section 107-2-D1.</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 poly-phase equipment and single-phase equipment having a rated current exceeding 10 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations Section 107-D1 or EN 60309-2</p>	No power cord provided.	<b>N</b>
	<p>S (ES): supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994</p> <p>Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993</p> <p>Class I equipment provided with socket-outlets with earth contacts, or which are intended to be used locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994</p> <p>If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2</p>	No power cord provided.	<b>N</b>
	<p>S (GB): apparatus 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 and plug, shall be fitted with a "standard plug" in accordance with Statutory Instrument 1768:1994 – The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations.</p> <p>NOTE: "Standard plug" is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug</p>	No power cord provided.	<b>N</b>
	<p>S (IE): apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug shall be</p>	No power cord provided.	<b>N</b>

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Clause	Requirement – Test	Result – Remark	Verdict
	fitted with a 13 A plug in accordance with Statutory Instrument 525: 1997 – National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997		
3.2.3	C: delete note 1, and in table 3A delete the conduit sizes in parentheses	Deleted.	<b>N</b>
	C: replace "60245 IEC 53" by "H05 RR-F", "60227 IEC 52" by "H03 VV-F or H03 VVH2-F" and "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2" In table 3B, replace the first four lines by the following: Up to and including 6                      0,75 <sup>1)</sup> Over 6; up to and including 10    (0,75) <sup>2)</sup> 1,0 Over 10 up to and including 16    (1,0) <sup>3)</sup> 1,5 In the conditions applicable to table 3B, delete the words "in some countries" in condition <sup>1)</sup> . In NOTE 1, delete the second sentence	Replaced.	<b>N</b>
	S (GB): a power supply cord with conductor of 1,25 mm <sup>2</sup> is allowed for equipment with rated current over 10 A and up to and including 13 A	No power cord provided.	<b>N</b>
3.3.4	C: in table 3D, delete the fourth line – conductor sizes for 10 to 13 A, and replace with the following: "Over 10 up to and including 16 Delete the fifth line – conductor sizes for 13 to 16 A.	No power cord provided.	<b>N</b>
	S (GB): the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current of over 10 A up to and including 13 A is: - 1,25 mm <sup>2</sup> to 1,5 mm <sup>2</sup> nominal cross-sectional area	No power cord provided.	<b>N</b>
4.3.6	S (GB): the torque test is performed using a socket outlet complying with BS 1363 and 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, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C	Not direct plug-in equipment.	<b>N</b>
	S (IE): direct plug-in equipment is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 – National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997	Not direct plug-in equipment.	<b>N</b>

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Clause	Requirement – Test	Result – Remark	Verdict
4.3.13	<p>C: replace the second compliance paragraph by: For equipment using LEDs or lasers, compliance is checked according to EN 60825-1</p> <p>NOTE 1 – If equipment falling within the scope of EN 60950 is inherently a class 1 laser product, i.e. it contains no embedded laser or LED of a higher class number, then a laser warning label or other laser warning statement is not required (see 1.1 of EN 60825-1)</p> <p>Renumber the NOTE below the third compliance paragraph as NOTE 2</p>	See IEC60950 report.	<b>P</b>
6.1.2.1	<p>S (NO, SE): add the following text between the first and second paragraph:</p> <p>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 2.10.8 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.7 shall be performed using 1,5 kV); and</li> <li>- is subjected to routine testing for electric strength during manufacturing, using a test voltage of 1,5 kV.</li> </ul> <p>It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2</p>	No TNV.	<b>N</b>
6.1.2.2	S (FI, NO, SE): the exclusions are applicable for permanently connected equipment and pluggable equipment type B only	No TNV.	<b>N</b>
G.2	S (NO): due to the IT power distribution system used (see annex V, figure V.7), the a.c. mains supply voltage is considered to be equal to the line-to-line voltage, and will remain at 230 V in case of a single earth fault	Considered.	<b>N</b>

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
Annex H	C: replace the last paragraph of this annex by: At any point 10 cm from the surface of the operator access area, the dose rate shall not exceed 1 $\mu$ Sv/h (0,1 mR/h) (see note). Account is taken of the background level	Not CRT.	<b>N</b>
	C: replace the NOTE as follows: NOTE – These values appear in Directive 96/29/Euratom		<b>N</b>
	<p>A (DE):</p> <p>(Regulation on protection against hazards by X-ray, of 8<sup>th</sup> January 1987, Article 5 [Operation of X-ray emission source], clauses 1 to 4)</p> <p>a) A licence is required by those who operate an X-ray emission source.</p> <p>b) A licence in accordance with Cl. 1 is not required by those who operate an X-ray emission source on which the electron acceleration voltage does not exceed 20 kV if</p> <p>1) the local dose rate at a distance of 0,1 m from the surface does not exceed 1 <math>\mu</math>Sv/h and</p> <p>2) it is adequately indicated on the X-ray emission source that</p> <p>i) X-rays are generated and</p> <p>ii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer.</p> <p>c) A licence in accordance with Cl. 1 is also not required by persons who operate an X-ray emission source on which the electron acceleration voltage exceeds 20 kV if</p> <p>1) the X-ray emission source has been granted a type approval and</p> <p>2) it is adequately indicated on the X-ray emission source that</p> <p>i) X-rays are generated</p> <p>ii) the device stipulated by the manufacturer or importer guarantees that the maximum permissible local dose rate in accordance with the type approval is not exceeded and</p> <p>iii) the electron acceleration voltage must not exceed the maximum value stipulated by the manufacturer or importer.</p> <p>d) Furthermore, a licence in accordance with Cl. 1 is also not required by persons who operate X-ray emission sources on which the electron acceleration voltage does not exceed 30 kV if</p> <p>1) the X-rays are generated only by intrinsically safe CRTs complying with Enclosure III, No. 6,</p> <p>2) the values stipulated in accordance with</p>		<b>N</b>

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
	Enclosure III, No. 6.2 are limited by technical measures and specified in the device and 3) it is adequately indicated on the X-ray emission source that the X-rays generated are adequately screened by the intrinsically safe CRT		
Annex P	C: replace the text of this annex by: See Annex ZA	Replaced.	N
Annex Q	C: Add the following notes for the standards indicated: IEC 60127 series NOTE: Harmonized as EN 60127 series (not modified) IEC 60269-2-1 NOTE: Harmonized as HD 630.2.1 S2:1997 (modified) IEC 60529 NOTE: Harmonized as EN 60529:1991 (not modified) IEC 61032 NOTE: Harmonized as EN 61032:1998 (not modified)	Added.	N
Annex ZA	C: This European standard incorporates by dated or undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.  NOTE: When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.  — IEC 60050-151:1978 — IEC 60050-195:1998 EN 60065 <sup>1)</sup> :1993 + corr. Nov. 1993 IEC 60065 (mod):1985 EN 60073:1996 IEC 60073:1996 HD 566 S1:1990 IEC 60085:1984 HD 214 S2:1980 IEC 60112:1979 HD 21 <sup>2)</sup> Series IEC 60227 (mod) Series HD 22 <sup>3)</sup> Series IEC 60245 (mod) Series EN 60309 Series IEC 60309 Series EN 60320 Series IEC 60320 (mod) Series		P

IEC 60950 / EN 60950			
Clause	Requirement – Test	Result – Remark	Verdict
	HD 384.3 S2:1995	IEC 60364-3 (mod):1993	
	HD 384.4.41 S2:1996	IEC 60364-4-41 (mod):1992	
	—	IEC 60384-14:1993	
	EN 60417-1:1999	IEC 60417-1:1998	
	EN 60417-2:1999	IEC 60417-2:1998	
	HD 625.1 S1:1996 + corr. Nov. 1996	IEC 60664-1 (mod):1992	
	EN 60695-2-1/1:1996	IEC 60695-2-1/1:1994 + corr. May 1995	
	EN 60695-2-2:1994	IEC 60695-2-2:1991	
	—	IEC 60695-10-2:1995	
	EN 60730-1:1995	IEC 60730-1 (mod):1993	
	EN 60825-1:1994 + corr. Feb. 1995 + A11:1996 + corr. July 1997	IEC 60825-1:1993	
	EN 60851-3:1996	IEC 60851-3:1995	
	EN 60851-5:1996	IEC 60851-5:1996	
	EN 60851-6:1996	IEC 60851-6:1996	
	—	IEC 60885-1:1987	
	EN 60990:1999	IEC 60990:1999	
	—	IEC 61058-1:1996	
	—	ISO 261:1973	
	—	ISO 262:1973	
	—	ISO 3864:1984	
	—	ISO 4046:1978	
	—	ISO 7000:1989	
	ITU-T Recommendation K.17:1988, Tests on power-fed repeaters using solid-state devices in order to check the arrangements for protection from external interference		
	ITU-T Recommendation K.21:1996, Resistibility of subscribers' terminals to overvoltages and overcurrents		
	<sup>1)</sup> EN 60065:1993 is superseded by EN 60065:1998 + corrigendum June 1999, which is based on IEC 60065:1998, mod. <sup>2)</sup> The HD 21 series is related to, but not directly equivalent with the IEC 60227 series. <sup>3)</sup> The HD 22 series is related to, but not directly equivalent with the IEC 60245 series.		

1.5.1	TABLE: list of critical components					P
Object/part no.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity <sup>1.</sup>	
Power supply	FSP Group Inc.	FSP250-60ATV(PF)	i/p: 115/230Vac, 60/50Hz, 10/5A, class I, 40°C  o/p: +5V/27A, -5V/0.3A, +12V/13A, -12V/0.8A, +3.3V/20A, +5Vsb/2.0A (+3.3V & +5V max. 175W; max. total o/p 250W)	IEC 60950/A4: 1996 EN 60950/A11	TUV, UL, CB (certified by NEMKO)	
	Delta Electronics	DPS-300GB-1	i/p: 100-127/ 200-240Vac, 47/63Hz, 9/4.5A, class I  o/p: +5V/30A, -5V/0.3A, +12V/15A, -12V/0.8A, +3.3V/28A, +5Vsb, 2.0A (total 300W at 25°C, 275W at 50°C)	IEC 60950/A4	TUV (certified by TUV)	
RTC battery	Rayovac	BR2335, BR2032, BF2325	3.0Vdc, 300mAh	--	UL	
	Mitsubishi	CR2032	3.0Vdc, 300mAh	--	UL	
	Sanyo.	CR2032	3.0Vdc, 300mAh	--	UL	
HDD	Yamagata	D353M3	5Vdc/1.2A max.	EN 60950	TUV, UL	
	Maxtor Corp.	3.5 series	5Vdc/0.5A max.	EN 60590	TUV, UL	
CPU fan	Aavid thermalloy of Taiwan	1455223	12Vdc, 0.16A, 12.4CFM	EN 60950	TUV, UL, CE	
PCB	--	--	V-1 min., 105°C	UL 94	UL	
For model AWS-8420XXX-XXX						
LCD panel	Torisan SANYO	TM121SV-02L01 or MXS121022010	12.1" TFT type	--	--	

DC/AC inverter	Bright Deer Tec.	IV-12A	i/p: 13Vdc max., 0.7A o/p: 1400Vrms max., 7mA	--	--
- transformer (T1)	Bright Deer Tec.	X03	105°C	--	--
CD-ROM (optional)	Teac	CD-5XX	5/12Vdc, 1.5/1.3A or 1.5/1.5A Laser Class 1	EN 60950 EN 60825- 1:1994	TUV, UL
System fan	Adda Corp.	AD0912HB- A70GL	12Vdc, 0.25A, 52.5CFM	EN 60950	TUV, UL

**For model AWS-8248XXX-XXX**

LCD panel	Chi Mei	M141X101	14.1" TFT type	--	--
	Chunghwa Picture Tubes	CLAA150XG	15" TFT type	--	--
DC/AC inverter	Lecerf Tec.	1501A-1	i/p: 13.2Vdc max., 1.45A o/p: 1400Vrms max., 7.5mA	--	--
- transformer (T1, T2)	Bright Deer Tec.	2X06, X06	105°C	--	--
FDD (optional)	NEC Corp.	FD1238 series	5Vdc, 0.34A	EN 60950	TUV, UL
System fan	Adda Corp.	AD0812HB- A70GL	12Vdc, 0.25A, 40.1CFM	EN 60950	TUV, UL

## Note(s):

1. An asterisk indicates a mark that assures the agreed level of surveillance.

1.6.2		TABLE: electrical data (in normal conditions)					P
Fuse #	Irated (A)	U (V)	P (W)	I (A)	Ifuse (A)	Condition/status	
Model AWS-8420TP-T installed with FSP's power supply, p/n. FSP250-60ATV(PF)							
--	--	103V/60Hz	56.6	0.76	0.76	Normal load condition.	
--	--	103V/50Hz	56.2	0.74	0.74	Dto.	
F1	10	115V/60Hz	57.6	0.70	0.70	Dto.	
F1	10	115V/50Hz	57.5	0.69	0.69	Dto.	
--	--	122V/60Hz	58.5	0.66	0.66	Dto.	
--	--	122V/50Hz	58.2	0.65	0.65	Dto.	
--	--	207V/60Hz	55.7	0.37	0.37	Dto.	
--	--	207V/50Hz	55.1	0.36	0.36	Dto.	
F1	5	230V/60Hz	57.6	0.35	0.35	Dto.	
F1	5	230V/50Hz	56.8	0.34	0.34	Dto.	



--	--	253V/60Hz	57.8	0.33	0.33	Dto.
--	--	253V/50Hz	58.6	0.33	0.33	Dto.
Model AWS-8420TP-T installed with Delta's power supply, p/n. DPS-300GB-1						
--	--	103V/60Hz	68.2	0.75	0.75	Normal load condition.
--	--	103V/50Hz	68.1	0.75	0.75	Dto.
F1	10	115V/60Hz	68.0	0.64	0.64	Dto.
F1	10	115V/50Hz	68.1	0.64	0.64	Dto.
--	--	122V/60Hz	59.8	0.59	0.59	Dto.
--	--	122V/50Hz	68.0	0.58	0.58	Dto.
--	--	207V/60Hz	62.7	0.40	0.40	Dto.
--	--	207V/50Hz	62.9	0.40	0.40	Dto.
F1	5	230V/60Hz	62.4	0.36	0.36	Dto.
F1	5	230V/50Hz	62.5	0.37	0.37	Dto.
--	--	253V/60Hz	62.1	0.32	0.32	Dto.
--	--	253V/50Hz	62.0	0.33	0.33	Dto.
Model AWS-8248VTP-T installed with FSP's power supply, p/n. FSP250-60ATV(PF)						
--	--	103V/60Hz	91.4	1.16	1.16	Normal load condition.
--	--	103V/50Hz	91.3	1.14	1.14	Dto.
F1	10	115V/60Hz	92.4	1.07	1.07	Dto.
F1	10	115V/50Hz	92.2	1.06	1.06	Dto.
--	--	122V/60Hz	93.7	1.00	1.00	Dto.
--	--	122V/50Hz	93.4	0.98	0.98	Dto.
--	--	207V/60Hz	90.0	0.57	0.57	Dto.
--	--	207V/50Hz	89.9	0.56	0.56	Dto.
F1	5	230V/60Hz	90.7	0.53	0.53	Dto.
F1	5	230V/50Hz	91.0	0.52	0.52	Dto.
--	--	253V/60Hz	92.3	0.49	0.49	Dto.
--	--	253V/50Hz	92.3	0.48	0.48	Dto.
Model AWS-8248VTP-T installed with Delta's power supply, p/n. DPS-300GB-1						
--	--	103V/60Hz	103.3	1.16	1.16	Normal load condition.
--	--	103V/50Hz	103.0	1.16	1.16	Dto.
F1	10	115V/60Hz	103.4	1.09	1.09	Dto.
F1	10	115V/50Hz	103.6	1.08	1.08	Dto.
--	--	122V/60Hz	103.7	0.99	0.99	Dto.
--	--	122V/50Hz	103.5	0.98	0.98	Dto.
--	--	207V/60Hz	96.5	0.59	0.59	Dto.

--	--	207V/50Hz	96.4	0.60	0.60	Dto.
F1	5	230V/60Hz	96.7	0.54	0.54	Dto.
F1	5	230V/50Hz	97.0	0.55	0.55	Dto.
--	--	253V/60Hz	96.4	0.50	0.50	Dto.
--	--	253V/50Hz	96.6	0.50	0.50	Dto.
Note(s):						

2.1.1.5	TABLE: max. V, A, VA test				N
Voltage (rated) (V)		Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)
Note(s):					

2.1.1.7	TABLE: discharge test				<b>N</b>
Condition		$\tau$ calculated (s)	$\tau$ measured (s)	$t_{u \rightarrow 0V}$ (s)	Comments
Note(s):					

2.2.2	TABLE: Hazardous voltage measurement				N
Transformer	Location	max. Voltage		Voltage Limitation Component	
		V peak	V d.c.		
Note(s):					

2.2.3	TABLE: SEL voltage measurement			N
Location		Voltage measured (V)	Comments	
Note(s):				

2.4.2	TABLE: limited current circuit measurement					<b>P</b>
Location		Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments
Model AWS-8420TP-T installed with Bright Deer's inverter, p/n IV-12A						
Under normal condition:						
CN3 pin 1 to earth		24.8	12.4	48	33	
CN3 pin 2 to earth		0	0	--	--	Unit shut down immediately

CN3 pin 1 to pin 2	25.2	12.6	47	33	
T2 pin 7 to earth	34.4	17.2	126	70	
T2 pin 6 to earth	0	0	--	--	Unit shut down immediately
T2 pin 6 to pin 7	32.0	16.0	135	70	
Under fault condition: C8 short					
CN3 pin 1 to earth	36.8	18.4	154	70	
CN3 pin 2 to earth	0	0	--	--	Unit shut down immediately
CN3 pin 1 to pin 2	34.4	17.2	158	70	
T2 pin 7 to earth	32.8	16.4	126	70	
T2 pin 6 to earth	0	0	--	--	Unit shut down immediately
T2 pin 6 to pin 7	33.6	16.8	135	70	
Under fault condition: R16 short					
CN3 pin 1 to earth	76.0	38.0	56	39	
CN3 pin 2 to earth	0	0	--	--	Unit shut down immediately
CN3 pin 1 to pin 2	76.0	38.0	55	38.5	
T2 pin 7 to earth	114	57	126	70	
T2 pin 6 to earth	0	0	--	--	Unit shut down immediately
T2 pin 6 to pin 7	104	52	135	70	
Under fault condition: IC2 pin 1-7 short					
CN3 pin 1 to earth	70.4	35.2	55	38.5	
CN3 pin 2 to earth	0	0	--	--	Unit shut down immediately
CN3 pin 1 to pin 2	71.2	35.6	56	40	
T2 pin 7 to earth	110	55	125	70	
T2 pin 6 to earth	0	0	--	--	Unit shut down immediately
T2 pin 6 to pin 7	104	52	135	70	
Under fault condition: D4 short					
CN3 pin 1 to earth	64.8	32.4	53	37.1	
CN3 pin 2 to earth	0	0	--	--	Unit shut down immediately
CN3 pin 1 to pin 2	67.2	33.6	55	38.5	
T2 pin 7 to earth	106	53	126	70	
T2 pin 6 to earth	0	0	--	--	Unit shut down immediately
T2 pin 6 to pin 7	98	49	134	70	
Model AWS-8248VTP-T installed with Lecerf's inverter, p/n 150IA-1					
Under normal condition:					
CN3 pin 1 to earth	22.0	11.0	42	29	
CN3 pin 2 to earth	0	0	--	--	Unit shut down immediately

CN3 pin 1 to pin 2	22.0	11.0	42	29	
T2 pin 7 to earth	32.8	16.4	125	70	
T2 pin 6 to earth	0	0	--	--	Unit shut down immediately
T2 pin 6 to pin 7	29.2	14.6	136	70	
Under fault condition: C8 short					
CN3 pin 1 to earth	32.4	16.2	125	70	
CN3 pin 2 to earth	0	0	--	--	Unit shut down immediately
CN3 pin 1 to pin 2	32.8	16.4	125	70	
T2 pin 7 to earth	31.6	16.4	125	70	
T2 pin 6 to earth	0	0	--	--	Unit shut down immediately
T2 pin 6 to pin 7	29.6	14.8	135	70	
Under fault condition: D5 short					
CN3 pin 1 to earth	74.4	37.2	54	37.8	
CN3 pin 2 to earth	0	0	--	--	Unit shut down immediately
CN3 pin 1 to pin 2	74.4	37.2	54	37.8	
T2 pin 7 to earth	98	49	125	70	
T2 pin 6 to earth	0	0	--	--	Unit shut down immediately
T2 pin 6 to pin 7	90	45	134	70	
Under fault condition: U2 pin 1-9 short					
CN3 pin 1 to earth	75.2	37.6	55	38.5	
CN3 pin 2 to earth	0	0	--	--	Unit shut down immediately
CN3 pin 1 to pin 2	75.4	37.7	55	38.5	
T2 pin 7 to earth	102	51	124	70	
T2 pin 6 to earth	0	0	--	--	Unit shut down immediately
T2 pin 6 to pin 7	92	46	134	70	
Under fault condition: L2 short					
CN3 pin 1 to earth	28.0	14.0	52	37	
CN3 pin 2 to earth	0	0	--	--	Unit shut down immediately
CN3 pin 1 to pin 2	28.4	14.2	53	37.1	
T2 pin 7 to earth	30.4	15.2	125	70	
T2 pin 6 to earth	0	0	--	--	Unit shut down immediately
T2 pin 6 to pin 7	29.6	14.8	134	70	
Note(s):					

2.5	TABLE: limited power source measurement			<b>P</b>
	Limits	Measured	Verdict	

According to Table 2B/2C (normal condition) – USB port 1/2 normal condition (Uoc=5.0Vdc)			
current (in A)	< 8	1.7	pass
apparent power (in VA)	< 5xUoc	6.2	pass
According to Table 2B/2C (single fault condition) – USB port 1/2 fault condition (U46 short)			
current (in A)	< 8	2.42	pass
apparent power (in VA)	< 5xUoc	7.18	pass
According to Table 2B/2C (normal condition) – USB port 3/4 normal condition (Uoc=5.0Vdc)			
current (in A)	< 8	1.53	pass
apparent power (in VA)	< 5xUoc	5.47	pass
According to Table 2B/2C (single fault condition) – USB port 3/4 fault condition (U47 short)			
current (in A)	< 8	2.28	pass
apparent power (in VA)	< 5xUoc	7.14	pass
Note(s):			

2.6.3.3	TABLE: ground continue test		P
Location		Resistance measured (mΩ)	Comments
Measured on model AWS-8420TP-T			
AC inlet earth pin to output		7	40A applied 2 min.
		11	25A applied 1 min.
Measured on model AWS-8248VTP-T			
AC inlet earth pin to output		8	40A applied 2 min.
		12	25A applied 1 min.
Note(s):			

2.10.2	Table: working voltage measurement			N
Location		RMS voltage (V)	Peak voltage (V)	Comments
Note(s):				

2.10.3 and 2.10.4	TABLE: clearance and creepage distance measurements					<b>N</b>
Clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required dcr (mm)	dcr (mm)
Note(s):						

2.10.5	TABLE: distance through insulation measurements			<b>N</b>
Distance through insulation di at/of:		U r.m.s. (V)	Test voltage (V)	Required di (mm)
Note(s):				

4.5.1	TABLE: temperature rise measurements				<b>P</b>
	test voltage (V) .....	115V-10%/230+10%			—
	t1 (°C) .....	--			—
	t2 (°C) .....	--			—
Rise ΔT of part/at:		ΔT (K)		Allowed ΔT (K)	
Model AWS-8420TP-T    a) with FSP's power supply p/n FSP250-60ATV(PF) b) with Delta's power supply p/n DPS-300GB-1					
Test condition	a)	b)	a)	b)	--
Ambient (°C)	27.7	25.1	27.9	25.8	65
Inverter T2 core	29.3	--	29.5	--	65
Inverter T2 coil	32.8	--	32.8	--	65
Inverter L1 coil	32.1	--	32.3	--	65
Control board U1 body	2.9	--	2.9	--	30
PS: AC inlet body	7.9	7.7	8.5	7.4	65
PS: PFC coil	6.7	9.2	6.4	8.7	65
PS: FL1 coil	9.3	9.6	9.6	8.2	65
PS: FL2 coil	6.5	13.5	6.1	10.2	65
PS: FL3 coil	7.0	24.5	6.4	12.7	65
PS: C1 body	4.8	22.2	5.3	11.9	45
PS: T1 coil	5.9	6.8	6.6	6.0	50
PS: T1 core	5.5	8.4	5.9	8.4	50
PS: T2 coil	7.6	8.9	9.3	8.8	50
PS: T2 core	5.7	13.1	6.7	12.7	50
PS: T3 coil	7.2	11.2	8.5	10.9	50
PS: T3 core	7.0	13.3	8.7	13.1	50
PS: L1 coil	13.2	10.8	19.2	10.7	65
PS: L2 coil	7.0	4.1	8.2	4.0	65
HDD body close to motor	6.7	--	6.6	--	--
Main PCB under CPU	6.1	--	6.1	--	65
Main PCB under U15	7.5	--	7.5	--	65
Main PCB under U17	6.5	--	6.5	--	65

Main PCB RTC battery body	5.7	--	5.9	--	--
Main PCB under Q11	5.9	--	5.9	--	65
Main PCB C235 body	3.6	--	2.9	--	45
Front switch body	3.1	--	3.0	--	55
Main PCB L44 coil	4.8	--	4.6	--	65
Enclosure outside near power supply	3.0	--	2.9	--	30
Model AWS-8420TP-T a) with FSP's power supply p/n FSP250-60ATV(PF) b) with Delta's power supply p/n DPS-300GB-1					
Ambient (°C)	28.1	26.1	27.1	26.5	--
Inverter T2 core	31.7	--	33.1	--	65
Inverter T2 coil	30.7	--	32.1	--	65
Inverter L1 coil	22.1	--	23.5	--	65
Panel board PCB under U401	9.4	--	10.8	--	65
Panel board PCB under U801	12.8	--	14.2	--	65
Panel board L801 coil	9.8	--	25.1	--	65
Panel board L800 coil	7.5	--	9.2	--	65
Panel board PWB under U800	12.3	--	13.5	--	65
Control board PWB under U4	3.9	--	5.3	--	65
Panel body	5.4	--	6.8	--	40
PS: AC inlet body	6.7	7.2	8.2	7.1	30
PS: PFC coil	11.1	8.9	10.2	8.3	65
PS: FL3 coil	10.4	9.2	9.0	7.8	65
PS: FL2 coil	10.9	14.2	9.5	10.5	65
PS: FL1 coil	12.7	23.7	12.7	13.2	65
PS: C1 body	6.7	22.3	8.4	12.5	45
PS: T1 coil	10.2	7.4	12.0	6.3	50
PS: T1 core	8.2	8.3	10.0	8.1	50
PS: T2 coil	8.8	8.8	10.9	8.7	50
PS: T2 core	7.2	13.0	9.0	12.7	50
PS: T3 coil	10.2	11.4	12.8	11.2	50
PS: T3 core	8.6	13.5	11.0	13.4	50
PS: L1 coil	13.6	10.5	20.8	10.3	65
PS: L2 coil	7.1	3.3	9.4	2.8	65
FDD body close to motor	4.1	--	5.4	--	--
HDD body close to motor	16.0	--	13.3	--	--
Main PCB under CPU	10.7	--	12.1	--	65
Main PCB under U15	14.8	--	16.1	--	65

Main PCB under U17	7.6	--	9.2	--	65
Main PCB under U5	8.8	--	10.3	--	65
Main PCB RTC battery body	5.8	--	7.5	--	--
Main PCB C235 body	10.1	--	11.4	--	45
Main PCB L44 coil	10.4	--	11.7	--	65
Main PCB under Q11	13.3	--	14.6	--	65
Front switch body	4.0	--	5.4	--	55
Enclosure outside near power supply	3.6	--	4.7	--	30

Temperature rise $\Delta T$ of winding:	$R_1$ ( $\Omega$ )	$R_2$ ( $\Omega$ )	$\Delta T$ (K)	allowed $\Delta T$ (K)	insulation class

**Comments:**

The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in 1.6.2 at voltages as described in above.

With maximum of 40°C ambient temperature specified the max. temperature rise is calculated as follows:

**Winding components:**

- class A  $\rightarrow \Delta T_{max} = 75K - 10K - (40-25)K = 50K$

**Electrolyte capacitor or components with:**

- max. absolute temp. of 70°C  $\rightarrow \Delta T_{max} = (70-40) K = 30K$

- max. absolute temp. of 85°C  $\rightarrow \Delta T_{max} = (85-40) K = 45K$

- max. absolute temp. of 105°C  $\rightarrow \Delta T_{max} = (105-40) K = 65K$

**Surface of equipment which may be touched:**

- metal  $\rightarrow \Delta T_{max} = 45K - (50-45) K = 30K$

- glass  $\rightarrow \Delta T_{max} = 55K - (50-45) K = 30K$

4.5.2	TABLE: ball pressure test of thermoplastic parts			N
	allowed impression diameter (mm)	:	≤ 2 mm	—
Part		Test temperature (°C)	Impression diameter (mm)	
Note(s):				

4.6.1, 4.6.2	Table: enclosure openings		<b>P</b>
Location	Size (mm)	Comments	
Top side	--	No openings	
Both sides	1. 19.8 x 2.8 2. 14.8 x 2.9	Numerous.opening provided	
Rear side	--	No openings rather than for DC fan.	



Bottom side	1. no opening 2. 19.3 x 2.7	For item 2, there a metal plate separate provided that a distance between secondary to power supply at least 85 mm distance, there is no access or objection likely occurred
Note(s): (1. for model AWS-8420 and 2. for model AWS-8248)		

5.1.6	TABLE: touch current measurement				P
Condition	L→ terminal A (mA)	N → terminal A (mA)	Limit (mA)	Comments	
Power on	0.59	0.62	3.5	Measured on model AWS-8420TP-T.	
Power on	0.63	0.65	3.5	Measured on model AWS-8248VTP-T.	
Note(s):					

5.2	TABLE: electric strength tests and impulse tests			P
Test voltage applied between:		Test voltage (V)	Breakdown	
Primary to secondary (SELV)		4242 V dc	No	
Primary to earth		3000 V dc	No	
Note(s): Test was conducted on both models.				

5.3	TABLE: fault condition tests						<b>P</b>
	ambient temperature (°C) .....					See below..	—
	model/type of power supply .....					See table 1.5.1	—
	manufacturer of power supply .....					See table 1.5.1	—
	rated markings of power supply .....					See table 1.5.1	—
No.	Component no.	Fault	Test voltage (V)	Test time	Fuse no.	Fuse current (A)	Result
1.	D1 (pin 1-3) of RTC battery	s-c	230V/50Hz	< 1 min	F1	--	Reverse current is 2.7 mA, no hazards.
Tests conducted on model AWAS-8420TP-T that installed with FSP's power supply:							
2.	Openings	blocked	230V/50Hz	2.5 hrs	F1	0.34	T2 of inverter=70.6°C, enclosure=43.4°C, amb.=28.2°C. Equilibrium temperature was obtained, no hazards.
3.	Power fan	stalled	230V/50Hz	3.5 hrs	F1	0.33	T2 of inverter=58.9°C, enclosure=33.3°C, amb.=27.9°C. Equilibrium temperature was obtained, no hazards.

4.	System fan	stalled	230V/50Hz	4.0 hrs	F1	0.34	T2 of inverter=57.4°C, enclosure=30.1°C, amb.=27.2°C. Equilibrium temperature was obtained, no hazards.
5.	CPU fan	stalled	230V/50Hz	1.5 hrs	F1	0.34	T2 of inverter=61.8°C, enclosure=30.5°C, amb.=27.2°C. Equilibrium temperature was obtained, no hazards.
Tests conducted on model AWAS-8248VTP-T that installed with FSP's power supply:							
6.	Openings	blocked	230V/50Hz	4.0 hrs	F1	0.51	T2 of inverter=70.0°C, enclosure=44.6°C, amb.=26.5°C. Equilibrium temperature was obtained, no hazards.
7.	Power fan	stalled	230V/50Hz	4.0 hrs	F1	0.50	T2 of inverter=62.8°C, enclosure=35.4°C, amb.=24.6°C. Equilibrium temperature was obtained, no hazards.
8.	System fan	stalled	230V/50Hz	1.5 hrs	F1	0.50	T2 of inverter=75.9°C, enclosure=29.9°C, amb.=23.9°C. Equilibrium temperature was obtained, no hazards.
9.	CPU fan	stalled	230V/50Hz	2.5 hrs	F1	0.50	T2 of inverter=56.2°C, enclosure=29.0°C, amb.=23.5°C. Equilibrium temperature was obtained, no hazards.
Tests conducted on model AWAS-8420TP-T that installed with Delta's power supply:							
10.	Openings	blocked	230V/50Hz	2.5 hrs	F1	0.34	L2 in SPS=51.7°C, enclosure=44.5°C, amb.=26.0°C. Equilibrium temperature was obtained, no hazards.
11.	Power fan	stalled	230V/50Hz	3.5 hrs	F1	0.33	L2 in SPS=71.5°C, enclosure=34.3°C, amb.=25.7°C. Equilibrium temperature was obtained, no hazards.
12.	System fan	stalled	230V/50Hz	4.0 hrs	F1	0.34	L2 in SPS=43.3°C, enclosure=31.1°C, amb.=26.0°C. Equilibrium temperature was obtained, no hazards.
13.	CPU fan	stalled	230V/50Hz	1.5 hrs	F1	0.34	L2 in SPS=43.0°C,

							enclosure=31.2°C, amb.=26.9°C. Equilibrium temperature was obtained, no hazards.
Tests conducted on model AWAS-8248VTP-T that installed with Delta's power supply:							
14.	Openings	blocked	230V/50Hz	4.0 hrs	F1	0.51	T1 in SPS=77.6°C, enclosure=31.5°C, amb.=26.8°C. Equilibrium temperature was obtained, no hazards.
15.	Power fan	stalled	230V/50Hz	4.0 hrs	F1	0.50	L2 in SPS=40.3°C, enclosure=30.9°C, amb.=26.9°C. Equilibrium temperature was obtained, no hazards.
16.	System fan	stalled	230V/50Hz	1.5 hrs	F1	0.50	L2 in SPS=40.6°C, enclosure=30.8°C, amb.=27.1°C. Equilibrium temperature was obtained, no hazards.
17.	CPU fan	stalled	230V/50Hz	2.5 hrs	F1	0.50	L2 in SPS=51.7°C, enclosure=44.5°C, amb.=26.0°C. Equilibrium temperature was obtained, no hazards.
Note(s):							

A.6.5	TABLE: flammable test for classifying materials V-0, V-1 or V-2		N
Sample no./ref.	After flame time (s) $t_1$ or $t_2$	After flame + afterglow (s) after 2nd flame application $t_2 + t_3$	
1/A			
2/A			
3/A			
4/A			
5/A			
6/B			
7/B			
8/B			
9/B			
10/B			
Supplementary information:			
Total after flame time (s) for any condition set $t_1 + t_2$ for five (5) specimens:			

A.6.6	TABLE: flammable test for classifying materials V-0, V-1 or V-2		N
Sample no.	After flame time (s) $t_1$ or $t_2$	After flame + after glow (s) after 2nd flame application $t_2 + t_3$	
11			
12			
13			
14			
15			
Supplementary information:			
Total after flame time (s) for any condition set $t_1 + t_2$ for five (5) specimens:			

A.7.4, A.7.5, A.7.6 and A.7.7	TABLE: flammability test for classifying foam materials HF-1, HF-2 or HBF			<b>N</b>
Sample no./ref.	Flame time (s)	Glow time (s)	Flaming/glowing distance from the end (mm)	Comment (for A.7.7 burning rate mm/min)
1/A				
2/A				
3/A				
4/A				
5/A				
6/B				
7/B				
8/B				
9/B				
10/B				
Supplementary information:				

A.7.8	TABLE: flammability test for classifying foam materials HF-1 or HF-2			<b>N</b>
Sample no.	Flame time (s)	Glow time (s)	Flaming/glowing distance from the end (mm)	Comment
11				
12				
13				
14				

15				
supplementary information:				

A.7.9	TABLE: flammability test for classifying foam materials HBF				N
Sample no.	Flame time (s)	Glow time (s)	Flaming/glowing distance from the end (mm)	Comment (for A.7.7 burning rate mm/min)	
11					
12					
13					
14					
15					
Supplementary information:					

A.8.5	TABLE: flammable test for classifying materials HB		N
Sample no.	Flaming/glowing rate (mm/min)	Flaming/glowing distance from reference mark (mm)	
1			
2			
3			
Supplementary information:			

A.8.6	TABLE: flammable test for classifying materials HB		N
Sample no.	Flaming/glowing rate (mm/min)	Flaming/glowing distance from reference mark (mm)	
4			
5			
6			
Supplementary information:			

A.9.6	TABLE: flammability test for classifying materials 5V		<b>N</b>
Sample no./ ref.	Test bars	Test plaques	

	Flaming + glowing time (s)	Burning distance (mm)	Flaming + glowing time (s)	Burning distance (mm)
1/A				
2/A				
3/A				
4/A				
5/A			—	—
6/B				
7/B				
8/B				
9/B				
10/B			—	—
Supplementary information:				

A.9.7	TABLE: flammability test for classifying materials 5V			<b>N</b>
Sample no.	Test bars		Test plaques	
	Flaming + glowing time (s)	Burning distance (mm)	Flaming + glowing time (s)	Burning distance (mm)
11				
12				
13				
14				
15			—	—
Supplementary information:				

Type Designation:  
Report Number:

AWS-8248XXX-XXX, AWS-8420XXX-XXX (X=0-9, A-Z or blank)  
12006589 001

**AWS-8420XXX-XXX**





Type Designation:  
Report Number:

AWS-8248XXX-XXX, AWS-8420XXX-XXX (X=0-9, A-Z or blank)  
12006589 001



**AWS-8420XXX-XXX**



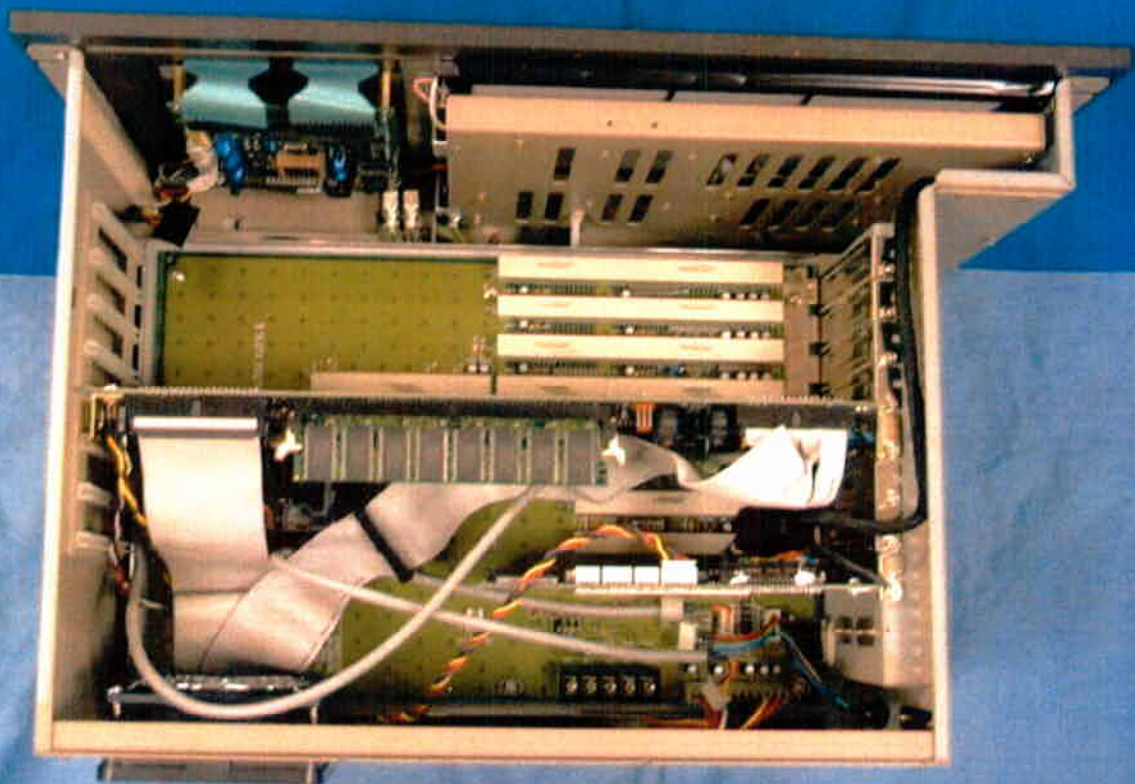


Type Designation:  
Report Number:

AWS-8248XXX-XXX, AWS-8420XXX-XXX (X=0-9, A-Z or blank)  
12006589 001



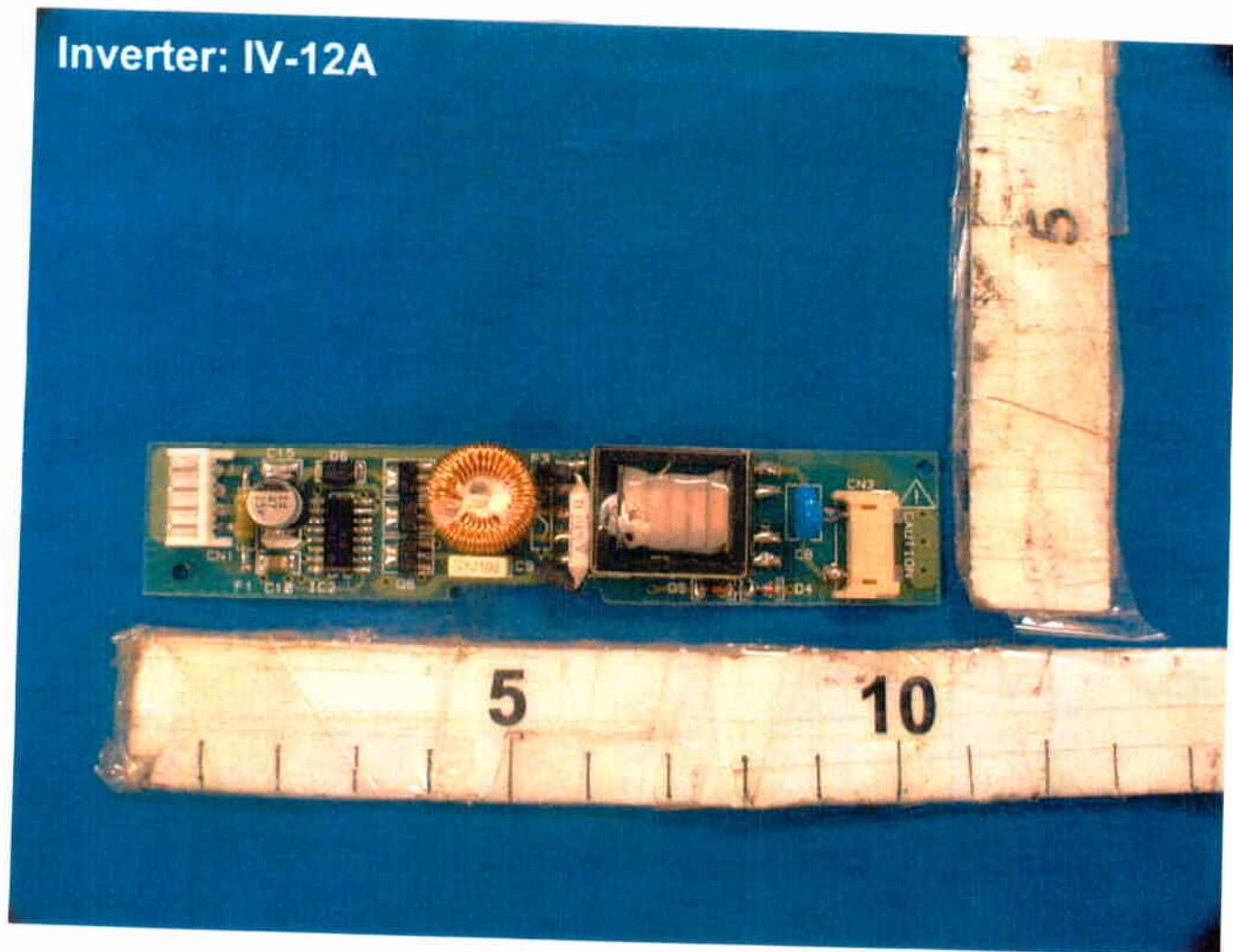
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Type Designation:  
Report Number:

AWS-8248XXX-XXX, AWS-8420XXX-XXX (X=0-9, A-Z or blank)  
12006589 001

Inverter: IV-12A



Type Designation:  
Report Number:

AWS-8248XXX-XXX, AWS-8420XXX-XXX (X=0-9, A-Z or blank)  
12006589 001



## Inverter: IV-12A

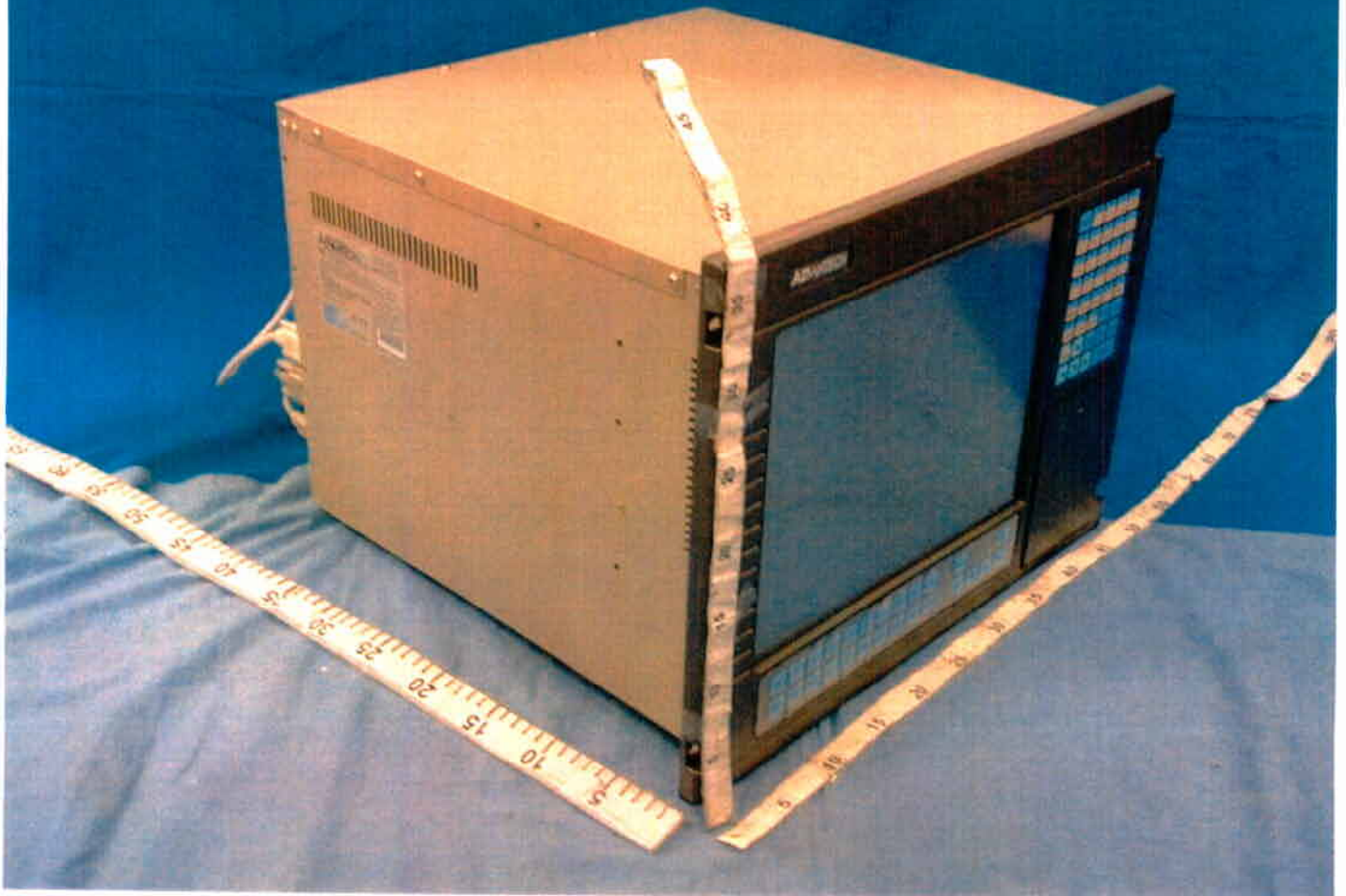




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Report Number:

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12006589 001

**AWS-8248XXX-XXX**



Type Designation:  
Report Number:

AWS-8248XXX-XXX, AWS-8420XXX-XXX (X=0-9, A-Z or blank)  
12006589 001



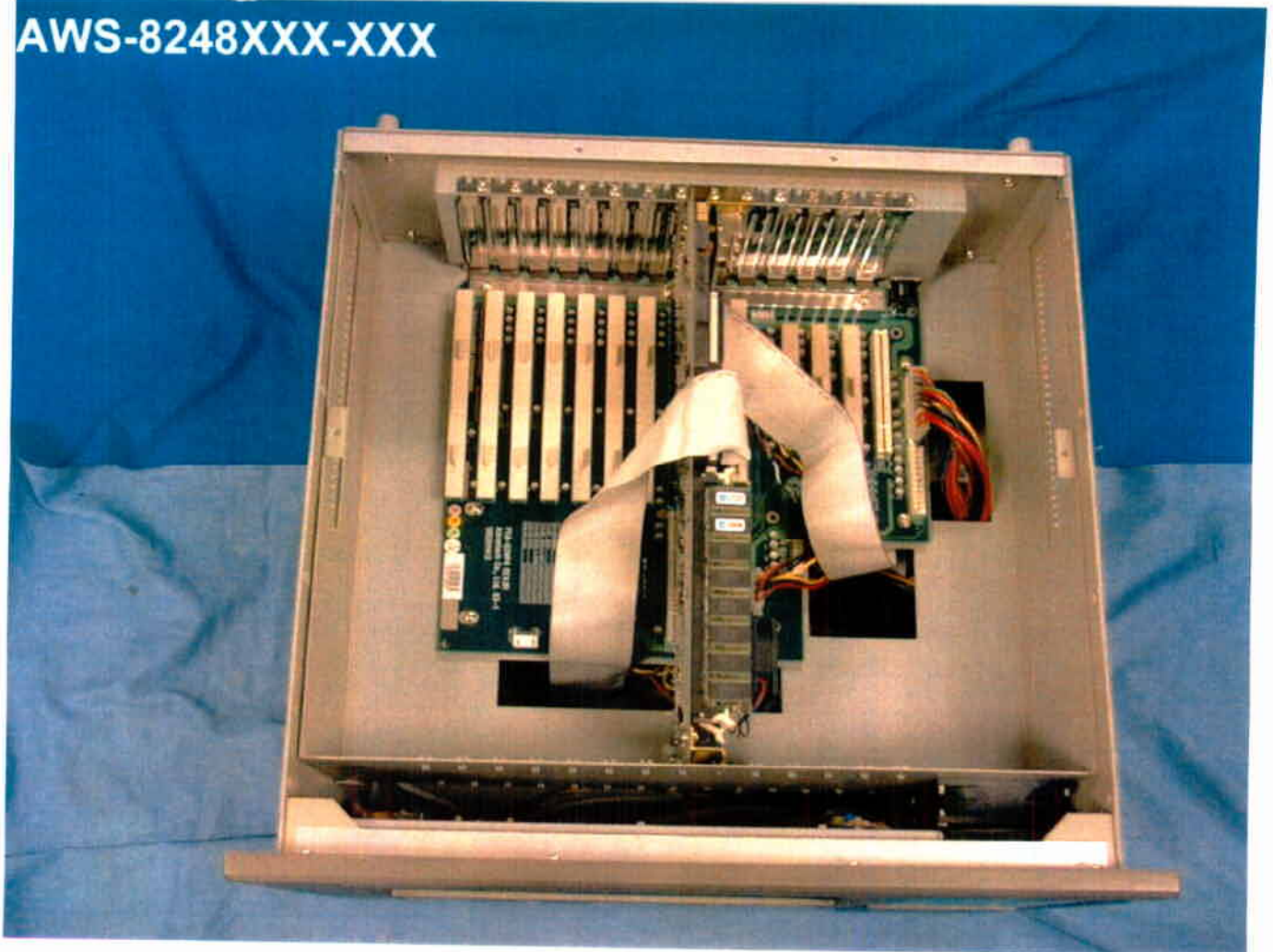
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Type Designation:  
Report Number:

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12006589 001

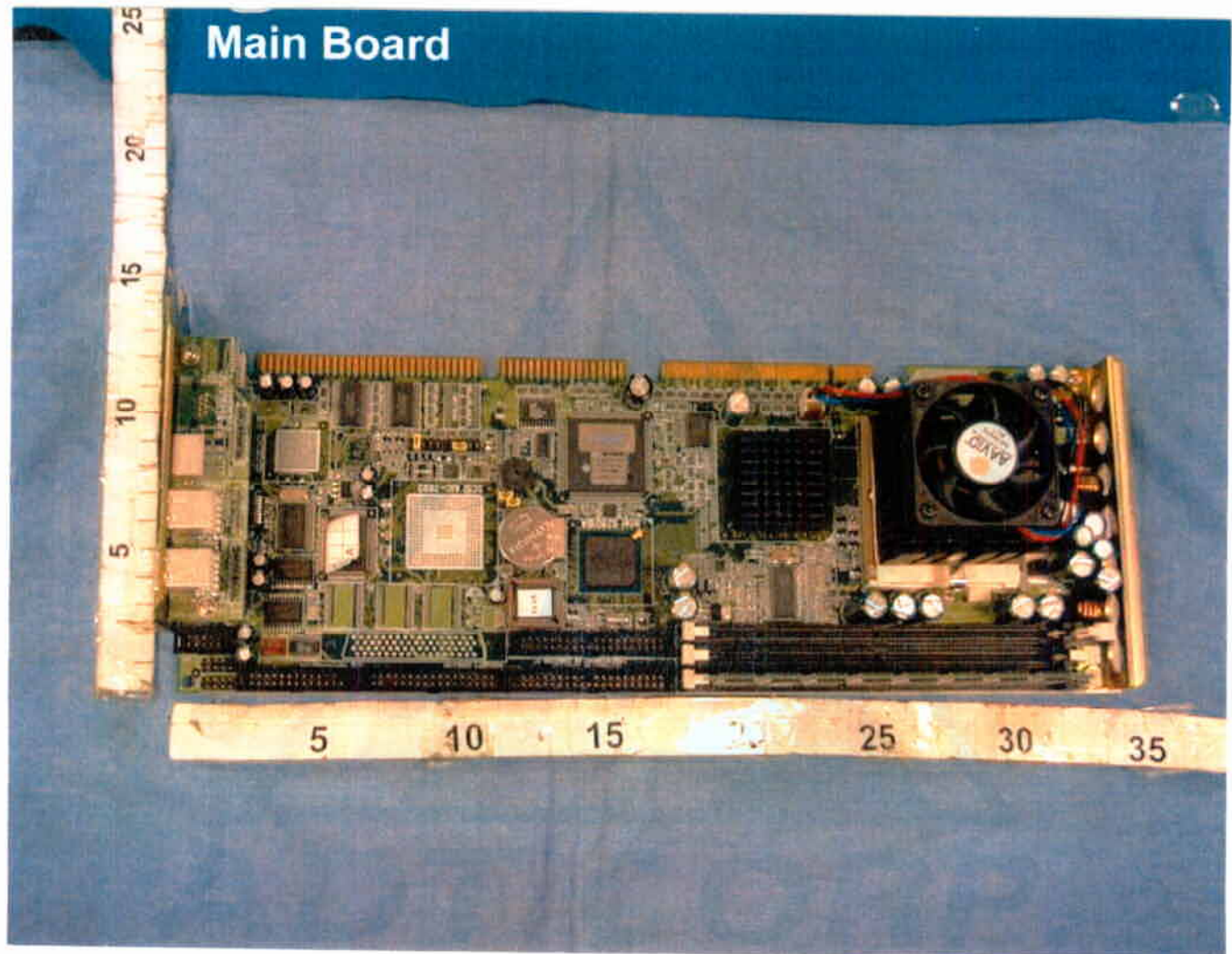
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Type Designation:  
Report Number:

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12006589 001



Type Designation:  
Report Number:

AWS-8248XXX-XXX, AWS-8420XXX-XXX (X=0-9, A-Z or blank)  
12006589 001

## Main Board

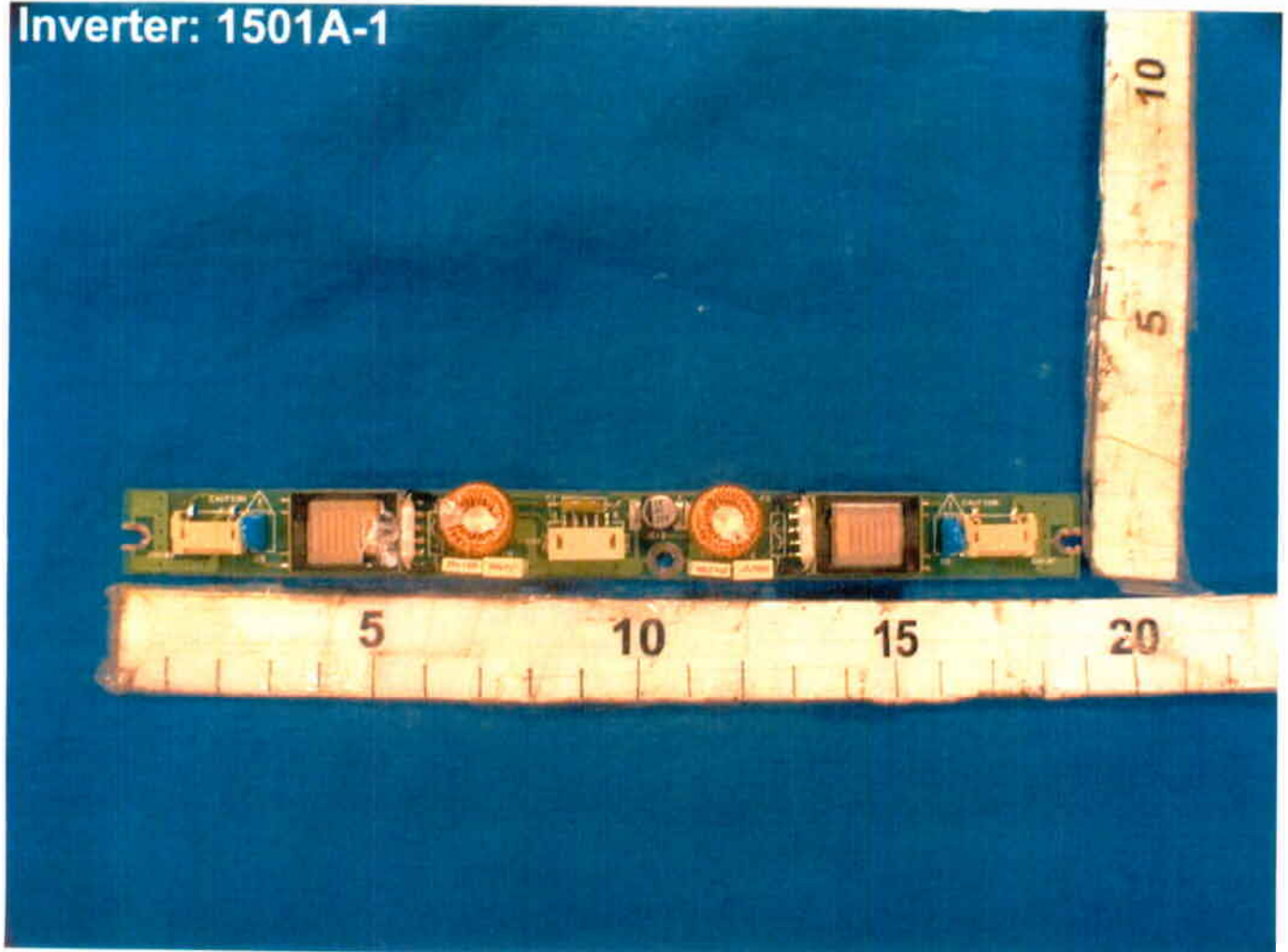




Type Designation:  
Report Number:

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Inverter: 1501A-1



Type Designation:  
Report Number:

AWS-8248XXX-XXX, AWS-8420XXX-XXX (X=0-9, A-Z or blank)  
12006589 001

**Inverter: 1501A-1**

