QPS Evaluation Services Inc.

Testing, Certification, and Field Evaluation Body
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TESTING - CERTIFICATION - FIELD EVALUATION
Energy Efficiency Verification - CB Scheme - IECEx Scheme
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Test Report issued under the responsibility of:

QPS Evaluation Services Inc.

TEST REPORT
IEC 62368-1
Audio/video, information and communication technology equipment
Part 1: Safety requirements

Report Number ..... :	CB1123-2R1
Date of issue ..... :	2021-07-19
Total number of pages ..... :	66
Applicant's name ..... :	Nanoptix Inc.
Address ..... :	699 Champlain Street, Dieppe, New Brunswick, E1A 1P6, Canada
Test specification:	
Standard..... :	IEC 62368-1:2014 (Second Edition)
Test procedure ..... :	CB Scheme
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC62368_1B
Test Report Form(s) Originator..... :	UL(US)
Master TRF ..... :	2014-03

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This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

General disclaimer:

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 ..... :	Thermal Printer - Component & Desktop	
Trade Mark ..... :	NANOPTiX	
Manufacturer ..... :	Nanoptix Inc.	
Model/Type reference ..... :	950011, 950020, 103665, 950005, 950050,950051, 950100, 100769, 950023, 950024, 950026, 950028, 950029, 950054.	
Ratings ..... :	24VDC, 2.4A	
Testing procedure and testing location:		
☒ CB Testing Laboratory:	QPS Evaluation Services Inc.	
Testing location/ address .....:	81 Kelfield St, Unit 8, Toronto, Ontario, M9W 5A3 Canada	
☐ Associated CB Testing Laboratory:		
Testing location/ address .....:		
Tested by (name + signature) .....:	Priyank Patel	
Approved by (name + signature) .....:	Paul Morton	Paul Morton
☐ Testing procedure: TMP/CTF Stage 1		
Testing location/ address ..... :		
Tested by (name + signature) .....:		
Approved by (name + signature) .....:		
☐ Testing procedure: WMT/CTF Stage 2		
Testing location/ address .....:		
Tested by (name + signature) .....:		
Witnessed by (name + signature).....:		
Approved by (name + signature) .....:		
☐ Testing procedure: SMT/CTF Stage 3 or 4		
Testing location/ address .....:		
Tested by (name + signature) .....:		
Approved by (name + signature) .....:		
Supervised by (name + signature) .....:		

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

Document No.	Documents included / attached to this report (description)	Page No.
1	National Deviations	28
2	Photos	2
3	Schematic	1

Summary of testing:

Tests performed (name of test and test clause):

CB1123-2 (Original report):

Test Clause	Name of Test
B.2.5	INPUT TEST
6.3, 9.2	HEATING TEST
B.3	SIMULATED ABNORMAL OPERATING CONDITIONS
B.4	SINGLE FAULT CONDITION
F.3.10	PERMANENCE OF MARKING
6.2.2	PS MEASUREMENT FOR CLASSIFICATION

CB1123-2R1:

Test Clause	Name of Test
B.2.5	INPUT TEST
6.3, 9.2	HEATING TEST

Testing location:

QPS Evaluation Services Inc.

81 Kelfield St, Unit 8

Toronto, Ontario M9W 5A3

Summary of compliance with National Differences:

List of countries addressed: EU A-Deviations, EU Group Differences, EU Special National Conditions, Australia/New Zealand, Canada, and USA

☒ **The product fulfils the requirements of** EN 62368-1:2014+A11:2017

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.

PayCheck® Slim
Model No. 103665
Serial No. PS00006

Manufactured By
NANOPTIX
Made in Canada

This device complies to part 15, Class A of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept interference received, including interference that may cause undesired operation.

CAN ICES-3(A) / NMB-3(A)

24 VDC @ 2.4Amps Continuous

WARNING: DISCONNECT POWER SUPPLY BEFORE SERVICING
ATTENTION: COUPER L'ALIMENTATION AVANT L'ENTRETIEN ET LE DÉPANNAGE.

Spill-Proof™
Model No. 100769
Serial No. SP01193

IPX3

Manufactured By
NANOPTIX
Made in Canada

Tested To Comply with FCC Standards
CAN ICES-3(B)/NMB-3(B)

WARNING: DISCONNECT POWER SUPPLY BEFORE SERVICING
ATTENTION: COUPER L'ALIMENTATION AVANT L'ENTRETIEN ET LE DÉPANNAGE.

24VDC @ 2.4Amps

PayCheck® Slim
Model No. 950005
Serial No. PS00006

Manufactured By
NANOPTIX
Made in Canada

This device complies to part 15, Class A of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept interference received, including interference that may cause undesired operation.

CAN ICES-3(A) / NMB-3(A)

24 VDC @ 2.4Amps Continuous

WARNING: DISCONNECT POWER SUPPLY BEFORE SERVICING
ATTENTION: COUPER L'ALIMENTATION AVANT L'ENTRETIEN ET LE DÉPANNAGE.

PayCheck®
H/S Couponing
Model No. 950011
Serial No. XXXXXXX

Manufactured By
NANOPTIX
Made in Canada

This device complies to part 15, Class A of the FCC rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference and
(2) this device must accept interference received, including interference that may cause undesired operation.

CAN ICES-3(A) / NMB-3(A)

24 VDC @ 2.4Amps Continuous

WARNING: DISCONNECT POWER SUPPLY BEFORE SERVICING
ATTENTION: COUPER L'ALIMENTATION AVANT L'ENTRETIEN ET LE DÉPANNAGE.

PayCheck® 4 PRINTER
Model No. 950020
Serial No. XXXXXXX

Manufactured By
NANOPTIX
Made in Canada

Tested to comply with FCC standards for home or office use.

CAN ICES-3(B) / NMB-3(B)

WARNING: DISCONNECT POWER SUPPLY BEFORE SERVICING
ATTENTION: COUPER L'ALIMENTATION AVANT L'ENTRETIEN ET LE DÉPANNAGE.

24 VDC @ 2.4Amps Continuous

Spill-Proof™
Model No. 950023
Serial No. SP01193

IPX3

Manufactured By
NANOPTIX
Made in Canada

Tested To Comply with FCC Standards
CAN ICES-3(B)/NMB-3(B)

WARNING: DISCONNECT POWER SUPPLY BEFORE SERVICING
ATTENTION: COUPER L'ALIMENTATION AVANT L'ENTRETIEN ET LE DÉPANNAGE.

24VDC @ 2.4Amps

HSVL Plus FS
Model No. 950026
Serial No. HF XXXXX

Manufactured By
NANOPTIX
Made in Canada

HSVL PLUS™
Model No. 950024
Serial No. HP01542

Tested to comply with FCC standards for home or office use.
CAN ICES-3(B) / NMB-3(B)
WARNING: DISCONNECT POWER SUPPLY BEFORE SERVICING
ATTENTION: COUPER L'ALIMENTATION AVANT L'ENTRETIEN ET LE DÉPANNAGE.

Manufactured By
NANOPTIX
Made in Canada

24 VDC @ 2.4Amps Continuous

Tested to comply with FCC standards for home or office use.
CAN ICES-3 (B) / NMB-3(B)
WARNING: DISCONNECT POWER SUPPLY BEFORE SERVICING
ATTENTION: COUPER L'ALIMENTATION AVANT L'ENTRETIEN ET LE DÉPANNAGE.

24 VDC @ 2.4Amps Continuous

HSVL Advanced
Model No. 950028
Serial No. HC00591

Manufactured By
NANOPTIX
Made in Canada

HSVL Plus L
Model No. 950029
Serial No. HL00111

Manufactured By:
NANOPTIX

Made in Canada

Tested To Comply with FCC Standards for home or office use
CAN ICES-3(B)/NMB-3(B)

24VDC @ 2.4A

WARNING: DISCONNECT POWER SUPPLY BEFORE SERVICING
ATTENTION: COUPER L'ALIMENTATION AVANT L'ENTRETIEN ET LE DÉPANNAGE.

Tested To Comply with FCC Standards for HOME OR OFFICE USE
CAN ICES-3(B)/NMB-3(B)
WARNING: DISCONNECT POWER SUPPLY BEFORE SERVICING
ATTENTION: COUPER L'ALIMENTATION AVANT L'ENTRETIEN ET LE DÉPANNAGE.

24 VDC @ 2.4A

PayCheck® Desktop 2™
Model No. 950051
Serial No. ND00761

Manufactured By:
NANOPTIX

This device complies to part 15, Class A of the FCC rules.
Operation is subject to the following two conditions:
(1) this device may not cause harmful interference and
(2) this device must accept interference received, including interference that may cause undesired operation.
CAN ICES-3 (A)/NMB-3(A)

Made in Canada

24 VDC @ 2.4Amps Continuous

WARNING: DISCONNECT POWER SUPPLY BEFORE SERVICING
ATTENTION: COUPER L'ALIMENTATION AVANT L'ENTRETIEN ET LE DÉPANNAGE.

NextGen™ PayCheck®
Model No. 950050
Serial No. XXXXXXX

Manufactured By
NANOPTIX
Made in Canada

This device complies to part 15, Class A of the FCC rules.
Operation is subject to the following two conditions:
(1) this device may not cause harmful interference and
(2) this device must accept interference received, including interference that may cause undesired operation.
CAN ICES-3(A) / NMB-3(A)

WARNING: DISCONNECT POWER SUPPLY BEFORE SERVICING
ATTENTION: COUPER L'ALIMENTATION AVANT L'ENTRETIEN ET LE DÉPANNAGE.

24 VDC @ 2.4Amps Continuous

ORiZON NEXTGEN

Manufactured By:
NANOPTiX

Model No. 950054
Serial No. ON00081

This device complies to part 15, Class A of the FCC rules.
Operation is subject to the following two conditions:
(1) this device may not cause harmful interference and
(2) this device must accept interference received,
including interference that may cause undesired operation.
CAN ICES-3(A) / NMB-3(A)

Made in Canada

WARNING: DISCONNECT POWER SUPPLY BEFORE SERVICING
ATTENTION: COUPER L'ALIMENTATION AVANT L'ENTRETIEN ET LE DÉPANNAGE.

24 VDC @ 2.4A

HSVL™
Model No. 950100
Serial No. XXXXXXX

Manufactured By
NANOPTiX
Made in Canada

This device complies to part 15, Class A of the FCC rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference and (2) this device must accept interference received, including interference that may cause undesired operation.
CAN ICES-3(A) / NMB-3(A)
WARNING: DISCONNECT POWER SUPPLY BEFORE SERVICING
ATTENTION: COUPER L'ALIMENTATION AVANT L'ENTRETIEN ET LE DÉPANNAGE.

24 VDC @ 2.4Amps Continuous

TEST ITEM PARTICULARS:	
Classification of use by ..... :	☒ Ordinary person ☒ Instructed person ☐ Skilled person ☐ Children likely to be present
Supply Connection ..... :	☐ AC Mains ☐ DC Mains ☐ External Circuit - not Mains connected ☒ ES1 ☐ ES2 ☐ ES3
Supply % Tolerance ..... :	☐ +10%/-10% ☐ +20%/-15% ☐ +____%/ -_____% ☒ None
Supply Connection – Type ..... :	☐ pluggable equipment type A - ☐ non-detachable supply cord ☐ appliance coupler ☐ direct plug-in ☐ mating connector ☐ pluggable equipment type B - ☐ non-detachable supply cord ☐ appliance coupler ☐ permanent connection ☒ mating connector ☐ other
Considered current rating of protective device as part of building or equipment installation .....:	Installation location: ☐ building; ☐ equipment ☒ N/A
Equipment mobility .....:	☒ movable (for P/N 100769 only) ☐ hand-held ☐ transportable ☐ stationary(fixed equipment)☒ for building-in(all models except P/N 100769) ☐ direct plug-in ☐ rack-mounting ☐ wall-mounted
Over voltage category (OVC) .....:	☐ OVC I ☒ OVC II(external power adapter only) ☐ OVC III ☐ OVC IV ☐ other:
Class of equipment .....:	☐ Class I ☐ Class II ☒ Class III;
Access location .....:	☐ restricted access location ☒ N/A
Pollution degree (PD) .....:	☐ PD 1 ☒ PD 2 ☐ PD 3
Manufacturer's specified maxium operating ambient:	N/A
IP protection class .....:	☒ IPX0 ☐ IP67
Power Systems .....:	☐ TN ☐ TT ☐ IT - ____ V_{L-L} ☒ N/A
Altitude during operation (m) .....:	☒ 2000 m or less ☐ _____ m;
Altitude of test laboratory (m) .....:	☐ 2000 m or less ☒ 173 m
Mass of equipment (kg) .....:	☒ see page 8 for details
POSSIBLE TEST CASE VERDICTS:	
- test case does not apply to the test object.....:	N/A
- test object does meet the requirement .....:	P (Pass)
- test object does not meet the requirement .....:	F (Fail)

TESTING:	
Date of receipt of test item ..... :	2020-08-07, 2020-09-18, 2020-10-05. For CB1123-2R1: 2021-06-08.
Date (s) of performance of tests ..... :	2020-08-07, 2020-08-28, 2020-09-21, 2020-09-25, 2020-10-07, 2020-10-08. For CB1123-2R1: 2021-07-16.

GENERAL REMARKS:

"(See Enclosure #)" refers to additional information appended to the report.
"(See appended table)" refers to a table appended to the report.

Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:

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 ..... :	☐ **Yes** ☒ **Not applicable**

When differences exist; they shall be identified in the General product information section.

Name and address of factory (ies) ..... :	Same as the applicant

GENERAL PRODUCT INFORMATION:

Product Description –

Powered by an approved external Limited Power Source (LPS) Power Supply - (cULus file number E190414) ITE Power Adaptor, Model FSP060-RTAAN2, by FSP Group Inc. or equivalent power supply marked "LPS",

P/N 950011, 950020, 103665, 950005, 950050, 950100, 950024, 950026, 950028, 950029, 950054 are component-type Thermal Printers to be used in an application where end product enclosure is provided

P/N 100769, 950023, 950051 provided with an enclosure can be used in the end application with or without an enclosure.

Report History:
CB1123-2 - Initial CB Report and Certificate.
CB1123-2R1 - This report as described below:

This test report includes all data and remarks from report CB1123-2, and documents updates to include evaluation of the following.

- Added a new test table (B.2.5 & 6.3).
- Added alternate Printer Assembly component (MHTAS010) for the following models (P/N): P/N 950020, 103665, 950005, 950023, 100769.
- Give interchangeable option for Enclosure, shell & cover material of the following models (P/N):

950023, 100769, 950024, 950026, 950028, 950029, 950054.

- Updated flame class for Plastic Enclosure of model 950051 from V-0 to HB. Changing flame class in PS2 circuit does not affect the safety or compromise safeguard and based on original evaluation fire enclosure is not required. In addition, the printer inside of this polymeric enclosure already has a metal plate underneath the PCB and print mechanism. HB flame class rated plastic enclosure is accepted.

Model Differences

All thermal printers have similar electrical design with a printer mechanism and control circuit board, moreover,

P/N 950020, 103665, 950005 has same printer mechanism and control circuit board but with different mechanical arrangement.

P/N 950011 is similar to P/N 103665 except printer mechanism, chassis and additional enclosure.

P/N 950050 is similar to P/N 950020 in mechanical design but with different printer mechanism

P/N 950051 is identical to P/N 950050 except with an enclosure

P/N 950024, 950026, 950028, 950029, use same printer mechanism and control circuit board but with different mechanical arrangement

P/N 950054 use same printer mechanism but a different control circuit board as in P/N 950024, 950026, 950028, 950029

P/N 103665 is identical to P/N 950005, the only difference is the P/N for marketing purpose only

P/N 100769 is identical to P/N 950023, the only difference is the P/N for marketing purpose only

Rated Ambient temperature

P/N 950011, 950020, 103665, 950005, 950051, 950100, 950023, 950024, 950026, 950028, 950029, 950054,100769 is rated 50°C

P/N 950050 is rated 60°C

Weights of Printers

P/N	Weights(kg)
103665/950005	1.215
950020	1.5
950011	5.5
950050	0.57
950051	1.35
950100	0.59
100769/950023	0.55
950024	2.06
950026	1.90
950028	0.985
950029	1.85
950054	1.111

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

Conditions of Acceptability:

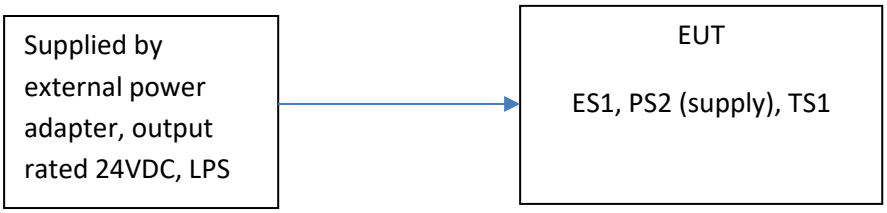
1. The thermal printers have been evaluated to be supplied by a Limited Power Source (LPS). Further investigation may be required if to be supplied by other than LPS.

2. Component-type thermal printers intended for building-in shall be provided with a suitable enclosure in the end product.
3. Information with regard to safety shall be given in a language acceptable to the country where the apparatus is intended to be used.
4. The final acceptance of these component-type Thermal Printers shall be verified along with the end-use product as part of its national approval procedure.
5. Suitable approved cord set for external power adapter to be provided for each destination country.
6. Licenses for critical components to be provided by applicant upon request.

ENERGY SOURCE IDENTIFICATION AND CLASSIFICATION TABLE:	
(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.	
Electrically-caused injury (Clause 5): (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)**
Input supply-24VDC	ES1
Electrically-caused fire (Clause 6): (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)**
Supply provided by external power adapter with output rated LPS	PS2
Injury caused by hazardous substances (Clause 7) (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
Mechanically-caused injury (Clause 8) (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)**
Component type	N/A
Thermal burn injury (Clause 9) (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)**
Enclosure	TS1
Radiation (Clause 10) (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)**
No radiation	N/A

ENERGY SOURCE DIAGRAM
Indicate which energy sources are included in the energy source diagram. Insert diagram below

☒ ES ☒ PS ☒ MS ☒ TS ☐ 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 Person	ES1: 24VDC	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
Combustible materials inside of the unit	PS2(source)	Temperature cannot cause ignition	Single fault test V-0 rated PCB material	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)
N/A	N/A	N/A	N/A	N/A
9.1	Thermal Burn			
Body Part (e.g., Ordinary)	Energy Source (TS2)	Safeguards		
		Basic	Supplementary	Reinforced
Enclosure	TS1	N/A	N/A	N/A
10.1	Radiation			
Body Part (e.g., Ordinary)	Energy Source (Output from audio port)	Safeguards		
		Basic	Supplementary	Reinforced
N/A	N/A	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				

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
4	**GENERAL REQUIREMENTS**		P
4.1.1	Acceptance of materials, components and subassemblies		P
4.1.2	Use of components	Considered	P
4.1.3	Equipment design and construction		P
4.1.15	Markings and instructions ..... :	(See Annex F)	P
4.4.4	Safeguard robustness	Component type for built in application	N/A
4.4.4.2	Steady force tests ..... :		N/A
4.4.4.3	Drop tests..... :		N/A
4.4.4.4	Impact tests..... :		N/A
4.4.4.5	Internal accessible safeguard enclosure and barrier tests ..... :		N/A
4.4.4.6	Glass Impact tests ..... :		N/A
4.4.4.7	Thermoplastic material tests ..... :		N/A
4.4.4.8	Air comprising a safeguard ..... :		N/A
4.4.4.9	Accessibility and safeguard effectiveness		N/A
4.5	Explosion		N/A
4.6	Fixing of conductors		P
4.6.1	Fix conductors not to defeat a safeguard		P
4.6.2	10 N force test applied to ..... :	Considered for internal conductors	P
4.7	Equipment for direct insertion into mains socket - outlets	Not such application	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		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 ..... :		N/A

5	**ELECTRICALLY-CAUSED INJURY**		P
5.2.1	Electrical energy source classifications .....:	Supplied by 24VDC(ES1)	P
5.2.2	ES1, ES2 and ES3 limits		P

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
5.2.2.2	Steady-state voltage and current.....:	Considered	P
5.2.2.3	Capacitance limits .....:	No such capacitor	N/A
5.2.2.4	Single pulse limits.....:	No such pulse	N/A
5.2.2.5	Limits for repetitive pulses.....:	No such pulse	N/A
5.2.2.6	Ringing signals .....:	No ringing signal	N/A
5.2.2.7	Audio signals .....:	Not such audio signals	N/A
5.3	Protection against electrical energy sources	ES1 only	N/A
5.3.1	General Requirements for accessible parts to ordinary, instructed and skilled persons		N/A
5.3.2.1	Accessibility to electrical energy sources and safeguards		N/A
5.3.2.2	Contact requirements		N/A
	a) Test with test probe from Annex V .....:		N/A
	b) Electric strength test potential (V).....:		N/A
	c) Air gap (mm) .....:		N/A
5.3.2.4	Terminals for connecting stripped wire		N/A
5.4	Insulation materials and requirements		N/A
5.4.1.2	Properties of insulating material		N/A
5.4.1.3	Humidity conditioning..... :		N/A
5.4.1.4	Maximum operating temperature for insulating materials .....:		N/A
5.4.1.5	Pollution degree.....:	PD2	—
5.4.1.5.2	Test for pollution degree 1 environment and for an insulating compound		N/A
5.4.1.5.3	Thermal cycling		N/A
5.4.1.6	Insulation in transformers with varying dimensions		N/A
5.4.1.7	Insulation in circuits generating starting pulses		N/A
5.4.1.8	Determination of working voltage		N/A
5.4.1.9	Insulating surfaces		N/A
5.4.1.10	Thermoplastic parts on which conductive metallic parts are directly mounted		N/A
5.4.1.10.2	Vicat softening temperature .....:		N/A
5.4.1.10.3	Ball pressure .....:		N/A
5.4.2	Clearances	No clearance is relied on as safety guard	N/A
5.4.2.2	Determining clearance using peak working voltage		N/A
5.4.2.3	Determining clearance using required withstand voltage .....:		N/A
	a) a.c. mains transient voltage .....:		—
	b) d.c. mains transient voltage .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
5.4.2.5	Multiplication factors for clearances and test voltages.....:		N/A
5.4.3	Creepage distances .....:	No creepage is relied on as safety guard	N/A
5.4.3.1	General		N/A
5.4.3.3	Material Group .....:		—
5.4.4	Solid insulation		N/A
5.4.4.2	Minimum distance through insulation .....:		N/A
5.4.4.3	Insulation compound forming solid insulation		N/A
5.4.4.4	Solid insulation in semiconductor devices		N/A
5.4.4.5	Cemented joints		N/A
5.4.4.6	Thin sheet material		N/A
5.4.4.6.1	General requirements		N/A
5.4.4.6.2	Separable thin sheet material		N/A
	Number of layers (pcs) .....:		N/A
5.4.4.6.3	Non-separable thin sheet material		N/A
5.4.4.6.4	Standard test procedure for non-separable thin sheet material..... :		N/A
5.4.4.6.5	Mandrel test		N/A
5.4.4.7	Solid insulation in wound components		N/A
5.4.4.9	Solid insulation at frequencies >30 kHz..... :		N/A
5.4.5	Antenna terminal insulation		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 ..... :		N/A
5.4.7	Tests for semiconductor components and for cemented joints		N/A
5.4.8	Humidity conditioning		N/A
	Relative humidity (%) ..... :		—
	Temperature (°C) .....:		—
	Duration (h) ..... :		—
5.4.9	Electric strength test ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.4.9.1	Test procedure for a solid insulation type test		N/A
5.4.9.2	Test procedure for routine tests		N/A
5.4.10	Protection against transient voltages between external circuit	No such external circuit	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	N/A
5.4.11.1	Exceptions to separation between external circuits and earth		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} ..... :		—
	Max increase due to ageing ΔU_{sa} ..... :		—
	$U_{op}= U_{peak} + \Delta U_{sp} + \Delta U_{sa}$..... :		—
5.5	Components as safeguards		
5.5.1	General		N/A
5.5.2	Capacitors and RC units		N/A
5.5.2.1	General requirement		N/A
5.5.2.2	Safeguards against capacitor discharge after disconnection of a connector ..... :		N/A
5.5.3	Transformers		N/A
5.5.4	Optocouplers		N/A
5.5.5	Relays		N/A
5.5.6	Resistors		N/A
5.5.7	SPD's		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 ..... :		N/A
5.6	Protective conductor		N/A
5.6.2	Requirement for protective conductors		N/A
5.6.2.1	General requirements		N/A
5.6.2.2	Colour of insulation		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
5.6.3	Requirement for protective earthing conductors		N/A
	Protective earthing conductor size (mm^2) ..... :		—
5.6.4	Requirement for protective bonding conductors		N/A
5.6.4.1	Protective bonding conductors		N/A
	Protective bonding conductor size (mm^2). ..... :		—
	Protective current rating (A) ..... :		—
5.6.4.3	Current limiting and overcurrent protective devices		N/A
5.6.5	Terminals for protective conductors		N/A
5.6.5.1	Requirement		N/A
	Conductor size (mm^2), nominal thread diameter (mm)..... :		N/A
5.6.5.2	Corrosion		N/A
5.6.6	Resistance of the protective system		N/A
5.6.6.1	Requirements		N/A
5.6.6.2	Test Method Resistance (Ω)..... :		N/A
5.6.7	Reliable earthing		N/A
5.7	Prospective touch voltage, touch current and protective conductor current		N/A
5.7.2	Measuring devices and networks		N/A
5.7.2.1	Measurement of touch current..... :		N/A
5.7.2.2	Measurement of prospective touch voltage		N/A
5.7.3	Equipment set-up, supply connections and earth connections		N/A
	System of interconnected equipment (separate connections/single connection)..... :		—
	Multiple connections to mains (one connection at a time/simultaneous connections)..... :		—
5.7.4	Earthed conductive accessible parts ..... :		N/A
5.7.5	Protective conductor current		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		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		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

	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

6	**ELECTRICALLY- CAUSED FIRE**		P
6.2	Classification of power sources (PS) and potential ignition sources (PIS)		P
6.2.2	Power source circuit classifications		P
6.2.2.1	General		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 appended table 6.2.2)	P
6.2.2.4	PS1 .....:		N/A
6.2.2.5	PS2 .....:	(See appended table 6.2.2)	P
6.2.2.6	PS3 .....:	No PS3	N/A
6.2.3	Classification of potential ignition sources		N/A
6.2.3.1	Arcing PIS .....:	(See appended table 6.2.2)	N/A
6.2.3.2	Resistive PIS .....:	(See appended table 6.2.2)	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.....:		P
6.3.1 (b)	Combustible materials outside fire enclosure	No such material	N/A
6.4	Safeguards against fire under single fault conditions		P
6.4.1	Safeguard Method	Both reduce the likelihood of ignition and control fire spread were considered	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		P
6.4.3.1	General		P
6.4.3.2	Supplementary Safeguards		P
	Special conditions if conductors on printed boards are opened or peeled		N/A
6.4.3.3	Single Fault Conditions ..... :	See appended table for single fault tests	P
	Special conditions for temperature limited by fuse		N/A
6.4.4	Control of fire spread in PS1 circuits		N/A
6.4.5	Control of fire spread in PS2 circuits		P
6.4.5.2	Supplementary safeguards .....:	V-0 PCB material	P

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Clause	Requirement + Test	Result - Remark	Verdict
6.4.6	Control of fire spread in PS3 circuit	No PS3	N/A
6.4.7	Separation of combustible materials from a PIS		N/A
6.4.7.1	General .....:		N/A
6.4.7.2	Separation by distance		N/A
6.4.7.3	Separation by a fire barrier		N/A
6.4.8	Fire enclosures and fire barriers		N/A
6.4.8.1	Fire enclosure and fire barrier material properties		N/A
6.4.8.2.1	Requirements for a fire barrier		N/A
6.4.8.2.2	Requirements for a fire enclosure		N/A
6.4.8.3	Constructional requirements for a fire enclosure and a fire barrier		N/A
6.4.8.3.1	Fire enclosure and fire barrier openings		N/A
6.4.8.3.2	Fire barrier dimensions		N/A
6.4.8.3.3	Top Openings in Fire Enclosure: dimensions (mm) .....:		N/A
	Needle Flame test		N/A
6.4.8.3.4	Bottom Openings in Fire Enclosure, condition met a), b) and/or c) dimensions (mm) .....:		N/A
	Flammability tests for the bottom of a fire enclosure .....:		N/A
6.4.8.3.5	Integrity of the fire enclosure, condition met: a), b) or c).....:		N/A
6.4.8.4	Separation of PIS from fire enclosure and fire barrier distance (mm) or flammability rating ..... :		N/A
6.5	Internal and external wiring		P
6.5.1	Requirements	UL approved VW-1 internal wiring	P
6.5.2	Cross-sectional area (mm^2) ..... :	AWG 26, AWG 28, AWG30	—
6.5.3	Requirements for interconnection to building wiring.....:	Considered, supplied by LPS power source	P
6.6	Safeguards against fire due to connection to additional equipment		P
	External port limited to PS2 or complies with Clause Q.1	Considered, supplied by LPS power source	P

7	**INJURY CAUSED BY HAZARDOUS SUBSTANCES**		N/A
7.2	Reduction of exposure to hazardous substances		N/A
7.3	Ozone exposure		N/A
7.4	Use of personal safeguards (PPE)		N/A
	Personal safeguards and instructions .....:		—
7.5	Use of instructional safeguards and instructions		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Instructional safeguard (ISO 7010) .....:		—
7.6	Batteries ..... :		N/A
8	**MECHANICALLY-CAUSED INJURY**		N/A
8.1	General		N/A
8.2	Mechanical energy source classifications		N/A
8.3	Safeguards against mechanical energy sources		N/A
8.4	Safeguards against parts with sharp edges and corners		N/A
8.4.1	Safeguards		N/A
8.5	Safeguards against moving parts		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		N/A
8.6.1	Product classification		N/A
	Instructional Safeguard ..... :		—
8.6.2	Static stability		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

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Clause	Requirement + Test	Result - Remark	Verdict
8.6.5	Horizontal force test (Applied Force) .....:		N/A
	Position of feet or movable parts .....:		—
8.7	Equipment 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		N/A
8.8.1	Classification		N/A
8.8.2	Applied Force .....:		N/A
8.9	Wheels or casters attachment requirements		N/A
8.9.1	Classification		N/A
8.9.2	Applied force.....:		—
8.10	Carts, stands and similar carriers		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		N/A
8.11.1	General		N/A
8.11.2	Product Classification		N/A
8.11.3	Mechanical strength test, variable *N* ..... :		N/A
8.11.4	Mechanical strength test 250N, including end stops		N/A
8.12	Telescoping or rod antennas		N/A
	Button/Ball diameter (mm) ..... :		—

9	**THERMAL BURN INJURY**		P
9.2	Thermal energy source classifications	TS1	P
9.3	Safeguard against thermal energy sources		N/A
9.4	Requirements for safeguards		N/A
9.4.1	Equipment safeguard		N/A
9.4.2	Instructional safeguard ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
10	**RADIATION**		N/A
10.2	Radiation energy source classification	No radiation of laser, visible, infra-red, ultraviolet, x-ray	N/A
10.2.1	General classification		N/A
10.3	Protection against laser radiation		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		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
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		N/A
10.5.1	X- radiation energy source that exists equipment :		N/A
	Normal, abnormal, single fault conditions		N/A

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

B	**NORMAL OPERATING CONDITION TESTS, ABNORMAL OPERATING CONDITION TESTS AND SINGLE FAULT CONDITION TESTS**		P
B.2	Normal Operating Conditions		P
B.2.1	General requirements ..... :	(See Test Item Particulars and appended test tables)	P
	Audio Amplifiers and equipment with audio amplifiers ..... :	Not an Audio Amplifier	N/A
B.2.3	Supply voltage and tolerances	Supplied by external certified power adapter output 24VDC	N/A
B.2.5	Input test..... :	See appended test table	P
B.3	Simulated abnormal operating conditions		P

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Clause	Requirement + Test	Result - Remark	Verdict
B.3.1	General requirements ..... :	See appended test table	P
B.3.2	Covering of ventilation openings		N/A
B.3.3	D.C. mains polarity test		N/A
B.3.4	Setting of voltage selector ..... :	No voltage selector	N/A
B.3.5	Maximum load at output terminals .....:		N/A
B.3.6	Reverse battery polarity		N/A
B.3.7	Abnormal operating conditions as specified in Clause E.2.		N/A
B.3.8	Safeguards functional during and after abnormal operating conditions		N/A
B.4	Simulated single fault conditions		P
B.4.2	Temperature controlling device open or short-circuited ..... :		N/A
B.4.3	Motor tests		N/A
B.4.3.1	Motor blocked or rotor locked increasing the internal ambient temperature ..... :		N/A
B.4.4	Short circuit of functional insulation	Considered during single fault tests	P
B.4.4.1	Short circuit of clearances for functional insulation		P
B.4.4.2	Short circuit of creepage distances for functional insulation		P
B.4.4.3	Short circuit of functional insulation on coated printed boards		N/A
B.4.5	Short circuit and interruption of electrodes in tubes and semiconductors	Considered during single fault tests	P
B.4.6	Short circuit or disconnect of passive components	Considered during single fault tests	P
B.4.7	Continuous operation of components		N/A
B.4.8	Class 1 and Class 2 energy sources within limits during and after single fault conditions	Considered	P
B.4.9	Battery charging under single fault conditions ... :		N/A
C	**UV RADIATION**		N/A
C.1	Protection of materials in equipment from UV radiation		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

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Clause	Requirement + Test	Result - Remark	Verdict
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
D	**TEST GENERATORS**		N/A
D.1	Impulse test generators		N/A
D.2	Antenna interface test generator		N/A
D.3	Electronic pulse generator		N/A
E	**TEST CONDITIONS FOR EQUIPMENT CONTAINING AUDIO AMPLIFIERS**		N/A
E.1	Audio amplifier normal operating conditions		N/A
	Audio signal voltage (V) ..... :		—
	Rated load impedance (Ω) ..... :		
E.2	Audio amplifier abnormal operating conditions		N/A
F	**EQUIPMENT MARKINGS, INSTRUCTIONS, AND INSTRUCTIONAL SAFEGUARDS**		P
F.1	General requirements		P
	Instructions – Language ..... :	Instruction in English reviewed. See Engineering considerations in this report	—
F.2	Letter symbols and graphical symbols		N/A
F.2.1	Letter symbols according to IEC60027-1		N/A
F.2.2	Graphic symbols IEC, ISO or manufacturer specific		N/A
F.3	Equipment markings		P
F.3.1	Equipment marking locations		P
F.3.2	Equipment identification markings		P
F.3.2.1	Manufacturer identification ..... :	Provided	—
F.3.2.2	Model identification ..... :	Identified on the nameplate	—
F.3.3	Equipment rating markings		P
F.3.3.1	Equipment with direct connection to mains		N/A
F.3.3.2	Equipment without direct connection to mains	Considered	P
F.3.3.3	Nature of supply voltage ..... :		—
F.3.3.4	Rated voltage ..... :		—
F.3.3.4	Rated frequency ..... :		—
F.3.3.6	Rated current or rated power ..... :		—
F.3.3.7	Equipment with multiple supply connections		N/A
F.3.4	Voltage setting device	No such devices	N/A
F.3.5	Terminals and operating devices		N/A
F.3.5.1	Mains appliance outlet and socket-outlet markings ..... :	No such outlets	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
F.3.5.2	Switch position identification marking ..... :	No such switch	N/A
F.3.5.3	Replacement fuse identification and rating markings..... :		N/A
F.3.5.4	Replacement battery identification marking ..... :		N/A
F.3.5.5	Terminal marking location		N/A
F.3.6	Equipment markings related to equipment classification		N/A
F.3.6.1	Class I Equipment		N/A
F.3.6.1.1	Protective earthing conductor terminal		N/A
F.3.6.1.2	Neutral conductor terminal		N/A
F.3.6.1.3	Protective bonding conductor terminals		N/A
F.3.6.2	Class II equipment (IEC60417-5172)	Not class II equipment	N/A
F.3.6.2.1	Class II equipment with or without functional earth		N/A
F.3.6.2.2	Class II equipment with functional earth terminal marking		N/A
F.3.7	Equipment IP rating marking ..... :	IPX0	—
F.3.8	External power supply output marking		N/A
F.3.9	Durability, legibility and permanence of marking		P
F.3.10	Test for permanence of markings		P
F.4	Instructions		P
	a) Equipment for use in locations where children not likely to be present - marking		N/A
	b) Instructions given for installation or initial use		P
	c) Equipment intended to be fastened in place		N/A
	d) Equipment intended for use only in restricted access area		N/A
	e) Audio equipment terminals classified as ES3 and other equipment with terminals marked in accordance F.3.6.1		N/A
	f) Protective earthing employed as safeguard		N/A
	g) Protective earthing conductor current exceeding ES 2 limits		N/A
	h) Symbols used on equipment		N/A
	i) Permanently connected equipment not provided with all-pole mains switch		N/A
	j) Replaceable components or modules providing safeguard function		N/A
F.5	Instructional safeguards		P
	Where “instructional safeguard” is referenced in the test report it specifies the required elements, location of marking and/or instruction		P

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Clause	Requirement + Test	Result - Remark	Verdict

G	**COMPONENTS**		P
G.1	**Switches**		N/A
G.1.1	General requirements		N/A
G.1.2	Ratings, endurance, spacing, maximum load		N/A
G.2	**Relays**		N/A
G.2.1	General requirements		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
G.3	**Protection Devices**		N/A
G.3.1	Thermal cut-offs		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
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		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 (Ω). :		—
G.3.3	PTC Thermistors		N/A
G.3.4	Overcurrent protection devices		N/A
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		N/A
G.3.5.2	Single faults conditions .....:		N/A
G.4	**Connectors**		N/A
G.4.1	Spacings		N/A
G.4.2	Mains connector configuration .....:		N/A
G.4.3	Plug is shaped that insertion into mains socket-outlets or appliance coupler is unlikely		N/A
G.5	**Wound Components**		N/A
G.5.1	Wire insulation in wound components.....		N/A
G.5.1.2 a)	Two wires in contact inside wound component, angle between 45° and 90°		N/A
G.5.1.2 b)	Construction subject to routine testing		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.5.2	Endurance test on wound components		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
G.5.3	**Transformers**		N/A
G.5.3.1	Requirements applied (IEC61204-7, IEC61558-1/-2, and/or IEC62368-1) ..... :	No transformers	N/A
	Position..... :		—
	Method of protection ..... :		—
G.5.3.2	Insulation		N/A
	Protection from displacement of windings ..... :		—
G.5.3.3	Overload test ..... :		N/A
G.5.3.3.1	Test conditions		N/A
G.5.3.3.2	Winding Temperatures testing in the unit		N/A
G.5.3.3.3	Winding Temperatures - Alternative test method		N/A
G.5.4	**Motors**		N/A
G.5.4.1	General requirements	Stepper motors only	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

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Clause	Requirement + Test	Result - Remark	Verdict
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 ..... :		—
G.6	**Wire Insulation**		N/A
G.6.1	General		N/A
G.6.2	Solvent-based enamel wiring insulation		N/A
G.7	**Mains supply cords**		N/A
G.7.1	General requirements		N/A
	Type .....:		—
	Rated current (A).....:		—
	Cross-sectional area (mm^2), (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		N/A
	Strain relief test force (N) ..... :		—
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
G.8	**Varistors**		N/A
G.8.1	General requirements		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
G.9	**Integrated Circuit (IC) Current Limiters**		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.9.1 a)	Manufacturer defines limit at max. 5A.		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
G.10	**Resistors**		N/A
G.10.1	General requirements		N/A
G.10.2	Resistor test		N/A
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
G.11	**Capacitor and RC units**		N/A
G.11.1	General requirements		N/A
G.11.2	Conditioning of capacitors and RC units		N/A
G.11.3	Rules for selecting capacitors		N/A
G.12	**Optocouplers**		N/A
	Optocouplers comply with IEC 60747-5-5:2007 Spacing or Electric Strength Test (specify option and test results).....:		N/A
	Type test voltage Vini .....:		—
	Routine test voltage, Vini,b .....:		—
G.13	**Printed boards**		P
G.13.1	General requirements	Approved PCB material V-0 provided	P
G.13.2	Uncoated printed boards	Considered	P
G.13.3	Coated printed boards		N/A
G.13.4	Insulation between conductors on the same inner surface		N/A
	Compliance with cemented joint requirements (Specify construction).....:		—
G.13.5	Insulation between conductors on different surfaces		N/A
	Distance through insulation.....:		N/A
	Number of insulation layers (pcs) .....:		—

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Clause	Requirement + Test	Result - Remark	Verdict
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
G.14	**Coating on components terminals**		N/A
G.14.1	Requirements .....:		N/A
G.15	**Liquid filled components**		N/A
G.15.1	General requirements		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
G.16	**IC including capacitor discharge function (ICX)**		N/A
a)	Humidity treatment in accordance with sc5.4.8 – 120 hours	No ICX	N/A
b)	Impulse test using circuit 2 with Uc = 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 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 signals	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) .....:		—

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
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**		N/A
	General requirements		N/A
K	**SAFETY INTERLOCKS**		N/A
K.1	General requirements	No interlocks	N/A
K.2	Components of safety interlock safeguard mechanism		N/A
K.3	Inadvertent change of operating mode		N/A
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**		N/A
L.1	General requirements		N/A
L.2	Permanently connected equipment		N/A
L.3	Parts that remain energized		N/A
L.4	Single phase equipment		N/A
L.5	Three-phase equipment		N/A
L.6	Switches as disconnect devices		N/A
L.7	Plugs as disconnect devices		N/A
L.8	Multiple power sources		N/A
M	**EQUIPMENT CONTAINING BATTERIES AND THEIR PROTECTION CIRCUITS**		N/A
M.1	General requirements		N/A
M.2	Safety of batteries and their cells		N/A
M.2.1	Requirements		N/A

IEC 62368-1			
Clause	Requirement + Test	Result - Remark	Verdict
M.2.2	Compliance and test method (identify method) .. :		N/A
M.3	Protection circuits		N/A
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

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Clause	Requirement + Test	Result - Remark	Verdict
M.7	Risk of explosion from lead acid and NiCd batteries		N/A
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 *Vz* (m^3/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) ..... :		P
N	**ELECTROCHEMICAL POTENTIALS**		N/A
	Metal(s) used ..... :		—
O	**MEASUREMENT OF CREEPAGE DISTANCES AND CLEARANCES**		N/A
	Figures O.1 to O.20 of this Annex applied..... :	Spacing is not used as safeguard	—
P	**SAFEGUARDS AGAINST ENTRY OF FOREIGN OBJECTS AND SPILLAGE OF INTERNAL LIQUIDS**		N/A
P.1	General requirements		N/A
P.2.2	Safeguards against entry of foreign object		N/A
	Location and Dimensions (mm) ..... :		—
P.2.3	Safeguard against the consequences of entry of foreign object		N/A
P.2.3.1	Safeguards against the entry of a foreign object		N/A
	Openings in transportable equipment		N/A
	Transportable equipment with metalized plastic parts ..... :		N/A
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		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

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Clause	Requirement + Test	Result - Remark	Verdict
P.3.4	Safeguards effectiveness		N/A
P.4	Metallized coatings and adhesive securing parts		N/A
P.4.2 a)	Conditioning testing		N/A
	Tc (°C)..... :		—
	Tr (°C) ..... :		—
	Ta (°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**		N/A
Q.1	Limited power sources		N/A
Q.1.1 a)	Inherently limited output		N/A
Q.1.1 b)	Impedance limited output		N/A
	- Regulating network limited output under normal operating and simulated single fault condition		N/A
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		N/A
Q.2	Test for external circuits – paired conductor cable		N/A
	Maximum output current (A) ..... :		—
	Current limiting method..... :		—
R	**LIMITED SHORT CIRCUIT TEST**		**N/A**
R.1	General requirements		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
S	**TESTS FOR RESISTANCE TO HEAT AND FIRE**		**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		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

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Clause	Requirement + Test	Result - Remark	Verdict
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
T	**MECHANICAL STRENGTH TESTS**		P
T.1	General requirements		N/A
T.2	Steady force test, 10 N .....:		N/A
T.3	Steady force test, 30 N .....:		N/A
T.4	Steady force test, 100 N .....:		N/A
T.5	Steady force test, 250 N .....:		N/A
T.6	Enclosure impact test	Applied to P/N 950051	P
	Fall test		N/A
	Swing test		N/A
T.7	Drop test .....:		N/A
T.8	Stress relief test .....:		N/A
T.9	Impact Test (glass)		N/A
T.9.1	General requirements		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
T.9.2	Impact test and compliance		N/A
	Impact energy (J)..... :		—
	Height (m) ..... :		—
T.10	Glass fragmentation test ..... :		N/A
T.11	Test for telescoping or rod antennas		N/A
	Torque value (Nm) .....:		—
U	**MECHANICAL STRENGTH OF CATHODE RAY TUBES (CRT) AND PROTECTION AGAINST THE EFECTS OF IMPLOSION**		N/A
U.1	General requirements	No CRT	N/A
U.2	Compliance and test method for non-intrinsically protected CRTs		N/A
U.3	Protective Screen .....:		N/A
V	**DETERMINATION OF ACCESSIBLE PARTS (FINGERS, PROBES AND WEDGES)**		N/A
V.1	Accessible parts of equipment		N/A
V.2	Accessible part criterion		N/A

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[1]
P/N 950011					
Printer Assembly	Fujitsu	FTP-639MCL354	DC 24 V	--	Tested with the equipment
PCB	Interchangeable	--	V-0, 105°C	UL 796	UR
P/N 950020, 103665, 950005					
Printer Assembly	Axiohm	MHTAGS24/C	DC 24 V	--	Tested with the equipment
Printer Assembly - Alternate component	Axiohm	MHTAS010	DC 24V	--	Tested with the equipment
PCB	Interchangeable	--	V-0, 105°C	UL 796	UR
Polymeric Drawer	Interchangeable	--	V-0	UL 746	cURus
P/N 950050					
Printer	TXCOM	AXIOHM MHTNGD24	25mm motor, thermal print head Rated Voltage: 24Vdc	UL 60950-1:2007 R12.11 CAN/CSA-C22.2 No.60950-1-07+A1:2011	TUV (CU72141773)
P/N 950051					
Printer Assembly	TXCOM	AXIOHM MHTNGD24	25mm motor, thermal print head	UL 60950-1:2007 R12.11 CAN/CSA-C22.2 No.60950-1-07+A1:2011	TUV (CU72141773)
Plastic enclosure for model 950051	Polymer Technology & Services LLC	ABS- FR3800-V	Acrylonitrile Butadiene Styrene (ABS), HB	CSA-C22.2 No. 0.17 UL 746C	cURus (E155285)
Plastic enclosure for model 950051	Interchangeable	--	Acrylonitrile Butadiene Styrene (ABS), HB	CSA-C22.2 No. 0.17 UL 746C	cURus
P/N 950100					
Printer Assembly	Seiko	CAP9347E-S640-E	24Vdc, 1.25A	IEC 60950-1	Tested with the equipment
DC Sepper Motor	Seiko	B420A	24Vdc, 0.50A	IE 60950-1	Tested with the equipment
P/N 950023, 100769					
Cover	Covestro Deutschland AG	Makrolon 2405+(z)	V-2	UL 746C	cURus(E41613)

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Clause	Requirement + Test	Result - Remark	Verdict

Cover	Interchangeable	--	V-2	UL 746C	cURus
Shell (top, bottom)	Teijin Limited Resin and Plastic	TN-7500M(#)	V-1 minimum	UL 746C	cURus(E98529)
Shell (top, bottom)	Interchangeable	--	V-1 minimum	UL 746C	cURus
Printer Assembly	Axiohm	MHTPGS24H	DC 24 V	--	Tested with the equipment
Printer Assembly - Alternate component	Axiohm	MHTAS010	DC 24V	--	Tested with the equipment
DC stepping motor	Minebea Electronic Co Ltd. (NMB)	PM20L-020-AXH2	DC 24V, 100MΩ, 120°C	--	Tested with the equipment
PCB	Interchangeable	--	V-0, 105°C	UL796	UR
PN 950024, 950026, 950028, 950029					
Enclosure frame material for P/N 950028	E I DUPONT DE NEMOURS & CO INC	FR50	V-0	UL 746C	UR(E41938)
Enclosure frame material for P/N 950028	Interchangeable	--	V-0	UL 746C	UR
Cover, mount material for P/N 950028	TRINSEO (HONG KONG) LTD	Celec 5200HF	V-0	UL 746C	UR(E132010)
Cover, mount material for P/N 950028	Interchangeable	--	V-0	UL 746C	UR
Printer Assembly	Seiko	CAPM347	Thermal printer mechanism 24VDC, 4.9A(peak)/144 dots; 9.9A(peak)/288 dots; 21.9A(peak)/640 dots Print speed 300mm/s	--	Tested with the equipment
Thermal Head	--	--	*Heat element matrix consist of 640 dots*	--	*Tested with the equipment*
Paper feed motor	--	*J05F9ZY2BC*	*PM type stepper motor, 3.7Ω/phase, Vp:21.6-26.4V* *600mA/phase*	--	*Tested with the equipment*

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

Paper motor	--	*J09C9ZE2BC*	*PM type stepper motor, 8.5Ω/phase, Vp:21.6-26.4V* *820mA/phase(at 1 phase)*	--	*Tested with the equipment*
PCB (control board 209008)	Interchangeable	--	V-0, 105°C	UL796	UR
Internal Wiring	Interchangeable	--	VW-1, 105°C	UL 758	UR
PN 950054					
Plastic material for presenter	COVESTRO DEUTSCHLAND AG [PC RESINS]	FR3000	V-0	UL 746C	UR(E41613)
Plastic material for presenter	Interchangeable	--	V-0	UL 746C	UR
Enclosure for main frame	CHI MEI CORPORATION	PA-757	HB	UL 746C	UR(E56070)
Enclosure for main frame	Interchangeable	--	HB	UL 746C	UR
Printer Assembly	Seiko	CAPM347	Thermal printer mechanism 24VDC, 4.9A(peak)/144 dots; 9.9A(peak)/288 dots; 21.9A(peak)/640 dots Print speed 300mm/s	--	Tested with the equipment
PCB for control board 209014 and presenter	Interchangeable	--	V-0, 105°C	UL796	UR
Internal Wiring	Interchangeable	--	VW-1, 105°C	UL 758	UR
Power adaptor	FSP Group	FSP060-RTAAN2	Input 100-240V, 1.5A, 50-60Hz Output 24VDC, 2.5A	UL/CSA 60950-1	cULus(E190414)
Supplementary information: 1) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

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

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.)		

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

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)**

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

5.2	Table: Classification of electrical energy sources						P
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	--	Supply	Normal	24VDC	--	--	ES1
			Abnormal	24VDC	--	--	
			Single fault – SC/OC	24VDC	--	--	

5.2.2.3 - Capacitance Limits						
No.	Supply Voltage	Location (e.g. circuit designation)	Test conditions	Parameters		ES Class
				Capacitance, nF	Upk (V)	
--	--	--	Normal	--	--	--
			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
				Off time (ms)	Upk (V)	Ipk (mA)	
--	--	--	Normal	--	--	--	--
			Abnormal	--	--	--	
			Single fault – SC/OC	--	--	--	

Test Conditions:

Normal –

Abnormal -

Supplementary information: SC=Short Circuit, OC=Short Circuit

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

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements for P/N 950011**					P
	Supply voltage (V) .....:	21.6Vdc	26.4Vdc	--	--	—
	Ambient T_{min} (°C) .....:	53.1	52.2	--	--	—
	Ambient T_{max} (°C) .....:	53.1	52.2	--	--	—
	Tma (°C) .....:	50	50	--	--	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
U1001 (in printer, power supply board)		73.6	74.7	--	--	105
C1008 (in printer, power supply board)		72.5	73.6	--	--	105
PCB (in printer, power supply board)		72.5	73.4	--	--	105
U400 (in printer, motor driver board)		94.0	97.1	--	--	105
PCB (in printer, motor driver board)		79.0	81.4	--	--	105
U100 (in printer, main controller board)		73.4	73.7	--	--	105
Motor case 1 (cutter)		68.1	68.7	--	--	100
Motor case 2(paper feed)		82.1	83.0	--	--	100
Metal frame, hot spot		59.3	59.4	--	--	--
Switch body		64.7	64.7	--	--	85
Supplementary information:						

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:
Note 1: Tma should be considered as directed by appliable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

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

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements for P/N 950020**					P
	Supply voltage (V) .....:	90V~/60Hz(external power adapter)	264V~/50Hz(external power adapter)	--	--	—
	Ambient T_{min} (°C) .....:	50.4	50.4	--	--	—
	Ambient T_{max} (°C) .....:	50.4	50.4	--	--	—
	Tma (°C) .....:	50	50	--	--	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
C22 near LF1 (in adaptor)		60	64	--	--	105
LF1 coil (in adaptor)		59	62	--	--	110
PCB under BD1 (in adaptor)		59	62	--	--	105
CY1 near BD1 and LF1 (in adaptor)		59	61	--	--	85
Transformer coil (top side) (in adaptor)		62	68	--	--	90
Transformer coil (bottom side) (in adaptor)		63	70	--	--	90
Enclosure surface of adaptor		56	59	--	--	95
Q600 (in printer)		81	84	--	--	105
C302 (in printer)		61	64	--	--	105
Q200 (in printer)		65	67	--	--	105
U1001 (in printer)		65	68	--	--	105
U100 (in printer)		68	70	--	--	105
U1301 (in printer)		66	69	--	--	105
U1307 (in printer)		73	76	--	--	105
L1300 (in printer)		64	67	--	--	105
Motor case (in printer)		94	107	--	--	110
Supplementary information:						

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

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

--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:
Note 1: Tma should be considered as directed by appliable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements for P/N 950050					P
	Supply voltage (V) .....:	24Vdc	--	--	--	—
	Ambient T_{min} (°C) .....:	60	--	--	--	—
	Ambient T_{max} (°C) .....:	60	--	--	--	—
	Tma (°C) .....:	60	--	--	--	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
Motor		93	-	--	--	105
PCB		80	-	--	--	105
DC Input Connector		68	-	--	--	85
Paper Outlet, blue plastic		61	-	--	--	85

Supplementary information:

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:
Note 1: Tma should be considered as directed by appliable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)
Note 3: The duty cycle is printing a ticket every 10 seconds.

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

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements for P/N 950100**					P
	Supply voltage (V) .....:	24Vdc	--	--	--	—
	Ambient T_{min} (°C) .....:	23	--	--	--	—
	Ambient T_{max} (°C) .....:	24	--	--	--	—
	Tma (°C) .....:	50	--	--	--	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
Motor enclosure, near pulley		82.9	-	--	--	90
Motor enclosure, at rear		77.3	-	--	--	90
Printer, rear enclosure		64.7	-	--	--	90

Supplementary information: continuously printing (every 10 seconds), re-inserting the paper if jammed

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:
Note 1: Tma should be considered as directed by appliable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements for P/N 100769, P/N 950023**					P
	Supply voltage (V) .....:	24Vdc	--	--	--	—
	Ambient T_{min} (°C) .....:	50	--	--	--	—
	Ambient T_{max} (°C) .....:	50	--	--	--	—
	Tma (°C) .....:	50	--	--	--	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
Stepping motor		96	-	--	--	110
Printer head		94	-	--	--	--
PCB		79	--	--	--	105
Knob		57	--	--	--	85

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

Enclosure	61	--	--	--	95
Switching power supply enclosure	55	--	--	--	95

Supplementary information: continuously printing (every 10 seconds), re-inserting the paper if jammed

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:
Note 1: Tma should be considered as directed by appliable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

5.4.1.4, 6.3.2, 9.0, B.2.6	TABLE: Temperature measurements for P/N 950024					P
	Supply voltage (V) .....:	24.3	24.3	--	--	—
	Ambient T_{min} (°C) .....:	23.2	23.2	--	--	—
	Ambient T_{max} (°C) .....:	23.2	23.2	--	--	—
	Tma (°C) .....:	--	50	--	--	—
Maximum measured temperature T of part/at:		Measured T (°C)	Normalized to 50 °C	T (°C)		Allowed T_{max} (°C)
Main board input connector		34.2	61	--	--	90
Main board PCB near input connector		36.2	63	--	--	105
Internal wiring to printer mech		33.0	59.8	--	--	90
Main circuit board housing		29.0	55.8	--	--	--
Connector, printer mech		30.1	56.9	--	--	90
Printer mech housing		29.6	56.4	--	--	90
Printer head near heater		32.4	59.2	--	--	90
Top of printer mech		27.9	54.7	--	--	--
Power adapter surface		26.4	--	--	--	70

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

Supplementary information: continuously printing (every 10 seconds), re-inserting the paper if jammed

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:
Note 1: Tma should be considered as directed by appliable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements for P/N 950054**					P
	Supply voltage (V) .....:	24.3	24.3	--	--	—
	Ambient T_{min} (°C) .....:	24.9	24.9	--	--	—
	Ambient T_{max} (°C) .....:	24.9	24.9	--	--	—
	Tma (°C) .....:	--	50	--	--	—
Maximum measured temperature T of part/at:		Measured T (°C)	Normalized to 50 °C	T (°C)		Allowed T_{max} (°C)
Printer head near heater		38.8	63.9	--	--	90
Main control board PCB near input connector		53.2	78.3	--	--	105
Presenter housing		32.0	57.1	--	--	90
Power adapter surface		30.0	--	--	--	70

Supplementary information: continuously printing (every 10 seconds), re-inserting the paper if jammed

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

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

Supplementary information:
Note 1: Tma should be considered as directed by appliable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

Repeated Temperature test for CB1123-2R1 (Only below Table 5.4.1.4, 6.3.2, 9.0, B.2.6):

5.4.1.4, 6.3.2, 9.0, B.2.6	**TABLE: Temperature measurements for P/N 950020**					P
	Supply voltage (V) .....:	24.4	24.4	--	--	—
	Ambient T_{min} (°C) .....:	22	22	--	--	—
	Ambient T_{max} (°C) .....:	22	22	--	--	—
	Tma (°C) .....:	--	50	--	--	—
Maximum measured temperature T of part/at:		Measured T (°C)	Normalized to 50 °C	T (°C)		Allowed T_{max} (°C)
Motor gearbox Enclosure - Printer Head side		51.2	79.2	--	--	90
Molex connector - Main Input		27.0	55.0	--	--	90
PCB - Close to printer head		36.1	64.1	--	--	105
Printer Head		27.6	55.6	--	--	90
Ambient		22.0	50.0			N/A

Supplementary information: continuously printing (every 10 seconds), re-inserting the paper if jammed

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:
Note 1: Tma should be considered as directed by appliable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

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

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		N/A
Allowed impression diameter (mm) .....:	≤ 2 mm		—
Object/Part No./Material	Manufacturer/trademark	Test temperature (°C)	Impression diameter (mm)
--	--	--	--
Supplementary information:			

5.4.2.2, 5.4.2.4 and 5.4.3	TABLE: Minimum Clearances/Creepage distance						N/A
Clearance (cl) and creepage distance (cr) at/of/between:	Up (V)	U r.m.s. (V)	Frequency (kHz)[1]	Required cl (mm)	cl (mm)[2]	Required[3] cr (mm)	cr (mm)
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

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

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

5.4.2.3	**TABLE: Minimum Clearances distances using required withstand voltage**			N/A
	Overvoltage Category (OV):			--
	Pollution Degree:			--
Clearance distanced between:	Required withstand voltage	Required cl (mm)	Measured cl (mm)	
--	--	--	--	
Supplementary information:				

5.4.2.4	**TABLE: Clearances based on electric strength test**			N/A
Test voltage applied between:	Required cl (mm)	Test voltage (kV) peak/ r.m.s. / d.c.	Breakdown Yes / No	
--	--	--	--	
Supplementary information:				

5.4.4.2, 5.4.4.5 c) 5.4.4.9	**TABLE: Distance through insulation measurements**				N/A
Distance through insulation di at/of:	Peak voltage (V)	Frequency (kHz)	Material	Required DTI (mm)	DTI (mm)
--	--	--	--	--	--
Supplementary information:					

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

5.4.9	TABLE: Electric strength tests			N/A
Test voltage applied between:		Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No
Basic/supplementary:				
--		--	--	--
Reinforced:				
--		--	--	--
Routine Tests:				
--		--	--	--
Supplementary information:				

5.5.2.2	TABLE: Stored discharge on capacitors				N/A
Supply Voltage (V), Hz	Test Location	Operating Condition (N, S)	Switch position On or off	Measured Voltage (after 2 seconds)	ES Classification
--	--	--	--	--	--

Supplementary information:

X-capacitors installed for testing are:

☐ bleeding resistor rating:

☐ ICX:

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

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

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

5.7.2.2, 5.7.4	TABLE: Earthed accessible conductive part	N/A
Supply voltage..... :		—
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)
Metal enclosure, connectors at rear chassis	1	N/A
	2*	N/A
	3	N/A
	4	N/A
	5	N/A
	6	N/A
	8	N/A

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 sub-clause 4.3
[4] IEC60990, sub-clause 6.2.2.7, Fault 7 not applicable.
[5] (*) IEC60990, sub-clause 6.2.2.2 is not applicable if switch or disconnect device (e.g., appliance coupler) provided.

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

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*)	PS Classification
A	DC input from supply	Power (W) :	--	--	PS2 assumed As supplied by LPS power adapter
		VA (V) :	--	--	
		IA (A) :	--	--	
B	V5.0	Power (W) :	18.4	--	PS2
		VA (V) :	4.5	--	
		IA (A) :	4.1	--	
C	V3.3	Power (W) :	2.41	--	PS1
		VA (V) :	2.68	--	
		IA (A) :	0.9	--	

Supplementary Information:
(*) Measurement taken only when limits at 3 seconds exceed PS1 limits
Note: PS2 assumed since the supplied from external power adapter output rated LPS

6.2.3.1	Table: Determination of Potential Ignition Sources (Arcing PIS)			N/A
Location	Open circuit voltage After 3 s (Vp)	Measured r.m.s current (Irms)	Calculated value (V_p x I_{rms})	Arcing PIS? Yes / No
--	--			

Supplementary information:

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 (Vp) and normal operating condition rms current (Irms) is greater than 15.

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

6.2.3.2	Table: Determination of Potential Ignition Sources (Resistive PIS)				P
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
See note	--	--	--	--	--

Note: Resistive PIS assumed since the supplied from external power adapter output rated LPS

Supplementary Information:

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 x IA) is used to determine Resistive PIS classification.

A Resistive PIS: (a) dissipates more than 15 W, measured after 30 s of normal operation, or (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						
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
P/N: 950011							
24Vdc	1.46	2.4	35.1	--	--	--	Normal printing
P/N 950020							
24Vdc	1.84	2.4	44.1	--	--	--	Normal printing
P/N 103665, P/N 950005							

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

B.2.5	TABLE: Input test						
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
24Vdc	1.78	2.4	42.7	--	--	--	Normal printing
P/N 950050							
24.2Vdc	1.1	2.4	24.7	--	--	--	Normal printing
P/N 950100							
24Vdc	2.4	2.4	--	--	--	--	Normal printing
P/N 100769, P/N 950023							
24.3Vdc	1.2	2.5	30	--	--	--	Normal printing
P/N 950024							
24.3Vdc	1.2	2.4	--	--	--	--	Normal printing Measured current is the peak current only in printing
P/N 950054							
24.3Vdc	2.6	2.4	--	--	--	--	Normal printing Measured current is the peak current only in printing
Supplementary information: Equipment may be have rated current or rated power or both. Both should be measured							

Repeated Input test for CB1123-2R1 (Only below Table B.2.5):

B.2.5	TABLE: Input test						P
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
P/N 950020							
24Vdc	1.64	2.4	40.0	--	--	--	Normal printing

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Clause	Requirement + Test	Result - Remark	Verdict

B.3	TABLE: Abnormal operating condition tests								P
Ambient temperature (°C) ..... :					--				—
Power source for EUT: Manufacturer, model/type, output rating . :					--				—
Component No.	Abnormal Condition	Supply voltage, (V)	Test time (min)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation	
P/N 950024									
Feed motor	Paper jam	24VDC	1hr 20 min	--	--	--		Similar power consumption as normal operation , No excessive temperature rise, no damage, no hazard, thermally stablized	
Supplementary information:									

B.3, E.2	TABLE: Temperature measurements					P
	Supply voltage (V)	--	--	--	--	—
	Ambient T_{min} (°C)	22.9	--	--	--	—
	Ambient T_{max} (°C)	22.9	--	--	--	—
	Tma (°C)	50	--	--	--	—
Maximum measured temperature T of part/at:		T (°C)				Allowed T_{max} (°C)
Main board input connector		61.4	--	--	--	--
Main board PCB near input connector		63.4	--	--	--	--
Internal wiring to printer mech		60.4	--	--	--	--
Main circuit board housing		56.2	--	--	--	--
Connector, printer mech		65	--	--	--	--
Printer mech housing		57.4	--	--	--	--
Printer head near heater		65.7	--	--	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

Top of printer mech	58.5	--	--	--	--
Power adapter surface	53.3	--	--	--	--
Supplementary information: paper jammed, P/N 950024					

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:
Note 1: Tma should be considered as directed by appliable requirement
Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

B.4	**TABLE: Fault condition tests**	P
Ambient temperature (°C) .....:	See table below	—
Power source for EUT: Manufacturer, model/type, output rating ..:	--	—

Component No.	Fault Condition	Supply voltage, (V)	Test time (min)	Fuse no.	Fuse current, (A)	T-couple	Temp. (°C)	Observation
P/N 950011								
C1010	S/C	264V(power adapter)	2 hr	--	--	--	--	Temperature of U1001=87.7°C, no hazards Ambient 23°C
C1009	S/C	264V(power adapter)	2 hr	--	--	--	--	Temperature of U1007=101°C, no hazards Ambient 23°C
C1004	S/C	264V(power adapter)	1 min	--	--	--	--	Temperature of U1000=51°C, unit shut down immediately, no hazards Ambient 23°C
P/N 950020								
C1311	S/C	24VDC	2 hr	--	--	--	--	Temperature of DC=141°C, Q1307=126°C, no hazard Ambient=21°C

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Clause	Requirement + Test			Result - Remark				Verdict
C1310	S/C	24VDC	2 hr	--	--	--	--	Temperature of Q1300=50°C, no hazard Ambient=21°C
C1304	S/C	24VDC	5 min	--	--	--	--	Output of adapter shut down, no hazards Ambient 23°C
P/N 950050								
Motor	Locked rotor	24VDC	7 hr	--	--	--	--	Motor body 43°C, PCB 52.9°C, ticket out 26.9°C Ambient 23.8°C
P/N 950051								
C310	S/C	24VDC	--	--	--	--	--	Product stop operation, no hazard, no damage
C1002	S/C	24VDC	--	--	--	--	--	Product stop operation, no hazard, no damage
P/N 950100								
Motor	Locked rotor	24VDC	5 min	--	--	--	--	No overheating or component failure, equipment continued to function normally after the test
Printer	Locked rotor	24VDC	5 hr	--	--	--	--	No overheating or component failure, equipment continued to function normally after the test
P/N 100769, P/N 950023								
Motor	Locked rotor	24VDC	2 hr	--	1.2	--	--	The temperature of the motor is 76.6°C. No fire hazards Ambient 23°C

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Clause	Requirement + Test				Result - Remark			Verdict
C1108	S/C	24VDC	30 min	--	0.25	--	--	The output power is limited by the switching power supply, the output voltage of the switching power supply dropped down. The input power is 5.8W and the temperature of L1100 went to 113°C. No fire hazards. Ambient 23°C
U1101 Pin1 and 2	S/C	24VDC	30 min	--	2.9A	--	--	The output power is limited by the switching power supply, the output voltage of the switching power supply dropped down. The input power is 30W and the temperature of L1100 went to 160°C. No hazards. Ambient 23°C
U1101 Pin1 and 4	S/C	24VDC	30 min	--	2.0	--	--	The output power is limited by the switching power supply, the output voltage of the switching power supply dropped down. The input power is 12W and the temperature of U200 went to 180°C. No hazards. Ambient 23°C
C1104	S/C	24VDC	10 min	--	1.8	--	--	The output power was only 1W, which was limited by the switching power supply. The temperature of the U1100 went to 40°C. No fire, no hazards Ambient 23°C

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Clause	Requirement + Test	Result - Remark	Verdict

PN/ 950026								
Printer head heating element	Continuous on	24.3	5	N/A	N/A	--	--	Modified printer 950026 control to make 0-160 dots on continuously, to print black rectangle Patten, input current measured 24Vdc, 3.0A, dots within 0-160 matrix damaged within 5 mins, current dropped to 0.4A Repeated for 160-320 matrix, 320-480 matrix and 480-640 matrix. Maximum temperature measured inside of the printer was 32°C, housing 28°C
P/N 950024								
C1013	Short	24.3	5	N/A	N/A	--	--	Power adapter output entered into hicuup mode, no damage, no hazards.
V24 output	short	24.3	5	N/A	N/A	--	--	Power adapter output entered into hicuup mode, no damage, no hazards.
C1012	short	24.3	60	N/A	N/A	--	--	Printer shut off, Short circuit current 4.4A,thermaly stabilized, PCB max 83°C, no damage, no hazard

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Clause	Requirement + Test			Result - Remark				Verdict
C144	short	24.3	60	N/A	N/A	--	--	Printer shut off, 3.3V output entered into hicuup,max short circuit current 550mA, thermally stabilized, PCB max 64°C, no damage, no hazard
Printer 950024, 950029, 950028 D1003	Short	24.3	5	N/A	N/A	--	--	C1010 burned and had flame for 4s and extinguished itself, many components between 24-5V circuits damaged and load current after 24V is 450mA and stabilized, no flame came out of the enclosure of the circuit board The same short circuit test was repeated three time including vertical and horizontal position with similar results but no flame came out of the enclosure of the circuit board
P/N 950054								
Presenter C608	short	24.3	60	N/A	N/A	--	--	Max 144mA short circuit current, PCB max 62°C, no damage, no hazard
Presenter C602	short	24.3	60	N/A	N/A	--	--	Max 2.0A short circuit current, PCB max 65°C, no damage, no hazard

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Clause	Requirement + Test	Result - Remark	Verdict

Presenter C603	short	24.3	60	N/A	N/A	--	--	Unit shut down, 24V in presenter is disabled, no damage, no hazard
Control board D1003	short	24.3	60	N/A	N/A	--	--	U201 damaged, short circuit current stabilized to 185mA, repeated three times, no hazards.
Supplementary information:								

Annex M	**TABLE: Batteries**	N/A
The tests of Annex M are applicable only when appropriate battery data is not available		--
Is it possible to install the battery in a reverse polarity position? .....:	See table B.3	--

	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		
- Explosion of the battery		
- Emission of flame or expulsion of molten metal		
- Electric strength tests of equipment after completion of tests		
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	--	--	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

	Normal	--	--	--	--
	Abnormal	--	--	--	--
Supplementary Information:					

Battery identification	Charging at T_{lowest} (°C)	Observation	Charging at $T_{highest}$ (°C)	Observation
--	--	--	--	--
Supplementary Information:				

Annex Q.1	**TABLE: Circuits intended for interconnection with building wiring (LPS)**					N/A
Note: Measured UOC (V) with all load circuits disconnected:						
Output Circuit	Components	U_{oc} (V)	I_{sc} (A)		S (VA)	
			Meas.	Limit	Meas.	Limit
Supplementary Information: SC=Short circuit, OC=Open circuit						

T.2, T.3, T.4, T.5	**TABLE: Steady force test**				N/A
Part/Location	Material	Thickness (mm)	Force (N)	Test Duration (sec)	Observation
Supplementary information:					

T.6, T.9	**TABLE: Impact tests**			P
Part/Location	Material	Thickness (mm)	Vertical distance (mm)	Observation
P/N 950051				
Top enclosure	Plastic	1.5mm min	1300	Top enclosure broken, not possible to access hazardous moving parts
Supplementary information:				

T.7	**TABLE: Drop tests**			N/A
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation
Supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict

T.8	TABLE: Stress relief test					N/A
Part/Location	Material	Thickness (mm)	Oven Temperature (°C)	Duration (h)	Observation	
Supplementary information:						