C B T E S T R E P O R T

50018006 001

for

Printer, MFP (Multi Function Printer)
ECOSYS P6130cdn, ECOSYS P6035cdn,
ECOSYS P7040cdn, ECOSYS M6030cdn,
ECOSYS M6530cdn, ECOSYS M6035cidn,
ECOSYS M6535cidn

KYOCERA Document Solutions Inc.

This documentation consists of **199** pages (excluding this cover page).

Test Report issued under the responsibility of:

TÜVRheinland®

TEST REPORT

IEC 60950-1

Information technology equipment – Safety – Part 1: General requirements

Report Number. .....: 50018006 001

Date of issue .....: 2014-12-18

Total number of pages.....: 199

Applicant's name.....: KYOCERA Document Solutions Inc.

Address .....: 1-2-28, Tamatsukuri, Chuo-ku, Osaka-shi, Osaka, 540-8585 Japan

Test specification:

Standard .....: IEC 60950-1:2005 (Second Edition) + Am 1:2009 + Am 2:2013

Test procedure.....: CB Scheme

Non-standard test method.....: N/A

Test Report Form No.....: IEC60950_1F

Test Report Form(s) Originator.....: SGS Fimko Ltd

Master TRF.....: Dated 2014-02

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General disclaimer:

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Test item description ..... :	1), 2), 3) Printer 4), 5) MFP (Multi Function Printer)
Trade Mark ..... :	KYOCERA (on the products)
Manufacturer ..... :	(Same as Applicant)
Model/Type reference ..... :	1) ECOSYS P6130cdn 2) ECOSYS P6035cdn 3) ECOSYS P7040cdn 4) ECOSYS M6030cdn, ECOSYS M6530cdn 5) ECOSYS M6035cidn, ECOSYS M6535cidn
Ratings ..... :	1), 4) 220-240V~, 50/60Hz, 5.0A 120V~, 60Hz, 9.0A 110V~, 60Hz, 10.0A 2) 220-240V~, 50/60Hz, 5.6A 120V~, 60Hz, 10.0A 110V~, 60Hz, 11.3A 3) 220-240V~, 50/60Hz, 5.8A 120V~, 60Hz, 11.3A 110V~, 60Hz, 12.0A 5) 220-240V~, 50/60Hz, 5.6A 120V~, 60Hz, 10.3A 110V~, 60Hz, 11.2A

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Testing procedure and testing location:			
☐	**CB Testing Laboratory:**	TÜV Rheinland Japan Ltd., Osaka Laboratory	
Testing location/ address .....:		Kansai Technology Assessment Center 1-3-14 Fukae Minami, Higashinari-ku, Osaka 537-0002, Japan	
☐	**Associated CB Testing Laboratory:**		
Testing location/ address .....:			
Tested by (name + signature).....:			
Approved by (name + signature) .....:			
☒	**Testing procedure:** **TMP/CTF Stage 1:**	KYOCERA Document Solutions Inc.	
Testing location/ address .....:		1-2-28, Tamatsukuri, Chuo-ku, Osaka-shi, Osaka, 540-8585 Japan	
Tested by (name + signature).....:		T. Kimura	.....
Approved by (name + signature) .....:		S. Hamamoto	.....
☐	**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).....:			
Witnessed by (name + signature) .....:			
Approved by (name + signature) .....:			
Supervised by (name + signature).....:			

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List of Attachments:

Attachments included in this Test Report:

- Measurement Section
- National Differences
- IEC/EN 60825-1 test report

Attachments separated from this Test Report:

- Photo Documentation

Summary of testing:

Test sample(s):

Serial No.: Production sample with serial number:
- P6130cdn: Z5T4800025(220-240V), Z5T4800028(120V), Z5T4800007(110V)
- P6035cdn: Z5P4800007(220-240V), Z5P4800022(120V), Z5P4800014(110V)
- P7040cdn: Z5Y4900036(220-240V), Z5Y4900027(120V), Z5Y4900011(110V)
- M6530cdn: Z664800028(220-240V), Z664800032(120V), Z664800006(110V)
- M6535cidn: Z6D4800059(220-240V), Z6D4800060(120V), Z6D4800052(110V)

Relevant tests were performed on those models within the series that were considered to represent the worst case condition for the respective tests.

Appended Table 4.5 Heating test data re-calculated by Max specified ambient temperature 35°C by customer's request.

Tests performed (name of test and test clause):	**Testing location:**
(see below)	(see "testing procedure and testing location" on the previous page)

Testing		Applicable (Yes/No)	Comments
Clause	Test description		
1.6.2	Input current	Yes	
1.7.11	Durability	Yes	
2.1.1.5	Energy hazards	Yes	
2.1.1.7	Discharge of capacitors in equipment	Yes	
2.1.1.8	Energy hazards – d.c. mains supply	No	
2.2.2	SELV/Voltage measurement under normal condition	Yes	
2.2.3	SELV/Voltage measurement under fault conditions	Yes	
2.3.5	Operating voltages generated externally	No	
2.4.2	Limited current circuits	Yes	

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Testing		Applicable (Yes/No)	Comments
Clause	Test description		
2.5	Limited power sources	Yes	
2.6.3.4	Resistance of earthing conductors and their terminations	Yes	
2.9.2	Humidity conditioning	Yes	
2.10	Creepage and Clearances, Distance through Insulation	Yes	
2.10.2.2/ 2.10.2.3	Determination of working voltage	Yes	
2.10.5	Solid insulation	Yes	
2.10.12	Enclosed and sealed parts	No	
3.2.6	Cord anchorages and strain relief	No	
4.1	Stability	Yes	
4.2	Mechanical strength	Yes	
4.3.6	Direct plug-in equipment	No	
4.3.8	Batteries	No	
4.3.13	Radiation	Yes	(see IEC/EN 60825-1 report)
4.5.2	Maximum Temperatures	Yes	
4.5.5	Resistance to abnormal heat	Yes	
5.1	Touch current and protective conductor current	Yes	
5.2	Electric strength	Yes	
5.3	Abnormal operating and fault conditions	Yes	
6.1.2	Separation of the telecommunication network from earth	Yes	Test data from CB test report No.: 12311166.003
6.2	Protection of equipment users from overvoltages on telecom. networks	Yes	Test data from CB test report No.: 12311166.003
6.3	Protection of the telecommunication wiring system from overheating	No	
7.2	Protection of equipment users from overvoltages on cable distribution system	No	
7.3	Insulation between primary and cable distribution system	No	

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Testing		Applicable (Yes/No)	Comments
Clause	Test description		
Annex A	Resistance to heat and fire	No	
Annex B	Locked-rotor overload test	Yes	
Annex C	Overload test	Yes	
Annex G	Determining minimum clearances	No	
Annex H	Ionizing radiation	No	
Annex K	Thermal controls	No	
Annex M	Criteria for telephone ringing signals	No	
Annex Q	Voltage dependent resistors (VDRs)	No	
Annex U	Insulated wire for use without interleaved insulation	No	
Annex Y	Ultraviolet light conditioning test	No	
Annex CC	Evaluation of Integrated circuit (IC) current limiters	No	
Annex DD	Requirements for the mounting means of rack-mounted equipment	No	
Annex EE	Household and home/office document/media shredders	No	

Additionally evaluated Test specifications (see appended test report).

EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013

IEC 60825-1:2007, EN 60825-1:2007

Summary of compliance with National Differences

List of countries addressed:

EU Group Differences, EU Special National Conditions, EU A-Deviations
AT, DK, IT, SE, GB, US, CA

Explanation of used codes: AT=Austria, DK=Denmark, IT=Italy, SE=Sweden, GB=United Kingdom, US=United States of America, CA=Canada.

For National Differences see end of this test report.

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Copy of marking plate

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Copy of marking plate

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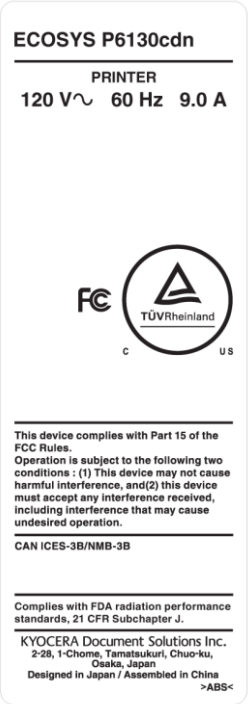

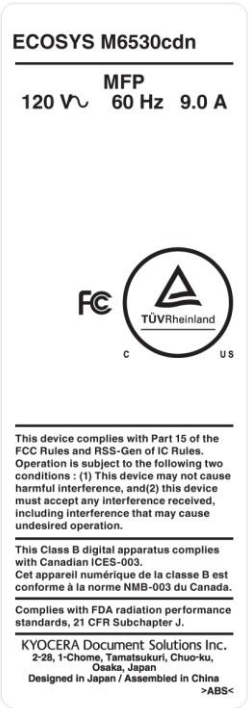

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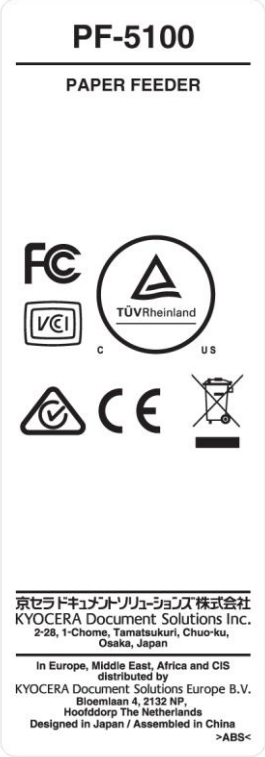

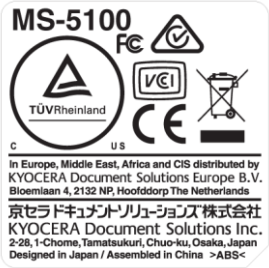

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Copy of marking plate

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

Caution label in the main unit

Laser radiation warning in the main unit

DANGER • CLASS 3B LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.

ATTENTION • CLASE 3B RAYONNEMENT LASER EN CAS D'OUVERTURE. EXPOSITION DANGEREUSE AU FAISCEAU.

VORSICHT • KLASSE 3B LASERSTRAHLUNG, WENN ABDECKUNG GEÖFFNET. NICHT DEM STRAHL AUSSETZEN.

ATTENZIONE • CLASSE 3B RADIAZIONE LASER IN CASO DI APERTURA. EVITARE L'ESPOSIZIONE AL FASCIO.

PRECAUCION • CLASSE 3B RADIACIONE LASER CUANDO SE ABRE. EVITAR EXPONERSE AL RAYO.

VARO! • AVATTAESSA OLET ALTTIINA LUOKAN 3B LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

警告 • 该产品为3B类激光产品，打开盖子后会有激光辐射，请避免光束照射。

警告 • 該產品爲3B類激光產品，打開蓋子後會有激光輻射，請避免光束照射。

위험 • CLASS 3B 가시 레이저광선을 직접 보지마십시오.

警告 • ここを開くとクラス3Bレーザー光がでます。ビームを直接見たり、触れないでください。

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Test item particulars	
Equipment mobility ..... :	[] movable [] hand-held [] transportable [**X**] stationary [] for building-in [] direct plug-in
Connection to the mains..... :	[**X**] pluggable equipment [**X**] type A [] type B [] permanent connection [**X**] detachable power supply cord [] non-detachable power supply cord [] not directly connected to the mains
Operating condition..... :	[**X**] continuous [] rated operating / resting time:
Access location ..... :	[**X**] operator accessible [] restricted access location
Over voltage category (OVC) ..... :	[] OVC I [**X**] OVC II [] OVC III [] OVC IV [] other:
Mains supply tolerance (%) or absolute mains supply values ..... :	±10%
Tested for IT power systems ..... :	[**X**] Yes [] No
IT testing, phase-phase voltage (V) ..... :	230 V
Class of equipment ..... :	[**X**] Class I [] Class II [] Class III [] Not classified
Considered current rating of protective device as part of the building installation (A) ..... :	16A (for Europe), 20A (for Canada and USA)
Pollution degree (PD) ..... :	[] PD 1 [**X**] PD 2 [] PD 3
IP protection class ..... :	Not rated, indoor use only.
Altitude during operation (m) ..... :	≤ 3500 m
Altitude of test laboratory (m) ..... :	< 1000 m
Mass of equipment (kg) ..... :	ECOSYS P6130cdn: Approx. 28.0 kg ECOSYS P6035cdn: Approx. 29.0 kg ECOSYS P7040cdn: Approx. 30.5 kg ECOSYS M6030cdn: Approx. 34.6 kg ECOSYS M6530cdn: Approx. 34.7 kg ECOSYS M6035cidn: Approx. 35.3 kg ECOSYS M6535cidn: Approx. 35.4 kg

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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 ..... :	N/A for TMP
Date(s) of performance of tests ..... :	2014-10-10 – 2014-12-12
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 6.2.5 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) ..... :	1) KYOCERA Document Technology (Dongguan) Co., Ltd. Kyocera Industrial Park 3 Fangzheng East Rd, Shilong, Dongguan, Guangdong, P.R. China 2) KYOCERA Document Solutions Inc. Hirakata Plant 1-38-12 Tsuda-Kita-machi, Hirakata-shi, Osaka 573-0121 Japan

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General product information:

1) Application details / Description of the product:

The product tested is a printer or multi-functional printer for use in a general office environment.

Max. specified ambient temperature (°C) ..... : 32.5 °C

Supply connection..... : Appliance inlet and detachable power cord set

Laser classification..... : Class 1

Non-approved building-in type switching power supplies in main unit were tested as part of the overall configuration of the equipment.

2) Differences between the models:

Differences between Printer model and MFP model are almost same except for below table.

Printer : ECOSYS P6130cdn, ECOSYS P6035cdn, ECOSYS P7040cdn

Printer Model	ECOSYS P6130cdn	ECOSYS P6035cdn	ECOSYS P7040cdn
Printing Speed	30ppm	35ppm	40ppm
Rated Voltage	Rated Current (A)		
220-240 V～	5.0	5.6	5.8
120 V～	9.0	10.0	11.3
110 V～	10.0	11.3	12.0
Switching Power Supply Unit	Type		
for 220-240V	MPW3162LX	MPW3162X	
for 110V and 120V	MPW3161LX	MPW3161X	
Heater Lamp	Type		
for 220-240V	QIRF 240-926 MKQK	QIRF 240-641/427 MKQK	
for 120V	QIRF 120-867 MKQK	QIRF 120-600/400 MKQK	
for 110V	QIRF 110-867 MKQK	QIRF 110-600/400 MKQK	
Document Processor Unit (Standard)	Not Provided		
Fax Unit (Standard)	Not Provided		
PF-5100 (Option)	Max. 3 Units		
MS-5100 (Option)	Not Provided		

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MFP: ECOSYS M6030cdn, ECOSYS M6530cdn, ECOSYS M6035cidn, ECOSYS M6535cidn

MFP (Multi Function Printer) Model	ECOSYS M6030cdn ECOSYS M6530cdn	ECOSYS M6035cidn ECOSYS M6535cidn
Printing Speed	30ppm	35ppm
Rated Voltage	Rated Current (A)	
220-240 V～	5.0	5.6
120 V～	9.0	10.3
110 V～	10.0	11.2
Switching Power Supply Unit	Type	
for 220-240V	MPW3162LX	MPW3162X
for 110V and 120V	MPW3161LX	MPW3161X
Heater Lamp	Type	
for 220-240V	QIRF 240-926 MKQK	QIRF 240-641/427 MKQK
for 120V	QIRF 120-867 MKQK	QIRF 120-600/400 MKQK
for 110V	QIRF 110-867 MKQK	QIRF 110-600/400 MKQK
Document Processor Unit (Standard)	Provided	
Fax Unit (Standard)	ECOSYS M6030cdn: Not Provided	ECOSYS M6035cidn: Not Provided
	ECOSYS M6530cdn: Provided	ECOSYS M6535cidn: Provided
PF-5100 (Option)	Max. 3 Units	
MS-5100 (Option)	Provided	

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3) Options: Paper Feeder, Model PF-5100, supplied by SELV Manual Stapler, Model MS-5100 for MFP, supplied by SELV
4) Insulation system: - Secondary circuits are separated from primary by double/reinforced insulation. - Primary circuits are separated from earth by at least basic insulation. - All output / interface voltages are at SELV level. - Secondary circuits are conductively connected to earth. - High voltage is generated from SELV circuits, see cl. 2.2.4. - Internal metal chassis and relevant accessible metal parts are reliably connected to protective bonding. - TNV circuits are separated from primary by double/reinforced insulation. - TNV circuits are separated from secondary circuits by basic insulation.
4.1) Sub-units (PCB's, ...) With pri – sec separation .....: SWPS, Fixing Unit in main unit With pri – parts only .....: (none) HV-unit(s) .....: High Voltage PWB (see appended table 1.5.1)
4.2) Pri - sec components, which are not part of the above mentioned sub-units: (none)
4.3) Non certified pri-components directly mounted to chassis: (certified components were only checked for correct-application (see 1.5.1) (none)

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Abbreviations used in the report:

- normal conditions	N.C.	- single fault conditions	S.F.C
- functional insulation	FI	- basic insulation	BI
- double insulation	DI	- supplementary insulation	SI
- between parts of opposite polarity	BOP	- reinforced insulation	RI
- protective earth/protective bonding	PE/PB	- primary	Pri
- (switching) power supply	(SW)PS	- secondary	sec
- high voltage	HV	- ground	gnd
- printed circuit (wiring) board	PCB	- input/output	I/O
- triple insulated wire	TIW	- installation instruction	ii
- built-in application	B/I		

Indicate used abbreviations (if any)

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Clause	Requirement + Test	Result - Remark	Verdict

1	**GENERAL**		P

1.5	**Components**		P
1.5.1	General		P
	Comply with IEC 60950-1 or relevant component standard	(see appended tables 1.5.1)	P
1.5.2	Evaluation and testing of components	Components, which are certified for IEC and/or national standards, are used correctly within their ratings.	P
1.5.3	Thermal controls	Certified components used; correct application confirmed.	P
1.5.4	Transformers	(see Annex C)	P
1.5.5	Interconnecting cables	No interconnecting cables.	N/A
1.5.6	Capacitors bridging insulation	Type X2 capacitors used between lines, type Y2 capacitors used between line and earth, double or reinforced insulation bridged between primary and secondary by Y1 capacitors comply with IEC 60384-14. (see appended table 1.5.1)	P
1.5.7	Resistors bridging insulation	See below	P
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Only resistors bridging functional insulations.	P
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	No such components.	N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	No such components.	N/A
1.5.8	Components in equipment for IT power systems	Line to PE components are rated for line to line voltage.	P

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.9	Surge suppressors	See below.	N/A
1.5.9.1	General	Only approved VDRs used in primary.	P
1.5.9.2	Protection of VDRs	Fuse (F1 in SWPS) is installed in series.	P
1.5.9.3	Bridging of functional insulation by a VDR		P
1.5.9.4	Bridging of basic insulation by a VDR	No such VDR	N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	No such VDR	N/A

1.6	**Power interface**		P
1.6.1	AC power distribution systems	TN, TN-S, IT (considered for Norway)	P
1.6.2	Input current	(see appended table 1.6.2)	P
1.6.3	Voltage limit of hand-held equipment	Not hand-held equipment.	N/A
1.6.4	Neutral conductor	Neutral insulated from earth and body like as line conductor. Components between neutral and earth are rated the same as for line to earth.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.7	**Marking and instructions**		P
1.7.1	Power rating and identification markings	See below.	P
1.7.1.1	Power rating marking		P
	Multiple mains supply connections ..... :	Single mains supply connection	N/A
	Rated voltage(s) or voltage range(s) (V) ..... :	1) 220-240V~ 2) 120V~ 3) 110V~	P
	Symbol for nature of supply, for d.c. only ..... :	AC supply.	N/A
	Rated frequency or rated frequency range (Hz) ... :	1) 50/60Hz 2), 3) 60Hz	P
	Rated current (mA or A) ..... :	1) 5.0A or 5.6A or 5.8A 2) 9.0A or 10.0A or 10.3A or 11.3A 3) 10.0A or 11.2A or 11.3A or 12.0A	P
1.7.1.2	Identification markings		P
	Manufacturer's name or trade-mark or identification mark ..... :	KYOCERA (on the products)	P
	Model identification or type reference ..... :	ECOSYS P6130cdn, ECOSYS P6035cdn, ECOSYS P7040cdn, ECOSYS M6030cdn, ECOSYS M6530cdn, ECOSYS M6035cidn, ECOSYS M6535cidn	P
	Symbol for Class II equipment only ..... :	Class I equipment	N/A
	Other markings and symbols ..... :	(see copy of marking plate)	P
1.7.1.3	Use of graphical symbols	Symbols placed on the equipment shall be explained in the user manual.	P

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2	Safety instructions and marking	See below.	P
	Operating Instructions provided to the operator, containing necessary instructions and caution information. English version checked. At least the safety relevant information is given in German or other applicable languages. Correct translation of safety relevant information for Germany confirmed. (In the following, relevant information may be given in an equivalent wording.) Dangerous levels of ozone not generated. Instruction for installation in a well-ventilated room is given. Non-toxic toner used. Proper disposal instructions provided. “Caution hot”; high temperature warning on fuser unit, as it does not immediately cool down when accessed during paper jam removal. Laser label and warning label is provided: ”CLASS 1 LASER PRODUCT” and other warning label. Refer to IEC/EN 60825-1 report.		—
1.7.2.1	General		P
1.7.2.2	Disconnect devices	Appliance inlet used.	N/A
1.7.2.3	Overcurrent protective device	Pluggable equipment type A	N/A
1.7.2.4	IT power distribution systems	Considered for Norway. No special modification, no instruction required.	P
1.7.2.5	Operator access with a tool	Only SELV voltages accessible to the operator without the use of another tool.	N/A
1.7.2.6	Ozone	See cl. 1.7.2.	P
1.7.3	Short duty cycles	Continuous operation.	N/A
1.7.4	Supply voltage adjustment ..... :	Single voltage range.	N/A
	Methods and means of adjustment; reference to installation instructions ..... :	--	—
1.7.5	Power outlets on the equipment ..... :	No power outlets provided.	N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) ..... :	Fuses are clearly and adequately marked with fuse number and rating.
		SWPS MPW3162, MPW3162L:
		F1: T5AH 250V
		F51: T10AH 250V
		SWPS MPW3161, MPW3161L:
		F1: T6.3AH 250V
		F51: T12.5AH 250V
		“CAUTION
		FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE AND RATINGS OF FUSES.”
		No user accessible fuse holder.
			P

1.7.7	Wiring terminals	See below.	P
1.7.7.1	Protective earthing and bonding terminals ..... :	Approved appliance inlet used. PB terminal where the PB wire from the inlet is connected to the chassis is marked with symbol IEC 60417, No. 5017.	P
1.7.7.2	Terminals for a.c. mains supply conductors	Appliance inlet used.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	No connection to DC mains.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
1.7.8	Controls and indicators	See below.	P
1.7.8.1	Identification, location and marking ..... :	Safety related switches and controls: Power Switch: function is obvious by positioning and marking (see 1.7.8.3) Other indicators/controls provided for functional reasons, not affecting safety.	P
1.7.8.2	Colours ..... :	No safety relevant color used	N/A
1.7.8.3	Symbols according to IEC 60417 ..... :	Marking for Main Switch (Optional) according to IEC 60417, No. 5007 " I " and 5008 " O ". Marking for Stand-by button No. 5009.	P
1.7.8.4	Markings using figures ..... :	Not used.	N/A
1.7.9	Isolation of multiple power sources ..... :	Single supply	N/A
1.7.10	Thermostats and other regulating devices ..... :	No such thermostats or the like.	N/A
1.7.11	Durability		P
1.7.12	Removable parts	Safety relevant markings are located on fixed installed parts.	P
1.7.13	Replaceable batteries ..... :	Lithium battery not replaceable by user.	N/A
	Language(s) ..... :	--	—
1.7.14	Equipment for restricted access locations..... :	Not intended for restricted access location.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2	**PROTECTION FROM HAZARDS**		P
2.1	**Protection from electric shock and energy hazards**		P
2.1.1	Protection in operator access areas		P
2.1.1.1	Access to energized parts	See below.	P
	Test by inspection ..... :	Operator cannot contact any hazardous bare parts or parts with only basic insulation to hazardous voltage. No ELV circuits.	P
	Test with test finger (Figure 2A) ..... :	No access to hazardous parts.	P
	Test with test pin (Figure 2B) ..... :	The test pin cannot touch hazardous bare parts through any openings in the enclosure.	P
	Test with test probe (Figure 2C) ..... :	Test probe cannot touch TNV circuits.	P
2.1.1.2	Battery compartments	No battery compartment. TNV circuits not accessible through battery compartment.	N/A
2.1.1.3	Access to ELV wiring	No ELV circuits.	N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)		—
2.1.1.4	Access to hazardous voltage circuit wiring	Not accessible to operator.	P
2.1.1.5	Energy hazards ..... :	No energy hazards in operator access area. (see appended table 2.1.1.5)	P
2.1.1.6	Manual controls	Not connected to and sufficiently separated from hazardous voltages.	P
2.1.1.7	Discharge of capacitors in equipment		P
	Measured voltage (V); time-constant (s) ..... :	(see appended table 2.1.1.7)	—
2.1.1.8	Energy hazards – d.c. mains supply	No d.c. mains supply.	N/A
	a) Capacitor connected to the d.c. mains supply . :	--	N/A
	b) Internal battery connected to the d.c. mains supply ..... :	--	N/A
2.1.1.9	Audio amplifiers ..... :	Not provided.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.1.2	Protection in service access areas	Bare parts carrying hazardous voltage or energy levels are located or guarded properly to avoid unintentional contact and bridging. No unexpected hazard. TNV circuits are sufficiently protected against bridging and/or accidental contact.	P
2.1.3	Protection in restricted access locations	Not intended to be installed in a restricted access location.	N/A
2.2	**SELV circuits**		P
2.2.1	General requirements	(see appended table 2.2)	P
2.2.2	Voltages under normal conditions (V) ..... :	--	P
2.2.3	Voltages under fault conditions (V) ..... :	Limits of 71V peak and 120Vdc were not exceed, SELV limits not for longer than 0.2 seconds, (see appended table 2.2 and table 5.3)	P
2.2.4	Connection of SELV circuits to other circuits ..... :	SELV not connected to primary. HV-unit(s): supplied from SELV; if HV (anode) was shorted to SELV side, SELV was not exceeded at the output connections of the unit. (measured with oscilloscope) (see appended table 2.2 and table 5.3)	P

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Clause	Requirement + Test	Result - Remark	Verdict

2.3	**TNV circuits**		P
2.3.1	Limits	Continuous voltages, combination of AC and DC values, are such that : $\frac{U_{ac}}{71} + \frac{U_{dc}}{120} \leq 1$	P
	Type of TNV circuits ..... :	TNV-3	—
2.3.2	Separation from other circuits and from accessible parts		P
2.3.2.1	General requirements	Separation between SELV and TNV-3 circuit. (see appended table 2.10.3/.4)	P
2.3.2.2	Protection by basic insulation	Electric strength test: 1500V, 60 sec.	P
2.3.2.3	Protection by earthing		N/A
2.3.2.4	Protection by other constructions ..... :	--	N/A
2.3.3	Separation from hazardous voltages	Insulation between primary and TNV is reinforced insulation.	P
	Insulation employed..... :	a)	—
2.3.4	Connection of TNV circuits to other circuits	Not connected to other circuits.	N/A
	Insulation employed..... :	--	—
2.3.5	Test for operating voltages generated externally	Not applied	N/A

2.4	**Limited current circuits** *Test performed for evaluation of cl. 1.5.6 and HV circuits.*		P
2.4.1	General requirements	See below.	P
2.4.2	Limit values	(see appended table 2.4.2)	P
	Frequency (Hz) ..... :	--	—
	Measured current (mA)..... :	--	—
	Measured voltage (V) ..... :	--	—
	Measured circuit capacitance (nF or µF)..... :	--	—
2.4.3	Connection of limited current circuits to other circuits	The limited current circuits are supplied from SELV circuits.	P

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Clause	Requirement + Test	Result - Remark	Verdict

2.5	**Limited power sources** *The following circuits were tested for limited power source:* *- 5V output for Card Reader and Front USB Connector* *- 24V and 3.3V output for Paper Feeder option unit* *- 24V output for Document Processor Unit of MFP Model* *- 5V and 3.3V output for Panel PWB for Operation Panel*		P
	a) Inherently limited output		N/A
	b) Impedance limited output		N/A
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition		P
	Use of integrated circuit (IC) current limiters		N/A
	d) Overcurrent protective device limited output	(see appended table 2.5)	P
	Max. output voltage (V), max. output current (A), max. apparent power (VA)..... :	(see appended table 2.5)	—
	Current rating of overcurrent protective device (A) :	(see appended table 2.5) The fuses have the characteristics required in remark 4 of table 2C	—

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Clause	Requirement + Test	Result - Remark	Verdict

2.6	**Provisions for earthing and bonding**		P
	Protective Bonding wire is on one side hocked in and soldered to Protective Earth pin of appliance inlet or soldered to the pin and additionally secured by heat-shrinkable tubing, the other side has ring terminal (fixed by double crimping). Ring terminal fitted with toothed lock is secured to chassis by M4 screw.		—
2.6.1	Protective earthing	a) Accessible basic insulated conductive parts are reliably bonded to the protective earth terminal. f) Ground of SELV circuits was earthed to reduce touch current.	P
2.6.2	Functional earthing	Secondary ground either separated from hazardous voltages by double- or reinforced insulation or safely connected to PB.	P
	Use of symbol for functional earthing.....:	--	N/A
2.6.3	Protective earthing and protective bonding conductors		P
2.6.3.1	General	2.6.1 a) metal parts: See below 2.6.1 f) Ground of SELV: adequate construction for actual current.	P
2.6.3.2	Size of protective earthing conductors	(refers to table 3B, cl. 3.2.5)	P
	Rated current (A), cross-sectional area (mm^2), AWG ..... :	Rated 5.8A, 0.75mm^2, Rated 11.3A, 16AWG, Rated 12.0A, 2.0mm^2	—
2.6.3.3	Size of protective bonding conductors	Table 3B for PB wires connected to Inlet. Tested per cl. 2.6.3.4.	P
	Rated current (A), cross-sectional area (mm^2), AWG ..... :	--	—
	Protective current rating (A), cross-sectional area (mm^2), AWG ..... :	--	—
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (Ω), voltage drop (V), test current (A), duration (min) ..... :	(see appended table 2.6.3.4)	P
2.6.3.5	Colour of insulation ..... :	PE and PB conductor green/yellow. Green/Yellow wire not used for other connections.	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.4	Terminals		P
2.6.4.1	General	Appliance inlet used.	P
2.6.4.2	Protective earthing and bonding terminals	Tested per cl. 2.6.3.4	P
	Rated current (A), type, nominal thread diameter (mm) ..... :	Rated 12.0A max., M4 screw used for PB terminals.	—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors	Appliance inlet used.	P
2.6.5	Integrity of protective earthing		P
2.6.5.1	Interconnection of equipment		P
2.6.5.2	Components in protective earthing conductors and protective bonding conductors	No switches or fuses in earthing conductors.	P
2.6.5.3	Disconnection of protective earth	Appliance inlet: It is not possible to disconnect earth without disconnecting mains.	P
2.6.5.4	Parts that can be removed by an operator	Plug and Appliance inlet: Earthing connected before and disconnected after hazardous voltage. No hazards expected on operator removable Fixing Unit.	P
2.6.5.5	Parts removed during servicing	It is not necessary to disconnect earthing except for the removing of the earthed parts itself.	P
2.6.5.6	Corrosion resistance	All protective earth connections in compliance with Annex J. Specifically no direct Al – Cu contacts.	P
2.6.5.7	Screws for protective bonding	Thread cutting or space thread screwed connections not used for protective bonding connections.	N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system	The protective earthing of the equipment does not rely on the telecommunication network.	P

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Clause	Requirement + Test	Result - Remark	Verdict

2.7	**Overcurrent and earth fault protection in primary circuits**		P
2.7.1	Basic requirements	The built-in device fuse provides overcurrent protection. Pluggable equipment type A. Equipment relies on 16A rated fuse or circuit breaker of the building installation for short circuit and earth fault.	P
	Instructions when protection relies on building installation	Neither pluggable equipment type B nor permanent connection.	N/A
2.7.2	Faults not simulated in 5.3.7		P
2.7.3	Short-circuit backup protection	Pluggable equipment type A, the building installation is considered as providing short circuit backup protection. Additionally verification by short / abnormal tests	P
2.7.4	Number and location of protective devices ..... :	Overcurrent protections in primary phase by fuses F1, F51 in SWPS. Earth fault protection by fuse or circuit breaker in the building installation.	P
2.7.5	Protection by several devices	Only these fuses in phase or line.	N/A
2.7.6	Warning to service personnel..... :	No unexpected hazard.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2.8	**Safety interlocks**		P
2.8.1	General principles	Safety interlocks are provided and prevent operator from access to hazardous moving parts and hazardous voltages.	P
	Main Body: Power (DC 24V) to the following parts is cut by Top / Rear Cover Interlock Switch when Top Cover or Rear Cover opened. High Voltage PWB, Drum Motor, LSU Cleaning Motor ,Lift Motor, Polygon Motor, Toner Motor, Exit Fan, Feed/ Black DLP Motor, Fuser Motor, DU motor, Image Motor, Colour DLP Motor, DLP Clutch, Feed Clutch, Resist Clutch, Mid Clutch, DU Clutch, MPF Clutch Accessories: Power (DC 24V) to the following parts is cut by Interlock Switch of Manual Stapler when Stapler Lid opened. Staple Motor of Manual Stapler		—
2.8.2	Protection requirements	Hazardous voltages and energy levels are de-energized when interlock is activated, moving parts are stopped and/or slowed down to non-hazardous speeds. No access to hazardous parts by test finger in interlocked areas.	P
2.8.3	Inadvertent reactivation	Inadvertent reactivation is not possible. Test finger cannot override interlock system.	P
2.8.4	Fail-safe operation	Failure in interlock system will result in open circuit condition of the system, no hazard.	P
	Protection against extreme hazard		P
2.8.5	Moving parts	Mechanism tested 10.000 cycles, no hazard.	P
2.8.6	Overriding	No such systems.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

2.8.7	Switches, relays and their related circuits	Switches comply with IEC 61058-1. No relays related to interlock.	P
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) ..... :	Approved switches.	N/A
2.8.7.2	Overload test	Approved switches.	N/A
2.8.7.3	Endurance test	Approved switches.	N/A
2.8.7.4	Electric strength test	Not tested per 2.8.7.2 / 3.	N/A
2.8.8	Mechanical actuators	Adequate design of the actuator/switch mechanism, no overstress.	P

2.9	**Electrical insulation**		P
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used.	P
2.9.2	Humidity conditioning	Humidity treatment conducted for 120h.	P
	Relative humidity (%), temperature (°C) ..... :	93%, 40°C	—
2.9.3	Grade of insulation	Kind of insulation and working voltage considered.	P
2.9.4	Separation from hazardous voltages		P
	Method(s) used ..... :	Method 1: a, b Method 2	—

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Clause	Requirement + Test	Result - Remark	Verdict

2.10	**Clearances, creepage distances and distances through insulation**		P
2.10.1	General		P
2.10.1.1	Frequency ..... :	(see appended table 2.10.2)	P
2.10.1.2	Pollution degrees ..... :	Pollution degree 2.	P
2.10.1.3	Reduced values for functional insulation	5.3.4 a) not applied except for before fuse. (see appended table 2.10.3/.4)	P
2.10.1.4	Intervening unconnected conductive parts	For Transformer T1. (see appended table 2.10.3/.4)	P
2.10.1.5	Insulation with varying dimensions	No applied.	N/A
2.10.1.6	Special separation requirements		N/A
2.10.1.7	Insulation in circuits generating starting pulses		N/A
2.10.2	Determination of working voltage	The r.m.s. and the peak voltages were measured on all sources of the switching power supply.	P
2.10.2.1	General		P
2.10.2.2	RMS working voltage	(see appeded table 2.10.2)	P
2.10.2.3	Peak working voltage	(see appeded table 2.10.2)	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.3	Clearances		P
2.10.3.1	General	Comply with 2.10.3.3/.4. Annex G applied for interlock in sec.	P
2.10.3.2	Mains transient voltages	Not measured, normal transient levels considered.	P
	a) AC mains supply ..... :	2500V considered for the rating AC220-240V. 1500V considered for the rating AC120V and AC110V.	P
	b) Earthed d.c. mains supplies ..... :	No direct connection to dc mains.	N/A
	c) Unearthed d.c. mains supplies ..... :	--	N/A
	d) Battery operation ..... :	No such batteries.	N/A
2.10.3.3	Clearances in primary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.4	Clearances in secondary circuits	(see appended table 2.10.3 and 2.10.4)	P
2.10.3.5	Clearances in circuits having starting pulses	No such lamps used.	N/A
2.10.3.6	Transients from a.c. mains supply ..... :	(see cl. 2.10.3.9)	N/A
2.10.3.7	Transients from d.c. mains supply ..... :	No d.c. mains.	N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems ..... :	Considered 1500V for TNV-3.	N/A
2.10.3.9	Measurement of transient voltage levels	Not measured, normal transient levels considered.	N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply ..... :	--	N/A
	For a d.c. mains supply ..... :	--	N/A
	b) Transients from a telecommunication network.. :	--	N/A
2.10.4	Creepage distances	(see appended table 2.10.3 and 2.10.4)	P
2.10.4.1	General		P
2.10.4.2	Material group and comparative tracking index	See below.	P
	CTI tests ..... :	Material group IIIb is assumed to be used.	—
2.10.4.3	Minimum creepage distances	(see appended table 2.10.3 and 2.10.4)	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.5	Solid insulation	(see appended table 2.10.5)	P
2.10.5.1	General		P
2.10.5.2	Distances through insulation	(see appended table 2.10.5)	P
2.10.5.3	Insulating compound as solid insulation	No such insulations.	N/A
2.10.5.4	Semiconductor devices	Photo-couplers are approved components.	N/A
2.10.5.5.	Cemented joints	Not considered.	N/A
2.10.5.6	Thin sheet material – General	Provided for reinforced insulation within Transformer T1 used in SWPS.	P
2.10.5.7	Separable thin sheet material		P
	Number of layers (pcs) ..... :	3 layers for the reinforced insulation within Transformer T1 used in SWPS.	—
2.10.5.8	Non-separable thin sheet material	No such construction.	N/A
2.10.5.9	Thin sheet material – standard test procedure		N/A
	Electric strength test		—
2.10.5.10	Thin sheet material – alternative test procedure		P
	Electric strength test	(see appended table 2.10.5)	—
2.10.5.11	Insulation in wound components	(see cl. 2.10.5.6)	P
2.10.5.12	Wire in wound components	Not considered.	N/A
	Working voltage ..... :	--	N/A
	a) Basic insulation not under stress ..... :	--	N/A
	b) Basic, supplementary, reinforced insulation ..... :	--	N/A
	c) Compliance with Annex U ..... :	--	N/A
	Two wires in contact inside wound component; angle between 45° and 90° ..... :	--	N/A
2.10.5.13	Wire with solvent-based enamel in wound components	Not used.	N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components	Not applied.	N/A
	Working voltage ..... :	--	N/A
	- Basic insulation not under stress ..... :	--	N/A
	- Supplementary, reinforced insulation ..... :	--	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.6	Construction of printed boards		P
2.10.6.1	Uncoated printed boards	(see appended table 2.10.3 and 2.10.4)	P
2.10.6.2	Coated printed boards	Coating not tested.	N/A
2.10.6.3	Insulation between conductors on the same inner surface of a printed board		N/A
2.10.6.4	Insulation between conductors on different layers of a printed board	Not used to provide supplementary or double/reinforced insulation.	N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs)..... :	--	N/A
2.10.7	Component external terminations	No such components.	N/A
2.10.8	Tests on coated printed boards and coated components	Coating not tested.	N/A
2.10.8.1	Sample preparation and preliminary inspection		N/A
2.10.8.2	Thermal conditioning		N/A
2.10.8.3	Electric strength test		N/A
2.10.8.4	Abrasion resistance test		N/A
2.10.9	Thermal cycling	Photo Cupler (PC1, PC5) on SWPS were tested. Photo Cupler (PC3), on SWPS was certified. Photo Cupler (PC4) on SWPS were certified Optical Isolator (PC10) on Fax Unit was certified. Optical Isolator (PC10) Alternate on Fax Unit was certified. Optical Isolator (PC11) on Fax Unit was certified. Optical Isolator (PC11) Alternate on Fax Unit was certified. (see appended table 1.5.1)	P

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Clause	Requirement + Test	Result - Remark	Verdict
2.10.10	Test for Pollution Degree 1 environment and insulating compound	Not applied	N/A
2.10.11	Tests for semiconductor devices and cemented joints	Photo Cupler (PC1, PC5) on SWPS were tested. Photo Cupler (PC3), on SWPS was certified. Photo Cupler (PC4) on SWPS were certified Optical Isolator (PC10) on Fax Unit was certified. Optical Isolator (PC10) Alternate on Fax Unit was certified. Optical Isolator (PC11) on Fax Unit was certified. Optical Isolator (PC11) Alternate on Fax Unit was certified. (see appended table 1.5.1)	P
2.10.12	Enclosed and sealed parts	Not applied	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

3	**WIRING, CONNECTIONS AND SUPPLY**		P
3.1	**General**		P
3.1.1	Current rating and overcurrent protection	Sufficient cross sectional area of internal wiring. Internal wires are UL recognized wires.	P
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges and heat sinks that could damage the insulation and cause hazard.	P
3.1.3	Securing of internal wiring	Internal secondary wires with basic isolation are routed so that they are not close to any live bare components. Wires are adequately fixed to prevent excessive strain or damage of the conductors' insulation.	P
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage.	P
3.1.5	Beads and ceramic insulators	Ends of heater lamps. Adequately fixed, 10N applied. No hazard.	P
3.1.6	Screws for electrical contact pressure	Relevant electrical and earthing/bonding connections engage at least two complete threads into metal. No screws of insulating material are used for electrical and earthing connections.	P
3.1.7	Insulating materials in electrical connections	Relevant current carrying and all protective earthing/bonding connections are metal to metal.	P
3.1.8	Self-tapping and spaced thread screws	Where safety is involved, thread cutting or space thread screws not used for current carrying electrical connections.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.1.9	Termination of conductors	Conductors are suitable terminated, creepage and clearances maintained, second securing for soldered terminations provided.	P
	10 N pull test	10 N applied to relevant conductors.	P
3.1.10	Sleeving on wiring	Relevant sleeving on primary and secondary wirings reliably kept in position.	P
3.2	**Connection to a mains supply**		P
3.2.1	Means of connection		P
3.2.1.1	Connection to an a.c. mains supply	Appliance inlet.	P
3.2.1.2	Connection to a d.c. mains supply	DC input connector used.	N/A
3.2.2	Multiple supply connections	Only one supply connection.	N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm) ..... :	--	—
3.2.4	Appliance inlets	The appliance inlet complies with IEC 60320 and is located at the rear of the unit. The power cord can be inserted without difficulties and does not support the unit.	P
3.2.5	Power supply cords		P
3.2.5.1	AC power supply cords	The power supply cord is provided with this unit.	P
	Type ..... :	(see appended table 1.5.1)	—
	Rated current (A), cross-sectional area (mm^2), AWG ..... :	Rated 5.8A, 0.75mm^2, Rated 11.3A, 16AWG, Rated 12.0A, 2.0mm^2	—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief	Appliance inlet used.	N/A
	Mass of equipment (kg), pull (N) ..... :	--	—
	Longitudinal displacement (mm) ..... :	--	—
3.2.7	Protection against mechanical damage	No sharp points or cutting edges that may damage the power supply cord.	P

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Clause	Requirement + Test	Result - Remark	Verdict

3.2.8	Cord guards	Neither hand-held nor intended to be moved while in operation.	N/A
	Diameter or minor dimension D (mm); test mass (g) ..... :	-	—
	Radius of curvature of cord (mm)..... :	--	—
3.2.9	Supply wiring space	Appliance inlet used.	N/A

3.3	**Wiring terminals for connection of external conductors** *No terminals, appliance inlet and detachable power supply cord.*		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2)..... :	--	—
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type, nominal thread diameter (mm) ..... :	--	—
3.3.6	Wiring terminal design		N/A
3.3.7	Grouping of wiring terminals		N/A
3.3.8	Stranded wire		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

3.4	**Disconnection from the mains supply**		P
3.4.1	General requirement	Disconnect device is provided.	P
3.4.2	Disconnect devices	Appliance inlet.	P
3.4.3	Permanently connected equipment	Pluggable equipment type A.	N/A
3.4.4	Parts which remain energized	No parts remain energized.	P
3.4.5	Switches in flexible cords	Not provided.	N/A
3.4.6	Number of poles - single-phase and d.c. equipment	The appliance inlet disconnects both poles simultaneously.	P
3.4.7	Number of poles - three-phase equipment	Single phase equipment.	N/A
3.4.8	Switches as disconnect devices	Switch not used as disconnect device.	N/A
3.4.9	Plugs as disconnect devices	Appliance inlet used.	N/A
3.4.10	Interconnected equipment	No such interconnection	N/A
3.4.11	Multiple power sources	Single supply connection.	N/A

3.5	**Interconnection of equipment**		P
3.5.1	General requirements	See below.	P
3.5.2	Types of interconnection circuits ..... :	SELV to SELV. TNV-3 to TNV-3. Hazardous voltage to Hazardous voltage.	P
3.5.3	ELV circuits as interconnection circuits	No ELV circuits.	N/A
3.5.4	Data ports for additional equipment	Supplied from limited power source. (see cl. 2.5)	P

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Clause	Requirement + Test	Result - Remark	Verdict

4	**PHYSICAL REQUIREMENTS**		P
4.1	**Stability**		P
	Angle of 10°	Stable mechanical construction, equipment does not overbalance when tilted to an angle of 10° from its normal upright position.	P
	Test force (N) .....:	250N, 800N tested anyway.	P

4.2	**Mechanical strength**		P
4.2.1	General	Outer enclosure shows sufficient strength to withstand expected handling conditions.	P
	Rack-mounted equipment.	Not rack-mounted.	N/A
4.2.2	Steady force test, 10 N	Applied to relevant parts, no hazard.	P
4.2.3	Steady force test, 30 N	30 N applied to internal enclosures.	P
4.2.4	Steady force test, 250 N	250N applied to outer enclosure. Test points: Main unit: Front Cover, Front Upper Cover, Exit Cover, Left Cover, Left Bottom Cover, Left Upper Cover, Right Cover, Right Upper Cover, Right Bottom Cover, Right Upper B Cover, ISU Left Cover, ISU Right Cover, Rear Upper Cover, Rear Bottom Cover, DP Rear Cover PF-5100: Left Frame, Right Frame MS-5100: Stapler Cover	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.5	Impact test		P
	Fall test	Test points: Main unit: Front Cover, Front Upper Cover, Exit Cover, Left Cover, Left Bottom Cover, Left Upper Cover, Right Cover, Right Upper Cover, Right Bottom Cover, Right Upper B Cover, ISU Left Cover, ISU Right Cover, Rear Upper Cover, Rear Bottom Cover, DP Rear Cover PF-5100: Left Frame, Right Frame MS-5100: Stapler Cover,	P
	Swing test		N/A
4.2.6	Drop test; height (mm) .....:	Neither direct plug-in nor hand held.	N/A
4.2.7	Stress relief test	After 7h at 73°C and cooling down to room temperature, no shrinkage, distortion or loosing of enclosure parts was noticeable on the unit.	P
4.2.8	Cathode ray tubes	No CRT.	N/A
	Picture tube separately certified ..... :	--	N/A
4.2.9	High pressure lamps	No such lamp..	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :	Not intended for wall or ceiling mounting.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

4.3	**Design and construction**		P
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded and smooth.	P
4.3.2	Handles and manual controls; force (N)..... :	15N (Main Switch)	P
4.3.3	Adjustable controls	Full range circuit, no voltage adjustment necessary. Operational controls not likely to cause any hazard.	N/A
4.3.4	Securing of parts	Electrical and mechanical connections can be expected to withstand usual mechanical stress. Relevant screws provided with lock-washer.	P
4.3.5	Connection by plugs and sockets	In operator and service areas, mismating prevented by incompatible form or location.	P
4.3.6	Direct plug-in equipment	Not direct plug-in.	N/A
	Torque ..... :	--	—
	Compliance with the relevant mains plug standard ..... :	--	N/A
4.3.7	Heating elements in earthed equipment	Each heater lamp protected by certified thermal cutouts in one phase and TRIAC in the other.	P
4.3.8	Batteries	Lithium battery (CR2032) circuits in Main PWB utilize a diode in series with a 1kΩ resistor.	P
	- Overcharging of a rechargeable battery		N/A
	- Unintentional charging of a non-rechargeable battery	(see above)	P
	- Reverse charging of a rechargeable battery		N/A
	- Excessive discharging rate for any battery	(see above)	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.9	Oil and grease	Insulation not in contact with oil or grease.	N/A
4.3.10	Dust, powders, liquids and gases	Insulation not exposed to any possible paper dust or toner; separation by internal covers.	P
4.3.11	Containers for liquids or gases	No liquid contained.	N/A
4.3.12	Flammable liquids ..... :	No flammable liquids present.	N/A
	Quantity of liquid (l) ..... :	--	N/A
	Flash point (°C) ..... :	--	N/A
4.3.13	Radiation	See below.	P
4.3.13.1	General	Adequate construction confirmed.	P
4.3.13.2	Ionizing radiation	No ionizing radiation.	N/A
	Measured radiation (pA/kg) ..... :	--	—
	Measured high-voltage (kV) ..... :	--	—
	Measured focus voltage (kV) ..... :	--	—
	CRT markings ..... :	--	—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	No ultraviolet (UV) radiation.	N/A
	Part, property, retention after test, flammability classification ..... :	--	N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation ..... :	--	N/A
4.3.13.5	Lasers (including laser diodes) and LEDs		P
4.3.13.5.1	Lasers (including laser diodes)	For laser see IEC/EN 60825-1 test report.	P
	Laser class ..... :	Class 1	—
4.3.13.5.2	Light emitting diodes (LEDs)	Classified as Exempt group.	P
4.3.13.6	Other types ..... :	--	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

4.4	**Protection against hazardous moving parts**		P
4.4.1	General	Access to hazardous moving parts prevented by construction.	P
4.4.2	Protection in operator access areas ..... :	Operator accessible moving parts represent no hazard, e.g. paper feeding / –exit areas. Hazardous moving parts are protected by interlock per cl.2.8.	P
	Household and home/office document/media shredders	Not shredder.	N/A
4.4.3	Protection in restricted access locations ..... :	--	N/A
4.4.4	Protection in service access areas	No unexpected hazard.	N/A
4.4.5	Protection against moving fan blades	No user accessible fan blade. Service accessible fan blade: see cl. 4.4.5.3.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.4.5.1	General	1), Container Fan, LVU Fan, Exit Fan Type: D06R-24TH 04 (AX) m = 0.04kg r = 30mm N = 5000rpm K = 540 a): 0.56 2), LSU Fan Type: D08K-24TU 83 (AX) m = 0.065kg r = 40mm N = 3400rpm K = 721.34 a): 0.53 3), Exit Fan Type: D07F-24SS1 09 (EX) m = 0.1kg r = 29mm N = 3400rpm K = 583.32 a): 0.47 4), Image Fan Type: D05F-24PH 20 (EX) m = 0.028kg r = 19mm N = 5700rpm K = 197.05 a): 0.46	P
	Not considered to cause pain or injury. a)..... :	$\frac{r/\text{min}}{15000} + \frac{K\ \text{factor}}{2400}$ = Less than 1 (see above)	P
	Is considered to cause pain, not injury. b)..... :	--	N/A
	Considered to cause injury. c)..... :	--	N/A
4.4.5.2	Protection for users	No user accessible fan blade.	N/A
	Use of symbol or warning ..... :	--	N/A
4.4.5.3	Protection for service persons	Inadvertent contact by service person is impossible.	P
	Use of symbol or warning..... :	--	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

4.5	**Thermal requirements**		P
4.5.1	General		P
4.5.2	Temperature tests	(see appended table 4.5)	P
	Normal load condition per Annex L ..... :	Method L.5	—
4.5.3	Temperature limits for materials	(see appended table 4.5)	P
4.5.4	Touch temperature limits	(see appended table 4.5)	P
4.5.5	Resistance to abnormal heat ..... :	(see appended table 4.5.5)	P

4.6	**Openings in enclosures**		P
4.6.1	Top and side openings	No openings above parts with hazardous voltages. Side openings comply with the 5° angle projection. Requirements for fire enclosure considered. Accessories: no hazardous voltages, SELV only	P
	Dimensions (mm) ..... :	(see appended table 4.6.1)	—
4.6.2	Bottoms of fire enclosures		P
	Construction of the bottomm, dimensions (mm) .. :	No openings below parts requiring fire enclosure.	—
4.6.3	Doors or covers in fire enclosures	Doors and covers are interlocked per cl. 2.8.	P
4.6.4	Openings in transportable equipment	Not transportable equipment.	N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm) ..... :	--	—
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes	Not used.	N/A
	Conditioning temperature (°C), time (weeks) ..... :	--	—

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Clause	Requirement + Test	Result - Remark	Verdict

4.7	**Resistance to fire**		P
4.7.1	Reducing the risk of ignition and spread of flame	Materials with the required flammability classes are used. Safety relevant components used within their specified rating. Electrical parts are not likely to ignite nearby materials. Temperatures see 4.5.1.	P
	Method 1, selection and application of components wiring and materials	(see appended table 1.5.1)	P
	Method 2, application of all of simulated fault condition tests	(see appended table 5.3)	P
4.7.2	Conditions for a fire enclosure	See below.	P
4.7.2.1	Parts requiring a fire enclosure	Components with windings, wiring, semiconductor devices, resistors, capacitors and inductors are located inside a fire enclosure.	P
4.7.2.2	Parts not requiring a fire enclosure	The following parts are located outside a fire enclosure: Cables and connectors in sec circuits supplied with LPS, power supply cord sets.	P

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.3	Materials		P
4.7.3.1	General	Materials with the required flammability classes are used. For overheating of VDRs (Z1) by fault conditions, the VDRs were mounted on PCBs with min. V-1 and other components / materials (C1, L1) within 13 mm from VDRs were min. V-1 Class Material or approved components.	P
4.7.3.2	Materials for fire enclosures	Metal enclosure. Plastic enclosures: 5VB (see appended table 1.5.1)	P
4.7.3.3	Materials for components and other parts outside fire enclosures	Decorative parts rated at least HB75 or HB40.	P
4.7.3.4	Materials for components and other parts inside fire enclosures	Internal components except small parts are V-2, HF-2 or better. Small parts were mounted on min. V-1 PCB.	P
4.7.3.5	Materials for air filter assemblies		N/A
4.7.3.6	Materials used in high-voltage components	Transformers on High Voltage Unit of main materials have flammability V-2 or better.	P

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Clause	Requirement + Test	Result - Remark	Verdict

5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		P
5.1	**Touch current and protective conductor current**		P
5.1.1	General	Tested for TN system.	P
5.1.2	Configuration of equipment under test (EUT)		P
5.1.2.1	Single connection to an a.c. mains supply		P
5.1.2.2	Redundant multiple connections to an a.c. mains supply	Single-supply equipment.	N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit	Per figure 5A.	P
5.1.4	Application of measuring instrument	Per Annex D.	P
5.1.5	Test procedure		P
5.1.6	Test measurements		P
	Supply voltage (V) ..... :	(see appended table 5.1)	—
	Measured touch current (mA) ..... :	(see appended table 5.1)	—
	Max. allowed touch current (mA) ..... :	(see appended table 5.1)	—
	Measured protective conductor current (mA) ..... :	(see appended table 5.1)	—
	Max. allowed protective conductor current (mA) .. :	3.5 mA	—
5.1.7	Equipment with touch current exceeding 3,5 mA	Not exceed.	N/A
5.1.7.1	General ..... :	--	N/A
5.1.7.2	Simultaneous multiple connections to the supply	Single supply equipment.	N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks	Per figure 5A.	P
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		P
	Supply voltage (V) ..... :	(see appended table 5.1)	—
	Measured touch current (mA) ..... :	(see appended table 5.1)	—
	Max. allowed touch current (mA) ..... :	0.25 mA	—
5.1.8.2	Summation of touch currents from telecommunication networks		N/A
	a) EUT with earthed telecommunication ports ..... :	--	N/A
	b) EUT whose telecommunication ports have no reference to protective earth		N/A

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5.2	**Electric strength**		P
5.2.1	General	(see appended table 5.2)	P
5.2.2	Test procedure		P

5.3	**Abnormal operating and fault conditions**		P
5.3.1	Protection against overload and abnormal operation	(see appended table 5.3)	P
5.3.2	Motors	Motors locked, stepping motors excluded. Temperature limits of Annex B not exceeded. (see appended Annex B)	P
5.3.3	Transformers	Adequate protection against overload provided. (see appended Annex C)	P
5.3.4	Functional insulation.....:	Short circuit tests. (see appended table 5.3)	P
5.3.5	Electromechanical components	Movement locked. Solenoids and clutches continuously energized. Stepping motors driver short or one winding continuously energized. (see appended table 5.3)	P
5.3.6	Audio amplifiers in ITE .....:	Not provided.	N/A
5.3.7	Simulation of faults	(see appended table 5.3)	P
5.3.8	Unattended equipment	Fault condition in temperature regulating circuit for heater lamps did not result in a hazard. (see appended table 5.3)	P
5.3.9	Compliance criteria for abnormal operating and fault conditions		P
5.3.9.1	During the tests	No fire propagated beyond the equipment. No molten metal was emitted.	P
5.3.9.2	After the tests	Electric strength test primary to SELV passed.	P

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Clause	Requirement + Test	Result - Remark	Verdict

6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		P
6.1	**Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment**		P
6.1.1	Protection from hazardous voltages		P
6.1.2	Separation of the telecommunication network from earth		P
6.1.2.1	Requirements	Sufficient insulation provided. Operating voltage: DC 500V or DC 1000V. Limit: Upeak+ΔUsp+ΔUsa = 460V max for DC 500V or 560V max. for DC 1000V Tested with 1.5kV, surge suppressors SA10, SA11 removed.	P
	Supply voltage (V) .....:	110V, 120V, 240V	—
	Current in the test circuit (mA) .....:	Measured leakage current with Varistor: 0mA	—
6.1.2.2	Exclusions .....:	--	N/A

6.2	**Protection of equipment users from overvoltages on telecommunication networks**		P
6.2.1	Separation requirements		P
6.2.2	Electric strength test procedure	See below.	P
6.2.2.1	Impulse test	Tested with 1.5kV on surge suppressors SA10, SA11 (RA-102M-C6 and RA-501M-C6) required by cl. 6.2.2.2.	P
6.2.2.2	Steady-state test	Operation Panel: 3.0kV SA10, SA11 removed for the followings. Enclosure (PE): 1.5kV I/O connectors: 1.5kV Voltages applied for were requested by the manufacturer.	P
6.2.2.3	Compliance criteria	No flashover or breakdown.	P

6.3	**Protection of the telecommunication wiring system from overheating**		N/A
	Max. output current (A) ..... :	Line is not used for power distribution.	—
	Current limiting method ..... :	--	—

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Clause	Requirement + Test	Result - Remark	Verdict

7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS** *No Cable Distribution System.*		N/A
7.1	**General**		N/A
7.2	Protection of cable distribution system service persons, and users of other equipment connected to the system, from hazardous voltages in the equipment		N/A
7.3	Protection of equipment users from overvoltages on the cable distribution system		N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE** *Not tested; flammability data were taken from available literature.*		N/A
A.1	**Flammability test for fire enclosures of movable equipment having a total mass exceeding 18 kg, and of stationary equipment (see 4.7.3.2)**		N/A
A.1.1	Samples..... :	--	—
	Wall thickness (mm) ..... :	--	—
A.1.2	Conditioning of samples; temperature (°C) ..... :	--	N/A
A.1.3	Mounting of samples ..... :	--	N/A
A.1.4	Test flame (see IEC 60695-11-3)		N/A
	Flame A, B, C or D ..... :	--	—
A.1.5	Test procedure		N/A
A.1.6	Compliance criteria		N/A
	Sample 1 burning time (s) ..... :	--	—
	Sample 2 burning time (s) ..... :	--	—
	Sample 3 burning time (s) ..... :	--	—

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Clause	Requirement + Test	Result - Remark	Verdict

A.2	**Flammability test for fire enclosures of movable equipment having a total mass not exceeding 18 kg, and for material and components located inside fire enclosures (see 4.7.3.2 and 4.7.3.4)**		N/A
A.2.1	Samples, material ..... :	--	—
	Wall thickness (mm) ..... :	--	—
A.2.2	Conditioning of samples; temperature (°C) ..... :	--	N/A
A.2.3	Mounting of samples ..... :	--	N/A
A.2.4	Test flame (see IEC 60695-11-4)		N/A
	Flame A, B or C ..... :	--	—
A.2.5	Test procedure		N/A
A.2.6	Compliance criteria		N/A
	Sample 1 burning time (s) ..... :	--	—
	Sample 2 burning time (s) ..... :	--	—
	Sample 3 burning time (s) ..... :	--	—
A.2.7	Alternative test acc. to IEC 60695-11-5, cl. 5 and 9		N/A
	Sample 1 burning time (s) ..... :	--	—
	Sample 2 burning time (s) ..... :	--	—
	Sample 3 burning time (s) ..... :	--	—
A.3	**Hot flaming oil test (see 4.6.2)**		N/A
A.3.1	Mounting of samples		N/A
A.3.2	Test procedure		N/A
A.3.3	Compliance criterion		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		P
B.1	**General requirements**		P
	Position ..... :	(see appended table 1.5.1)	—
	Manufacturer ..... :	(see appended table 1.5.1)	—
	Type ..... :	(see appended table 1.5.1)	—
	Rated values ..... :	(see appended table 1.5.1)	—
B.2	**Test conditions**	Motors were locked inside the equipment or in a bench test set-up. For stepping motors no test performed. (see appended table annex B)	P
B.3	**Maximum temperatures**	(see appended table annex B)	P
B.4	**Running overload test**	DC motors in secondary only	N/A
B.5	**Locked-rotor overload test**	DC motors in secondary only.	N/A
	Test duration (days) ..... :	--	—
	Electric strength test: test voltage (V) ..... :	--	—
B.6	**Running overload test for d.c. motors in secondary circuits**	Running overload not likely. Electronically controlled.	N/A
B.6.1	General		N/A
B.6.2	Test procedure		N/A
B.6.3	Alternative test procedure		N/A
B.6.4	Electric strength test; test voltage (V) ..... :	--	N/A
B.7	**Locked-rotor overload test for d.c. motors in secondary circuits**		P
B.7.1	General	See below.	P
B.7.2	Test procedure	(see appended table annex B)	P
B.7.3	Alternative test procedure		N/A
B.7.4	Electric strength test; test voltage (V) ..... :	--	N/A
B.8	**Test for motors with capacitors**	(none)	N/A
B.9	**Test for three-phase motors**	(none)	N/A
B.10	**Test for series motors**	(none)	N/A
	Operating voltage (V) ..... :	--	—

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C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		P
	Position ..... :	Pri – sec transformer: T1	—
	Manufacturer ..... :	(see appended table 1.5.1)	—
	Type ..... :	(see appended table 1.5.1)	—
	Rated values ..... :	(see appended table 1.5.1)	—
	Method of protection..... :	--	—
C.1	**Overload test**	(see appended table 5.3)	P
C.2	**Insulation**	(see appended tables 2.10.5 and 5.2)	P
	Protection from displacement of windings..... :	Adequate construction; for further details, see appended table 2.10.3/4.	P

D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		P
D.1	**Measuring instrument**		P
D.2	**Alternative measuring instrument**		N/A

E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)** *Thermocouples used.*	N/A

F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)** *Measured accordingly*.	P

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Clause	Requirement + Test	Result - Remark	Verdict

G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		P
G.1	**Clearances**	Applied for interlock in sec.	P
G.1.1	General		P
G.1.2	Summary of the procedure for determining minimum clearances		P
G.2	**Determination of mains transient voltage (V)**		P
G.2.1	AC mains supply ..... :	2500V considered.	P
G.2.2	Earthed d.c. mains supplies ..... :	No d.c. mains.	N/A
G.2.3	Unearthed d.c. mains supplies ..... :	--	N/A
G.2.4	Battery operation ..... :	No such operation.	N/A
G.3	**Determination of telecommunication network transient voltage (V) ..... :**	TNV3 considered.	P
G.4	**Determination of required withstand voltage (V)**		P
G.4.1	Mains transients and internal repetitive peaks ..... :	1500V, rule 3) b3) used.	P
G.4.2	Transients from telecommunication networks ..... :	1500V	P
G.4.3	Combination of transients		P
G.4.4	Transients from cable distribution systems	No such systems.	N/A
G.5	**Measurement of transient voltages (V)**		N/A
	a) Transients from a mains supply		N/A
	For an a.c. mains supply		N/A
	For a d.c. mains supply		N/A
	b) Transients from a telecommunication network		N/A
G.6	**Determination of minimum clearances ..... :**	(see appended table 2.10.3/.4)	P

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Clause	Requirement + Test	Result - Remark	Verdict

H	**ANNEX H, IONIZING RADIATION (see 4.3.13)** *No ionizing radiation source.*	N/A

J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		P
	Metal(s) used ..... :	Mild steel/ Ni on steel.	—

K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)** *Approved control used.*		P
K.1	Making and breaking capacity		N/A
K.2	Thermostat reliability; operating voltage (V) ..... :	--	N/A
K.3	Thermostat endurance test; operating voltage (V) :	--	N/A
K.4	Temperature limiter endurance; operating voltage (V) ..... :	--	N/A
K.5	Thermal cut-out reliability		N/A
K.6	Stability of operation	(see appended table 5.3)	P

L	**ANNEX L, NORMAL LOAD CONDITIONS FOR SOME TYPES OF ELECTRICAL BUSINESS EQUIPMENT (see 1.2.2.1 and 4.5.2)**		P
L.1	Typewriters		N/A
L.2	Adding machines and cash registers		N/A
L.3	Erasers		N/A
L.4	Pencil sharpeners		N/A
L.5	Duplicators and copy machines	Tested at continuous printing and others.	P
L.6	Motor-operated files		N/A
L.7	Other business equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)** *No ringing signals generated.*		N/A
M.1	Introduction		N/A
M.2	Method A		N/A
M.3	Method B		N/A
M.3.1	Ringing signal		N/A
M.3.1.1	Frequency (Hz) ..... :	--	—
M.3.1.2	Voltage (V) ..... :	--	—
M.3.1.3	Cadence; time (s), voltage (V) ..... :	--	—
M.3.1.4	Single fault current (mA) ..... :	--	—
M.3.2	Tripping device and monitoring voltage ..... :	--	N/A
M.3.2.1	Conditions for use of a tripping device or a monitoring voltage		N/A
M.3.2.2	Tripping device		N/A
M.3.2.3	Monitoring voltage (V) ..... :	--	N/A

N	**ANNEX N, IMPULSE TEST GENERATORS (see 1.5.7.2, 1.5.7.3, 2.10.3.9, 6.2.2.1, 7.3.2, 7.4.3 and Clause G.5)** *Not used.*		N/A
N.1	ITU-T impulse test generators		N/A
N.2	IEC 60065 impulse test generator		N/A

P	**ANNEX P, NORMATIVE REFERENCES**		—

Q	**ANNEX Q, Voltage dependent resistors (VDRs) (see 1.5.9.1)** *Approved Surge Suppressor used.*		P
	- Preferred climatic categories ..... :	40/085/56	P
	- Maximum continuous voltage ..... :	300V	P
	- Combination pulse current ..... :	--	P
	Body of the VDR Test according to IEC60695-11-5.....:	--	N/A
	Body of the VDR. Flammability class of material (min V-1).....:	--	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

R	**ANNEX R, EXAMPLES OF REQUIREMENTS FOR QUALITY CONTROL PROGRAMMES**		N/A
R.1	Minimum separation distances for unpopulated coated printed boards (see 2.10.6.2)		N/A
R.2	Reduced clearances (see 2.10.3)		N/A

S	**ANNEX S, PROCEDURE FOR IMPULSE TESTING (see 6.2.2.3)** *Not applied.*		N/A
S.1	Test equipment		N/A
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A

T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)** *Not applied.*		N/A

U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)** *Not used.*		N/A

V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)** *Considered.*		P
V.1	Introduction		P
V.2	TN power distribution systems		P

W	**ANNEX W, SUMMATION OF TOUCH CURRENTS** *Not applied.*		N/A
W.1	Touch current from electronic circuits		N/A
W.1.1	Floating circuits		N/A
W.1.2	Earthed circuits		N/A
W.2	Interconnection of several equipments		N/A
W.2.1	Isolation		N/A
W.2.2	Common return, isolated from earth		N/A
W.2.3	Common return, connected to protective earth		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

X	**ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)** *Considered.*		P
X.1	Determination of maximum input current		P
X.2	Overload test procedure		P

Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)** *No ultraviolet light source.*		N/A
Y.1	Test apparatus .....:	--	N/A
Y.2	Mounting of test samples .....:	--	N/A
Y.3	Carbon-arc light-exposure apparatus .....:	--	N/A
Y.4	Xenon-arc light exposure apparatus .....:	--	N/A

Z	**ANNEX Z, OVERVOLTAGE CATEGORIES (see 2.10.3.2 and Clause G.2)** *Considered.*	P

AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)** *Not applied*	N/A

BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**	—

CC	**ANNEX CC, Evaluation of integrated circuit (IC) current limiters** *Not applied.*		N/A
CC.1	General		N/A
CC.2	Test program 1 ..... :	--	N/A
CC.3	Test program 2 ..... :	--	N/A
CC.4	Test program 3 ..... :	--	N/A
CC.5	Compliance ..... :	--	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment** *Not applied.*		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N ..... :	--	N/A
DD.3	Mechanical strength test, 250N, including end stop ..... :	--	N/A
DD.4	Compliance ..... :	--	N/A

EE	**ANNEX EE, Household and home/office document/media shredders** *Not applied.*		N/A
EE.1	General		N/A
EE.2	Markings and instructions		N/A
	Use of markings or symbols ..... :	--	N/A
	Information of user instructions, maintenance and/or servicing instructions ..... :	--	N/A
EE.3	Inadvertent reactivation test..... :	--	N/A
EE.4	Disconnection of power to hazardous moving parts:	--	N/A
	Use of markings or symbols ..... :	--	N/A
EE.5	Protection against hazardous moving parts	--	N/A
	Test with test finger (Figure 2A) ..... :	--	N/A
	Test with wedge probe (Figure EE1 and EE2) ..... :	--	N/A

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Power Supply Cord for 220 - 240V (Optional)	Volex	Plug: M2511 Cord: H05VV-F Connector: V1625	250V, 16A 0.75 mm^2 x 3 250V, 10A	IEC60884-1 EN50525-2-11 IEC/EN60320-1	SEMKO
Power Supply Cord for 120V (Optional)	Volex	Plug: PS204X (X may be any alphabetical number or blank) Cord: SJT Connector: V1625	125V, 13A or 15A 16 AWG x 3 125V, 13A Max. 4.5m long, min. 1.5m long	UL817 UL62	UL(E62405) UL(E159216) UL(E156136)
Power Supply Cord for 110V (Optional)	Volex	Plug: TW15CS3 Cord: VCTF Connector: V1625	125V, 15A 2.0 mm^2 x 3 125V, 15A	CNS10917-2 CNS3199 IEC60320-1	BSMI
Appliance Inlet	Rong Feng Industrial Co., Ltd.	SS-120 Series	250Vac, 10A (VDE) 250Vac, 15A (UL)	EN60320-1 IEC60320-1 UL498	VDE UL(E102641)
Switch					
Main Switch (Optional)	Shinmei Electric Co., Ltd.	SLS-11-800-1BB	16A, 250Vac	IEC/EN61058-1 UL61058-1/1054	TUV UL(E90211)
Top / Rear Cover Interlock Switch	Omron Corp.	D3V-16-3C25 (10E)	250Vac/16(3)A, 50,000 Cycles (VDE) 250Vac/11A, 100,000 Cycles (UL)	EN61058-1 IEC61058-1 UL1054	VDE UL(E41515)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Fixing Unit					
Thermal Cutoff for Model ECOSYS P6130cdn, ECOSYS M6030cdn, ECOSYS M6530cdn	Wako Electronics Co., Ltd.	B-2	125Vac/25A, 250Vac/15A, 180ºC	EN/IEC60730 UL873	VDE UL(E50367)
Heater Lamp for 220 - 240V for Model ECOSYS P6130cdn, ECOSYS M6030cdn, ECOSYS M6530cdn	Ushio Inc.	QIRF 240-926 MKQK	240Vac , 926W	-	Evaluated together with unit
Heater Lamp for 120V for Model ECOSYS P6130cdn, ECOSYS M6030cdn, ECOSYS M6530cdn	Ushio Inc.	QIRF 120-867 MKQK	120Vac , 867W	-	Evaluated together with unit
Heater Lamp for 110V for Model ECOSYS P6130cdn, ECOSYS M6030cdn, ECOSYS M6530cdn	Ushio Inc.	QIRF 110-867 MKQK	110Vac , 867W	-	Evaluated together with unit

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Thermal Cutoff for Model ECOSYS P6035cdn, ECOSYS P7040cdn, ECOSYS M6035cidn, ECOSYS M6535cidn	Wako Electronics Co., Ltd.	B-2	Two provided. 125Vac/25A, 250Vac/15A, 180ºC	EN/IEC60730 UL873	VDE UL(E50367)
Heater Lamp for 220 - 240V for Model ECOSYS P6035cdn, ECOSYS P7040cdn, ECOSYS M6035cidn, ECOSYS M6535cidn	Ushio Inc.	QIRF 240-641/427 MKQK	240Vac , Main: 641W, Sub: 427W	-	Evaluated together with unit
Heater Lamp for 120V for Model ECOSYS P6035cdn, ECOSYS P7040cdn, ECOSYS M6035cidn, ECOSYS M6535cidn	Ushio Inc.	QIRF 120-600/400 MKQK	120Vac , Main: 600W, Sub: 400W	-	Evaluated together with unit

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Heater Lamp for 110V for Model ECOSYS P6035cdn, ECOSYS P7040cdn, ECOSYS M6035cidn, ECOSYS M6535cidn	Ushio Inc.	QIRF 110-600/400 MKQK	110Vac , Main: 600W, Sub: 400W	-	Evaluated together with unit
Fuser Low Cover, Exit Guide, Side L Cover, Side R Cover, Fuser UP Frame, Exit L Guide, Exit R Guide	Kaneka Corp.	3401NX	5V, Min. 1.8mm thick	UL94	UL(E48854)
Fuser Unit - Connector	Japan Solderless Terminal Mfg. Co., Ltd.	Type L, series EL	300V max., 10A max.	IEC/EN61984 UL1977	TUV UL(E60389)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Switching Power Supply					
Switching Power Supply Unit for 220 - 240V for Model ECOSYS P6035cdn, ECOSYS P7040cdn, ECOSYS M6035cidn, ECOSYS M6535cidn	Murata Mfg. Co., Ltd.	MPW3162X (X may be blank or any number from 0 to 9 or alphabetical number except for “L”)	Input: AC 220 - 240 V Output: 24V/7.0A	-	Evaluated together with unit
Switching Power Supply Unit for 220 - 240V for Model ECOSYS P6130cdn, ECOSYS M6030cdn, ECOSYS M6530cdn	Murata Mfg. Co., Ltd.	MPW3162LX (X may be blank or any number from 0 to 9 or alphabetical number)	Input: AC 220 - 240 V Output: 24V/7.0A	-	Evaluated together with unit
Switching Power Supply Unit for 110 and 120V for Model ECOSYS P6035cdn, ECOSYS P7040cdn, ECOSYS M6035cidn, ECOSYS M6535cidn	Murata Mfg. Co., Ltd.	MPW3161X (X may be blank or any number from 0 to 9 or alphabetical number except for “L”)	Input: AC 100 - 120 V Output: 24V/7.0A	-	Evaluated together with unit
Switching Power Supply Unit for 110 and 120V for Model ECOSYS P6130cdn, ECOSYS M6030cdn, ECOSYS M6530cdn	Murata Mfg. Co., Ltd.	MPW3161LX (X may be blank or any number from 0 to 9 or alphabetical number)	Input: AC 100 - 120V Output: 24V/7.0A	-	Evaluated together with unit

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Bleeding Resistors (R4, R5)	Interchangeable	Interchangeable	2.7 kohm, 1/4 W	-	Evaluated together with unit
Bleeding Resistors (R6, R7)	Interchangeable	Interchangeable	5.6 kohm, 1/4 W	-	Evaluated together with unit
Surge Suppressor (Z1)	Nippon Chemi-Con Corp.	TNR14SE471K or TND14SE471K	300 Vac	IEC/EN61051 IEC/EN60950-1 Annex Q UL1449	VDE UL(E323623)
X - Capacitor (C1) for 220 - 240V	Okaya Electric Industries Co., Ltd.	LE-MX	310V, 0.22uF X2	EN/IEC60384-14 UL60384-14	ENEC(SEMKO) UL(E47474)
X - Capacitor (C6) for 220 - 240V	Okaya Electric Industries Co., Ltd.	LE-MX	310V, 0.1uF X2	EN/IEC60384-14 UL60384-14	ENEC (SEMKO) UL(E47474)
X - Capacitor (C1, C6) for 110 and 120V	Okaya Electric Industries Co., Ltd.	LE-MX	310V, 0.33uF X2	EN/IEC60384-14 UL60384-14	ENEC (SEMKO) UL(E47474)
Y -Capacitors (C4, C5) for 220 - 240V	Murata Mfg. Co., Ltd.	KH	300V/250V, 470pF Y2	EN/IEC60384-14 UL1414/ UL60384-14	SEMKO UL(E37921)
Y -Capacitors (C4, C5) for 110 and 120V	Murata Mfg. Co., Ltd.	KH	300V/250V, 2200pF Y2	EN/IEC60384-14 UL1414/ UL60384-14	SEMKO UL(E37921)
Bridge Capacitor (C50)	Murata Mfg. Co., Ltd.	KX	300V/250V, 4700pF Y1	EN/IEC60384-14 UL1414/ UL60384-14	SEMKO UL(E37921)
Electrolytic Capacitor (C7) for MPW3162X	Interchangeable	Interchangeable	400V or 450V, 270uF	-	Evaluated together with unit
Electrolytic Capacitor (C7) for MPW3162LX	Interchangeable	Interchangeable	400V or 450V, 220uF	-	Evaluated together with unit

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Electrolytic Capacitor (C7) for 110 and 120V	Interchangeable	Interchangeable	200V, 1200uF	-	Evaluated together with unit
Inductor (L1, L2) for 220 - 240V	Tokyo Parts Industrial Co., Ltd.	TLV-20 (1R5A402V20A)	4.0mH Class A	-	Evaluated together with unit
Inductor (L1, L2) for 110 and 120V	Tokyo Parts Industrial Co., Ltd.	TLF-28YA (4R0A262F28YA)	2.6mH Class A	-	Evaluated together with unit
Inductor (L3) for MPW3162X	Tabuchi Electric Co., Ltd.	E2815C0785A-S	4.0mH Class A	-	Evaluated together with unit
Inductor (L51) for 220 - 240V	Tamura Corp.	SKP-T16274	40uH Class A	-	Evaluated together with unit
Inductor (L51) for 110 and 120V	Tamura Corp.	SKP-T16413	35uH Class A	-	Evaluated together with unit
Bridge Rectifier (D1) for 220 - 240V	Interchangeable	Interchangeable	Min. 600V, Min. 4A	-	Evaluated together with unit
Bridge Rectifier (D1) for 110 and 120V	Interchangeable	Interchangeable	Min. 600V, Min. 15A	UL1557	UL
FET (Q1, Q2) for 220 - 240V	Interchangeable	Interchangeable	Min. 900V, Min. 5A	-	Evaluated together with unit
FET (Q1, Q2) for 110 and 120V	Interchangeable	Interchangeable	Min. 500V, Min. 12A	-	Evaluated together with unit
Triac (TRA31, TRA41) for MPW3162X	Interchangeable	Interchangeable	Min. 800V, Min. 8A	-	Evaluated together with unit
Triac (TRA31) for MPW3162LX	Interchangeable	Interchangeable	Min. 800V, Min. 12A	-	Evaluated together with unit
Triac (TRA31, TRA41) for MPW3161X	Interchangeable	Interchangeable	Min. 600V, Min. 16A	-	Evaluated together with unit

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Triac (TRA31) for MPW3161LX	Interchangeable	Interchangeable	Min. 600V, Min. 16A	-	Evaluated together with unit
Photo Coupler (PC1, PC5)	Everlight Electronics Co., Ltd.	EL816M2	Isolation thickness: ≥0.5 mm, Ext. cr.: ≥7.7 mm, Int. cr. : ≥6 mm,	IEC/EN60950-1 IEC/EN60065 UL1577	SEMKO UL(E214129)
Photo Coupler (PC3)	Toshiba Corp.	TLP363JF	Isolation thickness: > 0.4 mm, Ext. cr.: > 8 mm, Int. cr. = thermal cycling tested (2.10.11), Isolation voltage: min. AC 5000V	IEC/EN60950-1 IEC/EN60747-5-2 UL1577	SEMKO UL(E67349)
Photo Coupler (PC4) for MPW3161X, MPW3162X	Toshiba Corp.	TLP363JF	Isolation thickness: > 0.4 mm, Ext. cr.: > 8 mm, Int. cr. = thermal cycling tested (2.10.11), Isolation voltage: min. AC 5000V	IEC/EN60950-1 IEC/EN60747-5-2 UL1577	SEMKO UL(E67349)
Transformer (T1) for 220 - 240V	Murata Mfg. Co., Ltd.	2V121	Class B UL System Designation: CM	UL1446	Evaluated together with unit UL(E247878)
Transformer (T1) for 110 and 120V	Murata Mfg. Co., Ltd.	2V120	Class B UL System Designation: CM	UL1446	UL(E247878)

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Fuse (F1) for 220 - 240V	Cooper Bussmann Inc.	S505 (-R series)	250V, T5AH	EN60127-2 IEC60127-2 UL248-1/ UL248-14	SEMKO UL(E19180)
Fuse (F1) for 220 - 240V, Alternate	SkyGate Co., Ltd.	SG5063	250V, T5AH	EN60127-2 IEC60127-2 UL248-1/ UL248-14	SEMKO UL(E195833)
Fuse (F1) for 110 and 120V	Cooper Bussmann Inc.	S505 (-R series)	250V, T6.3AH	EN60127-2 IEC60127-2 UL248-1/ UL248-14	SEMKO UL(E19180)
Fuse (F1) for 110 and 120V, Alternate	SkyGate Co., Ltd.	SG5063	250V, T6.3AH	EN60127-2 IEC60127-2 UL248-1/ UL248-14	SEMKO UL(E195833)
Fuse (F51) for 220 - 240V	Cooper Bussmann Inc.	S505 (-R series)	250V, T10AH	EN60127-2 IEC60127-2 UL248-1/ UL248-14	SEMKO UL(E19180)
Fuse (F51) for 220 - 240V, Alternate	SkyGate Co., Ltd.	SG5063	250V, T10AH	EN60127-2 IEC60127-2 UL248-1/ UL248-14	SEMKO UL(E195833)
Fuse (F51) for 110 and 120V	Hollyland Co., Ltd.	50CT(P) series	250V, T12.5AH	EN60127-2 IEC60127-2 UL248-1/ UL248-14	SEMKO UL(E156471)

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Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Relay (RL1) for 220 - 240V	Daiichi Electric Co., Ltd.	DG1U series	Contact: 250V, 10A Coil: 24 Vdc	EN/IEC61810-1 (TUV) EN/IEC61058-1 (SEMKO) UL508 UL60947	TUV SEMKO UL(E98688)
Relay (RL1) for 220 - 240V, Alternate	Panasonic Electric Works Co., Ltd. or Panasonic	LK series (LKP1aF-24V or ALKP322)	Contact: 250/277V, 10A Coil: 24 Vdc	EN/IEC61810-1 UL508 UL60947	TUV UL(E43149)
Relay (RL1) for 110 and 120V	Panasonic Electric Works Co., Ltd. or Panasonic	ALE series (ALE1PB24)	Contact: 250/277V, 16A Coil: 24 Vdc	EN/IEC61810-1 UL508 UL60947	VDE UL(E43149)
Relay (RL1) for 110 and 120V, Alternate	Daiichi Electric Co., Ltd.	DH1U series	Contact: 250V, 16A Coil: 24 Vdc	EN/IEC61810-1 UL508	VDE UL(E98688)
Connector (YC101)	Japan Solderless Terminal Mfg Co.	Type H, series VT	250V, 12A (AWG 16)	IEC/EN61984 UL1977	TUV UL(E60389)
Connector (YC102)	Japan Solderless Terminal Mfg Co.	Type H, series VH	250V, 10A (AWG 16)	IEC/EN61984 UL1977	TUV UL(E60389)
Printed Wiring Board	Interchangeable	Interchangeable	Min. V-1, Min. 105ºC	UL796	UL

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
High Voltage PWB for Model ECOSYS P6130cdn, ECOSYS P6035cdn, ECOSYS M6030cdn, ECOSYS M6530cdn, ECOSYS M6035cidn and ECOSYS M6535cidn					
High Voltage Unit	Murata Mfg. Co., Ltd.	MPH7498	Inputs: 24Vdc/ max. 1.0A Outputs: M: max. 3kV, Vslv: 1.5kVp-p, Vmag: 800Vp-p, T1: max. -5kV, T2: max. -7kV, CL: max -3.5kV	-	Evaluated together with unit
High Voltage Unit - Transformer (B51)	Murata Mfg. Co., Ltd.	NQ035	Class A	-	Evaluated together with unit
High Voltage Unit - Transformer (B101, B201, B301, B401)	Murata Mfg. Co., Ltd.	QJ001	Class A	-	Evaluated together with unit
High Voltage Unit - Transformer (B151, B251, B351, B451)	Murata Mfg. Co., Ltd.	QU101	Class A	-	Evaluated together with unit
High Voltage Unit - Transformer (B501)	Murata Mfg. Co., Ltd.	QU001	Class A	-	Evaluated together with unit
High Voltage Unit - Transformer (B551)	Murata Mfg. Co., Ltd.	QP537	Class A	-	Evaluated together with unit
High Voltage Unit - Transformer (B661, B761, B861, B961)	Murata Mfg. Co., Ltd.	QW108	Class A	-	Evaluated together with unit
Printed Wiring Board	Interchangeable	Interchangeable	Min. V-1, Min. 105ºC	UL796	UL

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
High Voltage PWB, Main for Model ECOSYS P7040cdn					
High Voltage Unit	Murata Mfg. Co., Ltd.	MPH7499	Inputs: 24Vdc/ max. 1.6A Outputs: M: max. 1.5kV, Vslv: 1.63kVp-p, Vmag: 1.15kVp-p, T2: max. -7kV	-	Evaluated together with unit
High Voltage Unit - Transformer (B51)	Murata Mfg. Co., Ltd.	NQ035	Class A	-	Evaluated together with unit
High Voltage Unit - Transformer (B101, B201, B301, B401)	Murata Mfg. Co., Ltd.	QW019	Class A	-	Evaluated together with unit
High Voltage Unit - Transformer (B151, B251, B351, B451)	Murata Mfg. Co., Ltd.	QU101	Class A	-	Evaluated together with unit
High Voltage Unit - Transformer (B551)	Murata Mfg. Co., Ltd.	QP537	Class A	-	Evaluated together with unit
High Voltage Unit - Transformer (B661, B761, B861, B961)	Murata Mfg. Co., Ltd.	QW107A	Class A	-	Evaluated together with unit
Printed Wiring Board	Interchangeable	Interchangeable	Min. V-1, Min. 105ºC	UL796	UL

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
High Voltage PWB, Transfer for Model ECOSYS P7040cdn					
High Voltage Unit	Murata Mfg. Co., Ltd.	MPH3343	Inputs: 24Vdc/ max. 0.5A Outputs: T1: max. 4.5kV, CL: max. -4kV	-	Evaluated together with unit
High Voltage Unit - Transformer (B51)	Murata Mfg. Co., Ltd.	MSH9AQU003	Class A	-	Evaluated together with unit
High Voltage Unit - Transformer (B101, B201, B301, B401)	Murata Mfg. Co., Ltd.	QJ001	Class A	-	Evaluated together with unit
High Voltage Unit - Transformer (B501)	Murata Mfg. Co., Ltd.	MSH9AQU001	Class A	-	Evaluated together with unit
Printed Wiring Board	Interchangeable	Interchangeable	Min. V-1, Min. 105ºC	UL796	UL

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Fan Motor, Motor, Clutch, Solenoid					
Container Fan	Nidec Corp.	D06R-24TH 04 (AX)	24Vdc, 0.11A max.	-	Evaluated together with unit
LVU Fan	Nidec Corp.	D06R-24TH 04 (AX)	24Vdc, 0.11A max.	-	Evaluated together with unit
LSU Fan	Nidec Corp.	D08K-24TU 83 (AX)	Two provided. 24Vdc, 0.077A max.	-	Evaluated together with unit
Exit Fan for Model ECOSYS P6035cdn, ECOSYS P7040cdn	Nidec Corp.	D06R-24TH 04 (AX)	24Vdc, 0.11A max.	-	Evaluated together with unit
Exit Fan for Model ECOSYS M6030cdn, ECOSYS M6530cdn, ECOSYS M6035cidn, ECOSYS M6535cidn	Nidec Corp.	D07F-24SS1 09 (EX)	24Vdc, 0.20A max.	-	Evaluated together with unit
Image Fan (Optional)	Nidec Corp.	D05F-24PH 20 (EX)	24Vdc, 0.12A max.	-	Evaluated together with unit
LSU Cleaning Motor	Standard Motor Co., Ltd.	RC370-KT-081000	24Vdc, 110mA max.	-	Evaluated together with unit
LSU Cleaning Motor, Alternate	Mabuchi Motor Co., Ltd.	RK-370CA-10800	24Vdc, 65mA max.	-	Evaluated together with unit
Lift Motor	Standard Motor Co., Ltd.	RC370-KT-081000	24Vdc, 110mA max.	-	Evaluated together with unit
Lift Motor, Alternate	Mabuchi Motor Co., Ltd.	RK-370CA-10800	24Vdc, 65mA max.	-	Evaluated together with unit
Toner Motor	Mabuchi Motor Co., Ltd.	RK-370CA-10800	Four provided. 24Vdc, 65mA max.	-	Evaluated together with unit

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Toner Motor, Alternate	Standard Motor Co., Ltd.	RC370-KT-081000	Four provided. 24Vdc, 110mA max.	-	Evaluated together with unit
DU Motor	Minebea Co., Ltd.	PM42S-F48-MIN9	Stepper type, 24Vdc, 310mA	-	Evaluated together with unit
Feed/ Black DLP Motor	Nidec Corp.	42M069F251	24Vdc, 1.1A max. Brushless Motor	-	Evaluated together with unit
Image Motor	Nidec Corp.	48M069F261	24Vdc, 1.6A max Brushless Motor	-	Evaluated together with unit
Image Motor, Alternate	Nidec Corp.	48M069L010	24Vdc, 1.6A max Brushless Motor	-	Evaluated together with unit
Fuser Motor	Oki Micro Engineering Co., Ltd.	KFL42LCB661A	Stepper type, 24Vdc, 650mA	-	Evaluated together with unit
Colour DLP Motor	Nidec Corp.	48M069F261	24Vdc, 1.6A max Brushless Motor	-	Evaluated together with unit
Colour DLP Motor, Alternate	Nidec Corp.	48M069L010	24Vdc, 1.6A max Brushless Motor	-	Evaluated together with unit
Drum Motor	Nidec Corp.	48M069F261	Two provided. 24Vdc, 1.6A max Brushless Motor	-	Evaluated together with unit
Drum Motor, Alternate	Nidec Corp.	48M069L010	Two provided. 24Vdc, 1.6A max Brushless Motor	-	Evaluated together with unit
Polygon Motor for CY LSU	Minebea Co., Ltd.	MASQ6EF5RKA	24Vdc, 0.60Arms max. Brushless Motor	-	Evaluated together with unit
Polygon Motor for KM LSU	Minebea Co., Ltd.	MASQ6EF5RKB	24Vdc, 0.60Arms max. Brushless Motor	-	Evaluated together with unit
Scanner Motor for MFP Model	Minebea Co., Ltd.	PM42S-096-MIM6	Stepper type, 24Vdc, 600mA	-	Evaluated together with unit

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Resist Clutch	Tenryu Marusawa Co., Ltd.	TMC-3.5L-01	24Vdc, 0.083A	-	Evaluated together with unit
Feed Clutch	Tenryu Marusawa Co., Ltd.	TMC-3.5L-01	24Vdc, 0.083A	-	Evaluated together with unit
MPF Clutch	Daiken Co., Ltd. or Sinfonia Microtec Co., Ltd.	MCA-50T	24Vdc, 0.104A	-	Evaluated together with unit
Middle Clutch	Tenryu Marusawa Co., Ltd.	TMC-3.5L-01	24Vdc, 0.083A	-	Evaluated together with unit
DLP Clutch	Tenryu Marusawa Co., Ltd.	TMC-3.5L-01	24Vdc, 0.083A	-	Evaluated together with unit
DU Clutch for Model ECOSYS P6035cdn, ECOSYS P7040cdn	Tenryu Marusawa Co., Ltd.	TMC-3.5L-01	24Vdc, 0.083A	-	Evaluated together with unit
MPF Solenoid	TDS Co., Ltd.	TDS-F06A-17	24Vdc, 300mA max.	-	Evaluated together with unit

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Laser Diode	Oclaro Japan, Inc. or Ushio Opto Semiconductors, Inc.	HL67150GN	Four provided. Class 3B, Wavelength: 670nm, Output Power: 32.5mW	-	Evaluated together with unit
Laser Diode, Alternate	Rohm	RLD2BPND2-00B	Four provided. Class 3B, Wavelength: 670nm, Output Power: 25mW	-	Evaluated together with unit
Scanner LED - for MFP Models	KYOCERA Document Solutions Inc.	3V2NM0108	24Vdc max. Classified as Exempt Group	IEC/EN62471	Evaluated together with unit
Lithium Battery (BAT1) on Main PWB	Interchangeable	CR2032	3 V; max. 10mA reverse charging current. Protected by a diode and a 1 kohm resistor.	UL1642	UL

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Fuse (YF2) on Main PWB for Document Processor Unit of MFP Models	SkyGate Co., Ltd.	SCT	250V, T3.15A	IEC/EN60127-3 UL248-1/ UL248-14	SEMKO UL(E195833)
Fuse (YF1) on Engine Connect PWB for Paper Feeder, Model PF-5100 (Option)	SkyGate Co., Ltd.	SCT	250V, T3.15A	IEC/EN60127-3 UL248-1/ UL248-14	SEMKO UL(E195833)
Fuse (YF2) on Engine Connect PWB for Paper Feeder, Model PF-5100 (Option)	SkyGate Co., Ltd.	SCT	250V, T3.15A	IEC/EN60127-3 UL248-1/ UL248-14	SEMKO UL(E195833)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Fuse (F2000) on Main PWB for Card Reader USB Connector of Model ECOSYS M6035cidn, ECOSYS M6535cidn and Front USB Connector	SkyGate Co., Ltd.	1206FT	32Vdc, 4A	UL248-1/ UL248-14	UL(E195833)
Fuse (YF2001) on Main PWB for 5V Line Operation Panel of MFP Model	SkyGate Co., Ltd.	SCT	250V, T4A	IEC/EN60127-3 UL248-1/ UL248-14	SEMKO UL(E195833)
Fuse (YF2002) on Main PWB for 5V Line Operation Panel of Printer Model	SkyGate Co., Ltd.	1206FA or 1206FA-T	48Vdc, 1.5A	UL248-1/ UL248-14	UL(E195833)
Fuse (YF2000) on Main PWB for 3.3V Line Operation Panel	SkyGate Co., Ltd.	1206FA or 1206FA-T	48Vdc, 1.5A	UL248-1/ UL248-14	UL(E195833)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Enclosure Option Plate	Interchangeable	Interchangeable	Steel, min. 1.0 mm thick.	-	Evaluated together with unit
Enclosure Memory Lid Plate	Interchangeable	Interchangeable	Steel, min. 0.5 mm thick.	-	Evaluated together with unit
Enclosure Controller Shield, Rear Frame	Interchangeable	Interchangeable	Steel, min. 0.6 mm thick.	-	Evaluated together with unit
Enclosure Middle Frame	Interchangeable	Interchangeable	Steel, min. 0.8 mm thick.	-	Evaluated together with unit
Enclosure Front Cover, Front Upper Cover, Exit Cover, Fuser Harness Right Cover, Inner Right Cover, Inner Left Cover, Left Cover, Left Bottom Cover, Left Upper Cover, Right Cover, Right Upper Cover, Right Bottom Cover, Middle Transfer Frame, Waste Tank Tray	Bayer MaterialScience	FR3006 HF	5VB, Min. 1.8mm thick	UL94	UL(E41613)
Enclosure for MFP Model: Right Upper B Cover, Inner Middle Cover, ISU Left Cover, ISU Right Cover	Bayer MaterialScience	FR3006 HF	5VB, Min. 1.8mm thick	UL94	UL(E41613)
35ppm MFP Model: LCD Lower Cover	Bayer MaterialScience	FR3006 HF	5VB, Min. 1.8mm thick	UL94	UL(E41613)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Enclosure for Printer Model: Top Cover	Bayer MaterialScience	FR3006 HF	5VB, Min. 1.8mm thick	UL94	UL(E41613)
Connector Cover, Memory Cover, MPF Cover, MPF Tray, MPF Base, MPF L Cursor, MPF R Cursor, Rear Cover, Top Rear Cover, Lower Rear Cover, Release Hook Cover, Waste Cover, Waste Low Cover, Top Lid, Paper stopper(s), Cassette, Operation Covers except for LCD Lower Cover of 35ppm MFP Model	Interchangeable	Interchangeable	Min. HB75	UL94	UL
Enclosure for MFP Model: ISU Bottom Frame, ISU Top Frame, Rear Upper Cover	Interchangeable	Interchangeable	Min. HB75	UL94	UL
Enclosure for Printer Model: Rear Bottom Cover	Interchangeable	Interchangeable	Min. HB75	UL94	UL
35ppm MFP Model: Card Reader Cover	Interchangeable	Interchangeable	Min. HB75	UL94	UL

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Document Processor Unit (Standard) for MFP Model ECOSYS M6030cdn, ECOSYS M6530cdn, ECOSYS M6035cidn and ECOSYS M6535cidn					
Feed Motor	Nidec Servo Corp.	KV4239-T3B006	Two provided. Stepper type, 24Vdc, 0.8A	-	Evaluated together with unit
Junction Motor	Minebea Co., Ltd.	PM35L-048-MIM2	Stepper type, 24Vdc, 0.7A	-	Evaluated together with unit
Front Cover, Rear Cover, PF Cover, Cursor Cover, Front Cursor, Rear Cursor, Main Table, Lower Guide, Left Lower Guide, Right Lower Guide, DP Base, Base Stopper, Base Stopper B	Interchangeable	Interchangeable	Min. HB75	UL94	UL

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Fax Unit (Standard) for MFP Model ECOSYS M6530cdn and ECOSYS M6535cidn					
FAX UNIT	Panasonic System Networks Co., Ltd. or Panasonic Corporation.	DA-FG520 Series	---	(IEC/EN 60950-1)	(Tested in unit)
NCU Board	--	--	Comprised of the following components:	--	--
Surge Absorbers (SA10, SA11)	Okaya Electric Industries Co., Ltd.	RA-102M-C6	1kV	UL1449	UL (E322107)
Surge Absorbers (SA10, SA11), Alternate	Okaya Electric Industries Co., Ltd.	RA-501M-C6	500V	UL1449	UL (E322107)
Surge Absorber (SA12)	Littelfuse/Teccor	SIDACtor type, P3100SCLRP	Switching Voltage 350V	UL497B	UL (E133083)
Hybrid IC (IC10) for 110V	NEC Tokin	THS-56F, THS-56 or THS-65	--	--	Evaluated together with unit
Optical Isolator (PC10)	Cosmo Electronics Corporation	K3010	Ext. cr.: ≥ 5 mm, Int. cr. ≥ 4 mm, Isolation voltage: min. AC 5000V	IEC/EN 60950-1 UL 1577	FIMKO UL(E169586)
Optical Isolator (PC10), Alternate	Toshiba Corp., Semiconductor Co. Discrete Semiconductor Div.	TLP620, TLP627, TLP621	Ext. cr.: > 8 mm, Int. cr. = thermal cycling tested (2.10.11), Isolation voltage: min. AC 5000V	IEC/EN 60950-1 UL 1577	SEMKO UL(E67349) UL(E152349)
Optical Isolator (PC10), Alternate	Toshiba Corp., Semiconductor Co. Discrete Semiconductor Div.	TLP320 or TLP629	Ext. cr.: > 6.4 mm, Int. cr. = thermal cycling tested (2.10.11), Isolation voltage: min. AC 5000V	IEC/EN 60950-1 UL 1577	BSI UL(E67349) UL(E152349)

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Optical Isolator (PC11) for 120V and 220 – 240V	Toshiba Corp., Semiconductor Co. Discrete Semiconductor Div.	TLP620, TLP627, TLP621	Ext. cr.: > 8 mm, Int. cr. = thermal cycling tested (2.10.11), Isolation voltage: min. AC 5000V	IEC/EN 60950-1 UL 1577	SEMKO UL(E67349) UL(E152349)
Optical Isolator (PC11) for 120V and 220 – 240V Alternate	Toshiba Corp., Semiconductor Co. Discrete Semiconductor Div.	TLP320 or TLP629	Ext. cr.: > 6.4 mm, Int. cr. = thermal cycling tested (2.10.11), Isolation voltage: min. AC 5000V	IEC/EN 60950-1 UL 1577	BSI UL(E67349) UL(E152349)
Capacitors (C12, C13)	Murata Mfg. Co., Ltd.	KY	250V, 220pF-680pF, Y2 type	IEC/EN60384-14 UL1414	SEMKO UL(E37921)
Relay (RLY10)	Fujitsu Components	FTR-C2	Contact: 30Vdc, 1.0A Coil: 5Vdc	IEC/EN60950-1 UL508	BSI UL(E63615)
Relay (RLY12) for 220 - 240V	Tyco Electronics	OUAZ	Contact: 24Vdc, 1.0A Coil: 5Vdc	IEC/EN61810-1 UL508	TUV UL(E82292)
Relay (RLY12) for 220 - 240V, Alternate	Xiamen Hongfa Electroacostic Co., Ltd.	HFD41 or HFD41A	Contact: 30Vdc, 1.0A Coil: 5Vdc	UL508	UL(E133481)
Fuse (F11) for 110V and 220 - 240V	Littelfuse Inc.	461 Series	1.25A, 600V	UL248-1/UL248-14	UL(E10480)
PTC Thermistor (POS10) for 120V	Murata Mfg. Co., Ltd.	PTGL06BB220N***** (*: any alphanumeric)	Vmax: 250V, Imax: 0.6A, 22 ohms at 25ºC	UL1434	UL(E137188)
Modular Jacks (JK10, JK11)	JST Mfg. Co., Ltd.	MJ-62J-RD	Type RJ-11	UL1863	UL(E174260)
Connector (CN10)	Iriso Electronics Co., Ltd	IMSA-9210 Series	250V, 3A	UL1977	UL(E115889)
PWB	Interchangeable	Interchangeable	Min. V-1, Min. 105ºC	UL796	UL

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
FCB Board	--	--	Comprised of the following components:	--	--
Capacitors (C206, C207)	Murata Mfg. Co., Ltd.	GF	250V, 33pF, Y2 type	EN/IEC60384-14 UL60950-1	SEMKO UL(E316111)
Capacitor (C205) (Optional)	Murata Mfg. Co., Ltd.	GF	250V, 10pF-220pF, Y2 type	EN/IEC60384-14 UL60950-1	SEMKO UL(E316111)
PWB	Interchangeable	Interchangeable	Min. V-1, Min. 105ºC	UL796	UL

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard (Edition / year)	Mark(s) of conformity
Paper Feeder, Model PF-5100 (Option)					
Lift Motor	Standard Motor Co., Ltd.	RC370-KT-081000	24Vdc, 110mA max.	-	Evaluated together with unit
Feed Motor	Nidec Corp.	42M069F251	24Vdc, 1.1A max. Brushless Motor	-	Evaluated together with unit
Clutches	Tenryu Marusawa Co., Ltd.	TMC-3. 5L-01	Two provided. 24Vdc, 0.083A	-	Evaluated together with unit
Front Frame, Left Frame, Right Frame, Rear Cover, Top Frame, Cassette	Interchangeable	Interchangeable	Min. HB75	UL94	UL
Manual Stapler, Model MS-5100 (Option) for MFP Model ECOSYS M6030cdn, ECOSYS M6530cdn, ECOSYS M6035cidn and ECOSYS M6535cidn					
Staple Motor	Johnson Electric	HC283LG-1020345	24Vdc, 0.59A	-	Evaluated together with unit
Interlock Switch	Omron Corp.	SS-5 series (SS-5GL)	250Vac/5A, 50,000 Cycles (VDE) 125Vac/5A, 250Vac/3A, 6,000 Cycles (UL)	EN61058-1 IEC61058-1 UL1054	VDE UL(E41515)
Enclosure Stapler Cover, Stapler Lid	Bayer MaterialScience	FR3006 HF	5VB, Min. 1.8mm thick	UL94	UL(E41613)
Supplementary information:					
Mark(s) of conformity: Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.5.1	**TABLE: Opto Electronic Devices**	P

Manufacturer.....: --

Type.....: --

Separately tested.....: --

Bridging insulation .....: --

External creepage distance .....: --

Internal creepage distance .....: --

Distance through insulation .....: --

Tested under the following conditions .....: --

Input.....: --

Output.....: --

supplementary information

See appended table 1.5.1 for details

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status	
99V/60Hz	9.0	--	880	*1	1.2/7.8	M.N.L.1/ Warm up	
110V/60Hz	9.5	10.0	1030	*1	1.1/8.4	M.N.L.1/ Warm up	
121V/60Hz	10.0	--	1200	*1	1.0/9.0	M.N.L.1/ Warm up	
99V/60Hz	9.0	--	880	*1	3.0/6.0	M.N.L.1/ Print	
110V/60Hz	8.8	10.0	950	*1	2.9/5.9	M.N.L.1/ Print	
121V/60Hz	8.4	--	1010	*1	2.7/5.7	M.N.L.1/ Print	
99V/60Hz	9.6	--	920	*1	1.2/8.4	M.N.L.2/ Warm up	
110V/60Hz	10.2	11.3	1094	*1	1.1/9.1	M.N.L.2/ Warm up	
121V/60Hz	10.9	--	1264	*1	1.0/9.9	M.N.L.2/ Warm up	
99V/60Hz	9.4	--	910	*1	3.0/6.4	M.N.L.2/ Print	
110V/60Hz	9.2	11.3	1000	*1	2.9/6.3	M.N.L.2/ Print	
121V/60Hz	8.8	--	1035	*1	2.7/6.1	M.N.L.2/ Print	
99V/60Hz	10.7	--	1030	*1	2.9/7.8	M.N.L.3/ Warm up	
110V/60Hz	11.0	12.0	1190	*1	2.7/8.3	M.N.L.3/ Warm up	
121V/60Hz	11.3	--	1340	*1	2.5/8.8	M.N.L.3/ Warm up	
99V/60Hz	9.4	--	910	*1	3.0/6.4	M.N.L.3/ Print	
110V/60Hz	9.2	12.0	1000	*1	2.9/6.3	M.N.L.3/ Print	
121V/60Hz	8.8	--	1040	*1	2.7/6.1	M.N.L.3/ Print	
99V/60Hz	9.0	--	880	*1	1.2/7.8	M.N.L.4/ Warm up	
110V/60Hz	9.5	10.0	1030	*1	1.1/8.4	M.N.L.4/ Warm up	
121V/60Hz	10.0	--	1200	*1	1.0/9.0	M.N.L.4/ Warm up	
99V/60Hz	9.0	--	880	*1	3.0/6.0	M.N.L.4/ Copy	
110V/60Hz	8.8	10.0	950	*1	2.9/5.9	M.N.L.4/ Copy	
121V/60Hz	8.4	--	1010	*1	2.7/5.7	M.N.L.4/ Copy	
99V/60Hz	9.6	--	920	*1	1.2/8.4	M.N.L.5/ Warm up	
110V/60Hz	10.2	11.2	1094	*1	1.1/9.1	M.N.L.5/ Warm up	
121V/60Hz	10.9	--	1264	*1	1.0/9.9	M.N.L.5/ Warm up	
99V/60Hz	9.4	--	910	*1	3.0/6.4	M.N.L.5/ Copy	
110V/60Hz	9.2	11.2	1000	*1	2.9/6.3	M.N.L.5/ Copy	
121V/60Hz	8.8	--	1035	*1	2.7/6.1	M.N.L.5/ Copy	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status	
108V/60Hz	8.4	--	895	*1	1.7/6.7	M.N.L.1/ Warm up	
120V/60Hz	8.7	9.0	1030	*1	1.5/7.2	M.N.L.1/ Warm up	
132V/60Hz	9.0	--	1170	*1	1.2/7.8	M.N.L.1/ Warm up	
108V/60Hz	8.1	--	860	*1	1.9/6.2	M.N.L.1/ Print	
120V/60Hz	8.0	9.0	950	*1	1.7/6.3	M.N.L.1/ Print	
132V/60Hz	7.5	--	980	*1	1.5/6.0	M.N.L.1/ Print	
108V/60Hz	9.0	--	960	*1	1.7/7.3	M.N.L.2/ Warm up	
120V/60Hz	9.3	10.0	1100	*1	1.5/7.8	M.N.L.2/ Warm up	
132V/60Hz	9.5	--	1240	*1	1.2/8.3	M.N.L.2/ Warm up	
108V/60Hz	8.5	--	870	*1	1.9/6.6	M.N.L.2/ Print	
120V/60Hz	8.4	10.0	980	*1	1.7/6.7	M.N.L.2/ Print	
132V/60Hz	7.9	--	1020	*1	1.5/6.4	M.N.L.2/ Print	
108V/60Hz	10.0	--	1049	*1	2.7/7.3	M.N.L.3/ Warm up	
120V/60Hz	10.3	11.3	1200	*1	2.5/7.8	M.N.L.3/ Warm up	
132V/60Hz	10.5	--	1360	*1	2.2/8.3	M.N.L.3/ Warm up	
108V/60Hz	8.5	--	870	*1	2.9/5.6	M.N.L.3/ Print	
120V/60Hz	8.4	11.3	980	*1	2.7/5.7	M.N.L.3/ Print	
132V/60Hz	7.9	--	1020	*1	2.5/5.4	M.N.L.3/ Print	
108V/60Hz	8.4	--	895	*1	1.7/6.7	M.N.L.4/ Warm up	
120V/60Hz	8.7	9.0	1030	*1	1.5/7.2	M.N.L.4/ Warm up	
132V/60Hz	9.0	--	1170	*1	1.2/7.8	M.N.L.4/ Warm up	
108V/60Hz	8.1	--	860	*1	1.9/6.2	M.N.L.4/ Copy	
120V/60Hz	8.0	9.0	950	*1	1.7/6.3	M.N.L.4/ Copy	
132V/60Hz	7.5	--	980	*1	1.5/6.0	M.N.L.4/ Copy	
108V/60Hz	9.0	--	960	*1	1.7/7.3	M.N.L.5/ Warm up	
120V/60Hz	9.3	10.3	1100	*1	1.5/7.8	M.N.L.5/ Warm up	
132V/60Hz	9.5	--	1240	*1	1.2/8.3	M.N.L.5/ Warm up	
108V/60Hz	8.5	--	870	*1	1.9/6.6	M.N.L.5/ Copy	
120V/60Hz	8.4	10.3	980	*1	1.7/6.7	M.N.L.5/ Copy	
132V/60Hz	7.9	--	1020	*1	1.5/6.4	M.N.L.5/ Copy	

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Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status	
198V/50Hz	4.2	--	820	*1	0.8/3.4	M.N.L.1/ Warm up	
220V/50Hz	4.3	5.0	940	*1	0.7/3.6	M.N.L.1/ Warm up	
240V/50Hz	4.5	5.0	1060	*1	0.7/3.8	M.N.L.1/ Warm up	
264V/50Hz	4.6	--	1200	*1	0.6/4.0	M.N.L.1/ Warm up	
198V/50Hz	3.8	--	740	*1	1.1/2.7	M.N.L.1/ Print	
220V/50Hz	4.0	5.0	865	*1	1.0/3.0	M.N.L.1/ Print	
240V/50Hz	4.2	5.0	990	*1	1.0/3.2	M.N.L.1/ Print	
264V/50Hz	4.4	--	1150	*1	0.9/3.5	M.N.L.1/ Print	
198V/60Hz	4.2	--	820	*1	0.8/3.4	M.N.L.1/ Warm up	
220V/60Hz	4.3	5.0	940	*1	0.7/3.6	M.N.L.1/ Warm up	
240V/60Hz	4.5	5.0	1060	*1	0.7/3.8	M.N.L.1/ Warm up	
264V/60Hz	4.6	--	1200	*1	0.6/4.0	M.N.L.1/ Warm up	
198V/60Hz	3.8	--	740	*1	1.1/2.7	M.N.L.1/ Print	
220V/60Hz	4.0	5.0	865	*1	1.0/3.0	M.N.L.1/ Print	
240V/60Hz	4.2	5.0	990	*1	1.0/3.2	M.N.L.1/ Print	
264V/60Hz	4.4	--	1150	*1	0.9/3.5	M.N.L.1/ Print	

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Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status	
198V/50Hz	4.5	--	880	*1	0.8/3.7	M.N.L.2/ Warm up	
220V/50Hz	4.8	5.6	1040	*1	0.7/4.1	M.N.L.2/ Warm up	
240V/50Hz	5.0	5.6	1180	*1	0.7/4.3	M.N.L.2/ Warm up	
264V/50Hz	5.2	--	1350	*1	0.6/4.6	M.N.L.2/ Warm up	
198V/50Hz	4.0	--	750	*1	1.1/2.9	M.N.L.2/ Print	
220V/50Hz	4.2	5.6	910	*1	1.0/3.2	M.N.L.2/ Print	
240V/50Hz	4.4	5.6	1040	*1	1.0/3.4	M.N.L.2/ Print	
264V/50Hz	4.6	--	1205	*1	0.9/3.7	M.N.L.2/ Print	
198V/60Hz	4.5	--	880	*1	0.8/3.7	M.N.L.2/ Warm up	
220V/60Hz	4.8	5.6	1040	*1	0.7/4.1	M.N.L.2/ Warm up	
240V/60Hz	5.0	5.6	1180	*1	0.7/4.3	M.N.L.2/ Warm up	
264V/60Hz	5.2	--	1350	*1	0.6/4.6	M.N.L.2/ Warm up	
198V/60Hz	4.0	--	750	*1	1.1/2.9	M.N.L.2/ Print	
220V/60Hz	4.2	5.6	910	*1	1.0/3.2	M.N.L.2/ Print	
240V/60Hz	4.4	5.6	1040	*1	1.0/3.4	M.N.L.2/ Print	
264V/60Hz	4.6	--	1205	*1	0.9/3.7	M.N.L.2/ Print	

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Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status	
198V/50Hz	4.9	--	955	*1	1.0/3.9	M.N.L.3/ Warm up	
220V/50Hz	5.1	5.8	1100	*1	0.9/4.2	M.N.L.3/ Warm up	
240V/50Hz	5.2	5.8	1228	*1	0.8/4.4	M.N.L.3/ Warm up	
264V/50Hz	5.4	--	1405	*1	0.7/4.7	M.N.L.3/ Warm up	
198V/50Hz	4.7	--	920	*1	1.4/3.3	M.N.L.3/ Print	
220V/50Hz	4.6	5.8	980	*1	1.2/3.4	M.N.L.3/ Print	
240V/50Hz	4.4	5.8	1020	*1	1.1/3.3	M.N.L.3/ Print	
264V/50Hz	4.3	--	1100	*1	1.0/3.3	M.N.L.3/ Print	
198V/60Hz	4.9	--	955	*1	1.0/3.9	M.N.L.3/ Warm up	
220V/60Hz	5.1	5.8	1100	*1	0.9/4.2	M.N.L.3/ Warm up	
240V/60Hz	5.2	5.8	1228	*1	0.8/4.4	M.N.L.3/ Warm up	
264V/60Hz	5.4	--	1405	*1	0.7/4.7	M.N.L.3/ Warm up	
198V/60Hz	4.7	--	920	*1	1.4/3.3	M.N.L.3/ Print	
220V/60Hz	4.6	5.8	980	*1	1.2/3.4	M.N.L.3/ Print	
240V/60Hz	4.4	5.8	1020	*1	1.1/3.3	M.N.L.3/ Print	
264V/60Hz	4.3	--	1100	*1	1.0/3.3	M.N.L.3/ Print	

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status	
198V/50Hz	4.2	--	820	*1	0.8/3.4	M.N.L.4/ Warm up	
220V/50Hz	4.3	5.0	940	*1	0.7/3.6	M.N.L.4/ Warm up	
240V/50Hz	4.5	5.0	1060	*1	0.7/3.8	M.N.L.4/ Warm up	
264V/50Hz	4.6	--	1200	*1	0.6/4.0	M.N.L.4/ Warm up	
198V/50Hz	3.8	--	740	*1	1.1/2.7	M.N.L.4/ Copy	
220V/50Hz	4.0	5.0	865	*1	1.0/3.0	M.N.L.4/ Copy	
240V/50Hz	4.2	5.0	990	*1	1.0/3.2	M.N.L.4/ Copy	
264V/50Hz	4.4	--	1150	*1	0.9/3.5	M.N.L.4/ Copy	
198V/60Hz	4.2	--	820	*1	0.8/3.4	M.N.L.4/ Warm up	
220V/60Hz	4.3	5.0	940	*1	0.7/3.6	M.N.L.4/ Warm up	
240V/60Hz	4.5	5.0	1060	*1	0.7/3.8	M.N.L.4/ Warm up	
264V/60Hz	4.6	--	1200	*1	0.6/4.0	M.N.L.4/ Warm up	
198V/60Hz	3.8	--	740	*1	1.1/2.7	M.N.L.4/ Copy	
220V/60Hz	4.0	5.0	865	*1	1.0/3.0	M.N.L.4/ Copy	
240V/60Hz	4.2	5.0	990	*1	1.0/3.2	M.N.L.4/ Copy	
264V/60Hz	4.4	--	1150	*1	0.9/3.5	M.N.L.4/ Copy	

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Clause	Requirement + Test	Result - Remark	Verdict

1.6.2	TABLE: Electrical data (in normal conditions)						P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status	
198V/50Hz	4.5	--	880	*1	0.8/3.7	M.N.L.5/ Warm up	
220V/50Hz	4.8	5.6	1040	*1	0.7/4.1	M.N.L.5/ Warm up	
240V/50Hz	5.0	5.6	1180	*1	0.7/4.3	M.N.L.5/ Warm up	
264V/50Hz	5.2	--	1350	*1	0.6/4.6	M.N.L.5/ Warm up	
198V/50Hz	4.0	--	750	*1	1.1/2.9	M.N.L.5/ Copy	
220V/50Hz	4.2	5.6	910	*1	1.0/3.2	M.N.L.5/ Copy	
240V/50Hz	4.4	5.6	1040	*1	1.0/3.4	M.N.L.5/ Copy	
264V/50Hz	4.6	--	1205	*1	0.9/3.7	M.N.L.5/ Copy	
198V/60Hz	4.5	--	880	*1	0.8/3.7	M.N.L.5/ Warm up	
220V/60Hz	4.8	5.6	1040	*1	0.7/4.1	M.N.L.5/ Warm up	
240V/60Hz	5.0	5.6	1180	*1	0.7/4.3	M.N.L.5/ Warm up	
264V/60Hz	5.2	--	1350	*1	0.6/4.6	M.N.L.5/ Warm up	
198V/60Hz	4.0	--	750	*1	1.1/2.9	M.N.L.5/ Copy	
220V/60Hz	4.2	5.6	910	*1	1.0/3.2	M.N.L.5/ Copy	
240V/60Hz	4.4	5.6	1040	*1	1.0/3.4	M.N.L.5/ Copy	
264V/60Hz	4.6	--	1205	*1	0.9/3.7	M.N.L.5/ Copy	
supplementary information:							
M.N.L.1: Model ECOSYS P6130cdn with PF-5100×3. M.N.L.2: Model ECOSYS P6035cdn with PF-5100×3. M.N.L.3: Model ECOSYS P7040cdn with PF-5100×3. M.N.L.4: Model ECOSYS M6530cdn with PF-5100×3 and MS-5100. M.N.L.5: Model ECOSYS M6535cidn with PF-5100×3 and MS-5100 *1: F1 on SWPS / F51 on SWPS							

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Clause	Requirement + Test	Result - Remark	Verdict

2.1.1.5 c) 1)	TABLE: max. V, A, VA test				P
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
SWPS Model: MPW3162 for 240V					
24V Output	7.0	24.2	13.8	333[1)]	
SWPS Model: MPW3162L for 240V					
24V Output	7.0	24.2	13.8	333[1)]	
SWPS Model: MPW3161 for 120V					
24V Output	7.0	24.4	13.5	328[1)]	
SWPS Model: MPW3161L for 120V					
24V Output	7.0	24.4	13.5	328[1)]	
supplementary information:					
[1)] not touchable					

2.1.1.5 c) 2)	TABLE: stored energy		N/A
Capacitance C (µF)	Voltage U (V)	Energy E (J)	
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supplementary information:			
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Clause	Requirement + Test	Result - Remark	Verdict

2.2	TABLE: evaluation of voltage limiting components in SELV circuits			P
Component (measured between)		max. voltage (V) (normal operation)		Voltage Limiting Components
		V peak	V d.c.	
SWPS Model: MPW3162				
T1	a) Pin 9 to pin 16 (gnd)	54.8	--	--
	b) Cathode of D101 to gnd	--	32.4	D101
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)		
Supply voltage: 264V, 50Hz				
SWPS, Model MPW3162L				
24V output (D101 shorted)		0 Vdc (Output shut down in 0.1 sec after D101 shorted.)		
SWPS, Model MPW3162				
24V output (D101 shorted)		0 Vdc (Output shut down in 0.1 sec after D101 shorted.)		

Component (measured between)		max. voltage (V) (normal operation)		Voltage Limiting Components
		V peak	V d.c.	
SWPS Model: MPW3161				
T1	a) Pin 9 to pin 16 (gnd)	59.2	--	--
	b) Cathode of D101 to gnd	--	34.4	D101
Fault test performed on voltage limiting components		Voltage measured (V) in SELV circuits (V peak or V d.c.)		
Supply voltage: 132V, 60Hz				
SWPS, Model MPW3161L				
24V output		0 Vdc (Output shut down in 0.1 sec after D101 shorted.)		
SWPS, Model MPW3161				
24V output		0 Vdc (Output shut down in 0.1 sec after D101 shorted.)		

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Clause	Requirement + Test	Result - Remark	Verdict

2.2	TABLE: evaluation of voltage limiting components in SELV circuits			P
Component (measured between)		max. voltage (V) (normal operation)		Voltage Limiting Components
		V peak	V d.c.	
High Voltage PWB Model: MPH7498				
B151	a) Pin 5 to gnd	2.48k	--	--
	b) Pin 1 to gnd	--	26.4	B151
B251	a) Pin 5 to gnd	2.48k	--	--
	b) Pin 1 to gnd	--	26.4	B251
B351	a) Pin 5 to gnd	2.48k	--	--
	b) Pin 1 to gnd	--	26.4	B351
B451	a) Pin 5 to gnd	2.48k	--	--
	b) Pin 1 to gnd	--	26.4	B451
B551	a) Output T2 to gnd	5.76k	--	--
	b) Pin 1 to gnd	--	26.2	B551
B501	a) Pin 7 to gnd	1.26k	--	--
	b) Pin 5 to gnd	--	28.2	B501
B661	a) Pin 6 to pin 3(gnd)	2.02k	--	--
	b) Pin 4 to pin 3(gnd)	19.9	--	B661
B761	a) Pin 6 to pin 3(gnd)	2.02k	--	--
	b) Pin 4 to pin 3(gnd)	19.9	--	B761
B861	a) Pin 6 to pin 3(gnd)	2.02k	--	--
	b) Pin 4 to pin 3(gnd)	19.9	--	B861
B961	a) Pin 6 to pin 3(gnd)	2.02k	--	--
	b) Pin 4 to pin 3(gnd)	19.9	--	B961

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Clause	Requirement + Test	Result - Remark	Verdict

2.2	TABLE: evaluation of voltage limiting components in SELV circuits	P
Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)	
High Voltage PWB Model:MPH7498		
24V input (B151 input - output shorted)	25.8 Vdc (Output M(Y) shut down in 0.1 sec after B151 was shorted.)	
24V input (B251 input - output shorted)	25.8 Vdc (Output M(C) shut down in 0.1 sec after B251 was shorted.)	
24V input (B351 input - output shorted)	25.8 Vdc (Output M(M) shut down in 0.1 sec after B351 was shorted.)	
24V input (B451 input - output shorted)	25.8 Vdc (Output M(K) shut down in 0.1 sec after B451 was shorted.)	
24V input (B551 input - output shorted)	25.8 Vdc (Output T2 shut down in 0.1 sec after B551 was shorted.)	
24V input (B501 input - output shorted)	25.8 Vdc (Output CL shut down in 0.1 sec after B501 was shorted.)	
24V input (B661 input – output Vslv(Y) shorted)	26.4 Vdc (Output Vslv(Y) shut down in 0.1 sec after shorted.)	
24V input (B761 input - output Vslv(C) shorted)	26.4 Vdc (Output Vslv(C) shut down in 0.1 sec after shorted.)	
24V input (B861 input - output Vslv(M) shorted)	26.4 Vdc (Output Vslv(M) shut down in 0.1 sec after shorted.)	
24V input (B961 input - output Vslv(K) shorted)	26.4 Vdc (Output Vslv(K) shut down in 0.1 sec after shorted.)	
24V input (B661 input – output Vmag(Y) shorted)	26.2 Vdc (Output Vmag(Y) shut down in 0.1 sec after shorted.)	
24V input (B761 input - output Vmag(C) shorted)	26.2 Vdc (Output Vmag(C) shut down in 0.1 sec after shorted.)	
24V input (B861 input - output Vmag(M) shorted)	26.2 Vdc (Output Vslv(M) shut down in 0.1 sec after shorted.)	
24V input (B961 input - output Vmag(K) shorted)	26.2 Vdc (Output Vslv(K) shut down in 0.1 sec after shorted.)	

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Clause	Requirement + Test	Result - Remark	Verdict

2.2	TABLE: evaluation of voltage limiting components in SELV circuits			P
Component (measured between)		max. voltage (V) (normal operation)		Voltage Limiting Components
		V peak	V d.c.	
High Voltage PWB Model: MPH7499				
B101	a) Pin 6 to pin3(gnd)	2.28k	--	--
	b) Pin 10 to pin3(gnd)	13.6	--	B101
B201	a) Pin 6 to pin3(gnd)	2.28k	--	--
	b) Pin 10 to pin3(gnd)	13.6	--	B201
B301	a) Pin 6 to pin3(gnd)	2.28k	--	--
	b) Pin 10 to pin3(gnd)	13.6	--	B301
B401	a) Pin 6 to pin3(gnd)	2.28k	--	--
	b) Pin 10 to pin3(gnd)	13.6	--	B401
B551	a) Output T2 to gnd	6.68k	--	--
	b) Pin 1 to gnd	--	26.4	B551
B661	a) Pin 6 to pin3(gnd)	1.17k	--	
	b) Pin 4 to pin 3(gnd)	11.2	--	B661
B761	a) Pin 6 to pin3(gnd)	1.17k	--	
	b) Pin 4 to pin 3(gnd)	11.2	--	B761
B861	a) Pin 6 to pin3(gnd)	1.17k	--	
	b) Pin 4 to pin 3(gnd)	11.2	--	B861
B961	a) Pin 6 to pin3(gnd)	1.17k	--	
	b) Pin 4 to pin 3(gnd)	11.2	--	B961

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Clause	Requirement + Test	Result - Remark	Verdict

2.2	TABLE: evaluation of voltage limiting components in SELV circuits	P
Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)	
High Voltage PWB Model: MPH7499		
24V input (B101 input - output shorted)	29.0 Vdc (Output M(Y) shut down in 0.1 sec after B101 was shorted.)	
24V input (B201 input - output shorted)	29.0 Vdc (Output M(C) shut down in 0.1 sec after B201 was shorted.)	
24V input (B301 input - output shorted)	29.0 Vdc (Output M(M) shut down in 0.1 sec after B301 was shorted.)	
24V input (B401 input - output shorted)	29.0 Vdc (Output M(K) shut down in 0.1 sec after B401 was shorted.)	
24V input (B551 input - output shorted)	25.8 Vdc (Output T2 shut down in 0.1 sec after B551 was shorted.)	
24V input (B661 input – output Vslv(Y) shorted)	26.4 Vdc (Output Vslv(Y) shut down in 0.1 sec after B661 was shorted.)	
24V input (B761 input - output Vslv(C) shorted)	26.4 Vdc (Output Vslv(C) shut down in 0.1 sec after shorted.)	
24V input (B861 input - output Vslv(M) shorted)	26.4 Vdc (Output Vslv(M) shut down in 0.1 sec after shorted.)	
24V input (B961 input - output Vslv(K) shorted)	26.4 Vdc (Output Vslv(K) shut down in 0.1 sec after shorted.)	
24V input (B661 input – output Vmag(Y) shorted)	26.2 Vdc (Output Vmag(Y) shut down in 0.1 sec after shorted.)	
24V input (B761 input - output Vmag(C) shorted)	26.2 Vdc (Output Vmag(C) shut down in 0.1 sec after shorted.)	
24V input (B861 input - output Vmag(M) shorted)	26.2 Vdc (Output Vmag(M) shut down in 0.1 sec after shorted.)	
24V input (B961 input - output Vmag(K) shorted)	26.2 Vdc (Output Vmag(K) shut down in 0.1 sec after shorted.)	
supplementary information:		
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Clause	Requirement + Test	Result - Remark	Verdict

2.4.2	TABLE: Limited current circuit measurement					P
Location		Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments
SWPS Model: MPW3162 (Input 240V)						
C50 (No fault)		358 Vpk	0.32	--	0.7	Measured by Annex D
C50 (C16 short)		--	0.31	--	0.7	Measured by Annex D
SWPS Model: MPW3161 (Input 120V)						
C50 (No fault)		168 Vpk	0.175	--	0.7	Measured by Annex D
C50 (C16 short)		--	0.17	--	0.7	Measured by Annex D
SWPS Model: MPW3161 (Input 110V)						
C50		155 Vpk	0.16	--	0.7	Measured by Annex D
C50 (C16 short)		--	0.15	--	0.7	Measured by Annex D

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Clause	Requirement + Test	Result - Remark	Verdict

2.4.2	TABLE: Limited current circuit measurement					P
Location		Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments
High Voltage PWB Model: MPH7498						
Output M(Y) (No fault)		2.5 kVdc	0.055	--	0.7	Measured by Annex D
Output M(Y) (Q668-E Open)		2.5 kVdc	2.70	--	0.7	Measured by Annex D. Not LCC.
Output M(C) (No fault)		2.5 kVdc	0.055	--	0.7	Measured by Annex D
Output M(C) (Q668-E Open)		2.5 kVdc	2.70	--	0.7	Measured by Annex D. Not LCC.
Output M(M) (No fault)		2.5 kVdc	0.055	--	0.7	Measured by Annex D
Output M(M) (Q668-E Open)		2.5 kVdc	2.70	--	0.7	Measured by Annex D. Not LCC.
Output M(K) (No fault)		2.5 kVdc	0.055	--	0.7	Measured by Annex D
Output M(K) (Q668-E open)		2.5 kVdc	2.70	--	0.7	Measured by Annex D. Not LCC.
Output Vslv(Y) (No fault)		2.02 kVpk	0.41	--	0.7	Measured by Annex D
Output Vslv(Y) (Q668-E open)		2.02 kVpk	3.05	--	0.7	Measured by Annex D. Not LCC.
Output Vslv(C) (No fault)		2.02 kVpk	0.41	--	0.7	Measured by Annex D
Output Vslv(C) (Q668-E open)		2.02 kVpk	3.05	--	0.7	Measured by Annex D. Not LCC.
Output Vslv(M) (No fault)		2.02 kVpk	0.41	--	0.7	Measured by Annex D
Output Vslv(M) (Q668-E open)		2.02 kVpk	3.05	--	0.7	Measured by Annex D. Not LCC.
Output Vslv(K) (No fault)		2.02 kVpk	0.41	--	0.7	Measured by Annex D
Output Vslv(K) (Q668-E open)		2.02 kVpk	3.05	--	0.7	Measured by Annex D. Not LCC.
Output Vmag(Y) (No fault)		1.40 kVpk	0.36	--	0.7	Measured by Annex D
Output Vmag(Y) (Q668-E open)		1.40 kVpk	2.50	--	0.7	Measured by Annex D. Not LCC.
Output Vmag(C) (No fault)		1.40 kVpk	0.36	--	0.7	Measured by Annex D
Output Vmag(C) (Q668-E open)		1.40 kVpk	2.50	--	0.7	Measured by Annex D. Not LCC.
Output Vmag(M) (No fault)		1.40 kVpk	0.36	--	0.7	Measured by Annex D
Output Vmag(M) (Q668-E open)		1.40 kVpk	2.50	--	0.7	Measured by Annex D. Not LCC.
Output Vmag(K) (No fault)		1.40 kVpk	0.36	--	0.7	Measured by Annex D
Output Vmag(K) (Q668-E open)		1.40 kVpk	2.50	--	0.7	Measured by Annex D. Not LCC.

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Clause	Requirement + Test	Result - Remark	Verdict

2.4.2	TABLE: Limited current circuit measurement					P
Location		Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments
High Voltage PWB Model: MPH7498						
Output T1(Y) (No fault)		-3.84 kVdc	0.043	--	0.7	Measured by Annex D
Output T1(Y) (IC14 pin 9-10 short)		-6.52 kVdc	0.44	----	0.7	Measured by Annex D
Output T1(C) (No fault)		-3.84 kVdc	0.043	--	0.7	Measured by Annex D
Output T1(C) (IC14 pin 5-6 short)		-6.52 kVdc	0.44		0.7	Measured by Annex D
Output T1(M) (No fault)		-3.84 kVdc	0.043	--	0.7	Measured by Annex D
Output T1(M) (IC14 pin 3-4 short)		-6.52 kVdc	0.44	--	0.7	Measured by Annex D
Output T1(K) (No fault)		-3.84 kVdc	0.043	--	0.7	Measured by Annex D
Output T1(K) (IC14 pin 11-12 short)		-6.52 kVdc	0.44	--	0.7	Measured by Annex D
Output T2 (No fault)		-5.76 kVdc	0.217	--	0.7	Measured by Annex D
Output T2 (Q552 E-C short)		-6.92 kVdc	1.55	--	0.7	Measured by Annex D. Not LCC.
Output CL (No fault)		-2.92 kVdc	0.032	--	0.7	Measured by Annex D
Output CL (IC13 pin 3-4 short)		-5.36 kVdc	0.76	--	0.7	Measured by Annex D. Not LCC.

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Clause	Requirement + Test	Result - Remark	Verdict

2.4.2	TABLE: Limited current circuit measurement					P
Location		Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments
High Voltage PWB Model: MPH7499						
Output M(Y) (No fault)		2.24 kVpk	0.22	--	0.7	Measured by Annex D
Output M(Y) (Q668-E Open)		2.24 kVpk	4.6	--	0.7	Measured by Annex D. Not LCC.
Output M(C) (No fault)		2.24 kVpk	0.22	--	0.7	Measured by Annex D
Output M(C) (Q668-E Open)		2.24 kVpk	4.6	--	0.7	Measured by Annex D. Not LCC.
Output M(M) (No fault)		2.24 kVpk	0.22	--	0.7	Measured by Annex D
Output M(M) (Q668-E Open)		2.24 kVpk	4.6	--	0.7	Measured by Annex D. Not LCC.
Output M(K) (No fault)		2.24 kVpk	0.22	--	0.7	Measured by Annex D
Output M(K) (Q668-E open)		2.24 kVpk	4.6	--	0.7	Measured by Annex D. Not LCC.
Output Vslv(Y) (No fault)		1.12 kVpk	0.34	--	0.7	Measured by Annex D
Output Vslv(Y) (Q668-E open)		1.12 kVpk	2.59	--	0.7	Measured by Annex D. Not LCC.
Output Vslv(C) (No fault)		1.12 kVpk	0.34	--	0.7	Measured by Annex D
Output Vslv(C) (Q668-E open)		1.12 kVpk	2.59	--	0.7	Measured by Annex D. Not LCC.
Output Vslv(M) (No fault)		1.12 kVpk	0.34	--	0.7	Measured by Annex D
Output Vslv(M) (Q668-E open)		1.12 kVpk	2.59	--	0.7	Measured by Annex D. Not LCC.
Output Vslv(K) (No fault)		1.12 kVpk	0.34	--	0.7	Measured by Annex D
Output Vslv(K) (Q668-E open)		1.12 kVpk	2.59	--	0.7	Measured by Annex D. Not LCC.
Output Vmag(Y) (No fault)		550 Vpk	0.36	--	0.7	Measured by Annex D
Output Vmag(Y) (Q668-E open)		550 Vpk	2.40	--	0.7	Measured by Annex D. Not LCC.
Output Vmag(C) (No fault)		550 Vpk	0.36	--	0.7	Measured by Annex D
Output Vmag(C) (Q668-E open)		550 Vpk	2.40	--	0.7	Measured by Annex D. Not LCC.
Output Vmag(M) (No fault)		550 Vpk	0.36	--	0.7	Measured by Annex D
Output Vmag(M) (Q668-E open)		550 Vpk	2.40	--	0.7	Measured by Annex D. Not LCC.
Output Vmag(K) (No fault)		550 Vpk	0.36	--	0.7	Measured by Annex D
Output Vmag(K) (Q668-E open)		550 Vpk	2.40	--	0.7	Measured by Annex D. Not LCC.

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Clause	Requirement + Test	Result - Remark	Verdict

2.4.2	TABLE: Limited current circuit measurement					P
Location		Voltage (V)	Current (mA)	Freq. (kHz)	Limit (mA)	Comments
High Voltage PWB Model: MPH7499						
Output T2 (No fault)		-6.68 kVdc	0.19	--	0.7	Measured by Annex D
Output T2 (Q552 E-C short)		-7.68 kVdc	1.51	--	0.7	Measured by Annex D. Not LCC.
Output PB (No fault)		516 Vdc	0.01	--	0.7	Measured by Annex D
Output PB (D51 short)		920 Vdc	0.015	--	0.7	Measured by Annex D
High Voltage PWB Model: MPH3343						
Output T1 (No fault)		3.18 kVdc	0.032	--	0.7	Mesured by Annex D
Output T1 (D404 short)		--	0.015	--	0.7	Mesured by Annex D
Output CL (No fault)		3.06 kVdc	0.031	--	0.7	Mesured by Annex D
Output CL (R515 short)		--	0.031	--	0.7	Mesured by Annex D
supplementary information:						
--						

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Clause	Requirement + Test	Result - Remark	Verdict

2.5	TABLE: Limited power sources					P
Circuit output tested: (see below)						
Note: Measured Uoc (V) with all load circuits disconnected: (see below)						
Location	Uoc (V)	I_{sc} (A)		VA		
		Meas.	Limit	Meas.	Limit	
Normal condition						
24V output for Paper Feeder option unit protected by Fuse YF2 on Engine Connect PWB, 3.15A	24	3.6	41.67	82.9	250	
3.3V output for Paper Feeder option unit protected by Fuse YF1 on Engine Connect PWB, 3.15A	3.3	4.8	303	14.9	250	
24V output for Document Processor Unit of MFP Models protected by Fuse YF2 on Main PWB, 3.15A	24	7.0	41.67	140	250	
5V output for Card Reader and Front USB Connector protected by Fuse F2000 on Main PWB, 4A	5	2.1	200	7.2	250	
5V output for Panel PWB for Operation Panel of MFP Model protected by Fuse YF2001 on Main PWB, 4A	5	7.7	200	29.0	250	
5V output for Panel PWB for Operation Panel of Printer Model protected by Fuse YF2002 on Main PWB,1.5A	5	7.7	200	29.0	250	
3.3V output for Panel PWB for Operation Panel protected by Fuse YF2000 on Main PWB,1.5A	3.3	4.2	303	12.6	250	
USB port, Type B [1)]	0	0	8	0	100	
LAN port [1)]	0	0	8	0	100	
Single fault:						
USB port Type B (fault condition:R2231 shorted) [1)]	0	0	8	0	100	
LAN port (fault condition: U2008 pin14 – pin15 short) [1)]	0	0	8	0	100	
supplementary information:						
Sc=Short circuit, Oc=Open circuit [1)] The USB and LAN have no power. All terminals are only for signal.						

2.6.3.4	TABLE: Resistance of earthing measurement		P
Location	Voltage drop (V)	Comments	
Inlet earth to metal of rear side	0.65	Limit: 2.5V	
Inlet earth to metal of Fuser	0.27	Limit: 2.5V	
supplementary information:			
Tested current 40A. Applied 2min.			

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.2	Table: working voltage measurement			P
Location		RMS voltage (V)	Peak voltage (V)	Comments
Input: 240V, 50Hz				
Switching Power Supply Unit for model MPW3162				
T1 pin1 - pin9		211	382	49.74kHz
T1 pin2 - pin9		212	362	95.42Hz
T1 pin3 - pin9		211	402	27.64kHz
T1 pin5 - pin9		221	464	55.65kHz
T1 pin7- pin9		275	692	51.48kHz
T1 pin1 - pin16		213	358	50.07Hz
T1 pin2 - pin16		215	388	2.706kHz
T1 pin3 - pin16		210	356	50.04Hz
T1 pin5 - pin16		235	510	56.43kHz
T1 pin7- pin16		302	738	50.26kHz
between C23 and R28 - T1 pin9		403	682	47.43kHz
between T1 pin7 and C23 - T1 pin9		278	704	50.25kHz
Input: 120V, 60Hz				
Switching Power Supply Unit for model MPW3161				
T1 pin1 - pin9		115	214	60.91kHz
T1 pin2 - pin9		103	183	3.942kHz
T1 pin3 - pin9		103	231	62.16kHz
T1 pin5 - pin9		103	215	63.83kHz
T1 pin7- pin9		117	314	80.21kHz
T1 pin1 - pin16		91.9	168	60.02Hz
T1 pin2 - pin16		93.1	203	61.12kHz
T1 pin3 - pin16		103	180	60.14Hz
T1 pin5 - pin16		124	265	63.28kHz
T1 pin7- pin16		152	364	63.2kHz
between C23 and R28 - T1 pin9		143	318	64.25kHz
between T1 pin7 and C23 - T1 pin9		127	335	62.29kHz

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.2	Table: working voltage measurement			P
Location		RMS voltage (V)	Peak voltage (V)	Comments
Input: 110V, 60Hz				
Switching Power Supply Unit for model MPW3161				
T1 pin1 - pin9		104	198	62.74kHz
T1 pin2 - pin9		90.3	163	4.122kHz
T1 pin3 - pin9		94.9	213	62.34kHz
T1 pin5 - pin9		89.1	203	36.28kHz
T1 pin7- pin9		113	302	61.84kHz
T1 pin1 - pin16		88	155	60.07Hz
T1 pin2 - pin16		95.4	191	16.54kHz
T1 pin3 - pin16		90.4	166	60.12Hz
T1 pin5 - pin16		112	252	62.97kHz
T1 pin7- pin16		132	345	62.57kHz
between C23 and R28 - T1 pin9		134	309	32.38kHz
between T1 pin7 and C23 - T1 pin9		118	316	61.88kHz
supplementary information:				
--				

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
SWPS-MPW3162, MPW3162L (pri, gnd, sec)						
Functional:						
Pri - pri (before fuse)	< 420	< 250	1.9	3.0	2.5	3.0
Basic / supplementary:						
Pri – gnd (traces at C4)	< 420	< 250	2.5	4.0	2.5	4.0
Pri – gnd (traces at C5)	< 420	< 250	2.5	5.0	2.5	5.0
Pri – gnd (traces at C1)	< 420	< 250	2.5	3.7	2.5	3.7
Pri – gnd (under PWB)	< 420	< 250	2.5	3.7	2.5	3.7
Pri – gnd (above C7) for MPW3162	< 420	< 250	2.5	4.6	2.5	4.6
Pri – gnd (above C7) for MPW3162L	< 420	< 250	2.5	7.6	2.5	7.6
Pri – gnd (above L1) for MPW3162L	< 420	< 250	2.5	12.6	2.5	12.6
Pri – gnd (above L3) for MPW3162	< 420	< 250	2.5	5.5	2.5	5.5
Reinforced:						
Pri – sec (traces under T1)	738	302	6.0	8.5	6.1	8.5
Pri – sec (between C23 and R28 - T1 pin9)	682	403	5.8	8.5	8.1	8.5
Pri – sec (traces at PC1, PC5)	< 420	< 250	4.9	7.8	5.0	7.8
Pri – sec (traces at PC3, PC4)	< 420	< 250	4.9	7.2	5.0	7.2
Pri – sec (traces at RL1)	< 420	< 250	4.9	6.7	5.0	6.7
Pri – sec (traces at C50)	< 420	< 250	4.9	7.8	5.0	7.8

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
SWPS-MPW3161, MPW3161L (pri, gnd, sec)						
Functional:						
Pri - pri (before fuse)	< 210	< 125	0.7	3.0	1.5	3.0
Basic / supplementary:						
Pri – gnd (traces at C4)	< 210	< 125	1.3	4.0	1.5	4.0
Pri – gnd (traces at C5)	< 210	< 125	1.3	5.0	1.5	5.0
Pri – gnd (traces at C1)	< 210	< 125	1.3	3.7	1.5	3.7
Pri – gnd (under PWB)	< 210	< 125	1.3	3.7	1.5	3.7
Pri – gnd (above C7)	< 210	< 125	1.3	4.6	1.5	4.6
Pri – gnd (above L1)	< 210	< 125	1.3	8.8	1.5	8.8
Reinforced:						
Pri – sec (traces under T1)	364	152	3.0	8.5	3.1	8.5
Pri – sec (traces at PC1, PC5)	< 210	< 125	2.5	7.8	3.0	7.8
Pri – sec (traces at PC3, PC4)	< 210	< 125	2.5	7.2	3.0	7.2
Pri – sec (traces at RL1)	< 210	< 125	2.5	6.7	3.0	6.7
Pri – sec (traces at C50)	< 210	< 125	2.5	7.8	3.0	7.8

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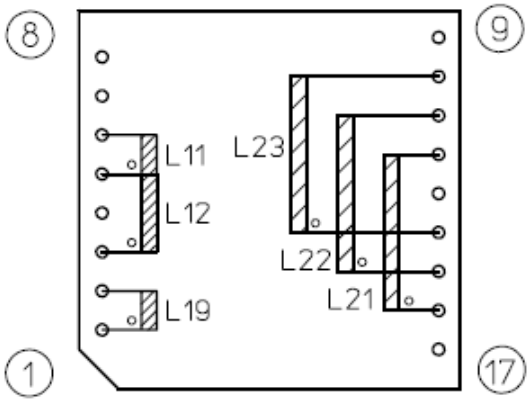
Clause	Requirement + Test	Result - Remark	Verdict

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Transformer T1 type 2V121						
Basic / supplementary:						
Pri – core (external)	-- [1])	--	--	4.5	--	4.5
Pri – core (internal)	--	--	--	6.4	--	6.4
Sec – core (external)	--	--	--	4.5	--	4.5
Sec – core (internal)	--	--	--	6.4	--	6.4
Reinforced:						
Pri-core –sec	738	302	6.0	9.0	6.1	9.0
Pri-sec	738	302	6.0	6.4	6.1	6.4

Construction details of Transformer T1:
[1]) core is floating; no electric potential defined.
Concentric pri windings and sec windings on a bobbin.
Winding ends are internally fixed with tapes, they are soldered on pins.
End tape (3 layers) above outer sec winding.
Bobbin: Type PM-9820; Sumitomo Bakelite Co., Ltd.; Phenole, V-0, min. 0.4mm thick



Distances from core to any pri- component:
dcl: min. 7.6mm, dcr: min. 12.9mm
Distances from core to any sec- component:
dcl: min. 6.0mm, dcr: min. 23.7mm

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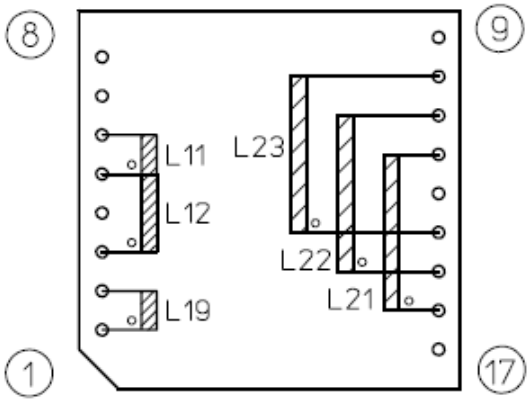
Clause	Requirement + Test	Result - Remark	Verdict

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Transformer T1 type 2V120						
Basic / supplementary:						
Pri – core (external)	-- [1])	--	--	4.5	--	4.5
Pri – core (internal)	--	--	--	3.2	--	3.2
Sec – core (external)	--	--	--	4.0	--	4.0
Sec – core (internal)	--	--	--	3.2	--	3.2
Reinforced:						
Pri-core –sec	364	152	3.0	6.4	3.1	6.4
Pri-sec	364	152	3.0	3.2	3.1	3.2

Construction details of Transformer T1:
[1]) core is floating; no electric potential defined.
Concentric pri windings and sec windings on a bobbin.
Winding ends are internally fixed with tapes, they are soldered on pins.
End tape (3 layers) above outer sec winding.
Bobbin: Type PM-9820; Sumitomo Bakelite Co., Ltd.; Phenole, V-0, min. 0.4mm thick



Distances from core to any pri- component:
dcl: min. 7.6mm, dcr: min. 12.9mm
Distances from core to any sec- component:
dcl: min. 6.0mm, dcr: min. 23.7mm

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Interlock system (PCB traces)						
Basic:						
Before interlock switch – after interlock switch	DC 24	DC 24	1.0 *	1.0 ***	1.0 **	1.0 ***
	* Annex G used. ** Required creepage was 0.5mm, however, 1.0mm was taken from required clearance. *** Measured three times.					
Fuser Unit						
Basic:						
Pri – gnd	< 420	< 250	2.5	3.9	2.5	4.8
Reinforced:						
Pri – sec	< 420	< 250	4.9	42.7	5.0	70.5

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements					P
Clearance (cl) and creepage distance (cr) at/of/between:	U peak (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	Required cr (mm)	cr (mm)
Fax PWB						
NCU Board						
Basic:						
TNV-SELV (traces at Relay RLY12)	120	71	1.3	2.5	1.5	2.5
TNV-SELV (traces at Relay RLY10)	120	71	1.3	2.5	1.5	2.5
TNV-SELV (traces at Relay SA10)	120	71	1.3	2.7	1.5	2.7
TNV-SELV (traces at Relay SA11)	120	71	1.3	2.8	1.5	2.8
TNV-SELV (traces at C12, C13)	120	71	1.3	2.8	1.5	2.8
TNV-SELV (traces at IC10 pin 2 - 3)	120	71	1.3	3.1	1.5	3.1
TNV-SELV (traces at CN10 PIN 2 - 4)	120	71	1.3	2.5	1.5	2.5
TNV-SELV (traces at PC10, PC11)	120	71	1.3	2.6	1.5	2.6
TNV-Chassis (RLY12 - Chassis)	120	71	1.3	4.0	1.5	4.0
FCB Board						
Basic:						
TNV-Chassis (CN402 - Chassis)	120	71	1.3	5.0	1.5	5.0
TNV-SELV (trases at CN402 pin 1-CN403 pin 1)	120	71	1.3	2.7	1.5	2.7
TNV-SELV (traces at C205,C206,C207)	120	71	1.3	2.9	1.5	2.9
Supplementary information:						
Each required clearance has been multiplied by the altitude correction factor 1.215 for 3500m.						

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.5	TABLE: Distance through insulation measurements					P
Distance through insulation (DTI) at/of:		U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)
Insulation Tape between Primary winding to Secondary winding of Transformer T1 type 2V121, for 220 - 240V		738	302	AC 3000V (2 of 3 layers)	3 layers	3 layers
Insulation Tape between Primary winding to Secondary winding of Transformer T1 type 2V120, for 110 and 120V		364	152	AC 3000V (2 of 3 layers)	3 layers	3 layers
Supplementary information:						
--						

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Clause	Requirement + Test	Result - Remark	Verdict

4.3.8	**TABLE: Batteries**								N/A
The tests of 4.3.8 are applicable only when appropriate battery data is not available									N/A
Is it possible to install the battery in a reverse polarity position?									N/A
	Non-rechargeable batteries			Rechargeable batteries					
	Discharging		Un-intentional charging	Charging		Discharging		Reversed charging	
	Meas. current	Manuf. Specs.		Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.	Meas. current	Manuf. Specs.
Max. current during normal condition	--	--	--	--	--	--	--	--	--
Max. current during fault condition	--	--	--	--	--	--	--	--	--
Test results:									Verdict
- Chemical leaks									N/A
- Explosion of the battery									N/A
- Emission of flame or expulsion of molten metal									N/A
- Electric strength tests of equipment after completion of tests									N/A
supplementary information:									
--									

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Clause	Requirement + Test	Result - Remark	Verdict

4.3.8	TABLE: Batteries	N/A
Battery category ..... :	--	
Manufacturer ..... :	--	
Type / model ..... :	--	
Voltage ..... :	--	
Capacity ..... :	--	
Tested and Certified by (incl. Ref. No.)..... :	--	
Circuit protection diagram:	--	
MARKINGS AND INSTRUCTIONS (1.7.13)		
Location of replaceable battery		
Language(s) ……..:	--	
Close to the battery ……..:	--	
In the servicing instructions ……..:	--	
In the operating instructions ……..:	--	

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Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: Temperature rise measurements	P

Temperatures were measured according cl. 1.4.5. Test in condition A and B at continuous normal operation as for power input measurements of table 1.6 resulted in highest temperature values.
<Condition> A: DP Copying, Duplex side copy / ECOSYS M6535cidn and PF-5100×3
B: DP Copying, Single side copy / ECOSYS M6535cidn and PF-5100×3
Temperatures are calculated according cl. 1.4.12.3 with regard to the maximum ambient operation temperature of 35°C (T_{ma}), as specified by the manufacturer.

test voltage(s) (V):	A: 108 V, 60 Hz		B: 108 V, 60 Hz	
t_{amb1} (°C):	A: -- B: --	t_{amb2} (°C):	A: 27 B: 26	

Temperature of part/at: (measured with thermocouples)	Measured temperature at T_{amb}		Calculated temperature at T_{ma}		Allowed T_{max} (°C)
	A (°C)	B (°C)	A (°C)	B (°C)	
SWPS T1 coil	81	85	89	94	110
SWPS T1 core	62	65	70	74	110
SWPS L1 coil	50	52	58	61	90
SWPS L2 coil	49	52	57	61	90
SWPS L51 coil	58	55	66	64	90
SWPS D1 body	58	61	66	70	130
SWPS D101 body	86	92	94	101	130
SWPS D102 body	88	94	96	103	130
SWPS RLY1	46	48	54	57	130
SWPS Q1 body	61	67	69	76	130
SWPS Q2 body	61	67	69	76	130
SWPS C7 body	46	48	54	57	105
SWPS PC1 body	50	54	58	63	130
SWPS PC3 body	48	53	56	62	130
SWPS Z1 body	35	35	43	44	130
SWPS TRA31 body	71	87	79	96	130
SWPS YC101 body	37	39	45	48	80
SWPS YC102 body	34	34	42	43	80
SWPS PC4 body	48	52	56	61	130
SWPS TRA41 body	64	77	72	86	130
High Voltage PWB B451 coil	39	39	47	48	90
High Voltage PWB B961 coil	41	42	49	51	90
High Voltage PWB B401 coil	37	38	45	47	90
High Voltage PWB B501 coil	34	34	42	43	90
High Voltage PWB B51 coil	45	45	53	54	90
Scanner Motor	57	57	65	66	100
DP Feed Motor	90	84	98	93	100
DP Feed Motor (Convey)	59	59	67	68	100
DP Junction Motor	66	42	74	51	100
LVU Fan	34	36	42	45	100
Fax Unit C12	37	36	45	45	--

Supplementary information:

Temperatures measured with winding resistance method: Not used

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: Temperature rise measurements	P

Temperatures were measured according cl. 1.4.5. Test in condition C and D at continuous normal operation as for power input measurements of table 1.6 resulted in highest temperature values.
<Condition> C: DP Copying, Duplex side copy / ECOSYS M6535cidn and PF-5100×3
D: DP Copying, Single side copy / ECOSYS M6535cidn and PF-5100×3
Temperatures are calculated according cl. 1.4.12.3 with regard to the maximum ambient operation temperature of 35°C (T_{ma}), as specified by the manufacturer.

test voltage(s) (V):	C: 132 V, 60 Hz		D: 132 V, 60 Hz	
t_{amb1} (°C):	C: -- D: --	t_{amb2} (°C):	C: 27 D: 27	

Temperature of part/at: (measured with thermocouples)	Measured temperature at T_{amb}		Calculated temperature at T_{ma}		Allowed T_{max} (°C)
	C (°C)	D (°C)	C (°C)	D (°C)	
SWPS T1 coil	81	83	89	91	110
SWPS T1 core	62	62	70	70	110
SWPS L1 coil	45	45	53	53	90
SWPS L2 coil	46	45	54	53	90
SWPS L51 coil	49	52	57	60	90
SWPS D1 body	53	53	61	61	130
SWPS D101 body	86	88	94	96	130
SWPS D102 body	88	90	96	98	130
SWPS RLY1	45	45	53	53	130
SWPS Q1 body	59	60	67	68	130
SWPS Q2 body	59	60	67	68	130
SWPS C7 body	45	44	53	52	105
SWPS PC1 body	59	49	67	57	130
SWPS PC3 body	47	48	55	56	130
SWPS Z1 body	35	33	43	41	130
SWPS TRA31 body	66	77	74	85	130
SWPS YC101 body	37	36	45	44	80
SWPS YC102 body	34	32	42	40	80
SWPS PC4 body	46	47	54	55	130
SWPS TRA41 body	60	69	68	77	130
High Voltage PWB B451 coil	39	37	47	45	90
High Voltage PWB B961 coil	42	40	50	48	90
High Voltage PWB B401 coil	37	36	45	44	90
High Voltage PWB B501 coil	34	32	42	40	90
High Voltage PWB B51 coil	43	44	51	52	90
Scanner Motor	54	54	62	62	100
DP Feed Motor	91	85	99	93	100
DP Feed Motor (Convey)	58	60	66	68	100
DP Junction Motor	65	44	73	52	100
LVU Fan	32	34	40	42	100
Fax Unit C12	35	37	43	45	--

Supplementary information:

Temperatures measured with winding resistance method: Not used

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: Temperature rise measurements				P
Temperatures were measured according cl. 1.4.5. Test in condition E at continuous normal operation as for power input measurements of table 1.6 resulted in highest temperature values. <Condition> E: DP Copying, Duplex side copy / ECOSYS M6535cidn and PF-5100×3 Temperatures are calculated according cl. 1.4.12.3 with regard to the maximum ambient operation temperature of 35°C (T_{ma}), as specified by the manufacturer.					
test voltage(s) (V):	E: 198 V, 50 Hz				
t_{amb1} (°C):	E: --	t_{amb2} (°C):		E: 23	
Temperature of part/at: (measured with thermocouples)	Measured temperature at T_{amb}		Calculated temperature at T_{ma}		Allowed T_{max} (°C)
	E (°C)	--	E (°C)	--	
SWPS T1 coil	80		92		110
SWPS T1 core	61		73		110
SWPS L1 coil	63		75		90
SWPS L2 coil	54		66		90
SWPS L3 coil	45		57		90
SWPS L51 coil	41		53		90
SWPS D1 body	45		57		130
SWPS D101 body	91		103		130
SWPS D102 body	84		96		130
SWPS RLY1	41		53		130
SWPS Q1 body	82		94		130
SWPS Q2 body	74		86		130
SWPS C7 body	47		59		105
SWPS PC1 body	43		55		130
SWPS PC3 body	43		55		130
SWPS Z1 body	29		41		130
SWPS TRA31 body	56		68		130
SWPS YC101 body	30		42		80
SWPS YC102 body	29		41		80
SWPS PC4 body	40		52		130
SWPS TRA41 body	53		65		130
Enclosure, Cover Rear	41		53		95
Enclosure ,Cover Left Side	45		57		95
Supplementary information:					
Temperatures measured with winding resistance method: Not used					

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Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: Temperature rise measurements				P
Temperatures were measured according cl. 1.4.5. Test in condition F and G at continuous normal operation as for power input measurements of table 1.6 resulted in highest temperature values. <Condition> F: Table Copying, Table copy / ECOSYS M6535cidn G: Staple, Staple / ECOSYS M6535cidn Temperatures are calculated according cl. 1.4.12.3 with regard to the maximum ambient operation temperature of 35°C (T_{ma}), as specified by the manufacturer.					
test voltage(s) (V):	F: 120 V, 60 Hz		G: 120 V, 60 Hz		
t_{amb1} (°C):	F: -- G: --		t_{amb2} (°C):	F: 24 G: 27	
Temperature of part/at: (measured with thermocouples)	Measured temperature at T_{amb}		Calculated temperature at T_{ma}		Allowed T_{max} (°C)
	F (°C)	G (°C)	F (°C)	G (°C)	
Scanner Motor	83	--	94	--	100
Staple Motor	--	76	--	84	100
Supplementary information:					
Temperatures measured with winding resistance method: Not used					

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Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: Temperature rise measurements	P

Temperatures were measured according cl. 1.4.5. Test in condition H and I at continuous normal operation as for power input measurements of table 1.6 resulted in highest temperature values.
<Condition> H: Printing, Single side print / ECOSYS P7040cdn and PF-5100×3
I: Printing, Single side print / ECOSYS P7040cdn and PF-5100×3
Temperatures are calculated according cl. 1.4.12.3 with regard to the maximum ambient operation temperature of 35°C (T_{ma}), as specified by the manufacturer.

test voltage(s) (V):	H: 108 V, 60 Hz	I: 132 V, 60 Hz	
t_{amb1} (°C):	H: -- I: --	t_{amb2} (°C):	H: 24 I: 24

Temperature of part/at: (measured with thermocouples)	Measured temperature at T_{amb}		Calculated temperature at T_{ma}		Allowed T_{max} (°C)
	H (°C)	I (°C)	H (°C)	I (°C)	
SWPS T1 coil SWPS T1 coil	73	73	84	84	110
SWPS T1 core	55	55	66	66	110
SWPS L1 coil	49	45	60	56	90
SWPS L2 coil	49	45	60	56	90
SWPS L51 coil	47	46	58	57	90
SWPS D1 body	54	49	65	60	130
SWPS D101 body	79	78	90	89	130
SWPS D102 body	81	79	92	90	130
SWPS RLY1	41	41	52	52	130
SWPS Q1 body	57	53	68	64	130
SWPS Q2 body	57	53	68	64	130
SWPS C7 body	39	37	50	48	105
SWPS PC1 body	51	48	62	59	130
SWPS PC3 body	48	46	59	57	130
SWPS Z1 body	33	32	44	43	130
SWPS TRA31 body	87	78	98	89	130
SWPS YC101 body	37	36	48	47	80
SWPS YC102 body	32	32	43	43	80
SWPS PC4 body	48	45	59	56	130
SWPS TRA41 body	76	69	87	80	130
Enclosure, Cover Top	48	48	59	59	95
Enclosure ,Cover Left Side	37	36	48	47	95
Fuser unit, Primary wire	59	60	70	71	150
Fuser unit, Secondary Wire	49	49	60	60	150
Fuser unit, Cover	52	52	63	63	--
Fuser unit, Connector	52	52	63	63	--

Supplementary information:

Temperatures measured with winding resistance method: Not used

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: Temperature rise measurements	P

Temperatures were measured according cl. 1.4.5. Test in condition J and K at continuous normal operation as for power input measurements of table 1.6 resulted in highest temperature values.
<Condition> J: Printing, Single side print / ECOSYS P7040cdn and PF-5100×3
K: Printing, Single side print / ECOSYS P7040cdn and PF-5100×3
Temperatures are calculated according cl. 1.4.12.3 with regard to the maximum ambient operation temperature of 35°C (T_{ma}), as specified by the manufacturer.

test voltage(s) (V):	J: 99 V, 60 Hz		K: 121 V, 60 Hz	
t_{amb1} (°C):	J: -- K: --	t_{amb2} (°C):	J: 24	K: 24

Temperature of part/at: (measured with thermocouples)	Measured temperature at T_{amb}		Calculated temperature at T_{ma}		Allowed T_{max} (°C)
	J (°C)	K (°C)	J (°C)	K (°C)	
SWPS T1 coil SWPS T1 coil	73	72	84	83	110
SWPS T1 core	55	54	66	65	110
SWPS L1 coil	52	45	63	56	90
SWPS L2 coil	52	45	63	56	90
SWPS L51 coil	49	47	60	58	90
SWPS D1 body	56	50	67	61	130
SWPS D101 body	81	77	92	88	130
SWPS D102 body	82	79	93	90	130
SWPS RLY1	41	40	52	51	130
SWPS Q1 body	60	53	71	64	130
SWPS Q2 body	59	53	70	64	130
SWPS C7 body	38	36	49	47	105
SWPS PC1 body	52	47	63	58	130
SWPS PC3 body	49	45	60	56	130
SWPS Z1 body	32	31	43	42	130
SWPS TRA31 body	91	82	102	93	130
SWPS YC101 body	37	35	48	46	80
SWPS YC102 body	31	31	42	42	80
SWPS PC4 body	48	45	59	56	130
SWPS TRA41 body	79	72	90	83	130
Enclosure, Cover Top	48	47	59	58	95
Enclosure ,Cover Left Side	37	35	48	46	95
Fuser unit, Primary wire	65	64	76	75	150
Fuser unit, Secondary Wire	47	46	58	57	150
Fuser unit, Cover	50	49	61	60	--
Fuser unit, Connector	48	47	59	58	--

Supplementary information:

Temperatures measured with winding resistance method: Not used

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Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: Temperature rise measurements	P

Temperatures were measured according cl. 1.4.5. Test in condition L and M at continuous normal operation as for power input measurements of table 1.6 resulted in highest temperature values.
<Condition> L: Printing, Single side print / ECOSYS P7040cdn and PF-5100×3
M: Printing, Single side print / ECOSYS P7040cdn and PF-5100×3
Temperatures are calculated according cl. 1.4.12.3 with regard to the maximum ambient operation temperature of 35°C (T_{ma}), as specified by the manufacturer.

test voltage(s) (V):	L: 242 V, 50 Hz		M: 264 V, 60 Hz	
t_{amb1} (°C):	L: -- M: --	t_{amb2} (°C):	L: 24 M: 25	

Temperature of part/at: (measured with thermocouples)	Measured temperature at T_{amb}		Calculated temperature at T_{ma}		Allowed T_{max} (°C)
	L (°C)	M (°C)	L (°C)	M (°C)	
SWPS T1 coil	68	69	79	79	110
SWPS T1 core	59	60	70	70	110
SWPS L1 coil	51	48	62	58	90
SWPS L2 coil	43	41	54	51	90
SWPS L3 coil	41	41	52	51	90
SWPS L51 coil	40	41	51	51	90
SWPS D1 body	52	50	63	60	130
SWPS D101 body	81	82	92	92	130
SWPS D102 body	77	77	88	87	130
SWPS RLY1	38	38	49	48	130
SWPS Q1 body	64	64	75	74	130
SWPS Q2 body	66	66	77	76	130
SWPS C7 body	42	42	53	52	105
SWPS PC1 body	43	43	54	53	130
SWPS PC3 body	41	41	52	51	130
SWPS Z1 body	30	30	41	40	130
SWPS TRA31 body	56	54	67	64	130
SWPS YC101 body	31	32	42	42	80
SWPS YC102 body	30	30	41	40	80
SWPS PC4 body	41	41	52	51	130
SWPS TRA41 body	50	49	61	59	130

Supplementary information:

Temperatures measured with winding resistance method: Not used

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Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: Temperature rise measurements				P
Temperatures were measured according cl. 1.4.5. Test in condition N at continuous normal operation as for power input measurements of table 1.6 resulted in highest temperature values. <Condition> N: Printing, Single side print / ECOSYS P7040cdn and PF-5100×3 Temperatures are calculated according cl. 1.4.12.3 with regard to the maximum ambient operation temperature of 35°C (T_{ma}), as specified by the manufacturer.					
test voltage(s) (V):	N: 198 V, 50 Hz				
t_{amb1} (°C):	N: --	t_{amb2} (°C):		N: 24	

Temperature of part/at: (measured with thermocouples)	Measured temperature at T_{amb}		Calculated temperature at T_{ma}		Allowed T_{max} (°C)
	N (°C)	--	N (°C)	--	
SWPS T1 coil	67		78		110
SWPS T1 core	59		70		110
SWPS L1 coil	59		70		90
SWPS L2 coil	49		60		90
SWPS L3 coil	45		56		90
SWPS L51 coil	41		52		90
SWPS D1 body	57		68		130
SWPS D101 body	83		94		130
SWPS D102 body	78		89		130
SWPS RLY1	38		49		130
SWPS Q1 body	72		83		130
SWPS Q2 body	74		85		130
SWPS C7 body	45		56		105
SWPS PC1 body	46		57		130
SWPS PC3 body	44		55		130
SWPS Z1 body	30		41		130
SWPS TRA31 body	59		70		130
SWPS YC101 body	32		43		80
SWPS YC102 body	30		41		80
SWPS PC4 body	42		53		130
SWPS TRA41 body	53		64		130
High Voltage PWB, Main B451 coil	38		49		90
High Voltage PWB, Main B961 coil	32		43		90
High Voltage PWB, Main B401 coil	31		42		90
High Voltage PWB, Main B51 coil	43		54		90
High Voltage PWB, Transfer B101 coil	37		48		90
High Voltage PWB, Transfer B501 coil	35		46		90
High Voltage PWB, Transfer B51 coil	39		50		90
Container Fan *1)	30		41		100
LVU Fan *1)	33		44		100
LSU Fan KM *1)	31		42		100
LSU Fan CY *1)	25		36		100
Exit Fan *1)	54		65		100
Image Fan *1)	41		52		100
LSU Cleaning Motor *1)	25		36		100
Lift Motor *1)	26		37		100
Toner Motor K *1)	32		43		100

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Clause	Requirement + Test	Result - Remark	Verdict

Temperature of part/at: (measured with thermocouples)	Measured temperature at T_{amb}		Calculated temperature at T_{ma}		Allowed T_{max} (°C)
	N (°C)	--	N (°C)	--	
Toner Motor M *1)	34		45		100
Toner Motor C *1)	34		45		100
Toner Motor Y *1)	35		46		100
DU Motor *1)	57		68		100
Feed/Back DLP Motor *1)	43		54		100
Image Motor *1)	52		63		100
Fuser Motor *1)	79		90		100
Colour DLP Motor *1)	50		61		100
Drum Motor 1(back) *1)	46		57		100
Drum Motor 2(front) *1)	54		65		100
Polygon Motor KM *1)	35		45		100
Resist Clutch *1)	69		80		90
Feed Clutch *1)	32		43		90
MPF Clutch *1)	30		41		90
Middle Clutch *1)	65		76		90
DLP Clutch *1)	69		80		90
DU Clutch *1)	29		40		90
MPF Solenoid *1)	29		40		90
Enclosure, Cover Top	46		57		95
Enclosure ,Cover Left Side	36		47		95
Fuser unit, Primary wire	56		67		150
Fuser unit, Secondary Wire	54		65		150
Fuser unit, Cover	50		61		--
Fuser unit, Connector	49		60		--
Supplementary information:					
Temperatures measured with winding resistance method: Not used *1)… Measurements of secondary parts were conducted on model ECOSYS P7040cdn which is the quickest printing speed.					

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Clause	Requirement + Test	Result - Remark	Verdict

4.5	TABLE: Temperature rise measurements				P
Temperatures were measured according cl. 1.4.5. Test in condition O and P at continuous normal operation as for power input measurements of table 1.6 resulted in highest temperature values. <Condition> O: Printing, Single side print from MPF / ECOSYS P7040cdn P: Printing, Duplex side print / ECOSYS P7040cdn Temperatures are calculated according cl. 1.4.12.3 with regard to the maximum ambient operation temperature of 35°C (T_{ma}), as specified by the manufacturer.					
test voltage(s) (V):	O: 230 V, 50 Hz		P: 230 V, 50 Hz		
t_{amb1} (°C):	O: -- P: --	t_{amb2} (°C):		O: 23 P: 24	
Temperature of part/at: (measured with thermocouples)	Measured temperature at T_{amb}		Calculated temperature at T_{ma}		Allowed T_{max} (°C)
	O (°C)	P (°C)	O (°C)	P (°C)	
MPF Clutch	59	--	71	--	90
MPF Solenoid	41	--	53	--	90
PF Feed Motor	--	45	--	56	100
PF Lift Motor	--	32	--	43	100
PF Clutch 1 (Transfer)	--	70	--	81	90
PF Clutch 2 (Feed)	--	74	--	85	90
Supplementary information:					
Temperatures measured with winding resistance method: Not used					

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Clause	Requirement + Test	Result - Remark	Verdict

4.5.5	TABLE: Ball pressure test of thermoplastic parts		P
	Allowed impression diameter (mm) .....:	≤ 2 mm	—
Part		Test temperature (°C)	Impression diameter (mm)
SWPS YC101 /Nylon		125	1.3
SWPS YC102 /Nylon		125	1.3
SWPS Inductor BOBBIN:L1,L2 for 220-240V /PBT		125	1.2
SWPS Inductor BOBBIN:L1,L2 for 110 and 120V /PBT		125	1.2
SWPS Inductor BOBBIN:L3 for 220-240V /PET		125	1.4
SWPS Inductor Base:L51 for 220-240V /PET		125	1.4
Fuser Unit Heater Connector Plug /Nylon		125	1.5
Connector Receptacle for Fuser Heater /Nylon		125	1.5
Supplementary information:			
--			

4.7	TABLE: Resistance to fire				P
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
--	--	--	--	--	--
Supplementary information:					
(see appended table 1.5.1)					

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Clause	Requirement + Test	Result - Remark	Verdict

5.1	TABLE: touch current measurement						P
	Test voltage (V) ..... :		(see below)				—
Measurement location (Terminal A connected to...)	Polarity (normal) [mA]		Polarity (reverse) [mA]		Limit (mA)	Comments	
	Switch: ON	Switch: OFF	Switch: ON	Switch: OFF			
Earth terminal ("e" = open)	0.33	0.66	0.33	0.02	3.5	AC 132V, 60Hz	
LAN Connector ("e" = close)	0	0	0	0	0.25	AC 132V, 60Hz	
FAX PWB TNV Connector ("e" = close)	0	0	0	0	0.25	AC 132V, 60Hz	
Earth terminal ("e" = open)	0.42	0.84	0.42	0.02	3.5	AC 264V, 60Hz	
LAN Connector ("e" = close)	0	0	0	0	0.25	AC 264V, 60Hz	
FAX PWB TNV Connector ("e" = close)	0	0	0	0	0.25	AC 264V, 60Hz	
Supplementary information:							
--							

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Clause	Requirement + Test	Result - Remark	Verdict

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Functional:				
--		--	--	--
Basic/supplementary:				
ECOSYS P6130cdn for 220-240V (Primary – Earth)		AC	2087	No
ECOSYS P6035cdn for 220-240V (Primary – Earth)		AC	2087	No
ECOSYS P7040cdn for 220-240V (Primary – Earth)		AC	2087	No
ECOSYS M6030cdn for 220-240V (Primary – Earth)		AC	2087	No
ECOSYS M6530cdn for 220-240V (Primary – Earth)		AC	2087	No
ECOSYS M6035cidn for 220-240V (Primary – Earth)		AC	2087	No
ECOSYS M6535cidn for 220-240V (Primary – Earth)		AC	2087	No
ECOSYS P6130cdn for 110 and 120V (Primary – Earth)		AC	1500	No
ECOSYS P6035cdn for 110 and 120V (Primary – Earth)		AC	1500	No
ECOSYS P7040cdn for 110 and 120V (Primary – Earth)		AC	1500	No
ECOSYS M6030cdn for 110 and 120V (Primary – Earth)		AC	1500	No
ECOSYS M6530cdn for 110 and 120V (Primary – Earth)		AC	1500	No
ECOSYS M6035cidn for 110 and 120V (Primary – Earth)		AC	1500	No
ECOSYS M6535cidn for 110 and 120V (Primary – Earth)		AC	1500	No
Switching Power Supply Unit:MPW3162, (primary - Earth)		AC	2087	No
Switching Power Supply Unit:MPW3162L, (primary - Earth)		AC	2087	No
Switching Power Supply Unit:MPW3161, (primary - Earth)		AC	1500	No
Switching Power Supply Unit:MPW3161L, (primary - Earth)		AC	1500	No

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Clause	Requirement + Test	Result - Remark	Verdict

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests		P
Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Transformer T1 on SWPS MPW3162 and MPW3162L (Primary – Core)	AC	2087	No
Transformer T1 on SWPS MPW3162 and MPW3162L (Secondary – Core)	AC	2087	No
Transformer T1 on SWPS MPW3161 and MPW3161L (Primary – Core)	AC	1500	No
Transformer T1 on SWPS MPW3161 and MPW3161L (Secondary – Core)	AC	1500	No
Optical Isolator (PC10,PC11) on FAX PWB (TNV – secondary) Cosmo Electronics Corporation, Type: K3010	AC	3000	No
Optical Isolator (PC10,PC11), Alternate on FAX PWB (TNV – secondary) Toshiba Corp., Type: TLP620, TLP627, TLP621	AC	3000	No
Optical Isolator (PC10,PC11), Alternate on FAX PWB (TNV – secondary) Toshiba Corp., Type: TLP320 or TLP629	AC	3000	No

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Clause	Requirement + Test	Result - Remark	Verdict

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			P
Test voltage applied between:		Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Reinforced:				
ECOSYS P6130cdn for 220-240V (Primary – Secondary)		AC	3000	No
ECOSYS P6035cdn for 220-240V (Primary – Secondary)		AC	3000	No
ECOSYS P7040cdn for 220-240V (Primary – Secondary)		AC	3000	No
ECOSYS M6030cdn for 220-240V (Primary – Secondary)		AC	3000	No
ECOSYS M6530cdn for 220-240V (Primary – Secondary)		AC	3000	No
ECOSYS M6035cidn for 220-240V (Primary – Secondary)		AC	3000	No
ECOSYS M6535cidn for 220-240V (Primary – Secondary)		AC	3000	No
ECOSYS P6130cdn for 110 and 120V (Primary – Secondary)		AC	3000	No
ECOSYS P6035cdn for 110 and 120V (Primary – Secondary)		AC	3000	No
ECOSYS P7040cdn for 110 and 120V (Primary – Secondary)		AC	3000	No
ECOSYS M6530cdn for 110 and 120V (Primary – Secondary)		AC	3000	No
ECOSYS M6535cidn for 110 and 120V (Primary – Secondary)		AC	3000	No
Switching Power Supply Unit:MPW3162, (Primary – Secondary)		AC	3000	No
Switching Power Supply Unit:MPW3162L, (Primary – Secondary)		AC	3000	No
Switching Power Supply Unit:MPW3161, (Primary – Secondary)		AC	3000	No
Switching Power Supply Unit:MPW3161L, (Primary – Secondary)		AC	3000	No
Transformer T1 on SWPS MPW3162 and MPW3162L (Primary – Secondary)		AC	3000	No
Transformer T1 on SWPS MPW3161 and MPW3161L (Primary – Secondary)		AC	3000	No
Photo Coupler (PC1, PC3, PC5) on SWPS MPW3162 and MPW3162L and MPW3161 and MPW3161L		AC	3000	No
Photo Coupler (PC4) on SWPS MPW3162 and MPW3161		AC	3000	No
Insulation Tape of Transformer T1 on SWPS (2 layer)		AC	3000	No
Supplementary information:				
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Clause	Requirement + Test	Result - Remark	Verdict

5.3	**TABLE: Fault condition tests**		P
	Ambient temperature (°C) ..... :	24 if not stated in each Observation	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Switching Power Supply Unit, Model MPW3162 T1	24V output overload with Fan	240V, 50Hz	5.0h	F1	5.0	All Output shutdown after 11.5A. Max temp. of T1: 119°C No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162 T1	24V output overload without Fan	240V, 50Hz	7.0h	F1	5.0	All Output shutdown after 8.0A. Max temp. of T1: 130°C No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 T1	24V output overload with Fan	120V, 60Hz	5.0h	F1	6.3	All Output shutdown after 12.5A. Max temp. of T1: 124°C No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 T1	24V output overload without Fan	120V, 60Hz	7.5h	F1	6.3	All Output shutdown after 9.5A. Max temp. of T1: 138°C No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 T1	24V output overload with Fan	110V, 60Hz	5.0h	--	--	All Output shutdown after 13.0A. Max temp. of T1: 142°C No hazards HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 T1	24V output overload without Fan	110V, 60Hz	5.5h	--	--	All Output shutdown after 9.5A. Max temp. of T1: 135°C No hazards HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162 IC1 VCC - GND	short	240V, 50Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162 IC1 VH	Open	240V, 50Hz	10 min	--	--	Operating normally. No hazards. HV test: 3000Vac passed.

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Clause	Requirement + Test	Result - Remark	Verdict

5.3	**TABLE: Fault condition tests**		P
	Ambient temperature (°C) ..... :	24 if not stated in each Observation	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Switching Power Supply Unit, Model MPW3162 IC1 VCC – FB	short	240V, 50Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162 IC1 VH – FB	short	240V, 50Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162 Q2 D-S	short	240V, 50Hz	10 min	F1	5A	Output shutdown immediately. F1 was opened. D7 was shorted. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162 C7	Open	240V, 50Hz	10 min	F1	5A	Output shutdown immediately. F1 opened. Q1, D1 and D7 were shorted. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162 D6	short	240V, 50Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162 C106	short	240V, 50Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162 R11	open	240V, 50Hz	10 min	F1	5A	Output shutdown immediately. F1 was opened. Q2 and D7 were shorted. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162L IC1 VCC – GND	short	240V, 50Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.

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Clause	Requirement + Test	Result - Remark	Verdict

5.3	**TABLE: Fault condition tests**		P
	Ambient temperature (°C) ..... :	24 if not stated in each Observation	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Switching Power Supply Unit, Model MPW3162L IC1 VH	Open	240V, 50Hz	10 min	--	--	Operating normally. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162L IC1 VCC – FB	short	240V, 50Hz	10 min	--	--	Operating normally. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162L IC1 VH – FB	short	240V, 50Hz	10 min	--	--	Operating normally. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162L Q2 D-S	short	240V, 50Hz	10 min	F1	5A	Output shutdown immediately. F1 was opened. D7 was shorted. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162L C7	Open	240V, 50Hz	10 min	F1	5A	Output shutdown immediately. F1 opened. Q1, D1 and D7 were shorted. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162L D6	short	240V, 50Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162L C106	short	240V, 50Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3162L R11	open	240V, 50Hz	10 min	F1	5A	Output shutdown immediately. F1 was opened. Q2 and D7 were shorted. No hazards. HV test: 3000Vac passed.

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Clause	Requirement + Test	Result - Remark	Verdict

5.3	**TABLE: Fault condition tests**		P
	Ambient temperature (°C) ..... :	24 if not stated in each Observation	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Switching Power Supply Unit, Model MPW3161 IC1 VCC – GND	short	120V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 IC1 VH	Open	120V, 60Hz	10 min	--	--	Operating normally. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 IC1 VCC – FB	short	120V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 IC1 VH – FB	short	120V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 Q2 D-S	short	120V, 60Hz	10 min	F1	6.3A	Output shutdown immediately. F1 was opened. D7 was shorted. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 C7	Open	120V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 D6	short	120V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 C106	short	120V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.

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Clause	Requirement + Test	Result - Remark	Verdict

5.3	**TABLE: Fault condition tests**		P
	Ambient temperature (°C) ..... :	24 if not stated in each Observation	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Switching Power Supply Unit, Model MPW3161 R11	open	120V, 60Hz	10 min	F1	6.3A	Output shutdown immediately. F1 was opened. Q2 and D7 were shorted. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161L IC1 VCC – GND	short	120V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161L IC1 VH	Open	120V, 60Hz	10 min	--	--	Operating normally. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161L IC1 VCC – FB	short	120V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161L IC1 VH – FB	short	120V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161L Q2 D-S	short	120V, 60Hz	10 min	F1	6.3A	Output shutdown immediately. F1 was opened. D7 was shorted. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161L C7	Open	120V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161L D6	short	120V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.

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Clause	Requirement + Test	Result - Remark	Verdict

5.3	**TABLE: Fault condition tests**		P
	Ambient temperature (°C) ..... :	24 if not stated in each Observation	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Switching Power Supply Unit, Model MPW3161L C106	short	120V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161L R11	open	120V, 60Hz	10 min	F1	6.3A	Output shutdown immediately. F1 was opened. Q2 and D7 were shorted. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 IC1 VCC – GND	short	110V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 IC1 VH	Open	110V, 60Hz	10 min	--	--	Operating normally. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 IC1 VCC – FB	short	110V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 IC1 VH – FB	short	110V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 Q2 D-S	short	110V, 60Hz	10 min	F1	6.3A	Output shutdown immediately. F1 was opened. D7 was shorted. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 C7	Open	110V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.

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Clause	Requirement + Test	Result - Remark	Verdict

5.3	**TABLE: Fault condition tests**		P
	Ambient temperature (°C) ..... :	24 if not stated in each Observation	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Switching Power Supply Unit, Model MPW3161 D6	short	110V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 C106	short	110V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161 R11	open	110V, 60Hz	10 min	F1	6.3A	Output shutdown immediately. F1 was opened. Q2 and D7 were shorted. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161L IC1 VCC – GND	short	110V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161L IC1 VH	Open	110V, 60Hz	10 min	--	--	Operating normally. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161L Q2 D-S	short	110V, 60Hz	10 min	F1	6.3A	Output shutdown immediately. F1 was opened. D7 was shorted. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161L C7	Open	110V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161L D6	short	110V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.

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Clause	Requirement + Test	Result - Remark	Verdict

5.3	**TABLE: Fault condition tests**		P
	Ambient temperature (°C) ..... :	24 if not stated in each Observation	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Switching Power Supply Unit, Model MPW3161L C106	short	110V, 60Hz	10 min	--	--	Output shutdown immediately. No hazards. HV test: 3000Vac passed.
Switching Power Supply Unit, Model MPW3161L R11	open	110V, 60Hz	10 min	F1	6.3A	Output shutdown immediately. F1 was opened. Q2 and D7 were shorted. No hazards. HV test: 3000Vac passed.
High Voltage PWB, Main Model MPH7498 Q151 C-E	Short	24Vdc	10 min	P1	3A	All output shutdown immediately. P1 was opened. No hazards.
High Voltage PWB, Main Model MPH7498 D153	Open	24Vdc	10 min	P1	3A	All output shutdown immediately. P1 was opened. B151 was broken. No hazards.
High Voltage PWB, Main Model MPH7498 Q661 C-E	Short	24Vdc	10 min	P1	3A	All output shutdown immediately. P1 was opened. Q662 was broken. No hazards.
High Voltage PWB, Main Model MPH7498 R651	Short	24Vdc	10 min	--	--	Operating normally. No hazards.
High Voltage PWB, Main Model MPH7498 B101 Pin 1 - 6	Short	24Vdc	10 min	P1	3A	All output shutdown immediately. P1 was opened. No hazards.
High Voltage PWB, Main Model MPH7498 Q501 C-E	Short	24Vdc	10 min	--	--	All output shutdown immediately. P1 was opened. No hazards.

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5.3	**TABLE: Fault condition tests**		P
	Ambient temperature (°C) ..... :	24 if not stated in each Observation	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
High Voltage PWB, Main Model MPH7498 D507	Short	24Vdc	10 min	--	--	Operating normally. No hazards.
High Voltage PWB, Main Model MPH7498 R625	Short	24Vdc	10 min	--	--	Operating normally. No hazards.
High Voltage PWB, Main Model MPH7498 C19	Short	24Vdc	10 min	P1	3A	All output shutdown immediately. P1 was opened. No hazards.
High Voltage PWB, Main Model MPH7499 Q104 C-E	Short	24Vdc	10 min	P1	3A	All output shutdown immediately. P1 was opened. No hazards.
High Voltage PWB, Main Model MPH7499 D102	Short	24Vdc	10 min	--	--	Increased Main output. No hazards.
High Voltage PWB, Main Model MPH7499 D154	Short	24Vdc	10 min	--	--	Main output shutdown immediately. No hazards.
High Voltage PWB, Main Model MPH7499 C11	Open	24Vdc	10 min	P1	3A	All output shutdown immediately. P1 was opened. No hazards.
High Voltage PWB, Main Model MPH7499 D555	Open	24Vdc	10 min	--	--	Increased all output. No hazards.

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5.3	**TABLE: Fault condition tests**		P
	Ambient temperature (°C) ..... :	24 if not stated in each Observation	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
High Voltage PWB, Main Model MPH7499 C21	Short	24Vdc	10 min	P1	3A	All output shutdown immediately. P1 was opened. No hazards.
High Voltage PWB, Transfer Model MPH3343 D505	Short	24Vdc	10 min	--	--	Output CL shutdown immediately. No hazards.
High Voltage PWB, Transfer Model MPH3343 R515	Short	24Vdc	10 min	--	--	Operated normally. No hazards.
High Voltage PWB, Transfer Model MPH3343 Q51 C-E	Short	24Vdc	10 min	F1	1.6A	All output shutdown immediately. No hazards.
High Voltage PWB, Transfer Model MPH3343 C53	Short	24Vdc	10 min	--	--	Output T1 shutdown immediately. No hazards.
DU Motor Model PM42S-F48-MIN9	CE	24Vdc	10 min	--	--	Max Temp.: 116°C. Motor winding was opened. Ambient temp.: 27°C No hazards.
Fuser Motor Model KFL42LCB661A	CE	24Vdc	10 min	--	--	Max Temp.: 84°C. Motor winding was opened. Ambient temp.: 23°C No hazards.
Scanner Motor Model PM42S-096-MIM6	CE	24Vdc	10 min	--	--	Max Temp.: 155°C. Motor winding was opened. Ambient temp.: 23°C No hazards.

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5.3	**TABLE: Fault condition tests**		P
	Ambient temperature (°C) ..... :	24 if not stated in each Observation	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Feed Motor (Document Processor Unit) Model KV4239-T3B006	CE	24Vdc	10 min	--	--	Max Temp.: 44°C. Motor winding was opened. Ambient temp.: 23°C No hazards.
Junction Motor (Document Processor Unit) Model PM35L-048-MIM2	CE	24Vdc	10 min	--	--	Max Temp.: 126°C. Motor winding was opened. Ambient temp.: 23°C No hazards.
Resist Clutch, Feed Clutch, Middle Clutch, DLP Clutch, DU Clutch, Clutches (PF-5100) Model TMC-3.5L-01	CE	24Vdc	7h	--	--	Temperature was stabilized. Max Temp.: 82°C. Ambient temp.: 26°C No hazards.
MPF Clutch Model MCA-50T	CE	24Vdc	7h	--	--	Temperature was stabilized. Max Temp.: 90°C. Ambient temp.: 23°C No hazards.
MPF Solenoid Model TDS-F06A-17	CE	24Vdc	7h	--	--	Max Temp.: 115°C. Ambient temp.: 26°C No hazards.
Output connector for PF Unit Pin12, 13	Overload	240V/50 Hz	1h	YF2	3.15	Overload current: 3.5A Ambient temp., 26°C No hazards.
Output connector for PF Unit Pin12, 13	Overload	120V/60 Hz	1h	YF2	3.15	Overload current: 3.5A Ambient temp., 26°C No hazards.
Output connector for PF Unit Pin12, 13	Overload	110V/60 Hz	1h	YF2	3.15	Overload current: 3.5A Ambient temp., 26°C No hazards.

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5.3	**TABLE: Fault condition tests**		P
	Ambient temperature (°C) ..... :	24 if not stated in each Observation	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Model ECOSYS M6535cidn Container Fan, LVU Fan, LSU Fan, Exit Fan, Image Fan	Stalled fan	240V/50 Hz	3.0h	--	--	Temperature stabilized. Max temp. of SWPS T1: 123°C Ambient temp.: 24°C No hazard. HV test: 3000Vac passed.
Model ECOSYS M6535cidn Container Fan, LVU Fan, LSU Fan, Exit Fan, Image Fan	Stalled fan	120V/60 Hz	3.5h	--	--	Temperature stabilized. Max temp. of SWPS T1: 116°C Ambient temp.: 25°C No hazard. HV test: 3000Vac passed.
Model ECOSYS M6535cidn Container Fan, LVU Fan, LSU Fan, Exit Fan, Image Fan	Stalled fan	110V/60 Hz	3.5H	--	--	Temperature stabilized. Max temp. of SWPS T1: 115°C Ambient temp.: 24°C No hazard. HV test: 3000Vac passed.
Model ECOSYS M6535cidn Main Heater Thermal control	Disable	240V/50 Hz	10 min	--	--	Thermal cutoff opened in 1min after disabling. No hazards. HV test: 3000Vac passed.
Model ECOSYS M6535cidn Sub Heater Thermal control	Disable	240V/50 Hz	10 min	--	--	Thermal cutoff opened in 2min after disabling. No hazards. HV test: 3000Vac passed.
Model ECOSYS M6530cdn Heater Thermal control	Disable	240V/50 Hz	10 min	--	--	Thermal cutoff opened in 1min after disabling. No hazards. HV test: 3000Vac passed.
Model ECOSYS M6535cidn Main Heater Thermal control	Disable	120V/60 Hz	10 min	--	--	Thermal cutoff opened in 1min after disabling. No hazards. HV test: 3000Vac passed.
Model ECOSYS M6535cidn Sub Heater Thermal control	Disable	120V/60 Hz	10 min	--	--	Thermal cutoff opened in 2min after disabling. No hazards. HV test: 3000Vac passed.

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5.3	TABLE: Fault condition tests		P
	Ambient temperature (°C) ..... :	24 if not stated in each Observation	—
	Power source for EUT: Manufacturer, model/type, output rating ..... :	--	—

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation
Model ECOSYS M6530cdn Heater Thermal control	Disable	120V/60 Hz	10 min	--	--	Thermal cutoff opened in 1min after disabling. No hazards. HV test: 3000Vac passed.
Model ECOSYS M6535cidn Main Heater Thermal control	Disable	110V/60 Hz	10 min	--	--	Thermal cutoff opened in 1min after disabling. No hazards. HV test: 3000Vac passed.
Model ECOSYS M6535cidn Sub Heater Thermal control	Disable	110V/60 Hz	10 min	--	--	Thermal cutoff opened in 2min after disabling. No hazards. HV test: 3000Vac passed.
Model ECOSYS M6530cdn Heater Thermal control	Disable	110V/60 Hz	10 min	--	--	Thermal cutoff opened in 1min after disabling. No hazards. HV test: 3000Vac passed.
Ventilation openings closed	--	110V/ 60Hz	1.5 h	--	--	Printing. Temperature stabilized. Max. temp.: 85ºC at T1. Ambient temp.:24ºC No hazards.
Ventilation openings closed	--	120V/ 60Hz	1.5 h	--	--	Printing. Temperature stabilized. Max. temp.: 87ºC at T1. Ambient temp.:25ºC No hazards.
Ventilation openings closed	--	240V/ 50Hz	2.5 h	--	--	Printing. Temperature stabilized. Max. temp.: 78ºC at T1. Ambient temp.:25ºC No hazards.
Supplementary information:						
Sc=Short circuit, Oc=Open circuit						

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Clause	Requirement + Test	Result - Remark	Verdict

B	TABLE: MOTOR TEST UNDER ABNORMAL CONDITION		P
B.7	Locked-rotor overload test for DC motor in secondary circuits		—
B.7.3	test time(h):	7h	—

Motor type / No.	Max. Temp. (°C)	Comments
Container Fan, LVU Fan, Exit Fan for Model: ECOSYS P6035cdn, ECOSYS P7040cdn, D06R-24TH 04 (AX)	44°C	Temperature saturated. Ambient Temp. at 24°C. No hazard.
LSU Fan D08K-24TU 83 (AX)	66°C	Temperature saturated. Ambient Temp. at 24°C. No hazard.
Exit Fan for Model: ECOSYS M6030cdn, ECOSYS M6530cdn, ECOSYS M6035cidn, ECOSYS M6535cidn D07F-24SS1 09 (EX)	74°C	Temperature saturated. Ambient Temp. at 24°C. No hazard.
Image Fan D05F-24PH 20 (EX)	68°C	Temperature saturated. Ambient Temp. at 24°C. No hazard.
LSU Cleaning Motor, Lift Motor, Toner Motor, Alternate, Lift Motor for PF-5100 RC370-KT-081000	123°C	Temperature saturated. Ambient Temp. at 25°C. No hazard.
LSU Cleaning Motor, Alternate, Lift Motor, Alternate, Toner Motor RK-370CA-10800	104°C	Temperature saturated. Ambient Temp. at 23°C. No hazard.
Feed/ Black DLP Motor, Feed Motor for PF-5100 42M069F251	--	Sensing circuits provided with motor disconnected power to the motor in 0.60 sec. After starting the locked rotor. No hazard.
Image Motor, Colour DLP Motor, Drum Motor 48M069F261	--	Sensing circuits provided with motor disconnected power to the motor in 0.94 sec. After starting the locked rotor. No hazard.
Image Motor, Alternate, Colour DLP Motor, Alternate, Drum Motor, Alternate 48M069L010	--	Sensing circuits provided with motor disconnected power to the motor in 0.94 sec. After starting the locked rotor. No hazard.

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Clause	Requirement + Test	Result - Remark	Verdict

B	**TABLE: MOTOR TEST UNDER ABNORMAL CONDITION**		P
B.7	Locked-rotor overload test for DC motor in secondary circuits		—
B.7.3	test time(h):	7h	—

Motor type / No.	Max. Temp. (°C)	Comments
Polygon Motor for CY LSU MASQ6EF5RKA	--	Sensing circuits provided with motor disconnected power to the motor in 0.5 sec. After starting the locked rotor. No hazard.
Polygon Motor for KM LSU MASQ6EF5RKB	--	Sensing circuits provided with motor disconnected power to the motor in 0.5 sec. After starting the locked rotor. No hazard.
Manual Stapler, Model MS-5100 Staple Motor Type: HC283LG1020345	32°C	Temperature saturated. Ambient Temp. at 26°C. No hazard.
Supplementary information:		
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Clause	Requirement + Test	Result - Remark	Verdict

C.2	TABLE: transformers						P
Loc.	Tested insulation	Working voltage peak / V (2.10.2)	Working voltage rms / V (2.10.2)	Required electric strength (5.2)	Required clearance / mm (2.10.3)	Required creepage distance / mm (2.10.4)	Required distance thr. insul. (2.10.5)
--	--	--	--	--	--	--	--
Loc.	Tested insulation			Test voltage/ V	Measured clearance / mm	Measured creepage dist./ mm	Measured distance thr. insul. / mm; number of layers
--	--			--	--	--	--
supplementary information:							
Refer to the table 2.10.3 and 2.10.4							

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Clause	Requirement + Test	Result - Remark	Verdict

List of test equipment used:

Manegement No.	Test Instrument Name	Type	Mecanical No.	Manufacturing	Calibration Date - Last	Calibration Date - Due
G14-C089	AC Current Meter	2052-02	71BC00246	Yokogawa	2014-10-15	2015-10-14
G14-C094	Lekage current tester	228	348	Simpson	2014-06-09	2015-06-08
G14-C095	Ball Pressure tester	T-10.02	BP-001	EXCEL	2014-08-08	2015-08-07
G14-C096	High Voltage probe	P6015A	B051259	Tektronix	2014-01-14	2015-01-13
G14-C097	Portable DC Ammeters & Voltmeters	201200	85AA1194	Yokogawa	2014-06-09	2015-06-08
G14-C099	Digital Multi Meter	(Fluke) 189	89410662	FLUKE	2014-08-11	2015-08-10
G14-C101	Temperature Recorder	437124	S5F703898	Yokogawa	2014-08-08	2015-08-07
G14-C102	Temperature Recorder	437124	S5F703899	Yokogawa	2014-08-08	2015-08-07
G14-C103	Steel Ball	TB-500	G14-C103	EXCEL	2014-10-07	2015-10-06
G14-C112	Scale Lupe	Scale Lupe 10x	G14-C112	PEAK	2014-05-23	2015-05-22
G14-C113	Steel Ruler 2m	No. 102H04J	G14-C113	Shinwa	2014-05-20	2015-05-19
G14-C114	Temp. and Humidty Meter	NT3-D	50173024	Rotronic	2014-03-17	2015-03-16
G14-C117	Digital Force Gauge	Z2-500N	202869	IMADA	2014-10-08	2015-10-07
G14-C118	Stop Watch	SVAE101	756428	SEIKO S-YARD	2014-10-08	2015-10-07
G14-C122	Power Meter	253401	2534FA042	Yokogawa	2014-03-25	2015-03-24
G14-C123	Protractor	DS	---	Niigata Seiki	2014-05-22	2015-05-21
G14-C125	Dielectric Tester	TOS5051	BA002985	Kikusui	2014-08-11	2015-08-10
G14-C128	Earth Continutity Tester	TOS6210	MB005213	Kikusui	2014-01-14	2015-01-13
G14-C132	Laser Poser Meter	PD300-UV/VEGA	65574/651539	OPHIR	2014-10-09	2015-10-08
G14-D001	Digital Oscilloscope	TDS3054B	B011872	Sony Tektronix	2014-05-26	2015-05-25
TS-46	Chamber	LP-201	1040000403	TABAI ESPEC	--(*1)	--(*1)
TS-50	Humidity Chamber	PLZ 150W	30093413	Kikusui Electronics Corp.	--(*1)	--(*1)

(*1): This instrument was monitored with Instrument No. G14-C114.

ATTACHMENT	Measurement Section		
Clause	Requirement + Test	Result - Remark	Verdict

2.1.1.7	TABLE: Discharge test				P
Condition	τ calculated (s)	τ measured (s)	t u→ 0V (s)	Comments	
AC264V, 50Hz, SWPS Model: MPW3162					
Plug in off mode	--	0.084	0.140	Initial Voltage (peak) V_0 : 373 After 1sec (0.01) V	
Ready mode	--	0.072	0.148	Initial Voltage (peak) V_0 : 373 After 1sec (0.008) V	
Sleep mode(Energy Saver)	--	0.086	0.160	Initial Voltage (peak) V_0 : 373 After 1sec (0.008) V	
Sleep mode(Quick Recovery)	--	0.084	0.140	Initial Voltage (peak) V_0 : 373 After 1sec (0.008) V	
AC132V, 60Hz, SWPS Model: MPW3161					
Plug in off mode	--	0.100	0.204	Initial Voltage (peak) V_0 : 187 After 1sec (0.001) V	
Ready mode	--	0.066	0.156	Initial Voltage (peak) V_0 : 187 After 1sec (0.001) V	
Sleep mode(Energy Saver)	--	0.094	0.192	Initial Voltage (peak) V_0 : 187 After 1sec (0) V	
Sleep mode(Quick Recovery)	--	0.092	0.216	Initial Voltage (peak) V_0 : 187 After 1sec (0) V	
AC121V, 60Hz, SWPS Model: MPW3161					
Plug in off mode	--	0.90	0.194	Initial Voltage (peak) V_0 : 171 After 1sec (0.001) V	
Ready mode	--	0.068	0.156	Initial Voltage (peak) V_0 : 171 After 1sec (0.00) V	
Sleep mode(Energy Saver)	--	0.088	0.240	Initial Voltage (peak) V_0 : 171 After 1sec (0.001) V	
Sleep mode(Quick Recovery)	--	0.092	0.204	Initial Voltage (peak) V_0 : 171 After 1sec (0.00) V	
Supplementary information:					
--					

ATTACHMENT	Measurement Section		
Clause	Requirement + Test	Result - Remark	Verdict

4.6.1, 4.6.2	Table: Enclosure opening measurements	P

Location	Size (mm)	Comments
Right Cover	25.0 x 2.0 slot	Covering two areas of 54.0mm W x 50.0mm H
	18.4 x 2.0 slot	Covering an area of 18.4mm W x 46.0mm H
Left Cover	25.0 x 2.0 slot	Covering an area of 82.2mm W x 66.0mm H
	25.0 x 2.0 slot	Covering an area of 82.2mm W x 26.0mm H
	29.7 x 2.0 slot	Covering an area of 148.0mm W x 14.0mm H
	25.0 max x 2.0 slot	Covering an area of 53.4mm W x 102.0mm H
Left Bottom Cover	25.0 x 2.0 slot	Covering an area of 82.2mm W x 42.0mm H
Right Upper Cover for Model ECOSYS P6130cdn	29.7 x 2.0 slot	Covering an area of 96.3mm W x 14.0mm H
	29.7 x 2.0 slot	Covering an area of 29.7mm W x 14.0mm H
Right Upper Cover for Model ECOSYS P6035cdn and P7040cdn	29.7 x 2.0 slot	Covering an area of 96.3mm W x 14.0mm H
	29.7 x 2.0 slot	Covering two areas of 29.7mm W x 14.0mm H
Right Upper Cover for MFP Model	25.2 x 2.0 slot	Covering an area of 111.6mm W x 14.0mm H
Left Upper Cover	29.7 max x 2.0 slot	Covering an area of 63.0mm W x 34.0mm H
	29.7 x 2.0 slot	Covering an area of 29.7mm W x 34.0mm H
Top Rear Cover for Model ECOSYS P6130cdn and MFP Model	58.5 x 2.0 slot	Covering two areas of 58.5mm W x 2.0mm H
	39.25 x 2.0 slot	Covering two areas of 39.25mm W x 2.0mm H
Top Rear Cover for Model ECOSYS P6035cdn and P7040cdn	28.7 x 2.0 slot	Covering an area of 58.6mm W x 6.0mm H
	27.2 x 2.0 slot	Covering two areas of 27.2mm W x 50.0mm H
	28.7 x 2.0 slot	Covering an area of 178.2mm W x 50.0mm H
ISU Left Cover for MFP Model	29.0 x 2.0 slot	Covering an area of 29.0mm W x 18.0mm H
	28.7 x 2.0 slot	Covering an area of 30.5mm W x 18.0mm H
	28.7 x 2.0 slot	Covering an area of 16.5mm W x 18.0mm H
Rear Cover for DP Unit	24.0 max x 3.5 slot	Covering an area of 82.0mm W x 24.0mm H
	16.5 max x 3.8 slot	Covering an area of 82.0mm W x 16.5mm H

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1
EUROPEAN GROUP DIFFERENCES AND NATIONAL DIFFERENCES
Information technology equipment – Safety –
Part 1: General requirements

Differences according to.....:	EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013
Attachment Form No.....:	EU_GD_IEC60950_1E
Attachment Originator .....:	SGS Fimko Ltd
Master Attachment .....:	Date 2013-09

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EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013 – CENELEC COMMON MODIFICATIONS

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	Clauses, subclauses, notes, tables and figures which are additional to those in IEC60950-1 and it´s amendmets are prefixed “Z”		P
Contents (A2:2013)	Add the following annexes: Annex ZA (normative) — Normative references to international publications with their corresponding European publications Annex ZB (normative) — Special national conditions Annex ZD (informative) — IEC and CENELEC code designations for flexible cords		P
General	Delete all the “country” notes in the reference document (IEC 60950-1:2005) according to the following list: 1.4.8 Note 2; 1.5.1 Note 2 & 3; 1.5.7.1 Note 1.5.8 Note 2; 1.5.9.4 Note; 1.7.2.1 Note 4, 5 & 6 2.2.3 Note; 2.2.4 Note; 2.3.2 Note 2.3.2.1 Note 2; 2.3.4 Note 2; 2.6.3.3 Note 2 & 3 2.7.1 Note; 2.10.3.2 Note 2; 2.10.5.13 Note 3 3.2.1.1 Note; 3.2.4 Note 3; 2.5.1 Note 2 4.3.6 Note 1 & 2; 4.7 Note 4; 4.7.2.2 Note 4.7.3.1 Note 2; 5.1.7.1 Note 3 & 4; 5.3.7 Note 1 6 Note 2 & 5; 6.1.2.1 Note 2; 6.1.2.2 Note 6.2.2 Note; 6.2.2.1 Note 2; 6.2.2.2 Note 7.1 Note 3; 7.2 Note; 7.3 Note 1 & 2 G.2.1 Note 2; Annex H Note 2		P
General (A1:2010)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A1:2010) according to the following list: 1.5.7.1 Note; 6.1.2.1 Note 2 6.2.2.1 Note 2; EE.3 Note		P

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
General (A2:2013)	Delete all the “country” notes in the reference document (IEC 60950-1:2005/A2:2013) according to the following list: 2.7.1 Note * 2.10.3.1 Note 2 6.2.2. Note * Note of secretary: Text of Common Modification remains unchanged.		P
1.1.1 (A1:2010)	**Replace** the text of NOTE 3 by the following. NOTE 3 The requirements of EN 60065 may also be used to meet safety requirements for multimedia equipment. See IEC Guide 112, Guide on the safety of multimedia equipment. For television sets EN 60065 applies.		N/A
1.3.Z1	Add the following subclause: 1.3.Z1 Exposure to excessive sound pressure The apparatus shall be so designed and constructed as to present no danger when used for its intended purpose, either in normal operating conditions or under fault conditions, particularly providing protection against exposure to excessive sound pressures from headphones or earphones. NOTE Z1 A new method of measurement is described in EN 50332-1, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 1: General method for “one package equipment”, and in EN 50332-2, Sound system equipment: Headphones and earphones associated with portable audio equipment - Maximum sound pressure level measurement methodology and limit considerations - Part 2: Guidelines to associate sets with headphones coming from different manufacturers.		N/A
(A12:2011)	In EN 60950-1:2006/A12:2011 Delete the addition of 1.3.Z1 / EN 60950-1:2006 Delete the definition 1.2.3.Z1 / EN 60950-1:2006 /A1:2010	Deleted.	N/A
1.5.1 (Added info*)	Add the following NOTE: NOTE Z1 The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC. New Directive 2011/65/11 *		P
1.7.2.1 (A1:2010)	In addition, for a PORTABLE SOUND SYSTEM, the instructions shall include a warning that excessive sound pressure from earphones and headphones can cause hearing loss.		N/A
1.7.2.1 (A12.2011)	In EN 60950-1:2006/A12:2011 Delete NOTE Z1 and the addition for Portable Sound System. Add the following clause and annex to the existing standard and amendments.	Deleted.	N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx Protection against excessive sound pressure from personal music players		
	Zx.1 General This sub-clause specifies requirements for protection against excessive sound pressure from personal music players that are closely coupled to the ear. It also specifies requirements for earphones and headphones intended for use with personal music players. A personal music player is a portable equipment for personal use, that: - is designed to allow the user to listen to recorded or broadcast sound or video; and - primarily uses headphones or earphones that can be worn in or on or around the ears; and - allows the user to walk around while in use. NOTE 1 Examples are hand-held or body-worn portable CD players, MP3 audio players, mobile phones with MP3 type features, PDA's or similar equipment. A personal music player and earphones or headphones intended to be used with personal music players shall comply with the requirements of this sub-clause. The requirements in this sub-clause are valid for music or video mode only. The requirements do not apply: - while the personal music player is connected to an external amplifier; or - while the headphones or earphones are not used. NOTE 2 An external amplifier is an amplifier which is not part of the personal music player or the listening device, but which is intended to play the music as a standalone music player. The requirements do not apply to: - hearing aid equipment and professional equipment; NOTE 3 Professional equipment is equipment sold through special sales channels. All products sold through normal electronics stores are considered not to be professional equipment.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	- analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before the end of 2015. NOTE 4 This exemption has been allowed because this technology is falling out of use and it is expected that within a few years it will no longer exist. This exemption will not be extended to other technologies. For equipment which is clearly designed or intended for use by young children, the limits of EN 71-1 apply.		
	Zx.2 Equipment requirements No safety provision is required for equipment that complies with the following: - equipment provided as a package (personal music player with its listening device), where the acoustic output $L_{Aeq,T}$ is ≤ 85 dBA measured while playing the fixed "programme simulation noise" as described in EN 50332-1; and a personal music player provided with an analogue electrical output socket for a listening device, where the electrical output is ≤ 27 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" as described in EN 50332-1. NOTE 1 Wherever the term acoustic output is used in this clause, the 30 s A-weighted equivalent sound pressure level $L_{Aeq,T}$ is meant. See also Zx.5 and Annex Zx. All other equipment shall: a) protect the user from unintentional acoustic outputs exceeding those mentioned above; and b) have a standard acoustic output level not exceeding those mentioned above, and automatically return to an output level not exceeding those mentioned above when the power is switched off; and		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	c) provide a means to actively inform the user of the increased sound pressure when the equipment is operated with an acoustic output exceeding those mentioned above. Any means used shall be acknowledged by the user before activating a mode of operation which allows for an acoustic output exceeding those mentioned above. The acknowledgement does not need to be repeated more than once every 20 h of cumulative listening time; and NOTE 2 Examples of means include visual or audible signals. Action from the user is always required. NOTE 3 The 20 h listening time is the accumulative listening time, independent how often and how long the personal music player has been switched off. d) have a warning as specified in Zx.3; and e) not exceed the following: 1) equipment provided as a package (player with Its listening device), the acoustic output shall be ≤ 100 dBA measured while playing the fixed "programme simulation noise" described in EN 50332-1; and 2) a personal music player provided with an analogue electrical output socket for a listening device, the electrical output shall be ≤ 150 mV measured as described in EN 50332-2, while playing the fixed "programme simulation noise" described in EN 50332-1. For music where the average sound pressure (long term $L_{Aeq,T}$) measured over the duration of the song is lower than the average produced by the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. In this case T becomes the duration of the song. NOTE 4 Classical music typically has an average sound pressure (long term $L_{Aeq,T}$) which is much lower than the average programme simulation noise. Therefore, if the player is capable to analyse the song and compare it with the programme simulation noise, the warning does not need to be given as long as the average sound pressure of the song is below the basic limit of 85 dBA. For example, if the player is set with the programme simulation noise to 85 dBA, but the average music level of the song is only 65 dBA, there is no need to give a warning or ask an acknowledgement as long as the average sound level of the song is not above the basic limit of 85 dBA.		

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.3 Warning The warning shall be placed on the equipment, or on the packaging, or in the instruction manual and shall consist of the following: - the symbol of Figure 1 with a minimum height of 5 mm; and - the following wording, or similar: “To prevent possible hearing damage, do not listen at high volume levels for long periods.” **Figure 1 – Warning label (IEC 60417-6044)** Alternatively, the entire warning may be given through the equipment display during use, when the user is asked to acknowledge activation of the higher level.		N/A
	Zx.4 Requirements for listening devices (headphones and earphones)		N/A
	Zx.4.1 Wired listening devices with analogue input With 94 dBA sound pressure output $L_{Aeq,T}$, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
	Zx.4.2 Wired listening devices with digital input With any playing device playing the fixed "programme simulation noise" described in EN 50332-1 (and respecting the digital interface standards, where a digital interface standard exists that specifies the equivalent acoustic level), the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.		N/A
	Zx.4.3 Wireless listening devices In wireless mode: - with any playing and transmitting device playing the fixed programme simulation noise described in EN 50332-1; and - respecting the wireless transmission standards, where an air interface standard exists that specifies the equivalent acoustic level; and - with volume and sound settings in the listening device (for example built-in volume level control, additional sound feature like equalization, etc.) set to the combination of positions that maximize the measured acoustic output for the abovementioned programme simulation noise, the acoustic output $L_{Aeq,T}$ of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		N/A
	Zx.5 Measurement methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		P
2.7.2	This subclause has been declared 'void'.		P
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.		N/A
3.2.5.1	Replace "60245 IEC 53" by "H05 RR-F"; "60227 IEC 52" by "H03 VV-F or H03 VVH2-F"; "60227 IEC 53" by "H05 VV-F or H05 VVH2-F2". In Table 3B, replace the first four lines by the following: Up to and including 6 | 0,75[a)] | Over 6 up to and including 10 | (0,75)[b)] 1,0 | Over 10 up to and including 16 | (1,0)[c)] 1,5 | In the conditions applicable to Table 3B delete the words "in some countries" in condition [a)]. In NOTE 1, applicable to Table 3B, delete the second sentence.		P
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD		P

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.3.4	In Table 3D, delete the fourth line: conductor sizes for 10 to 13 A, and replace with the following: Over 10 up to and including 16 | 1,5 to 2,5 | 1,5 to 4 | Delete the fifth line: conductor sizes for 13 to 16 A		N/A
4.3.13.6 (A1:2010)	Replace the existing NOTE by the following: NOTE Z1 Attention is drawn to: 1999/519/EC: Council Recommendation on the limitation of exposure of the general public to electromagnetic fields 0 Hz to 300 GHz, and 2006/25/EC: Directive on the minimum health and safety requirements regarding the exposure of workers to risks arising from physical agents (artifical optical radiation).		N/A
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
Annex H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE These values appear in Directive 96/29/Euratom. Delete NOTE 2.		N/A
Bibliography	Additional EN standards.		—

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

ZA	**NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS**	—

ZB ANNEX (normative) SPECIAL NATIONAL CONDITIONS (EN)			
Clause	Requirement + Test	Result - Remark	Verdict
1.2.4.1	In **Denmark**, certain types of Class I appliances (see 3.2.1.1) may be provided with a plug not establishing earthing conditions when inserted into Danish socket-outlets.		N/A
1.2.13.14 (A11:2009)	In **Norway** and **Sweden**, for requirements see 1.7.2.1 and 7.3 of this annex.		N/A
1.5.7.1 (A11:2009)	In **Finland, Norway** and **Sweden**, resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		N/A
1.5.8	In **Norway**, due to the IT power system used (see annex V, Figure V.7), capacitors are required to be rated for the applicable line-to-line voltage (230 V).		P
1.5.9.4	In **Finland**, **Norway** and **Sweden**, the third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	In **Finland**, **Norway** and **Sweden**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in the applicable countries shall be as follows: In **Finland**: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan" In **Norway**: “Apparatet må tilkoples jordet stikkontakt” In **Sweden**: “Apparaten skall anslutas till jordat uttag”		P

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1 (A11:2009)	In **Norway** and **Sweden**, the screen of the cable distribution system is normally not earthed at the entrance of the building and there is normally no equipotential bonding system within the building. Therefore the protective earthing of the building installation need to be isolated from the screen of a cable distribution system. It is however accepted to provide the insulation external to the equipment by an adapter or an interconnection cable with galvanic isolator, which may be provided by e.g. a retailer. The user manual shall then have the following or similar information in Norwegian and Swedish language respectively, depending on in what country the equipment is intended to be used in: “Equipment connected to the protective earthing of the building installation through the mains connection or through other equipment with a connection to protective earthing – and to a cable distribution system using coaxial cable, may in some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11).” NOTE In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): “Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr – og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel- TV nettet.” Translation to Swedish: ”Utrustning som är kopplad till skyddsjord via jordat vägguttag och/eller via annan utrustning och samtidigt är kopplad till kabel-TV nät kan i vissa fall medföra risk för brand. För att undvika detta skall vid anslutning av utrustningen till kabel-TV nät galvanisk isolator finnas mellan utrustningen och kabel-TV nätet.”		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2.1 (A2:2013)	In **Denmark**, CLASS I PLUGGABLE EQUIPMENT TYPE A intended for connection to other equipment or a network shall, if safety relies on connection to protective earth or if surge suppressors are connected between the network terminals and accessible parts, have a marking stating that the equipment must be connected to an earthed mains socket-outlet. The marking text in **Denmark** shall be as follows: In **Denmark**: "Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord."		P
1.7.5 1.7.5 (A11:2009)	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the Heavy Current Regulations, Section 107-2-D1, Standard Sheet DK 1-3a, DK 1-5a or DK 1-7a, when used on Class I equipment. For STATIONARY EQUIPMENT the socket-outlet shall be in accordance with Standard Sheet DK 1-1b or DK 1-5a. For **CLASS II EQUIPMENT** the socket outlet shall be in accordance with Standard Sheet DKA 1-4a.		N/A
1.7.5 (A2:2013)	In **Denmark**, socket-outlets for providing power to other equipment shall be in accordance with the DS 60884-2-D1:2011. For class I equipment the following Standard Sheets are applicable: DK 1-3a, DK 1-1c, DK 1-1d, DK 1-5a or DK 1-7a, with the exception for STATIONARY EQUIPMENT where the socket-outlets shall be in accordance with Standard Sheet DK 1-1b, DK 1-1c, DK 1-1d or DK 1-5a. Socket outlets intended for providing power to Class II apparatus with a rated current of 2,5 A shall be in accordance with DS 60884-2-D1 standard sheet DKA 1-4a. Other current rating socket outlets shall be in compliance with by DS 60884-2-D1 Standard Sheet DKA 1-3a or DKA 1-3b. Justification the Heavy Current Regulations, 6c		N/A
2.2.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		P
2.3.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the insulation. See 6.1.2.1 and 6.1.2.2 of this annex.		P
2.3.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.		P

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.3.3	In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A.		N/A
2.7.1	In the **United Kingdom**, to protect against excessive currents and short-circuits in the PRIMARY CIRCUIT of DIRECT PLUG-IN EQUIPMENT, tests according to 5.3 shall be conducted, using an external protective device rated 30 A or 32 A. If these tests fail, suitable protective devices shall be included as integral parts of the DIRECT PLUG-IN EQUIPMENT, so that the requirements of 5.3 are met.	No direct plug-in.	N/A
2.10.5.13	In **Finland**, **Norway** and **Sweden**, there are additional requirements for the insulation, see 6.1.2.1 and 6.1.2.2 of this annex.		N/A
3.2.1.1	In **Switzerland**, supply cords of equipment having a RATED CURRENT not exceeding 10 A shall be provided with a plug complying with SEV 1011 or IEC 60884-1 and one of the following dimension sheets: SEV 6532-2.1991 Plug Type 15 3P+N+PE 250/400 V, 10 A SEV 6533-2.1991 Plug Type 11 L+N 250 V, 10 A SEV 6534-2.1991 Plug Type 12 L+N+PE 250 V, 10 A In general, EN 60309 applies for plugs for currents exceeding 10 A. However, a 16 A plug and socket-outlet system is being introduced in Switzerland, the plugs of which are according to the following dimension sheets, published in February 1998: SEV 5932-2.1998: Plug Type 25 3L+N+PE 230/400 V, 16 A SEV 5933-2.1998: Plug Type 21 L+N 250 V, 16A SEV 5934-2.1998: Plug Type 23 L+N+PE 250 V, 16 A		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding13 A shall be provided with a plug according to the Heavy Current Regulations, Section 107-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If poly-phase equipment and single-phase equipment having a RATED CURRENT exceeding 13 A is provided with a supply cord with a plug, this plug shall be in accordance with the Heavy Current Regulations, Section 107-2-D1 or EN 60309-2.		N/A
3.2.1.1 (A2:2013)	In **Denmark**, supply cords of single-phase equipment having a rated current not exceeding 13 A shall be provided with a plug according to DS 60884-2-D1. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules shall be provided with a plug in accordance with standard sheet DK 2-1a or DK 2-5a. If a single-phase equipment having a RATED CURRENT exceeding 13 A or if a poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with the standard sheets DK 6-1a in DS 60884-2-D1 or EN 60309-2. Justification the Heavy Current Regulations, 6c		N/A
3.2.1.1	In **Spain**, supply cords of single-phase equipment having a rated current not exceeding 10 A shall be provided with a plug according to UNE 20315:1994. Supply cords of single-phase equipment having a rated current not exceeding 2,5 A shall be provided with a plug according to UNE-EN 50075:1993. CLASS I EQUIPMENT provided with socket-outlets with earth contacts or which are intended to be used in locations where protection against indirect contact is required according to the wiring rules, shall be provided with a plug in accordance with standard UNE 20315:1994. If poly-phase equipment is provided with a supply cord with a plug, this plug shall be in accordance with UNE-EN 60309-2.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
3.2.1.1	In the **United Kingdom**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to BS 1363 by means of that flexible cable or cord and plug, shall be fitted with a 'standard plug' in accordance with Statutory Instrument 1768:1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE 'Standard plug' is defined in SI 1768:1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
3.2.1.1	In **Ireland**, apparatus which is fitted with a flexible cable or cord and is designed to be connected to a mains socket conforming to I.S. 411 by means of that flexible cable or cord and plug, shall be fitted with a 13 A plug in accordance with Statutory Instrument 525:1997 - National Standards Authority of Ireland (section 28) (13 A Plugs and Conversion Adaptors for Domestic Use) Regulations 1997.		N/A
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.		N/A
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1,25 mm^2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.		N/A
3.3.4	In the **United Kingdom**, the range of conductor sizes of flexible cords to be accepted by terminals for equipment with a RATED CURRENT of over 10 A up to and including 13 A is: • 1,25 mm^2 to 1,5 mm^2 nominal cross-sectional area.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
4.3.6	In the **United Kingdom**, the torque test is performed using a socket outlet complying with BS 1363 part 1:1995, including Amendment 1:1997 and Amendment 2:2003 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.13, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125 °C. Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A
4.3.6	In **Ireland**, DIRECT PLUG-IN EQUIPMENT is known as plug similar devices. Such devices shall comply with Statutory Instrument 526:1997 - National Standards Authority of Ireland (Section 28) (Electrical plugs, plug similar devices and sockets for domestic use) Regulations, 1997.		N/A
5.1.7.1	In **Finland**, **Norway** and **Sweden** TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s. are permitted only for the following equipment: • STATIONARY PLUGGABLE EQUIPMENT TYPE A that - is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and - has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and - is provided with instructions for the installation of that conductor by a SERVICE PERSON; • STATIONARY PLUGGABLE EQUIPMENT TYPE B; • STATIONARY PERMANENTLY CONNECTED EQUIPMENT.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.1 (A1:2010)	In **Finland**, **Norway** and **Sweden**, add the following text between the first and second paragraph of the compliance clause: If this insulation is solid, including insulation forming part of a component, it shall at least consist of either - two layers of thin sheet material, each of which shall pass the electric strength test below, or - one layer having a distance through insulation of at least 0,4 mm, which shall pass the electric strength test below.		P
	Alternatively for components, there is no distance through insulation requirements for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 60384-14:2005, subclass Y2. A capacitor classified Y3 according to EN 60384-14:2005, may bridge this insulation under the following conditions: - the insulation requirements are satisfied by having a capacitor classified Y3 as defined by EN 60384-14, which in addition to the Y3 testing, is tested with an impulse test of 2,5 kV defined in EN 60950-1:2006, 6.2.2.1; - the additional testing shall be performed on all the test specimens as described in EN 60384-14: - the impulse test of 2,5 kV is to be performed before the endurance test in EN 60384-14, in the sequence of tests as described in EN 60384-14.		P

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict
6.1.2.2	In **Finland**, **Norway** and **Sweden**, the exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	In **Finland**, **Norway** and **Sweden**, for requirements see 6.1.2.1 and 6.1.2.2 of this annex. The term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
7.3 (A11:2009)	In **Norway** and **Sweden**, for requirements see 1.2.13.14 and 1.7.2.1 of this annex.		N/A

IEC60950_1F - ATTACHMENT			
Clause	Requirement + Test	Result - Remark	Verdict

Annex ZD
(informative)

IEC and CENELEC code designations for flexible cords

Type of flexible cord	Code designations	
	IEC	CENELEC
PVC insulated cords		
Flat twin tinsel cord	60227 IEC 41	H03VH-Y
Light polyvinyl chloride sheathed flexible cord	60227 IEC 52	H03VV-F H03VVH2-F
Ordinary polyvinyl chloride sheathed flexible cord	60277 IEC 53	H05VV-F H05VVH2-F
Rubber insulated cords		
Braided cord	60245 IEC 51	H03RT-F
Ordinary tough rubber sheathed flexible cord	60245 IEC 53	H05RR-F
Ordinary polychloroprene sheathed flexible cord	60245 IEC 57	H05RN-F
Heavy polychloroprene sheathed flexible cord	60245 IEC 66	H07RN-F
Cords having high flexibility		
Rubber insulated and sheathed cord	60245 IEC 86	H03RR-H
Rubber insulated, crosslinked PVC sheathed cord	60245 IEC 87	H03RV4-H
Crosslinked PVC insulated and sheathed cord	60245 IEC 88	H03V4V4-H

UL 60950-1, Edition 2, Amendment 2 (IEC 60950-1, Ed 2, Am2)			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1 with A1:2009 and A2:2013 U.S.A. NATIONAL DIFFERENCES Information technology equipment – Safety – Part 1: General requirements	
Differences according to ..... :	UL 60950-1-07(Second Edition) + A1: 2011 + A2: 2014
Attachment Form No. ..... :	US_ND_IEC60950_1F
Attachment Originator ..... :	UL
Master Attachment ..... :	Date 2014-07
Copyright © 2014 IEC System for Conformity Testing and Certification of Electrical Equipment (IECEE), Geneva, Switzerland. All rights reserved.	

	Special National condition		
1.1.1	All equipment is designed as to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and if applicable, the National Electrical Safety Code, IEEE C2.		P
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.		P
1.1.2	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Considered.	P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g. DP, CL2) specified in the NEC.	Less than 3.0 m	N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the NEC are required to have special construction features and identification markings.		N/A

UL 60950-1, Edition 2, Amendment 2 (IEC 60950-1, Ed 2, Am2)			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.	Single phase conductor.	N/A
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and		N/A
	- if it is part of a range that extends into the Table 2 "Normal Operating Conditions."		N/A
	Likewise, a voltage rating is not to be lower than the specified “Normal Operating Conditions,” unless it is part of a range that extends into the “Normal Operating Conditions.”		N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with NEC or CEC Part 1 or NEC are marked with the voltage rating and “Class 2” or equivalent.	No such terminals.	N/A
	- Marking is located adjacent to the terminals		N/A
	- Marking is visible during wiring.		N/A
2.5	Fuse providing Class 2, Limited Power Source, or TNV current limiting is not operator-accessible unless it is not interchangeable	Not accessible and interchangeable fuses used for LPS.	P
2.6	Equipment with isolated ground (earthing) receptacles is in compliance with NEC 250.146(D) and CEC 10-112 and 10-906(8).	Modified.	P
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is provided for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No standard supply outlets.	N/A
	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, provided with special transformer overcurrent protection.	No such transformers.	N/A

UL 60950-1, Edition 2, Amendment 2 (IEC 60950-1, Ed 2, Am2)			
Clause	Requirement + Test	Result - Remark	Verdict
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains is in accordance with the NEC/CEC.	Approved appliance inlet used.	P
3.2.1	Attachment plugs of power supply cords are rated not less than 125 percent of the rated current of the equipment.	Rated: max. 11.3A Plug rated 15A.	P
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment comply with special earthing, wiring, marking and installation instruction requirements.	Not connected to DC mains.	N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	Not permanent connection.	N/A
3.2.5	Power supply cords are no longer than 4.5 m in length		P
	Minimum cord length is 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement.		P
	Flexible power supply cords are compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.	Type: SJT	P
3.2.9	Permanently connected equipment has a suitable wiring compartment and wire bending space.	Appliance inlet used.	N/A
3.3	Wiring terminals and associated spacings for field wiring connections comply with CSA C22.2 No. 0.	Appliance inlet used.	N/A
3.3.3	Wire binding screws are not attached with conductors larger than 10 AWG (5.3 mm^2).		N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are		N/A
	- rated 125 per cent of the equipment rating, and		N/A
	- are specially marked when specified (1.7.7).		N/A
3.3.5	Revise first column of Table 3E to “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration.”	Revised.	P

UL 60950-1, Edition 2, Amendment 2 (IEC 60950-1, Ed 2, Am2)			
Clause	Requirement + Test	Result - Remark	Verdict
3.4.2	Motor control devices are provided for cord-connected equipment with a motor if the equipment is rated more than 12 A.	No such motors.	N/A
	- or if the motor has a nominal voltage rating greater than 120 V		N/A
	- or is rated more than 1/3 hp (locked rotor current over 43 A)		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position.	No such switches or breakers.	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the computer room remote power-off circuit.	No such systems.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.	No flammable liquid.	N/A
4.3.13. 5. 1	Equipment with lasers meets the U.S Code of Federal Regulations 21 CFR 1040 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	Tested for IEC 60825-1. (see IEC 60825-1 test report) FDA applied separately. (Accession No. 0720775-037)	P
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m^3 (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	No such systems.	N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m^2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less.	No such enclosures.	N/A
	For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.		N/A
4.7.3.1	Non-metallic enclosures of equipment for use in spaces used for environmental air (plenums) are required to comply with UL 2043.		N/A
Annex H	Equipment that produces ionizing radiation complies with U.S. Code of Federal Regulations, 21 CFR 1020 (and the Canadian Radiation Emitting Devices Act, REDR C1370).	No ionizing radiation source.	N/A

UL 60950-1, Edition 2, Amendment 2 (IEC 60950-1, Ed 2, Am2)			
Clause	Requirement + Test	Result - Remark	Verdict

	Other National Differences		P
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements. These components include: attachment plugs, battery backup systems, battery packs, cathode ray tubes, circuit breakers, communication circuit accessories, connectors (used for current interruption of non-LPS circuits), cord sets and power supply cords, direct plug-in equipment, electrochemical capacitor modules (energy storage modules with ultracapacitors), enclosures (outdoor), flexible cords and cables, fuses (branch circuit), fuseholders, ground-fault current interrupters, industrial control equipment, insulating tape, interconnecting cables, lampholders, limit controls, printed wiring, protectors for communications circuits, receptacles, solid state controls, supplementary protectors, switches (including interlock switches), thermal cut-offs, thermostats, (multi-layer) transformer winding wire, surge protective devices, tubing, vehicle battery adapters, wire connectors, and wire and cables.	(see appended table 1.5.1)	P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as a SELV Circuit, a TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply.	No connection to DC mains.	N/A
	This maximum operating voltage includes consideration of the battery charging “float voltage” associated with the intended supply system, regardless of the marked power rating of the equipment.		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.		P

UL 60950-1, Edition 2, Amendment 2 (IEC 60950-1, Ed 2, Am2)			
Clause	Requirement + Test	Result - Remark	Verdict
2.6.2	Equipment with functional earthing marked with the functional earthing symbol (IEC 60417-6092).		N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.	No such constructions.	N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more reduce the risk of injury due to the implosion of the CRT.	No CRTs.	N/A
4.3.2	Equipment with handles complies with special loading tests.		N/A
4 3.8	Battery packs for both portable and stationary applications comply with special component requirements.		N/A
5.1.8.3	Equipment intended to receive telecommunication ringing signals comply with a special touch current measurement tests.	Max. touch current: 0.0mA	P
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are overloaded.		P
	During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test is repeated twice (three tests total) using new components as necessary	(see appended table 5.3)	P
6.4	Equipment intended for connection to telecommunication network outside plant cable is protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	Min. AWG 26 Cord provided.	P
Annex EE	Articulated accessibility probe (Fig EE.3) is used for assessing accessibility to document/media shredders instead of the Figure 2A test finger.	Not shredders.	N/A
Annex M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear comply with special acoustic pressure requirements.		N/A

National Differences to IEC 60950-1:2005 + A2:2013			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT TO TEST REPORT IEC 60950-1 CANADA NATIONAL DIFFERENCES Information technology equipment – Safety – Part 1: General requirements	
Differences according to ..... :	Amendment 1:2011 to CAN/CSA-C22.2 No. 60950-1-07
Attachment Form No. ..... :	N/A
Attachment Originator..... :	N/A
Master Attachment..... :	N/A

	Special national conditions The following is a summary of the key national differences based on national regulatory requirements, such as the Canadian Electrical Code (CEC) Part I and the Canadian Building Code, which are referenced in legislation and which form the basis for the rules and practices followed in electrical and building installations.		
1.1.1	All equipment is to be designed to allow installation in accordance with the National Electrical Code (NEC), ANSI/NFPA 70, the Canadian Electrical Code (CEC), Part I, CAN/CSA C22.1, and when applicable, the National Electrical Safety Code, IEEE C2.		P
	Also, unless marked or otherwise identified, installation is allowed per the Standard for the Protection of Electronic Computer/Data-Processing Equipment, ANSI/NFPA 75.		P
1.1.2	Baby monitors are required to comply with ASTM F2951, Consumer Safety Specification for Baby Monitors		N/A
1.4.14	For Pluggable Equipment Type A, the protection in the installation is assumed to be 20A.	Considered.	P
1.5.5	For lengths exceeding 3.05 m, external interconnecting flexible cord and cable assemblies are required to be a suitable cable type (e.g. DP, CL2) specified in the CEC/NEC.	Less than 3.0 m	N/A
	For lengths 3.05 m or less, external interconnecting flexible cord and cable assemblies that are not types specified in the CEC are required to have special construction features and identification markings.		N/A

National Differences to IEC 60950-1:2005 + A2:2013			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.1	Equipment for use on a.c. mains supply systems with a neutral and more than one phase conductor (e.g. 120/240 V, 3-wire) require a special marking format for electrical ratings.	Single phase conductor.	N/A
	A voltage rating that exceeds an attachment plug cap rating is only permitted if it does not exceed the extreme operating conditions in Table 2 of CAN/CSA C22.2 No. 235, and		N/A
	- if it is part of a range that extends into the Table 2 "Normal Operating Conditions."		N/A
	A voltage rating is not be lower than the specified "Normal Operating Conditions," unless it is part of a range that extends into the "Normal Operating Conditions."		N/A
1.7.7	Wiring terminals intended to supply Class 2 outputs in accordance with CEC Part 1 or NEC shall be marked with the voltage rating and “Class 2” or equivalent.	No such terminals.	N/A
	- Marking is located adjacent to the terminals.		N/A
	- Marking is visible during wiring.		N/A
2.5	Fuse providing Class 2, Limited Power Source, or TNV current limiting is not operator-accessible unless it is not interchangeable.	Not accessible and interchangeable fuses used for LPS.	P
2.6	Equipment with isolated ground (earthing) receptacles is required to comply with NEC 250.146(D) and CEC 10-112 and 10-906(8).	Modified.	P
2.7.1	Suitable NEC/CEC branch circuit protection rated at the maximum circuit rating is provided for all standard supply outlets and receptacles (such as supplied in power distribution units) if the supply branch circuit protection is not suitable.	No standard supply outlets.	N/A
	Power distribution transformers distributing power at 100 volts or more, and rated 10 kVA or more, provided with special transformer overcurrent protection.	No such transformers.	N/A

National Differences to IEC 60950-1:2005 + A2:2013			
Clause	Requirement + Test	Result - Remark	Verdict
3.2	Wiring methods (terminals, leads, etc.) used for the connection of the equipment to the mains is in accordance with the NEC/CEC.	Approved appliance inlet used.	P
3.2.1	Attachment plugs of power supply cords are rated not less than 125 percent of the rated current of the equipment.	Rated: max. 11.3A Plug rated 15A.	P
3.2.1.2	Equipment connected to a centralized d.c. power system, and having one pole of the DC mains input terminal connected to the main protective earthing terminal in the equipment comply with special earthing, wiring, marking and installation instruction requirements.	Not connected to DC mains.	N/A
3.2.3	Permanent connection of equipment to the mains supply by a power supply cord is not permitted, except for certain equipment, such as ATMs.	Not permanent connection.	N/A
3.2.5	Power supply cords are required to be no longer than 4.5 m in length.		P
	Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement.		P
	Flexible power supply cords are compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.	Type: SJT	P
3.2.9	Permanently connected equipment have a suitable wiring compartment and wire bending space.	Appliance inlet used.	N/A
3.3	Wiring terminals and associated spacing for field wiring connections comply with CSA C22.2 No. 0.	Appliance inlet used.	N/A
3.3.3	Wire binding screws are not permitted to attach conductors larger than 10 AWG (5.3 mm^2).		N/A
3.3.4	Terminals for permanent wiring, including protective earthing terminals, are suitable for Canadian/US wire gauge sizes, are		N/A
	- rated 125 percent of the equipment rating, and		N/A
	- are specially marked when specified (1.7.7).		N/A
3.3.5	Revise first column of Table 3E to “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration.”	Revised.	P

National Differences to IEC 60950-1:2005 + A2:2013			
Clause	Requirement + Test	Result - Remark	Verdict
3.4.2	Motor control devices are provided for cord-connected equipment with a motor if the equipment is rated more than 12 A,	No such motor.	N/A
	- or if the motor has a nominal voltage rating greater than 120 V,		N/A
	- or is rated more than 1/3 hp (locked rotor current over 43 A).		N/A
3.4.8	Vertically-mounted disconnect switches and circuit breakers have the "on" position indicated by the handle in the up position.	No such switches or breakers.	N/A
3.4.11	For computer room applications, equipment with battery systems capable of supplying 750 VA for five minutes have a battery disconnect means that may be connected to the computer room remote power-off circuit.	No such systems.	N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with NFPA 30.	No flammable liquid.	N/A
4.3.13.5.1	Equipment with lasers meets the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations 21 CFR 1040, as applicable.	Tested for IEC 60825-1. (see IEC 60825-1 test report) FDA applied separately. (Accession No. 0720775-037)	P
4.7	For computer room applications, automated information storage systems with combustible media greater than 0.76 m^3 (27 cu ft) have a provision for connection of either automatic sprinklers or a gaseous agent extinguishing system with an extended discharge.	No such systems.	N/A
4.7.3.1	For computer room applications, enclosures with combustible material measuring greater than 0.9 m^2 (10 sq ft) or a single dimension greater than 1.8 m (6 ft) have a flame spread rating of 50 or less.	No such enclosures.	N/A
	For other applications, enclosures with the same dimensions require a flame spread rating of 200 or less.		N/A
Annex H	Equipment that produces ionizing radiation complies with the Canadian Radiation Emitting Devices Act, REDR C1370 and/or Code of Federal Regulations, 21 CFR 1020, as applicable.	No ionizing radiation source.	N/A

National Differences to IEC 60950-1:2005 + A2:2013			
Clause	Requirement + Test	Result - Remark	Verdict
	Other National Differences The following key national differences are based on requirements other than national regulatory requirements		
1.5.1	Some components and materials associated with the risk of fire, electric shock, or personal injury have component or material ratings in accordance with the applicable national (Canadian and/or U.S.) component or material standard requirements.	(see appended table 1.5.1)	P
1.6.1.2	A circuit for connection to the DC Mains Supply is classified as either a SELV Circuit, TNV-2 Circuit or Hazardous Voltage Circuit depending on the maximum operating voltage of the supply.	No connection to DC mains.	N/A
	This maximum operating voltage shall include consideration of the battery charging “float voltage” associated with the intended supply system, regardless of the marked power rating of the equipment.		N/A
2.3.1	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vpeak or 60 Vd.c., the maximum acceptable current through a 2000 ohm resistor (or greater) connected across the voltage source with other loads disconnected is 7.1 mA peak or 30 mA d.c. under normal operating conditions.		N/A
2.3.2.1	In the event of a single fault between TNV and SELV circuits, the limits of 2.2.3 apply to SELV Circuits and accessible conductive parts.		P
2.6.2	Equipment with functional earthing is required to be marked with the functional earthing symbol (IEC 60417-6092)		N/A
2.6.3.4	Protective bonding conductors of non-standard protective bonding constructions (e.g., printed circuit traces) may be subjected to the additional limited short circuit test conditions specified.	No such constructions.	N/A
4.2.8.1	Enclosures around CRTs with a face diameter of 160 mm or more reduce the risk of injury due to the implosion of the CRT.	No CRTs.	N/A
4.3.2	Equipment with handles complies with special loading tests.		N/A
4.3.8	Battery packs for both portable and stationary applications are required to comply with special component requirements.		N/A

National Differences to IEC 60950-1:2005 + A2:2013			
Clause	Requirement + Test	Result - Remark	Verdict
5.1.8.3	Equipment intended to receive telecommunication ringing signals is required to comply with a special touch current measurement tests.	Max. touch current: 0.0mA	P
5.3.7	Internal (e.g., card cage) SELV circuit connectors and printed wiring board connectors that are accessible to the operator and that deliver power are overloaded.		P
	During abnormal operating testing, if a circuit is interrupted by the opening of a component, the test shall be repeated twice (three tests total) using new components as necessary	(see appended table 5.3)	P
6.4	Equipment intended for connection to telecommunication network outside plant cable is protected against overvoltage from power line crosses in accordance with 6.4 and Annex NAC.	Min. AWG 26 Cord provided.	P
Annex EE	Articulated accessibility probe (Fig EE.3) is used for assessing accessibility to document/media shredders instead of the Figure 2A test finger.	Not shredders.	N/A
Annex M.2	Continuous ringing signals up to 16 mA only are permitted if the equipment is subjected to special installation and performance restrictions.		N/A
Annex NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear comply with special acoustic pressure requirements.		N/A

TEST REPORT
IEC 60825-1, 2nd Edition
Part 1: Equipment classification and requirements

Report Reference No. ..... :	50018006 001
Date of issue ..... :	(see IEC60950-1 test report)
Total number of pages	--
CB Testing Laboratory ..... :	(see IEC60950-1 test report)
Address ..... :	(see IEC60950-1 test report)
Applicant's name ..... :	(see IEC60950-1 test report)
Address ..... :	(see IEC60950-1 test report)
Test specification:	
Standard..... :	IEC 60825-1 : 2007 (2nd Edition)
Test procedure ..... :	CB / CCA
Non-standard test method……..:	N/A
Test Report Form No. ..... :	IEC60825_1D
Test Report Form(s) Originator..... :	Intertek Semko AB
Master TRF ..... :	Dated 2007-06

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Test item description.....:	(see IEC60950-1 test report)
Trade Mark..... :	(see IEC60950-1 test report)
Manufacturer ..... :	(see IEC60950-1 test report)
Model/Type reference ..... :	(see IEC60950-1 test report)
Ratings ..... :	(see IEC60950-1 test report)

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Copy of marking plate:
See IEC/EN 60950-1 test report.

Summary of testing:
Tested and evaluated in accordance with IEC/EN 60825-1 except for sub clause 4.14.1 Non-optical hazards. For the sub clause, compliance will be checked in the end equipment.
For measuring laser radiations from Laser Scan Unit, the Unit was controlled a testing jig supplied by the manufacturer.

Tests performed (name of test and test clause):	**Testing location:**
Clause 9 Measurements of accessible emission level	(see IEC60950-1 test report)

Additionally evaluated Test specifications.
EN 60825-1:2007
(see below)

Summary of compliance with National Differences:
Only Annex ZA of EN 60825-1 exists and was evaluated. No additional requirements.
See Appendix EU Group Differences (EN 60825-1:2007).

Test item particulars:	
Classification of installation and use ..... :	(see IEC60950-1 test report)
Supply Connection..... :	(see IEC60950-1 test report)
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..... :	(see IEC60950-1 test report)
Date (s) of performance of tests..... :	(see IEC60950-1 test report)

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General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(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 point is used as the decimal separator.

General product information:

See IEC/EN 60950-1 test report.

For Laser Scanner Unit:
The Unit has one laser diode, one polygon motor and mirror, one laser aperture.
The length of laser pass between the polygon mirror and the aperture is 123.4mm.
The motor runs on 24V dc and the diode runs on 5V dc.
Number of facets on the mirror: 5
Polygon motor speed: 29868rpm, 25864rpm, 22401rpm, 21809rpm, 19398rpm, 16357rpm
Laser aperture dimensions: 161.0mm x 8.0mm
Laser scan angles for the aperture:
- Long sides of the aperture: +30/-30 degrees
- Short sides of the aperture: 9.7 degrees

Laser Product Class shall be determined in end equipment.

IEC 60825-1			
Clause	Requirement + Test	Result – Remark	Verdict

4	**ENGINEERING SPECIFICATIONS**		P
4.1	General remarks		P
	Modification	Not modified product.	N/A
4.2	Protective housing		P
4.2.1	General	Protective housing provided to restrict operator access to laser radiation in excess of Class 1.	P
4.2.2	Service	Caution label on the equipment. A tool is required to remove the protective housing.	P
4.2.3	Removable laser system	Not removable.	N/A
4.3	Access panels and safety interlocks		N/A
4.3.1	Access panels of protective housing	No access panels intended.	N/A
	Product Class .....:	Class 1 laser product.	—
	Accessible emission during removal of access panel .....:	--	N/A
	The removal of the panel gives access to laser radiation levels designated by “X” in the table		N/A
	Accessible emissions after removal .....:	--	—
4.3.2	Deliberate override mechanism	No such mechanisms.	N/A
4.4	Remote interlock connector	Class 1 laser product.	N/A
4.5	Manual reset	Class 1 laser product.	N/A
4.6	Key control	Class 1 laser product.	N/A
4.7	Laser radiation emission warning		N/A
4.7.1	Class 3R (λ<400 nm; λ>700 nm), 3B and 4	Class 1 laser product.	N/A
4.7.2	Audible or visible warning	Class 1 laser product.	N/A
4.7.3	Operational control and laser aperture		N/A
4.7.4	Laser emission distributed through more than one output		N/A
4.8	Beam stop or attenuation	Class 1 laser product.	N/A
4.9	Controls	Class 1 laser product.	N/A

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Clause	Requirement + Test	Result – Remark	Verdict
4.10	Viewing optics	Not provided.	N/A
	a) Human access to laser radiation in excess of Class 1M prevented when the shutter is opened or attenuation varied		N/A
	b) Opening of the shutter or variation of the attenuation prevented when exposure to laser radiation in excess of Class 1M is possible		N/A
4.11	Scanning safeguard	Not considered.	N/A
4.12	Walk-in access		N/A
	a) Means provided so that any person inside the housing can prevent activation of a Class 3B or 4 laser hazard	No Walk-in access provided.	N/A
	b) A warning device provides adequate warning of emission to any person within the housing		N/A
	c) Where “walk-in” access during operation is intended or reasonably foreseeable, emission of laser radiation that is equivalent to Class 3B or Class 4 while someone is present inside the enclosure of Class 1, Class 2 or Class 3R product shall be prevented by engineering means		N/A
4.13	Environmental conditions		P
	- climatic conditions		P
	- vibration and shock		P
4.14	Protection against other hazards		P
4.14.1	Non-optical hazards (product safety standard)	(see IEC60950-1 test report)	P
	- electrical hazards;		P
	- excessive temperature;		P
	- spread of fire from the equipment;		P
	- sound and ultrasonic;		N/A
	- harmful substances;		P
	- explosion;		N/A
4.14.2	Collateral radiation	No such concerns expected.	N/A

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Clause	Requirement + Test	Result – Remark	Verdict

5	**LABELLING**		P
5.1	General		P
	LASER PRODUCT CLASS .....:	Class 1 laser product.	—
	Labelling location (Product / User instruction / Package)	Class 1 laser label provided in rating label. (see copy of marking plate)	P
	Warning label – Hazard symbol (Figure 1)		P
	Explanatory label (Figure 2)		P
5.2-5.6	Text on explanatory label .....:	CLASS 1 LASER PRODUCT	P
5.7	Aperture label		N/A
5.8	Radiation output and standards information	For Class 1.	P
	Max output of laser radiation .....:	--	—
	Pulse duration .....:	--	—
	Emitted wavelength(s) .....:	--	—
	The name and publication date of the standard....:	In instructions.	P
5.9	Labels for access panels		P
5.9.1 a) – f)	Warning wording used .....:	Class 1 laser product. (3B was taking account of the maximum value in the specification of manufacturer and the following label was affixed anyway. DANGER CLASS 3B LASER RADIATION WHEN OPEN. AVOID DIRECT EXPOSURE TO BEAM.)	P
5.9.2	Labels for safety interlocked panels		N/A
	Warning wording used .....:	Class 1 laser product.	N/A
5.10	Warning for invisible laser radiation .....:	No such radiation expected.	N/A
5.11	Warning for visible laser radiation .....:	--	N/A

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Clause	Requirement + Test	Result – Remark	Verdict
6	**OTHER INFORMATIONAL REQUIREMENTS**		P
6.1	Information for the user	Provided in the instructions of this product.	P
	a) adequate instructions for proper assembly, maintenance and safe use and description of the classification limitations, if appropriate	Provided.	P
	b) warning for Class 1M and 2M	Class 1 laser product.	N/A
	c) laser beam parameters for radiation above the AEL of Class 1	Class 1 laser product.	N/A
	• Wavelength .....:	--	N/A
	• Beam divergence .....:	--	N/A
	• Pulse duration .....:	--	N/A
	• Maximum power or energy output .....:	--	N/A
	d) embedded laser products and other incorporated laser products	No exposure to user expected.	N/A
	e) MPE and NOHD for Class 3B and Class 4 laser products For collimated beam Class 1M and 2M lasers the extended NOHD (ENOHD)	Class 1 laser product.	N/A
	f) information for the selection of eye protection		N/A
	g) reproduction of labels	Legible reproductions provided.	P
	h) location of laser apertures		N/A
	i) listing of controls, adjustment of procedures and warning statement		N/A
	j) information about laser energy source if not incorporated in the manual	Incorporated.	N/A
6.2	Purchasing and service information		P
	a) safety classification of each laser product stated in descriptive material	Stated.	P
	b) adequate instructions for servicing available		P

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Clause	Requirement + Test	Result – Remark	Verdict

7	**ADDITIONAL REQUIREMENTS FOR SPECIFIC LASER PRODUCTS**		P
7.1	Applicable other parts of the standard series IEC/EN 60825		P
	IEC 60825-2 (Safety of optical communication systems)		N/A
	IEC 60825-4 (Laser guards)		N/A
	IEC 60825-12 (Safety of free space optical communication systems used for transmission of information)		N/A
	Further information may be found in:		P
	IEC/TR 60825-3 (Guidance for laser displays and shows)	Not referred.	—
	IEC/TR 60825-5 (Manufacturer's checklist for IEC 60825-1)	Referred.	—
	IEC/TR 60825-8 (Guidelines for the safe use of laser beams on humans)	Not referred.	—
	IEC/TR 60825-9 (Compilation of maximum permissible exposure to incoherent optical radiation)	Referred.	—
	IEC/TR 60825-10 (Application guidelines and explanatory notes to IEC 60825-1)	Referred.	—
	IEC/TR 60825-13 (Measurements for classification of laser products)	Not referred.	—
	IEC/TR 60825-14 (A user's guide)	Referred.	—
	IEC 62471 (CIE S 009) (Photobiological safety of lamps and lamp system)	Not referred.	—
7.2	Medical laser products	Not such products.	N/A
	Class 3B and Class 4 medical laser products comply with IEC 60601-2-22		N/A
7.3	Laser processing machines	Not such products.	N/A
	Comply with IEC/ISO 11553-1		N/A
7.4	Electric toys	Not such products.	N/A
	Comply with IEC 62115		N/A
7.5	Consumer electronic products	IT equipment.	P
	Complying with IEC 60950 or IEC 60065	(see IEC60950-1 test report)	P

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Clause	Requirement + Test	Result – Remark	Verdict

8	**CLASSIFICATION**		P
8.2	Classification responsibilities		P
8.3	Classification rules		P
8.3a	Radiation of a single wavelength		P
8.3b	Radiation of multiple wavelengths	No such radiation.	N/A
	1) Laser product emission two or more wavelengths in spectral regions shown as additive in Table 2 .....:	--	N/A
	2) Laser product emission two or more wavelengths in spectral regions not shown as additive in Table 2 .....:	--	N/A
8.3c	Radiation from extended sources .....:	No such sources radiating from Laser Scanner Unit considered.	N/A
	Value of angular subtense α (mrad) .....:	--	N/A
8.3d	Non-uniform retinal image radiance profile, non-circular and multiple sources	No such sources considered.	N/A
8.3e	Time basis		P
	1) 0.25s		N/A
	2) 100s		P
	3) 30000s		N/A
8.3f	Repetitively pulsed or modulated lasers	Radiation from Laser Scanner Unit was considered as continuous output (CW) under the system configured.	N/A
	1) Exposure from any single pulse not exceeding the AEL for a single pulse		N/A
	2) Average power for a pulse train		N/A
	3a) Constant pulse energy and pulse duration		N/A
	3b) Varying pulse widths or varying pulse durations		N/A

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Clause	Requirement + Test	Result – Remark	Verdict

9	**DETERMINATION OF ACCESSIBLE EMISSION LEVELS**		P
9.1	Tests		P
	Single fault eliminated		N/A
	Housing material withstanding degradation		N/A
	Fault detection		N/A
9.2	Measurement conditions .....:	See 9.3.2.	P
	Measured laser radiation .....:	See table “Measured laser radiation, calculations and comparison with AEL limits”	P
9.3	Measurement geometry		P
9.3.1	General, evaluation scheme		—
	a) Simplified (default) method		P
	b) Increased AEL by parameter C_6		N/A
9.3.2	Default (simplified) evaluation		P
	Condition applied .....:	3	P
	Aperture stop diameter (mm) .....:	7	P
	Measurement distance (mm) .....:	At the closest point on the outside of the aperture of Laser Scanner Unit and main unit.	P
9.3.3	Extended sources	No such sources considered.	N/A
	C_6 .....:	--	N/A
9.3.3a	Aperture diameters		N/A
	Condition applied .....:	--	N/A
	Aperture stop diameter (mm). .....:	--	N/A
	Angular subtense of the apparent source α .....:	--	N/A
9.3.3b	Angle of acceptance		N/A
	Condition applied .....:	--	N/A
	1) Photochemical retinal limits .....:	--	N/A
	Angel of acceptance .....:	--	N/A
	2) All other retinal limits.....:	--	N/A
	Angel of acceptance .....:	--	N/A

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Clause	Requirement + Test	Result – Remark	Verdict

Measured laser radiation, calculations and comparison with AEL limits:

1. Classification, Laser Class:
- Class 1 for end product
- Class 3B for laser diode from the specification

2. Calculation of AEL

Angular subtense: α = 0 mrad assumed

Accessible emission limits (AEL)
- Class 1: 0.39 [mW] for end product
- Class 3B: 0.5 [W]

3. Measurement results of Laser Scan Unit

Laser Scan Unit with following Laser diode:
- 1) Ushio Opto Semiconductors, Inc, Type HL67150GN
- 2) Rohm, Type RLD2BPNK2-00A

3.1 Normal condition:
- 1) 20.7 x 10^{-6} W
- 2) 27.4 x 10^{-6} W

3.2 Fault condition

3.2.1 Polygon Motor locked:
- 1) 0.485 x 10^{-3} W
- 2) 0.634 x 10^{-3} W

3.2.2 Laser diode adjusted to maximum power:
- 1) 55.0 x 10^{-6} W
- 2) 97.0 x 10^{-6} W

3.2.3 Polygon Motor locked and Laser diode adjusted to maximum power:
- 1) 1.285 x 10^{-3} W
- 2) 2.083 x 10^{-3} W

Operator cannot access the Laser Scan Unit.

4. Measurement results of end product, outside the equipment (main unit) for leakage

4.1 Fault conditions

4.1.1 Polygon Motor locked and Laser diode adjusted to maximum power, all covers closed:
- 1) Type HL67150GN: 1 x 10^{-6} mW
- 2) Type RLD2BPNK2-00A: 1 x 10^{-6} mW

Main unit provided to restrict operator access to laser radiation in excess of Class 1.

IEC 60825-1			
Clause	Requirement + Test	Result – Remark	Verdict

Appendix	EU Group Differences (EN 60825-1:2007)	--
Annex ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies. NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies. -- IEC 60050-845: 1987 EN 60601-2-22: 1996 2) IEC 60601-2-22 1) EN 61010-1: 2001 3) + corr. June: 2002 IEC 61010-1 1)	P
	1) Undated reference. 2) Valid edition at date of issue. EN 60601-2-22:1996 will be superseded by EN 60601-1-2-22: 200X, which is based on IEC 60601-2-22:2007. 3) Valid edition at date of issue.	

IEC 60825-1			
Clause	Requirement + Test	Result – Remark	Verdict

Appended table	**EQUIPMENT MANUFACTURE INFORMATION (DATA SHEET) ABOUT THE CONTAINING LASER COMPONENT/S**		--
	Manufacturer ..... :	1) Oclaro Japan, Inc. or Ushio Opto Semiconductors, Inc. 2) Rohm	—
	Type designation ..... :	1) HL67150GN 2) RLD2BPND2-00B (see appended table 1.5.1)	—
	Structure ..... :	AlGaInP	—
	Wavelength ..... :	670nm	—
	Output power (min. and max.) ..... :	1) 32.5mW max. 2) 25mW max.	—
	Radiation is		—
	Continuous..... :	Continuous.	—
	Pulsed ..... :	--	—
	Pulse time ..... :	--	—
	Pulse repetition frequency ..... :	--	—
	Others ..... :	--	—
	PIC UP UNIT		--
	Manufacturer .....:	--	—
	Type designation .....:	--	—
	Others .....:	--	—
	TRANSMITTER/TRANSCIEVER UNIT		--
	Manufacturer .....:	--	—
	Type designation .....:	--	—
	Others .....:	--	—