TEST REPORT

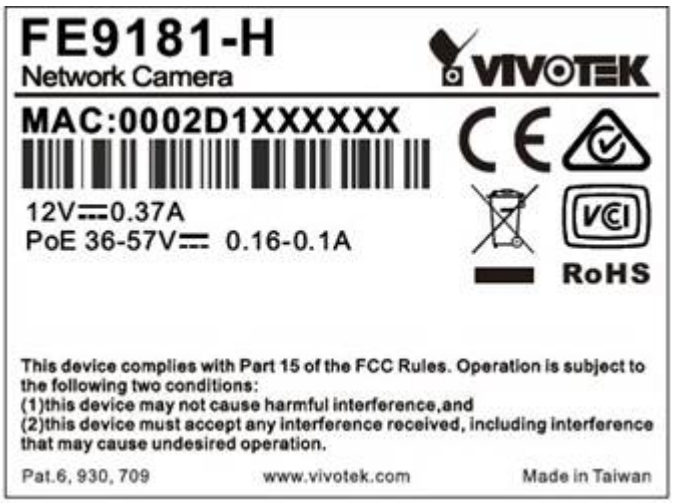
IEC 60950-1: 2005 and/or EN 60950-1:2006
Information technology equipment – Safety –
Part 1: General requirements

Report Number.....:	T1291601004A	
Tested by (printed name and signature) .....:	Eason Wang	Eason Wang .....
Approved by (printed name and signature) .....:	Sprewell Chien	Sprewell Chien .....
Date of issue.....:	2016-02-17	
Testing Laboratory .....:	Perfectlink International Corp.	
Address.....:	4F., No. 16-1, Sec. 2, Zhongyang S. Rd., Beitou Dist., Taipei City 112, Taiwan	
Applicant's name .....:	VIVOTEK INC.	
Address.....:	6F, No.192, Lien-Cheng Rd., Chung-Ho, New Taipei City, 235, Taiwan, R.O.C.	
Test specification:		
Standard .....:	IEC 60950-1:2005 + A1:2009 + A2:2013 and/or EN 60950-1:2006 + A11:2009 + A1:2010 + A12:2011 + A2:2013	
Test procedure.....:	Service of CE Marking in LVD	
Non-standard test method……..:	N/A	
Test item description ..... :	Network Camera	
Trade Mark .....:	VIVOTEK	
Manufacturer .....:	VIVOTEK INC. 5F, No.168, Lien-Cheng Rd., Chung-Ho, New Taipei City, 235, Taiwan, R.O.C.	
Model/Type reference.....:	FE9181-H, FE9381-EHV	
Ratings.....:	For Model FE9181-H: I/P: DC12V, 0.37A ; PoE 36-57V, 0.16-0.1A For Model FE9381-EHV: I/P: DC12V, 0.9A; PoE 36-57V, 0.36-0.23A;	

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.

(Representative)



The warning caution "Use only power supplies listed in the user instructions" or "For applicable power supplies see user instructions" shall be marked on the outer enclosure of the product by suitable regional language, and it must be legible and durable.

Test item particulars.....:	See below
Equipment mobility.....:	[] movable [] hand-held [] transportable [X] stationary [] for building-in [] direct plug-in [X] fixed
Connection to the mains .....:	[] pluggable equipment [] type A [] type B [] permanent connection [] detachable power supply cord [] non-detachable power supply cord [X] 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 [] OVC II [] OVC III [] OVC IV [X] other: Not directly connected to AC or DC mains
Mains supply tolerance (%) or absolute mains supply values .....:	No direct mains connection
Tested for IT power systems .....:	[] Yes [X] No
IT testing, phase-phase voltage (V) .....:	N/A
Class of equipment .....:	[] Class I [] Class II [X] Class III [] Not classified
Considered current rating of protective device as part of the building installlation (A) .....:	N/A
Pollution degree (PD) .....:	[] PD 1 [X] PD 2 [] PD 3
IP protection class .....:	IP66 for model FE9381-EHV only
Altitude during operation (m) .....:	≤ 2000 m
Altitude of test laboratory (m) .....:	≤ 2000 m
Mass of equipment (kg) .....:	Approx. 0.51 kg (Model: FE9381-EHV), Approx. 0.34 kg (Model: FE9181-H)
Possible test case verdicts:	
- test case does not apply to the test object .....:	N/A (or N)
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement.....:	F (Fail)
Testing:	
Date of receipt of test item.....:	2016-01-06
Date(s) of performance of tests.....:	2016-01-13 to 2016-01-14

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 comma or point is used as the decimal separator.

Name and address of factory (ies) ..... : VIVOTEK INC.
5F, No.168, Lien-Cheng Rd., Chung-Ho, New Taipei City, 235, Taiwan, R.O.C.

General product information:

General description:

This equipment, models FE9181-H and FE9381-EHV, is a Network Camera which is intended to use within information technology equipment.

Model difference:
All models are similar except for model designation, rating, enclosure, heater mode and material as below.

Model name	FE9181-H	FE9381-EHV
Input rating	DC12V, 0.37A ; PoE 36-57V, 0.16-0.1A	DC12V, 0.9A; PoE 36-57V, 0.36-0.23A
IP66	No	Yes
Enclosure material	See table 1.5.1 for detail	See table 1.5.1 for detail
Enclosure shape	See attached photo for detail	See attached photo for detail
Heater mode	No	Yes

The equipment is power supplied from the external power adaptor or PoE device which is complied with the requirement of Limited Power Source. Otherwise, the adaptor which is intended to be used with this equipment in the regional market should be stated in the specified manufacturers and models in the instruction by suitable regional languages.

The external power adaptor is approved products which were CB-scheme evaluated according to IEC 60950-1:2005, IEC 60950-1:2005+A1:2009 or IEC 60950-1:2005+A1:2009+A2:2013, for detail information see appended table 1.5.1.

The label is a draft of an artwork for marking plate pending approval by National Certification Bodies and it shall not be affixed to products prior to such an approval.

The construction of model FE9381-EHV is complied with the requirement of IEC 60950-22, the separate report is declared and reported by applicant. See attachment for details.

The mechanical construction of model FE9381-EHV is identical to model FE8172V.
Therefore, the construction of IP protection class is declared and reported by applicant. See attachment for details.

The protection against water test of IEC 60529 is considered to be representative of IEC 60950-22 Annex B test. (IP 66)

Other comments:

The equipment is a Class III Network Camera, consists of electronic components mounted on PWB and is equipped with a progressive scan CCD sensor then housed with metal/plastic enclosure, also provides a general I/O terminal block which is used to connect external input/output devices. The EUT intended to install on the wall or ceiling. The EUT intended to be supplied by DC adaptor or PoE.

According to manufacturer's declaration on installation instruction, this equipment is to be connected only to PoE networks without routing to the outside plant.

The product was submitted and tested for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 50°C for model FE9181-H; 55°C for model FE9381-EHV.

The test report is evaluated with IEC/EN 60950-1 only. However, based on client's requirement the separate reports according IEC 60950-22 test report (Attachment 1, issued by UL) and IEC 60529 (Attachment 2, issued by SGS) are attached for reference.

List of Attachments (including a total number of pages in each attachment):
- IEC 60950-22 test report (Report Reference No. OFF- 4787311596-A-1) (24 pages)
- IEC 60529 test report for IP66 evaluation (8 pages)

Abbreviations used in the report:

- normal conditions	N.C.	- single fault conditions	S.F.C
- functional insulation	OP	- basic insulation	BI
- double insulation	DI	- supplementary insulation	SI
- between parts of opposite polarity	BOP	- reinforced insulation	RI

Indicate used abbreviations (if any)

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1	**GENERAL**		P
1.5	**Components**		P
1.5.1	General	See below.	P
	Comply with IEC 60950-1 or relevant component standard	Components which were found to affect safety aspects comply with the requirements of this standard or with the safety aspects of the relevant IEC/EN component standards. See appended table 1.5.1.	P
1.5.2	Evaluation and testing of components	Components that are certified to IEC and /or national standards are used correctly within their ratings. Components not covered by IEC standards are tested under the conditions present in the equipment.	P
1.5.3	Thermal controls	No thermal control.	N/A
1.5.4	Transformers	No insulation transformers used.	N/A
1.5.5	Interconnecting cables	Interconnecting cables comply with the relevant requirements of this standard.	P
1.5.6	Capacitors bridging insulation	Equipment is not directly connected to the AC mains supply.	N/A
1.5.7	Resistors bridging insulation	No such components.	N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation	Same as above.	N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits	Same as above.	N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable	Same as above.	N/A
1.5.8	Components in equipment for IT power systems	Equipment is not directly connected to the AC mains supply.	N/A
1.5.9	Surge suppressors	No such components.	N/A
1.5.9.1	General	Same as above.	N/A
1.5.9.2	Protection of VDRs	Same as above.	N/A
1.5.9.3	Bridging of functional insulation by a VDR	Same as above.	N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.9.4	Bridging of basic insulation by a VDR	Same as above.	N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR	Same as above.	N/A
1.6	**Power interface**		P
1.6.1	AC power distribution systems	Equipment is not directly connected to the AC mains supply.	N/A
1.6.2	Input current	Highest load according to 1.2.2.1 for this equipment. See appended table 1.6.2.	P
1.6.3	Voltage limit of hand-held equipment	This appliance is not hand-held equipment.	N/A
1.6.4	Neutral conductor	Equipment is not directly connected to the AC mains supply.	N/A
1.7	**Marking and instructions**		P
1.7.1	Power rating and identification markings	See below.	P
1.7.1.1	Power rating marking	All relevant markings are provided on equipment. Not directly connected to mains.	P
	Multiple mains supply connections.....:	Class III equipment. No multiple mains power sources provided.	N/A
	Rated voltage(s) or voltage range(s) (V) ..... :	See copy of marking plate.	P
	Symbol for nature of supply, for d.c. only..... :	See copy of marking plate.	P
	Rated frequency or rated frequency range (Hz) ... :	Supplied by DC voltage only.	N/A
	Rated current (mA or A) ..... :	See copy of marking plate.	P
1.7.1.2	Identification markings	See below.	P
	Manufacturer's name or trade-mark or identification mark ..... :	VIVOTEK	P
	Model identification or type reference ..... :	See copy of marking plate.	P
	Symbol for Class II equipment only ..... :	Class III equipment.	N/A
	Other markings and symbols ..... :	Additional symbols or markings do not give rise to misunderstanding.	P
1.7.1.3	Use of graphical symbols	Complied.	P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.2	Safety instructions and marking	See below.	P
1.7.2.1	General	The user's manual contains information for operation, installation, servicing, transport, storage and technical data. The operation guide is provided to the user.	P
1.7.2.2	Disconnect devices	Equipment is not directly connected to the AC mains supply.	N/A
1.7.2.3	Overcurrent protective device	Class III equipment.	N/A
1.7.2.4	IT power distribution systems	Equipment is not directly connected to the AC mains supply.	N/A
1.7.2.5	Operator access with a tool	No operator access areas require the use of a tool.	N/A
1.7.2.6	Ozone	No ozone produces within this equipment.	N/A
1.7.3	Short duty cycles	Equipment is designed for continuous operation.	N/A
1.7.4	Supply voltage adjustment ..... :	No voltage adjustment device provided.	N/A
	Methods and means of adjustment; reference to installation instructions ..... :	Same as above.	N/A
1.7.5	Power outlets on the equipment ..... :	No outlet provided.	N/A
1.7.6	Fuse identification (marking, special fusing characteristics, cross-reference) ..... :	Evaluated in approved switching power adaptor.	N/A
1.7.7	Wiring terminals	See below.	N/A
1.7.7.1	Protective earthing and bonding terminals ..... :	No direct connection to mains supply.	N/A
1.7.7.2	Terminals for a.c. mains supply conductors	No direct connection to mains supply.	N/A
1.7.7.3	Terminals for d.c. mains supply conductors	No direct connection to mains supply.	N/A
1.7.8	Controls and indicators	See below.	P
1.7.8.1	Identification, location and marking ..... :	The marking and indication is located that indication of function clearly.	P
1.7.8.2	Colours ..... :	No safety relevant controls or indicators.	N/A
1.7.8.3	Symbols according to IEC 60417.....:	No safety switch used.	N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7.8.4	Markings using figures .....:	No indicators for different positions.	N/A
1.7.9	Isolation of multiple power sources .....:	No connection supplying hazardous voltages or hazardous energy levels to equipment.	N/A
1.7.10	Thermostats and other regulating devices .....:	No thermostats and similar regulating devices intended to be adjusted during installation or in normal use.	N/A
1.7.11	Durability	The label was subjected to the permanence of marking test. The label was rubbed with cloth soaked with water for 15 s and then again for 15 s with the cloth soaked with petroleum spirit. After this test there was no damage to the label. The marking on the label did not fade. There was neither curling nor lifting of the label edge.	P
1.7.12	Removable parts	No removable part provided.	N/A
1.7.13	Replaceable batteries .....:	No batteries provided.	N/A
	Language(s) .....:	Same as above.	—
1.7.14	Equipment for restricted access locations .....:	No restricted access location.	N/A
2	**PROTECTION FROM HAZARDS**		P
2.1	**Protection from electric shock and energy hazards**		P
2.1.1	Protection in operator access areas	Class III equipment. Supply from external power source or PoE device that is considered to carry SELV at below 240VA only. No risk of electrical shock or energy hazards.	N/A
2.1.1.1	Access to energized parts	Only SELV inside.	N/A
	Test by inspection ..... :	Same as above.	N/A
	Test with test finger (Figure 2A) ..... :	Same as above.	N/A
	Test with test pin (Figure 2B) ..... :	Same as above.	N/A
	Test with test probe (Figure 2C) ..... :	No TNV circuits.	N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.1.1.2	Battery compartments	No battery compartments and TNV circuits.	N/A
2.1.1.3	Access to ELV wiring	No ELV wiring in operator accessible area.	N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm)	Same as above.	—
2.1.1.4	Access to hazardous voltage circuit wiring	No hazardous voltage wiring in operator accessible area.	N/A
2.1.1.5	Energy hazards ..... :	No energy hazard in operator access area.	P
2.1.1.6	Manual controls	No conductive shafts of operating knobs and handles.	N/A
2.1.1.7	Discharge of capacitors in equipment	No direct connection to mains supply.	N/A
	Measured voltage (V); time-constant (s)..... :	Same as above.	—
2.1.1.8	Energy hazards – d.c. mains supply	Class III equipment.	N/A
	a) Capacitor connected to the d.c. mains supply .. :	Same as above.	N/A
	b) Internal battery connected to the d.c. mains supply ..... :	Same as above.	N/A
2.1.1.9	Audio amplifiers ..... :	No audio amplifier provided.	N/A
2.1.2	Protection in service access areas	No maintenance work in operation mode necessary.	N/A
2.1.3	Protection in restricted access locations	It is not intended to use in restricted locations.	N/A
2.2	**SELV circuits**		P
2.2.1	General requirements	See below.	P
2.2.2	Voltages under normal conditions (V) ..... :	Between any SELV circuits 42.4V peak or 60VDC are not exceeded. See appended table 2.2.	P
2.2.3	Voltages under fault conditions (V) ..... :	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 71V peak and 120V DC were not exceed and SELV limits not for longer than 0.2 seconds. See appended table 2.2.	P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.2.4	Connection of SELV circuits to other circuits .....:	See 2.2.2 and 2.2.3. No direct connection between SELV and any primary circuits.	N/A
2.3	**TNV circuits**		N/A
2.3.1	Limits	Class III equipment without TNV circuit.	N/A
	Type of TNV circuits ..... :		—
2.3.2	Separation from other circuits and from accessible parts		N/A
2.3.2.1	General requirements		N/A
2.3.2.2	Protection by basic insulation		N/A
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		N/A
	Insulation employed ..... :		—
2.3.4	Connection of TNV circuits to other circuits		N/A
	Insulation employed ..... :		—
2.3.5	Test for operating voltages generated externally		N/A
2.4	**Limited current circuits**		N/A
2.4.1	General requirements	No such circuit within this equipment.	N/A
2.4.2	Limit values		N/A
	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		N/A
2.5	**Limited power sources**		N/A
	a) Inherently limited output	The equipment is power supplied from the external power source or PoE device which is complied with the requirement of Limited Power Source.	N/A
	b) Impedance limited output		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	c) Regulating network limited output under normal operating and single fault condition		N/A
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)..... :		—
	Current rating of overcurrent protective device (A) .:		—
	Use of integrated circuit (IC) current limiters		—
2.6	**Provisions for earthing and bonding**		N/A
2.6.1	Protective earthing	Class III equipment.	N/A
2.6.2	Functional earthing		N/A
	Use of symbol for functional earthing .....:		N/A
2.6.3	Protective earthing and protective bonding conductors		N/A
2.6.3.1	General		N/A
2.6.3.2	Size of protective earthing conductors		N/A
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
2.6.3.3	Size of protective bonding conductors		N/A
	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)..... :		N/A
2.6.3.5	Colour of insulation ..... :		N/A
2.6.4	Terminals		N/A
2.6.4.1	General		N/A
2.6.4.2	Protective earthing and bonding terminals		N/A
	Rated current (A), type, nominal thread diameter (mm) ..... :		—
2.6.4.3	Separation of the protective earthing conductor from protective bonding conductors		N/A
2.6.5	Integrity of protective earthing		N/A
2.6.5.1	Interconnection of equipment		N/A
2.6.5.2	Components in protective earthing conductors and protective bonding conductors		N/A
2.6.5.3	Disconnection of protective earth		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
2.6.5.4	Parts that can be removed by an operator		N/A
2.6.5.5	Parts removed during servicing		N/A
2.6.5.6	Corrosion resistance		N/A
2.6.5.7	Screws for protective bonding		N/A
2.6.5.8	Reliance on telecommunication network or cable distribution system		N/A
2.7	**Overcurrent and earth fault protection in primary circuits**		N/A
2.7.1	Basic requirements	Class III equipment.	N/A
	Instructions when protection relies on building installation		N/A
2.7.2	Faults not simulated in 5.3.7		N/A
2.7.3	Short-circuit backup protection		N/A
2.7.4	Number and location of protective devices ..... :		N/A
2.7.5	Protection by several devices		N/A
2.7.6	Warning to service personnel ..... :		N/A
2.8	**Safety interlocks**		N/A
2.8.1	General principles	No such device within this equipment.	N/A
2.8.2	Protection requirements		N/A
2.8.3	Inadvertent reactivation		N/A
2.8.4	Fail-safe operation		N/A
	Protection against extreme hazard		N/A
2.8.5	Moving parts		N/A
2.8.6	Overriding		N/A
2.8.7	Switches, relays and their related circuits		N/A
2.8.7.1	Separation distances for contact gaps and their related circuits (mm) .....:		N/A
2.8.7.2	Overload test		N/A
2.8.7.3	Endurance test		N/A
2.8.7.4	Electric strength test		N/A
2.8.8	Mechanical actuators		N/A
2.9	**Electrical insulation**		P

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.9.1	Properties of insulating materials	Natural rubber, asbestos or hygroscopic materials are not used.	P
2.9.2	Humidity conditioning	Class III equipment, only functional insulation requirements.	N/A
	Relative humidity (%), temperature (°C) ..... :		—
2.9.3	Grade of insulation	Functional Insulation. The adequate levels of safety insulation is provided and maintained to comply with the requirements of this standard.	P
2.9.4	Separation from hazardous voltages	See below.	P
	Method(s) used ..... :	Class III equipment, which is separated from hazardous voltage by double/reinforced insulation through external power source.	—

2.10	**Clearances, creepage distances and distances through insulation**		P
2.10.1	General	Functional insulation only. See 5.3.4 c).	P
2.10.1.1	Frequency .....:		N/A
2.10.1.2	Pollution degrees .....:		N/A
2.10.1.3	Reduced values for functional insulation		N/A
2.10.1.4	Intervening unconnected conductive parts		N/A
2.10.1.5	Insulation with varying dimensions		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		N/A
2.10.2.1	General		N/A
2.10.2.2	RMS working voltage		N/A
2.10.2.3	Peak working voltage		N/A
2.10.3	Clearances		N/A
2.10.3.1	General		N/A
2.10.3.2	Mains transient voltages		N/A
	a) AC mains supply .....:		N/A
	b) Earthed d.c. mains supplies .....:		N/A
	c) Unearthed d.c. mains supplies .....:		N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	d) Battery operation .....:		N/A
2.10.3.3	Clearances in primary circuits		N/A
2.10.3.4	Clearances in secondary circuits		N/A
2.10.3.5	Clearances in circuits having starting pulses		N/A
2.10.3.6	Transients from a.c. mains supply .....:		N/A
2.10.3.7	Transients from d.c. mains supply .....:		N/A
2.10.3.8	Transients from telecommunication networks and cable distribution systems .....:		N/A
2.10.3.9	Measurement of transient voltage levels		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		N/A
2.10.4.1	General		N/A
2.10.4.2	Material group and comparative tracking index		N/A
	CTI tests .....:		—
2.10.4.3	Minimum creepage distances		N/A
2.10.5	Solid insulation		N/A
2.10.5.1	General		N/A
2.10.5.2	Distances through insulation		N/A
2.10.5.3	Insulating compound as solid insulation		N/A
2.10.5.4	Semiconductor devices		N/A
2.10.5.5.	Cemented joints		N/A
2.10.5.6	Thin sheet material – General		N/A
2.10.5.7	Separable thin sheet material		N/A
	Number of layers (pcs) .....:		—
2.10.5.8	Non-separable thin sheet material		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		N/A
	Electric strength test		—
2.10.5.11	Insulation in wound components		N/A
2.10.5.12	Wire in wound components		N/A
	Working voltage .....:		N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	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		N/A
	Electric strength test		—
	Routine test		N/A
2.10.5.14	Additional insulation in wound components		N/A
	Working voltage .....:		N/A
	- Basic insulation not under stress .....:		N/A
	- Supplementary, reinforced insulation .....:		N/A
2.10.6	Construction of printed boards		N/A
2.10.6.1	Uncoated printed boards		N/A
2.10.6.2	Coated printed boards		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		N/A
	Distance through insulation		N/A
	Number of insulation layers (pcs) .....:		N/A
2.10.7	Component external terminations		N/A
2.10.8	Tests on coated printed boards and coated components		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		N/A
2.10.10	Test for Pollution Degree 1 environment and insulating compound		N/A
2.10.11	Tests for semiconductor devices and cemented joints		N/A
2.10.12	Enclosed and sealed parts		N/A

3	**WIRING, CONNECTIONS AND SUPPLY**	P
3.1	**General**	P

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Clause	Requirement + Test	Result - Remark	Verdict
3.1.1	Current rating and overcurrent protection	All internal wires are UL recognized. Cross-sectional area of internal wiring is suitable for current intended to be carried.	P
3.1.2	Protection against mechanical damage	Wires do not touch sharp edges which could damage the insulation and cause hazard.	P
3.1.3	Securing of internal wiring	The wires are secured by soldering and glue so that a loosening of the terminal connection is unlikely.	P
3.1.4	Insulation of conductors	The insulation of the individual conductors is suitable for the application and the working voltage. For the insulation material see 3.1.1.	P
3.1.5	Beads and ceramic insulators	Not used.	N/A
3.1.6	Screws for electrical contact pressure	No screw used for electrical connection.	N/A
3.1.7	Insulating materials in electrical connections	All current carrying connections are metal to metal.	N/A
3.1.8	Self-tapping and spaced thread screws	No self-tapping or spaced thread screws used.	N/A
3.1.9	Termination of conductors	All conductors are reliably secured.	P
	10 N pull test	Applied and passed.	P
3.1.10	Sleeving on wiring	No sleeving used as supplementary insulation.	N/A
3.2	**Connection to a mains supply**		N/A
3.2.1	Means of connection	Class III equipment. No direct connection to mains supply.	N/A
3.2.1.1	Connection to an a.c. mains supply		N/A
3.2.1.2	Connection to a d.c. mains supply		N/A
3.2.2	Multiple supply connections		N/A
3.2.3	Permanently connected equipment		N/A
	Number of conductors, diameter of cable and conduits (mm) ..... :		—
3.2.4	Appliance inlets		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.2.5	Power supply cords		N/A
3.2.5.1	AC power supply cords		N/A
	Type ..... :		—
	Rated current (A), cross-sectional area (mm^2), AWG ..... :		—
3.2.5.2	DC power supply cords		N/A
3.2.6	Cord anchorages and strain relief		N/A
	Mass of equipment (kg), pull (N) ..... :		—
	Longitudinal displacement (mm) ..... :		—
3.2.7	Protection against mechanical damage		N/A
3.2.8	Cord guards		N/A
	Diameter or minor dimension D (mm); test mass (g) :		—
	Radius of curvature of cord (mm) ..... :		—
3.2.9	Supply wiring space		N/A
3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals	Class III equipment. No direct connection to mains supply.	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
3.4	**Disconnection from the mains supply**		N/A
3.4.1	General requirement	Class III equipment. No direct connection to mains supply.	N/A
3.4.2	Disconnect devices		N/A
3.4.3	Permanently connected equipment		N/A
3.4.4	Parts which remain energized		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.4.5	Switches in flexible cords		N/A
3.4.6	Number of poles - single-phase and d.c. equipment		N/A
3.4.7	Number of poles - three-phase equipment		N/A
3.4.8	Switches as disconnect devices		N/A
3.4.9	Plugs as disconnect devices		N/A
3.4.10	Interconnected equipment		N/A
3.4.11	Multiple power sources		N/A
3.5	**Interconnection of equipment**		P
3.5.1	General requirements	See below.	P
3.5.2	Types of interconnection circuits ..... :	Interconnection circuits of SELV via secondary output connector.	P
3.5.3	ELV circuits as interconnection circuits	No ELV interconnection.	N/A
3.5.4	Data ports for additional equipment	Supplied from the external power source which is complied with LPS.	P
4	**PHYSICAL REQUIREMENTS**		P
4.1	**Stability**		N/A
	Angle of 10°	The weight of the unit does not more than 7 kg.	N/A
	Test force (N) ..... :	Equipment is not a floor-standing unit.	N/A
4.2	**Mechanical strength**		P
4.2.1	General	See below.	P
	Rack-mounted equipment.		N/A
4.2.2	Steady force test, 10 N		N/A
4.2.3	Steady force test, 30 N		N/A
4.2.4	Steady force test, 250 N	250 N applied to outer enclosure. No energy or other hazards.	P
4.2.5	Impact test	No hazard as result from steel ball impact test.	P
	Fall test	Same as above.	P
	Swing test	Same as above.	P
4.2.6	Drop test; height (mm) ..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.2.7	Stress relief test	72°C, 7 hours.	P
4.2.8	Cathode ray tubes	No CRT.	N/A
	Picture tube separately certified ..... :	Same as above.	N/A
4.2.9	High pressure lamps	No high pressure lamp.	N/A
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :	Applied 50N.	P
4.3	**Design and construction**		P
4.3.1	Edges and corners	Edges and corners of the enclosure are rounded.	P
4.3.2	Handles and manual controls; force (N) ..... :	No handles or controls used.	N/A
4.3.3	Adjustable controls	No hazardous adjustable controls.	N/A
4.3.4	Securing of parts	Mechanical fixings are reliable designed to withstand mechanical stress occurring during normal use.	P
4.3.5	Connection by plugs and sockets	No misconnection of plugs, connections or sockets possible.	P
4.3.6	Direct plug-in equipment	Not direct plug-in type.	N/A
	Torque ..... :	Same as above.	—
	Compliance with the relevant mains plug standard :	Same as above.	N/A
4.3.7	Heating elements in earthed equipment	No heating elements.	N/A
4.3.8	Batteries	No battery provided.	N/A
	- Overcharging of a rechargeable battery	Same as above.	N/A
	- Unintentional charging of a non-rechargeable battery	Same as above.	N/A
	- Reverse charging of a rechargeable battery	Same as above.	N/A
	- Excessive discharging rate for any battery	Same as above.	N/A
4.3.9	Oil and grease	Insulation in intended use not considered to be exposed to oil and grease.	N/A
4.3.10	Dust, powders, liquids and gases	EUT in intended use does not produce dust or use powders, liquids or gases.	N/A
4.3.11	Containers for liquids or gases	No such containers provided.	N/A
4.3.12	Flammable liquids ..... :	No flammable liquids used.	N/A
	Quantity of liquid (l) ..... :	Same as above.	N/A
	Flash point (°C) ..... :	Same as above.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.3.13	Radiation	No concerned radiation within this equipment.	N/A
4.3.13.1	General	Same as above.	N/A
4.3.13.2	Ionizing radiation	No ionizing radiation or flammable liquids present.	N/A
	Measured radiation (pA/kg) ..... :	Same as above.	—
	Measured high-voltage (kV) ..... :	Same as above.	—
	Measured focus voltage (kV) ..... :	Same as above.	—
	CRT markings ..... :	Same as above.	—
4.3.13.3	Effect of ultraviolet (UV) radiation on materials	No UV presents.	N/A
	Part, property, retention after test, flammability classification ..... :	Same as above.	N/A
4.3.13.4	Human exposure to ultraviolet (UV) radiation ..... :	Same as above.	N/A
4.3.13.5	Lasers (including laser diodes) and LEDs	See below.	N/A
4.3.13.5.1	Lasers (including laser diodes)	No laser diodes provided.	—
	Laser class ..... :	Same as above.	—
4.3.13.5.2	Light emitting diodes (LEDs)	No light emitting diodes	N/A
4.3.13.6	Other types ..... :	No other type.	N/A

4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General	No hazard moving parts are employed.	N/A
4.4.2	Protection in operator access areas ..... :		N/A
	Household and home/office document/media shredders		N/A
4.4.3	Protection in restricted access locations ..... :		N/A
4.4.4	Protection in service access areas		N/A
4.4.5	Protection against moving fan blades		N/A
4.4.5.1	General		N/A
	Not considered to cause pain or injury. a)……:		N/A
	Is considered to cause pain, not injury. b) ……:		N/A
	Considered to cause injury. c) ……:		N/A
4.4.5.2	Protection for users		N/A
	Use of symbol or warning ……:		N/A
4.4.5.3	Protection for service persons		N/A
	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	See below.	P
4.5.2	Temperature tests	See appended table 4.5.	P
	Normal load condition per Annex L ..... :	See appended table 1.6.2.	—
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 ..... :	Class III equipment.	N/A
4.6	**Openings in enclosures**		P
4.6.1	Top and side openings	See below.	P
	Dimensions (mm) ..... :	See appended table 4.6.1, 4.6.2.	—
4.6.2	Bottoms of fire enclosures	See below.	P
	Construction of the bottomm, dimensions (mm) .. :	See appended table 4.6.1, 4.6.2.	—
4.6.3	Doors or covers in fire enclosures	No doors or covers provided.	N/A
4.6.4	Openings in transportable equipment	Not such equipment.	N/A
4.6.4.1	Constructional design measures	Same as above.	N/A
	Dimensions (mm) ..... :	Same as above.	—
4.6.4.2	Evaluation measures for larger openings	Same as above.	N/A
4.6.4.3	Use of metallized parts	Same as above.	N/A
4.6.5	Adhesives for constructional purposes	No such consideration.	N/A
	Conditioning temperature (°C), time (weeks) ..... :	Same as above.	—
4.7	**Resistance to fire**		P
4.7.1	Reducing the risk of ignition and spread of flame	Use of materials with the required flammability classes.	P
	Method 1, selection and application of components wiring and materials	Method 1 used.	P
	Method 2, application of all of simulated fault condition tests	Same as above.	N/A
4.7.2	Conditions for a fire enclosure	See below.	P
4.7.2.1	Parts requiring a fire enclosure	See below.	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
4.7.2.2	Parts not requiring a fire enclosure	The appliance with: Supply of components in the secondary circuit by a limited power source adaptor. The components are mounted on PCB material of flammability rating V-1 min., the fire enclosure construction is not required.	P
4.7.3	Materials		P
4.7.3.1	General	PCB rated accordingly. For details see table 1.5.1.	P
4.7.3.2	Materials for fire enclosures	See sub-clause 4.7.2.	N/A
4.7.3.3	Materials for components and other parts outside fire enclosures	Same as above.	N/A
4.7.3.4	Materials for components and other parts inside fire enclosures	Same as above.	N/A
4.7.3.5	Materials for air filter assemblies	No air filter provided.	N/A
4.7.3.6	Materials used in high-voltage components	No high voltage components provided.	N/A
5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		P
5.1	**Touch current and protective conductor current**		N/A
5.1.1	General	Class III equipment without TNV circuit.	N/A
5.1.2	Configuration of equipment under test (EUT)		N/A
5.1.2.1	Single connection to an a.c. mains supply		N/A
5.1.2.2	Redundant multiple connections to an a.c. mains supply		N/A
5.1.2.3	Simultaneous multiple connections to an a.c. mains supply		N/A
5.1.3	Test circuit		N/A
5.1.4	Application of measuring instrument		N/A
5.1.5	Test procedure		N/A
5.1.6	Test measurements		N/A
	Supply voltage (V) .....:		—
	Measured touch current (mA) .....:		—
	Max. allowed touch current (mA) .....:		—
	Measured protective conductor current (mA) .....:		—
	Max. allowed protective conductor current (mA) ...:		—

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Clause	Requirement + Test	Result - Remark	Verdict
5.1.7	Equipment with touch current exceeding 3,5 mA		N/A
5.1.7.1	General .....:		N/A
5.1.7.2	Simultaneous multiple connections to the supply		N/A
5.1.8	Touch currents to telecommunication networks and cable distribution systems and from telecommunication networks		N/A
5.1.8.1	Limitation of the touch current to a telecommunication network or to a cable distribution system		N/A
	Supply voltage (V) .....:		—
	Measured touch current (mA) .....:		—
	Max. allowed touch current (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
5.2	**Electric strength**		N/A
5.2.1	General		N/A
5.2.2	Test procedure		N/A
5.3	**Abnormal operating and fault conditions**		P
5.3.1	Protection against overload and abnormal operation	See sub-clause 5.3.4.	P
5.3.2	Motors	No such component provided.	N/A
5.3.3	Transformers	No safety isolation transformer in this equipment.	N/A
5.3.4	Functional insulation .....:	Method c). Test results see appended table 2.2 and 5.3.	P
5.3.5	Electromechanical components	No electromechanical components provided.	N/A
5.3.6	Audio amplifiers in ITE .....:	No audio amplifier within this equipment.	N/A
5.3.7	Simulation of faults	See sub-clause 5.3.4.	N/A
5.3.8	Unattended equipment	None of the listed components provided.	N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions	See below.	P

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Clause	Requirement + Test	Result - Remark	Verdict
5.3.9.1	During the tests	No fire occurred beyond the equipment, no molten metal emitted and no deformation of enclosure.	P
5.3.9.2	After the tests	Same as above.	N/A
6	**CONNECTION TO TELECOMMUNICATION NETWORKS**		N/A
6.1	**Protection of telecommunication network service persons, and users of other equipment connected to the network, from hazards in the equipment**		N/A
6.1.1	Protection from hazardous voltages		N/A
6.1.2	Separation of the telecommunication network from earth		N/A
6.1.2.1	Requirements		N/A
	Supply voltage (V) ..... :		—
	Current in the test circuit (mA) ..... :		—
6.1.2.2	Exclusions ..... :		N/A
6.2	**Protection of equipment users from overvoltages on telecommunication networks**		N/A
6.2.1	Separation requirements		N/A
6.2.2	Electric strength test procedure		N/A
6.2.2.1	Impulse test		N/A
6.2.2.2	Steady-state test		N/A
6.2.2.3	Compliance criteria		N/A
6.3	**Protection of the telecommunication wiring system from overheating**		N/A
	Max. output current (A) ..... :		—
	Current limiting method ..... :		—
7	**CONNECTION TO CABLE DISTRIBUTION SYSTEMS**		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

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Clause	Requirement + Test	Result - Remark	Verdict
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A
A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		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)..... :		—
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)..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
	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
B	**ANNEX B, MOTOR TESTS UNDER ABNORMAL CONDITIONS (see 4.7.2.2 and 5.3.2)**		N/A
B.1	**General requirements**		N/A
	Position ..... :		—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
B.2	**Test conditions**		N/A
B.3	**Maximum temperatures**		N/A
B.4	**Running overload test**		N/A
B.5	**Locked-rotor overload test**		N/A
	Test duration (days) ..... :		—
	Electric strength test: test voltage (V) ..... :		—
B.6	**Running overload test for d.c. motors in secondary circuits**		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**		N/A
B.7.1	General		N/A
B.7.2	Test procedure		N/A
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**		N/A
B.9	**Test for three-phase motors**		N/A
B.10	**Test for series motors**		N/A
	Operating voltage (V) ..... :		—

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Clause	Requirement + Test	Result - Remark	Verdict
C	**ANNEX C, TRANSFORMERS (see 1.5.4 and 5.3.3)**		N/A
	Position ..... :	Evaluated in approved switching power adaptor.	—
	Manufacturer ..... :		—
	Type ..... :		—
	Rated values ..... :		—
	Method of protection ..... :		—
C.1	**Overload test**		N/A
C.2	**Insulation**		N/A
	Protection from displacement of windings ..... :		N/A
D	**ANNEX D, MEASURING INSTRUMENTS FOR TOUCH-CURRENT TESTS (see 5.1.4)**		N/A
D.1	**Measuring instrument**		N/A
D.2	**Alternative measuring instrument**		N/A
E	**ANNEX E, TEMPERATURE RISE OF A WINDING (see 1.4.13)**		N/A
F	**ANNEX F, MEASUREMENT OF CLEARANCES AND CREEPAGE DISTANCES (see 2.10 and Annex G)**		N/A
G	**ANNEX G, ALTERNATIVE METHOD FOR DETERMINING MINIMUM CLEARANCES**		N/A
G.1	**Clearances**		N/A
G.1.1	General		N/A
G.1.2	Summary of the procedure for determining minimum clearances		N/A
G.2	**Determination of mains transient voltage (V)**		N/A
G.2.1	AC mains supply ..... :		N/A
G.2.2	Earthed d.c. mains supplies ..... :		N/A
G.2.3	Unearthed d.c. mains supplies ..... :		N/A
G.2.4	Battery operation ..... :		N/A
G.3	**Determination of telecommunication network transient voltage (V) ..... :**		N/A
G.4	**Determination of required withstand voltage (V)**		N/A
G.4.1	Mains transients and internal repetitive peaks ..... :		N/A
G.4.2	Transients from telecommunication networks ..... :		N/A
G.4.3	Combination of transients		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
G.4.4	Transients from cable distribution 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 ..... :**		N/A
H	**ANNEX H, IONIZING RADIATION (see 4.3.13)**		N/A
J	**ANNEX J, TABLE OF ELECTROCHEMICAL POTENTIALS (see 2.6.5.6)**		N/A
	Metal(s) used ..... :		—
K	**ANNEX K, THERMAL CONTROLS (see 1.5.3 and 5.3.8)**		N/A
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		N/A
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		N/A
L.6	Motor-operated files		N/A
L.7	Other business equipment	See sub-clause 1.6.2.	P
M	**ANNEX M, CRITERIA FOR TELEPHONE RINGING SIGNALS (see 2.3.1)**		N/A
M.1	Introduction		N/A
M.2	Method A		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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)**		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)**		N/A
	- Preferred climatic categories ..... :		N/A
	- Maximum continuous voltage ..... :		N/A
	- Combination pulse current ..... :		N/A
	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
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)**		N/A
S.1	Test equipment		N/A

IEC/EN 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		N/A
			—
U	**ANNEX U, INSULATED WINDING WIRES FOR USE WITHOUT INTERLEAVED INSULATION (see 2.10.5.4)**		N/A
			—
V	**ANNEX V, AC POWER DISTRIBUTION SYSTEMS (see 1.6.1)**		N/A
V.1	Introduction		N/A
V.2	TN power distribution systems		N/A
W	**ANNEX W, SUMMATION OF TOUCH CURRENTS**		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
X	**ANNEX X, MAXIMUM HEATING EFFECT IN TRANSFORMER TESTS (see clause C.1)**		N/A
X.1	Determination of maximum input current		N/A
X.2	Overload test procedure		N/A
Y	**ANNEX Y, ULTRAVIOLET LIGHT CONDITIONING TEST (see 4.3.13.3)**		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)**		N/A

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

AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**	N/A

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

CC	**ANNEX CC, Evaluation of integrated circuit (IC) current limiters**		N/A
CC.1	General	No such current limiter provided	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

DD	**ANNEX DD, Requirements for the mounting means of rack-mounted equipment**		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N……..:		N/A
DD.3	Mechanical strength test, 250N, including end stops……:		N/A
DD.4	Compliance……..:		N/A

EE	**ANNEX EE, Household and home/office document/media shredders**		N/A
EE.1	General	No such device provided.	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

1.5.1	TABLE: List of critical components				P
Object/part No.	Manufacturer/ trademark	Type/model	Technical data	Standard	Mark(s) of conformity [1)]
External Power Adaptor (Optional) (For model FE9181-H used)	Interchangeable	Interchangeable	O/P: 12Vdc, 0.37A min., 50°C min., LPS	IEC 60950-1:2005 or IEC 60950-1:2005+A1:2009 or IEC 60950-1:2005+A1:2009 +A2:2013	CB (issued by National Certification Body)
External Power Adaptor (Optional) (For model FE9181-H used)	Interchangeable	Interchangeable	O/P: 36-57Vdc, 0.16-0.1A, 50°C min., LPS	IEC 60950-1:2005 or IEC 60950-1:2005+A1:2009 or IEC 60950-1:2005+A1:2009 +A2:2013	CB (issued by National Certification Body)
External Power Adaptor (Optional) (For all models used)	Interchangeable	Interchangeable	O/P: 12Vdc, 0.9A min., 55°C min., LPS	IEC 60950-1:2005 or IEC 60950-1:2005+A1:2009 or IEC 60950-1:2005+A1:2009 +A2:2013	CB (issued by National Certification Body)
External Power Adaptor (Optional) (For all models used)	Interchangeable	Interchangeable	O/P: 36-57Vdc, 0.36-0.23A, 55°C min., LPS	IEC 60950-1:2005 or IEC 60950-1:2005+A1:2009 or IEC 60950-1:2005+A1:2009 +A2:2013	CB (issued by National Certification Body)
Metal Enclosure (For model FE9381-EHV used)	Interchangeable	Interchangeable	Aluminium, 2.5mm thickness	--	--
Plastic enclosure (For model FE9181-H used only)	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	AC3100	HB min. 1.2 mm thick min.	UL 94	UL
Lens cover (For model FE9381-EHV used)	Teijin Polycarbonate China Ltd	L-1225Z(#1)(f1)	HB min. 1.8 mm thick min, outdoor used.	UL 94	UL

Wall Mount Bracket (Optional)	Interchangeable	Interchangeable	Aluminum	--	--
O-ring (between Plastic Lens and Enclosure)	Chen Yuan Hsing Yeh Co., Ltd.	612014801G	EPDM/SILICONE rubber	--	--
O-ring (between Upper Enclosure and Bottom Enclosure)	Chen Yuan Hsing Yeh Co., Ltd.	612014701G	EPDM/SILICONE rubber	--	--
Seal Plug (for LAN port terminal)	AVC Industrial Corp.	GEW16-08-05SG	Rubber	--	--
	AVC Industrial Corp.	612015801G	EPDM/SILICONE	--	--
Liquid-tight rubber washer (for General I/O terminal)	AVC Industrial Corp.	P-WE-PG7-A-B	EPDM/SILICONE	--	--
PCB	Interchangeable	Interchangeable	V-1 min., 105°C min.	ANSI/UL 796	UL
Electric Double Layer Capacitors (BT2)	ELNA Co., Ltd.	DHL-5R5D224T	5.5Vdc, 0.22F	--	--
Supplementary information:					
1) Provided evidence ensures the agreed level of compliance.					

1.5.1	**TABLE: Opto Electronic Devices**	N/A

Manufacturer.....:

Type .....:

Separately tested .....:

Bridging insulation.....:

External creepage distance .....:

Internal creepage distance.....:

Distance through insulation.....:

Tested under the following conditions.....:

Input.....:

Output .....:
Supplementary information

1.6.2	TABLE: Electrical data (in normal conditions)					P
U (V)	I (A)	Irated (A)	P (W)	Fuse #	Ifuse (A)	Condition/status
For model: FE9381-EHV						
12Vdc	0.71	0.9	8.52	--	--	Maximum normal load with heater device on.
PoE 36V	0.31	0.36	11.16	--	--	Ditto
PoE 57V	0.19	0.23	10.83	--	--	Ditto
For model: FE9181-H						
12Vdc	0.22	0.37	2.64	--	--	Maximum normal load.
PoE 36V	0.09	0.16	3.24	--	--	Ditto
PoE 57V	0.05	0.1	2.85	--	--	Ditto
Supplementary information:						
Maximum normal load : EUT was operated continuously with data-link mode.						

2.1.1.5 c) 1)	TABLE: max. V, A, VA test				N/A
Voltage (rated) (V)	Current (rated) (A)	Voltage (max.) (V)	Current (max.) (A)	VA (max.) (VA)	
Supplementary information:					

2.1.1.5 c) 2)	TABLE: stored energy	N/A
Capacitance C (µF)	Voltage U (V)	Energy E (J)
Supplementary information:		

2.1.1.7	TABLE: Discharge test				N/A
Condition	τ calculated (s)	τ measured (s)	t u→ 0V (s)	Comments	
Supplementary information:					

Test voltage:
Overall capacity:
Discharge resistor:

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.	
T1 pin 1, 2 to 5, 6	--	53.7	T1
T1 pin 1, 2 to 7, 8	91.0	--	T1
T1 pin 3 to 7, 8	36.8	--	T1
T1 pin 10 to 5, 6	36.0	--	T1
T1 pin 10 to 7, 8	17.8	--	
T1 pin 11, 12 to 5, 6	158	--	T1
T1 pin 11, 12 to 7, 8	150	--	T1
L2 primary to GND	24.4	--	T1

Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)
T1 pin 1, 2 to 5, 6,s-c	0Vdc
T1 pin 1, 2 to 7, 8,s-c	0Vdc
T1 pin 3 to 7, 8,s-c	12Vdc
T1 pin 10 to 5, 6,s-c	13.1Vpk
T1 pin 11, 12 to 5, 6,s-c	0Vdc*
T1 pin 11, 12 to 7, 8,s-c	0Vdc
D2, s-c	0Vdc
L2, s-c	12Vdc
Supplementary information:	
1. Test voltage: PoE 57V 2. *: Unit shutdown immediately, EUT damaged	

2.4.2	TABLE: Limited current circuit measurement				N/A
Location	Voltage (V)	Current (mA)	Freq. (Hz)	Limit (mA)	Comments
Supplementary information:					

2.5	TABLE: limited power sources	N/A

Circuit output tested:						
Note: Measured Uoc (V) with all load circuits disconnected:						
Components	Test condition (Single fault)	Uoc (V)	I_{sc} (A)		VA	
			Meas.	Limit	Meas.	Limit
Supplementary information:						
Sc=Short circuit, Oc=Open circuit						

2.6.3.4	TABLE: Resistance of earthing measurement	N/A
Location	Resistance measured (mΩ)	Comments
Supplementary information:		

2.10.2	Table: working voltage measurement		N/A
Location	RMS voltage (V)	Peak voltage (V)	Comments
Supplementary information:			
Test voltage:			

2.10.3 and 2.10.4	TABLE: Clearance and creepage distance measurements						N/A
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)	
Basic/Supplementary							
Reinforced							
Supplementary information:							

2.10.5	TABLE: Distance through insulation measurements				N/A
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)

2.10.5	TABLE: Distance through insulation measurements					N/A
Distance through insulation (DTI) at/of:	U peak (V)	U rms (V)	Test voltage (V)	Required DTI (mm)	DTI (mm)	
Supplementary information:						

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

4.3.8	TABLE: Batteries	N/A
Battery category .....:	(Lithium, NiMh, NiCad, Lithium Ion …)	
Manufacturer .....:		
Type / model .....:		
Voltage .....:		
Capacity .....:	mAh	
Tested and Certified by (incl. Ref. No.) .....:		
Circuit protection diagram:		

MARKINGS AND INSTRUCTIONS (1.7.13)	
Location of replaceable battery	N/A
Language(s) ……..:	N/A
Close to the battery ……..:	N/A
In the servicing instructions ……..:	N/A
In the operating instructions ……..:	N/A

4.5	TABLE: Thermal requirements			P
	Supply voltage (V) ..... :	See below	See below	—
	Ambient T_{min} (°C) ..... :	--	--	—
	Ambient T_{max} (°C) ..... :	--	--	—
Maximum measured temperature T of part/at::		T (°C)		Allowed T_{max} (°C)
Tested with FE9381-EHV				
Test voltage:		POE 36Vdc	POE 57Vdc	--
Test position:		Ceiling	Ceiling	--
U7 touch PWB (Main board)		73.9	73.3	105
U4 touch PWB (Main board)		77.1	76.5	105
T1 coil (Main board)		78.4	78.6	105
U8 touch PWB (Main board)		74.1	73.5	105
BT2 body (Main board)		74.2	73.7	--
Plastic lens inside		61.5	61.0	--
Plastic lens outside		59.6	59.0	95
Metal enclosure outside near T1		62.5	61.9	70
Metal enclosure oustdie (label)		65.5	64.9	70
Tma		55.0	55.0	--
Tamb		24.4	24.2	--
Test voltage:		12Vdc	POE 36Vdc	--
Test position:		Ceiling	Wall	--
U7 touch PWB (Main board)		71.6	71.9	105
U4 touch PWB (Main board)		74.7	74.7	105
T1 coil (Main board)		68.8	76.3	105
U8 touch PWB (Main board)		71.9	71.9	105
BT2 body (Main board)		71.3	72.4	--
Plastic lens inside		60.2	60.4	--
Plastic lens outside		58.6	58.2	95
Metal enclosure outside near T1		60.9	60.6	70

Metal enclosure oustdie (label)	63.8	63.2	70
Tma	55.0	55.0	--
Tamb	24.3	23.8	--
Tested with FE9181-H			
Test voltage:	POE 36Vdc	POE 57Vdc	--
Test position:	Ceiling	Ceiling	--
U7 touch PWB (Main board)	74.5	75.4	105
U4 touch PWB (Main board)	74.8	75.8	105
T1 coil (Main board)	76.2	79.4	105
U8 touch PWB (Main board)	74.3	75.1	105
BT2 body (Main board)	72.3	73.1	--
Plastic enclosure inside near T1	58.8	58.9	--
Plastic enclosure outside near T1	56.0	55.7	95
Metal enclosure oustdie (label)	64.7	65.4	70
Tma	50.0	50.0	--
Tamb	23.8	24.5	--
Test voltage:	12Vdc	POE 57Vdc	--
Test position:	Ceiling	Wall	--
U7 touch PWB (Main board)	71.6	76.1	105
U4 touch PWB (Main board)	71.8	76.2	105
T1 coil (Main board)	65.5	80.1	105
U8 touch PWB (Main board)	71.4	75.5	105
BT2 body (Main board)	68.9	74.6	--
Plastic enclosure inside near T1	55.7	59.6	--
Plastic enclosure outside near T1	53.3	56.5	95
Metal enclosure oustdie (label)	62.1	66.1	70
Tma	50.0	50.0	--
Tamb	23.7	23.8	--

Supplementary information:

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

Supplementary information:

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

2) The maximum ambient temperature (Tma) permitted by the manufacturer's specification: 50°C for model FE9181-H; 55°C for model FE9381-EHV.

3) All values for T (°C) are re-calculated from Tamb respectively.

4.5.5	TABLE: Ball pressure test of thermoplastic parts		N/A
	Allowed impression diameter (mm) ..... :	≤ 2 mm	—

Part	Test temperature (°C)	Impression diameter (mm)
Supplementary information:		

4.6.1, 4.6.2	Table: Enclosure opening measurements	P

Location	Size (mm)	Comments
Top / Bottom / Front / Rear / Right / Left sides	--	No openging provided.
Supplementary information:		
1) Label down side		

4.7	TABLE: Resistance to fire				P

Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
Lens cover	Interchangeable	Interchangeable	--	--	1)
Enclosure	Interchangeable	Interchangeable	1)	1)	1)
PCB	Interchangeable	Interchangeable	--	1)	1)
Supplementary information:					
1) See appended table 1.5.1 for details.					

5.1	TABLE: touch current measurement		N/A

Measured between:	Measured (mA)	Limit (mA)	Comments/conditions
Supplementary information:			
Test voltage:			

5.2	TABLE: Electric strength tests, impulse tests and voltage surge tests			N/A

Test voltage applied between:	Voltage shape (AC, DC, impulse, surge)	Test voltage (V)	Breakdown Yes / No
Basic / supplementary:			
Reinforced:			

Supplementary information:			

5.3	**TABLE: Fault condition tests**						P
	Ambient temperature (°C) ..... :				25°C, if no others states		—
	Power source for EUT: Manufacturer, model/type, output rating ..... :				See appended table 1.5.1.		—
Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation	
D12	short	PoE 57	30 min	--	--	Normal operation, no damage, no hazard, NC, NT	
R177	short	PoE 57	30 min	--	--	Normal operation, no damage, no hazard, NC, NT	
Q10,pin D to S	short	PoE 57	30 min	--	--	Normal operation, no damage, no hazard, NC, NT	
Supplementary information:							
In fault column: s-c=short-circuited, o-c=open-circuited, o-l= overload							

C.2	**TABLE: transformers**						N/A
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:							

C.2	**TABLE: transformers**	N/A
Transformer Mfr.:		
Transformer Type:		
Bobbin:		

Primary/input pins.....:	
Secondary/output pins .....:	
Material (manufacturer, type, ratings).....:	
Thickness (mm).....:	

M.2	**TABLE: Criteria for telephone ringing signals (European method)**								N/A
Condition	I_{DC} (mA)	I_P (mA)	I_{PP} (mA)	t_1 (ms)	t_2 (ms)	I_{TS1} (mA)	Limit (mA)	I_{TS2} (mA)	Limit (mA)
Supplementary information:									

ATTACHMENT TO TEST REPORT **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

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”		
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
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

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
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.		P
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.	Not such equipment.	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	Considered	P
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 *		N/A
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.	Not such equipment.	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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.	Same as above.	N/A
	Zx Protection against excessive sound pressure from personal music players		N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	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.	Not such equipment.	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
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	Same as above.	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
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.		

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
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.	Same as above.	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.	Same as above.	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
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.	Same as above.	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.	Same as above.	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.	Same as above.	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
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;	Replaced.	N/A
	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.	Replaced.	N/A
2.7.2	This subclause has been declared ‘void’.	Void.	N/A
3.2.3	Delete the NOTE in Table 3A, and delete also in this table the conduit sizes in parentheses.	Class III equipment.	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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.	Same as above.	N/A
3.2.5.1 (A2:2013)	NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD	Same as above.	N/A
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	Same as above.	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).	No such consideration.	N/A
	Standards taking into account mentioned Recommendation and Directive which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.	Same as above.	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.	No ionizing radiation	N/A
Bibliography	Additional EN standards.		—

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
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.	Class III equipment.	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.	Not applied for.	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.	Class III equipment.	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).	Class III equipment.	N/A
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.	Not applied for.	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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”	Class III equipment.	N/A
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).”		

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	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.”		
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.”	Class III equipment.	N/A
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.	Class III equipment.	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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	Same as above.	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.	Not applied for.	N/A
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.	Not applied for.	N/A
2.3.4	In **Norway**, for requirements see 1.7.2.1, 6.1.2.1 and 6.1.2.2 of this annex.	Not applied for.	N/A
2.6.3.3	In the **United Kingdom**, the current rating of the circuit shall be taken as 13 A, not 16 A.	Class III equipment.	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.	Not direct plug-in equipment.	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.	Not applied for.	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	No power supply cord provided.	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	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		
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.	Same as above.	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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	Same as above.	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.	Same as above.	N/A
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.	Same as above.	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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.	Same as above.	N/A
3.2.4	In **Switzerland**, for requirements see 3.2.1.1 of this annex.	Same as above.	N/A
3.2.5.1	In the **United Kingdom**, a power supply cord with conductor of 1,25 mm2 is allowed for equipment with a rated current over 10 A and up to and including 13 A.	Same as above.	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.	Same as above.	N/A
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.	Not direct plug-in equipment.	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.	Same as above.	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
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.	Not applied for.	N/A
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. 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.	Not applied for.	N/A

IEC 60950-1, GROUP DIFFERENCES (CENELEC common modifications EN)			
Clause	Requirement + Test	Result - Remark	Verdict
	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.		
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.	Not applied for.	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.	Not such equipment.	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.	Same as above.	N/A

Annex ZD
(informative)

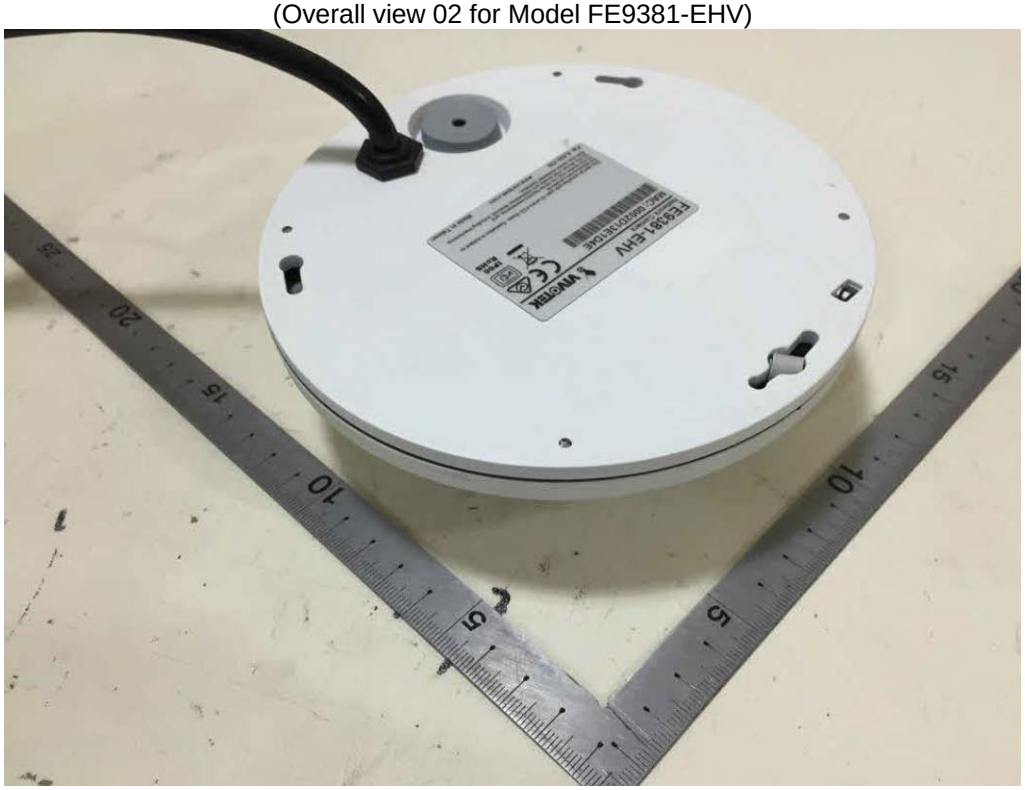
IEC and CENELEC code designations for flexible cords

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

Photo(s)

(Overall view 01 for Model FE9381-EHV)

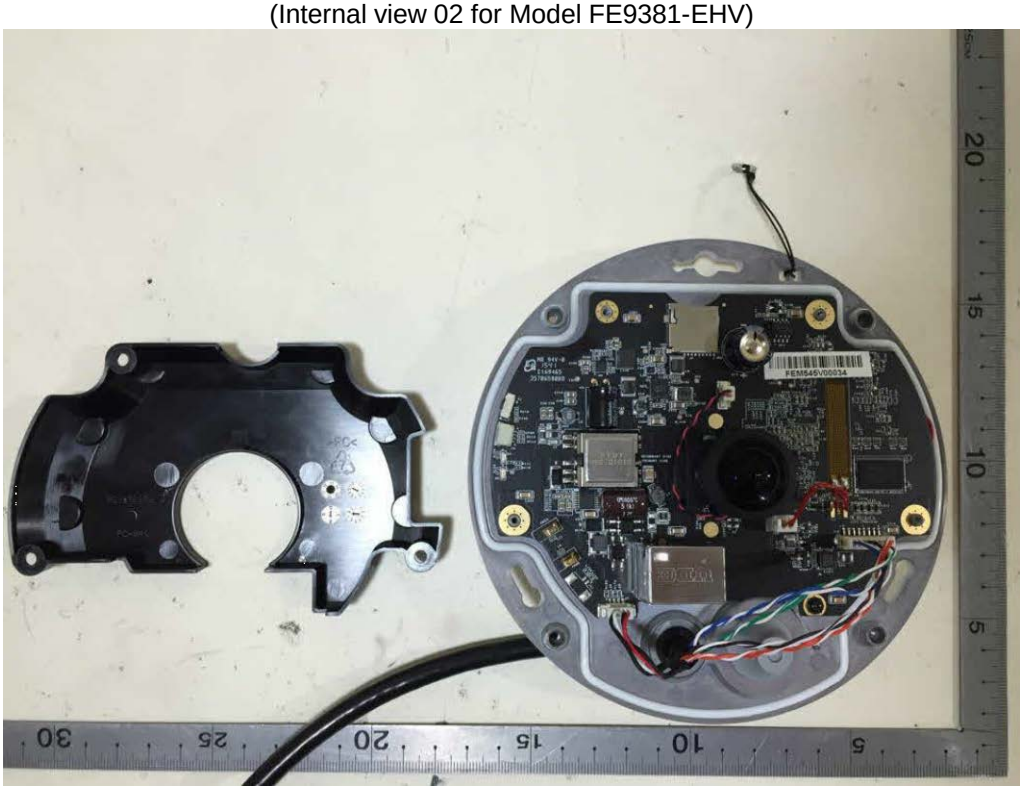
(Overall view 02 for Model FE9381-EHV)



Photo(s)

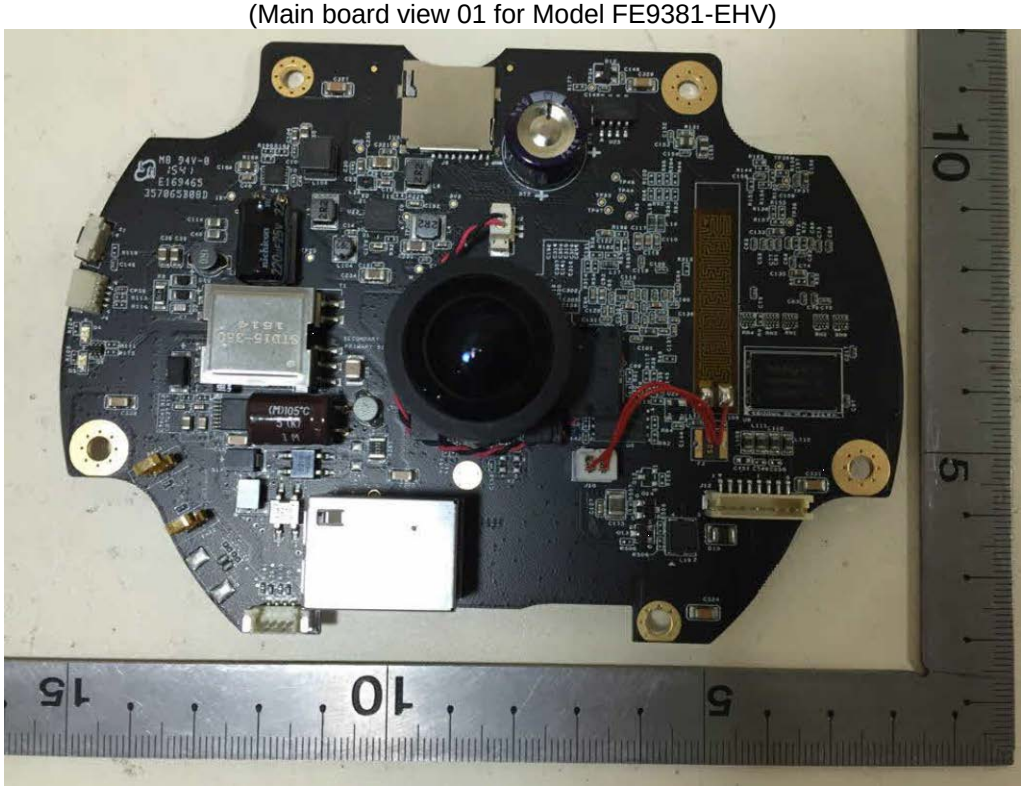
(Internal view 01 for Model FE9381-EHV)

(Internal view 02 for Model FE9381-EHV)

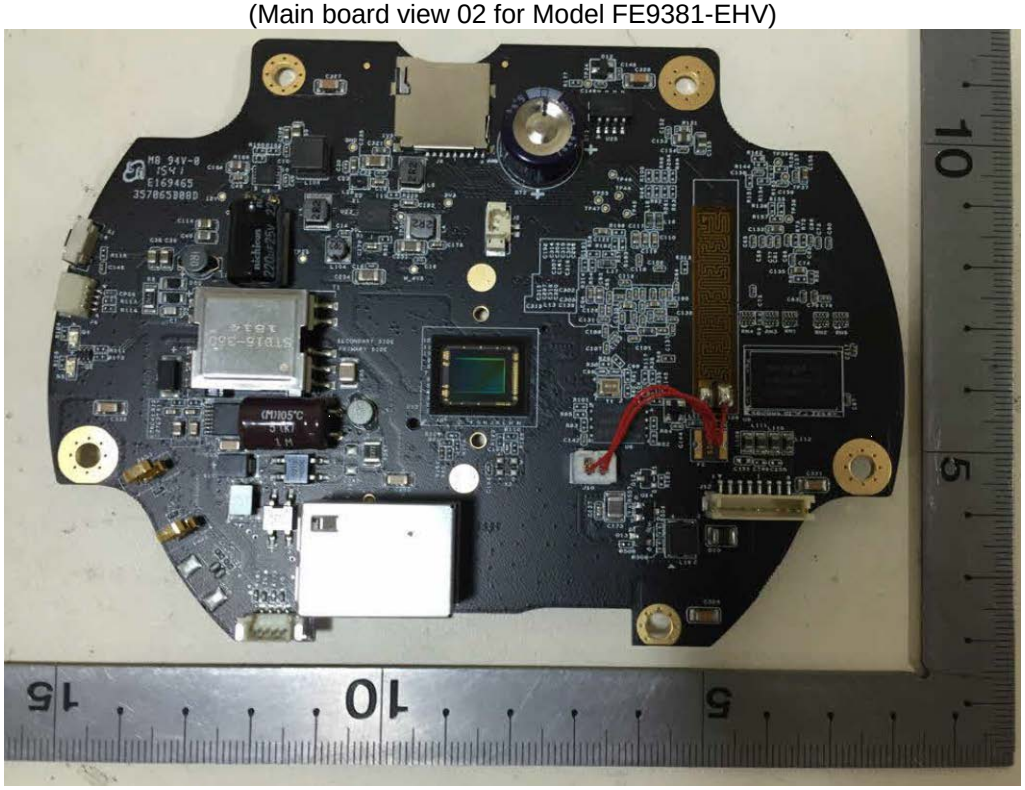


Photo(s)

(Main board view 01 for Model FE9381-EHV)

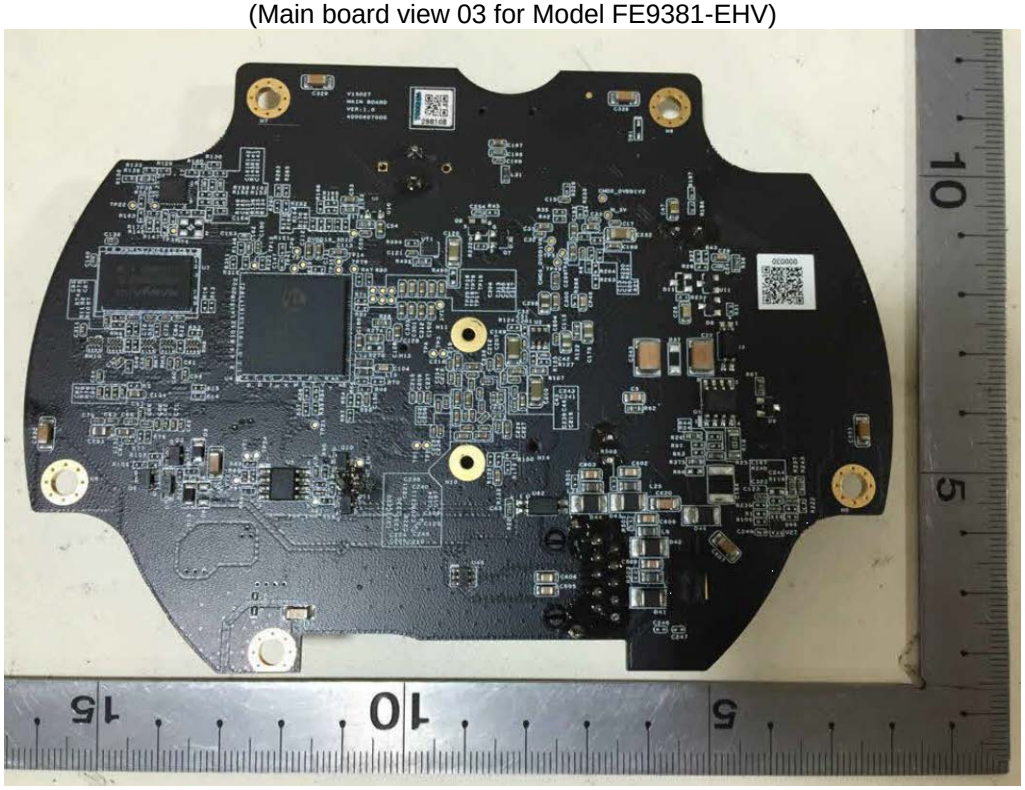


(Main board view 02 for Model FE9381-EHV)



Photo(s)

(Main board view 03 for Model FE9381-EHV)

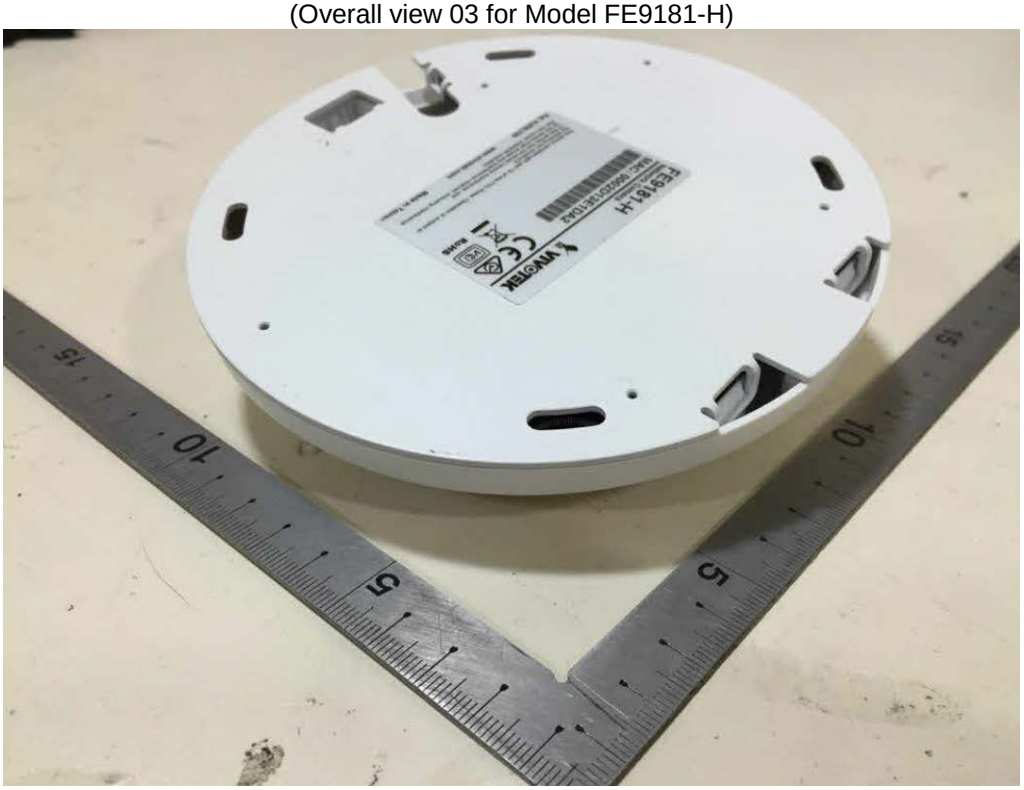


(Overall view 01 for Model FE9181-H)

Photo(s)

(Overall view 02 for Model FE9181-H)

(Overall view 03 for Model FE9181-H)



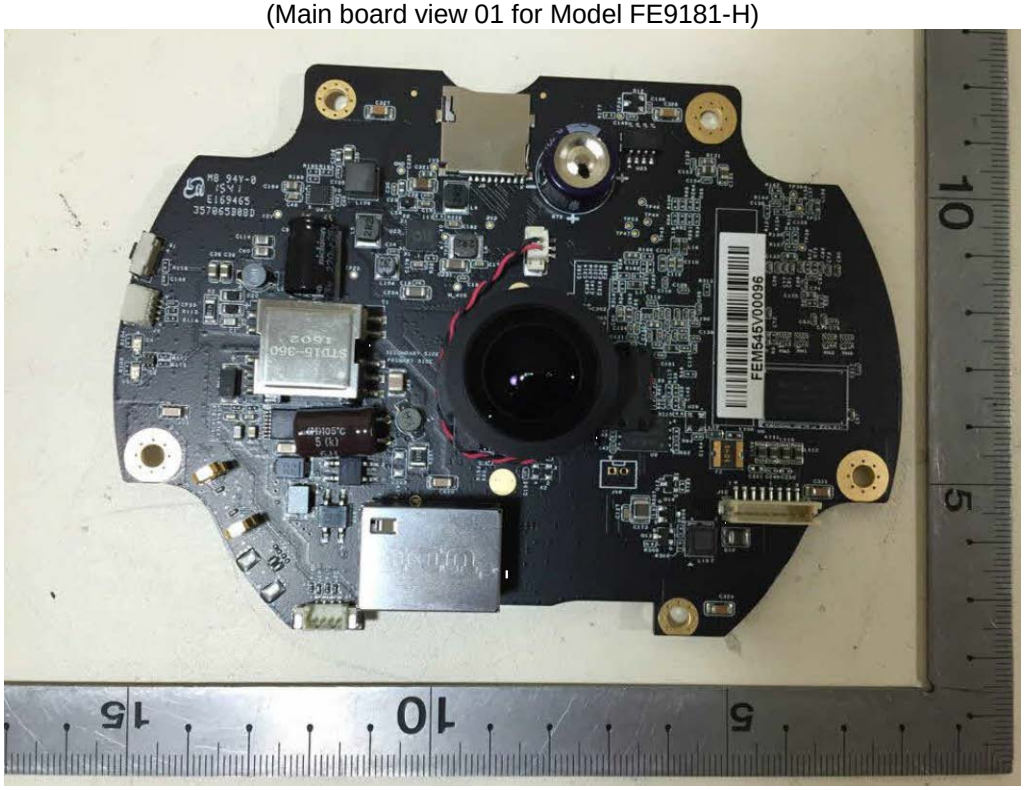
Photo(s)

(Internal view 01 for Model FE9181-H)

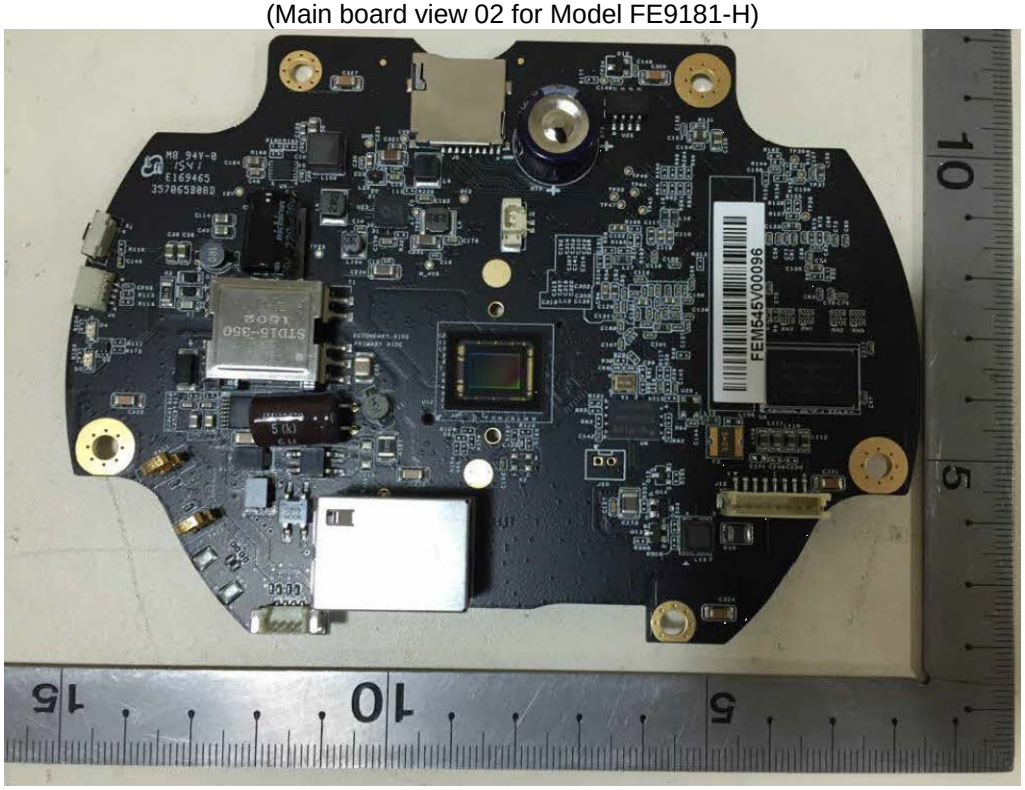
(Internal view 02 for Model FE9181-H)

Photo(s)

(Main board view 01 for Model FE9181-H)

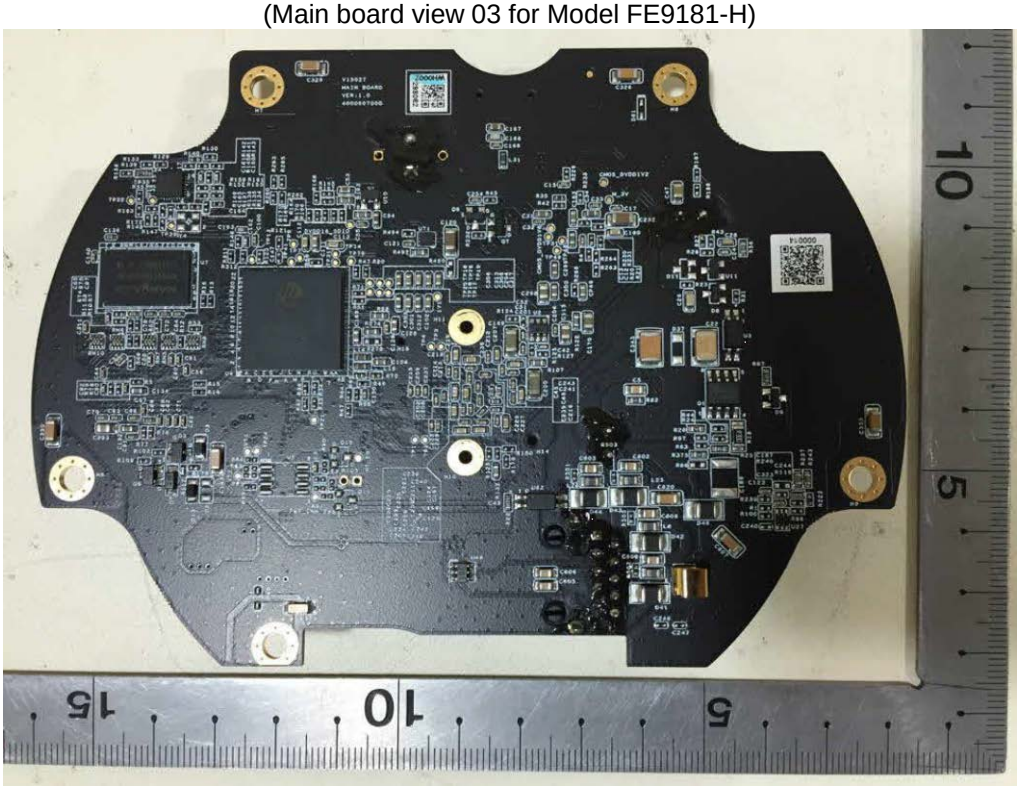


(Main board view 02 for Model FE9181-H)

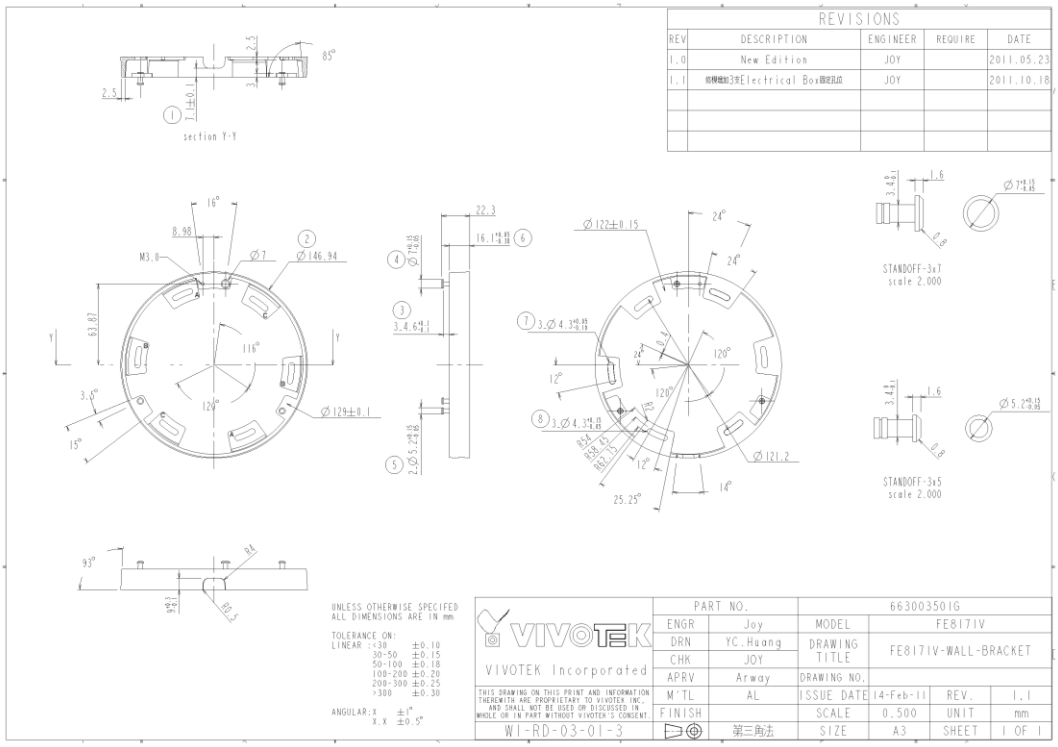


Photo(s)

(Main board view 03 for Model FE9181-H)



(Wall Mount Bracket dimension drawing)



T1291601004A

Attachment 1

IEC 60950-22: 2005 (1st Edition)
Report No.: OFF- 4787311596-A-1
Total number of pages: 24

This partially report is intended for the investigation of safety in accordance with IEC 60950-22. It can only be read together with the IEC 60950-1 main report issued from UL.

Test Report issued under the responsibility of:

TEST REPORT
IEC 60 950-22
Information technology equipment
Safety – Part 22: Equipment to be installed outdoors

Report Reference No. .....:	OFF- 4787311596-A-1
Date of issue .....:	2016-02-04
Total number of pages	23
CB Testing Laboratory .....:	UNDERWRITERS LABORATORIES TAIWAN CO LTD
Address .....:	1ST FI, 260 DA-YEH RD, PEI TOU DISTRICT, TAIPEI CITY, TAIWAN 112
Applicant's name .....:	VIVOTEK INC.
Address .....:	6TH FL, 192 LIEN CHENG RD CHUNG HO DISTRICT NEW TAIPEI 235 TAIWAN
Test specification:	
Standard .....:	IEC 60 950-22 : 2005 (1st Edition)
Test procedure.....:	CB / CCA
Non-standard test method.....:	N/A
Test Report Form No.....:	IEC60950_22A
Test Report Form(s) Originator .....:	The Standards Institution of Israel Ltd.
Master TRF .....:	Dated 2007-03

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

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

Test item description..... :	Network Camera
Trade Mark .....:	VIVOTEK INC.
Manufacturer.....:	VIVOTEK INC.
Model/Type reference .....:	FE9381-EHV
Ratings .....:	(Optional) 36-57Vdc, 0.36-0.23A (for unit supplied by PoE) or 12Vdc, 0.9A (for unit supplied by adapter)

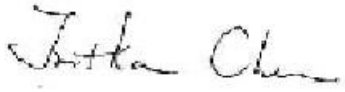
Testing procedure and testing location:

☒ **CB Testing Laboratory**: UNDERWRITERS LABORATORIES TAIWAN CO LTD

Testing location/ address ..... : 1ST FI, 260 DA-YEH RD, PEI TOU DISTRICT, TAIPEI CITY, TAIWAN 112

☐ **Associated CB Test Laboratory:**

Testing location/ address ..... :

Tested by (name + signature)..... : Jonathan Chen 

Approved by (+ signature) ..... : Stanley Tsai 

☐ Testing procedure: TMP

Tested by (name + signature)..... :

Approved by (+ signature) ..... :

Testing location/ address ..... :

☐ Testing procedure: WMT

Tested by (name + signature)..... :

Witnessed by (+ signature) ..... :

Approved by (+ signature) ..... :

Testing location/ address ..... :

☐ Testing procedure: SMT

Tested by (name + signature)..... :

Approved by (+ signature) ..... :

Supervised by (+ signature)..... :

Testing location/ address ..... :

☐ Testing procedure: RMT

Tested by (name + signature)..... :

Approved by (+ signature) ..... :

Supervised by (+ signature)..... :

Testing location/ address ..... :

Summary of testing:

The following tests were waived:

Test	Rationale for Waiving
Tensile Strength and Elongation (Part 22 8.5, Annex D.2)	Refer E324690-A15 Model FE8171V.
Compression - Gaskets, Closed Cell Construction (Part 22 8.5.1, Annex D.3)	Refer E324690-A15 Model FE8171V.
Degrees of protection provided by enclosures (IP Code), IEC 60529, Edition 2.1 + Corr. 1:2003 + Corr. 2:2007 + Corr. 3:2009: 13.4 – DUST TEST FOR ENCLOSURE DESIGNATION IP6X 14.2.6 – WATER SPRAY TEST FOR ENCLOSURE DESIGNATION IPX6.	Refer E324690-A15 Model FE8171V.

The following tests were conducted according to Information Technology Equipment - Safety - Part 22: Equipment to be Installed Outdoors, UL 60950-22 First Edition, dated April 23, 2007. CAN/CSA-C22.2 No. 60950-22-07 First Edition, Dated April 2007.

Tests performed (name of test and test clause):

4.2.5, 4.2.1, PART 22 10.2 – IMPACT TEST

PART 22 9.1, ANNEX B – WATER SPRAY TEST

Testing location:

UNDERWRITERS LABORATORIES TAIWAN CO LTD/ 1ST FI, 260 DA-YEH RD, PEI TOU DISTRICT, TAIPEI CITY, TAIWAN 112.

Summary of compliance with National Differences:

N/A

Copy of marking plate

N/A

Test item particulars..... :	
Temperature range ..... :	-40 degree c to 55 degree C
Overvoltage category ..... :	☒ OVC I ☐ OVC II ☐ OVC III ☐ OVC IV
IP protection class ..... :	IP66
Possible test case verdicts:	
- test case does not apply to the test object ..... :	N/A or N
- test object does meet the requirement ..... :	P (Pass)
- test object does not meet the requirement..... :	F (Fail)
Testing..... :	
Date of receipt of test item ..... :	2016-01-27
Date (s) of performance of tests..... :	2016-02-03

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 comma (point) is used as the decimal separator.

This Test Report Form is intended for the investigation of safety of equipment to be installed outdoors in accordance with UL 60950-22. It can only be used together with the UL 60950-1 requirements.

General product information:

Report Summary:

All applicable tests according to the referenced standard(s) have been carried out.

Product Description:

The equipment is a Class III Network Camera, consists of electronic components mounted on PWB and housed in metal/plastic enclosure.
The EUT installs to the wall or ceiling.
Intended to be supplied by UL Listed AC/DC adapter or PoE.

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
4	CONDITIONS FOR OUTDOOR EQUIPMENT		P
4.1	Ambient air temperature		P
	Suitability for use at any temperature in the range specified by the manufacturer. If not specified by the manufacturer, the range is taken as -33°C to +40°C	-40°C to 55°C	P
4.2	AC mains supply		N
	Suitability for the highest Overvoltage Category expected in the installation location	Class III equipment.	N
	Components used to reduce the Overvoltage Category comply with IEC 61643-series		N
	Reference to installation instructions .....:		N
4.3	Rise of earth potential		
	Special earthing conditions	Class III equipment.	N
	Reference to installation instructions .....:		N
5	MARKING AND INSTRUCTIONS		P
	Special installation features for protection from conditions in the OUTDOOR LOCATION (see 1.7.2 of UL 60950-1)	Precautions in the installation instruction.	P
	OUTDOOR ENCLOSURE classification according to IEC 60529 (IP Code)	The unit is considered as outdoor equipment	N
6	PROTECTION FROM ELECTRICAL SHOCK IN AN OUTDOOR LOCATION		P
6.1	Voltage limits of user-accessible parts in OUTDOOR LOCATIONS (2.2.2 and 2.2.3 of UL 60950-1 with voltage limits of UL60950-22)		P
	Voltages under normal conditions (V).....:	Accessible parts are less than 21.2 Vp or 30Vdc and are classified as SELV.	P
	Voltages under fault conditions (V) .....:	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 15 V a.c., 21,2 V peak, or 30 V d.c. for longer than 0,2 s under single fault conditions.	P
6.2	Limited current circuits in outdoor locations		N
	The requirements of 2.4 of UL60950-1 apply without change		N

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
7	WIRING TERMINALS FOR CONNECTION OF EXTERNAL CONDUCTORS		N
	The mains supply terminations powered via the normal building installation wiring are as specified in 3.3 of UL 60950-1	Not directly connected to mains.	N
	The mains supply terminations powered directly from the mains distribution system are as specified in IEC 60364	Not directly connected to mains.	N
8	CONSTRUCTION REQUIREMENTS FOR OURDOOR ENCLOSURES		P
8.1	General		P
	Protection against corrosion by use of suitable materials or by application of a protective coating	Metallic enclosure was made of aluminium.	P
	Parts serving as a functional part of an OUTDOOR ENCLOSURE (e.g., dials, connectors, etc.) comply with the same environmental protection requirements as for the OUTDOOR ENCLOSURE	All relevant parts comply with applicable requirements	P
	Use of OUTDOOR ENCLOSURE to carry current during normal operation	Outdoor enclosure does not carry current during normal operation.	P
	Connection of a conductive part of an OUTDOOR ENCLOSURE to protective earth for carrying fault currents (see 2.6 of UL 60950-1 and 8.3 of this standard)		N
8.2	Resistance to ultra-violet radiation		P
	Resistance of non-metallic parts of an outdoor enclosure to degradation by ultra-violet (UV) radiation	The materials of enclosure are Aluminium and plastic. Plastic (Lens) cover are UL approved component (UL 746C, Sections 25 (UV Exposure) and 57 (UV Light Exposure Test) and sufficiently resistant to degradation by ultra-violet (UV) radiation.	P
	Parts providing mechanical support:		N
	Tensile strength test (ISO 527)		N
	Flexural strength test (ISO 178)		N
	Parts providing impact resistance:		N
	Charpy impact test (ISO 179)		N
	Izod impact test (ISO 180)		N
	Tensile impact test (ISO 8256)		N

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
	All parts:		N
	Flammability classification (1.2.12 and annex A of UL 60950-1)		N
8.3	Resistance to corrosion		P
8.3.1	General	Metallic enclosure was made of aluminum and after evaluated/reviewed the data provided from manufacturer, the construction complied with requirements.	P
	Resistance of metallic parts of an OUTDOOR ENCLOSURE to the effects of water-borne contaminants		N
	Alternate method for 8.3.2-8.3.4 (IEC 61587-1)		N
8.3.2	Test apparatus		N
	Salt-spray test (IEC 60068-2-11)		N
	Test in a water-saturated sulphur dioxide atmosphere (water-saturated sulphur dioxide atmosphere as described in Annex A; chamber as described in ISO 3231)		N
8.3.3	Test procedure		N
8.3.4	Compliance criteria		N
8.4	Bottoms of FIRE ENCLOSURES		N
	Comply with 4.6.2 of UL 60950-1	No bottom opening.	N
	Bottom of FIRE ENCLOSURE of OUTDOOR EQUIPMENT mounted directly and permanently on a non-combustible surface (e.g., concrete or metal)		N
8.5	Gaskets		P
	If gaskets are used as the method for protection against the ingress of potential contaminants, requirements of 8.5.1 through 8.5.3 apply	Refer to Report No. E324690-A15 for test result in detail.	P
8.5.1	General		N
8.5.2	Oil resistance		N
8.5.3	Securing means	mechanical means used	P
9	PROTECTION OF EQUIPMENT WITHIN AN OUTDOOR ENCLOSURE		P
9.1	Protection from moisture (see Table 2)	Also IEC 60529 tests applied	P
9.2	Protection from plants and vermin	No openings on the enclosure.	N

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
9.3	Protection from excessive dust	Also IEC 60529 tests applied	P

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
10	MECHANICAL STRENGTH OF ENCLOSURES		P
10.1	General		P
10.2	Impact test (4.2.5 of UL 60950-1)	(see separate test report UL 60950-1)	P
	Compliance criteria:		P
	- after test the level of protection remains in accordance with 9.1of this standard		P
	- after test the requirements of 4.2.1 of UL 60950-1 are met		P
11	OUTDOOR EQUIPMENT CONTAINING VENTED BATTERIES		N
	Adequate ventilation in the compartment housing a vented battery, where gassing is possible during normal usage or over-charging	No such battery was provided.	N
	Protection against the risk of ignition of local concentrations of hydrogen and oxygen in a compartment containing both a battery and electrical components		N
	Hydrogen gas concentration measurement test		N
	Measured hydrogen gas concentration (% by volume) .....:		—
	Max. allowed gas concentration for the mixture location in proximity to an ignition source (% by volume) .....:		—
	Max. allowed gas concentration for the mixture location not in proximity to an ignition source (% by volume) .....:		—
	Overcharging of rechargeable battery (see 4.3.8 of UL 60950-1)		N
A	ANNEX A, WATER-SATURATED SULPHUR DIOXIDE ATMOSPHERE (see 8.3.2 and 8.3.3)		N
B	ANNEX B, WATER SPRAY TEST (see 9.1)		P
C	ANNEX C, ULTRAVIOLET LIGHT CONDITIONING TEST (see 8.2)		N
C.1	Test apparatus.....:		N
C.2	Mounting of test samples.....:		N
C.3	Carbon-arc light-exposure apparatus.....:		N

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
C.4	Xenon-arc light-exposure apparatus .....:		N
D	ANNEX D, GASKET TESTS (see 8.5)		P
D.1	Gasket tests		P
D.2	Tensile strength and elongation tests (for gaskets that can stretch)	Refer to Report No. E324690-A15 for test result in detail.	P
	Tensile strength (%) .....:		N
	Elongation (%) .....:		N
	Visible deterioration, deformation, melting, cracking or hardening of the material.....:	There was no visible cracking or other adverse effect of the conditioned material.	P
D.3	Compression test (for gaskets with closed cell construction)	Refer to Report No. E324690-A15 for test result in detail.	P
	Initial thickness of the specimen (mm) .....:		N
	Thickness of the specimen after test a) (mm), compression set after test a) (%).....:		N
	Thickness of the specimen after test b) (mm), compression set after test b) (%).....:		N
	Thickness of the specimen after test c) (mm), compression set after test c) (%).....:		N
	Visible cracks or deterioration .....:		N
D.4	Oil immersion test		N
	Swelling (%).....:		N
	Shrinking (%).....:		N
E	ANNEX E, RATIONALE		—
E.1	General		—
E.2	Electric shock		—
E.3	Energy related hazards		—
E.4	Fire		—
E.5	Mechanical hazards		—
E.6	Heat related hazards		—
E.7	Radiation		—
E.8	Chemical hazards		—
E.9	Biological hazards		—

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
E.10	Explosion hazards		—

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-22:2005 – COMMON MODIFICATIONS		
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions	
General	Delete all the “country” notes in the reference document according to the following list: 4.1 Note 3 4.3 Note 8.5 Note 10.2 Note D.3 Note D.4 Note	

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

ZB	SPECIAL NATIONAL CONDITIONS		
4.1	In **Finland**, **Norway** and **Sweden**, the temperature in winter may be extremely low. For OUTDOOR EQUIPMENT this will demand special design so that the equipment can withstand transport, erection and operation/service at temperatures down to -50°C	This National Condition has been removed in EN 60950-22:2006 + A11:2008.	N
10.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the minimum ambient temperature. See 4.1 of this annex.	This National Condition has been removed in EN 60950-22:2006 + A11:2008.	N
D.3	In **Finland**, **Norway** and **Sweden** there are additional requirements for the minimum ambient temperature. See 4.1 of this annex.	This National Condition has been removed in EN 60950-22:2006 + A11:2008.	N

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2a)	Tensile strength test (ISO 527)	**N**

Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples..... :		—
Conditioning for Set 1 of samples ..... :		—
Conditioning for Set 2 of samples (including Annex C)..... :		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Tensile strength (MPa)	Test sample #	Tensile strength (MPa)

Arithmetic mean for Set 1 (MPa) ..... :	
Arithmetic mean for Set 2 (MPa) ..... :	
Retention (%) ..... :	

Supplementary information:

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	**TABLE: Resistance to ultra-violet radiation**		
8.2b)	Flexural strength test (ISO 178)		**N**
Material identification (manufacturer, type designation) ..... :			—
Shape and dimensions of test samples..... :			—
Conditioning for Set 1 of samples ..... :			—
Conditioning for Set 2 of samples (including Annex C)..... :			—
Test conditions (T °C, RH %)..... :			—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Flexural strength (MPa)	Test sample #	Flexural strength (MPa)

Arithmetic mean for Set 1 (MPa) ..... :	
Arithmetic mean for Set 2 (MPa) ..... :	
Retention (%) ..... :	

Supplementary information:

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	**TABLE: Resistance to ultra-violet radiation**		
8.2c)	Charpy impact test (ISO 179) - unnotched		**N**
Material identification (manufacturer, type designation) ..... :			—
Shape and dimensions of test samples..... :			—
Conditioning for Set 1 of samples ..... :			—
Conditioning for Set 2 of samples (including Annex C)..... :			—
Test method (according to Tables 2 and 3 of ISO 179) ..... :			—
Test conditions (T °C, RH %)..... :			—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Charpy impact strength (kJ/m^2)	Test sample #	Charpy impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%)..... :	

Supplementary information:

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2d)	Charpy impact test (ISO 179) - notched	**N**

Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples..... :		—
Conditioning for Set 1 of samples ..... :		—
Conditioning for Set 2 of samples (including Annex C)..... :		—
Test method (according to Tables 2 and 3 of ISO 179) ..... :		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Charpy impact strength (kJ/m^2)	Test sample #	Charpy impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%)..... :	

Supplementary information:

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	**TABLE: Resistance to ultra-violet radiation**		
8.2e)	Izod impact test (ISO 180) - unnotched		**N**
Material identification (manufacturer, type designation) .....:			—
Shape and dimensions of test samples.....:			—
Conditioning for Set 1 of samples .....:			—
Conditioning for Set 2 of samples (including Annex C).....:			—
Test method (according to Table 1 of ISO 180) .....:			—
Test conditions (T °C, RH %).....:			—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Izod impact strength (kJ/m^2)	Test sample #	Izod impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2).....:	
Arithmetic mean for Set 2 (kJ/m^2).....:	
Retention (%).....:	

Supplementary information:

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2f)	Izod impact test (ISO 180) - notched	**N**
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples..... :		—
Conditioning for Set 1 of samples ..... :		—
Conditioning for Set 2 of samples (including Annex C)..... :		—
Test method (according to Table 1 of ISO 180) ..... :		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Izod impact strength (kJ/m^2)	Test sample #	Izod impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%)..... :	

Supplementary information:

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	**TABLE: Resistance to ultra-violet radiation**		
8.2g)	Tensile impact test (ISO 8256) - unnotched		**N**
Material identification (manufacturer, type designation) ..... :			—
Shape and dimensions of test samples..... :			—
Conditioning for Set 1 of samples ..... :			—
Conditioning for Set 2 of samples (including Annex C)..... :			—
Test method (A or B)			—
Test conditions (T °C, RH %)..... :			—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Tensile impact strength (kJ/m^2)	Test sample #	Tensile impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%)..... :	

Supplementary information:

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

8.2	**TABLE: Resistance to ultra-violet radiation**	
8.2h)	Tensile impact test (ISO 8256) - notched	**N**

Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples..... :		—
Conditioning for Set 1 of samples ..... :		—
Conditioning for Set 2 of samples (including Annex C)..... :		—
Test method (A or B)		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Tensile impact strength (kJ/m^2)	Test sample #	Tensile impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%)..... :	

Supplementary information:

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

List of test equipment used:
(Note: This is an example of the required attachment. Other forms with a different layout but containing similar information are also acceptable.)

Clause	Measurement / testing	Testing / measuring equipment / material used	Range used	Calibration date

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

ATTACHMENT

US - UL60950-22, First Edition - SPECIAL NATIONAL CONDITIONS			
4	Applicable parts of Chapter 8 of the NEC may be applicable to ITE installed outdoors with connections to communication systems		P
4.2	Power supply cords are to be suitable outdoor use type as required by Section 400-4 of the NEC, i.e., marked “water resistant,” “outdoor,” “W” or “W-A.”		N
4.2	Surge Arrestors and Transient Voltage Surge Suppressors installed external to the ITE are required to comply with the appropriate NEC requirements.		N
5	Outdoor Enclosures are required to be classified and marked in accordance with UL 50		N
7	Applicable parts of the NEC, NFPA 70; and the National Electrical Safety Code, ANSI/IEEE C2, are required, as appropriate.		N
7	Wiring terminals intended to supply Class 2 outputs are required per Article 725 of the NEC to be marked.		N
11	Requires stationary installations of storage batteries external to the ITE to comply with Article 480 of the NEC		N
OTHER DIFFERENCES			
1.2	For protection of ITE against direct lightning strikes, reference is made to NFPA 780 for additional requirements.		P
2	All references to IEC 60950-1 in this standard are replaced by the equivalent UL 60950-1 Standards. All relevant Standards referenced in the Part 1 Standard (Annex P, including P.1 and P.2) also apply to this Part 22 Standard and are not listed below. All references to clauses and subclauses in IEC 60950-1 are to the second edition.		P

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Attachment 2

IEC 60529 Edition 2.1
Report No.: HC50152/2012
Total number of pages: 8

Reliability Laboratory

TEST REPORT

Report No.: HC50152/2012
Page: 1 of 7
Date: June 7, 2012

VIVOTEK INC.
6F, NO. 192, LIEN-CHENG RD.,
CHUNG HO DIST., NEW TAIPEI CITY,
TAIWAN, R.O.C.

The following merchandise was submitted and identified by the vendor as:

Product Description: Netwoek Camera
Style/ Item No.: FE8172V/ No. 1, No. 2
Quantity: Total 2 pieces
Testing Period: May 22, 2012 to Jun. 6, 2012

We have tested the submitted sample(s) as requested and the following results were obtained:

Test Required:

Test for Degrees of Protection Provided by Enclosures (IEC 60529 Edition 2.1: 2001)

IP Code	IP66
First characteristic numeral	Degrees of protection against access to hazardous parts and against solid foreign objects
Second characteristic numeral	Degrees of protection against ingress of water

Test Results:

Conclusion
Submittals sample(s) comply with the requirement and acceptance conditions of IEC 60529 Edition 2.1: 2001 Degrees of Protection Provided by Enclosures -- IP66 The detailed description of test result, please see attached sheet(s).

Signed for and on behalf of SGS TAIWAN Ltd.

Hank Chiou
Asst. Supervisor

SGS Taiwan Ltd.
台灣檢驗科技股份有限公司
No.31, No.33, No.35, Wu Chyuan Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五權路 31 號, 33 號, 35 號
No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan/新北市五股區新北產業園區五工路 134 號
t (886-2) 2299-3279 f (886-2) 2299-9558 www.tw.sgs.com
Member of SGS Group

Test for Degrees of Protection Provided by Enclosures:

Test Equipment:

Name	Brand	Model	Serial No.
1.0 mm Test Wire Probe	E.D.&D.	TRP-02	B0050180
Digital Force Gauge	ALGOL	HF-50	HF-106764
Dust Tester	T-MACHINE	TMJ-9723C	T-23-050411
IPX6 Water Jet Hose Nozzle Set	PTL	P03.28	5040045

Lab Environmental Conditions:

Ambient temperature: 25±3℃
Relative humidity: 55±20%RH

Test Method/ Specification:

Test method: IEC 60529 Edition 2.1: 2001--IP66

1. Test for protection against access to hazardous parts:

Test method: IEC 60529 Edition 2.1: 2001--IP6X
The test wire with 1.0 mm in diameter and 100 mm long is pushed against or inserted through any openings of the enclosure with the force specified in Table 6 in IEC 60529 Edition 2.1: 2001. Examine whether the test wire touches the hazardous live parts inside the enclosure or not.

Test force: 1 N±10 %

2. Test for protection against solid foreign objects:

Test method: IEC 60529 Edition 2.1: 2001--IP6X (Dust test)
Sample condition: Non-Operating
Type of dust: Talcum powder
The amount of dust: 2 kg
The chamber size: 1 m^3
The maximum depression: -20 mbar
Test duration: 8 hours

- Examine the protection against ingress of dust of specimen(s) after this test.

Test Method/ Specification--Continued:

3. Test for protection against water:

Test method:	IEC 60529 Edition 2.1: 2001--IPX6
Test means:	Spraying the enclosure from all practicable directions with a stream of water from a standard test nozzle as specified in test standard.
Internal diameter of the nozzle:	12.5 mm
Delivery rate:	100 ℓ/min ±5%
Distance from nozzle to enclosure surface:	between 2.5 m and 3 m
Core of the substantial stream:	circle of approximately 120 mm diameter at 2.5 m distance from nozzle
Test duration:	3 minutes

- Examine the protection against ingress water of specimen after this test.

Specimen:

Style/ Item No.: FE8172V/ No. 1, No. 2
Quantity: Total 2 pieces

Test Result:

A. Degrees of protection against access to hazardous parts and against solid foreign objects (IP6X)

A-1 Test for protection against access to hazardous parts (IP6X)

Test Result		
Check Item		Style/ Item No
		FE8172V/ No. 1
1	Does the test wire penetrate any openings of the enclosure?	No
2	(followed check item 1) If the test wire penetrates any openings of the enclosure, does the test wire touch any hazardous live parts or any hazardous mechanical parts?	N/A
3	(followed check item 2) Does adequate clearance be kept between the test wire and hazardous live parts or hazardous mechanical parts?	N/A
Note 1: N/A means "Not Applicable". Note 2: The check items in this test report for inspecting the degree of protection provided by enclosures are reference to the requirements specified in IEC 60529 Edition 2.1: 2001 and in accordance with the acceptance conditions specified by client.		

A-2 Test for protection against solid foreign objects (IP6X)

Test Result		
Check Item		Style/ Item No
		FE8172V/ No. 1
1	Does any dust deposit inside the enclosure?	No
Note 1: N/A means "Not Applicable". Note 2: The check items in this test report for inspecting the degree of protection provided by enclosures are reference to the requirements specified in IEC 60529 Edition 2.1: 2001 and in accordance with the acceptance conditions specified by client.		

Test Result--Continued:

B. Degree of protection against ingress of water (IPX6)

Test Result		
Check Item		Style/ Item No
		FE8172V/ No. 2
1	Does any water enter the enclosure?	No
2	(followed check item 1) If any water has entered, does the water accumulate near the cable end or live parts?	N/A
2.1	(followed check item 2) Does the water be sufficient to interfere with the correct operation of the equipment or impair safety?	N/A
2.2	(followed check item 2.1) Does the water deposit on insulation parts where it could lead to tracking along the creepage distances?	N/A
2.3	(followed check item 2.2) Does the water reach live parts or windings not designed to operate when wet?	N/A

Note 1: N/A means "Not Applicable".
Note 2: The check items in this test report for inspecting the degree of protection provided by enclosures are reference to the requirements specified in IEC 60529 Edition 2.1: 2001 and in accordance with the acceptance conditions specified by client.

Test Photos:

1. Appearance of specimen: FE8172V/ No. 1

2. Appearance of specimen: FE8172V/ No. 2

3. Test for protection against access to hazardous parts

4. Test for protection against access to hazardous parts

5. Test for protection against solid foreign objects (Dust test)

6. Test for protection against solid foreign objects (Dust test)

Test Photos--Continued:

	
7. Test for protection against water	8. Test for protection against water

— — — **The End of Test Report** — — —