TEST REPORT
IEC 60950-1
Information technology equipment - Safety - Part 1: General requirements

Report Reference No ..... :	E234884-A412-IT-1
Date of issue ..... :	2019-04-25
Total number of pages ..... :	47
Applicant's name ..... :	ZHEJIANG DAHUA VISION TECHNOLOGY CO LTD
Address ..... :	NO.1199 BIN'AN RD. BINJIANG DISTRICT HANGZHOU ZHEJIANG 310053 CHINA
Test specification:	
Standard ..... :	IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013
Test procedure ..... :	Informative
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	IEC60950_1F
Test Report Form originator ..... :	SGS Fimko Ltd
Master TRF ..... :	Dated 2014-02

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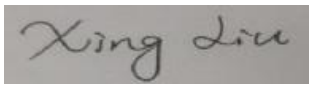
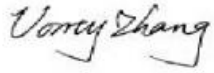
Test item description ..... :	IP CAMERA
Trade Mark ..... :	
Manufacturer ..... :	ZHEJIANG DAHUA VISION TECHNOLOGY CO.,LTD. NO.1199, BIN'AN ROAD, BINJIANG DISTRICT, HANGZHOU, P.R. CHINA
Model/Type reference ..... :	1. DH-IPC-HDW5241HN-AS-PV; DH-IPC-HDW5241HP-AS-PV; IPC-HDW5241HN-AS-PV; IPC-HDW5241HP-AS-PV; DH-IPC-HDW5241H-AS-PV; IPC-HDW5241H-AS-PV; IPC-HDW4243H-SA-PV; IPC-HDW4243H-AS-PV; DH-IPC-HDW4243H-SA-PV; DH-IPC-HDW4243H-AS-PV; IPC-HDW4243DH-SA-PV; IPC-HDW4243DH-AS-PV; DH-IPC-HDW4243DH-SA-PV; DH-IPC-HDW4243DH-AS-PV; DH-IPC-HDW5243DH-SA-PV; DH-IPC-HDW5243DH-AS-PV; IPC-HDW5243DH-SA-PV; IPC-HDW5243DH-AS-PV; DH-IPC-HDW5243H-SA-PV; DH-IPC-HDW5243H-AS-PV; IPC-HDW5243H-AS-PV; IPC-HDW5243H-SA-PV; IPC-HDW5241H-AS-PV-0280B; IPC-HDW5241H-AS-PV-0360B; IPC-HDW5241H-AS-PV-0600B 2. DH-IPC-HDW5541HP-AS-PV; IPC-HDW5541HP-AS-PV; DH-IPC-HDW5541HN-AS-PV; IPC-HDW5541HN-AS-PV; IPC-HDW5541H-AS-PV; DH-IPC-HDW5541H-AS-PV; IPC-HDW4443H-AS-PV; IPC-HDW4443H-SA-PV; DH-IPC-HDW4443H-SA-PV; DH-IPC-HDW4443H-AS-PV; IPC-HDW4443DH-AS-PV; IPC-HDW4443DH-SA-PV; DH-IPC-HDW4443DH-SA-PV; DH-IPC-HDW4443DH-AS-PV; DH-IPC-HDW5443H-SA-PV; DH-IPC-HDW5443H-AS-PV; IPC-HDW5443H-SA-PV; IPC-HDW5443H-AS-PV; DH-IPC-HDW5443DH-SA-PV; DH-IPC-HDW5443DH-AS-PV; IPC-HDW5443DH-SA-PV; IPC-HDW5443DH-AS-PV; IPC-HDW5541H-AS-PV-0280B; IPC-HDW5541H-AS-PV-0360B; IPC-HDW5541H-AS-PV-0600B
Ratings ..... :	(optional)DC12V,1A, POE(802.3af)

Testing procedure and testing location:			
	Testing location / address .....:	UL-CCIC Company Limited No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, China	
	Tested by (name + signature) .....:	Wendy Xia(T)/Xing Liu	
	Approved by (+ signature).....:	Vonty Zhang	

List of Attachments

National Differences (33 pages)

Enclosures (47 pages)

Summary Of Testing

Unless otherwise indicated, all tests were conducted at UL-CCIC Company Limited No. 2, Chengwan Road, Suzhou Industrial Park, Suzhou 215122, China.

Tests performed (name of test and test clause)	**Testing location / Comments**
End Product Reference Page	
Input: Single-Phase (1.6.2)	
Limited Power Source Measurements (2.5)	
Stress Relief (4.2.7, 4.2.1)	
Loading - Wall and Ceiling Mounted Equipment (4.2.10)	
Heating (4.5.1, 1.4.12, 1.4.13)	

Summary of Compliance with National Differences:

Countries outside the CB Scheme membership may also accept this report.

List of countries addressed: AT, BE, BG, BY, CA, CH, CS, CZ, DE, DK, EU, FI, FR, GB, GR, HU, IT, NL, NO, PL, RO, SE, SI, SK, UA, US

The product fulfills the requirements of: EN 60950-1:2006 + A1:2010 + A11:2009 + A12:2011 + A2:2013

Copy of Marking Plate - Refer to Enclosure titled Marking Plate for copy.

Test item particulars :	
Equipment mobility ..... :	stationary
Connection to the mains ..... :	No direct connection
Operating condition ..... :	continuous
Access location ..... :	restricted access location
Over voltage category (OVC) ..... :	OVC II
Mains supply tolerance (%) or absolute mains supply values ..... :	N/A
Tested for IT power systems ..... :	No
IT testing, phase-phase voltage (V) ..... :	N/A
Class of equipment ..... :	Class III (supplied by SELV)
Considered current rating of protective device as part of the building installation (A) ..... :	20A
Pollution degree (PD) ..... :	PD 2
IP protection class ..... :	IP X0
Altitude of operation (m) ..... :	no more than 2000
Altitude of test laboratory (m) ..... :	no more than 2000
Mass of equipment (kg) ..... :	0.50kg
Possible test case verdicts:	
- test case does not apply to the test object ..... :	N / A
- test object does meet the requirement ..... :	P(Pass)
- test object does not meet the requirement ..... :	F(Fail)
Testing:	
Date(s) of receipt of test item ..... :	2019-03-08
Date(s) of Performance of tests ..... :	2019-03-08 to 2019-03-09
General remarks:	
"(see Enclosure #)" refers to additional information appended to the report. "(see appended table)" refers to a table appended to the report. Throughout this report a point is used as the decimal separator.	
Name and address of Factory(ies):	ZHEJIANG DAHUA VISION TECHNOLOGY CO.,LTD. NO.1199, BIN'AN ROAD, BINJIANG DISTRICT, HANGZHOU, P.R. CHINA ZHEJIANG DAHUA ZHILIAN CO.,LTD. NO.28, DONGQIAO ROAD, DONGZHOU STREET, FUYANG DISTRICT, HANGZHOU,P.R.CHINA.

GENERAL PRODUCT INFORMATION:

Report Summary

Product Description

The unit consists of electronic components mounted on a V-1 PWB, housed in a metal enclosure and plastic enclosure, supplied by external approved adapter which comply with L.P.S 12Vdc,1A or POE(802.3af).

Model Differences

1. model DH-IPC-HDW5241HP-AS-PV is same as model IPC-HDW5541HP-AS-PV except mainboard.
2. model DH-IPC-HDW5241HN-AS-PV is same as model DH-IPC-HDW5241HP-AS-PV; IPC-HDW5241HN-AS-PV; IPC-HDW5241HP-AS-PV; DH-IPC-HDW5241H-AS-PV; IPC-HDW5241H-AS-PV; IPC-HDW4243H-SA-PV; IPC-HDW4243H-AS-PV; DH-IPC-HDW4243H-SA-PV; DH-IPC-HDW4243H-AS-PV; IPC-HDW4243DH-SA-PV; IPC-HDW4243DH-AS-PV; DH-IPC-HDW4243DH-SA-PV; DH-IPC-HDW4243DH-AS-PV; DH-IPC-HDW5243DH-SA-PV; DH-IPC-HDW5243DH-AS-PV; IPC-HDW5243DH-SA-PV; IPC-HDW5243DH-AS-PV; DH-IPC-HDW5243H-SA-PV; DH-IPC-HDW5243H-AS-PV; IPC-HDW5243H-AS-PV; IPC-HDW5243H-SA-PV except model names.
3. model DH-IPC-HDW5541HP-AS-PV is same as model IPC-HDW5541HP-AS-PV; DH-IPC-HDW5541HN-AS-PV; IPC-HDW5541HN-AS-PV; IPC-HDW5541H-AS-PV; DH-IPC-HDW5541H-AS-PV; IPC-HDW4443H-AS-PV; IPC-HDW4443H-SA-PV; DH-IPC-HDW4443H-SA-PV; DH-IPC-HDW4443H-AS-PV; IPC-HDW4443DH-AS-PV; IPC-HDW4443DH-SA-PV; DH-IPC-HDW4443DH-SA-PV; DH-IPC-HDW4443DH-AS-PV; DH-IPC-HDW5443H-SA-PV; DH-IPC-HDW5443H-AS-PV; IPC-HDW5443H-SA-PV; IPC-HDW5443H-AS-PV; DH-IPC-HDW5443DH-SA-PV; DH-IPC-HDW5443DH-AS-PV; IPC-HDW5443DH-SA-PV; IPC-HDW5443DH-AS-PV except pixel.

Additional Information

N/A

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of: 60°C
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): All output connectors.
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual

Abbreviations used in the report:

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

Indicate used abbreviations (if any)

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

1	**GENERAL**		Pass
1.5	Components		Pass
1.5.1	General		Pass
	Comply with IEC 60950-1 or relevant component standard	(see appended table 1.5.1)	Pass
1.5.2	Evaluation and testing of components	-Components certified to IEC harmonized standard and checked for correct application. -Components, for which no relevant IEC-Standard exist, have been tested under the conditions occurring in the equipment, using applicable parts of IEC 60950-1. -Components not certified are used in accordance with their ratings and they comply with applicable parts of IEC 60950-1 and the relevant component Standard.	Pass
1.5.3	Thermal controls		N/A
1.5.4	Transformers		N/A
1.5.5	Interconnecting cables	Interconnecting cables comply with the relevant requirements of this standard.	Pass
1.5.6	Capacitors bridging insulation		N/A
1.5.7	Resistors bridging insulation		N/A
1.5.7.1	Resistors bridging functional, basic or supplementary insulation		N/A
1.5.7.2	Resistors bridging double or reinforced insulation between a.c. mains and other circuits		N/A
1.5.7.3	Resistors bridging double or reinforced insulation between a.c. mains and antenna or coaxial cable		N/A
1.5.8	Components in equipment for IT power systems		N/A
1.5.9	Surge suppressors		N/A
1.5.9.1	General		N/A
1.5.9.2	Protection of VDRs		N/A
1.5.9.3	Bridging of functional insulation by a VDR		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.5.9.4	Bridging of basic insulation by a VDR		N/A
1.5.9.5	Bridging of supplementary, double or reinforced insulation by a VDR		N/A
1.6	**Power interface**		Pass
1.6.1	AC power distribution systems		N/A
1.6.2	Input current	The steady state input current of the equipment did not exceed the RATED CURRENT under NORMAL LOAD.	Pass
1.6.3	Voltage limit of hand-held equipment	The unit is not a hand-held equipment.	N/A
1.6.4	Neutral conductor		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
1.7	**Marking and instructions**		Pass
1.7.1	Power rating and identification markings		Pass
1.7.1.1	Power rating marking		Pass
	Multiple mains supply connections ..... :		N/A
	Rated voltage(s) or voltage range(s) (V) ..... :	Refer to the Rating information at the beginning of this Test Report.	Pass
	Symbol for nature of supply, for d.c. only ..... :	IEC 60417 No. 5031 provided on marking label.	Pass
	Rated frequency or rated frequency range (Hz) .... :		N/A
	Rated current (mA or A) ..... :	Refer to the Rating information at the beginning of this Test Report.	Pass
1.7.1.2	Identification markings		Pass
	Manufacturer's name or trademark or identification mark..... :	ZHEJIANG DAHUA TECHNOLOGY CO LTD or E234884	Pass
	Model identification or type reference ..... :	Refer to the Model information at the beginning of this Test Report.	Pass
	Symbol for Class II equipment only..... :		N/A
	Other markings and symbols..... :		N/A
1.7.1.3	Use of graphical symbols		N/A
1.7.2	Safety instructions and marking	Operating/safety instructions made available to the user.	Pass
1.7.2.1	General		Pass
1.7.2.2	Disconnect devices		N/A
1.7.2.3	Overcurrent protective device		N/A
1.7.2.4	IT Power distribution systems		N/A
1.7.2.5	Operator access with a tool		N/A
1.7.2.6	Ozone		N/A
1.7.3	Short duty cycles		N/A
1.7.4	Supply voltage adjustment ..... :		N/A
	Method and means of adjustment; reference to installation instructions ..... :		N/A
1.7.5	Power outlets on the equipment..... :	No standard power outlets are provided.	N/A
1.7.6	Fuse identification (marking, special fusing		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
	characteristics, cross-reference) ..... :		
1.7.7	Wiring terminals		N/A
1.7.7.1	Protective earthing and bonding terminals ..... :		N/A
1.7.7.2	Terminals for a.c. mains supply conductors		N/A
1.7.7.3	Terminals for d.c. mains supply conductors		N/A
1.7.8	Controls and indicators		Pass
1.7.8.1	Identification, location and marking ..... :	No controls will affect safety .	N/A
1.7.8.2	Colours ..... :	Only functional indicators use color.	Pass
1.7.8.3	Symbols according to IEC 60417 ..... :		N/A
1.7.8.4	Markings using figures..... :		N/A
1.7.9	Isolation of multiple power sources ..... :		N/A
1.7.10	Thermostats and other regulating devices ..... :		N/A
1.7.11	Durability	All markings provided on UL Recognized Component labels suitable for surface they are applied upon and meet the durability test.	Pass
1.7.12	Removable parts	No removable part provided.	N/A
1.7.13	Replaceable batteries..... :		N/A
	Language(s) ..... :		-
1.7.14	Equipment for restricted access locations..... :		N/A

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2	**PROTECTION FROM HAZARDS**		Pass
2.1	Protection from electric shock and energy hazards		Pass
2.1.1	Protection in operator access areas	Class III unit.	Pass
2.1.1.1	Access to energized parts	The operator has access to bare parts of SELV CIRCUITS.	Pass
	Test by inspection..... :		N/A
	Test with test finger (Figure 2A) ..... :		N/A
	Test with test pin (Figure 2B)..... :		N/A
	Test with test probe (Figure 2C)..... :	No TNV present.	N/A
2.1.1.2	Battery compartments		N/A
2.1.1.3	Access to ELV wiring		N/A
	Working voltage (Vpeak or Vrms); minimum distance through insulation (mm) ..... :		-
2.1.1.4	Access to hazardous voltage circuit wiring		N/A
2.1.1.5	Energy hazards ..... :	Units supplied by LPS.	N/A
2.1.1.6	Manual controls		N/A
2.1.1.7	Discharge of capacitors in equipment		N/A
	Measured voltage (V); time-constant (s) ..... :		-
2.1.1.8	Energy hazards - d.c. mains supply		N/A
	a) Capacitor connected to the d.c. mains supply .. :		N/A
	b) Internal battery connected to the d.c. mains supply ..... :		N/A
2.1.1.9	Audio amplifiers..... :		N/A
2.1.2	Protection in service access areas	No bare parts operating at HAZARDOUS VOLTAGES in a service access area.	Pass
2.1.3	Protection in restricted access locations		N/A

2.2	**SELV circuits**		Pass
2.2.1	General requirements	SELV levels are maintained after single fault condition.	Pass
2.2.2	Voltages under normal conditions (V) ..... :	Class III equipment.	Pass
2.2.3	Voltages under fault conditions (V) ..... :	Class III equipment.	Pass
2.2.4	Connection of SELV circuits to other circuits ..... :	SELV circuits are only connected to other secondary circuits.	Pass

IEC 60950-1			
Clause	Requirement + Test	Result - Remark	Verdict
2.3	**TNV circuits**		N/A
2.3.1	Limits		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 limited current circuits.	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**		Pass
	a) Inherently limited output		Pass
	b) Impedance limited output		N/A
	c) Regulating network or IC current limiter, limits output under normal operating and single fault condition		N/A
	Use of integrated circuit (IC) current limiters ..... :		-
	d) Overcurrent protective device limited output		N/A
	Max. output voltage (V), max. output current (A), max. apparent power (VA)..... :	See table 2.5	-
	Current rating of overcurrent protective device (A) :		-

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Clause	Requirement + Test	Result - Remark	Verdict
2.6	**Provisions for earthing and bonding**		N/A
2.6.1	Protective earthing		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 (mm²), AWG ..... :		-
2.6.3.3	Size of protective bonding conductors		N/A
	Rated current (A), cross-sectional area (mm²), AWG ..... :		-
	Protective current rating (A), cross-sectional area (mm²), AWG..... :		-
2.6.3.4	Resistance of earthing conductors and their terminations; resistance (ohm), 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
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

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Clause	Requirement + Test	Result - Remark	Verdict
2.7	**Overcurrent and earth fault protection in primary circuits**		N/A
2.7.1	Basic requirements		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 Safety interlocks	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**		Pass
2.9.1	Properties of insulating materials	Class III unit.	N/A
2.9.2	Humidity conditioning		N/A
	Relative humidity (%), temperature (°C)..... :		-
2.9.3	Grade of insulation	Functional insulation.	Pass
2.9.4	Separation from hazardous voltages		N/A
	Method(s) used..... :		-

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Clause	Requirement + Test	Result - Remark	Verdict
2.10	**Clearances, creepage distances and distances through insulation**		Pass
2.10.1	General		Pass
2.10.1.1	Frequency..... :		N/A
2.10.1.2	Pollution degrees..... :	PD2	Pass
2.10.1.3	Reduced values for functional insulation	see 5.3.4	Pass
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
	d) Battery operation ..... :		N/A
2.10.3.3	Clearances in primary circuits		N/A
2.10.3.4	Clearances in secondary circuits	See 5.3.4 method c.	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	See 5.3.4 for secondary circuits.	N/A
2.10.4.1	General		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
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
	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

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Clause	Requirement + Test	Result - Remark	Verdict
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

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Clause	Requirement + Test	Result - Remark	Verdict
3	**WIRING, CONNECTIONS AND SUPPLY**		Pass
3.1	General		Pass
3.1.1	Current rating and overcurrent protection	All internal wiring used in the distribution of primary power protected against overcurrent and short circuit by suitably rated protective devices.	Pass
3.1.2	Protection against mechanical damage	The wires are routed away from sharp edges and parts which could damage insulation.	Pass
3.1.3	Securing of internal wiring	The wires are positioned in such a manner that prevents excessive strain, loosening of terminal connections and damage of conductor insulation.	Pass
3.1.4	Insulation of conductors		Pass
3.1.5	Beads and ceramic insulators		N/A
3.1.6	Screws for electrical contact pressure		N/A
3.1.7	Insulating materials in electrical connections		N/A
3.1.8	Self-tapping and spaced thread screws		N/A
3.1.9	Termination of conductors		N/A
	10 N pull test		N/A
3.1.10	Sleeving on wiring		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.2	**Connection to a mains supply**		N/A
3.2.1	Means of connection	Class III unit, supplied by the LPS and SELV adapter.	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
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 of minor dimension D (mm); test mass (g) ..... :		-
	Radius of curvature of cord (mm) ..... :		-
3.2.9	Supply wiring space		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
3.3	**Wiring terminals for connection of external conductors**		N/A
3.3.1	Wiring terminals		N/A
3.3.2	Connection of non-detachable power supply cords		N/A
3.3.3	Screw terminals		N/A
3.3.4	Conductor sizes to be connected		N/A
	Rated current (A), cord/cable type, cross-sectional area (mm^2) ..... :		-
3.3.5	Wiring terminal sizes		N/A
	Rated current (A), type and nominal thread diameter (mm) ..... :		-
3.3.6	Wiring terminals 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		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
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**		Pass
3.5.1	General requirements		Pass
3.5.2	Types of interconnection circuits ..... :	Interconnection circuits are SELV CIRCUITS.	Pass
3.5.3	ELV circuits as interconnection circuits		N/A
3.5.4	Data ports for additional equipment		Pass

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Clause	Requirement + Test	Result - Remark	Verdict
4	**PHYSICAL REQUIREMENTS**		Pass
4.1	Stability		Pass
	Angle of 10°	Based on construction, the test was deemed not necessary.	Pass
	Test force (N)..... :		N/A
4.2	**Mechanical strength**		Pass
4.2.1	General	The equipment is supplied by SELV and LPS adapter.	N/A
	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		N/A
4.2.5	Impact test		N/A
	Fall test		N/A
	Swing test		N/A
4.2.6	Drop test; height (mm)..... :		N/A
4.2.7	Stress relief test		N/A
4.2.8	Cathode ray tubes		N/A
	Picture tube separately certified ..... :		N/A
4.2.9	High pressure lamps		N/A
4.2.10	Wall or ceiling mounted equipment; force (N) ..... :	Mounting means withstands four times unit weight or 50N minimum.	Pass

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Clause	Requirement + Test	Result - Remark	Verdict
4.3	**Design and construction**		Pass
4.3.1	Edges and corners	All edges and corners are judged to be sufficiently well rounded so as not to constitute a hazard.	Pass
4.3.2	Handles and manual controls; force (N) ..... :		N/A
4.3.3	Adjustable controls		N/A
4.3.4	Securing of parts		N/A
4.3.5	Connection by plugs and sockets	IEC 60083 or IEC 60320 type connectors not used for SELV circuits.	Pass
4.3.6	Direct plug-in equipment		N/A
	Torque ..... :		N/A
	Compliance with the relevant mains plug standard:		N/A
4.3.7	Heating elements in earthed equipment		N/A
4.3.8	Batteries		Pass
	- Overcharging of a rechargeable battery	the battery is protected by R16 and R102	Pass
	- Unintentional charging of a non-rechargeable battery		N/A
	- Reverse charging of a rechargeable battery		Pass
	- Excessive discharging rate for any battery	evaluate in UL 1642	Pass
4.3.9	Oil and grease		N/A
4.3.10	Dust, powders, liquids and gases		N/A
4.3.11	Containers for liquids or gases		N/A
4.3.12	Flammable liquids ..... :		N/A
	Quantity of liquid (l) ..... :		N/A
	Flash point (°C) ..... :		N/A
4.3.13	Radiation		Pass
4.3.13.1	General		N/A
4.3.13.2	Ionizing radiation		N/A
	Measured radiation (pA/kg) ..... :		-
	Measured high-voltage (kV) ..... :		-
	Measured focus voltage (kV) ..... :		-
	CRT markings ..... :		-
4.3.13.3	Effect of ultraviolet (UV) radiation on materials		N/A
	Part, property, retention after test, flammability		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	classification ..... :		
4.3.13.4	Human exposure to ultraviolet (UV) radiation ..... :		N/A
4.3.13.5	Lasers (including laser diodes) and LEDs	This product contains only visible indicator LEDs (Class 1) operating in the range of 400 - 700 nm wavelength. No IEC60825-1 evaluation was deemed necessary. Additional review may be required at the discretion of the accepting NCB.	Pass
4.3.13.5.1	Lasers (including laser diodes)		Pass
	Laser class ..... :	(For indicator LEDs, see above statement.)	-
4.3.13.5.2	Light emitting diodes (LEDs)		Pass
4.3.13.6	Other types ..... :		N/A
4.4	**Protection against hazardous moving parts**		N/A
4.4.1	General		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**		Pass
4.5.1	General		Pass
4.5.2	Temperature tests	(see appended table 4.5)	Pass
	Normal load condition per Annex L ..... :	Operated in the most unfavorable way of operation given in the operating instructions until steady conditions established.	-
4.5.3	Temperature limits for materials		Pass
4.5.4	Touch temperature limits		Pass
4.5.5	Resistance to abnormal heat..... :		N/A
4.6	**Openings in enclosures**		N/A
4.6.1	Top and side openings	Unit supplied by SELV and LPS.	N/A
	Dimensions (mm) ..... :		-
4.6.2	Bottoms of fire enclosures		N/A
	Construction of the bottom, dimensions (mm)..... :		-
4.6.3	Doors or covers in fire enclosures		N/A
4.6.4	Openings in transportable equipment		N/A
4.6.4.1	Constructional design measures		N/A
	Dimensions (mm) ..... :		-
4.6.4.2	Evaluation measures for larger openings		N/A
4.6.4.3	Use of metallized parts		N/A
4.6.5	Adhesives for constructional purposes		N/A
	Conditioning temperature (°C), time (weeks) ..... :		-

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Clause	Requirement + Test	Result - Remark	Verdict
4.7	**Resistance to fire**		Pass
4.7.1	Reducing the risk of ignition and spread of flame		Pass
	Method 1, selection and application of components wiring and materials		Pass
	Method 2, application of all of simulated fault condition tests		N/A
4.7.2	Conditions for a fire enclosure	No fire enclosure is needed.	Pass
4.7.2.1	Parts requiring a fire enclosure		N/A
4.7.2.2	Parts not requiring a fire enclosure	Circuit supplied by a limited power source complying with 2.5 and with components mounted on materials of Class V-1 or better.	Pass
4.7.3	Materials		Pass
4.7.3.1	General	Unit is supplied by LPS.	Pass
4.7.3.2	Materials for fire enclosures		N/A
4.7.3.3	Materials for components and other parts outside fire enclosures	Decorative parts and parts outside of the fire enclosure are made of minimum HB material.	Pass
4.7.3.4	Materials for components and other parts inside fire enclosures	PWBs are rated min. V-1.Internal wiring is UL Recognized, marked VW-1 or FT-1 and strapped by individual cable ties (where needed).	Pass
4.7.3.5	Materials for air filter assemblies		N/A
4.7.3.6	Materials used in high-voltage components		N/A

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Clause	Requirement + Test	Result - Remark	Verdict

5	**ELECTRICAL REQUIREMENTS AND SIMULATED ABNORMAL CONDITIONS**		Pass
5.1	Touch current and protective conductor current		N/A
5.1.1	General	Supplied by the SELV and LPS adapter.	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)... :		-
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

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Clause	Requirement + Test	Result - Remark	Verdict
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**		Pass
5.3.1	Protection against overload and abnormal operation		N/A
5.3.2	Motors		N/A
5.3.3	Transformers		N/A
5.3.4	Functional insulation ..... :	Functional insulation complies with the requirements (a), (b), or (c).	Pass
5.3.5	Electromechanical components		N/A
5.3.6	Audio amplifiers in ITE..... :		N/A
5.3.7	Simulation of faults		N/A
5.3.8	Unattended equipment		N/A
5.3.9	Compliance criteria for abnormal operating and fault conditions		N/A
5.3.9.1	During the tests		N/A
5.3.9.2	After the tests		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

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Clause	Requirement + Test	Result - Remark	Verdict
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	No cable distribution systems.	N/A
7.4	Insulation between primary circuits and cable distribution systems		N/A
7.4.1	General		N/A
7.4.2	Voltage surge test		N/A
7.4.3	Impulse test		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
A	**ANNEX A, TESTS FOR RESISTANCE TO HEAT AND FIRE**		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 ..... :		N/A
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) ..... :		-
	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

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Clause	Requirement + Test	Result - Remark	Verdict
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	No motors.	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 ..... :		-
	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

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Clause	Requirement + Test	Result - Remark	Verdict
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
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..... :		-

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Clause	Requirement + Test	Result - Remark	Verdict
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)**		Pass
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		Pass
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
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

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Clause	Requirement + Test	Result - Remark	Verdict
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**		Pass
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
S.2	Test procedure		N/A
S.3	Examples of waveforms during impulse testing		N/A
T	**ANNEX T, GUIDANCE ON PROTECTION AGAINST INGRESS OF WATER (see 1.1.2)**		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)**		Pass
V.1	Introduction		Pass
V.2	TN power distribution systems		Pass

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Clause	Requirement + Test	Result - Remark	Verdict
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)**		Pass
AA	**ANNEX AA, MANDREL TEST (see 2.10.5.8)**		N/A
BB	**ANNEX BB, CHANGES IN THE SECOND EDITION**		Pass
CC	**ANNEX CC, EVALUATION OF INTEGRATED CIRCUIT (IC) CURRENT LIMITERS**		N/A
CC.1	General		N/A
CC.2	Test program 1 ..... :		N/A
CC.3	Test program 2 ..... :		N/A
CC.4	Test program 3 ..... :		N/A
CC.5	Compliance..... :		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
DD	**ANNEX DD, REQUIREMENTS FOR THE MOUNTING MEANS OF RACK-MOUNTED EQUIPMENT**		N/A
DD.1	General		N/A
DD.2	Mechanical strength test, variable N ..... :		N/A
DD.3	Mechanical strength test, 250 N, 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		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

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

1.5.1	**TABLE: list of critical components**				Pass
object/part or Description	manufacturer/ trademark	type/model	technical data	standard (Edition or year)	mark(s) of conformity[1])
1. Metal Enclosure	--	--	Metal, details refer to supplement 4-01	--	--, --
2. Plastic Enclosure Base	COVESTRO DEUTSCHLAND AG	2807	Min HB, min. 1.5mm.	UL94, UL 746C	UL E41613, --
3. Power adaptor (optional)	Interchangeable	Interchangeable	Output: min 12VDC, 1A; POE(36-57VDC),0.35A ; Min 60 degree C, LPS output.	UL 60950-1 2nd	UL, --
4. Internal wiring, secondary	Interchangeable	Interchangeable	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1; minimum 60V, 80 degree C	UL758	UL, --
5. Interconnecting Cable (Optional)	Interchangeable	Interchangeable	Minimum 80 degree C, 60V, maximum 3.05m long, jacketed, marked "VW-1" or "FT-1".	UL 758	UL, --
6.Connectors and Receptacles (secondary ELV/SELV circuits)	Interchangeable	Interchangeable	Copper alloy pins housed in bodies of plastic rated V-2 minimum	UL94, UL746C	UL, --
6a. Connectors and Receptacles (secondary ELV/SELV circuits) (Alternate)	Interchangeable	Interchangeable	Metal/Plastic	UL498, UL1977	UL, --
7. RTC battery	SEIKO INSTRUMENTS INC MICRO ENERGY DIV	ML414H	Max Charging current: 300mA, Max Charging Voltage: 3.4Vdc	UL1642	UL MH15628, --
8. Label	Interchangeable	Interchangeable	Maximum surface temperature specified, or 80 degree C if not specified.	UL969	UL, --

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Clause	Requirement + Test	Result - Remark	Verdict

9. Printed wiring board	Interchangeable	Interchangeable	Minimum V-1, minimum 105°C	UL796	UL, --
10. Flexiable PWB	Interchangeable	Interchangeable	V-1 or better, minimum 105 degree C	UL 796F	UL, --
11.LED	Cree Huizhou Solid State Lighting Co., Ltd.	LTE-R38386A-S-DH	12VDC/10.8W; POE(802.3af) RG0	IEC 62471	UL, --
Supplementary information: [1]) Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

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

1.5.1	**TABLE: Opto Electronic Devices**			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:				
Additional devices may be described in Enclosure - Miscellaneous				

1.6.2	**TABLE: Electrical data (in normal conditions)**					Pass
U (V)	I (A)	I rated (A)	P (W)	Fuse #	I fuse (A)	condition/status
For model: DH-IPC-HDW5241HP-AS-PV	--	--	--	--	--	--
12Vdc	0.555	1	6.660	--	--	Maximum normal load
36Vdc	0.221	0.35	7.956	--	--	Maximum normal load
57Vdc	0.138	0.35	7.866	--	--	Maximum normal load
For model: DH-IPC-HDW5541HP-AS-PV	---	--	--	--	--	--
12Vdc	0.535	1	6.420	--	--	Maximum normal load
36Vdc	0.207	0.35	7.452	--	--	Maximum normal load
57Vdc	0.129	0.35	7.353	--	--	Maximum normal load
supplementary information:						
Maximum normal load : Unit normal operated, all IR light are on						

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:					

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

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

2.2	**TABLE: evaluation of voltage limiting components in SELV circuits**		N/A
Component (measured between)	max. voltage (V) (normal operation)		Voltage limiting components
	V peak	V d.c.	
Fault test performed on voltage limiting components	Voltage measured (V) in SELV circuits (V peak or V d.c.)		
supplementary information:			

2.5	**TABLE: Limited power sources**					Pass
Circuit output tested:		See below				
Note: Measured Uoc (V) with all load circuits disconnected:		See below				
Components	Test condition (Single fault)	Uoc (V)	Isc (A)		VA	
			Meas.	Limit	Meas.	Limit

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Clause	Requirement + Test	Result - Remark	Verdict

For model: DH-IPC-HDW5241HP-AS-PV	--	--	--	--	--	--
J4(DC IN & RJ45 port, Pin 5, 6, 7, 8: DC in)	--	--	--	--	--	--
Pin 1, 2, 3, 4, 9, 10, 11, 12 to GND	1#	0	0	8	0	100
J6(Alarm in & out and audio in & out port, Pin 4, 10, 11, 12, 13, 14 :NC, Pin 2, 5, 6, 8: GND)	--	--	--	--	--	--
Pin 1, 7, 9 to GND	1#	0	0	8	0	100
Pin 3 to GND	1#	3.25	0	8	0	100
For model: DH-IPC-HDW5541HP-AS-PV	--	--	--	--	--	--
J16(DC IN & RJ45 port, Pin 5, 6, 7, 8: DC in)	--	--	--	--	--	--
Pin 1, 2, 3, 4, 9, 10, 11, 12 to GND	2#	0	0	8	0	100
J4(Alarm in & out and audio in & out port, Pin 4, 10, 11, 12, 13, 14 :NC, Pin 2, 5, 6, 8: GND)	--	--	--	--	--	--
Pin 1, 7, 9 to GND	1#	0	0	8	0	100
Pin 3 to GND	1#	3.22	0	8	0	100
supplementary information:						
N/A						

2.10.2	**TABLE: working voltage measurement**			N/A
Location	RMS voltage (V)	Peak voltage (V)	Comments	
supplementary information:				

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Clause	Requirement + Test	Result - Remark	Verdict

2.10.3 and 2.10.4	**TABLE: Clearance and creepage distance measurements**					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)
Functional:						
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:						
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)
Reinforced:						
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)
supplementary information:						

2.10.5	**TABLE: Distance through insulation measurements**				N/A
Distance through insulation (DTI) at/of:	Upeak (V)	Urms (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.
Test results:					Verdict				
- Chemical leaks					N/A				
- Explosion of the battery					N/A				
- Emission of flame or expulsion of molten metal					N/A				
- Electric strength tests of equipment after completion of tests					N/A				
supplementary information:									

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Clause	Requirement + Test	Result - Remark	Verdict

4.3.8	**TABLE: Batteries**			N/A
Battery category (lithium, NiMh, NiCad, lithium ion, etc.)				
Manufacturer				
Type / model				
Voltage				
Capacity (mAh)				
Tested and Certified by (incl. Ref. No.)				
Circuit protection diagram (Refer to indicated supplement of Enclosure - Miscellaneous)				
MARKINGS AND INSTRUCTIONS (1.7.12, 1.7.15)				
Location of replaceable battery				
Language(s)				
Close to the battery				
In the servicing instructions				
In the operating instructions				
In the operating instructions				
supplementary information:				
Additional devices may be described in Enclosure - Miscellaneous				

4.5	**TABLE: Thermal requirements**						Pass
	Supply voltage (V) :	--	--	--	--	--	---
	Ambient Tmin (°C) :	--	--	--	--	--	---
	Ambient Tmax (°C) :	--	--	--	--	--	---

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Clause	Requirement + Test	Result - Remark	Verdict

Maximum measured temperature T of part/at:	T (°C) #1	T (°C) #2	T (°C) #3	T (°C) #4	T (°C) #5	Allowed Tmax (°C)
For model: DH-IPC-HDW5241HP-AS-PV	12Vdc	12Vdc Shift to Amb	--	--	--	--
PCB near U1	44.9	83.3	--	--	--	105
PCB near HD2	42.6	81.0	--	--	--	105
PCB near T1	40.9	79.3	--	--	--	105
BT1 body	45.7	84.1	--	--	--	100
Sensor board	43.4	81.8	--	--	--	105
LED board	43.1	81.5	--	--	--	105
Internal plastic case above main board	32.6	71.0	--	--	--	--
Plastic case near LED	35.2	73.6	--	--	--	95
Glass case near LED	37.1	75.5	--	--	--	80
Metal case near LED	39.2	77.6	--	--	--	90
Ambient	21.6	60.0	--	--	--	--
For model: DH-IPC-HDW5241HP-AS-PV	36Vdc	36Vdc Shift to Amb	57Vdc	57Vdc Shift to Amb	--	--
PCB near U1	44.9	83.3	49.3	87.0	--	105
PCB near HD2	42.6	81.0	58.0	95.7	--	105
PCB near T1	40.9	79.3	55.0	92.7	--	105
BT1 body	45.7	84.1	52.2	89.9	--	100
Sensor board	43.4	81.8	47.7	85.4	--	105
LED board	43.1	81.5	46.5	84.2	--	105
Internal plastic case above main board	32.6	71.0	36.4	74.1	--	--
Plastic case near LED	35.2	73.6	37.9	75.6	--	95
Glass case near LED	37.1	75.5	40.1	77.8	--	80
Metal case near LED	39.2	77.6	41.9	79.6	--	90
Ambient	21.6	60.0	22.3	60.0	--	--
For model: DH-IPC-HDW5541HP-AS-PV	12Vdc	12Vdc Shift to Amb	--	--	--	--
PCB near U1	46.2	84.6	--	--	--	105
PCB near HD2	43.4	81.8	--	--	--	105
PCB near T1	41.9	80.3	--	--	--	105
BT1 body	47.0	85.4	--	--	--	100
Sensor board	44.9	83.3	--	--	--	105
LED board	45.3	83.7	--	--	--	105
Internal plastic case above main board	33.0	71.4	--	--	--	--
Plastic case near LED	35.6	74.0	--	--	--	95
Glass case near LED	37.1	75.5	--	--	--	80
Metal case near LED	36.1	74.5	--	--	--	90
Ambient	21.6	60.0	--	--	--	--

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Clause	Requirement + Test	Result - Remark	Verdict

For model: DH-IPC-HDW5541HP-AS-PV	36Vdc	36Vdc Shift to Amb	57Vdc	57Vdc Shift to Amb	--	--
PCB near U1	51.4	89.1	51.8	89.5	--	105
PCB near HD2	62.3	100.0	59.8	97.5	--	105
PCB near T1	55.5	93.2	56.7	94.4	--	105
BT1 body	54.0	91.7	54.6	92.3	--	100
Sensor board	49.3	87.0	49.7	87.4	--	105
LED board	48.6	86.3	48.9	86.6	--	105
Internal plastic case above main board	36.6	74.3	37.1	74.8	--	--
Plastic case near LED	37.6	75.3	38.8	76.5	--	95
Glass case near LED	39.7	77.4	40.3	78.0	--	80
Metal case near LED	38.3	76.0	39.3	77.0	--	90
Ambient	22.3	60.0	22.3	60.0	--	--

Temperature T of winding:	t1 (°C)	R1 (ohm)	t2 (°C)	R2 (ohm)	T (°C)	Allowed Tmax (°C)	Insulation class
-	-	-	-	-	-	-	-

supplementary information:

The temperatures were measured under worst case normal mode defined in 1.2.2.1 and as described in 1.6.2 at voltages as described in 1.4.5. Tma=60 degree C All temperatures above for T(degree C) have been retrieved by measurement and have been calculated/adjusted to Tma as follows: T + (Tma – Tamb), where T is the maximum temperature measured during test, Tamb is the ambient temperature during test and Tma is the maximum ambient temperature by the manufacturer's specification. Accessible part temperature limit is according to Table 4C, and others are according to maximum operation temperature of certificated component.

4.5.5	**TABLE: Ball pressure test of thermoplastic parts**		N/A
	allowed impression diameter (mm) :	less than or equal to 2.0	---

part	test temperature (°C)	impression diameter (mm)

supplementary information:

4.7	**TABLE: Resistance to fire**				Pass
Part	Manufacturer of material	Type of material	Thickness (mm)	Flammability class	Evidence
--	--	--	--	--	--

supplementary information:

See table 1.5.1

5.1	**TABLE: touch current measurement**			N/A
Measured between	Measured (mA)	Limit (mA)	Comments/conditions	

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Clause	Requirement + Test	Result - Remark	Verdict

supplementary information:

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

5.3	**TABLE: Fault condition tests**		Pass
	Ambient temperature (°C) :	-	---
	Power source for EUT: Manufacturer, model/type, output rating :	-	---

Component No.	Fault	Supply voltage (V)	Test time	Fuse #	Fuse current (A)	Observation

supplementary information:
Results Key: IP = Internal protection operated (component indicated) CT = Constant temperatures were obtained TW = Transformer winding opened CD = Components damaged (damaged components indicated) NB = No indication of dielectric breakdown YB = Dielectric breakdown (time and location indicated) NC = Cheesecloth remained intact YC = Cheesecloth charred or flamed NT = Tissue paper remained intact YT = Tissue paper charred or flamed Functional insulation complies with the requirements (a), (b), or (c).

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)

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Loc.	Tested insulation	Test voltage / V	Measured clearance / mm	Measured creepage dist. / mm	Measured distance thr. insul. / mm; number of layers

Transformer type number	Enclosure - Miscellaneous ID

supplementary information:

Enclosure

National Differences

Austria**
Belarus*
Belgium**
Bulgaria**
Czech Republic**
Denmark
Finland
France**
Germany
Greece**
Group
Hungary**
Italy**
Netherlands**
Norway
Poland**
Romania**
Serbia**
Slovakia**
Slovenia**
Sweden
Switzerland
USA / Canada
Ukraine*
United Kingdom

* No National Differences Declared
** Only Group Differences

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
Denmark - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
1.2.4.1	In Denmark, certain types of Class I appliances (see sub-clause 3.2.1.1) may be provided with plug not establishing earthing continuity when inserted into Danish socket-outlets.		N/A
1.7.2.1	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: : “Apparatets stikprop skal tilsluttes en stikkontakt med jord, som giver forbindelse til stikproppens jord.”		N/A
1.7.5	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.		N/A
1.7.5	For CLASS II EQUIPMENT the socket outlet shall be in accordance with Standard Sheet DKA 1-4a. (Heavy Current Regulations, Section 107-2-D1)		N/A
3.2.1.1	Supply cord of single-phase equipment having a rated current not exceeding 13 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 contact 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		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	Regulations, Section 107-2-D1 or EN 60309-2.		

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
Finland - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
1.5.7.1	Resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.1. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		N/A
1.5.9.4	The third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	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 shall be: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan"		N/A
2.3.2	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
2.10.5.3	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
5.1.7.1	Touch current measurement results exceeding 3,5 mA r.m.s are permitted only for the following equipment: - STATIONARY PLUGGABLE EQUIPMENT TYPE A that: (1) is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and (2) has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and (3) is provided with instructions for the installation of that conductor by a SERVICE PERSON; - STATIONARY PLUGGABLE EQUIPMENT TYPE B - STATIONARY PERMANENTLY CONNECTED EQUIPMENT		N/A
6.1.2.1	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		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
	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 requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994 (EN 60384-14:2005), subclass Y2. A capacitor classified Y3 according to EN 132400 [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 132400 [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 132400 [EN 60384-14]; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400 [EN 60384-14], in the sequence of tests as described in EN 132400 [EN 60384-14].		
6.1.2.2	The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT, PLUGGABLE EQUIPMENT TYPE B and equipment intended to		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
	be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication center, 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.		
7.2	Requirements according to this annex 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
Germany - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
1.7.2.1	If for the assurance of safety and health certain rules during use, amending or maintenance of a technical labour equipment or readymade consumer product are to be followed, a manual in German language has to be delivered when placing the product on the market. Of this requirement, rules for use even only by SERVICE PERSONS are not exempted.		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
Group - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
General	Group Differences also includes the requirements in A11:2009 and A12:2011		N/A
1.3	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		N/A
1.5.1	Add the following NOTE Z1: The use of certain substances in electrical and electronic equipment is restricted within the EU: see Directive 2002/95/EC		N/A
1.7.2.1	Delete NOTE Z1 and the addition for Portable Sound System Add the following Zx clauses and annex to the existing standard and amendments		N/A
2.7.1	Replace the subclause as follows: Basic requirements To protect against excessive current, short-circuits and earth faults in PRIMARY CIRCUITS, protective devices shall be included either as integral parts of the equipment or as parts of the building installation, subject to the following, a), b) and c): a) except as detailed in b) and c), protective devices necessary to comply with the requirements of 5.3 shall be included as parts of the equipment; b) for components in series with the mains input to the equipment such as the supply cord, appliance coupler, r.f.i. filter and switch, short-circuit and earth fault protection may be provided by protective devices in the building installation; c) it is permitted for PLUGGABLE EQUIPMENT TYPE B or PERMANENTLY CONNECTED EQUIPMENT, to rely on dedicated overcurrent and short-circuit protection in the building installation, provided that the means of protection, e.g. fuses or circuit breakers, is fully specified in the installation instructions. If reliance is placed on protection in the building installation, the installation instructions shall so state, except that for PLUGGABLE EQUIPMENT TYPE A the building installation shall be regarded as providing protection in accordance with the rating of the wall socket outlet.		N/A
2.7.2	Void		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
3.2.3	Delete the NOTE and conduit sizes in parentheses in Table 3A		N/A
3.2.5.1	Add the following Note: NOTE Z1 The harmonised code designations corresponding to the IEC cord types are given in Annex ZD. 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 Table 3B, to delete the second sentence.		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 by 4" Delete the fifth line: conductor sizes for 13 to 16A.		N/A
4.3.13.6	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 (artificial optical radiation). Standards taking into account this Recommendation which demonstrate compliance with the applicable EU Directive are indicated in the OJEC.		N/A
H	Replace the last paragraph of this annex by: At any point 10 cm from the surface of the OPERATOR ACCESS AREA, the dose rate shall not exceed 1 µSv/h (0,1 mR/h) (see NOTE). Account is taken of the background level. Replace the notes as follows: NOTE - These values appear in Directive 96/29/Euratom. Delete NOTE 2.		N/A
Zx	Protection against excessive sound pressure from personal music players		N/A

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SubClause	Difference + 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. - analogue personal music players (personal music players without any kind of digital processing of the sound signal) that are brought to the market before		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
	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 LAeq,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 LAeq,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 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		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
	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 LAeq,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 LAeq,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.		
Zx.3	Warning - The warning shall be placed on the		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
	equipment, or on the packaging, or in the instruction manual and shall consist of the following: - the symbol of Figure 1 (IEC 60417-6044) 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.” 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		
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 LAeq,T, the input voltage of the fixed “programme simulation noise” described in EN 50332-2 shall be ≥ 75 mV. This requirement is applicable in any mode where the headphones can operate (active or passive), including any available setting (for example built-in volume level control). NOTE The values of 94 dBA – 75 mV correspond with 85dBA – 27 mV and 100 dBA – 150 mV.		N/A
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 LAeq,T of the listening device shall be ≤ 100 dBA. This requirement is applicable in any mode where the headphones can operate, including any available setting (for example built-in volume level control, additional sound feature like equalization, etc.). NOTE An example of a wired listening device with digital input is a USB headphone.		N/A
Zx.4.3	Wireless listening devices In wireless mode: - with any playing and transmitting device playing the fixed programme simulation noise described in		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
	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 LAeq,T of the listening device shall be ≤ 100 dBA. NOTE An example of a wireless listening device is a Bluetooth headphone.		
Zx.5	Measurement Methods Measurements shall be made in accordance with EN 50332-1 or EN 50332-2 as applicable. Unless stated otherwise, the time interval T shall be 30 s. NOTE Test method for wireless equipment provided without listening device should be defined.		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
Norway - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
General	Norway has national differences declared for 60950-1:2005, Am 1:2009 (below).		N/A
1.2.13.14	For requirements see 1.7.2.1 and 7.3.		N/A
1.5.7.1	Resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.2. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		N/A
1.5.8	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).		N/A
1.5.9.4	The third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	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 shall be: "Apparatet må tilkoples jordet stikkontakt"		N/A
1.7.2.1	In Norway, 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		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
	some circumstances create a fire hazard. Connection to a cable distribution system has therefore to be provided through a device providing electrical isolation below a certain frequency range (galvanic isolator, see EN 60728-11)." NOTE: In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to Norwegian (the Swedish text will also be accepted in Norway): "Utstyr som er koplet til beskyttelsesjord via nettplugg og/eller via annet jordtilkoplet utstyr - og er tilkoplet et kabel-TV nett, kan forårsake brannfare. For å unngå dette skal det ved tilkopling av utstyret til kabel-TV nettet installeres en galvanisk isolator mellom utstyret og kabel-TV nettet."		
2.2.4	Requirements according to this annex, 1.7.2.1, 6.1.2.1 and 6.1.2.2 apply.		Pass
2.3.2	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
2.3.4	Requirements according to this annex, 1.7.2.1, 6.1.2.1 and 6.1.2.2 apply.		Pass
2.10.5.13	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
5.1.7.1	TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s are permitted only for the following equipment: - STATIONARY PLUGGABLE EQUIPMENT TYPE A that: (1) is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and (2) has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and (3) is provided with instructions for the installation of that conductor by a SERVICE PERSON; - STATIONARY PLUGGABLE EQUIPMENT TYPE B - STATIONARY PERMANENTLY CONNECTED EQUIPMENT		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
6.1.2.1	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 requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 123400 [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 132400 [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 132400 [EN 60384-14]; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400 [EN 60384-14], in the sequence of tests as described in EN 132400 [EN 60384-14.]		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
6.1.2.2	The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		N/A
7.3	Refer to EN 60728-11:2005 for installation conditions		N/A
7.3	Requirements according to this annex 1.2.13.14 and 1.7.2.1 apply.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
Sweden - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
1.2.13.14	For requirements see 1.7.2.1 and 7.3.		N/A
1.5.1	(Ordinance (1990:944)) Add NOTE: Switches containing mercury are not permitted.		N/A
1.5.7.1	Resistors bridging BASIC INSULATION in CLASS I PLUGGABLE EQUIPMENT TYPE A must comply with the requirements in 1.5.7.2. In addition when a single resistor is used, the resistor must withstand the resistor test in 1.5.7.2.		N/A
1.5.9.4	The third dashed sentence is applicable only to equipment as defined in 6.1.2.2 of this annex.		N/A
1.7.2.1	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 shall be:"Apparaten skall anslutas till jordat uttag"		N/A
1.7.2.1	In 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		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	(galvanic isolator, see EN 60728-11)." NOTE: In Norway, due to regulation for installations of cable distribution systems, and in Sweden, a galvanic isolator shall provide electrical insulation below 5 MHz. The insulation shall withstand a dielectric strength of 1,5 kV r.m.s., 50 Hz or 60 Hz, for 1 min. Translation to 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."		
2.3.2	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
2.10.5.13	Requirements according to this annex, 6.1.2.1 and 6.1.2.2 apply.		N/A
5.1.7.1	TOUCH CURRENT measurement results exceeding 3,5 mA r.m.s are permitted only for the following equipment: STATIONARY PLUGGABLE EQUIPMENT TYPE A that: (1) is intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, for example, in a telecommunication centre; and (2) has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR; and (3) is provided with instructions for the installation of that conductor by a SERVICE PERSON; - STATIONARY PLUGGABLE TYPE B - STATIONARY PERMANENTLY CONNECTED EQUIPMENT		N/A
6.1.2.1	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		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	through insulation requirement for the insulation consisting of an insulating compound completely filling the casing, so that CLEARANCES and CREEPAGE DISTANCES do not exist, if the component passes the electric strength test in accordance with the compliance clause below and in addition - passes the tests and inspection criteria of 2.10.11 with an electric strength test of 1,5 kV multiplied by 1,6 (the electric strength test of 2.10.10 shall be performed using 1,5 kV), and - is subject to ROUTINE TESTING for electric strength during manufacturing, using a test voltage of 1,5 kV. It is permitted to bridge this insulation with an optocoupler complying with 2.10.5.4 b). It is permitted to bridge this insulation with a capacitor complying with EN 132400:1994, subclass Y2. A capacitor classified Y3 according to EN 132400 [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 132400 [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 132400 [EN 60384-14]; - the impulse test of 2,5 kV is to be performed before the endurance test in EN 132400 [EN 60384-14], in the sequence of tests as described in EN 132400 [EN 60384-14.]		
6.1.2.2	The exclusions are applicable for PERMANENTLY CONNECTED EQUIPMENT and PLUGGABLE EQUIPMENT TYPE B and equipment intended to be used in a RESTRICTED ACCESS LOCATION where equipotential bonding has been applied, e.g. in a telecommunication centre, and which has provision for a permanently connected PROTECTIVE EARTHING CONDUCTOR and is provided with instructions for the installation of that conductor by a SERVICE PERSON.		N/A
7.2	Requirements according to this annex, 6.1.2.1 and		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	6.1.2.2 apply with the term TELECOMMUNICATION NETWORK in 6.1.2 being replaced by the term CABLE DISTRIBUTION SYSTEM.		
7.3	Requirements according to this annex 1.2.13.14 and 1.7.2.1 apply.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
Switzerland - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
General	Includes update from 60950-1:2005, AC:2011		N/A
1.5.1	Ordinance on environmentally hazardous substances SR 814.81, Annex 1.7, Mercury - Annex 1.7 of SR 814.81 applies for mercury. Switches containing mercury such as thermostats, relays and level controllers are not allowed.		N/A
1.7.13	Ordinance on chemical hazardous risk reduction SR 814.81, Annex 2.15, Batteries - Annex 2.15 of SR 814.81 applies for batteries containing cadmium and mercury. Note: Ordinance relating to environmentally hazardous substances, SR 814.013 of 1986-06-09 is no longer in force and superseded by SR 814.81 of 2009-02-01 (ChemRRV).		Pass
3.2.1.1	Supply cords of portable electrical appliances having a rated current not exceeding 10 A shall be provided with a plug complying with IEC 60884-1 (3rd Ed.) + Amd. 1, SEV 1011 and one of the following dimension sheets: - SEV 6533-2:2009, Plug type 11, L+N, 250 V, 10 A - SEV 6534-2:2009, Plug type 12, L+N+PE, 250 V, 10 A - SEV 6532-2:2009, Plug type 15, 3P+N+PE, 250/400 V, 10 A Supply cords of portable electrical appliances having a rated current not exceeding 16 A shall be provided with a plug complying with IEC 60884-1 (3rd Ed.) + Amd. 1, SEV 1011 and one of the following dimension sheets: - SEV 5933-2:2009, Plug type 21, L+N, 250 V, 16 A - SEV 5934-2:2009, Plug type 23, L+N+PE, 250 V, 16 A - SEV 5932-2:2009, Plug type 25, 3P+N+PE, 230/400 V, 16 A NOTE: 16 A plugs are not often used in Swiss domestic installation systems.		N/A
3.2.4	Requirements according to this annex 3.2.1.1		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	apply.		

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
USA / Canada - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
1.1.1	Equipment able to be installed in accordance with the National Electrical Code ANSI/NFPA 70 and the Canadian Electrical Code, Part1, and when applicable, the National Electrical Safety Code, IEEE C2.		Pass
1.1.1	Equipment able to be installed in accordance with ANSI/NFPA 75 and NEC Art. 645 unless intended for use outside of computer room and provided with such instructions.		Pass
1.1.2	Baby monitors are required to additionally comply with ASTM F2951, Consumer Safety Specification for Baby Monitors.		N/A
1.1.2	Equipment in wire-line communication facilities serving high-voltage electric power stations operating at greater than 1kV are excluded.		N/A
1.1.2	Special requirements apply to equipment intended for use outdoors.		N/A
1.4.14	For PLUGGABLE EQUIPMENT TYPE A, the protection in the installation is assumed to be 20 A.		N/A
1.5.1	All IEC standards for components identified in Annex P.1 replaced by the relevant requirements of CSA and UL component standards in Annex P.1.		Pass
1.5.1	All IEC standards for components identified in Annex P.2 alternatively satisfied by the relevant requirements of CSA and UL component standards in Annex P.2.		Pass
1.5.5	Interconnecting cables acceptable for the application regarding voltage, current, temperature, flammability, mechanical serviceability and the like.		Pass
1.5.5	For other than limited power and TNV circuits, the type of output circuit identified for output connector.		N/A
1.5.5	External cable assemblies that exceed 3.05 m in length to be types specified in the NEC and CEC.		N/A
1.5.5	Detachable external interconnecting cables 3.05 m or less in length and provided with equipment marked to identify the responsible organization and the designation for the cable.		Pass
1.5.5	Building wiring and cable for use in ducts, plenums and other air handling space subject to special requirements and excluded from scope.		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
1.5.5	Telephone line and extension cords and the like comply with UL 1863 and CSA C22.2 No. 233.		N/A
1.6.1.2	Equipment intended for connection to a d.c. power (mains) distribution system is subject to special circuit classification requirements (e.g., TNV-2)		N/A
1.6.1.2	Earthing of d.c. powered equipment provided.		N/A
1.7	Lamp replacement information indicated on lampholder in operator access area.		N/A
1.7.1	Special marking format for equipment intended for use on a supply system with an earthed neutral and more than one phase conductor.		N/A
1.7.1	Equipment voltage rating not higher than rating of the plug except under special conditions.		N/A
1.7.6	Special fuse replacement marking for operator accessible fuses.		N/A
1.7.7	Identification of terminal connection of the equipment earthing conductor.		N/A
1.7.7	Connectors and field wiring terminals for external Class 2 or Class 3 circuits provided with marking indicating minimum Class of wiring to be used.		N/A
1.7.7	Marking located adjacent to terminals and visible during wiring.		N/A
2.1.1.1	Bare TNV conductive parts in the interior of equipment normally protected against contact by a cover intended for occasional removal are exempt provided instructions include directions for disconnection of TNV prior to removal of the cover.		N/A
2.3.1.b	Other telecommunication signaling systems (e.g., message waiting) than described in 2.3.1(b) are subject to M.4.		N/A
2.3.1.b	For TNV-2 and TNV-3 circuits with other than ringing signals and with voltages exceeding 42.4 Vp or 60 V d.c., the maximum current limit through a 2000 Ohm or greater resistor with loads disconnected is 7.1 mA peak or 30 mA d.c. under normal conditions.		N/A
2.3.1.b	Limits for measurements across 5000 ohm resistor in the event of a single fault are replaced after 200 ms with the limits of M.3.1.4.		N/A
2.3.2.1	In the event of a single fault, the limits of 2.2.3 apply to SELV circuits and accessible conductive parts.		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
2.5	Overcurrent protection device required for Class 2 and Class 3 limiting in accordance with the NEC, or for a Limited Power Source, not interchangeable with devices of higher ratings if operator replaceable.		N/A
2.6	Equipment having receptacles for output a.c. power connectors generated from an internal separately derived source have the earthed (grounded) circuit conductor suitably bonded to earth.	Class III unit.	N/A
2.6.2	Equipment with functional earthing is required to be marked with the functional earthing symbol (IEC 60417-6092).		N/A
2.6.3.3	For PLUGGABLE EQUIPMENT TYPE A, if a) b) or c) are not applicable, the current rating of the circuit is taken as 20 A		N/A
2.6.3.3	The first column on Table 2D requirement: “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		N/A
2.6.3.4	Capacity of connection between earthing terminal and parts required to be earthed subject to special conditions based on the current rating of the circuit.		N/A
2.6.3.4	Protective bonding conductors and their terminals of non-standard constructions (e.g. PWB traces) evaluated to limited short-circuit test of CSA C22.2 No.0.4.		N/A
2.6.4.1	Field wiring terminals for earthing conductors suitable for wire sizes (gauge) used in US and Canada.		N/A
2.7.1	Data for selection of special external branch circuit overcurrent devices marked on the equipment.		N/A
2.7.1	Standard supply outlets protected by overcurrent device in accordance with the NEC, and CEC, Part 1.		N/A
2.7.1	Overcurrent protection for individual transformers that distribute power to other units over branch circuit wiring.		N/A
2.7.1	Additional requirements for overcurrent protection apply to equipment provided with panelboards.		N/A
2.7.1	Non-motor-operated equipment requiring special overcurrent protective device marked with device rating.		N/A

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SubClause	Difference + Test	Result - Remark	Verdict
2.10.5.12	Multi-layer winding wire subject to UL component wire requirements in addition to 2.10.5.12 and Annex U.		N/A
3.1.1	Permissible combinations of internal wiring/external cable sizes for overcurrent and short circuit protection.		N/A
3.1.1	All interconnecting cables protected against overcurrent and short circuit.		Pass
3.2	Wiring methods permit connection of equipment to primary power supply in accordance with the NEC and CEC, Part 1.		N/A
3.2.1	Permitted use for flexible cords and plugs.		N/A
3.2.1	Flexible cords provided with attachment plug rated 125% of equipment current rating.		N/A
3.2.1	Any Class II equipment provided with 15 or 20 A standard supply outlets, Edison-base lampholders or single pole disconnect device provided with a polarized type attachment plug.		N/A
3.2.1.2	Equipment intended for connection to DC mains supply power systems complies with special wiring requirements (e.g., no permanent connection to supply by flexible cord).		N/A
3.2.1.2	Equipment with one pole of the DC mains supply connected to both the equipment mains input terminal and the main protective earthing terminal provided with special instructions and construction provisions for earthing.		N/A
3.2.1.2	Equipment with means for connecting supply to earthing electrode conductor has no switches or protective devices between supply connection and earthing electrode connection.		N/A
3.2.1.2	Special markings and instructions for equipment with provisions to connect earthed conductor of a DC supply circuit to earthing conductor at the equipment.		N/A
3.2.1.2	Special markings and instructions for equipment with earthed conductor of a DC supply circuit connected to the earthing conductor at the equipment.		N/A
3.2.1.2	Terminals and leads provided for permanent connection of DC powered equipment to supply marked to indicate polarity if reverse polarity may		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	result in a hazard.		
3.2.3	Permanently connected equipment has provision for connecting and securing a field wiring system (i.e. conduit, or leads etc.) per the NEC and CEC, Part 1.		N/A
3.2.3	Permanently connected equipment may have terminals or leads not smaller than No. 18 AWG (0.82 mm²) and not less than 150 mm in length for connection of field installed wiring.		N/A
3.2.3	If supply wires exceed 60 °C, marking indicates use of 75 °C or 90 °C wiring for supply connection as appropriate.		N/A
3.2.3	Equipment compatible with suitable trade sizes of conduits and cables.		N/A
3.2.5	Power supply cords are required to be no longer than 4.5 m in length. Minimum cord length is required to be 1.5 m, with certain constructions such as external power supplies allowed to consider both input and output cord lengths into the requirement. Flexible power supply cords are required to be compatible with Article 400 of the NEC, and Tables 11 and 12 of the CEC.		N/A
3.2.5	Conductors in power supply cords sized according to NEC and CEC, Part I.		N/A
3.2.5	Power supply cords and cord sets incorporate flexible cords suitable for the particular application.		N/A
3.2.6	Strain relief provided for non-detachable interconnecting cables not supplied by a limited power source.		N/A
3.2.9	Adequate wire bending space and volume of field wiring compartment required to properly make the field connections.		N/A
3.2.9	Equipment intended solely for installation in Restricted Access Locations using low voltage d.c. systems may not need provision for connecting and securing a field wiring system. A method of securing wiring or instructions provided to ensure the wiring is protected from abuse.		N/A
3.3	Field wiring terminals provided for interconnection of units for other than LPS or Class 2 circuits also		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	comply with 3.3.		
3.3	Interconnection of units by LPS or Class 2 conductors may have field wiring connectors other than those specified in 3.3 if wiring is reliably separated.		N/A
3.3.1	Terminals for the connection of neutral conductor identified by a distinctive white marking or other equally effective means.		N/A
3.3.3	Wire binding screw terminal permitted for connection of No. 10 AWG (5.3 mm^2) or smaller conductor if provided with upturned lugs, cupped washer or equivalent retention.		N/A
3.3.4	Terminals accept wire sizes (gauge) used in the U.S. and Canada.		N/A
3.3.4	Terminals accept current-carrying conductors rated 125% of the equipment current rating.		N/A
3.3.5	First column of Table 3E revised to require “Smaller of the RATED CURRENT of the equipment or the PROTECTIVE CURRENT RATING of the circuit under consideration."		N/A
3.3.6	Field wiring terminals marked to indicate the material(s) of the conductor appropriate for the terminals used.		N/A
3.3.6	Connection of an aluminum conductor not permitted to terminal for equipment earthing conductor.		N/A
3.3.6	Field wiring connections made through the use of suitable pressure connectors (including set screw type), solder lugs or splices to flexible leads.		N/A
3.4.2	Separate motor control device(s) required for cord-connected equipment rated more than 12 A, or with motor rated more than 1/3 hp or more than 120 V.		N/A
3.4.8	Vertically mounted disconnect devices oriented so up position of handle is "on".		N/A
3.4.11	For computer-room applications, equipment with battery systems capable of supplying 750 VA for 5 min require battery disconnect means.		N/A
4.2.8.1	Special opening restrictions for enclosures around CRTs with face dimension of 160 mm or more.		N/A
4.2.9	Compartment housing high-pressure lamp marked to indicate risk of explosion.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
4.3.2	Loading test for equipment with handle(s) used to support more than 9 kg tested at four times the weight of the unit.		N/A
4.3.6	In addition to the IEC requirements, Direct Plug-in Equipment complies with UL 1310 or CSA 223 mechanical assembly requirements.		N/A
4.3.8	Battery packs for both portable and stationary applications are required to comply with special component requirements.		N/A
4.3.12	The maximum quantity of flammable liquid stored in equipment complies with ANSI/NFPA 30(Table NAE.6).		N/A
4.3.12	Equipment using replenishable liquids marked to indicate type of liquid to be used.		N/A
4.3.13.2	Equipment that produces x-radiation and does not comply with 4.3.12 under all conditions of servicing marked to indicate the presence of radiation where readily visible.		N/A
4.3.13.5.1	Requirements contained in the applicable national codes and regulations apply to lasers (21 CFR 1040 and REDR C1370).		N/A
4.7	Automated information storage equipment intended to contain more than 0.76 m^3 of combustible media requires provision for automatic sprinklers or a gaseous agent extinguishing system.		N/A
4.7.3.1	Equipment for use in environmental air space other than ducts or plenums provided with metal enclosure or with non-metallic enclosure having adequate fire-resistance and low smoke producing characteristics. Low smoke-producing characteristics evaluated according to UL 2043. Equipment for installation in space used for environmental air as described in Sec. 300-22(c) of the NEC provided with instructions indicating suitability for installation in such locations.		N/A
4.7.3.1	Flame spread rating for external surface of combustible material with exposed area greater than 0.9 m^2 or a single dimension greater than 1.8 m; 50 or less for computer room applications or 200 or less for other applications.		N/A
4.7.3.4	Wire marked "VW-1" or "FT-1" considered equivalent.		Pass
5.1.8.2	Special earthing provisions and instructions for		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
	equipment with high touch current due to telecommunication network connections.		
5.1.8.3	Touch current due to ringing voltage for equipment containing telecommunication network leads.		N/A
5.3.7	Overloading of SELV connectors and printed wiring board receptacles accessible to the operator.		N/A
5.3.7	Tests interrupted by opening of a component repeated two additional times.		N/A
5.3.9.1	Test interrupted by opening of wire or trace subject to certain conditions.		N/A
6	Specialized instructions provided for telephones that may be connected to a telecommunications network.		N/A
6	Marking identifying function of telecommunication type connectors not used for connection to a telecommunication network.		N/A
6.3	Equipment remotely powered over telecommunication wiring systems provided with specialized markings adjacent to the connection.		N/A
6.3	Overcurrent protection incorporated into equipment to provide power over telecommunication wiring system not interchangeable with devices of higher ratings if operator replaceable.		N/A
6.4	Additional requirements for equipment intended for connection to a telecommunication network using cable subject to overvoltage from power line failures (Fig. 6C).		N/A
6.4	Where 26 AWG line cord required by Fig. 6C, either the cord is provided with the equipment or described in the safety instructions.		N/A
7	Equipment associated with the cable distribution system may need to be subjected to applicable parts of Chapter 8 of the NEC.		N/A
H	Ionizing radiation measurements made under single fault conditions in accordance with the requirements of the Code of Federal Regulations 21 CFR 1020 and the Canadian Radiation Emitting Devices Act, REDR C1370.		N/A
M.2	Continuous ringing signals evaluated to Method A subjected to special accessibility considerations.		N/A
M.4	Special requirements for message waiting and similar telecommunications signals.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
NAC	Equipment intended for use with a generic secondary protector marked with suitable instructions.		N/A
NAC	Equipment intended for use with a specific primary or secondary protector marked with suitable instructions.		N/A
NAD	Acoustic pressure from an ear piece less than 140 dBA for short duration disturbances, and less than 125 dBA for handsets, 118 dBA for headsets and insert earphones, for long duration disturbances.		N/A
NAD	Equipment connected to a telecommunication and cable distribution networks and supplied with an earphone intended to be held against, or in the ear is required to comply with special acoustic pressure requirements.		N/A
EE.5	UL articulated accessibility probe (Fig. EE.3) required for assessing accessibility to document/media shredders, instead of Figure 2A test finger.		N/A

IEC 60950-1:2005			
SubClause	Difference + Test	Result - Remark	Verdict
United Kingdom - Differences to IEC 60950-1:2005 (Second Edition); Am1:2009 + Am2:2013			
2.6.3.3	The current rating of the circuit shall be taken as 13 A, not 16 A.		N/A
2.7.1	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.		N/A
3.2.1.1	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 1786: 1994 - The Plugs and Sockets etc. (Safety) Regulations 1994, unless exempted by those regulations. NOTE: "Standard plug" is defined in SI 1786: 1994 and essentially means an approved plug conforming to BS 1363 or an approved conversion plug.		N/A
3.2.5.1	A power supply cord with conductor of 1.25 mm^2 is allowed for equipment with a rated current over 10A and up to and including 13A.		N/A
3.3.4	The range of conductor sizes of flexible cords to be accepted by terminals for equipment with a rated current of over 10 A up to and including 13 A is 1.25 mm^2 to 1.5 mm^2 nominal cross-sectional area.		N/A
4.3.6	The torque test is performed using a socket outlet complying with BS 1363 and the plug part of DIRECT PLUG-IN EQUIPMENT shall be assessed to BS 1363: Part 1, 12.1, 12.2, 12.3, 12.9, 12.11, 12.12, 12.16 and 12.17, except that the test of 12.17 is performed at not less than 125°C.		N/A
4.3.6	Where the metal earth pin is replaced by an Insulated Shutter Opening Device (ISOD), the requirements of clauses 22.2 and 23 also apply.		N/A

Enclosures

Type	Supplement Id	Description
Marking Plate	13-01	DH-IPC-HDW5241HP-AS-PV
Marking Plate	13-02	DH-IPC-HDW5541HP-AS-PV
Photographs	3-29	Front view of DH-IPC-HDW5241HP-AS-PV
Photographs	3-30	Port view of DH-IPC-HDW5241HP-AS-PV
Photographs	3-31	Rear view of DH-IPC-HDW5241HP-AS-PV
Photographs	3-32	All parts of DH-IPC-HDW5241HP-AS-PV
Photographs	3-33	main engine of DH-IPC-HDW5241HP-AS-PV
Photographs	3-34	Inter view of DH-IPC-HDW5241HP-AS-PV
Photographs	3-35	Rear view of inside of DH-IPC-HDW5241HP-AS-PV
Photographs	3-36	01 Front of mainboard of DH-IPC-HDW5241HP-AS-PV
Photographs	3-37	01 Rear view of mainboard of DH-IPC-HDW5241HP-AS-PV
Photographs	3-38	Lower part of DH-IPC-HDW5241HP-AS-PV
Photographs	3-39	Lower part near lens of DH-IPC-HDW5241HP-AS-PV
Photographs	3-40	02 Front view of mainboard of DH-IPC-HDW5241HP-AS-PV
Photographs	3-41	02 Rear view of mainboard of DH-IPC-HDW5241HP-AS-PV
Photographs	3-42	Front view of lens of DH-IPC-HDW5241HP-AS-PV
Photographs	3-43	All parts of lens of DH-IPC-HDW5241HP-AS-PV
Photographs	3-44	All parts of lens grops of DH-IPC-HDW5241HP-AS-PV
Photographs	3-45	Front view of lens and its mainboard of DH-IPC-HDW5241HP-AS-PV
Photographs	3-46	Rear view of lens and its mainboard of DH-IPC-HDW5241HP-AS-PV
Photographs	3-47	Front view of lens and its mainboard ofDH-IPC-HDW5541HP-AS-PV
Photographs	3-48	Rear view of lens and its mainboard ofDH-IPC-HDW5541HP-AS-PV
Photographs	3-49	Front view of mainboard of DH-IPC-HDW5541HP-AS-PV
Photographs	3-50	Rear view of mainboard of DH-IPC-HDW5541HP-AS-PV
Diagrams	4-05	dimension figure of DH-IPC-HDW5541HP-AS-PV
Schematics + PWB	5-01	Layout of DH-IPC-HDW5241HP-AS-PV
Schematics + PWB	5-02	Layout of DH-IPC-HDW5541HP-AS-PV layouts
Manuals	6-01	product manual

Enclosures

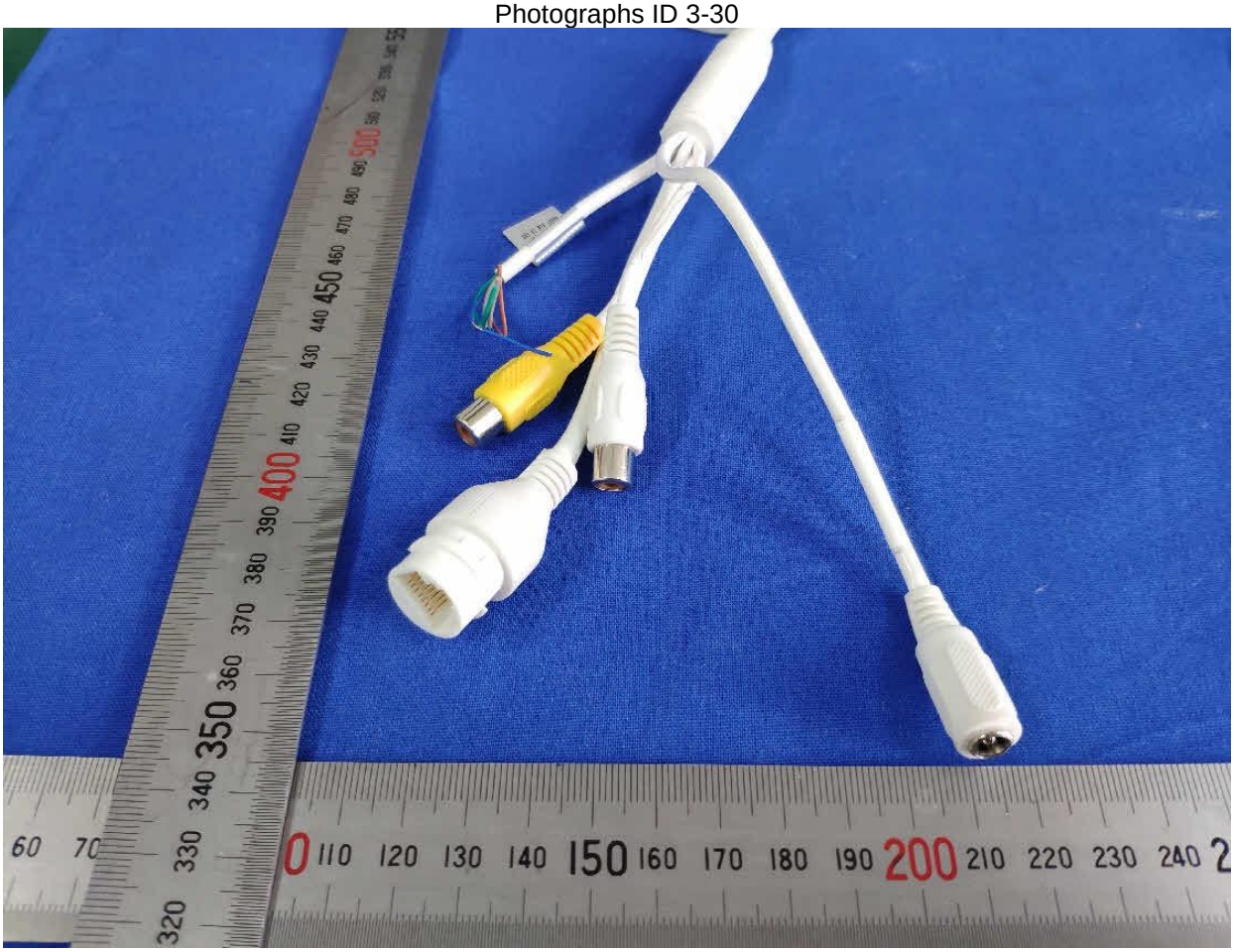
MarkingPlate ID 13-01

Enclosures

MarkingPlate ID 13-02

Photographs ID 3-29

Photographs ID 3-30



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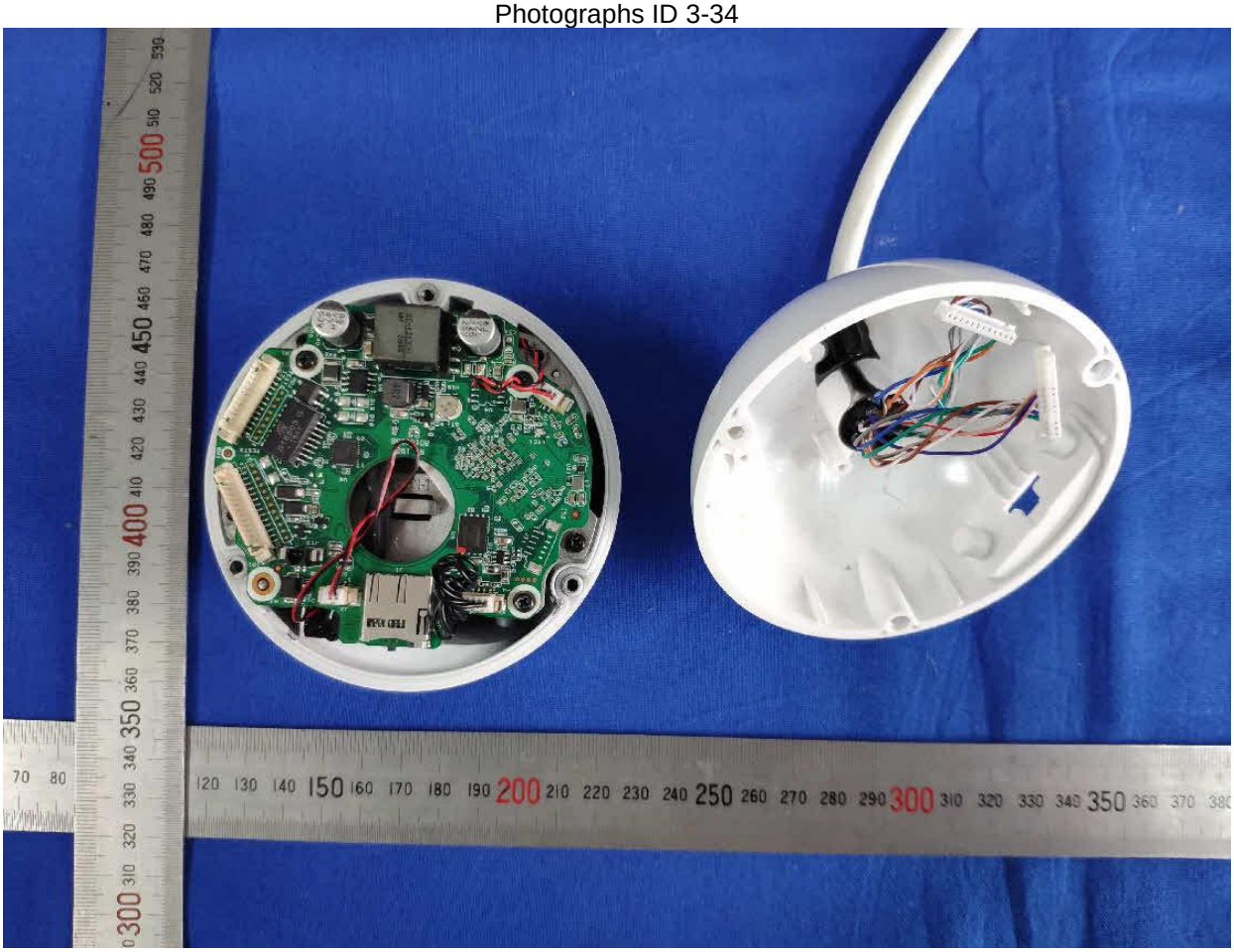
Photographs ID 3-32

Photographs ID 3-33

Photographs ID 3-34



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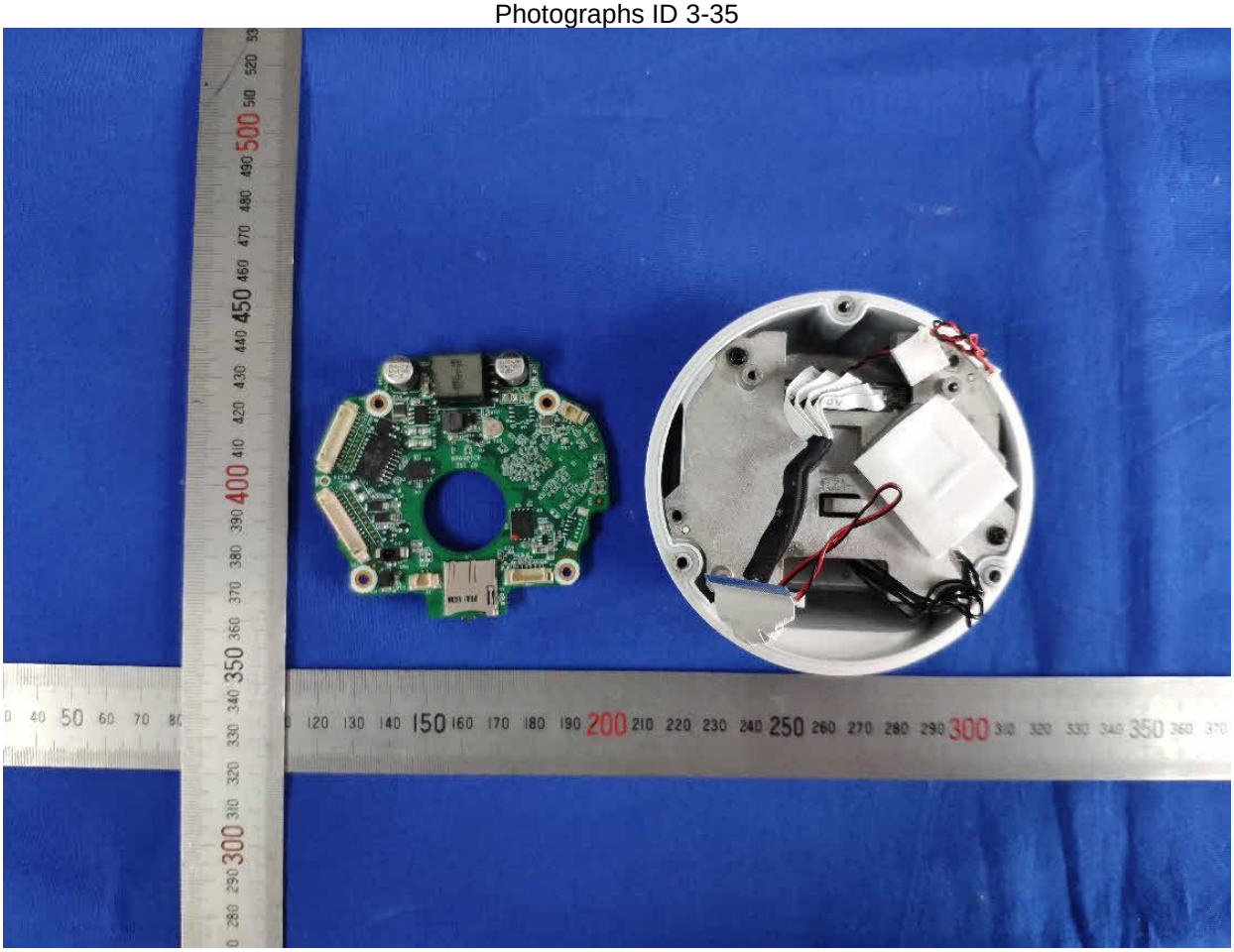

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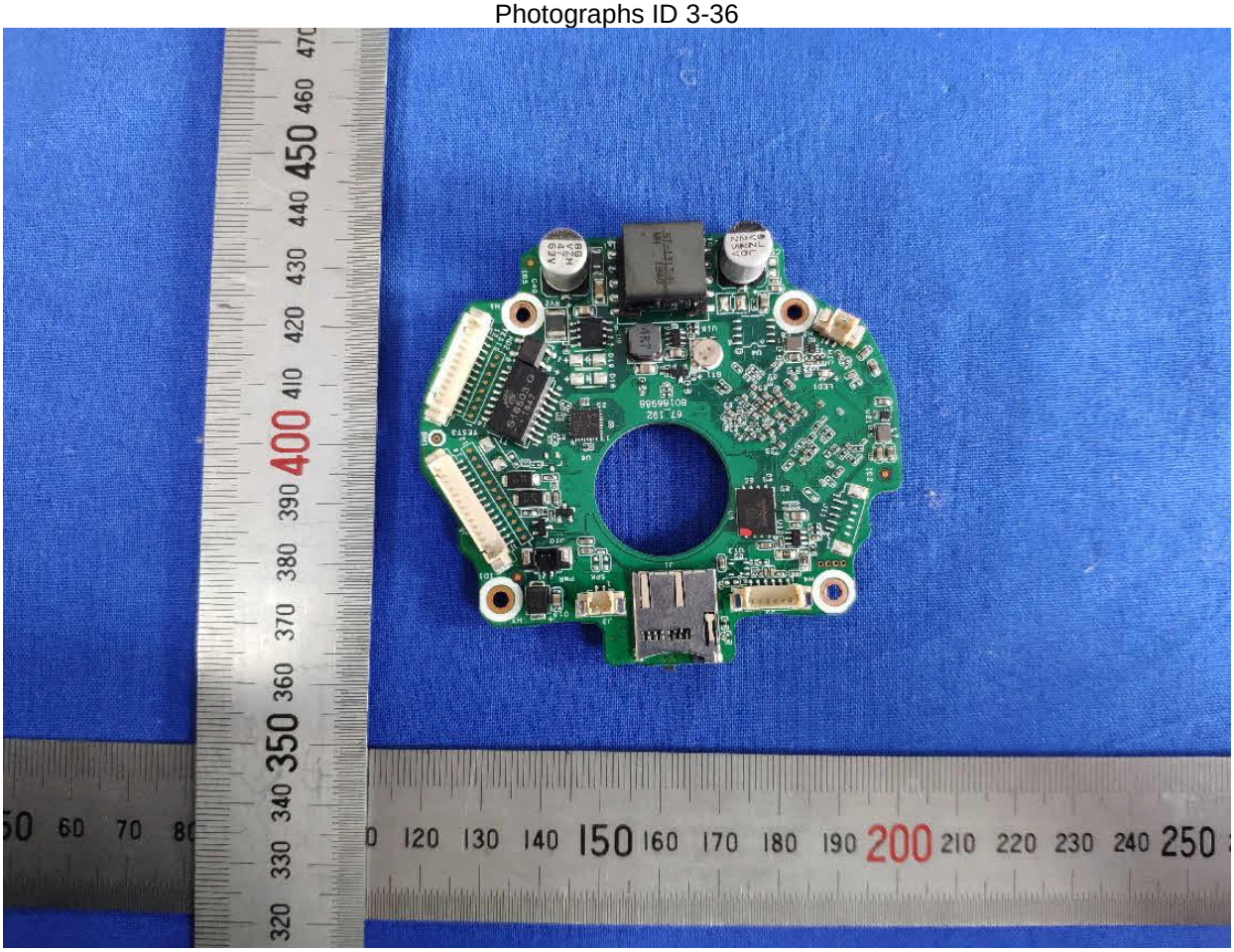

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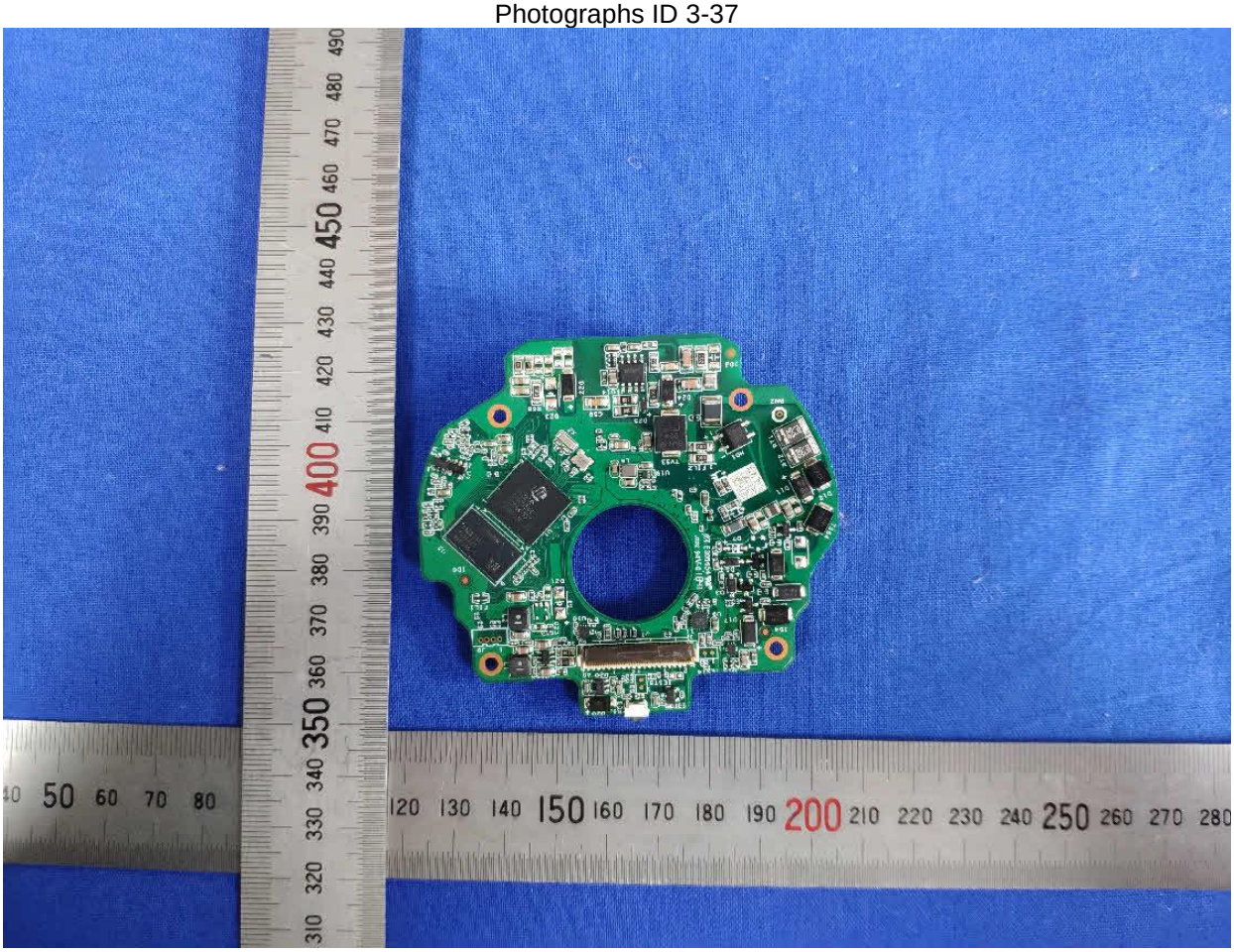

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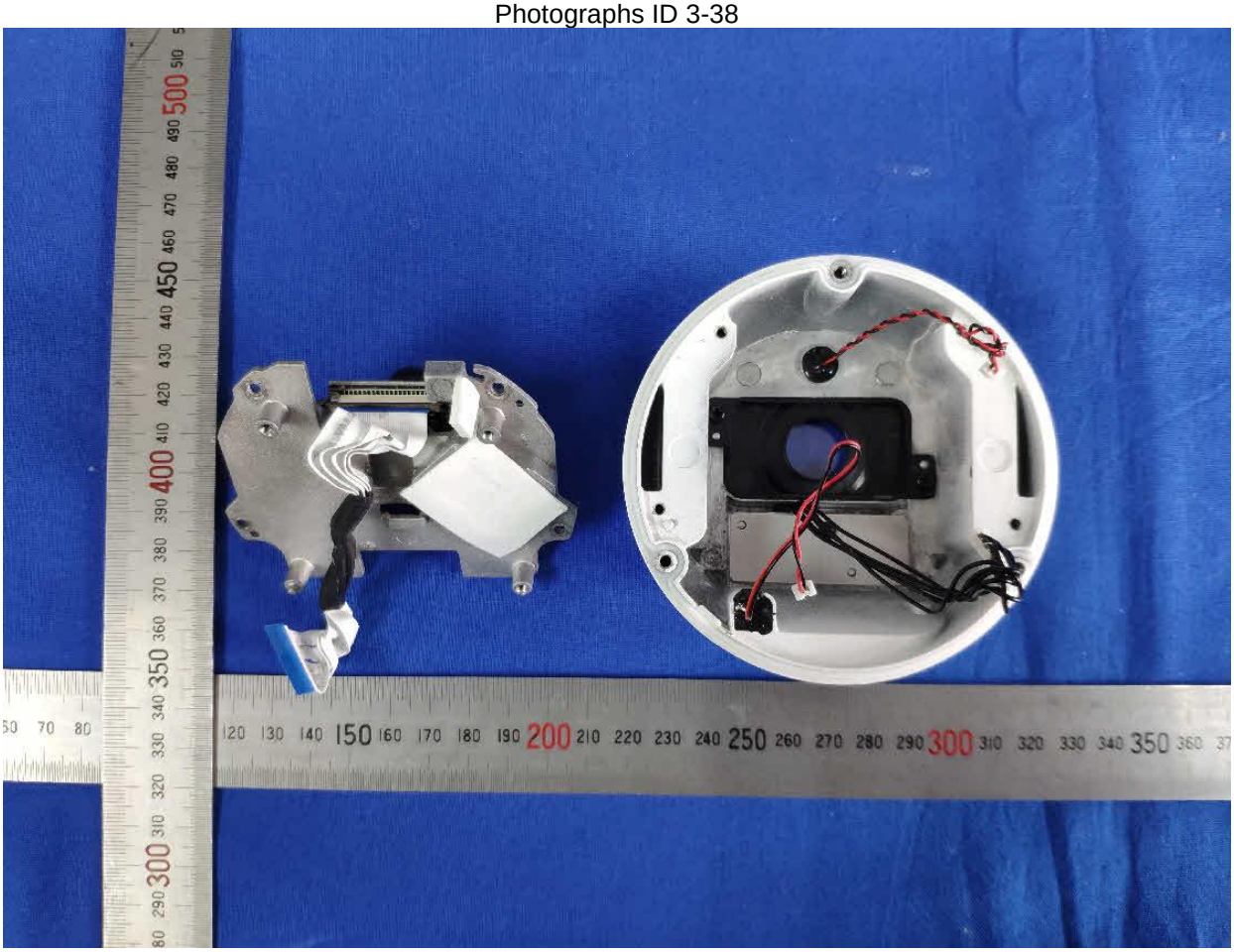

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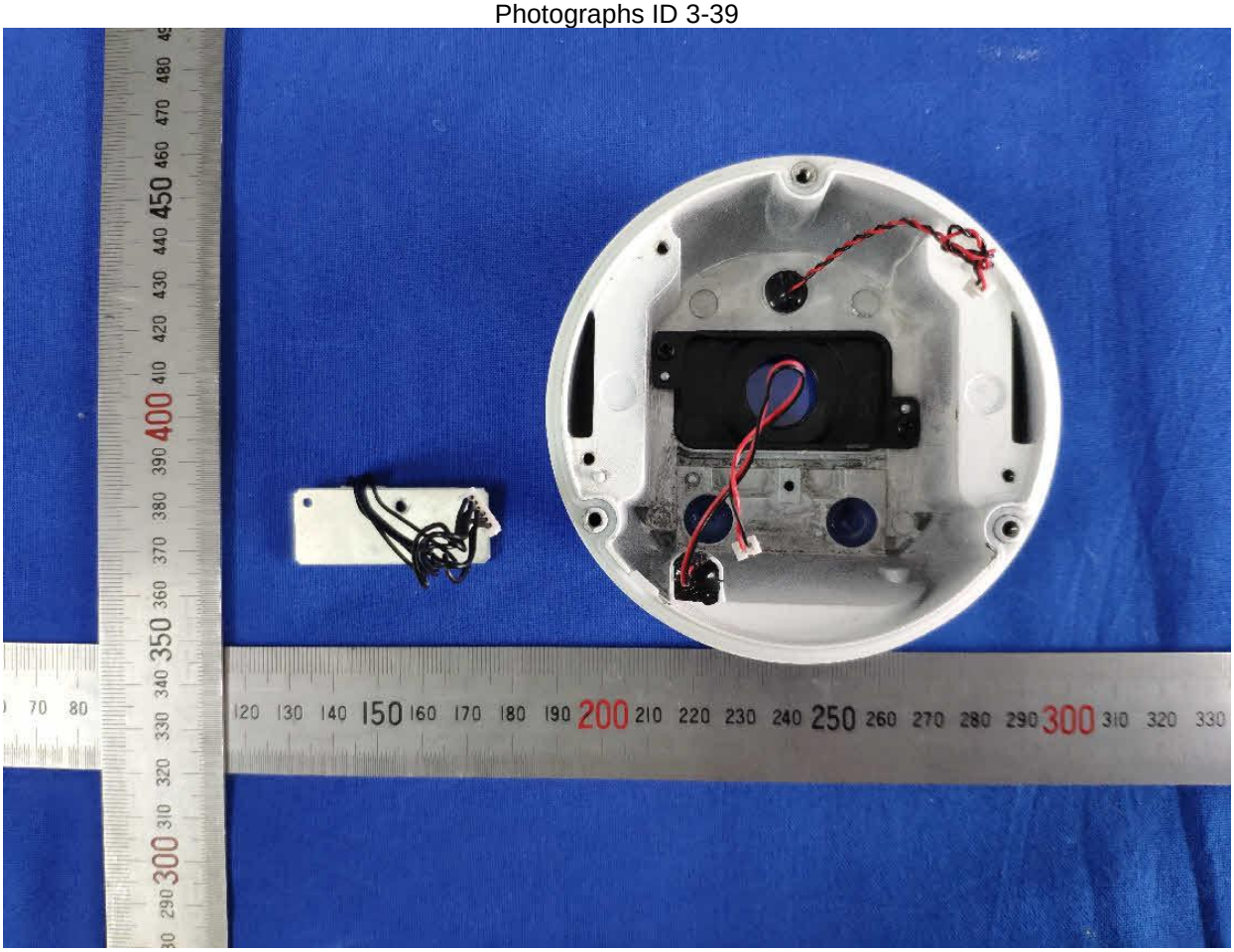

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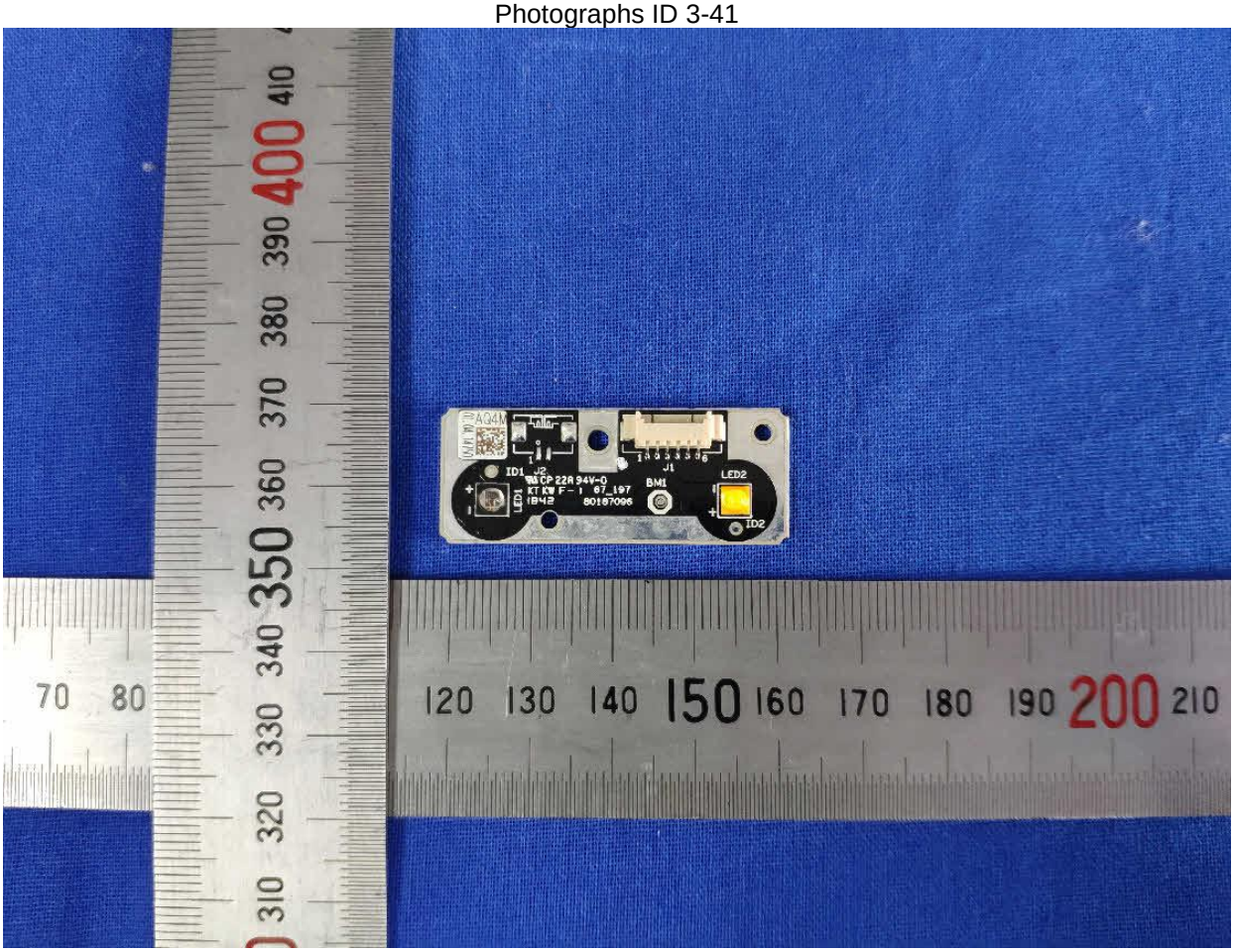
Photographs ID 3-41



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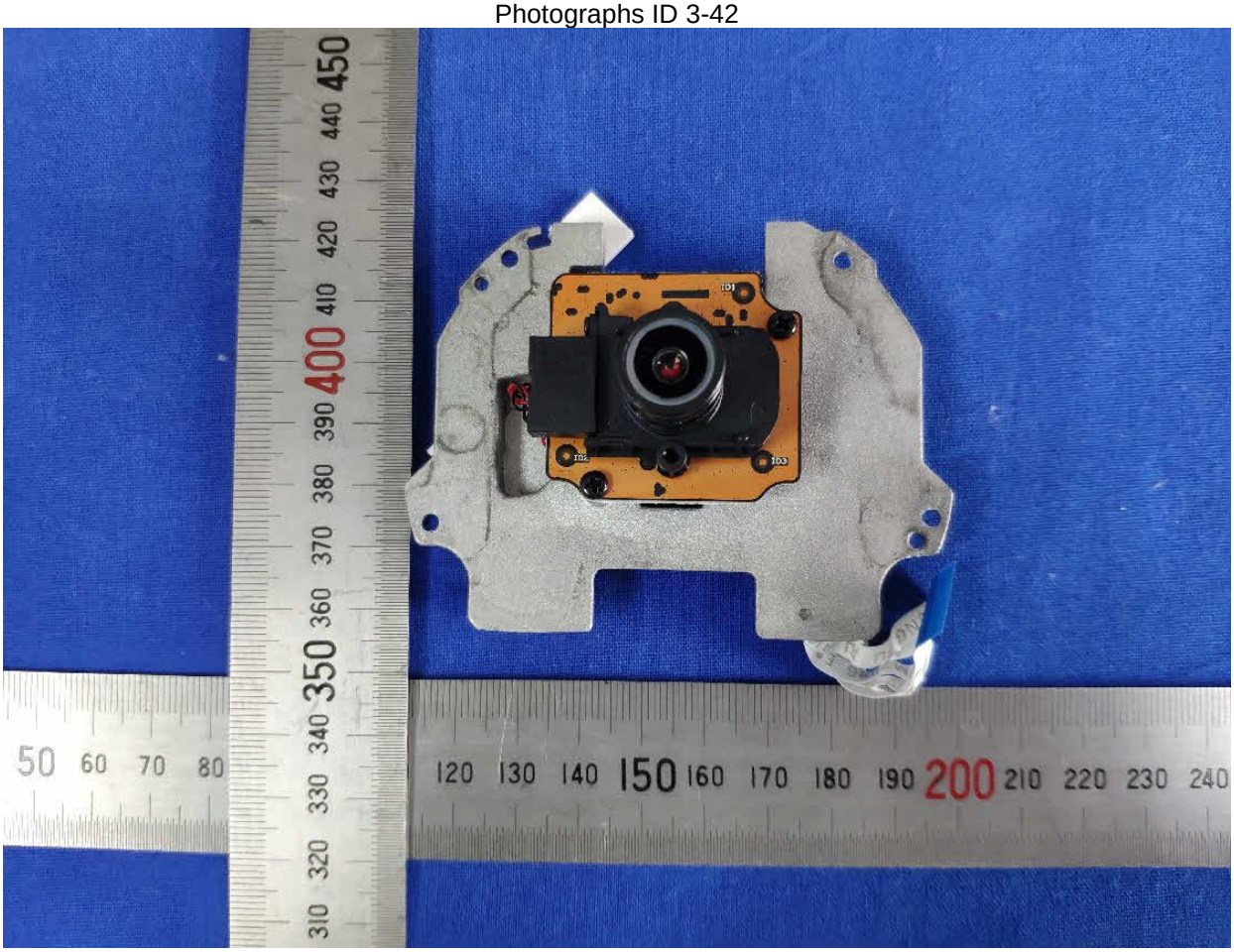

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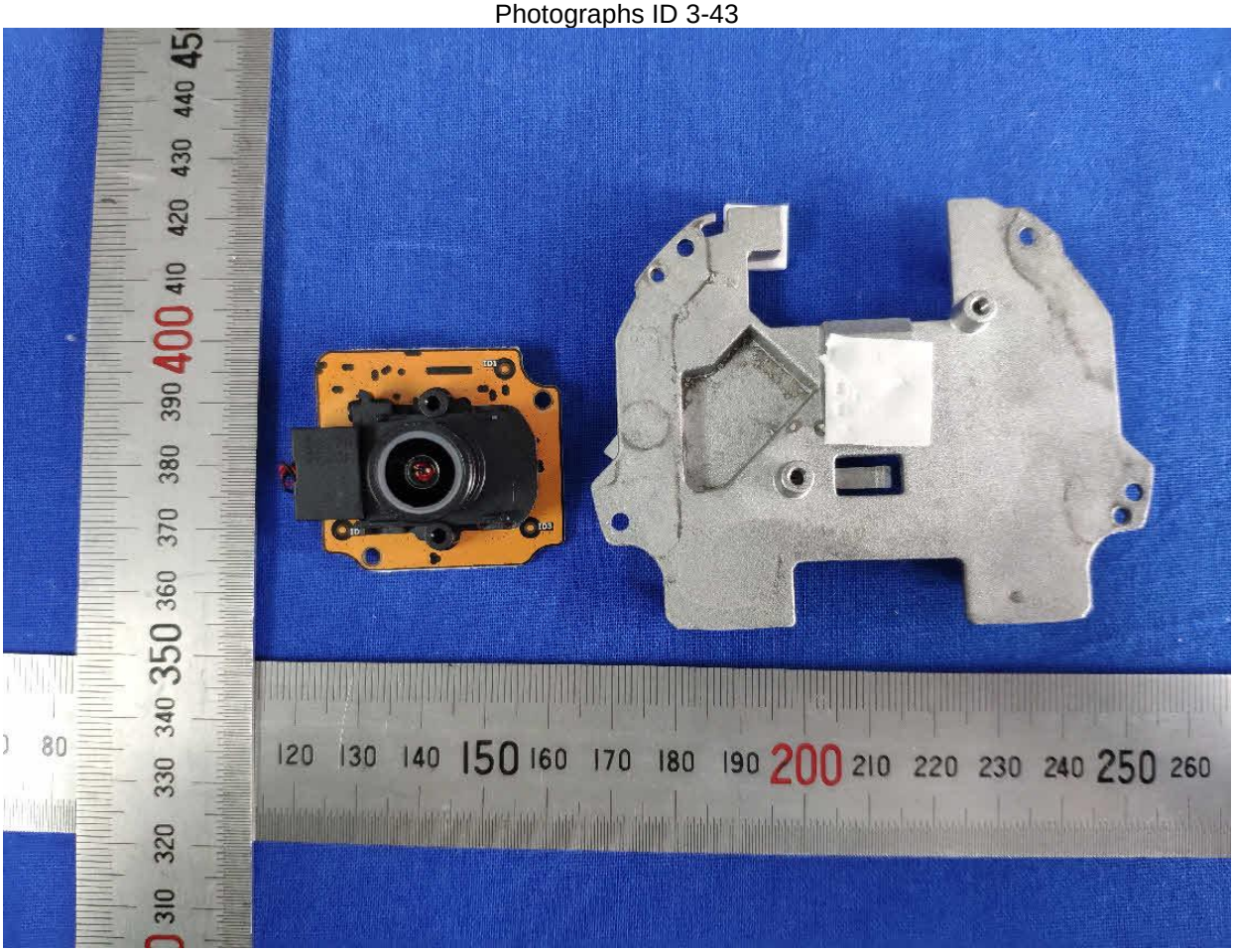

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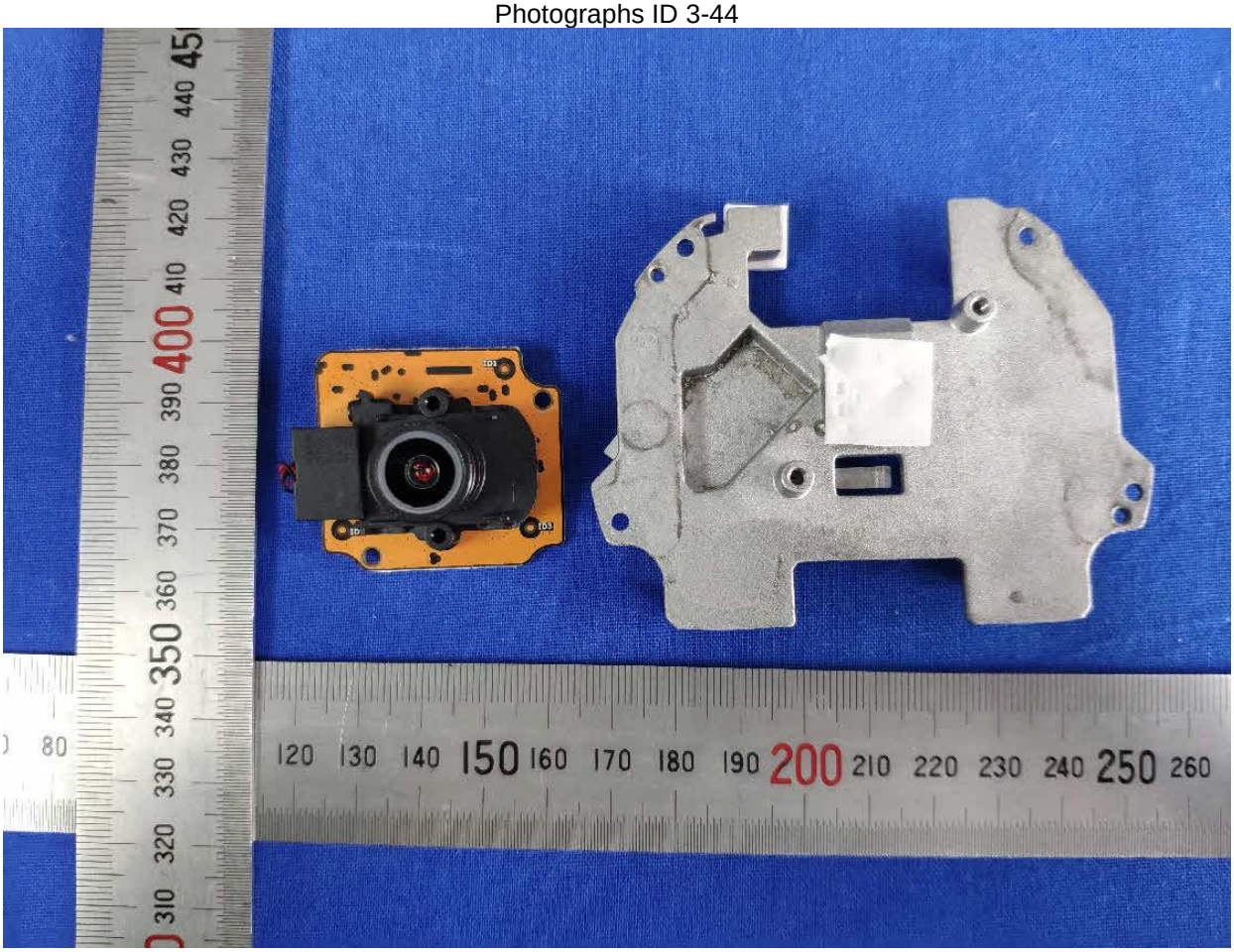

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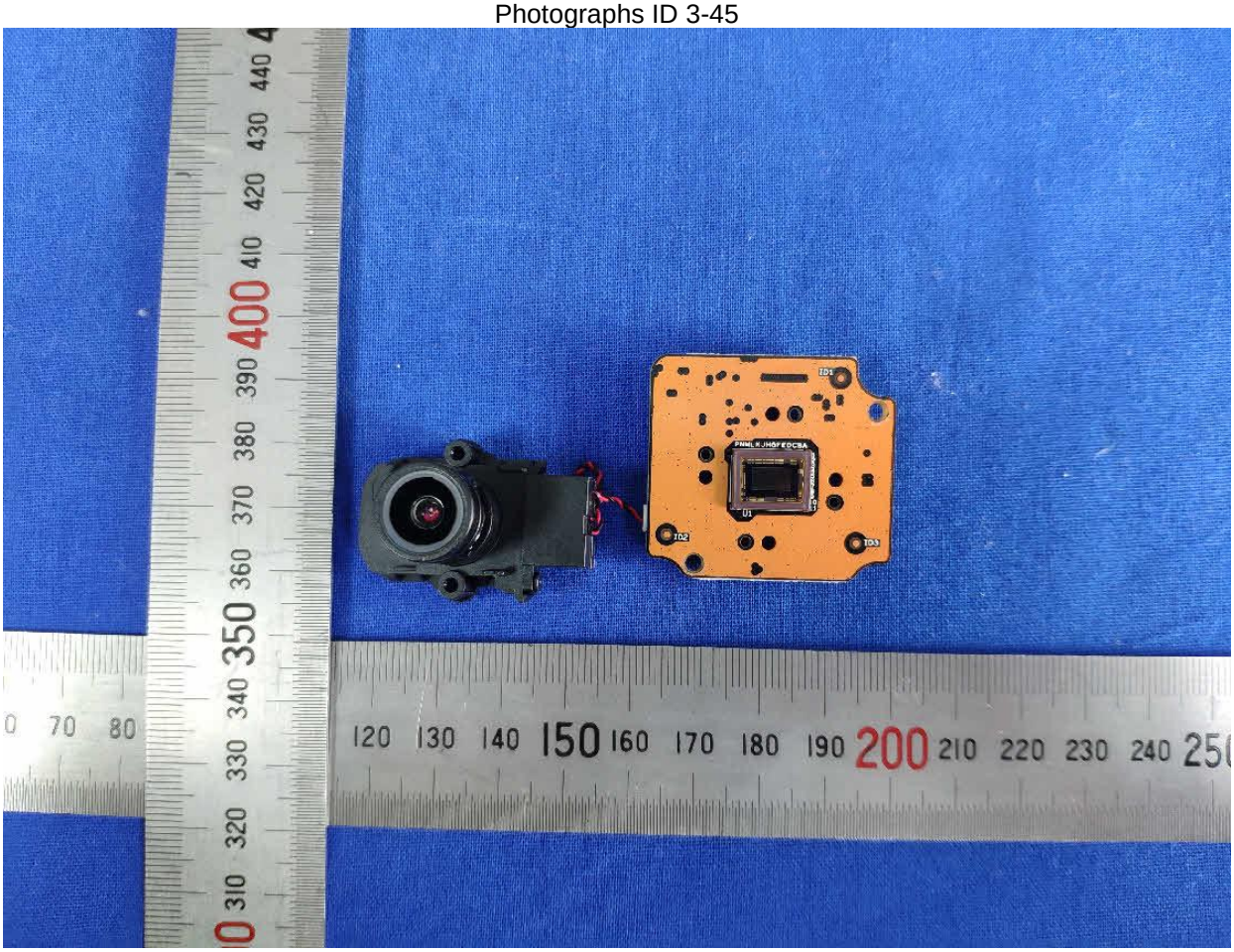

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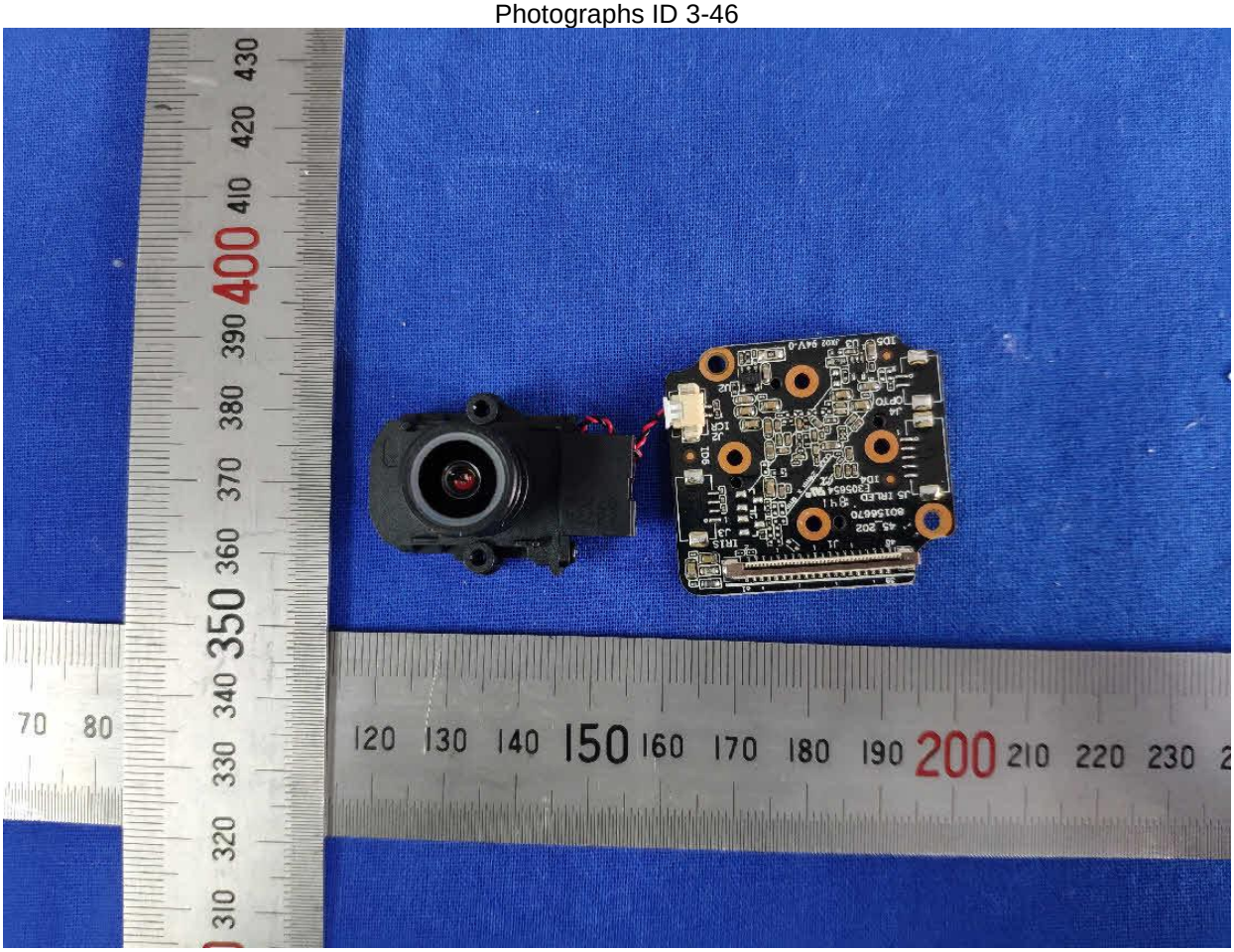

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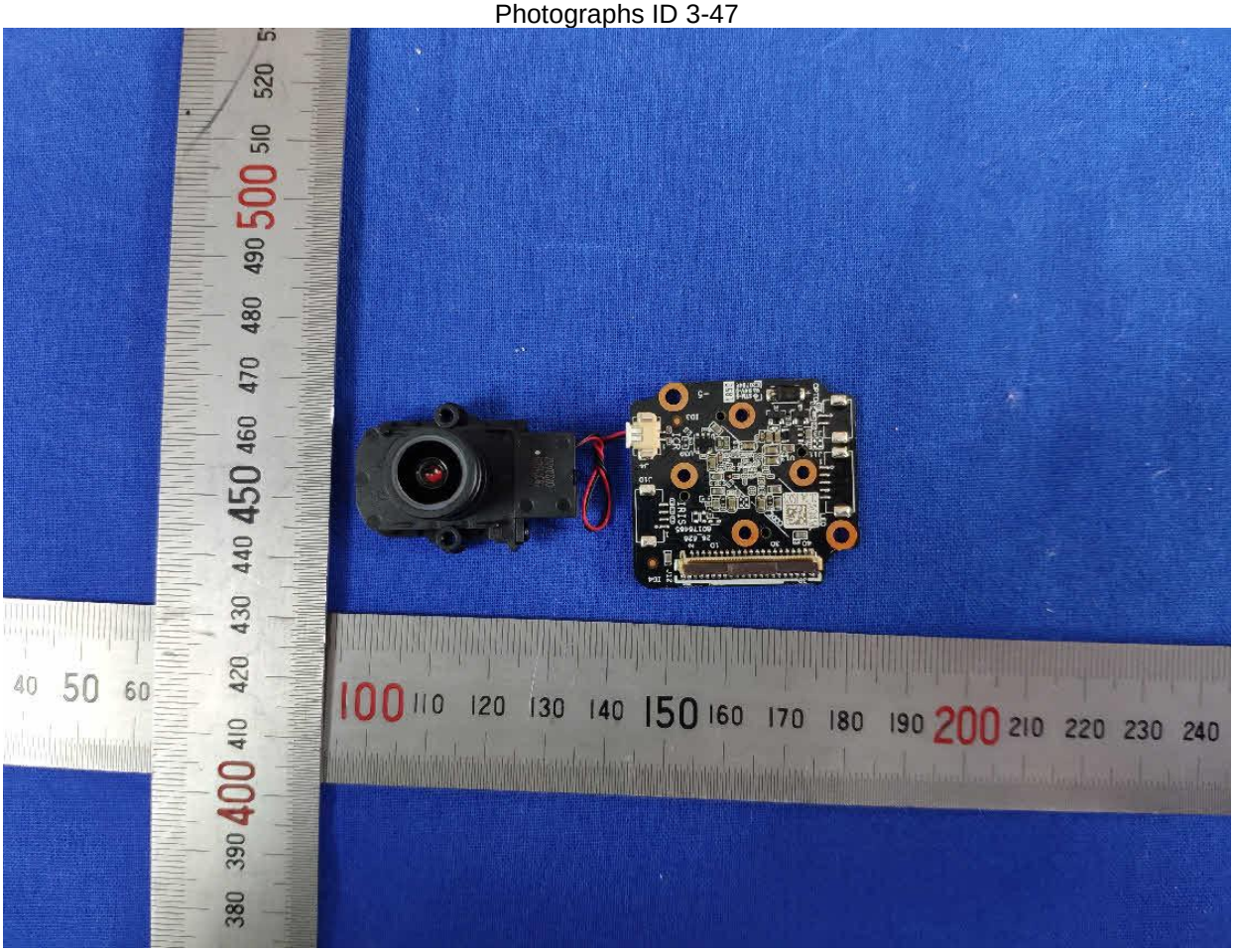
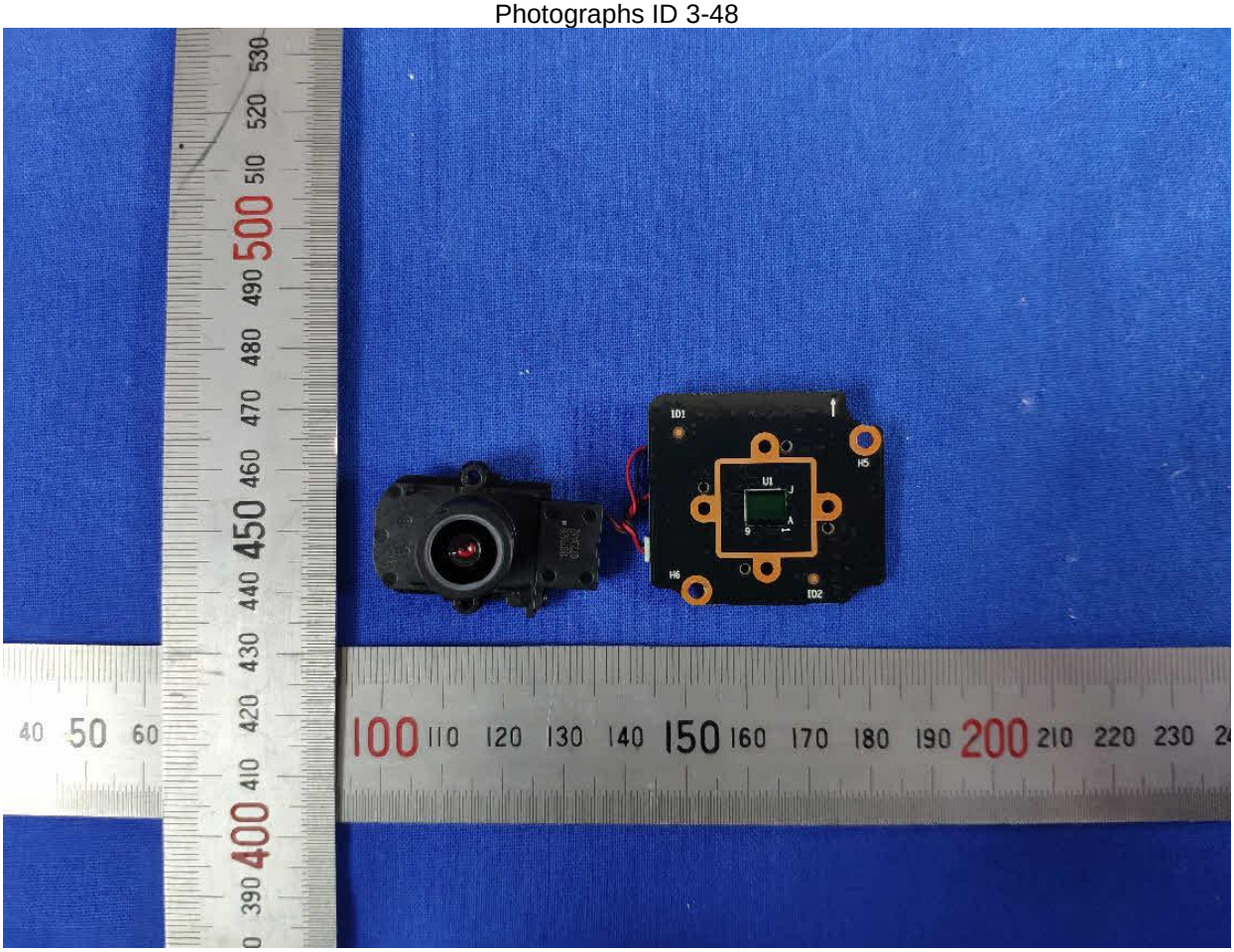


Photographs ID 3-48



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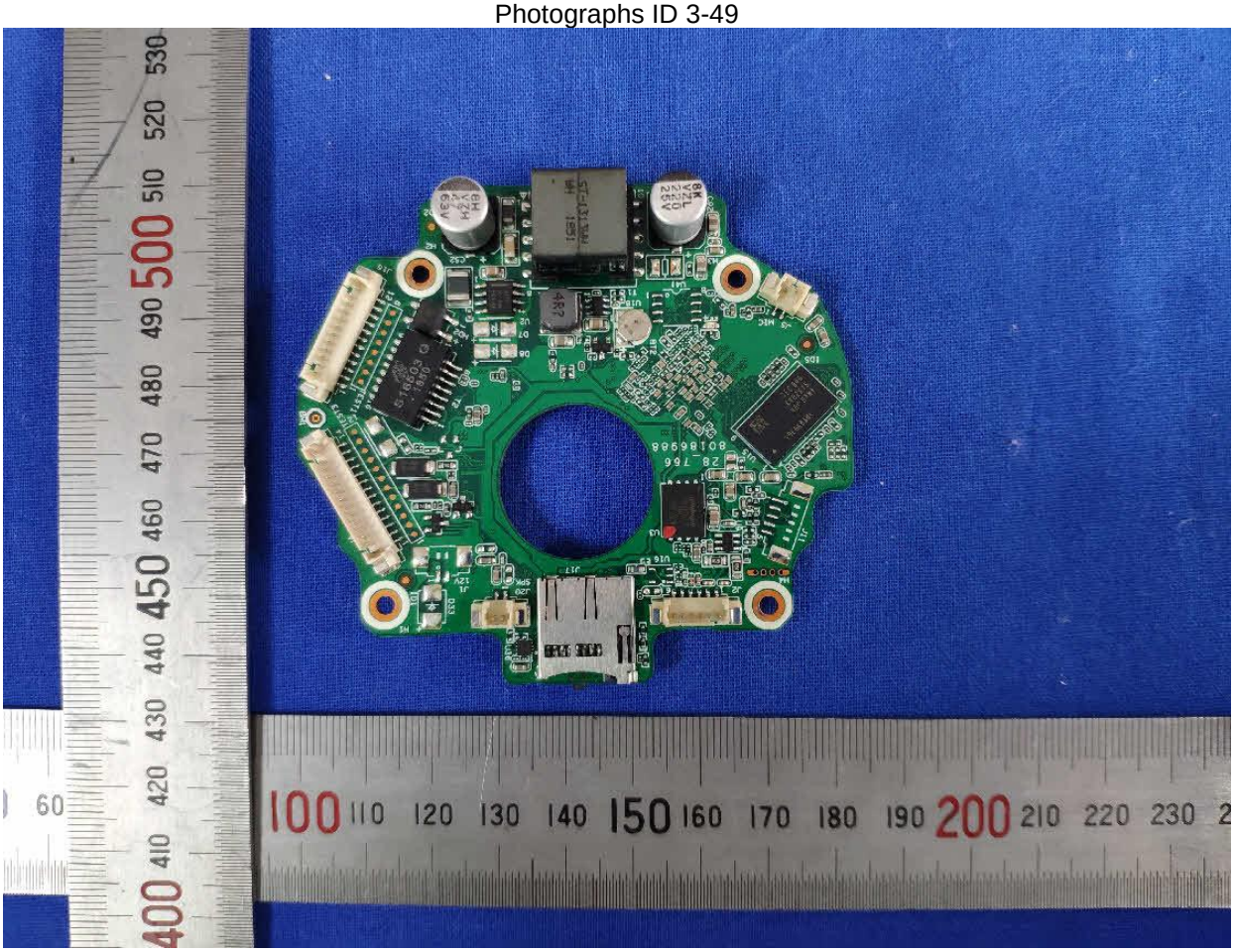

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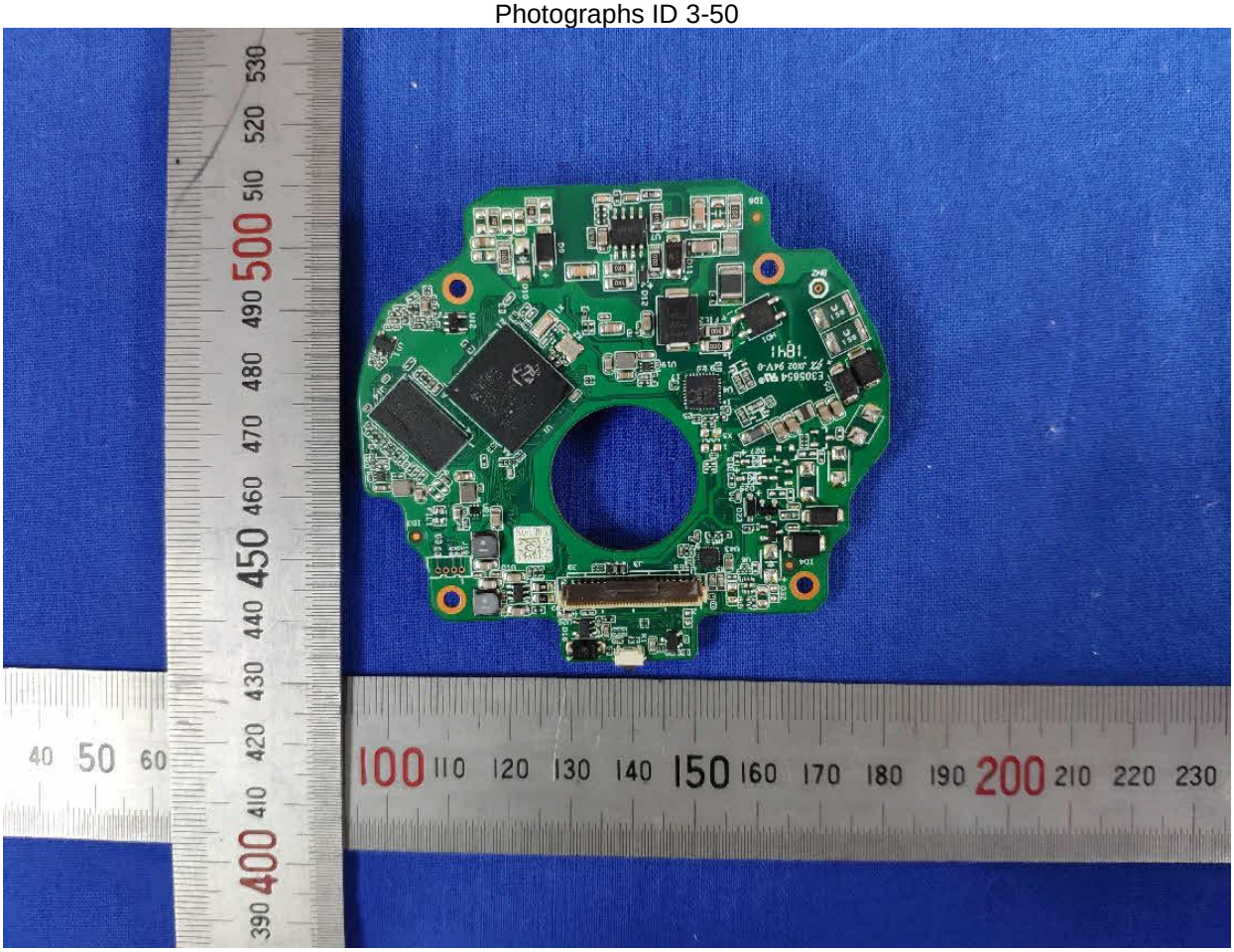
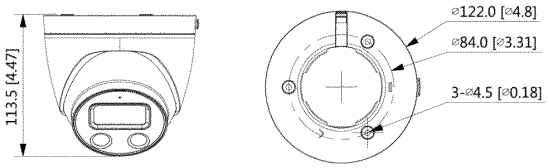


Enclosures

Diagrams ID 4-05

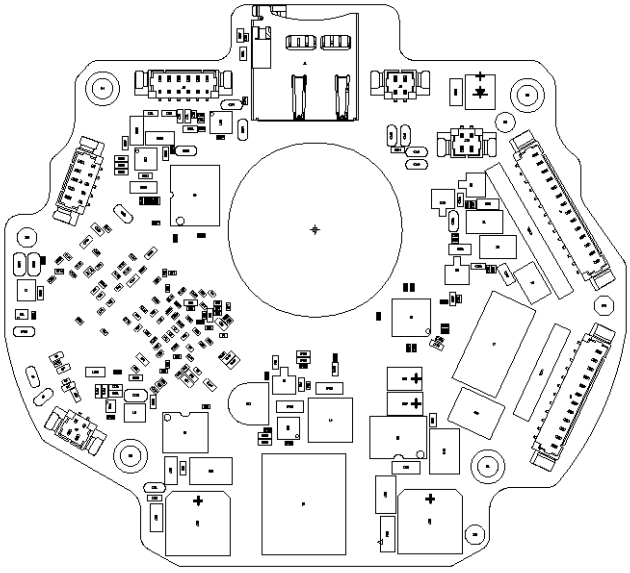
The unit is mm [inch].



Enclosures

Schematics ID 5-01

ART FILM - ASS-TOP

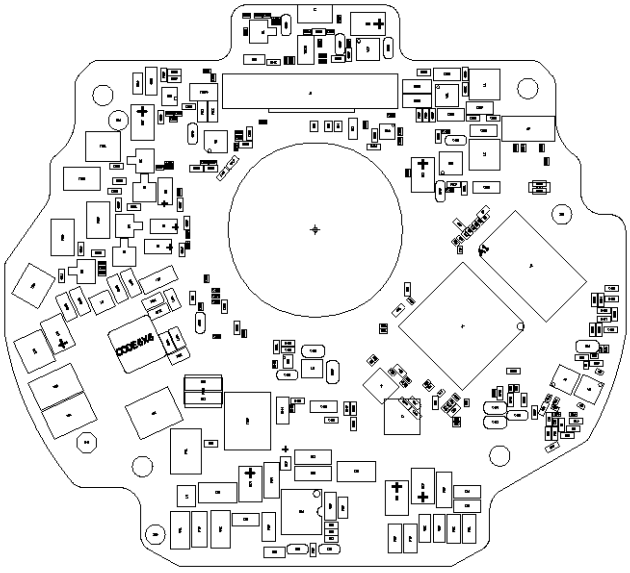


ART FILM - ASS-TOP

Enclosures

Schematics ID 5-01

ART FILM - ASS-BOTTOM

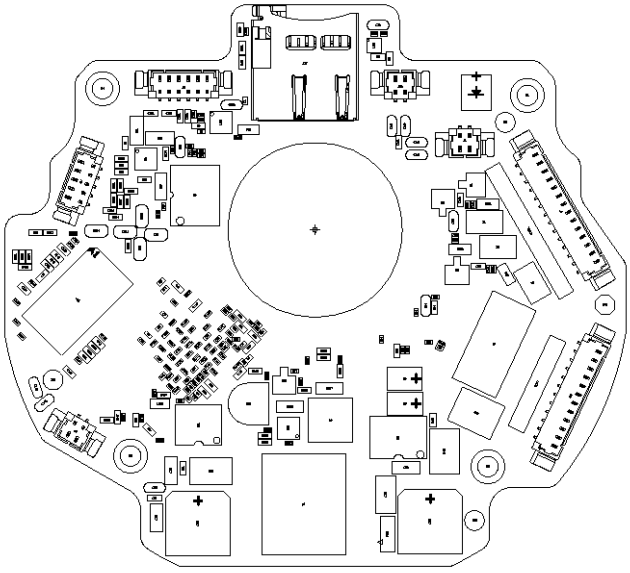


ART FILM - ASS-BOTTOM

Enclosures

Schematics ID 5-02

ART FILM - ASS-TOP

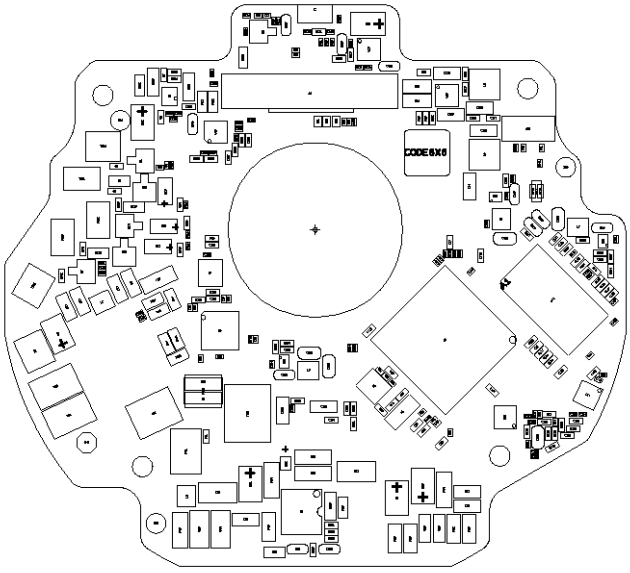


ART FILM - ASS-TOP

Enclosures

Schematics ID 5-02

ART FILM - ASS-BOTTOM



ART FILM - ASS-BOTTOM

Manuals ID 6-01

ZHEJIANG DAHUA VISION TECHNOLOGY CO., LTD

Manuals ID 6-01

Foreword

General

This Quick Start Guide (hereinafter referred to be "the Guide") introduces the functions, installation, and operations of the camera.

Safety Instructions

The following categorized signal words with defined meaning might appear in the Guide.

Signal Words	Meaning
WARNING	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.
CAUTION	Indicates a potential risk which, if not avoided, could result in property damage, data loss, lower performance, or unpredictable result.
NOTE	Provides additional information as the emphasis and supplement to the text.

Revision History

No.	Version	Revision Content	Release Time
1	V1.0.0	First Release.	October 26, 2018

Privacy Protection Notice

As the device user or data controller, you might collect personal data of others such as face, fingerprints, car plate number, Email address, phone number, GPS and so on. You need to be in compliance with the local privacy protection laws and regulations to protect the legitimate rights and interests of other people by implementing measures include but not limited to: providing clear and visible identification to inform data subject the existence of surveillance area and providing related contact.

About the Guide

- The Guide is for reference only. If there is inconsistency between the Guide and the actual product, the actual product shall prevail.
- We are not liable for any loss caused by the operations that do not comply with the Guide.
- The Guide would be updated according to the latest laws and regulations of related regions. For detailed information, see the paper manual, CD-ROM, QR code or our official website. If there is inconsistency between paper manual and the electronic version, the electronic version shall prevail.

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- All the designs and software are subject to change without prior written notice. The product updates might cause some differences between the actual product and the Guide. Please contact the customer service for the latest program and supplementary documentation.
- There still might be deviation in technical data, functions and operations description, or errors in print. If there is any doubt or dispute, please refer to our final explanation.
- Upgrade the reader software or try other mainstream reader software if the Guide (in PDF format) cannot be opened.
- All trademarks, registered trademarks and the company names in the Guide are the properties of their respective owners.
- Please visit our website, contact the supplier or customer service if there is any problem occurred when using the device.
- If there is any uncertainty or controversy, please refer to our final explanation.

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Important Safeguards and Warnings

Electrical Safety

- All installation and operation should conform to your local electrical safety codes.
- The power source shall conform to the Safety Extra Low Voltage (SELV) standard, and supply power with rated voltage which conforms to Limited power Source requirement according to IEC60950-1. Please note that the power supply requirement is subject to the device label.
- Make sure the power supply is correct before operating the device.
- A readily accessible disconnect device shall be incorporated in the building installation wiring.
- Prevent the power cable from being trampled or pressed, especially the plug, power socket and the junction extruded from the device.

Environment

- Do not aim the device at strong light to focus, such as lamp light and sun light; otherwise it might cause over brightness or light marks, which are not the device malfunction, and affect the longevity of Complementary Metal-Oxide Semiconductor (CMOS).
- Do not place the device in a damp or dusty environment, extremely hot or cold temperatures, or the locations with strong electromagnetic radiation or unstable lighting.
- Keep the device away from any liquid to avoid damage to the internal components.
- Keep the indoor device away from rain or damp to avoid fire or lightning.
- Keep sound ventilation to avoid heat accumulation.
- Transport, use and store the device within the range of allowed humidity and temperature.
- Heavy stress, violent vibration or water splash are not allowed during transportation, storage and installation.
- Pack the device with standard factory packaging or the equivalent material when transporting the device.
- Install the device in the location where only the professional staff with relevant knowledge of safety guards and warnings can access. The accidental injury might happen to the non-professionals who enter the installation area when the device is operating normally.

Operation and Daily Maintenance

- Do not touch the heat dissipation component of the device to avoid scald.
- Carefully follow the instructions in the Guide when performing any disassembly operation about the device; otherwise, it might cause water leakage or poor image quality due to unprofessional disassemble. Please contact after-sale service for desiccant replacement if there is condensed fog found on the lens after unpacking or when the desiccant turns green. (Not all models are included with the desiccant).

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- It is recommended to use the device together with lightning arrester to improve lightning protection effect.
- It is recommended to ground the device to enhance reliability.
- Do not touch the image sensor directly (CMOS). Dust and dirt could be removed with air blower, or you can wipe the lens gently with soft cloth that moistened with alcohol.
- Device body can be cleaned with soft dry cloth, which can also be used to remove stubborn stains when moistened with mild detergent. To avoid possible damage on device body coating which could cause performance decrease, do not use volatile solvent such as alcohol, benzene, diluent and so on to clean the device body, nor can strong, abrasive detergent be used.
- Dome cover is an optical component, do not touch or wipe the cover with your hands directly during installation or operation. For removing dust, grease or fingerprints, wipe gently with moisten oil-free cotton with diethyl or moisten soft cloth. You can also air blower to remove dust.

- Please strengthen the protection of network, device data and personal information by adopting measures which include but not limited to using strong password, modifying password regularly, upgrading firmware to the latest version, and isolating computer network. For some device with old firmware versions, the ONVIF password will not be modified automatically along with the modification of the system password, and you need to upgrade the firmware or manually update the ONVIF password.
- Use standard components or accessories provided by manufacturer and make sure the device is installed and maintained by professional engineers.
- The surface of the image sensor should not be exposed to laser beam radiation in an environment where a laser beam device is used.
- Do not provide two or more power supply sources for the device unless otherwise specified. A failure to follow this instruction might cause damage to the device.

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Regulatory Information

The regulatory information herein might vary according to the model you purchased. Some information is only applicable for the country or region where the product is sold.

FCC Information

CAUTION

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC conditions:

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- This device may not cause harmful interference.
- This device must accept any interference received, including interference that may cause undesired operation.

FCC compliance:

This equipment has been tested and found to comply with the limits for a digital device, pursuant to part 15 of the FCC Rules. This equipment generate, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communication.

- For class A device, these limits are designed to provide reasonable protection against harmful interference in a commercial environment. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.
- For class B device, these limits are designed to provide reasonable protection against harmful interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
  - Reorient or relocate the receiving antenna.
  - Increase the separation between the equipment and receiver.
  - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
  - Consult the dealer or an experienced radio/TV technician for help.

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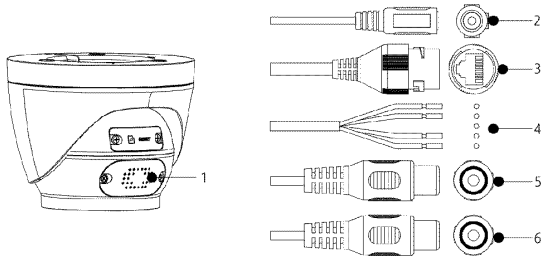
1 Introduction

- Cable type might vary with different devices, and the actual product shall prevail.
- Waterproof all the cable joints with insulating tape and waterproof tape to avoid short circuit and water damage. For the detailed operation, see the *FAQ manual*.

Figure 1-1 Structure Components



For more information about cable ports, see Table 1-1.

Table 1-1 Cable information

Port	Port Name	Note
1	Built-in Mic	Input audio.
1	Power input	Inputs DC 12V power. Please be sure to supply power as instructed in the Guide. CAUTION • Device abnormity or damage could occur if power is not supplied correctly.
2	Ethernet	• Connects to network with network cable. • Provides power to the device with PoE.
3	Alarm I/O	Includes alarm signal input and output ports, the number of I/O ports might vary on different devices. For detailed information, see 错误！未找到引用源。.
4	Audio input	Connects to sound-pick-up device to receive audio signal.
5	Audio output	Connects to speaker to output audio signal.

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2 Network Configuration

Device initialization and IP address setting can be finished with the "ConfigTool" or in web interface. For more information, see the *WEB operation manual*.

- Device initialization is available on select models, and it is required at first use or after the device being reset.
- Device initialization is available only when the IP addresses of the device (192.168.1.108 by default) and the PC stay in the same network segment.
- Plan useable network segment properly to connect the device to the network.
- The following figures and interfaces are for reference only, and the actual product shall prevail.

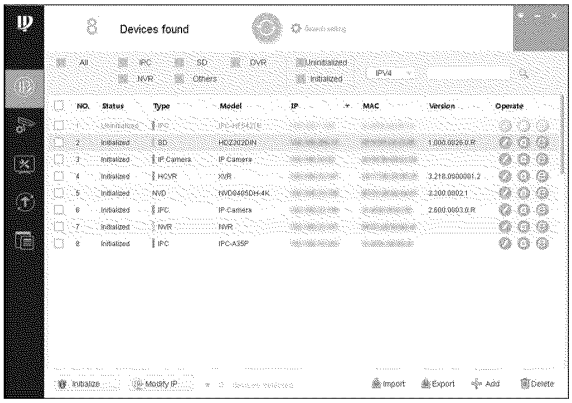
2.1 Initializing Device

Step 1 Double-click "ConfigTool.exe" to open the tool.

Step 2 Click .

The **Modify IP** interface is displayed. See Figure 2-1.

Figure 2-1 Modify IP



Step 3 Click Search setting.

The **Setting** interface is displayed.

Step 4 Enter the start IP address and end IP address of the network segment in which you want to search devices, and then click **OK**.

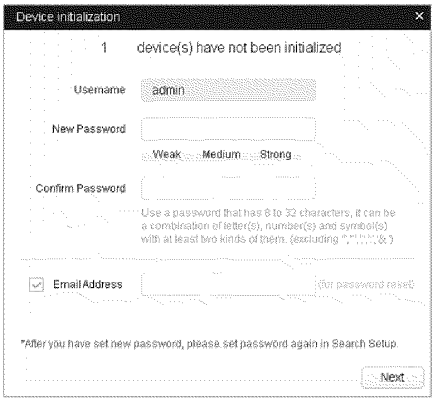
All the devices found in the network segment are listed.

Step 5 Select one or several devices with **Status** shows **Uninitialized**, and then click **Initialize**.

The **Device initialization** interface is displayed.

Step 6 Select the devices that need initialization, and then click **Initialize**.
The password setting interface is displayed. See Figure 2-2.

Figure 2-2 Password setting



Step 7 Set and confirm the password of the devices, then enter a valid email address, and then click **Next**.
The final setting interface is displayed.

Password can be modified or reset in **System Settings**.

Step 8 Select the options according to your needs, and then click **OK**.
The **Initialization** interface is displayed after initialization is completed. Click the success icon (✓) or the failure icon (⚠) for the details.

Step 9 Click **Finish**.
The device status in the **Modify IP** interface (Figure 2-1) turns to **Initialized**.

2.2 Modifying Device IP Address

- You can modify IP address of one or multiple devices in one time. This section is based on modifying IP addresses in batch.
- Modifying IP addresses in batch is available only when the corresponding devices have the same login password.

Step 1 Do "Step 1" to "Step 4" in "2.1 Initializing Device" to search devices in your network segment.

After clicking **Search setting**, enter the username and password, and please make sure they are the same as what you set during initialization, otherwise there will be "wrong password" notice.

Step 2 Select the devices which IP addresses need to be modified, and then click **Modify IP**.
The **Modify IP Address** interface is displayed. See Figure 2-3.

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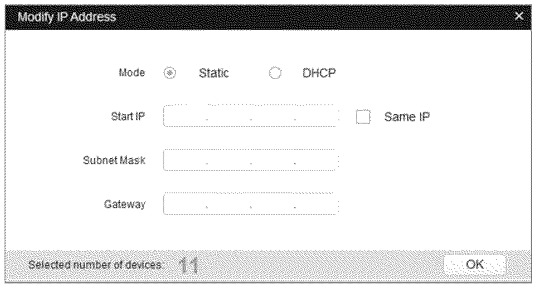
Figure 2-3 Modify IP Address



Step 3 Select **Static** mode, and then enter start IP, subnet mask, and gateway.

- IP addresses of multiple devices will be set to the same if you select the **Same IP** checkbox.
- If DHCP server is available in the network, devices will automatically obtain IP addresses from DHCP server when you select **DHCP**.

Step 4 Click **OK**.

2.3 Logging in Web Interface

Step 1 Open IE browser, then enter the IP address of the device in the address bar, and then press Enter.
If the setup wizard is displayed, finish the settings as instructed.

Step 2 Enter the user name and password in the log in box, and then click **Login**.

Step 3 For first time login, click **Click Here to Download Plugin**, and then install the plugin as instructed.
The main interface is displayed when the installation is finished. See Figure 2-4.

Figure 2-4 Main interface

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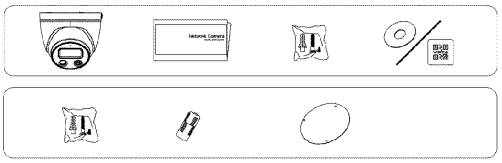
3 Installation

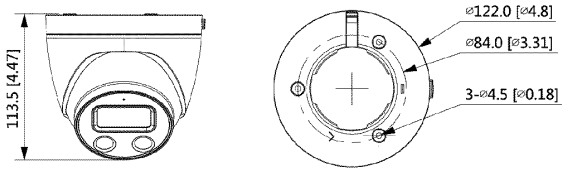
3.1 Packing List

- The tool required for the installation such as electric drill is not provided in the packing.
- The operation manual and related tool are contained in the disk or the QR code, and the actual packing shall prevail.



3.2 Dimension

The unit is mm [inch].



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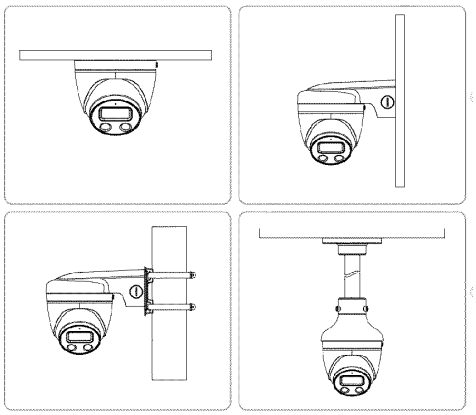
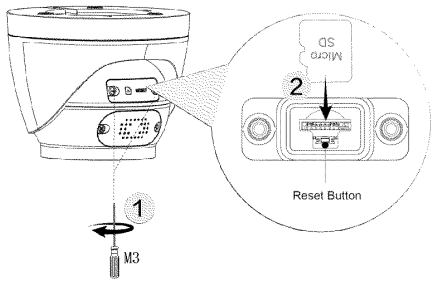
3.3 Installing Device

3.3.1 Installation Type



3.3.2 Installing SD Card (Optional)

- Pull the power plug off before installing or removing the SD card.
- Press and hold the RESET button for 10 s to reset the camera.



3.3.3 Attaching Device

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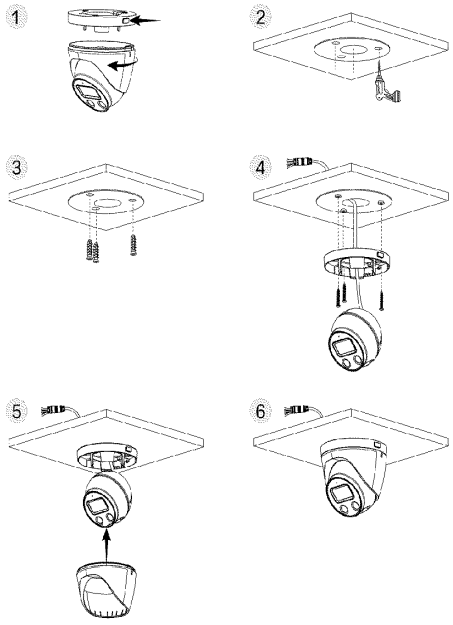
Make sure the mounting surface is strong enough to hold at least three times of the weight of the device and bracket.

Cable going through the mounting surface



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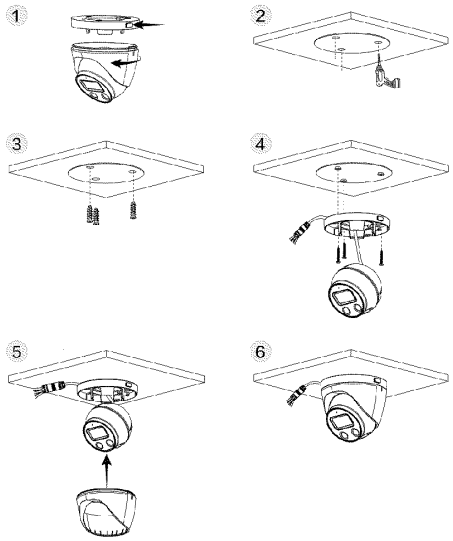
Cable going through the side cable tray



3.3.4 Installing Waterproof Connector (Optional)

This part is needed only when there is waterproof connector come with the device and the device is used outdoor.

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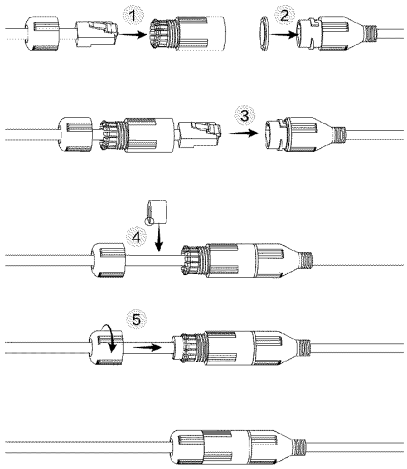
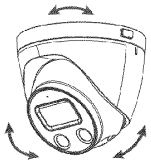


3.3.5 Adjusting Lens Angle



Enclosures

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