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Please note, Follow-Up Procedure Revisions or Report Revisions do not include Authorization Pages, Indices, Section General, and/or Appendices unless revisions were required or requested.

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Please find attached the related material

For your convenience, the below describes the related updates:

(1) For revised/new documentation, please reference 2021-03-18 in the page headings.(2) If there are illegible images in this package, legible images may be found online via myUL Portal.

E158873-A6034-DescriptionUL
Figure-24-Total
E158873-A6034-TestRecordUL

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Times change, Trust Remains™

UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 2nd Ed, 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1-14, 2nd Ed, Issued: 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements)
Certification Type:	Listing
CCN:	AZOT, AZOT7 (Audio/video, Information and Communication Technology Equipment)
Complementary CCN:	N/A
Product:	NETWORK CAMERA
Model:	XNP-9300RW, XNP-8300RW, XNP-6400RW
Rating:	PoE (55 Vdc), 0.77 A
Applicant Name and Address:	HANWHA TECHWIN CO LTD 6, PANGYO-RO 319BEON-GIL, BUNDANG-GU SEONGNAM-SI GYEONGGI-DO 13488 KOREA

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

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UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

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Prepared By: Lawrence Lee / Project Handler Reviewed By: SeulKi Park / Reviewer

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Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

A. Authorization - The Authorization page may include additional Factory Identification Code markings.

B. Generic Inspection Instructions -

i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.

ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.

iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

OUTDOOR NETWORK CAMERA has been designed for Indoor use and integrated a bracket for wall or ceiling mount.

It is a commercial equipment supplied from PoE (Power over Ethernet) and installed by service personnel.

Model Differences

XNP-9300RW is basic model.

XNP-8300RW is identical to basic model except model designation and scaling.

XNP-6400RW is identical to basic model except model designation, scaling and VCL lens.

Test Item Particulars

Classification of use by	Instructed person
Supply Connection	External Circuit - not Mains connected ES1
Supply % Tolerance	None
Supply Connection – Type	PoE (Power over Ethernet)
Considered current rating of protective device as part of building or equipment installation	N/A
Equipment mobility	wall-mounted
Over voltage category (OVC)	OVC I
Class of equipment	Class III
Access location	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified maximum operating ambient (°C)	60
IP protection class	IP 66
Power Systems	N/A
Altitude during operation (m)	2000 m or less
Altitude of test laboratory (m)	2000 m or less
Mass of equipment (kg)	5.35

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 Risk Group of a lamp or lamp system (including LEDs) is : RG 1
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual
- The product was investigated to the following additional standard : UL 60950-22, Second Edition, March 31, 2017, CSA CAN/CSA-C22.2 No. 60950-22-17, Issued March 31, 2017
- • The outdoor equipment/enclosure was evaluated for use in an ambient temperature range of: -20 °C to +60 °C

Additional Information

4789515728
- Maximum Normal Load: Continuous operation with LED on, wiper moving, heater on and unit rotation.

4789684076 2.1
- Alternate O-ring type gasket (O-VMQ-30-BK, O-VMQ-30-RE, O-VMQ-30-GR, O-VMQ-40-BK, O-VMQ-50-BK, O-VMQ-50-BL, O-VMQ-50-RE, O-VMQ-50-OR, O-VMQ-60-BK, O-VMQ-70-RE, O-VMQ-70-GR, O-VMQ-70-BK)
- Alternate Closeed cell type gasket (C-VMQ-40-GR, C-VMQ-60-GR)

4789684076 1.1
- Alternate Closeed cell type gasket (C-VMQ-30-BK, C-VMQ-30-BL, C-VMQ-40-BK, C-VMQ-50-YE, C-VMQ-50-GR, C-VMQ-50-BK, C-VMQ-60-BK)

Additional Standards

The product fulfills the requirements of: UL 60950-22 2nd Edition Issued March 31, 2017
CSA CAN/CSA-C22.2 No. 60950-22-17, Issued March 31, 2017
IEC 60950-22:2016

Markings and Instructions

Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listee's or Recognized companys name, Trade Name, Trademark or File Number
Equipment identification marking – model identification	Model Number
Equipment rating marking – ratings	"Input Ratings (voltage, frequency/dc, current/power)", "Output Ratings (voltage, frequency/dc, current/power)"

Replaceable batteries	"CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions."/“ATTENTION: Risque d’explosion si la batterie est remplacée par un type incorrect. Mettre au rebus les batteries usagées selon les instructions.“ (Marking) Alternatively, symbol (ISO 7000-0434 and/or ISO 7000-1641) on product where visible, with the above wording in the instruction manual.
Outdoor installation	“Type 3R” or “Rainproof”/“Étanche”; “Type 3” or “Raintight”
Hard Copy	A. IMPORTANT B. Please check 'Manuals' from out website, before connecting to the supply. C. Company website URL (https://www.~~)
Website Manual -1	This product is intended to be supplied by a Listed Power Supply Unit marked “Class 2” or “LPS” or “PS2” and rated from PoE (55Vdc), 0.77A.
Website Manual -2	The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3.af shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1 or PS2 as defined in UL62368-1.
Special Instructions to UL Representative N/A	

BD1.0	**TABLE: Production-Line Testing Requirements**					
BD1.1	**Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.**					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
N/A	N/A	N/A	N/A	N/A	N/A	N/A
BD1.2	**Earthing Continuity Test Exemptions – This test is not required for the following models:**					
	All models					
BD1.3	**Electric Strength Test Exemptions – This test is not required for the following models:**					
	All models					
BD1.4	**Electric Strength Test Component Exemptions – The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test.**					
	All models					

BE1.0	**Sample and Test Specifics for Follow-Up Tests at UL**				
Model	Component	Material	Test	Sample (s)	Test Specifics
N/A	N/A	N/A	N/A	N/A	N/A

4.1.2	TABLE: List of critical components					Pass
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Product Category CCN(s)	Mark(s) of conformity	Supplement ID
HPoE Injector	CREATIVE LIANJIE NETWORK TECHNOLOGY CO LTD	PT-PSE109GBRO-AH	Rated output 55 Vdc, 1.5 A, marked "LPS" or "Class 2"	NWGQ/7	UL (E487558)	
Internal Metal top Cover (Black)	Interchangeable	Interchangeable	Aluminium, Min. 1.5 mm thickness.	-	-	
Internal Metal bottom Cover (Ivory)	Interchangeable	Interchangeable	Aluminium, Min. 1.5 mm thickness.	-	-	
Front Dome cover (Glass)	Interchangeable	Interchangeable	Glass,Min. 2.0 mmthickness	-	-	
External Side Deco Cover (Plastic) (Black)	LOTTE CHEMICAL CORPORATION	HN-1068(+)(f1)	Min. 1.5 mm thickness, rated Min. V-0, 130 deg. C	QMFZ2	UL (E115797)	
Camera bottom Deco Cover (Plastic) (Ivory)	LG CHEM LTD	LI996(&)	Min. 2.0 mm thickness, rated Min. V-0, 50 deg. C	QMFZ2	UL (E67171)	
Transformer(T1)	CLOVER HI-Tech CO., LTD.	1400651	130 deg. C, See enclosure for more detail.	-	-	
Transformer(T1) - Alternate	COREPLUS CO LTD	1400651	130 deg. C, See enclosure for more detail.	-	-	
Line Filter (LF1)	TNC CO.,LTD	QV181610A	7.0 mH, 120 deg. C, See enclosure for more detail.	-	-	
Line Filter (LF2)	TNC CO.,LTD	CVA6011RNF2	11.0 uH, 105 deg. C, See enclosure for more detail.	-	-	

Opto-coupler(PC1)	LITE-ON TECHNOLOGY CORP	LTV-1DXX(&)	Isolation Voltage: 5 000. Max. Operation Temperature: 110 deg. C	FPQU2/8	UL(E113898)	
DC Fan (2ea)	DONGGUAN PROTECHNIC ELECTRIC CO LTD	MG(a)2512(d)(e)-(f)10	Rated 12 Vdc, 0.07A	GPWV2	UL (E187236)	
Zoom/lens motor 1 (Stepping motor) (3ea)	TOKYO MICRO INC.	85-173L99-S	Rated 5.0 Vdc, Max pulse rate 1500 pps	-	-	
Zoom/lens motor 2 (Stepping motor)	NIDEC SANKYO CORPORATION	MSEV020G65	Rated 5.0Vdc, pulse rate 80 pps	-	-	
Day/Night motor (Stepping motor)	NEW ASIA OPTICAL INDUSTRY CO.,LTD	CL7-VCL-C	Rated 3.0+0.5 Vdc, Max pulse rate 300 pps	-	-	
Iris motor (Stepping motor)	NEW ASIA OPTICAL INDUSTRY CO.,LTD	CL7-IRIS	Rated 4.0+2Vdc	-	-	
Pan / Tilt Motor (Stepping motor) (2eA)	DONGGUAN SHINANO MOTOR CO., LTD.	STH-42C2010	Rated 12 Vdc, 1.0 A Hybrid stepping type.	-	-	
Wiper motor(Stepping motor)	VIDE TECHNOLOGY CO.,LTD	VGSM1588	Rated 4.5 Vdc, Max pulse rate 1200 pps	-	-	
Heater (R4 to R33, R35) (28ea)	Interchangeable	Interchangeable	5.6 ohm, 0.14W each	-	-	
Lithium Battery (BAT1)	FDK CORPORATION	ML614R	Lithium (Coin), Rechargeable, 5 Vdc, 2.5 mAh	BBCV2	UL (MH13421)	
LED (LED Right board, LED (LD1, LD2, LD3), Left	OSRAM	SFH4715AS	VF =Max. 4.7 V, IF=Max.3 A	-	-	

board (LD1, LD2, LD3) (Total 6ea)						
Internal Plastic Part Materials	Interchangeable	Interchangeable	Min. HB	QMFZ2/8	UL	
PWB	Interchangeable	Interchangeable	Min. V-1, 130 deg. C	ZPMV2	UL	
Thermal Pad	KOMOTECH CO LTD	KGP-1(a)	Min. 0.2 mm thickness, rated V-0, 150 deg. C	QMFZ2/8	UL (E245303)	
Gasket (O-Ring Type)	Namyang Vina	O-VMQ-50-GR	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-50-YE	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-60-BL	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-60-RE	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-60-GR	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-70-YE	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-70-OR	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-30-BK	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-30-RE	Gasket Test was conducted under E158873-A6034.	-	-	

Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-30-GR	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-40-BK	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-50-BK	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-50-BL	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-50-RE	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-50-OR	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-60-BK	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-70-RE	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-70-GR	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (O-Ring Type) - Alternate	Namyang Vina	O-VMQ-70-BK	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (Closed Cell Type)	Namyang Vina	C-VMQ-50-TR	Gasket Test was conducted under E158873-A6034.	-	-	

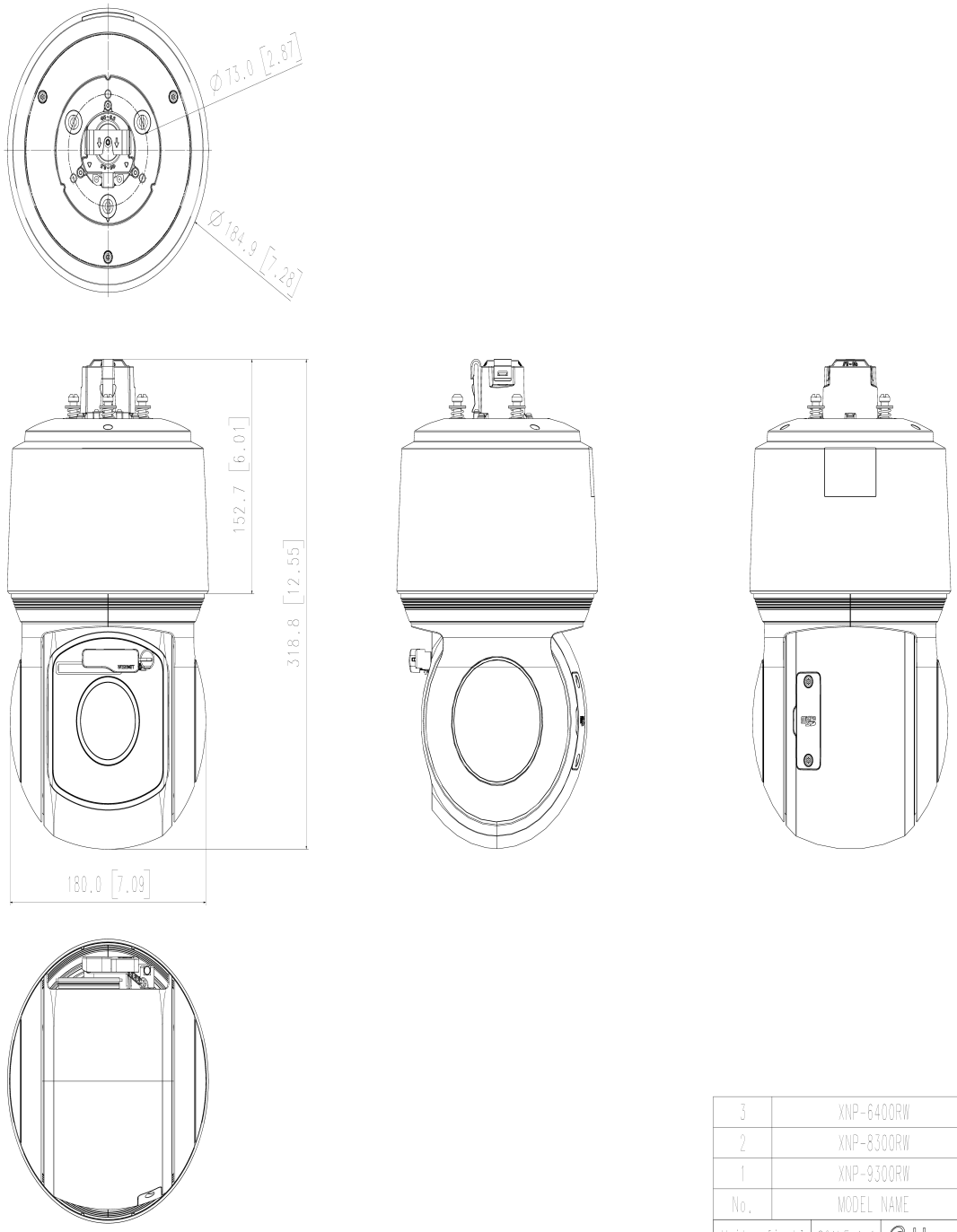
Gasket (Closed Cell Type) - Alternate	Namyang Vina	C-VMQ-40-GR	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (Closed Cell Type) - Alternate	Namyang Vina	C-VMQ-60-GR	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (Closed Cell Type) - Alternate	Namyang Vina	C-VMQ-30-BK	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (Closed Cell Type) - Alternate	Namyang Vina	C-VMQ-30-BL	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (Closed Cell Type) - Alternate	Namyang Vina	C-VMQ-40-BK	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (Closed Cell Type) - Alternate	Namyang Vina	C-VMQ-50-YE	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (Closed Cell Type) - Alternate	Namyang Vina	C-VMQ-50-GR	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (Closed Cell Type) - Alternate	Namyang Vina	C-VMQ-50-BK	Gasket Test was conducted under E158873-A6034.	-	-	
Gasket (Closed Cell Type) - Alternate	Namyang Vina	C-VMQ-60-BK	Gasket Test was conducted under E158873-A6034.	-	-	
Connectors and Receptacles (Secondary circuits)	Interchangeable	Interchangeable	Min. V-2	ECBT2	UL	
Connectors and Receptacles (Secondary circuits) - Alternate	Interchangeable	Interchangeable	Copper alloy pins housed in bodies of plastic rated Min. V-2	QMFZ2	UL	

Internal Wiring (Secondary)	Interchangeable	Interchangeable	Marked VW-1; Min. 30 V, 80 deg. C	AVLV2	UL	
Cable	Interchangeable	Interchangeable	Marked VW-1; Min. 30 V, 80 deg. C	AVLV2	UL	
FFC	Interchangeable	Interchangeable	Min. VW-1, 60 V, 105 deg. C	AVLV2	UL	
Outdoor Label	Interchangeable	Interchangeable	Max Temp 100 deg. C, Min Temp -40 deg. C	PGDQ2 or PGJL2	UL	

Enclosures

Type	Supplement Id	Description
Photographs	03-01	Overall View -1
Photographs	03-02	Overall View -2
Photographs	03-03	Overall View -3
Photographs	03-04	Overall View-4
Photographs	03-05	Internal View-1
Photographs	03-06	Internal View-2
Photographs	03-07	Lens View-1
Photographs	03-08	Lens View-2
Photographs	03-09	Drive board
Photographs	03-10	Network board top
Photographs	03-11	Network board bottom
Photographs	03-12	Motion board
Photographs	03-13	IR LED board top
Photographs	03-14	IR LED board bottom
Photographs	03-15	Fan
Diagrams	04-01	Enclosure Dimension
Manuals	06-01	Manual
Miscellaneous	07-01	PoE Transformer (T1) spec (CLOVER Hi-Tech Co., LTD.)
Miscellaneous	07-02	PoE Transformer (T1) spec (CORE Pluse)
Miscellaneous	07-03	Line Filter (LF1) spec
Miscellaneous	07-04	Line Filter (LF2) spec
Miscellaneous	07-05	Dual language safety labeling CRD
Miscellaneous	07-06	Label
Miscellaneous	07-07	IEC 60950-22 Report

Diagrams-01 Page-1



3	XNP-6400RW	
2	XNP-8300RW	
1	XNP-9300RW	'20.05.20
No.	MODEL NAME	DATE
Unit:mm[inch]	SCALE:1/1	Hanwha Techwin

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overview

IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean the contaminated area on the product surface with a soft, dry cloth or a damp cloth.
   (Do not use a detergent or cosmetic products that contain alcohol, solvents or surfactants or oil constituents as they may deform or cause damage to the product.)
7. Do not block any ventilation openings, install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/ accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.

13. Unplug this apparatus during lighting storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. This product is intended to be supplied by a Listed Power Supply Unit marked "Class 2" or "LPS" and rated from PoE(55 Vdc), 0.77 A.
16. This product is intended to be supplied by isolation power.
17. If you use excessive force when installing the product, the camera may be damaged and malfunction.
    If you forcibly install the product using non-compliant tools, the product may be damaged.
18. Do not install the product in a place where chemical substances or oil mist exists or may be generated. As edible oils such as soybean oil may damage or warp the product, do not install the product in the kitchen or near the kitchen table.
    This may cause damage to the product.
19. When installing the product, be careful not to allow the surface of the product to be stained with chemical substance.
    Some chemical solvents such as cleaner or adhesives may cause serious damage to the product's surface.
20. If you install/disassemble the product in a manner that has not been recommended, the production functions/ performance may not be guaranteed.
    Install the product by referring to "Installation & connection" in the user manual.
21. Installing or using the product in water can cause serious damage to the product.
22. If your product works normal, the degree of preset precision is 0.1°. In the case of reboot due to outage, firmware upgrade, etc., its tolerance might have to be adjusted after checking for any changes in Preset setup.

WARNING

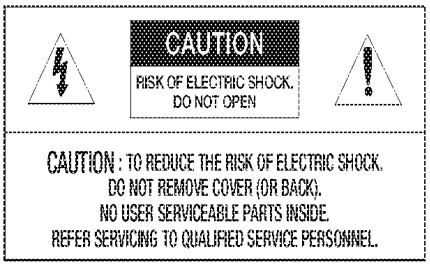
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENNINGS ON THE EQUIPMENT.

Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

To prevent injury, this apparatus must be securely attached to the Wall/ceiling in accordance with the installation instructions.

Pan/Tilt/Zoom motors and slip ring are warrantied for one year under continuous operation.

CAUTION



EXPLANATION OF GRAPHICAL SYMBOLS

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

overview

Class I construction

An apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.

Battery

Batteries(battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

The battery cannot be replaced.

Disconnection Device

Disconnect the main plug from the apparatus, if it's defected. And please call a repair man in your location.

When used outside of the U.S., it may be used HAR code with fittings of an approved agency is employed.

CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

ATTENTION

IL Y A RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACÉE PAR UNE BATTERIE DE TYPE INCORRECT.
METTRE AU REBUT LES BATTERIES USAGÉES CONFORMÉMENT AUX INSTRUCTIONS.

CAUTION

These servicing instructions are for use by qualified service personnel only.
To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

Please use the input power with just one camera and other devices must not be connected.

The ITE is to be connected only to PoE networks without routing to the outside plant.

The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3bt shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1 or PS2 as defined in UL62368-1.

Unit is intended for installation in a Network Environment 0 as defined in IEC TR 62102. As such, associated Ethernet wiring shall be limited to inside the building.

Please read the following recommended safety precautions carefully.

- Do not place this apparatus on an uneven surface.
- Do not install on a surface where it is exposed to direct sunlight, near heating equipment or heavy cold area.
- Do not place this apparatus near conductive material.
- Do not attempt to service this apparatus yourself.
- Do not place a glass of water on the product.
- Do not install near any magnetic sources.
- Do not block any ventilation openings.
- Do not place heavy items on the product.
- Please wear protective gloves when installing/removing the camera.
  The high temperature of the product surface may cause a burn.
- When connecting the HPoE injector to the external Internet, use either one of network cable port (LAN) or fiber optic port (SFP) but not both.

User's Manual is a guidance book for how to use the products.

The meaning of the symbols are shown below.

- Reference : in case of providing information for helping of product's usages
- Notice : if there's any possibility to occur any damages for the goods and human caused by not following the instruction

※ Please read this manual for the safety before using of goods and keep it in the safe place.

We do not guarantee the quality of third-party products (e.g. lenses, accessories) that you separately purchase.

WARNING

To Prevent damage which may caused by IR LED, don't stare at operating lamp.

For below models only.

XNP-9300RW

XNP-8300RW

XNP-6400RW

Risk Group 1
WARNING IR emitted from this product. **Do not stare at operating lamp.**
Product tested against IEC 62471

PN개발-수- 17110 (2120420)

NO.

SPECIFICATIONS

DESCRIPTION	TRANS-POWER S/W
SPECIFICATION	EER3019(HE4,PC40,PL-7) / 100uH±7%
MAKER SPECIFICATION	EER3019 10PIN(5+5)
PART NO.	1400651
MODEL NO.	PN042HTCA-9080VQ
SPECIAL ARTICLES	UL INSULATION SYSTEM(CLASS-B) CIS.04 SYSTEM(SC-05B)

DESIGN	CHECK	APPROVAL
Y.H CHA	G.T KIM	D.K PARK
2017. 03. 13.	2017. 03. 13.	2017. 03. 13.
A TERM OF VALIDITY		YEAR

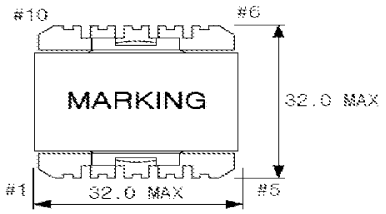
Indemnification
Clover Hi-Tech will indemnify, hold harmless, and at POWERNET's request, defend POWERNET and POWERNET's directors, officers, employees, agents and independent contractors from and against any loss, cost, liability or expense (including court costs and reasonable fees of attorneys and other professionals) arising out of or resulting from any third party claim that any Products and/or Components provided by Clover Hi-Tech infringes patent, copyright, trade secret right or other intellectual property right. If Clover Hi-Tech receives notice of an alleged patent, copyright, trade secret or other intellectual property right infringement or if POWERNET's use of the Products and/or the Components provided by Clover Hi-Tech shall be prevented by permanent injunction for reasons of patent, copyright or trade secret infringement, Clover Hi-Tech may, at its sole option and expense, procure for POWERNET the right to continued use of the Products and/or the Components as provided hereunder, or modify the allegedly infringing item such that it is no longer infringing, or replace the allegedly infringing item.

REQUEST CUSTOMER	CLOVER Hi-Tech CO., LTD.	TEL	02)453-0488
ADDRESS	HEAD QUARTER : CLOVER BLDG., 131, Samjeon-Dong, Songpa-Gu, Seoul, Korea. FACTORY 1: 268, Munhwa-Dong, Chungju-City, Chungbuk-Do, Korea FACTORY 2: 62, Shenzhen Road, Mansanzhen, Wendeng-City, Shan Dong, China. FACTORY 3: Chang Fa Management Area, Fu Shan Liad Bu Town, Dong Guan-City, Guang Dong P.R.China.		

CUSTOMER : POWERNET TECHNOLOGIES.

SPECIFICATIONS		DATE	2017.03.13
PART NAME	TRANS-POWER S/W	PART NO	1400651

6. DIMENSION (UNIT:mm)



◈TOP VIEW◈

MARKING(BLACK)

1400651 -- PART NO.

SC-05B SC-AABBCCDE-- LOT NO.

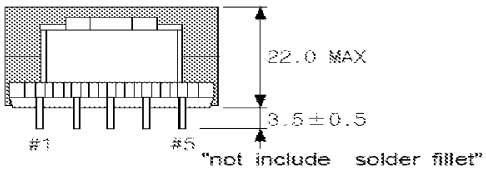
MAKER(TRADENAME)

INSULATION SYSTEM DESIGN NO(CLASS-B)

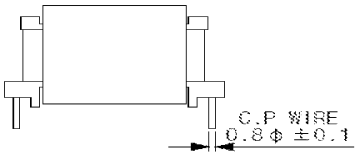
LOT NO

YEAR(AA)	MONTH(BB)	DAY(CC)
2016Y→16 2017Y→17 2018Y→18	JAN→01 FEB→02 DEC→12	1st DAY→01 2nd DAY→02 31thDAY→31

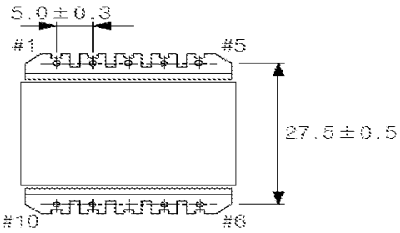
PRODUCT CODE(D)	MANUFACTURER OF CORE(E)
A:KOREA PRODUCT C:CHINA(WENDENG) D:CHINA(DONGGUAN) E:CHINA(ZAOZHUANG)	K:DONGYANGGUANG N:JISHUN S:SAMHWA



◈FRONT VIEW◈



◈SIDE VIEW◈



◈BOTTOM VIEW◈

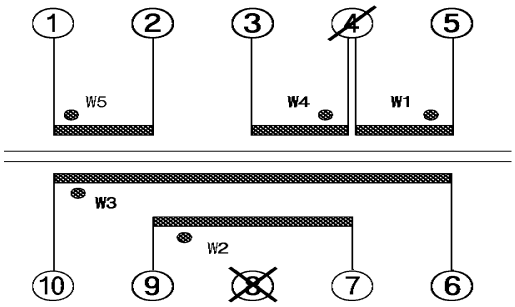
* REMOVE PIN : #8
* CUTTING PIN : #4
* GAP CORE : TOP
* CENTER BOND : SW-860HF

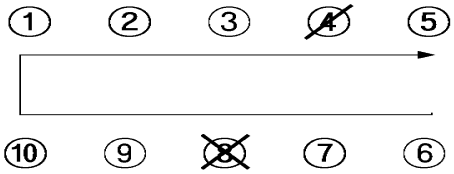
CLOVER Hi-Tech CO., LTD.	DESIGN	CHECK	APPROVAL	PAGE
	Y.H CHA	K.T KIM	D.K PARK	2/19

CUSTOMER : POWERNET TECHNOLOGIES.

SPECIFICATIONS		DATE	2017.03.13
PART NAME	TRANS-POWER S/W	PART NO	1400651

7. SCHEMATIC DIAGRAM





WINDING	BOTTOM VIEW	C.W
BOBBIN INSERT	BOTTOM SIDE	
TUBE PIN	-	
N.C PIN	-	
REMOVE PIN	#8	
CUTTING PIN	#4	

8. WINDING SPECIFICATION

NO	NAME	TERMINAL NO.		WINDING		
		START	FINISH	WIRE	TURNS	WINDING METHOD
1	W1	5	4	1UEW 0.50φ×2	7	SOLENOID
2	W2	9	7	1UEW 0.50φ×2	7	SOLENOID
3	W3	10	6	1UEW 0.50φ×2	7	SOLENOID
4	W4	4	3	1UEW 0.50φ×2	7	SOLENOID
5	W5	1	2	1UEW 0.40φ	12	SOLENOID

WIRE SPECIFICATION	CONDUCTOR		
	WIRE	DIAMETER[mm]	TOLERANCE OF DIAMETER[mm]
	1UEW	0.40	±0.004
	1UEW	0.50	±0.005

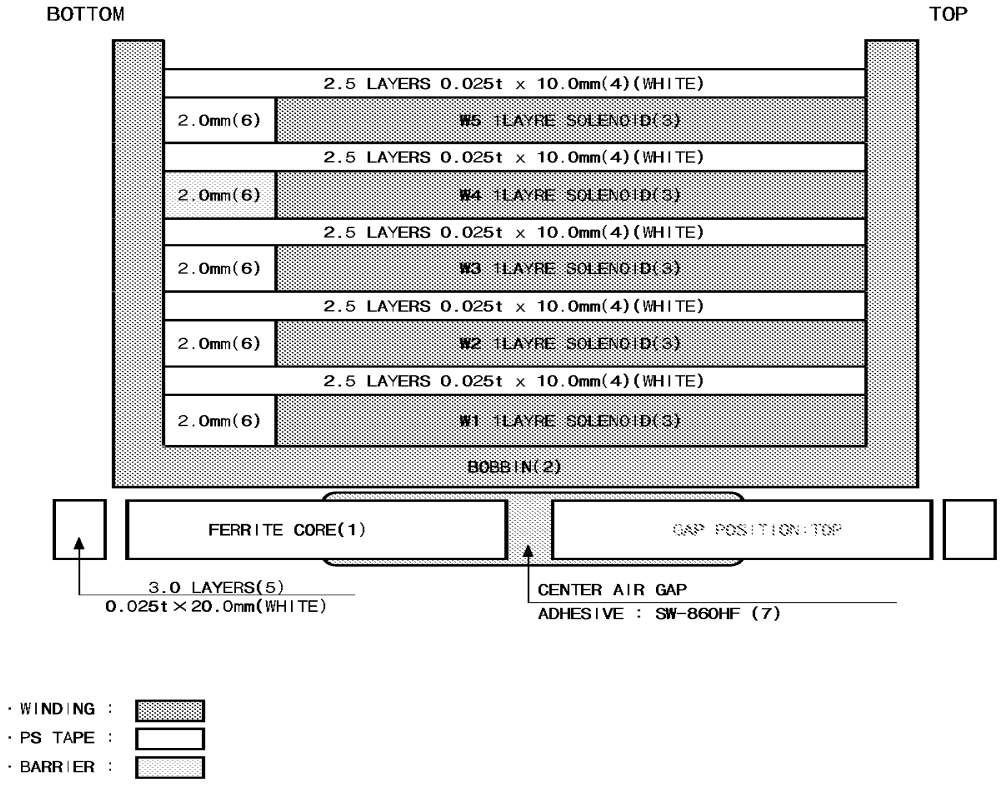
* REGARDING ABOVE TABLE STANDARD, THICKNESS OF WIRE MUST BE OVER SPECIFICATION.

CLOVER Hi-Tech CO., LTD.	DESIGN	CHECK	APPROVAL	PAGE
	Y.H CHA	K.T KIM	D.K PARK	3/19

CUSTOMER : POWERNET TECHNOLOGIES.

SPECIFICATIONS		DATE	2017.03.13
PART NAME	TRANS-POWER S/W	PART NO	1400651

11. CONSTRUCTION



· WINDING :
· PS TAPE :
· BARRIER :

CLOVER Hi-Tech CO., LTD.	DESIGN	CHECK	APPROVAL	PAGE
	Y.H CHA	K.T KIM	D.K PARK	6/19

CUSTOMER : POWERNET TECHNOLOGIES.

SPECIFICATIONS		DATE	2017.03.13
PART NAME	TRANS-POWER S/W	PART NO	1400651

16. LIST OF MATERIAL

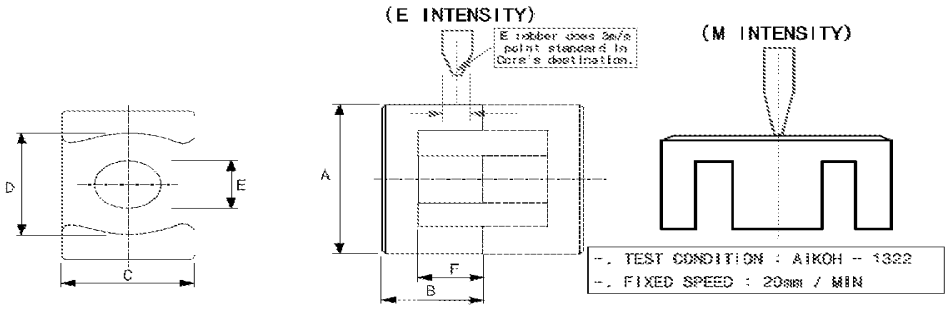
NO	COMPONENT	NAME OF MATERIAL	MANUFACTURER OF MATERIAL	UL FILE NO
1	CORE	HE4 EER 3019 (EC30-4R) PC40 EER 3019 PL-7 EER 3019S	RUYUAN DONGYANGGUANG MAGNETICS MATERIALS CO.,LTD. SHANGHAI JISHUN MAGNETIC MATERIAL CO.,LTD. SAMWHA ELECTORNICS CO., LTD.	
2	BOBBIN	PHENOLIC 94V-0 EER3019 V"TYPE 10PIN(5+5)	SUMITOMO BAKELITE CO.,LTD.(PM-9820)	E41429
3	WIRE	1UEW 0.40φ 1UEW 0.50φ	CNI ELECTRONICS CO.,LTD. (ANSI TYPE(RATED 130℃)=MW28, MW75) SHANONG PENGTAI STOCK CO.,LTD.	E210918 E166187
4	INSULATION TAPE	POLYESTER TAPE 0.025Tx10.0mm(W)	JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO.,LTD. (CT*(b)(g))	E165111
5	CORE FIXING TAPE	POLYESTER TAPE 0.025Tx20.0mm(W)		
6	BARRIER	PNW(BUSIKPO) TAPE 0.45Tx2.0mm	TAE HWA INDUSTRIAL CO.,LTD.(H-5673*) JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO.,LTD.(WF)	E92677 E165111
7	ADHESIVE	EPOXY RESIN SW-860HF	SUNGWOO CHEMICAL CO.,LTD.	
8	SOLDER	BAR, WIRE	ALPHA METALS CO.,LTD.	
	FLUX	JS-7000S-2	KOKI SANEI KOREA CO.,LTD.	
9	VARNISH	DVB-2085(*)	NOROO PAINT & COATINGS CO.,LTD.	E93947
10	MARKING	INK(Black)	HITACHI CHEMICAL CO.,LTD.	

CLOVER Hi-Tech CO., LTD.	DESIGN	CHECK	APPROVAL	PAGE
	Y.H CHA	K.T KIM	D.K PARK	13/19

CUSTOMER : POWERNET TECHNOLOGIES.

SPECIFICATIONS		DATE	2017.03.13
PART NAME	TRANS-POWER S/W	PART NO	1400651

※ CORE DIMENSION ※



TYPE	DIMENSION(mm)						EFFECTIVE PARAMETER			INTENSITY (Kgf MIN.)		RE MARKS
	A	B	C	D	E	F	Le(mm)	Ae(㎟)	Ve(㎤)	M	E	
EER3019 (EC30-4R)	30.00 ±0.40	9.40 ±0.15	20.30 ±0.30	25.70 ±0.40	13.30 ±0.20	6.60 ±0.20	47.7	132.0	6298	9.5	16.5	DONGYANG GUANG
EER3019	30.00 ±0.40	9.40 ±0.15	20.30 ±0.30	25.70 ±0.40	13.30 ±0.20	6.60 ±0.20	47.7	132.0	6298	9.5	16.5	JISHUN
EER3019S	30.00 ±0.40	9.40 ±0.15	20.30 ±0.30	25.70 ±0.40	13.30 ±0.20	6.60 ±0.20	47.7	132.0	6298	9.5	16.5	SAMHWA

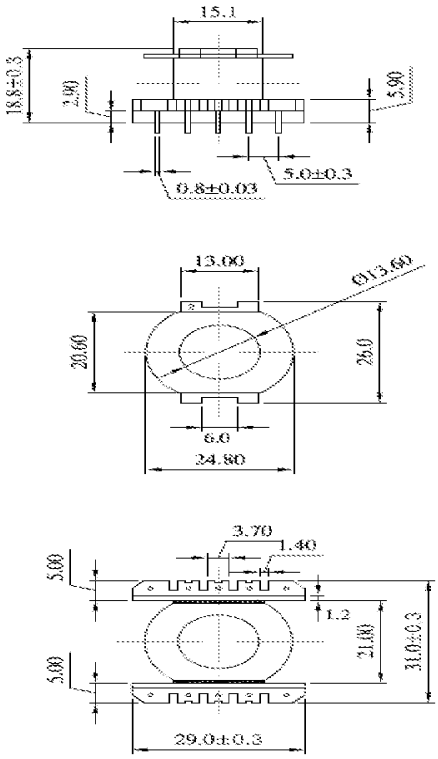
	A	B	C	D	E	F
1	30.69	9.46	20.30	25.73	13.38	6.60
2	30.72	9.47	20.38	25.71	13.38	6.65
3	30.73	9.40	20.37	25.78	13.41	6.63
4	30.72	9.46	20.33	25.77	13.39	6.65
5	30.68	9.45	20.35	25.72	13.36	6.68

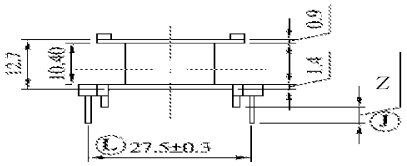
CLOVER Hi-Tech CO., LTD.	DESIGN	CHECK	APPROVAL	PAGE
	Y.H CHA	K.T KIM	D.K PARK	14/19

CUSTOMER : POWERNET TECHNOLOGIES.

SPECIFICATIONS		DATE	2017.03.13
PART NAME	TRANS-POWER S/W	PART NO	1400651

※ BOBBIN DIMENSION ※





CLOVER Hi-Tech CO., LTD.	DESIGN	CHECK	APPROVAL	PAGE
	Y.H CHA	K.T KIM	D.K PARK	18/19

SPECIFICATIONS

DESCRIPTION	MAIN TRANS
SPECIFICATION	100uH / EER3019 (PL-7,TP4,ZP40)
MAKER SPECIFICATION	EER3019 P10 (5+5)
CODE NO	1400651
MODEL NO	PN042HTCA-9080VQ
SPECIAL ARTICLES	CLASS 130(B) TRANSFORMER INSULATION SYSTEMDESIGNATED CP-130 (YOUNG CHANG SILICONE)

CUSTOMER APPROVED

검토	확인	승인

작성	검토	심사	승인
2017. 03. 13.	2017. 03. 13.	2017. 03. 13.	2017. 03. 13.

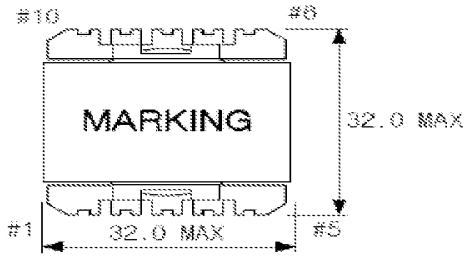
REQUEST CUSTOMER	CORE Plus	TEL	TEL : 031)224-6030 FAX : 031)224-6066
ADDRESS	* HEAD OFFICE : RM606,SAMHO TOWER 1122-10 INGYE-DONG PALDAL-GU GYEONGGI-DO KOREA. * CHINA FACTORY :43 LANTANG ROAD,SHOUSHAN DUSTRIAL PARK, LIAOYANG COUNTY, LIAONING PROVINCE, CHINA * INDONESIA FACTORY : KP. SINDANG RESMI RT.03 RW.07 DESA KUTAJAYA KEC. CICURUG KAB. SUKABUMI 43359 INDONESIA		

CUSTOMER : **POWERNET TECHNOLOGIES**

SPECIFICATIONS		SHEET NO.	2 OF 21
		DATE	2017. 03. 13.
PART NAME	S/W TRANS	MODEL NAME	PN042HTCA-9080VQ
PART NO.	1400651	TYPE	EER3019

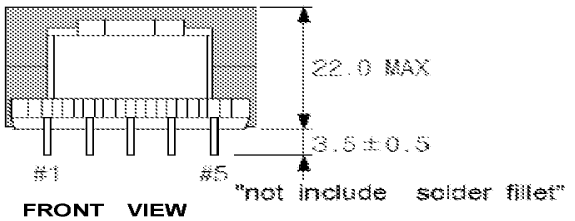
6. DIMENSIONS (UNIT: m/m)

TOP VIEW

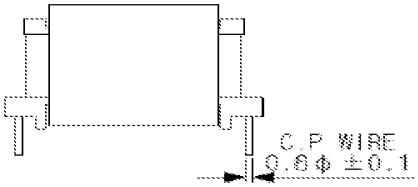


MARKING	
PART NO.	1400651
TRADE NAME	CP(COREPLUS)
CHINA FACTORY	LY(LIAOYANG)
CP-130	COREPLUS 'CLASS B' SYSTEM
Year	2016 → 16 2017 → 17...
Week	First Week → 1 Second Week → 2...
Product Area	A: KOREA C: CHINA I :INDONESIA
MANUFACTURER OF CORE	S: SMAWHA T: TDG N: NANTONG

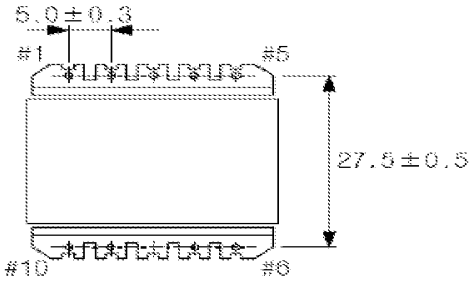
1400651
CP LY
CP-130 1612CT



FRONT VIEW



SIDE VIEW



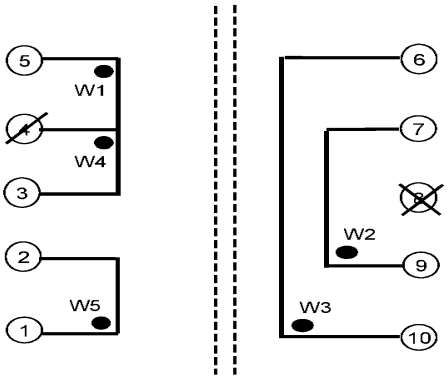
BOTTOM VIEW

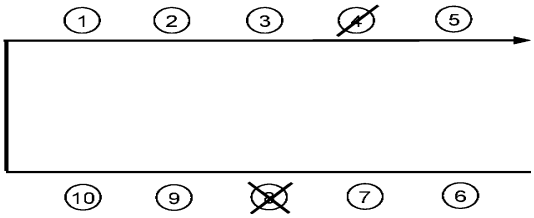
CUSTOMER CHECK		DESIGN	CHECK	CONFIRM	APPROVAL
	CORE Plus	PARK.J.S	YANG.S.J	JANG.C.H	LEE.Y.G

CUSTOMER : **POWERNET TECHNOLOGIES**

SPECIFICATIONS		SHEET NO.	3 OF 21
		DATE	2017. 03. 13.
PART NAME	S/W TRANS	MODEL NAME	PN042HTCA-9080VQ
PART NO.	1400651	TYPE	EER3019

7. SCHEMATIC DIAGRAM





WINDING	BOTTOM VIEW	C.W
BOBBIN INSERT	BOTTOM	
REMOVE PIN	#8	
N.C PIN	NONE	
CUT PIN	#4	
TEFLON TUBE	NONE	

8. WINDING SPECIFICATION

WINDING ORDER	TERMINAL NO		WIRE	TURNS	WINDING METHOD	REMARKS
	S	F				
W1	5	4	1UEW 0.50Ø * 2P	7	SOLENOID	1 LAYERS
W2	9	7	1UEW 0.50Ø * 2P	7	SOLENOID	1 LAYERS
W3	10	6	1UEW 0.50Ø * 2P	7	SOLENOID	1 LAYERS
W4	4	3	1UEW 0.50Ø * 2P	7	SOLENOID	1 LAYERS
W5	1	2	1UEW 0.40Ø	12	SOLENOID	1 LAYERS

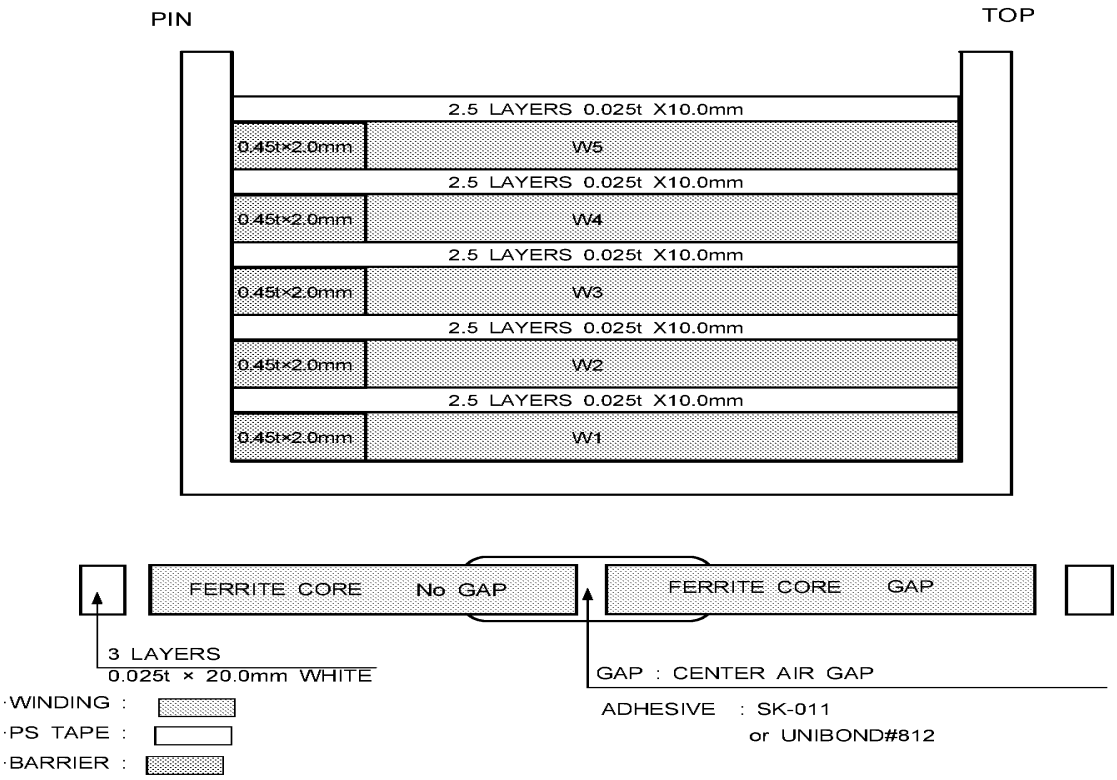
* REGARDING ABOVE TABLE STANDARD, THICKNESS OF WIRE MUST BE OVER SPECIFICATION RANGE.

CUSTOMER CHECK		DESIGN	CHECK	CONFIRM	APPROVAL
	CORE Plus	PARK.J.S	YANG.S.J	JANG.C.H	LEE.Y.G

CUSTOMER : **POWERNET TECHNOLOGIES**

SPECIFICATIONS		SHEET NO.	6 OF 21
		DATE	2017. 03. 13.
PART NAME	S/W TRANS	MODEL NAME	PN042HTCA-9080VQ
PART NO.	1400651	TYPE	EER3019

11. INTERNAL CONSTRUCTION



CUSTOMER CHECK		DESIGN	CHECK	CONFIRM	APPROVAL
	CORE Plus	PARK.J.S	YANG.S.J	JANG.C.H	LEE.Y.G

CUSTOMER : **POWERNET TECHNOLOGIES**

SPECIFICATIONS		SHEET NO.	12 OF 21
		DATE	2017. 03. 13.
PART NAME	S/W TRANS	MODEL NAME	PN042HTCA-9080VQ
PART NO.	1400651	TYPE	EER3019

19. MATERIAL LIST

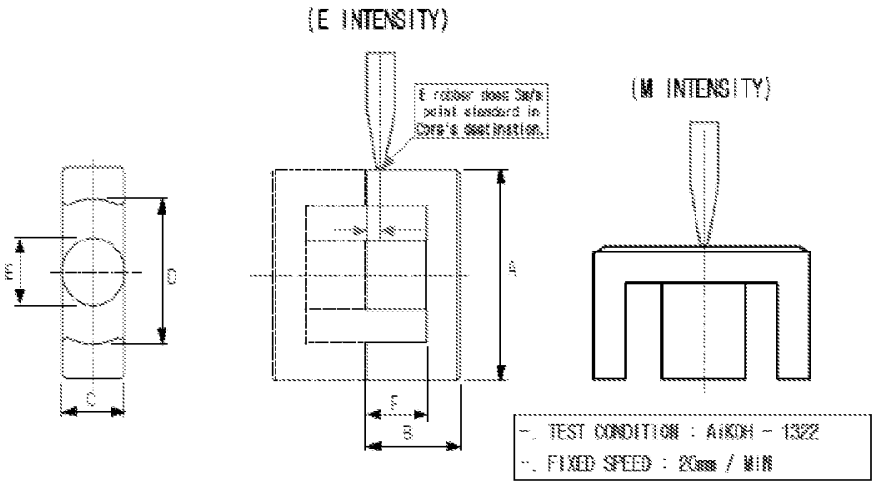
No	COMPONENT	NAME OF MATERIAL	MANUFACTURER OF MATERIAL	UL FILE No
1	CORE	EER3019 PL-7	SAM WHA ELECTRONICS CO., LTD	
		EER3019 TP-4	TDG HOLDING CO.,LTD	
		EER3019 ZP40	NANTONG ZHONGXING MAGNETIC INDUSTRIAL CO., LTD	
2	BOBBIN	"V"TYPE , PHENOLIC (PM 9820) EER3019 "V" 5+5PIN	SUMITOMO BAKELITE CO., LTD	E41429
3	WIRE	POLYURETHANE 1UEW 0.40Ø 1UEW 0.50Ø	CNI ELECTRONICS CO LTD LIAONING WANXINGDA SPECIAL ENAMELLED WIRE(GROUP) CO.LTD	E210918 E220501
4	INSULATION TAPE	POLYESTER FILM TAPE 0.025t X 10.0mm (WHITE)	JINGJIANG JINGYI ADHESIVE PRODUCT CO., LTD	E246950
5	CORE FIXING TAPE	POLYESTER FILM TAPE 0.025t X 20.0mm (WHITE)	JINGJIANG YAHUA PRESSURESENSITIVE GLUE CO., LTD(CT*)	E165111
6	ADHESIVE	SK-011	SE KYE CHEMICAL CO.,LTD	
		UNI-BOND #812	GREEN STAR CO., LTD.	
7	BARRIER TAPE	P.N.W TAPE 0.45t × 2.0mm	JINGJIANG JINGYI ADHESIVE PRODUCT CO., LTD JINGJIANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD(WF)	E246950 E165111
8	VARNISH	SR-337A,B	SE KYE CHEMICAL CO.,	E257443
9	SOLDER	LEAD FREE	TIANJIN HENKO TECHNOLOGY CO., LTD.	
10	FLUX	319-5F	JIANGYIN CITY DENGFENG ELECRICAL MATERAIL CO.,LTD	
11	MARKING	INK	BON MARQUE.	

CUSTOMER CHECK		DESIGN	CHECK	CONFIRM	APPROVAL
	CORE Plus	PARK.J.S	YANG.S.J	JANG.C.H	LEE.Y.G

CUSTOMER : **POWERNET TECHNOLOGIES**

SPECIFICATIONS		SHEET NO.	20 OF 21
		DATE	2017. 03. 13.
PART NAME	S/W TRANS	MODEL NAME	PN042HTCA-9080VQ
PART NO.	1400651	TYPE	EER3019

21. CORE DIMENSION



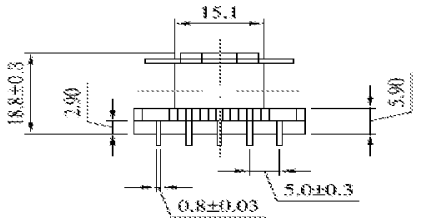
TYPE	DIMENSION(mm)						EFFECTIVE PARAMETERS			INTENSITY (Kgf MIN)		REMARKS
	A	B	C	D	E	F	Le(mm)	Ae(㎟)	Ve(㎣)	M	E	
EER3124N	30.00 ±0.5	9.40 ±0.15	20.30 ±0.30	25.70 ±0.40	13.30 ±0.20	6.60 ±0.20	47.7	132.0	6298	9.5	16.5	SAMWHA
EER3124	30.00 ±0.5	9.40 ±0.15	20.30 ±0.30	25.70 ±0.40	13.30 ±0.20	6.60 ±0.20	47.7	132.0	6298	9.5	16.5	TDG
EER3124	30.00 ±0.5	9.40 ±0.15	20.30 ±0.30	25.70 ±0.40	13.30 ±0.20	6.60 ±0.20	47.7	132.0	6298	9.5	16.5	NANTONG

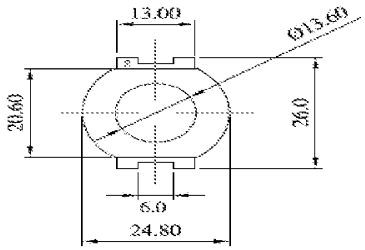
CUSTOMER CHECK		DESIGN	CHECK	CONFIRM	APPROVAL
	CORE Plus	PARK.J.S	YANG.S.J	JANG.C.H	LEE.Y.G

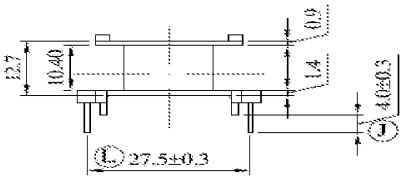
CUSTOMER : **POWERNET TECHNOLOGIES**

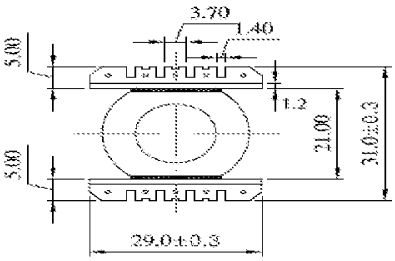
SPECIFICATIONS		SHEET NO.	22 OF 21
		DATE	2017. 03. 13.
PART NAME	S/W TRANS	MODEL NAME	PN042HTCA-9080VQ
PART NO.	1400651	TYPE	EER3019

23. BOBBIN DIMENSION









CUSTOMER CHECK		DESIGN	CHECK	CONFIRM	APPROVAL
	CORE Plus	PARK.J.S	YANG.S.J	JANG.C.H	LEE.Y.G

NO	TC-1773-1

SPECIFICATIONS

TO MESSRS : 파워넷

CUSTOMER'S MODEL :

CUSTOMER'S PART NO :

ITEM : LINE FILTER

TNC SPEC NO. : QV181610A

APPROVED	REFERENCE

DATE : 2016. 03. 18

TNC (株)TNC

304-29 Asan Valley, DunPo-Myeon, Asan-Si, Chung Cheong Nam-Do, KOREA 336-871
TEL : 82-41-530-9600
FAX : 82-41-530-9697

NOTICE : After received this approval sheet and finished it's approval, please return back one copy. In case of that you don't do any reply until initial order date, this approval sheet is to be standard approval and initial order date is to be approved date for concerning item.

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	QV181610A	1

2. ELECTRICAL CHARACTERISTIC

NO	ITEM	TERMINAL	SPECIFICATION			REMARKS
1	RATED VOLTAGE	LINE TO LINE	AC 300V			
2	RATED CURRENT	START-FINISH	2.0A			
3	INDUCTANCE	START-FINISH	16KHz	7.0mH	MIN.	HP-4194A 1V (25℃±2℃)
4	TEMPERATURE RISE	AT RATED CURRENT	55℃ MAX			
5	DC RESISTANCE	START-FINISH	156.0 mΩ MAX			HIOKI 3540 (25℃±2℃)
6	WITHSTANDING VOLTAGE	LINE TO LINE	AC 1,500V 1 MINUTE.			TOS-5101 CUT OFF CURRENT (5mA)

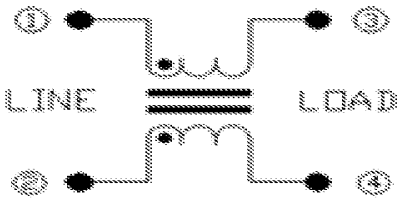
3. OPERATING TEMPERATURE RANGE

-30℃ TO +120℃ INCLUDING TEMPERATURE RISE.

4. KEEP TEMPERATURE RANGE

-30℃ ~ +60℃.

5. CIRCUIT DIAGRAM



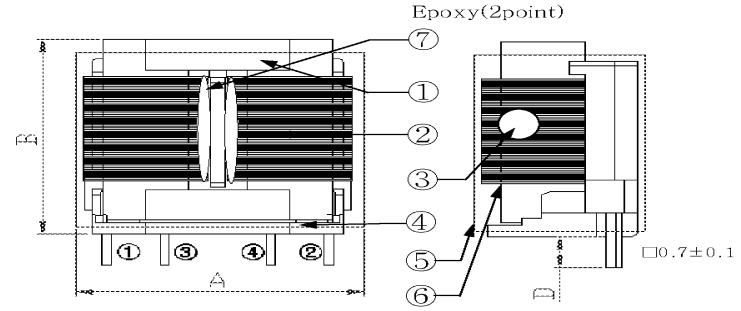
TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
	RYU.H.E R&D	KANG.S.W R&D	KOO.J.H R&D	3/15

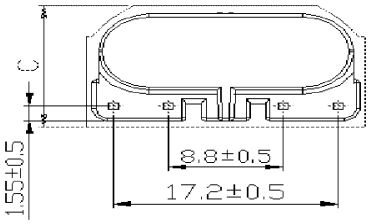
SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	QV181610A	1

6. WINDING SPECIFICATION

NO	TERMINAL		WIRE	TURNS	WINDING METHOD	UNBALANCE SPECIFICATION
	START	FINISH				
L1	1	3	UEW 0.20X1.0mm	44Ts Ref	AUTO WINDING	BETWEEN L1 AND L2 (0.23mH MAX)
L2	2	4				

7. SHAPE AND DIMENSION





DIMENSION	A	B	C	D
	25.0mm MAX	19.5mm MAX	16.0mm MAX	Not include solder fillet 2.8 ± 0.5mm

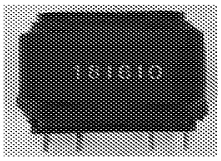
TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
	RYU.H.E R&D	KANG.S.W R&D	KOO.J.H R&D	4/15

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	QV181610A	1

8. MATERIAL LIST

No.	NAME	SPECIFICATION		MANUFACTURER	COLOR	UL No.
1	Core Cover	LCP GA130(r)		POLYPLASTICS CO LTD	BLACK	E106764
2	Rectangular Copper Wire	UEW 0.20X1.0mm / 44Ts Ref	SFT-UEWH	WELL ASCENT ELECTRONIC CO LTD	YELLOW	E318511
			1UEWF /180	SHANDONG PENGTAI STOCK CO LTD	YELLOW	E166187
3	Ferrite Core	R12KF SQ1816 HL12 1816SQ		LAIWU CHAINWELL ELECTRONIC&MATERIAL.CO.,Ltd RUYUAN DONGYANGGUANG MAGNETIC MATERIAS CO.,LTD	BLACK	
4	Coil Base	Phenolic (PF 2736(a)(b)) UL 94 V-0 Class		Hexion GmbH	BLACK	E61040
		Phenolic (T375HF) UL 94 V-0 Class		CHANG CHUN Plastics Co.,Ltd	BLACK	E59481
5	Insulation tube	Heat Shrink Tube HKCT2(HF)		HAN KYUNG COMPONENT	BLACK	E222852
6	Impregnant	DVB-2177(M)		NOROO PAINT & COATING CO.,LTD	Transparent	E93947
7	Epoxy	EPOXY RESIN	NA-010	ND Chemical	WHITE BLACK	
			EA610A / EA610B	Chem Tech	WHITE	
A	Marking	Bon Mar Que		T&K Toka	SILVER	
		IR-254WTSPB/MC-254WT		DOMINO	WHITE	

MARKING
181610



TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
	RYU.H.E R&D	KANG.S.W R&D	KOO.J.H R&D	5/15

*승인원 품명 (ITEM) : Linefilter → Commonfilter
요기 정정

PN계획-승- 16092 (재발행)

CUSTOMER : POWERNET DATE : 2016. 04. 08

APPROVAL SHEET

APPROVAL Powernet Doc. R095 02

ITEM : COMMON FILTER

MODEL No. : CVA6011RNF2

Customer Code No. :

1420830-A07

CUSTOMER'S APPROVED

MODEL : ASUS K20E

4/8 / 4/11 / 4/11

2016. 04. 11

중점 관리 내용 :
-. 3 Page INDUCTANCE SPEC 관리
-. 7 Page IMPEDANCE SPEC 관리

Drawing	Agreement			Approval
	Circuit	Reliability & Product Eng.	Mechanical	
2016.04.08	2016.04.08	2016.04.08	2016.04.08	2016.04.08

Maker	TNC CO., LTD. (KOREA FACTORY)	TEL	82-41-530-9600	
Address	# 304-29 Asan Valley, DunPo-Myeon, Asan-Si, Chung Cheong Nam-Do, KOREA 336-871			
Factory 1	TNC CO.,LTD (CHINA FACTORY)	TEL	+86-539-723-6759	O
Address	GUANDI VILLAGE ECONOMY DEVELOPMENT ZONE, JANAN-COUNTRY LINYI CITY, SHANDONG CHINA			
Factroy 2	TNC CO., LTD. (THAILAND FACTORY)	TEL	+66-38-573715	
Address	105/18 MOO3 BANGNA TRAD RD KM52, THAKHAM BANGPAKONG CHACHOENGSAO 24130, THAILAND			

NO	TC-1795-1

SPECIFICATIONS

TO MESSRS : 파워넷

CUSTOMER'S MODEL :

CUSTOMER'S PART NO :

ITEM : COMMON FILTER

TNC SPEC NO. : CVA6011RNF2

APPROVED	REFERENCE

DATE : 2016. 04. 08

TNC (株)TNC

#304-29 Asan Valley, DunPo-Myeon, Asan-Si, Chung Cheong Nam-Do, KOREA 336-871
TEL : 82-41-530-9600
FAX : 82-41-530-9697

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SPECIFICATIONS	ITEM	COMMON FILTER	Rev
	TNC SPEC NO	CVA6011RNF2	0

2. ELECTRICAL CHARACTERISTIC

NO	ITEM	TERMINAL	SPECIFICATION			REMARKS
1	RATED VOLTAGE	LINE TO LINE	DC 50V			
2	RATED CURRENT	START-FINISH	6.0A			
3	INDUCTANCE	START-FINISH	160KHz	11.0uH	+50%,-30%	HP-4194A 1V (25℃±2℃)
4	TEMPERATURE RISE	AT RATED CURRENT	55℃ MAX			
5	DC RESISTANCE	START-FINISH	16.0 mΩ MAX			HIOKI 3540 (25℃±2℃)
6	WITHSTANDING VOLTAGE	LINE TO LINE	AC 100V 1 MINUNE.			TOS-5101 CUN OFF CURRENT (5mA)

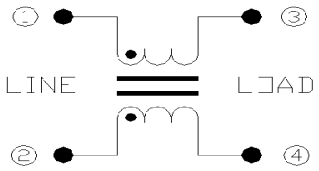
3. OPERATING TEMPERATURE RANGE

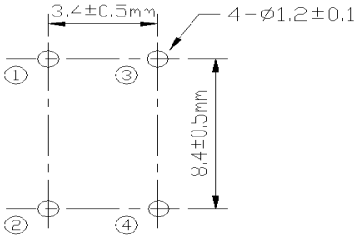
-30℃ TO +105℃ INCLUDING TEMPERATURE RISE.

4. KEEP TEMPERATURE RANGE

-30℃ ~ +60℃.

5. CIRCUIT DIAGRAM





Minimum PCB Piercing HOLE

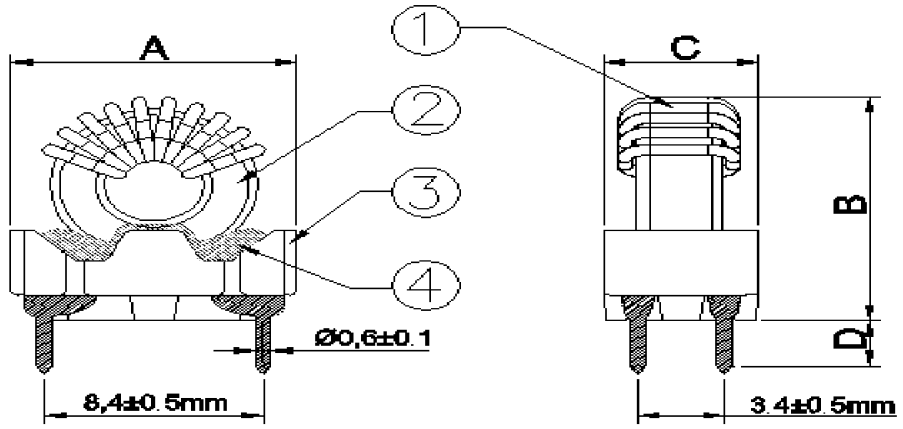
TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
	RYU.H.E R&D	KANG.S.W R&D	KOO.J.H R&D	3/12

SPECIFICATIONS	ITEM	COMMON FILTER	Rev
	TNC SPEC NO	CVA6011RNF2	0

6. WINDING SPECIFICATION

NO	TERMINAL		WIRE	TURNS	WINDING METHOD	UNBALANCE SPECIFICATION
	START	FINISH				
L1	1	3	UEW 0.55Φ (RED)	6 ±1Ts	HANDMADE	BETWEEN L1 AND L2 (1.99uH MAX)
L2	2	4	UEW 0.55Φ (NATURAL)			

7. SHAPE AND DIMENSION



DIMENSION	A	B	C	D
	11.5mm MAX	13.0mm MAX	6.5mm MAX	Not include solder fillet 2.8 ± 0.5mm

TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
	RYU.H.E R&D	KANG.S.W R&D	KOO.J.H R&D	4/12

SPECIFICATIONS	ITEM	COMMON FILTER	Rev
	TNC SPEC NO	CVA6011RNF2	0

8. MATERIAL LIST

No.	NAME	SPECIFICATION		MANUFACTURER	COLOR	UL No.
1	Enamel Wire	UEW 0.55Φ / 6±1Ts	UEW	Hwa Il Electronics Co.,Ltd	YELLOW RED	E140246
			UEW	SHANDONG PENGTAI STOCK CO LTD	YELLOW RED	E166187
2	Ferrite Core	L7H T 8x3x4-K K081 T 8X4X3UC		Korea TDK Co., Ltd ACME Electronics Corporation	WHITE	
3	Coil Base	Phenolic (PF 2736(a)(b)) UL 94 V-0 Class		Hexion GmbH	BLACK	E61040
		Phenolic (T375HF) UL 94 V-0 Class		CHANG CHUN Plastics Co.,Ltd	BLACK	E59481
4	Epoxy	EPOXY RESIN	NA-010	ND Chemical	WHITE	
			EA610A / EA610B	Chem Tech	Transparent	

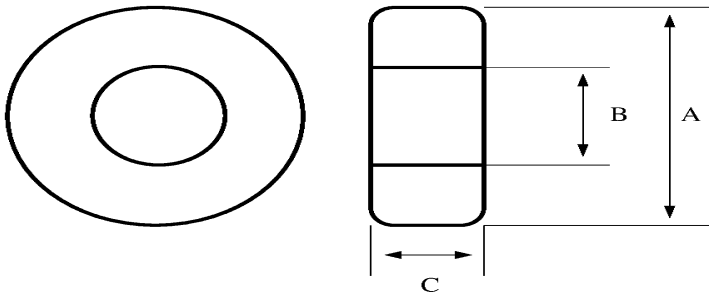
SPECIFICATIONS	ITEM	COMMON FILTER	Rev
	TNC SPEC NO	CVA6011RNF2	0

14. FERRITE CORE SPECIFICATION

- Characteristics

Symbol	Unit	L7H T 8/3/4 – K	K081 T8*4*3UC
μi	–	800±25%	800±25%
Bms	mT	390	410
Hcms	A/m	16	27
Brms	mT	220	272
Tc	℃	>180	>190
TANδ /μiac	$*10^{-6}$	<80	<80
αμr	$*10^{-6}$ /℃	7~15	7~15
ρ	Ω.m	10^{6}	10^{6}
d	g/㎤	5.1	5.1

- Dimension (Before Coating)



A: 8.0 ±0.4 **B: 4.0 ±0.2** **C: 3.0 ±0.3**

TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
	RYU.H.E R&D	KANG.S.W R&D	KOO.J.H R&D	9/12

Project No. 4789515728 File E158873 Page 1

Compliance Review Conducted by: _____ Date _____

Printed Name Signature

Standard: SCC Requirements and Guidance - Product Certification Body Accreditation Program

Edition/Revision Date: 2016-04-06

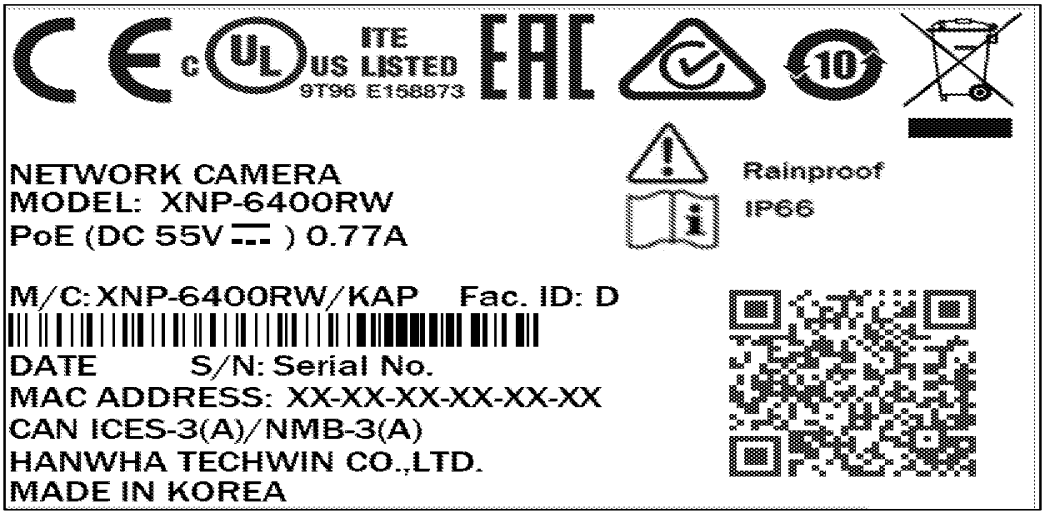
Clause/Par. Reference and Construction Requirement	Comply Yes	Comply No	Comply N/A	Comments/Measurements	Inst. ID No.
9.2.3 CBs shall include dual language safety labeling within their product certification requirements, if so required by the standard or by the authority having jurisdiction.					
The manufacturer has confirmed they have the ability to include English and French safety labeling exactly as specified in the product standard; or, if NOT specified in the product standard, the ability to include English and French safety labelling consisting of markings associated with the signal words DANGER, WARNING, and CAUTION when required.	X			The ability of the manufacturer to include these markings was verified by either (1) visual inspection of the markings on the actual product or (2) draft of labels that will be applied to the product or (3) written confirmation from the customer of the markings that will appear on the product. If the product standard provides the exact translation, the evidence must match the exact translation. If the product standard does NOT provide the exact translation, the evidence must simply include both the English and French text (no verification of translation is required).	N/A

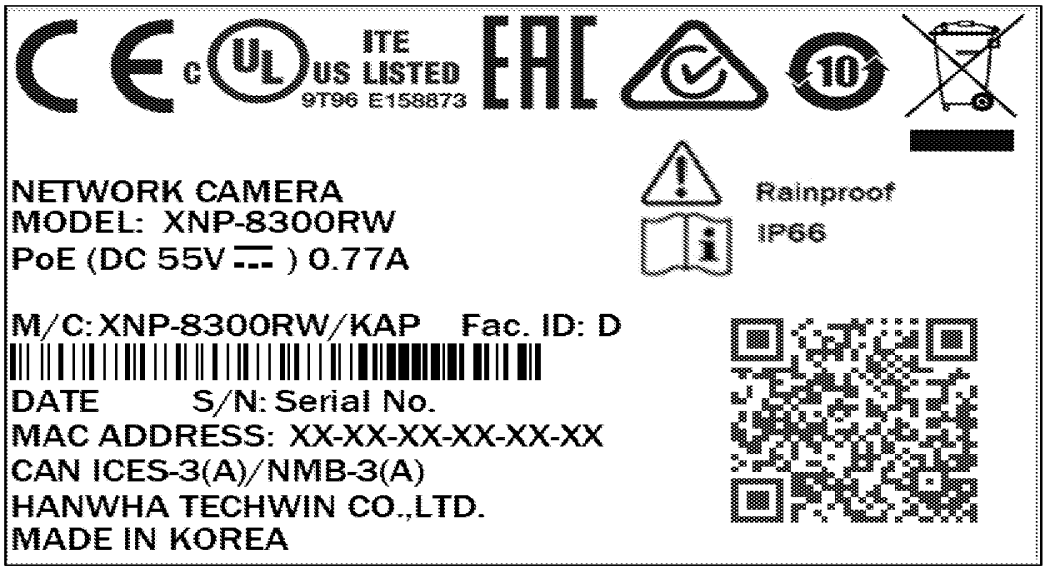
Project No. 4789515728 File E158873 Page 2

Compliance Review Conducted by: _____ Date _____

Printed Name Signature

Clause/Par. Reference and Construction Requirement	Comply			Comments/Measurements	Inst. ID No.
	Yes	No	N/A		
Manufacturer has a method to manage distribution of products, IF all products with the Canadian certification mark are NOT going to include the dual language.	X			Evaluation staff are to only verify that the manufacturer has a method to control distribution. Evaluation staff do not have to record the method of control nor are the evaluation staff expected to verify the effectiveness of the method of control. This requirement to verify that a method exists will be noted in the FUS Procedure. The UL Field Engineer will verify the method during surveillance. If the manufacturer is going to include the dual language on all products with the Canadian certification mark, then this item is N/A; no further action required.	N/A


ITE
US LISTED
9T96 E158873
NETWORK CAMERA
MODEL: XNP-6400RW
PoE (DC 55V ⎓) 0.77A
Rainproof
IP66
M/C:XNP-6400RW/KAP Fac. ID: D
DATE S/N: Serial No.
MAC ADDRESS: XX-XX-XX-XX-XX-XX
CAN ICES-3(A)/NMB-3(A)
HANWHA TECHWIN CO.,LTD.
MADE IN KOREA


ITE
US LISTED
9T96 E158873
NETWORK CAMERA
MODEL: XNP-8300RW
PoE (DC 55V ⎓) 0.77A
Rainproof
IP66
M/C:XNP-8300RW/KAP Fac. ID: D
DATE S/N: Serial No.
MAC ADDRESS: XX-XX-XX-XX-XX-XX
CAN ICES-3(A)/NMB-3(A)
HANWHA TECHWIN CO.,LTD.
MADE IN KOREA

ITE
US LISTED
9T96 E158873

NETWORK CAMERA
MODEL: XNP-9300RW
PoE (DC 55V ⎓) 0.77A

Rainproof
IP66

M/C: XNP-9300RW/KAP Fac. ID: D
DATE S/N: Serial No.
MAC ADDRESS: XX-XX-XX-XX-XX-XX
CAN ICES-3(A)/NMB-3(A)
HANWHA TECHWIN CO.,LTD.
MADE IN KOREA

Risk Group 1
WARNING IR emitted from this product. Do not stare at operating lamp NOTICE IR emitted from this product. Use appropriate shielding or eye protection.
Product tested against IEC62471

The following Page(s) are related to Miscellaneous-07. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

Test Report issued under the responsibility of:

TEST REPORT
IEC 60950-22
Information technology equipment – Safety –
Part 22: Equipment to be installed outdoors

Report Number. .....:	E158873-A6034
Date of issue .....:	N/A
Total number of pages.....	24
Name of Testing Laboratory preparing the Report.....:	N/A
Applicant's name.....:	HANWHA TECHWIN CO LTD
Address .....:	6, PANGYO-RO 319BEON-GIL, BUNDANG-GU SEONGNAM-SI GYEONGGI-DO 13488 KOREA
Test specification:	
Standard.....:	IEC 60950-22(ed.2)
Test procedure .....:	CB Scheme
Non-standard test method.....:	N/A
Test Report Form No.....:	IEC60950_22B
Test Report Form(s) Originator ....:	The Standards Institution of Israel
Master TRF.....:	Dated 2016-04

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

General disclaimer:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

Test item description .....:	See Report E158873-A6034
Trade Mark .....:	--
Manufacturer.....:	See Report E158873-A6034
Model/Type reference .....:	See Report E158873-A6034
Ratings .....:	See Report E158873-A6034

Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):

☐	**CB Testing Laboratory:**	N/A	
Testing location/ address ..... :			
☐	**Associated CB Testing Laboratory:**		
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Approved by (name, function, signature).. :			
☐	**Testing procedure: CTF Stage 1:**	N/A	
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Approved by (name, function, signature).. :			
☐	**Testing procedure: CTF Stage 2:**	N/A	
Testing location/ address ..... :			
Tested by (name + signature) ..... :			
Witnessed by (name, function, signature). :			
Approved by (name, function, signature).. :			
☐	**Testing procedure: CTF Stage 3:**	N/A	
☐	**Testing procedure: CTF Stage 4:**	N/A	
Testing location/ address ..... :			
Tested by (name, function, signature) ..... :			
Witnessed by (name, function, signature). :			
Approved by (name, function, signature).. :			
Supervised by (name, function, signature) :			

List of Attachments (including a total number of pages in each attachment): **N/A**	
Summary of testing:	
Tests performed (name of test and test clause): PART 22, 9.1, ANNEX B – WATER SPRAY TEST PART 22, 8.5, ANNEX D.2 – TENSILE STRENGTH AND ELONGATION PART 22, 8.5.1, ANNEX D.3 – COMPRESSION TEST – GASKETS, CLOSED CELL CONSTRUCTION	**Testing location:** <For Water spray test> CTK CO., LTD. / 142, DONGBU-RO, CHEOIN-GU, YONGIN-SI, GYEONGGI-DO, 17141, KOREA <For Annex D.2, D.3> Underwriters Laboratories Taiwan Co., Ltd, 1st Fl, 260 Da-Yeh Road, Peitou, Taipei City, Taiwan 112
Summary of compliance with National Differences (List of countries addressed): See Report E158873-A6034 ☐ **The product fulfils the requirements of _____ (insert standard number and edition and delete the text in parenthesis, leave it blank or delete the whole sentence, if not applicable)**	

Copy of marking plate:

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

See Report E158873-A6034

Test item particulars ..... :	
Temperature range ..... :	-20 ~ 60 deg C
Overvoltage category ..... :	☒ OVC I ☐ OVC II ☐ OVC III ☐ OVC IV
IP protection class ..... :	IP 66
Possible test case verdicts:	
- test case does not apply to the test object .....:	N/A
- test object does meet the requirement.....:	P (Pass)
- test object does not meet the requirement .....:	F (Fail)
Testing.....:	
Date of receipt of test item.....:	See Report E158873-A6034
Date (s) of performance of tests .....:	See Report E158873-A6034
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report. **Throughout this report a ☒ comma / ☐ point is used as the decimal separator.** **This Test Report Form is intended for the investigation of safety of equipment to be installed outdoors in accordance with IEC 60950-22. It can only be used together with the IEC 60950-1 requirements.**	
Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided..... :	☐ **Yes** ☒ **Not applicable**
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) ..... :	N/A
General product information: See Report E158873-A6034	

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

4	**CONDITIONS FOR OUTDOOR EQUIPMENT**		P
4.1	**Ambient air temperature**		P
	Suitability for use at any temperature in the range specified by the manufacturer. If not specified by the manufacturer, the range is taken as -33°C to +40°C	Manufacturer declares an operating ambient range of -20 to 60 deg. C	P
4.2	**Mains supply**		N/A
4.2.1	General	Overvoltage Category I	N/A
	Suitability for the highest mains transient voltage expected in the installation location		N/A
	Components within outdoor equipment that reduce mains transient voltage or the prospective fault current comply with IEC 61643-series		N/A
4.2.2	Mains transient voltage on AC mains supply		N/A
4.2.3	Mains transient voltage on DC mains supply		N/A
4.3	**Rise of earth potential**		N/A
	Special earthing conditions		N/A
	Reference to installation instructions .....:		N/A
5	**MARKING AND INSTRUCTIONS**		P
	Special installation features for protection from conditions in the outdoor location (see 1.7.2 of IEC 60950-1:2005)	Operating/Safety instructions made available to the installer including outdoor installation precautions.	P
	outdoor enclosure classification according to IEC 60529 (IP Code)	See Clause 9.1. Marked IP66.	P
6	**PROTECTION FROM ELECTRICAL SHOCK IN AN OUTDOOR LOCATION**		N/A
6.1	**Voltage limits of user-accessible parts in outdoor locations** (2.2.2 and 2.2.3 of IEC 60950-1:2005/AMD2:2013 with voltage limits of IEC60950-22)		N/A
	Voltages under normal conditions (V).....:		N/A
	Voltages under fault conditions (V) .....:		N/A
6.2	**Limited current circuits in outdoor locations**		N/A
	The requirements of 2.4 of IEC60950-1:2005/ AMD1:2009/AMD2:2013 apply without change		N/A
6.3	**Protection for socket-outlet in outdoor locations**		N/A
	Use of residual current protective device (RCD) with rated residual operating current not exceeding 30 mA in the mains supply to socket-outlets intended for general use and with a rated current not exceeding 20 A.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	RCD is an integral part of the equipment		N/A
	RCD is part of the building installation (installation instructions)		N/A
7	**WIRING TERMINALS FOR CONNECTION OF EXTERNAL CONDUCTORS**		N/A
	The mains supply terminations powered via the normal building installation wiring are as specified in 3.3 of IEC 60950-1:2005/AMD2:2013		N/A
	The mains supply terminations powered directly from the mains distribution system are as specified in IEC 60364		N/A
8	**CONSTRUCTION REQUIREMENTS FOR OURDOOR ENCLOSURES**		P
8.1	**General**		**P**
	Protection against corrosion by use of suitable materials or by application of a protective coating		P
	Parts serving as a functional part of an outdoor enclosure (e.g., dials, connectors, etc.) comply with the same environmental protection requirements as for the outdoor enclosure		N/A
	Use of outdoor enclosure to carry current during normal operation		N/A
	Connection of a conductive part of an outdoor enclosure to protective earth for carrying fault currents (see 2.6 of IEC60950-1:2005/ AMD1:2009/AMD2:2013 and 8.3 of this standard)		N/A
8.2	**Resistance to ultra-violet radiation**		N/A
	Resistance of non-metallic parts of an outdoor enclosure to degradation by ultra-violet (UV) radiation		N/A
	Parts providing mechanical support:		N/A
	Tensile strength test (ISO 527)		N/A
	Flexural strength test (ISO 178)		N/A
	Parts providing impact resistance:		N/A
	Charpy impact test (ISO 179)		N/A
	Izod impact test (ISO 180)		N/A
	Tensile impact test (ISO 8256)		N/A
	All parts:		N/A
	Flammability classification (1.2.12 and annex A of IEC 60950-1:2005)		N/A
8.3	**Resistance to corrosion**		**P**
8.3.1	General		P

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
	Resistance of metallic parts of an outdoor enclosure to the effects of water-borne contaminants	Aluminum outdoor enclosure used.	P
	Alternate method for 8.3.2-8.3.4 (IEC 61587-1)		N/A
8.3.2	Test apparatus		N/A
	Salt-spray test (IEC 60068-2-11)		N/A
	Test in a water-saturated sulphur dioxide atmosphere (water-saturated sulphur dioxide atmosphere as described in Annex A; chamber as described in ISO 3231)		N/A
8.3.3	Test procedure		N/A
	Alternate test procedure		N/A
8.3.4	Compliance criteria:		N/A
	No rust other than surface corrosion of the protective coating; no cracking or other deterioration that will jeopardize the safety aspects as follows:		N/A
	– continued protection against access to hazardous parts, including after mechanical strength tests; and		N/A
	– continued protection against ingress of dust and water; and		N/A
	– continued provision of earth continuity		N/A
8.4	**Bottoms of fire enclosures**		N/A
	Comply with 4.6.2 of IEC 60950-1:2005	No openings	N/A
	Bottom of fire enclosure of outdoor equipment mounted directly and permanently on a non-combustible surface (e.g., concrete or metal)		N/A
8.5	**Gaskets**		P
8.5.1	General	Gasket was tested by UL/CSA 60950-22. See annex D.	P
8.5.2	Oil resistance		N/A
8.5.3	Securing means		N/A
9	**PROTECTION OF EQUIPMENT WITHIN AN OUTDOOR ENCLOSURE**		P
9.1	**Protection from moisture**		P
	Adequate protection from the effect of moisture on the enclosed equipment (see Table 2)	Internal environment considered Pollution Degree 2 based on measures taken to prevent ingress of moisture and dust. No water entered the enclosure.	P

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
9.2	**Protection from plants and vermin**		P
	Adequate protection if entry by plants and vermin is a consideration	Entry by plants and vermin unlikely.	P
9.3	**Protection from excessive dust**		P
9.3.1	General	No openings in enclosure.	P
	Adequate protection against the ingress of the dust through the use of an appropriately rated IP5X or IP6X enclosure, or equivalent		P
9.3.2	IP5X equipment		N/A
9.3.3	IP6X equipment		P
10	**MECHANICAL STRENGTH OF ENCLOSURES**		P
10.1	**General**		P
	Adequate mechanical strength and protection against access to energized parts and other hazards within the equipment throughout the intended ambient operating range	Aluminum and glass outdoor enclosure used.	P
10.2	**Impact test (4.2.5 of IEC 60950-1)**		N/A
	Low temperature conditioning for polymeric enclosures	There is no polymeric enclosures except deco part. (Aluminum and glass outdoor enclosure used.)	N/A
	Compliance criteria:		N/A
	- after test the level of protection remains in accordance with 9.1of this standard		N/A
	- after test the requirements of 4.2.1 of IEC 60950-1: 2005/ AMD1:2009/AMD2:2013 are met		N/A
11	**OUTDOOR EQUIPMENT CONTAINING VENTED BATTERIES**		N/A
11.1	**Risk of explosion from lead acid, NiCd and NiMH batteries**		N/A
	Adequate ventilation in the compartment housing a valve regulated or vented battery, where gassing is possible during normal usage or over-charging		N/A
	Protection against the risk of ignition of local concentrations of hydrogen and oxygen in a compartment containing both a battery and electrical components		N/A
	Construction of the ventilation system to ensure explosive gases venting in case of any potential fault, including distortion of the battery cases due to overheating or thermal runaway		N/A
	Ventilation tubes used for conducting explosive gas from the battery cases to the outside air		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	Adequate ventilation under single-fault failure conditions in case of mechanical or forced-air ventilation		N/A
	Enclosures with mechanical or electromechanical dampers		N/A
11.2	**Ventilation preventing an explosive gas concentration**		N/A
	Comply with M.7 of IEC 62368-1:2014		N/A
11.3	**Ventilation test**		N/A
	Measured hydrogen gas concentration (% by volume) .....:		—
	Max. allowed gas concentration for the mixture location in proximity to an ignition source (% by volume) .....:	≤ 1% by volume	—
	Max. allowed gas concentration for the mixture location not in proximity to an ignition source (% by volume) .....:	≤ 2% by volume	—
	Overcharging of rechargeable battery (see 4.3.8 of IEC 60950-1:2005/AMD2:2013)	(see separate test report IEC 60950-1)	N/A
A	**ANNEX A, WATER-SATURATED SULPHUR DIOXIDE ATMOSPHERE (see 8.3.2 and 8.3.3)**		N/A
	Test chamber .....:		N/A
	Test method .....:		N/A
B	**ANNEX B, WATER SPRAY TEST (see 9.1)**		N/A
	Test apparatus .....:		N/A
	Test method .....:		N/A
C	**ANNEX C, ULTRAVIOLET LIGHT CONDITIONING TEST (see 8.2)**		N/A
C.1	Test apparatus .....:		N/A
C.2	Mounting of test samples.....:		N/A
C.3	Carbon-arc light-exposure apparatus.....:		N/A
C.4	Xenon-arc light-exposure apparatus .....:		N/A
D	**ANNEX D, GASKET TESTS (see 8.5)**		P
D.1	Gasket tests		P
D.2	Tensile strength and elongation tests (for gaskets that can stretch)		P

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
	Tensile strength (%) .....:	O-VMQ-50-GR - 93.50 % O-VMQ-50-YE - 102.36 % O-VMQ-60-BL - 101.33 % O-VMQ-60-RE - 94.76 % O-VMQ-60-GR - 98.41 % O-VMQ-70-YE - 102.84 % O-VMQ-70-OR - 99.71 % O-VMQ-30-BK - 121.21 % O-VMQ-30-RE – 114.73 % O-VMQ-30-GR – 103.32 % O-VMQ-40-BK – 104.32 % O-VMQ-50-BK – 107.86 % O-VMQ-50-BL – 102.03 % O-VMQ-50-RE – 105.76 % O-VMQ-50-OR – 106.02 % O-VMQ-60-BK – 109.53 % O-VMQ-70-RE – 105.58 % O-VMQ-70-GR – 107.10 % O-VMQ-70-BK – 118.49 %	P
	Elongation (%) .....:	O-VMQ-50-GR - 87.66 % O-VMQ-50-YE - 97.26 % O-VMQ-60-BL - 100.46 % O-VMQ-60-RE - 92.13 % O-VMQ-60-GR - 92.43 % O-VMQ-70-YE - 99.77 % O-VMQ-70-OR - 90.76 % O-VMQ-30-BK - 102.64 % O-VMQ-30-RE - 93.42 % O-VMQ-30-GR – 96.27 % O-VMQ-40-BK – 90.48 % O-VMQ-50-BK – 90.60 % O-VMQ-50-BK – 84.80 % O-VMQ-50-RE – 84.93 % O-VMQ-50-OR – 93.38 % O-VMQ-60-BK – 97.57 % O-VMQ-70-RE – 88.37 % O-VMQ-70-GR – 94.48 % O-VMQ-70-BK – 97.05 %	P
	Visible deterioration, deformation, melting, cracking or hardening of the material.....:	There was no visible cracking or other adverse effect of the conditioned material.	P
D.3	Compression test (for gaskets with closed cell construction)		P

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Clause	Requirement + Test	Result - Remark	Verdict
	Initial thickness of the specimen (mm) .....:	C-VMQ-50-TR 3.0759 mm (Material 1) 3.0786 mm (Material 2) 2.9997 mm (Material 3) C-VMQ-40-GR 3.1634 mm (Material 1) 3.1565 mm (Material 2) 3.1749 mm (Material 3) C-VMQ-60-GR 3.1788 mm (Material 1) 3.1732 mm (Material 2) 3.1855 mm (Material 3) C-VMQ-30-BK 3.2035 mm (Material 1) 3.1581 mm (Material 2) 3.2373 mm (Material 3) C-VMQ-30-BL 3.1367 mm (Material 1) 3.1667 mm (Material 2) 3.1044 mm (Material 3) C-VMQ-40-BK 3.2186 mm (Material 1) 3.1553 mm (Material 2) 3.1382 mm (Material 3) C-VMQ-50-YE 3.1339 mm (Material 1) 3.1566 mm (Material 2) 3.0846 mm (Material 3) C-VMQ-50-GR 3.1267 mm (Material 1) 3.1271 mm (Material 2) 3.1154 mm (Material 3) C-VMQ-50-BK 3.1090 mm (Material 1) 3.1002 mm (Material 2) 3.1682 mm (Material 3) C-VMQ-60-BK 3.1083 mm (Material 1) 3.1896 mm (Material 2) 3.0614 mm (Material 3)	P

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
	Thickness of the specimen after test a) (mm), compression set after test a) (%).....:	C-VMQ-50-TR 3.0352 mm (Material 1) 3.0426 mm (Material 2) 2.9777 mm (Material 3) C-VMQ-40-GR 3.1519 mm (Material 1) 3.1509 mm (Material 2) 3.1729 mm (Material 3) C-VMQ-60-GR 3.1728 mm (Material 1) 3.1611 mm (Material 2) 3.1843 mm (Material 3) C-VMQ-30-BK 3.1994 mm (Material 1) 3.1527 mm (Material 2) 3.2324 mm (Material 3) C-VMQ-30-BL 3.1314 mm (Material 1) 3.1633 mm (Material 2) 3.1029 mm (Material 3) C-VMQ-40-BK 3.2080 mm (Material 1) 3.1526 mm (Material 2) 3.1185 mm (Material 3) C-VMQ-50-YE 3.1289 mm (Material 1) 3.1495 mm (Material 2) 3.0815 mm (Material 3) C-VMQ-50-GR 3.1143 mm (Material 1) 3.1243 mm (Material 2) 3.1058 mm (Material 3) C-VMQ-50-BK 3.1069 mm (Material 1) 3.0857 mm (Material 2) 3.1430 mm (Material 3) C-VMQ-60-BK 3.1029 mm (Material 1) 3.0896 mm (Material 2) 3.0618 mm (Material 3)	P

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Clause	Requirement + Test	Result - Remark	Verdict
	Thickness of the specimen after test b) (mm), compression set after test b) (%).....:	Type: C-VMQ-50-TR 3.0170 mm (Material 1) 3.0368 mm (Material 2) 2.9677 mm (Material 3) C-VMQ-40-GR 3.1598 mm (Material 1) 3.1538 mm (Material 2) 3.1538 mm (Material 3) C-VMQ-60-GR 3.1717 mm (Material 1) 3.1709 mm (Material 2) 3.1763 mm (Material 3) C-VMQ-30-BK 3.1974 mm (Material 1) 3.1286 mm (Material 2) 3.2304 mm (Material 3) C-VMQ-30-BL 3.1214 mm (Material 1) 3.1554 mm (Material 2) 3.0826 mm (Material 3) C-VMQ-40-BK 3.2118 mm (Material 1) 3.1289 mm (Material 2) 3.1339 mm (Material 3) C-VMQ-50-YE 3.1262 mm (Material 1) 3.1401 mm (Material 2) 3.0738 mm (Material 3) C-VMQ-50-GR 3.1108 mm (Material 1) 3.1229 mm (Material 2) 3.1013 mm (Material 3) C-VMQ-50-BK 3.1018 mm (Material 1) 3.0849 mm (Material 2) 3.1348 mm (Material 3) C-VMQ-60-BK 3.0932 mm (Material 1) 3.0849 mm (Material 2) 3.0427 mm (Material 3)	P

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
	Thickness of the specimen after test c) (mm), compression set after test c) (%).....:	Type: C-VMQ-50-TR 3.0459 mm (Material 1) 3.0432 mm (Material 2) 2.9809 mm (Material 3) C-VMQ-40-GR 3.1555 mm (Material 1) 3.1418 mm (Material 2) 3.1644 mm (Material 3) C-VMQ-60-GR 3.1574 mm (Material 1) 3.1701 mm (Material 2) 3.1669 mm (Material 3) C-VMQ-30-BK 3.2018 mm (Material 1) 3.1305 mm (Material 2) 3.2368 mm (Material 3) C-VMQ-30-BL 3.1306 mm (Material 1) 3.1574 mm (Material 2) 3.0933 mm (Material 3) C-VMQ-40-BK 3.1912 mm (Material 1) 3.1389 mm (Material 2) 3.1126 mm (Material 3) C-VMQ-50-YE 3.1278 mm (Material 1) 3.1482 mm (Material 2) 3.0683 mm (Material 3) C-VMQ-50-GR 3.1029 mm (Material 1) 3.1236 mm (Material 2) 3.1107 mm (Material 3) C-VMQ-50-BK 3.0906 mm (Material 1) 3.0778 mm (Material 2) 3.1465 mm (Material 3) C-VMQ-60-BK 3.1016 mm (Material 1) 3.0780 mm (Material 2) 3.0504 mm (Material 3)	P
	Visible cracks or deterioration .....:	There was no visible cracking or other adverse effect of the conditioned material.	P
D.4	Oil immersion test		N/A
	Swelling (%) .....:		N/A
	Shrinking (%).....:		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
E	**ANNEX E, RATIONALE**		—
E.1	General		—
E.2	Electric shock		—
E.3	Energy related hazards		—
E.4	Fire		—
E.5	Mechanical hazards		—
E.6	Heat related hazards		—
E.7	Radiation		—
E.8	Chemical hazards		—
E.9	Biological hazards		—
E.10	Explosion hazards		—

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

8.2	**TABLE: Resistance to ultra-violet radiation**		
8.2a)	**Tensile strength test (ISO 527)**		N/A
Material identification (manufacturer, type designation) .....:			—
Shape and dimensions of test samples.....:			—
Conditioning for Set 1 of samples .....:			—
Conditioning for Set 2 of samples (including Annex C) .....:			—
Test conditions (T °C, RH %) .....:			—
Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Tensile strength (MPa)	Test sample #	Tensile strength (MPa)
Arithmetic mean for Set 1 (MPa) .....:			
Arithmetic mean for Set 2 (MPa) .....:			
Retention (%).....:			
Supplementary information:			

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

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

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

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

Supplementary information:

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

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

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

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

Supplementary information:

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

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

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

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

Supplementary information:

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

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

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

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

Supplementary information:

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

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

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

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

Supplementary information:

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Clause	Requirement + Test	Result - Remark	Verdict

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

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

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

Supplementary information:

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

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

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

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

Supplementary information:

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

	TABLE: Critical components information				N/A
Object / part No.	**Manufacturer/ trademark**	**Type / model**	**Technical data**	**Standard**	**Mark(s) of conformity[1)]**
(see separate test report E158873-A6034)					
Supplementary information: [1)] Provided evidence ensures the agreed level of compliance. See OD-CB2039.					

ATTACHMENT TO TEST REPORT IEC 60950-22
NATIONAL DIFFERENCES
Information Technology Equipment – Safety – Part 22: Equipment to be Installed Outdoors
Part 1: General requirements

Differences according to .....:	CSA/UL 60950-22:2017, Issued for Canada and USA;
Attachment Form No.....:	IEC60950_22B
Attachment Originator .....:	UL
Master Attachment.....:	Date 2017_03

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IEC 60950-22 - Canada and US National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
1.2	For protection of ITE against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72-M87 (R2003) for additional requirements.		N/A
2	All references to IEC 60950-1 in this standard are replaced by the equivalent UL 60950-1 and CSA 60950-1 Standards. All relevant Standards referenced in the Part 1 Standard (Annex P, including P.1 and P.2) also apply to this Part 22 Standard and are not listed below. All references to clauses and sub-clauses in IEC 60950-1 are to the second edition. If the relevant clause or subclause has been renumbered in IEC 60950-1, second edition, the first edition reference is identified in parentheses directly after the second edition reference.		P
4	Applicable parts of Chapter 8 of the NEC and Rules 54 and 60 of the CEC may be applicable to ITE installed outdoors with connections to communication systems.		N/A
4.2.1	Power supply cords are to be suitable outdoor use type as required by Section 400-4 of the NEC and Rule 4-012 of the CEC, i.e., marked “water resistant,” “outdoor,” “W” or “W-A.”		N/A
4.2.1	Surge Arrestors and Transient Voltage Surge Suppressors installed external to the ITE are required to comply with the appropriate NEC and CEC requirements.		N/A

IEC 60950-22 - Canada and US National Differences			
Clause	Requirement + Test	Result - Remark	Verdict
5	Outdoor Enclosures are required to be classified and marked in accordance with UL 50 or 50E, or CAN/CSA C22.2 No. 94 or 94.2		P
6.3	Receptacles, rated 125-V, single phase, 15- or 20-A accessible to either ordinary, instructed, or skilled persons shall be provided with GFCI Protection for Personnel if the equipment containing the receptacles is installed outdoors. The protection devices shall comply with UL 943, and CAN/CSA C22.2 No.144.		N/A
7	Applicable parts of the NEC, NFPA 70; the National Electrical Safety Code, ANSI/IEEE C2; and Canadian Electrical Code, Part I, CSA C22.1; Canadian Electrical Code, Part III, CSA C22.3, are required, as appropriate.		P
7	Wiring terminals intended to supply Class 2 outputs are required per Article 725 of the NEC and Rule 16 of the CEC to be marked.		N/A
11	Requires stationary installations of storage batteries external to the ITE to comply with Article 480 of the NEC and Rule 26-540 of the CEC.		N/A

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Photographs-02 Page-1

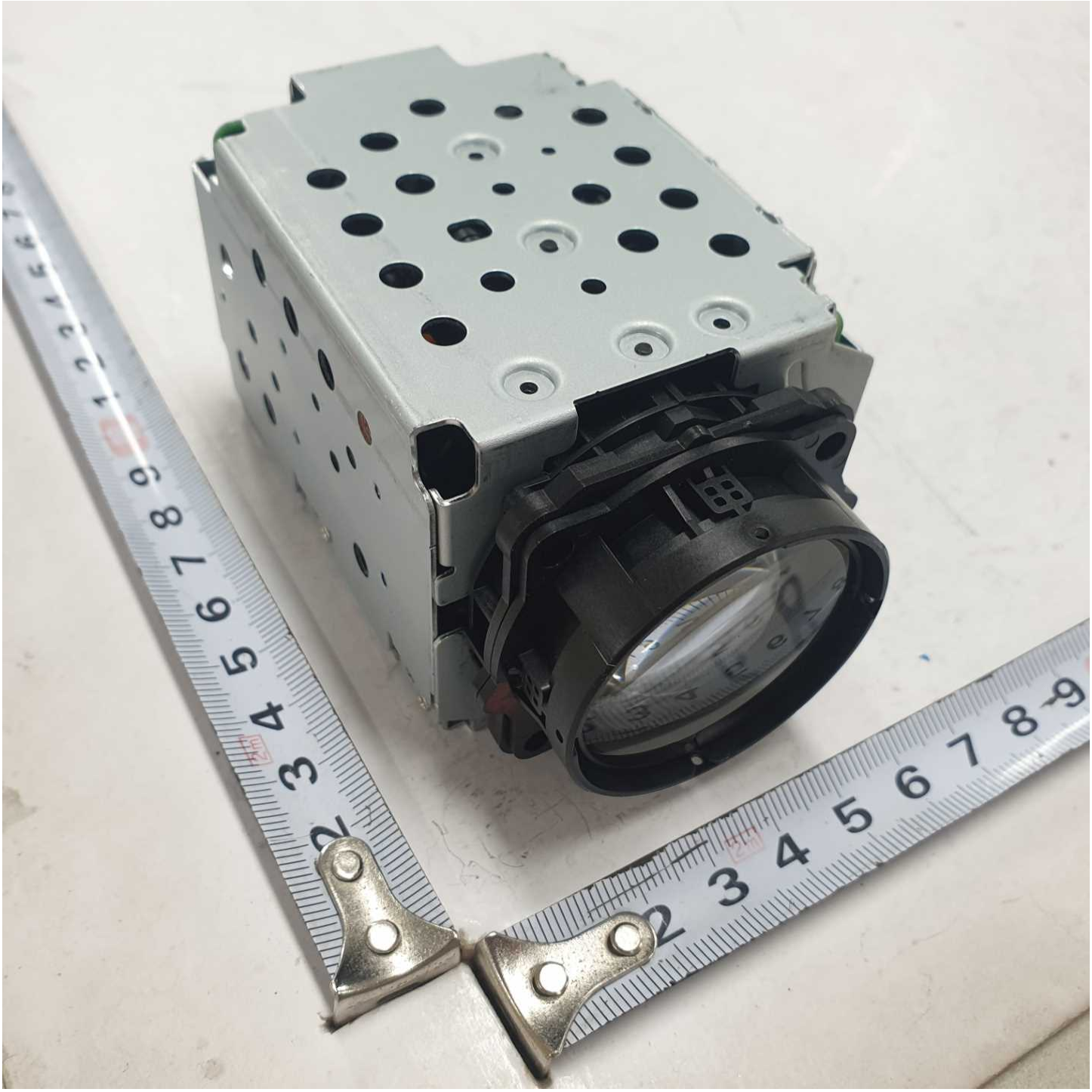
Photographs-03 Page-1

Photographs-04 Page-1

Photographs-05 Page-1

Photographs-06 Page-1

Photographs-07 Page-1



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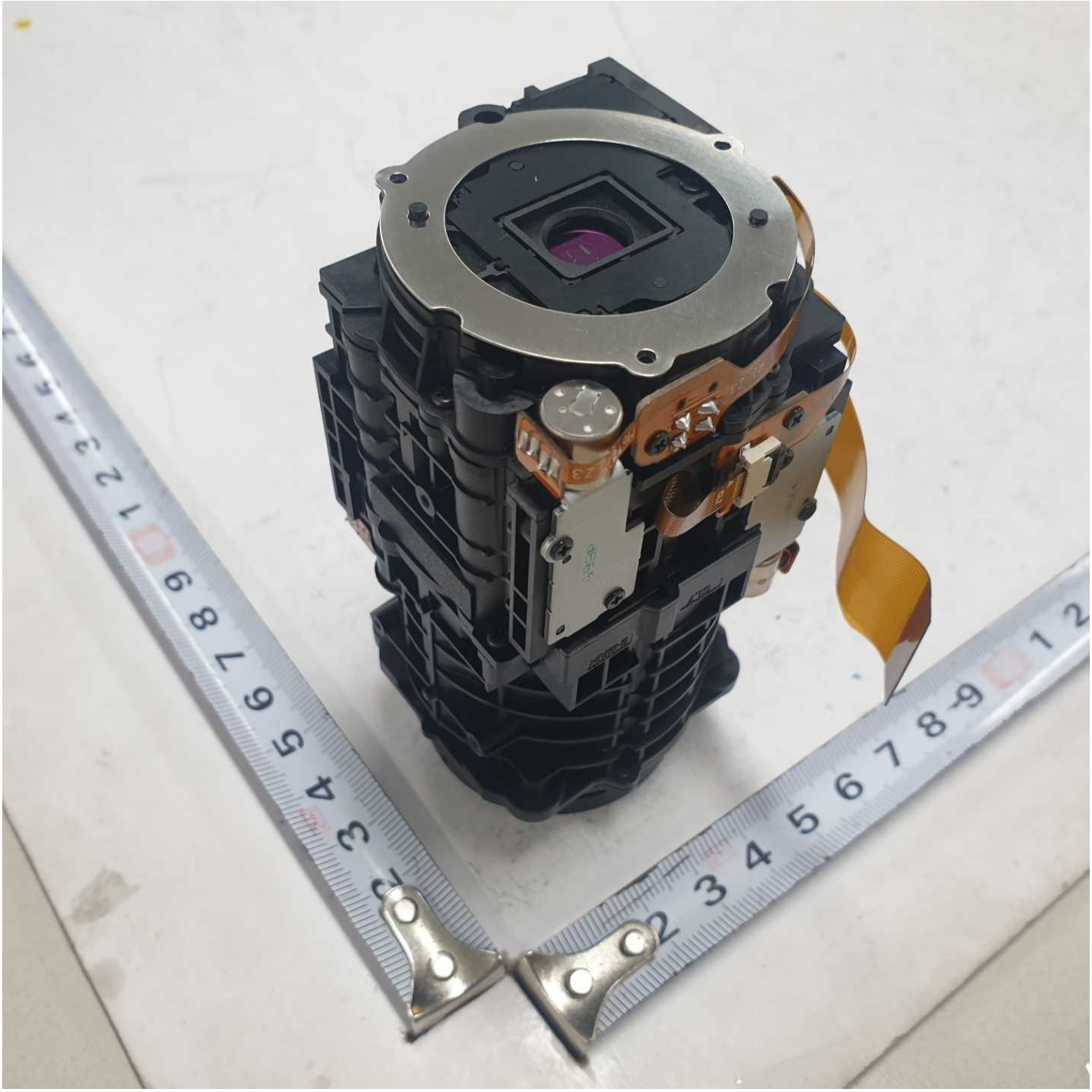

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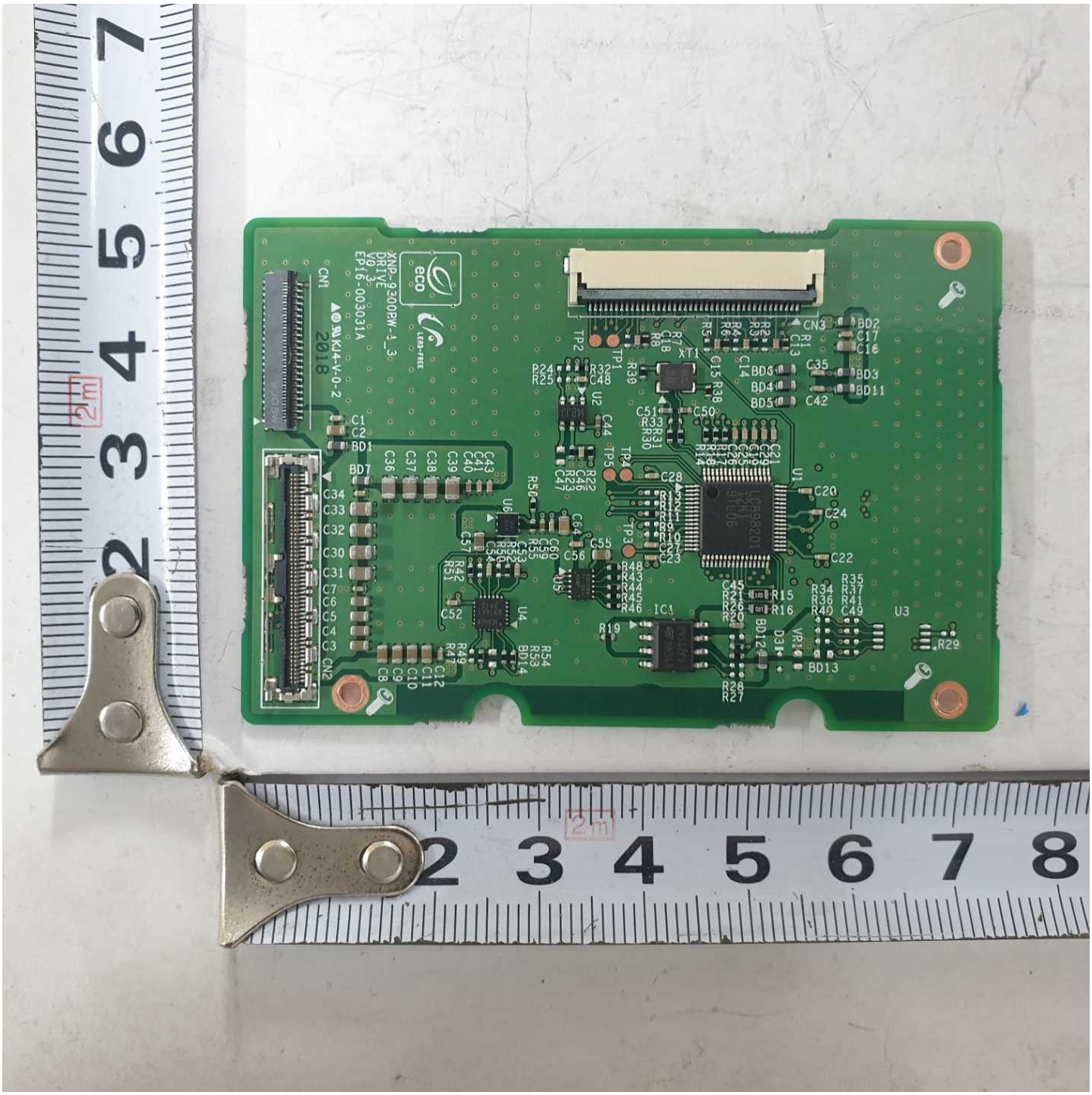

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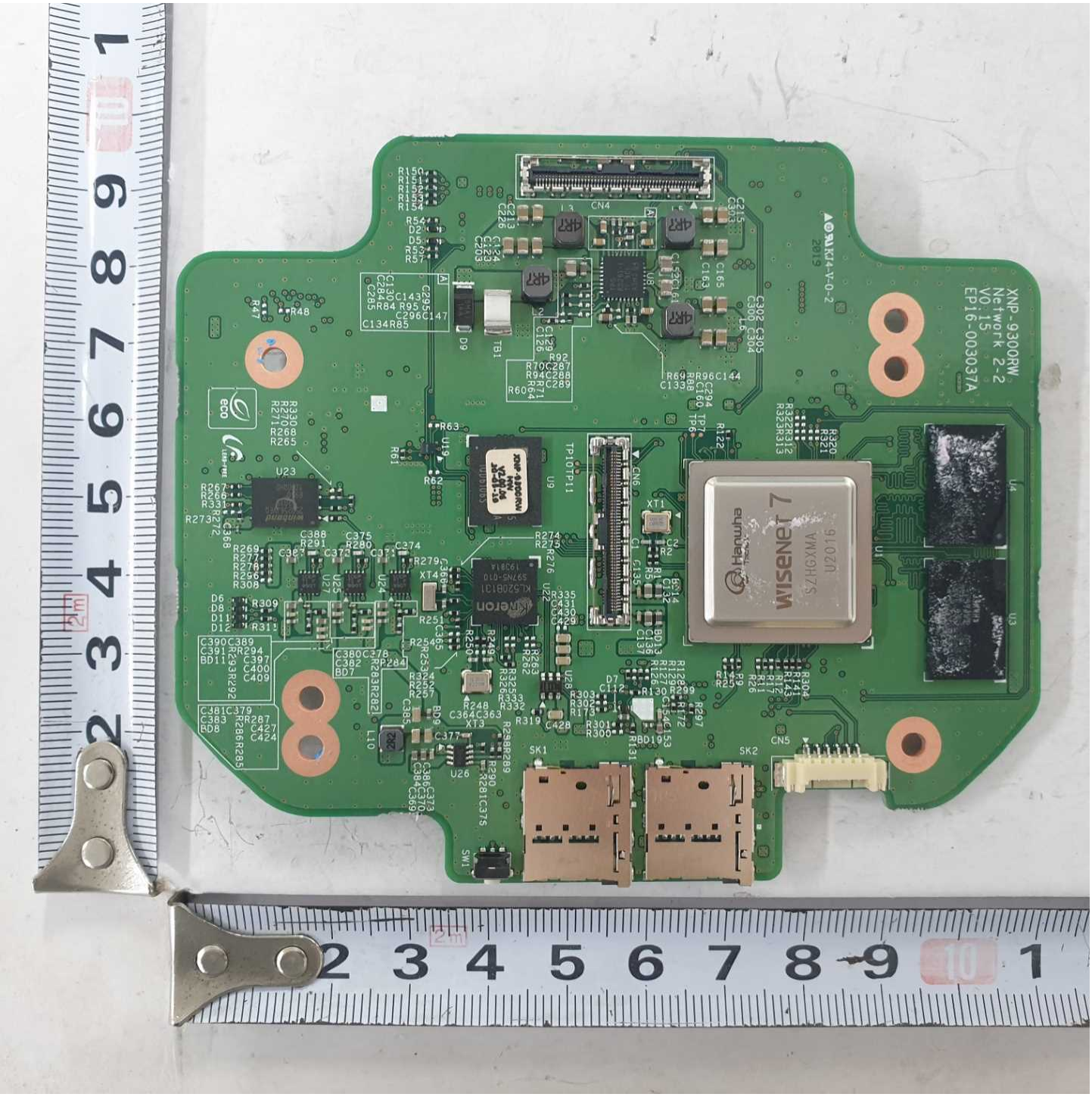

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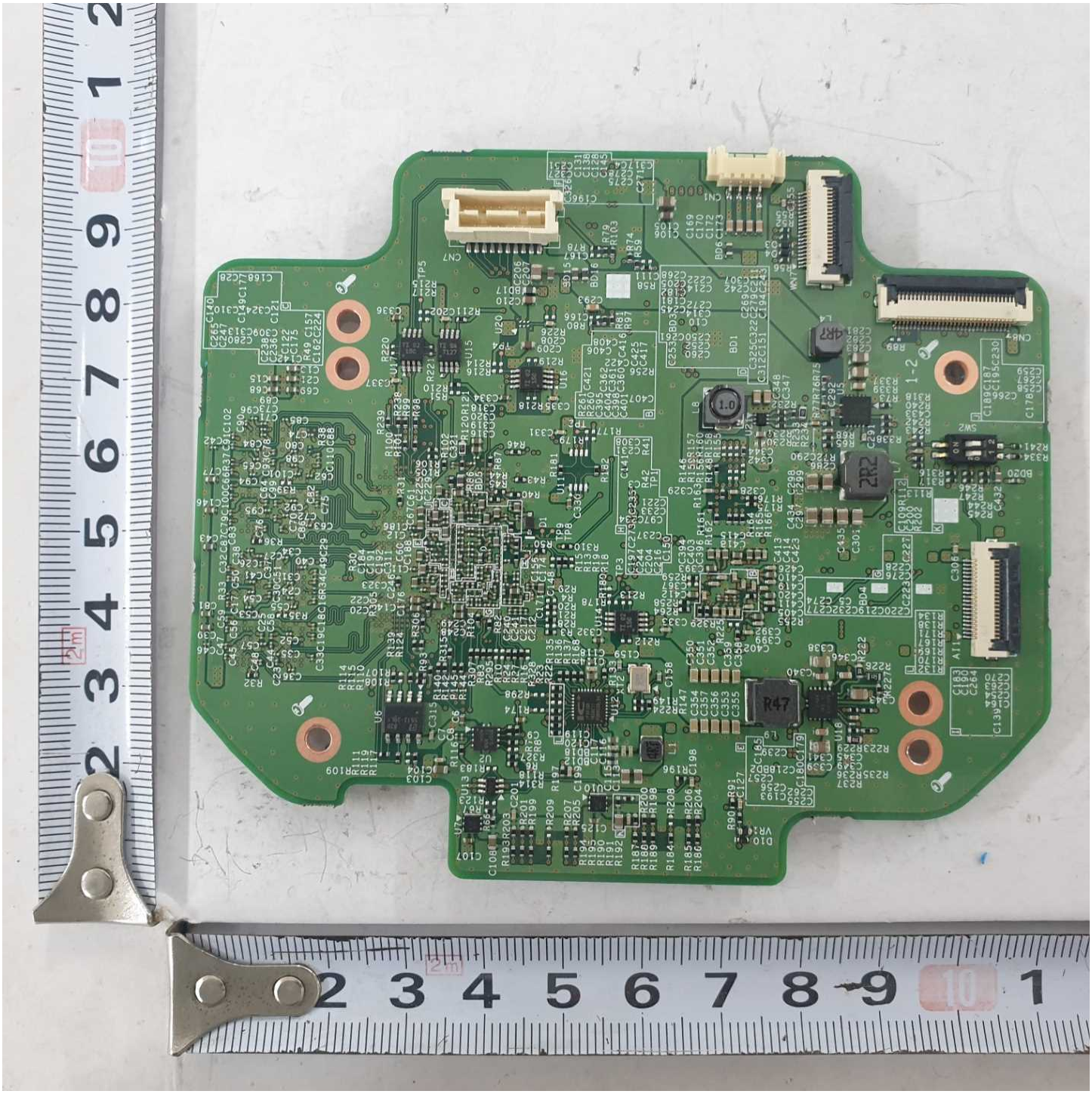

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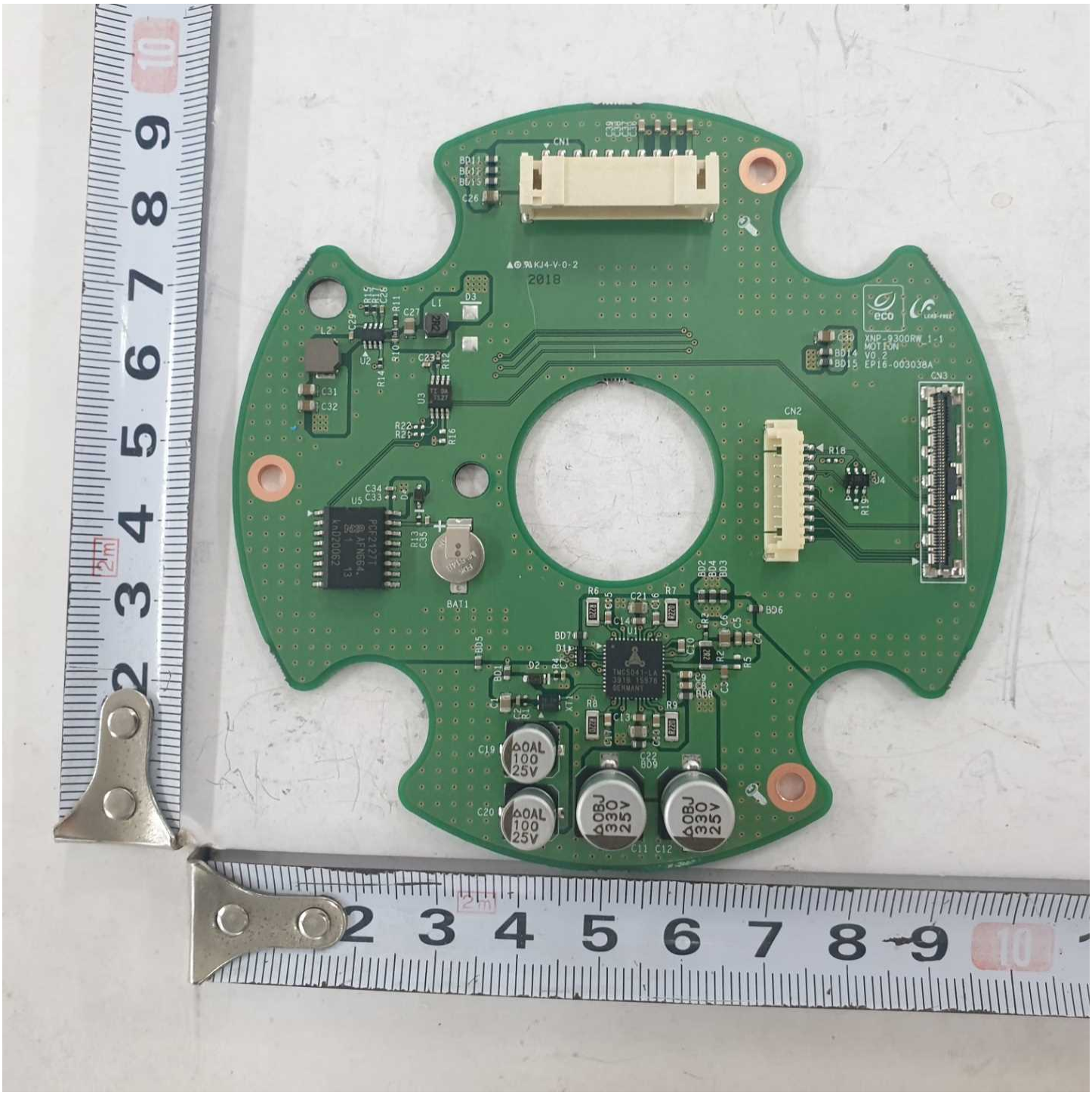

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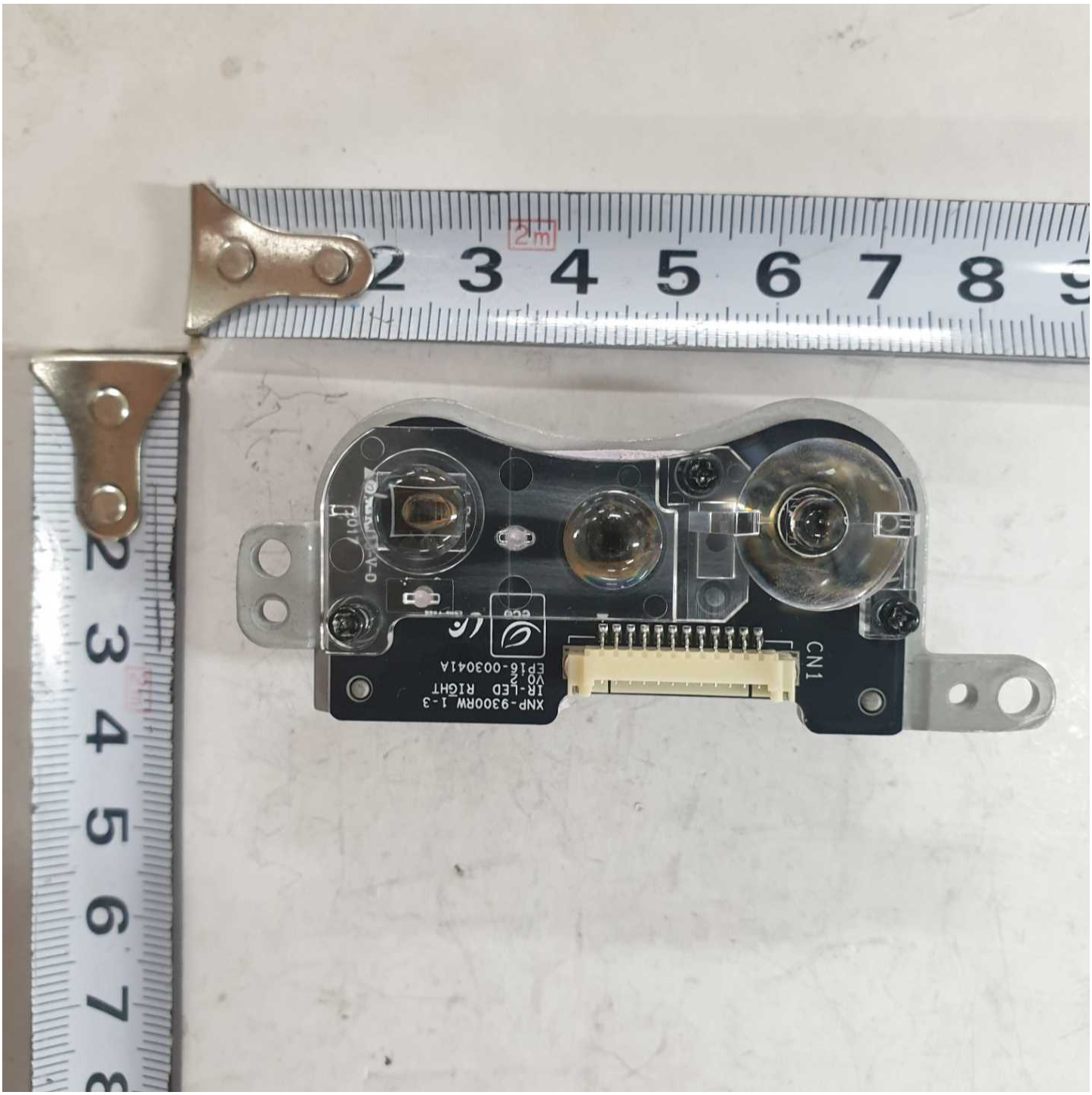

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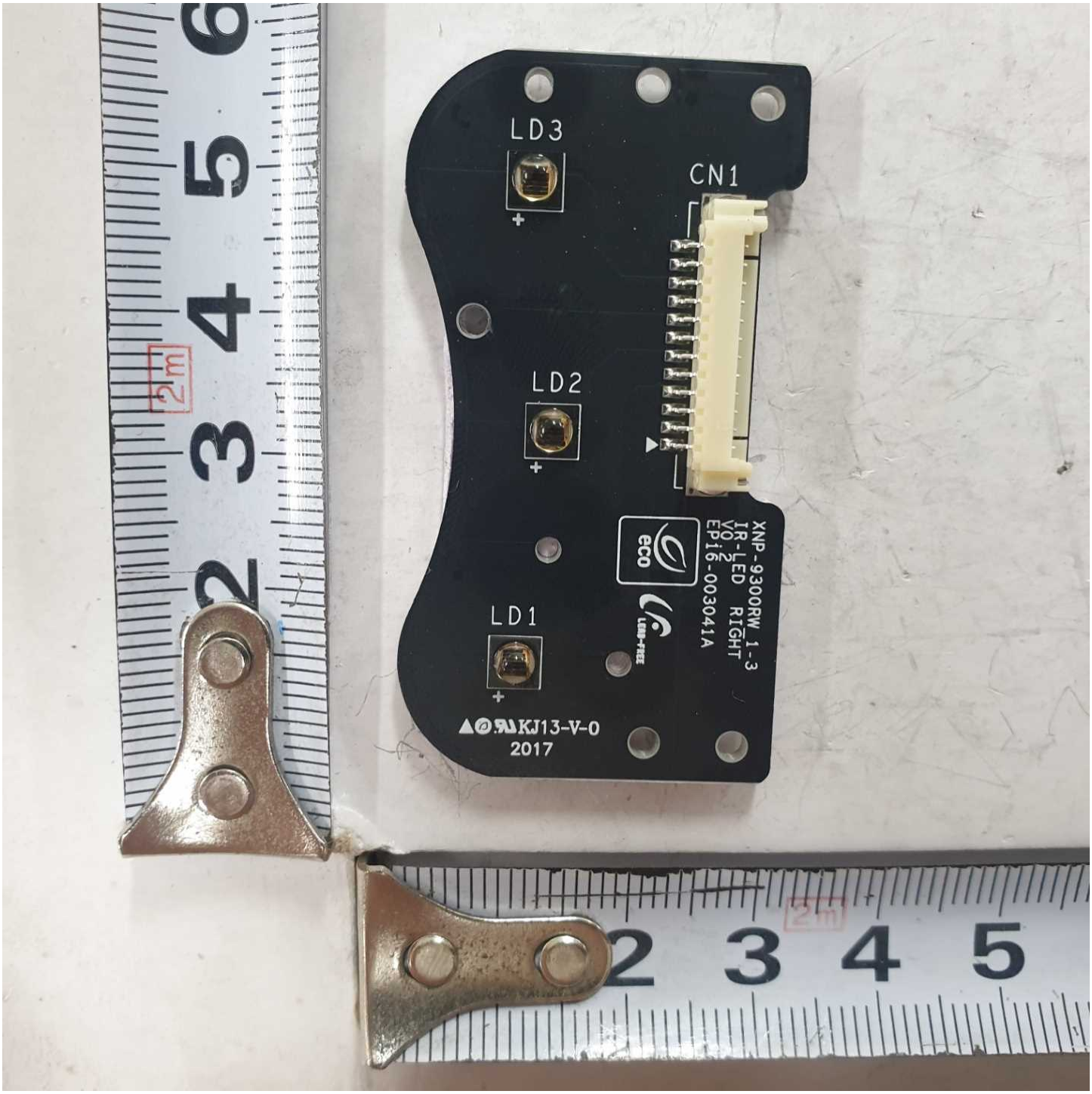

Photographs-15 Page-1

Test Record No. 1

1. Test result relate only to the items tested.
2. The manufacturer submitted representative production samples of NETWORK CAMERA, PNM-9000VQ.
3. Only the test listed were considered necessary.

The following tests were conducted:

Tests performed (name of test and test clause):	**Testing location:** CTK Co., Ltd., 386-1 Ho-dong Yongin-shi, Kyungki-do, 449-100, Korea
MAXIMUM OPERATING TEMPERATURE FOR MATERIALS, COMPONENTS AND SYSTEMS (5.4.1.4, 6.2, 9.2.5 ANNEX B.2)	
DETERMINATION OF WORKING VOLTAGE (5.4.1.8)	
WALL OR CEILING MOUNTING TESTS (8.7)	
INPUT TEST: SINGLE PHASE (B.2.5)	
SIMULATED ABNORMAL OPERATING CONDITIONS (B.3)	
SIMULATED SINGLE FAULT CONDITIONS (B.4)	
PROTECTION CIRCUITS FOR BATTERIES (ANNEX M.3.2)	
The following tests were waived:	**Rationale for Waiving**

Test results are valid only for the tested equipment. These tests are considered representative of the products covered by this Test Report. The test methods and results of the above tests have been reviewed and found to be in accordance with the requirements in the Standard(s) referenced at the beginning of this Test Report.

The following supplements are provided as part of this Test Record. NOTE: These supplements are only available to the Applicant via the myUL™ Client Portal.

Type	Supplement Id	Description
Datasheet	02-01	Datasheet
Datasheet	02-02	Datasheet (Outdoor test)

Test Record No. 2

1. Test result relate only to the items tested.
2. The manufacturer submitted representative production samples below.
- O-ring type gasket (O-VMQ-30-BK, O-VMQ-30-RE, O-VMQ-30-GR, O-VMQ-40-BK, O-VMQ-50-BK, O-VMQ-50-BL, O-VMQ-50-RE, O-VMQ-50-OR, O-VMQ-60-BK, O-VMQ-70-RE, O-VMQ-70-GR, O-VMQ-70-BK)
- Closeed cell type gasket (C-VMQ-40-GR, C-VMQ-60-GR)
3. Only the test listed were considered necessary.
4. Datasheet attached Test Referece page.

The following tests were conducted:

Tests performed (name of test and test clause): None	**Testing location: None**
The following tests were waived: None	**Rationale for Waiving**

Test results are valid only for the tested equipment. These tests are considered representative of the products covered by this Test Report. The test methods and results of the above tests have been reviewed and found to be in accordance with the requirements in the Standard(s) referenced at the beginning of this Test Report.

The following supplements are provided as part of this Test Record. NOTE: These supplements are only available to the Applicant via the myUL™ Client Portal.

Type	Supplement Id	Description

Test Record No. 3

1. Test result relate only to the items tested.
2. The manufacturer submitted representative production samples below.
- Closeed cell type gasket (C-VMQ-30-BK, C-VMQ-30-BL, C-VMQ-40-BK, C-VMQ-50-YE, C-VMQ-50-GR, C-VMQ-50-BL, C-VMQ-60-BK)
3. Only the test listed were considered necessary.
4. Datasheet attached Test Referece page.

The following tests were conducted:

Tests performed (name of test and test clause): None	**Testing location: None**
The following tests were waived: None	**Rationale for Waiving**

Test results are valid only for the tested equipment. These tests are considered representative of the products covered by this Test Report. The test methods and results of the above tests have been reviewed and found to be in accordance with the requirements in the Standard(s) referenced at the beginning of this Test Report.

The following supplements are provided as part of this Test Record. NOTE: These supplements are only available to the Applicant via the myUL™ Client Portal.

Type	Supplement Id	Description

Test Record No. 4

No test was considered necessary in order to correct typo error.

The following tests were conducted:

Tests performed (name of test and test clause): None	**Testing location: None**
The following tests were waived: None	**Rationale for Waiving**

Test results are valid only for the tested equipment. These tests are considered representative of the products covered by this Test Report. The test methods and results of the above tests have been reviewed and found to be in accordance with the requirements in the Standard(s) referenced at the beginning of this Test Report.

The following supplements are provided as part of this Test Record. NOTE: These supplements are only available to the Applicant via the myUL™ Client Portal.

Type	Supplement Id	Description