



JEISOON KANG
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SEONGNAM-SI GYEONGGI-DO 13488 KOREA

Date: 2020/09/08
Subscriber: 813307003
PartySite: 105140
File No: E158873
Project No: 4789564588
PD No: 20044008
Type: R
PO Number: LEE, MINJU

Subject: **Procedure And/Or Report Material**

The following material resulting from the investigation under the above numbers is enclosed.

Issue

<u>Date</u>	<u>Vol</u>	<u>Sec</u>	<u>Pages</u>	<u>Revised Date</u>
	X13		Index Page(s)	
2020/09/03	X13	A6032	Cert of Compliance	
2020/09/03	X13	A6032	Add New Proc/Report Sect	

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Please file revised pages and illustrations in place of material of like identity. New material should be filed in its proper numerical order.

NOTE: Follow-Up Service Procedure revisions DO NOT include Cover Pages, Test Records and Conclusion Pages. Report revisions DO NOT include Authorization Pages, Indices, Section General Pages and Appendixes.

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NBK File

File		Volume	Page	Date:
E158873	Index	X13	1	03-Sep-20

Index

<u>Product Type</u>	<u>Model/Type Reference</u>	<u>Report Reference #</u>	<u>Status</u>
NETWORK VIDEO RECORDER	XRN-6410B4, XRN-3210B4	E158873-A6027-UL	
NETWORK VIDEO RECORDER	PRN-6410B4, PRN-3210B4, XRP-4210B4	E158873-A6028-UL	
NETWORK VIDEO RECORDER	XRN-6410DB4	E158873-A6029-UL	
NETWORK VIDEO RECORDER	PRN-6410DB4, XRP-4310DB4	E158873-A6030-UL	
NETWORK CAMERA	PNM-9002VQ	E158873-A6031-UL	
NETWORK CAMERA	XNF-9010RV, XNF-9010RVM	E158873-A6032-UL	

CERTIFICATE OF COMPLIANCE

Certificate Number E158873
Report Reference E158873-A6032-UL
Issue Date 2020-SEPTEMBER-08

Issued to: Hanwha Techwin Co Ltd
6, Pangyo-ro 319beon-gil, Bundang-gu
Seongnam-si Gyeonggi-do 13488 KOREA

This certificate confirms that
representative samples of

AUDIO/VIDEO, INFORMATION AND COMMUNICATION
TECHNOLOGY EQUIPMENT
NETWORK CAMERA
XNF-9010RV, XNF-9010RVM

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.

Standard(s) for Safety:

UL 62368-1 and CAN/CSA C22.2 No. 62368-1-14-
Audio/video, information and communication technology
equipment Part 1: Safety requirements

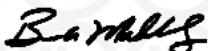
Additional Information:

See the UL Online Certifications Directory at
<https://iq.ulprospector.com> for additional information.

This *Certificate of Compliance* does not provide authorization to apply the UL Mark. Only the UL Follow-Up Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program
UL LLC

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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-(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:	XNF-9010RV, XNF-9010RVM
Rating:	12 Vdc 0.92 A or PoE (48 Vdc) 0.27 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.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

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: SeungTae Kim / Reviewer

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

Network camera has been designed for Indoor use and integrated a bracket for wall or ceiling mount.

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

Model Differences

XNF-9010RV is basic model.

XNF-9010RVM is identical to basic model except model designation and cable type (M12 Cable).

Test Item Particulars

Classification of use by	Instructed person
Supply Connection	External Circuit - not Mains connected ES1
Supply % Tolerance	None
Supply Connection – Type	DC or 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	IPX0
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)	0.99

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (T_{ma}) permitted by the manufacturer's specification of : 60 °C
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual

Additional Information

4789564588

- Maximum Normal Load: Continuous operation with LED on.

Additional Standards

The product fulfills the requirements of: N/A

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.
Hard Copy	A. IMPORTANT B. Please check 'Manuals' from our 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 12 Vdc 0.92 A or PoE (48 Vdc) 0.27 A.

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

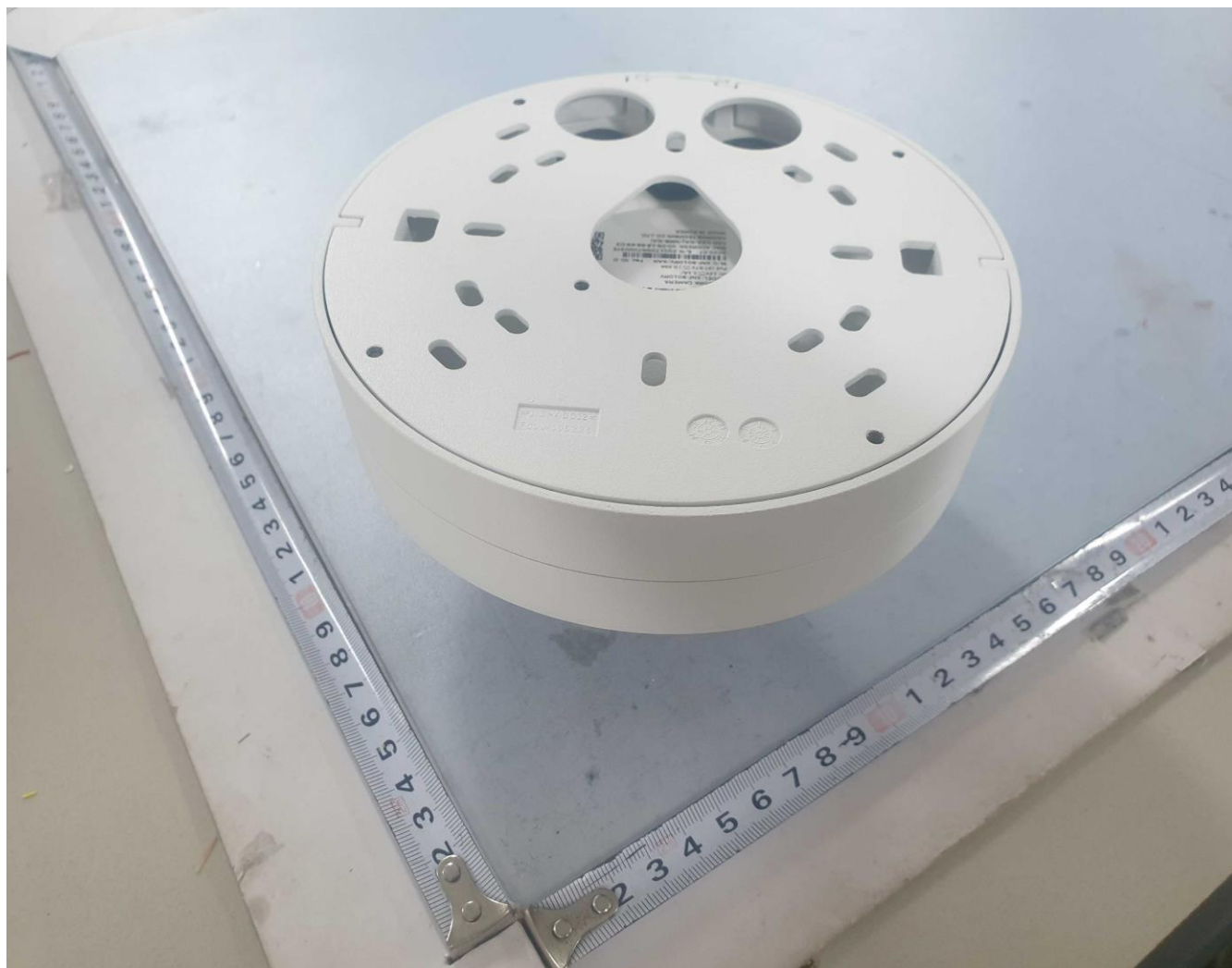
4.1.2	TABLE: List of critical components					Pass
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Product Category CCN(s)	Mark(s) of conformity	Supplement ID
Transparent Cover Enclosure (Plastic)	MITSUBISHI ENGINEERING- PLASTICS CORP	S-2000V+(f1), S- 2001V+(f1), S- 2003V+(f1)	Min. 1.5 mm thick, rated V-2, 115 deg. C	QMFZ2	UL (E41179)	
Transparent Cover Side Enclosure (Plastic)	LOTTE CHEMICAL CORPORATION	SC-122(+)	Min. 0.75mm thick, rated V-2, 80 deg. C.	QMFZ2	UL (E115797)	
Transparent Cover Side Enclosure (Plastic) - Alternate	SABIC JAPAN L L C	143(f1),143R(f1)	Min. 0.75 mm thick, rated HB, 120 deg. C.	QMFZ2	UL (E207780)	
External Side Enclosure (Metal)	Interchangeable	Interchangeable	Aluminium, Min. 2.0 mm thickness	-	-	
External Bottom Enclosure (Metal)	Interchangeable	Interchangeable	Aluminium, Min. 2.0 mm thickness.	-	-	
External Bracket Enclosure (Metal) (Fire / Mech / Elec)	Interchangeable	Interchangeable	Aluminium, Min. 2.0 mm thickness.	-	-	
Internal Plastic Part Materials	Interchangeable	Interchangeable	Min. HB	QMFZ2	UL	
LED 1(6EA, LD11, LD12, LD21, LD22, LD31, LD32)	OSRAM	SHF4714A	VF=2.3Vdc(max), IF=1.0A(max)	-	-	
LED 2(4EA, LD41, LD42, LD43, LD44)	OSRAM	SHF4713A	VF=2.3Vdc(max), IF=1.0A(max)	-	-	
Fuse (F2)	SEMITELELECTRONICS CO LTD	S6125S	125 V, 1.5 A	JDYX2/8	UL (E338954)	
Line Filter (T5)	TNC CO.,LTD	CH005200SM2	130 deg.C, See enclosure for more detail.	-	-	

Transformer(T3)	SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO.,LTD	PDT25117SR	130 deg.C, See enclosure for more detail.	-	-	
Opto-coupler (LS2)	LITE-ON TECHNOLOGY CORP	LTV-816	Isolation Voltage: 5300. Max. Operation Temperature:110 deg. C	FPQU2/8	UL (E113898)	
Coin battery(BAT1)	FDK CORPORATION	ML614R	Lithium (Coin), Rechargeable, Max Charging Voltage, 5V dc, Max Charging current: 300 mA	BBCV2	UL (MH13421)	
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	
Thermal Pad	KOMOTECH CO LTD	KGP-1(a)	Min. 0.2 mm thickness, rated V-0, 150 deg. C	QMFZ2	UL (E245303)	
Cable	Interchangeable	Interchangeable	Marked VW-1; Min. 30 V, 80 deg. C	AVLV2	UL	
FFC	Interchangeable	Interchangeable	Marked VW-1, 60 V, 105 deg.C.	AVLV2	UL	
Label	Interchangeable	Interchangeable	Min. 60 deg.C if max. surface temperature not specified.	PGDQ2 or PGJI2	UL	
PWB	Interchangeable	Interchangeable	Min. V-0, 105 deg. C.	ZPMV2	UL	

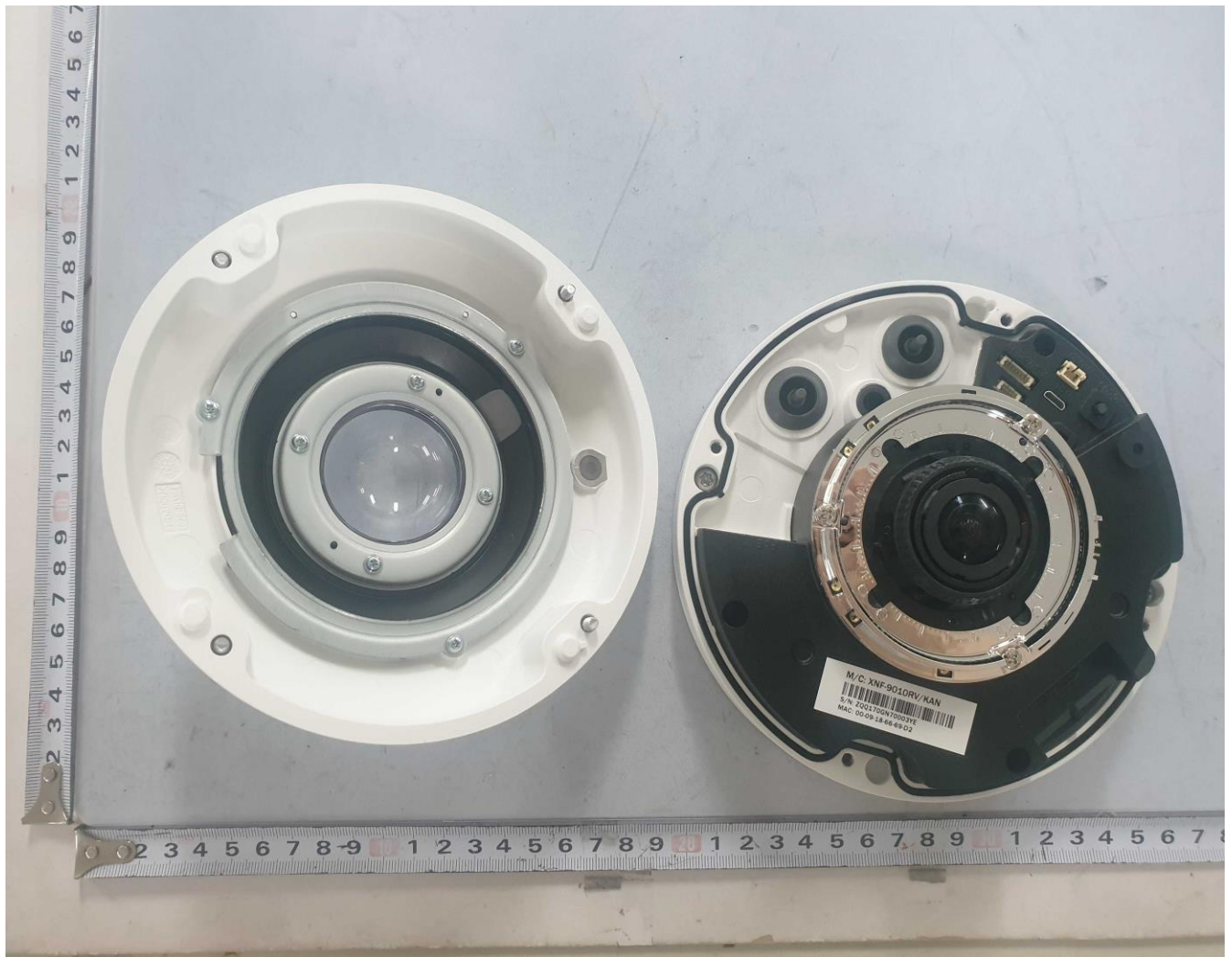
Enclosures

Type	Supplement Id	Description
Photographs	03-01	Overall View -1
Photographs	03-02	Overall View -2
Photographs	03-03	Lens Module
Photographs	03-04	Internal View -1
Photographs	03-05	Internal View -2
Photographs	03-06	Main Board (Top)
Photographs	03-07	Main Board (Bottom)
Diagrams	04-01	Enclosure Dimension
Manuals	06-01	Manual
Miscellaneous	07-01	PoE Transformer (T3) spec
Miscellaneous	07-02	Dual language safety labeling CRD
Miscellaneous	07-03	Label
Miscellaneous	07-04	Line Filter (T5)

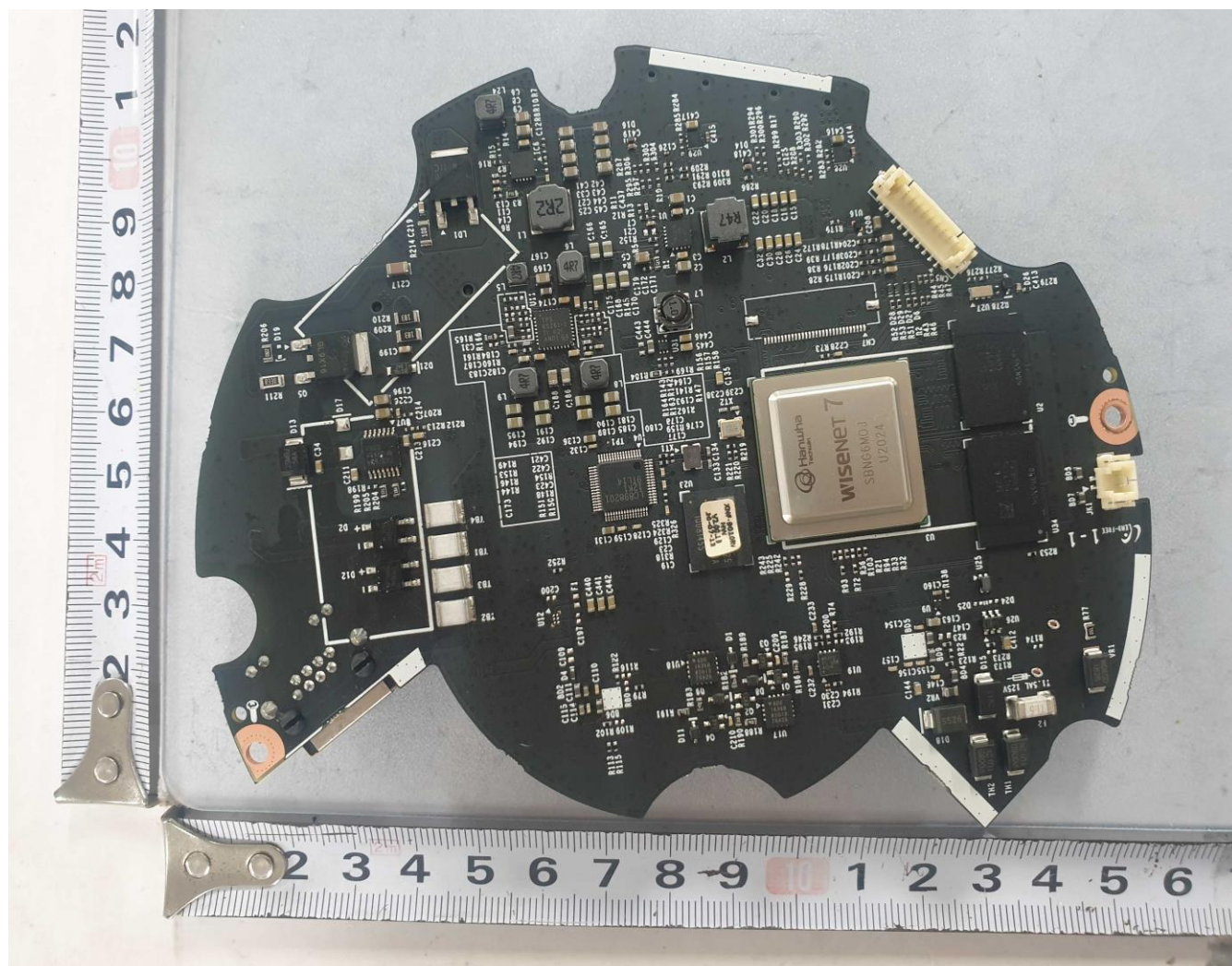


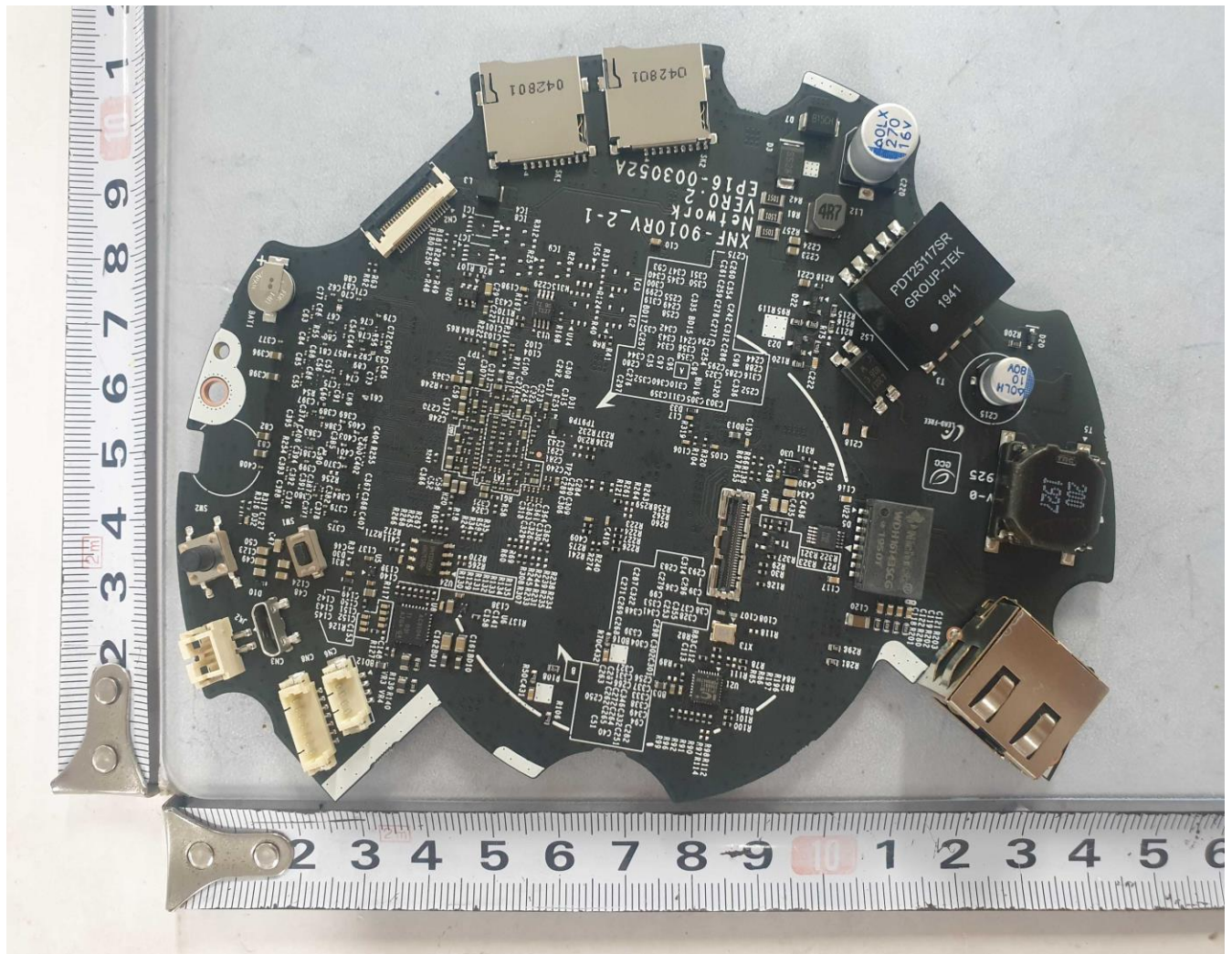


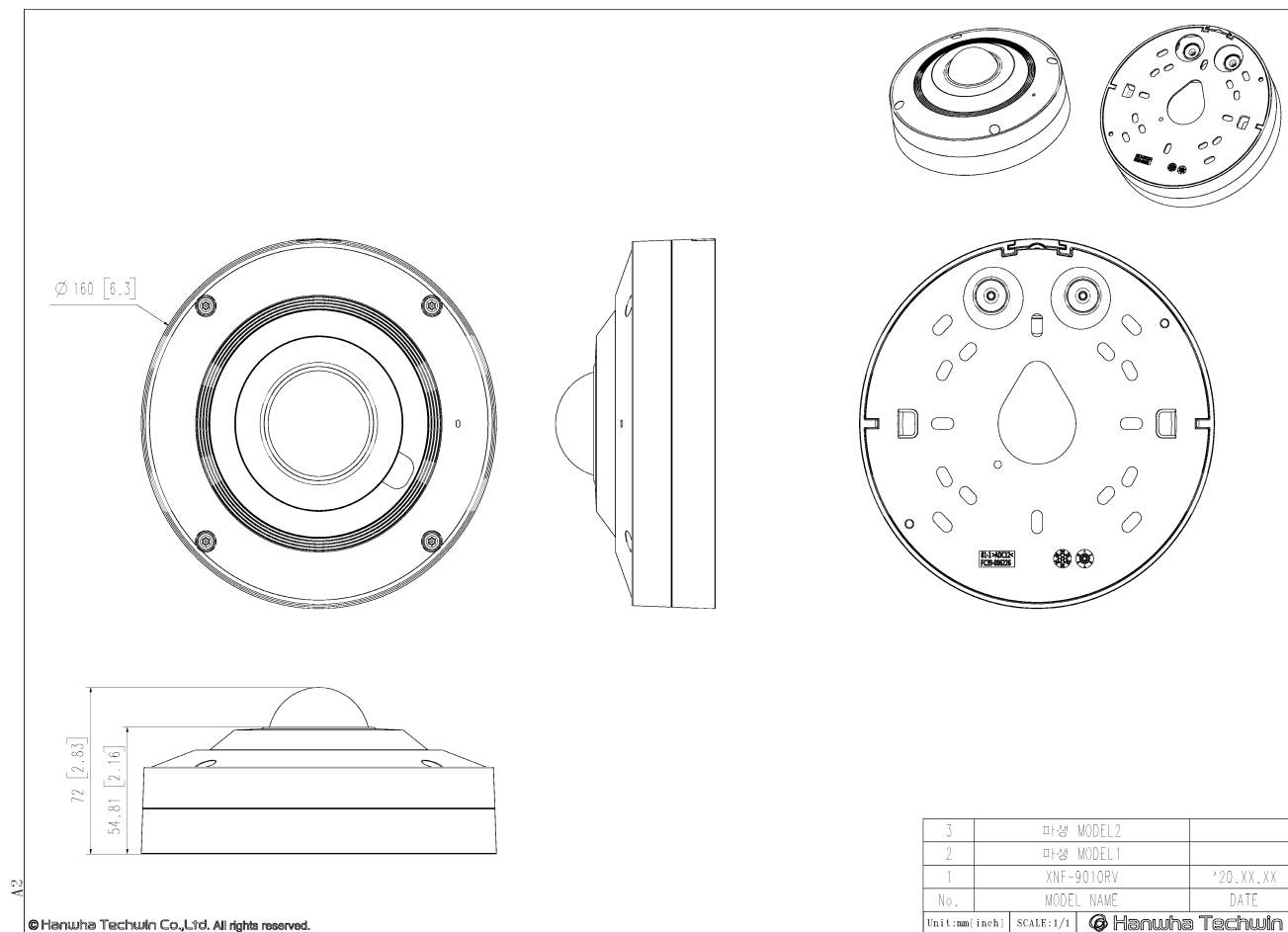












overview

IMPORTANT SAFETY INSTRUCTIONS

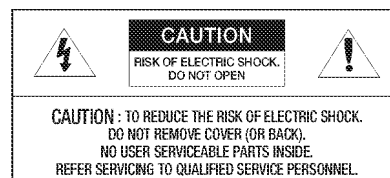
1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean the contaminated area on the product surface with a soft, dry cloth or a damp cloth.
(Do not use a detergent or cosmetic products that contain alcohol, 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 lightning 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 12 Vdc, 1.1 A or PoE, 0.35 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. Although a rapid change in temperature could cause frost inside the dome, there will be no problem with the video.

**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 OPENINGS 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.

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.

The Test Monitor Out port of the product is provided for easier installation, and is not recommended for monitoring purposes.

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

Disconnect the power plug from the outlet before connecting the power terminal block.

When a new product box is opened (or when the product is initially operated), moisture may form on the camera glass. The generated moisture is removed within a few hours after power is connected.

Do not loosen or tighten the Gore valve arbitrarily.

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 802.3.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.

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.

4...overview

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.

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.

XNF-9010RV

XNF-9010RVM

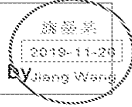
Risk Group 1
WARNING IR emitted from this product. Do not stare at operating lamp.
Product tested against IEC 62471

GROUP-TEK[®]



承 认 书

SPECIFICATION FOR APPROVAL

CUSTOMER	
MODEL NO.	
PART NAME	POWER TRANSFORMER
PART TYPE	PDT25117SR
REV	X3
SIGNATURE	制图:  2019-11-20 Drawn by Lei Wan 审核:  2019-11-20 Checked by GY Gong 批准:  2019-11-20 Approved by Jiang Wang
CUSTOMER APPROVAL	 阮志斌: SIGNET  嘸0 : SIGNATURE

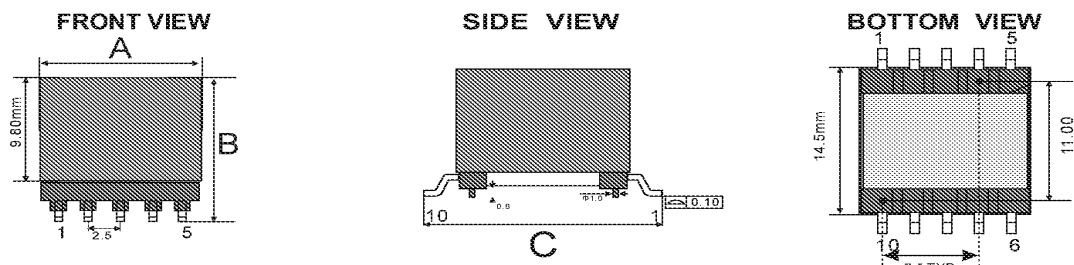
拐 提 攢 旒 壘 某 隼 槐 梟 毒 泐 涓 漈 濬
SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD
 地 址 : 深圳市宝安区石岩街道应人石工业区伟泰路 1 栋 (P. C: 518108)
 ADD: No.1 Block, WeiTai Rd. Ying Ren Shi Industry Park, Shi Yan Sub-District, Bao'An ShenZhen.
 TEL: +86-755-29810619 29810976 FAX: +86-755-29810159
 Http://www.group-tek.com E-mail:sale1@group-tek.com

GROUP-TEK®

A Leading Supplier of Magnetic Components

PDT25117SR

2. Mechanical Dimensions:



Note:

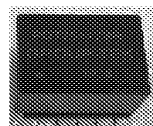
1. Wrap 2Ts of 7mm tape around the finished part.
2. Place the epoxy to fixed the core.
3. Wrap the copper shield for the finished part, then wrap 2T tape.

Unit: mm

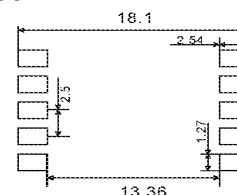
A MAX	B MAX	C MAX
15.0	14.0	17.8

Laser Marking information

PDT25117SR
GROUP-TEK
● YYWW



Suggested PCB Paad Layout



3. Electrical Characteristics :

Specifications: at 25 degree C. Operating Temperature -40 to +105°C			
NO.	ITEM	TEST CONDITION	SPECIFICATION
1	Inductance	(3-2) @100KHz, 1.0V	77.0uH ±15%.
2	Inductance	(4-5) @100KHz, 1.0V	23.0uH ±20%.
3	Inductance	(8,9-6,7) @100KHz, 1.0V	31uH ±20%.
4	Leakage Inductance	(3-2) @100KHz, 1.0V with shorted other pins.	3.0uH Max.
5	DCR	(3-2) @ 25°C	0.20Ω Max.
6		(4-5) @ 25°C	0.15Ω Max..
7		(8,9-6,7) @ 25°C	0.15Ω Max.
8	HI-POT	PRITO SEC	1200Vac 5mA 3Sec.
9	TURN RATIO	(3-2):(8,9-6,7)	1:0.64±2%.
10	TURN RATIO	(3-2):(4-5)	1:0.55±2%.

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PDT25117SR

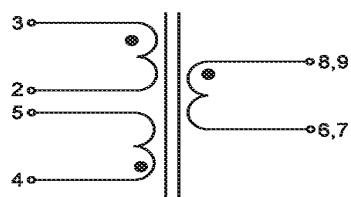
4. Winding Information:

WINDING SEQ.	ST-FN	WIRE/FOIL	TURNS	WRAP INSUL.	MARGIN TAPE	SLEEVE	NOTE
1	3--2	0.30mm 2UEW	22	2T w8.0mm	N/A	N/A	1.
2	8,9--6,7	2*0.30mm 2UEW	14	2T w8.0mm	2T W=1.0mm	N/A	1.
3	4--5	0.30mm 2UEW	12	3T w8.0mm	1T W=1.0mm	N/A	1.

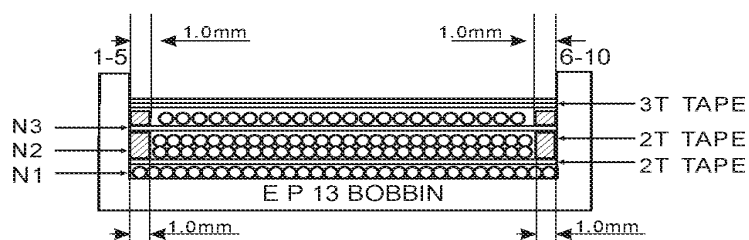
NOTE :

1. Place the bobbin pin 1 left side of operator.

5. Schematic:



6. Winding detail:

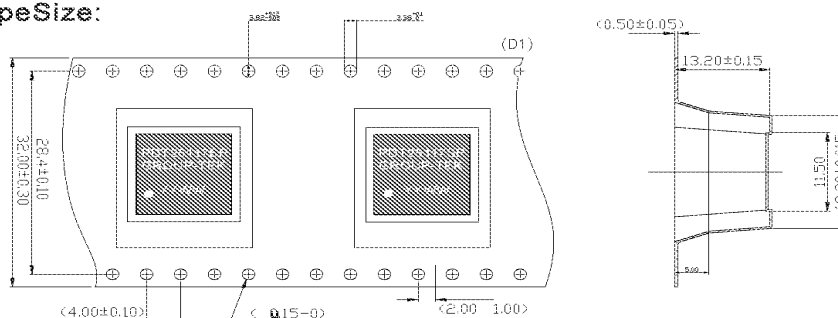


GROUP-TEK[®]
A Leading Supplier of Magnetic Components

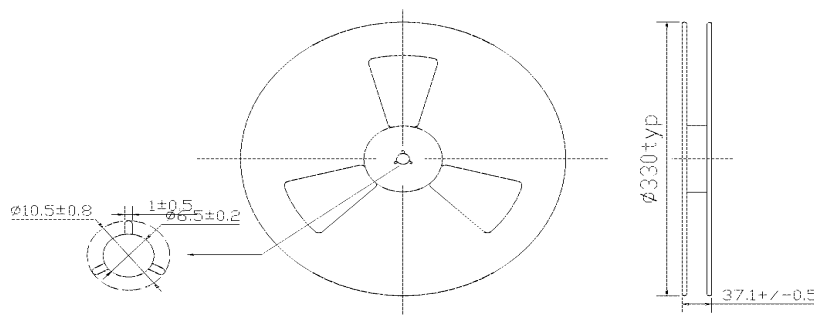
PDT25117SR

Tape and Reel Package (包装图)

1. Tape Size:



2. Reel Size:



3. Packaging:

- 3.1 Quantity per reel: 150pcs.
- 3.2 Quantity per carton: 450pcs.
- 3.3 Carton size: 37.3*37.3*21.2cm.
- 3.4 Unit weight: TBD.
- 3.5 Carton weight: TBD.

Project No. 4789564588

File E158873

Page 1

Compliance

Review

Conducted by:

Printed Name

Signature

Date

Standard SCC Requirements and Guidance - Product Certification Body Accreditation Program Edition/ Revision Date 2016-04-06

Clause/Par. Reference and Construction Requirement	Comply			Comments/Measurements	Inst. ID No.
	Yes	No	N/A		
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. 4789564588

File E158873

Page 2

Compliance

Review

Conducted by:

Printed Name

Signature

Date

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

M/C: Model Code
S/N: Serial No.
MAC: XX-XX-XX-XX-XX-XX

XNF-9010RV/KAP
MAC ADDRESS: XX-XX-XX-XX-XX-XX

CE UL ITE US LISTED EAC 10

NETWORK CAMERA
MODEL: XNF-9010RV
DC 12V --- 0.92A/
PoE (48 ---) 0.27A
M/C: XNF-9010RV/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

M/C: Model Code
S/N: Serial No.
MAC: XX-XX-XX-XX-XX-XX

XNF-9010RVM/KUS
MAC ADDRESS: XX-XX-XX-XX-XX-XX

CE UL ITE US LISTED EAC 10

NETWORK CAMERA
MODEL: XNF-9010RVM
DC 12V --- 0.92A/
PoE (48 ---) 0.27A
M/C: XNF-9010RVM/KUS 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.
Product tested against IEC62471

NO TC-1425-4

SPECIFICATIONS

TO MESSRS : 한화테크윈

CUSTOMERS MODEL :

CUSTOMERS PART NO : EP07-003237

ITEM : LINE FILTER

TNC SPEC NO. : CH005200SM2

APPROVED	REFERENCE

DATE : 2020. 03. 11

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 you don't 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	CH005200SM2			0

2. ELECTRICAL CHARACTERISTIC

NO	ITEM	TERMINAL	SPECIFICATION			REMARKS
1	RATED VOLTAGE	LINE TO LINE	AC 300V			
2	RATED CURRENT	START-FINISH	0.5A			
3	INDUCTANCE	START-FINISH	16KHz	20.0mH	+ 50%, -40%	HP-4194A 1V (25℃±2℃)
4	TEMPERATURE RISE	AT RATED CURRENT	55℃ MAX			
5	DC RESISTANCE	START-FINISH	1194.0 mΩ MAX			HIOKI 3540 (25℃±2℃)
6	WITHSTANDING VOLTAGE	LINE TO LINE	AC 1,500V 1 MINUTE.			TOS-5101 CUT OFF CURRENT (5mA)

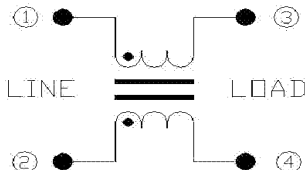
3. OPERATING TEMPERATURE RANGE

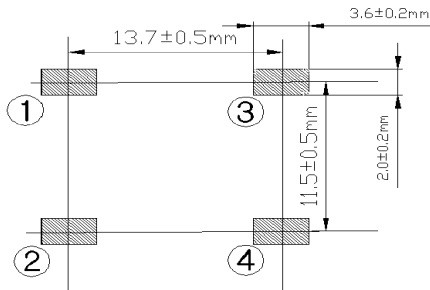
-40℃ TO +105℃ INCLUDING TEMPERATURE RISE.

4. KEEP TEMPERATURE RANGE

-40℃ ~ +105℃.

5. CIRCUIT DIAGRAM





PCB TOP VIEW

TNC TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
	CHOI.J.K R&D	KANG.S.W R&D	KOO.J.H R&D	3/14

SPECIFICATIONS		ITEM	LINE FILTER	Rev
		TNC SPEC NO	CH005200SM2	0

6. WINDING SPECIFICATION

NO	TERMINAL		WIRE	TURNS	UNBALANCE SPECIFICATION
	START	FINISH			
L1	1	3	UEW 0.20Φ	71 ±3Ts	BETWEEN L1 AND L2 (0.28mH MAX)
L2	2	4			

7. SHAPE AND DIMENSION

The technical drawing includes three views of the line filter: a top view, a side view, and a bottom view. The top view shows a circular core with four terminals labeled 1, 2, 3, and 4. Dimensions A and B are indicated for the core width and height. The side view shows the core height C and the terminal height D. The bottom view shows the marking '200 AAB B' and a note 'MARKING : WHITE or SILVER'. Specific dimensions include 0.7mm for the terminal width, 0.2mm for the terminal height, and 0.4T for the terminal thickness.

DIMENSION	A	B	C	D
	14.5mm MAX	14.5mm MAX	8.1mm MAX	1.0±0.5mm

TNC TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
	CHOL.J.K R&D	KANG.S.W R&D	KOO.J.H R&D	4/14

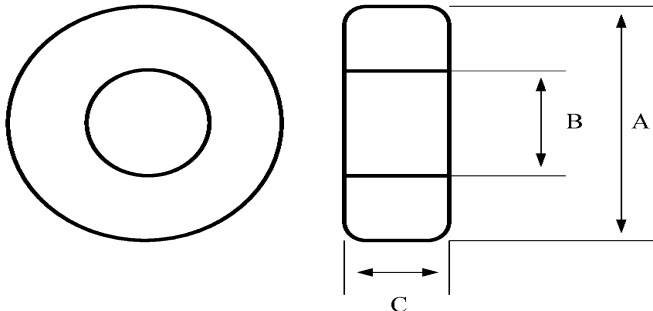
SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CH005200SM2	0

15. FERRITE CORE SPECIFICATION

- Characteristics

Symbol	Unit	MA100 R-10/6/4	M10K T10X6X4C
μ_i	-	10,000±30%	10,000±30%
Bms	mT	415	380
Hcms	A/m	3.0	6.0
Brms	mT	76	120
Tc	℃	>115	>120
TANδ /μiac	*10 ⁻⁶	<1.9	<20
αμr	*10 ⁻⁶ /℃	-0.5~2.0	-0.5~1.5
ρ	Ω.m	0.1	0.2
d	g/cm ³	5.0	4.9

- Dimension (Before Coating)



A: 10.0 ±0.3 B: 6.0 ±0.3 C: 4.0 ±0.25

TNC TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
	CHOL.J.K R&D	KANG.S.W R&D	KOO.J.H R&D	9/14

Test Record No. 1

1. Test result relate only to the items tested.
2. The manufacturer submitted representative production samples of NETWORK CAMERA, XNF-9010RV.
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 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