Thank you for giving UL the opportunity to partner with you.
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.

Should you have any questions, after reviewing the material, or need to report any inaccuracies, please reach out to your UL representative or find UL contact details for your local Customer Service Department at https://www.ul.com/about/locations.

Please find attached the related material on Project

For your convenience, the below describes the related updates:

E158873-A6259-DescriptionUL
Figure-15-Total

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Times change, Trust Remains™

UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 3rd Ed, 2021-10-22 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1:19, 3rd Ed, 2021-10-22 (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:	PNM-A13022RV
Rating:	12 Vdc, 1.67 A or PoE (53 Vdc), 0.42 A
Applicant Name and Address:	HANWHA VISION 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: Sohyun Lee / Project Handler Reviewed By: Mansoo Huh / 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

NETWORK CAMERA is designed for outdoor use, wall or ceiling use with mounting brackets.

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

Model Differences

N/A

Test Item Particulars

Product group .....:	end product
Classification of use by .....:	Instructed person
Supply Connection .....:	not mains connected: ES1
Supply tolerance .....:	None
Supply connection – type .....:	Not directly connected to the mains
Considered current rating of protective device ....:	N/A
Equipment mobility .....:	wall/ceiling-mounted
Over voltage category (OVC) .....:	OVC I
Class of equipment .....:	Class III
Special installation location .....:	Outdoor location
Pollution degree (PD) .....:	PD 2
Manufacturer's specified Tma (°C) .....:	55 Outdoor: minimum - 40
IP protection class .....:	IP 66
Power systems .....:	not AC mains
Altitude during operation (m) .....:	2000 m or less
Altitude of test laboratory (m) .....:	2000 m or less
Mass of equipment (kg) .....:	2.69 kg

Technical Considerations

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 55 °C
- The product is intended for use on the following power systems : No direct connection
- Considered current rating of protective device as part of the building installation (A) : N/A
- Mains supply tolerance (%) or absolute mains supply : No direct connection
- The Risk Group of a lamp or lamp system (including LEDs) is : Exempt
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual
- The product was investigated to the following additional standard : IEC 62471:2006, IEC 60529:1989+A1:1999+A2:2013
- The outdoor equipment/enclosure was evaluated for use in an ambient range of: - 40 °C to 55 °C.

Additional Information

4791873939
- Maximum Normal Load: Continuous operation. (Operate the camera through networked equipment with IR 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 Company's name, Trade Name, File Number
Equipment identification marking – model identification	Model Number
Equipment rating marking – ratings	Input Ratings (voltage, current)
Outdoor enclosure type	"Rainproof", IP 66
Hard Copy	A. IMPORTANT or ATTENTION or similar wording B. Please check 'Manuals' from out website, before connecting to the supply. C. Company website URL (https://www.~~) or QR code.
(Website) Manual - 1	This Product is intended to be supplied by a UL Listed Power Supply Unit marked "Class 2" or "LPS" or PS2" and rated from 12 Vdc, 1.67 A or PoE(53 Vdc), 0.42 A.
(Website) Manual - 2	The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3at 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.
SCC requirement	If the signal words DANGER, WARNING, and CAUTION are included, a French manual is provided.

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
Enclosure - Lens cover dome (Plastic)	MITSUBISHI ENGINEERING-PLASTICS CORP	S-2000V+(f1)	Min. 1.8 mm thickness, rated Min. V-2, 115 deg. C, See enclosure for dimension.	QMFZ2	UL (E41179)	
Enclosure - Top (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.0 mm thickness, See enclosure for dimension.	-	-	
Enclosure - Bottom (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.0 mm thickness, See enclosure for dimension.	-	-	
Enclosure - LED cover (Plastic)	LOTTE CHEMICAL CORPORATION	QC-1220UR(f1)	Min. 1.6 mm thickness, rated Min. V-2, 125 deg. C, See enclosure for dimension.	QMFZ2	UL (E115797)	
Internal metal part materials	Interchangeable	Interchangeable	Aluminum, Min. 1.5 mm thickness.	-	-	
Internal plastic part materials	LOTTE CHEMICAL CORPORATION	HN-1068(f1)	Min. 1.5 mm thickness, rated Min. V-0, 130 deg. C	QMFZ2	UL (E115797)	
Internal plastic part materials - Alternate	Interchangeable	Interchangeable	Min. 1.5 mm thickness, rated Min. V-2	QMFZ2	UL	
Mounting bracket (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.0 mm thickness.	-	-	
Fuse (F1)	LITTELFUSE INC	449*	125 Vac, 2.5 A	JDYX2	UL (E10480)	
Fuse (F1) - Alternate	SEMITEL ELECTRONICS CO LTD	S6125S	125 Vac, 2.5 A	JDYX2	UL (E338954)	
Opto-coupler (LS1)	LITE-ON TECHNOLOGY CORP	LTV-217 (Type: LTV-217-G)	Isolation Voltage: 3750. Max. Operation	FPQU2	UL (E113898)	

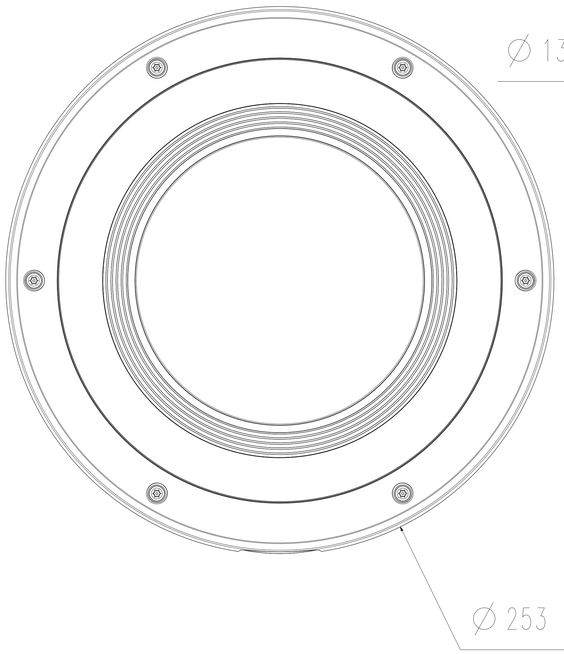
			Temperature: 110 deg. C			
Opto-coupler (LS1) - Alternate	COSMO ELECTRONICS CORP	KPC357NT	Isolation Voltage: 3750. Max. Operation Temperature: 115 deg. C	FPQU2	UL (E169586)	
Transformer (T4)	SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD	PDT25125SR	41 uH, 130 deg. C, See enclosure for more detail.	-	-	
Line filter (T2)	SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD	PCM1206-752S	7.5 mH, 130 deg. C, See enclosure for more detail.	-	-	
IR LED (LD1, LD2, LD3, LD4) * 2 ea) (Total 8 ea)	OSRAM	SFH4714A	VF = 2.3 Vdc (Max), IF = 1 A (Max)	-	-	
Lens module	SUNNY OPTICS (ZHONGSHAN)CO.,LTD.	C7340E-2B6	Rated 3.0 - 6.0 Vdc	-	-	
Rechargeable battery (BAT1)	SEIKO INSTRUMENTS INC MICRO-ENERGY DIV	ML414H	Lithium, Rechargeable, Max Charging voltage: 3.4 Vdc, Max Charging current: 300 mA	BBCV2	UL (MH15628)	
Lithium Battery Protection Circuit (BAT1)	Interchangeable	Interchangeable	Diode (D18, 80 V, 250 mA) and Resistor (R145, 3.3 Kohm) in series	-	-	
DC Fan	SUNONWEALTH ELECTRIC MACHINE INDUSTRY CO LTD	HA40101V4-1(Y) (Type: HA40101V4-1000U-A99)	12 Vdc, 0.028 A, 0.34 W, 5000 RPM ± 15%, (N/15000+K/2400 = 0.3483 < 1, N=5000, K=35.9148)	GPWV2	UL (E77551)	
Thermal pad	KOMOTECH	KGP-1(a)	Min. 0.2 mm thickness, rated V-0, 150 deg. C	QMFZ2	UL (E245303)	

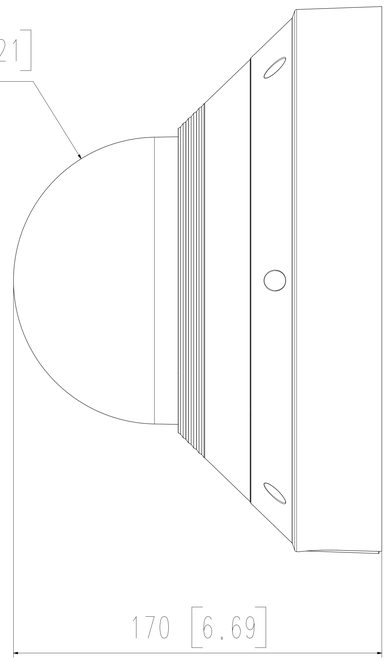
Thermal pad - Alternate	ATEX CO LTD	ATP-20	Min. 0.2 mm thickness, rated V-0, 105 deg. C	QMFZ2	UL (E513170)	
Gasket - Dome	NAMYANG VINA	O-VMQ-30-BK	Gasket Test was conducted under E158873-A6034	-	-	
Gasket - Deco	NAMYANG VINA	O-VMQ-30-BK	Gasket Test was conducted under E158873-A6034	-	-	
Gasket - Bottom	NAMYANG VINA	O-VMQ-30-GR	Gasket Test was conducted under E158873-A6034	-	-	
Gasket - Cable	NAMYANG VINA	C-VMQ-40-GR	Gasket Test was conducted under E158873-A6034	-	-	
PWB	HANNSTAR BOARD CORP	MV-4	Min. V-0, 130 deg. C	ZPMV2	UL (E89382)	
PWB - Alternate	Interchangeable	Interchangeable	Min. V-0, 130 deg. C	ZPMV2	UL	
Outdoor Label	Interchangeable	Interchangeable	Suitable for use on each type of surface to which applied, rated for maximum and minimum surface temperature specified, or Min. - 40 deg. C to Max. 55 deg. C if not specified.	PGDQ2 or PGJI2	UL	

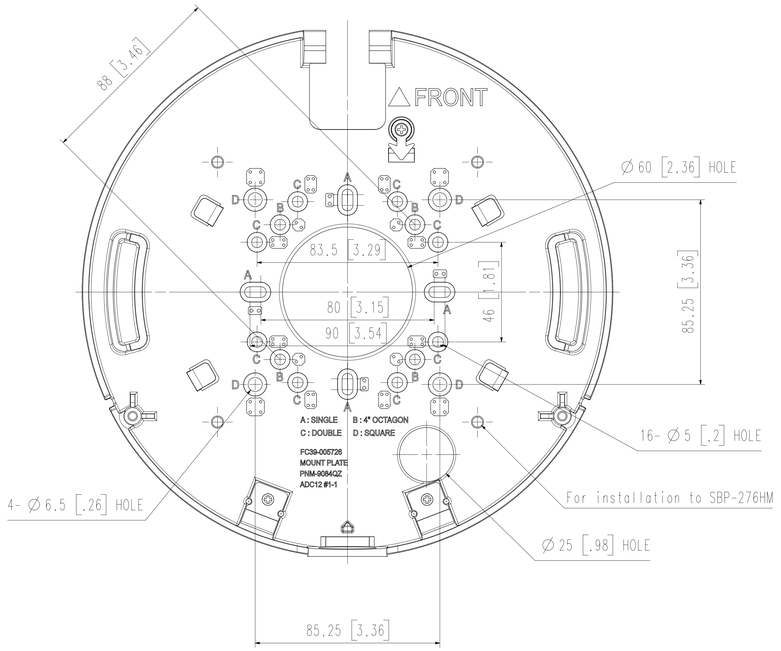
Enclosures

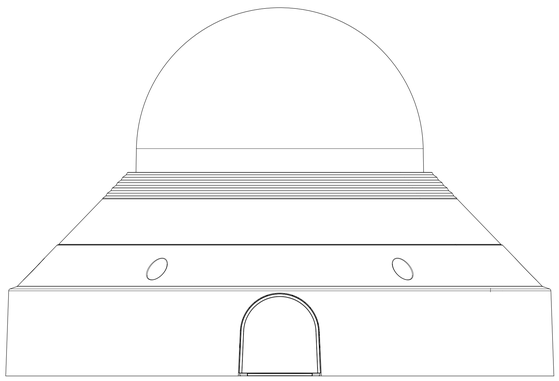
Type	Supplement Id	Description
Photographs	03-01	External View
Photographs	03-02	Internal View
Photographs	03-05	Mainboard View - 1
Photographs	03-06	Mainboard View - 2
Photographs	03-07	IR LED board View - 1
Photographs	03-08	IR LED board View - 2
Photographs	03-09	Sensor board View - 1
Photographs	03-10	Sensor board View - 2
Photographs	03-13	Lens View
Photographs	03-14	DC Fan
Diagrams	04-01	Enclosure drawings
Manuals	06-01	Manual
Miscellaneous	07-01	Transformer (T4) Specification
Miscellaneous	07-03	Linefilter (T2) Specification
Miscellaneous	07-04	Label

The following Page(s) are related to Diagrams-01. The next supplement, if applicable, will be identified with a new Supplement Page Heading.









3		
2		
1	PNM-C13022RV	25.07.15
No.	MODEL NAME	DATE
Unit:mm[inch]	SCALE:1/1	Hanwha Techwin

A0

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The following Page(s) are related to Manuals-01. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

Hanwha Vision

NETWORK CAMERA

User Manual

PNM-A13022RV

CE

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 UL Listed Power Supply Unit marked "Class 2" or "LPS" or PS2" and rated from 12 Vdc, 1.67 A or PoE(53 Vdc), 0.42 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. Screen distortion could occur outside of the subject distance.
23. While encoding, a real time fps fluctuation of ±1fps could occur.
24. This device has been verified using STP cable. The use of appropriate GND grounding and STP cable is recommended to effectively protect your product and property from transient voltage, thunderstroke, communication interruption.
25. Stitching performance is optimized for the 13 MP resolution when the product is released. Note that stitching performance may deteriorate if a lower resolution is used.
26. The operating temperature for the PNM-A13022RV products is -40°C to +55°C(-40°F to +131°F).

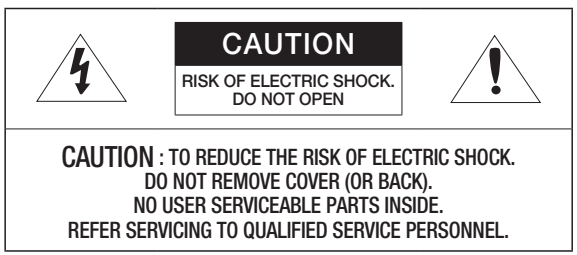
WARNING

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.

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.

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.

Prohibition of battery abuse

- Do not install and use the wrong type of battery.
- Do not leave the battery in a mechanically crush or cut it because it can explode.
- Do not leave the battery in a high temperature environment.
- Do not leave the battery in a low-pressure environment.

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.

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.

Before connecting the Power Terminal Block, you need to unplug the power plug from the outlet first.

The USB-C port on the product is intended for initial setup only and should not be used for any other purpose.

When a new product box is opened (or during the initial use of the product), moisture might build up on the glass of the camera. The built-up moisture disappears naturally within a few hours after powered on.

Do not arbitrarily loosen or tighten the gore valve.

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 802.3at 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.

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

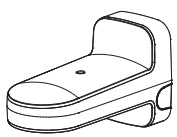
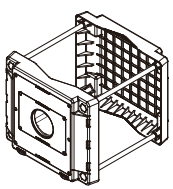
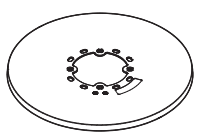
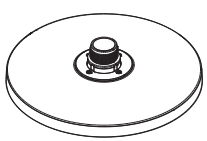
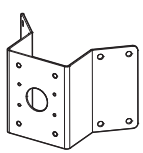
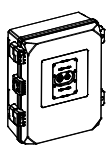
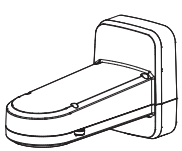
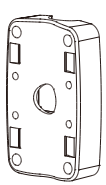
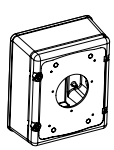
※ Please read this manual for the safety before using of goods and keep it in the safe place.

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

In particular installation environments, there might be interference in radio communications. When interference of electromagnetic waves occurs between the product and radio communication device, it is recommended to keep a certain distance between the two or change the direction of the receiving antenna.

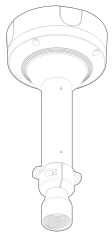
OPTIONAL ACCESSORIES FOR INSTALLATION

You can purchase appropriate optional accessories available.

Wall Mount and Pole Mount		Mounting Hole Cover	Hanging Mount	Corner Mount	Cabinet
 SBP-250WMW (Wall Mount)	 SBP-150PMW (Pole Mount)	 SBP-250C	 SBP-250HMW	 SBP-156KMW	 SBP-150NBW
 SBP-400WMW (Wall Mount)	 SBP-300PMW2 (Pole Mount)				 SBP-300NBW

Ceiling Mount

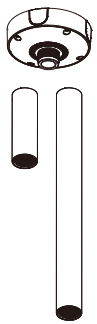
Assembly



SBP-300CMTS
(Ball Head)



SBP-300CMTW



SBP-300CMW1
SBP-900CMW



SBP-150CMI
SBP-300CMI

Individual Parts



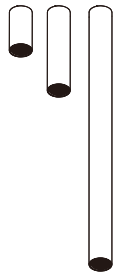
SBP-180CMB



SBP-180CMS
(Ball Head)



SBP-140CMB



SBP-150CMP
SBP-300CMP
SBP-900CMP



SBP-C15P



SBP-C15H

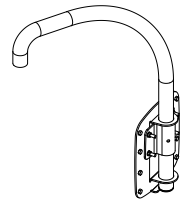


SBP-C15NP

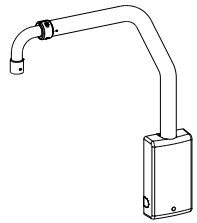


SBP-C35H

Parapet Mount



SBP-300LMW



SBP-156LMW1

INSTALLATION

- The camera jack connected to the external cable is not waterproof. You are recommended to install this product below the edge of eaves to prevent the cable from being externally exposed.

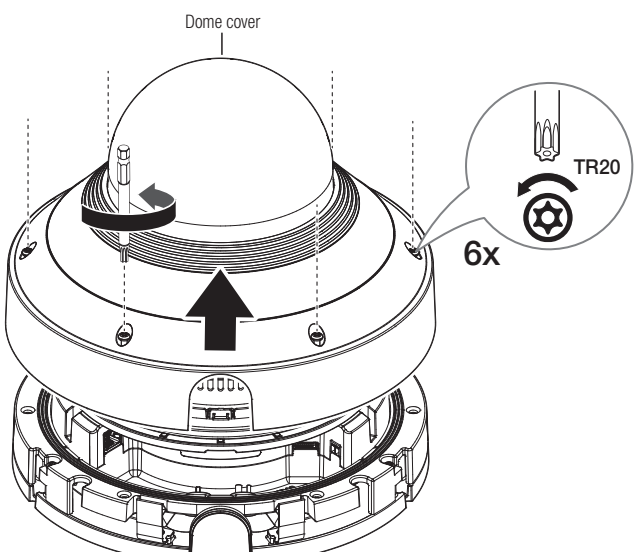
Precautions before installation

Ensure you read out the following instructions before installing the camera:

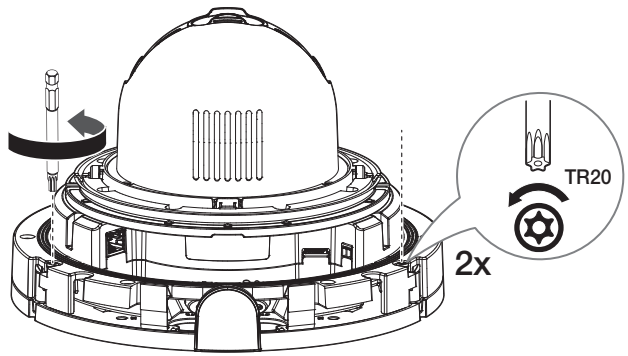
- It must be installed on the area (ceiling or wall) that can withstand 5 times the weight of the camera including the installation bracket.
- Stuck-in or peeled-off cables can cause damage to the product or a fire.
- For safety purposes, keep anyone else away from the installation site. And put aside personal belongings from the site, just in case.
- If the product is installed with excessive force, it may cause damage to the camera due to malfunction. Forcing assembly using non-compliant tools may damage the product.

Disassembling

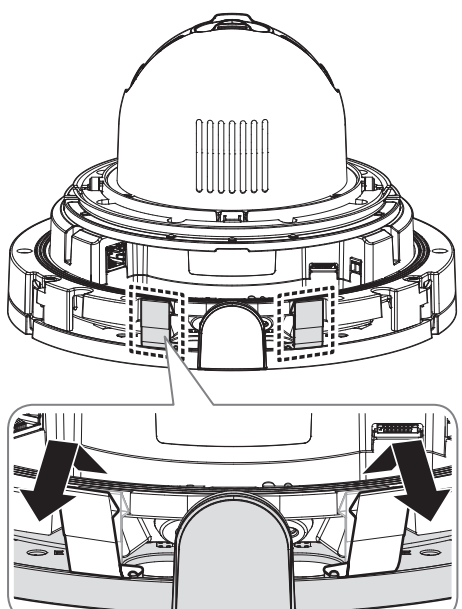
1. Remove the dome cover by loosening the fastening bolt of the dome cover. This can be done by turning it counterclockwise using the screw bit provided.
   - Note that it is not necessary to loosen the screws completely.



2. Loosen the fastening screw on the camera body.
   - You don't have to completely remove the screws.

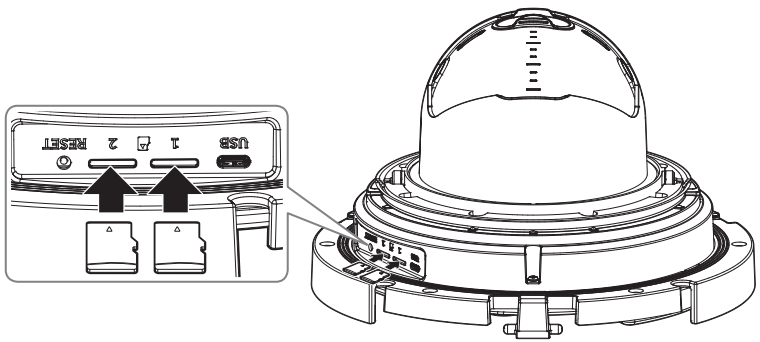


3. Remove the camera body and mounting plate by pulling the mounting clip, as shown in the figure.

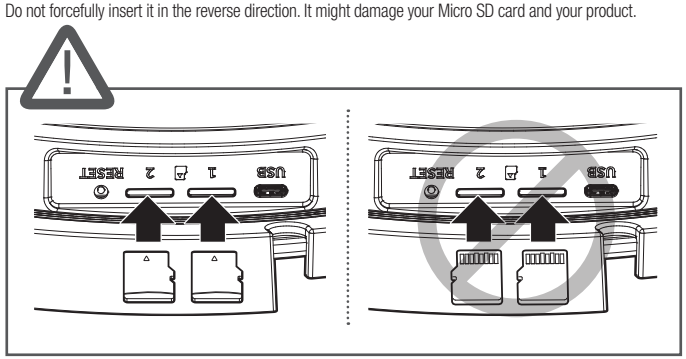


Inserting a Micro SD card

1. Remove the dome cover of the camera.
2. Insert a Micro SD card in the arrow direction shown in the figure.



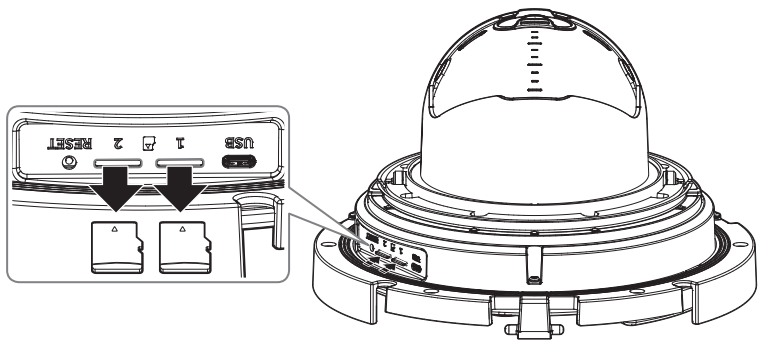
- Do not forcefully insert it in the reverse direction. It might damage your Micro SD card and your product.



- Before installing the camera, the Micro SD card should be inserted while the power source and the body are separated.
- When it rains or the humidity is high, insertion or ejection of a Micro SD card is not recommended.
- Disassembly of the product cover should be finished within 5 minutes, or there will be the risk of internal dew condensation.
- When installing/removing the Micro SD card, make sure you put the product body on a flat ground before working on it in order to prevent accidents due to loss or drop of any parts.

Removing a Micro SD card

Gently press down on the exposed end of the Micro SD card as shown in the diagram to eject the Micro SD card from the slot.

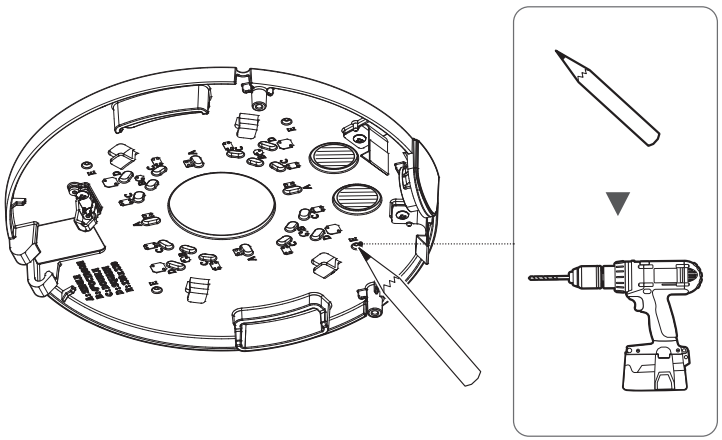


- Before removing the Micro SD card, in <**Setup ( )**>-<**Event**>-<**Storage**>, set the device to <**Off**> and press the [**Apply**] button and turn the camera off.
- If you turn off the camera or remove the Micro SD card that contains data from the product, the data may be lost or damaged.

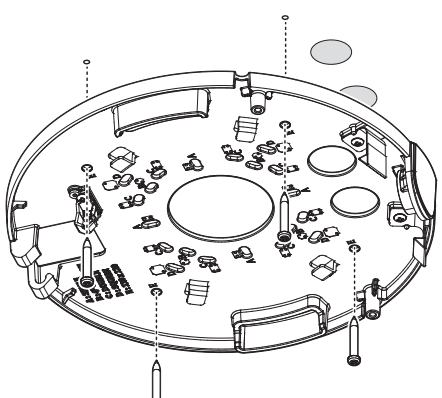
Installation (mount plate)

[Directly installing on wall/ceiling]

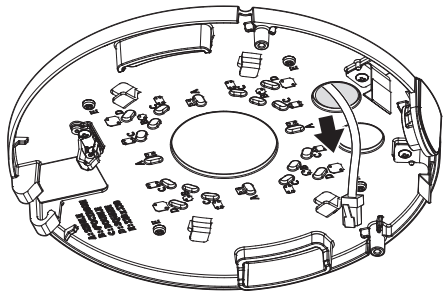
1-1. Place the mount plate on the desired location considering the direction to be monitored, mark the locations for the screw holes and cable holes, and then drill the holes.



1-2. Fix the mount plate using appropriate screws.

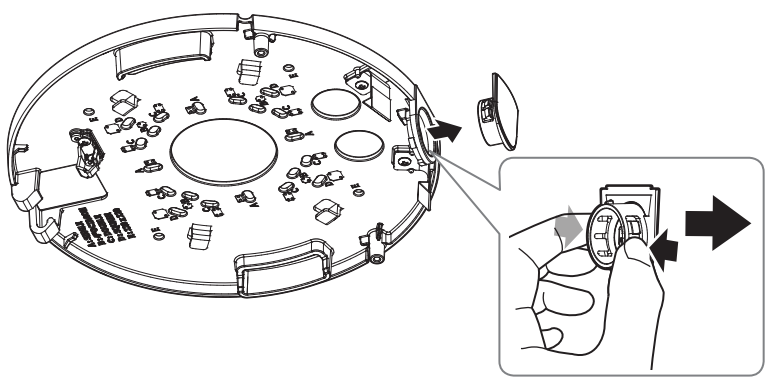


1-3. Pull out necessary cables among network/power/audio/alarm cables through the hole in the mount plate.



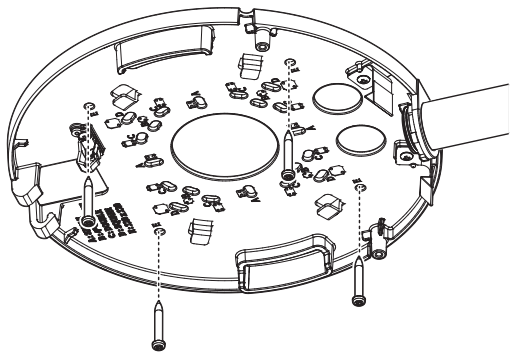
[Installing using pipe]

2-1. When installing by connecting pipes, you can use it by removing the pipe cover from the mount plate. Separate the pipe cover of the Mount plate by pressing its sides.



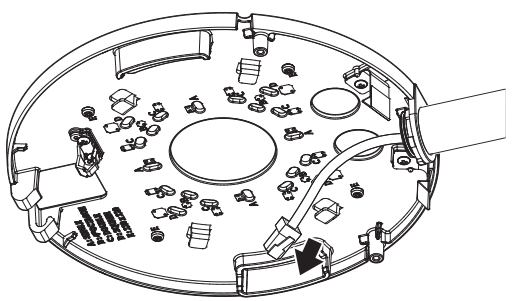
2-2. Place the pipe on the mount plate.

2-3. Fix the mount plate using appropriate screws.



- Use installation screws of at least M4, L30 for the installation of this product.

2-4. Pull out necessary cables among network/power/audio/alarm cables through the pipe.

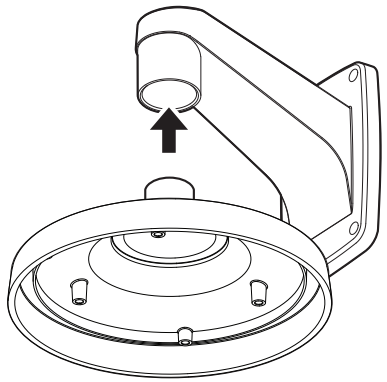


[Attaching to the unbundled adapter]

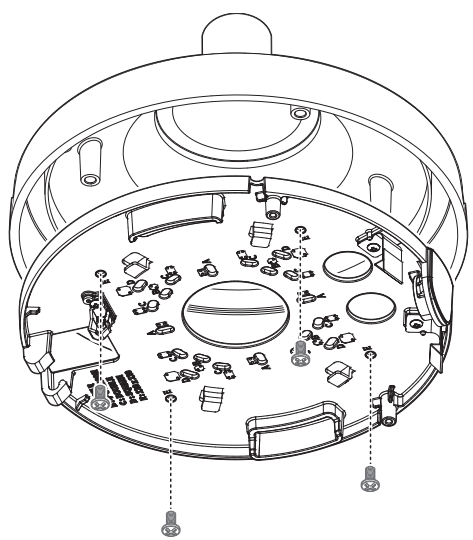
Choose and purchase a necessary one of the following options (unbundled) that is suitable to the installation site or for your convenience.

3-1. Install the hanging mount to the wall mount adapter.

- Wall mount adapters and hanging mounts are sold separately.

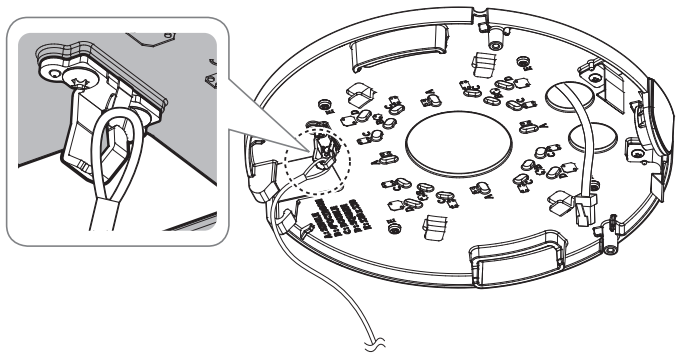


3-2. Connect the mounting plate and the hanging mount.

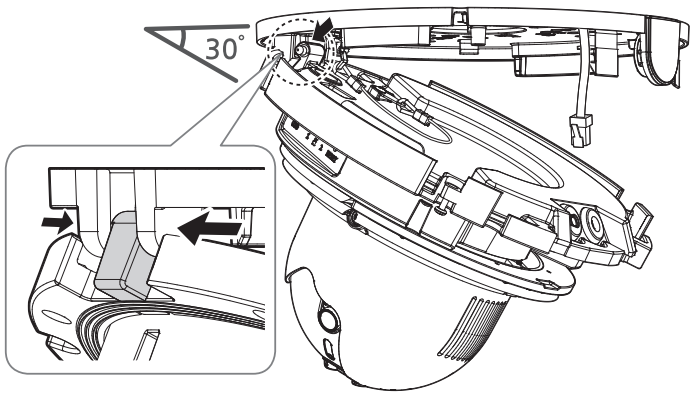


Installation (camera body and dome cover)

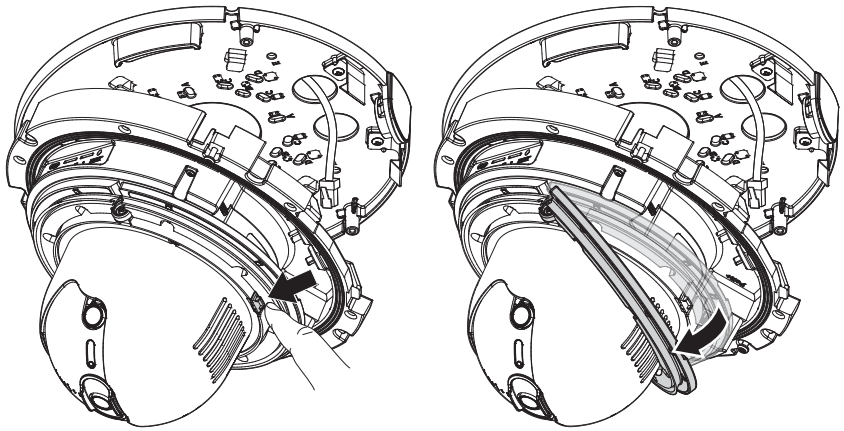
1. Connect the safety wire from the camera body to the safety wire loop on the mount plate.



2. Mount the camera body to the mount plate.
   - Mount it to fit the hinges as shown in the image.



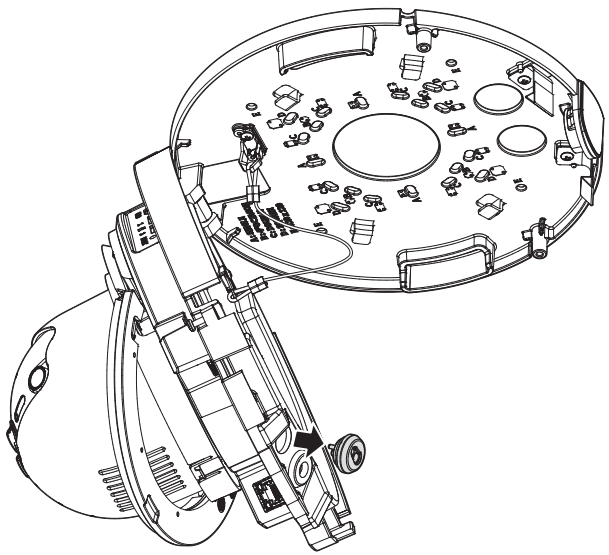
3. Pull the cable cover of the camera body to open it as shown in the figure below.



[Installing network/power cables]

- Use a cable bushing compliant with the network cable to be connected.
  - Camera main: use a cable with the diameter of Ø5 to 6.5
- You can only use a network cable with a diameter of Ø6.5 or less.

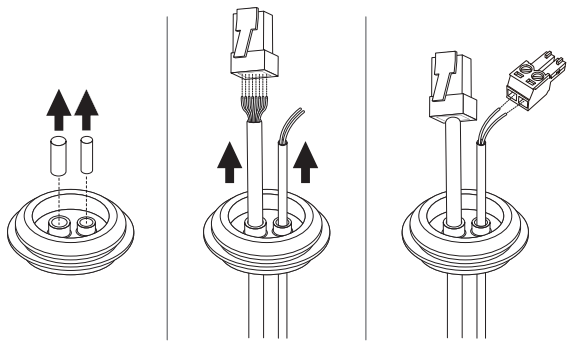
1-1. As shown in the figure below, remove the cable bushing from the camera body.



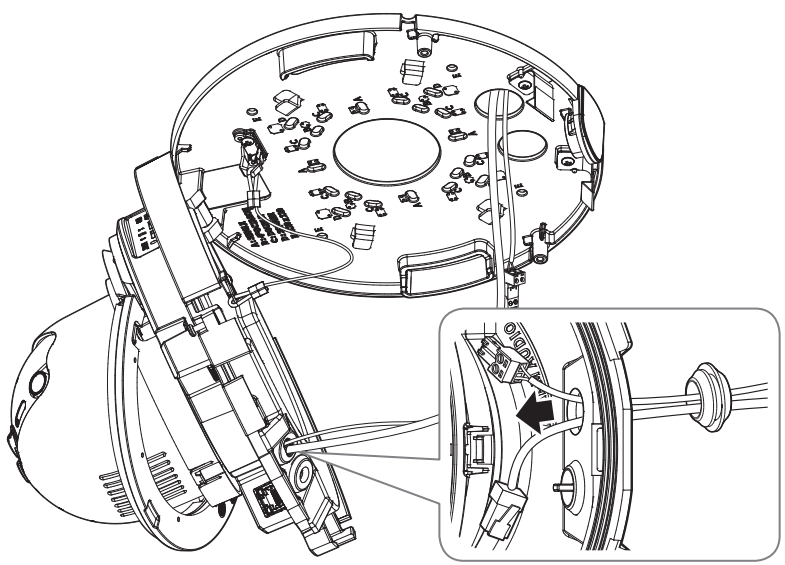
1-2. Remove the protruding part you wish to use from the removed cable bushing.

1-3. Route the network cable through the big hole of the cable bushing and connect to the network cable connector.

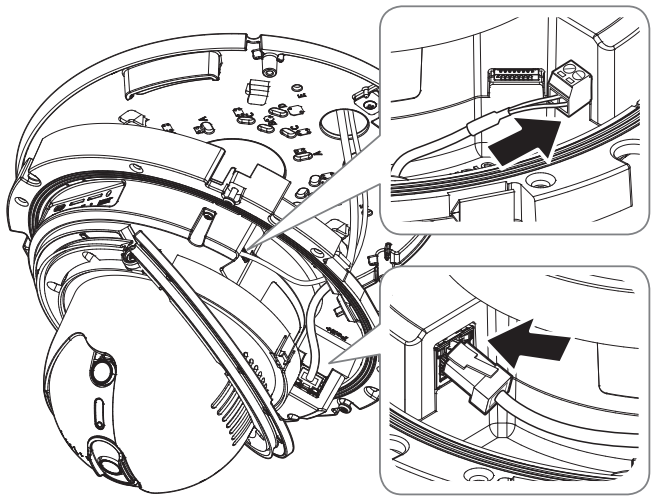
1-4. (When using the power) Route the power cable through the small hole of the cable bushing and connect it to the provided power terminal block.



1-5. Mount the cable bushing to the camera body.

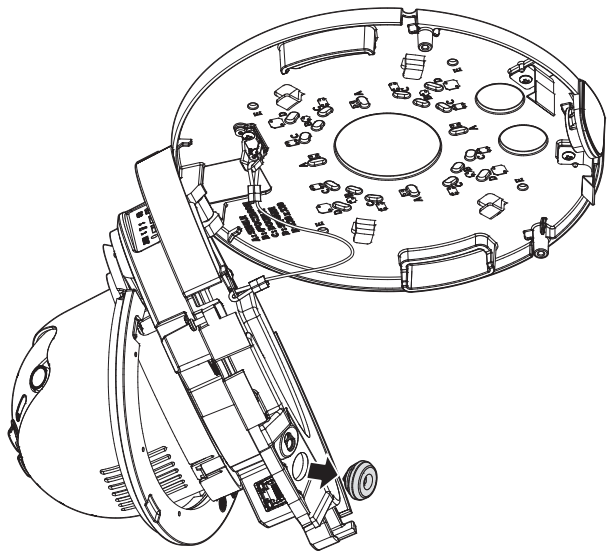


1-6. Connect the network cable connector to the PoE+ port, and connect the power terminal block to the power port.



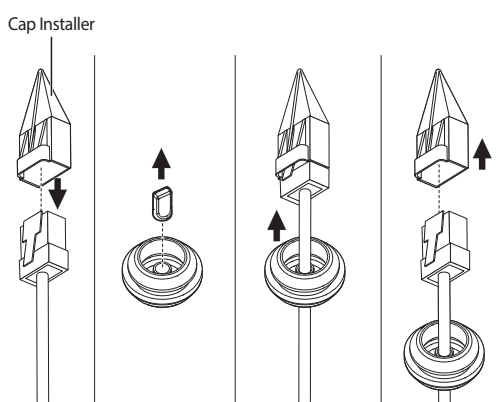
[Installing the network cable] (IP66)

2-1. As shown in the figure below, remove the cable bushing from the camera body.

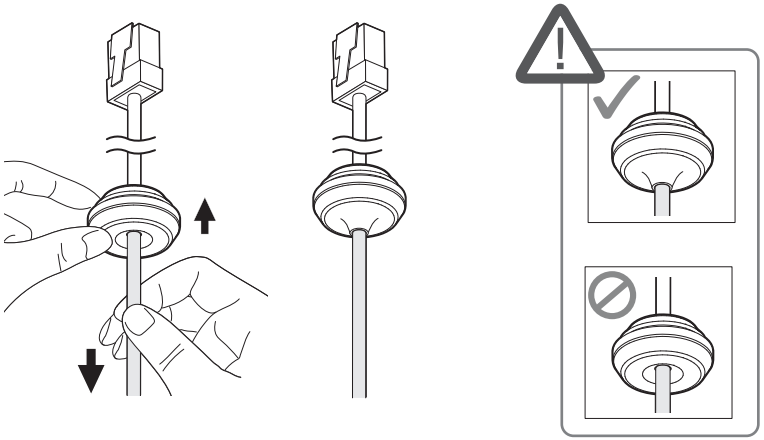


2-2. Pull off the extruded part of the 1-hole cable bushing provided.

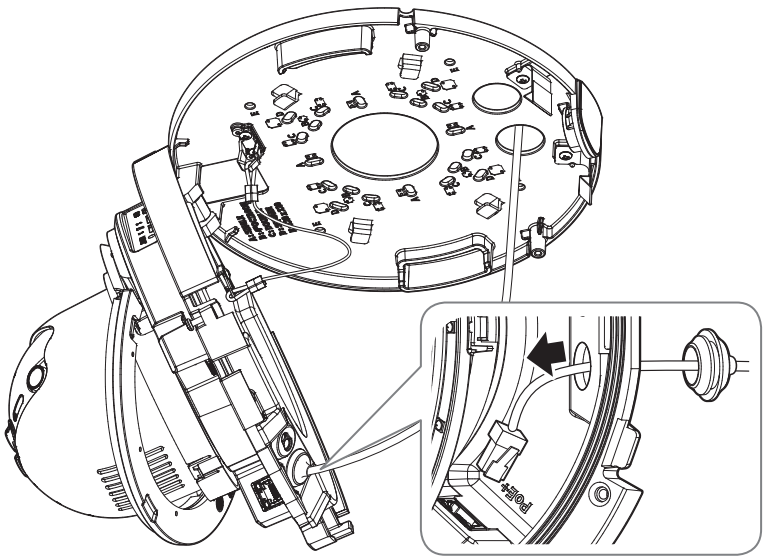
2-3. Use the cap installer to route the network cable through the cable bushing.



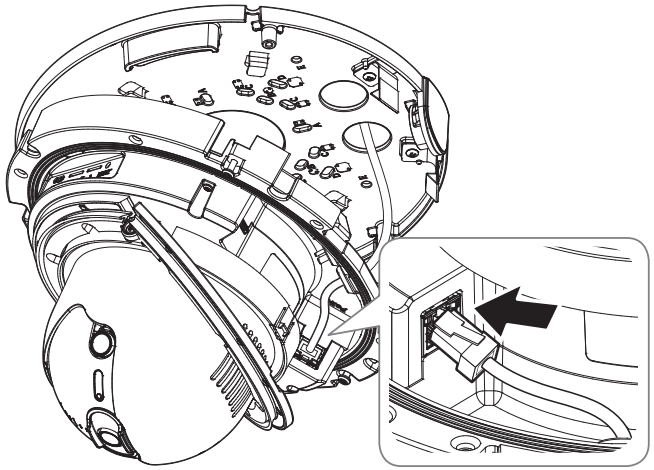
2-4. For waterproof protection, pull down the cable below the cable bushing as shown in the figure below.



2-5. Mount the cable bushing to the camera body.

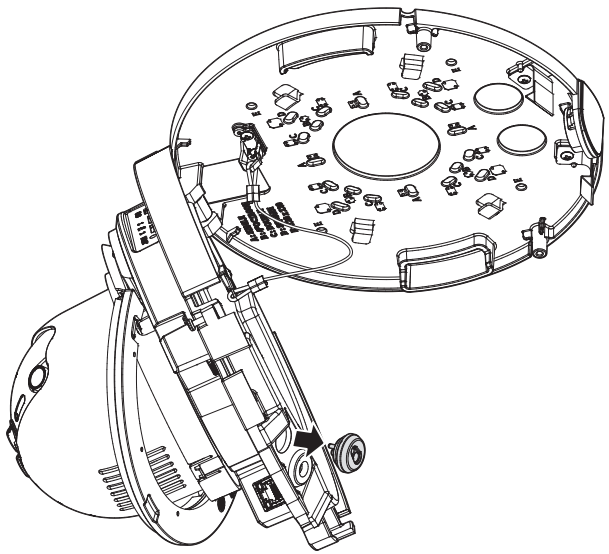


2-6. Connect the network cable jack to the PoE+ port of the camera.

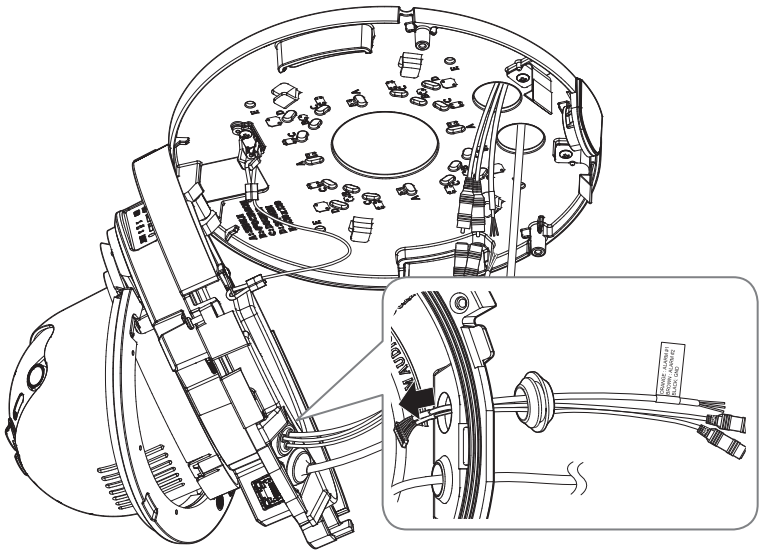


[Installing audio/alarm cables]

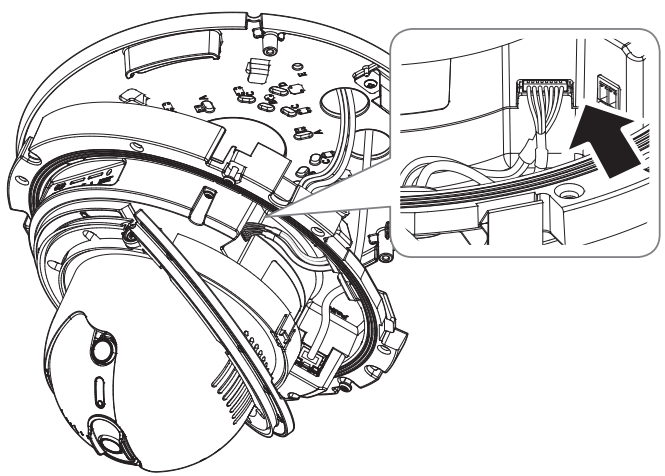
3. As shown in the figure below, remove the cable bushing from the camera body.



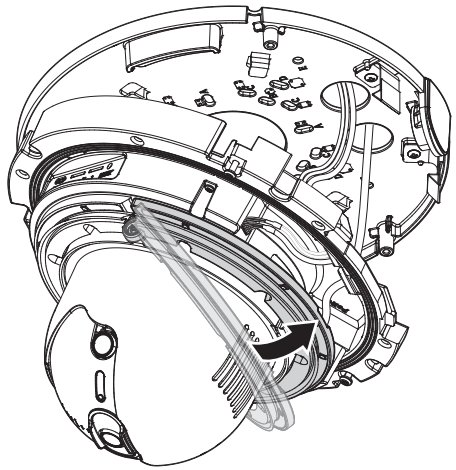
4. Plug the cable bushing of the provided audio/alarm cable into the camera body.



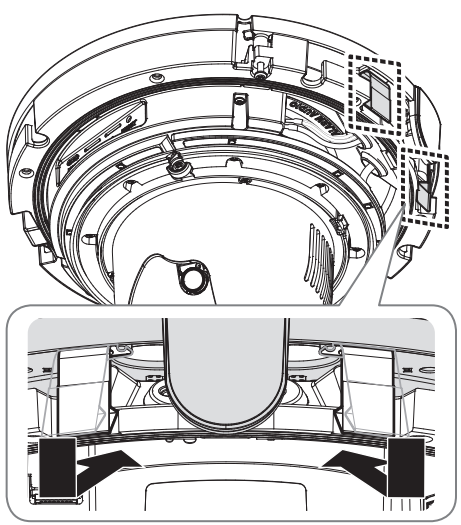
5. Connect the connector of the audio/alarm cable to its connection port.



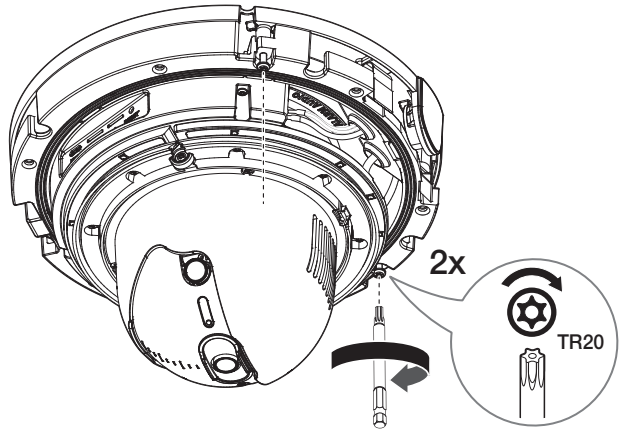
6. When all cable connections are complete, raise the cable cover and close it so that it gets stuck in the lock.



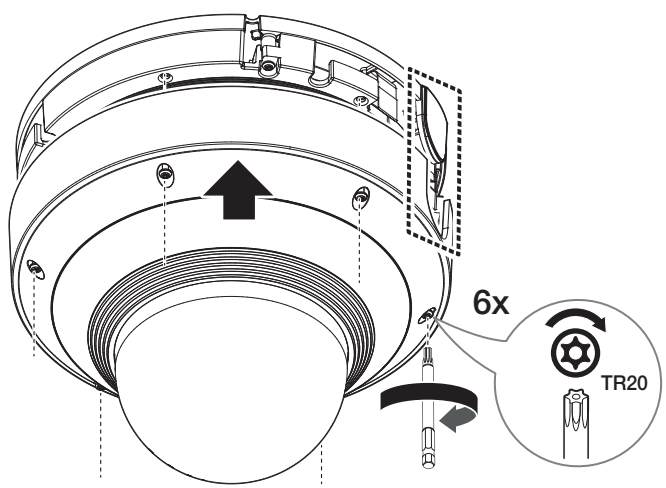
7. Lift up the camera body and push the mounting clips until they click into place.



8. Using the fastening screws on the camera body, fix the camera body to the mount plate.



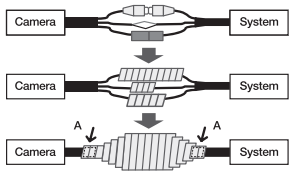
9. Adjust the lens to the desired direction by referring to "**Adjusting the monitoring direction for the camera**". (Page 22)
   - If you tilt the lens, you may need to adjust the lens as this may block the screen.
10. Assemble the dome cover.
    - When assembling the dome cover, align the pipe cover part to assemble it.
    - To ensure there are no issues with waterproofing, tighten the fastening bolts tightly using the screw bit.



Waterproofing of cable connections

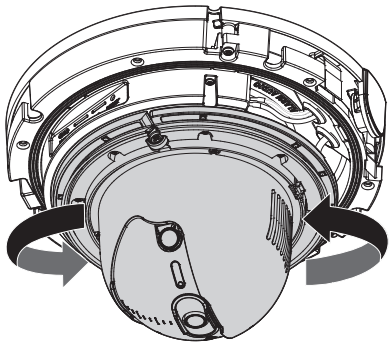
When installing the camera, please waterproof it with waterproof butyl rubber tape (can be purchased in stores) so that water does not leak from the gap of the cable connected to the outside.

1. Connect the power, I/O, and network cables.
2. Wrap the black cable jacket (Area A) and the cable connection area with waterproof (butyl rubber) tape so that more than half of the butyl rubber tape is overlapped.

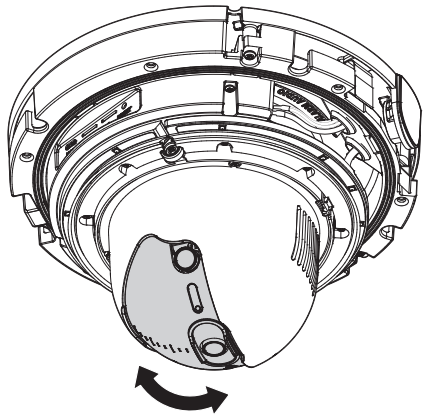


- If the cable jacket is not waterproofed properly, then it can directly cause leakage. Make sure to protect the cable with a dense layer of taping.
- Waterproof butyl tape is made of butyl rubber that can be stretched to twice its normal length.

Adjusting the monitoring direction for the camera



Pan



Tilt

▪ Adjusting the monitoring direction

You can adjust the camera direction only when the camera is fixed on the ceiling.
At this time, rotating the main body of the camera in the left and right direction is called PAN, and adjusting the angle of the camera is called TILT.

- The effective range of pan is a total of 360° degrees.
- The effective range of tilt is a total of 50° degrees.

- The image can be covered up by the camera case depending on the angle.
- Be careful not to get fingerprints or foreign substances on the lens when adjusting the camera tilt angle.

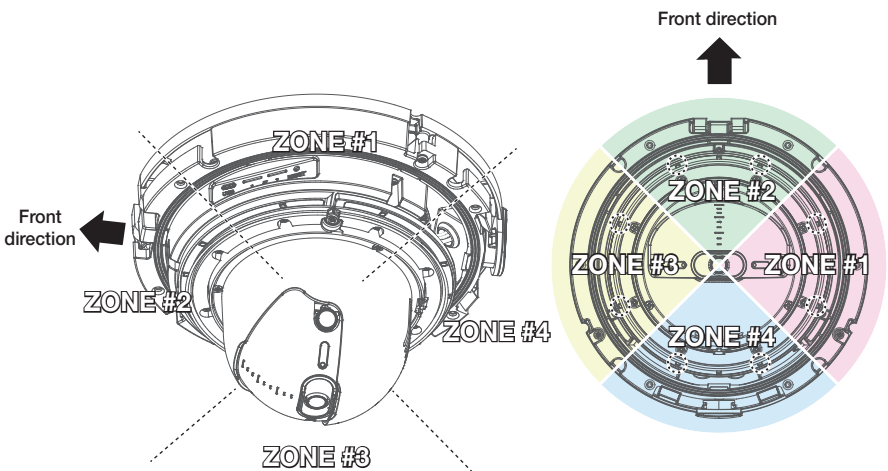
▪ Methods of adjustment

1. After installing the camera, adjust the panning angle in consideration of the monitoring direction.
2. Adjust the tilt angle so that the camera faces toward the monitoring object.

Installation precautions when using the IR mode

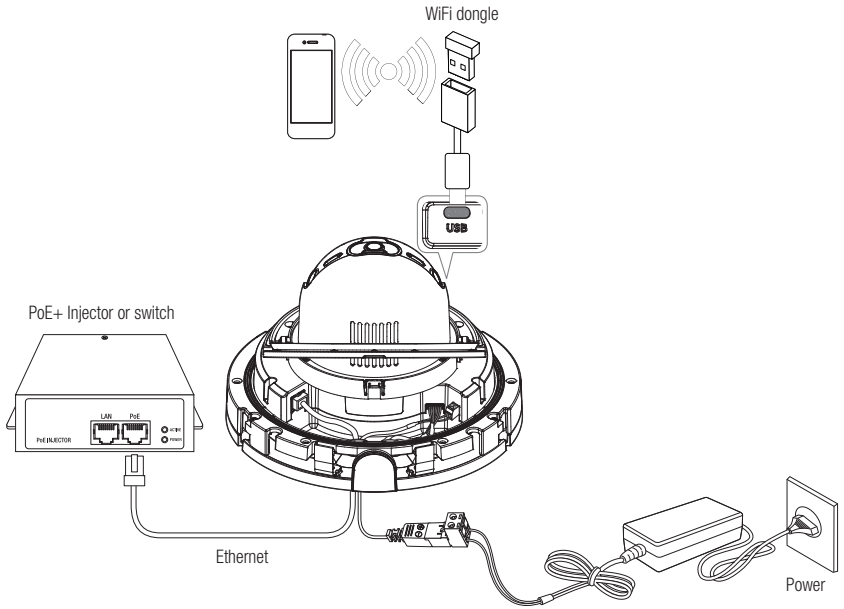
- <Auto1>: Optimized to evenly radiate IR light when generally mounting the camera on the wall.
- <Auto2>: Optimized to evenly radiate IR light when generally mounting the camera on the ceiling.
- <Manual>: You can manually adjust each zone to better capture the environment where the camera is installed.
- The IR LED will moved following the rotation of the camera lens.
- Make sure that the front factory default direction is correct when installing it.
- Even after the complete installation of the camera, you can customize it using the video rotation if necessary.

[Example of installing the ceiling mount]



<Factory default direction>

CONNECTING WITH OTHER DEVICE



- The product USB Type-C port is used to communicate with the application installed in the smartphone by connecting the WiFi dongle.
  The USB Type-C port is intended solely for installation purposes and should not be used during product operation.

Ethernet Connection

Connect the Ethernet cable to the local network or to the Internet.

Powering and networking

Connect the PoE+ device with the PoE+ port of the camera.

- Connect and use a PoE+ -enabled router.
- Use a PoE+ device that complies with the IEEE 802.3at standard.
- If you connect using an PoE+ -enabled router, you don't need a separate power supply cable to power it on.

The following Page(s) are related to Miscellaneous-01. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

GROUP-TEK®

RoHS

承 认 书

SPECIFICATION FOR APPROVAL

CUSTOMER	
MODEL NO.	EP23-001075A
PART NAME	POWER TRANSFORMER
PART TYPE	PDT25125SR
REV	X7
SIGNATURE	制图：Drawn by 旐壘某 2020-01-07 Lei Wan　审核：Checked by 旐壘某 2020-01-07 GX Song　批准：Approved by 旐壘某 2020-01-07 Jiang Wang
CUSTOMER APPROVAL	廄志恔: SIGNET　　嚽Ò：SIGNATURE

拐 提 擐 旐 壘 某 棎 槐 櫐 毒 渺 淐 滐 濯

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）

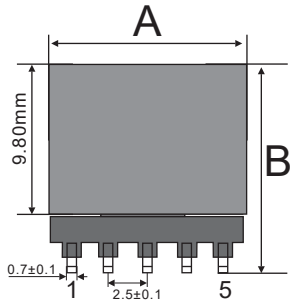
ADD: No.1 Block, WeiTai Rd. Ying Ren Shi Industry Park, Shi Yan Sub-District, Bao'An ShenZhen,

TEL：+86-755-29810619　29810976　FAX:+86-755-29810159

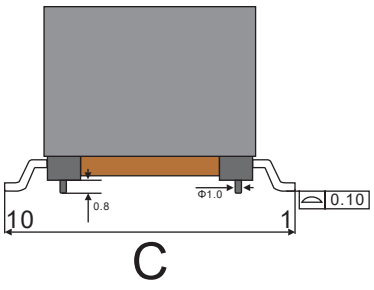
Http://www.group-tek.com　E-mail:sale1@group-tek.com

2. Mechanical Dimensions:

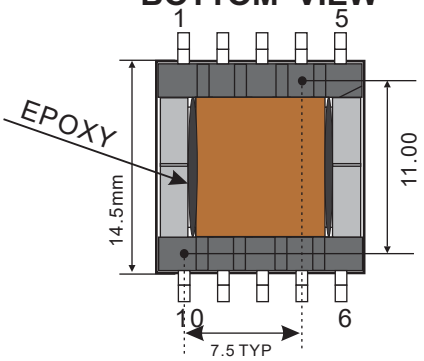
FRONT VIEW



SIDE VIEW

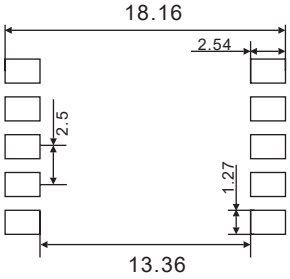


BOTTOM VIEW



Note:
1.Wrap 2Ts of 7mm kapton tape around the finished part.
2.Fixed the cores with glue,and fixed the case with glue.

Suggested PCB Paad Layout



Unit: mm

A MAX	B MAX	C MAX
15.0	14.8	17.8

Laser Marking information

PDT25125SR GROUP-TEK
• YYWW

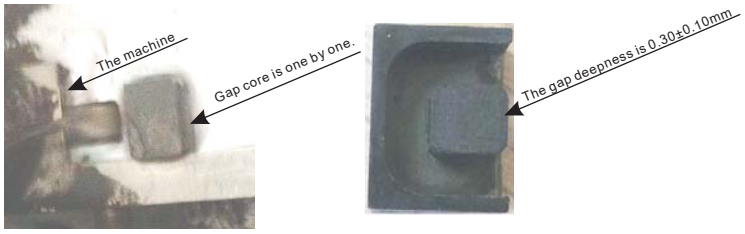


3.Electrical Characteristics :

Specifications: at 25℃. Operating Temperature -40 to +105°C*			
NO.	ITEM	TEST CONDITION	SPECIFICATION
1	Inductance	(1-3) @100KHz, 1.0V	41.0uH ±10%.
2	Leakage Inductance	(1-3) @100KHz, 1.0V with shorted other pins.	0.67uH Max.
3	DCR	(1-3) @ 25°C	62.0mΩ Max.
4		(9-6) @ 25°C	20.0mΩ Max..
5		(10-7) @ 25°C	23.0mΩ Max.
6		(4-5) @ 25°C	120.0mΩ Max.
7	HI-POT	PRI TO SEC	2250Vac 5mA 3Sec.
8	TURN RATIO	(1-3):(9-6):(10-7)	2.67:1.0:1.0±2%.
9	TURN RATIO	(1-3):(4-5)	2.67:1.0±2%.
10	INSULATION RESISTANCE	PRI--SEC DC500V	100MΩ Min.
11		PRI--CORE DC500V	100MΩ Min.
12		SEC--CORE DC500V	100MΩ Min.

*Remark:Product surface temperature:-40 to +125℃,at 25℃.

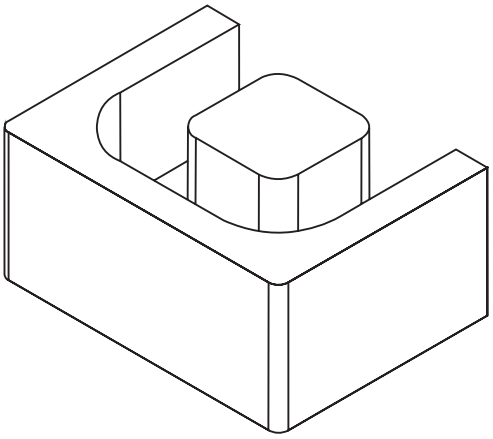
4.Overhauling List.

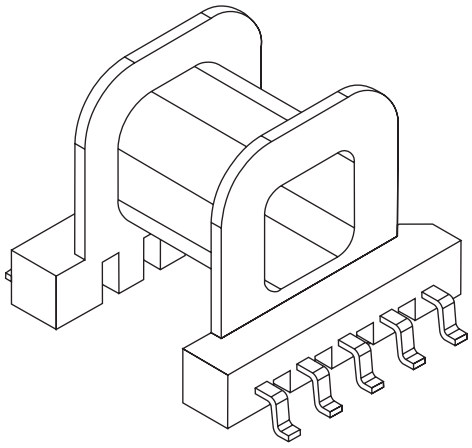
NO.	ITEM	SPECIFICATION
1	Tape turns	2T
2	Winding turns	P1-1:16T S1-1:6T P1-2:16T S1-2:6T P2:6T
3	Pins order/Pin connection .	1T
4	Marking Information	PDT25125SR GROUP-TEK ● DATE CODE
5	Gap the center leg	
6	Solder Temperature	

5.Winding Information:

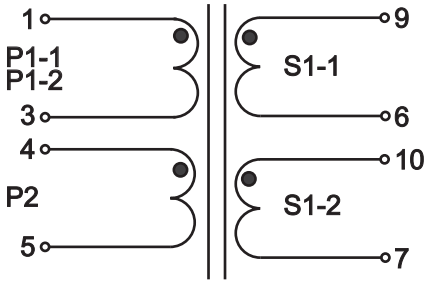
WINDING SEQ.	ST-FN	WIRE/FOIL	TURNS	WRAP INSUL.	MARGIN TAPE	SLEEVE	NOTE
P1-1	1--3	4*0.21mm 2UEW	16	1T w8.0mm (kapton tape)	N/A	N/A	1
S1-1	9--6	4*0.27mm 2UEW (Red)	6	1T w8.0mm (kapton tape)	N/A	N/A	1
P1-2	1--3	2*0.21mm 2UEW (Natural)	16	1T w8.0mm (kapton tape)	N/A	N/A	1
S1-2	10--7	4*0.27mm 2UEW	6	1T w8.0mm (kapton tape)	N/A	N/A	1
P2	4--5	3*0.17mm 2UEW	6	2T w8.0mm (kapton tape)	N/A	N/A	1

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

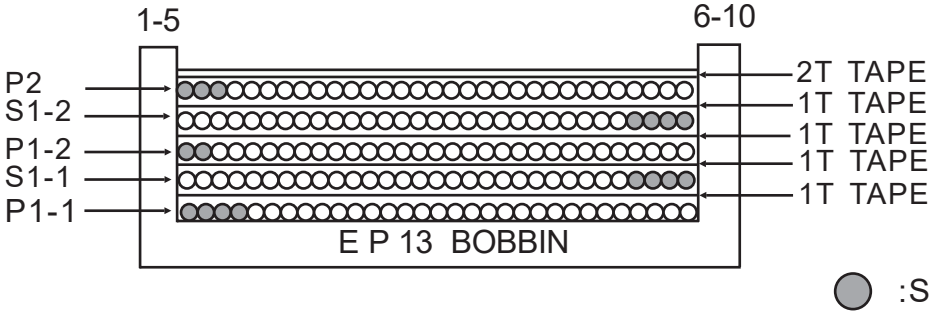




6.Schematic:



7.Winding construction



:Start terminal

8.Material List:

NO.	ITEM.	MATERIALS	SUPPLIERS/MANUFACTURERS	UL FILE NO.
1	BOBBIN	PHENOLIC T375J UL RATING: 94V-0	CHANG CHUN PLASTICS CO LTD.	QMFZ2.E59481
2	CORE	TP2A	TTS Technology Co.,Ltd.	N/A
3	WIRE	POLYURETHANE ENAMELED TYPE NO: 2UEW THERMAL RATING:180°C	ZHUHAI SUNTEK WIRE CO LTD	OBMW2.E234867
4	TAPE	ADHESIVE POLYESTER TAPE TYPE NO.:CT*(c)(g) THERMAL RATING:130°C yellow tape: for inner coils	JingJiang yahua pressure sensitive glue Co., Ltd	E165111
5	SOLDER	SN/CU: 99.3/0.7	Gao Xin stannum industry Co.,Ltd	N/A
6	Glue	E-500(xx)	Dong Guan city eatto electronic material Co.,Ltd	E218090
7	CASE	PHENOLIC T375J UL RATING: 94V-0	CHANG CHUN PLASTICS CO LTD.	QMFZ2.E59481

9.PACKING INFORMATION:

DESCRIPTION	QTY
PIECES PER REEL	150
PIECES PER POCKET	1
PIECES PER BOX	450
REEL PER BOX	3
GROSS WEIGHT PER BOX(KG)	TBD
NET WEIGHT PER BOX(KG)	TBD

The following Page(s) are related to Miscellaneous-03. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

GROUP-TEK®

承 认 书

RoHS

SPECIFICATION FOR APPROVAL

客户名称 CUSTOMER	
客户料号 MODEL NO	
产品名称 PART NAME	COMMON MODE CHOKE
产品型号 PART TYPE	PCM1206-752S
版 本 REV	X0
签 名 SIGNATURE	制作：联泰兴 2024-11-20 JLYe PREPARED BY 审核：联泰兴 2024-11-20 weifeng.Luo CHECKED BY 批准 联泰兴 2024-11-20 Jiang.Wang APPROVED BY
客户承认 CUSTOMER APPROVAL	承认印: SIGNET 签 名: SIGNATURE

深 圳 市 联 泰 兴 电 子 科 技 有 限 公 司
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 2-5 楼
ADD: Floor 2-5, No.1 Block, WeiTai Rd. Ying Ren Shi Industry Park, Shi Yan Sub-District, Bao'An ShenZhen,China
TEL：+86-755-29810619 29810976 FAX：+86-755-29810159
Http://www.group-tek.com **E-mail:sale1@group-tek.com**

二. ELECTRICAL CHARACTERISTICS:

PART NUMBER	INDUCTANCE @10KHz/0.3V (1-2)=(4-3) mH+50%-30%	Turn Ratio@ (1-2):(4-3)	Rated Current IRMS△T≤40℃ Typ	RDC(Ω) (1-4)=(2-3)Max	HI-POT pri-sec V 1mA/ 2Sec
PCM1206-752S	7.5mH	1:1±2%	1.0A	250mΩ	1500V/AC

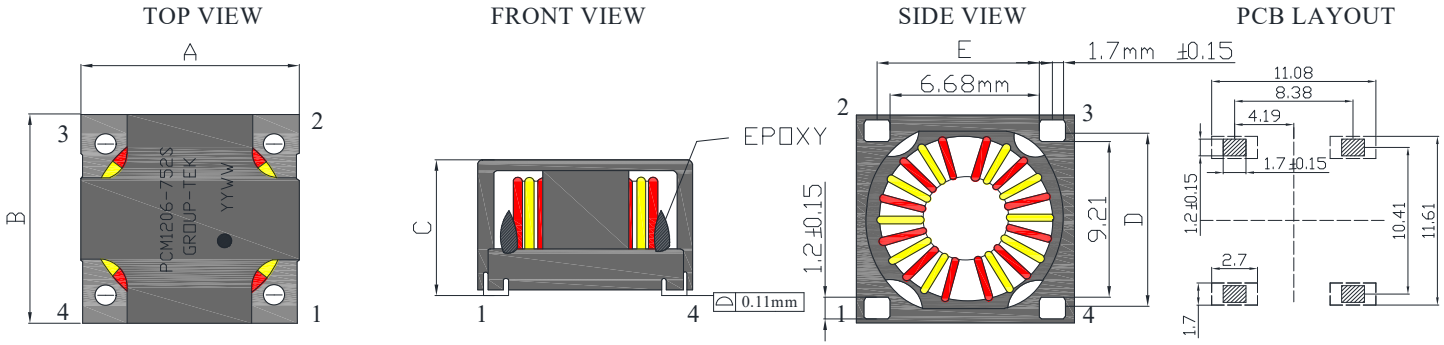
Operating temperature -40℃~ +125℃

CH3302 or HP4284……, RDC test equipments CH502…..

*. Inductance & Q value test condition Frequency 10KHz and 0.3Vrms at 25℃;

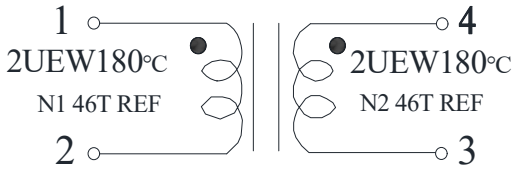
*. Storage temperature -25℃~+125℃, Humidity 20% to 70%RH.

三. EXTERNAL DIMENSIONS: UNIT: mm



Item	A	B	C	D	E
mm	12.6 ± 0.5	12.8 ± 0.5	6.0 ± 0.5	10.41 ± 0.5	8.38±0.5

四： CIRCUIT



五. MATERIAL LIST:

NO	ITEM	MATERIAL	SUPPLIER OF THE MATERIAL	UL File no.
1	CASE	PHENOLIC PM9630 UL RATING: 94V-0	Sumitomo Bakelite CO.,LTD	E41429
2	CORE	Mn-Zn T9*5*3 10K	HUIZHOU KELI MAGNETICS CO ,LTD	N/A
3	WIRE	POLYURETHANE ENAMELED TYPE NO: 2UEW THERMAL RATING:180° C	.Shing Shun Magnet wire (hui zhou)co,Ltd	E255839
4	SOLDER	SN99.3%/CU0.7%	Gaoxin stannum industry co,ltd	N/A
5	Glue	E-500(XX)	Dong Guan city eatto electronic material Co.,Ltd	E218090



NETWORK CAMERA, PNM-A13022RV

DC 12V ⎓ 1.67A /

PoE(53V ⎓) 0.42A

M/C: PNM-A13022RV/KEX Fac.ID:D



2025.08 S/N: Serial No.

Rainproof/ Étanche
IP66

MAC ADDRESS: XX-XX-XX-XX-XX-XX

CAN ICES-3(A)/NMB-3(A)

Manufacture for Hanwha Vision Co., Ltd.

MADE IN KOREA

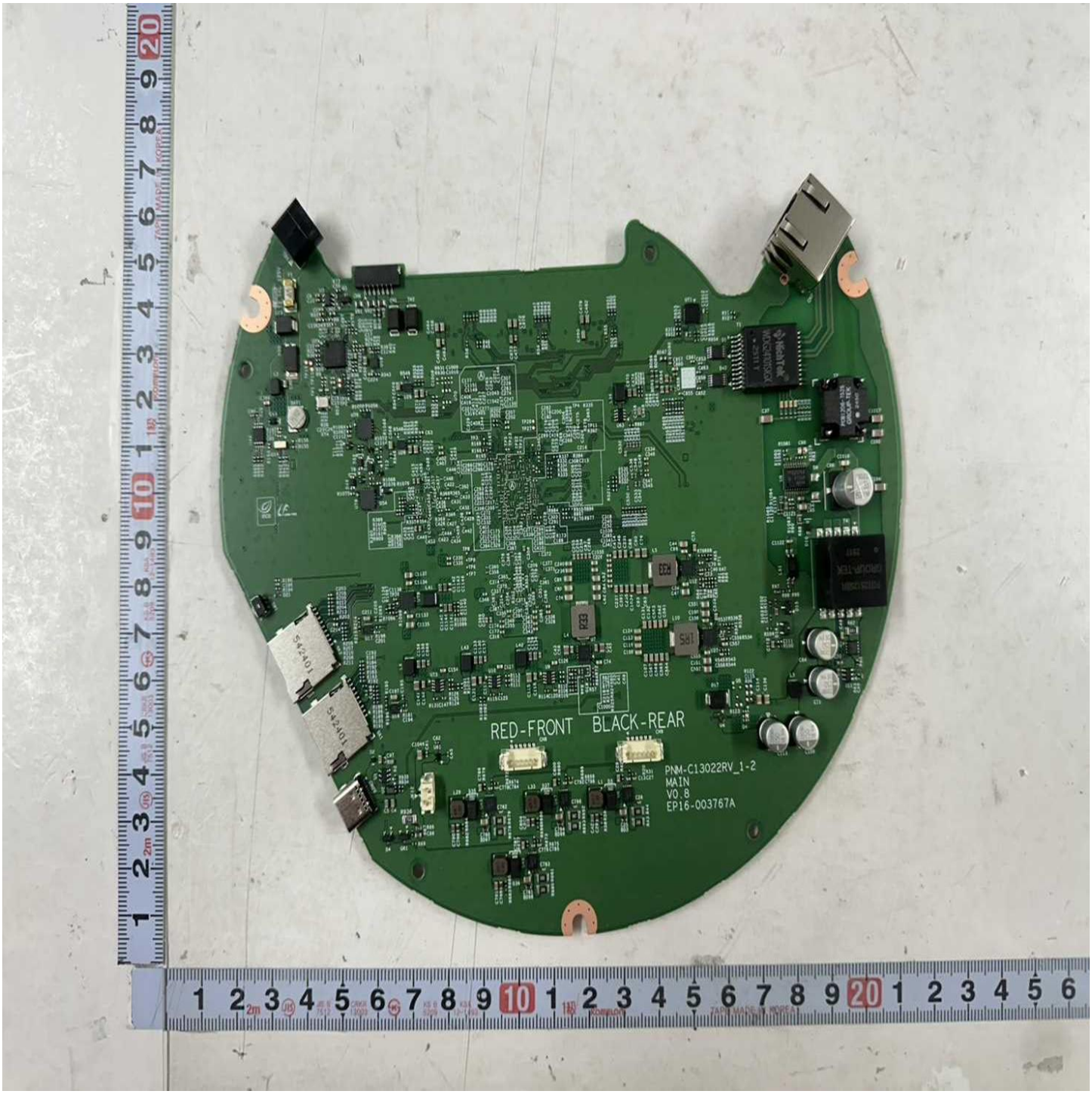
Photographs-01 Page-1



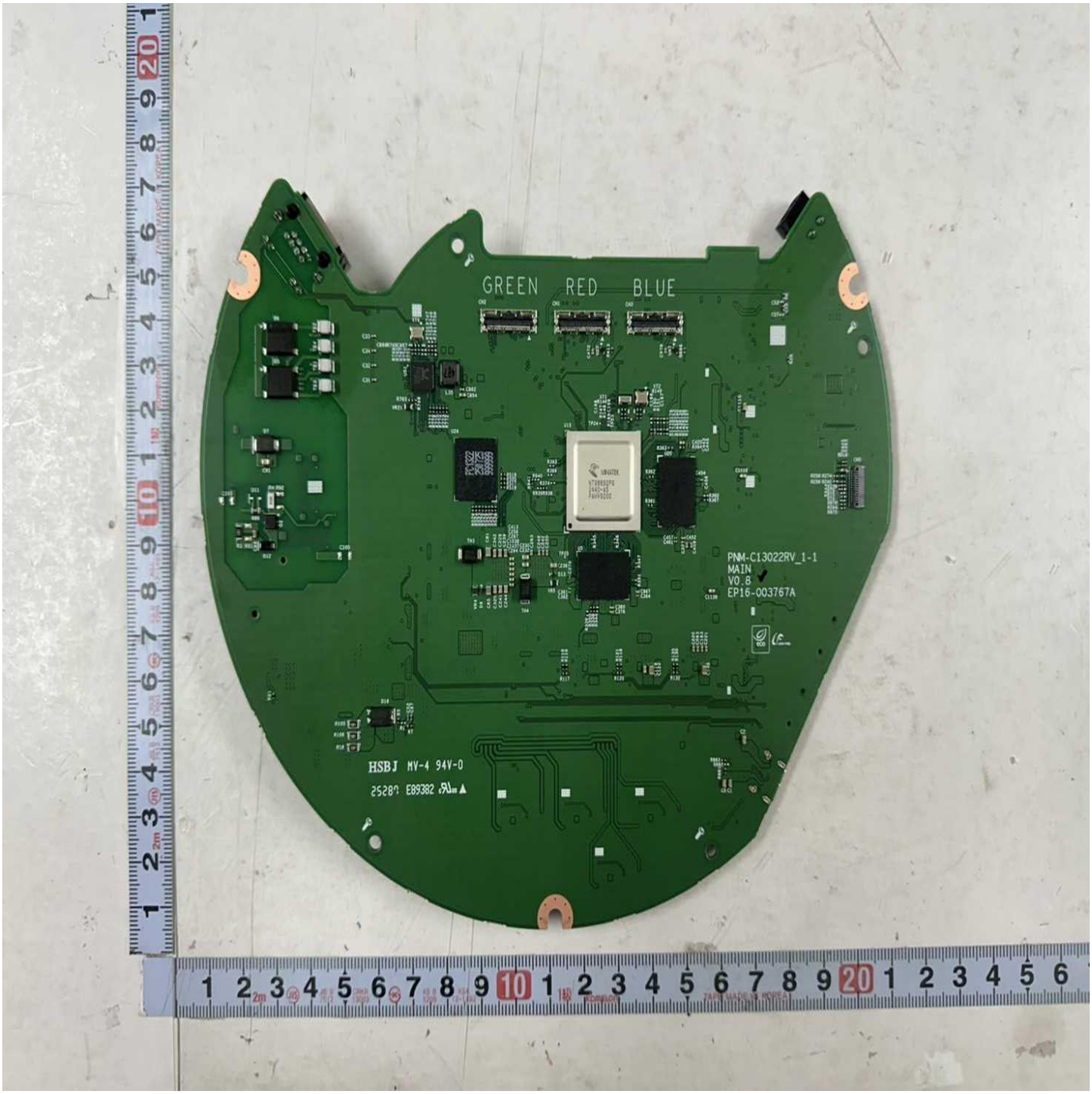
Photographs-02 Page-1



Photographs-05 Page-1



Photographs-06 Page-1



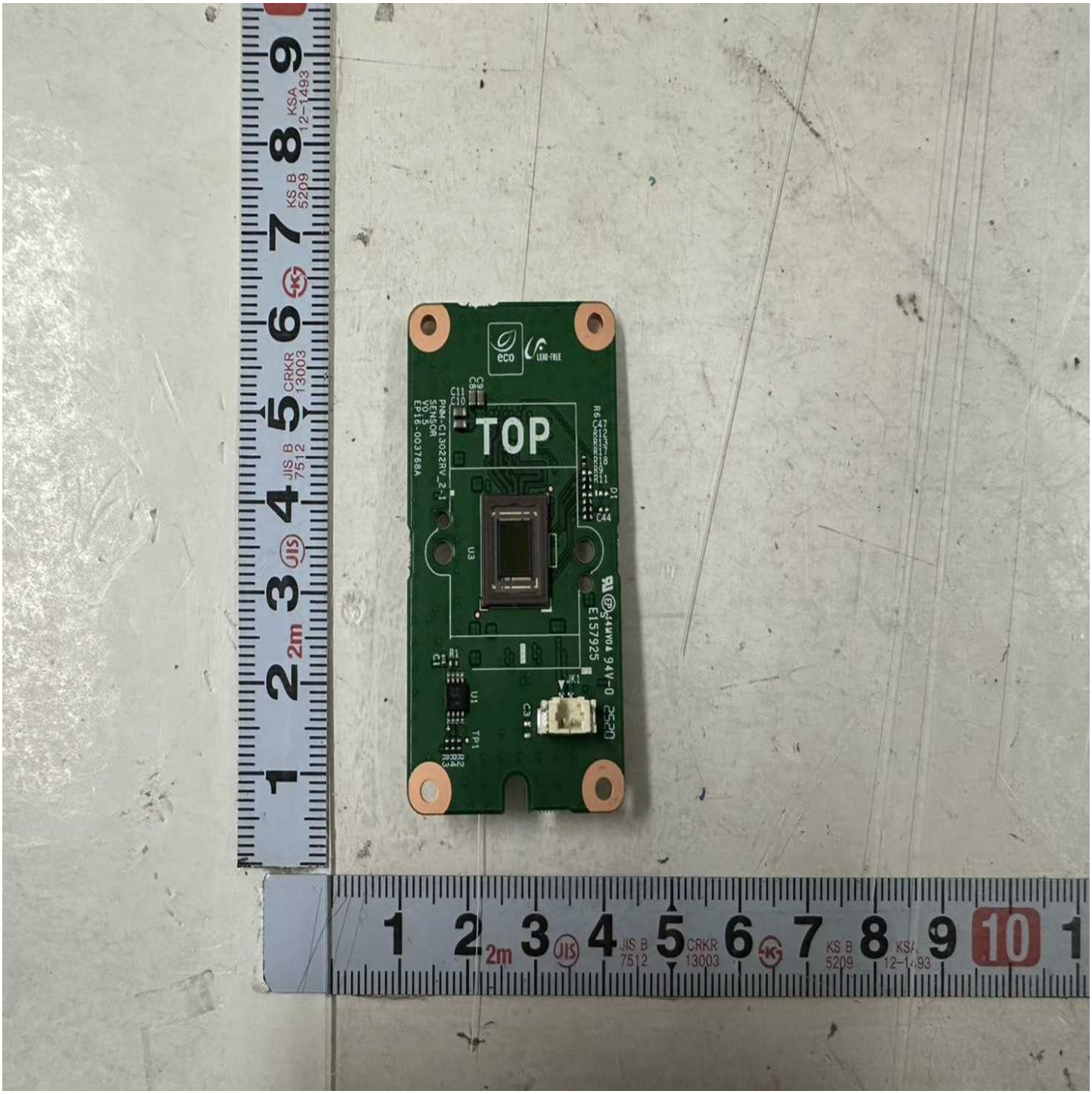
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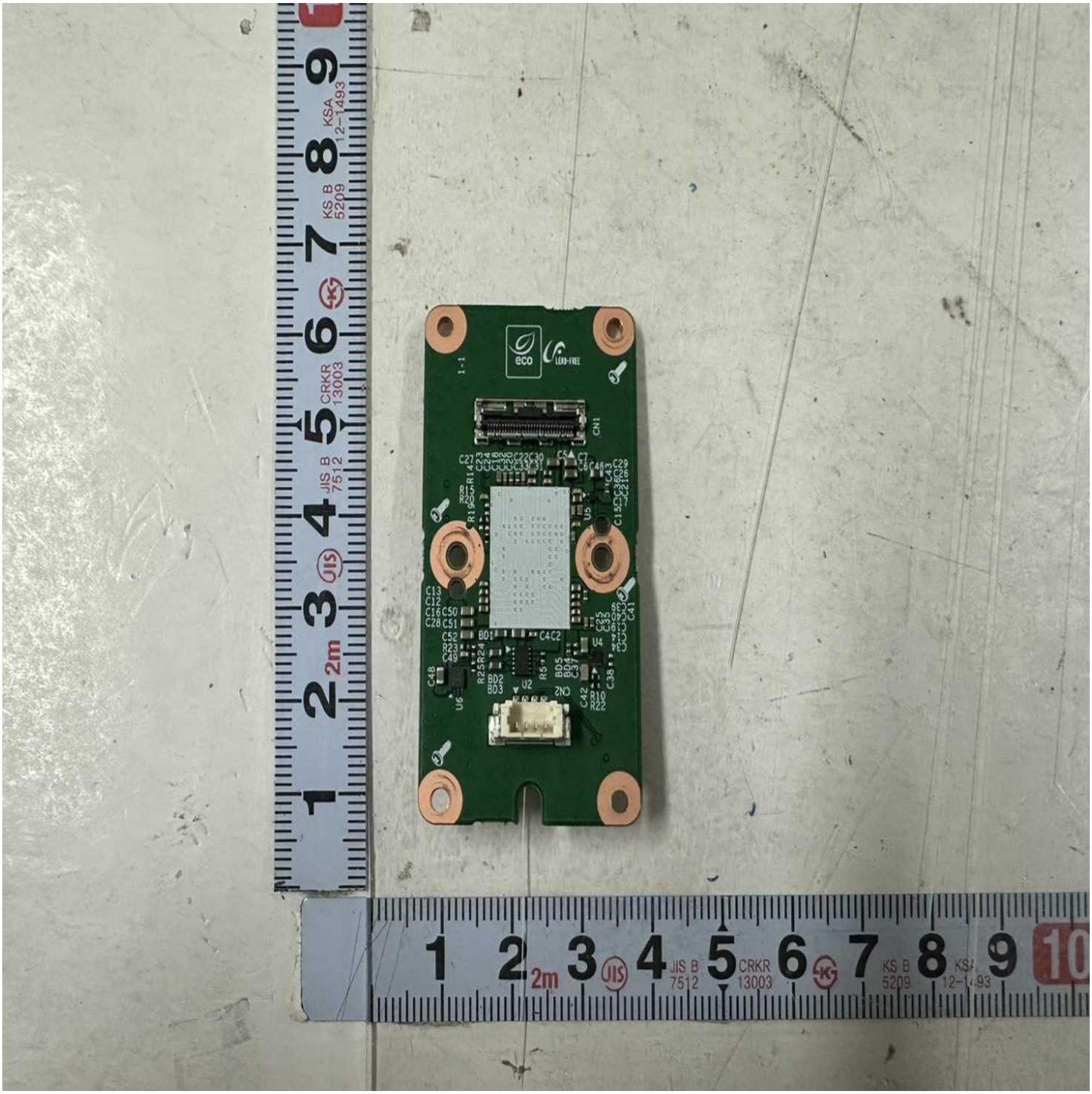
Photographs-08 Page-1



Photographs-09 Page-1



Photographs-10 Page-1



Photographs-13 Page-1



Photographs-14 Page-1

