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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.

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-A6248-DescriptionUL
Figure-12-Total

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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:	PNV-A7082RZ, PNV-A9082RZ
Rating:	PoE (53 Vdc), 0.28 A (for model PNV-A7082RZ) PoE (53 Vdc), 0.33 A (for model PNV-A9082RZ)
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: Lawrence Lee / Project Handler Reviewed By: SeulKi Park / 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 is designed for outdoor or indoor use, wall or ceiling use with mounting brackets.

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

Model Differences

PNV-A7082RZ is a basic model.

PNV-A9082RZ is identical to basic model except model designation, rating and lens specification.

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)	50 Outdoor: minimum -50
IP protection class	IP 66, 67
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)	1.93

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 outdoor equipment/enclosure was evaluated for use in an ambient range of : -50 °C to 55 °C

Additional Information

4791690478

- Maximum Normal Load: Continuous operation (Operate the camera through networked equipment with IR LED ON, Motor on, Camera on, Heater on.)

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- Add model name and rating; PNV-A9082RZ.

- Maximum Normal Load: Continuous operation (Operate the camera through networked equipment with IR LED ON, Motor on, Camera on, Heater 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 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", IP66, IP67
Hard Copy	A. IMPORTANT or ATTENTION or similar wording B. Please check 'Manuals' from our 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 PoE (53 Vdc), 0.28 A.
(Website) Manual - 2	The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3.at shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL 60950-1 or PS2 as defined in UL 62368-1.

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 model					
BD1.3	Electric Strength Test Exemptions – This test is not required for the following models:					
	All model					
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 model					

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 (Plastic)	MITSUBISHI ENGINEERING- PLASTICS CORP	S-3000(&6)(f1)	Min. 1.8 mm thickness, rated Min. V-2, 125 deg. C	QMFZ2	UL (E41179)	
Enclosure – IR LED cover (Plastic)	LOTTE CHEMICAL CORPORATION	QC122(+)(f1)	Min. 1.5 mm thickness, rated Min. V-2, 125 deg. C	QMFZ2	UL (E115797)	
Enclosure-Top side (Metal)	Interchangeable	Interchangeable	Aluminium, Min. 2.4 mm thickness, See enclosure for dimension.	-	Tested in equipment	
Enclosure - Top (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.0 mm thickness, See enclosure for dimension.	-	Tested in equipment	
Enclosure - Bottom (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.0 mm thickness, See enclosure for dimension.	-	Tested in equipment	
Internal Metal Part Materials	Interchangeable	Interchangeable	Aluminum, Min. 2.0 mm thickness, See enclosure for dimension.	-	Tested in equipment	
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	SABLC JAPAN L L C	D2000	Min. 1.5 mm thickness, rated Min. HB, 80.0 deg. C	QMFZ2	UL (E207780)	
Internal Plastic Part Materials - Alternate	Interchangeable	Interchangeable	Min. 1.5 mm thickness, rated Min. HB	QMFZ2	UL	

Opto-coupler (LS1)	LITE-ON TECHNOLOGY CORP	LTV-217 (Type: LTV-217-C-G)	Isolation Voltage: 3750. Max. Operation Temperature: 110 deg. C	FPQU2	UL (E113898)	
Opto-coupler (LS1) - Alternate	COSMO ELECTRONICS CORP	KPC357NT	Isolation Voltage: 3750. Max. Operation Temperature: 115 deg. C	FPQU2	UL (E169586)	
Transformer(T1)	SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD	PDT25125SR	41.0 uH, 130 deg. C, See enclosure for more detail.	-	Tested in equipment	
Line-Filter (L5)	SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD	PCM1206-752S	7.5 mH, 130 deg. C, see enclosure for more detail.	-	Tested in equipment	
Heater resistor (R01, R04, R07, R10) (Total 4 EA)	Interchangeable	Interchangeable	Each 10 ohm (4 EA, 0.36 W Total)	-	Tested in equipment	
Heater resistor (R02, R03, R05, R06, R08, R09) (Total 6 EA)	Interchangeable	Interchangeable	Each 20 ohm (6 EA, 0.54 W Total)	-	Tested in equipment	
Lens module for PNV-A7082RZ	DONGGUAN YUTONG OPTICAL TECHNOLOGY CO LTD	YTW30033A01DB.I R-PIRIS-JZ-4MP+H128+IR1021	Rated 4.2 - 5.0 Vdc	-	Tested in equipment	
Lens module for PNV-A9082RZ	CBC Co.,Ltd. IO Div.	NSF2.3Z5915BHR W-F9A(TMD018-SS00)	IRIS, ZOOM, AF :3-5 V, IRCF: 3-5.5 V	-	Tested in equipment	
Stepping Motor (Pan, Tilt)	Mine ea (Cambodia) Co., Ltd.	SMC10-F20-XKK2	5 Vdc, max 200 mA	-	Tested in equipment	

Stepping Motor (Rotate)	NMB TECHNOLOGIES CORP	SMC10-2007-A	5 Vdc, max 200 mA	-	Tested in equipment	
Rechargeable battery (BAT1)	SEIKO INSTRUMENTS INC MICRO-ENERGY DIV	MS421R	Lithium, Rechargeable, Max Charging Voltage: 3.4 Vdc, Max Charging current: 300 mA	BBCV2	UL (MH15628)	
Lithium Battery Protection Circuit (BAT1)	Interchangeable	Interchangeable	Diode (D2, 80 V, 250 mA) and Resistor (R194, 3.3 Kohm) in series	-	Tested in equipment	
Thermal pad	KOMOTECH	KGP-1(a)	Min. 2.0 mm thickness, rated V-0, 150 deg. C	QMFZ2	UL (E245303)	
Gasket – Inside the Cover Top	NAMYANG VINA	O-VMQ-60-BK	Gasket Test was conducted under E158873-A6034	-	Tested in equipment	
Gasket - Between Top Cover and Enclosure Bottom	NAMYANG VINA	O-VMQ-40-BK	Gasket Test was conducted under E158873-A6034	-	Tested in equipment	
PWB	HANNSTAR BOARD CORP	ML-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. 50 deg. C to Max.-50 deg. C if not specified.	PGDQ2 or PGJI2	UL	
IR LED (ZONE #1 LD1 to LD3) (ZONE #2 LD1 to LD3) (ZONE #3 LD1 to	OSRAM	SFH4713A	Vf = 2.3 Vdc (max), If = 1 000 mA Max	-	Tested in equipment	

Issue Date: 2025-06-03
Revision Date: 2025-08-10

LD3) (Zone #4 LD1 to LD3) (total 12 ea)						
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Enclosures

Type	Supplement Id	Description
Photographs	03-01	External View
Photographs	03-02	Internal View
Photographs	03-04	Lens Module
Photographs	03-05	LED Board - Top
Photographs	03-06	LED Board - Bottom
Photographs	03-07	Network Board - Top
Photographs	03-08	Network Board - Bottom
Manuals	06-01	Manual
Miscellaneous	07-01	Transformer (T1) Specification
Miscellaneous	07-02	Line Filter (L5) Specification
Miscellaneous	07-03	Enclosure Drawing
Miscellaneous	07-04	Label

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

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 PoE(53 Vdc), 0.33 A (PNV-A9082RZ), PoE(53 Vdc), 0.28 A (PNV-A7082RZ).
16. 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, 1.38 A or PoE(53 Vdc), 0.36 A (PND-A9082RV/PNO-A9082R/PNO-A9092R), 12 Vdc, 1.06 A or PoE(53 Vdc), 0.28 A (PND-A7082RV/PNO-A7082R).
17. This product is intended to be supplied by isolation power.
18. 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.
19. 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.
20. 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.
21. 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.
22. Installing or using the product in water can cause serious damage to the product.
23. Although a rapid change in temperature could cause frost inside the dome, there will be no problem with the video.



24. The operating temperature for the PNV-A9082RZ/PNV-A7082RZ products is -50°C to +55°C(-58°F to +131°F).
25. The operating temperature for the PND-A9082RV/PND-A7082RV products is -25°C to +50°C(-13°F to +122°F).
26. The operating temperature for the PNO-A9092R/PNO-A9082R/PNO-A7082R products is -50°C to +55°C(-58°F to +131°F).
27. The heater turns on when the ambient temperature is below 5°C(41°F) and off when it is above 10°C(50°F).
(PNV-A9082RZ/PNV-A7082RZ/PND-A9082RV/PND-A7082RV/PNO-A9092R/PNO-A9082R/PNO-A7082R)

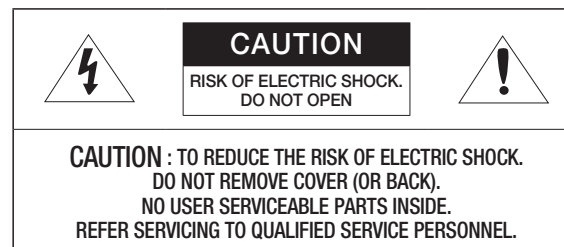
WARNING

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.

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.

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 USB-C port on the product is intended for initial setup only and should not be used for any other purpose. (PND-A9082RV/PND-A7082RV/PNO-A9092R/PNO-A9082R/PNO-A7082R)

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

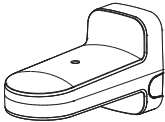
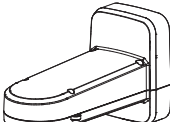
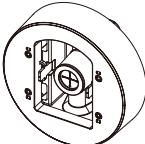
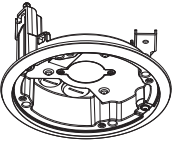
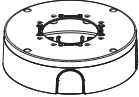
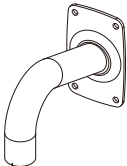
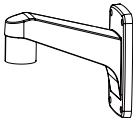
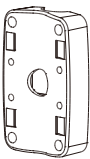
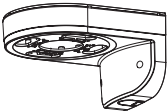
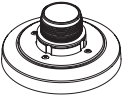
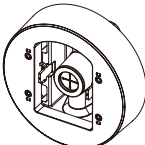
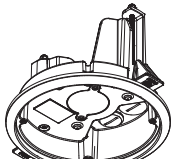
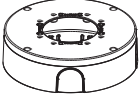
※ Please read this manual for the safety before using of goods and keep it in the safe place.

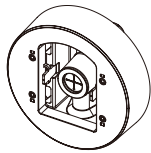
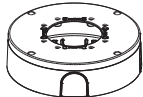
We do not guarantee the quality of third-party products (e.g. lenses, accessories) that you separately purchase.

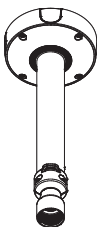
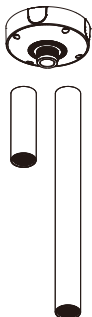
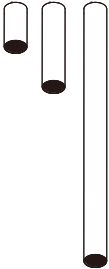
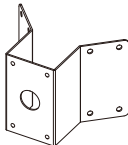
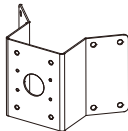
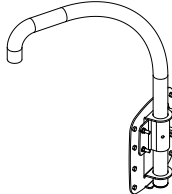
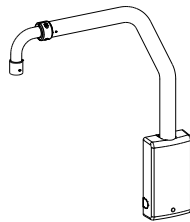
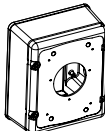
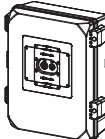
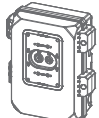
In particular installation environments, there might be interference in radio communications. When interference of electromagnetic waves occurs between the product and radio communication device, it is recommended to keep a certain distance between the two or change the direction of the receiving antenna.

OPTIONAL ACCESSORIES FOR INSTALLATION

You can purchase appropriate optional accessories available.

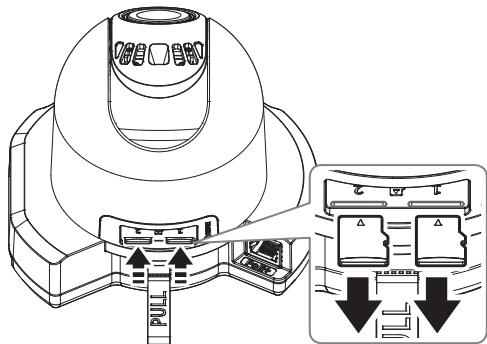
Model name	Wall Mount and Pole Mount	Hanging Mount	Pole Mount (Direct Assembly)	Housing	Back Box and Tilt Mount
PNV-A9082RZ/ PNV-A7082RZ	 SBP-250WMW (Wall&Pole Mount)  SBP-400WMW (Wall&Pole Mount)	 SBP-180HMMW1	 SBD-180PMW	 SHD-1370FPW	 SBV-180BW (Back Box)  SBV-180WW (Waterproof Back Box)
	 SBP-300WMW (Wall Mount)  SBP-300WMW1 (Wall Mount)  SBP-300PMW2 (Pole Mount) * SBP-300PMW2 required for pole installation * SBP-300PMW2 required for pole installation				
PND-A9082RV/ PND-A7082RV	 SBP-160WMW1 (Indoor Wall&Pole Mount)	 SBP-160HMMW1	 SBD-180PMW	 SHD-1372FPW	 SBV-180BW (Back Box)  SBV-180WW (Waterproof Back Box)  SBP-160TMW1 (Tilt Mount)

Model name	Wall Mount and Pole Mount	Hanging Mount	Pole Mount (Direct Assembly)	Housing	Back Box and Tilt Mount
PNO-A9092R/ PNO-A9082R/ PNO-A7082R	-	 SBP-160HMW1	 SBD-180PMW	-	 SBV-180BW (Back Box)  SBV-180WW (Waterproof Back Box)

Model name	Ceiling Mount		Corner Mount	Parapet Mount	Cabinet
	Assembly	Individual Parts			
PNV-A9082RZ/ PNV-A7082RZ/ PND-A9082RV/ PND-A7082RV	 SBP-300CMTW (Telescopic)  SBP-300CMTS (Ball Head)  SBP-300CMW1 SBP-900CMW  SBP-150CMI SBP-300CMI	 SBP-180CMB  SBP-180CMS (Ball Head)  SBP-140CMB  SBP-150CMP SBP-300CMP SBP-900CMP  SBP-C15P  SBP-C15H	 SBP-300KMW1  SBP-156KMW	 SBP-300LMW  SBP-156LMW1	 SBP-300NBW  SBP-150NBW  SBP-050NBW
PNO-A9092R/ PNO-A9082R/ PNO-A7082R	-	-	-	-	-

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.

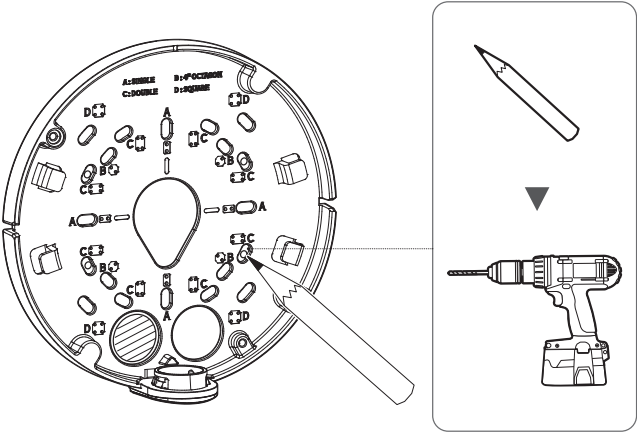


- Before removing the Micro SD card, in <Setup (⚙️)>><Event>><Storage>, set the device to <Off> and press the [Apply] button and turn the camera off.
- If you turn off the camera or remove the Micro SD card that contains data from the product, the data may be lost or damaged.

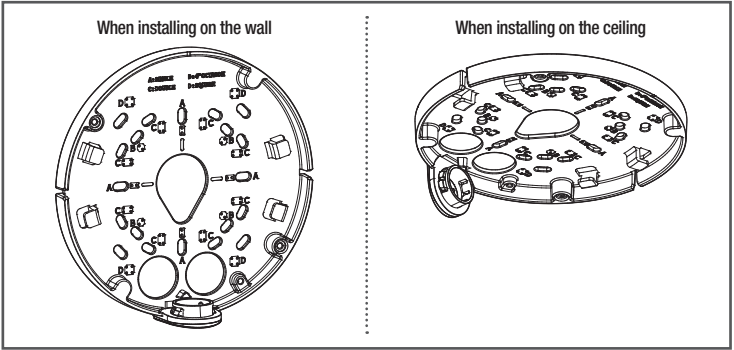
Installation (mount plate)

[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.

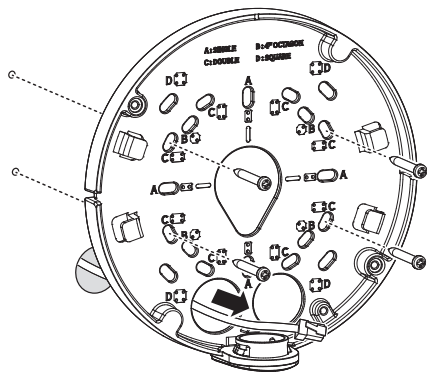


- When installing on the wall or the ceiling, check the direction of the mount plate.



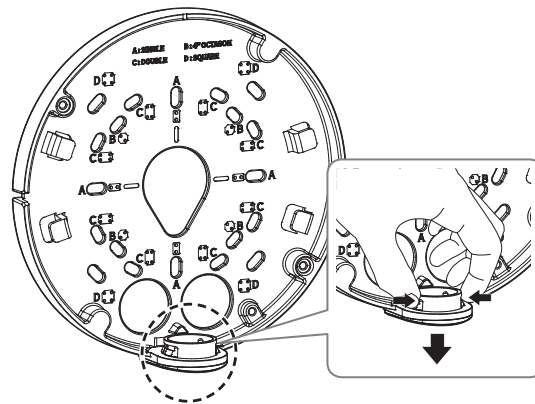
1-2. Fix the mount plate using appropriate screws.

1-3. Pull out the network cable through the hole in the mount plate.



[Installing using pipe]

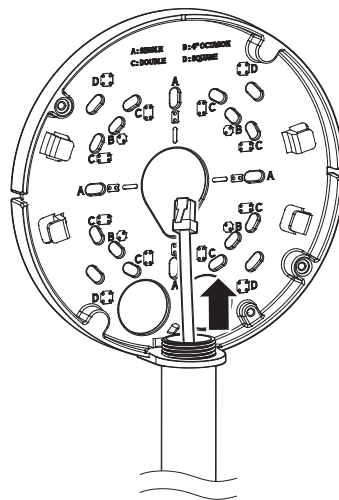
2-1. Separate the pipe cover of the mount plate by pressing its sides.



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

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

2-4. Pull out the network cable through the pipe.

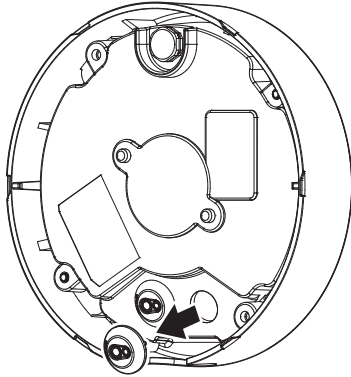


Installation (camera case)

- ! ■ 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.

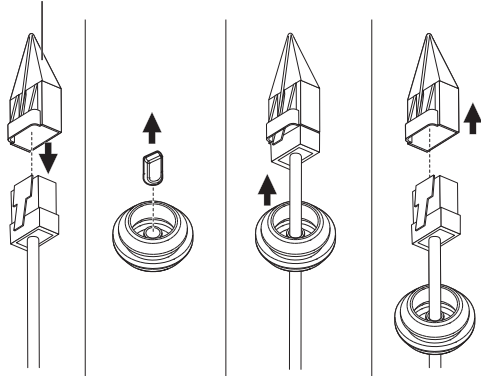
[Installing the network cable] (PNV-A9082RZ/PNV-A7082RZ: IP66/IP67)

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

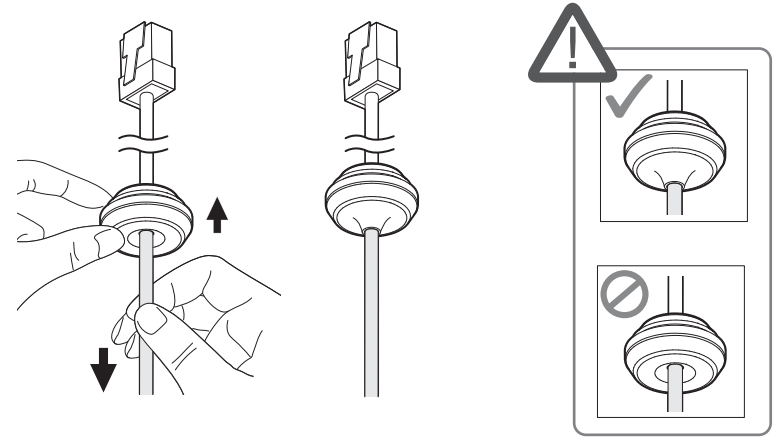


2. Pull off the extruded part of the 1-hole cable bushing provided.
3. Use the cap installer to pass through the RJ45 cable.

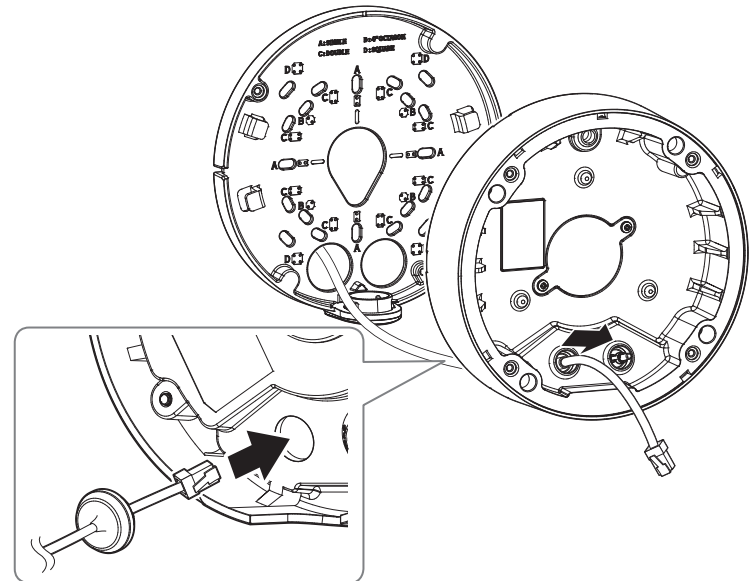
Cap Installer



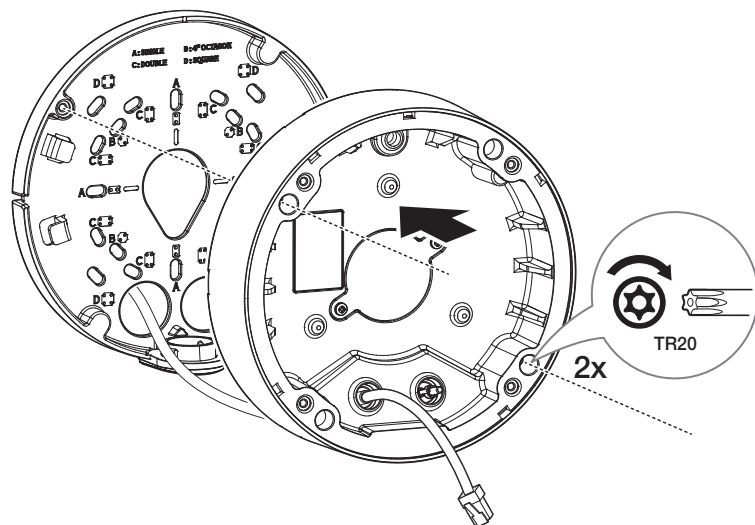
4. For waterproof protection, pull down the cable below the cable bushing as shown in the figure below.



5. Mount the cable bushing to the camera case.



6. Join the mount plate with the camera case.

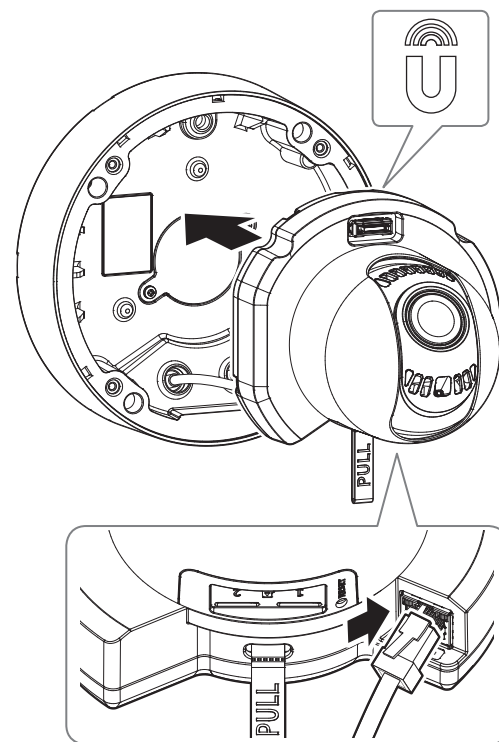


Installing the camera module

1. Connect the network cable to the PoE+ port of the camera module.
2. Attach the camera module to the case.



- A magnet is embedded at the bottom of the module
- Take caution not to allow any foreign objects between the attaching surfaces.

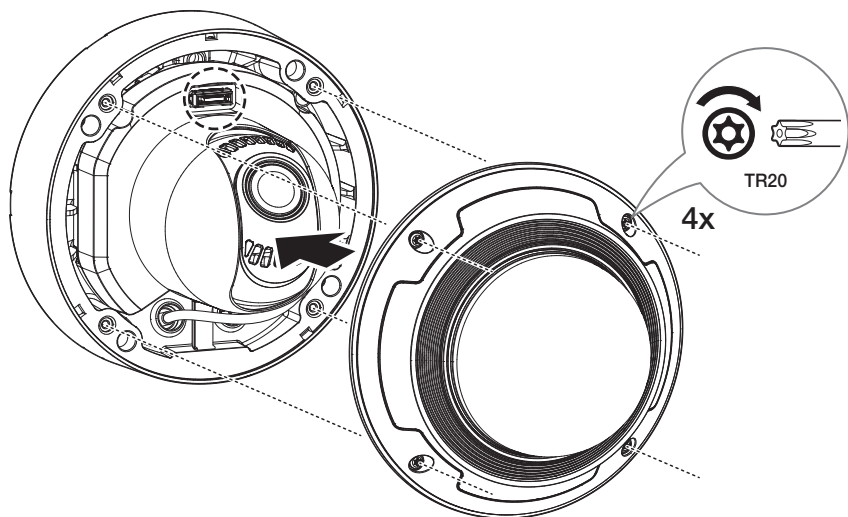


Assembling the dome cover

[Directly installing on wall/ceiling]

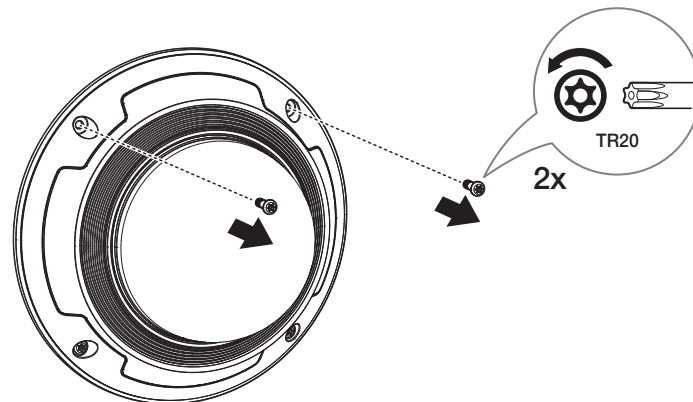
1. Assemble the dome cover.

- Align the dome cover power connector on the camera module to the connector on the dome cover before assembling.
- Make sure to firmly tighten the fastening screws so that there is no water damage issue.



[Using Weather cap]

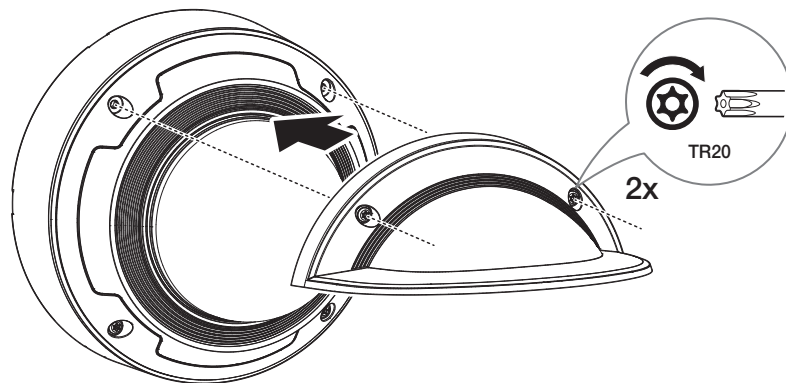
1. Remove the screws from the dome cover.



2. Assemble the dome cover.

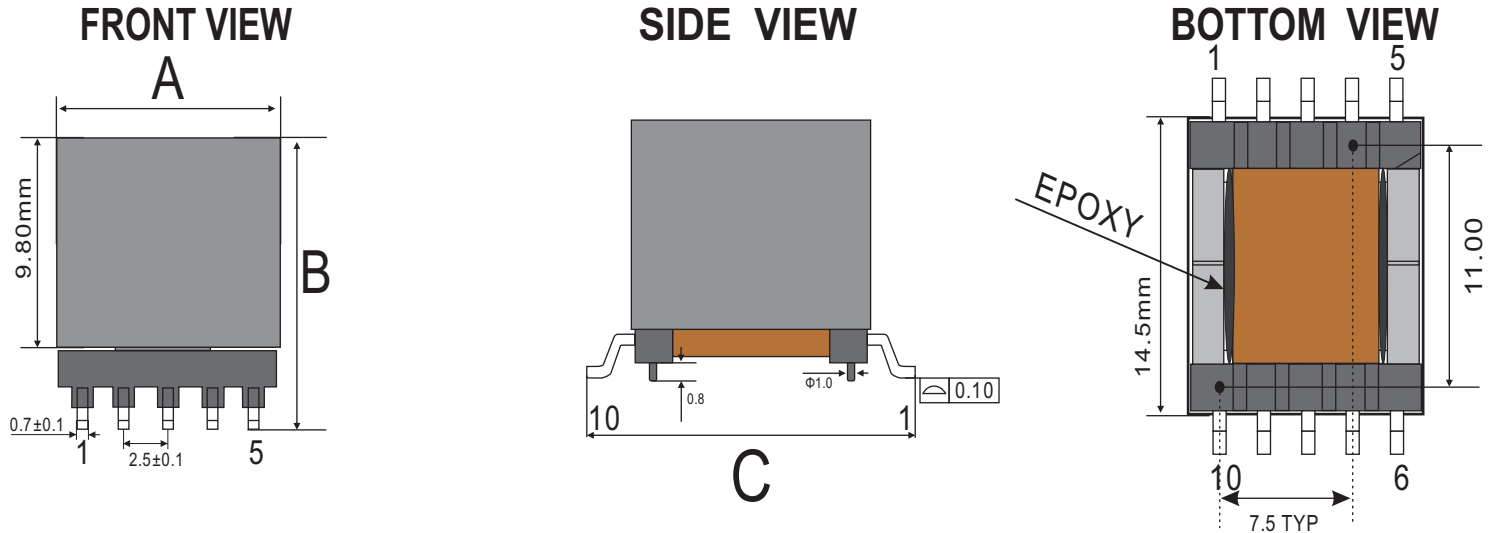
3. Mount the weather cap to the dome cover and fasten the screws.

- Make sure to firmly tighten the fastening screws so that there is no water damage issue.



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

2. Mechanical Dimensions:



Note:

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

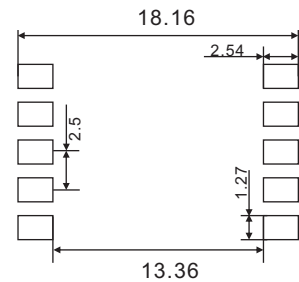
Unit: mm

A MAX	B MAX	C MAX
15.2	14.8	17.8

Laser Marking information



Suggested PCB Paad Layout



3. Electrical Characteristics :

Specifications: at 25°C.		Operating Temperature -40 to +130°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	225 0Vac 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 .

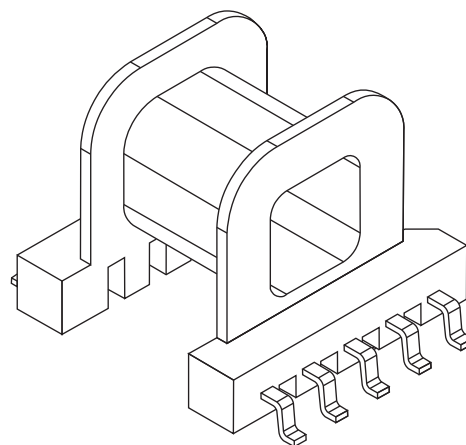
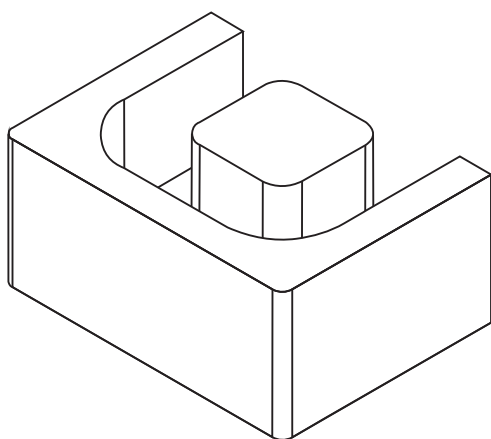
Remark:Product surface temperature:-40 to +130°C.

5.Winding Information:

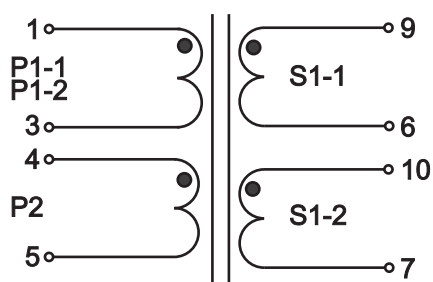
WINDING SEQ.	ST-FN	WIRE/FOIL	TURNS	WRAP INSUL.	MARGIN TAPE	SLEEVE	NOTE
P1-1	1--3	4*0.21mm 2UEW	16	1T w8.0mm (kapton tape)	N/A	N/A	1
S1-1	9--6	4*0.27mm 2UEW (Red)	6	1T w8.0mm (kapton tape)	N/A	N/A	1
P1-2	1--3	2*0.21mm 2UEW (Natural)	16	1T w8.0mm (kapton tape)	N/A	N/A	1
S1-2	10--7	4*0.27mm 2UEW	6	1T w8.0mm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

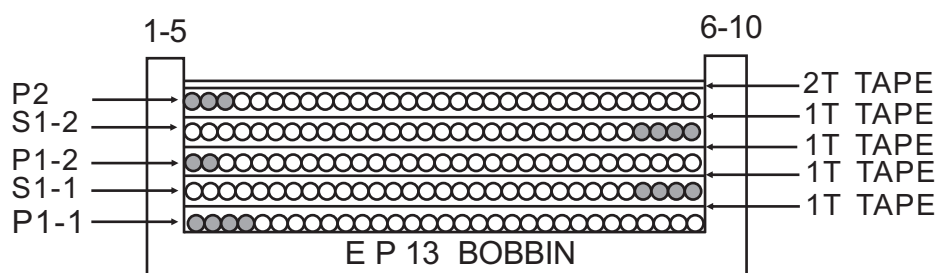
1. -Place the bobbin pin 1 left side of operator.



6.Schematic:



7.Winding construction



● :Start terminal

8.Material List:

NO.	ITEM.	MATERIALS	SUPPLIERS/MANUFAXTURES	UL FILE NO.
1	BOBBIN	PHENOLIC T375J UL RATING: 94V-0 THERMAL RATING:150°C	CHANG CHUN PLASTIC CO LTD.	QMFZ2.E59481
2	CORE	Tp2A	TTS Technology Co.,Ltd.	N/A
3	WIRE	POLYURETHANE ENAMELED TYPE NO: 2UEW THERMAL RATING:180°C	ZHU HAI SUNTEK WIRE COLTD	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 THERMAL RATING:150°C	CHANG CHUN PLASTIC 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-02. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

二. ELECTRICAL CHARACTERISTICS:

PART NUMBER	INDUCTANCE @10KHz/0.3V (1-2)=(4-3) mH+50%-30%	Turn Ratio@ (1-2):(4-3)	Rated Current IRMSΔT≤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

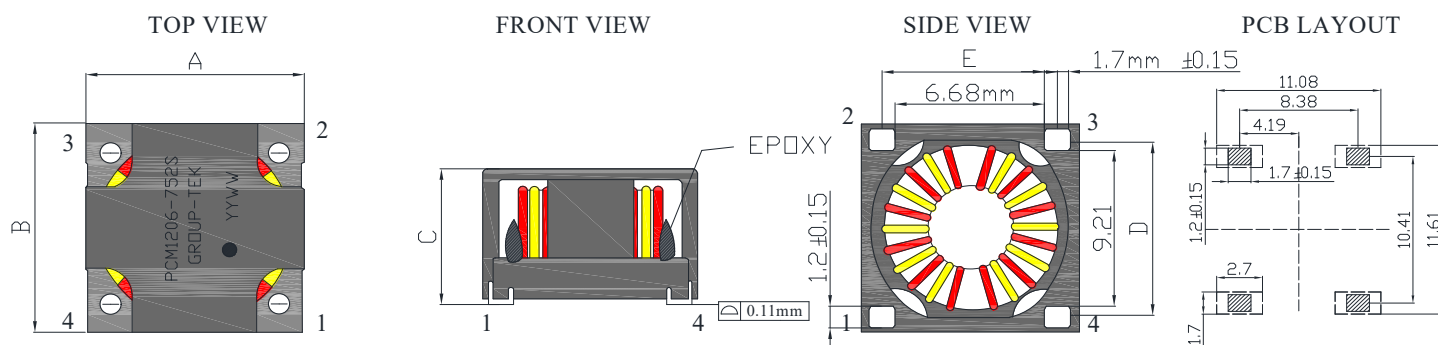
Operating temperature -40℃~+125℃

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

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

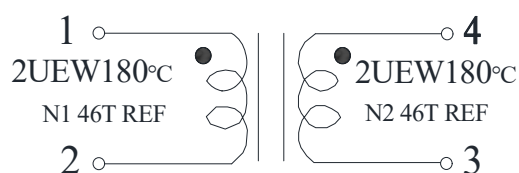
*. Storage temperature -25℃~+125℃, Humidity 20% to 70%RH.

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 CARD
1	CORE	Mn-Zn T9*5*3 10K	HUIZHOU KELI MAGNETICS CO.,LTD	N/A
2	CASE	21-0911HN	DONGGUAN FENGQIANG ELECTRONICS CO.,LTD	N/A
3	WIRE	2UEW180℃, 0.2mm R, N	.Shing Shun Magnet wire (hui zhou)co,Ltd	E255839
4	SOLDER	SN99.3%/CU0.7%	Gaoxin stannum industry co,ltd	N/A
5	Varnish	E-57	Shen zhen Eastlight chemi cals., Ltd.	N/A

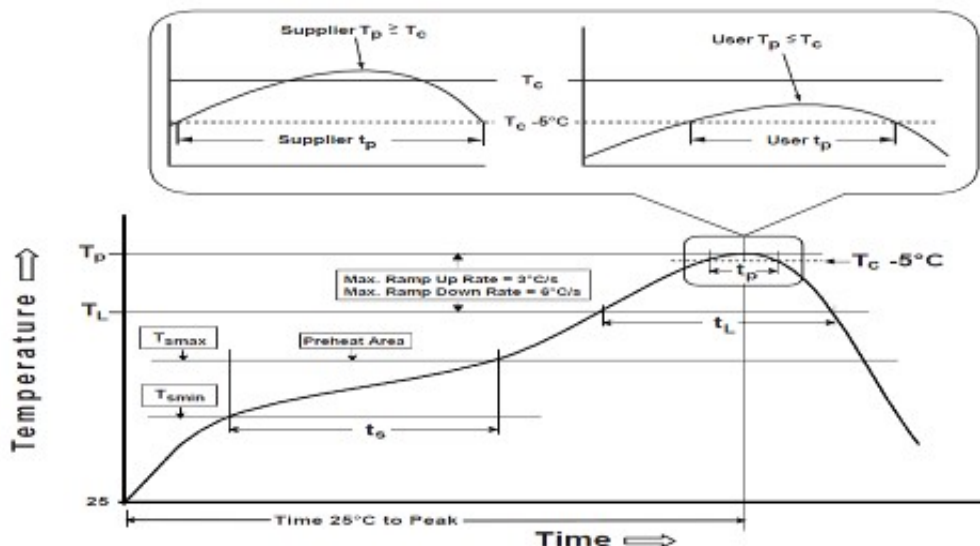
Reflow curve diagram

1.1 Available for all the through hole parts.

1.2 Soldering Method: IR Reflow.

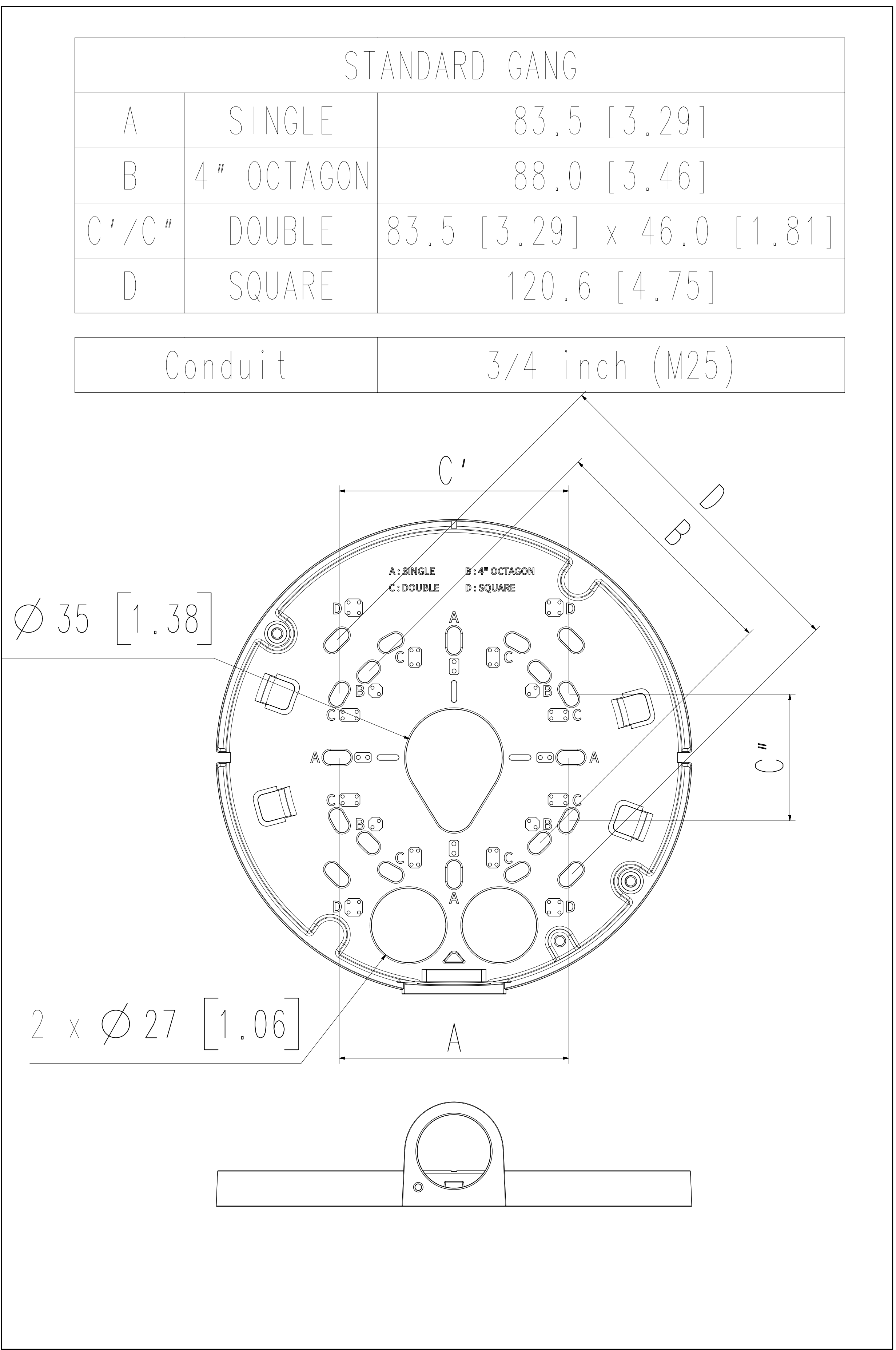
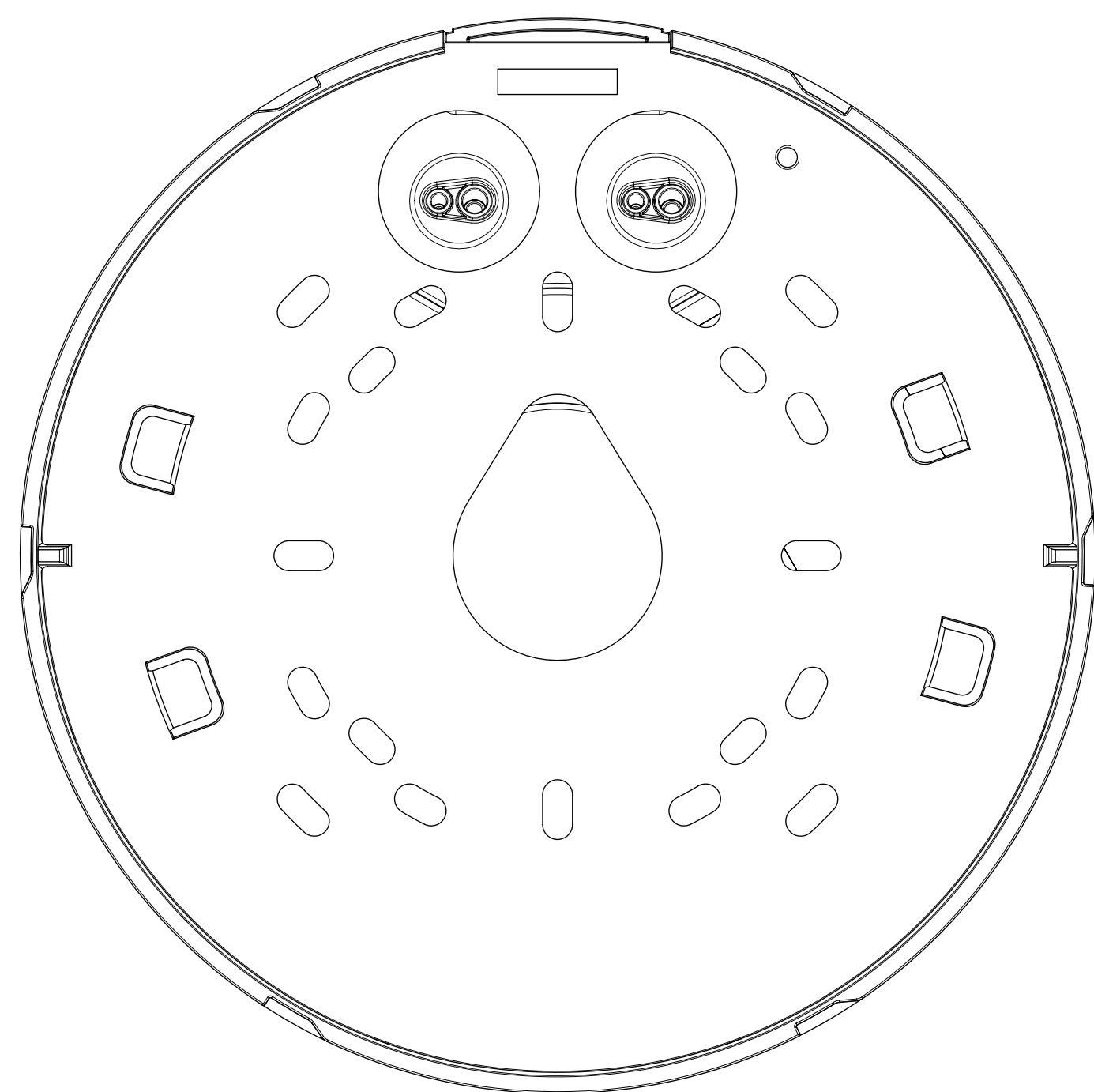
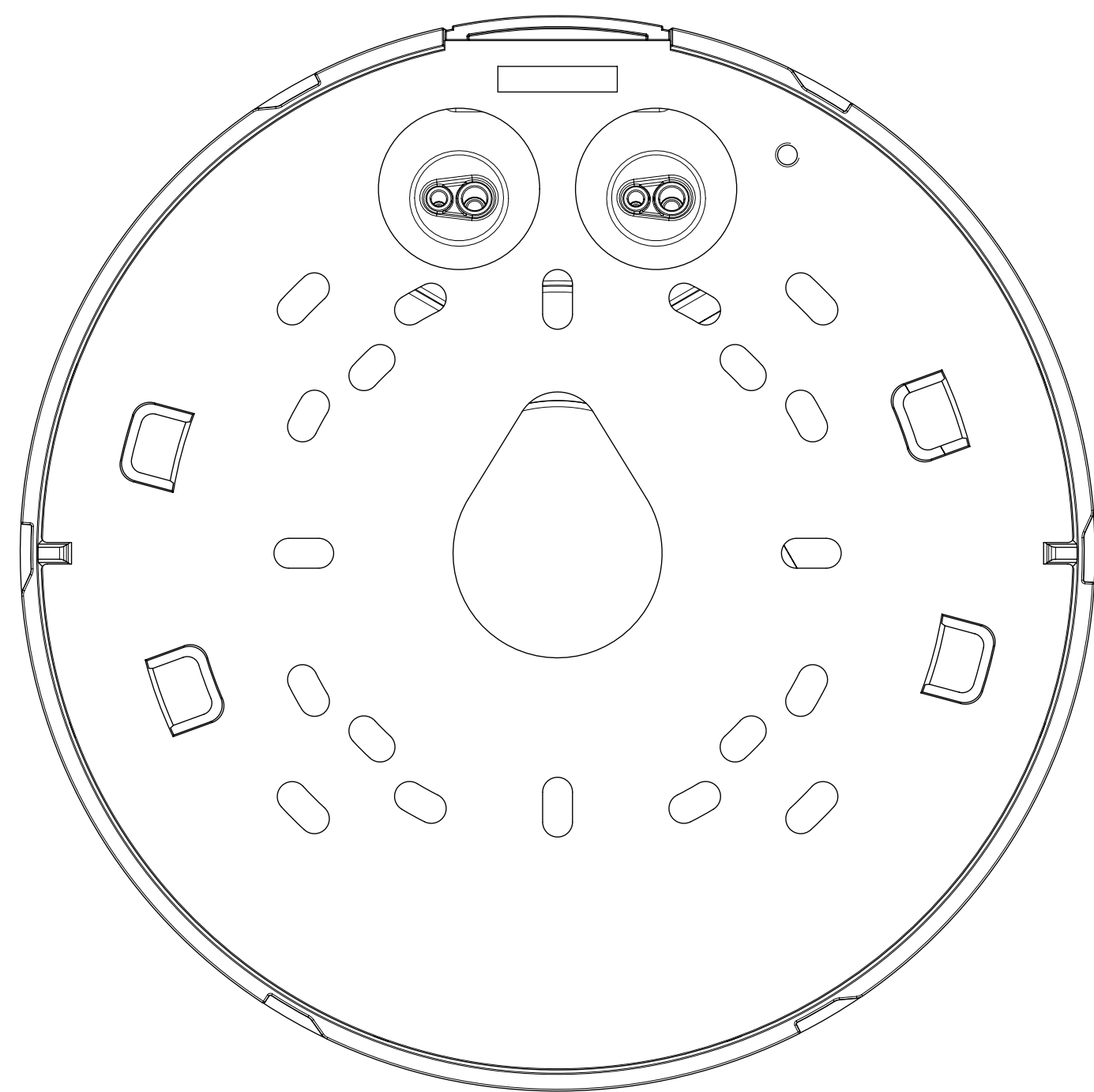
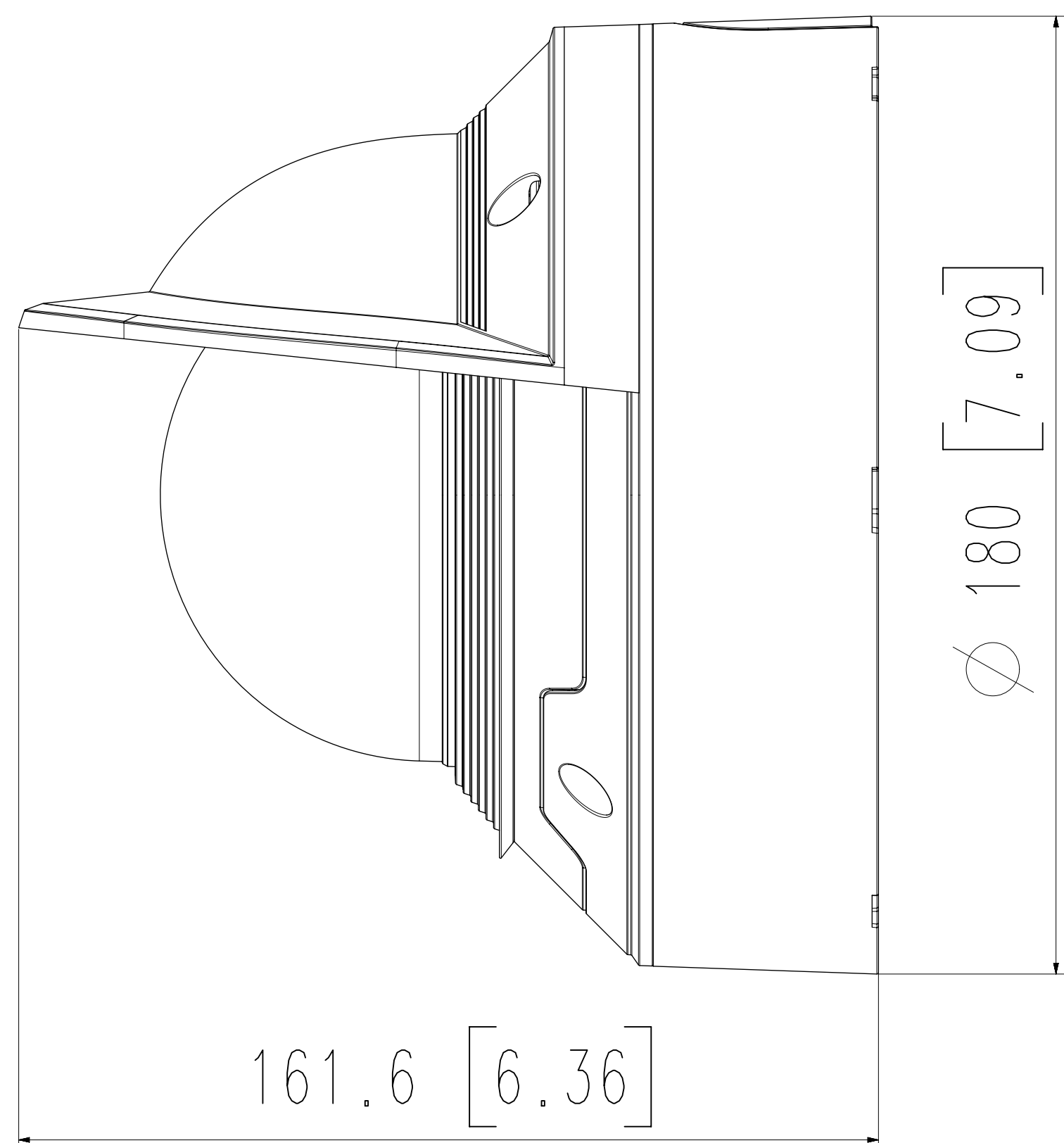
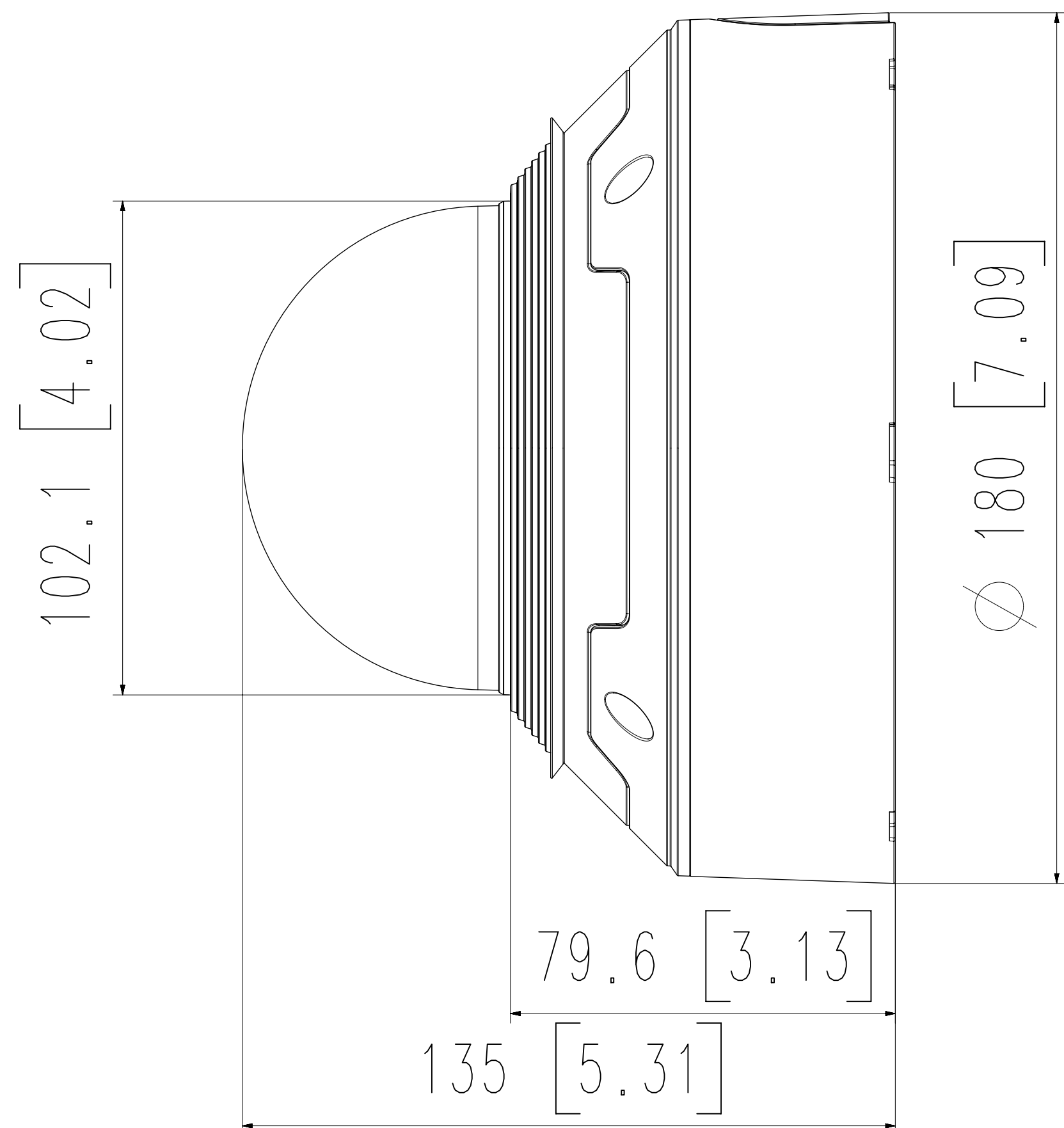
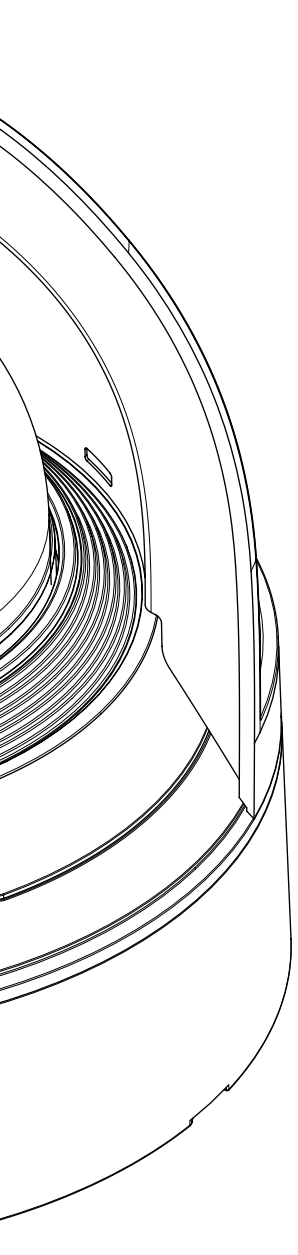
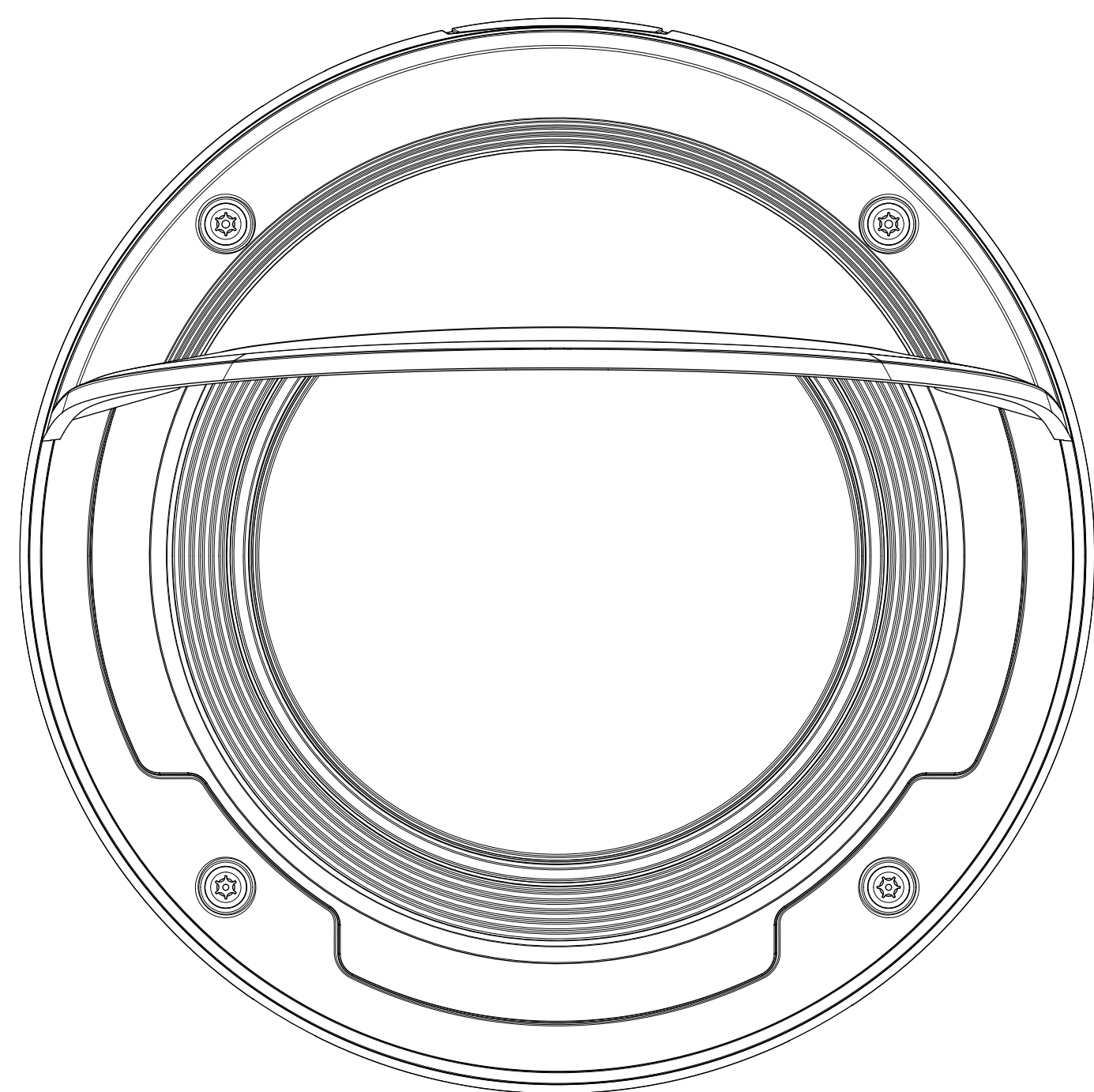
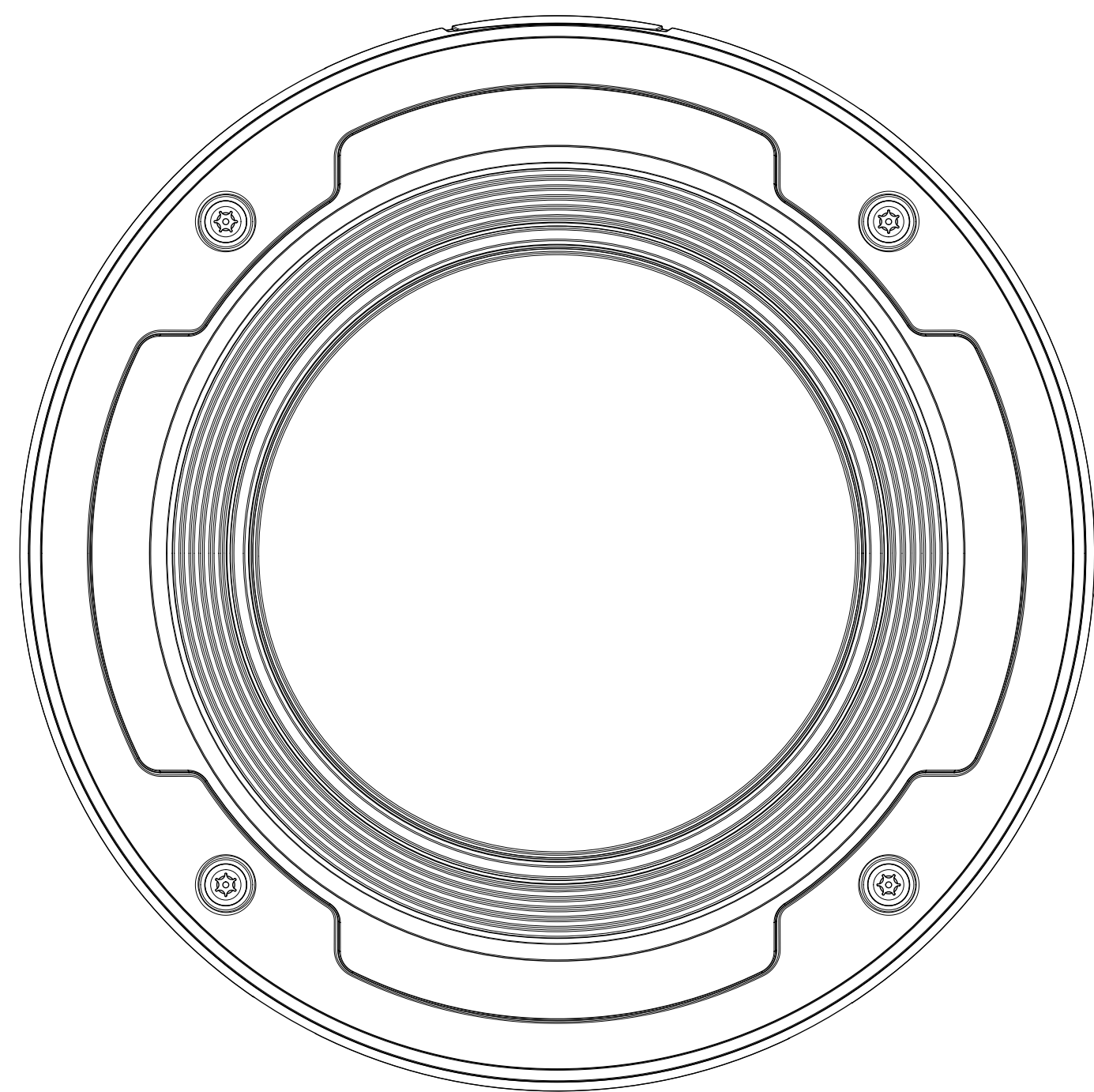
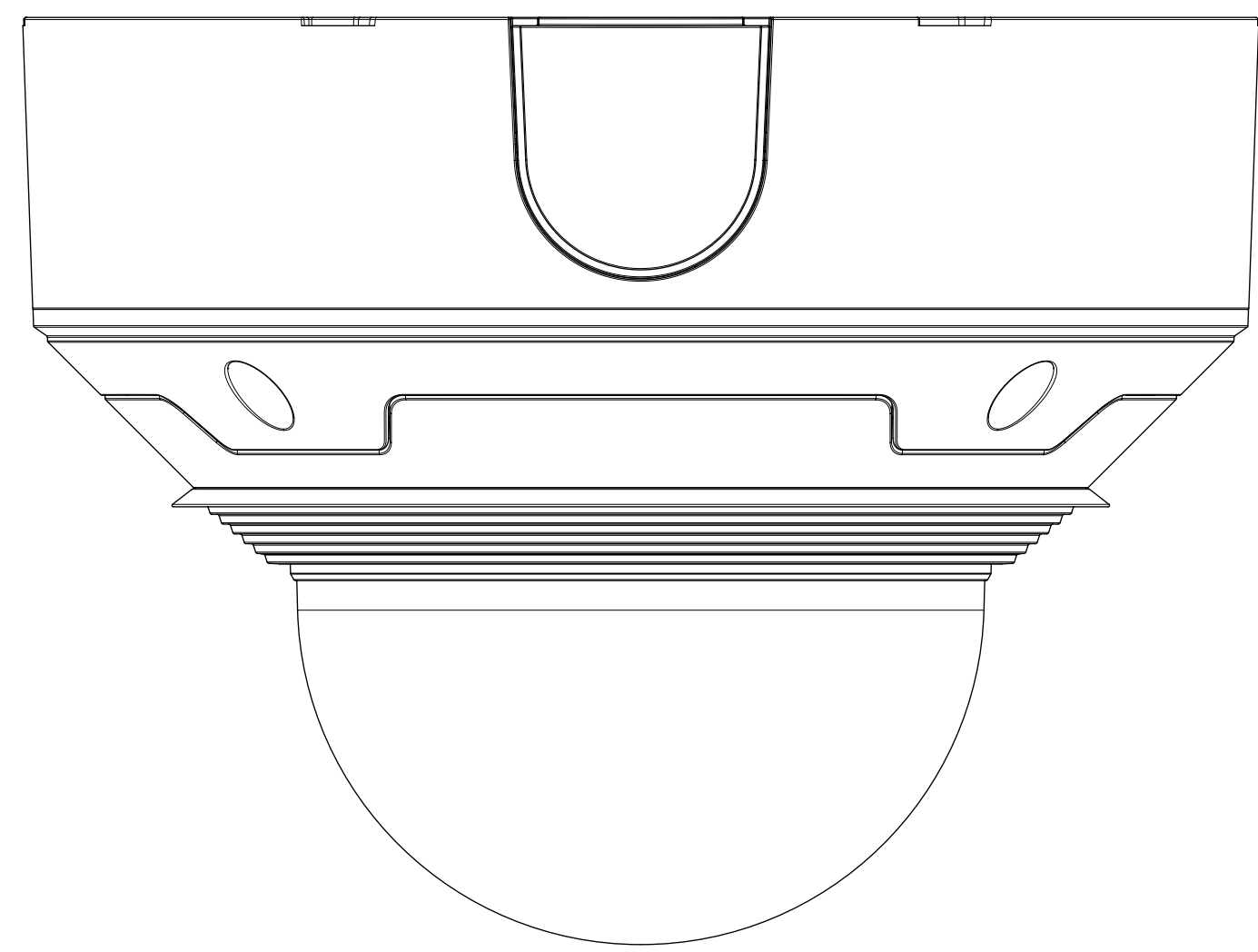
1.3 Solder: Sn99/Ag0.3/Cu0.7.

1.4 The recommended Lead Free IR Reflow Soldering Curve:



Item	Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
1	Preheat/Soak Temperature Min (T_{min}) Temperature Max (T_{max}) Time (t_s) from (T_{min} to T_{max})	100 °C 150 °C 60-120 seconds	150 °C 200 °C 60-120 seconds
2	Ramp-up rate (T_L to T_p)	3 °C/second max.	3 °C/second max.
3	Liquidous temperature (T_L) Time (t_L) maintained above T_L	183 °C 60-150 seconds	217 °C 60-150 seconds
4	Peak package body temperature (T_p)	For users T_p must not exceed the Classification temp in Table 4-1(IPC/JEDEC J-STD-020D.1). For suppliers T_p must equal or exceed the Classification temp in Table 4-1(IPC/JEDEC J-STD-020D.1).	For users T_p must not exceed the Classification temp in Table 4-2(IPC/JEDEC J-STD-020D.1).260°C. For suppliers T_p must equal or exceed the Classification temp in Table 4-2(IPC/JEDEC J-STD-020D.1).
5	Time (t_p)* within 5°C of the specified classification temperature (T_c), see Figure 5-1(IPC/JEDEC J-STD-020D.1).	20* seconds	30* seconds
6	Ramp-down rate (T_p to T_L)	6 °C/second max.	6 °C/second max.
7	Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

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



3		
2	PNV-A7082RZ	24.09.25
1	PNV-A9082RZ	24.09.25
No.	MODEL NAME	DATE
Unit:mm[inch]	SCALE:1/1	Hanwha Vision



NETWORK CAMERA,PNV-A7082RZ

PoE (53V ) 0.28A

M/C: PNV-A7082RZ/KEX Fac.ID:D



DATE

S/N: Serial No.

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

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

HANWHA VISION CO.,LTD.

MADE IN KOREA

Rainproof/Étanche

IP66 and IP67



