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Please find attached the related material on Project

For your convenience, the below describes the related updates:

E158873-A6249-DescriptionUL
Figure-17-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:	PNM-C19183RVTP
Rating:	PoE (55 Vdc), 0.77 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: Lawrence Lee / Project Handler Reviewed By: SeungTae Kim / Reviewer

Supporting Documentation

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

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

B. Generic Inspection Instructions -

- i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.
- ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.
- iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

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

It is commercial equipment supplied from 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	mating connector
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)	4.75

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 : -40 °C to 55 °C

Additional Information

4791702883

- Maximum Normal Load: Continuous operation (Operate the camera through networked equipment with IR LED ON + Camera motion operate.)

- Loads due to optional features: Heater on with IR LED and Camera 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
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 (55 Vdc), 0.77 A.
(Website) Manual - 2	The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3bt shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL 60950-1 or PS2 as defined in UL 62368-1.

Special Instructions to UL Representative

N/A

BD1.0	TABLE: Production-Line Testing Requirements					
BD1.1	Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.					
Model	Component	Removable parts	Test probe location	Test V rms	Test V dc	Test Time, s
N/A	N/A	N/A	N/A	N/A	N/A	N/A
BD1.2	Earthing Continuity Test Exemptions – This test is not required for the following models:					
	All 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
FIBER PoE Injector (Optional)	CREATIVE LIANJIE NETWORK TECHNOLOGY CO LTD	PT-PSE109GBRO- AH-S	Rated output 55 Vdc, 1.5 A, marked "LPS" or "Class 2"	AZOT	UL (E487558)	
Power Code set (Optional)	LONGWELL CO	LP-30B + SVT 18AWG X 3C + LS- 13	Detachable, Min. 1.5 m, Max. 2.4 m long, rated 125 V, 10 A, 18/3 AWG, 60 deg. C, SVT type flexible cord. One end with NEMA 5-15P the other end with appliance coupler.	ELBZ2	UL (E55349)	
Power Code set (Optional) - Alternate	Interchangeable	Interchangeable	Detachable, Min. 1.5 m, Max. 2.4 m long, rated 125 V, 10 A, 18/3 AWG, 60 deg. C, SVT type flexible cord. One end with NEMA 5-15P the other end with appliance coupler.	ELBZ2	UL	
Dome cover top enclosure - bubble (Plastic)	MITSUBISHI ENGINEERING- PLASTICS CORP	S-2000V+(f1)	Min. 2.0 mm thickness, rated Min. V-2, 115 deg. C, see enclosure for dimension.	QMFZ2	UL (E41179)	
Dome cover side enclosure - bubble (Plastic)	MITSUBISHI ENGINEERING- PLASTICS CORP	S-2000V+(f1)	Min. 2.0 mm thickness, rated Min. V-2, 115 deg. C, see enclosure for dimension.	QMFZ2	UL (E41179)	
Dome cover side enclosure - black (Plastic)	Covestro Deutschland AG [PC Resins]	2407 + (z)(f1)	Min. 2.0 mm thickness, rated Min. V-2, 115 deg. C, see enclosure for dimension.	QMFZ2	UL (E41613)	

Dome cover side enclosure - black frame (Plastic)	SABIC JAPAN L L C	EXL9330(X)(f1)(GG) (B1)(IP)	Min. 1.6 mm thickness, rated Min. V-0, 110 deg. C, see enclosure for dimension.	QMFZ2	UL (E207780)	
Dome cover side enclosure - black (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 1.5 mm thickness, See enclosure for dimension.	-	-	
Dome cover side enclosure - white (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.0 mm thickness, See enclosure for dimension.	-	-	
Bottom enclosure (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.0 mm thickness, See enclosure for dimension.	-	-	
Bottom bracket (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.5 mm thickness, See enclosure for dimension.	-	-	
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. HB, 130 deg. C.	QMFZ2	UL	
Transformer(T1)	SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD	PDT25268SR	100 uH, 130 deg. C, See enclosure for more detail.	-	-	
Line filter (L11)	TNC CO., LTD	CV320070SB	7.0 mH, 105 deg. C, See enclosure for more detail.	-	-	

Opto-coupler (LS1)	LITE-ON TECHNOLOGY CORP	LTV-356T (TYPE: LTV-356T-BN)	Isolation Voltage: 3750. Max. Operation Temperature:110 deg.C	FPQU2/8	UL (E113898)	
Lens module for PTZ camera	UNION OPTECH CO.,LTD	T5097-N6	Rated 5.0 Vdc	-	-	
Lens module for fixed camera (3 EA)	Sunny Optics (zhongshan)Co.Ltd.	C7269E-28Q	Rated 3.3-5.0 Vdc	-	-	
Rechargeable battery (BAT1) - in mainboard	SEIKO INSTRUMENTS INC MICRO-ENERGY DIV	ML414H	Lithium, Rechargeable, Max Charging Voltage, 3.4 V dc, Max Charging current: 300 mA	BBCV2	UL (MH15628)	
Lithium Battery Protection Circuit in mainboard	Interchangeable	Interchangeable	Diode (D18, 100 V, 500 mA) and Resistor (R145, 3.3 Kohm) in series	-	-	
Rechargeable battery (BAT101) - in PTZ main	SEIKO INSTRUMENTS INC MICRO-ENERGY DIV	ML414H	Lithium, Rechargeable, Max Charging Voltage, 3.4 V dc, Max Charging current: 300 mA	BBCV2	UL (MH15628)	
Lithium Battery Protection Circuit in PTZ main	Interchangeable	Interchangeable	Diode (D107, 90 V, 250 mA) and Resistor (R298, 3.3 Kohm) in series	-	-	
Stepping motor (Pan)	ASPINA DONGGUAN SHINANO MOTOR CO., LTD.	STH-36C0068-01	Rated 12 Vdc, 0.4 A Hybrid stepping type.	-	-	
Stepping motor (Tilt)	ASPINA DONGGUAN SHINANO MOTOR CO., LTD.	STH-36C0068-01	Rated 12 Vdc, 0.4 A Hybrid stepping type.	-	-	
DC Fan 1 near mainboard	DONGGUAN PROTECHNIC ELECTRIC CO LTD	MGA2512HB-O10	12 Vdc, 0.07 A, 9500 RPM (N/15000+K/2400 = 0.640537 < 1, N=9500, K=17.2881)	GPWV2	UL (E187236)	

DC Fan 2 near mainboard	DONGGUAN PROTECHNIC ELECTRIC CO LTD	MGA2512HB-O10	12 Vdc, 0.07 A, 9500 RPM (N/15000+K/2400 = 0.640537 < 1, N=9500, K=17.2881)	GPWV2	UL (E187236)	
DC Fan 3 near PTZ main board	DONGGUAN PROTECHNIC ELECTRIC CO LTD	MGA2512HB-O10	12 Vdc, 0.07 A, 9500 RPM (N/15000+K/2400 = 0.640537 < 1, N=9500, K=17.2881)	GPWV2	UL (E187236)	
DC Fan 4 near Heatsink	DONGGUAN PROTECHNIC ELECTRIC CO LTD	MGA2512HB-O10	12 Vdc, 0.07 A, 9500 RPM (N/15000+K/2400 = 0.640537 < 1, N=9500, K=17.2881)	GPWV2	UL (E187236)	
Heater (R1, R2, R3, R4, R5, R6) - 6 EA	Interchangeable	Interchangeable	Resistor, 10 Ohm, 0.4 W (Total 2.4 W)	-	-	
Heatsink	Interchangeable	Interchangeable	Aluminum, Approx. overall size of 136.0 by 94.0 by 31.9 mm, Min. 2.0 mm thickness, See enclosure for more dimension	-	-	
Thermal pad	KOMOTECH	KGP-1(a)	Min. 1.0 mm thickness, rated V-0, 150 deg. C	QMFZ2	UL (E245303)	
Thermal pad - Alternate	ATEX CO LTD	ATP-20	Min. 2.0 mm thickness, rated V-0, 105 deg. C	QMFZ2	UL (E513170)	
Gasket - Dome cover	Y&K	O-VMQ-30-BK	Gasket Test was conducted under E158873-A6034	-	-	
Gasket - Bottom	Y&K	O-VMQ-30-BK	Gasket Test was conducted under E158873-A6034	-	-	
Gasket - Cable hole	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	
IR LED (LD1, LD3)	LITEON OPTOELECTRONICS CORP	LTE-R38386L-YE5-SS	VF= 1.8-2.5 Vdc, IF=1 A Max	-	-	
IR LED (LD2)	OSRAM Opto Semiconductors. GmbH	SFH 4718A	VF= 1.75-2.3 Vdc, IF=1 000 mA Max	-	-	

Enclosures

Type	Supplement Id	Description
Photographs	03-01	External View
Photographs	03-02	Internal View
Photographs	03-04	Internal View - 1
Photographs	03-05	Internal View - 2
Photographs	03-06	IR LED Board
Photographs	03-07	PTZ Camera Module
Photographs	03-08	Motor (Tilt)
Photographs	03-09	Motor (Pan)
Photographs	03-10	Mainboard - Top
Photographs	03-11	Mainboard - Bottom
Photographs	03-12	PTZ Heater Board
Manuals	06-01	Manual
Miscellaneous	07-01	Transformer (T1) Specification
Miscellaneous	07-02	Line Filter (L11) Specification
Miscellaneous	07-03	Heatsink Diagram
Miscellaneous	07-04	Enclosure Diagram
Miscellaneous	07-05	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" and rated from PoE(55V), 0.77A.
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. 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.
23. The operating temperature of the product is -40°C to +55°C (-40°F ~ +131°F).

WARNING

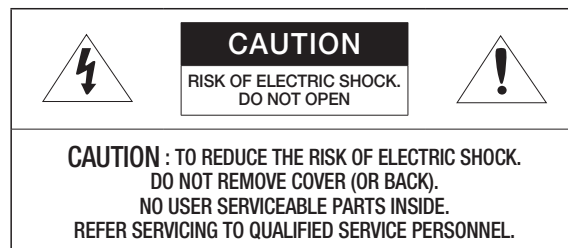
TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

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 in accordance with the installation instructions.

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

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.

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.

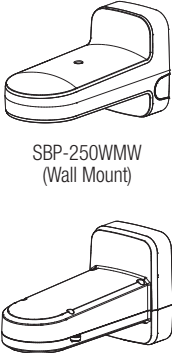
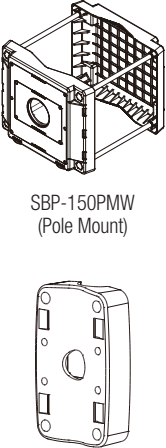
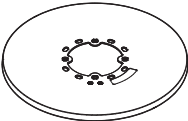
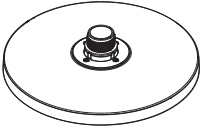
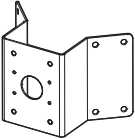
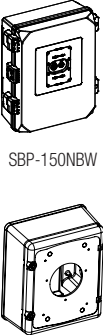
We do not guarantee the quality of third-party products (e.g. lenses, accessories) that you separately purchase.



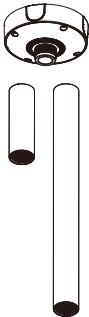






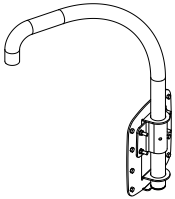
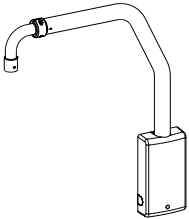
In particular installation environments, there might be interference in radio communications.

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	Installation Box
 <p>SBP-250WMW (Wall Mount)</p> <p>SBP-400WMW (Wall Mount)</p>	 <p>SBP-150PMW (Pole Mount)</p> <p>SBP-300PMW2 (Pole Mount)</p>	 <p>SBP-250C</p>	 <p>SBP-250HMW</p>	 <p>SBP-156KMW</p>	 <p>SBP-150NBW</p> <p>SBP-300NBW</p>

Ceiling Mount		Parapet Mount
Assembly	Individual Parts	
 SBP-300CMTS (Ball Head)  SBP-300CMTW  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-C15NP SBP-C35H	 SBP-300LMW  SBP-156LMW1

INSTALLATION

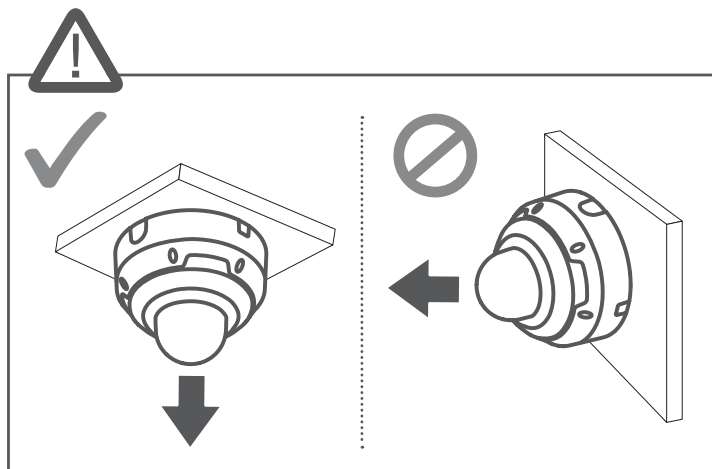


- This camera is waterproof and in compliance with the IP66 spec, but the jack connected to the external cable is not. You are recommended to install this product below the edge of eaves to prevent the cable from being externally exposed.

Precautions before installation

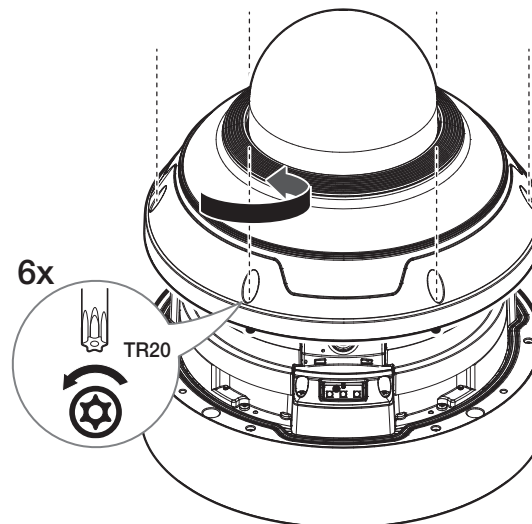
Ensure you read out the following instructions before installing the camera:

- Select an installation site that can hold at least 5 times the camera's weight.
- 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.

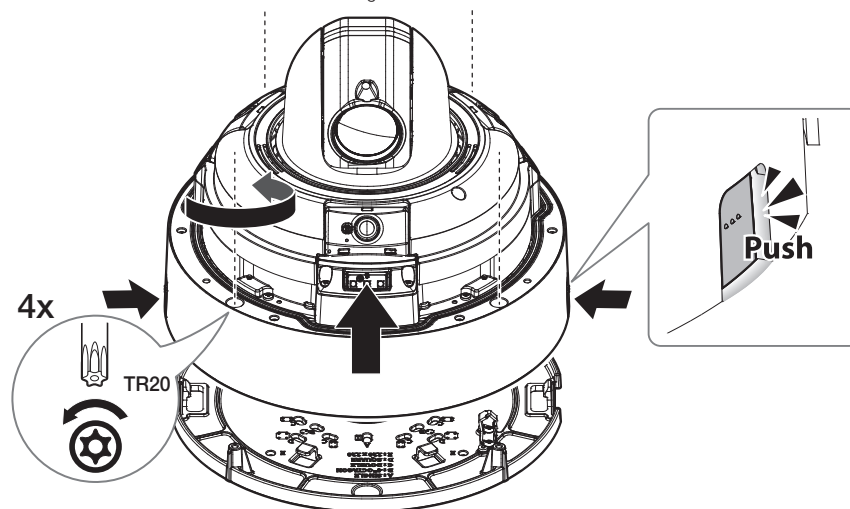


Disassembling

1. Remove the dome cover by turning the dome cover's fastening screws counterclockwise.
 - Note that it is not necessary to loosen the screws completely.



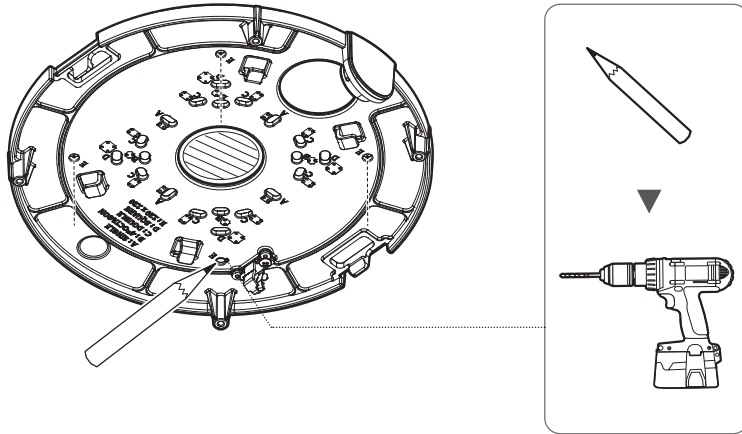
2. After loosening the fastening screws on the camera body, remove the mount plate after pressing the buttons on both sides as shown in the figure.



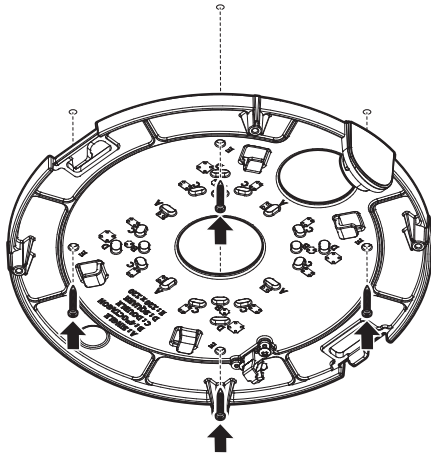
Installation (mount plate)

[Directly installing on ceiling]

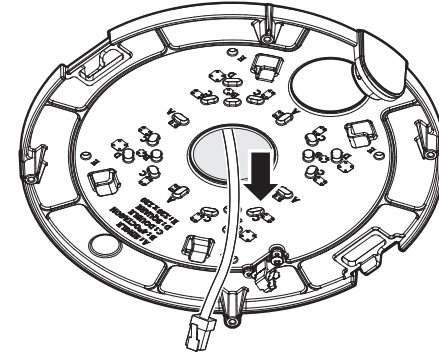
1-1. Place the mount plate on the desired location considering the direction to be monitored, mark the locations for the screw holes and cable holes, and then drill the holes.



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



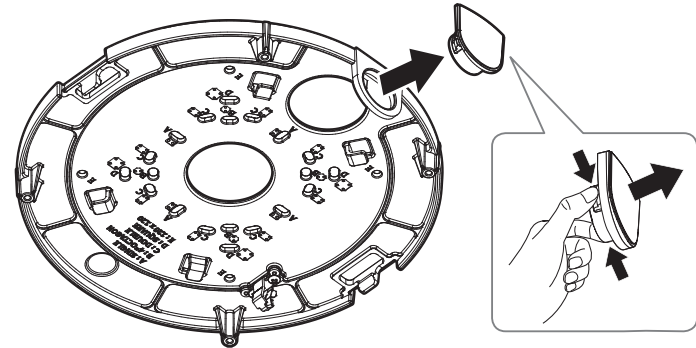
1-3. Pull out network cable through the hole in the mount plate.



[Installing using pipe]

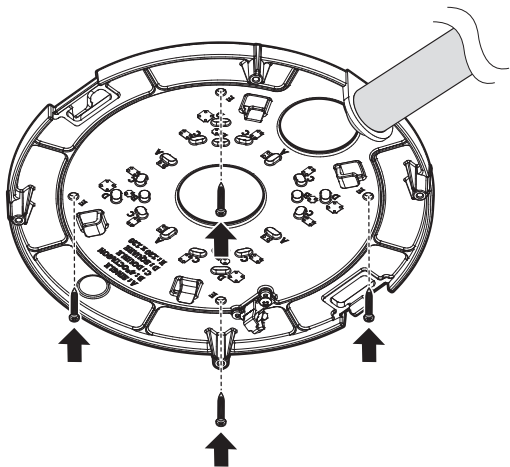
2-1. Place the mount plate on the desired location considering the direction to be monitored, mark the locations for the screw holes, and then drill the holes.

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

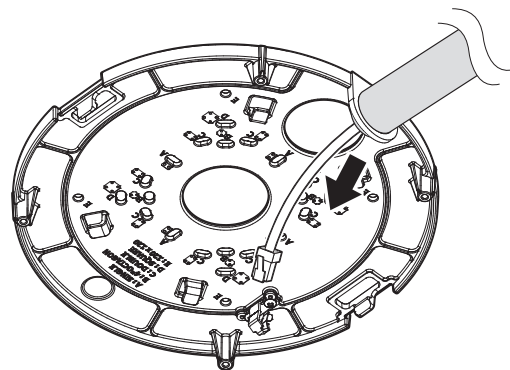


2-3. Place the pipe on the mount plate.

2-4. Fix the mount plate using appropriate screws.

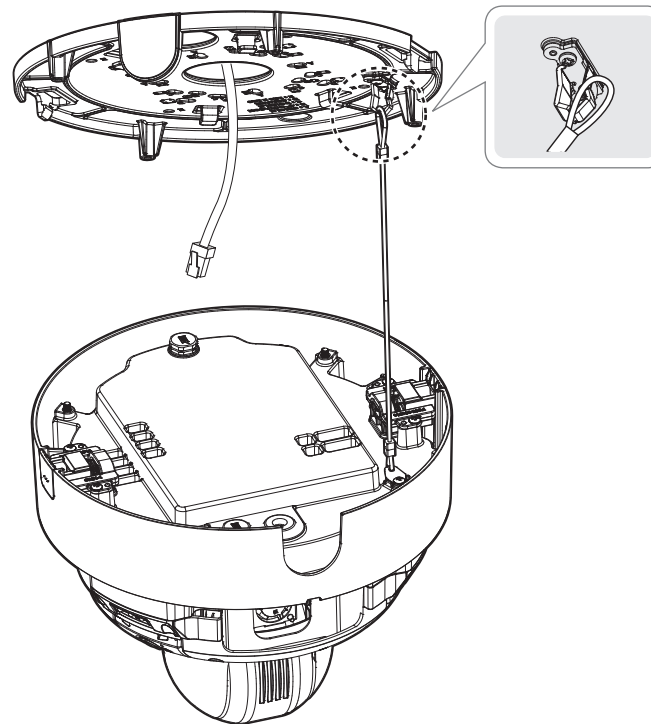


2-5. Take out the necessary cables from among the network and alarm cables through the pipe.

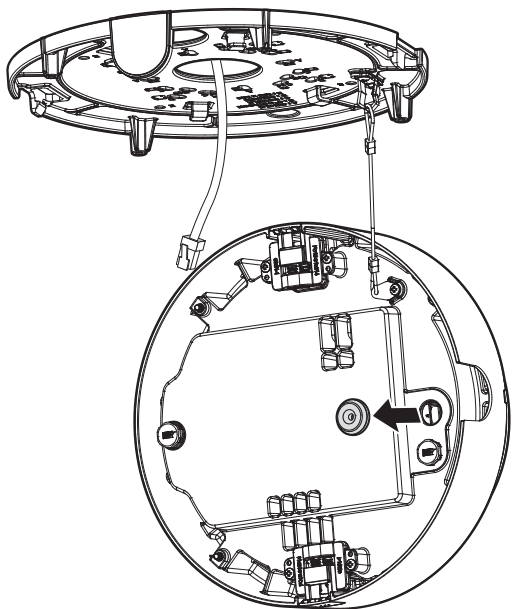


Installation (camera body and dome cover)

1. Connect the safety wire to the mount plate.



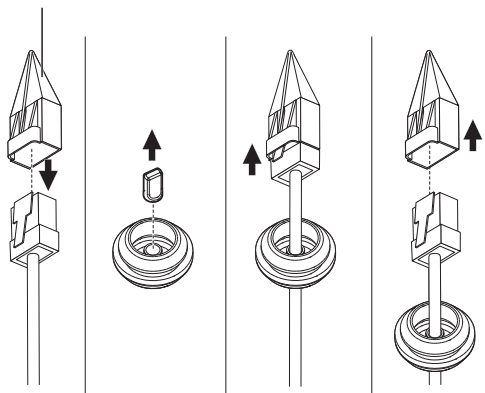
2. Pull out the cable bushings from the camera body.



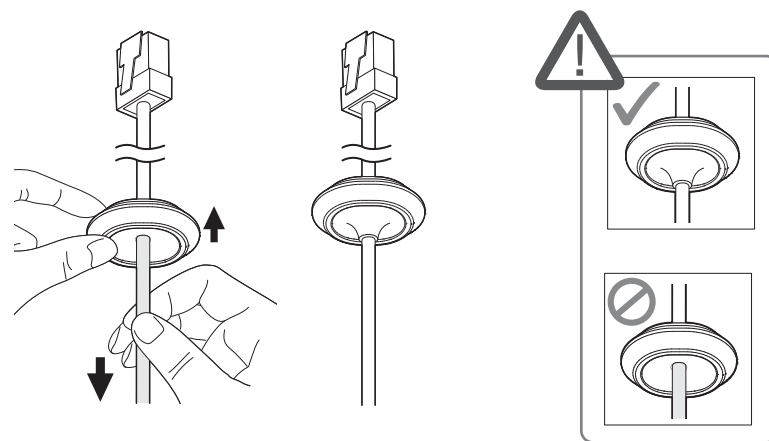
3. Pull off the extruded part of the removed cable bushing.

4. Use the cap installer to route the network cable through the cable bushing.

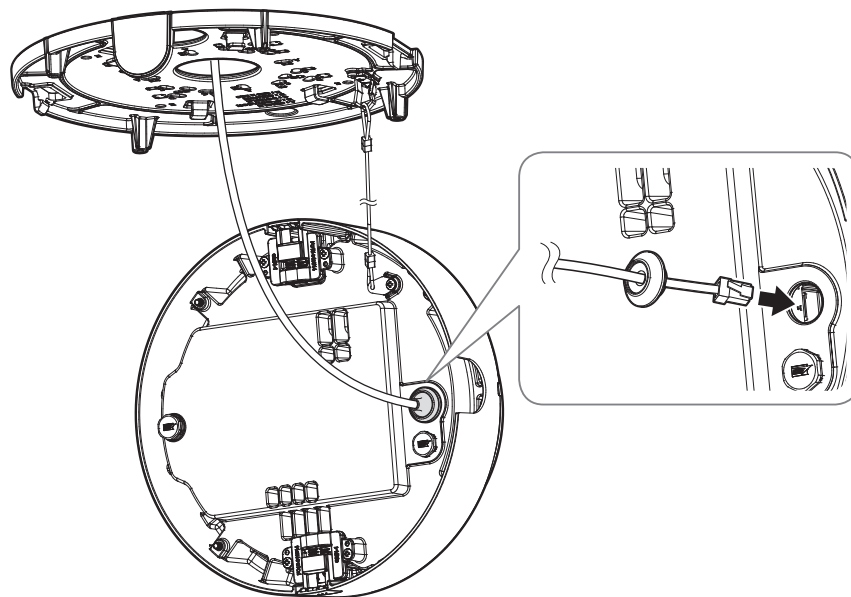
Cap Installer



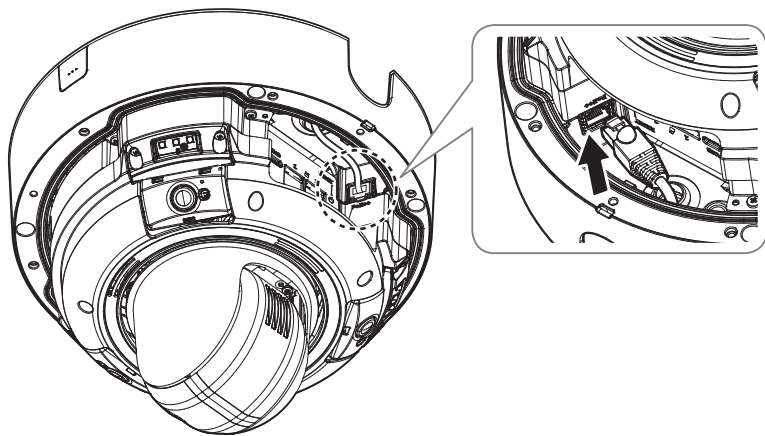
5. For waterproof protection, pull down the cable below the cable bushing as shown in the figure below.



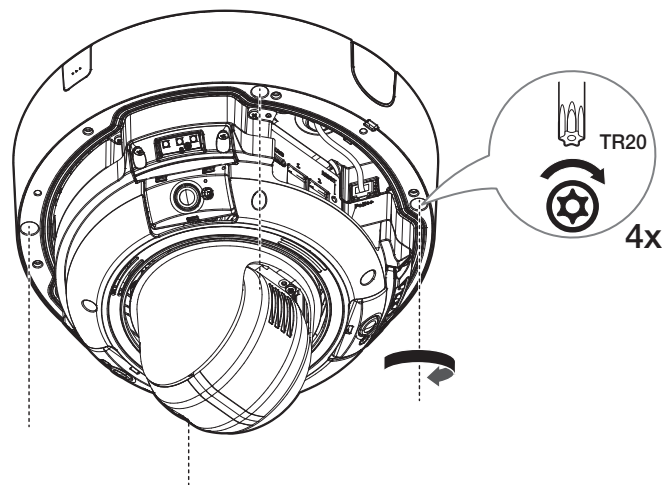
6. Insert the cable bushing of the network cable into the camera body.



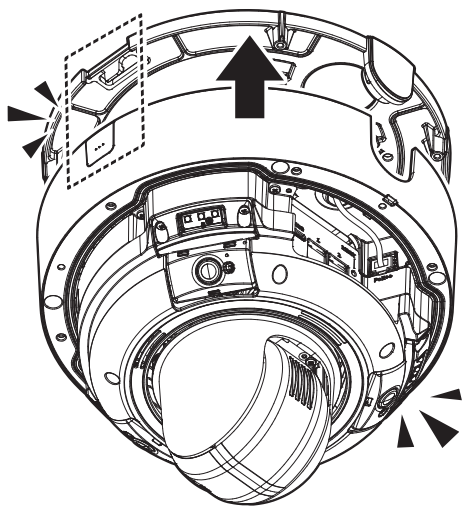
7. Connect the connector of the network cable to the camera's PoE++ port.



9. Fix the camera body by tightening the fastening screws on the camera body.

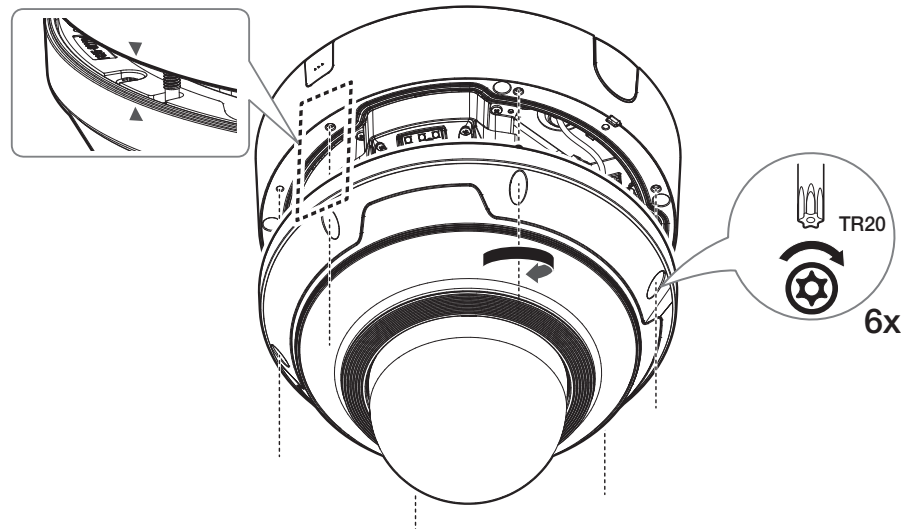


8. Lift up the camera body and push the mounting clips until they click into place.



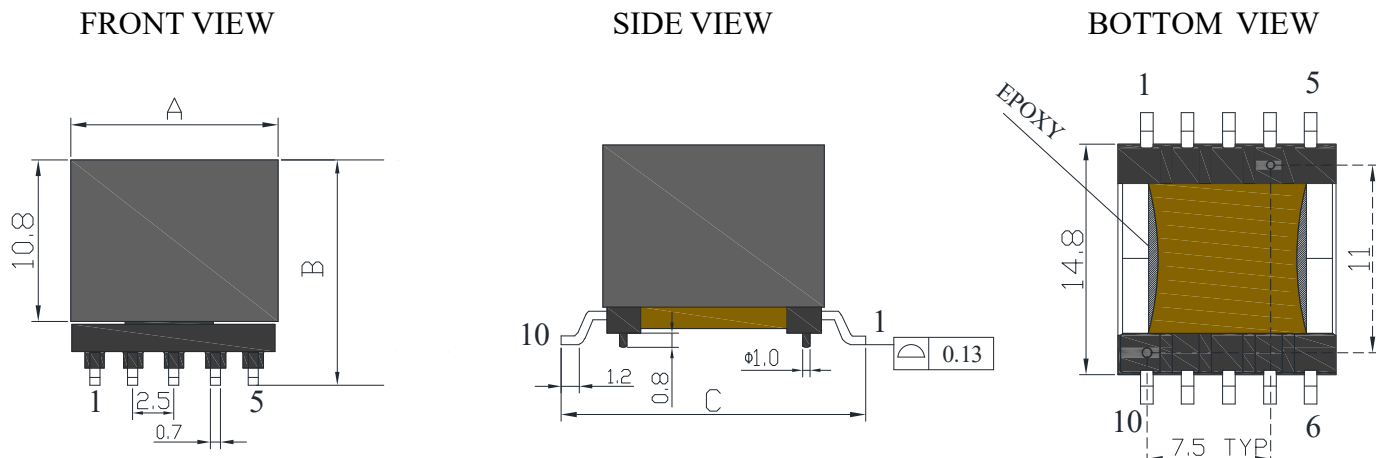
10. Assemble the dome cover.

- Assemble the camera and the dome cover by aligning the direction guide on them.
- To ensure there are no issues with waterproofing, tighten the fastening bolts tightly.



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

2. EXTERNAL DIMENSIONS: UNIT: mm



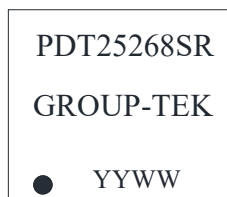
Note:

- 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 Tolerances:

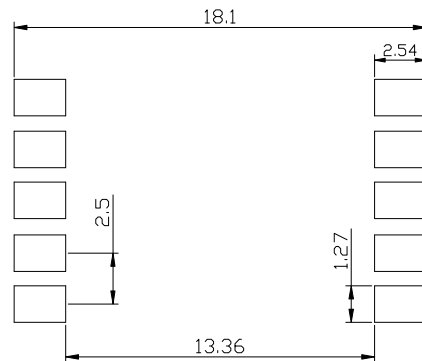
A	B	C
Max	Max	Max
15.2	14.0	17.8

Marking information



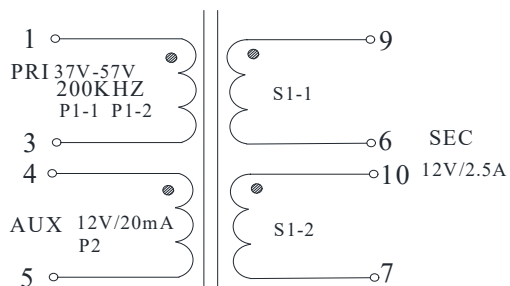
3. Electrical Characteristics :

Suggested PCB Pad Lad Layout



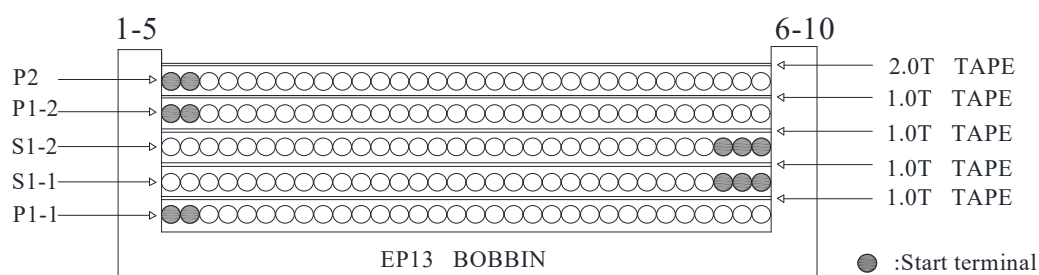
Specifications: at 25 degree C. Operating Temperature -40 to +125°C			
NO	ITEM	TEST CONDITION	SPECIFICATION
1	Inductance	((1-3)) @25°C 100KHZ/1.0V	100uH±15%
2	Leakage Inductance	(1-3)@25°C 100KHZ/1.0V shorted other pins	0.4uH MAX
3	DCR	(1-3)@25°C	40mΩ MAX.
4		(9-6)@25°C	32mΩ MAX.
5		(10-7)@25°C	36mΩ MAX.
		(4-5)@25°C	150mΩ MAX.
6	TURNS RATIO	(1-3) : (9-6) : (10-7) : (4-5) 20KHZ/1.0V	1.71: 1: 1±3%
7	HI-POT:	PRI TO SEC	1500V/AC/5mA 3Sec
8	INSULATION RESISTANCE	PRI-SEC DC500V	100MΩ Min
		PRI-CORE DC500V	100MΩ Min
		SEC-CORE DC500V	100MΩ Min

5. Schematic:



NOTE: PIN9,10&6,7 must shorted on PCB

6. winding detail:

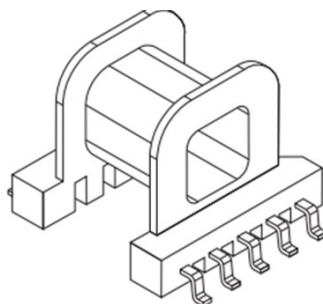
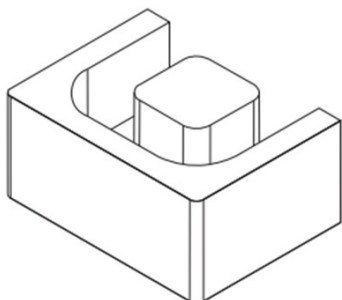


7. Winding Information:

WINDING SEQ.	ST-FN	WIRE/FOIL	TURNS	WRAP INSUL.	MARGIN TAPE	SLEEVE	NOTE
P1-1	1--3	2*0.27mm 2UEW	12TS	1T w8.0mm	N/A	N/A	1
S1-1	9--6	3*0.28mm 2UEW	7TS	1T w8.0mm	N/A	N/A	1
S1-2	10--7	3*0.28mm 2UEW	7TS	1T w8.0mm	N/A	N/A	1
P1-2	1--3	2*0.27mm 2UEW	12TS	1T w8.0mm	N/A	N/A	1
P2	4--5	2*0.17mm 2UEW	7TS	2T w8.0mm	N/A	N/A	1

NOTE :

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



8. Material List:

NO	ITEM	MATERIALS	SUPPLIERS/MANUFACTURERS	UL FILE NO.
1	BOBBIN	PHENOLIC PM9630 UL RATING: 94V-0	Sumitomo Bakelite CO.,LTD.	E41429
2	CORE	E P13 PC95/TP2A	High-tech Electronics Co.,Ltd/FENGHU	N/A
3	WIRE	POLYURETHANE ENAMELED TYPE NO: 2UEW THERMAL RATING:180°C	Shing Shun Magnet wire(HuiZhou) Co.,Ltd	E255839
4	TAPE	ADHESIVE POLYESTER TAPE TYPE NO.:W 001 THERMAL RATING:130°C	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 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

The following Page(s) are related to Miscellaneous-02. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV320070SB	0

2. ELECTRICAL CHARACTERISTIC

NO	ITEM	TERMINAL	SPECIFICATION			REMARKS
1	RATED VOLTAGE	LINE TO LINE	AC 300V			
2	RATED CURRENT	START-FINISH	2.0A			
3	INDUCTANCE	START-FINISH	16KHz	7.0mH	+ 50%-30%	HP-4194A 1V (25℃±2℃)
4	TEMPERATURE RISE	AT RATED CURRENT	55℃ MAX			
5	DC RESISTANCE	START-FINISH	130.0 mΩ MAX			HIOKI 3540 (25℃±2℃)
6	WITHSTANDING VOLTAGE	LINE TO LINE	AC 1,500V 1 MINUTE.			TOS-5101 CUT OFF CURRENT (5mA)

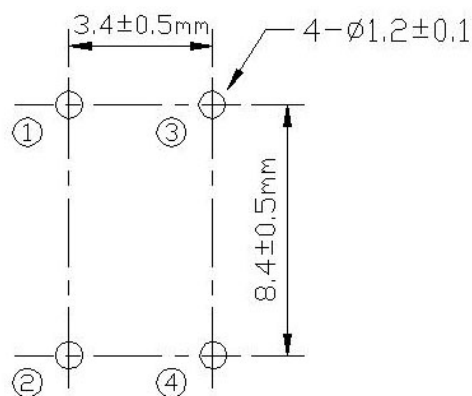
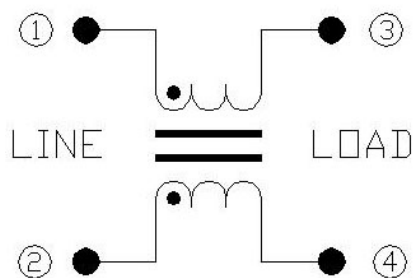
3. OPERATING TEMPERATURE RANGE

-40℃ TO +105℃ INCLUDING TEMPERATURE RISE.

4. KEEP TEMPERATURE RANGE

-40℃ ~ +105℃.

5. CIRCUIT DIAGRAM



Minimum PCB Piercing HOLE

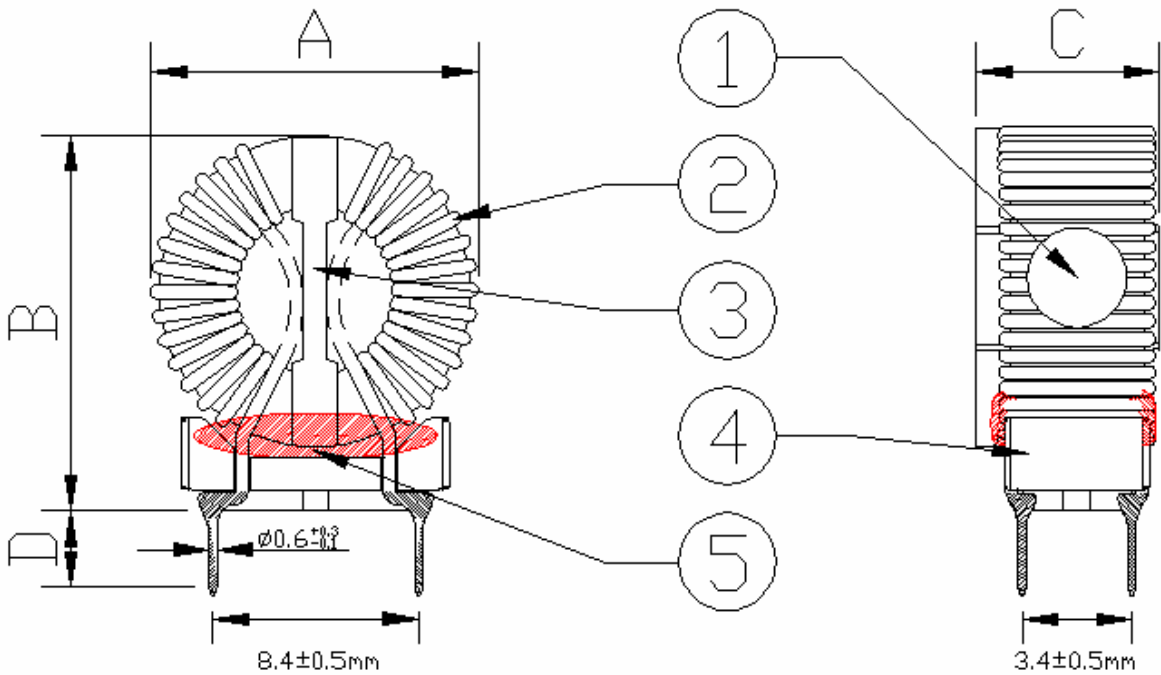
 TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
	 R&D	 R&D	 R&D	3/14

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV320070SB	0

6. WINDING SPECIFICATION

NO	TERMINAL		WIRE	TURNS	WINDING METHOD	UNBALANCE SPECIFICATION
	START	FINISH				
L1	1	3	UEW 0.40Φ	35±2Ts	HANDMADE	BETWEEN L1 AND L2 (0.2mH MAX)
L2	2	4				

7. SHAPE AND DIMENSION



DIMENSION	A	B	C	D
	15.5mm MAX	18.5mm MAX	9.5mm MAX	Not include solder fillet 2.6 ± 0.5mm

DESIGN	CHECK	APPROVAL	PAGE
RYU.H.E R&D	KIM.J.S R&D	PARK.J.W R&D	4/14

SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV320070SB	0

8. MATERIAL LIST

No.	NAME	SPECIFICATION		MANUFACTURER	COLOR	UL No.
1	Ferrite Core	MA100 R-13/7/5 R10KF TR13X7X5C		JFE Ferrite Corp LAIWU CHAINWELL ELECTRONIC&MATERIAL CO.,LTD	GRAY	
2	Enamel Wire	UEW 0.40Φ / 35±2Ts	UEW	HWA IL ELECTRONICS CO.,LTD	YELLOW	E140246
			UEW	SHANDONG PENGTAI STOCK CO LTD	YELLOW	E166187
			UEW	SIAM PACIFIC ELECTRIC WIRE & CABLE CO.,LTD	YELLOW	E142108
3	Coil Separator	LCP L304T40		TORAY INDUSTRIES INC	BLACK	E41797
		NYLON A 50H1(r3)(f2)		SOLVAY ENGINEERING PLASTICS GBU	BLACK	E44716
4	Coil Base	Phenolic (PF 2736(a)(b)) UL 94 V-0 Class		Hexion GmbH	BLACK	E61040
		Phenolic (T375HF) UL 94 V-0 Class		CHANG CHUN PLASTICS CO LTD	BLACK	E59481
5	Epoxy	EPOXY RESIN	NA-010	ND Chemical	WHITE	
			EA610A / EA610B	Chemtech Co.,Ltd	Transparent	

 TNC CO.,LTD	DESIGN	CHECK	APPROVAL	PAGE
				5/14

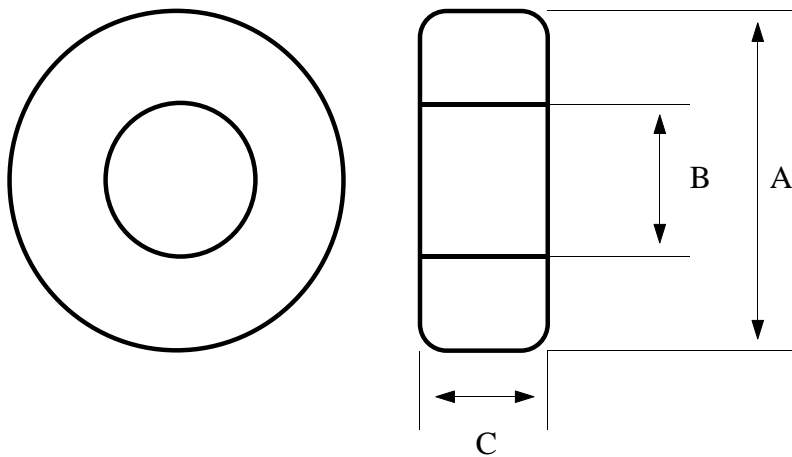
SPECIFICATIONS	ITEM	LINE FILTER	Rev
	TNC SPEC NO	CV320070SB	0

14. FERRITE CORE SPECIFICATION

- Characteristics

Symbol	Unit	MA100 R-13/7/5	R10KF TR13X7X5C
μ_i	-	10,000±30%	10,000±30%
B _{ms}	mT	415	390
H _{cms}	A/m	3.0	7.0
B _{rms}	mT	76	100
T _c	°C	>115	>120
TANδ /μiac	*10 ⁻⁶	<1.9	<7.0
α _{μr}	*10 ⁻⁶ /°C	-0.5~2.0	0~1.5
ρ	Ω.m	0.1	0.15
d	g/cm ³	5.0	4.8

- Dimension (Before Coating)

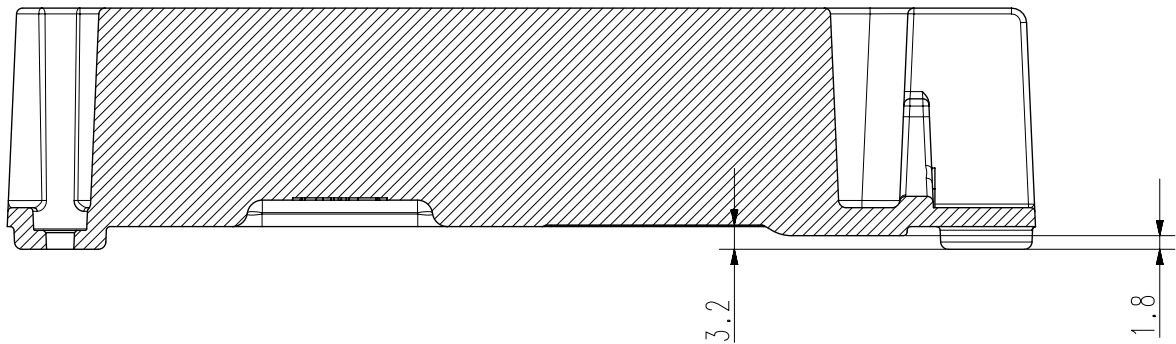
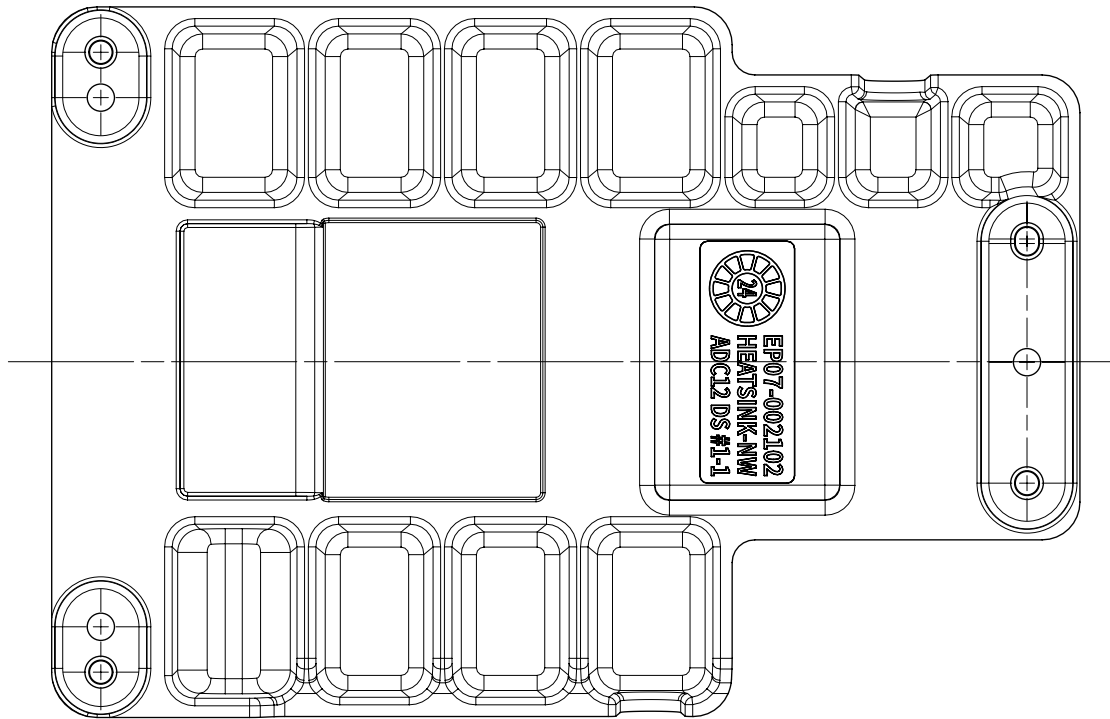
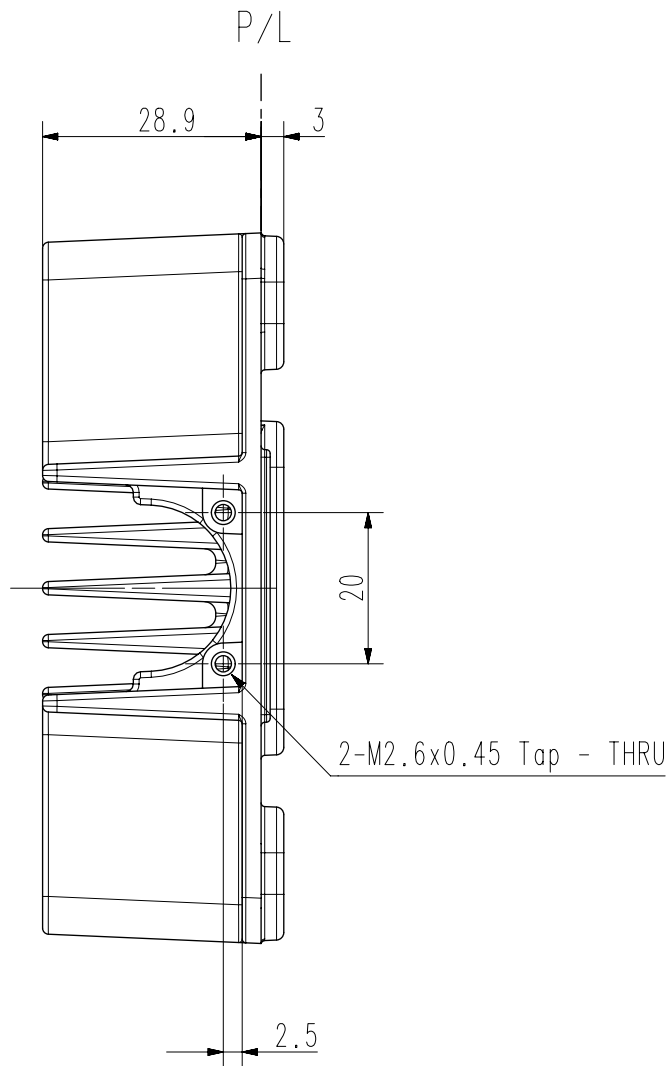
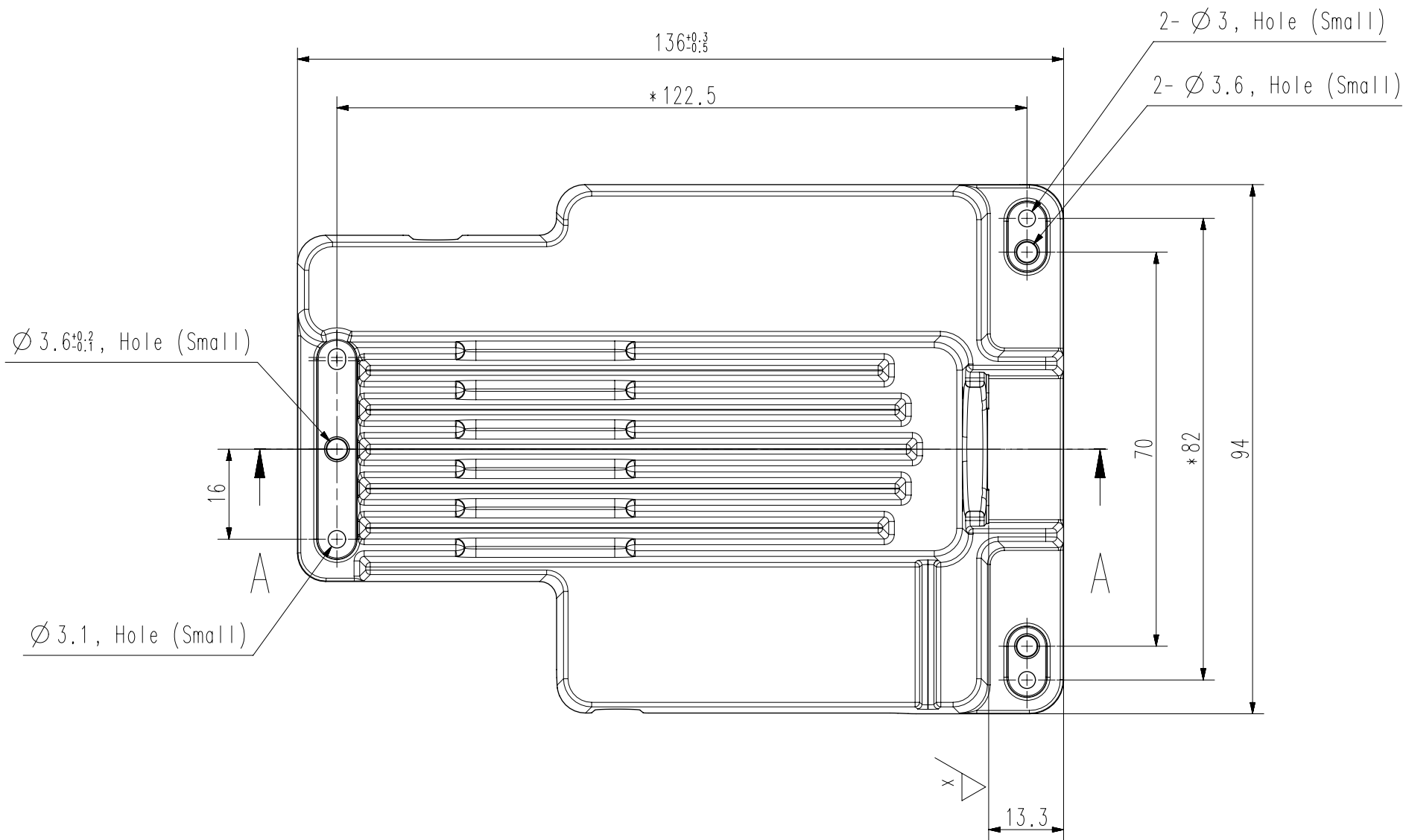
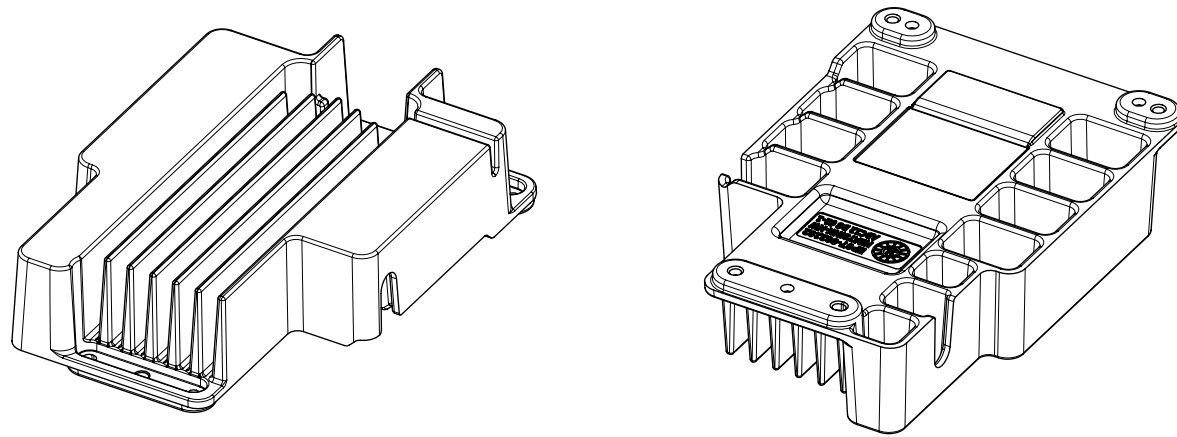
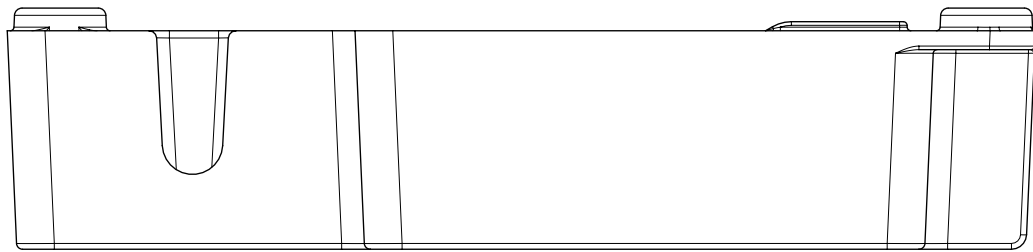


A: 13.0 ±0.35 B: 7.0 ±0.3 C: 5.0 ±0.3

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

This parts should not contain any substances which are specified in AH60-0033K

NO	PART NAME	CODE NO.	MATERIAL	Q 'TY	REMARK
1	SINK,HEAT-NW-PTZ	EP07-002102A	ADC12	1	-



SECTION A-A

NOTE:Die-Casting

1. Material and Basic wall thickness : ADC, t2.5
2. Gate, P/L, Ejector Pin location must be handled with HVC designer.
3. Ejector pin stain must be less than 0.3 depth (凹), no flash is allowed.
4. Undescribed edge round must be less than R0.5, undescribed corners must be less than R0.3.
5. No Deformation, Air bubble, Shrinkage is allowed.
6. Every Flash on P/L must be less than 0.1.
7. Undescribed draft angles must be less than 0.5°.
8. * marks (Key dimensions) must be carefully handled.
9. Surface cutting level of Gate and Over-Flow must be equivalent with other surface cutting level.
10. Part Name, Code Number, Mold Number, Material, Model Name must be carved on the inner side of the part.
 - Location and Specs. must be handled with HVC designer.
11. External look and printing specification must follow separately distributed Design Specification data.
 - Including Surface cutting, Chromate, Sanding, Spray, Silk Print specifications.
12. Reliability must satisfy HVC standards.
13. Delivery packing specifications must be discussed separately.
14. All other issues must be handled with HVC designer.

STANDARD TOLERANCE					
DIV	lvl 1	lvl 2	lvl 3	lvl 4	lvl 5
0-16	±0.05	±0.1	±0.1	±0.2	±0.3
16-63	±0.05	±0.1	±0.2	±0.3	±0.4
63-250	±0.1	±0.2	±0.3	±0.4	±0.4
250-1000	±0.2	±0.3	±0.4	±0.5	±0.6

Process Specification

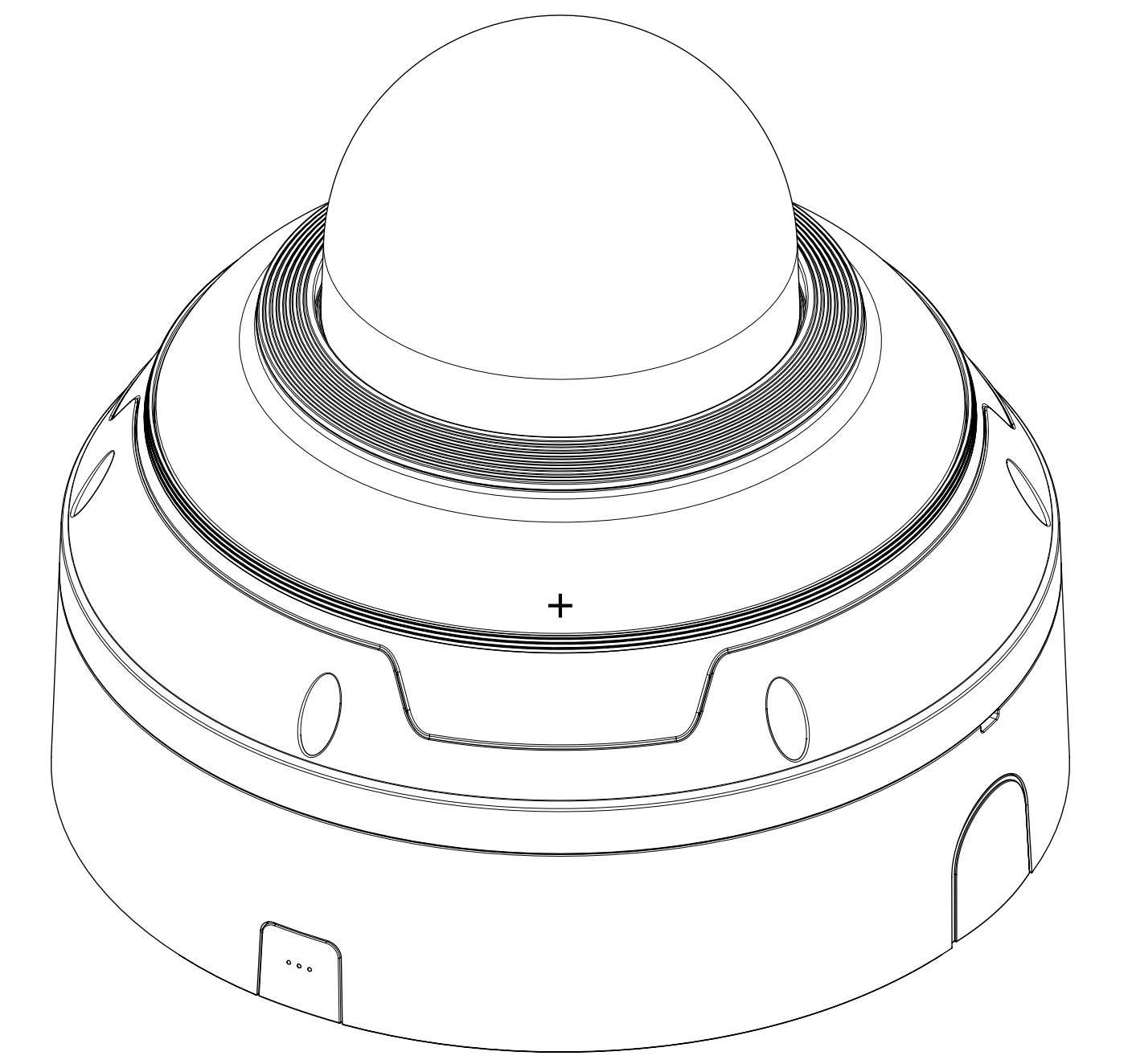
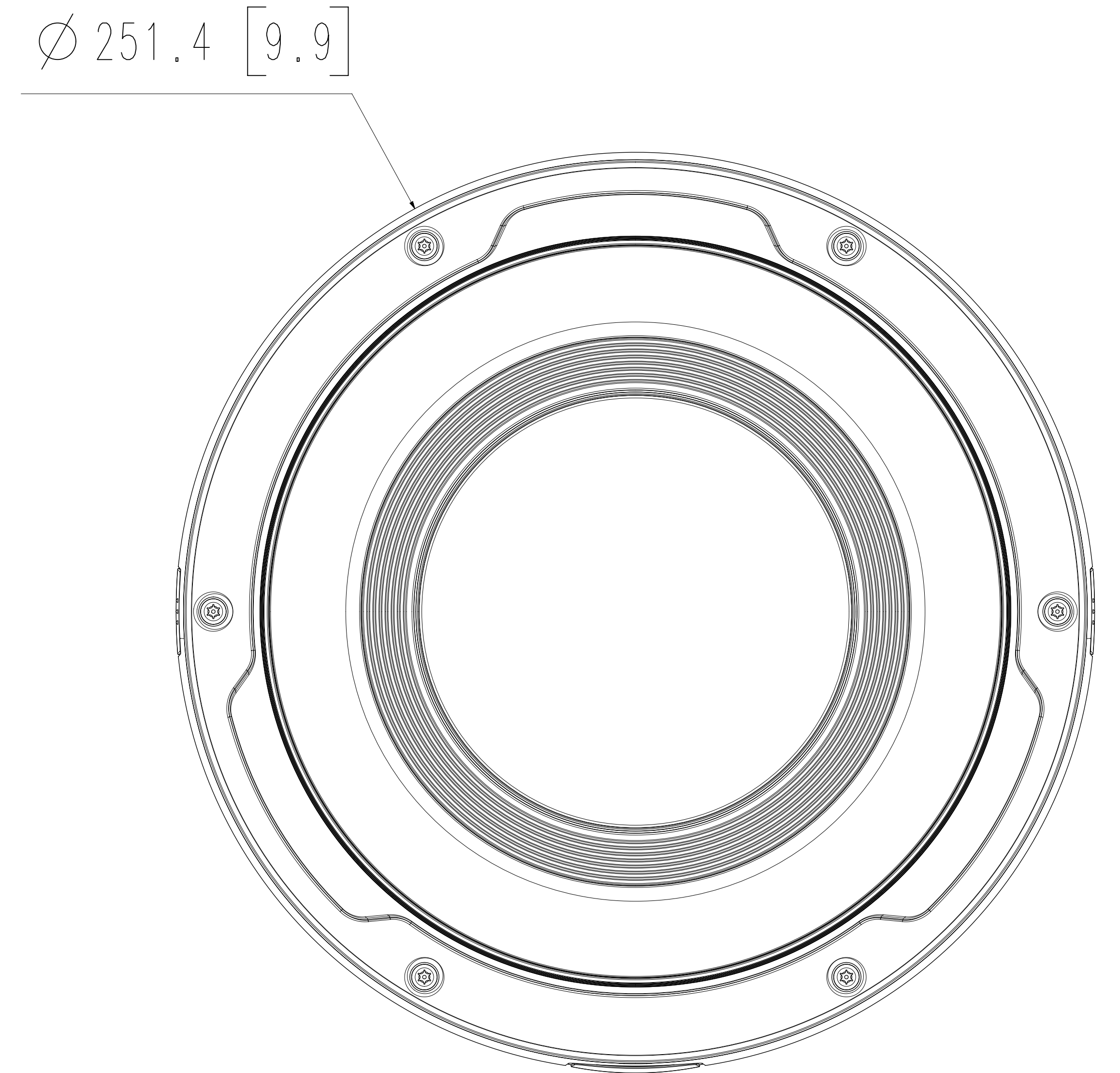
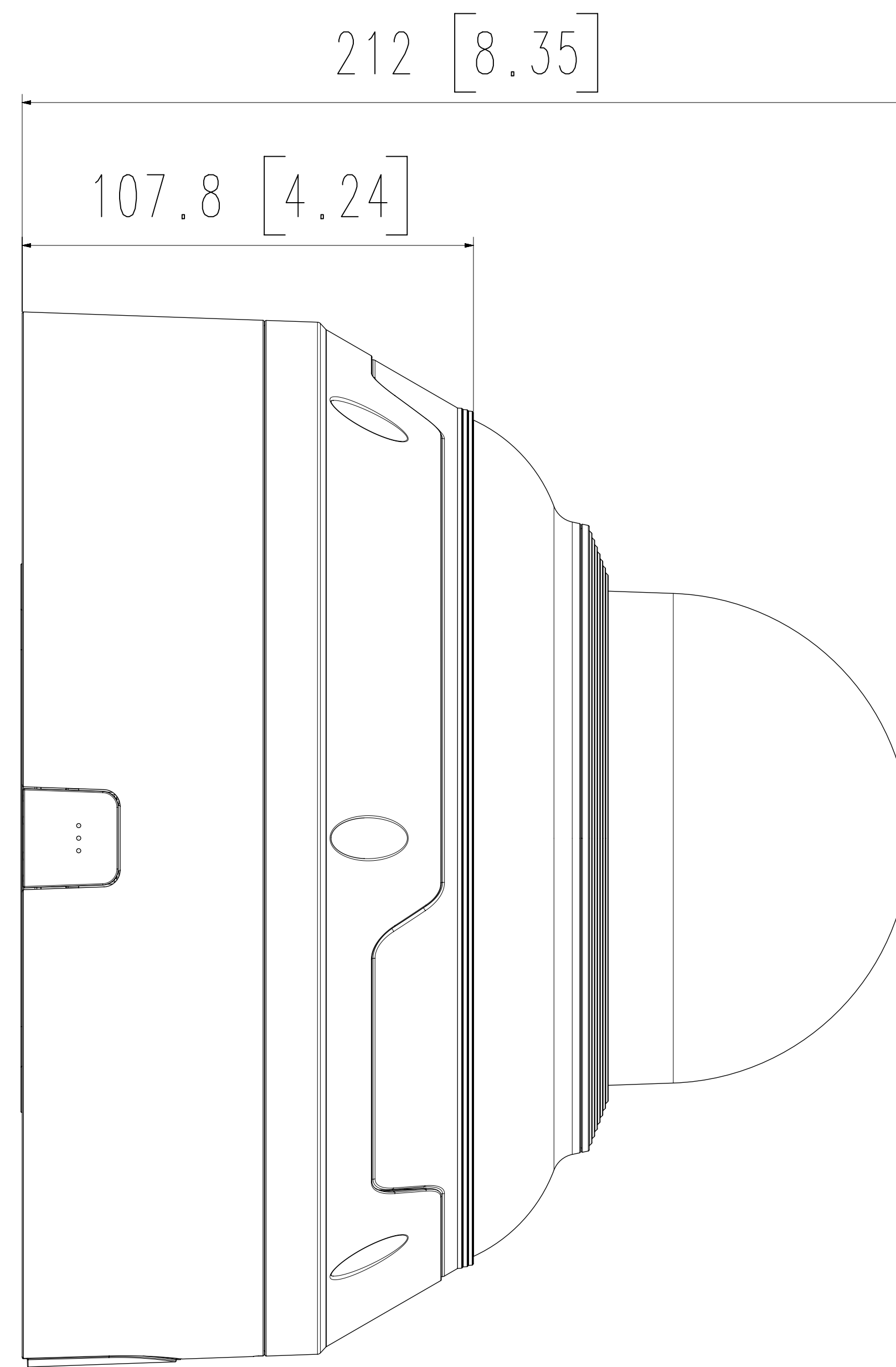
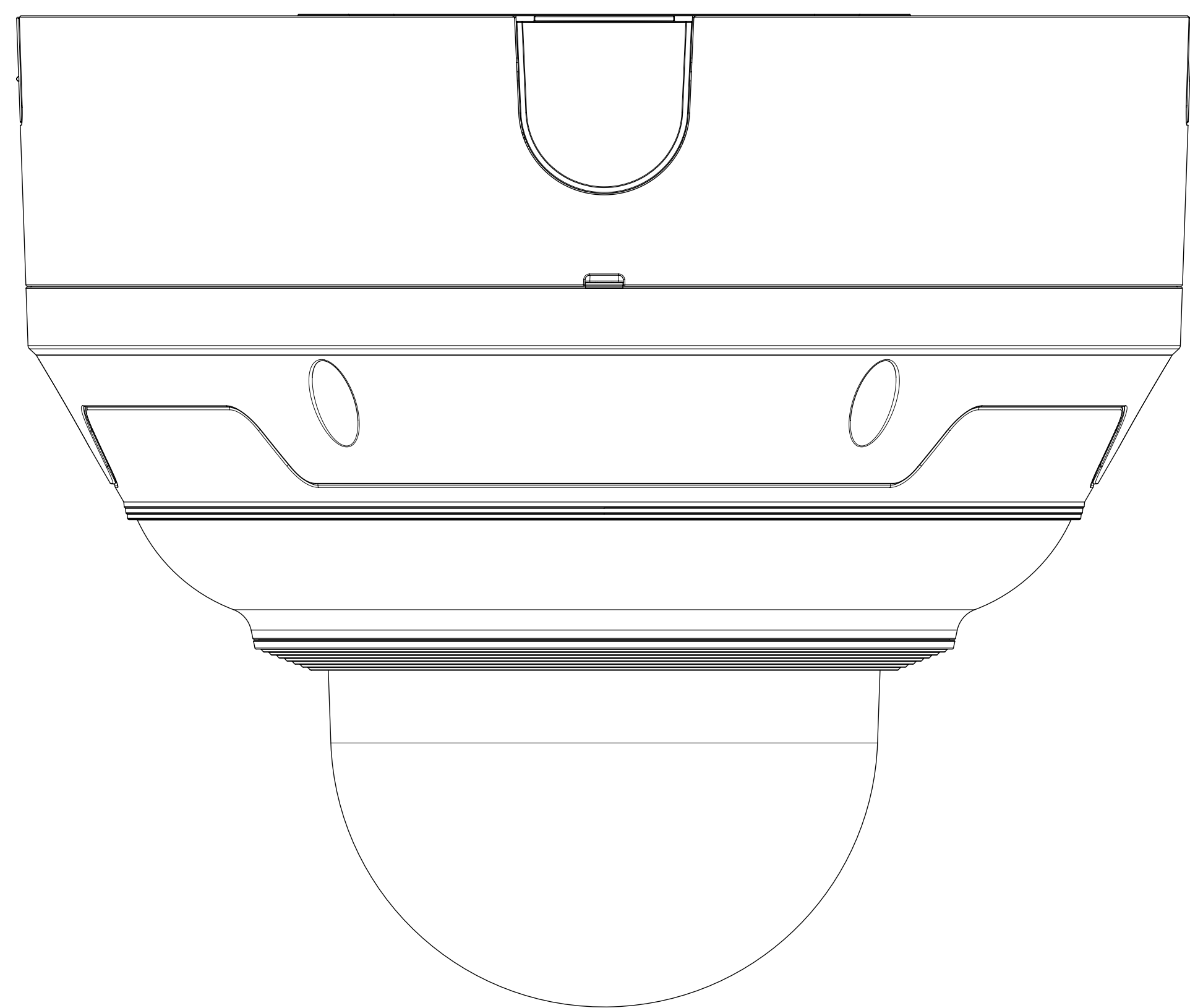
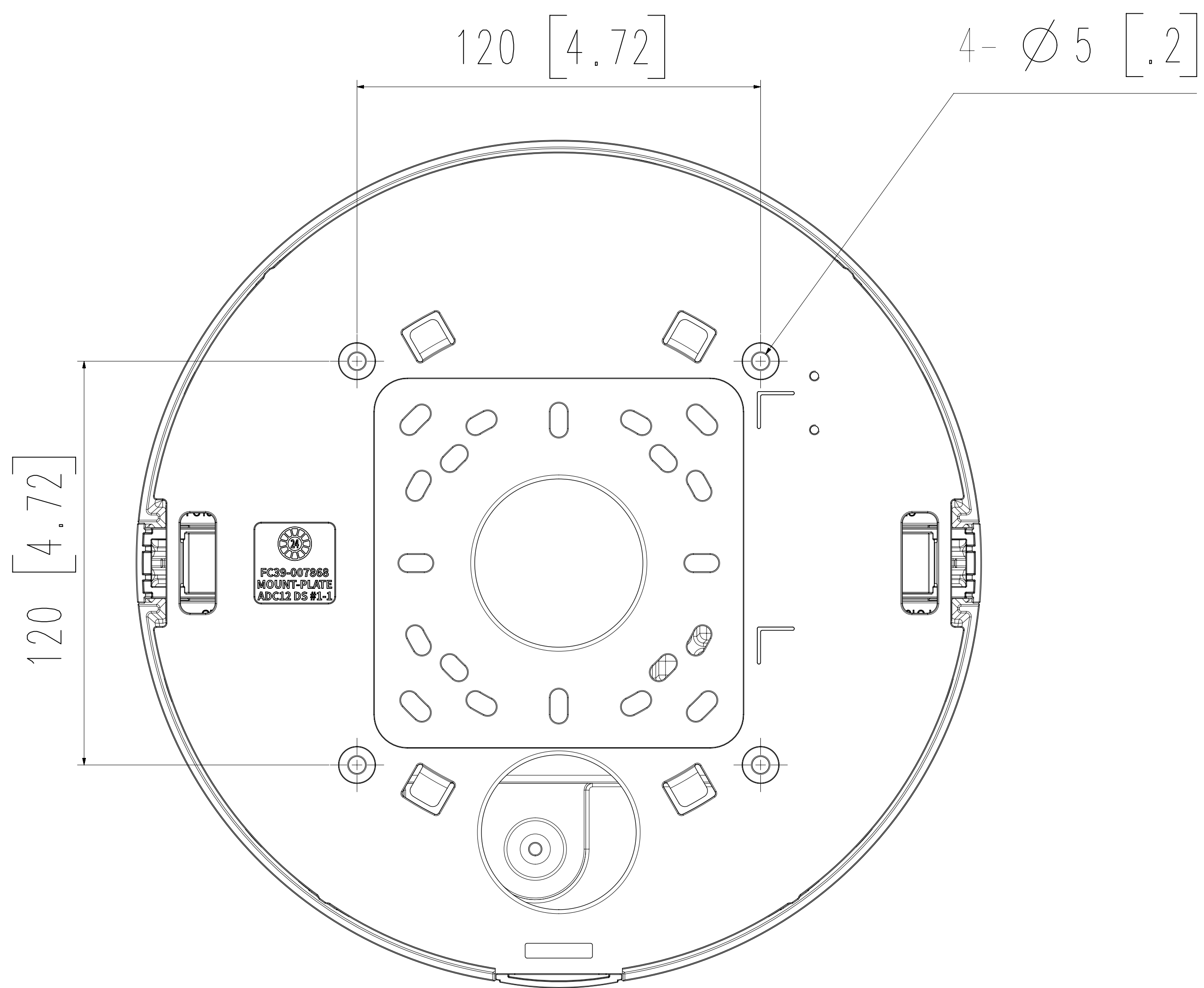
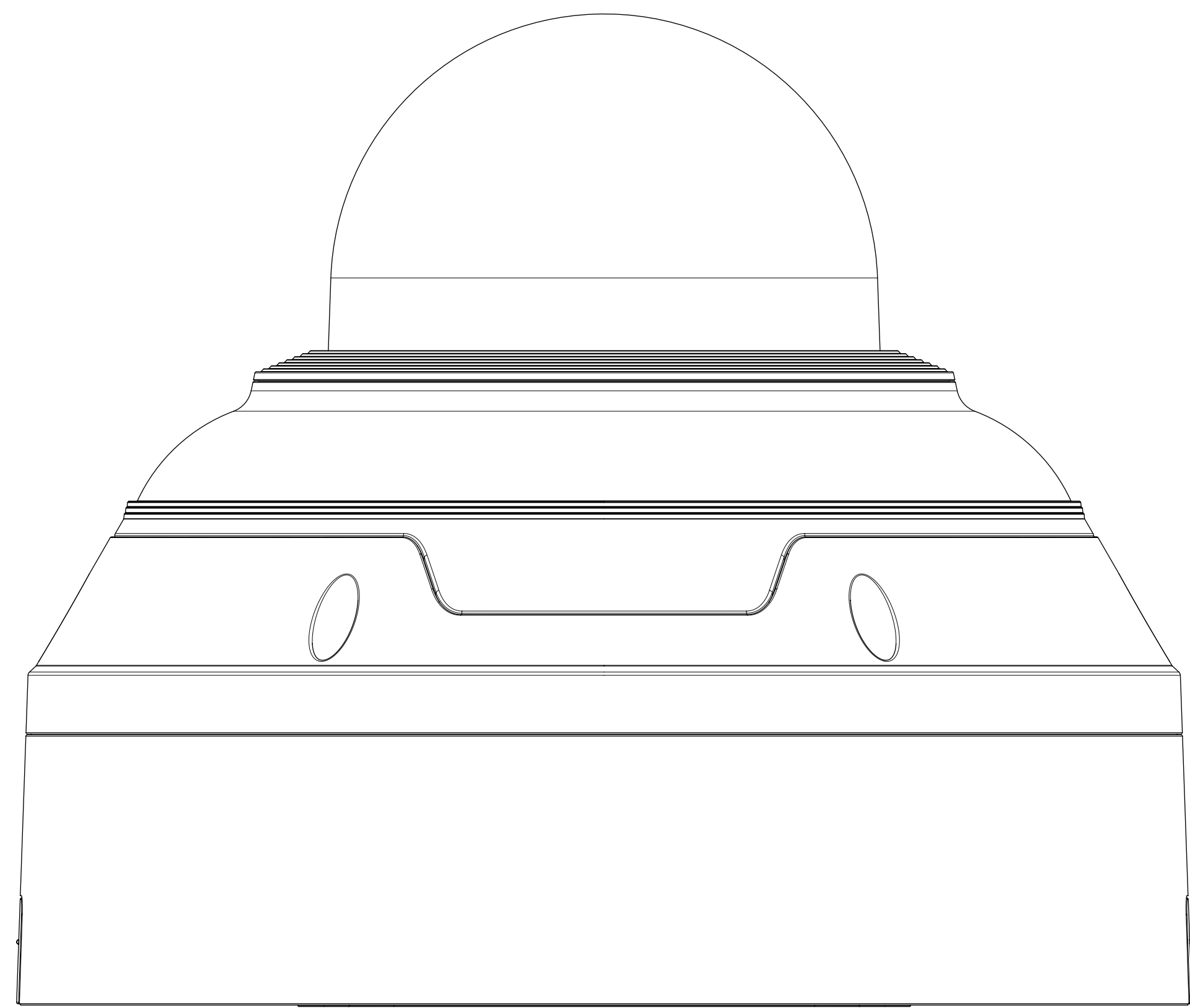
Process	Casting→Cutting→Sanding→Machining/Tapping→Degrease→Chromate
---------	---



A2
CHANGE

UNIT	mm	DESIGN	CHECK	APPROVAL	PART NAME	SINK,HEAT-NW-PTZ
		WD	BH	YS		
	SCALE	1 / 1	JUNG	LEE	CHOI	MODEL NAME
24.07.11			24.07.11	24.07.11		
Hanwha Vision					CODE NO.	EP07-002102A

The following Page(s) are related to Miscellaneous-04. The next supplement, if applicable, will be identified with a new Supplement Page Heading.



1	PNM-C19183RVTP	'25.03.11
No.	MODEL NAME	DATE
Unit:mm[inch]	SCALE:1/1	Hanwha Vision



NETWORK CAMERA, PNM-C19183RVTP

PoE(55V ) 0.77A

M/C: PNM-C19183RVTP/KEX Fac.ID:D



2025.04 S/N: Serial No.

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

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

Manufacture for Hanwha Vision Co., Ltd.

MADE IN KOREA

Rainproof/ Étanche
IP66







