



File E158873

Vol X13

Authorization Page 1

Issued: 2020-07-22

Revised: 2023-05-02

FOLLOW-UP SERVICE PROCEDURE
(TYPE R)

AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT
(AZOT, AZOT7)

Manufacturer:	SEE ADDENDUM FOR MANUFACTURER LOCATIONS
Applicant: (813307-003)	105140 (Party Site) Hanwha Vision Co Ltd 6, Pangyo-ro 319beon-gil, Bundang-gu Seongnam-si Gyeonggi-do 13488 KR
Listee/Classified Company: (813307-003)	105140 (Party Site) SAME AS APPLICANT

Use of the Mark

This Follow-Up Service Procedure authorizes the above Manufacturer(s) to use the marking specified by UL LLC, or any authorized licensee of UL LLC, including the UL Contracting Party, only on products when constructed, tested and found to be in compliance with the requirements of this Follow-Up Service Procedure and in accordance with the terms of the applicable service agreement with UL Contracting Party. The UL Contracting Party for Follow-Up Services is listed in the addendum to this Follow-Up Service Procedure ("UL Contracting Party"). UL Contracting Party and UL LLC are referred to jointly herein as "UL."

It is the responsibility of the Applicant, Manufacturer(s), and Listee/Classified Company to make sure that only the products meeting the aforementioned requirements bear the authorized Marks of UL LLC, or any authorized licensee of UL LLC.

Additional Responsibilities

Additional responsibilities, duties and requirements for the Applicant and Manufacturers are defined under Additional Resources at the following website: <https://www.ul.com/fus>. Manufacturers without Internet access may obtain the current version of these documents from their local UL customer service representative or UL field representative. For assistance, or to obtain a paper copy of these documents or the Follow-Up Service Terms referenced below, please contact UL's Customer Service at <https://www.ul.com/aboutul/locations/>, select a location and enter your request, or call the number listed for that location.

Acceptance of Follow-Up Services

The Applicant and the specified Manufacturer(s) and any Listee/Classified Company in this Follow-Up Service Procedure must agree to receive Follow-Up Services from UL Contracting Party. If your applicable service agreement is a Global Services Agreement ("GSA"), the Applicant, the specified Manufacturer(s), and any Listee/Classified Company will be bound to a Service Agreement for Follow-Up Services upon the earliest by any Subscriber of a) use of the prescribed UL Mark, b) acceptance of the factory inspection, or c) payment of the Follow-Up Service fees. The Service Agreement incorporates such GSA, this Follow-Up Service Procedure and the Follow-Up Service Terms which can be accessed by clicking the following link: <https://www.ul.com/resources/contracts/follow-up-service-terms>. In all other events, Follow-Up Services will be governed by and incorporate the terms of your applicable service agreement and this Follow-Up Service Procedure.

Use and Ownership of the Follow-Up Service Procedure

This Follow-Up Service Procedure, and any subsequent revisions, is the property of UL and is not transferable. This Follow-Up Service Procedure contains confidential information for use only by the Applicant, the specified Manufacturer(s), and representatives of UL and is not to be used for any other purpose. It is provided to the Subscribers with the understanding

that it is not to be copied, either wholly or in part unless specifically allowed, and that it will be returned to UL, upon request.

Definition of Terms

Capitalized terms used but not defined herein have the meanings set forth in the GSA and the applicable Service Terms or any other applicable UL service agreement.

No Third Party Liability

UL shall not incur any obligation or liability for any loss, expense or damages, including incidental, consequential or punitive damages arising out of or in connection with the use or reliance upon this Follow-Up Service Procedure to anyone other than the above Manufacturer(s) as provided in the agreement between UL LLC or an authorized licensee of UL LLC, including UL Contracting Party, and the Manufacturer(s).

Certification Body

UL LLC has signed below solely in its capacity as the certification body to indicate that this Follow-Up Service Procedure fulfills the requirements for certification documentation issued by the certification body. The certification body's accreditation status for the applicable certification scheme and identification of the accreditation body can be found at <https://www.ul.com/resources/accreditation>.

Deborah Jennings-Conner
VP Regulatory Services
UL LLC

LOCATION

135422 (Party Site)
D-TECH CO LTD
173-25 Saneop-ro Gwonseon-gu
Suwon-si Gyeonggi-do 16648 KR
Factory ID: D
UL Contracting Party for above site is: UL GmbH

1846102 (Party Site)
HANWHA VISION VIETNAM COMPANY LIMITED
Lot O-2 Que Vo Industrial Zone extended area Nam Son Ward
Bac Ninh VN
Factory ID: V
UL Contracting Party for above site is: UL GmbH

2467434 (Party Site)
KCE Co Ltd
KCE B/D 34, Annam-ro 369beon-gil Bupyeong-gu
Incheon 21312 KR
Factory ID: C
UL Contracting Party for above site is: UL GmbH

(100578-786) 241273 (Party Site)
OIC KOREA CO LTD
5F, 12 Annam-ro 369beon-gil Bupyeong-gu
Incheon 21312 KR
Factory ID: O
UL Contracting Party for above site is: UL GmbH

2637173 (Party Site)
KOSTEM CO.,Ltd.
4-74, 228, Haan-ro
Gwangmyeong-si Gyeonggi-do KR
Factory ID: KOS
UL Contracting Party for above site is: UL GmbH



Multiple Listing Correlation Sheet

ML FILE NO. E482654

Issued: 2022-11-30
Revised: 2023-03-21

MULTIPLE LISTING
of
AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT
(AZOT, AZOT7)
for

[1566244] QOGNIFY LTD

Basically Listed for:

[105140] HANWHA VISION CO LTD

MARKING: Same as that described in Follow-Up Service Procedure and/or Report except for Multiple Listee's name, file number, Trademark / Tradename, when applicable, and product designation. The Control Number remains 9T96.

LITERATURE: If literature is packaged with the Multiple Listed product(s) it shall be in compliance with the requirements outlined in the appropriate UL Standard(s).

Basically Listed products covered by Procedure and/or Reports under File No. E158873, Volume X13

Products Covered	Report Date	Basic Applicant's (Supplier's) Product Designation	Multiple Listee's Product Designation
NETWORK VIDEO ENCODER	A6125-UL	SPE-1630	NVE4016

File		Volume	Page	Date:
E158873	Index	X13	1	04-Aug-23

Index

Product Type	Model/Type Reference	Report Reference #	Status
NETWORK VIDEO RECORDER	XRN-6410B4, XRN-3210B4	E158873-A6027-UL	
NETWORK VIDEO RECORDER	PRN-6410B4, PRN-3210B4, XRP-4210B4, PRN-6400B4, PRN-3200B4	E158873-A6028-UL	
NETWORK VIDEO RECORDER	XRN-6410DB4	E158873-A6029-UL	
NETWORK VIDEO RECORDER	PRN-6410DB4, XRP-4310DB4, PRN-6400DB4	E158873-A6030-UL	
NETWORK CAMERA	PNM-9002VQ	E158873-A6031-UL	
NETWORK CAMERA	XNF-9010RV, XNF-9010RVM, XNF-9010RS	E158873-A6032-UL	
NETWORK CAMERA	PNM-9000QB	E158873-A6033-UL	
NETWORK CAMERA	XNP-9300RW, XNP-8300RW, XNP-6400RW	E158873-A6034-UL	
NETWORK CAMERA	TNV-8010C, TNV-8011C	E158873-A6035-UL	
OUTDOOR NETWORK CAMERA	PNM-8082VT	E158873-A6036-UL	
THERMAL CAMERA	TNM-3620TDY	E158873-A6037-UL	
DIGITAL VIDEO RECORDER	HRX-1621* (* is Blank or N or P : P=PAL, N=NTSC)	E158873-A6038-UL	
NETWORK CAMERA	PNM-9022V	E158873-A6039-UL	
NETWORK CAMERA	PNM-9322VQP	E158873-A6040-UL	
DIGITAL VIDEO RECORDER	HRX-821* (* is Blank or N or P : P=PAL, N=NTSC)	E158873-A6041-UL	
NETWORK I/O BOX	SPM-4210	E158873-A6042-UL	
NETWORK VIDEO RECORDER	XRN-2011*, XRN-2010*, XRN-3010*, XRN-1610*, XRN-2010P/DM, XRN-3010P/DM, XRN-3010A, XRN-2011A, XRN-2010A, XRN-1610A (* is blank or N or P: N=NTSC, P=PAL)	E158873-A6043-UL	
PUBLIC VIEW MONITOR	SMT-2730PV	E158873-A6044-UL	
PUBLIC VIEW MONITOR	SMT-3230PV	E158873-A6045-UL	
CAMERA HOUSING	SHB-9000H	E158873-A6046-UL	
PUBLIC VIEW MONITOR	SMT-1030PV	E158873-A6047-UL	
NETWORK CAMERA	XNP-9250R, XNP-8250R, XNP-6400R	E158873-A6049-UL	
NETWORK CAMERA	XNP-9250, XNP-8250, XNP-6400	E158873-A6050-UL	
NETWORK CAMERA	ONO-9081R	E158873-A6051-UL	
NETWORK CAMERA	ONV-9081R	E158873-A6052-UL	
NETWORK VIDEO RECORDER	XRN-1620B2	E158873-A6053-UL	

File		Volume	Page	Date:
E158873	Index	X13	2	04-Aug-23

NETWORK VIDEO RECORDER	XRN-1620SB1	E158873-A6054-UL	
NETWORK VIDEO RECORDER	XRN-820S	E158873-A6055-UL	
NETWORK CAMERA	SCO-6020	E158873-A6056-UL	
NETWORK CAMERA	TNF-9010	E158873-A6057-UL	
NETWORK VIDEO RECORDER	PRN-3210B2, PRN-1610B2, XRN-6410RB2, XRN-3210RB2, XRN-6410B2, XRN-3210B2, PRN-3200B2, PRN-3205B2, PRN-1600B2, PRN-1605B2	E158873-A6058-UL	
NETWORK CAMERA	PNB-A6001	E158873-A6059-UL	
NETWORK CAMERA	PND-A6081RV, PND-A6081RF	E158873-A6060-UL	
NETWORK CAMERA	PNO-A6081R	E158873-A6061-UL	
LENS MODULE	SLA-T2480*, SLA-T2480V*, SLA-T4680*, SLA-T4680V*, SLA-T4680D, SLA-T4680DW, SLA-T4680DS, SLA-T2415, SLA-T2815B, SLA-T2480A, SLA-T2480VA, SLA-T4680A, SLA-T4680VA (* is blank or N or P: N = NTSC, P=PAL)	E158873-A6062-UL	
NETWORK CAMERA	PNV-A6081R	E158873-A6063-UL	
NETWORK CAMERA	XNB-6001*, XNB-H6240A, XNB-H6242A	E158873-A6064-UL	
NETWORK THERMAL CAMERA	TNO-3030T, TNO-3020T, TNO-3010T, TNO-3040T, TNO-3050T	E158873-A6067-UL	
NETWORK CAMERA	QNP-6320, QNP-6250, QNP-6251	E158873-A6068-UL	
NETWORK CAMERA	QNP-6320H, QNP-6250H, QNP-6251H	E158873-A6069-UL	
NETWORK CAMERA	XNV-C9083R, XNV-C8083R, XNV-C7083R, XNV-C6083R, XNV-C6083	E158873-A6070-UL	
NETWORK CAMERA	TID-600R	E158873-A6071-UL	
DIGITAL VIDEO RECORDER	HRX-1632, HRX-835	E158873-A6072-UL	
LED MONITOR	SMT-4343	E158873-A6073-UL	
NETWORK CAMERA	TNO-7180R, TNO-7180RLP	E158873-A6075-UL	
NETWORK CAMERA	XND-C9083RV, XND-C8083RV, XND-C7083RV, XND-C6083RV	E158873-A6076-UL	
NETWORK CAMERA	PNM-9031RV	E158873-A6077-UL	
NETWORK CAMERA	QNO-7082R	E158873-A6078-UL	
NETWORK CAMERA	QND-7082R	E158873-A6080-UL	
NETWORK CAMERA	QNV-7082R	E158873-A6081-UL	
NETWORK CAMERA	XNO-C9083R, XNO-C8083R, XNO-C7083R, XNO-C6083R	E158873-A6082-UL	
NETWORK CAMERA	XNV-9083R, XNV-8083R, XNV-8093R, XNV-6083R	E158873-A6083-UL	
NETWORK CAMERA	XND-9083RV, XND-8083RV, XND-8093RV, XND-6083RV	E158873-A6084-UL	
NETWORK CAMERA	QNO-7032R, QNO-7022R, QNO-7012R	E158873-A6088-UL	

File		Volume	Page	Date:
E158873	Index	X13	3	04-Aug-23

NETWORK CAMERA	XNB-9003, XNB-8003, XNB-6003	E158873-A6089-UL	
NETWORK CAMERA	XNO-9083R, XNO-8083R, XNO-6083R	E158873-A6091-UL	
NETWORK CAMERA	QNV-7012R, QNV-7022R, QNV-7032R	E158873-A6092-UL	
NETWORK CAMERA	QND-7012R, QND-7022R, QND-7032R	E158873-A6093-UL	
NETWORK CAMERA	QNP-6320R, QNP-6250R	E158873-A6094-UL	
NETWORK CAMERA	XNV-6123R	E158873-A6100-UL	
NETWORK CAMERA	XNO-6123R	E158873-A6101-UL	
NETWORK CAMERA	LNO-6072R	E158873-A6102-UL	
NETWORK CAMERA	LVN-6012R, LVN-6022R, LVN-6032R, ANV-L6012R	E158873-A6103-UL	
NETWORK CAMERA	LVN-6072R	E158873-A6104-UL	
NETWORK CAMERA	LND-6012R, LND-6022R, LND-6032R	E158873-A6105-UL	
NETWORK CAMERA	LND-6072R	E158873-A6106-UL	
NETWORK CAMERA	LNO-6012R, LNO-6022R, LNO-6032R, ANO-L6012R, ANO-L6022R	E158873-A6107-UL	
NETWORK CAMERA	ANO-L7022R, ANO-L7012R	E158873-A6108-UL	
NETWORK CAMERA	TNV-7010RC, TNV-7011RC	E158873-A6109-UL	
NETWORK CAMERA	ANV-L7012R	E158873-A6110-UL	
NETWORK CAMERA	XNZ-6320A	E158873-A6111-UL	
NETWORK CAMERA	QNP-6320HS	E158873-A6112-UL	
NETWORK CAMERA	PNM-A9083RVD, PNM-A7083RVD, PNM-C12083RVD, PNM-C7083RVD	E158873-A6113-UL	
NETWORK VIDEO RECORDER	ARN-1610S	E158873-A6114-UL	
NETWORK CAMERA	XNZ-L6320A	E158873-A6115-UL	
NETWORK VIDEO RECORDER	QRN-1630S, XRN-815S	E158873-A6116-UL	
NETWORK CAMERA	ANO-L7082R, ANO-L6082R	E158873-A6117-UL	
THERMAL NETWORK CAMERA	TNM-C4940TD, TNM-C4950TD, TNM-C4960TD	E158873-A6118-UL	
NETWORK CAMERA	ANE-L7012R, ANE-L6012R	E158873-A6119-UL	
NETWORK CAMERA	PNM-12082RVD, PNM-7082RVD	E158873-A6120-UL	
NETWORK CAMERA	ANV-L7082R, ANV-L6082R	E158873-A6121-UL	
DIGITAL VIDEO RECORDER	HRX-1635	E158873-A6122-UL	
DIGITAL VIDEO RECORDER	HRX-835A	E158873-A6123-UL	
NETWORK CAMERA	XNF-9013RV	E158873-A6124-UL	
NETWORK VIDEO ENCODER	SPE-1630	E158873-A6125-UL	
NETWORK VIDEO RECORDER	QRN-430S, ARN-410S	E158873-A6126-UL	
NETWORK VIDEO RECORDER	XRN-420S	E158873-A6127-UL	

File		Volume	Page	Date:
E158873	Index	X13	4	04-Aug-23

NETWORK VIDEO RECORDER	QRN-830S	E158873-A6128-UL	
NETWORK VIDEO RECORDER	ARN-810S	E158873-A6129-UL	
NETWORK CAMERA	XNV-9083RZ, XNV-8083RZ, XNV-6083RZ	E158873-A6130-UL	
DIGITAL VIDEO RECORDER	HRX-434	E158873-A6131-UL	
NETWORK CAMERA	XNV-8083Z, XNV-6083Z	E158873-A6132-UL	
NETWORK VIDEO ENCODER	SPE-420	E158873-A6133-UL	
NETWORK CAMERA	XNB-6002, XNB-H6244A	E158873-A6134-UL	
DIGITAL VIDEO RECORDER	HRX-435	E158873-A6135-UL	
DIGITAL VIDEO RECORDER	HRX-1634	E158873-A6136-UL	
VIDEO DECODER	SPD-152	E158873-A6137-UL	
NETWORK CAMERA	PNM-C9022RV	E158873-A6138-UL	
PENDANT SPEAKER	SPA-P100W, SPA-P100B	E158873-A6139-UL	
SECURITY LED MONITOR	SMT-2212	E158873-A6140-UL	
DIGITAL VIDEO RECORDER	ARD-1610	E158873-A6142-UL	
DIGITAL VIDEO RECORDER	ARD-810, ARD-410	E158873-A6144-UL	
NETWORK CAMERA	PNV-A6081R-E2T, PNV-A6081R-E1T	E158873-A6150-UL	
USB JOYSTICK CONTROLLER	SPC-2001	E158873-A6151-UL	
NETWORK CAMERA	MGC-D8080LI, MGC-D8080	E158873-A6153-UL	
NETWORK CAMERA	QNO-C9083R, QNO-C8083R	E158873-A6154-UL	
NETWORK CAMERA	QNV-C9083R, QNV-C8083R	E158873-A6155-UL	
NETWORK CAMERA	XNP-C9303RW, XNP-C8303RW, XNP-C6403RW	E158873-A6158-UL	
NETWORK CAMERA	XNP-C9253R, XNP-C8253R, XNP-C6403R	E158873-A6159-UL	
NETWORK CAMERA	XNP-C9253, XNP-C8253, XNP-C6403	E158873-A6160-UL	
NETWORK CAMERA	TNV-C7013RC	E158873-A6161-UL	
NETWORK CAMERA	MGC-F9010LI	E158873-A6162-UL	
NETWORK CAMERA	PNM-C32083RVQ, PNM-C16083RVQ	E158873-A6163-UL	
NETWORK CAMERA	QNV-C9011R, QNV-C8011R, QNV-C8012	E158873-A6164-UL	
ANALOG CAMERA	ACE-8020R, ACE-6020R	E158873-A6165-UL	
ANALOG CAMERA	ACV-8081R, ACV-8080R	E158873-A6166-UL	
ANALOG CAMERA	ACO-8020R, ACO-6020R	E158873-A6167-UL	
NETWORK CAMERA	ANE-L7012L	E158873-A6168-UL	
NETWORK CAMERA	PNM-C34404RQPZ	E158873-A6178-UL	

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:	ANE-L7012L
Rating:	PoE(48Vdc), 0.16 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.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Prepared By: Seohwan Kim / Project Handler Reviewed By: HanQ Choi / Reviewer

Supporting Documentation

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

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

B. Generic Inspection Instructions -

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

Product Description

NETWORK CAMERA has been designed for indoor use and integrated a hole for mount.

It is a commercial equipment supplied from UL Listed PoE (Power over Ethernet) 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	PoE (Power over Ethernet - 48 Vdc)
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	N/A
Pollution degree (PD)	PD 2
Manufacturer's specified Tma (°C)	55
IP protection class	IPX0
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)	0.616

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

Additional Information

4790849923

- Maximum Normal Load: Continuous operation with LED on

Additional Standards

The product fulfills the requirements of: N/A

Markings and Instructions

Clause Title	Marking or Instruction Details
Equipment identification marking – Manufacturer identification	Listee's or Recognized Company's name, Trade Name, Trademark or File Number
Equipment identification marking – model identification	Model Number
Equipment rating marking – ratings	Input Ratings (voltage, frequency/dc, current/power)
Installation Manual	These servicing instructions are for use by qualified service personnel only.
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 (48 Vdc), 0.16A.
(Website) Manual - 2	The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3af shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1 or PS2 as defined in UL62368-1.

Special Instructions to UL Representative

N/A

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

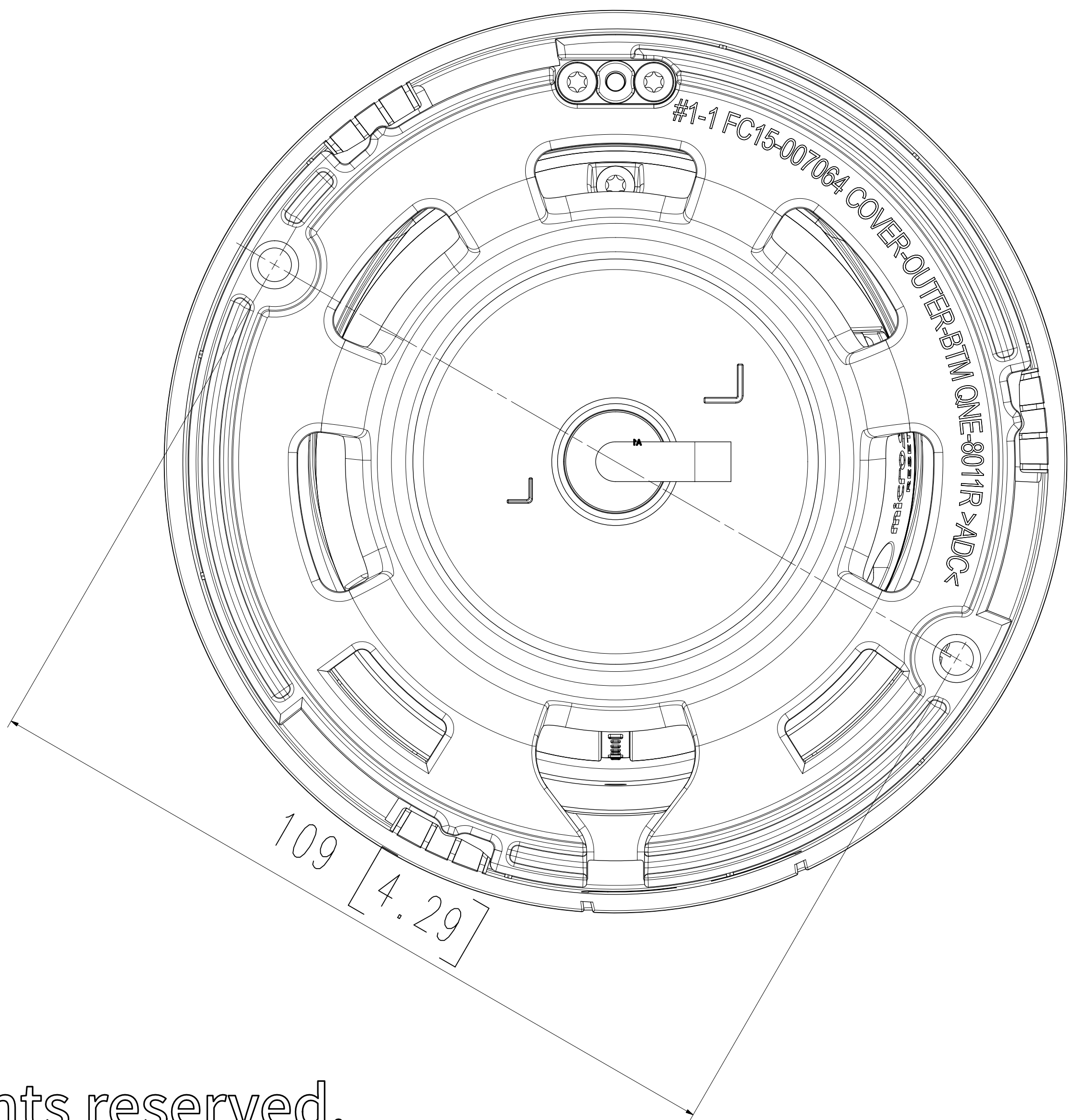
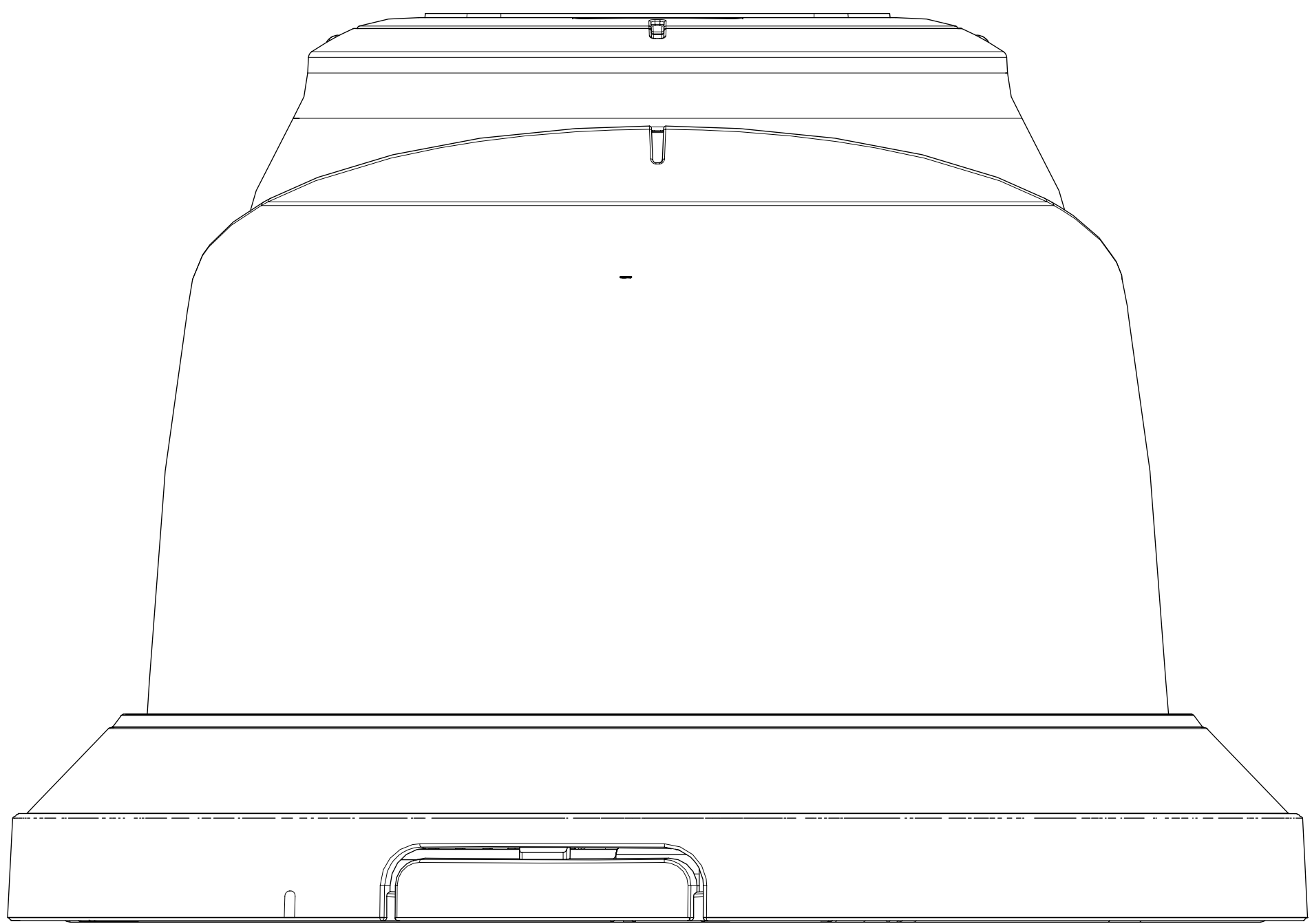
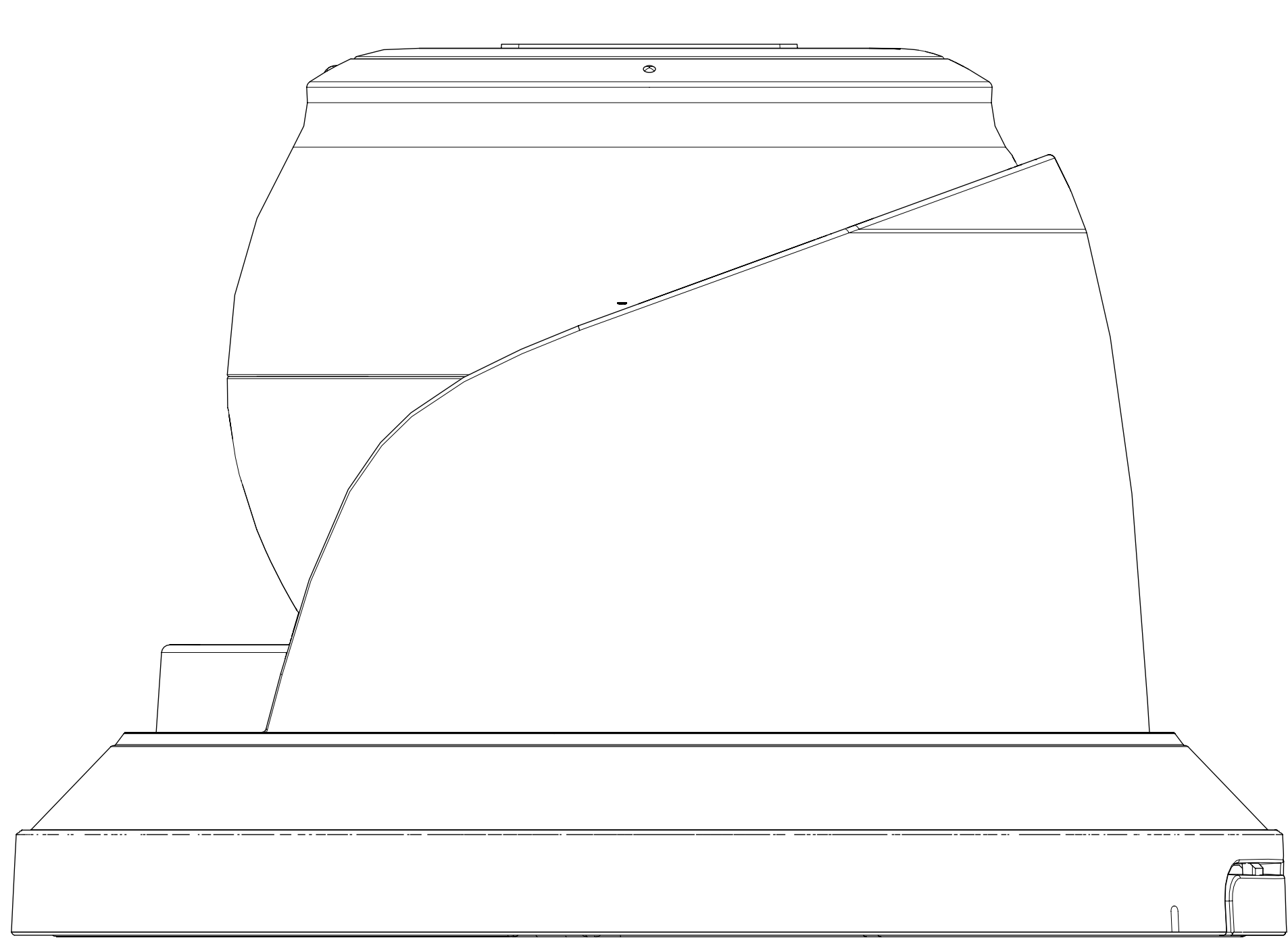
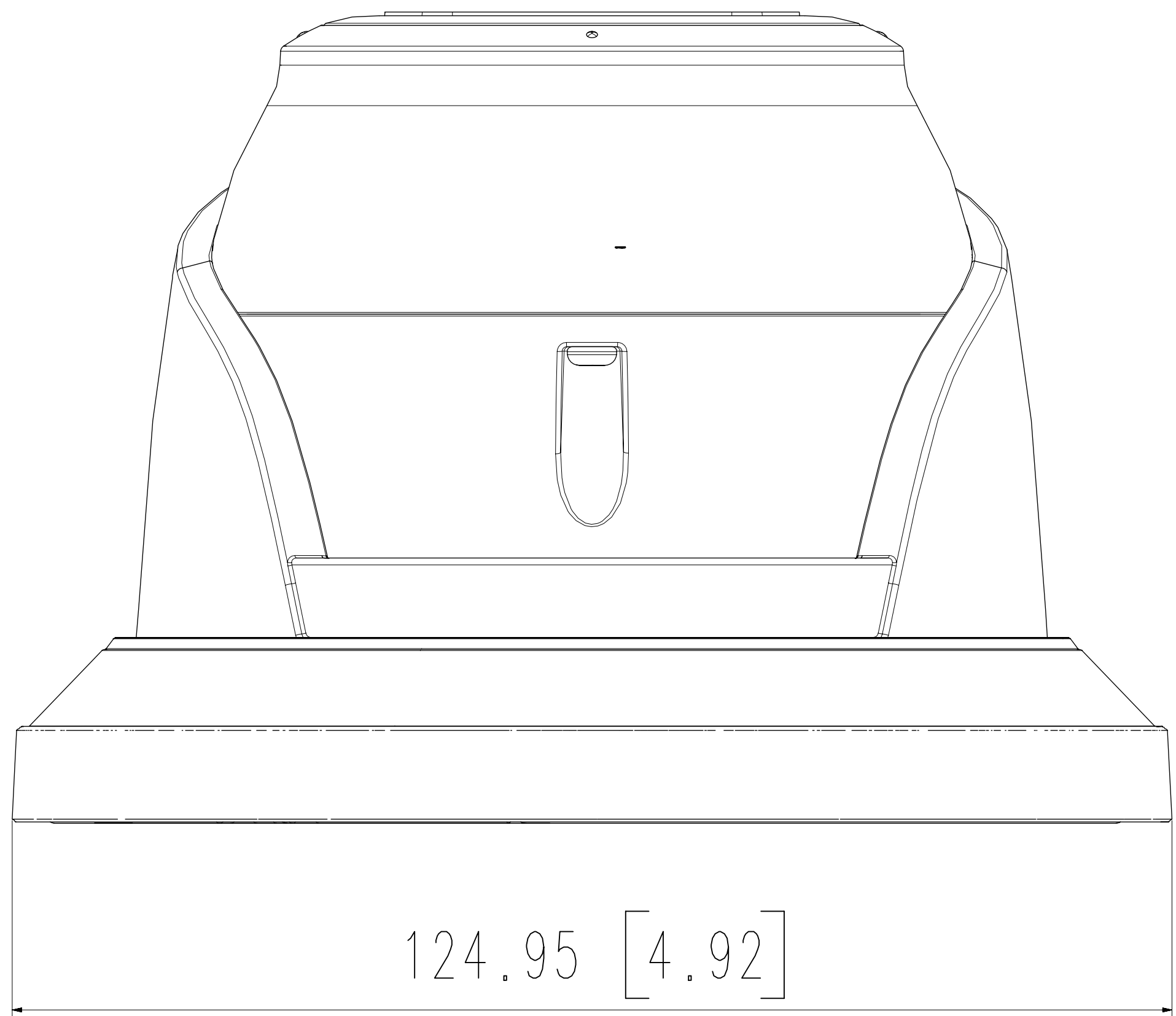
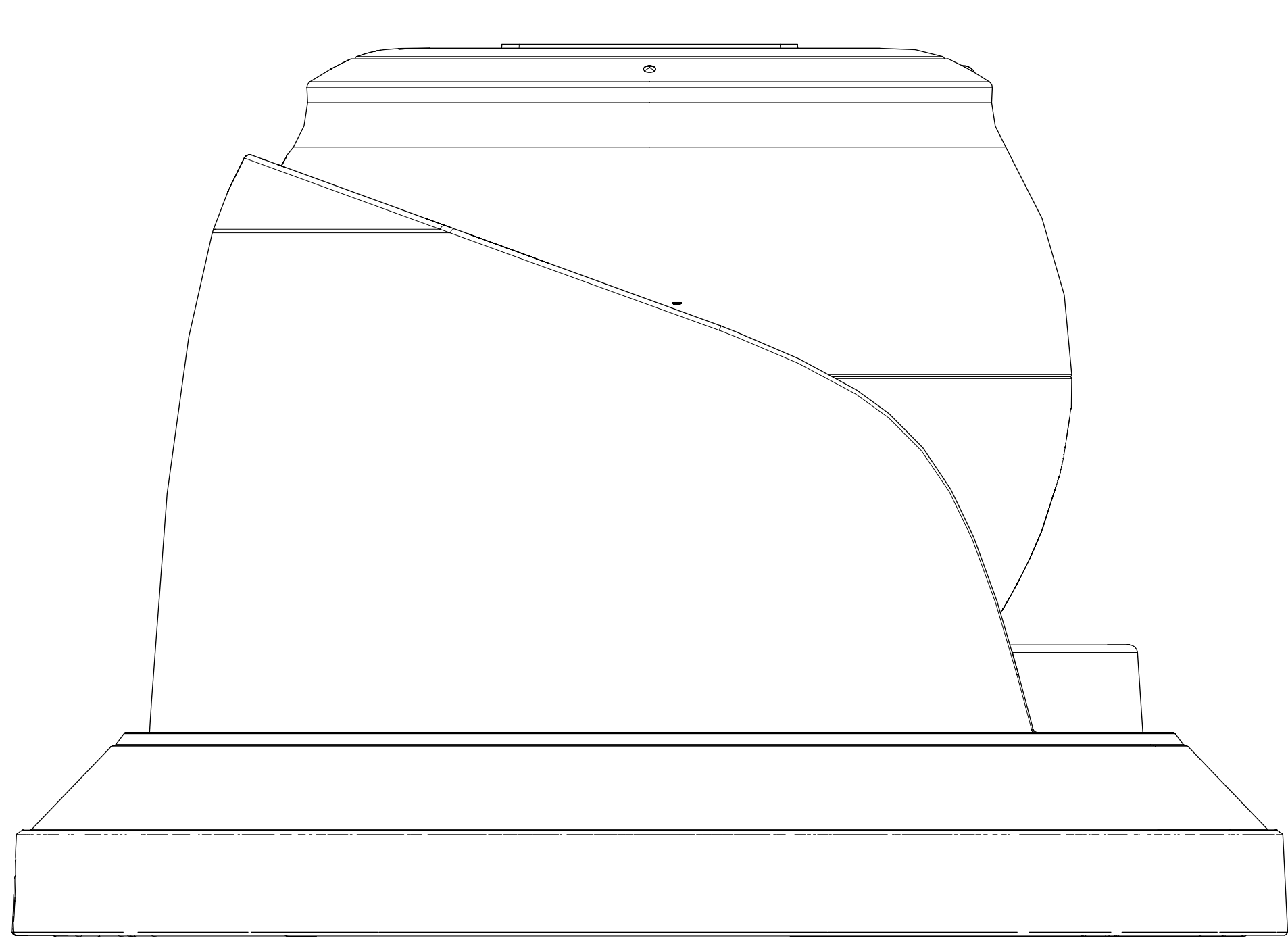
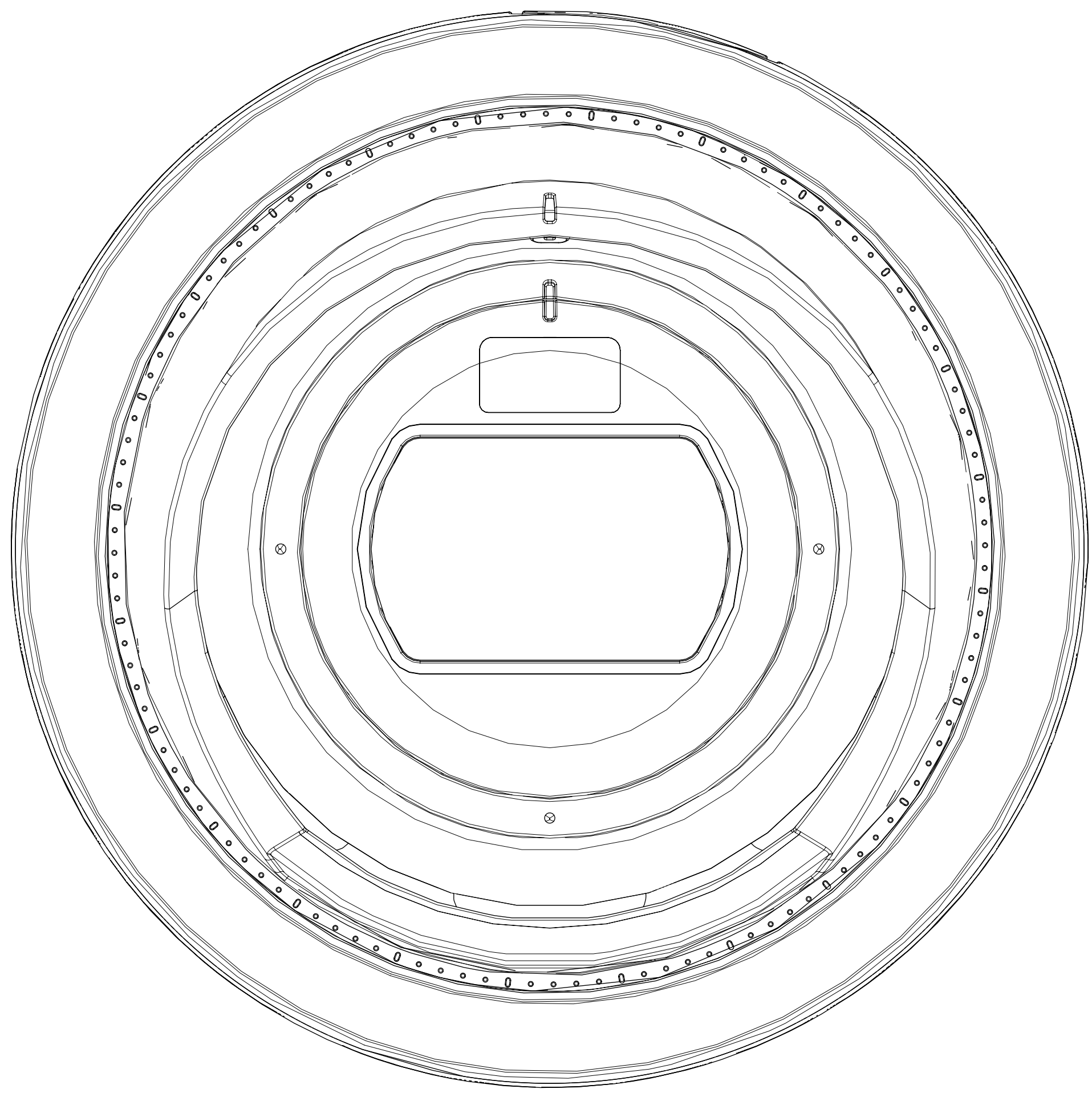
BE1.0	Sample and Test Specifics for Follow-Up Tests at UL				
Model	Component	Material	Test	Sample (s)	Test Specifics
-	-	-	-	-	-

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
Metal Enclosure	Interchangeable	Interchangeable	Aluminium, Min. 2.5 mm thickness.	-	-	
Plastic Enclosure (Bottom CASE)	LOTTE CHEMICAL CORPORATION	NH-1035(+)	Min. 2.0 mm thickness, rated Min. V-0	QMFZ2	UL (E115797)	
Plastic Enclosure (Front CASE)	LOTTE CHEMICAL CORPORATION	NH-1035(+)	Min. 2.0 mm thickness, rated Min. V-0	QMFZ2	UL (E115797)	
Plastic Enclosure (Lens CASE Black)	CHI MEI CORPORATION	PC-6715VT(f1)(a)	Min. 1.5 mm thickness, rated Min. V-0	QMFZ2	UL (E56070)	
Plastic Enclosure (Lens CASE Window)	LOTTE CHEMICAL CORPORATION	QC-122(+)(f1)	Min. 2.0mm thickness, rated Min. V-2	QMFZ2	UL (E115797)	
Transformer (T7)	SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO LTD	PDT2431SR	130 deg. C, see enclosure for more detail.	-	-	
Opto-coupler (LS2)	LITE-ON Technology Corporation	LTV-356T(%)(c)	Isolation Voltage: 3750. Max. Operation Temperature: 110 deg. C	FPQU2	UL (E113898)	
Lithium Battery (BAT1)	SEIKO INSTRUMENTS INC MICRO-ENERGY DIV	ML414H	Lithium(Coin), Rechargeable, Max 3.4 Vdc, Maximum charging current 300mA	BBCV2	UL (MH15628)	
Lithium Battery Protection circuit	Interchangeable	Interchangeable	Diode (D1, 80 V, 300 mA) and Resistor (R4, 3.3 k ohm) in series	-	-	

Flexible PoE cable	Henan CARVE Electronics Polytron Technologies Inc	2725	Marked VW-1	AVLV2	UL (E346485)	
Flexible PoE cable - Alternate	Interchangeable	Interchangeable	Marked VW-1	AVLV2	UL	
FFC cable	Interchangeable	Interchangeable	Min. VW-1, 60 V, 105 deg. C	AVLV2	UL	
Input Cable	Interchangeable	Interchangeable	VW-1, Min. 30 V, 80 deg. C	AVLV2	UL	
Internal Wiring (Secondary)	Interchangeable	Interchangeable	VW-1; Min. 30 V, 80 deg. C	AVLV2	UL	
Thermal Pad	KOMOTECH CO LTD	KGP-1(a)	Min. 0.2 mm thickness, rated V-0, 150 deg. C	QMFZ2	UL(E245303)	
Thermal Pad-Alternate	Interchangeable	Interchangeable	Min. 0.2 mm thickness, rated V-0, 150 deg. C	QMFZ2	UL	
FPWB	Interchangeable	Interchangeable	Min V-2 or VTM-2, 80 deg. C.	ZPXK2 or ZPMV2	UL	
PWB	Glory Faith	14MV0	Min. V-0, 130 deg. C	ZPMV2	UL (E157925)	
PWB -Alternate	KI JOO INDUSTRIAL CO LTD	KJ3-V-0-1	Min. V-0, 130 deg. C	ZPMV2	UL (E111636)	
PWB-Alternate	Interchangeable	Interchangeable	Min. V-0, 130 deg. C	ZPMV2	UL	
Label	Interchangeable	Interchangeable	Suitable for use in ambient temperatures down to 0°C (32°F)	PGDQ2 or PGJI2	UL	
LED (LD302)	OSRAM	GW CSSRM3.EM	VF: Max. 3.20 V	-	-	

Enclosures

Type	Supplement Id	Description
Photographs	03-01	Over view-1
Photographs	03-02	Over view-2
Photographs	03-03	Over view-3
Photographs	03-04	Internal view
Photographs	03-05	LED board top
Photographs	03-06	LED board bottom
Photographs	03-07	Network board top
Photographs	03-08	Network board bottom
Photographs	03-09	Power board top
Photographs	03-10	Power board bottom
Photographs	03-11	Sensor board top
Photographs	03-12	Sensor board bottom
Diagrams	04-01	Enclosure sketch_ANE-L7012L
Manuals	06-01	Manuals
Miscellaneous	07-08	Label-ANE-L7012L
Miscellaneous	07-09	Transformar Specification



3	MODEL 2	
2	MODEL 1	
1	BASIC MODEL	'23.05.15
No.	MODEL NAME	ANE-L7012L
Unit:mm[inch]		SCALE:2/1
Hanwha Vision		

NETWORK CAMERA

User Manual

ANE-L7012L



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 (48V), 0.16A.
16. This product is intended to be supplied by isolation power.
17. If you use excessive force when installing the product, the camera may be damaged and malfunction. If you forcibly install the product using non-compliant tools, the product may be damaged.
18. Do not install the product in a place where chemical substances or oil mist exists or may be generated. As edible oils such as soybean oil may damage or warp the product, do not install the product in the kitchen or near the kitchen table. This may cause damage to the product.
19. When installing the product, be careful not to allow the surface of the product to be stained with chemical substance. Some chemical solvents such as cleaner or adhesives may cause serious damage to the product's surface.
20. If you install/disassemble the product in a manner that has not been recommended, the production functions/ performance may not be guaranteed. Install the product by referring to "Installation & connection" in the user manual.
21. Installing or using the product in water can cause serious damage to the product.



22. Although a rapid change in temperature could cause frost inside the glass, there will be no problem with the video.
23. The operating temperature of the product is -30°C to +55°C (-22°F ~ +131°F)

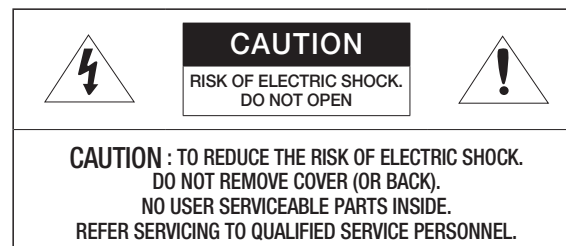
WARNING

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 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.

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.

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.

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 802.3af 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.

RECOMMENDED PC SPECIFICATIONS

- CPU : Intel(R) Core(TM) i7 3.4 GHz or higher
 - RAM : 8G or higher
 - Recommended browser: Chrome
 - Supported browsers: Chrome, Safari, Firefox, MS Edge(chromium based)
 - Supported OS : Windows, Mac, Linux, Android, iOS, Chrome
 - Verification environment
 - Windows 10: Google Chrome version 80 or later, Firefox version 72 or later, MS Edge version 83 or later
 - Mac 10.13/14: Safari version 11.0.1 or later
- ※ The video play performance of the web viewer depends on the performance of the user's CPU and GPU.

RECOMMENDED MICRO SD/SDHC/SDXC MEMORY CARD SPECIFICATIONS

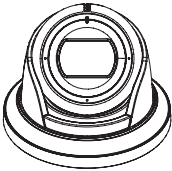
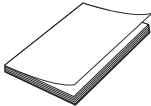
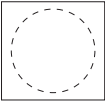
- Recommended capacity : 16GB ~ 128GB (MLC type required)
- Recommended Manufacturers : SanDisk, Transcend
- Product Type : High endurance
- The compatibility varies depending on the card manufacturers and types.

NAS RECOMMENDED SPECS

- For this camera, you are recommended to use a NAS with the following manufacturer's specs.
Recommended Product : QNAP, Synology

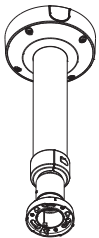
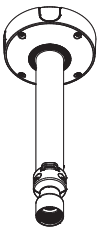
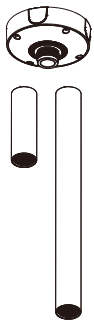
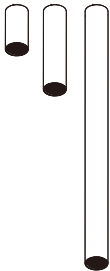
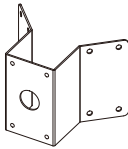
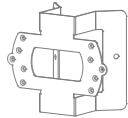
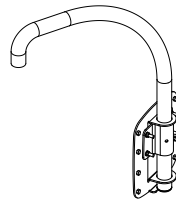
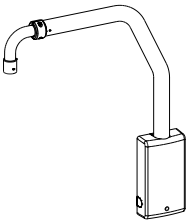
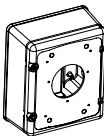
WHAT'S INCLUDED

Please check if your camera and accessories are all included in the product package.
(As for each sales country, accessories are not the same.)

Appearance	Item Name	Quantity	Description
	Camera	1	
	Quick Guide (Optional)	1	
	Template	1	Product installation guide
	Torx L wrench	1	Used to open the micro SD slot cover

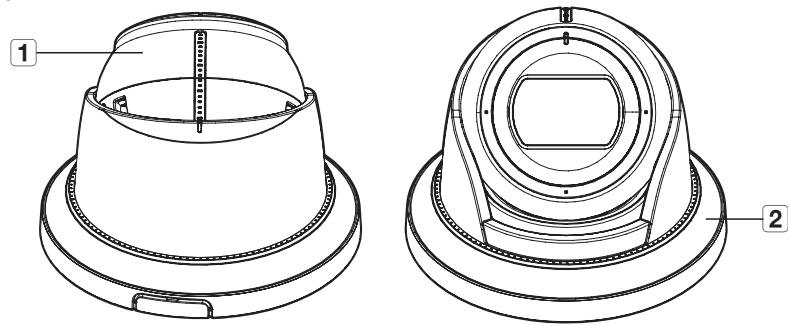


■ Use installation screws of at least M4, L30 for the installation of this product.

Ceiling Mount		Corner Mount	Parapet Mount	Cabinet
Assembly	Individual Parts			
 SBP-156CMW (Telescopic)  SBP-300CMTW (Telescopic)  SBP-300CMW1 SBP-900CMW  SBP-150CMI SBP-300CMI	 SBP-180CMB SBP-140CMB  SBP-150CMP SBP-300CMP SBP-900CMP  SBP-C15P	 SBP-300KMW1  SBD-140KMB (Light version)	 SBP-300LMW  SBP-156LMW1 (Telescopic)	 SBP-300NBW

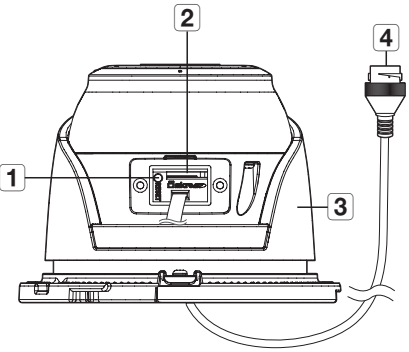
AT A GLANCE

Appearance



Item	Description
1 Head	A part that contains the lens and the internal body.
2 Middle Cover	A cover placed over to fix its position after the head direction has been adjusted.

Components



Item	Description
1 Reset Button	The button restores all camera settings to the factory default. Press and hold for about 5 seconds to reboot the system. i If you reset the camera, the network settings will be adjusted so that DHCP can be enabled. If there is no DHCP server in the network, you must run the Device Manager program to change the basic network settings such as IP address, Subnet mask, Gateway, etc., before you can connect to the network.
2 Micro SD Card slot	Compartment for the Micro SD memory card.
3 Inside cover	Protective cover for the main body.
4 PoE Connector	Connects to the network and supplies power through Ethernet cable.

INSTALLATION



You are recommended to install this product below the edge of eaves to prevent the cable from being externally exposed.

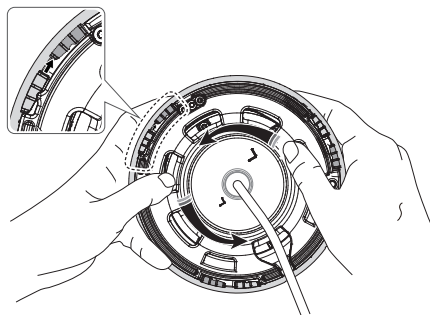
Precautions before installation

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

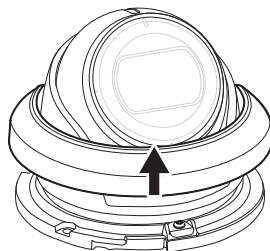
- It must be installed on the area (ceiling) that can withstand 5 times the weight of the camera including the installation bracket.
- Stuck-in or peeled-off cables can cause damage to the product or a fire.
- For safety purposes, keep anyone else away from the installation site. And put aside personal 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. Hold the camera body with both hands as illustrated and use thumbs to rotate the groove of the base anticlockwise to unlock the middle cover.

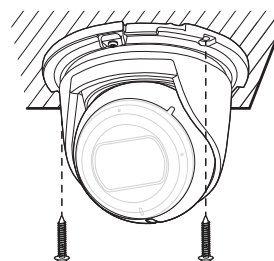
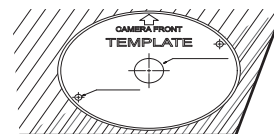


2. Remove the middle cover by lifting it.

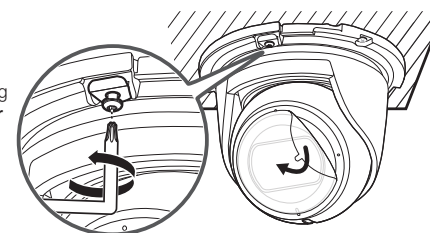


Installation

1. Consider the direction to be monitored, attach the template, and drill holes by following the template.
 - Set the <↑> mark printed on the template to face the direction of camera monitoring.
2. Connect the camera internal terminal with the corresponding cable.
3. Using 2 tapping screws, fix the camera at 2 holes drilled with a template.



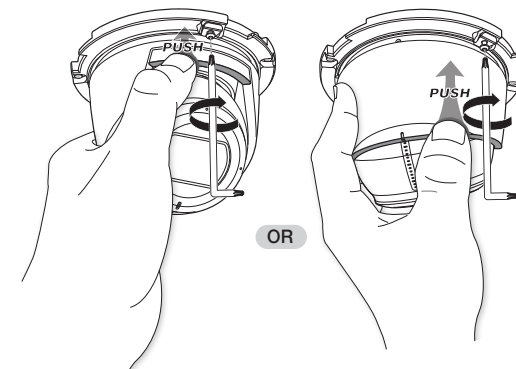
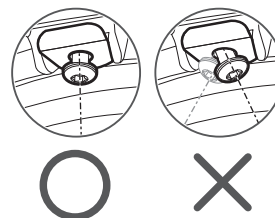
4. Remove all protective films from the camera windows.
5. Unfasten the inner cover bracket until loose.
6. Adjust the lens in a desired direction by referring to the "Adjusting the monitoring direction for the camera" section. (page 13)



7. Push the colored camera part upward in the direction of the arrow, and tighten the screws in the direction perpendicular to the ceiling.



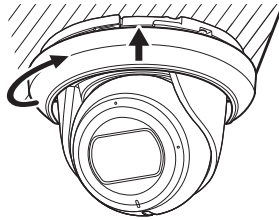
- Don't install the screws at an angle.



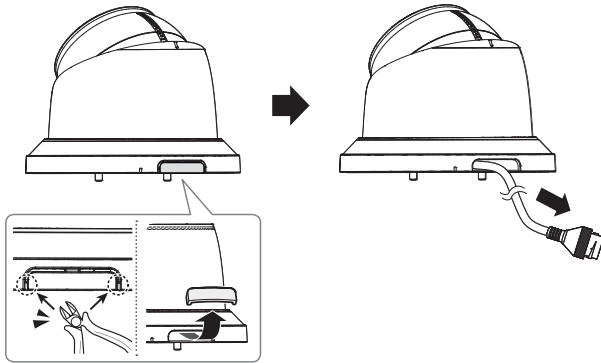
installation & connection

8. Put the middle cover back and rotate it clockwise until it is firmly in place.

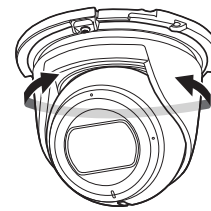
- Align the insert mark on the camera body and the interlock mark on the middle cover to assemble.



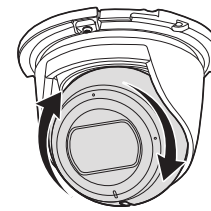
- When connecting the cable through the side, remove the wiring hole cover first before doing so.



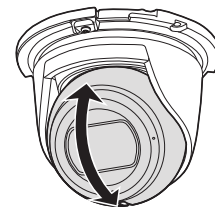
Adjusting the monitoring direction for the camera



Pan



Lens rotation



Tilt

■ Adjusting the monitoring direction

You can adjust the camera direction only when the camera is fixed on the ceiling.

Where, rotating the camera unit to the left or right is called Pan, adjusting the tilt is called Tilt, and turning the lens on its axis is called Rotation.

- The effective range of pan is a total of 350 degrees.
- The effective range of rotation is a total of 360 degrees.
- The effective range of tilt is a total of 75 degrees.

■ Methods of adjustment

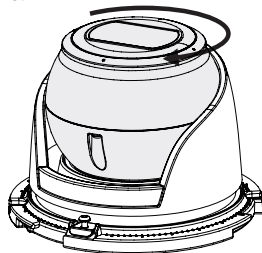
After installing the camera in consideration of the direction to monitor, adjust Pan, Rotation, and Tilt angles.

INSERTING/REMOVING A MICRO SD MEMORY CARD

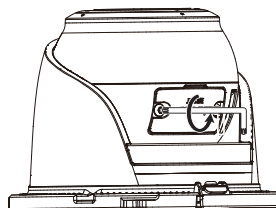
- Before installing the camera, the Micro SD card should be inserted while the power source and the body are separated.
- Do not forcefully insert it in the reverse direction. It might damage your Micro SD card and your product.
- When it rains or the humidity is high, insertion or ejection of a Micro 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.

Inserting a Micro SD Memory Card

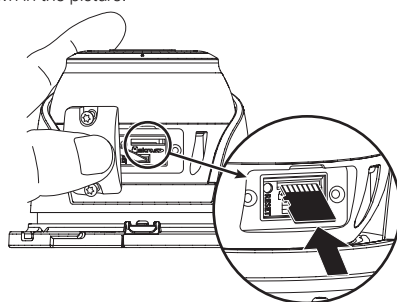
1. Remove the middle cover and unfasten screws on the inside cover bracket.
2. Rotate it 90° so that the SD cover faces the front, as shown in the picture.
3. Completely tilt the camera towards the back.



4. Use the L wrench provided as a tool to release the SD cover.

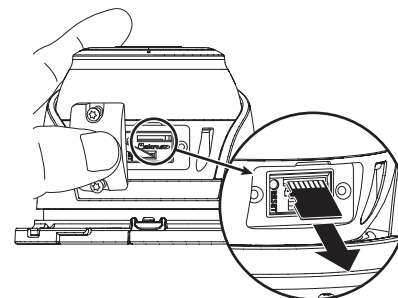


5. Slide in the Micro SD card following the direction shown in the picture.



Removing a Micro SD Memory Card

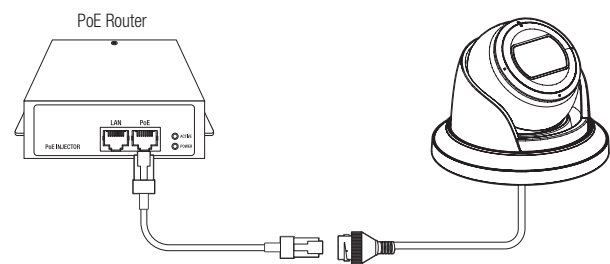
Gently press down on the exposed end of the memory card as shown in the diagram to eject the memory card from the slot.



- 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 memory card that contains data from the product, the data may be lost or damaged.

POWERING AND NETWORKING

Connect the PoE device and camera's PoE connectors.



- Connect to a PoE (Power over Ethernet) enabled router's PoE connector.
- Use PoE (Power over Ethernet) that is compliant with the IEEE802.3af protocols.
- If you want to connect an external device, you must turn off the external device before proceeding.

Network Cable Specification

Item	Contents	Remark
Connector	RJ45	
Ethernet	10/100BASE-T	10/100 Mbps
Cable	Category 5e	
Max Distance	100 m	DC Resistance ≤ 0.125 Ω/m
PoE Support	IEEE 802.3af	



- If you use a cable other than Category 5e standards, 100m of transmission distance is not guaranteed.

NETWORK CAMERA, ANE-L7012L

PoE(48V $\overline{\text{---}}$) 0.16A

M/C: ANE-L7012L/KEX Fac. ID:D



S/N:

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

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

HANWHA VISION CO.,LTD. MADE IN KOREA

客户名称 CUSTOMER			
客户料号 MODEL NO.			
产品名称 PART NAME	POWER TRANSFORMER		
产品型号 PART TYPE	PDT2431SR		
版本 REV	X5		
签名 SIGNATURE	制图: Drawn by	审核: Checked by	批准: 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 (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

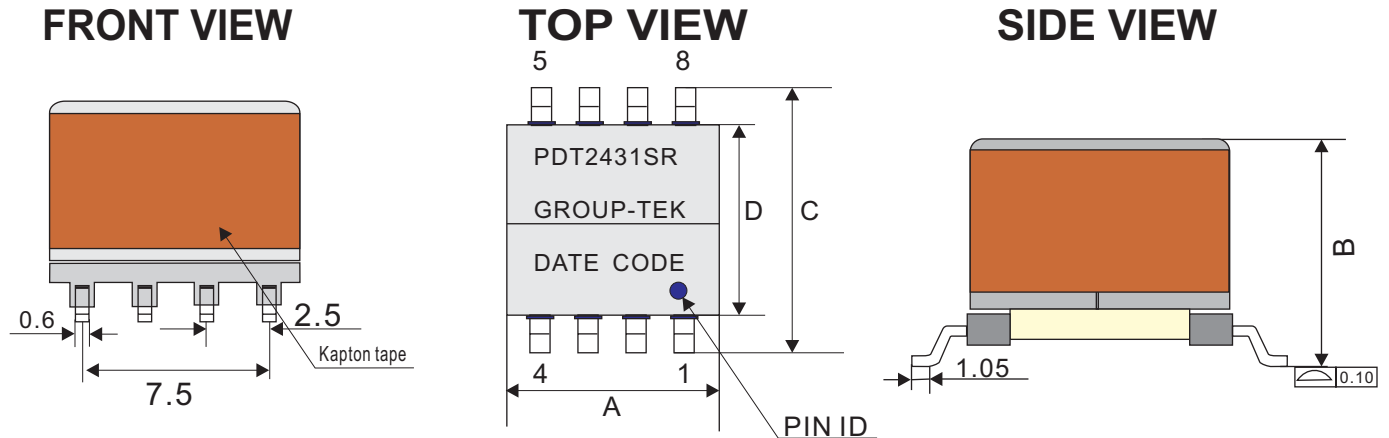
29810976

FAX: +86-755-29810159

Http://www.group-tek.com

E-mail:sale1@group-tek.com

2. Mechanical Dimensions:



Note:

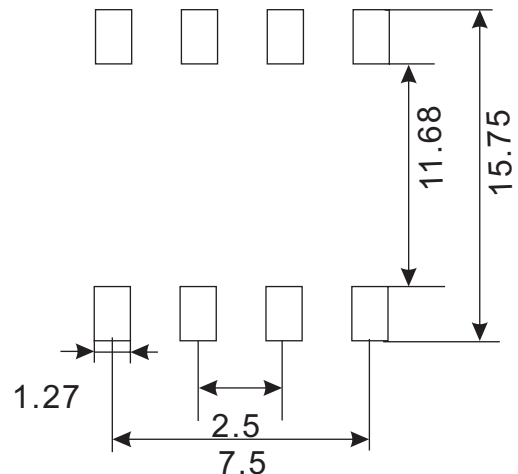
1. Wrap 2Ts of 6mm tape around the finished part.

Unit: mm

A MAX	B MAX	C MAX	D TYP
12.7	11.43	15.24	10.60

SUGGESTED PAD LAYOUT

Unit: mm Tolerances: +/-0.2



3. Electrical Characteristics :

Specifications Test: at 25 °C. Operating Temperature: -40 to +125°C

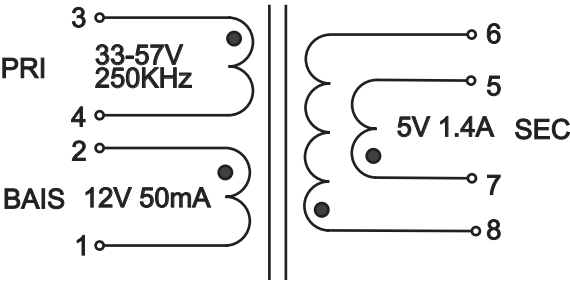
NO.	ITEM	TEST CONDITION	SPECIFICATION
1	Inductance	(3-4)@200kHz, 0.1v	155uH+/-10%.
2	Inductance	(2-1)@200kHz, 0.1v	30uH+/-15%.
3	Inductance	(7-5)///(8-6)@200kHz, 0.1v	5.3uH+/-15%.
4	Leakage Inductance	(3-4) with shorted other@200kHz, 0.1v	3.6uH MAX.
5	DCR	(3-4) @ 25°C	0.414 Ω Max.
6		(7+8)-(5+6) @ 25°C	0.06Ω Max.
7		(2-1) @ 25°C	0.822Ω Max.
8	HI-POT	PRI TO SEC	1500Vac 1mA 3Sec.
9	T/R	(3-4):(9+10-7+8):(2-1)	33:6:14±2%.

5.Winding Information:

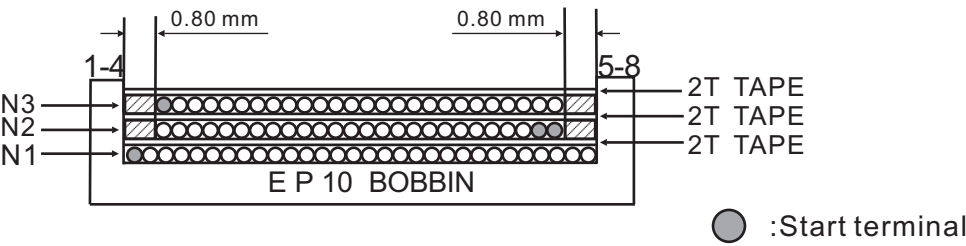
WINDING SEQ.	ST-FN	WIRE/FOIL	TURNS	WRAP INSUL.	MARGIN TAPE	SLEEVE	NOTE
1	3--4	0.30mm 2UEW	33	2T w6.0mm	N/A	N/A	1
2	8--6 7--5	0.30mm 2UEW R 0.30mm 2UEW N	6	2T w6.0mm	2T W0.80mm	N/A	1
3	2--1	0.23mm 2UEW	14	2T w6.0mm	2T W0.80mm	N/A	1

NOTE :
1. -Place the bobbin pin 1 right side of operator.

6.Schematic:



7.Winding construction



8. Material List

NO.	ITEM.	MATERIALS	SUPPLIERS/MANUFACTURERS	UL FILE NO.
1	BOBBIN	PHENOLIC T375J UL RATING: 94V-0	CHANG CHUN PLASTIC CO LTD.	QMFZ2.E59481
2	CORE	Ep10 PG232A	High-tech Electronics Co.,Ltd.	N/A
3	WIRE	POLYURETHANE ENAMELED TYPE NO: 2UEW 0.23mm 0.30mm THERMAL RATING:180°C	Shing Shun Magnet wire(HuiZhou) Co.,Ltd	E255839
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	TAPE	ADHESIVE POLYESTER TAPE TYPE NO.:519(kapton tape) THERMAL RATING:200°C Kapton tape: for outside of core	Shen zhen yanda electronic Technology Co.,Ltd	E309332
6	SOLDER	SN/CU: 99.3/0.7	Gao Xin stannum industry Co.,Ltd	N/A
7	Glue	E-500(xx)	Dong Guan city eatto electronic material Co.,Ltd	E218090
8	INK	VIC-120	Shenshen Huarui samwo group Co.,Ltd	N/A

9. PACKING INFORMATION:

DESCRIPTION	QTY
PIECES PER REEL	250
PIECES PER POCKET	1
PIECES PER BOX	750
REEL PER BOX	3
GROSS WEIGHT PER BOX(KG)	TBD
NET WEIGHT PER BOX(KG)	TBD



