

TEST REPORT

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 449-100, Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

REPORT No.:

CTK-2025-01602

Page (1) / (30) pages

1. Applicant

- Name : Hanwha Vision Co., Ltd
- Address : 6 Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si,
Gyeonggi-do, 13488 KOREA
- Date of Receipt : Apr. 16, 2025

2. Manufacturer

- Name : HANWHA VISION VIETNAM COMPANY LIMITED
- Address : Lot O-2, Que Vo Industrial Zone extended area, Nam Son ward,
Bac Ninh city, Bac Ninh province, Vietnam

3. Use of Report :

Quality control

4. Test sample / Model :

NETWORK THERMAL CAMERA / TNO-C3080T

5. Date(s) of test :

May. 14, 2025~ May. 21, 2025

6. Test Standard (Method) used :

NEMA 250-2014

Enclosures for Electrical Equipment (1000 Volts Maximum)

7. Testing Environment :

Temperature: (25 ±10) °C, Humidity: (50 ±25) % R.H.

Pressure: (96 ±10) kPa

8. Test Results :

Refer to the test results

9. Location of Test :☒ Permanent Testing Lab ☐ On Site Testing

(5 Dongbu-ro 221beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Republic of Korea)

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
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Approval	Tested by	Technical Manager
	Name: HyungUk Jeon (Signature)	Name: HoHyun Lee (Signature)

Remark. This report is not related to KOLAS accreditation and relevant regulation.

Jun 20, 2025

CTK Co., Ltd.

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
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Tel: +82-31-339-9970
Fax: +82-31-624-9501

REPORT No. :
CTK-2025-01602
Page (2) / (23) pages

Table of Contents

1. Testing laboratory	3
1.1 Testing laboratory information	3
1.2 Testing laboratory accreditation status	3
2. Product description and equipment information	3
2.1 Product description	3
2.2 Manufacturer information	3
2.3 Equipment information	6
2.4 Pre-test product images	7
2.5 Testing equipment images	8
3. Test Information	9
3.1 Test item particulars and Possible test case verdicts	9
3.2 General remarks and factory information	9
3.3 Type 4X Test information	11
3.4 NEMA 250-2014 Test list	13
3.5 Attachment 1 – Construction Diagram and installation method	16
3.6 Attachment 2 – Parts List	17
4. Hose Down Test (Clause 5.7)	18
4.1 Test date and environmental conditions	18
4.2 Test Conditions and methods	19
4.3 Attachment 3 – Photographs	19
5. Test result	21
5.1 Test result table	21
5.2 Post-test product images	22

 CTK Co., Ltd. (Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, 449-100, Korea Tel: +82-31-339-9970 Fax: +82-31-624-9501	REPORT No.: CTK-2025-01602 Page (3) / (23) pages	
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1. Testing laboratory

1.1 Testing laboratory information

Lab. Name	CTK Co., Ltd.
Address	113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do Republic of Korea
Tel.	031-339-9970
Fax.	031-624-9501
E-Mail	all.yongin@element.com
Website	www.elementkorea.kr

1.2 Testing laboratory accreditation status

Country	Classification	Accreditation Number	Logo
International	KOLAS	TESTING NO. KT119	

2. Product description and equipment information

2.1 Product description

Product Name	Model Name	Quantity	Comment
NETWORK THERMAL CAMERA	TNO-C3080T	1 EA	—

2.2 Manufacturer information



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CTK-2025-01602

Page (4) / (23) pages

Test item description : NETWORK THERMAL CAMERA

Trade Mark :



Hanwha Vision

Manufacturer : Lot O-2, Que Vo Industrial Zone extended area, Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam

Model/Type reference : TNO-C3080T

Ratings :

Electrical

TNO-C3080T DC12 V $\approx$ 9.4 W PoE 48 V $\approx$ 10.8 W

DC12 V $\approx$ 0.78 A PoE 48 V $\approx$ 0.23 A

TNO-C3082T DC12 V $\approx$ 9.4 W PoE 48 V $\approx$ 10.8 W

DC12 V $\approx$ 0.78 A PoE 48 V $\approx$ 0.23 A

TNO-C3060T DC12 V $\approx$ 9.4 W PoE 48 V $\approx$ 10.8 W

DC12 V $\approx$ 0.78 A PoE 48 V $\approx$ 0.23 A

TNO-C3062T DC12 V $\approx$ 9.4 W PoE 48 V $\approx$ 10.8 W

DC12 V $\approx$ 0.78 A PoE 48 V $\approx$ 0.23 A

Dimension:

Ø107.27 by 336.82 mm, Ø143 by 449.02 mm, Ø25 *2 by 157 mm,
Ø6*3 by 56.52 mm, Ø 101 by 317.14 mm, Ø 9.3 *3 by 87.6 mm,
35 mm, 55mm, 62mm

List of Attachments (including a total number of pages in each attachment):

Attachment 1: 16 pages (Construction Diagram including installation method)

Attachment 2: 17-18 pages (Parts List)

Attachment 3: 20-23 pages (photographs)

Summary of testing:

Tests performed (name of test and test clause):
Clause 5.7(Hose Down Test)

Testing location:

CTK Co., Ltd.

5 Dongbu-ro 221beon-gil, Cheoin-gu, Yongin-si,
Gyeonggi-do, Republic of Korea

Copy of marking plate: The artwork above may be only a draft.

제품명칭: NETWORK THERMAL CAMERA

모델명: TNO-C3060T

정격전압: DC 12V $\approx$ 9.4W /
PoE (48V $\approx$) 10.8W

M/C: TNO-C3060T/KDO Fac.ID: D

DATE S/N:XXXXXXXXXXXXXX

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

인증번호: R-R-HWWS-TNOC3080T

상호: 한화비전(주)

제조사/제조국가:한화비전(주)/한국

IP66/IP67



NETWORK THERMAL CAMERA
TNO-C3060T

DC 12V $\approx$ 0.78A /
PoE (48V $\approx$) 0.23A

M/C: TNO-C3060T/KEX Fac.ID:D

DATE S/N:XXXXXXXXXXXXXX

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



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REPORT No.:
CTK-2025-01602
Page (5) / (23) pages

제품명칭: NETWORK THERMAL CAMERA

모델명: TNO-C3062T

정격전압: DC 12V $\bar{\cdot}$ 9.4W /
PoE (48V $\bar{\cdot}$) 10.8W

M/C: TNO-C3062T/KDO Fac. ID: D



DATE S/N:XXXXXXXXXXXXXX

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

인증번호: R-R-HWWS-TNOC3080T

상호: 한화비전(주)

제조사/제조국가:한화비전(주)/한국



IP66/IP67



NETWORK THERMAL CAMERA

TNO-C3062T

DC 12V $\bar{\cdot}$ 0.78A /
PoE (48V $\bar{\cdot}$) 0.23A

M/C: TNO-C3062T/KEX Fac.ID:D



DATE S/N:XXXXXXXXXXXXXX

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

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

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제품명칭: NETWORK THERMAL CAMERA

모델명: TNO-C3080T

정격전압: DC 12V $\bar{\cdot}$ 9.4W /
PoE (48V $\bar{\cdot}$) 10.8W

M/C: TNO-C3080T/KDO Fac. ID: D



DATE S/N:XXXXXXXXXXXXXX

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IP66/IP67



NETWORK THERMAL CAMERA

TNO-C3080T

DC 12V $\bar{\cdot}$ 0.78A /
PoE (48V $\bar{\cdot}$) 0.23A

M/C: TNO-C3080T/KEX Fac.ID:D



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제품명칭: NETWORK THERMAL CAMERA

모델명: TNO-C3082T

정격전압: DC 12V $\bar{\cdot}$ 9.4W /
PoE (48V $\bar{\cdot}$) 10.8W

M/C: TNO-C3082T/KDO Fac. ID: D



DATE S/N:XXXXXXXXXXXXXX

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

인증번호: R-R-HWWS-TNOC3080T

상호: 한화비전(주)

제조사/제조국가:한화비전(주)/한국



IP66/IP67



NETWORK THERMAL CAMERA

TNO-C3082T

DC 12V $\bar{\cdot}$ 0.78A /
PoE (48V $\bar{\cdot}$) 0.23A

M/C: TNO-C3082T/KEX Fac.ID:D



DATE S/N:XXXXXXXXXXXXXX

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

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

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REPORT No. :
CTK-2025-01602
Page (6) / (23) pages

2.3 Equipment information

Testing equipment	Model Name	Manufacturer	Manufacturing Number	Effective Calibration Date
25.4mm Nozzle	S3-IP18	CTK	S3-IP18	-
Temperature & Humidity Chamber	TH-GA-408	JEIO TECH	X110169	Aug.23,2025
Area flow meter	Z-6504	FLOWTECH	229400	Jan.16,2026
Steel measuring meter	5.5 m	KOMELON	225851	Jan.16,2026
Stop Watch	NONE	Casio	612Q01R-1	Jan.15,2027
Digital Vernier Calipers	100 mm	MITUTOYO	A17179462	-

2.4 Pre-test product images



Top



Bottom



Front



Rear



Left side



Right side



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REPORT No.:
CTK-2025-01602
Page (8) / (23) pages

2.5 Testing equipment images



25.4mm Nozzle



Temperature & Humidity Chamber



Area flow meter



Stop Watch



Stop Watch



Digital Vernier Calipers

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REPORT No. :
CTK-2025-01602
Page (9) / (23) pages

3. Test Information

3.1 Test item particulars and Possible test case verdicts

Test item particulars	NETWORK THERMAL CAMERA
Classification of installation and use	Outdoor (Watertight/Corrosion Resistant)
Possible test case verdicts:	
- test case does not apply to the test object.... :	N/A
- test object does meet the requirement	P (Pass)
- test object does not meet the requirement.... :	F (Fail)
- test case does not evaluate to the test object:	N/E

3.2 General remarks and factory information

General remarks:
“(See Enclosure #)” refers to additional information appended to the report. “(See appended table)” refers to a table appended to the report. Throughout this report a ☐ comma / ☒ point is used as the decimal separator. Clause numbers between brackets refer to clauses in NEMA 250-2014

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REPORT No. :
CTK-2025-01602
Page (10) / (23) pages

Name and address of factory (ies):

1. HANWHA VISION VIETNAM COMPANY LIMITED

Lot O-2, Que Vo Industrial Zone extended area, Nam Son ward, Bac Ninh city, Bac Ninh province, Vietnam

2. D-TECH CO., LTD.

173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi-do, Korea (Suwon Industrial Complex)

Basic Model	TNO-C3080T
Series model	TNO-C3082T,TNO-C3060T,TNO-C3062T
Model differences	TNO-C3082T: Basic model and SW difference TNO-C3060T: Basic model and Fixed Lens difference TNO-C3062T: basic model and Fixed Lens and SW differences

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REPORT No.:

CTK-2025-01602

Page (11) / (23) pages

3.3 Type 4X Test information

Type 4X

Enclosures constructed for either indoor or outdoor use to provide a degree of protection to personnel against access to hazardous parts; to provide a degree of protection of the equipment inside the enclosure against ingress of solid foreign objects (falling dirt and windblown dust); to provide a degree of protection with respect to harmful effects on the equipment due to the ingress of water (rain, sleet, snow, splashing water, and hose directed water); that provides an increased level of protection against corrosion; and that will be undamaged by the external formation of ice on the enclosure.

Table 2-1
Comparison of Specific Applications of Enclosures for Indoor Nonhazardous (Unclassified) Locations

Provides a Degree of Protection against the Following Conditions	Type of Enclosure									
	1	2	4	4X	5	6	6P	12	12K	13
Access to hazardous parts	X	X	X	X	X	X	X	X	X	X
Ingress of solid foreign objects (falling dirt)	X	X	X	X	X	X	X	X	X	X
Ingress of water (dripping and light splashing)	...	X	X	X	X	X	X	X	X	X
Ingress of solid foreign objects (circulating dust, lint, fibers, and flyings **)	...	...	X	X	...	X	X	X	X	X
Ingress of solid foreign objects (settling airborne dust, lint, fibers, and flyings **)	...	...	X	X	X	X	X	X	X	X
Ingress of water (hosedown and splashing water)	...	...	X	X	...	X	X	...	...	...
Oil and coolant seepage	...	...	...	...	...	...	...	X	X	X
Oil or coolant spraying and splashing	...	...	...	...	...	...	...	...	...	X
Corrosive agents	...	...	...	X	...	...	X	...	...	...
Ingress of water (occasional temporary submersion)	...	...	...	...	...	X	X	...	...	...
Ingress of water (occasional prolonged submersion)	...	...	...	...	...	...	X	...	...	...

** These fibers and flyings are not considered Class III type ignitable fibers or combustible flyings. For Class III type ignitable fibers or flyings see the *National Electrical Code*®, Article 500.5(D).

Table 2-2
Comparison of Specific Applications of Enclosures for Indoor & Outdoor Nonhazardous (Unclassified) Locations

Provides a Degree of Protection Against the Following Conditions	Type of Enclosure									
	3	3X	3R	3RX	3S	3SX	4	4X	6	6P
Access to hazardous parts	X	X	X	X	X	X	X	X	X	X
Ingress of solid foreign objects (falling dirt)	X	X	X	X	X	X	X	X	X	X
Ingress of water (dripping and light splashing)	X	X	X	X	X	X	X	X	X	X
Ingress of water (rain, snow, and sleet **)	X	X	X	X	X	X	X	X	X	X
Sleet ***	...	...	...	...	X	X	...	...	...	...
Ingress of solid foreign objects (windblown dust, lint, fibers, and flyings****)	X	X	...	...	X	X	X	X	X	X
Ingress of water (hosedown and splashing water)	...	...	...	...	...	...	X	X	X	X
Corrosive agents	...	X	...	X	...	X	...	X	...	X
Ingress of water (occasional temporary submersion)	...	...	...	...	...	...	...	...	X	X
Ingress of water (occasional prolonged submersion)	...	...	...	...	...	...	...	...	...	X

** External operating mechanisms are not required to be operable when the enclosure is ice covered.

*** External operating mechanisms are operable when the enclosure is ice covered. See subsection 5.6.

**** These fibers and flyings are not considered Class III type ignitable fibers or combustible flyings. For Class III type ignitable fibers or flyings see the *National Electrical Code*®, Article 500.5(D).

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REPORT No. :
CTK-2025-01602
Page (12) / (23) pages

Table 5-1A
Degrees of Protection Against Access to Hazardous Parts

Enclosure Type	Test Conditions	Degree of Protection		Corresponding IP First Characteristic Numeral
		Brief Description	Definition	
4X	5.7	Protected against access to hazardous parts with a wire	An access probe of 1.0 mm shall not penetrate	6

Table 5-1B
Degrees of Protection Against Solid Foreign Objects

Enclosure Type	Test Conditions	Degree of Protection		Corresponding IP First Characteristic Numeral
		Brief Description	Definition	
4X	<u>Non-vented</u> 5.7	Windblown dust protected	No ingress of dust	6
	<u>Vented</u> 5.5.1 Dust Blast Method			

Table 5-1C
Degrees of Protection against Water

Enclosure Type	Test Conditions	Degree of Protection		Corresponding IP Second Characteristic Numeral
		Brief Description	Definition	
4X	5.7	Protected against hose directed water	Water projected against the enclosure in any direction shall not enter	6 No Ingress Allowed*

Table 5-1D
Additional Protection

Enclosure Type	Test Conditions	Additional Protection		Corresponding IP Second Characteristic Numeral
		Brief Description	Definition	
4X	5.6 5.9 5.10	Special corrosion protection and undamaged by the external formation of ice	Enclosure provides increased corrosion protection and is not damaged by ice that forms on the outside	None

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REPORT No. :
CTK-2025-01602
Page (13) / (23) pages

3.4 NEMA 250-2014 Test list

NEMA 250-2014			
Clause	Requirement + Test	Result – Remark	Verdict
3	CONSTRUCTION		
3.1	General		P
3.2	Units of Measurement		P
3.3	Materials-General	Enclosures are made of metal or polymeric materials	P
3.4	Materials-Polymeric	More than 650 mm ² (1 in ²) in area Polymeric Materials used is declared as Min. V-2 Used to UL certified material. (See the attachment 2)	N/E
3.5	Corrosion Protection	Stainless steel and/or aluminium are declared as the materials used (See the attachment 2)	N/E
3.6	Openings	No openings in Product	N/A
3.7	Mounting	Mounting means are external to the equipment cavity (See the attachment 1)	P
3.8	Conduit Connection	No conduit connection (See the attachment 1)	N/A
3.9	Hubs and Fittings	No Hubs and Fittings	N/A
3.10	Knockouts	No Knockouts	N/A
3.11	External Operating Mechanisms	No External Operating Mechanisms	N/A
3.12	Access to Interior	Needs tool to open unit	P
3.13	Closing Hardware	No closing Hardware	N/A

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REPORT No. :
CTK-2025-01602
Page (14) / (23) pages

NEMA 250-2014

Clause	Requirement + Test	Result – Remark	Verdict
3.14	Gaskets	Gaskets made of a silicone Sponge Rubber (no Elastomeric or Thermoplastic used) (See clause 5.14 and the attachment 2)	P
3.15	Observation Windows	No Observation Window	N/A

4	MARKING		
4.1	Type Designations	“Type 4X” Marking is declared to be on the product before on the market	P
4.2	Supplemental Markings	Supplemental Marking (watertight/ corrosion resistant) is declared to be used when it is on the market. The required marking shall be added on the product)	P
4.3	Location of Markings	See the Attachment 3	P
4.4	Enclosure Orientation	No Particular Mounting Orientation	N/A
4.5	Conduit Hubs and Closure Plates	No Conduit Hubs and Closure Plates	N/A
4.6	Equipment Openings	No Openings on Unit	N/A
4.7	Drainage Openings	No Drain Openings	N/A

5	DESIGN TESTS		
5.1	General	See Table 5-1A to 5-1D and 5.1.5 in the General product information	P
5.2	Tests For Protection Against Access to Hazardous Parts	Rated 4X	N/A
5.3	Tests for Protection Against Ingress of Water (Dripping and Light Splashing)	Rated 4X	N/A

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REPORT No. :
CTK-2025-01602
Page (15) / (23) pages

NEMA 250-2014

Clause	Requirement + Test	Result – Remark	Verdict
5.4	Tests for Protection Against Ingress of Water (Rain)	Rated 4X	N/A
5.5	Tests for Protection Against Ingress of Solid Foreign Objects (Setting Airborne Dust, Lint, Fibers, And Flings)	Non-vented (See clause 5.7)	N/A
5.6	External Icing Test	No external cavities to trap water when mounted in the normal position.	N/A
5.7	Tests for Protection Against Ingress of Water (Hosedown)	No entry of water See the test information	P
5.8	Indoor Corrosion Protection (Rust-Resistance Test (24-Hour Salt Spray Test))	See clause 3.5	N/E
5.9	Outdoor Corrosion Protection	See clause 3.5	N/E
5.10	Corrosion Protection-Type 3X, 3RX, 3SX, 4X Or 6P Enclosures	See clause 3.5	N/E
5.11	Test for Protection Against Ingress of Water (Temporary Submersion)	Rated 4X	N/A
5.12	Test for Protection Against Ingress of Water (Prolonged Submersion)	Rated 4X	N/A
5.13	Oil Exclusion Test	Rated 4X	N/A
5.14	GASKET MATERIAL TESTS	The product itself(including gaskets) was conditioned at 70 °C for 168 hrs according to 5.14.3(Alternate Evaluation) before performing relevant required tests.	P
5.15	Test for Sharpness of Edges	No sharp edges	P

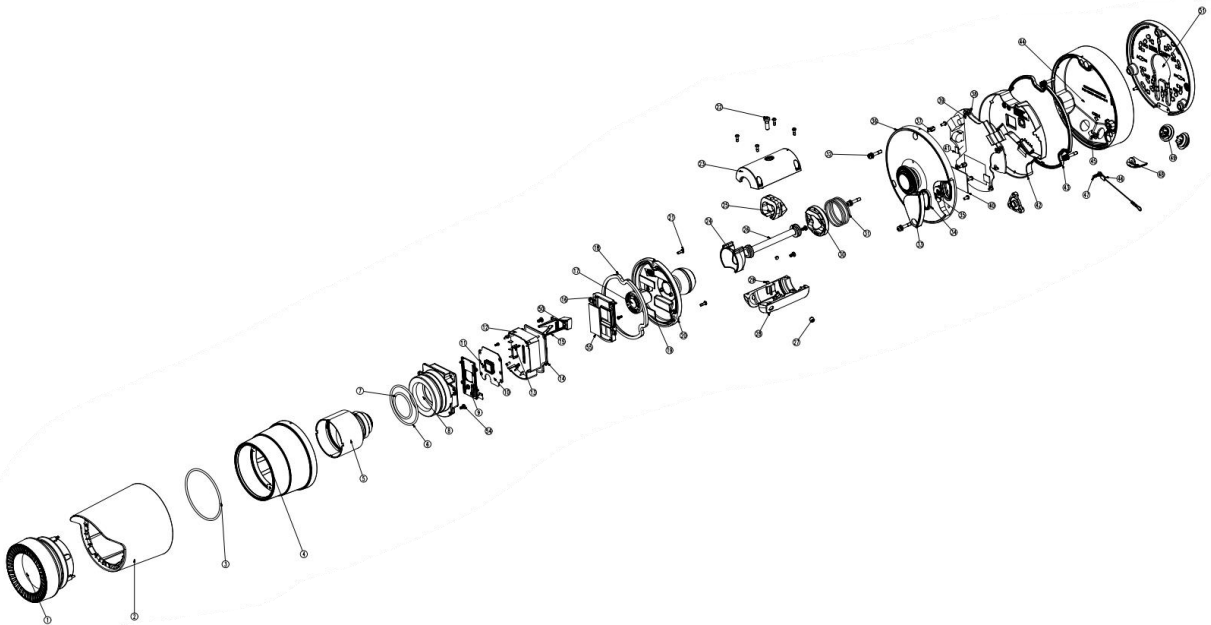
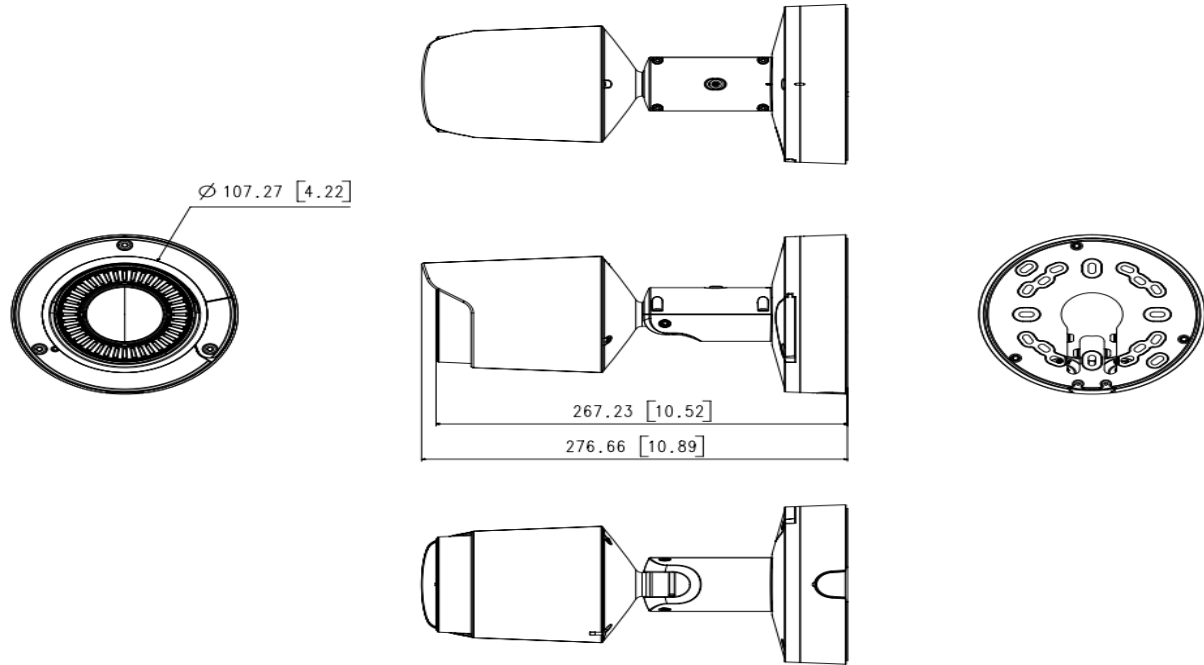


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REPORT No.:
CTK-2025-01602
Page (16) / (23) pages

3.5 Attachment 1 – Construction Diagram and installation method





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(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 449-100, Korea
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REPORT No.:
CTK-2025-01602
Page (17) / (23) pages

3.6 Attachment 2 – Parts List

NO	제품/자재 코드	제품/자재명	수량
1	FC39-007988A	BODY-DECO-FRONT-TNO-C3060T;ADC	1
2	FC28-004211A	SHIELD-SUN-TNO-C3060T;PC	1
3	FC18-007932A	O-RING-D1 72.69,D2 2.62,TNO-C3060T	1
4	FC29-018219A	CASE-BODY-FRONT-TNO-C3060T;ADC	1
5	EP14-001352	LENS SET-H4879_60MM_QVGA;FIXED	1
6	FC18-007933A	O-RING-D1 55.25;D2 2.62	1
7	FC18-007934A	O-RING-D1 34.59;D2 2.62	1
8	FC29-018220A	HOLDER-LENS-TNO-C3060T;ADC	1
9	EP15-001017A	SHUTTER-THERMAL CAMERA;TEMP. MONITORING	1
10	AM06-011195A	ASSY,PCB-TNO-C3010TRA,IR DETECTOR	1
11	FC18-003435A	SCREW-MACHINE : CH,+,M1.7,L4,BLK,FP	1
12	FC29-016660A	HOLDER-PCB-NUC_TNO-C3022TRA	1
13	Z9761208007	SCREW-TAPTITE:PH,+,M2,L8,BLK,B-TYPE	1
14	AM06-011819A	ASSY,PCB-TNO-C3040T,NUC	1
16	EP07-001971A	SINK,HEAT-NUC-PBA_TNO-C30XXTRA;ADC12	1
17	FC29-016661A	HOLDER-CABLE-MAIN_TNO-C3022TRA	1
17	FC15-008257A	COVER-BUSHING-MD-XNO-C9083R;PC,MOLD	1
19	FC28-003866A	PAD-THERMAL-PET_32X10XT1.0;7W	1
20	FC29-018218A	CASE-BODY-REAR-TNO-3060T;ADC	1
21	FC18-001418A	SCREW-MACHINE:PH,T10,M3,L8,SUS,FP	1
22	FC18-006234A	SCREW-SEMS-TORX20_M5XL15;0.8,15,FLAT,M5,	1
23	FC29-014039A	CASE-TOP BRACKET_XNO-C9083R;ADC12,WHITE	1
24	FC28-003367E	LOCKER-FRONT-BRKT_C3012TRA;D13,ADC12	1
25	FC29-014038C	PUSHER-BRACKET_TNO-C30X;ADC12,WHITE	1
26	HP13-001248B	TUBE,ETC-CABLE_95MM_TNO-C30*;RB,1,1	1
27	FC18-007085A	SCREW-SET : T20,M7,L6,SUS,KCP(SERRATION)	2
28	FC29-014048C	CASE-BTM-BRKT-SETSCREW_PNO-A9311R;ADC12,	1
29	FC29-014053A	STOPPER,PIN-XNO-9083R;SUS	2
30	FC28-003369B	LOCKER-REAR_TNO-C30X;ADC12,ANODIZING	1
31	FC38-001279A	SPRING,COM-BRACKET_XNO-C9083R;SWPB	1
32	FC18-006121A	SCREW-MACHINE;TORX20,P0.7,L20,FLAT+SPRIN	3
32	FC18-006121A	SCREW-MACHINE;TORX20,P0.7,L20,FLAT+SPRIN	3
33	FC28-003368A	DOOR-BUTTON_XNO-C9083R;ADC12	1
34	HP07-001639A	GASKET-DOOR_XNO-C9083R;SILICON	1
35	FC15-008243A	COVER-INTERFACE_XNO-C9083R;PC,BLACK	1
36	FC29-014047B	CASE-TOP BACKBOX_TNO-C3022TRA;ADC12,WHIT	1
37	FC29-014054A	SUPPORT-PCB_XNO-C9083R;3604BD,6,5,5	2
39	AM06-011839A	ASSY,PCB-TNO-C3060T,NETWORK	1
40	FC28-003047A	PAD-THERMAL-48X30XT1,K=7W/M-K	1
41	FC28-003686A	PAD-THERMAL;9X6XT1.0, 7W	1
42	FC15-010132B	COVER-BBOX-PCB_TNO-C3022TRA_WO-SD-LO;PC	1
43	HP07-002041A	GASKET-MAIN-BODY-TNO-C3060T	1



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 449-100, Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

REPORT No. :
CTK-2025-01602
Page (18) / (23) pages

44	FC29-014049A	CASE-BOTTOM BACKBOX_XNO-C9083R;ADC12,WHI	1
45	FC09-006670A	BRACKET-WIRE-SNO-8081R;SUS304,1.2	1
46	RM01-005941A	WIRE,METALIC-SAFETY;SUS304 Ø1.0	1
47	Z6001044701A	SCREW-MACHINE : BH,+,M3,L12,BLK,FP	1
48	FC15-008241A	COVER-CONDUIT_XNO-C9083R;ADC12,WHITE	1
49	MC06-001189A	BUSHING-CABLE 2 HOLE;SILICONE,GRAY	2
50	Z6001055201A	SCREW-MACHINE;6001-001708,BH,+,M2,L5,ZP	11
51	FC09-012507A	BRACKET-WALL MOUNT_XNO-C9083R;ADC12,WHIT	1
52	FC15-008240A	COVER-BUSHING_XNO-C9083R;ADC12	1
53	Z9642306007	MACHINE SCREW(M3xL6,Zn-B,남비머리)	7
54	Z6001049601A	SCREW-MACHINE;6001-000128,BH,+,M3,L6,NI	6
55	FC28-003447A	PAD-THERMAL-45X22XT1.5;K=7W/M-K	1
CABLE	EP02-004605A	HARNESS-PNM-9084QZ;MCX,BLACK,50P-50P,340	1
CABLE	Z3809021301A	SDC425_FCABLE	1
CABLE	EP02-004794A	HARNESS-XNP-9300RW;MCX,50P-50P,100MM	1

Component - Plastics			Yellow Card™
UL			
HN-1068(+)(f1)			
LOTTE CHEMICAL CORPORATION			File Number: E115797
58 GOSAN-RO			
UIWANG-SI, GYEONGGI-DO 16073 Republic of Korea			
INFINO: HN-1068(+)(f1)			
Polycarbonate (PC), pellets			
(*) - May be replaced by one, two, or three numbers and/or letter(s)			
(f1) - Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and			
Immersion in accordance with UL 746C.			
			CAIUS ALUMINUM IEC REQUIREMENTS
Flammability	Value	Test Method	
Flame Rating		UL 94	
1.5 mm, ALL	V-0	IEC 60695-11-10, -20	
3.0 mm, ALL	V-0		
Glow Wire Flammability Index		IEC 60695-2-12	
1.5 mm	960 °C		
3.0 mm	960 °C		
Glow Wire Ignition Temperature		IEC 60695-2-13	
1.5 mm	825 °C		
3.0 mm	825 °C		
Electrical	Value	Test Method	
Hot-wire Ignition (HWI) (1.5 mm)	PLC 3	UL 746A	
High Amp Arc Ignition (HAI) (1.5 mm)	PLC 3	UL 746A	
Comparative Tracking Index (CTI)	PLC 3	UL 746A	
Dielectric Strength	32 kV/mm	ASTM D149	
Volume Resistivity	1.0E+17 ohms-cm	ASTM D257	
		IEC 60093	
Thermal	Value	Test Method	
RTI Elec		UL 746B	
1.5 mm	130 °C		
3.0 mm	130 °C		
RTI Imp		UL 746B	
1.5 mm	130 °C		
3.0 mm	130 °C		
RTI Str		UL 746B	
1.5 mm	130 °C		
3.0 mm	130 °C		
Ball Pressure Test (130°C)	Pass	IEC 60695-10-2	
Physical	Value	Test Method	
Outdoor Suitability	f1	UL 746C	

Page 1 of 1
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Form Number: E115797-103587012
Report Date: 6/24/1568
Last Revised: 10/5/2023 12:24:21 AM
ANSI/UL 94 small-scale test data does not pertain to building materials, furnishings and related contents. ANSI/UL 94 small-scale test data is intended solely for determining the flammability of plastic materials used in the components and parts of end-product devices and appliances, where the acceptability of the combination is determined by UL.

4. Hose Down Test (Clause 5.7)

4.1 Test date and environmental conditions

4.1.1 Test date: May. 14, 2025~ May. 21, 2025

**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 449-100, Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

REPORT No. :
CTK-2025-01602
Page (19) / (23) pages

4.1.2 Measured Environmental Conditions

Item	Temperature (°C)	Humidity (% R.H.)	Pressure (kPa)
Measurement	27.1	66.2	102.5

4.2 Test Conditions and methods

4.2.1 Description of Test

The enclosure and its external mechanisms were subjected to a stream of water from a hose that has a 25.4 mm (1 in) inside diameter nozzle and delivers at least 240 L (65 gal) per minute. The nozzle was held from 3.0 to 3.5 m (10 to 12 feet) from the enclosure, and the spray of water was directed at all points of potential water entry such as seams, joints, external operating mechanisms, and such. The nozzle was moved along each test point one time at a uniform rate of 6 mm/sec (1/4 in/sec).

4.2.2 Sample Dimension

Ø107.27 by 336.82 mm, Ø143 by 449.02 mm, Ø25 *2 by 157 mm, Ø6*3 by 56.52 mm,
Ø 101 by 317.14 mm, Ø 9.3 *3 by 87.6 mm, 35 mm, 55mm, 62mm
Test Duration = 259.35 secs

4.2.3 Acceptance conditions

The enclosure shall be considered to have met the requirements if at the conclusion of the test no water has entered the enclosure

4.3 Attachment 3 – Photographs

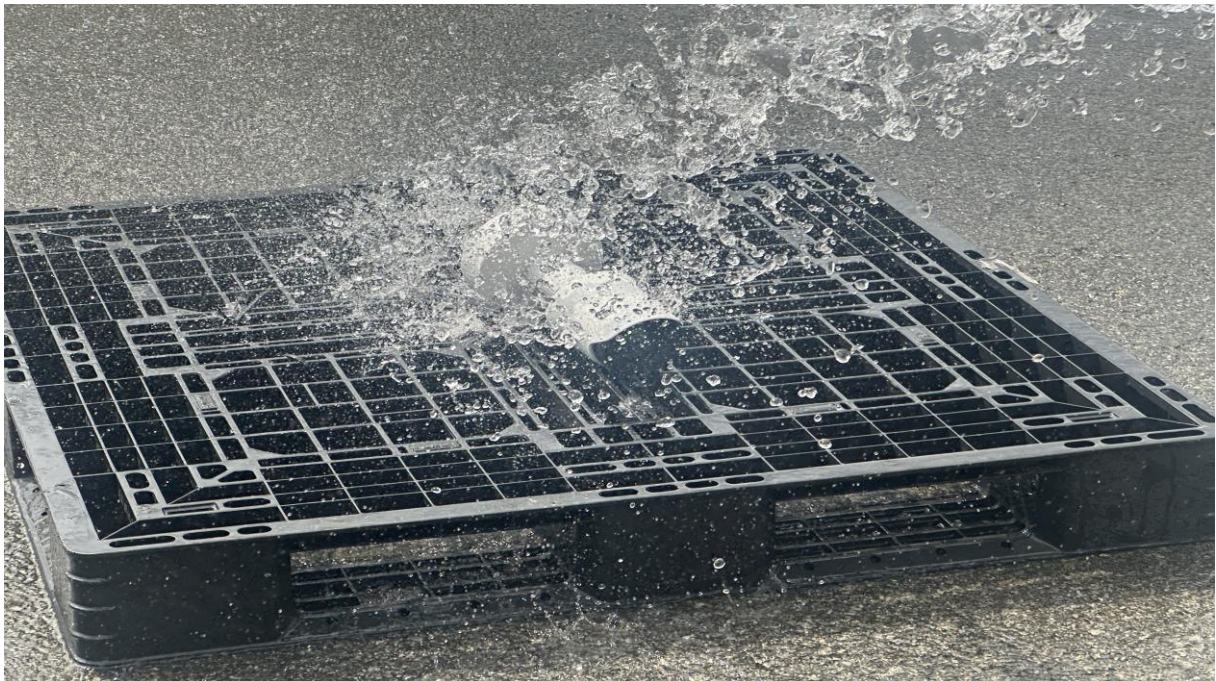
4.3.1 Hose down test



CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 449-100, Korea
Tel: +82-31-339-9970
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REPORT No. :
CTK-2025-01602
Page (20) / (23) pages



**CTK Co., Ltd.**

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 449-100, Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

REPORT No. :
CTK-2025-01602
Page (21) / (23) pages

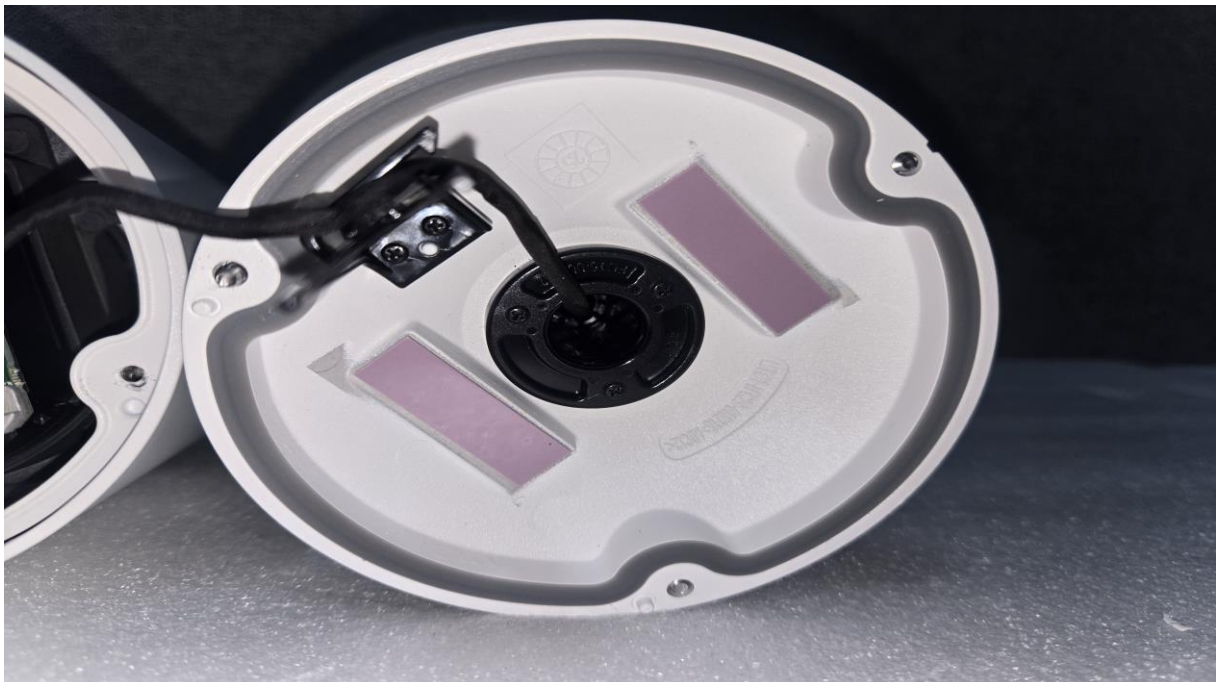
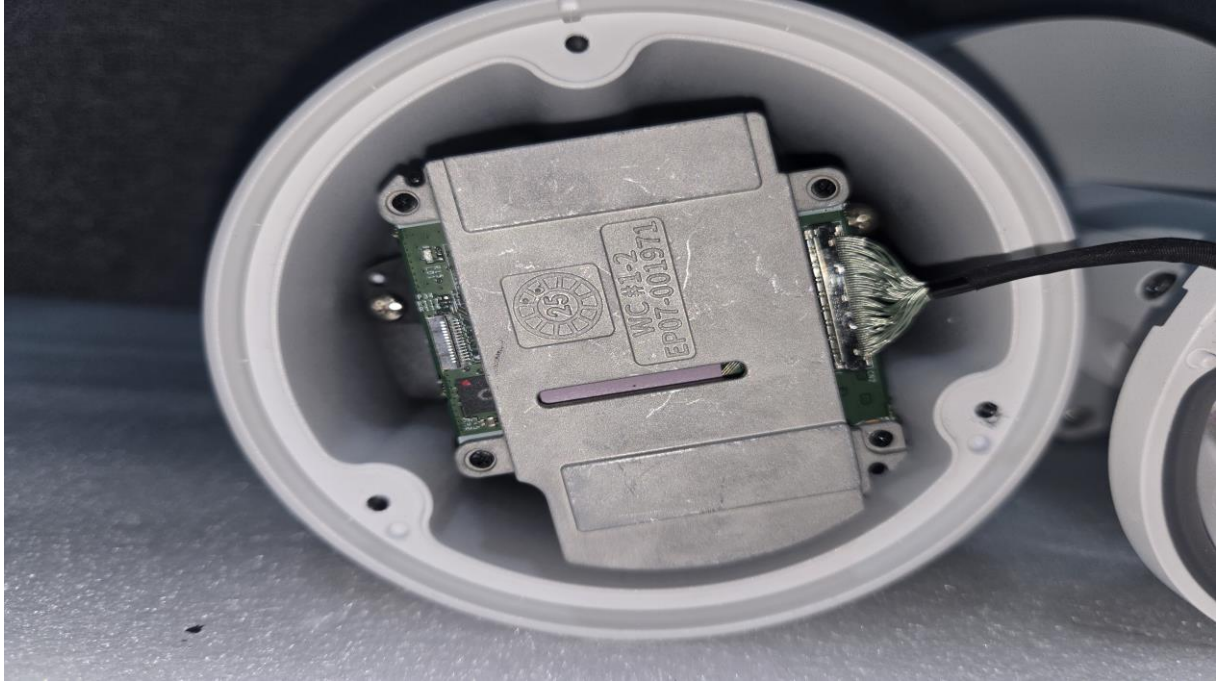
5. Test result

5.1 Test result table

Sample No (Model)	Water Flow	Presence of water inside	Result
TNO-C3080T	240 LPM	No	Nomal

※ Refer to the product photos after the completion of testing in section 5.2.

5.2 Post-test product images

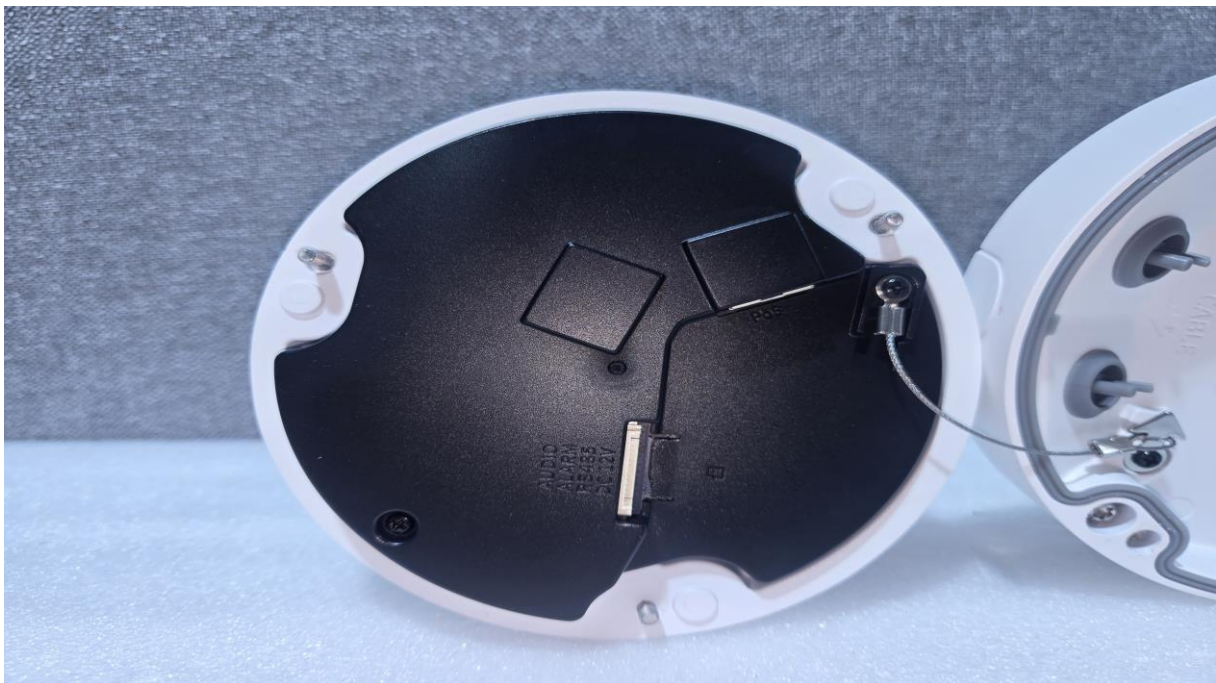




CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 449-100, Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

REPORT No.:
CTK-2025-01602
Page (23) / (23) pages





CTK Co., Ltd.

(Ho-dong), 113, Yejik-ro, Cheoin-gu, Yongin-si,
Gyeonggi-do, 449-100, Korea
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REPORT No.:
CTK-2025-01602
Page (24) / (23) pages



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