

TEST REPORT

**CTK Co., Ltd.**

5 Dongbu-ro 221beon-gil, Cheoin-gu, Yongin-si,
Gyeonggi-do, Republic of Korea
Tel: +82-31-339-9970
Fax: +82-31-624-9501

REPORT No.:

CTK-2025-03142

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1. Applicant

- Name : Hanwha Vision Co., Ltd
◦ Address : 6, Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si,
Gyeonggi-do, 13488 KOREA
◦ Date of Receipt : Feb. 28, 2022

2. Manufacturer

- Name : Hanwha Vision Co., Ltd

3. Use of Report :

Quality control

4. Test sample / Model :

Network Thermal Camera / TNM-C4940TD

5. Date(s) of test :

Apr. 28, 2022

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. This report cannot be reproduced or copied without the written consent of CTK.

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.

Nov. 12, 2025

CTK Co., Ltd.

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1. Testing laboratory

1.1 Testing laboratory information

Lab. Name	CTK Co., Ltd.
Representative	Young Joseph Seungwon
Address	5 Dongbu-ro 221beon-gil, Cheoin-gu, Yongin-si, Gyeonggi-do, Republic of Korea
Tel.	+82-31-339-9970
Fax.	+82-31-624-9501
E-Mail	all.youngin@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	TNM-C4940TD	1 EA	—

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2.2 Model description

Basic Model	TNM-C4940TD	
Series model	TNM-C4950TD, TNM-C4960TD, TNM-C4940TDR, TNM-C4942TDR, TNM-C4952TD, TNM-C4962TD	
Model differences	TNM-C4950TD, TNM-C4960TD, TNM-C4952TD, TNM-C4962TD	Use of the same external shape and materials (case, finishing material, PCB, cable, etc.), differences in SW.
	TNM-C4940TDR, TNM-C4942TDR	differences in SW.

2.3 Manufacturer information

Test item description	Network Thermal Camera	
Trade Mark	 Hanwha Vision	
Manufacturer	Lot O-2, Que Vo Industrial Zone extended area, Nam Son ward, Bac Ninh province, Vietnam	
Model/Type reference	TNM-C4940TD	
Ratings	Electrical TNM-C4940TD: DC 12 V 1.8 A, PoE (53 V) 0.48 A TNM-C4950TD: DC 12 V 1.63 A, PoE (53 V) 0.45 A TNM-C4960TD: DC 12 V 1.63 A, PoE (53 V) 0.45 A TNM-C4940TDR: DC 12 V 1.8 A, PoE (53 V) 0.48 A TNM-C4942TDR: DC 12 V 1.8 A, PoE (53 V) 0.48 A TNM-C4952TD: DC 12 V 1.8 A, PoE (53 V) 0.48 A TNM-C4962TD: DC 12 V 1.8 A, PoE (53 V) 0.48 A Dimension: Ø 10*4 mm by 125.6 mm, Ø 15*2 mm by 94.2 mm, Ø 5*12 mm by 188.4 mm, 110*2 mm by 220 mm, 32*2 mm by 64 mm, Ø 50 mm by 157 mm, Ø 85 mm by 266.9 mm, 137*2 mm by 274 mm, 52*2 mm by 104 mm, 30*4 mm by 120 mm, 190 mm, 525 mm	



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

Attachment 1: 15-24 pages (Construction Diagram including installation method)

Attachment 2: 25-26 pages (Parts List)

Attachment 3: 28-30 pages (photographs)

Summary of testing:

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

Testing location:

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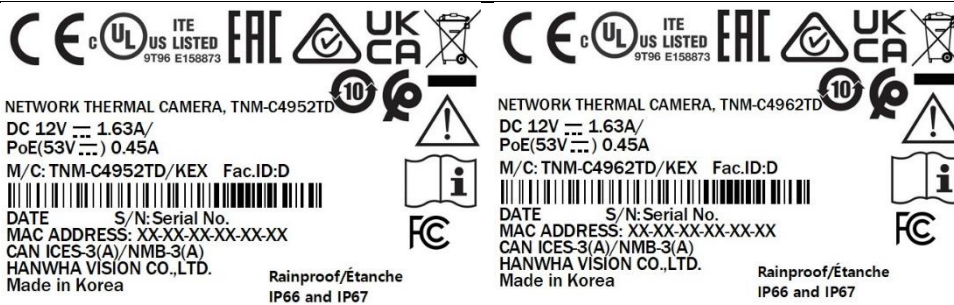
기기명칭: NETWORK CAMERA 모델명: TNM-C4940TD 정격전압: DC 12V --- 21.5W / PoE(53V ---) 25.5W M/C: TNM-C4940TD/KDO 2022.04 S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX 인증번호: R-R-SIW-TNMC4940TD 상호: 한화테크윈(주) 제조자/제조국가: 한화테크윈(주)/한국	CE, UL, ITE US LISTED, EAC, UKCA, Rainproof/Étanche IP66 and IP67 NETWORK CAMERA, TNM-C4940TD DC 12V --- 1.8A / PoE(53V ---) 0.48A M/C: TNM-C4940TD/KEX Fac.ID:D 2022.04 S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX CAN ICES-3(A)/NMB-3(A) HANWHA TECHWIN CO.,LTD. MADE IN KOREA	기기명칭: NETWORK CAMERA 모델명: TNM-C4950TD 정격전압: DC 12V --- 19.5W / PoE(53V ---) 23.5W M/C: TNM-C4950TD/KDO 2022.04 S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX 인증번호: R-R-SIW-TNMC4960TD 상호: 한화테크윈(주) 제조자/제조국가: 한화테크윈(주)/한국
기기명칭: NETWORK CAMERA 모델명: TNM-C4950TD 정격전압: DC 12V --- 1.63A / PoE(53V ---) 0.45A M/C: TNM-C4950TD/KEX Fac.ID:D 2022.04 S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX CAN ICES-3(A)/NMB-3(A) HANWHA TECHWIN CO.,LTD. MADE IN KOREA	CE, UL, ITE US LISTED, EAC, UKCA, Rainproof/Étanche IP66 and IP67 NETWORK CAMERA, TNM-C4950TD DC 12V --- 1.63A / PoE(53V ---) 0.45A M/C: TNM-C4950TD/KDO 2022.04 S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX CAN ICES-3(A)/NMB-3(A) HANWHA TECHWIN CO.,LTD. MADE IN KOREA	기기명칭: NETWORK CAMERA 모델명: TNM-C4960TD 정격전압: DC 12V --- 19.5W / PoE(53V ---) 23.5W M/C: TNM-C4960TD/KDO 2022.04 S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX 인증번호: R-R-SIW-TNMC4960TD 상호: 한화테크윈(주) 제조자/제조국가: 한화테크윈(주)/한국
제품명칭: NETWORK THERMAL CAMERA 모델명: TNM-C4940TDR 정격전압: DC 12V --- 21.5W / PoE(53V ---) 25.5W M/C: TNM-C4940TDR/KDO DATE S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX 인증번호: R-R-SIW-TNMC4940TD 상호: 한화비전(주) 제조자/제조국가: 한화비전(주)/한국	CE, UL, ITE US LISTED, EAC, UKCA, Rainproof/Étanche IP66 and IP67 NETWORK THERMAL CAMERA, TNM-C4940TDR DC 12V --- 1.8A / PoE(53V ---) 0.48A M/C: TNM-C4940TDR/KEX Fac.ID:D DATE S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX CAN ICES-3(A)/NMB-3(A) HANWHA VISION CO.,LTD. MADE IN KOREA	제품명칭: NETWORK THERMAL CAMERA 모델명: TNM-C4942TDR 정격전압: DC 12V --- 21.5W / PoE(53V ---) 25.5W M/C: TNM-C4942TDR/KDO DATE S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX 인증번호: R-R-SIW-TNMC4940TD 상호: 한화비전(주) 제조자/제조국가: 한화비전(주)/한국
CE, UL, ITE US LISTED, EAC, UKCA, Rainproof/Étanche IP66 and IP67 NETWORK THERMAL CAMERA, TNM-C4942TDR DC 12V --- 1.8A / PoE(53V ---) 0.48A M/C: TNM-C4942TDR/KEX Fac.ID:D DATE S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX CAN ICES-3(A)/NMB-3(A) HANWHA VISION CO.,LTD. MADE IN KOREA		



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2.4 Equipment information

Testing equipment	Model Name	Manufacturer	Manufacturing Number	Next Cal. Date
25.4mm Nozzle	S3-IP18	CTK	S3-IP18	-
Temperature & Humidity Chamber	C4-340	Weisstechnik	54260023190010	Feb.06,2026
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	-



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2.5 Pre-test product images

2.5.1 Test sample





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2.6 Testing equipment images

2.6.1 Test equipment



25.4mm Nozzle



Temperature & Humidity Chamber



Area flow meter



Steel measuring meter



Stop Watch



Digital Vernier Calipers

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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
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)

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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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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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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	See the Attachment 1	P
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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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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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



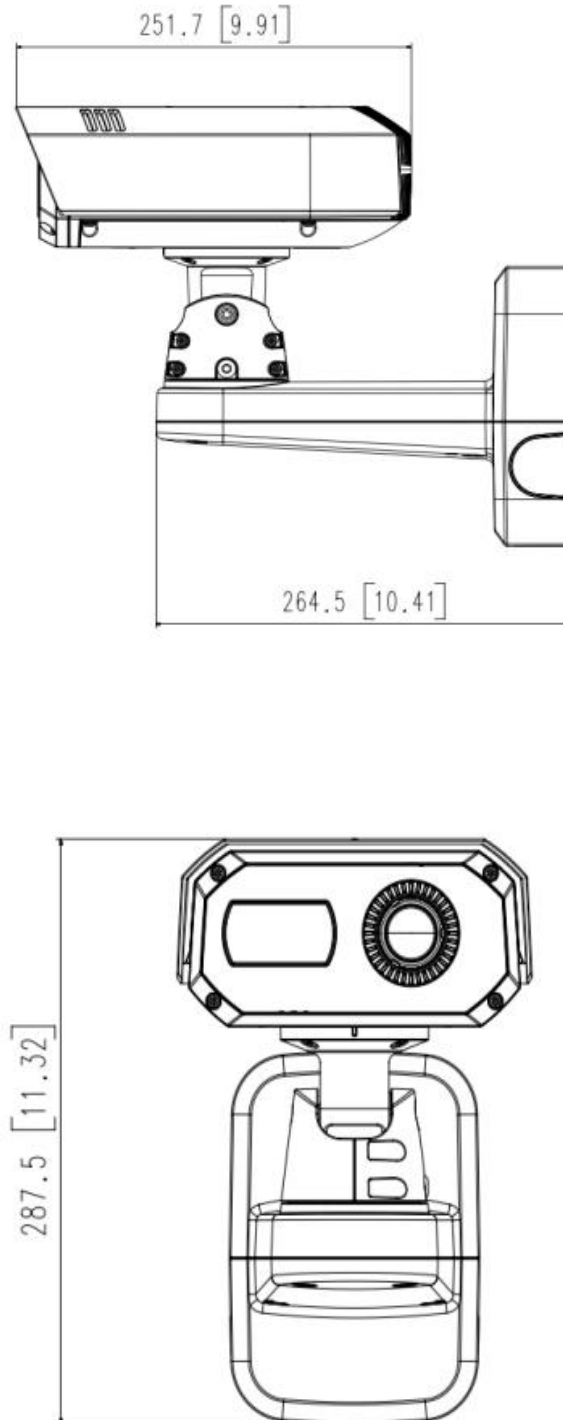
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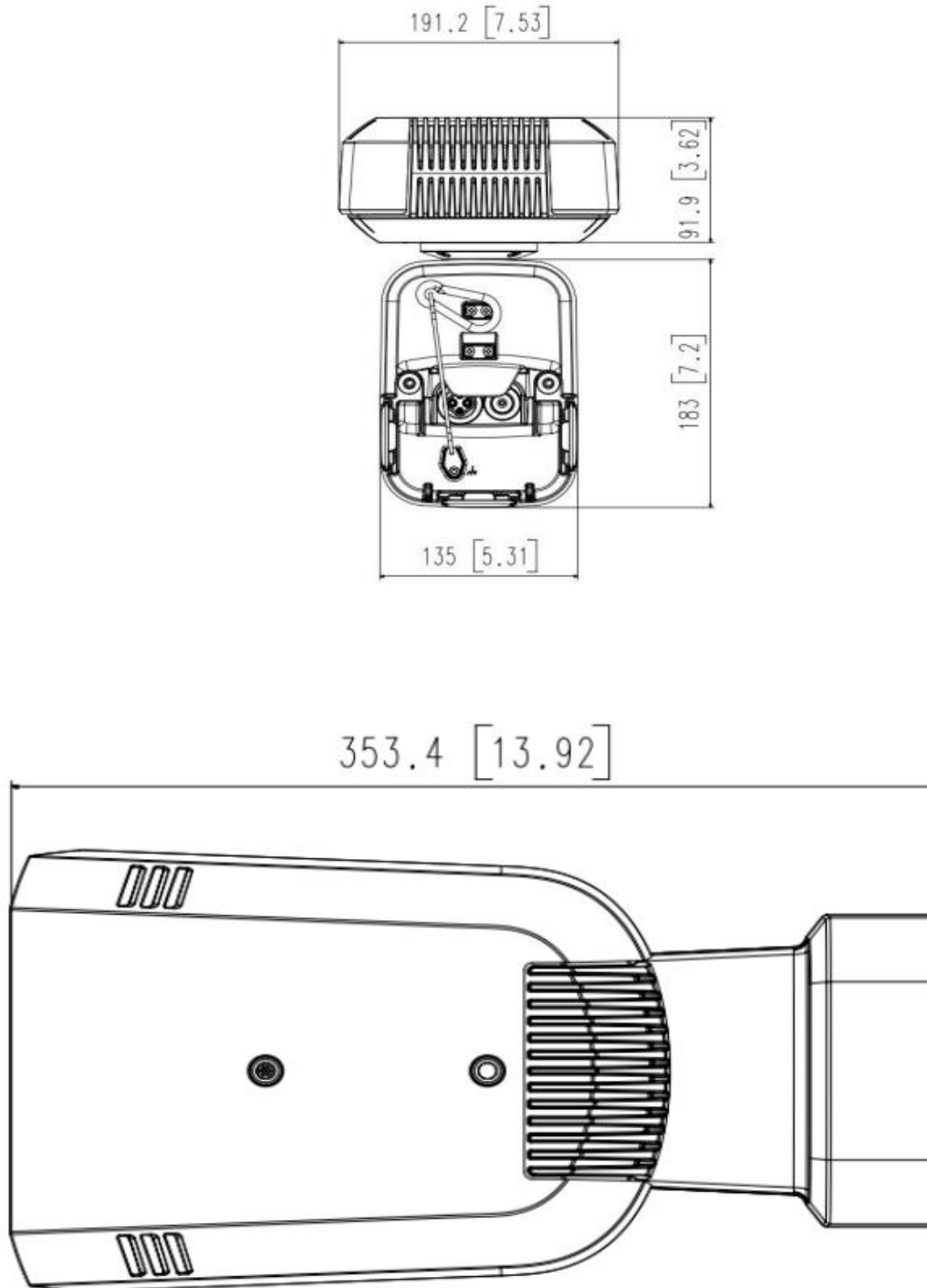
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3.5 Attachment 1 - Construction Diagram and installation method

3.5.1 Construction Diagram



3.5.2 Construction Diagram

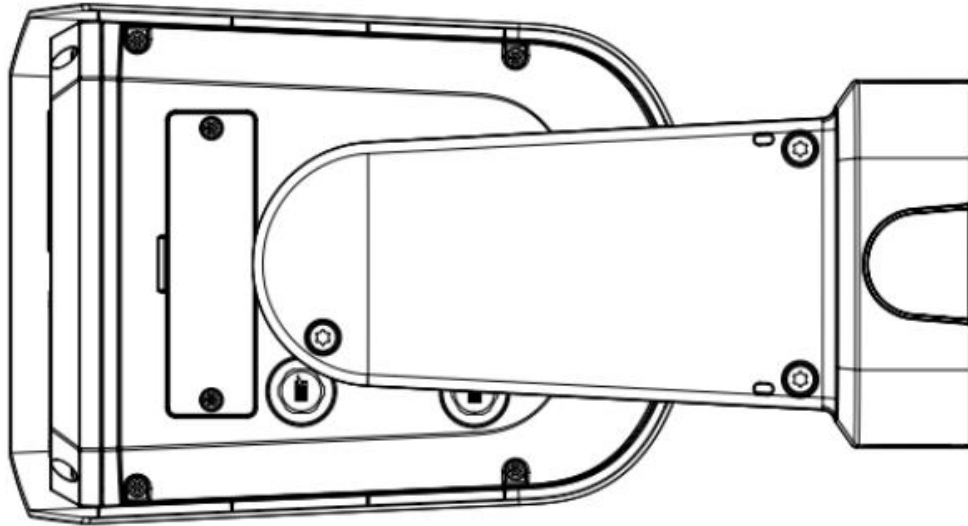


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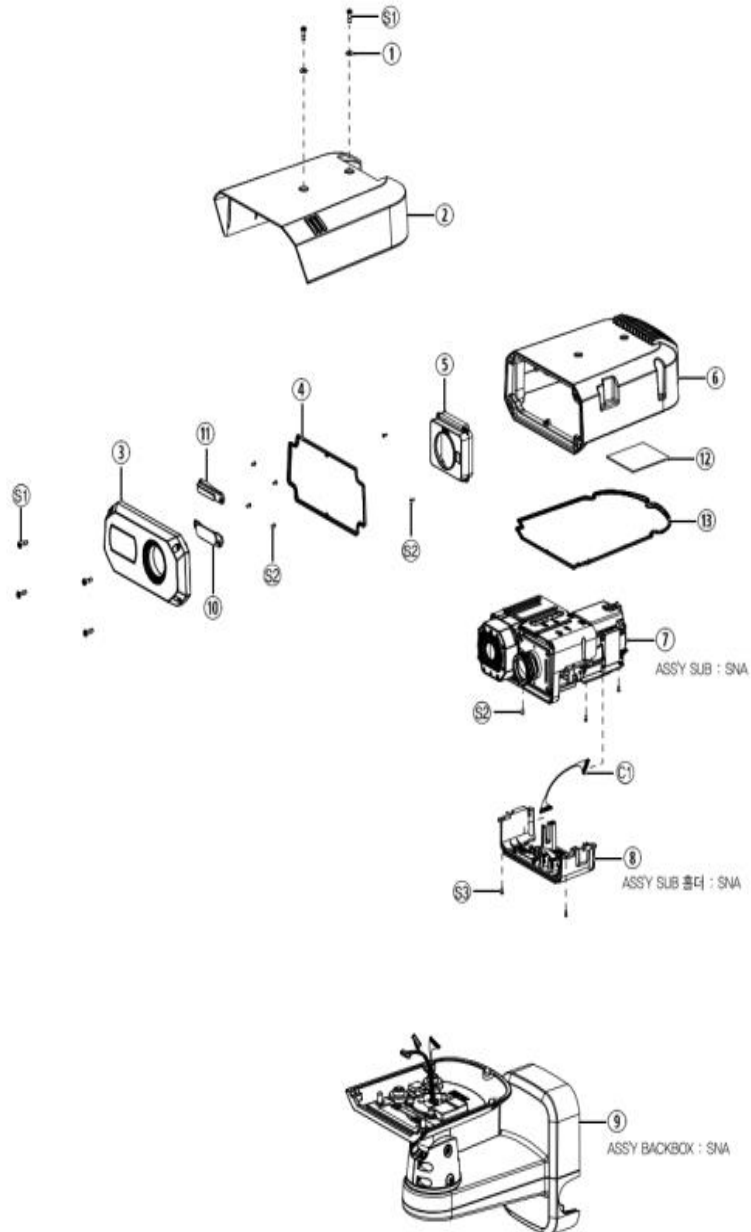
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3.5.3 Construction Diagram



3.5.4 installation method



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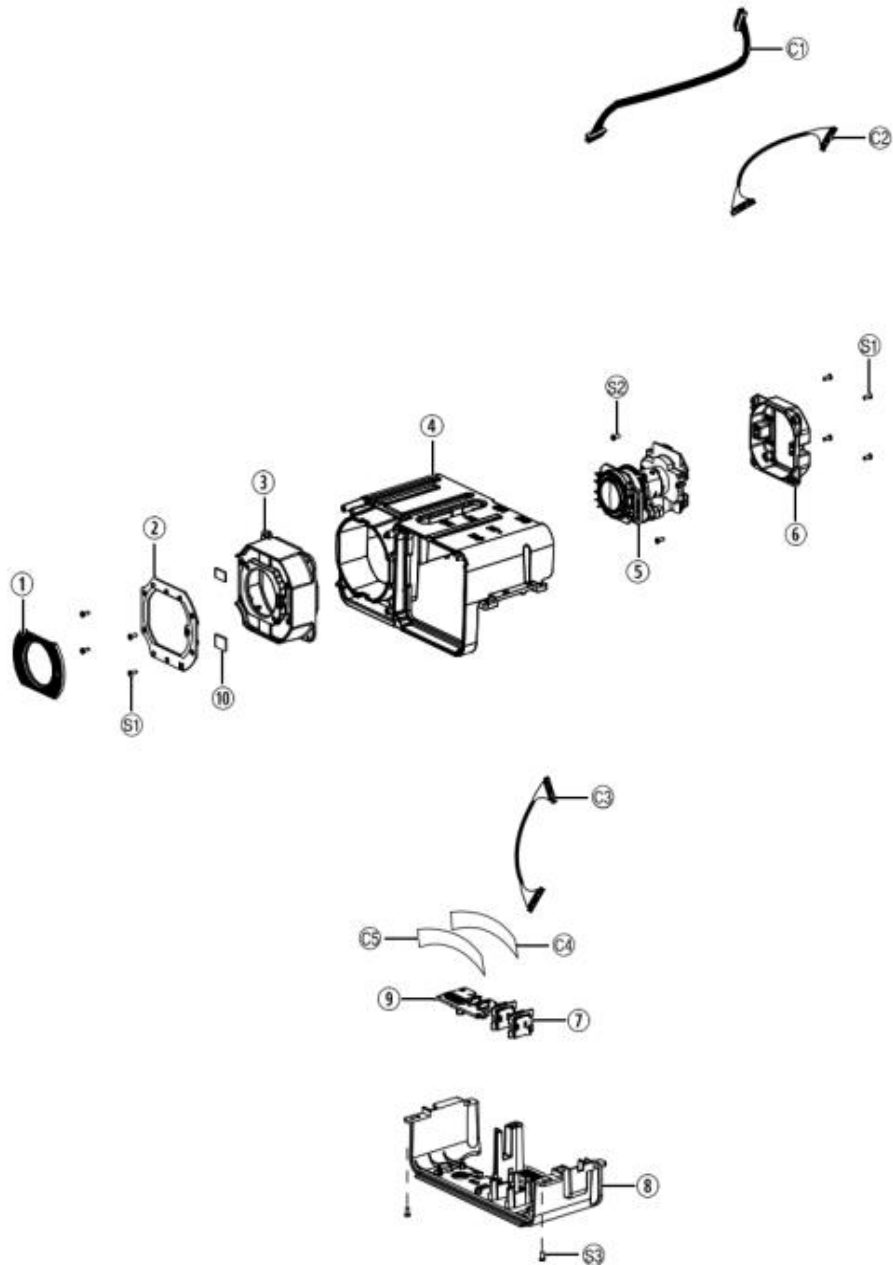
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3.5.5 installation method

부품위치	부품번호	품명	규격	수량	공급여부	비고
1	FC18-006303A	WASHER,ETC-M4-SUNSHIELD		2	SA	
2	FC28-003450A	SHIELD-SUN		1	SA	W/W
	FC28-003450B	SHIELD-SUN		1	SA	DO
3	AM08-006922A	ASSY-SUB-FRONT-WINDOW		1	SA	
4	HP07-001678A	GASKET-FRONT		1	SA	
5	FC15-008659A	COVER-THERMAL-LENS		1	SA	
6	FC29-014513A	CASE-TOP-BODY		1	SA	
7	AM08-006910A	ASSY-SUB-VISIB-THERM_TNM-A4940TD		1	SNA	TNM-C4940TD
	AM08-006909A	ASSY-SUB-VISIBLE-THERMAL_TNM-4950TD		1	SNA	TNM-C4950TD
	AM08-006907A	ASSY-SUB-VISIBLE-THERMAL_TNM-4960TD		1	SNA	TNM-C4960TD
8	AM08-006921A	ASSY-SUB-HOLDER-SDCARD-JOG		1	SNA	
9	AM08-006920A	ASSY-SUB-BTM-BACKBOX		1	SNA	
10	FC15-009035A	COVER-IR-TRANS-120deg		1	SA	
11	FC15-009036A	COVER-IR-TRANS-40deg		1	SA	
12	FC28-003505A	PAD-THERM-STICKER-45X50X1T_7W		1	SA	
13	HP07-001696A	GASKET-MAIN		1	SA	
C1	EP02-004786A	HARNESS-PNM-8082VT		1	SA	
S1	FC18-004000A	SCREW-BUILT-IN_TORX20		6	SA	
S2	Z6001055201A	SCREW-MACHINE;BH,+,M2,L5		2	SA	
S3	Z9642308001	MACHINE SCERW(M3XL8,Ni,PAN HEAD)		5	SA	

3.5.6 installation method



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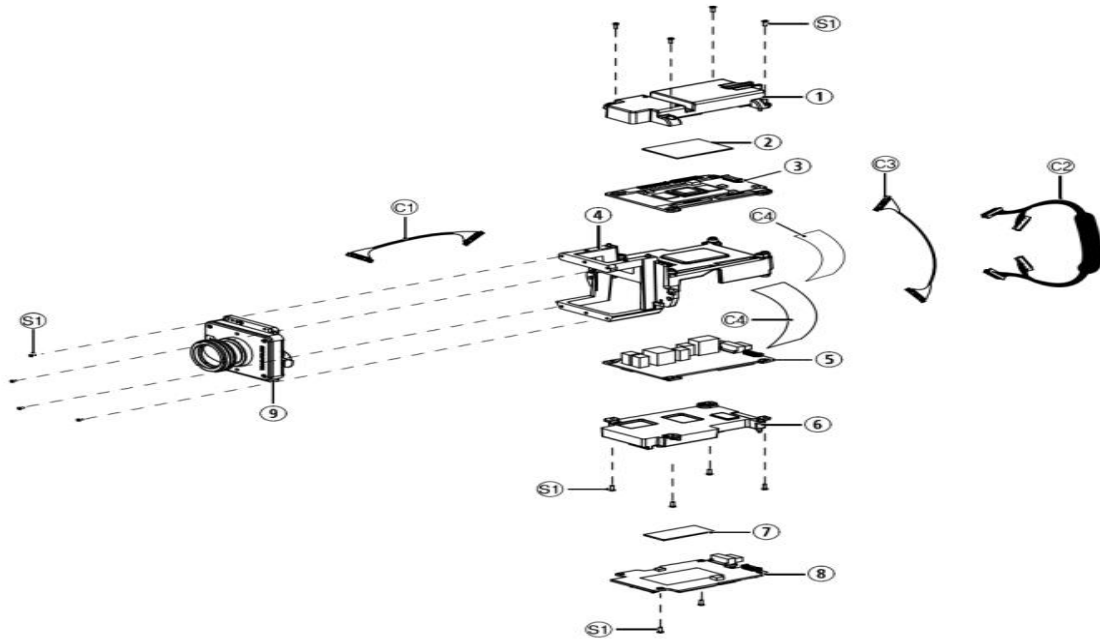
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3.5.7 installation method

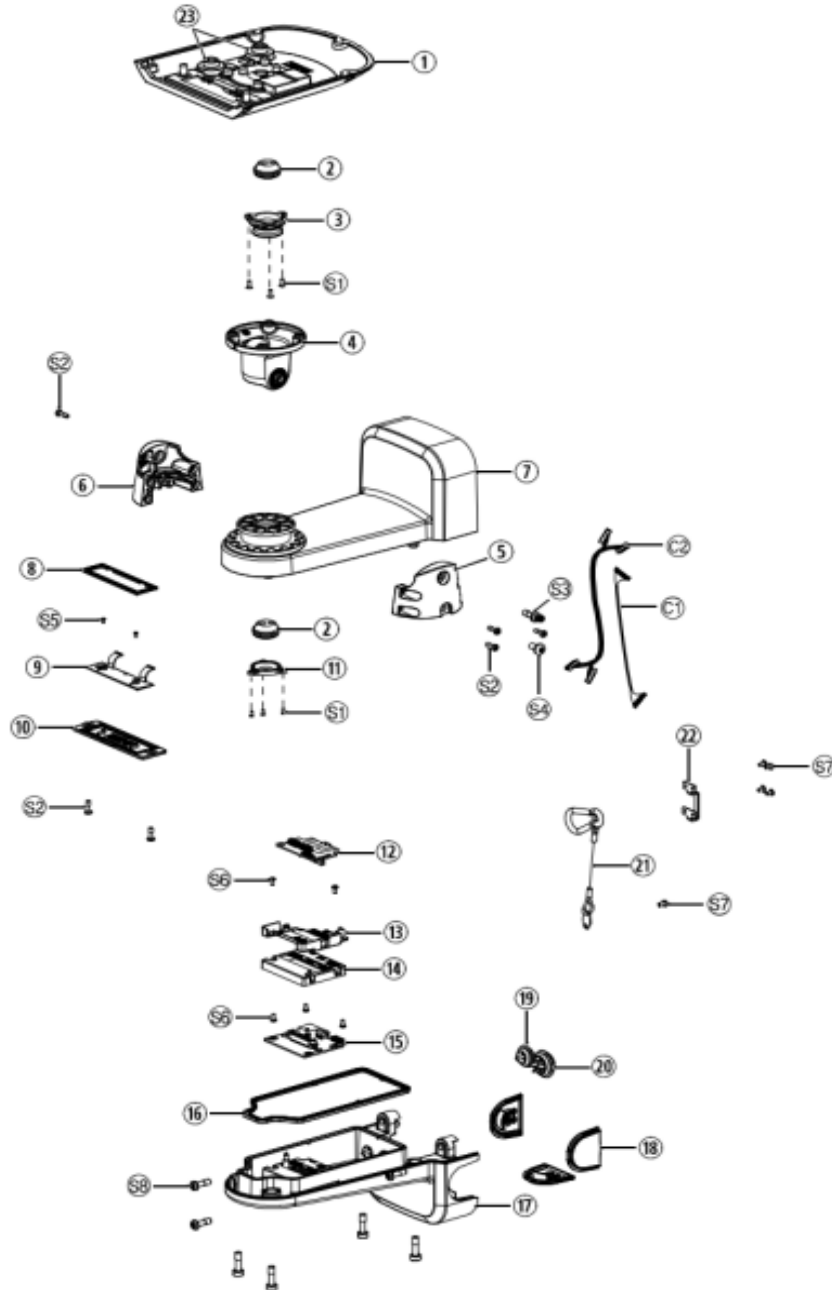
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1	FC18-006223A	SPACER-IR-RB		1	SA	
2	AM06-010415A	ASSY,PCB-TNM-A4940TD IR LED		1	SA	TNM-C4940TD
	AM06-010498A	ASSY,PCB-TNM-A4950_60TD IR LED		1	SA	TNM-C4950TD/ C4960TD
3	FC29-014515A	HOLDER-IR		1	SA	
4	FC29-014516A	HOLDER-TOP-2LENS-DC		1	SA	
5	EP14-001174	LENS SET-YT30033DB.IR- 8MP+H151+IR0510		1	SA	TNM-C4940TD
	EP14-001181	LENS SET-YT0W2X15DB.ICR-8MP		1	SA	TNM-C4950TD/ C4960TD
6	FC15-008660A	COVER-REAR-VF-LENS		1	SA	TNM-C4940TD
	FC15-008661A	COVER-REAR-VCL-LENS		1	SA	TNM-C4950TD/ C4960TD
7	AM06-007869A	ASSY,PCB-XNO-L6080R SD		2	SA	
8	FC29-014518A	HOLDER-BTM-2LENS		1	SA	
9	AM06-010422A	ASSY,PCB-TNM-A4940TD INTERFACE		1	SA	
10	FC28-003049A	PAD-THERMAL-17X11XT1		2	SA	
C1	EP02-005041A	HARNESS-TNM-A4940TD;WIRE,10P- 10P,250MM		1	SA	
C2	EP02-004794A	HARNESS-XNP-9300RW;MCX,50P- 50P,100MM		1	SA	
C3	EP02-004786A	HARNESS-PNM-8082VT;MCX,40P- 40P,250MM		1	SA	
C4	EP02-001213	CABLE-QRN-1610S;FFC,10P,100MM		1	SA	
C5	EP02-005054A	CABLE-TNM-A4940TD;FFC,10P,50MM		1	SA	
S1	Z6001055201A	SCREW-MACHINE:BH,+,M2,L5		8	SA	
S2	Z9642206007	MACHINE SCREW(M2xL6,Zn-B,BIND HEAD)		2	SA	
S3	Z9642308001	MACHINE SCREW(M3xL8,Ni,PAN HEAD)		2	SA	

3.5.8 installation method



부품위치	부품번호	품명	규격	수량	공급여부	비고
1	FC29-014509A	HOLDER-NUC-TOP		1	SA	
2	FC28-003106A	PAD-THERMAL-46X35XT1,K=7W/M-K		1	SA	
3	AM06-010670A	ASSY,PCB-TNM-A4940TD_NUC_PV_RE		1	SA	
4	FC29-014508A	HOLDER-NUC-BODY		1	SA	
5	AM06-010400A	ASSY,PCB-TNM-A4940TD POWER		1	SA	
6	FC29-014825A	HOLDER-FPGA-SMPS-PCB		1	SA	
7	FC28-003406A	PAD-THERMAL-45X22XT2,K=7W/M-K		1	SA	
8	AM06-010567A	ASSY,PCB-TNM-A4940TD_NETWORK		1	SA	TNM-C4940TD
	AM06-010568A	ASSY,PCB-TNM-A4950TD_NETWORK		1	SA	TNM-C4950TD/ C4960TD
9	AM08-006923A	ASSY-SUB-NUC-LENS-THERMAL_4940TD		1	SA	TNM-C4940TD
	AM08-006925A	ASSY-SUB-NUC-LENS-THERMAL_4950TD		1	SA	TNM-C4950TD
	AM08-006924A	ASSY-SUB-NUC-LENS-THERMAL_4960TD		1	SA	TNM-C4960TD
C1	EP02-004794A	HARNESS-XNP-9300RW;MCX,50P-50P,100MM		1	SA	
C2	EP02-004834B	HARNESS-TNM-3620TDY;WIRE;9P-9P,6P-6P		1	SA	
C3	EP02-004838A	HARNESS-TNM-3620TDY;MCX,30P-30P,110MM		1	SA	
C4	EP02-005100A	CABLE-TNM-A4940TD;FFC,50P,65MM		2	SA	
S1	Z6001055201A	SCREW-MACHINE;BH,+,M2,L5		14	SA	

3.5.9 installation method





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3.5.10 installation method

부품위치	부품번호	품명	규격	수량	공급여부	비고
1	FC29-014517A	CASE-BTM-BODY		1	SA	
2	HP07-001180A	GASKET-CABLE-XNO6080R		2	SA	
3	FC29-002456B	GUIDE-PANNING		1	SA	
4	FC09-012312A	BRACKET-PAN		1	SA	
5	FC09-012311A	BRACKET-TILT-R		1	SA	
6	FC09-012314A	BRACKET-TILT-L		1	SA	
7	FC15-008749A	COVER-TOP-BACKBOX		1	SA	
8	HP07-001698A	GASKET-SDCARD		1	SA	
9	FC29-014520A	STRAP-COVER-SD		1	SA	
10	FC15-008658A	COVER-SDCARD		1	SA	
11	FC15-005367A	COVER-CABLE GASKET_XNO-6080R		1	SA	
12	AM06-010420A	ASSY.PCB-TNM-A4940TD CONNECTOR		1	SA	
13	FC15-008751A	COVER-PCB-TOP-BACKBOX		1	SA	
14	FC15-008752A	COVER-PCB-BTM-BACKBOX		1	SA	
15	AM06-010416A	ASSY.PCB-TNM-A4940TD BACK BOX		1	SA	
16	HP07-001697A	GASKET-BACKBOX		1	SA	
17	FC15-008750A	COVER-BTM-BACKBOX		1	SA	
18	FC15-007668A	COVER-PIPE		3	SA	
19	MC06-001145A	BUSHING-CABLE SET-XNV-6081RE		1	SA	
20	MC06-001165A	BUSHING-SET-4HOLE_TNO-7180R		1	SA	
21	EP24-001014A	WIRE-SAFETY-RH		1	SA	
22	FC29-014826A	HOLDER-PRESS-SAFETYWIRE		1	SA	
23	HP06-001351	VENT-GORE-PMF100586-WHT		2	SA	
C1	EP02-004360A	HARNESS-TNO-4040T.MCX;30P-30P;425MM		1	SA	
C2	EP02-005052A	HARNESS-TNM-A4940TD;WIRE,10P-10P;9P-9P		1	SA	
S1	FC18-005184A	SCREW,MS-M3_L8_FH		6	SA	
S2	FC18-004000A	SCREW-BUILT-IN_TORX20		7	SA	
S3	FC18-005987A	SCREW-BUILT-IN-M6-L15-T30		1	SA	
S4	FC18-005667A	SCREW,MS-M6_L12_TORX30		1	SA	
S5	Z6001055101A	SCREW-MACHINE,BH,+,M2,L4		2	SA	
S6	Z9642308001	MACHINE SCREW(M3XL8,NL,PAN HEAD)		6	SA	
S7	Z6001047201A	SCREW_TH_M3L6		5	SA	
S8	FC18-005590A	SCREW-MACHINE SOCKET HEAD,M6,L22,TORX30		6	SA	



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3.6 Attachment 2 - Parts List

3.6.1 Parts List (1)

UL Component - Plastics File Number: E115797		
LOTTE CHEMICAL CORPORATION 56 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.		
CULUS		
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

UL Component - Plastics File Number: E67171		
LG CHEM LTD 128 Yeoui-daero Yeongdeungpo-gu Seoul, 07336 Republic of Korea LI996(&) Acrylonitrile Styrene Acrylate (ASA), pellets (&) - May be replaced by one, two, or three numbers and/or letter, except Grade AF367SH, XR401B, AF366F and AF367T		
CULUS		
Flammability	Value	Test Method
Flame Rating		UL 94
2.0 mm, ALL	V-0	IEC 60695-11-10, -20
3.0 mm, ALL	V-0	
Electrical	Value	Test Method
Hot-wire Ignition (HWI)		UL 746A
2.0 mm	PLC 4	
3.0 mm	PLC 4	
High Amp Arc Ignition (HAI)		UL 746A
2.0 mm	PLC 0	
3.0 mm	PLC 0	
Comparative Tracking Index (CTI)	PLC 2	UL 746A
High Voltage Arc Tracking Rate (HVTR)	PLC 2	UL 746A
Arc Resistance	PLC 5	ASTM D495
Thermal	Value	Test Method
RTI Elec		UL 746B
2.0 mm	50.0 °C	
3.0 mm	50.0 °C	
RTI Imp		UL 746B
2.0 mm	50.0 °C	
3.0 mm	50.0 °C	
RTI Str		UL 746B
2.0 mm	50.0 °C	
3.0 mm	50.0 °C	



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3.6.2 Parts List (2)

 Component - Plastics File Number: E162823		
FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV 201 TUNG HWA N RD TAIPEI, 105, Taiwan		
TAIRILITE: AC383(x)(f1)		
Polycarbonate (PC), pellets		
(f1) - Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.		
(x) - Replace by one digital 0-9, unconcerned with formula or constituent changed		
Flammability	Value	Test Method
Flame Rating		UL 94
1.0 mm, ALL	V-0	IEC 60695-11-10, -20
1.2 mm, ALL	V-0	
1.5 mm, ALL	V-0	
3.0 mm, ALL	V-0, 5VA	
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	875 °C	
3.0 mm	875 °C	
Electrical	Value	Test Method
Hotwire Ignition (HWI)		UL 746
1.0 mm	PLC 1	
1.2 mm	PLC 1	
1.5 mm	PLC 1	
3.0 mm	PLC 1	
High Amp Arc Ignition (HAI)		UL 746
1.0 mm	PLC 0	
1.2 mm	PLC 0	
1.5 mm	PLC 0	
3.0 mm	PLC 0	
Comparative Tracking Index (CTI)	PLC 2	UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 3	UL 746
Arc Resistance	PLC 7	ASTM D495
Thermal	Value	Test Method
RTI Elec		UL 746
1.0 mm	130 °C	
1.2 mm	130 °C	
1.5 mm	130 °C	
3.0 mm	130 °C	
RTI Imp		UL 746
1.0 mm	130 °C	
1.2 mm	130 °C	
1.5 mm	130 °C	
3.0 mm	130 °C	

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4. Hose Down Test (Clause 5.7)

4.1 Test date and environmental conditions

4.1.1 Test date: Jun. 26, 2025~ Jul. 03, 2025

4.1.2 Measured Environmental Conditions

Item	Temperature (°C)	Humidity (% R.H.)	Pressure (kPa)
Measurement	30.1	70.1	103.9

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

Ø 10*4 mm by 125.6 mm, Ø 15*2 mm by 94.2 mm, Ø 5*12 mm by 188.4 mm,
110 mm, 110 mm, 32 mm, 32 mm, Ø 50 mm by 157 mm, Ø 85 mm by 266.9 mm,
137 mm, 137 mm, 52 mm, 52 mm, 30 mm, 30 mm, 30 mm, 30 mm, 190 mm, 525 mm
Test Duration = 388.0 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



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4.3 Attachment 3 - Photographs

4.3.1 Hose down test



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4.4 Test result**4.4.1 Test result table**

Sample No (Model)	Water Flow	Presence of water inside	Result
TNM-C4940TD	240 LPM	No	Normal

※ Refer to the product photos after the completion of testing in section 4.5.



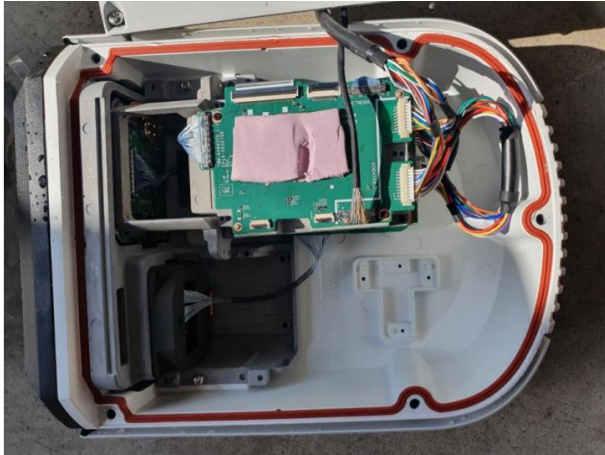
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4.5 Post-test product images

4.5.1 Test sample image (1)



- End -