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-2026-00737

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. 04, 2026

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 CAMERA / XNO-A9014R

5. Date(s) of test : Feb. 25, 2026 ~ Mar. 04, 2026

6. Test Standard (Method) used : NEMA 250-2014
Enclosures for Electrical Equipment (1000 Volts Maximum)

7. Testing Environment : Temperature: (25 ± 10) ℃, 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 Name: HongBeom Jeon (Signature)	Technical Manager Name: HoHyun Lee (Signature)

Remark. This report is not related to ISO/IEC 17025, KOLAS accreditation and relevant regulation.

Mar. 19, 2026

CTK Co., Ltd.

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 ____ 4
2.1 Product description 4
2.2 Model description 4
2.3 Manufacturer information 4
2.4 Equipment information 6
2.5 Pre-test product images 7
2.6 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 10
3.4 NEMA 250-2014 Test list 12
3.5 Attachment 1 - Construction Diagram and installation method 16
3.6 Parts List 18

4. Hose Down Test (Clause 5.7) ____ 29
4.1 Test date and environmental conditions 29
4.2 Test Conditions and methods 29
4.3 Attachment 3 - Photographs 30
4.4 Test result 31
4.5 Post-test product images 32

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	

※ CTK Co., Ltd. is an independent third-party testing laboratory and is not affiliated with the manufacturer (Hanwha Vision Co., Ltd.) or any of its parent or subsidiary companies.

2. Product description and equipment information

2.1 Product description

Sample Name	Model Name	S/N	Date of Manufacture	Quantity	Comment
Network Camera	XNO-A9014R	ZX4C70GL10000LV	2026.01	1 EA	-

2.2 Model description

Basic Model .....:	XNO-A9014R
Series model .....:	XNO-A8014R, XNO-A6014R
Model differences .....:	Differences between the base model and the image sensor.

2.3 Manufacturer information

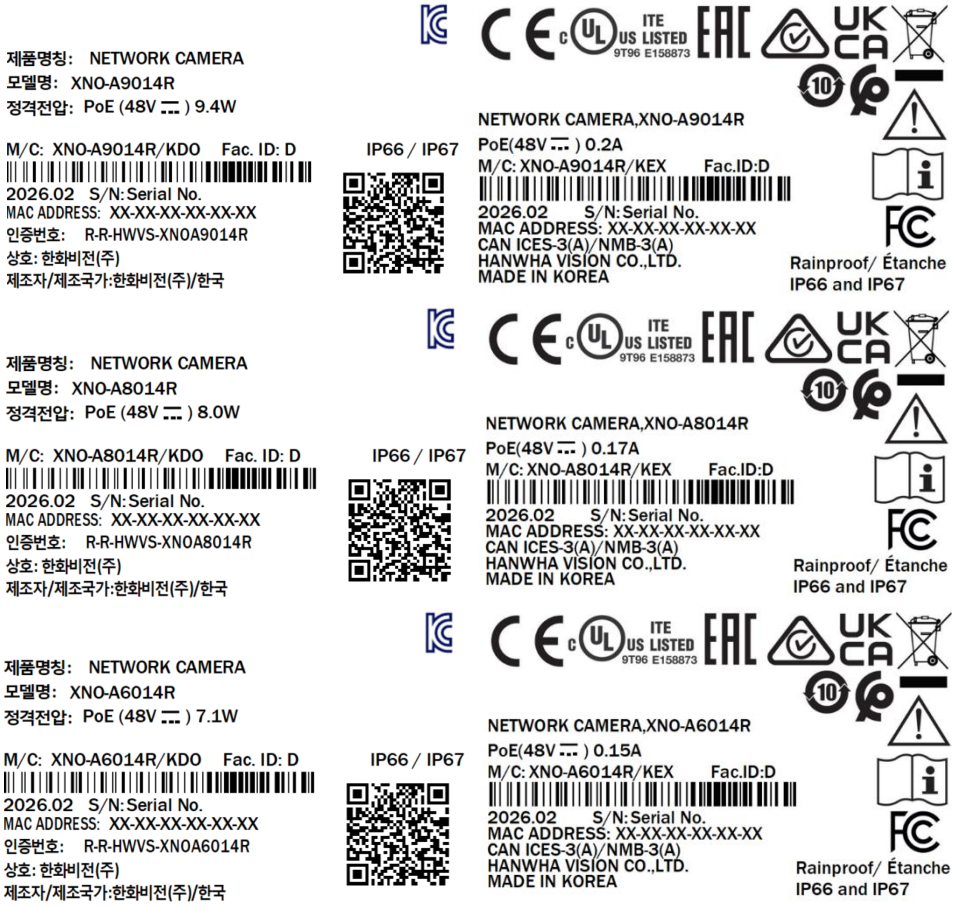
Test item description .....:	NETWORK CAMERA
Trade Mark .....:	Hanwha Vision
Manufacturer .....:	Lot O-2, Que Vo Industrial Zone extended area, Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam
Model/Type reference .....:	XNO-A9014R
Ratings .....:	Electrical XNO-A9014R PoE 48 V ⎓ 9.4 W / PoE 48 V ⎓0.2 A XNO-A8014R PoE 48 V ⎓ 8.0 W / PoE 48 V ⎓0.17 A XNO-A6014R PoE 48 V ⎓ 7.1 W / PoE 48 V ⎓0.15 A Dimension: Ø 140.47 mm by 441.07 mm, Ø 93.4 mm by 293.27 mm, Ø 79.6 mm by 249.94mm, Ø 78.6 mm by 246.80mm, Ø 18 * 2mm by 113.04 mm , Ø 4.1 mm *6 by 77.244. mm 16mm, 60mm

List of Attachments (including a total number of pages in each attachment):
Attachment 1: 16-17 pages (Construction Diagram including installation method)
Attachment 2: 18-20 pages (Parts List)
Attachment 3: 22 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.



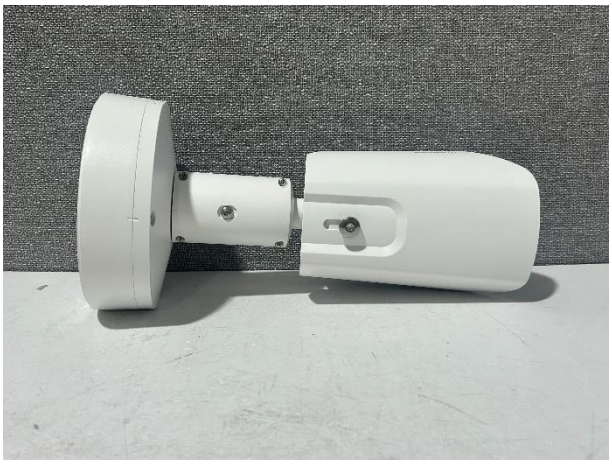
2.4 Equipment information

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.06,2027
Area flow meter	Z-6504	FLOWTECH	0064	Jan.19,2027
Steel measuring meter	5.5 m	KOMELON	225851	Jan.13,2028
Stop Watch	NONE	Casio	612Q01R-1	Jan.15,2027
Digital Vernier Calipers	100 mm	MITUTOYO	A17179462	-

※ All test equipment used for this testing was calibrated in accordance with the manufacturer's requirements, and the calibration ranges cover the measurement values recorded in this report.

2.5 Pre-test product images

2.5.1 Test sample



Top



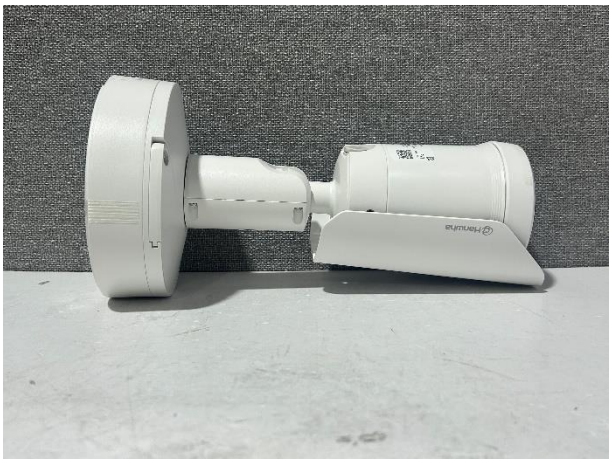
Bottom



Front



Rear



Lest side



Right side

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

3. Test Information

3.1 Test item particulars and Possible test case verdicts

Test item particulars.....:	Network 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 province, Vietnam

2. D-TECH CO., LTD.
   173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi-do, Korea (Suwon Industrial Complex)

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).

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	Non-vented 5.7 Vented 5.5.1 Dust Blast Method	Windblown dust protected	No ingress of dust	6

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

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

NEMA 250-2014			
Clause	**Requirement + Test**	**Result – Remark**	**Verdict**
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
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

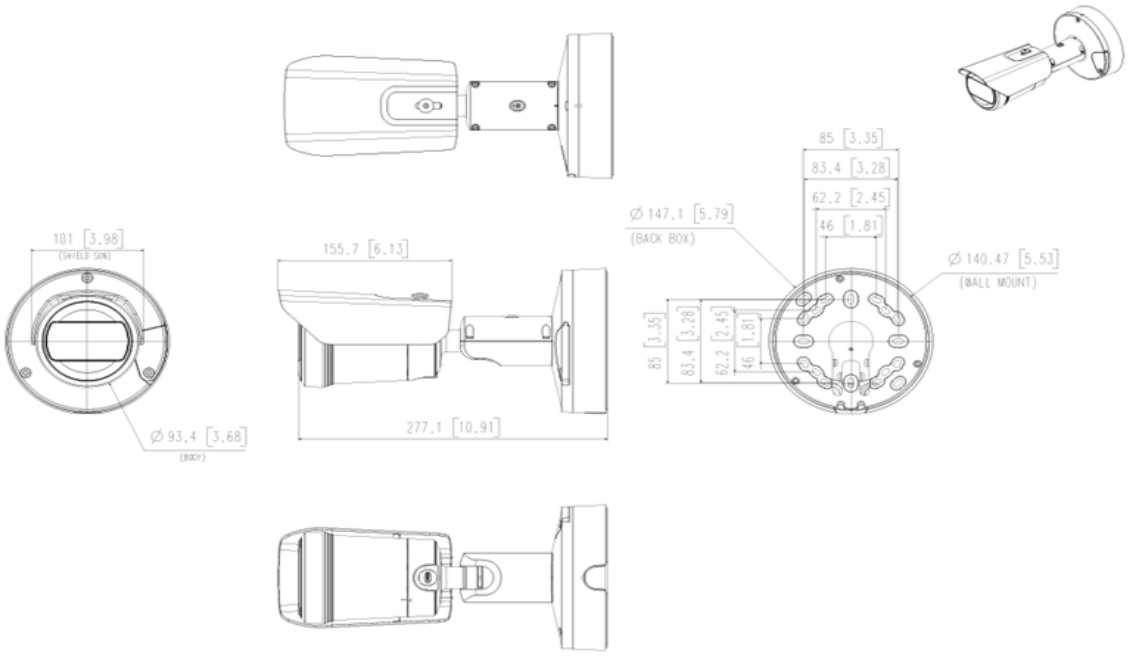
NEMA 250-2014			
Clause	**Requirement + Test**	**Result – Remark**	**Verdict**
4.2	Supplemental Markings	Supplemental Marking (watertight/ corrosion resistant) is declared to be used when it is on the market. The required marking shall be added on the product)	P
4.3	Location of Markings	See the Attachment 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
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

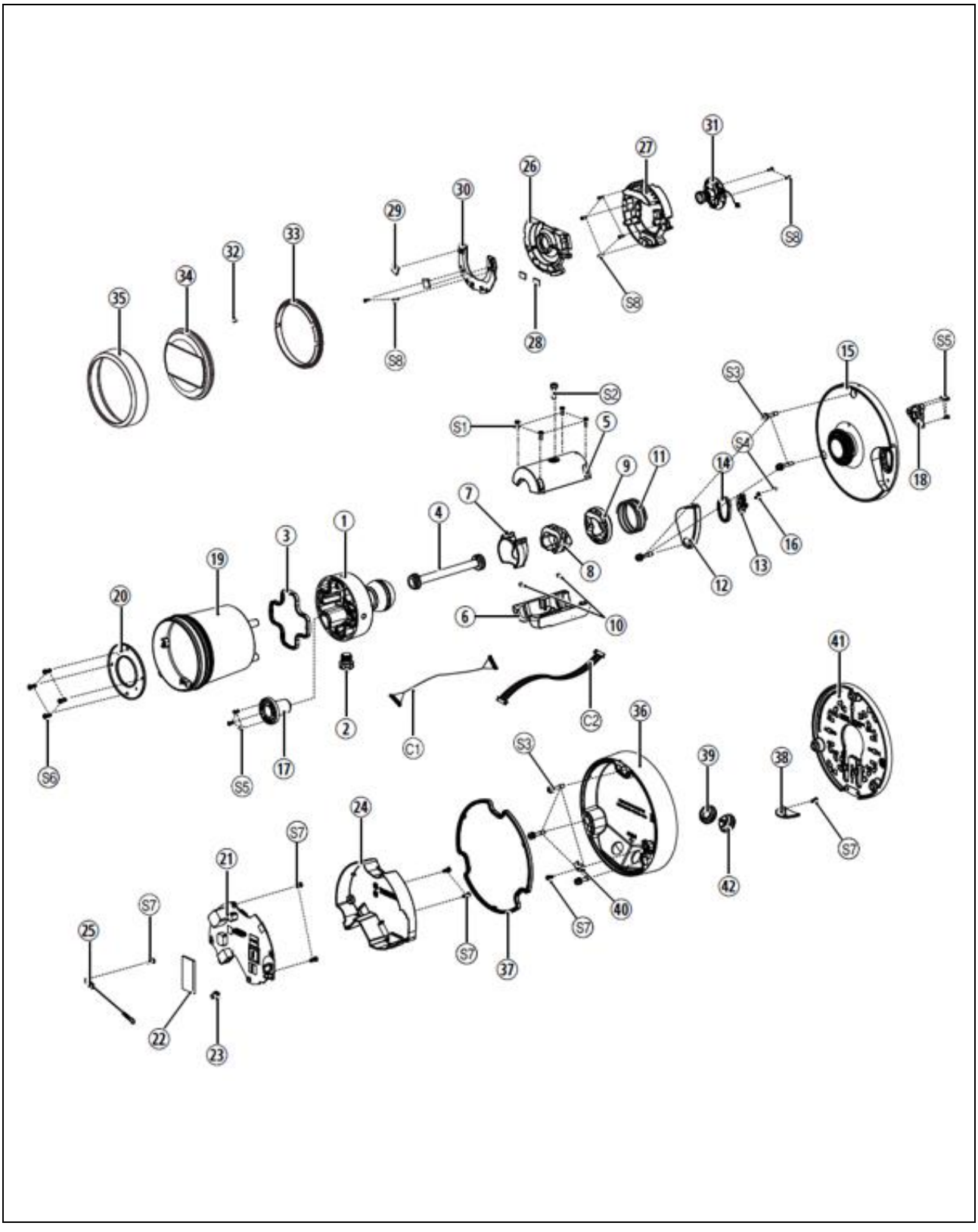
NEMA 250-2014			
Clause	**Requirement + Test**	**Result – Remark**	**Verdict**
5.8	Indoor Corrosion Protection (Rust-Resistance Test (24-Hour Salt Spray Test))	See clause 3.5	N/E
5.9	Outdoor Corrosion Protection	See clause 3.5	N/E
5.10	Corrosion Protection-Type 3X, 3RX, 3SX, 4X Or 6P Enclosures	See clause 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 ℃ 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

3.5 Attachment 1 - Construction Diagram and installation method

3.5.1 Construction Diagram



3.5.2 installation method



3.6 Parts List

3.6.1 Parts List (1)

부품위치	부품번호	품명	수량	공급여부	비고
1	FC04-001011B	BALL-BRACKET_XNO-C9083R:ADC12,WHITE	1	SA	
2	HP06-001351	VENT-GORE-PMF100586-WHT;MEMBRANE,SCREW I	1	SA	
3	HP07-001637A	GASKET-REAR_XNO-C9083R:SILICON	1	SA	
4	HP13-001217B	TUBE,ETC-CABLE-105_XNO-C9083R;-,-,RUBBER	1	SA	
5	FC29-014039A	CASE-TOP BRACKET_XNO-C9083R:ADC12,WHITE	1	SA	
6	FC29-014048A	CASE-BOTTOM BRACKET_XNO-C9083R:ADC12,WHI	1	SA	
7	FC28-003367E	LOCKER-FRONT-BRKT_C3012TRA:D13,ADC12	1	SA	
8	FC29-014038C	PUSHER-BRACKET_TNO-C30X:ADC12,WHITE	1	SA	
9	FC28-003369B	LOCKER-REAR_TNO-C30X:ADC12,ANODIZING	1	SA	
10	FC29-014053A	STOPPER,PIN-XNO-9083R:SUS	2	SA	
11	FC38-001279A	SPRING,COM-BRACKET_XNO-C9083R:SWPB	1	SA	
12	FC28-003368A	DOOR-BUTTON_XNO-C9083R:ADC12	1	SA	
13	FC15-012910A	COVER-INTERFACE_TNO-C4040T	1	SA	
14	HP07-001639A	GASKET-DOOR_XNO-C9083R:SILICON	1	SA	
15	FC29-017769A	CASE-TOP BACKBOX_XNO-A9084R:ADC12	1	SA	
16	PM01-001099A	INDICATOR-PIPE_TNO-C4040T	1	SA	
17	FC15-008257A	COVER-BUSHING-MD-XNO-C9083R:PC,MOLD	1	SA	
18	FC15-008240A	COVER-BUSHING_XNO-C9083R:ADC12	1	SA	
19	FC29-014050D	CASE-BODY_XNO-C9083R:PC (WHITE)	1	SA	
20	FC09-017613A	BRACKET-BODY_XNO-C9083R:SECC,1.0	1	SA	
21	AM06-012351A	ASSY,PCB-XNO-A6084R NETWORK	1	SA	
22	FC28-004202A	PAD-THERMAL-49X20XT2;K=7.0W/M-K	1	SA	
23	FC29-019008A	CAP-SW-RB_TNO-C4040T	1	SA	
24	FC15-011423B	COVER-MAIN PCB_XNO-A9084R:PC,-	1	SA	
25	RM01-005941A	WIRE,METALIC-SAFETY;SUS304 Ø1.0	1	SA	
26	EP07-002265A	SINK, HEAT-IR_XNO-A9014R	1	SA	
27	FC29-019226A	HOLDER-SENSO_XNO-A6014R	1	SA	XNO-A6014R/A8014R
	FC29-019211A	HOLDER-SENSO_XNO-A9014R	1	SA	XNO-A9014R
28	FC28-003686A	PAD-THERMAL_9x6x1T ;GP-1(350),1.0	2	SA	
29	FC28-003056A	PAD-THERMAL_10x10x2T ;GP-1(350),1.0	2	SA	
30	AM06-012347A	ASSY,PCB-XNO-A9084R IR LED	1	SA	
31	AM06-012347A	ASSY,LENS-SENSOR_XNO-A6014R	1	SA	XNO-A6014R
	AM08-008199A	ASSY,LENS-SENSOR_XNO-A014R	1	SA	XNO-A8014R
	AM08-008197A	ASSY,LENS-SENSOR_XNO-96014R	1	SA	XNO-A9014R
32	HP07-001640A	GASKET-CDS SENSOR_XNO-C9083R:EPDM	1	SA	
33	HP07-001717A	GASKET-WINDOW_XNO-6123R;O-VMQ-60-BK	1	SA	
34	AM07-017371B	ASSY-FRONT-WINDOW_QNO-C8013R	1	SA	
35	FC15-008242A	COVER-FRONT_XNO-C9083R:PC,WHITE	1	SA	
36	FC29-014049A	CASE-BOTTOM BACKBOX_XNO-C9083R:ADC12,WHI	1	SA	
37	HP07-001638A	GASKET-BACKBOX_XNO-C9083R:SILICON	1	SA	
38	FC15-012771A	COVER-CABLE-XNO-A9084R:PC	1	SA	
39	MC06-001201A	BUSHING-DUMMY_16MM:RB	1	SA	
40	FC09-006670A	BRACKET-WIRE-SNO-8081R:SUS304,1.2	1	SA	
41	FC09-012507A	BRACKET-WALL MOUNT_XNO-C9083R:ADC12,WHIT	1	SA	
42	MC06-001203A	BUSHING-CABLE-FLEXIBLE;SILICON,TUBE T0.5	1	SA	
C1	EP02-004360A	HARNESS-TNO-4040T:MCX,30P-30P,425MM	1	SA	
C2	EP02-005702A	HARNESS-1.25HOUSING:1:1,WIRE,BL,8P-8P,37	1	SA	
S1	FC18-001418C	SCREW-SPECIAL : BH,TR10,M3,L4.5+3.5,SUS,	4	SA	
S2	FC18-006234A	SCREW-SEMS-TORX20_M5XL15:0.8,15,FLAT,M5,	1	SA	
S3	FC18-006121B	SCREW-MACHINE;TORX20,P0.7,L20,FLAT+SPRIN	6	SA	
S4	Z6003019601A	SCREW-TAPTITE:PL,+,M2,L4,WHT,B-TYPE	1	SA	
S5	Z6001055201A	SCREW-MACHINE:6001-001708,BH,+,M2,L5,ZP	6	SA	
S6	Z9642306001	SCREW-MACHINE:PH,+,M3,L8,WHT,FP	4	SA	
S7	Z9642306007	MACHINE SCREW(M3xL6,Zn-B,냄비머리)	7	SA	
S8	Z6003019601A	SCREW-TAPTITE:PH,+,M2,L6,BLK,B-TYPE	8	SA	

3.6.2 Parts List (2)

Component - Plastics

L-1250U(#)(f1), L-1250V(#)(f1), L-1250Z(#)(f1)

Yellow Card™

TEIJIN POLYCARBONATE CHINA LTD
Zhapu Development Rd
888 Yashan W Rd
Jiaxing, Zhejiang 314201 China

File Number: E245526

Panlite: L-1250U(#)(f1), L-1250V(#)(f1), L-1250Z(#)(f1)

Polycarbonate (PC), pellets, powder

(#) - Suffix optional
(f1) - Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.

c UL us
ALSO CERTIFIED TO IEC REQUIREMENTS

Flammability	Value (English)	Value (SI)	Test Method
Flame Rating			
0.06 in (1.5 mm), ALL	HB	HB	UL 94
0.12 in (3.0 mm), ALL	HB	HB	UL 94
0.24 in (6.0 mm), ALL	HB	HB	UL 94
0.016 in (0.40 mm), ALL	V-2	V-2	UL 94 IEC 60695-11-10, -20
0.030 in (0.75 mm), ALL	V-2	V-2	UL 94 IEC 60695-11-10, -20
0.03 in (0.8 mm), ALL	V-2	V-2	UL 94 IEC 60695-11-10, -20
0.12 in (3.0 mm), ALL	HB40	HB40	IEC 60695-11-10, -20
0.24 in (6.0 mm), ALL	HB40	HB40	IEC 60695-11-10, -20
0.06 in (1.5 mm), ALL	HB75	HB75	IEC 60695-11-10, -20
Electrical	**Value (English)**	**Value (SI)**	**Test Method**
Hot-wire Ignition (HWI)			UL 746A
0.016 in (0.40 mm)	PLC 4	PLC 4	
0.030 in (0.75 mm)	PLC 4	PLC 4	
0.03 in (0.8 mm)	PLC 4	PLC 4	
0.06 in (1.5 mm)	PLC 4	PLC 4	
0.12 in (3.0 mm)	PLC 1	PLC 1	
0.24 in (6.0 mm)	PLC 1	PLC 1	
High Amp Arc Ignition (HAI)			UL 746A
0.016 in (0.40 mm)	PLC 3	PLC 3	
0.030 in (0.75 mm)	PLC 3	PLC 3	
0.03 in (0.8 mm)	PLC 3	PLC 3	
0.06 in (1.5 mm)	PLC 0	PLC 0	
0.12 in (3.0 mm)	PLC 0	PLC 0	
0.24 in (6.0 mm)	PLC 0	PLC 0	
Comparative Tracking Index (CTI)	PLC 2	PLC 2	UL 746A

Page 1 of 2
Form Number: E245526-101512723

UL LLC Copyright ©2025. All rights reserved. | www.ul.com

Report Date: 8/20/2021
Last Revised: 8/20/2021 6:33:05 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.

3.6.3 Parts List (3)

Component - Plastics

L-1250U(#)(f1), L-1250V(#)(f1), L-1250Z(#)(f1)

Electrical	Value (English)	Value (SI)	Test Method
Dielectric Strength	610 V/mil	24 kV/mm	ASTM D149
High Voltage Arc Tracking Rate (HVTR)	PLC 4	PLC 4	UL 746A
Volume Resistivity	1.0E+16 ohms·cm	1.0E+16 ohms·cm	ASTM D257 IEC 60093
Arc Resistance	PLC 5	PLC 5	ASTM D495
Thermal	**Value (English)**	**Value (SI)**	**Test Method**
RTI Elec			UL 746B
0.016 in (0.40 mm)	176 °F	80.0 °C	
0.030 in (0.75 mm)	257 °F	125 °C	
0.03 in (0.8 mm)	257 °F	125 °C	
0.06 in (1.5 mm)	257 °F	125 °C	
0.12 in (3.0 mm)	257 °F	125 °C	
0.24 in (6.0 mm)	257 °F	125 °C	
RTI Imp			UL 746B
0.016 in (0.40 mm)	176 °F	80.0 °C	
0.030 in (0.75 mm)	239 °F	115 °C	
0.03 in (0.8 mm)	239 °F	115 °C	
0.06 in (1.5 mm)	239 °F	115 °C	
0.12 in (3.0 mm)	239 °F	115 °C	
0.24 in (6.0 mm)	239 °F	115 °C	
RTI Str			UL 746B
0.016 in (0.40 mm)	176 °F	80.0 °C	
0.030 in (0.75 mm)	257 °F	125 °C	
0.03 in (0.8 mm)	257 °F	125 °C	
0.06 in (1.5 mm)	257 °F	125 °C	
0.12 in (3.0 mm)	257 °F	125 °C	
0.24 in (6.0 mm)	257 °F	125 °C	
Physical	**Value (English)**	**Value (SI)**	**Test Method**
Dimensional Change	0.0 %	0.0 %	ASTM D1042 ISO 2796
Outdoor Suitability	f1	f1	UL 746C

Page 2 of 2

UL LLC Copyright ©2025. All rights reserved. | www.ul.com

Form Number: E245526-101512723
Report Date: 8/20/2021
Last Revised: 8/20/2021 6:33:05 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.

3.6.4 Parts List (4)

Product iQ®

Grade Designation HN-1068(f1)

File Number: E115797

Yellow Card™

c UL us ALSO CERTIFIED TO IEC REQUIREMENTS

Component - Plastics E115797

Guide Information View Certificate of Compliance

LOTTE CHEMICAL CORPORATION

56 Gosan-ro, Uiwang-si, Gyeonggi-do 16073 Republic of Korea

HN-1068(f1)

Polycarbonate (PC) "INFINO", furnished as pellets

Color	Min. Thk (mm)	Flame Class	HWI (PLC)	HAI (PLC)	GWIT (°C)	GWFI (°C)	RTI Elec (°C)	RTI Imp (°C)	RTI Str (°C)
ALL	1.5	V-0	3	3	825	960	130	130	130
	3.0	V-0	--	--	825	960	130	130	130

Comparative Tracking Index (CTI) (PLC):	3	IEC Comparative Tracking Index (V):	-	IEC CTI Material Group:	--
Inclined Plane Tracking (IPT) (kV):	-	High-Voltage Arc Tracking Rate (HVTR) (PLC):	-	Dielectric Strength (DS) (kV/mm):	31.8
Volume Resistivity (VR) (10^x ohm cm):	17	Surface Resistivity (SR) (10^x ohms/square):	-	High Volt, Low Current Arc Resis (D495):	0

(f1) - Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.

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.

Report Date: 1998-08-24
Last Revised: 2026-02-26

© 2026 UL Solutions

c UL us ALSO CERTIFIED TO IEC REQUIREMENTS

FLAMMABILITY PROPERTIES	VALUE	TEST METHOD
Flammability		ANSI/UL 94
1.5 mm, Color: ALL	V-0	
3.0 mm, Color: ALL	V-0	

ISO/IEC FLAMMABILITY PROPERTIES	VALUE	TEST METHOD

3.6.5 Parts List (5)

Flammability		IEC 60695-11-10
1.5 mm, Color: ALL	V-0	
3.0 mm, Color: ALL	V-0	
Glow Wire Ignition Temperature (GWIT)		IEC 60695-2-13
1.5 mm	825 °C	
3.0 mm	825 °C	
Glow Wire Flammability Index (GWFI)		IEC 60695-2-12
1.5 mm	960 °C	
3.0 mm	960 °C	

ELECTRICAL PROPERTIES	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
High Voltage, Low Current Arc Resistance	PLC 0	

THERMAL PROPERTIES	VALUE	TEST METHOD
Relative Thermal Index - Electrical Strength		UL 746B
1.5 mm	130 °C	
3.0 mm	130 °C	
Relative Thermal Index - Mechanical Impact		UL 746B
1.5 mm	130 °C	
3.0 mm	130 °C	
Relative Thermal Index - Mechanical Strength		UL 746B
1.5 mm	130 °C	

3.6.6 Parts List (6)

3.0 mm	130 °C	
Ball Pressure Temperature (3.0 mm)	130 °C	IEC 60695-10-2

PHYSICAL PROPERTIES	VALUE	TEST METHOD
UV Exposure & Water Immersion	f1	UL 746C

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL Solutions' Follow – Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL Solutions' Follow – Up Service. Always look for the Mark on the product.

UL Solutions permits the reproduction of the material contained in Product iQ subject to the following conditions: 1. The Guide Information, Assemblies, Constructions, Designs, Systems, and/or Certifications (files) must be presented in their entirety and in a non-misleading manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from Product iQ with permission from UL Solutions" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in the following format: "©2026 UL LLC."

3.6.7 Parts List (7)

Product iQ®

Grade Designation UH-1068(f1)

File Number: E115797

Yellow Card™

Component - Plastics E115797

Guide Information View Certificate of Compliance

LOTTE CHEMICAL CORPORATION
56 Gosan-ro, Uiwang-si, Gyeonggi-do 16073 Republic of Korea

UH-1068(f1)
Polycarbonate (PC) "INFINO", furnished as pellets

Color	Min. Thk (mm)	Flame Class	HWI (PLC)	HAI (PLC)	GWIT (°C)	GWFI (°C)	RTI Elec (°C)	RTI Imp (°C)	RTI Str (°C)
ALL	1.5	V-0	3	3	825	960	130	130	130
	3.0	V-0	--	--	825	960	130	130	130

Comparative Tracking Index (CTI) (PLC):	3	IEC Comparative Tracking Index (V):	-	IEC CTI Material Group:	-
Inclined Plane Tracking (IPT) (kV):	-	High-Voltage Arc Tracking Rate (HVTR) (PLC):	-	Dielectric Strength (DS) (kV/mm):	-
Volume Resistivity (VR) (10^x ohm cm):	-	Surface Resistivity (SR) (10^x ohms/square):	-	High Volt, Low Current Arc Resis (D495):	-

(f1) - Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.

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.

Report Date: 1998-08-24
Last Revised: 2026-02-26

© 2026 UL Solutions

FLAMMABILITY PROPERTIES	VALUE	TEST METHOD
Flammability		ANSI/UL 94
1.5 mm, Color: ALL	V-0	
3.0 mm, Color: ALL	V-0	

ISO/IEC FLAMMABILITY PROPERTIES	VALUE	TEST METHOD

3.6.8 Parts List (8)

Flammability		IEC 60695-11-10
1.5 mm, Color: ALL	V-0	
3.0 mm, Color: ALL	V-0	
Glow Wire Ignition Temperature (GWIT)		IEC 60695-2-13
1.5 mm	825 °C	
3.0 mm	825 °C	
Glow Wire Flammability Index (GWFI)		IEC 60695-2-12
1.5 mm	960 °C	
3.0 mm	960 °C	

ELECTRICAL PROPERTIES	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

THERMAL PROPERTIES	VALUE	TEST METHOD
Relative Thermal Index - Electrical Strength		UL 746B
1.5 mm	130 °C	
3.0 mm	130 °C	
Relative Thermal Index - Mechanical Impact		UL 746B
1.5 mm	130 °C	
3.0 mm	130 °C	
Relative Thermal Index - Mechanical Strength		UL 746B
1.5 mm	130 °C	
3.0 mm	130 °C	
Ball Pressure Temperature (3.0 mm)	130 °C	IEC 60695-10-2

3.6.9 Parts List (9)

PHYSICAL PROPERTIES	VALUE	TEST METHOD
UV Exposure & Water Immersion	fl	UL 746C

The appearance of a company's name or product in this database does not in itself assure that products so identified have been manufactured under UL Solutions' Follow - Up Service. Only those products bearing the UL Mark should be considered to be Certified and covered under UL Solutions' Follow - Up Service. Always look for the Mark on the product.

UL Solutions permits the reproduction of the material contained in Product iQ subject to the following conditions: 1. The Guide Information, Assemblies, Constructions, Designs, Systems, and/or Certifications (files) must be presented in their entirety and in a non-misleading manner, without any manipulation of the data (or drawings). 2. The statement "Reprinted from Product iQ with permission from UL Solutions" must appear adjacent to the extracted material. In addition, the reprinted material must include a copyright notice in the following format: "©2026 UL LLC."

3.6.10 Parts List (10)

iq.ul.com

PROSPECTOR® CLICK TO CONTINUE
View additional material information including performance and processing data

The information presented on the UL Prospector datasheet was acquired by UL Prospector from the producer of the material. UL Prospector makes substantial efforts to assure the accuracy of this data. However, UL Prospector assumes no responsibility for the data values and strongly encourages that upon final material selection, data points are validated with the material supplier.

Component - Plastics E45329
Guide Information View Certificate of Compliance

SABIC INNOVATIVE PLASTICS B V
EUROPE - RESIN, PLASTICSLAAN 1, BERGEN OP ZOOM 4612 PX NL

EXL1434T(f1)(GG)(N1)(BK47)
PC/Siloxane, UV Stabilized "Lexan", furnished as pellets

Color	Min. Thk (mm)	Flame Class	HWI	HAI	RTI Elec (°C)	RTI Imp (°C)	RTI Str (°C)
NC	0.8	-	-	-	80	80	80
BK	0.8	HB	-	-	80	80	80
NC, BK	1.5	HB	-	-	130	120	130
	2.5	HB	-	-	130	120	130
	3.0	V-2	-	-	130	120	130

Comparative Tracking Index (CTI): -
Dielectric Strength (kV/mm): -
High-Voltage Arc Tracking Rate (HVTR): -
Dimensional Change (%): -
Inclined Plane Tracking (IPT) kV: -
Volume Resistivity (10^x ohm-cm): -
Surface Resistivity (10^x ohms/square): -
High Volt, Low Current Arc Resis (D495): -

(BK47) - Black Color represents color code 7N1A8522T
(GG) - Denotes a global grade formulation previously in File E161759.
(N1) - Natural Color represents color code NA8A005T
(f1) - Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.
NOTE - Material designation may be followed by a color nomenclature consisting of either an alpha/numeric or a numeric/alpha combination.

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.

Report Date: 2003-01-10
Last Revised: 2024-02-14

ALSO CERTIFIED TO IEC REQUIREMENTS

© 2026 UL Solutions

IEC and ISO Test Methods

Test Name	Test Method	Units	Thk (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.8	HB, HB75 (BK)
			1.5	HB, HB75 (NC, BK)
			2.5	HB, HB75 (NC, BK)
			3.0	V-2 (NC, BK)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	°C	0.8	825
			0.8	825
			1.5	825
			2.5	825
			3.0	960
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	°C	0.8	850
			0.8	850
			1.5	850
			2.5	850
			3.0	850
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC AC Dielectric Strength (AC DS)	IEC 60243-1	kV/mm	-	-
IEC DC Dielectric Strength (DC DS)	IEC 60243-2	kV/mm	-	-
IEC Volume Resistivity (VR)	IEC 62631-3-1	10^x ohm-m	-	-
IEC Surface Resistivity (SR)	IEC 62631-3-2	10^x ohms	-	-
IEC Inclined Plane Tracking (IPT)	IEC 60587	kV	-	-
IEC Ball Pressure	IEC 60695-10-2	°C	-	-
ISO Heat Deflection (1.80 MPa)	ISO 75-2	°C	-	-
ISO Tensile Strength	ISO 527-2	MPa	-	-
ISO Flexural Strength	ISO 178	MPa	-	-
ISO Tensile Impact	ISO 8256	kJ/m^2	-	-
ISO Izod Impact	ISO 180	kJ/m^2	-	-
ISO Charpy Impact	ISO 179-1	kJ/m^2	-	-

3.6.11 Parts List (11)

Component - Plastics
File Number: E115797

LOTTE CHEMICAL CORPORATION
56 Gosan-ro
Uiwang-si, Gyeonggi-do 16073 Republic of Korea

INFINO: GC-1021F, GC-1022F, GC-1023F, GC-1024F, GC-1025F, GC-1026F, GC-1027F, GC-1028F, GC-1029F(f1)(wa1)
Polycarbonate (PC), pellets, recycled

Flammability	Value	Test Method
Flame Rating		UL 94
1.5 mm, ALL	V-0	
3.0 mm, ALL	V-0	
Flammability Classification		IEC 60695-11-10, -20
1.5 mm, ALL	V-0	
3.0 mm, ALL	V-0	
Glow Wire Flammability Index		IEC 60695-2-12
1.5 mm	930 °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	24 kV/mm	ASTM D149
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

4. Hose Down Test (Clause 5.7)

4.1 Test date and environmental conditions

4.1.1 Test date: Feb. 25, 2026 ~ Mar. 04, 2026

4.1.2 Measured Environmental Conditions

Item	Temperature (℃)	Humidity (% R.H.)	Pressure (kPa)
Measurement	20.6	30.8	99.6

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 140.47 mm by 441.07 mm, Ø 93.4 mm by 293.27 mm,
Ø 79.6 mm by 249.94mm, Ø 78.6 mm by 246.80mm,
Ø 18 * 2mm by 113.04 mm , Ø 4.1 mm *6 by 77.244. mm
16mm, 60mm
Test Duration = 249.56 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





4.4 Test result

4.4.1 Test result table

Sample No (Model)	Water Flow	Presence of water inside	Result
XNV-A9014R	240 LPM	No	Pass

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

4.5 Post-test product images

4.5.1 Test sample image








- End -