


TEST REPORT

 CTK Co., Ltd. <small>The Power Leader of Global Regulatory Certification</small>	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-2023-00767 Page (1) / (41) pages	
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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 : 2023-03-02

2. Manufacturer

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

3. Use of Report : Quality control

4. Test sample / Model : NETWORK CAMERA / XNP-C9253R

5. Date(s) of test : 2023-03-21 to 2023-03-29

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

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

7. Test Standard (Method) used : NEMA 250-2014



Enclosures for Electrical Equipment (1000 Volts
Maximum)

8. Testing Environment : Temperature: (25.0 ± 5.0) °C, Humidity: (40.0 ± 5.0) %.

9. Test Results : Refer to each test items

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
This Test Report cannot be reproduced, except in full.


The test was conducted as one sample, and the test result does not depend on the number of
samples








Affirmation	Tested by	Technical Manager
	Mingi Moon	SooChan Bae
	 (Signature)	 (Signature)

2023-04-17





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Test item description : NETWORK CAMERA
Trade Mark : 
Manufacturer : Lot O-2, Que Vo Industrial Zone extended area, Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam
Model/Type reference : XNP-C9253R
Ratings : Electrical XNP-C9253R : PoE (55 V  0.72 A) XNP-C6403 : PoE (53 V  0.49 A) XNP-C6403R: PoE (55 V  0.72 A) XNP-C8253 : PoE (53 V  0.49 A) XNP-C8253R : PoE (55 V  0.72 A) XNP-C9253 : PoE (53 V  0.49 A) Dimension: Ø 158.0 mm by 496.12 mm, Ø 130.0 mm by 408.2 mm Ø 9.45 * 2 mm by 59.346 mm, Ø 10.33 * 3 mm by 97.30 mm Ø 5.3 * 3 mm by 49.926 mm

List of Attachments (including a total number of pages in each attachment): Attachment 1: 12 pages (Construction Diagram including installation method) Attachment 2: 13-36 pages (Parts List) Attachment 3: 37-41 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.	
 <p> NETWORK CAMERA,XNP-C6403 PoE(53V ) 0.49A M/C: XNP-C6403/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 </p> <p> Rainproof/ Étanche IP66 </p>	 <p> NETWORK CAMERA,XNP-C6403R PoE(55V ) 0.72A M/C: XNP-C6403R/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 </p> <p> Rainproof/ Étanche IP66 </p>



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NETWORK CAMERA,XNP-C8253
PoE(53V ---) 0.49A
M/C: XNP-C8253/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

Rainproof/ Étanche
IP66



NETWORK CAMERA,XNP-C8253R
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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 evaluated to the test object :	N/E

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 <input type="checkbox"/> comma / <input checked="" type="checkbox"/> 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 commune, 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)	
General product information:	
Applied NEMA Rating: 4X	
Model XNP-C9253R is basic model which was tested.	
Model description	
Basic Model	XNP-C9253R
Series Model	XNP-C8253R, XNP-C6403R ,XNP-C9253 XNP-C8253, XNP-C6403
Model differences	Using the same appearance and material (case,finish,pcb cable etc), differences in electronic components inside the product

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



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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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NEMA 250-2014

Clause	Requirement + Test	Result - Remark	Verdict
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3	CONSTRUCTION		
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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
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		
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NEMA 250-2014			
Clause	Requirement + Test	Result - Remark	Verdict
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	
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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
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

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

Test Information

	Hose Down Test: Clause 5.7	P
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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).

Sample Dimension

Ø 158.0 mm by 496.12 mm, Ø 130.0 mm by 408.2 mm

Ø 9.45 * 2 mm by 59.346 mm, Ø 10.33 * 3 mm by 97.30 mm

Ø 5.3 * 3 mm by 49.926 mm


Test Duration = 185.14secs

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

Test Results

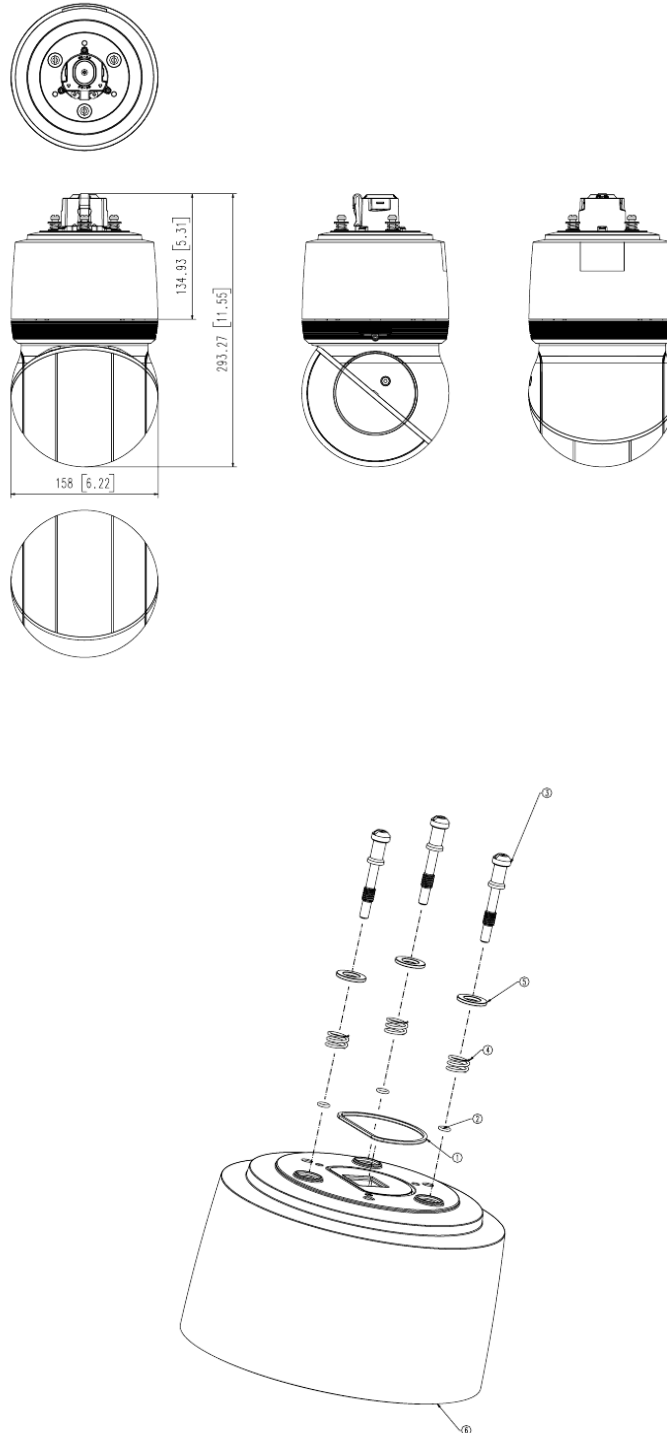
Sample No (Model)	Water Flow	Presence of water inside	Result
XNP-C9253R	240 LPM	No	Pass

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List of test equipment used:

Instr. Code	Instrument Type	Range Used	Mfr./Model	Calibration Date	
				Last	Due
S3-IP18	25.4mm Nozzle	25.4 mm	CTK/S3-IP18	-	Checked by calliper below before using
S1-SW2	Stop Watch	0.01 s	CASIO/ NONE	2022-02-22	2024-02-21
C-S1-D09	Steel Measuring Tape	5 m	KOMELON/KMC-74N	2023-02-17	2024-11-14
S3-IP23	Water flow meter	250LPM	Nuri tech/ Z-6504	2024.01.19	2024.02.12
C-S1-D02	DIGITAL VERNIER CALIPER	150 mm	MITUTOYO/150 mm	2021-08-28	2023-08-09

Attachment 2 – Parts List



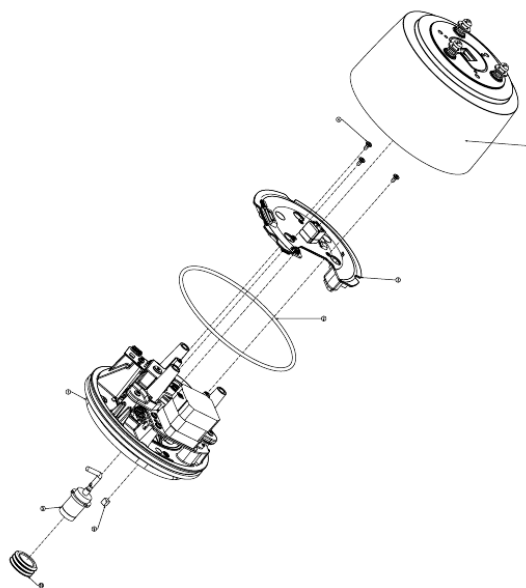
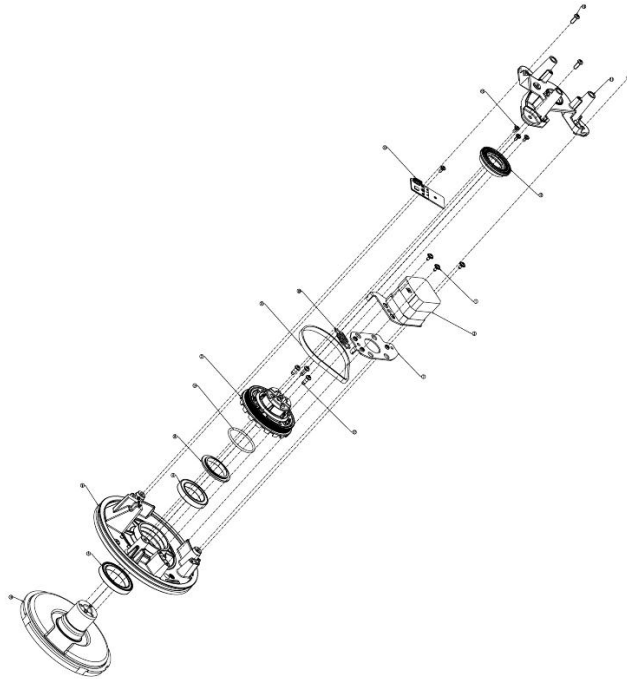


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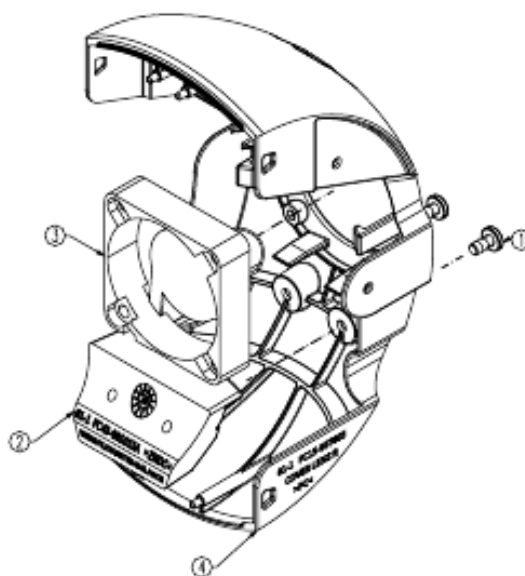
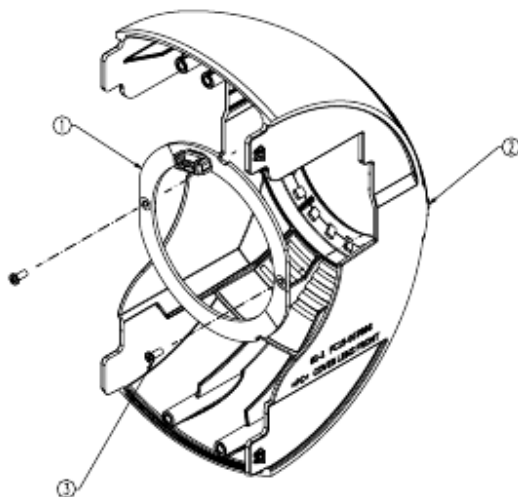
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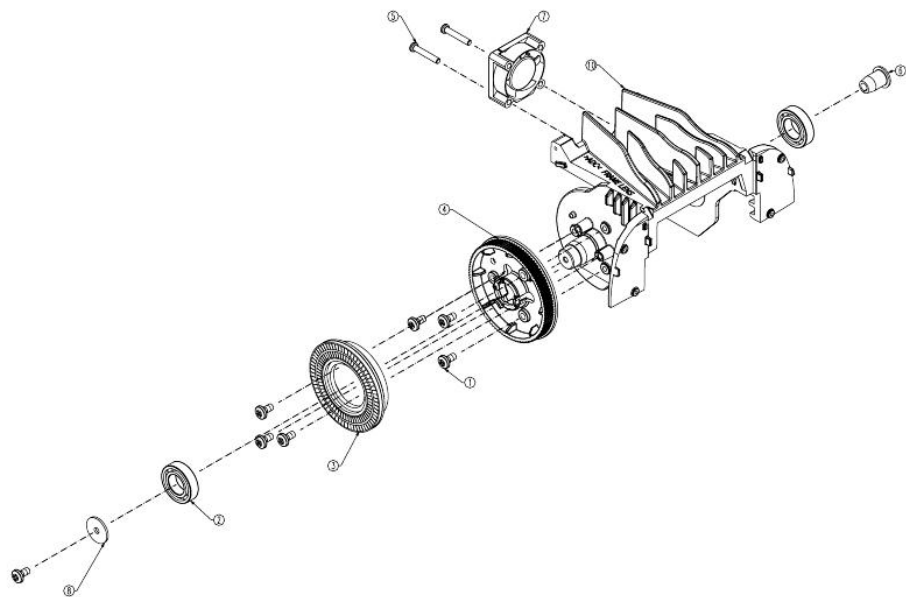
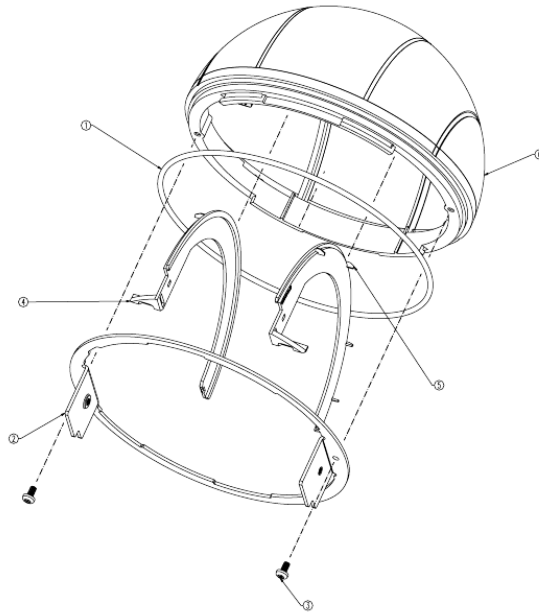
Attachment 2 – Parts List



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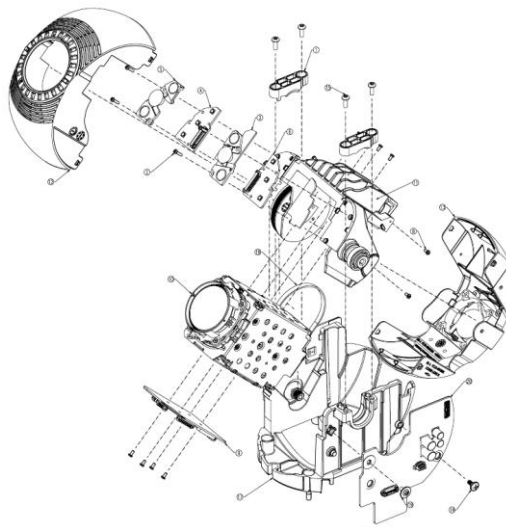
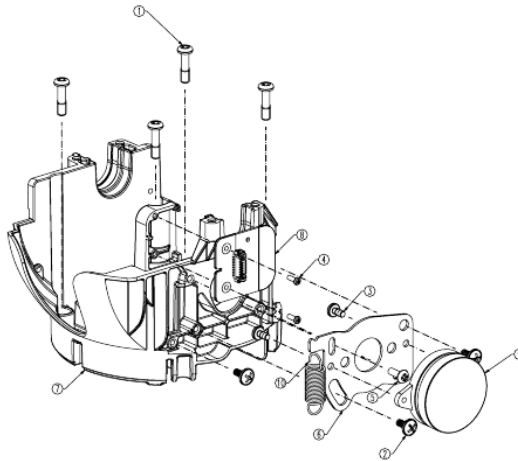


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Attachment 2 – Parts List



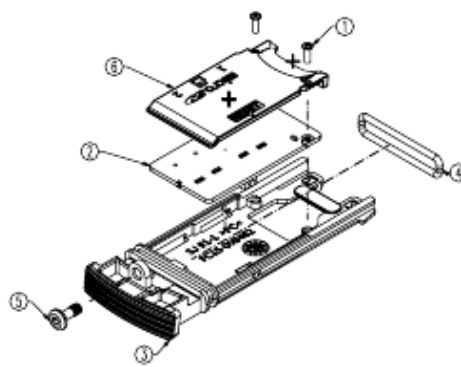
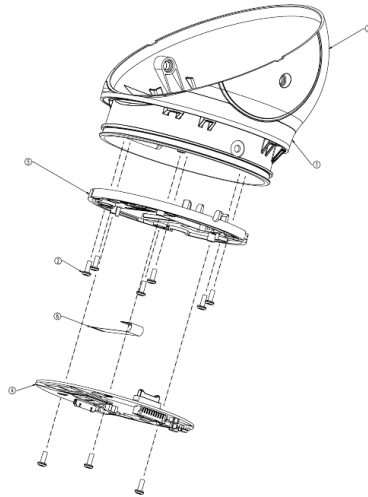


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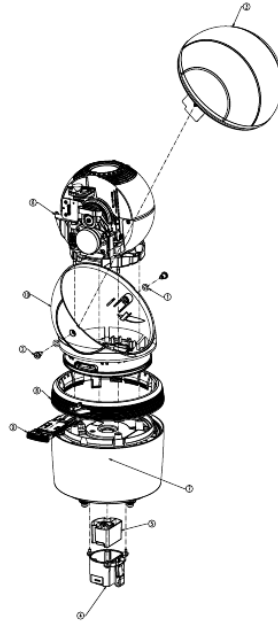



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Attachment 2 – Parts List



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Attachment 2 – Parts List

1	품번	품명	규격	Qty
2	FC05-001526A	BASE-PAN;ADC12	ADC12 / ~ Chromate	1
3	MC03-004396A	Bearing-6807ZZ	6807ZZ	1
4	FC09-011406A	BRACKET-PAN BASE	ADC12 / ~ Chromate	1
5	MC03-004236A	Bearing-6806-2SR	6806-2SR	1
6	FC09-011447A	Bracket-Pan-Spacer	A6061 가공	1
7	FC10-001191A	RUBBER,RING-PAN_SPACER	Silicone rubber, 50HsA / Red 032 C	1
8	FC09-011408A	BRACKET-PAN MOUNT	ADC12 / ~ Chromate	1
9	MC11-005745A	Gear-PT_RW	POM (FT2020, White)	1
10	Z6001053501A	Screw machine	BH, M3xL6	3
11	FC18-000335A	Screw machine	PH, M4xL10	6
12	EP10-001234A	MAGNET-ABSOLUTE-32P	32P, Absolute	1
13	Z6001053501A	Screw machine	BH, M3xL6	4
14	MC05-001054A	BELT,TIMING-60;S2M,242	Bando 60-S2M-242	1
15	FC09-011413A	Bracket-Motor-Base	SUS304 T1.5	1
16	EP08-002318A	Motor STH-42C2010	Shinano STH-42C2010	1
17	FC09-011412A	Bracket-Motor-Mover	SUS304 T1.5	1
18	Z6001053501A	Screw machine	BH, M3xL6	4
19	Z6001045901A	Screw machine	PH, M3xL6	3
20	FC38-001250A	500	SUS304WPB	1

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Attachment 2 – Parts List

20	FC38-001250A	500	SUS304WPB	1
21	FC39-006114A	FRAME-MECHA	ADC12 / ~ Chromate	1
22	FC18-005577A	O-ring_D1 142.47-D2 3.53	Silicone rubber, 60HsA / Sky Blue 306 C	1
23	Z6001053501A	Screw machine	BH, M3xL6	6
24	FC39-006418A	Body	ADC12 / ~ WHT 분체도장 + 인쇄	1
25	HP07-001528A	Gasket for cover bush	Silicone rubber, 70HsA / Orange 021U	1
26	MC19-003222A	Shaft guide	SUS304 가공	3
27	FC38-001245A	Spring for shaft	SUS304WPB	3
28	FC18-005575A	Washer plain	SUS304, ID8.4 x OD15.5	3
29	HP07-001529A	Gasket for shaft	Silicone rubber, 60HsA / Cool Grey 10	3
30	FC10-001206A	RUBBER-SLIP RING	Silicon Rubber OUTER DIA Φ26.4	1
31	Z6001053501A	SCREW-MACHINE;6001-001476,BH,+,M3,L6,Ni		3
32	FC28-002038	FINGER-IDFG-0020-3P-33;NICKEL		1
33	MC03-004418A	BEARING,BALL-6800ZZ;10,19,5		2
34	EP08-003531A	MOTOR,STEP-STH-36C0068-01GA		1
35	Z6003019601A	SCREW-TAPTYPE;6003-001438,BH,+,B,M2,L6,	Z9761204007 검토	2
36	MC05-001056A	TIMING BELT-0040;S1.5M,165,1.5,4,1.12		1
37	FC39-006251A	FRAME LENS	ADC 12	1
38	MC19-003264A	SHAFT GEAR	A6061BE	1
39	MC19-003265A	SHAFT CABLE	A6061BE	1
40	MC11-005831A	GEAR TILT	FT2020	1

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41	Z6001053501A	SCREW-MACHINE;6001-001476,BH,+,M3,L6,Ni		6
42	EP10-001234A	MAGNET-ABSOLUTE-32P	32P, Absolute	1
43	Z6001041102A	MACHINE SCREW B		2
44	FC18-005714A	WASHER FLAT	SECC T1.0 3.1_13.1	1
45	Z6001053501A	SCREW-MACHINE;6001-001476,BH,+,M3,L6,Ni		1
46	FC18-005722A	RING,C-SNAP;10,9.3,1		1
47	FC29-013255A	GUARD CABLE	SILICON RUBBER	1
48	FC38-001267A	SPRING,EXT-TILT-XNP-XX00R;SWP		1
49	FC29-013392A	HOLDER-TILT-XNP-XX00R		2
50	FC09-011891A	BRACKET,MOTOR-TITL-XNP-XX00R;T1.2		1
51	FC09-011892A	BRACKET-TILT-MAIN-XNP-XX00R		1
52	FC18-004952A	SCREW,TAPTITE-M3;SPECIAL,0.5,8,N,3		5
53	Z6003012501A	4748_TAPTITE_SCREW_M3_L6		1
54	Z6001053501A	SCREW-MACHINE;6001-001476,BH,+,M3,L6,Ni		2
55	Z6009004401A	M4_SCREW_3760		4
56	Z6003013801A	SCREW-TAPTYPE;6003-000282,BH,+,-,B,M3,L		3
57	Z6001055101A	SCREW-MACHINE;6001-001707,BH,+,M2,L4,ZP		11
58	FC15-007805A	COVER LENS R	PC(BLACK)	1
59	FC43-001013A	WEIGHT,COUNTER-BALANCE-XNP-XX00R;ZNDC		1
60	RM04-001030A	TAPE-FILAMENT;#8915,T0.15MM,W12MM,L		0.03

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Attachment 2 – Parts List

61	FC28-003200A	PAD-THERMAL;XNP-9300R,1.2T		2
62	Z9642208007	MACHINE SCREW(M2xL8,Zn-B,PAN HEAD)		4
63	FC29-015703A	CASE-DOME-XNP-C6402R	PC COVESTRO Makrolon 2407450601	1
64	FC29-015704A	CASE-DECO-DOME-XNP-C6402R	PC COVESTRO Makrolon 2407450601	1
65	FC30-008650A	PLATE-INTERFACE-PAN;XNP-6402R	PC 1100U	1
66	FC18-005713A	O RING 114	Silicon Rubber D2.62*INNER DIA Φ114	1
67	Z6003013801A	SCREW-TAPTYPE;6003-000282,BH,+,-,B,M3,L		6
68	AM07-014438A	ASSY COVER DOME	3201A+7794A+6250A	1
69	FC28-003201A	INSERT ISOLATOR	PC(SABIC LEXAN EXL9330 BK1A068)	1
70	FC15-007794A	COVER DOME	IR:PC COVESTRO Makrolon 2407450601/ Clear window:PC Mitsubishi 2000VUR	1
71	FC39-006250A	FRAME DOME	PC(SABIC LEXAN EXL9330 BK1A068)	1
72	FC09-011768A	BRACKET DOME	SECC T1.6	1
73	FC10-001205A	RUBBER-BRKT BTM	Silicon Rubber D2.62*INNER DIA Φ145.7	1
74	Z6003013801A	SCREW-TAPTYPE;6003-000282,BH,+,-,B,M3,L		6
75	FC15-009462A	COVER-SD-SLOT;XNP-C6402R	PC V0 HN-1068 K21441 (BLK)	1
76	FC15-009470A	COVER-SD-BOTTOM;XNP-C6402R	PC+GF10% 3025G10	1
77	HP07-001571A	GASKET-SD	Silicon Rubber INNER 28.9*3.9*Φ1.78	1
78	Z6003022301A	M17_3MM_TAP_BINDHEAD		2
79	FC18-005781A	SCREW M3L7 INSTALL	SWCH18A(3BZn) TORX10	1
80	FC15-009463A	COVER-PAN;XNP-C6402R	PC V0 HN-1068 K21441 (BLK)+INSERT	1

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Attachment 2 – Parts List


81	FC15-007806B	COVER-LENS FRONT;XNP-XX00R	PC(BLACK)	1
82	Z6003022301A	M17_3MM_TAP_BINDHEAD		2
83	EP10-001252A	ISOLATOR IR L	PC NH 1035 K2261	1
84	EP10-001253A	ISOLATOR IR R	PC NH 1035 K2261	1
85	FC18-005723A	SPECIAL SCREW M4	ALLOY BLACK(SWCH18A, 흑색니켈합금 TORZ T20, MACHINE M4.0 PITCH0.7	2
86	FC18-004793A	O-RING-PNM-9320VP;D1-8.5_D2_2.0		2
87	HP06-001320A	VENT-GORE-VE90510		1
88	FC15-007604A	Cover bush	ADC12 / ~ WHT 분체도장	1
89	FC38-001247A	Spring plate for safety wire	SUS304CSP 1/2H	1
90	FC18-004468A	Screw machine	Torx T6, M2xL5	2
91	FC18-001418A	Screw machine	Torx T??, M3xL8	3
92	MC06-001150A	Bushing cable	Silicone rubber, 60HsA / Tranparent	1
93	FC15-007852A	COVER-GUIDE FOR RJ45 JACK_XNP-XX00RW		1

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Attachment 2 – Parts List



FC39-006418B	BODY-XNP-9300R-HANWHA	ADC12
FC15-009463A	COVER-PAN;XNP-C6402R	PC LOTTE UH-1068 K226 (BLACK) + INSERT
AM07-014438D	ASSY-COVER DOME-COAT2	PC SABIC LEXAN EXL9330 BK1A068 + PC Mitsubishi 2000VUR + PC COVESTRO Makrolon 2407450601
AM07-016626A	ASSY,CASE DOME-DECO	PC LOTTE QC-1220UR 60069 BLACK

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Attachment 2 – Parts List

2020. 5. 20.

2407 + (z)(f1) Yellow Card | E41613



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/ COVESTRO DEUTSCHLAND AG [PC RESINS] (/certifications/669/covestro-deutschland-ag-pc-resins)
/ Makrolon 2407 + (z)(f1) - Datasheet

Component - Plastics

File Number: E41613

COVESTRO DEUTSCHLAND AG [PC RESINS]



Chempark
2407 + (z)(f1)
Polycarbonate (PC)

- (f1) Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.
- (z) Material designation and color code may be followed by up to three letters and/or three numbers (does not include grades which are separately recognized with above material designation and suffix)
- + Material designations may be followed by a six digit numerical code denoting color.


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Flammability	Nominal Value Unit	Test Method
Flame Rating		
0,11 in, ALL		UL 94
0,12 in, ALL		UL 94
0,24 in, ALL		UL 94
0,030 in, ALL		UL 94, IEC 60695-11-10, -20
0,06 to 0,10 in, ALL		UL 94, IEC 60695-11-10, -20
0,12 in, ALL		IEC 60695-11-10, -20
0,24 in, ALL		IEC 60695-11-10, -20
0,11 in, ALL		IEC 60695-11-10, -20
Electrical	Nominal Value Unit	Test Meth
Hot-wire Ignition (HWI)		UL 746
0,06 to 0,10 in		
0,11 in		
0,12 in		

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Attachment 2 – Parts List

2020. 5. 20.

2407 + (z)(f1) Yellow Card | E41613


0,24 in		
High Amp Arc Ignition (HAI)		UL 746
0,06 to 0,10 in		
0,11 in		
0,12 in		
0,24 in		
Comparative Tracking Index (CTI)		UL 746
Dielectric Strength	V/mil	ASTM D149, IEC 60243-1
High Voltage Arc Tracking Rate (HVTR)		UL 746
Volume Resistivity	ohms-cm	ASTM D257, IEC 60093
Arc Resistance		ASTM D495
Thermal	Nominal Value Unit	Test Method
RTI Elec		UL 746
0,030 in	°F	
0,06 to 0,10 in	°F	
0,11 in	°F	
0,12 in	°F	
0,24 in	°F	
RTI Imp		UL 746
0,030 in	°F	
0,06 to 0,10 in	°F	
0,11 in	°F	
0,12 in	°F	
0,24 in	°F	
RTI Str		UL 746
0,030 in	°F	
0,06 to 0,10 in	°F	
0,11 in	°F	
0,12 in	°F	
0,24 in	°F	
Physical	Nominal Value Unit	Test Method
Dimensional Stability	%	ASTM D1042, ISO 2796
Outdoor Suitability		UL 746C

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Attachment 2 – Parts List

2020. 5. 20.

2407 + (z)(f1) Yellow Card | E41613

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Attachment 2 – Parts List

2020. 5. 20.

EXL9330(GG)(X)(f1)(B1)(IP) Yellow Card | E121562



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/ Lexan EXL9330(GG)(X)(f1)(B1)(IP) - Datasheet

Component - Plastics

File Number: E121562

SABIC INNOVATIVE PLASTICS US L L C
AMERICAS - RESIN
EXL9330(GG)(X)(f1)(B1)(IP)



PC/Siloxane

- (B1) Represents colour code BK1E526 and BK1E649
- (f1) Suitable for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.
- (GG) Denotes a global grade formulation previously in File E161759.
- (X) All colors except Natural.
- B1 Represents color code BK1E526, BK1E649 and BK1E519
- IP Inclined Plane Tracking per UL746A, average time to track at 1.5 kV is 60+ minutes.
- NOTE Material designation may be followed by a color nomenclature consisting of either an alpha/numeric or numeric/alpha combination.

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Flammability	Nominal Value Unit	Test Method
Flame Rating		
0.028 in, ALL		UL 94
0.031 in, (B1)		UL 94
0.06 in, (X)		UL 94, IEC 60695-11-10, -20
0.08 in, (X)		UL 94, IEC 60695-11-10, -20
0.09 in, (X)		UL 94, IEC 60695-11-10, -20
0.10 in, BK, GY		UL 94, IEC 60695-11-10, -20
0.12 in, (X)		UL 94, IEC 60695-11-10, -20
0.028 in, ALL		IEC 60695-11-10, -20

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Attachment 2 – Parts List

2020. 5. 20.		EXL9330(GG)(X)(f1)(B1)(IP) Yellow Card E121562	
0.03 in, (B1)		IEC 60695-11-10, -20	
Glow Wire Flammability Index		IEC 60695-2-12	
0.04 in	°F		
0.06 in	°F		
0.08 in	°F		
0.09 in	°F		
0.10 in	°F		
0.12 in	°F		
Glow Wire Ignition Temperature		IEC 60695-2-13	
0.04 in	°F		
0.06 in	°F		
0.08 in	°F		
0.09 in	°F		
0.10 in	°F		
0.12 in	°F		
Electrical	Nominal Value Unit	Test Method	
Hot-wire Ignition (HWI)		UL 746	
0.024 in			
0.025 in			
0.028 in			
0.03 in			
0.04 in			
0.06 in			
0.08 in			
0.09 in			
0.10 in			
0.12 in			
High Amp Arc Ignition (HAI)		UL 746	
0.024 in			
0.025 in			
0.028 in			
0.03 in			
0.04 in			
0.06 in			
0.08 in			
0.09 in			
0.10 in			
0.12 in			

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Attachment 2 – Parts List

2020. 5. 20.		EXL9330(GG)(X)(f1)(B1)(IP) Yellow Card E121562	
0.12 in			
Comparative Tracking Index (CTI)		UL 746	
Dielectric Strength	V/mil	ASTM D149, IEC 60243-1	
Inclined-Plane Tracking	kV	ASTM D2303	
Volume Resistivity	ohms·cm	ASTM D257, IEC 60093	
Thermal	Nominal Value Unit	Test Method	
RTI Elec		UL 746	
0.024 in		°F	
0.025 in		°F	
0.028 in		°F	
0.031 in		°F	
0.04 in		°F	
0.06 in		°F	
0.08 in		°F	
0.09 in		°F	
0.10 in		°F	
0.12 in		°F	
RTI Imp		UL 746	
0.024 in		°F	
0.025 in		°F	
0.028 in		°F	
0.031 in		°F	
0.04 in		°F	
0.06 in		°F	
0.08 in		°F	
0.09 in		°F	
0.10 in		°F	
0.12 in		°F	
RTI Str		UL 746	
0.024 in		°F	
0.025 in		°F	
0.028 in		°F	
0.031 in		°F	
0.04 in		°F	
0.06 in		°F	
0.08 in		°F	
0.09 in		°F	
0.10 in		°F	
0.12 in		°F	

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Attachment 2 – Parts List

2020. 5. 20. EXL9330(GG)(X)(f1)(B1)(IP) Yellow Card | E121562

0.09 in	°F	
0.10 in	°F	
0.12 in	°F	
Physical	Nominal Value Unit	Test Method
Dimensional Stability	%	ASTM D1042, ISO 2796
Outdoor Suitability		UL 746C

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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.

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 746
High Amp Arc Ignition (HAI) (1.5 mm)	PLC 3	UL 746
Comparative Tracking Index (CTI)	PLC 3	UL 746
Dielectric Strength	32 kV/mm	ASTM D149 IEC 60243-1
Volume Resistivity	1.0E+17 ohms-cm	ASTM D257 IEC 60093
Thermal	Value	Test Method
RTI Elec		UL 746
1.5 mm	130 °C	
3.0 mm	130 °C	
RTI Imp		UL 746
1.5 mm	130 °C	
3.0 mm	130 °C	
RTI Str		UL 746
1.5 mm	130 °C	
3.0 mm	130 °C	
Ball Pressure Test (130°C, 3.00 mm)	Pass	IEC 60695-10-2
Physical	Value	Test Method
Outdoor Suitability	f1	UL 746C



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LEXANTM COPOLYMER EXL9330

REGION ASIA

DESCRIPTION

Opaque PC/Siloxane copolymer with excellent processability. Non-chlorinated, non-brominated flame retardant product in most colors. UV-stabilized. UL rated F1/V-0/5VA.

TYPICAL PROPERTY VALUES

Revision 20190718

PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
MECHANICAL			
Tensile Stress, yld, Type I, 50 mm/min	58	MPa	ASTM D 638
Tensile Stress, brk, Type I, 50 mm/min	61	MPa	ASTM D 638
Tensile Strain, yld, Type I, 50 mm/min	6	%	ASTM D 638
Tensile Strain, brk, Type I, 50 mm/min	130	%	ASTM D 638
Tensile Modulus, 50 mm/min	2100	MPa	ASTM D 638
Flexural Stress, yld, 1.3 mm/min, 50 mm span	88	MPa	ASTM D 790
Flexural Modulus, 1.3 mm/min, 50 mm span	2060	MPa	ASTM D 790
Tensile Stress, yield, 50 mm/min	55	MPa	ISO 527
Tensile Stress, break, 50 mm/min	60	MPa	ISO 527
Tensile Strain, yield, 50 mm/min	6	%	ISO 527
Tensile Strain, break, 50 mm/min	125	%	ISO 527
Tensile Modulus, 1 mm/min	2100	MPa	ISO 527
Flexural Stress, yield, 2 mm/min	85	MPa	ISO 178
Flexural Modulus, 2 mm/min	2200	MPa	ISO 178
Ball Indentation Hardness, H358/30	90	MPa	ISO 2039-1
IMPACT			
Izod Impact, notched, 23°C	801	J/m	ASTM D 256
Izod Impact, notched, -30°C	678	J/m	ASTM D 256
Izod Impact, notched, -50°C	587	J/m	ASTM D 256
Izod Impact, notched, 23°C, 6.4mm	640	J/m	ASTM D 256
Izod Impact, double-gated, 23°C	1068	J/m	SABIC method
Instrumented Impact Total Energy, 23°C	52	J	ASTM D 3763
Izod Impact, unnotched 80°10'3" +23°C	NB	kJ/m ²	ISO 180/1U
Izod Impact, unnotched 80°10'3" -30°C	NB	kJ/m ²	ISO 180/1U
Izod Impact, notched 80°10'3" +23°C	70	kJ/m ²	ISO 180/1A
Izod Impact, notched 80°10'3" -30°C	55	kJ/m ²	ISO 180/1A
Izod Impact, notched 63.5°12.7'3.2, 23°C	80	kJ/m ²	ISO 180/4A
Izod Impact, notched 63.5°12.7'3.2, -30°C	65	kJ/m ²	ISO 180/4A
Charpy 23°C, V-notch Edgew 80°10'3" sp=62mm	75	kJ/m ²	ISO 179/1eA
Charpy -30°C, V-notch Edgew 80°10'3" sp=62mm	60	kJ/m ²	ISO 179/1eA
Charpy 23°C, Unnotch Edgew 80°10'3" sp=62mm	NB	kJ/m ²	ISO 179/1eU
Charpy -30°C, Unnotch Edgew 80°10'3" sp=62mm	NB	kJ/m ²	ISO 179/1eU
THERMAL			
Vicat Softening Temp, Rate B/50	142	°C	ASTM D 1525

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Attachment 2 – Parts List



PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
HDT, 0.45 MPa, 3.2 mm, unannealed	134	°C	ASTM D 648
HDT, 1.82 MPa, 3.2mm, unannealed	120	°C	ASTM D 648
HDT, 1.82 MPa, 6.4 mm, unannealed	124	°C	ASTM D 648
CTE, -40°C to 40°C, flow	6.66E-05	1/°C	ASTM E 831
CTE, -40°C to 40°C, xflow	6.66E-05	1/°C	ASTM E 831
CTE, 23°C to 80°C, flow	7.2E-05	1/°C	ISO 11359-2
CTE, 23°C to 80°C, xflow	7.7E-05	1/°C	ISO 11359-2
Ball Pressure Test, 125°C +/- 2°C	PASSES	-	IEC 60695-10-2
Vicat Softening Temp, Rate B/50	140	°C	ISO 306
Vicat Softening Temp, Rate B/120	142	°C	ISO 306
HDT/Be, 0.45MPa Edgew 120°10°4 sp=100mm	135	°C	ISO 75/Be
HDT/Ae, 1.8 MPa Edgew 120°10°4 sp=100mm	124	°C	ISO 75/Ae
Relative Temp Index, Elec ^[1]	125	°C	UL 746B
Relative Temp Index, Mech w/impact ^[1]	115	°C	UL 746B
Relative Temp Index, Mech w/o impact ^[1]	125	°C	UL 746B
PHYSICAL			
Specific Gravity	1.18	-	ASTM D 792
Mold Shrinkage, flow, 3.2 mm	0.4 – 0.8	%	SABIC method
Mold Shrinkage, xflow, 3.2 mm	0.4 – 0.8	%	SABIC method
Melt Flow Rate, 300°C/1.2 kgf	10	g/10 min	ASTM D 1238
Density	1.19	g/cm³	ISO 1183
Water Absorption, (23°C/sat)	0.35	%	ISO 62
Moisture Absorption (23°C / 50% RH)	0.15	%	ISO 62
Melt Volume Rate, MVR at 300°C/1.2 kg	9	cm³/10 min	ISO 1133
ELECTRICAL			
Dielectric Strength, in oil, 3.2 mm	17	kV/mm	ASTM D 149
Relative Permittivity, 50/60 Hz	2.95	-	ASTM D 150
Relative Permittivity, 1 MHz	2.9	-	ASTM D 150
Dissipation Factor, 50/60 Hz	0.0024	-	ASTM D 150
Dissipation Factor, 1 MHz	0.0085	-	ASTM D 150
Volume Resistivity	>1.E+15	Ohm-cm	IEC 60093
Surface Resistivity, 80A	>1.E+15	Ohm	IEC 60093
Dielectric Strength, in oil, 3.2 mm	16	kV/mm	IEC 60243-1
Relative Permittivity, 1 MHz	2.7	-	IEC 60250
Dissipation Factor, 50/60 Hz	0.001	-	IEC 60250
Dissipation Factor, 1 MHz	0.0085	-	IEC 60250
Comparative Tracking Index	225	V	IEC 60112
Relative Permittivity, 50/60 Hz	2.6	-	IEC 60250
Comparative Tracking Index (UL) (PLC)	3	PLC Code	UL 746A
Hot-Wire Ignition (HWO), PLC 1	23	mm	UL 746A
Hot-Wire Ignition (HWO), PLC 2	21.5	mm	UL 746A
Hot-Wire Ignition (HWO), PLC 3	20.6	mm	UL 746A
High Amp Arc Ignition (HA), PLC 0	22.3	mm	UL 746A
High Amp Arc Ignition (HA), PLC 1	20.6	mm	UL 746A
FLAME CHARACTERISTICS ^[1]			



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PROPERTIES	TYPICAL VALUES	UNITS	TEST METHODS
UL Yellow Card Link	E207780-102516601	-	-
UL Yellow Card Link 2	E207780-228378	-	-
UL Recognized, 94-SVA Flame Class Rating	23	mm	UL 94
UL Recognized, 94-SVB Flame Class Rating	22.5	mm	UL 94
UL Recognized, 94V-0 Flame Class Rating	21.5	mm	UL 94
UL Recognized, 94V-1 Flame Class Rating	20.8	mm	UL 94
UL Recognized, 94HB Flame Class Rating	20.6	mm	UL 94
Glow Wire Ignitability Temperature, 3.0 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.5 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.3 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 2.0 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.5 mm	825	°C	IEC 60695-2-13
Glow Wire Ignitability Temperature, 1.0 mm	825	°C	IEC 60695-2-13
Glow Wire Flammability Index, 3.0 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 2.5 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 2.3 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 2.0 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.5 mm	960	°C	IEC 60695-2-12
Glow Wire Flammability Index, 1.0 mm	960	°C	IEC 60695-2-12
Oxygen Index (LOI)	35	%	ISO 4589
UV-light, water exposure/immersion	F1	-	UL 746C
INJECTION MOLDING			
Drying Temperature	120	°C	
Drying Time	3 – 4	hrs	
Drying Time (Cumulative)	48	hrs	
Maximum Moisture Content	0.02	%	
Melt Temperature	265 – 315	°C	
Nozzle Temperature	260 – 310	°C	
Front - Zone 3 Temperature	265 – 315	°C	
Middle - Zone 2 Temperature	255 – 305	°C	
Rear - Zone 1 Temperature	245 – 295	°C	
Mold Temperature	70 – 95	°C	
Back Pressure	0.3 – 0.7	MPa	
Screw Speed	40 – 70	rpm	
Shot to Cylinder Size	40 – 60	%	
Vent Depth	0.025 – 0.076	mm	

[1] UL Ratings shown on the technical datasheet might not cover the full range of thicknesses and colors. For details, please see the UL Yellow Card.

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Attachment 3 – Photographs

Test Unit





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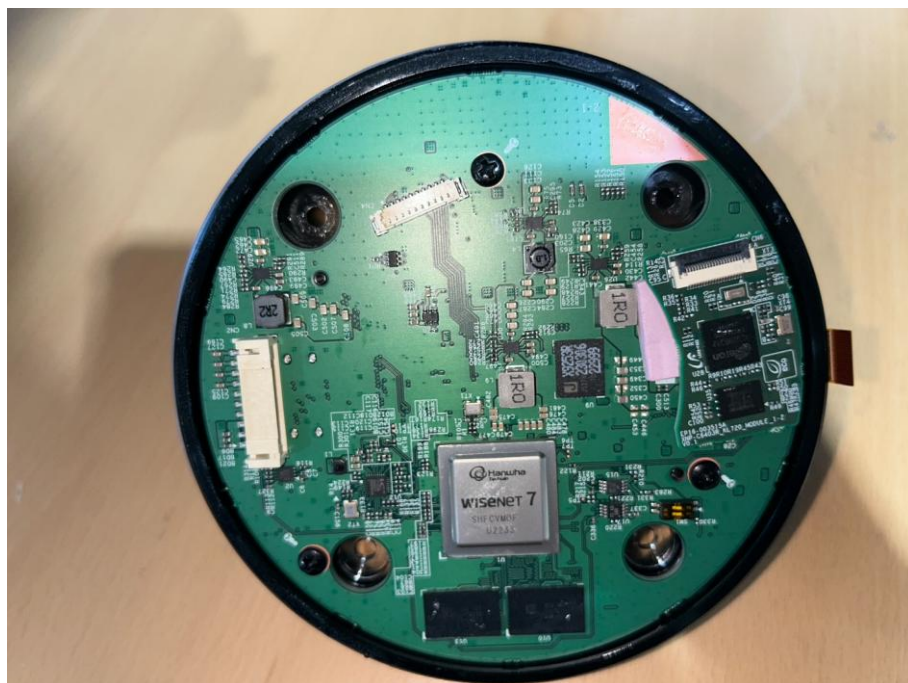
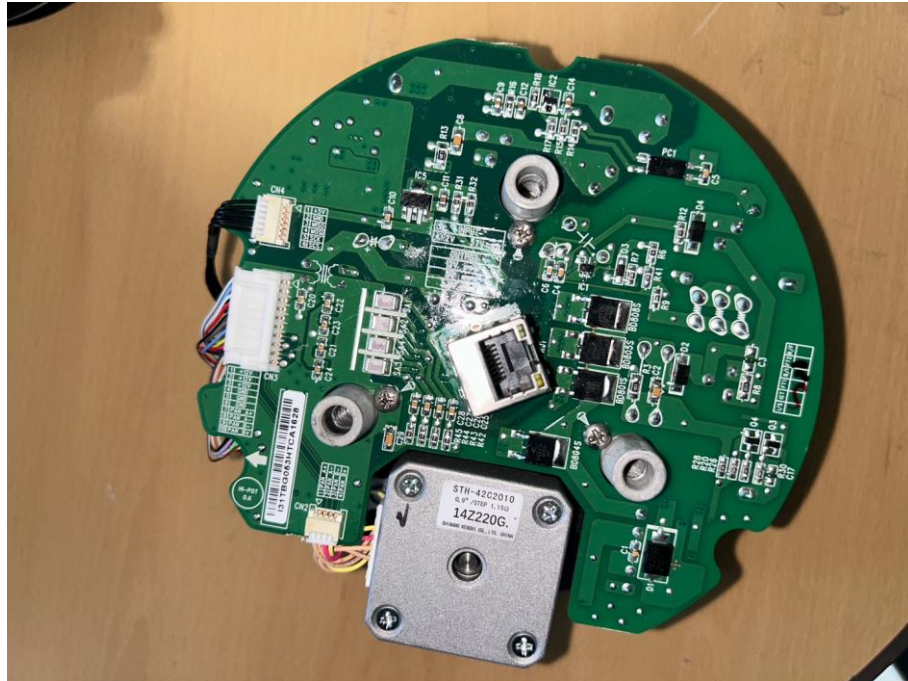
Attachment 3 – Photographs

Hose down test



Attachment 3 – Photographs

Test Result



Attachment 3 – Photographs



Attachment 3 – Photographs



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