TEST REPORT

CTK Co., Ltd.	**CTK Co., Ltd.** (Ho-dong) 113, Yejik-ro, Cheoin-gu, Yongin-shi Gyeonggi-do KOREA, REPUBLIC OF Tel: +82-31-339-9970 Fax: +82-31-624-9501	REPORT No.: CTK-2022-00162 Page (1) / (28) pages	

1. Applicant

- Name ..... : Hanwha Techwin Co., Ltd.
- Address ..... : 6 Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13488 KOREA
- Date of Receipt ..... : 2021-11-17

2. Manufacturer

- Name ..... : HANWHA TECHWIN SECURITY VIETNAM CO.,LTD
- Address ..... : Lot O-2, Que Vo Industrial Zone extended area, Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam

3. Test sample / Model .....: Network Camera / PNM-9322VQP

4. Date(s) of test .....: 2021-11-24 to 2022-01-13

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

6. Results .....: Pass

The results shown in this test report refer only to the sample(s) tested unless otherwise stated.
This report shall not be reproduced except in full without the written approval of CTK

Approval	Tested by: Min-Gi Mun	(Signature)	Technical Manager: WonHyeon Choi	(Signature)

2022-01-17

CTK Co., Ltd.

CTK Co., Ltd.
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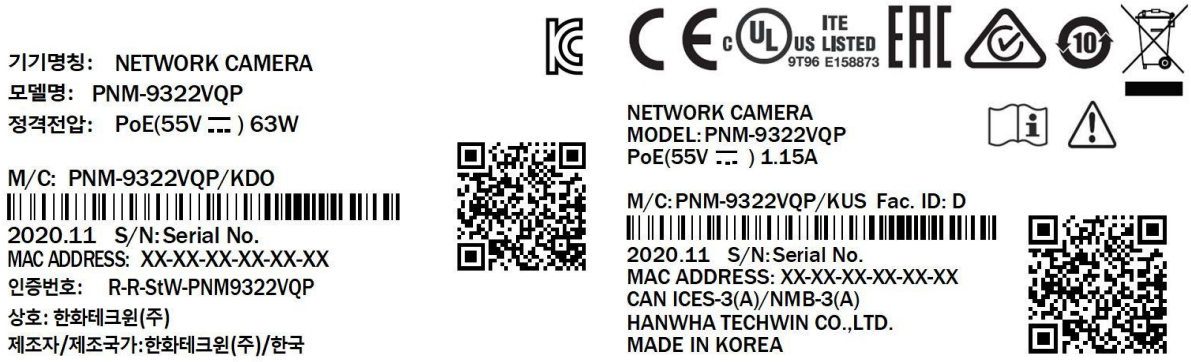
Test item description..... :	Network Camera
Trade Mark..... :	WISENET
Manufacturer ..... :	Lot O-2, Que Vo Industrial Zone extended area, Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam
Model/Type reference..... :	PNM-9322VQP
Ratings..... :	Electrical PoE (55 V⎓) 1.15 A Dimension: Ø 45 mm by 141.3 mm, Ø 10*3 mm by 94.2 mm, Ø 367 mm by 1 152.38 mm, Ø 10*6 mm by 188.4 mm, Ø 250 mm by 785 mm, Ø 135 mm by 423.9 mm

List of Attachments (including a total number of pages in each attachment):
Attachment 1: 11-13 pages (Construction Diagram including installation method)
Attachment 2: 14-22 pages (Parts List)
Attachment 3: 23-26 pages (photographs)

Summary of testing:

Tests performed (name of test and test clause): **Clause 5.7(Hose Down Test)**	**Testing location:** CTK Co., Ltd. 142, Dongbu-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, Republic of Korea

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



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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 ☐ 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 TECHWIN SECURITY VIETNAM CO., LTD
   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 i.
nformation:

Applied NEMA Rating : 4X

Model PNM-9322VQP is basic model which was tested.

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

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

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**		
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

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 ℃ 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

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

Test Information

	Hose Down Test: Clause 5.7	**P**

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 45 mm by 141.3 mm, Ø 10*3 mm by 94.2 mm, Ø 367 mm by 1 152.38 mm, Ø 10*6 mm by 188.4 mm, Ø 250 mm by 785 mm, Ø 135 mm by 423.9 mm)

Test Duration = 464 secs

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

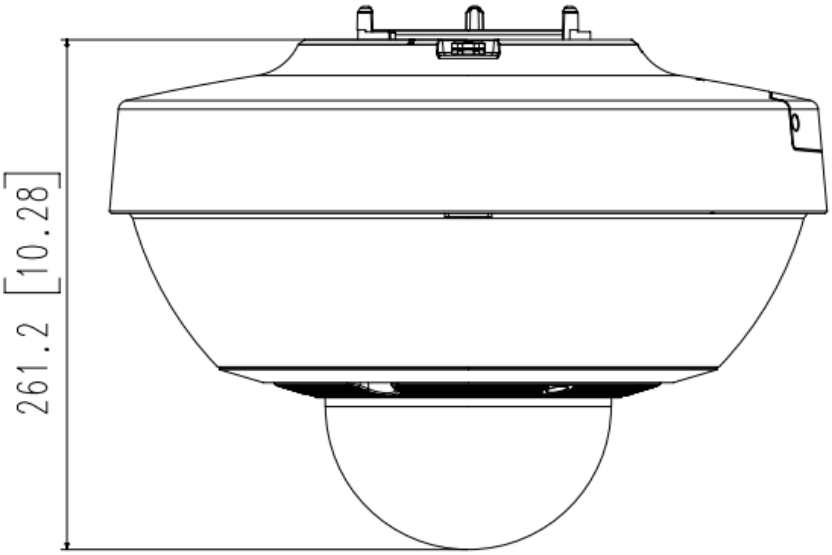
Sample No (Model)	Water Flow	Presence of water inside	Result
PNM-9322VQP	240 LPM	No	Pass

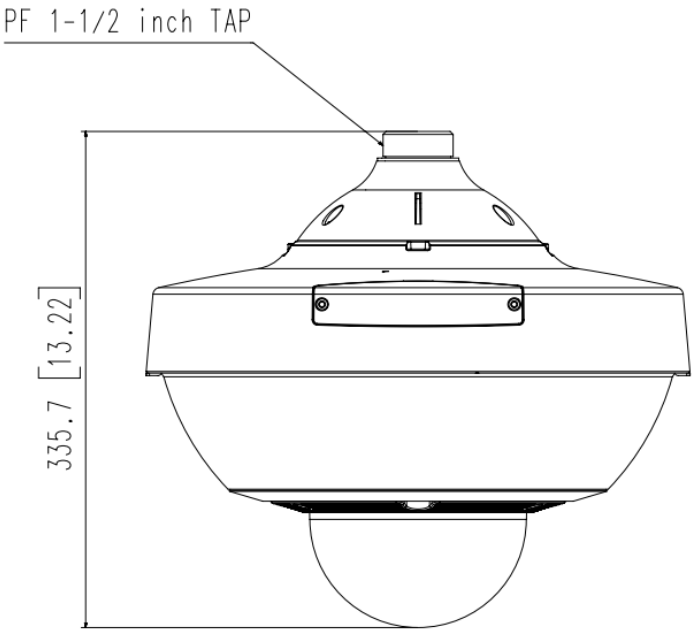
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List of test equipment used:

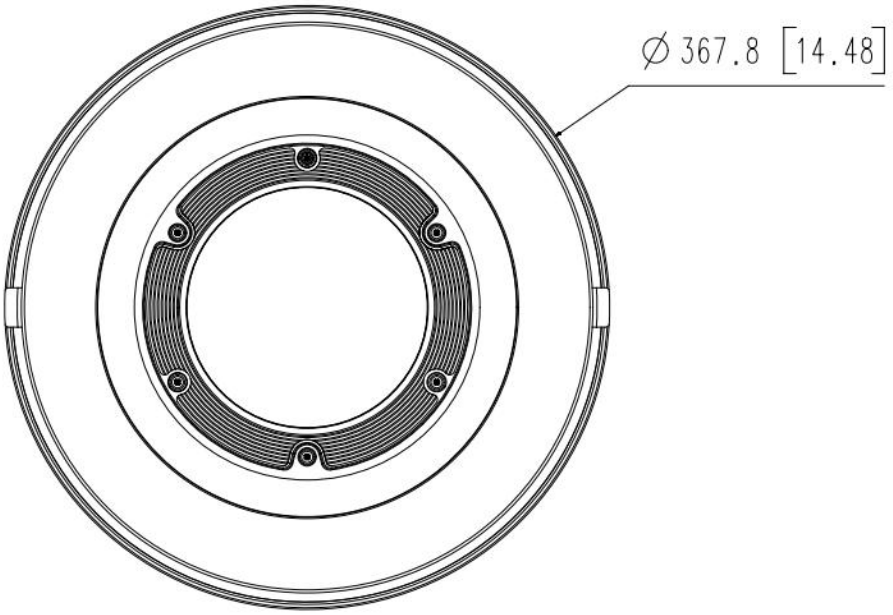
Instr. Code	Instrument Type	Range Used	Mfr./Model	Calibration Date	
				Last	Due
S3-IP18	25.4mm Nozzle	25.4 mm	CTK/S3-IP18	-	Checked by calliper below before using
S1-SW2	Stop Watch	0.01 s	CASIO/ NONE	2021-03-19	2023-03-03
C-S1-D09	Steel Measuring Tape	5 m	KOMELON/KMC-74N	2021-06-23	2023-06-18
S3-IP23	Water flow meter	250LPM	Nuri tech/ Z-6504	2021-07-08	2022-06-30
C-S1-D02	DIGITAL VERNIER CALIPER	150 mm	MITUTOYO/150 mm	2021-08-28	2022-08-18

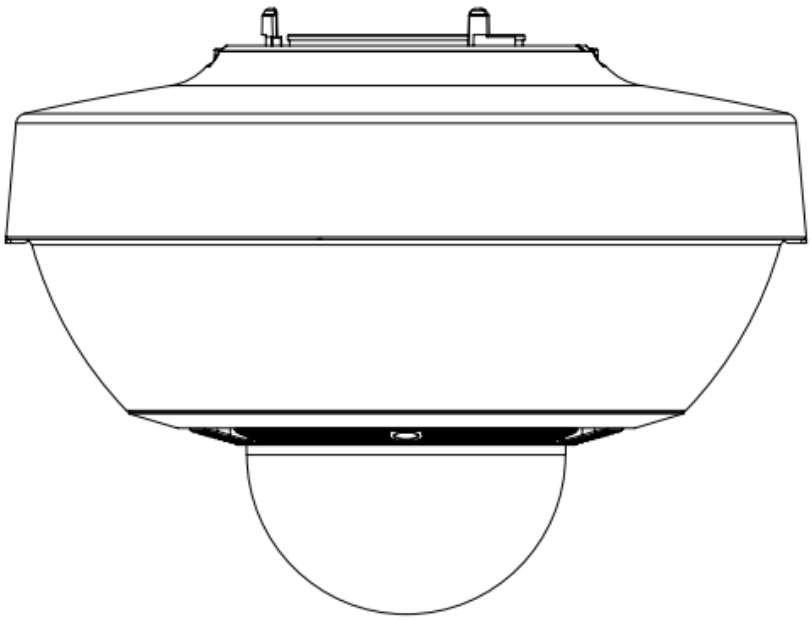
Attachment 1 – Construction Diagram including installation method



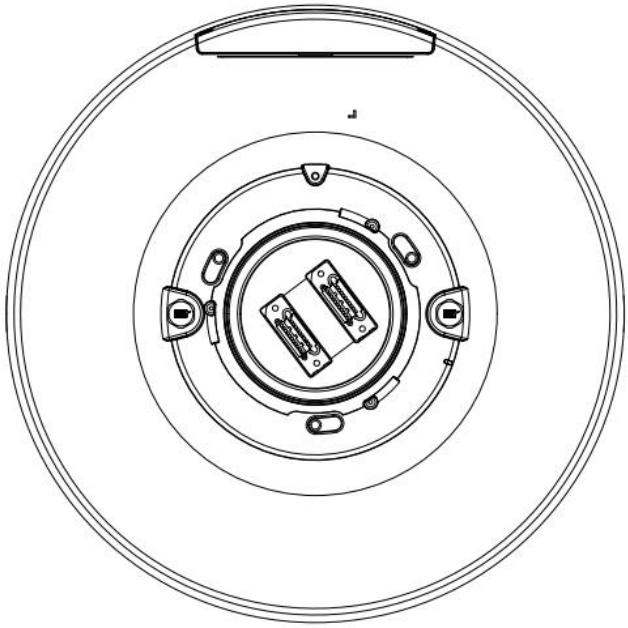


Attachment 1 – Construction Diagram including installation method



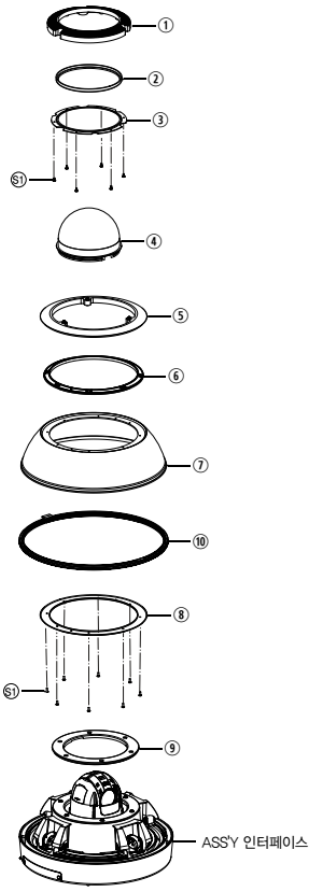


Attachment 1 – Construction Diagram including installation method



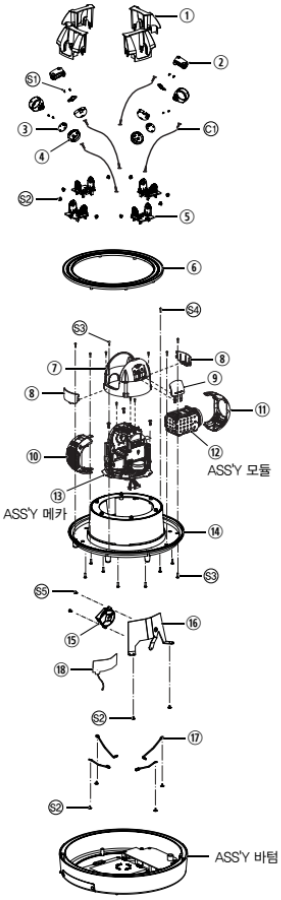
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Attachment 2 – Parts List



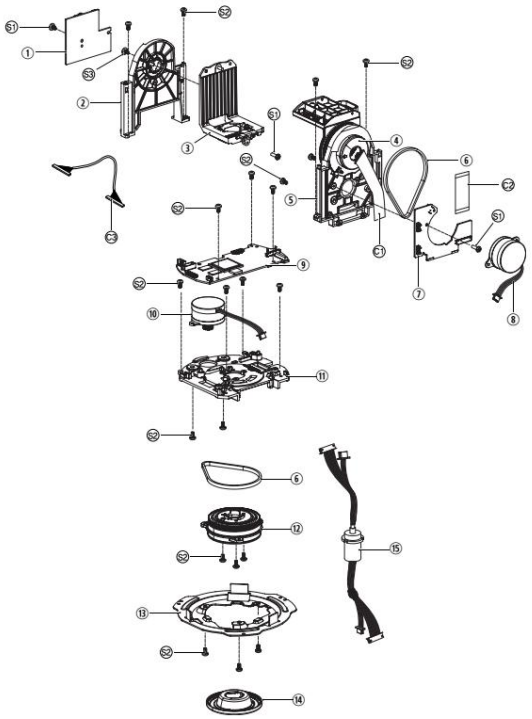
부품위치	부품번호	품명	규격	수량	공급여부	비고
1	FC15-006167A	COVER-DOME PTZ_PNM-9320VP	ADC	1	SA	PNM-9320VQP
	FC15-006167B	COVER-DOME PTZ_PNM-9322VQP		1	SA	PNM-9322VQP
2	HP07-001346A	GASKET-WINDOW DOME_PNM-9320VP	SILICON RUBBER	1	SA	
3	FC09-009181A	BRACKET-DOME PTZ_PNM-9320VP	SECC	1	SA	
4	FC15-001130A	COVER-OPTICAL		1	SA	
5	FC15-006168A	COVER-WINDOW QUAD CAM_PNM-9320VP	ADC	1	SA	PNM-9320VQP
	FC15-006168B	COVER-WINDOW QUAD CAM_PNM-9322VQP		1	SA	PNM-9322VQP
6	HP07-001345A	GASKET-WINDOW QUAD CAM_PNM-9320VP	SILICON RUBBER	1	SA	
7	FC37-001051A	WINDOW-QUAD CAM_PNM-9320VP	PC	1	SA	
8	FC09-009821A	BRACKET-WINDOW CAM_PNM9320VQP	SECC,1.0T	1	SA	
9	HP07-001349A	GASKET-WINDOW INNER_PNM-9320VP	SILICON RUBBER	1	SA	
10	HP07-001506A	GASKET-WINDOW TOP-9320VQP	SILICON RUBBER	1	SA	
S1	Z6001053501A	SCREW-MACHINE	BH,+,M3,L6,Ni	15	SA	

Attachment 2 – Parts List



부품위치	부품번호	품명	규격	수량	공급여부	비고
1	FC29-010530A	HOOD-CAM_CH1-PNM-9320VP	CH1, PC	1	SA	
	FC29-010530B	HOOD-CAM_CH2-PNM-9320VP	CH2, PC	1	SA	
	FC29-010530C	HOOD-CAM_CH3-PNM-9320VP	CH3, PC	1	SA	
	FC29-010530D	HOOD-CAM_CH4-PNM-9320VP	CH3, PC	1	SA	
2	FC29-010398B	HOLDER-MODULE_PNM-9320VP	PC	1	SA	
3	AM06-007793A	ASSY,PCB-PNM-7000VD INTERFACE		1	SA	
4	FC05-001335B	BASE-MODULE-BTM_PNM-9320VQP	PC	1	SA	
5	FC39-004851C	FRAME-TILT_PNM-9320VP	A, PC	1	SA	
	FC39-004851D	FRAME-TILT_B_PNM-9320VP	B, PC	1	SA	
6	FC30-005961A	PLATE-MOVING CAM_PNM-9320VP	PC+GF15	1	SA	
7	FC15-006466B	COVER-TOP_PNM-9320VP	HANWHA, ALDC12	1	SA	PNM-9320VQP
	FC15-007888B	COVER-TOP_PNM-9322VQP	HANWHA, ALDC12	1	SA	PNM-9322VQP
8	FC09-003142A	BRACKET-BLIND	OUTDOOR	2	SA	
9	FC15-006215B	COVER-MICRO_SD ONLY	PC,BLACK	1	SA	
10	FC15-002736A	COVER-CAMERA-REAR_SNP-6320	PC BLACK	1	SA	
11	FC15-002735A	COVER-CAMERA-FRONT_SNP-6320	PC BLACK	1	SA	
12	AM07-010781A	ASSY,FINAL-XNP-6320 MODULE		1	SA	
13	AM07-011515A	ASSY,MECHA-PNM-9320VP		1	SA	PNM-9320VQP
	AM07-014572A	ASSY,MECHA-PNM-9322VQP		1	SA	PNM-9322VQP
14	FC15-006462A	COVER-INNER_PNM-9320VP	PC	1	SA	
15	EP07-000160A	FAN,ELECTRIC-MBA5112XB-O15	BLOWER FAN	1	SA	
16	FC09-009482A	BRACKET-HEATER_PNM-9320VP	A5052	1	SA	
17	FC18-004812A	CLAMP-MCX CABLE_PNM-9320VP	URETHANE	4	SA	
18	EP07-001302A	HEATER,ELECTRIC-HK11R803R8P	12V,20W	1	SA	
C1	EP02-004461B	HARNESS-PNM-9320VQP	MCX,30P-30P,320MM	1	SA	
S1	Z9761204007	TAPTITE SCREW	M2xL4,Zn-B	2	SA	
S2	Z6003012501A	4748_TAPTITE_SCREW	M3_L6	9	SA	
S3	Z6003013601A	SCREW-TAPTYPE	BH,+,B,M3,L10	11	SA	
S4	Z9642308001	MACHINE SCREW(PAN HEAD)	M3XL8,Ni	6	SA	
S5	Z6001057601A	MACHINE_SCREW	M3,L15	2	SA	

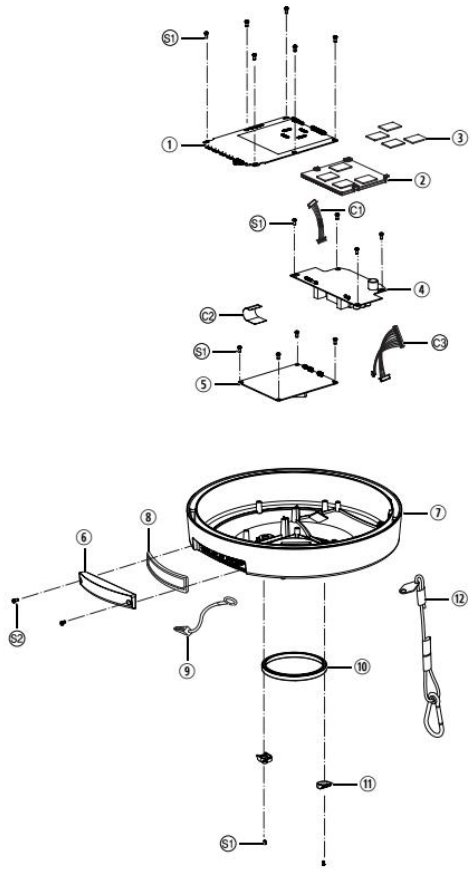
Attachment 2 – Parts List



부품위치	부품번호	품명	규격	수량	공급여부	비고
1	AM06-007944A	ASSY,PCB-PNM-9320VP PTZ SD		1	SA	
2	FC09-001656A	BRACKET-TILT-LEFT_WN3	PC,BLACK	1	SA	
3	FC09-001322A	BRACKET-CAMERA-LEFT_SNP-6320	PC GF15%	1	SA	
4	FC29-001983A	CAP-TILT	POM,BNL	1	SA	
5	AM07-001495A	ASSY,TILT BODY-WN3		1	SA	
6	MC05-000172	TIMING BELT-BANDO;S2M	210MM,2PITCH,W4	2	SA	
7	AM06-007762A	ASSY,PCB-XNP-6320 MOTION		1	SA	
8	EP08-001063A	MOTOR,STEP-STH-36C1056GA	STEPPER	1	SA	
9	AM06-007969A	ASSY,PCB-PNM-9320VP PTZ MAIN		1	SA	PNM-9320VQP
	AM06-009512A	ASSY,PCB-PNM-9322VQP PTZ MAIN		1	SA	PNM-9322VQP
10	EP08-001063B	MOTOR,STEP-STH-36C1078	CABLE 165MM	1	SA	
11	FC09-001654A	BRACKET-PAN-ROTATE	ADC12,BLACK	1	SA	
12	AM07-001494A	ASSY,PAN BODY-WN3		1	SA	
13	FC09-001655A	BRACKET-PAN-BASE_WN3	SECC,1.2T	1	SA	
14	FC29-001118A	CAP-PAN_WN3	POM,BLACK	1	SA	
15	EP10-001181A	SLIP RING-SRS1802-20SC		1	SA	
C1	EP16-000861C	FPCB-SNP-6321 DRIVE TO NETWORK	2L	1	SA	
C2	EP02-003290A	FFC CABLE-SNP-6321	30PIN	1	SA	
C3	EP02-001260A	MCX HARNESS-XNV-6011	30P,80MM	1	SA	
S1	Z6003013601A	SCREW-TAPTYPE	BH,+,B,M3,L10	4	SA	
S2	Z6001053501A	SCREW-MACHINE	BH,+,M3,L6,Ni	17	SA	
S3	Z6009001301A	TAPPING SCREW	M3xL6,,Zn-B	1	SA	

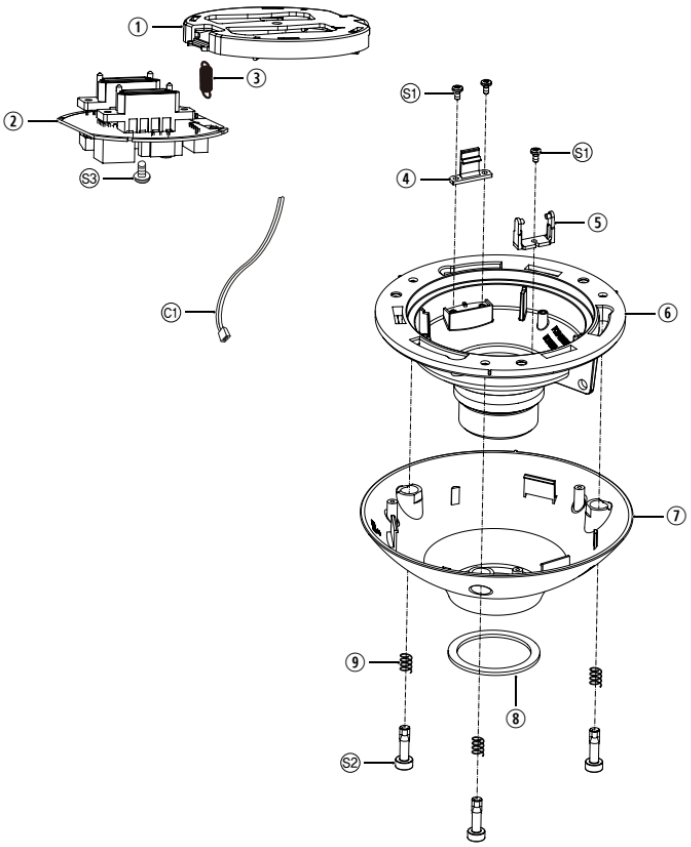
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Attachment 2 – Parts List



부품위치	부품번호	품명	규격	수량	공급여부	비고
1	AM06-008091A	ASSY,PCB-PNM-9320VQP MAIN		1	SA	PNM-9320VQP
	AM06-009513A	ASSY,PCB-PNM-9322VQP MAIN		1	SA	PNM-9322VQP
2	EP07-001281A	SINK,HEAT-MAIN PCB_PNM-9320VP	ADC	1	SA	
3	FC28-000556A	PAD-THERMAL;GP1500,2	W30,D45,T2	1	SA	
4	EP06-003146B	SUPPLY,POWER,ETC-PNM-9320VQP SMPS	DC12V	1	SA	
5	AM06-008097A	ASSY,PCB-PNM-9320VQP SUB		1	SA	PNM-9320VQP
	AM06-009178A	ASSY,PCB-PNM-9322VQP SUB		1	SA	PNM-9322VQP
6	FC28-002712A	DOOR,SD-SLOT_PNM-9320VP	ADC	1	SA	PNM-9320VQP
	FC28-002712B	DOOR,SD-SLOT_PNM-9322VQP		1	SA	PNM-9322VQP
7	FC15-006166A	COVER-TOP_PNM-9320VP	ADC	1	SA	PNM-9320VQP
	FC15-007888A	COVER-TOP_PNM-9322VQP		1	SA	PNM-9322VQP
8	HP07-001347A	GASKET-DOOR SD_PNM-9320VP	SILICON RUBBER	1	SA	
9	EP24-001002A	WIRE-DOOR SD_PNM-9320VP	URETHANE	1	SA	
10	FC10-001088A	RUBBER-GASKET-TOP	GASKET	1	SA	
11	HP06-001351	VENT-GORE-PMF100586-WHT	MEMBRANE	2	SA	
12	FC14-000868A	CONNECTOR-WIRE-SNP6200RH	SUS	1	SA	
C1	EP02-004146A	WIRE HARNESS-PNM-9000VQ	6P-6P,60MM	1	SA	
C2	EP02-004157A	FFC CABLE-PNM-9320VQP	50P,60MM	1	SA	
C3	EP02-004160A	WIRE HARNESS-PNM-9320VQP	15P-5P/10P,60MM	1	SA	
C4	EP02-004205A	HARNESS-PNM-9320VQP		1	SA	PNM-9322VQP
S1	Z6001053501A	SCREW-MACHINE	BH,+,M3,L6,Ni	15	SA	
S2	FC18-004000A	SCREW-BUILT-IN_TORX20	0.7,15,NO,4	2	SA	

Attachment 2 – Parts List



부품위치	부품번호	품명	규격	수량	공급여부	비고
1	FC09-002558D	BRACKET-INTERFACE	PC,SCP6322	1	SA	
2	AM06-009183A	ASSY,PCB-PNM-9322VQP_INTERFACE		1	SA	
3	FC38-000120A	SPRING,EXT-SNP5300	SUS	1	SA	
4	FC09-007452A	BRACKET-INTERFACE_LOCK;PC BLACK	PC	1	SA	
5	FC09-007453A	BRACKET-INTERFACE-FIX;PC BLACK		1	SA	
6	FC29-008018C	HOUSING-COU-PLING;PNM-9322VQP_;ALDC12	ALD12	1	SA	
7	FC15-001493E	COVER-COUPLING;PC-WHITE,PNM-9322VQP_	PC	1	SA	
8	HP07-000100A	GASKET-RING-70;SILICON,IVORY	SILICON	1	SA	
9	FC38-001251A	SPRING,COM-FOR COMPATIBLE KIT_SBK-950;SU	SUS	3	SA	
C1	Z9010084101A	GND_CABLE_ASSY_SPU3750		1	SA	
S1	Z6001053501A	SCREW-MACHINE;6001-001476,BH,+,M3,L6,Ni	M3_L6	3	SA	
S2	FC18-005590A	SCREW-MACHINE;SOCKET HEAD,M6,L22,TORX30,	M6_L22	3	SA	
S3	Z6003012501A	4748_TAPTITE_SCREW	M3_L6	1	SA	

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Attachment 2 – Parts List

Component - Plastics
File Number: E121562

SABIC INNOVATIVE PLASTICS US L L C
AMERICAS - RESIN, 1 PLASTICS AVE, PITTSFIELD MA 01201-3662

Lexan: HF1130R(f2)

Polycarbonate (PC), pellets

(f2) - Subjected to one or more of the following tests: Ultraviolet Light, Water Exposure or Immersion in accordance with UL 746C, where the acceptability for outdoor use is to be determined by UL.
NOTE - Material designation may be followed by a color nomenclature consisting of either an alpha/numeric or numeric/alpha combination.

Flammability	Value	Test Method
Flame Rating		UL 94 IEC 60695-11-10, -20
1.00 mm, ALL	V-2	
1.50 mm, ALL	V-2	
3.00 mm, ALL	V-2	
6.00 mm, ALL	V-2	
Thermal	**Value**	**Test Method**
RTI Elec		UL 746
1.00 mm	80.0 °C	
1.50 mm	130 °C	
3.00 mm	130 °C	
6.00 mm	130 °C	
RTI Imp		UL 746
1.00 mm	80.0 °C	
1.50 mm	125 °C	
3.00 mm	130 °C	
6.00 mm	130 °C	
RTI Str		UL 746
1.00 mm	80.0 °C	
1.50 mm	125 °C	
3.00 mm	130 °C	
6.00 mm	130 °C	
Physical	**Value**	**Test Method**
Outdoor Suitability	f2	UL 746C

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Form Number: E121562-101243762

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Report Date: 8/8/2012
Last Revised: 8/7/2012

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Attachment 2 – Parts List

Component - Plastics
File Number: E67171

LG CHEM LTD
20 YOIDO-DONG
YONGDUNGPO-GU
SEOUL, 150-721 Republic of Korea

LUPOY UF1004C, LUPOY UF1004CI
Polycarbonate (PC), pellets

Flammability	Value	Test Method
Flame Rating		UL 94 IEC 60695-11-10, -20
0.40 mm, NC	V-2	
1.5 mm, NC	V-2	
3.0 mm, NC	V-2	
Thermal	**Value**	**Test Method**
RTI Elec		UL 746B
0.40 mm	80.0 °C	
1.5 mm	80.0 °C	
3.0 mm	80.0 °C	
RTI Imp		UL 746B
0.40 mm	80.0 °C	
1.5 mm	80.0 °C	
3.0 mm	80.0 °C	
RTI Str		UL 746B
0.40 mm	80.0 °C	
1.5 mm	80.0 °C	
3.0 mm	80.0 °C	

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Attachment 2 – Parts List

Component - Plastics E115797

Guide Information

LOTTE CHEMICAL CORPORATION

56 Gosan-ro, Uiwang-si Gyeonggi-do 437-711 KR

HN-1068(+)(f1)

Polycarbonate (PC) "INFINO", furnished as pellets

Color	Min. Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
ALL	1.5	V-0	3	3	130	130	130
	3.0	V-0	-	-	130	130	130

Comparative Tracking Index (CTI): 3
Dielectric Strength (kV/mm): 31.8
High-Voltage Arc Tracking Rate (HVTR): -
Dimensional Stability (%): -
Inclined Plane Tracking (IPT) kV: -
Volume Resistivity (10^x ohm-cm): 17
Surface Resistivity (10^x ohm-cm): -
High Volt, Low Current Arc Resis (D495): -

(+) - 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.

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Report Date: 1998-08-24
Last Revised: 2019-08-27

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IEC and ISO Test Methods

Test Name	Test Method	Units	Thk (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	1.5	V-0 (ALL)
			3.0	V-0 (ALL)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	°C	1.5	960
			3.0	960
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	°C	1.5	825
			3.0	825
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	°C	-	130
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 179-2	kJ/m^2	-	-

Component - Plastics E121254

[guide info]

SAMYANG CORPORATION

407 3-Ga Palbok-Dong, Cheonju Cheonbuk 560-200 KR

3025G-(y)

Polycarbonate (PC) "TRIREX", furnished as pellets

Color	Min Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
ALL	1.5	V-0	2	0	130	125	130
	3.0	V-0	2	0	130	125	130
	6.0	V-0	1	0	130	125	130

Comparative Tracking Index (CTI): 3
Dielectric Strength (kV/mm): 31
High-Voltage Arc Tracking Rate (HVTR): 3
Dimensional Stability (%): 0
Inclined Plane Tracking (IPT): -
Volume Resistivity (10^x ohm-cm): 15
High Volt, Low Current Arc Resis (D495): 7

(y) - Represents any number 10-19 incl.

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Report Date: 1990-05-22
Last Revised: 2003-10-24

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IEC and ISO Test Methods

Test Name	Test Method	Units	Thk (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	1.5	V-0 (ALL)
			3.0	V-0 (ALL)
			6.0	V-0 (ALL)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	°C	-	-
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	°C	-	-
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
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 179-2	kJ/m^2	-	-

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Attachment 2 – Parts List

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View additional material information including performance and processing data
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Component - Plastics E245303
Guide Information

KOMOTECH CO LTD
992-2 Gumsan-Ri, Waegwan-Eup, Chilgok-Gun Kyoungsangbuk-Do KR

KGP-1(a)
Silicone (SI), furnished as sheets

Color	Min. Thk (mm)	Flame Class	HWI	HAI	RTI Elec	RTI Imp	RTI Str
NC	0.2	V-0	-	-	150	150	150
	3.0	V-0	-	-	150	150	150

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

(a) - Two-Component, Addition-Cure, Vinyl, Platinum Catalyzed

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Last Revised: 2018-01-30

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IEC and ISO Test Methods

Test Name	Test Method	Units	Thk (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.2	V-0 (NC)
			3.0	V-0 (NC)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	°C	-	-
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	°C	-	-
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
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	-	-

Attachment 3 – Photographs

<Photo 1 > Test Unit





Attachment 3 – Photographs

<Photo 2 > Hose down test

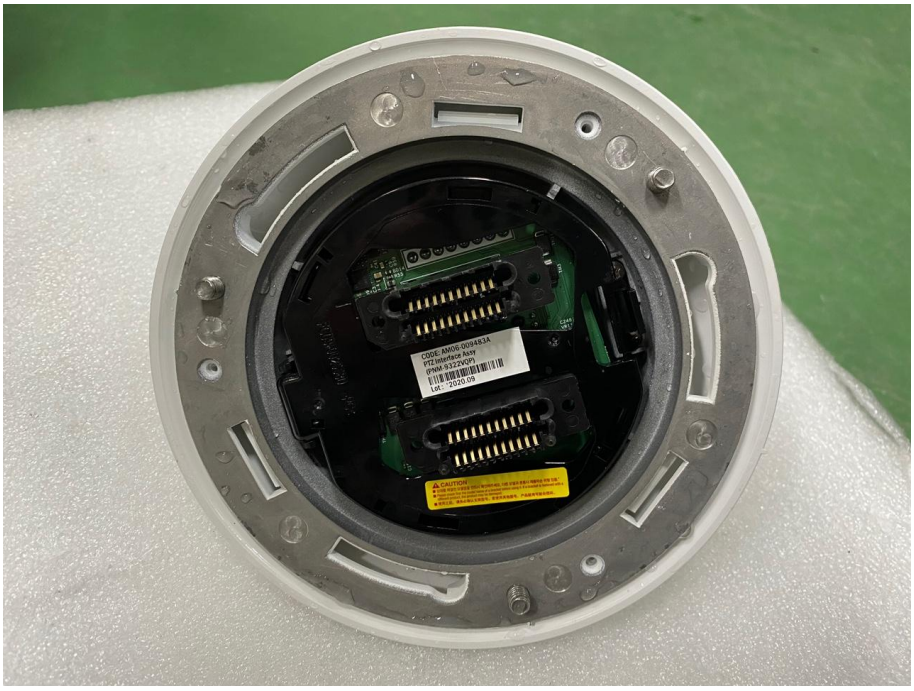


Attachment 3 – Photographs

<Photo 3 > Test Result



<Photo 4 > Test Result



Attachment 3 – Photographs

<Photo 5 > Test Result



<Photo 6 > Test Result

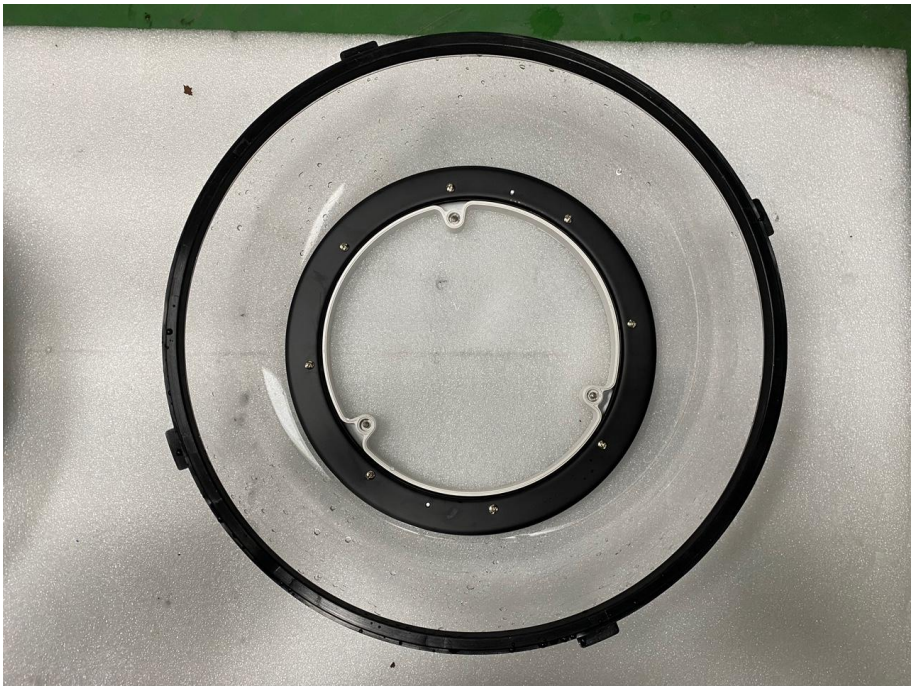


Attachment 3 – Photographs

<Photo 7 > Test Result



<Photo 8 > Test Result



Attachment 3 – Photographs

<Photo 9 > Test Result

