




TEST REPORT

	CTK Co., Ltd. (Ho-dong) 113, Yejik-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, KOREA, REPUBLIC OF Tel: +82-31-339-9970 Fax: +82-31-624-9501	Report No.: CTK-2020-02565 Page(1) / (21) Pages	
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1. Applicant	◦ Name: Hanwha Techwin Co., Ltd. ◦ Address.....: Hanwha Techwin R&D center, 6 Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13488 KOREA ◦ Date of Receipt.....: 2020-06-04
2. Manufacturer	◦ Name: Hanwha Techwin Co., Ltd.
3. Use of Report	.....: Quality control
4. Test sample / Model	.....: NETWORK CAMERA / XNP-9300RW
5. Date(s) of test	.....: 2020-06-11 - 2020-06-18 NEMA 250-2014
6. Test Standard (Method) used	.....: Enclosures for Electrical Equipment (1000 Volts Maximum)
7. 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: SooChan Bae  (Signature)	Technical Manager: YenHwang Jung  (Signature)
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2020-07-01



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Test place

<p>Institution name</p>	<p>CTK Co., Ltd.</p>
<p>Address</p>	<p>142, Dongbu-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, Republic of Korea</p>



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Test item description	NETWORK CAMERA
Trade Mark	WISENET
Manufacturer	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
Model/Type reference	XNP-9300RW
Ratings	Electrical : PoE(DC 55 V / 0.77 A) Dimension : Ø 56 mm by 175.9 mm, Ø 63 mm by 197.9 mm, Ø 79 mm by 248.1 mm, Ø 127 mm by 398.9 mm, Ø 44 mm by 138.2 mm, Ø 283 mm by 889 mm, Ø 32 mm by 100.5 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: 14-18 pages (Parts List)
Attachment 3: 19-20 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.	
 <p>기기명칭: NETWORK CAMERA 모델명: XNP-9300RW 정격전압: PoE (DC 55V ~) 42W</p> <p>M/C: XNP-9300RW/KDO</p>  <p>DATE S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX</p> <p>인증번호: R-R-StW-XNP9300RW</p> <p>상호: 한화테크윈(주) 제조사/제조국가:한화테크윈(주)/한국</p> 	      <p>NETWORK CAMERA MODEL: XNP-9300RW PoE (DC 55V ~) 0.77A</p> <p>M/C:XNP-9300RW/KAP Fac. ID: D</p>  <p>DATE S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX CAN ICES-3(A)/NMB-3(A) HANWHA TECHWIN CO.,LTD. MADE IN KOREA</p> 



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<p>기기명칭: NETWORK CAMERA 모델명: XNP-8300RW 정격전압: PoE (DC 55V ---) 42W</p> <p>M/C: XNP-8300RW/KDO DATE S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX 인증번호: R-R-StW-XNP9300RW 상호: 한화테크윈(주) 제조사/제조국가:한화테크윈(주)/한국</p> 	        <p>NETWORK CAMERA MODEL: XNP-8300RW PoE (DC 55V ---) 0.77A</p> <p>M/C: XNP-8300RW/KAP Fac. ID: D DATE S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX CAN ICES-3(A)/NMB-3(A) HANWHA TECHWIN CO.,LTD. MADE IN KOREA</p> 
<p>기기명칭: NETWORK CAMERA 모델명: XNP-6400RW 정격전압: PoE (DC 55V ---) 42W</p> <p>M/C: XNP-6400RW/KDO DATE S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX 인증번호: R-R-StW-XNP6400RW 상호: 한화테크윈(주) 제조사/제조국가:한화테크윈(주)/한국</p> 	        <p>NETWORK CAMERA MODEL: XNP-6400RW PoE (DC 55V ---) 0.77A</p> <p>M/C: XNP-6400RW/KAP Fac. ID: D DATE S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX CAN ICES-3(A)/NMB-3(A) HANWHA TECHWIN CO.,LTD. MADE IN KOREA</p> 

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

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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 information:

Applied NEMA Rating : 4X

Model XNP-9300RW is basic model which was tested.

Basic Model	XNP-9300RW
Series model	XNP-8300RW, XNP-6400RW

Model differences:

Series model differences are only for function not related to the quality of enclosure integrity.

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.



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

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

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

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

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

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

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

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



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

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

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

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

Table 5-1C
Degrees of Protection against Water

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

Table 5-1D
Additional Protection

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



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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. HB 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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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



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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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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 56 mm by 175.9 mm, Ø 63 mm by 197.9 mm, Ø 79 mm by 248.1 mm,
Ø 127 mm by 398.9 mm, Ø 44 mm by 138.2 mm, Ø 283 mm by 889 mm, Ø 32 mm by 100.5 mm)

Test Duration = 358 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
XNP-9300RW	240 LPM	No	Pass

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	2019-04-03	2021-04-03
S1-D09	Steel Measuring Tape	5 m	KOMELON/KMC-74N	2019-02-25	2021-02-25
S3-IP20	Water flow meter	250LPM	Nuri tech/Z-4007	2019-07-04	2020-07-04
S1-D03	DIGITAL VERNIER CALIPER	200 mm	MITUTOYO/200 mm	2020-03-26	2021-03-26



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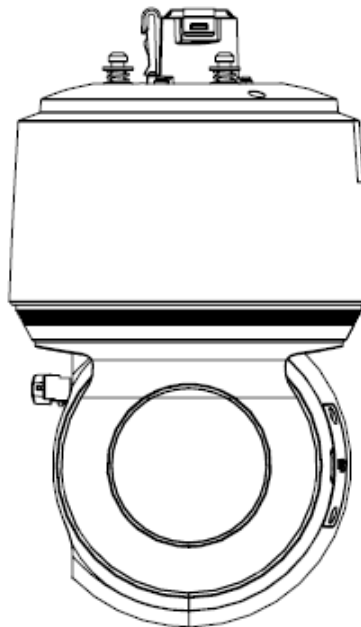
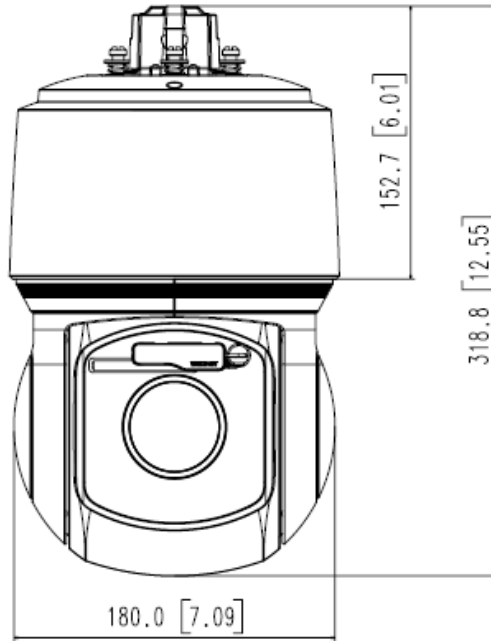
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Attachment 1 – Construction Diagram and installation method





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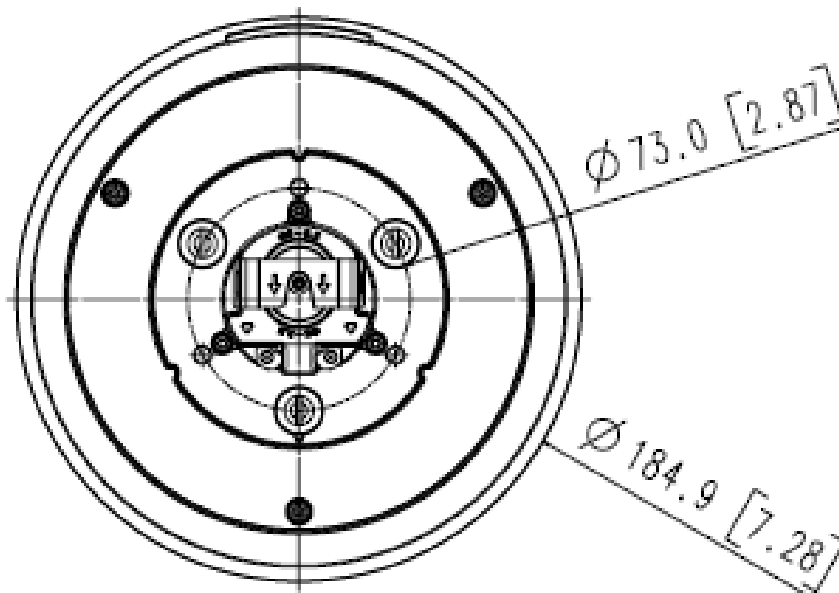
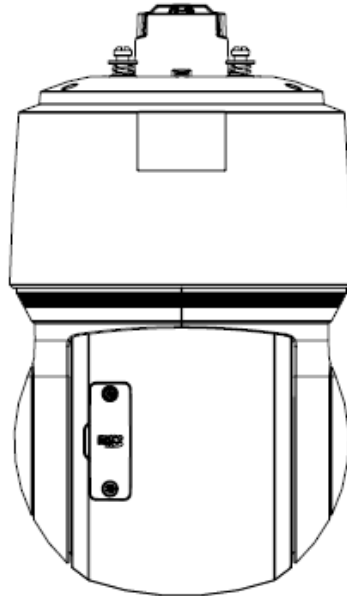
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Attachment 1 – Construction Diagram and installation method





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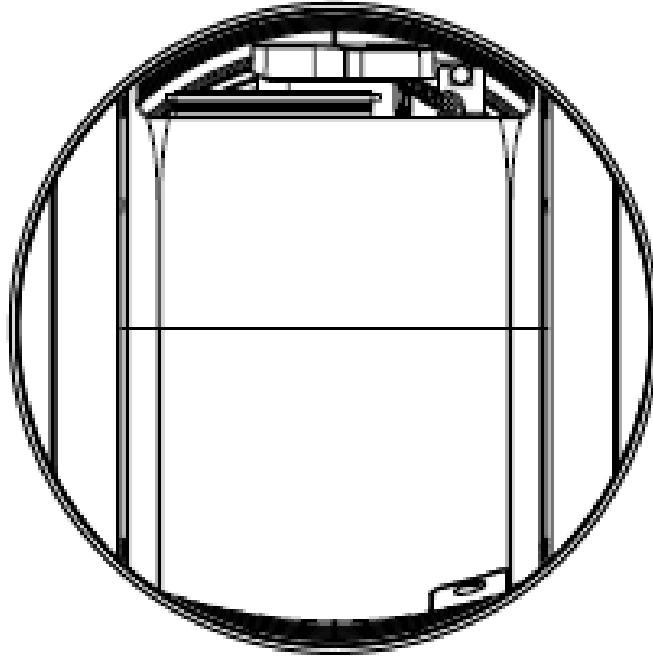
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Attachment 1 – Construction Diagram and installation method





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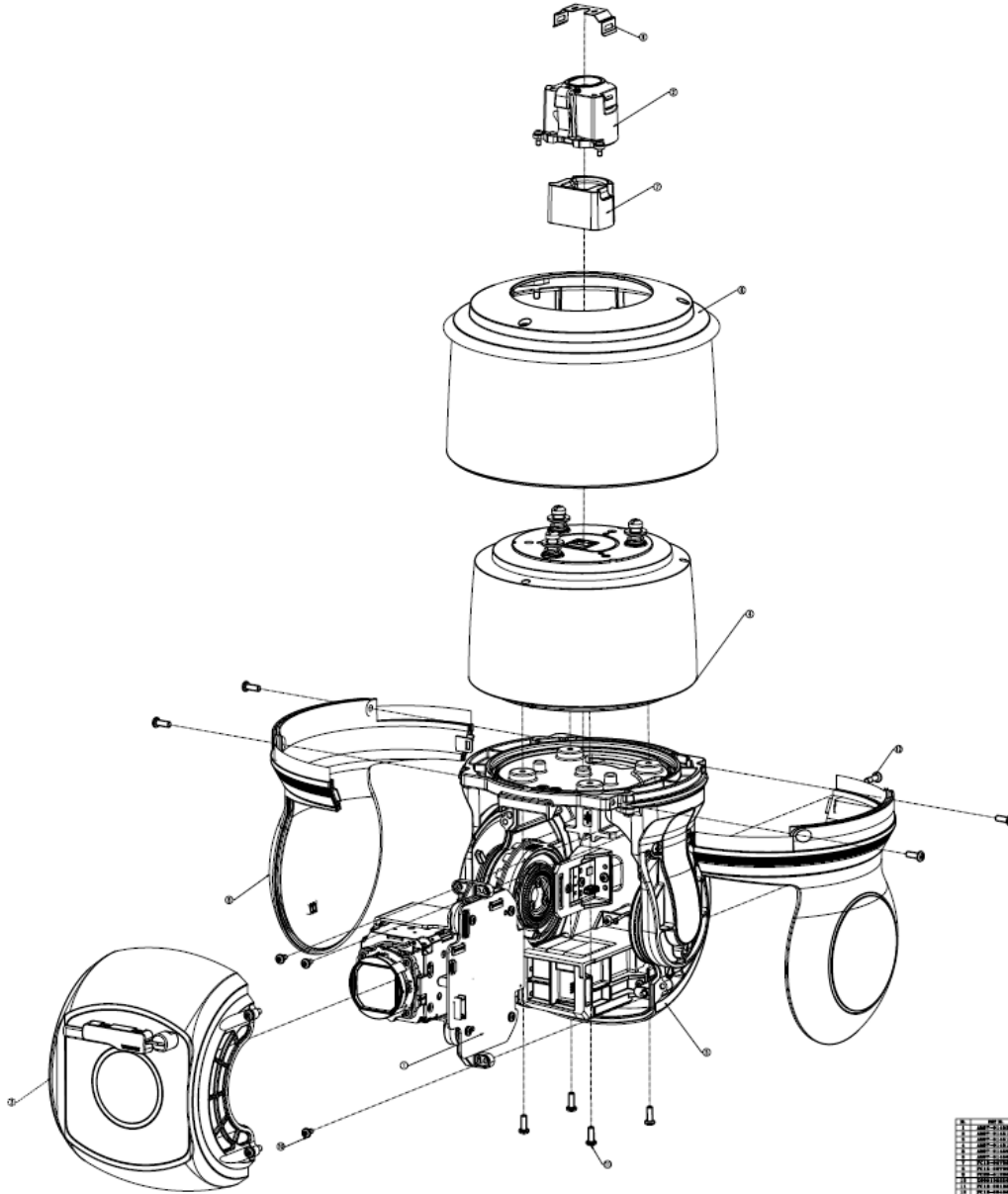
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Attachment 2 – Parts List



NO.	PART NO.	PART NAME	Spec	Q'TY
1	AM07-014520A	Assy camera_PNP-Axx00RW	Assy	1
2	AM07-014510A	Assy cover bush_PNP-Axx00RW	Assy	1
3	AM07-014519A	Assy cover front_main_XNP-xx00RW	Assy	1
4	AM07-014517A	Assy mecha Pan_main_XNP-xx00RW	Assy	1
5	AM07-014506A	Assy sub mecha tilt_XNP-xx00RW	Assy	1
6	AM07-014508A	Assy sun shield_PNP-Axx00RW	Assy	1
7	FC15-007852A	Cover guide for RJ45 jack_XNP-xx00RW	PC (HN-1068)	1
8	FC15-007602A	Cover left_PNP-Axx00RW	PC (HN-1068) + Spray	2
9	FC29-012881A	Holder bush cable_PNP-Axx00RW	SUS304CSP 1/2H	1
10	Z6001053501A	SCREW_MACHINE_BH_M3_L6_WHITE	BH, M3xL6	3
11	FC18-001330A	SCREW_MACHINE_PH_M4_L10_BLACK	PH, M4xL10	8
12	FC18-004000A	SCREW_MACHINE_PH_M4_L12_ORIGINALCOLOR	PH, M4xL12	2

NO.	PART NO.	PART NAME	Spec	Q'TY
1	AM07-014520A	Assy camera_PNP-Axx00RW	Assy	1
2	AM07-014510A	Assy cover bush_PNP-Axx00RW	Assy	1
3	AM07-014519A	Assy cover front_main_XNP-xx00RW	Assy	1
4	AM07-014517A	Assy mecha Pan_main_XNP-xx00RW	Assy	1
5	AM07-014506A	Assy sub mecha tilt_XNP-xx00RW	Assy	1
6	AM07-014508A	Assy sun shield_PNP-Axx00RW	Assy	1
7	FC15-007852A	Cover guide for RJ45 jack_XNP-xx00RW	PC (HN-1068)	1
8	FC15-007602A	Cover left_PNP-Axx00RW	PC (HN-1068) + Spray	2
9	FC29-012881A	Holder bush cable_PNP-Axx00RW	SUS304CSP 1/2H	1
10	Z6001053501A	SCREW_MACHINE_BH_M3_L6_WHITE	BH, M3xL6	3
11	FC18-001330A	SCREW_MACHINE_PH_M4_L10_BLACK	PH, M4xL10	8
12	FC18-004000A	SCREW_MACHINE_PH_M4_L12_ORIGINALCOLOR	PH, M4xL12	2



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Attachment 2 – Parts List



Component - Plastics

File Number: E121254

SAMYANG CORPORATION

407 3-Ga Palbok-Dong
Cheonju, YKCheonbuk 560-200 Korea, Republic of



TRIEX: 3025G(y) (f2), 3025PG(y), 3025PGR(y), 3025GRU(y), 3025PGRU(y)

Polycarbonate (PC), pellets

(f2) - Subjected to one or more of the following tests: Ultraviolet Light, Water Exposure or Immersion in accordance with UL 748C, where the acceptability for outdoor use is to be determined by UL.
(y) - Represents any number 10-19 incl.

Flammability	Value	Test Method
Flame Rating		UL 94
1.0 mm, ALL	V-0	IEC 60695-11-10, -20
1.5 mm, ALL	V-0	
2.0 mm, ALL	V-0, 5VB	
3.0 mm, ALL	V-0, 5VA	
6.0 mm, ALL	V-0, 5VA	
Electrical	Value	Test Method
Hot-wire Ignition (HWI)		UL 746
1.5 mm	PLC 2	
2.0 mm	PLC 2	
3.0 mm	PLC 2	
6.0 mm	PLC 1	
High Amp Arc Ignition (HAI)		UL 746
1.5 mm	PLC 0	
2.0 mm	PLC 0	
3.0 mm	PLC 0	
6.0 mm	PLC 0	
Comparative Tracking Index (CTI)	PLC 3	UL 746
Dielectric Strength	31 kV/mm	ASTM D149 IEC 60243-1
High Voltage Arc Tracking Rate (HVTR)	PLC 3	UL 746
Volume Resistivity	1.0E+15 ohms-cm	ASTM D257 IEC 60093
Arc Resistance	PLC 7	ASTM D495
Thermal	Value	Test Method
RTI Elec		UL 746
1.0 mm	80.0 °C	
1.5 mm	125 °C	
2.0 mm	125 °C	
3.0 mm	125 °C	
6.0 mm	125 °C	
RTI Imp		UL 746
1.0 mm	80.0 °C	
1.5 mm	115 °C	
2.0 mm	115 °C	
3.0 mm	115 °C	
6.0 mm	115 °C	

Component - Plastics

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Thermal	Value	Test Method
RTI Str		UL 746
1.0 mm	80.0 °C	
1.5 mm	125 °C	
2.0 mm	125 °C	
3.0 mm	125 °C	
6.0 mm	125 °C	
Physical	Value	Test Method
Dimensional Stability	0.0 %	ASTM D1042 ISO 2796
Outdoor Suitability	f2	UL 748C



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Component - Plastics

File Number: E121254

SAMYANG CORPORATION
407 3-Ga Palbok-Dong
Cheonju, YKCheonbuk 560-200 Korea, Republic of



TRIEX: 3500G-(z)
Polycarbonate (PC), pellets
(z) - Represents any number 20-29 incl.

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	
6.0 mm, ALL	V-0	
Electrical	Value	Test Method
Hot-wire Ignition (HWI)		UL 746
1.5 mm	PLC 2	
3.0 mm	PLC 1	
6.0 mm	PLC 0	
High Amp Arc Ignition (HAI)		UL 746
1.5 mm	PLC 0	
3.0 mm	PLC 0	
6.0 mm	PLC 0	
Comparative Tracking Index (CTI)	PLC 3	UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 3	UL 746
Arc Resistance	PLC 7	ASTM D495
Thermal	Value	Test Method
RTI Elec		UL 746
1.5 mm	130 °C	
3.0 mm	130 °C	
6.0 mm	130 °C	
RTI Imp		UL 746
1.5 mm	125 °C	
3.0 mm	125 °C	
6.0 mm	125 °C	
RTI Str		UL 746
1.5 mm	130 °C	
3.0 mm	130 °C	
6.0 mm	130 °C	



Component - Plastics

File Number: E120354

KOREA ENGINEERING PLASTICS CO LTD
450 KONGDUK-DONG
MAPO-KU
SEOUL, Korea, Republic of



KEPITAL: FT-20(xx)(+)
Polyoxymethylene (POM), pellets
(xx) - May be replaced by one or two digits except F20-52(+), F20-61(+) and F20-51U.
+ - May be replaced by one, two, three, four, or five letters and/or one, two, or three digit numbers except 1325GV2.

Flammability	Value	Test Method
Flame Rating		UL 94
0.75 mm, ALL	HB	IEC 60695-11-10, -20
0.75 mm, ALL	HB75	
Thermal	Value	Test Method
RTI Elec (0.75 mm)	50.0 °C	UL 746
RTI Imp (0.75 mm)	50.0 °C	UL 746
RTI Str (0.75 mm)	50.0 °C	UL 746



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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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Component - Plastics
File Number: E67171

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



LI996(&)

Acrylonitrile Styrene Acrylate (ASA), pellets

(&) - May be replaced by one, two, or three numbers and/or letter, except Grade AF387SH, XR401B, AF386F and AF387T

Flammability	Value	Test Method
Flame Rating		UL 94
2.0 mm, ALL	V-0	IEC 60695-11-10, -20
3.0 mm, ALL	V-0	
Electrical	Value	Test Method
Hot-wire Ignition (HWI)		UL 746
2.0 mm	PLC 4	
3.0 mm	PLC 4	
High Amp Arc Ignition (HAI)		UL 746
2.0 mm	PLC 0	
3.0 mm	PLC 0	
Comparative Tracking Index (CTI)	PLC 2	UL 746
High Voltage Arc Tracking Rate (HVTR)	PLC 2	UL 746
Arc Resistance	PLC 5	ASTM D495
Thermal	Value	Test Method
RTI Elec		UL 746
2.0 mm	50.0 °C	
3.0 mm	50.0 °C	
RTI Imp		UL 746
2.0 mm	50.0 °C	
3.0 mm	50.0 °C	
RTI Str		UL 746
2.0 mm	50.0 °C	
3.0 mm	50.0 °C	



Component - Plastics
File Number: E115797

LOTTE CHEMICAL CORPORATION
58 GOSAN-RO
UIWANG-SI, GYEONGGI-DO 16073 Republic of Korea



INFINO: LS-3(dd)2(+)

Polycarbonate (PC), pellets, glass fiber reinforced

(+) - May be replaced by one, two, or three numbers and/or letter(s)
(dd) - Denotes glass fiber content 10-40%

Flammability	Value	Test Method
Flame Rating		UL 94
0.8 mm, ALL	V-2	IEC 60695-11-10, -20
3.2 mm, ALL	V-1	
Thermal	Value	Test Method
RTI Elec		UL 746
0.8 mm	80.0 °C	
3.2 mm	80.0 °C	
RTI Imp		UL 746
0.8 mm	80.0 °C	
3.2 mm	80.0 °C	
RTI Str		UL 746
0.8 mm	80.0 °C	
3.2 mm	80.0 °C	



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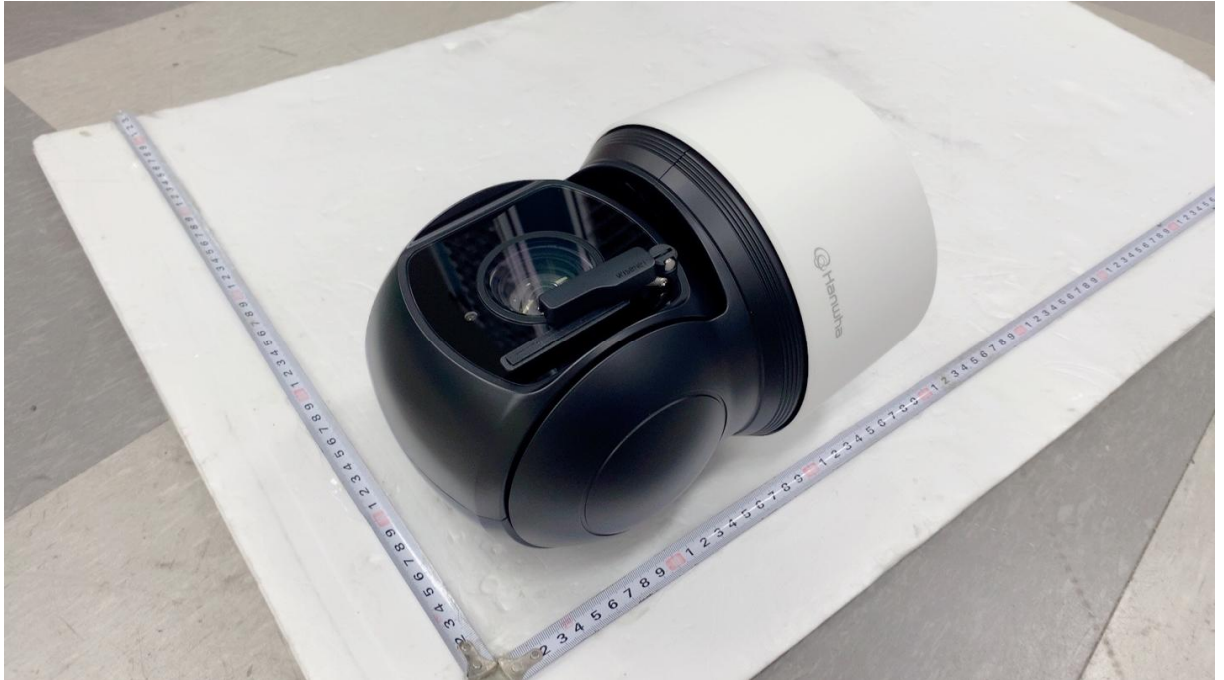
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Attachment 3 – Photographs

<Photo 1 > Test Unit



<Photo 2 > Test Unit





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Attachment 3 – Photographs

<Photo 3 > Hose down test



<Photo 4 > Test Result

