

TEST REPORT

 CTK Co., Ltd. The Power Leader of Global Regulatory Certification	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-2021-04346 Page (1) / (21) pages	
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1. Applicant

- Name.....: Hanwha Techwin Co., Ltd.
- Address: 6 Pangyo-ro 319Beon-gil, Bundang-gu, Seongnam-si, Gyeonggi-do, 13488 KOREA
- Date of Receipt: 2021-10-21

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 / XNO-6123R

4. Date(s) of test : 2021-10-28 to 2021-11-23

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.
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Approval	Tested by:	Technical Manager:
	SooChan Bae  (Signature)	Wonhyeon Choi  (Signature)

2021-11-30

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-2021-04346

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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.....: XNO-6123R**Ratings**.....: ElectricalDC 12 V $\equiv$ 1.38 A / PoE(53 V $\equiv$, 0.37 A)

Dimension: 60 mm, 60 mm, 50 mm, 50 mm,
Ø 80 mm by 251.2 mm, Ø 90 mm by 282.6 mm,
Ø 160 mm by 502.4 mm, Ø 5 mm by 15.7 mm * 3,
50 mm, 50 mm, 120 mm, 50 mm,
Ø 15 mm by 47.1 mm, Ø 20 mm by 62.8 mm * 2

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

Attachment 1: 11-12 pages (Construction Diagram including installation method)

Attachment 2: 13-17 pages (Parts List)

Attachment 3: 18-21 pages (photographs)

Summary of testing:**Tests performed (name of test and test clause):****Clause 5.7(Hose Down Test)****Testing location:**

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

기기명칭: NETWORK CAMERA

모델명: XNO-6123R

정격전압: DC 12V $\equiv$ 16.5W /
PoE(53V $\equiv$) 19.5W

M/C: XNO-6123R/KDO Fac. ID: D

DATE S/N: Serial No.
MAC ADDRESS: XX-XX-XX-XX-XX-XX

인증번호: R-R-SIW-XNO6123R

상호: 한화테크윈(주)

제조자/제조국가: 한화테크윈(주)/한국



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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 information: Applied NEMA Rating: 4X Model XNO-6123R is basic model which was tested. Model differences: The 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.

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			

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

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(60 mm, 60 mm, 50 mm, 50 mm, Ø 80 mm by 251.2 mm, Ø 90 mm by 282.6 mm, Ø 160 mm by 502.4 mm, Ø 5 mm by 15.7 mm * 3, 50 mm, 50 mm, 120 mm, 50 mm, Ø 15 mm by 47.1 mm, Ø 20 mm by 62.8 mm * 2)

Test Duration = 291 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

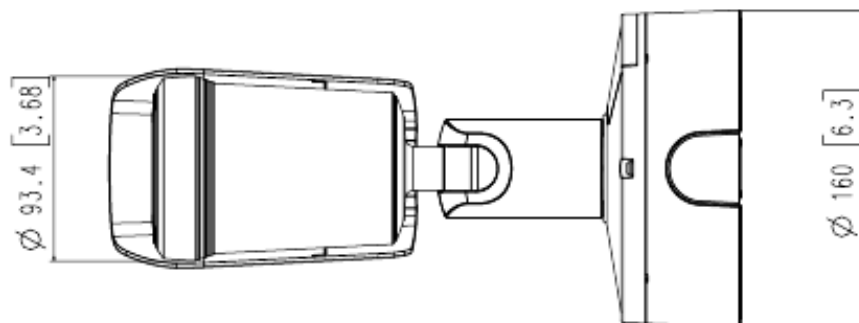
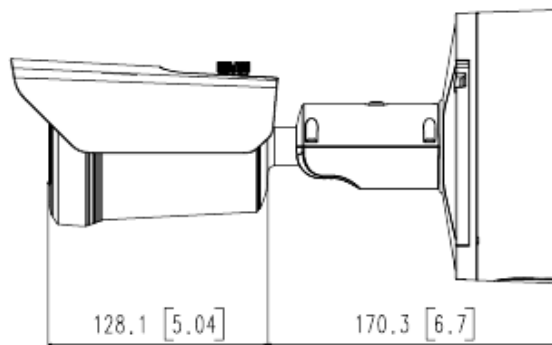
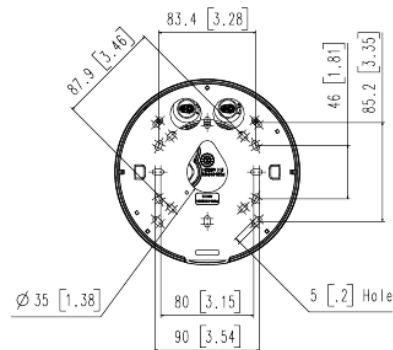
Sample No (Model)	Water Flow	Presence of water inside	Result
XNO-6123R	240 LPM	No	Pass

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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	2021-06-18	2023-06-18
S3-IP23	Water flow meter	250LPM	Nuri tech/ Z-6504	2021-06-30	2020-06-30
C-S1-D02	DIGITAL VERNIER CALIPER	150 mm	MITUTOYO/150 mm	2021-08-18	2022-08-18

Attachment 2 – Part List





CTK Co., Ltd.

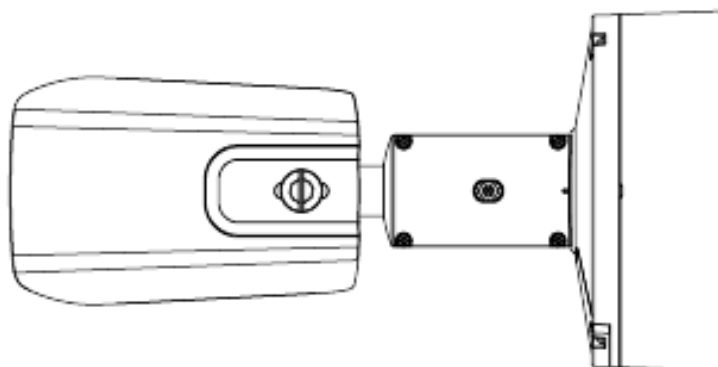
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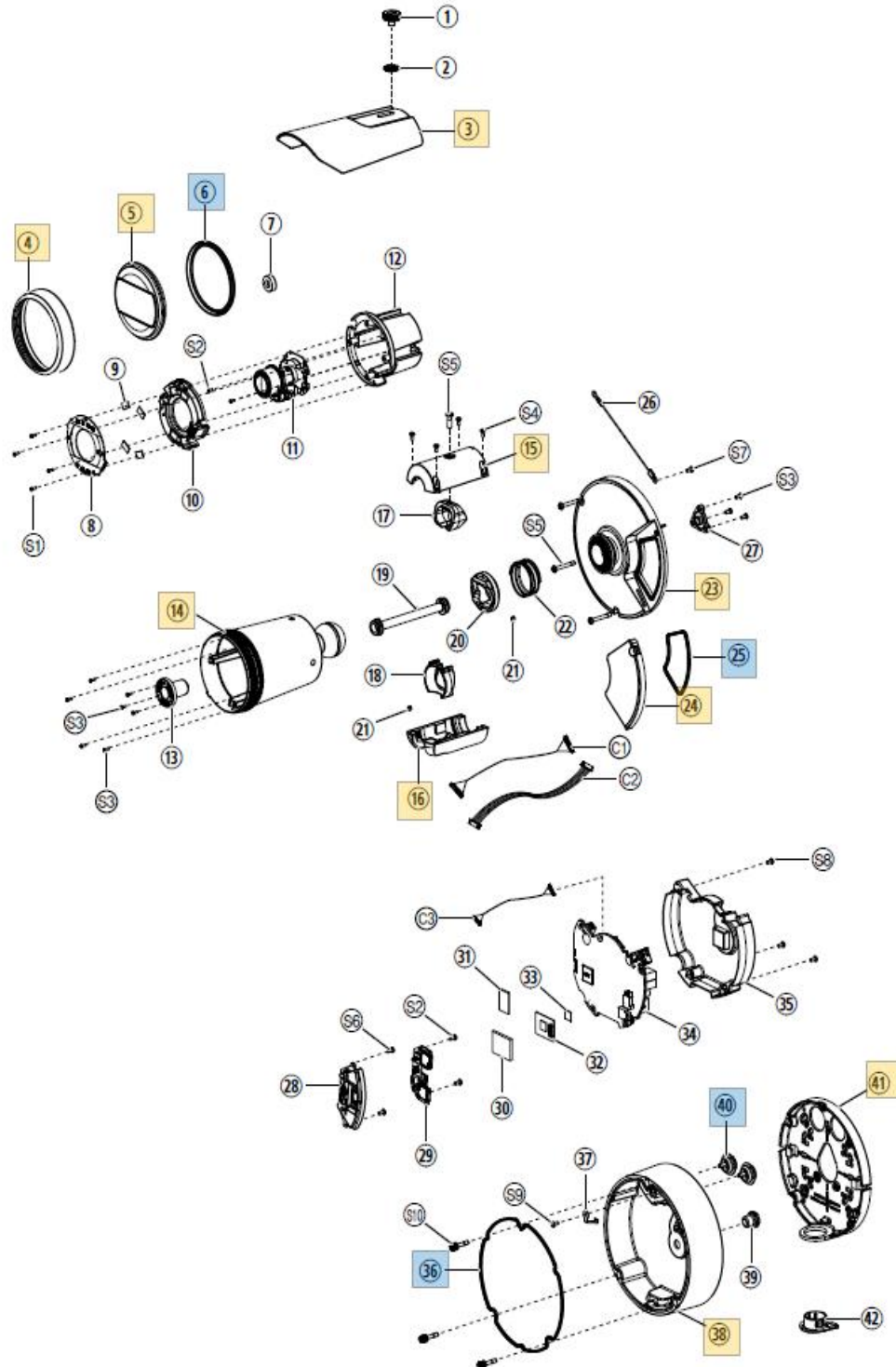
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Attachment 2 – Part List



Attachment 2 – Part List



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Attachment 2 – Part List

No.	품명	재질			최소살두께(mm)
		대분류	소분류	메이커(모델명)	
3	SHIELD-SUN_NEW_C9083R;PC(WHT)	플라스틱	PC	Lotte(HN-1068)	
4	COVER-FRONT-XNO9083R;AL	AL	-	-	2.0
5	ASSY,FRONT-WINDOW	플라스틱	PC	- Violet : Lotte(QC-1220UR) - Clear : Chimei(PC-6715VT)	1.6 1.5
14	CASE-BODY-XNO9083R	AL	-	-	2.0
15	CASE-TOP BRACKET_XNO-C9083R;ADC12,WHITE	AL	-	-	2.0
16	CASE-BOTTOM BRACKET_XNO-C9083R;ADC12,WHI	AL	-	-	2.0
23	CASE-TOP-BBOX-XNO9083R;ADC12	AL	-	-	2.0
24	DOOR-BACKBOX-XNO9083R;ADC12	AL	-	-	2.0
38	CASE-BOTTOM-BBOX-XNO9083R;ADC12	AL	-	-	2.0
41	BRACKET-MOUNT-XNO9083R;ADC12	AL	-	-	2.0

품명	모델명	제조사
PAD-THERMAL, 12X8;GP-1(350),1.0	GP-1	KOMOTECH
PAD-THERMAL-45X30XT2,K=7W/M-K	KGP-1	KOMOTECH
PAD-THERMAL 30X27XT2,K=7W/M-K	KGP-1	KOMOTECH
PAD-THERMAL-25X18XT4,K=7W/M-K	KGP-1	KOMOTECH

No.	품명	경도	색상	제조사	UL 인증 형명
6	GASKET-WINDOW_XNO-C9083R;SILICON	60	BLACK	NAMYANG	O-VMQ-60-BK
25	GASKET-DOOR-XNO9083R;SILICON	30	BLACK	NAMYANG	O-VMQ-30-BK
36	GASKET-CASE-BBOX-XNO9083R;SILICON	30	BLACK	NAMYANG	O-VMQ-30-BK
40	BUSHING-CABLE ACC;SILICON,SNV-6084R	60	GRAY	NAMYANG	C-VMQ-60-GR

Attachment 2 – Part List



UL 인증

INFINO	Grade	HN-1064
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Component - Plastics E115797

[guide info]

LOTTE ADVANCED MATERIALS CO LTD
56 Gosan-ro, Ulsang-si Gyeonggi-do 437-711 KR

HN-1064(+)
Polycarbonate (PC) "INFINO", furnished as pellets

Color	Min Thk (mm)	Flame Class	HWI	HAI	Elec	RTI Imp	RTI Str
ALL	0.75	V-2	4	4	80	80	80
	1.0	V-2	-	-	80	80	80
	1.2	V-1	4	4	80	80	80
	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): -
High-Voltage Arc Tracking Rate (HVTR): -
Dimensional Stability (%): -

Inclined Plane Tracking (IPT): -
Volume Resistivity (10⁹ ohm-cm): -
High Volt, Low Current Arc Resis (D495): -

(+) - May be replaced by one, two, or three numbers and/or letter(s)

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: 2015-12-10 © 2017 UL LLC



IEC and ISO Test Methods

Test Name	Test Method	Units	Thk (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.75	V-2 (ALL)
			1.0	V-2 (ALL)
			1.2	V-1 (ALL)
			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
			1.5	825
Glow-Wire Ignition (GWI)	IEC 60695-2-13	°C	1.5	825
			3.0	825
			3.0	825
IEC Comparative Tracking Index	IEC 60112	Volts (Max)	-	-
IEC Ball Pressure	IEC 60695-10-2	°C	3.0	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	-	-



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Attachment 2 – Part List



Component - Plastics

File Number: E56070

CHI MEI CORPORATION

59-1 SAN CHIA

JEN TE

TAINAN, 717 Taiwan



WONDERLITE: PC-6715VT(f1)(a)

Polycarbonate (PC), pellets

(a) - Ball pressure temperature is in accordance with IEC 60695-10-2 Method B.

(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, 5VA	
Glow Wire Flammability Index		IEC 60695-2-12
1.5 mm	960 °C	
3.0 mm	960 °C	
Glow Wire Ignition Temperature		IEC 60695-2-13
1.5 mm	825 °C	
3.0 mm	850 °C	
Electrical	Value	Test Method
Hot-wire Ignition (HWI)		UL 746A
1.5 mm	PLC 3	
3.0 mm	PLC 3	
High Amp Arc Ignition (HAI)		UL 746A
1.5 mm	PLC 1	
3.0 mm	PLC 1	
Comparative Tracking Index (CTI)	PLC 2	UL 746A
Dielectric Strength	30 kV/mm	ASTM D149
High Voltage Arc Tracking Rate (HVTR)	PLC 2	UL 746A
Volume Resistivity	1.0E+14 ohms-cm	ASTM D257 IEC 60093
Arc Resistance	PLC 6	ASTM D495
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	115 °C	
3.0 mm	120 °C	
RTI Str		UL 746B
1.5 mm	125 °C	
3.0 mm	130 °C	
Ball Pressure Test (135°C)	Pass	IEC 60695-10-2
Physical	Value	Test Method
Dimensional Stability	0.0 %	ASTM D1042 ISO 2796
Outdoor Suitability	I1	UL 746C

Attachment 3 – Photographs

<Photo 1 > Test Unit



<Photo 2 >





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Attachment 3 – Photographs

<Photo 3 > Hose down test



Attachment 3 – Photographs

<Photo 4 > Test Result



<Photo 5 >



Attachment 3 – Photographs

<Photo 6 > Test Result



<Photo 7 >

