


# TEST REPORT

 <b>CTK Co., Ltd.</b> <small>The Power Leader of Global Regulatory Certification</small>	<b>CTK Co., Ltd.</b> (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.: <b>CTK-2022-00085-1</b> Page (1) / (28) 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 .....: 2021-12-20

## 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-A9083RVD

4. Date(s) of test ..... : 2021-12-20 to 2021-12-29

5. Test Standard (Method) used... : NEMA 250-2014  
Enclosures for Electrical Equipment (1 000 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:	Technical Manager:
	Min-Gi Mun (Signature)	WonHyeon Choi (Signature)

2022-03-11

**CTK Co., Ltd.**



 <b>CTK Co., Ltd.</b> <small>The Power Leader of Global Regulatory Certification</small>	<b>CTK Co., Ltd.</b> (Ho-dong) 113, Yejik-ro, Cheoin-gu, Yongin-shi Gyeonggi-do KOREA, REPUBLIC OF Tel: +82-31-339-9970 Fax: +82-31-624-9501	<b>REPORT No.:</b> <b>CTK-2022-00085-1</b> Page (2) / (28) pages	
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<b>Test item description</b> .....	Network Camera
<b>Trade Mark</b> .....	
<b>Manufacturer</b> .....	Lot O-2, Que Vo Industrial Zone extended area, Nam Son commune, Bac Ninh city, Bac Ninh province, Vietnam
<b>Model/Type reference</b> .....	Basic Model: PNM-A9083RVD Series Model: PNM-A7083RVD
<b>Ratings</b> .....	Electrical PNM-A9083RVD PoE (53 V $\overline{\text{---}}$ ) 0.4 A PNM-A7083RVD PoE (53 V $\overline{\text{---}}$ ) 0.37 A Dimension: Ø 60*2 mm by 376.8 mm, Ø 180 mm by 565.2 mm, Ø 155 mm by 486.7 mm, Ø 10*4 mm by 125.6 mm

<b>List of Attachments (including a total number of pages in each attachment):</b> Attachment 1: 13-16 pages (Construction Diagram including installation method) Attachment 2: 17-24 pages (Parts List) Attachment 3: 25-28 pages (photographs)
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<b>Summary of testing:</b>	
<b>Tests performed (name of test and test clause):</b> <b>Clause 5.7(Hose Down Test)</b>	<b>Testing location:</b> CTK Co., Ltd. 142, Dongbu-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, Republic of Korea

<b>Copy of marking plate: The artwork above may be only a draft.</b>	
제품명칭: NETWORK CAMERA 모델명: PNM-A9083RVD 정격전압: PoE(53V $\overline{\text{---}}$ ) 21W M/C: PNM-A9083RVD/KDO  DATE S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX 인증번호: R-R-StW-PNMA9083RVD 상호: 한화테크윈(주) 제조자/제조국가:한화테크윈(주)/한국	 <p>             NETWORK CAMERA,PNM-A9083RVD              PoE (53V <math>\overline{\text{---}}</math>) 0.4A              M/C: PNM-A9083RVD/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 TECHWIN CO.,LTD.              MADE IN KOREA              Rainproof Étanche IP66           </p>
제품명칭: NETWORK CAMERA 모델명: PNM-A7083RVD 정격전압: PoE(53V $\overline{\text{---}}$ ) 20W M/C: PNM-A7083RVD/KDO  DATE S/N: Serial No. MAC ADDRESS: XX-XX-XX-XX-XX-XX 인증번호: R-R-StW-PNMA7083RVD 상호: 한화테크윈(주) 제조자/제조국가:한화테크윈(주)/한국	 <p>             NETWORK CAMERA,PNM-A7083RVD              PoE (53V <math>\overline{\text{---}}</math>) 0.37A              M/C: PNM-A7083RVD/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 TECHWIN CO.,LTD.              MADE IN KOREA              Rainproof Étanche IP66           </p>



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기기명칭: NETWORK CAMERA

모델명: PNM-C12083RVD

정격전압: PoE (53V ~ ) 21W

M/C: PNM-C12083RVD/KDO



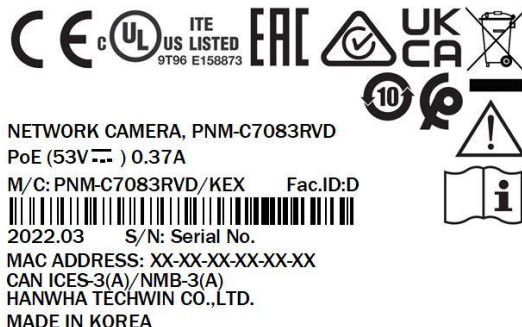
2022.03 S/N: Serial No.

MAC ADDRESS: XX-XX-XX-XX-XX-XX

인증번호: R-R-StW-PNMA9083RVD

상호: 한화테크윈(주)

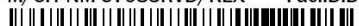
제조사/제조국가: 한화테크윈(주)/한국



NETWORK CAMERA, PNM-C7083RVD

PoE (53V ~ ) 0.37A

M/C: PNM-C7083RVD/KEX Fac.ID:D



2022.03 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

기기명칭: NETWORK CAMERA

모델명: PNM-C7083RVD

정격전압: PoE (53V ~ ) 20W

M/C: PNM-C7083RVD/KDO



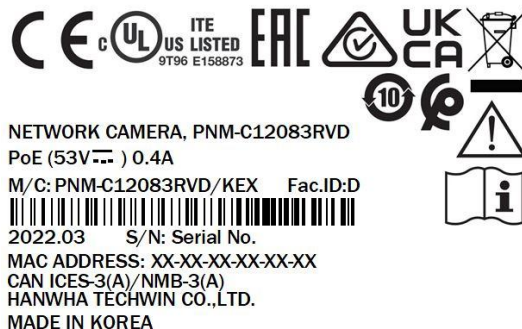
2022.03 S/N: Serial No.

MAC ADDRESS: XX-XX-XX-XX-XX-XX

인증번호: R-R-StW-PNMA7083RVD

상호: 한화테크윈(주)

제조사/제조국가: 한화테크윈(주)/한국



NETWORK CAMERA, PNM-C12083RVD

PoE (53V ~ ) 0.4A

M/C: PNM-C12083RVD/KEX Fac.ID:D




2022.03 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

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<b>Test item particulars.....:</b>	Network Camera
<b>Classification of installation and use .....</b>	Outdoor (Watertight/Corrosion Resistant)
<b>Possible test case verdicts:</b>	
- 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

<b>General remarks:</b>				
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.  <b>Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.</b>  <b>Clause numbers between brackets refer to clauses in NEMA 250-2014</b>				
<b>Name and address of factory (ies):</b> 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)				
<b>General product information:</b> Applied NEMA Rating: 4X Model PNM-A9083RVD is basic model which was tested.				
<table border="1" data-bbox="301 1525 1442 1680"> <tr> <td>Basic Model .....</td> <td>PNM-A9083RVD</td> </tr> <tr> <td>Series model .....</td> <td>PNM-C12083RVD, PNM-C7083RVD, PNM-12082RVD, PNM-7082RVD</td> </tr> </table>	Basic Model .....	PNM-A9083RVD	Series model .....	PNM-C12083RVD, PNM-C7083RVD, PNM-12082RVD, PNM-7082RVD
Basic Model .....	PNM-A9083RVD			
Series model .....	PNM-C12083RVD, PNM-C7083RVD, PNM-12082RVD, PNM-7082RVD			
<b>Model differences:</b>  PNM-A9083RVD and PNM-A7083RVD 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			



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REPORT No.:

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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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<b>NEMA 250-2014</b>
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Clause	Requirement + Test	Result - Remark	Verdict
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<b>3</b>	<b>CONSTRUCTION</b>		
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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 <sup>2</sup> (1 in <sup>2</sup> ) 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

<b>4</b>	<b>MARKING</b>		
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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

<b>5</b>	<b>DESIGN TESTS</b>	
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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

Clause 5.7	Hose Down Test	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 60\*2 mm by 376.8 mm, Ø 180 mm by 565.2 mm, Ø 155 mm by 486.7 mm, Ø 10\*4 mm by 125.6 mm)


Test Duration = 227 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

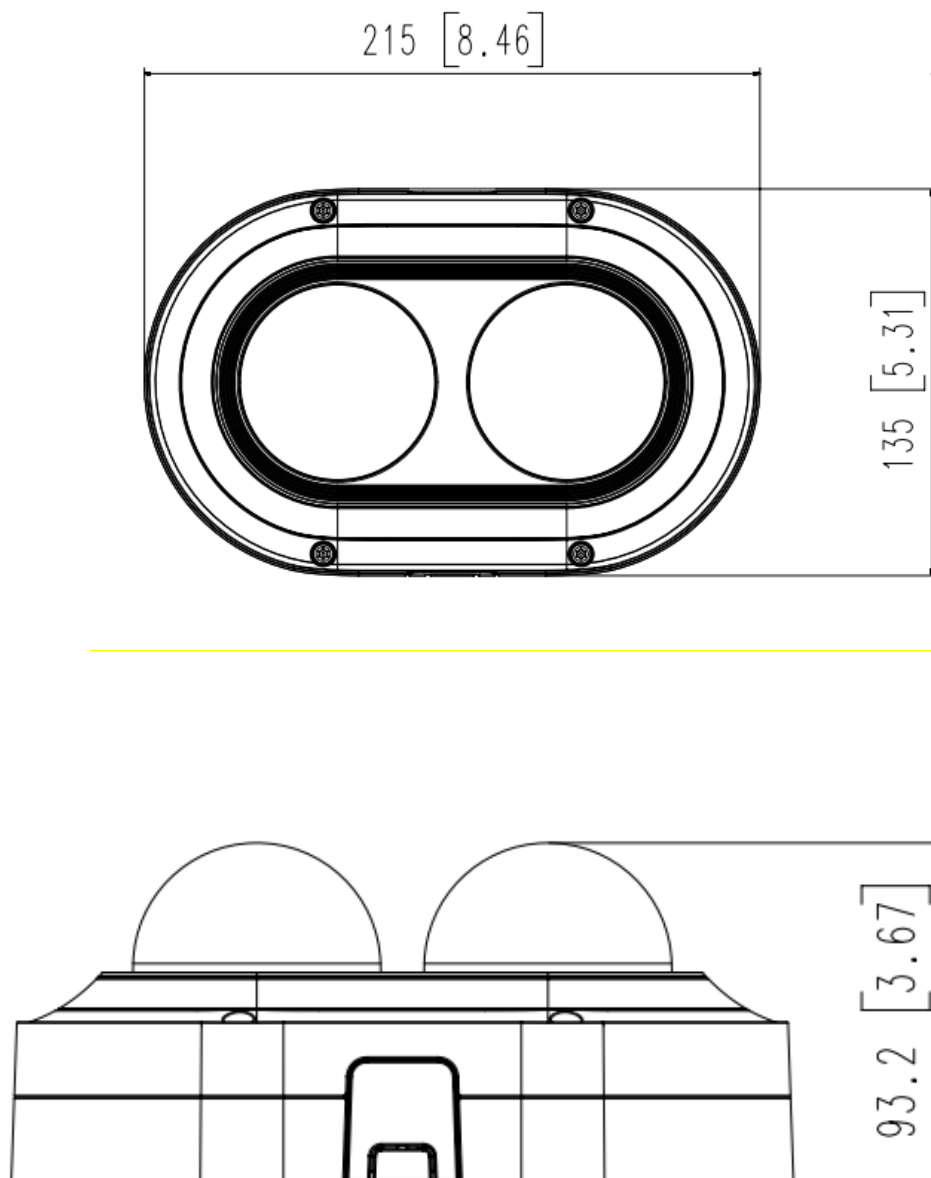
Sample No (Model)	Water Flow	Presence of water inside	Result
PNM-A9083RVD	240 LPM	No	Pass

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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

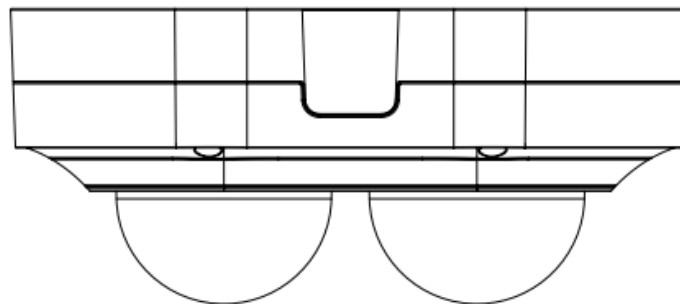
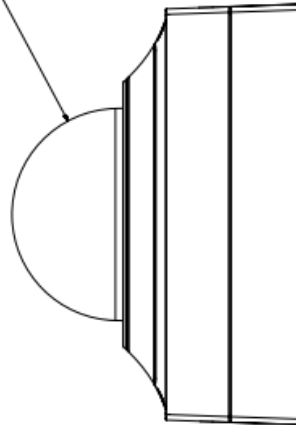
**Attachment 1 – Construction Diagram including installation method**



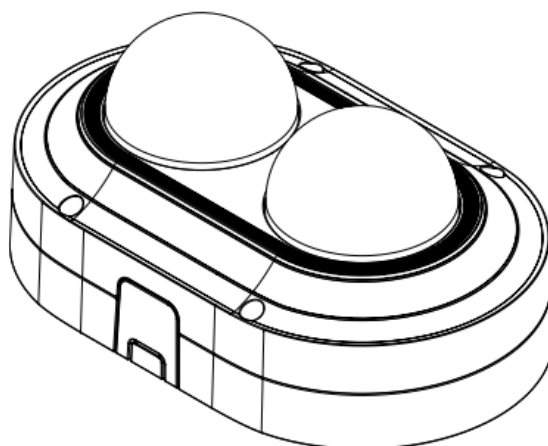
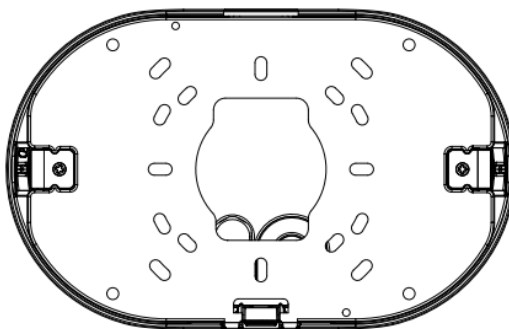


**Attachment 1 – Construction Diagram including installation method**

2-  $\varnothing 68$  [2.68]

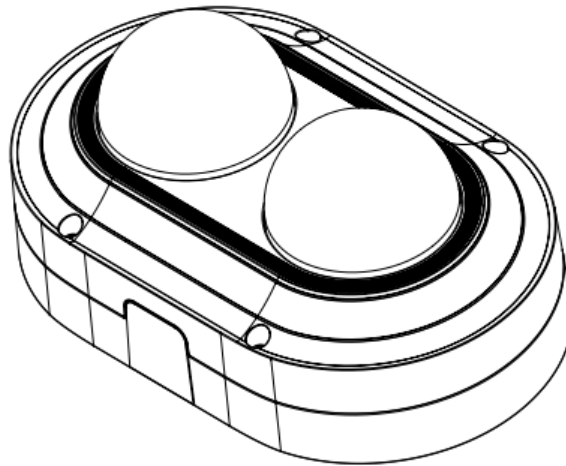


**Attachment 1 – Construction Diagram including installation method**

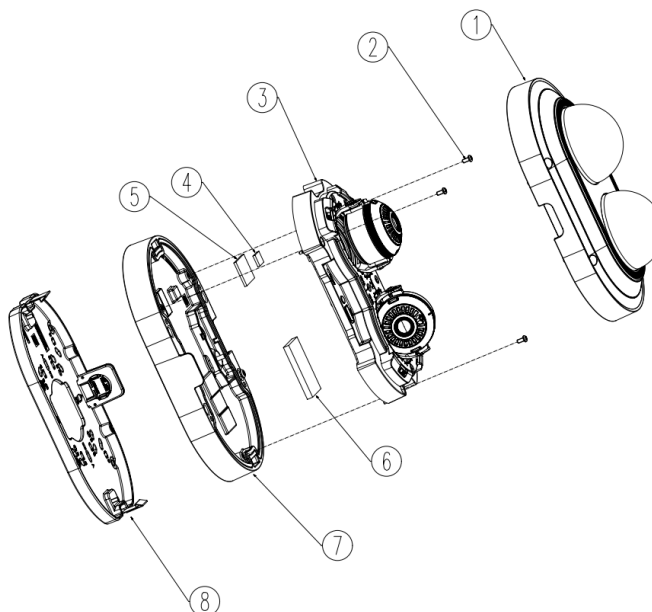


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**Attachment 1 – Construction Diagram including installation method**

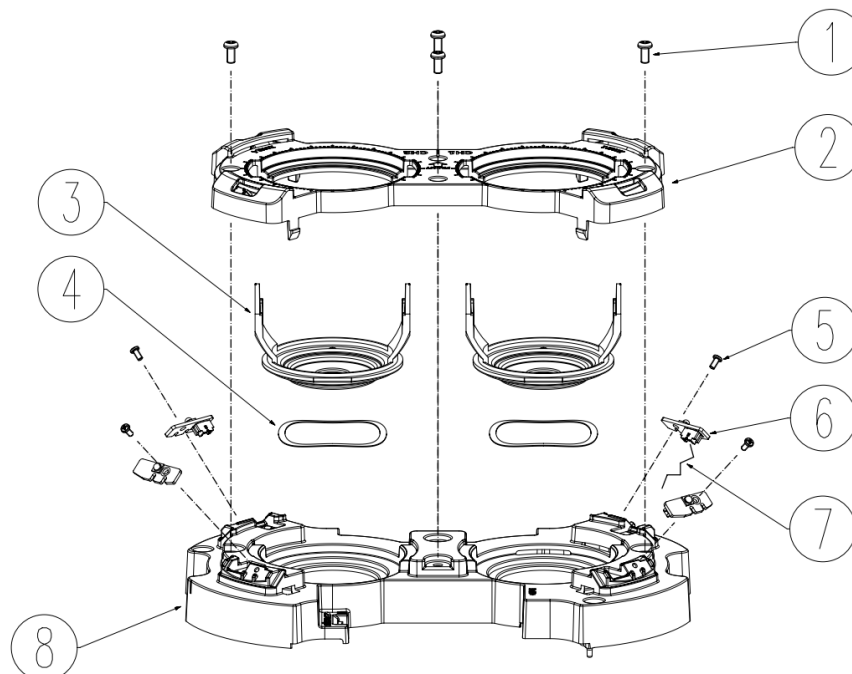


## Attachment 2 – Parts List



No	Part No	Part Name	Q'ty	COMMENT
1-1	AM07-015703A	ASSY,CASE-TOP;PNM-A7083RVD	1	NON _ D0형
1-2	AM07-015855A	ASSY,CASE-TOP;PNM-A7083RVD_HANWHA		D0형
2	Z9642306007	MACHINE SCREW(M3xL6,Zn-B)	3	
3-1	AM07-015697A	ASSY-HALF-PNM-A7083RVD	1	PNM-A7083RVD
3-2	AM07-015854A	ASSY-HALF-PNM-A9083RVD_		PNM-A9083RVD
4	FC28-002489A	PAD-THERMAL_1014T2_V6430BNH	1	
5	FC28-002474A	PAD-THERMAL-28X22XT2	1	
6	FC28-003418A	PAD-THERMAL-48X30XT5,K=2W/M-K	1	
7	AM07-015704A	ASSY,CASE-BOTTOM;PNM-A7083RVD	1	
8	AM07-015701A	ASSY,WALL-MOUNT;PNM-A7083RVD	1	

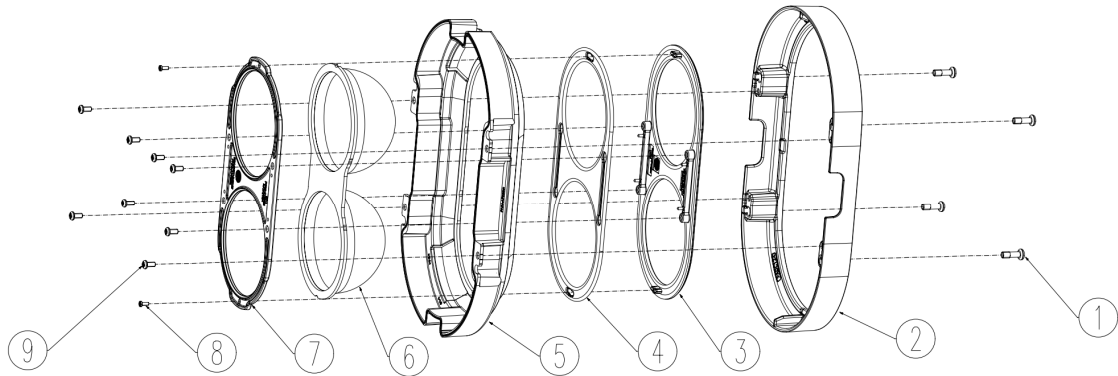
**Attachment 2 – Parts List**



No	Part No	Part Name	Q'ty	COMMENT
1	Z9642306007	MACHINE SCREW(M3xL6,Zn-B)	4	
2	FC15-008620A	COVER-IR;PNM-A7083RVD;PC,V0	1	
3	FC39-006726A	FRAME-PAN;PNM-A7083RVD;PC-V0	2	
4	FC18-001468A	WASHER,WAVE;SNV-6013,ID36,OD41	2	
5	Z6001055101A	SCREW-MACHINE;6001-001707,BH,+,M2,L4,ZP	4	
6	AM06-010316A	ASSY,PCB-PNM-A7083RVD_IR	4	
7	EP02-004636B	HARNESS-PNM-9084QZ HEATER;WIRE,BLACK,2P-	4	
8	FC39-006727A	FRAME-MAIN;PNM-A7083RVD;ALDC12,BLACK	1	

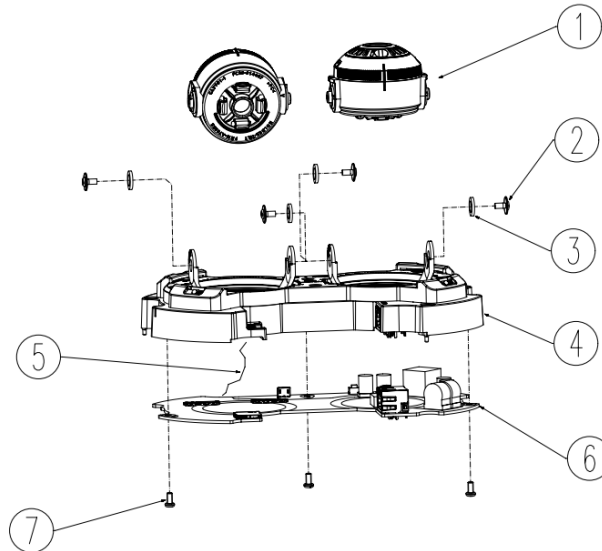


**Attachment 2 – Parts List**



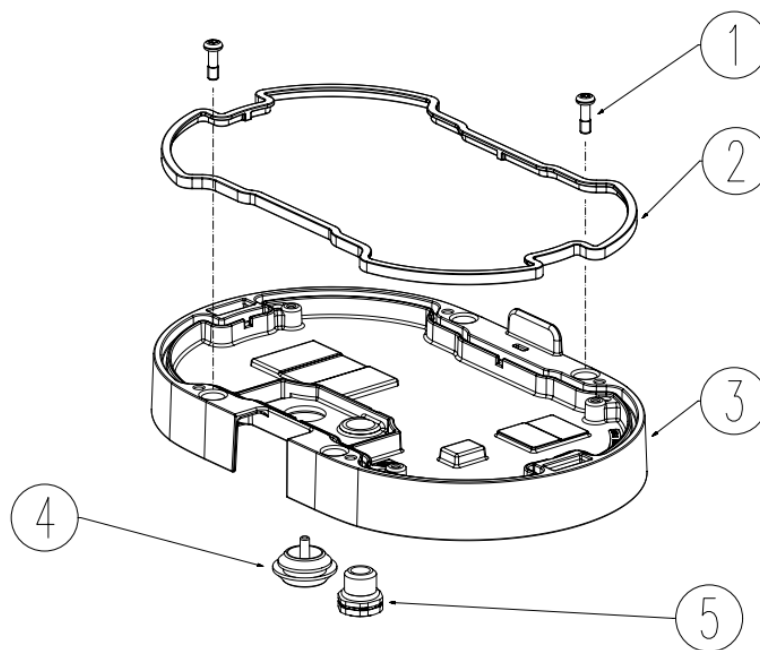
No	Part No	Part Name	Q'ty	COMMENT
1	FC18-004000A	SCREW-BUILT-IN_TORX20;0.7,15,NO,4	4	
2-1	FC29-014470A	CASE-TOP;PNM-A7083RVD_WISENET	1	AM07-015703A (WISENET)
2-2	FC29-014470B	CASE-TOP;PNM-A7083RVD_HANWHA		AM07-015855A (HANWHA)
3	FC29-014576A	CASE-DOME;PNM-A7083RVD	1	
4	HP07 001676A	GASKET DOME;PNM A7083RVD;SILICON,BLACK	1	
5	FC37-001091A	WINDOW-IR;PNM-A7083RVD;PC-V0	1	
6	FC15-008623B	COVER-DOME_PNM-A7083RVD_HC	1	
7	FC09-013223A	BRACKET-DOME;PNM-A7083RVD;ALDC12	1	
8	Z6001055201A	SCREW-MACHINE;6001-001708,BH,+,M2,L5,ZP	2	
9	Z9642306007	MACHINE SCREW(M3xL6,Zn-B)	8	

## Attachment 2 – Parts List



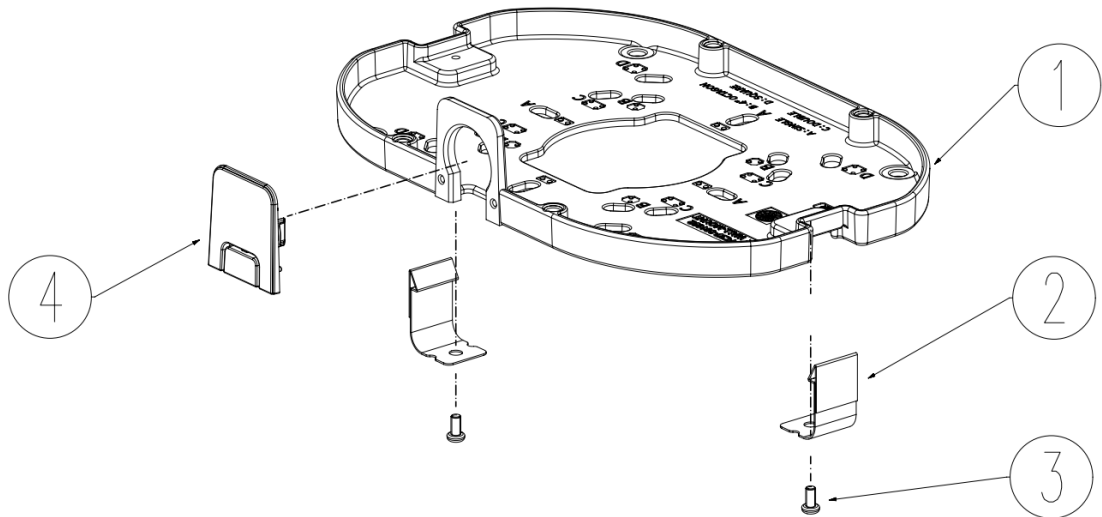
No	Part No	Part Name	Q'ty	COMMENT
1-1	AM07-015700A	ASSY,MODULE-LENS_PNM-A7083RVD	2	PNM-A7083RVD
1-2	AM07-015851A	ASSY-MODULE-LENS_PNM-A9083RVD		PNM-A9083RVD
2	Z6003012501A	4748_TAPTITE_SCREW_M3_L6	4	
3	FC10-001180A	RUBBER,RING-TILT_JNV-7010R;SILICON,,RED	4	
4	AM07-015699A	ASSY-FRAME MAIN-PNM-A7083RVD	1	
5	EP02-005028A	HARNESS-PNM-A9083RVD/A7083RVD;MCX,RED,40	2	
6	AM06-010315B	ASSY,PCB-PNM-A7083RVD_MAIN_DDC CHANGE	1	
7	Z9642306007	MACHINE SCREW(M3xL6,Zn-B)	3	

## Attachment 2 – Parts List




No	Part No	Part Name	Q'ty	COMMENT
1	FC18-004000A	SCREW-BUILT-IN_TORX20;0.7,15,N0,4	2	
2	HP07-001677A	GASKET-BOTTOM;PNM-A7083RVD;SILICON	1	
3	FC29-014469A	CASE-BOTTOM;PNM-A7083RVD;ALDC12,WHITE	1	
4	MC06-001082A	BUSHING-CABLE FLEXIBLE;SILICON,GRAY	1	
5	HP06-001350	VENT-CORE_PMF100319;MEMBRANE,SCREW IN	1	

**Attachment 2 – Parts List**



No	Part No	Part Name	Q'ty	COMMENT
1	FC37-001092A	WALL-MOUNT;PNM-A7083RVD;ALDC12,BLACK	1	
2	FC38-001296A	SPRING,ETC-FIXED;PNM-A7083RVD	2	
3	Z9642306007	MACHINE SCREW(M3xL6,Zn-B)	2	
4	FC15-008621A	COVER-BOLT;PNM-A7083RVD;PC,V0	1	

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## Attachment 2 – Parts List

Supplement (does not print)	Object/Part or Description	IEC	Manufacturer/ Trademark	Type/Model	Technical Data	Product Category CCN	Marks of Conformity - Required for FUS	Marks of Conformity - All Others	Standard (edition or year)
	Cover-Dome		mitsubishi ENGINEERING- PLASTICS CORP	S-2000+(f1), S-2001+(f1), S-2003+(f1)	Min. 2.0 mm thickness, rated Min. V- 2, 80deg. C, see enclosure for dimension.	QMFZ2/8	UL (E41179)	-	UL746
	Enclosure (Metal)		Interchangeable	Interchangeable	Aluminium, Min. 2.0 mm thickness, see enclosure for dimension.	-	-	-	Tested in equipment
	Enclosure Front IR Cover (Transparent part) (Plastic)		LOTTE CHEMICAL CORPORATION	QC-122(+)(f1)	Min. 1.6 mm thickness, rated Min. V- 2, 125 deg.C.	QMFZ2/8	UL (E115797)		
	Moumting Bracket (Metal)		Interchangeable	Interchangeable	Approximate 115.0 by 115.0 by 10.0 mm, Aluminium, Min. 2.3 mm thickness,	-	-	-	Tested in equipment
	Internal (Metal)		Interchangeable	Interchangeable	Aluminium, Min. 2.0 mm thickness, see enclosure for dimension.	-	-	-	Tested in equipment
	Internal Plastic Part Materials		Interchangeable	Interchangeable	Min. HB	QMFZ2/8	UL	--	UL746C, UL94
	Thermal Pad		KOMOTECH CO LTD	KGP-1(a)	Min. 0.2 mm thickness, rated V-0, 150 deg.C	QMFZ2/8	UL (E245303)	-	UL 746 UL 94



## Attachment 2 – Parts List

Component - Plastics

Guide Information

LOTTE ADVANCED MATERIALS CO LTD

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

QC-122(+)(f1)

Polycarbonate (PC) "INFINO", furnished as pellets

Color	Min. Thk (mm)	Flame Class	HVI	HAI	RTI Elec	RTI Imp	RTI Str
ALL	1.6	V-2	3	0	130	125	125
	3.2	V-2	2	0	130	130	130

Comparative Tracking Index (CTI): 0

Dielectric Strength (kV/mm): -

High-Voltage Arc Tracking Rate (HVTR): 2

Dimensional Stability (%): -

Inclined Plane Tracking (IPT) kV: -

Volume Resistivity (10<sup>9</sup> ohm-cm): 16

High Volt, Low Current Arc Resis (D495): 5

(+) - 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.

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: 2008-10-17

Last Revised: 2018-12-11

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UL



IEC and ISO Test Methods				
Test Name	Test Method	Units	Thk (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	1.6	V-2 (ALL)
			3.2	V-2 (ALL)
Glow-Wire Flammability (GWFI)	IEC 60695-2-12	°C	1.6	850
			3.2	850
Glow-Wire Ignition (GWIT)	IEC 60695-2-13	°C	1.6	900
			3.2	875
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 <sup>2</sup>	-	-
ISO Izod Impact	ISO 180	kJ/m <sup>2</sup>	-	-
ISO Charpy Impact	ISO 179-2	kJ/m <sup>2</sup>	-	-

Component - Plastics

E41179

MITSUBISHI ENGINEERING-PLASTICS CORP

ENVIRONMENT & QUALITY ASSURANCE DEPT, DIV 1, SHIODOME SUMITOMO-BLDG 25TH FL, 1-9-2 HIGASHI-SHINBASHI, MINATO-KU TOKYO 105-0021 JP

S-2000V+(f1), S-2001V+(f1), S-2003V+(f1)

Polycarbonate (PC), unreinforced, furnished as pellets

Color	Min Thk (mm)	Flame Class	HVI	HAI	RTI Elec	RTI Imp	RTI Str
ALL	0.38	V-2	-	-	80	80	80
	1.5	V-2	3	0	125	115	125
	3.0	V-2	3	0	125	115	125

Comparative Tracking Index (CTI): 2

Dielectric Strength (kV/mm): 20

High-Voltage Arc Tracking Rate (HVTR): 0

Dimensional Stability (%): 0

Inclined Plane Tracking (IPT): -

Volume Resistivity (10<sup>9</sup> ohm-cm): 7

High Volt, Low Current Arc Resis (D495): 5

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

+ Suffix optional, exceptions: The following cannot be used as optional suffixes: "T" for grade 2030, "A" for 1501, 1502, 1511, 1521 & 2502, "N" for NXG5050, NXG5030, NXG5501, & CGF-(v)(u), "S1" for F20-54.

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: 1992-10-01

Last Revised: 2004-03-23

Underwriters Laboratories Inc®





IEC and ISO Test Methods				
Test Name	Test Method	Units	Thickness Tested (mm)	Value
Flammability	IEC 60695-11-10	Class (color)	0.38	V-2 (ALL)
			1.5	V-2 (ALL)
			3.0	V-2 (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 <sup>2</sup>	-	-
ISO Izod Impact	ISO 180	kJ/m <sup>2</sup>	-	-
ISO Charpy Impact	ISO 179-2	kJ/m <sup>2</sup>	-	-

Underwriters Laboratories Inc®

**Attachment 3 – Photographs**

**<Photo 1 > Front View**



**<Photo 2 > Rear View**





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### Attachment 3 – Photographs

#### <Photo 3 > Hose down test





**Attachment 3 – Photographs**

**<Photo 4 > Test Result**



**<Photo 5 > Test Result**



**Attachment 3 – Photographs**

**<Photo 6 > Test Result**



- End -