


# TEST REPORT

 CTK Co., Ltd. <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.: CTK-2019-03995-1 Page (1) / (18) 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 .....: 2018-10-04

## 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


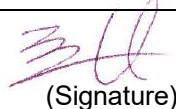
3. Test sample / Model ..... : NETWORK CAMERA / XNV-6081Z

4. Date(s) of test ..... : 2018-11-06

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)
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2021-07-21

**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  
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REPORT No.:

CTK-2019-03995-1

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**Test item description**.....: Network Camera**Trade Mark**.....:**WISeNET**

**Manufacturer** .....: No.11 Weiliu Rd, Micro-Electronic Industrial  
Park, TEDA, Tianjin, 300385, People's Republic of China

**Model/Type reference**.....: XNV-6081Z**Ratings**.....: Electrical : PoE

Dimension : 100.0 mm by 180.0 mm by 125.0 mm

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

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

Attachment 2: 13-15 pages (Parts List )

Attachment 3: 16-18 pages (photographs)

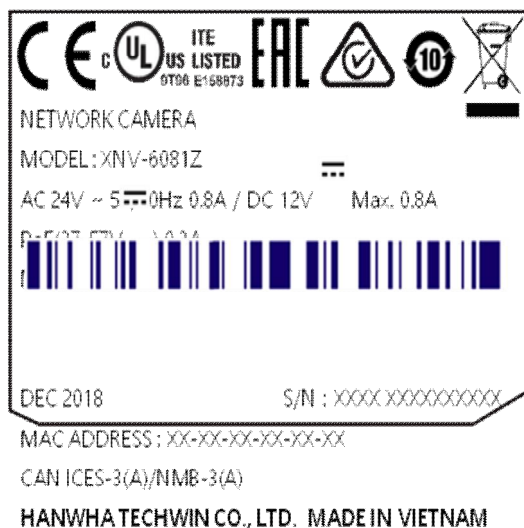
**Summary of testing:**

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

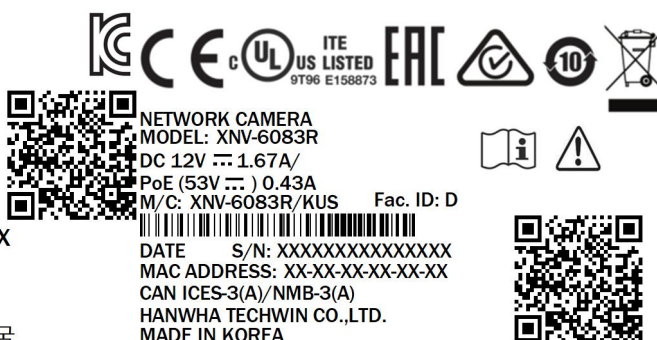
**Testing location:**

CTK Co., Ltd.

(Ho-Dong) 113, Yejik-ro Cheoin-gu, Yongin-shi  
Gyeonggi-do KOREA, REPUBLIC OF

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

기기명칭: NETWORK CAMERA  
 모델명: XNV-6083R  
 정격전압: DC 12V ~ 20.0W/  
 PoE(53V ~) 22.5W  
 M/C: XNV-6083R/KDO  
 DATE S/N: XXXXXXXXXXXXXXXX  
 MAC ADDRESS: XX-XX-XX-XX-XX-XX  
 인증번호: R-R-StW-XNV6083R  
 상호: 한화테크윈(주)  
 제조자/제조국가: 한화테크윈(주)/한국



기기명칭: NETWORK CAMERA

모델명: XNV-8083R

정격전압: DC 12V  $\bar{\sim}$  20.0W/  
PoE(53V  $\bar{\sim}$ ) 22.5W

M/C: XNV-8083R/KDO



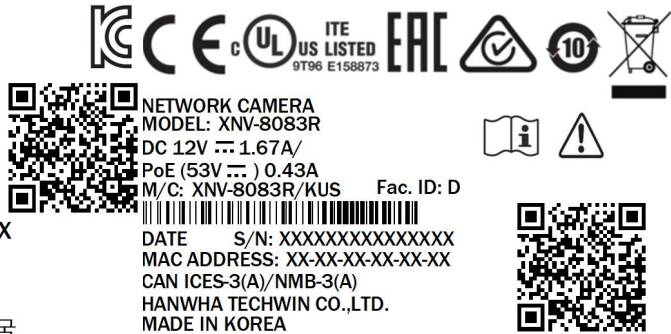
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MAC ADDRESS: XX-XX-XX-XX-XX-XX

인증번호: R-R-StW-XNV8083R

상호: 한화테크윈(주)

제조사/제조국가: 한화테크윈(주)/한국



NETWORK CAMERA  
MODEL: XNV-8083R

DC 12V  $\bar{\sim}$  1.67A/

PoE (53V  $\bar{\sim}$ ) 0.43A

M/C: XNV-8083R/KUS Fac. ID: D

DATE S/N: XXXXXXXXXXXXXXXX

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: XNV-8093R

정격전압: DC 12V  $\bar{\sim}$  20.0W/  
PoE(53V  $\bar{\sim}$ ) 22.5W

M/C: XNV-8093R/KDO



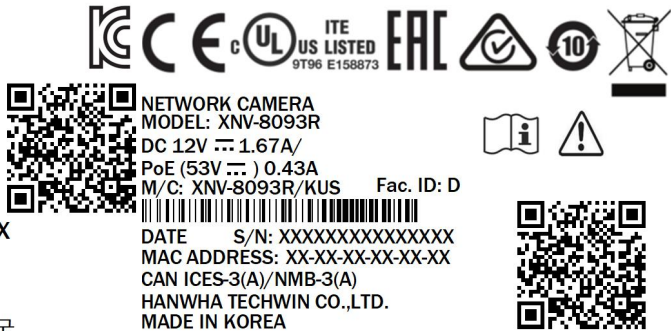
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MAC ADDRESS: XX-XX-XX-XX-XX-XX

인증번호: R-R-StW-XNV8093R

상호: 한화테크윈(주)

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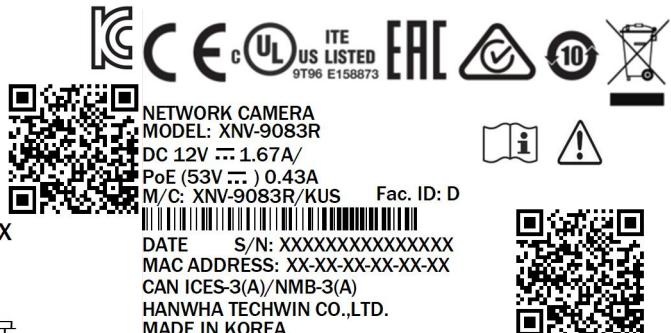
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인증번호: R-R-StW-XNV9083R

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MODEL: XNV-9083R

DC 12V  $\bar{\sim}$  1.67A/

PoE (53V  $\bar{\sim}$ ) 0.43A

M/C: XNV-9083R/KUS Fac. ID: D


DATE S/N: XXXXXXXXXXXXXXXX

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

CAN ICES-3(A)/NMB-3(A)

HANWHA TECHWIN CO.,LTD.

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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. D-TECH CO.,LTD. 173-25, Saneop-ro, Gwonseon-gu, Suwon-si, Gyeonggi-do, Korea (Suwon Industrial Complex)  2. 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	
<b>General product information:</b>	
Applied NEMA Rating : 4X	
Model XNV-6081Z is basic model which was tested.	
Basic Model .....	XNV-6081Z
Series model .....	XNV-8081Z, XNV-6081, XNV-6081R, XNV-8081R, PNV-A8081R, PNV-A9081R, PNV-A6080R, XNV-9081R, XNV-6081RE, XNV-8081RE, XNV-9083R, XNV-8083R, XNV-8093R, XNV-6083R
Model differences .....	Use of the same external shape and materials (case, finishing material, PCB, cable, etc.), differences in electronic parts inside the product, deployment path difference

**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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<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	No Polymeric Materials Part.. (See the attachment 2)	N/A
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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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




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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
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**

	<b>Hose Down Test : Clause 5.7</b>	<b>P</b>
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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(180.0 mm by 100.0 mm by 125.0 mm)


Test Duration = 150.0 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
XNV-6081Z	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	2017-03-29	2019-03-29
S1-D09-1	Steel Measuring Tape	5.5 m	KOMELON/ 5.5 m	2017-03-23	2019-03-23
S3-IP20	Water flow meter	250LPM	Nuri tech/Z-4007	2018-06-05	2019-06-05
S1-D03	DIGITAL VERNIER CALIPER	200 mm	MITUTOYO/ 200 mm	2018-04-08	2019-04-08



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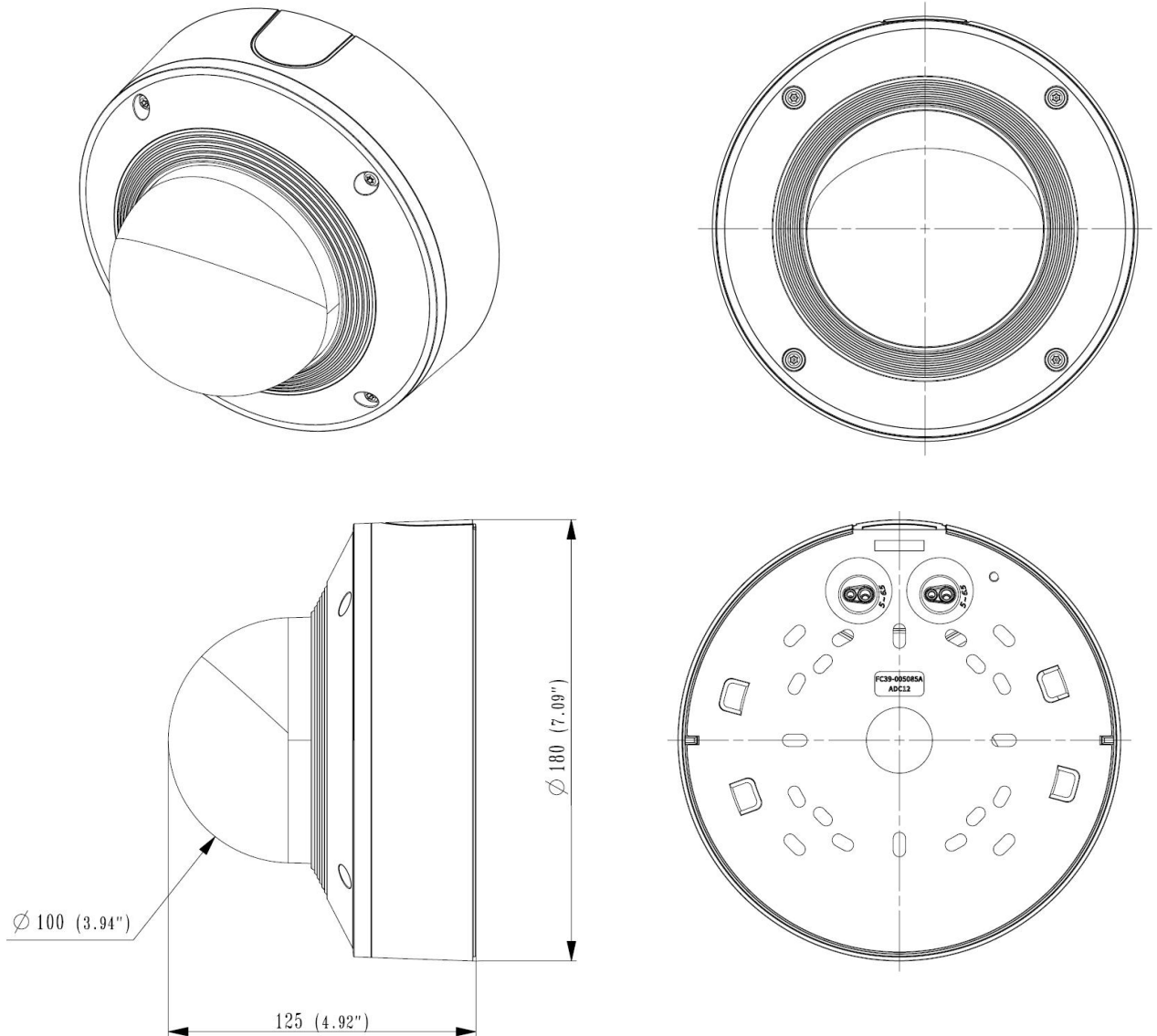
REPORT No.:

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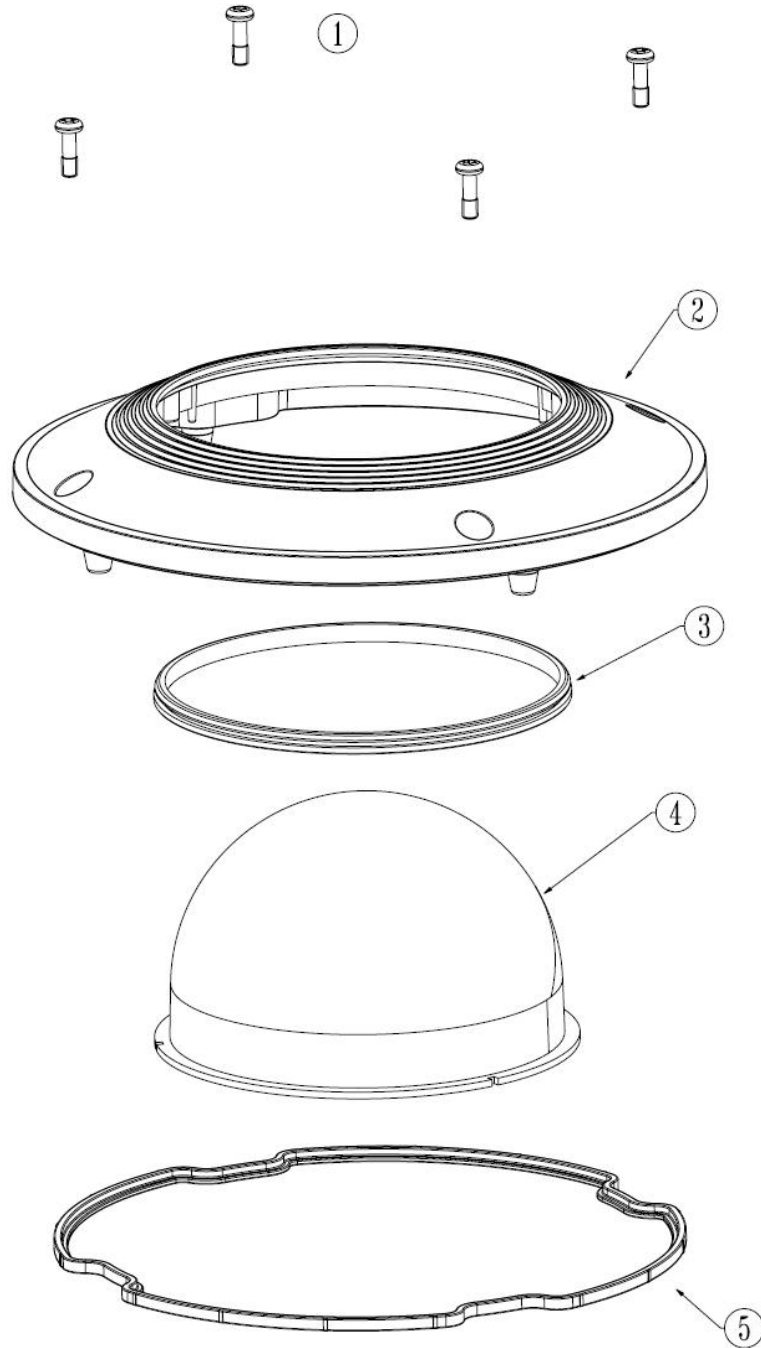
Page (12) / (18) pages

### Attachment 1 – Construction Diagram and installation method

XNV-6081Z

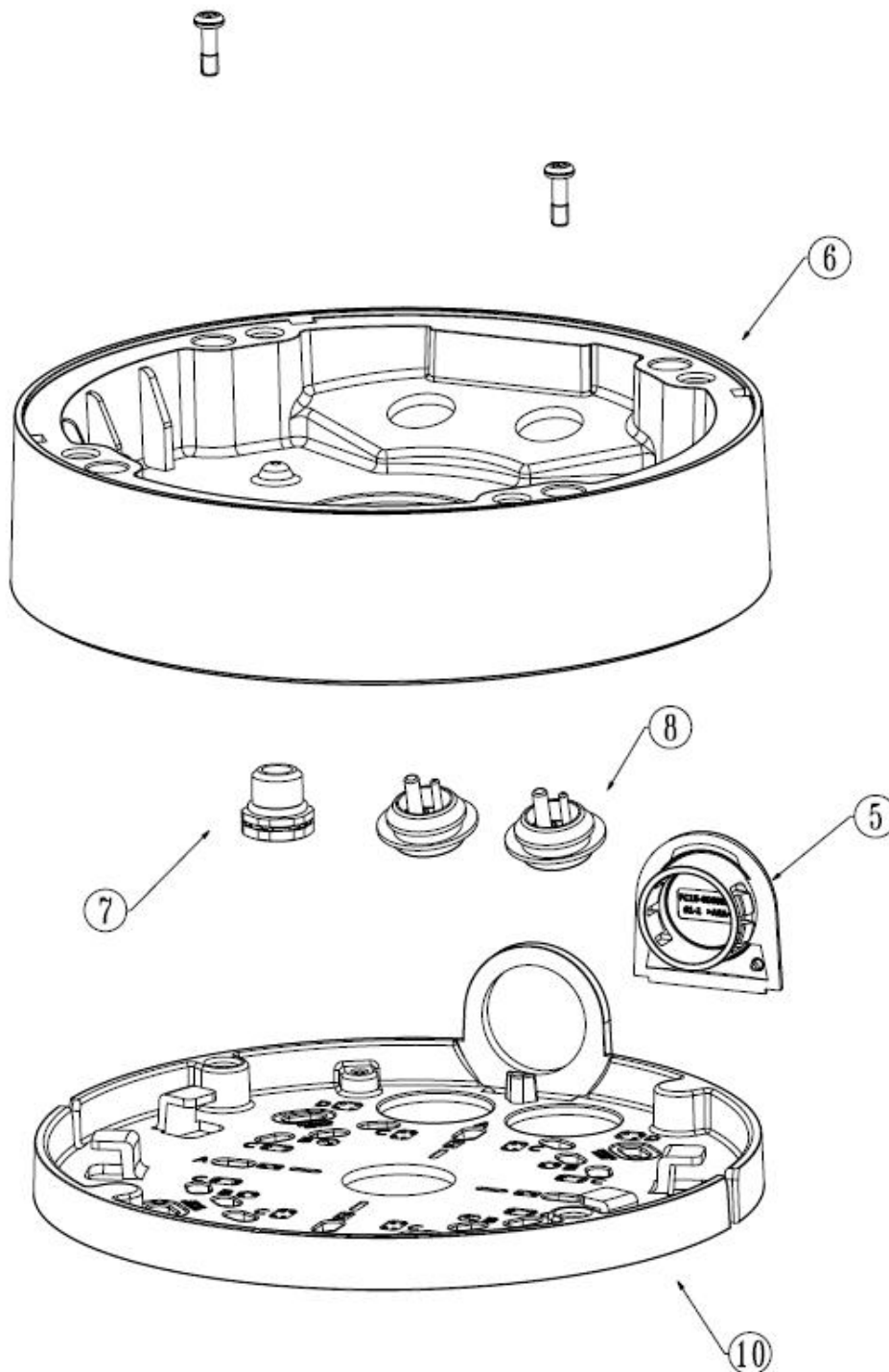



**Attachment 1 – Construction Diagram and installation method**





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



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## Attachment 2 – Parts List

No.	Part No,	Part Name	Raw material
1	FC18-004000A	SCREW-BUILT-IN_TORX20;0.7,15,NO,4	Stainless Steel (XM7)
2	FC29-010815A	CASE-TOP-XNV-6081Z;ADC12	Aluminum (ADC12)
3	FC10-001150A	RUBBER-DOME-XNV-6081Z;SILICON	Silicon
4	FC15-006668A	COVER-DOME;MOLD,100,65	Polycarbonate (S-3000UR)
5	FC10-001149A	RUBBER-TOP-XNV-6081Z;SILICON	Silicon
6	FC29-010814A	CASE-BOTTOM-XNV-6081Z;ADC12	Aluminum (ADC12)
7	HP06-001187	VENT-GORE-PMF100585;MEMBRANE,SCREW IN,PM	
8	MC06-001042A	BUSHING-CABLE_2HOLE_NEW	Silicon
9	FC15-006682A	COVER-BOT-XNV-6081Z;ASA	ASA LI996
10	FC39-005085A	MOUNT-PLATE-XNV-6081Z;ADC12	Aluminum (ADC12)

**Attachment 3 – Photographs**

**<Photo 1 > Test Unit**



**<Photo 2 > Test Unit**





**Attachment 3 – Photographs**

**<Photo 3 > Hose down test**



**<Photo 4 > Test Result**



**Attachment 3 – Photographs**

**<Photo 5 > Test Result**

