CERTIFICATE OF COMPLIANCE

Certificate Number	20161122-E324690
Report Reference	E324690-A103-UL
Issue Date	2016-NOVEMBER-22

Issued to:	VIVOTEK INC 6TH FL, 192 LIEN CHENG RD CHUNG HO DISTRICT NEW TAIPEI, 235 TAIWAN
This is to certify that representative samples of	INFORMATION TECHNOLOGY EQUIPMENT INCLUDING ELECTRICAL BUSINESS EQUIPMENT Network Camera (1) FE9182-H (2) FE9382-EHV Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	UL 60950-1 & CAN/CSA C22.2 No. 60950-1-07 Standard for Information Technology Equipment - Safety - Part 1: General Requirements
Additional Information:	See the UL Online Certifications Directory at www.ul.com/database for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's Certification and Follow-Up Service.

Look for the UL Certification Mark on the product.

Bruce Mahrenholz, Director North American Certification Program

UL LLC

UL TEST REPORT AND PROCEDURE

Standard:	UL 60950-1, 2nd Edition, 2014-10-14 (Information Technology Equipment - Safety - Part 1: General Requirements) CAN/CSA C22.2 No. 60950-1-07, 2nd Edition, 2014-10 (Information Technology Equipment - Safety - Part 1: General Requirements)
Certification Type:	Listing
CCN:	NWGQ, NWGQ7 (Information Technology Equipment Including Electrical Business Equipment)
Product:	Network Camera
Model:	(1) FE9182-H (2) FE9382-EHV
Rating:	(optional) (1) PoE 37-57V, 0.35-0.22A; DC 12V, 0.87A (2) PoE 37-57V, 0.54-0.35A; DC 12V, 1.3A
Applicant Name and Address:	VIVOTEK INC 6TH FL, 192 LIEN CHENG RD CHUNG HO DISTRICT NEW TAIPEI 235 TAIWAN

This is to certify that representative samples of the products covered by this Test Report have been investigated in accordance with the above referenced Standards. The products have been found to comply with the requirements covering the category and the products are judged to be eligible for Follow-Up Service under the indicated Test Procedure. The manufacturer is authorized to use the UL Mark on such products which comply with this Test Report and any other applicable requirements of UL LLC ('UL') in accordance with the Follow-Up Service Agreement. Only those products which properly bear the UL Mark are considered as being covered by UL's Follow-Up Service under the indicated Test Procedure.

The applicant is authorized to reproduce the referenced Test Report provided it is reproduced in its entirety.

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Prepared by: Timothy Lai Reviewed by: Eddie Chen

Supporting Documentation

The following documents located at the beginning of this Procedure supplement the requirements of this Test Report:

A. Authorization - The Authorization page may include additional Factory Identification Code markings.

B. Generic Inspection Instructions -

i. Part AC details important information which may be applicable to products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of this Test Report.

ii. Part AE details any requirements which may be applicable to all products covered by this Procedure. Products described in this Test Report must comply with any applicable items listed unless otherwise stated in the body of each Test Report.

iii. Part AF details the requirements for the UL Certification Mark which is not controlled by the technical standard used to investigate these products. Products are permitted to bear only the Certification Mark(s) corresponding to the countries for which it is certified, as indicated in each Test Report.

Product Description

The equipment is a Class III Network Camera which consists of electronic components mounted on PWB, one Lens module, one IR LED module and heater module (only for model FE9382-EHV), houses within metal/plastic enclosure and provides one general I/O terminal block, two Audio ports, one SD card slot and one RJ45 port.

Model Differences

All models are similar except for input rating, Tma, model designation, indoor/outdoor type and enclosure.

Technical Considerations

- Equipment mobility : movable
- Connection to the mains : not directly connected to the mains
- Operating condition : continuous
- Access location : operator accessible
- Over voltage category (OVC) : not directly connected to the mains
- Mains supply tolerance (%) or absolute mains supply values : N/A
- Tested for IT power systems : No
- IT testing, phase-phase voltage (V) : N/A
- Class of equipment : Class III (supplied by SELV)
- Considered current rating of protective device as part of the building installation (A) : N/A
- Pollution degree (PD) : PD 2
- IP protection class : IP 66 for model FE9382-EHV
- Altitude of operation (m) : up to 2000 m
- Altitude of test laboratory (m) : less than 2000 m
- Mass of equipment (kg) : 0.63 Kg for model FE9182-H; 0.94 Kg for model FE9382-EHV
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer’s specification of: 50 °C for model FE9182-H; 55 °C for model FE9382-EHV
- The product was investigated to the following additional standards: (1) CSA C22.2 NO. 60950-22-07 Edition 1 - Revision Date 2011/12/01; (2) UL 60950-22 Edition 1 - Revision Date 2011/12/19; (3) IEC

60529, Degrees of Protection Provided by Enclosures, Edition 2.1, Revision Date October 2009 (IP Code)

- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): All output ports except for SD card port
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
- The outdoor equipment/enclosure is: IP rated 66 for model FE9382-EHV
- The outdoor equipment/enclosure was evaluated for use in an ambient range of: -40°C to 55°C for model FE9382-EHV
- LEDs provided in the product are considered low power devices: Yes
- (For model FE9182-H) Based upon the product specification provided by the manufacturer, this unit is intended to be supplied by (1) an UL listed power supply suitable to use at Tma min. 50 degree C and whose output rated 12Vdc, min. 0.87A or PoE 37-57Vdc, 0.35-0.22A and met SELV and LPS; (2) an UL listed end-product suitable for using at Tma min. 50 degree C and with "PoE" connector complied SELV and LPS and rated 37-57Vdc, 0.35-0.22A; (For model FE9382-EHV) Based upon the product specification provided by the manufacturer, this unit is intended to be supplied by (1) an UL listed power supply suitable to use at Tma min. 55 degree C and whose output rated 12Vdc, min. 1.3A or PoE 37-57V, 0.54-0.35A and met SELV and LPS; (2) an UL listed end-product suitable for using at Tma min. 55 degree C and with "PoE" connector complied SELV and LPS and rated 37-57V, 0.54-0.35A
- (For model FE9382-EHV) For the compliance with UL 60950-22, all interconnecting cables are to be routed inside UL Listed flexible conduits marked "outdoor"
- This equipment is to be connected only to PoE networks without routing to the outside plant
- Maximum Normal Load for the unit: record video and output signal continuously with LED IR lights and Heater function (for model FE9382-EHV only) on mode
- The unit is intended to install on the wall or ceiling
- Model FE9182-H is evaluated for indoor use only

Additional Information

For model FE9382-EHV
(1) Test of "Effect of Ultraviolet (UV) Radiation on Materials (4.3.13.3, Part 22 8.2)" was waived, because the material of lens cover (TEIJIN / L-1225Z(#1)(f1)) and IR LED cover (SABIC / 43R(f1)) suited for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.

(2) Test of "Resistance to Corrosion (Part 22 8.3, Annex A)" was waived, because the material of enclosure was Aluminum.

(3) Tests of "Tensile Strength and Elongation (Part 22 8.5, Annex D.2)" and "Compression - Gaskets, Closed Cell Construction (Part 22 8.5.1, Annex D.3)" were waived, because the same materials of gaskets (MOMENTIVE / TSE2186U(aq)) were used in reports E324690-A61 and E324690-A50.

(4) Test of "Water Spray (Part 22 9.1, Annex B)" was waived, because the equipment complied with IP66.

(5) Test of "Impact Test (4.2.5, 4.2.1, Part 22 10.2)" was waived, because the same enclosure/gasket/cable gland were used in reports E324690-A61.

(6) Test of "Dust Test for Enclosure Designation IP6X and Water Spray Test for Enclosure Designation IPX6" was waived, because the same enclosure/gasket/cable gland were used in reports E324690-A61.

Additional Standards

The product fulfills the requirements of: (1) CSA C22.2 No. 60950-1-07 + A1:2011 + A2:2014; (2) CSA C22.2 NO. 60950-22-07 Edition 1 - Revision Date 2011/12/01; (3) UL 60950-22 Edition 1 - Revision Date 2011/12/19; (4) IEC 60529, Degrees of Protection Provided by Enclosures, Edition 2.1, Revision Date October 2009 (IP Code)

Markings and instructions

Clause Title	Marking or Instruction Details
Inter-connecting cables - External detachable	Listee's Name and Part number (Marking or Instruction)
Power rating - Company identification	Listee's or Recognized company's name, Trade Name, Trademark or File Number
Power rating - Model	Model Number
Instruction/Installation/Safety	Instruction/Installation/Safety Manual shall be shipped with unit. For model FE9182-H If the power adapter doesn't ship with the unit, the user manual shall have the description as below or equivalent: "This product is intended to be supplied by (1) UL listed power supply suitable to use at Tma min. 50 degree C and whose output rated 12Vdc, min. 0.87A or PoE 37-57Vdc, 0.35-0.22A and compled with LPS; (2) an UL listed end-product suitable for using at Tma min. 50 degree C and with "PoE" connector complied with LPS and rated 37-57Vdc, 0.35-0.22A; For model FE9382-EHV If the power adapter doesn't ship with the unit, the user manual shall have the description as below or equivalent: "This product is intended to supplied by (1) UL listed power supply suitable to use at Tma min. 55 degree C and whose output rated 12Vdc, min. 1.3A or PoE 37-57V, 0.54-0.35A and complied with LPS; (2) an UL listed end-product suitable for using at Tma min. 55 degree C and with "PoE" connector complied with LPS and rated 37-57V, 0.54-0.35A.
(Optional) Power rating - Ratings	Ratings (voltage, frequency/dc, current)

Special Instructions to UL Representative

(1) If the Power Supply does not mark with "LPS" or "Limited Power Source", please check the UL report for Power Supply and confirm whether it complies with Limited Power Source in Technical Consideration.
(2) For power adapter which was shipped with the product without listing manufacturer and model (various) in critical component table, the Field Representative should verify the Tma (maximum ambient temperature) is minimum 50 degree C for model FE9182-H / 55 degree C for model FE9382-EHV from the updated version of UL reports for power adapter which were certified by UL60950-1, 2nd edition, 2014-10-14 (provided from customer).

Production-Line Testing Requirements

Electric Strength Test Special Constructions - Refer to Generic Inspection Instructions, Part AC for further information.

Model	Component	Removable Parts	Test probe location	V rms	V dc	Test Time, s
-	-	-	-	-	-	-

Earthing Continuity Test Exemptions - This test is not required for the following models:

-

Electric Strength Test Exemptions - This test is not required for the following models:

-

Electric Strength Test Component Exemptions - The following solid-state components may be disconnected from the remainder of the circuitry during the performance of this test:

-

Sample and Test Specifics for Follow-Up Tests at UL

Model	Component	Material	Test	Sample(s)	Test Specifics
-	-	-	-	-	-

1.5.1	**TABLE: list of critical components**					Pass
Object/part or Description	Manufacturer/ trademark	type/model	technical data	Product Category CCN(s)	Required Marks of Conformity	Supplement ID
01.Power Adaptor (Optional) (For model FE9182-H used)	Interchangeable	Interchangeable	O/P: 37-57Vdc, 0.35-0.22A or 12Vdc, 0.87A minimum. Comply with L.P.S. Tma 50 degree C.	NWGQ	UL	
01a.Power Adaptor (Optional) (Alternate) (For model FE9382-EHV used)	Interchangeable	Interchangeable	O/P: 37-57Vdc, 0.54-0.35A or 12Vdc, 1.3A minimum. Comply with L.P.S. Tma 55 degree C.	NWGQ	UL	
02. Enclosure (For model FE9182-H used)	--	--	See Enclosure diagram 4-01 for details.	--	--	
02-1. Top enclosure	TEIJIN POLYCARBONATE CHINA LTD	L-1225(###)(f2)	HB minimum. 2.0 mm thick minimum. 115 degree C minimum.	QMFZ2 (E245526)	UL	
02-2. Bottom enclosure	--	--	SECC, 2.0 mm thick minimum.	--	--	
02-3. IR LED cover	SABIC JAPAN L L C	143R(f1)	HB minimum. 2.0 mm thick minimum. 125 degree C minimum.	QMFZ2 (E45587)	UL	
03. Enclosure (For model FE9382-EHV used)	--	--	See enclosure diagram 4-02 for details.	--	--	
03-1. Top enclosure	--	--	Aluminum, 2.5 mm thick minimum.	--	--	
03-2. Bottom enclosure	Interchangeable	Interchangeable	Aluminum, 1.5 mm thick minimum.	--	--	
03-3. Lens cover	TEIJIN CHEMICALS PLASTIC COMPOUNDS SHANGHAI LTD	L-1225Z(#1)(f1)	HB minimum. 2.5 mm thick minimum. 115 degree C minimum.	QMFZ2 (E244324)	UL	
03-4. IR LED cover	SABIC JAPAN L L C	143R(f1)	HB minimum. 2.0 mm thick minimum. 125 degree C minimum.	QMFZ2 (E45587)	UL	
03-5. Mount Kit (optional)	--	--	Aluminum, 1.0 mm thick minimum. See enclosure	--	--	

			diagram 4-09 for details.			
04. Signal transformer (T2)	--	--	105 degree C minimum. See enclosure diagram 4-10 for details.	--	--	
05. Electric Double Layer Capacitors (BT2)	ELNA CO LTD	DHL-5R5D224T	Rated 5.5Vdc, 0.22F.	--	--	
06. O-ring (For model FE9382-EHV used)	--	--	--	--	--	
06-1. O-ring (Between plastic lens cover and top enclosure)	MOMENTIVE PERFORMANCE MATERIALS JAPAN L L C	TSE2186U(aq)	HB minimum, Silicone rubber overall see enclosure 4-03 for detail. (Vivotek part No. 612033900G) (Refer to E324690-A50 report)	QMFZ2 (E56745)	UL	
06-2. O-ring (Between plastic IR LED cover and top enclosure) (near lens cover)	MOMENTIVE PERFORMANCE MATERIALS JAPAN L L C	TSE2186U(aq)	HB minimum., Silicone rubber overall see enclosure 4-04 for detail. (Vivotek part No. 612034200G) (Refer to E324690-A50 report)	QMFZ2 (E56745)	UL	
06-3. O-ring (Between plastic IR LED cover and top enclosure) (near bottom enclosure)	MOMENTIVE PERFORMANCE MATERIALS JAPAN L L C	TSE2186U(aq)	HB minimum., Silicone rubber overall see enclosure 4-05 for detail. (Vivotek part No. 612034100G) (Refer to E324690-A50 report)	QMFZ2 (E56745)	UL	
06-4. O-ring (Between upper enclosure and bottom enclosure)	MOMENTIVE PERFORMANCE MATERIALS JAPAN L L C	TSE2186U(aq)	HB minimum., Silicone rubber overall see enclosure 4-06 for detail. (Vivotek part No. 612034000G)(Refer to E324690-A50 report)	QMFZ2 (E56745)	UL	
06-5. O-ring (On the I/O cable)	MOMENTIVE PERFORMANCE MATERIALS JAPAN L L C	TSE2186U(aq)	HB minimum., Silicone rubber overall see enclosure 4-07 for detail. (Vivotek part No. 612036900G)(Refer to E324690-A50 report)	QMFZ2 (E56745)	UL	
06-6. Cable Glands (For Hole of LAN cable)	AVC INDUSTRIAL CORP	SE93160H(AVC)	Silicone rubber, overall see enclosure 4-08 for detail. (Vivotek part No. 612031601G).	JMLU2 (MH48567)	UL	

07. IR LED (Six provided)	TAIWAN SEMICONDUCTOR LIGHTING CO LTD (TSLC)	C3535X-INx1	Peak wavelength: 840 λp min, 870 λp max; Radiometric Power: 0.8W.	--	--	
08. Internal plastic parts/material	Interchangeable	Interchangeable	HB or HBF minimum.	QMFZ2	UL	
09. PWB	Interchangeable	Interchangeable	V-1 minimum, 105 degree C minimum.	ZPMV2	UL	
10. Label	Interchangeable	Interchangeable	75 degree C if maximum surface temperature not specified.	PGDQ2, PGJI2	UL	
10a. Permanency of Marking (Alternate)	--	--	Engraved laser marking.	--	--	
10b. Permanency of Marking (Alternate)	--	--	Permanently ink-stamped, silk-screened, molded in, or in self-adhesive labels.	--	--	
11. Interconnecting Cable (Optional)	Interchangeable	Interchangeable	Minimum 60 degree C, 57V, maximum 3.05 m long, jacketed, VW-1 or FT-1.	AVLV2, ZPFW2, DVPJ	UL	
11a. Interconnecting Cable (Optional) (Alternate)	Interchangeable	Interchangeable	Maximum 3.05 m long, jacketed, type CMP, CMR, CMG, CM, CMX, CMUC, or CMH.	DUZX, ZPFW2	UL	
11b. Interconnecting Cable (optional) (Alternate)	Interchangeable	Interchangeable	Minimum 60 degree C, 57V, maximum 3.05 m long, jacketed, VW-1 or FT-1.	DUXR	UL	
12. Wiring, internal secondary SELV circuits (Optional)	Interchangeable	Interchangeable	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1; minimum 57 V, minimum 60 degree C.	AVLV2	UL	
13. Connectors and Receptacles (secondary SELV circuits)	Interchangeable	Interchangeable	Copper alloy pins housed in bodies of plastic rated V-2 minimum	QMFZ2	UL	
13a. Connectors and Receptacles (secondary SELV circuits) (alternate)	Interchangeable	Interchangeable	Minimum 57 V.	ECBT2, RTRT2	UL	
13b. Connectors and	Interchangeable	Interchangeable	One provided.	DUXR2	UL	

Receptacles (secondary SELV circuits) (alternate)						

Enclosures

Type	Supplement Id	Description
Photographs	3-01	(FE9182-H) Overall (1)
Photographs	3-02	(FE9182-H) Overall (2)
Photographs	3-03	(FE9182-H) Inside (1)
Photographs	3-04	(FE9182-H) Inside (2)
Photographs	3-05	(FE9182-H) Inside (3)
Photographs	3-06	(FE9182-H) Main board (1)
Photographs	3-07	(FE9182-H) Main board (2)
Photographs	3-08	(FE9182-H) Main board (3)
Photographs	3-09	IR LED board (1)
Photographs	3-10	IR LED board (2)
Photographs	3-11	(FE9382-EHV) Overall (1)
Photographs	3-12	(FE9382-EHV) Overall (2)
Photographs	3-13	(FE9382-EHV) Inside (1)
Photographs	3-14	(FE9382-EHV) Inside (2)
Photographs	3-15	(FE9382-EHV) Main board (1)
Photographs	3-16	(FE9382-EHV) Main board (2)
Photographs	3-17	(FE9382-EHV) Main board (3)
Diagrams	4-01	(FE9182-H) Overall enclosure
Diagrams	4-02	(FE9382-EHV) Overall enclosure
Diagrams	4-03	(FE9382-EHV) O-ring (Between plastic lens cover and top enclosure)
Diagrams	4-04	(FE9382-EHV) O-ring (Between plastic IR LED cover and top enclosure) (near lens cover)
Diagrams	4-05	(FE9382-EHV) O-ring (Between plastic IR LED cover and top enclosure) (near bottom enclosure)
Diagrams	4-06	(FE9382-EHV) O-ring (Between upper enclosure and bottom enclosure)
Diagrams	4-07	(FE9382-EHV) O-ring (On the I/O cable)
Diagrams	4-08	(FE9382-EHV) Cable glands (For Hole of LAN cable)
Diagrams	4-09	Wall bracket
Diagrams	4-10	Transformer T2
Manuals	6-01	User manual
Miscellaneous	7-01	(FE9382-EHV) O-ring and cable gland position
Miscellaneous	7-02	UL 60950-22 TRF
Miscellaneous	7-03	IEC 60529 letter report
Miscellaneous	7-04	Test data (IEC 60529 IP6X)

Miscellaneous	7-05	Test data (IEC 60529 IPX6)


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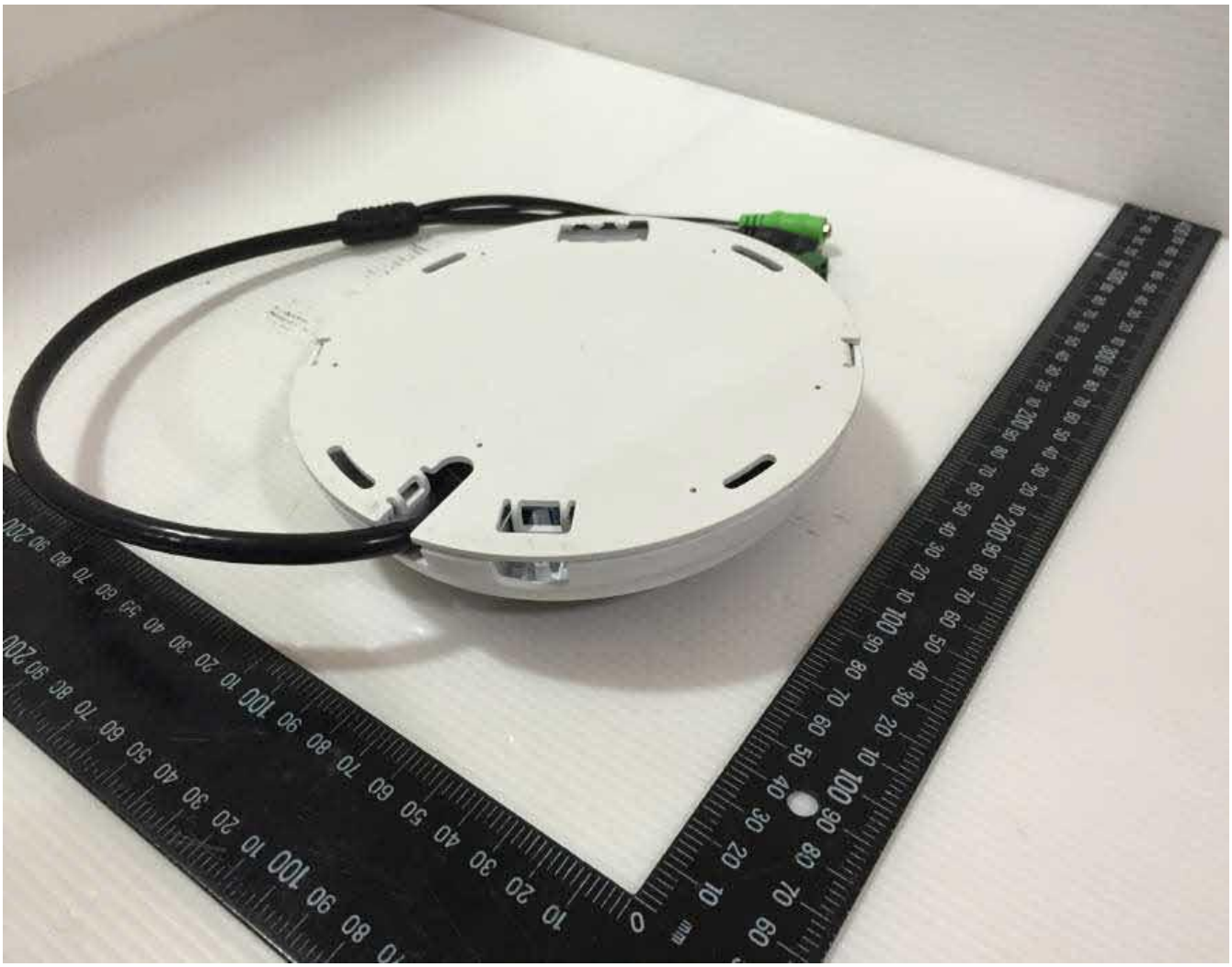
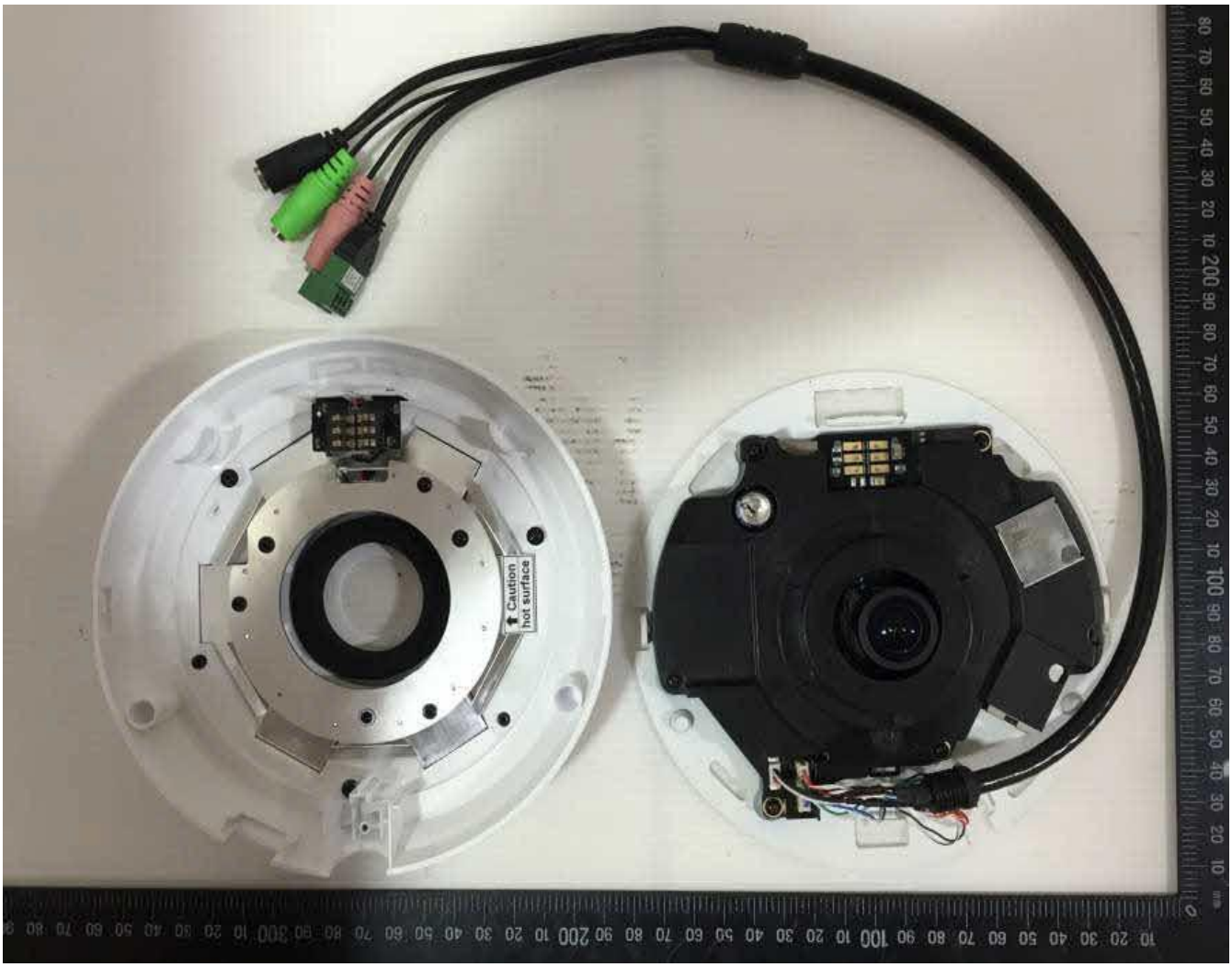
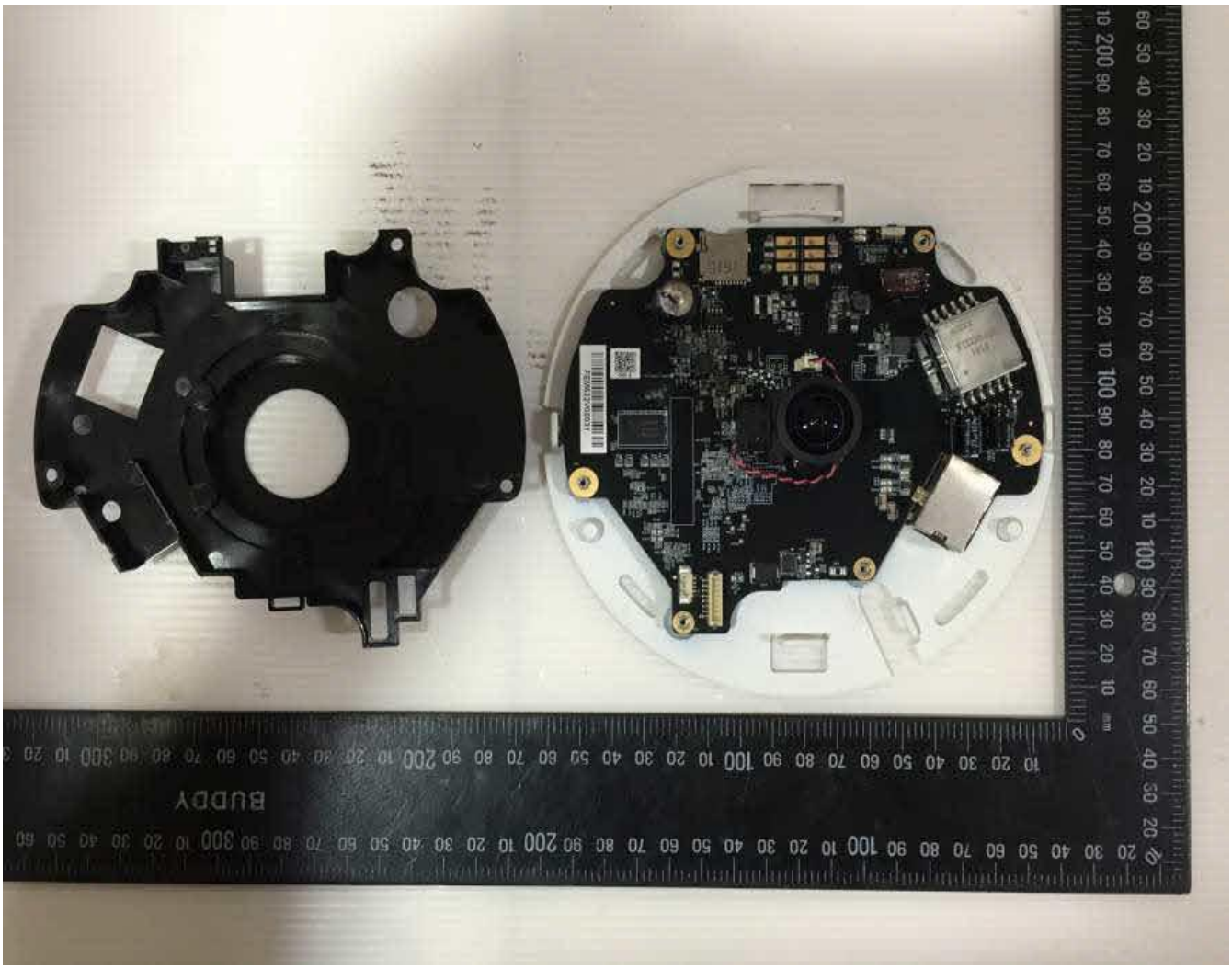
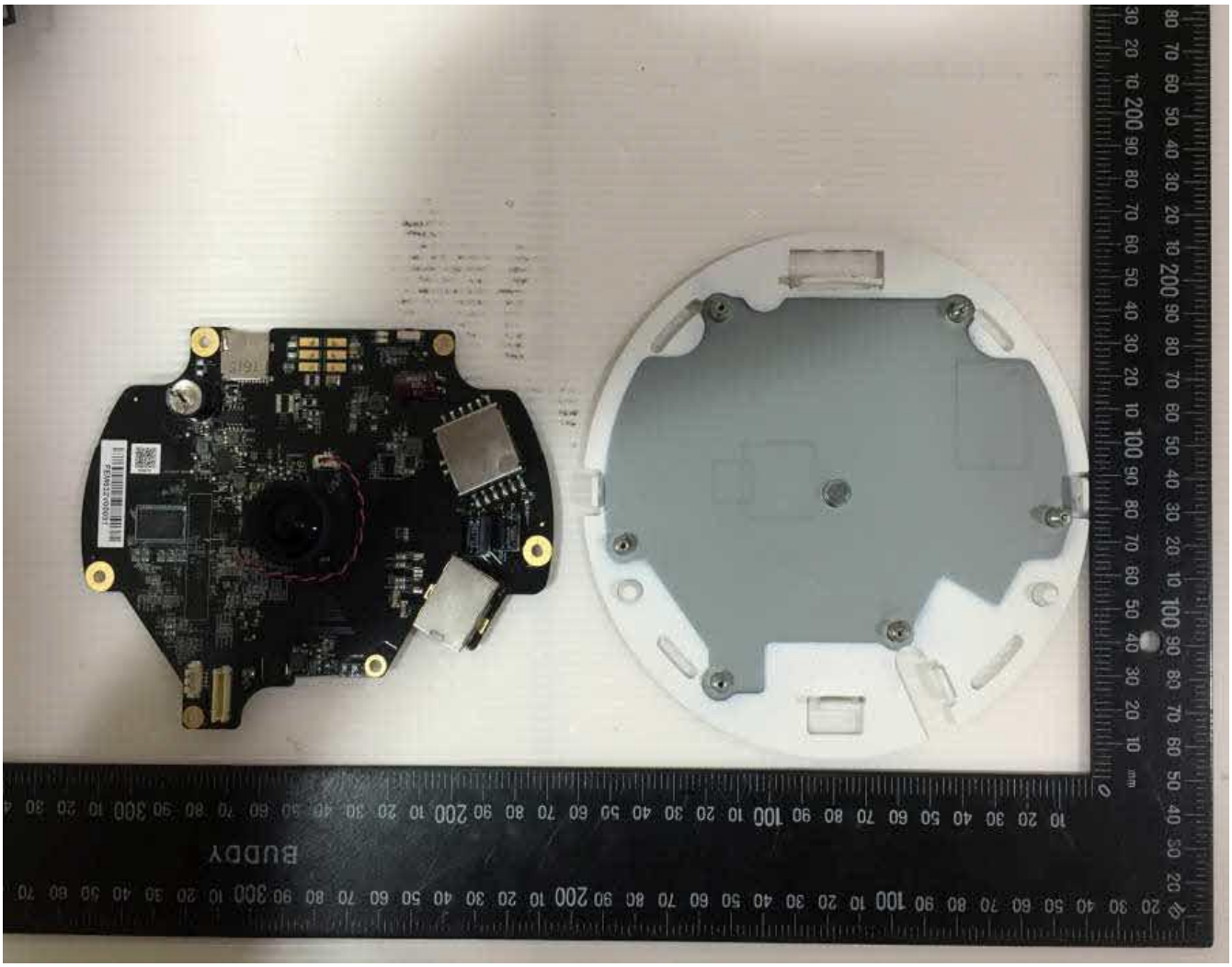



Caution
hot surface

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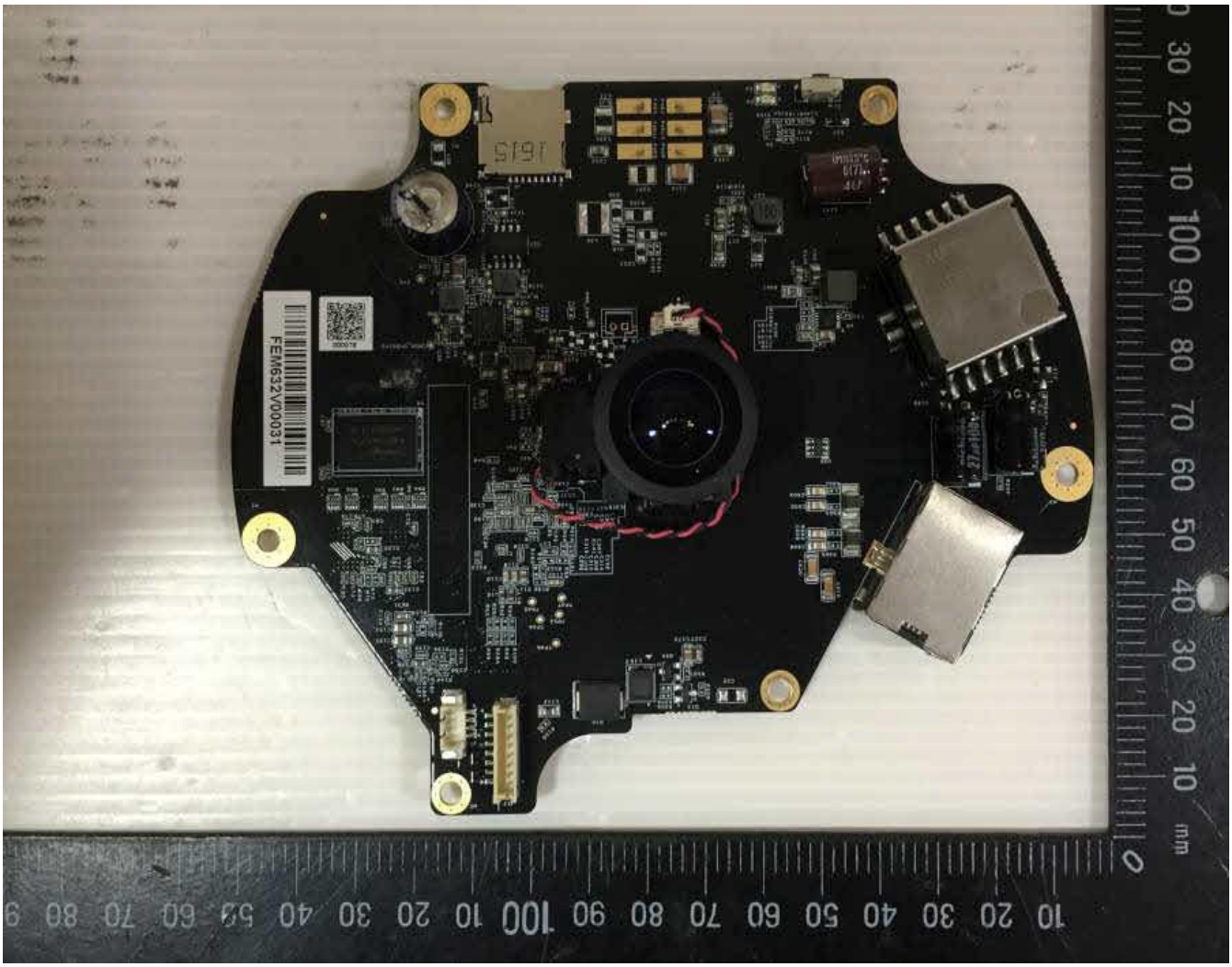
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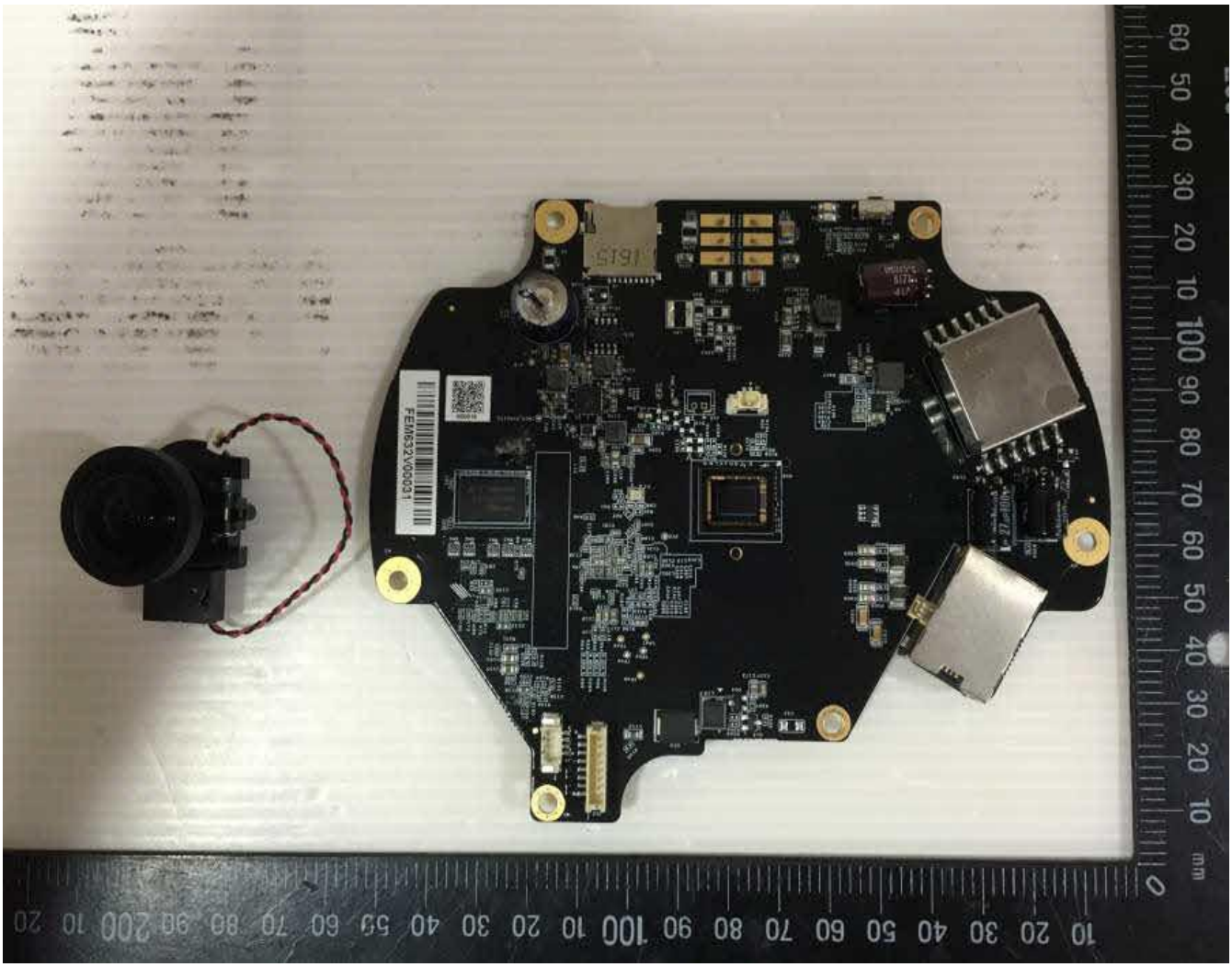
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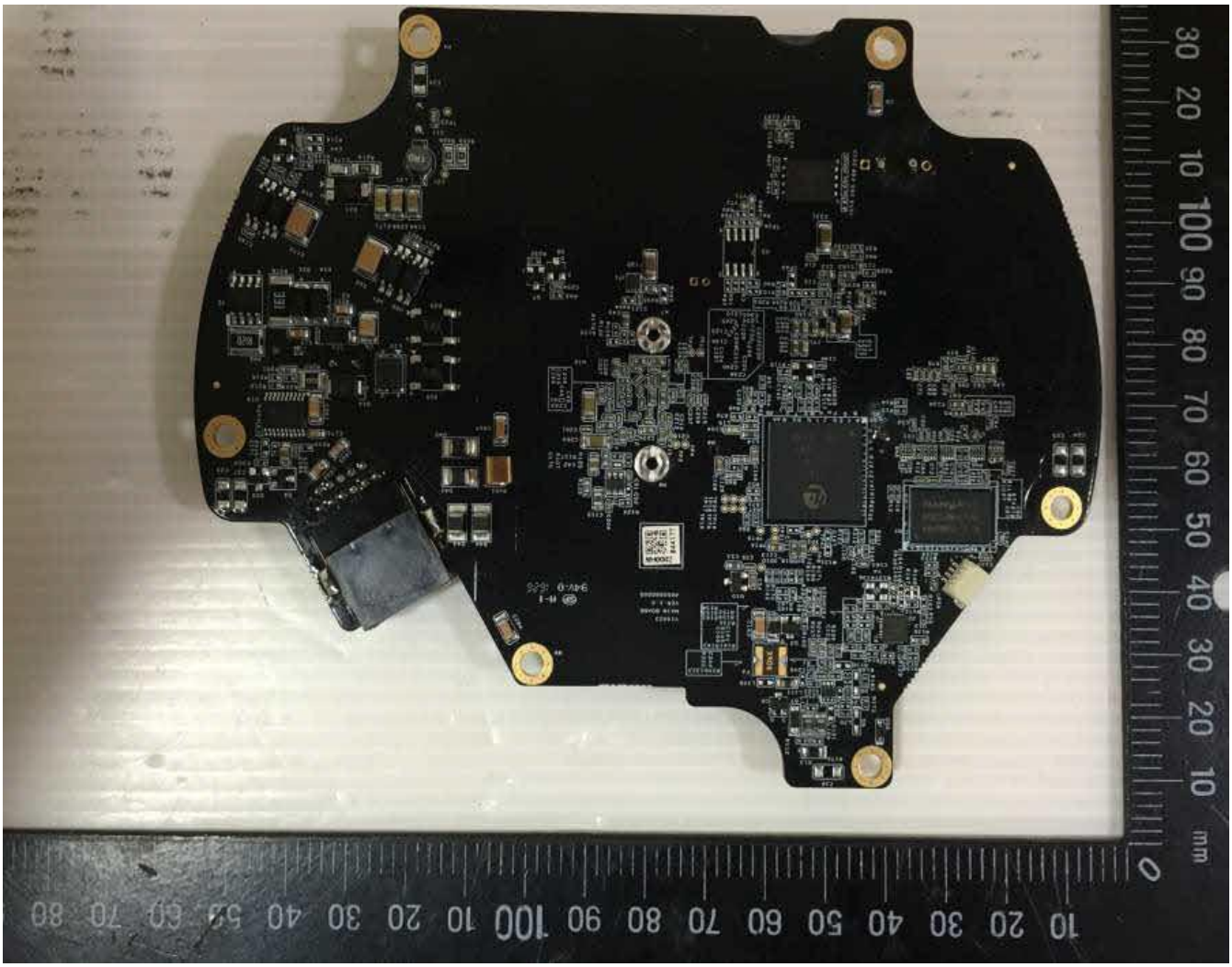

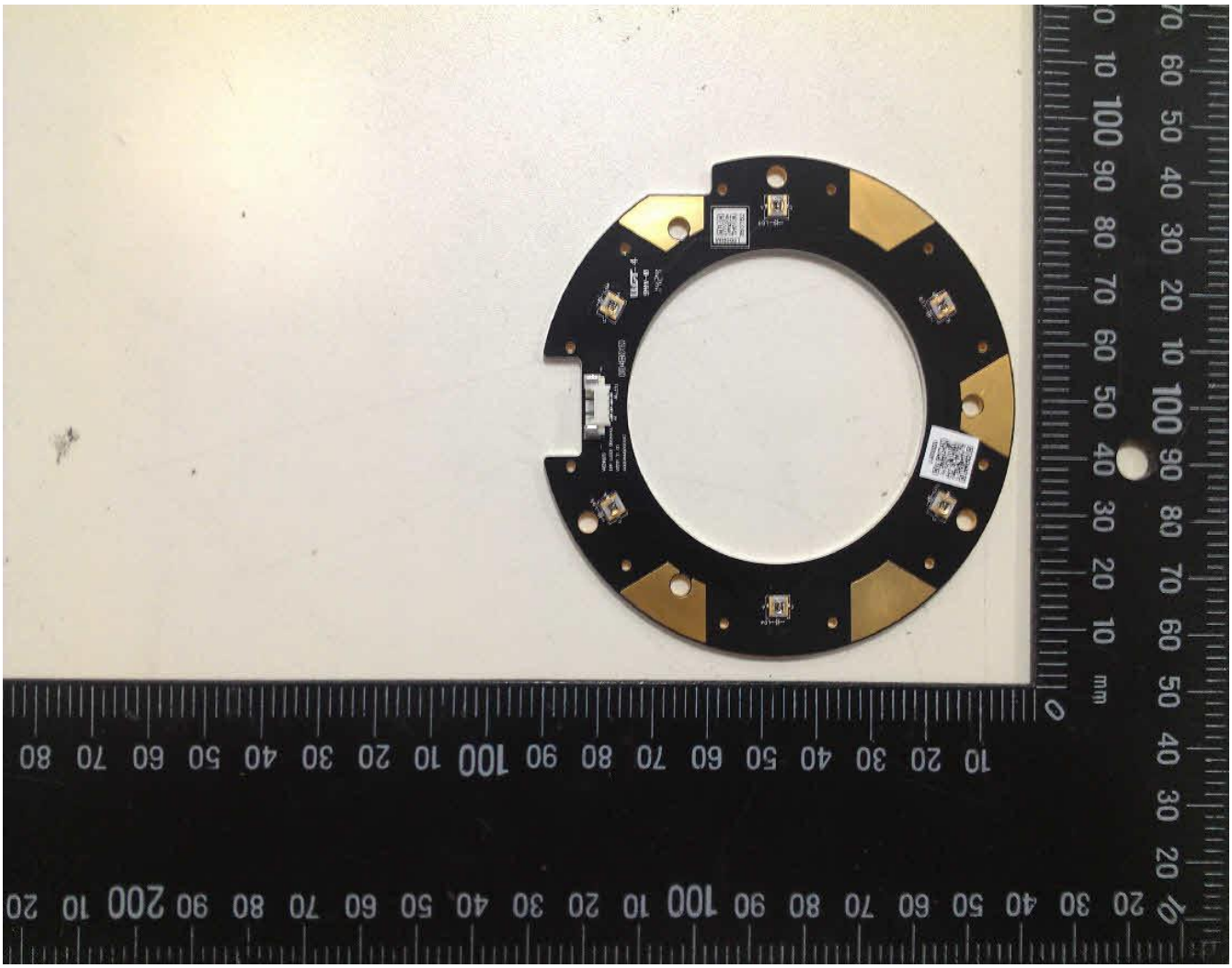
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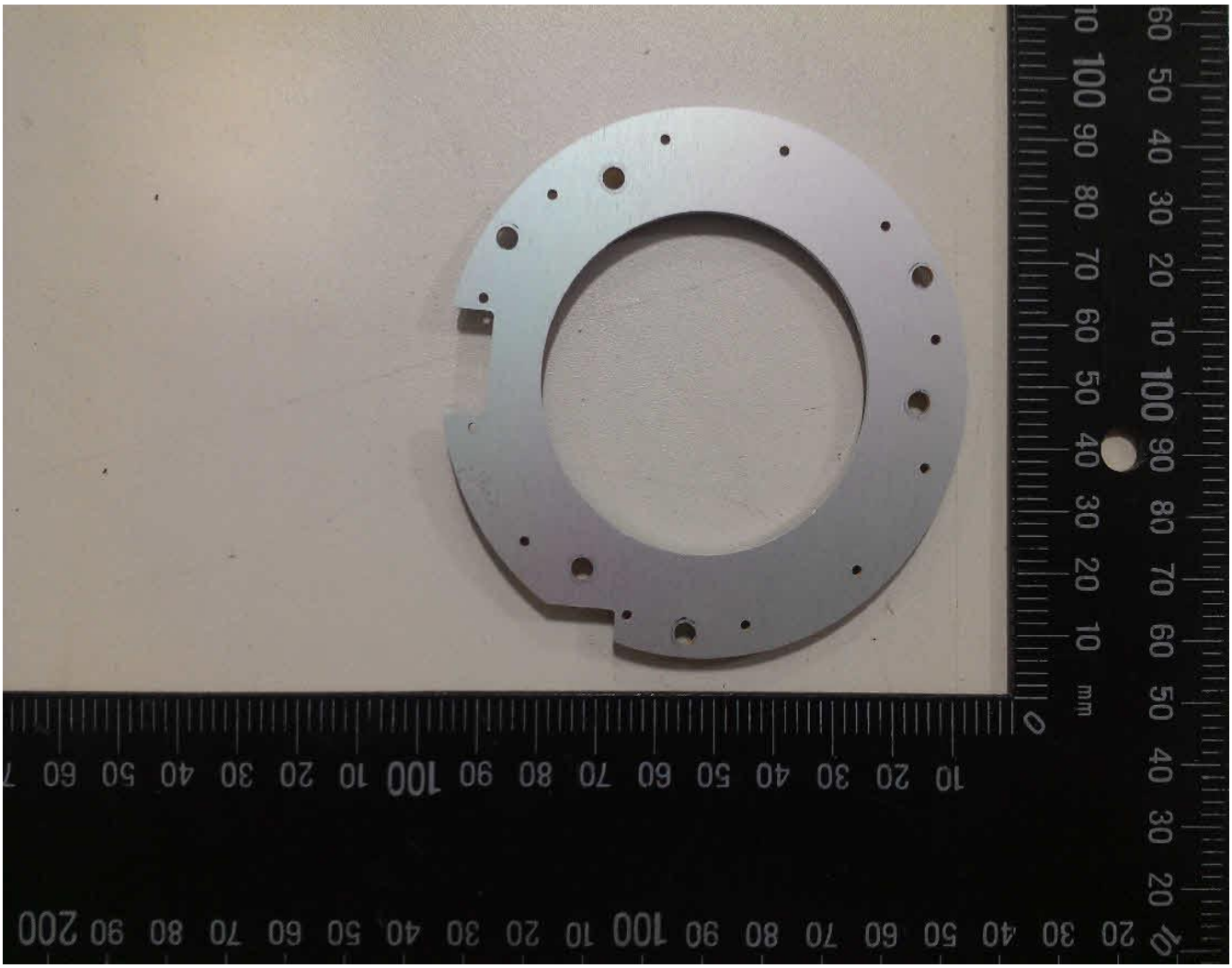
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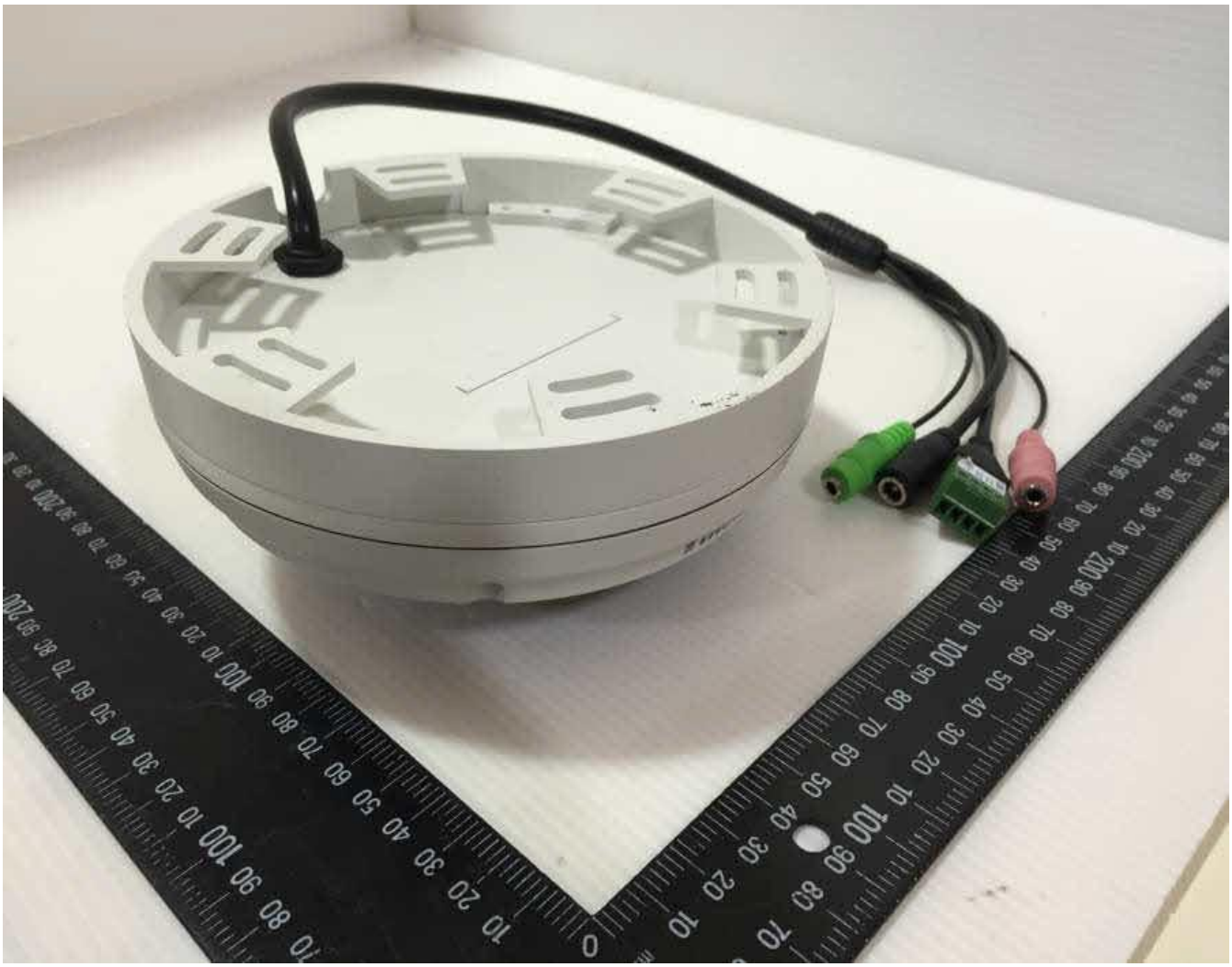
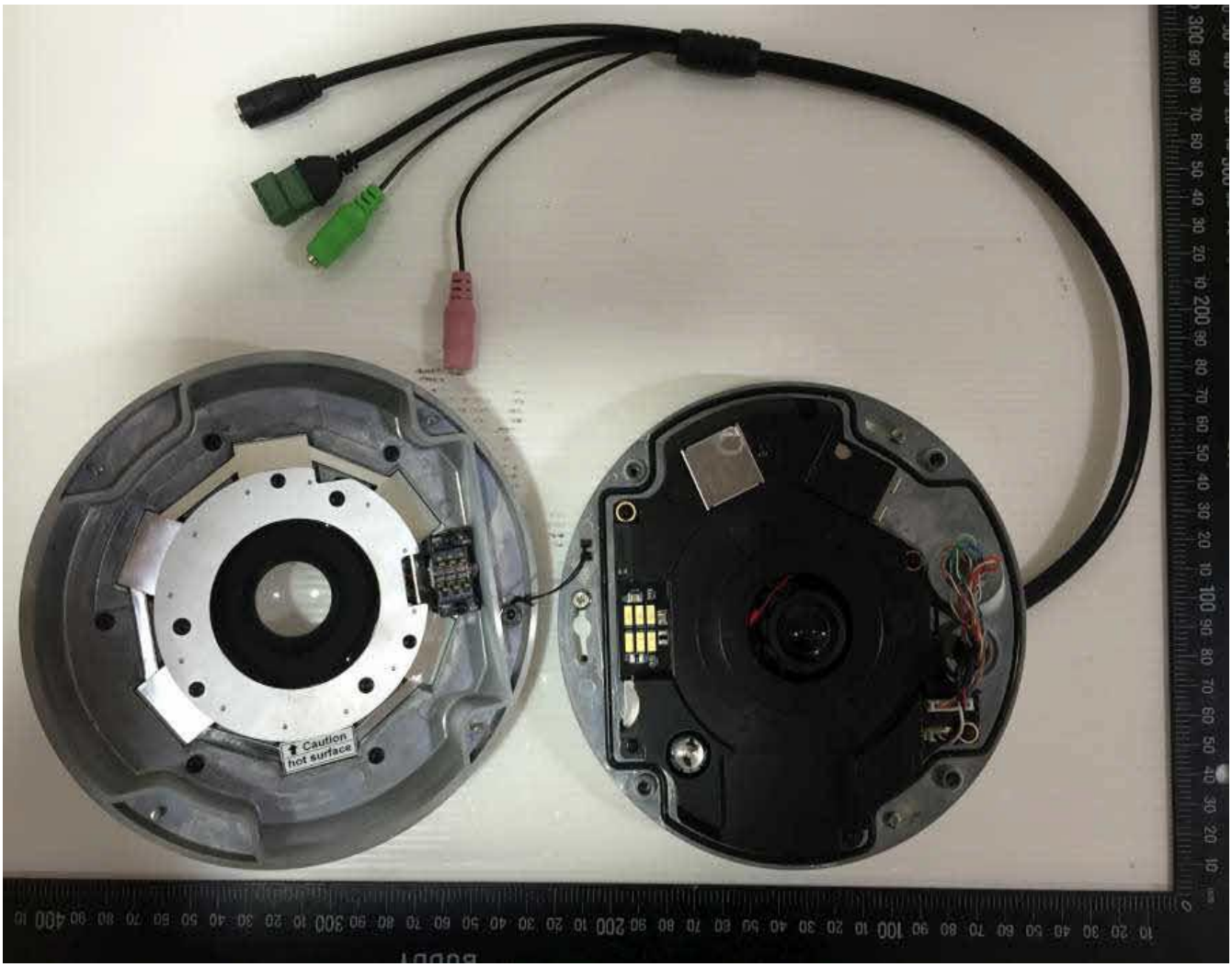
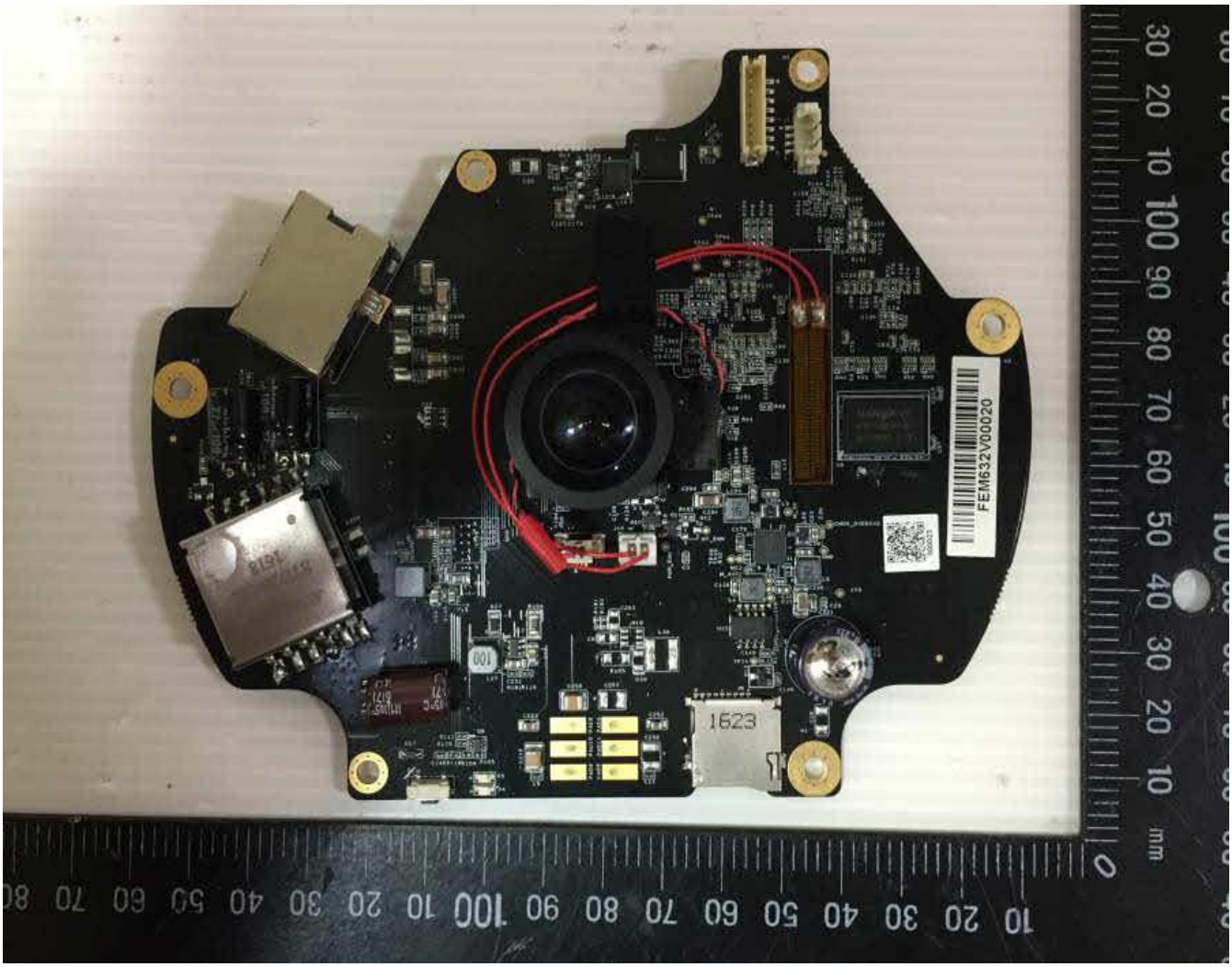



Caution
hot surface


Caution
hot surface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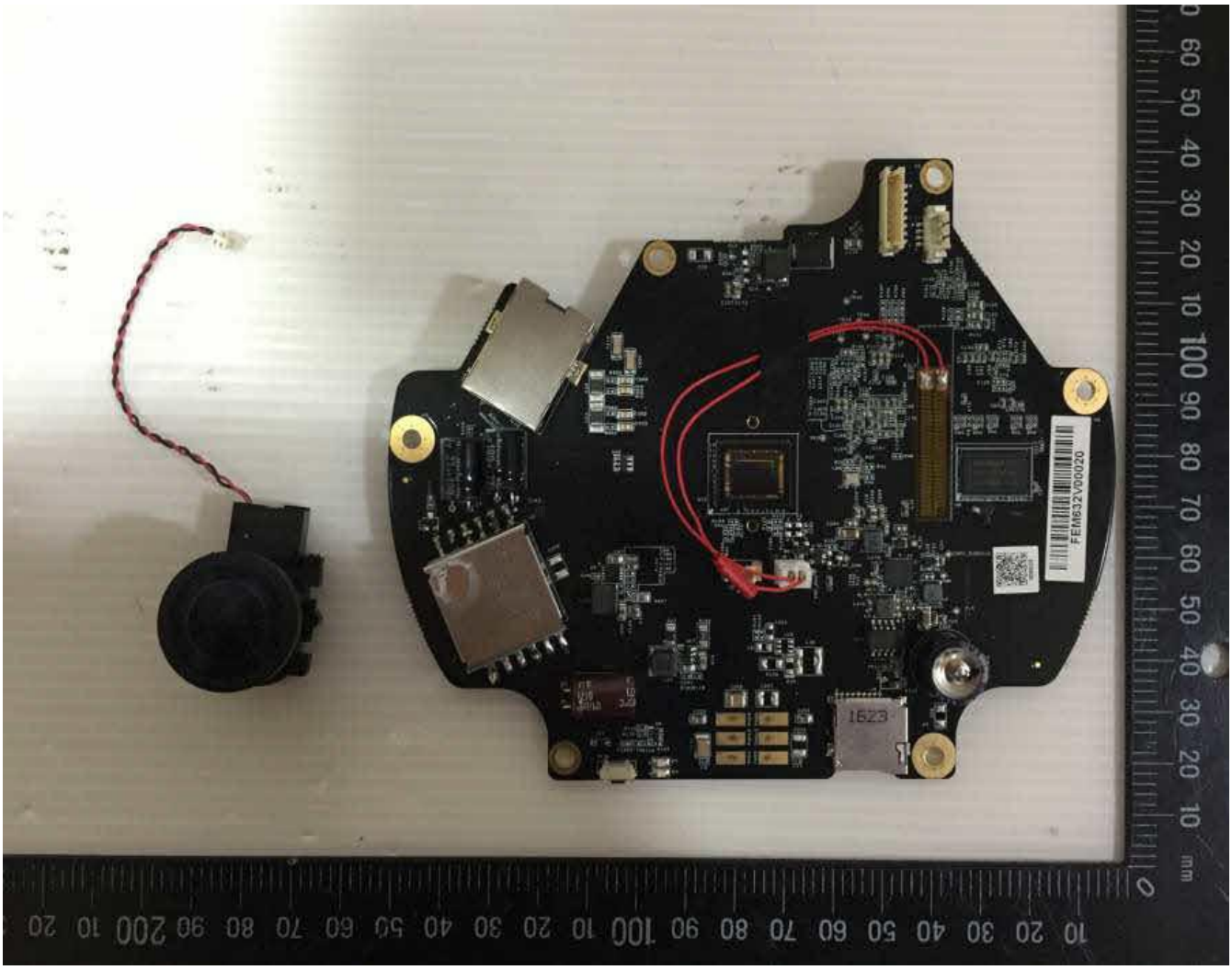
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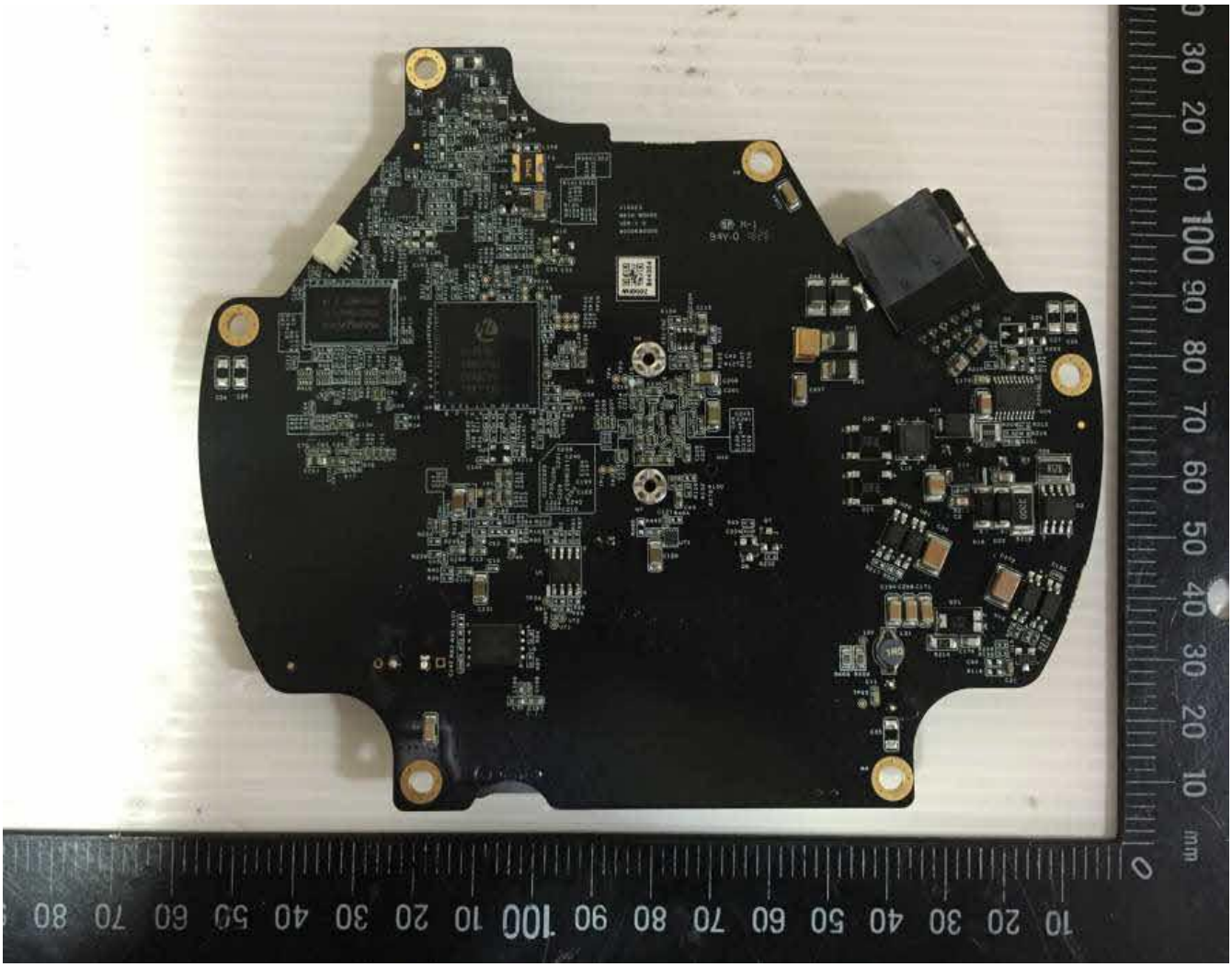

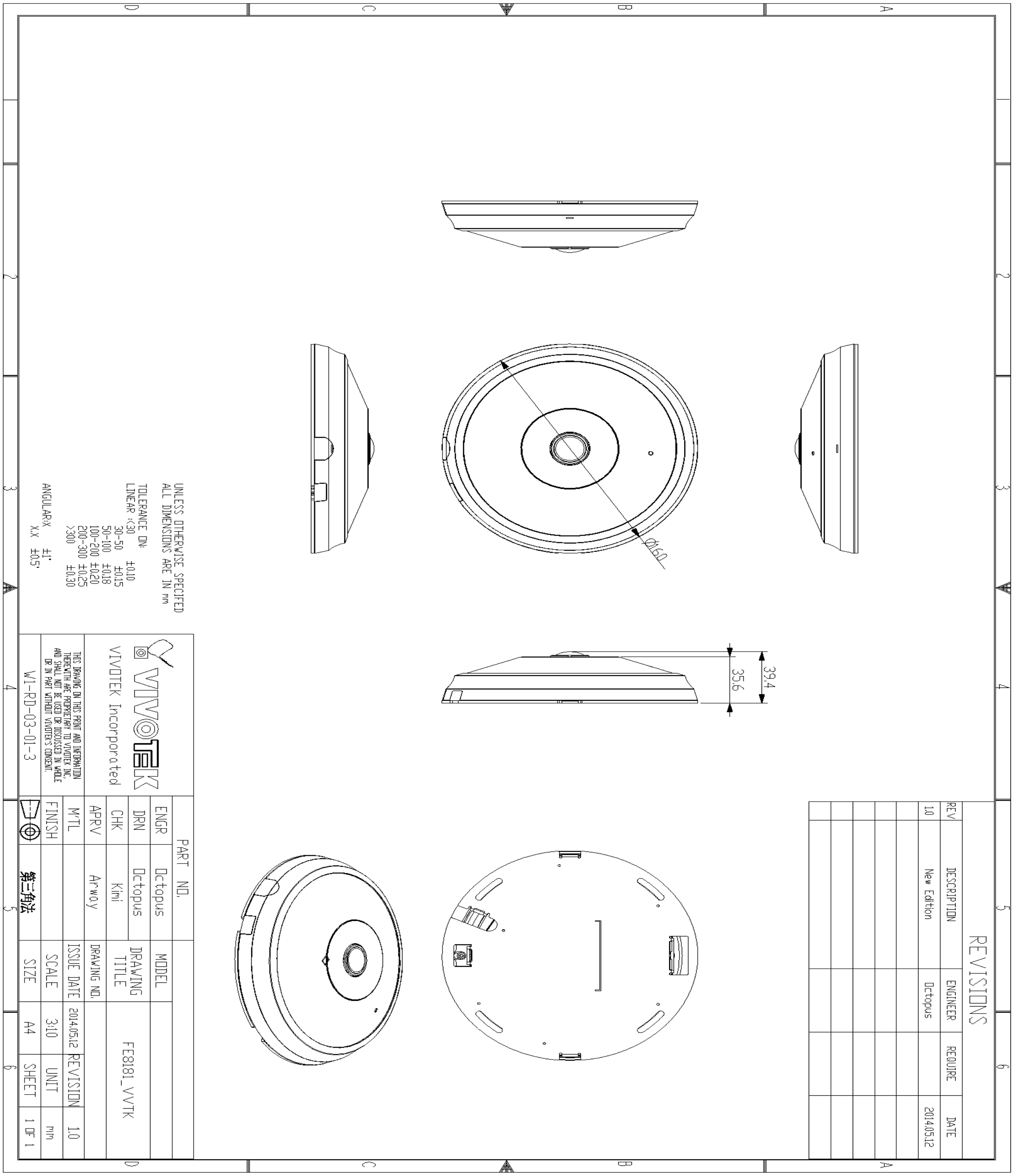
UNLESS OTHERWISE SPECIFED
ALL DIMENSIONS ARE IN mm
TOLERANCE DIN
LINEAR <30 ±0.10
30-50 ±0.15
50-100 ±0.18
100-200 ±0.20
200-300 ±0.25
>300 ±0.30
ANGULAR:X ±1°
X.X ±0.5°
Ø160
39.4
35.6
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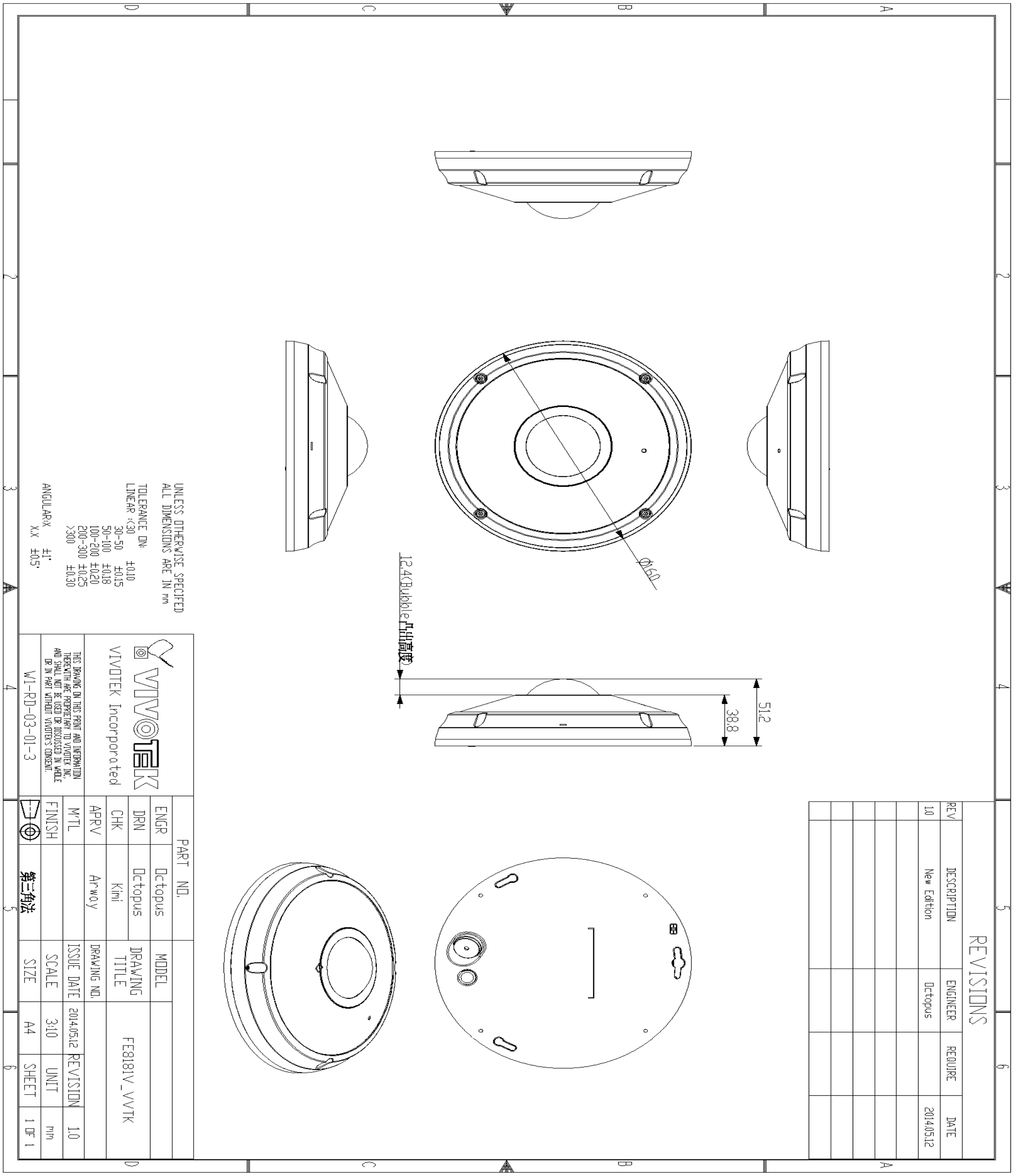
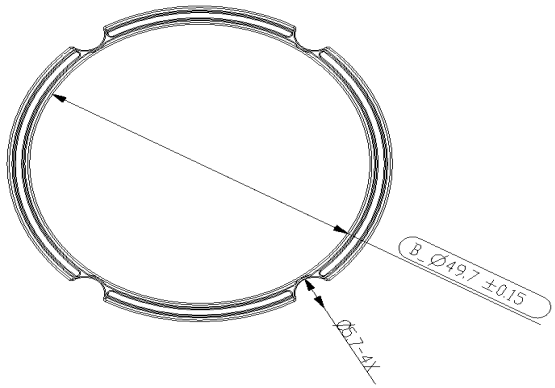
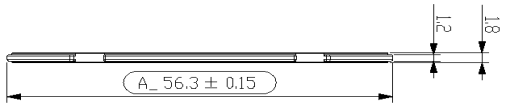
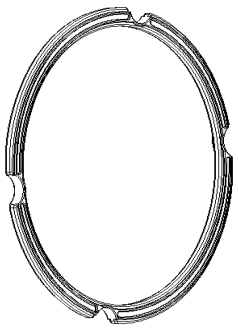
第三角法
MODEL
DRAWING TITLE FE8181_VVTK
DRAWING NO.
ISSUE DATE 2014.05.12
REVISION 1.0
SCALE 3:10
UNIT mm
SIZE A4
SHEET 1 OF 1
REVISIONS
REV DESCRIPTION ENGINEER REQUIRE DATE
1.0 New Edition Octopus 2014.05.12


UNLESS OTHERWISE SPECIFED
ALL DIMENSIONS ARE IN mm
TOLERANCE ON
VIVOTEK Incorporated
WI-RD-03-01-3
PART NO.
ENGR Octopus
DRN Octopus
CHK Kimi
APRV Arway
M'TL
FINISH
MODEL
DRAWING TITLE FE8181V_VVTK
DRAWING NO.
ISSUE DATE 2014.05.12
REVISION 1.0
SCALE 3:10
UNIT mm
SIZE A4
SHEET 1 OF 1
REVISIONS
REV DESCRIPTION ENGINEER REQUIRE DATE
1.0 New Edition Octopus 2014.05.12
51.2
38.8

注意事項
1.材質SILICON(TSE218-6U)，符合UL94-V0
2.顏色黑
3.硬度50±5(Shore A)
4.部品不可有毛邊、合模線
5.參考尺寸均以實配為基準
6.橢圓符號框選尺寸為重點檢驗尺寸







UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN mm

TOLERANCE ON:	
LINEAR: <30	±0.10
30~50	±0.15
50~100	±0.18
100~200	±0.20
200~300	±0.25
>300	±0.30
ANGULAR:	±1°
X.X	±0.5°

REVISIONS				
REV	DESCRIPTION	ENGINEER	REQUIRE	DATE
1.0	New Edition	Octopus		2014.05.19

PART NO.	Octopus	MODEL	612033900G
ENGR	Octopus		FE8181V
DRN	Kimi	DRAWING TITLE	FE8181V_OPTIC-RUBBER
CHK	Arwoy		
APRV	SILICON	DRAWING NO.	
M'TL		ISSUE DATE	2014.05.19
FINISH		SCALE	1:1
	第三角法	SIZE	A4
		UNIT	mm
		REVISION	1.0
		SHEET	1 OF 1

VIVOTEK Incorporated

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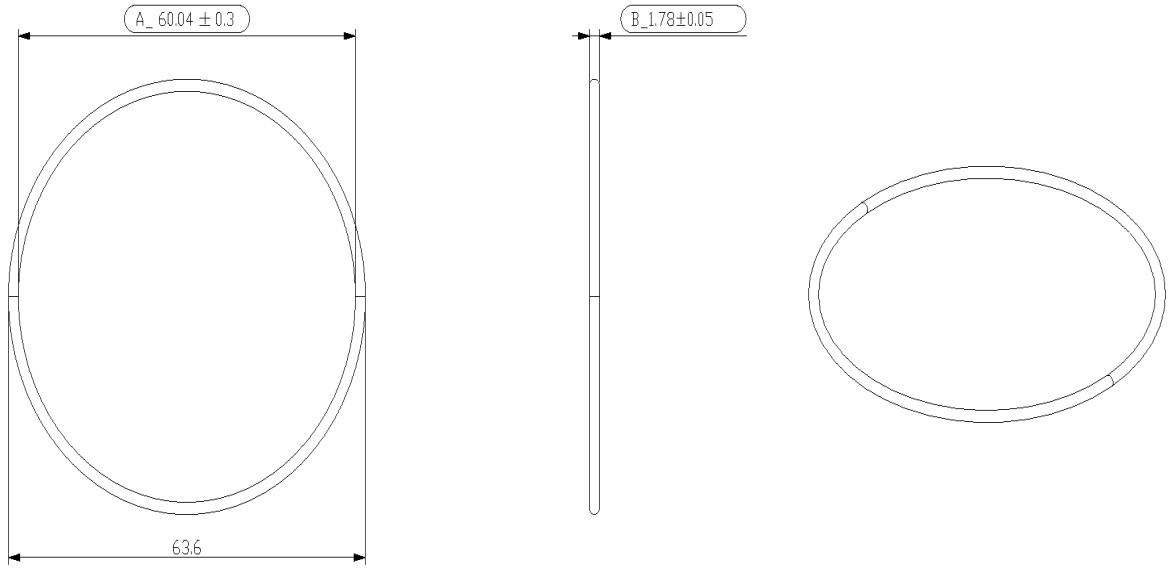
W1-RD-03-01-3

File E324690 Vol. X2 Sec. A103 DIA-04 Issued: 2016-11-09

REVISIONS				
REV	DESCRIPTION	ENGINEER	REQUIRE	DATE
1.0	New Edition	Octopus		2014.05.24



注意事項
1.材質SILICON(TSE218-6U)，符合UL94-V0
2.顏色黑色
3.硬度50±5(Shore A)
4.部品不可有毛邊、合模線
5.參考尺寸均以實配為基準
6.橢圓符號框選尺寸為重點檢驗尺寸

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN mm

TOLERANCE ON:
LINEAR: <30 ±0.10
30-50 ±0.15
50-100 ±0.18
100-200 ±0.20
200-300 ±0.25
>300 ±0.30

ANGULAR: X ±1°
X.X ±0.5°

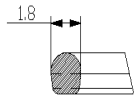
VIVOTEK Incorporated

W1-RD-03-01-3

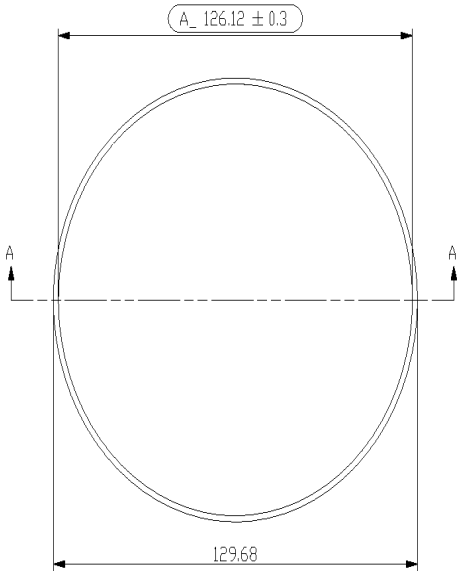
PART NO.		612034200G			
ENGR	Octopus	MODEL	FE8181V		
DRN	Octopus	DRAWING TITLE	FE8181V-IR-RUBBER-IN		
CHK	Kimi				
APRV	Arway	DRAWING NO.			
M'TL	SILICON	ISSUE DATE	2014.05.24	REVISION	1.0
FINISH		SCALE	1:1	UNIT	mm
第三角法		SIZE	A4	SHEET	1 OF 1

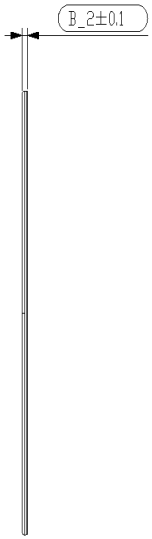
File E324690 Vol. X2 Sec. A103 DIA-05 Issued: 2016-11-09

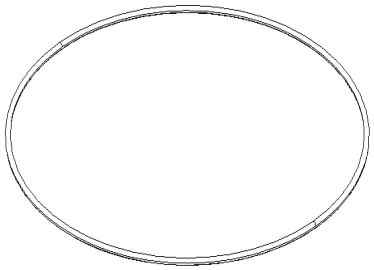
REVISIONS				
REV	DESCRIPTION	ENGINEER	REQUIRE	DATE
1.0	New Edition	Octopus		2014.08.04



截面 A-A
比例 3:1







注意事項:
1.材質:SILICONE(TSE218-6U)，符合UL94-V0
2.顏色:黑
3.硬度:40±5(Shore A)
4.部品不可有毛邊、合模線
5.參考尺寸均以實配為基準
6.橢圓符號框選尺寸為重點檢驗尺寸

UNLESS OTHERWISE SPECIFED
ALL DIMENSIONS ARE IN mm

TOLERANCE ON:
LINEAR :<30 ±0.10
30-50 ±0.15
50-100 ±0.18
100-200 ±0.20
200-300 ±0.25
>300 ±0.30

ANGULAR:X ±1°
X.X ±0.5°

VIVOTEK Incorporated

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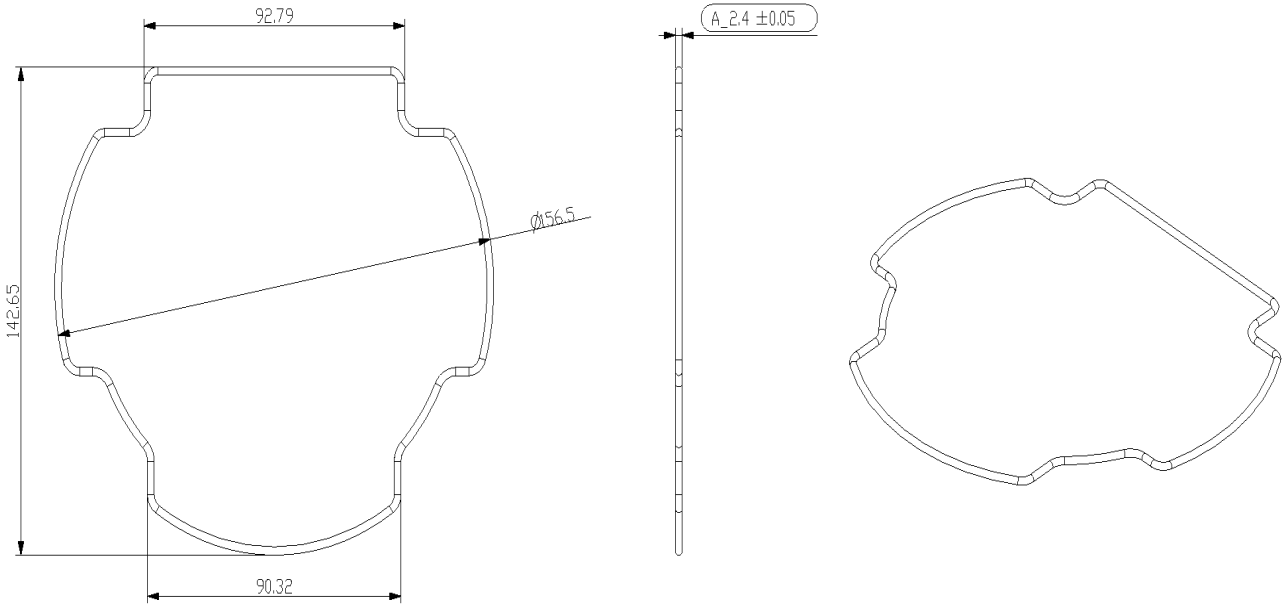
PART NO.		612034100G				
ENGR	Octopus	MODEL	FE8181V			
DRN	Octopus	DRAWING TITLE	FE8181V-IR-RUBBER-OUT			
CHK	Kimi					
APRV	Arway	DRAWING NO.				
M'TL	SILICONE	ISSUE DATE	2014.08.04	REVISION	1.0	
		SCALE	1:2	UNIT	mm	
		SIZE	A4	SHEET	1 OF 1	

File E324690 Vol. X2 Sec. A103 DIA-06 Issued: 2016-11-09

REVISIONS				
REV	DESCRIPTION	ENGINEER	REQUIRE	DATE
1.0	New Edition	Octopus		2014.05.19



注意事項
1.材質SILICON(TSE218-6U)，符合UL94-V0
2.顏色:黑
3.硬度50±5(Shore A)
4.部品不可有毛邊、合模線
5.參考尺寸均以實配為基準
6.橢圓符號框選尺寸為重點檢驗尺寸

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN mm

TOLERANCE ON:
LINEAR: <30 ±0.10
30~50 ±0.15
50~100 ±0.18
100~200 ±0.20
200~300 ±0.25
>300 ±0.30

ANGULAR: X ±1°
X.X ±0.5°

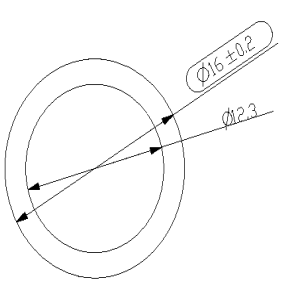
VIVOTEK Incorporated

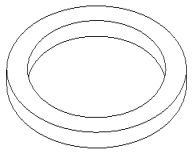
W1-RD-03-01-3

PART NO.		612034000G			
ENGR	Octopus	MODEL	FE8181V		
DRN	Octopus	DRAWING TITLE	FE8181V-MRP2		
CHK	Kimi				
APRV	Arwoy	DRAWING NO.			
M'TL	SILICON	ISSUE DATE	2014.05.19	REVISION	1.0
FINISH		SCALE	1:2	UNIT	mm
第三角法		SIZE	A4	SHEET	1 OF 1

File E324690 Vol. X2 Sec. A103 DIA-07 Issued: 2016-11-09

REVISIONS				
REV	DESCRIPTION	ENGINEER	REQUIRE	DATE
1.0	New Edition	Octopus		2014.07.17





注意事項

1.材質:SILICON(TSE218-6U)，符合UL94-V0
2.顏色:黑色
3.硬度:75±5(Shore A)
4.部品不可有毛邊、合模線
5.參考尺寸均以實配為基準
6.橢圓符號框選尺寸為重點檢驗尺寸

UNLESS OTHERWISE SPECIFED
ALL DIMENSIONS ARE IN mm

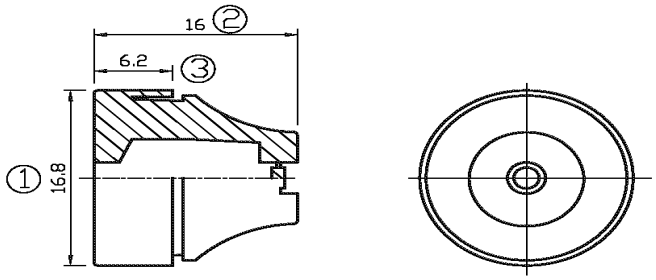
TOLERANCE ON:
LINEAR :<30 ±0.10
30-50 ±0.15
50-100 ±0.18
100-200 ±0.20
200-300 ±0.25
>300 ±0.30

ANGULAR:X ±1°
X.X ±0.5°

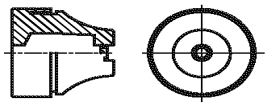
VIVOTEK Incorporated

W1-RD-03-01-3

PART NO.		612036900G			
ENGR	Octopus	MODEL	FE8181V		
DRN	Octopus	DRAWING TITLE	GASKET-12-16		
CHK	Kimi				
APRV	Arwoy	DRAWING NO.			
M'TL	TSE 218-6U	ISSUE DATE	2014.07.17	REVISION	1.0
FINISH		SCALE	2:1	UNIT	mm
第三角法		SIZE	A4	SHEET	1 OF 1



SCALE\2:1



SCALE\1:1

Confidential 機密文件 非授權 請勿外流

Cable Range	3.5 - 5.5 mm
Panel Hole Size	14 ± 0.25 mm
IP Ratings	IP68 - 0.2bar
Panel Thickness	1 - 4 mm
AVC Test No.	E231-103-0007-1A-1

全冠企業有限公司 AVC Industrial Corp.	INSPECTED BY	YAWEN	2014.03.05
	DRAWN BY	LING GHIOU	2014.03.05
PRODUCT: Waterproof Sealing Grommet			
PART NO.: GEW14S-05-03SG	MATERIAL	SILVER GREY GASKET	
SCALE: 2:1 / UNIT: mm / REV. 1			

TOLERANCE:
6 ↓ ±0.2 18.1~30±0.5
6.1~9±0.3 30.1~50±0.6
9.1~18±0.4 50.1~80±0.8

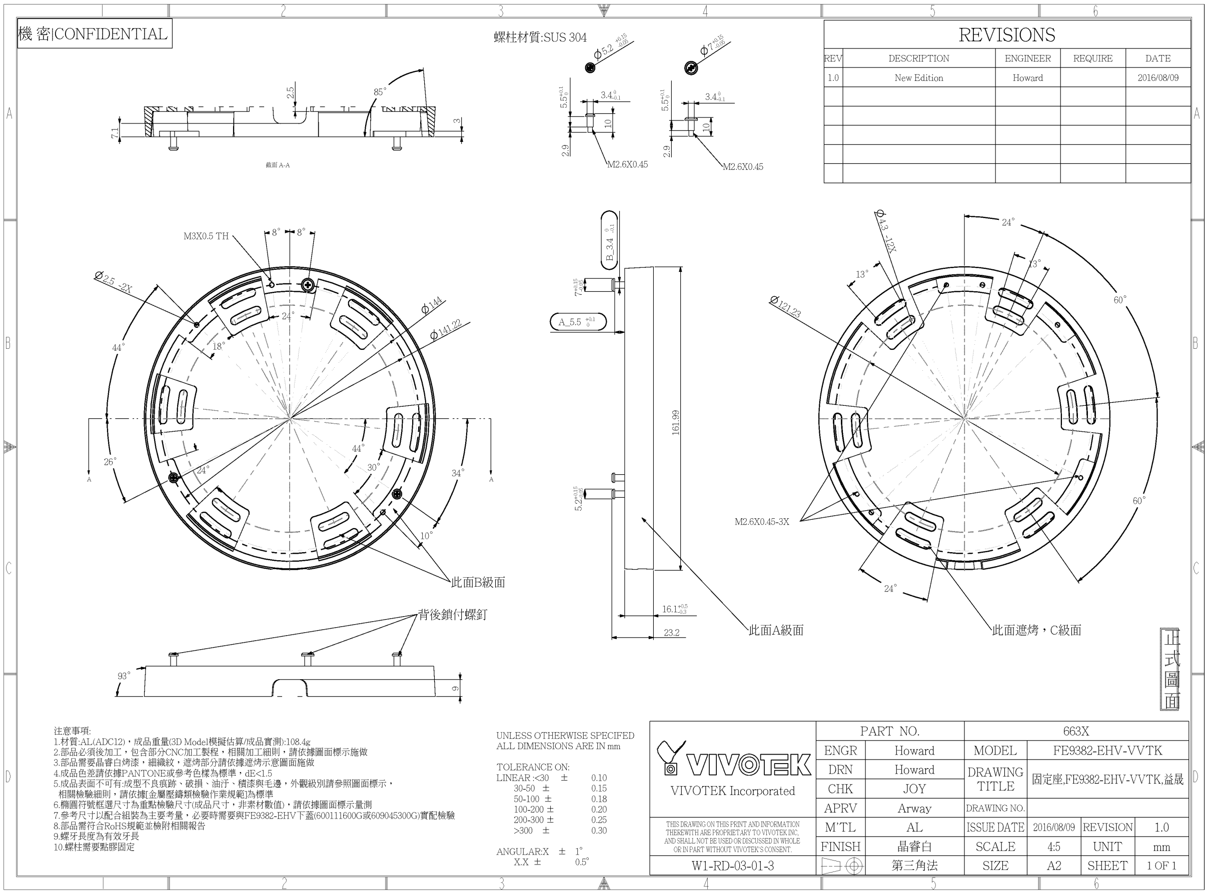
PATENTED

IP68

REMARK:

( )Inside reference value

RoHS


機密|CONFIDENTIAL
螺柱材質:SUS 304
REVISIONS
REV DESCRIPTION ENGINEER REQUIRE DATE
1.0 New Edition Howard 2016/08/09
截面 A-A
M3X0.5 TH
M2.6X0.45
M2.6X0.45-3X
此面B級面
背後鎖付螺釘
此面A級面
此面遮烤，C級面
正式圖面
注意事項:
1.材質:AL(ADC12)，成品重量(3D Model模擬估算/成品實測):108.4g
2.部品必須後加工，包含部分CNC加工製程，相關加工細則，請依據圖面標示施做
3.部品需要晶睿白烤漆，細織紋，遮烤部分請依據遮烤示意圖面施做
4.成品色差請依據PANTONE或參考色樣為標準，dE<1.5
5.成品表面不可有:成型不良痕跡、破損、油汙、積漆與毛邊，外觀級別請參照圖面標示，
相關檢驗細則，請依據[金屬壓鑄類檢驗作業規範]為標準
6.橢圓符號框選尺寸為重點檢驗尺寸(成品尺寸，非素材數值)，請依據圖面標示量測
7.參考尺寸以配合組裝為主要考量，必要時需要與FE9382-EHV下蓋(600111600G或609045300G)實配檢驗
8.部品需符合RoHS規範並檢附相關報告
9.螺牙長度為有效牙長
10.螺柱需要點膠固定
UNLESS OTHERWISE SPECIFED
ALL DIMENSIONS ARE IN mm
TOLERANCE ON:
LINEAR :<30 ± 0.10
30-50 ± 0.15
50-100 ± 0.18
100-200 ± 0.20
200-300 ± 0.25
>300 ± 0.30
ANGULAR:X ± 1°
X.X ± 0.5°
VIVOTEK
VIVOTEK Incorporated
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W1-RD-03-01-3
PART NO. 663X
ENGR Howard
DRN Howard
CHK JOY
APRV Arway
M'TL AL
FINISH 晶睿白
第三角法
MODEL FE9382-EHV-VVTK
DRAWING TITLE 固定座,FE9382-EHV-VVTK,益晟
DRAWING NO.
ISSUE DATE 2016/08/09
REVISION 1.0
SCALE 4:5
UNIT mm
SIZE A2
SHEET 1 OF 1

承認書番号 Spec No. TTS- ASST00327

客戶
Customer 晶睿 殿

承 認 書
Specifications For Approval

製 品 名 Description: 變壓器 Transformer

客 戶 品 名 Customer P/ N:

仕 樣 名 Trade Name: STD20- 12L

RoHS對應品

受領印欄
Please return one copy with your approved signature

作 成 DRAWN	検 認 CHECKED	品管検認 QC CHECKED	承 認 APPROVED
江 2014/09/04 文娟	鮑 2014/09/04 靜華	佐藤(正)	黃 2014/09/04 文李

AUDIX

発行日 Date: 2014年9月4日

信華科技(廈門)有限公司
AUDIX TECHNOLOGY (XIAMEN) Co.,LTD
中国廈門市集美区杏南路46号
46,XING NAN ROAD,JIMEI,XIAMEN,CHINA
TEL: (0086) 0592- 6216601 FAX:(0086) 0592－6214837

承 認 書 Specifications	管理番号 Classified No.	TTS- ASST00327	1/4
品 名 TITLE	STD20- 12L		

1、適用範囲 Scope

本承認書為變壓器 STD20- 12L 適用。
This specification applies to the Transformer STD20- 12L delivery.

2、内 容 Content

①	表 紙 Surface sheet			⑦	材料表 Material list	
②	変更履歴 Revision of change	1/4				
③	電気特性表 Electrical characteristics	2/4				
④	製 品 図 Products drawing	2/4				
⑤	梱包方法 Packing method	3/4				
⑥	回流焊曲線圖 SOLDERING PROFILE	4/4				

3、使用材料 Raw material

本線圈沒有使用破壞臭氧層的物質、塩素系有機溶剤及特定臭素系難燃剤。
Neither the ozone _depleting substance、the chloric organic solvent nor the flame retardant medicine of the specific bromine system are used for this coil .

4、其他 Note

如有發生疑義，請速与本公司聯系，進行協商解決。
If any doubt is occurred on this spec , make contact with us immediately , and take a disposition based on the agreement between each other.

版 Edition	日 期 Date	改 定 事 項 Revision	改 定 理 由 Reason
0	2014- 9- 4	制 定	-

作 成 DRAWN	検認 CHECKED	品管検認 QC CHECKED	承 認 APPROVED	制 定 日 ISSUED DATE
江 2014/09/04 文娟	鮑 2014/09/04 静華	佐藤 (正)	黃 2014/09/04 文季	2014- 9- 4

承 認 書 Specifications	分類番号 Classified No.	TTS- ASST00327	2/4

品 名 TITLE: STD20- 12L

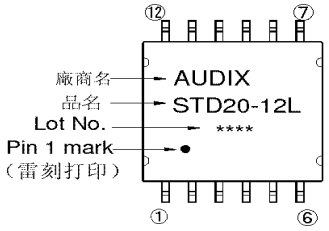
電気特性 Electric Characterisrics

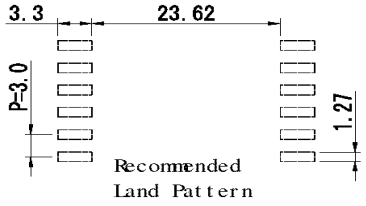
Part number	Inductance at 0 A ±10%uH	Inductance at Ipk min(uH)	DCR max(Ω) pri	DCR max(Ω) sec	DCR max(Ω) aux	Leakage inductance max(uH)	Turns ratio pri : sec	Turns ratio pri : aux	Ipk (A)	Output (REF)
STD20- 12L	42	37.8	0.061	0.015	0.195	0.545	1 : 0.33	1 : 0.33	2.6	12V, 2.5A

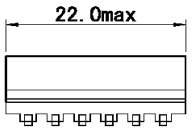
1. Inductance is for the primary, measured at 250kHz, 0.7Vrms, 0Adc.
2. Peak primary current drawn at minimum input voltage.
3. DCR is with the windings connected in parallel.
4. Leakage inductance is for the primary winding with the secondary windings shorted.
5. Turns ratio is with the primary and the secondary windings connected in parallel.
6. Output is with the secondary windings connected in parallel. Output of the auxiliary winding is 12V.
7. Electrical specifications at 25°C.
8. Operating temperature - 40°C to + 125°C.
9. Storage temperature - 40°C to + 125°C.
10. Packaging - 55°C to + 80°C.

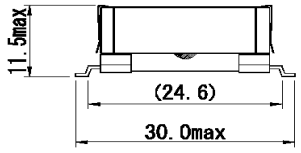
外形、寸法 Externals and Dimensions

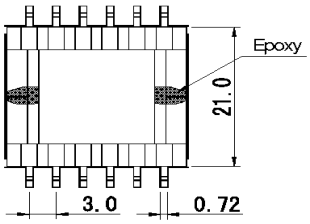
UNIT: mm



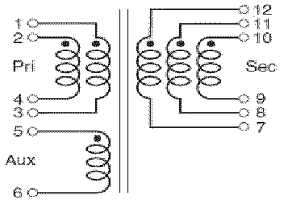








Schematics



品名: STD20 -12L
- 輸出電壓Output Voltage
- 型名Type

Lot No.: * * * *
- 周Week
- 年Year

承 認 書 Specifications	管理番号 Classified No.	TTS- ASST00327	3/4
品 名 TITLE	STD20- 12L		

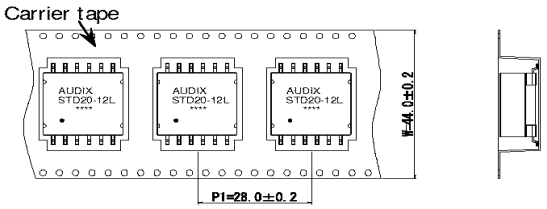
包装方法 Packing Method

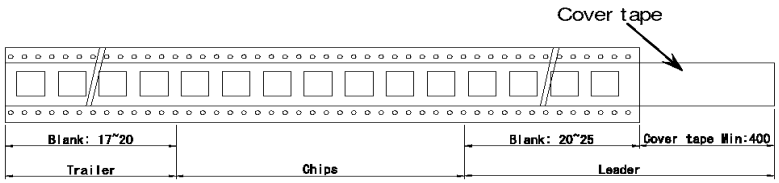
材料 Materials

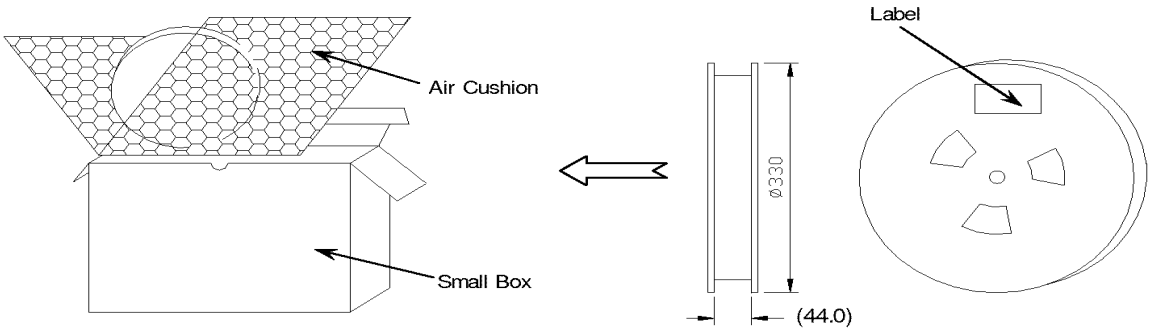
① 編帶 Carrier tape
② 蓋帶 Cover tape
③ 卷軸 Reel
④ 汽泡袋 Air Cushion
⑤ 小箱 Small Box
⑥ 外箱 Outer Box
⑦ 封裝膠帶 Cellophane Tape

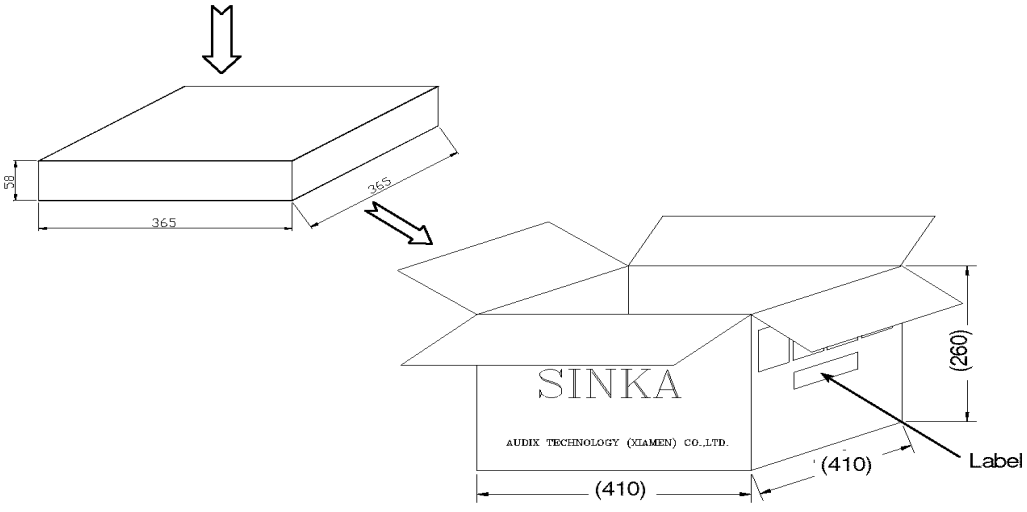
数量 Quantity

4卷×200個/ 卷＝800個/ 箱
4Reel×200pcs/ Reel＝800pcs/ Box







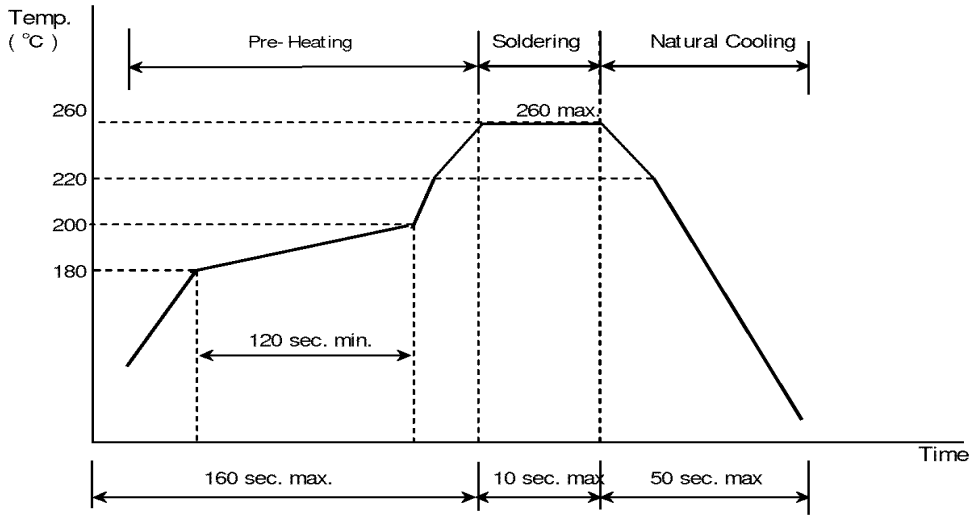


AUDIX

承 認 書 Specifications	管理番号 Classified No.	TTS- ASST00327	4/4
品 名 TITLE	STD20- 12L		

SOLDERING PROFILE

1) Re- flow Soldering profile



2) Manual soldering

Solder iron temperature : 380±5℃

Soldering time : 3±1sec.

TO: _____

1. Description : Transformer
2. Lot No. :
3. Trade Name : STD20-12L
4. Quantity :

MATERIAL LIST

No.	Item	Trade name	Material	File No.	Temp Class	Manufacture
①	Core	P4 EFD20	Ferrite	----	----	ACME Electronics Material Co., Ltd.
		PG232A EFD20	Ferrite	----	----	Magsource Electronic Co., Ltd.
		DMR40 EPC20	Ferrite	----	----	Dongyang Magnetic Enterprise Group Corporation
		TP4 EFD20	Ferrite	----	----	TDG Holding Co., Ltd.
②	Bobbin	EFD20	Phenolic	E41429 UL94V-0	150 ℃	Sumitomo Bakelite Co., Ltd.
③	Magnet Wire	UEW	Polyurethane Copper Wire	E174837	130 ℃	Jung Shing Wire Co., Ltd.
				E197768	130 ℃	Ta YA Electric Wire Factory
				E85640	130 ℃	TAI-1 Copper Co., Ltd.
				E221719	155 ℃	Zhejiang Hongbo Electric Line & Wire Co., Ltd.
④	Insulation Tape	635F#25 White	Polyethylene naphthalate	E56086	150 ℃	Teraoka Seisakusho Co., Ltd.
		201 #25 Brown	Polyimide film	E229667	180 ℃	Shanghai Jinzhang Insulating Material Co., Ltd.
⑤	Holder	EFD20	SUS 301	----	----	PIN HSIANG Industriall Co., Ltd.
⑥	Solder	Sn95-1Ag-4CU	Lead-Free	----	----	ALPHA Metal Co., Ltd.
		SN100C3	Lead-Free	----	----	AIM Solder Corporation
⑦	Adhesive	E-5002	Epoxy	----	----	Chemitech Co., Ltd.

AUDIX TECHNOLOGY (XIAMEN) Co.,LTD.

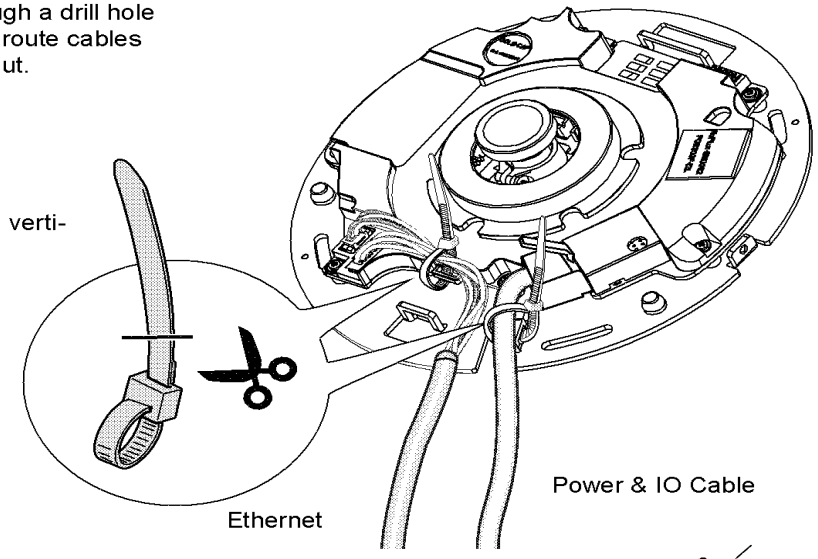
Connecting Cables

If you need to route cables through the side opening, proceed with the following:

1. Connect the Ethernet and the Power & IO cables. The Ethernet cable is user-supplied.
2. Use an included cable tie to secure the Ethernet and IO cable to the base plate. Insert the cable tie through the vertical mounting tab located on the edge of the cabling cutout.
3. Make a clearance between cables and the vertical mounting tab. Arrange the cables neatly to avoid getting in the way when the dome cover is attached.
4. Cut the extra length from the cable tie.

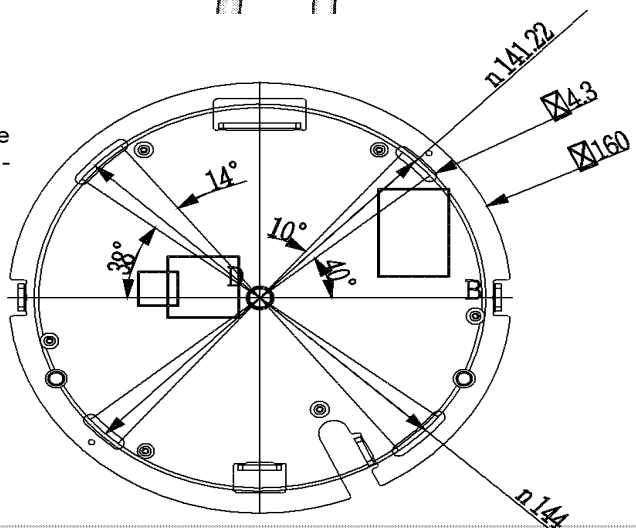
If you route cables through a drill hole on a wall/ceiling, simply route cables through the cabling cutout.

Make a clearance between cables and the vertical tab



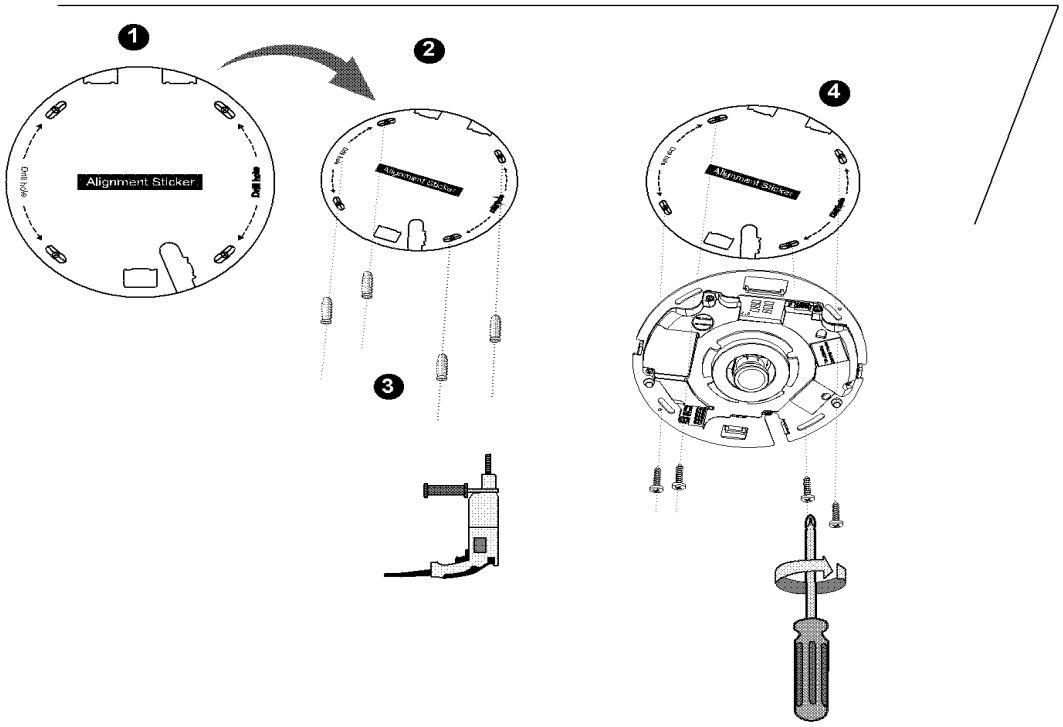
Mounting Positions

Refer to the diagram on the right for the mounting hole positions and the dimensions of the base plate.



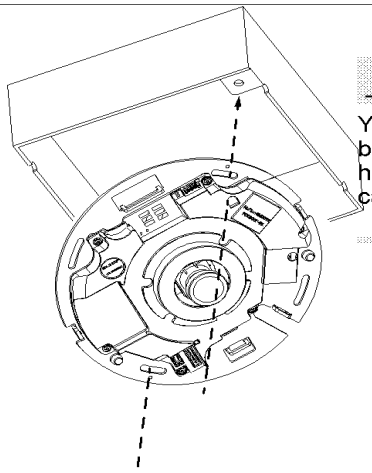
Ceiling or Wall Mount

1. Attach the supplied alignment sticker for the camera base to the a ceiling or wall.
2. Using the circles on the sticker, drill pilot holes into the ceiling. Then hammer the supplied plastic anchors into the holes.
3. (Optional) Drill a cable hole on the ceiling/wall, and feed the cables through the hole.
4. Secure the camera base to the ceiling/wall with the supplied screws.



IMPORTANT:

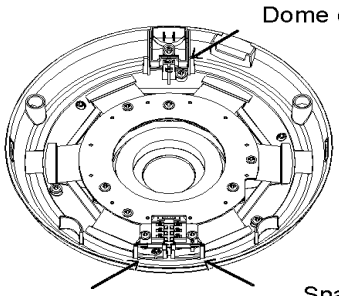
Arrange the cables neatly to avoid getting in the way when the dome cover is attached.



NOTE:

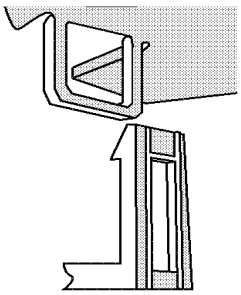
You may also install the camera to a U.S. standard 4 in. junction box. You can align the camera's curved slots with the mounting holes on a junction box. Use diagonal mounting positions on the camera to match those on a junction box.

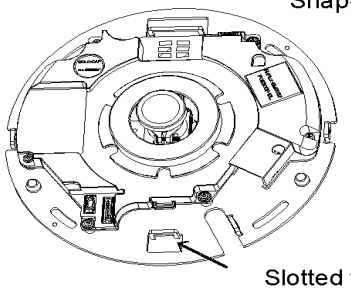
Attach the Dome Cover



Install the plastic dome cover by aligning the snap-fit tabs on the dome cover with the slotted tabs on the camera base. Install the dome cover by pressing it evenly to the camera base.

Make sure the dome cover and the base plate are flush-aligned before pressing down. The dome cover is secured using a snap-fit mechanism.

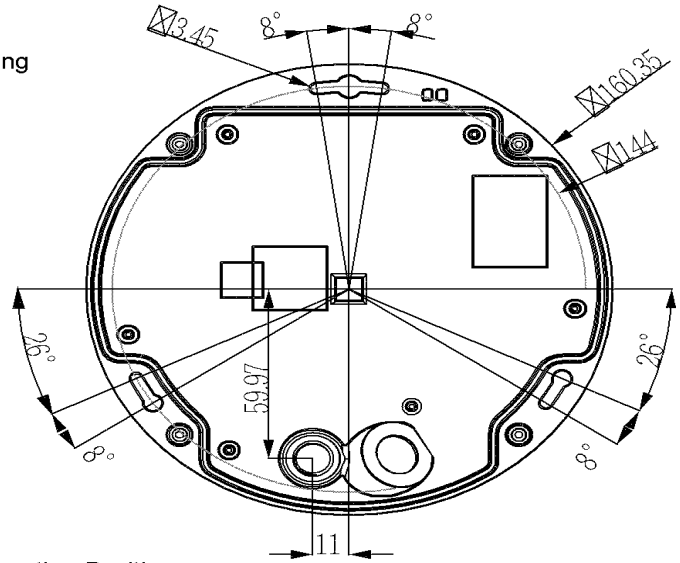




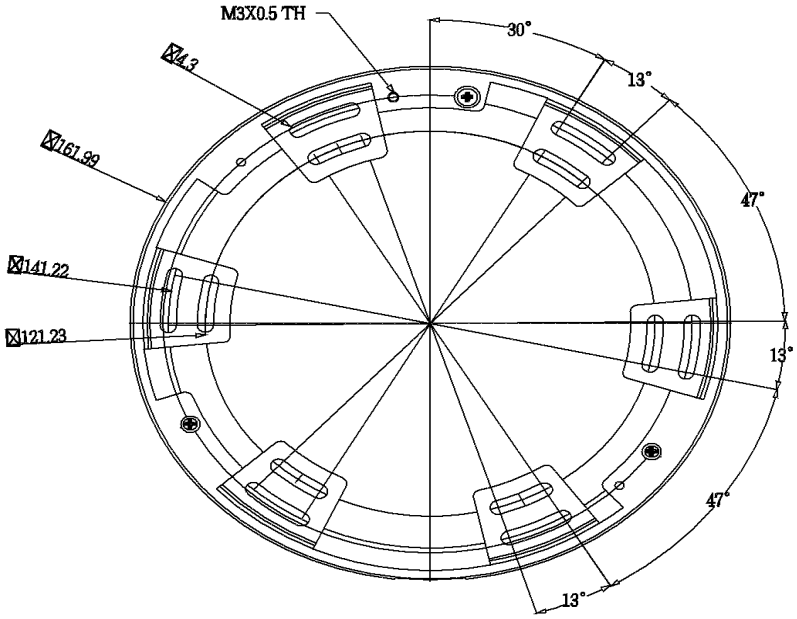
Mounting Positions

Refer to the diagram on the right for the mounting hole positions and the dimensions of the base plate.

Camera Base Plate Mounting Positions



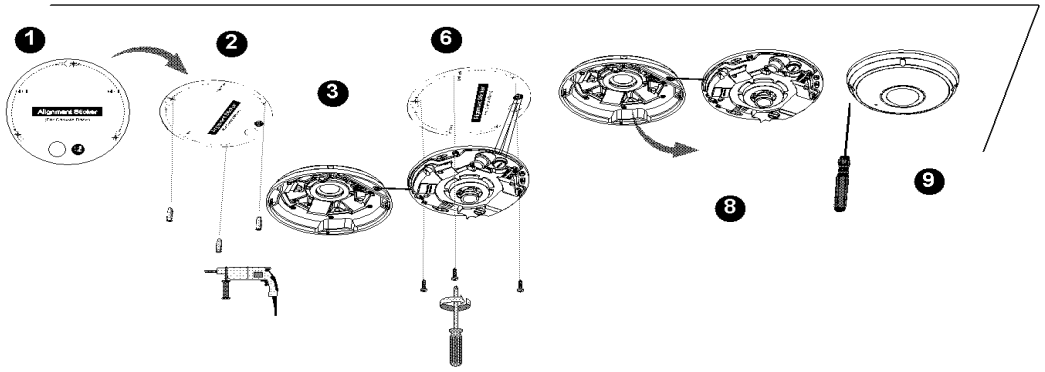
Camera Mounting Plate Mounting Positions

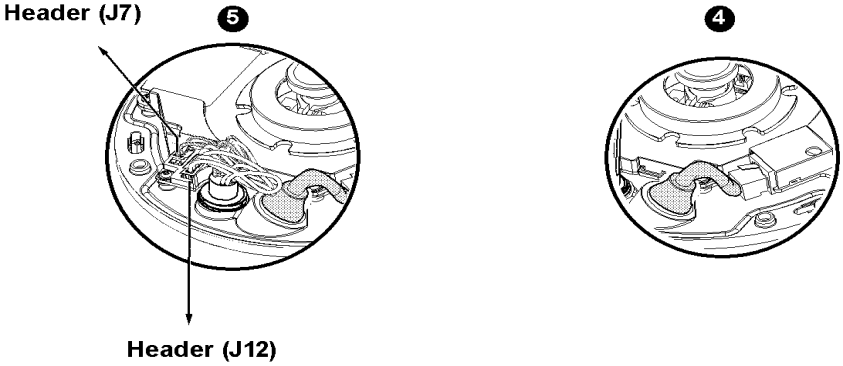


Ceiling/Wall Mount without Mounting Plate

(Choose this mounting type if you want to feed the cables form the bottom of the camera)

1. Attach the supplied alignment sticker for camera base to the ceiling/wall.
2. Using the three circles on the sticker, drill three pilot holes into the ceiling. Then hammer the three supplied plastic anchors into the holes.
3. Drill a cable hole on the ceiling/wall, and feed the cables through the hole.
4. Connect the Ethernet cable to the socket.
5. Connect the two white header connectors to the J12 and J7 connectors.
6. Secure the camera base to the ceiling/wall with three supplied screws.
7. You will find a dessicant bag attached to the camera. Replace the dessicant bag included in the camera with the one shipped within the accessory bag.
8. Attach the dome cover.
9. Secure the four screws with the supplied stardriver. Make sure all camera parts are securely installed.





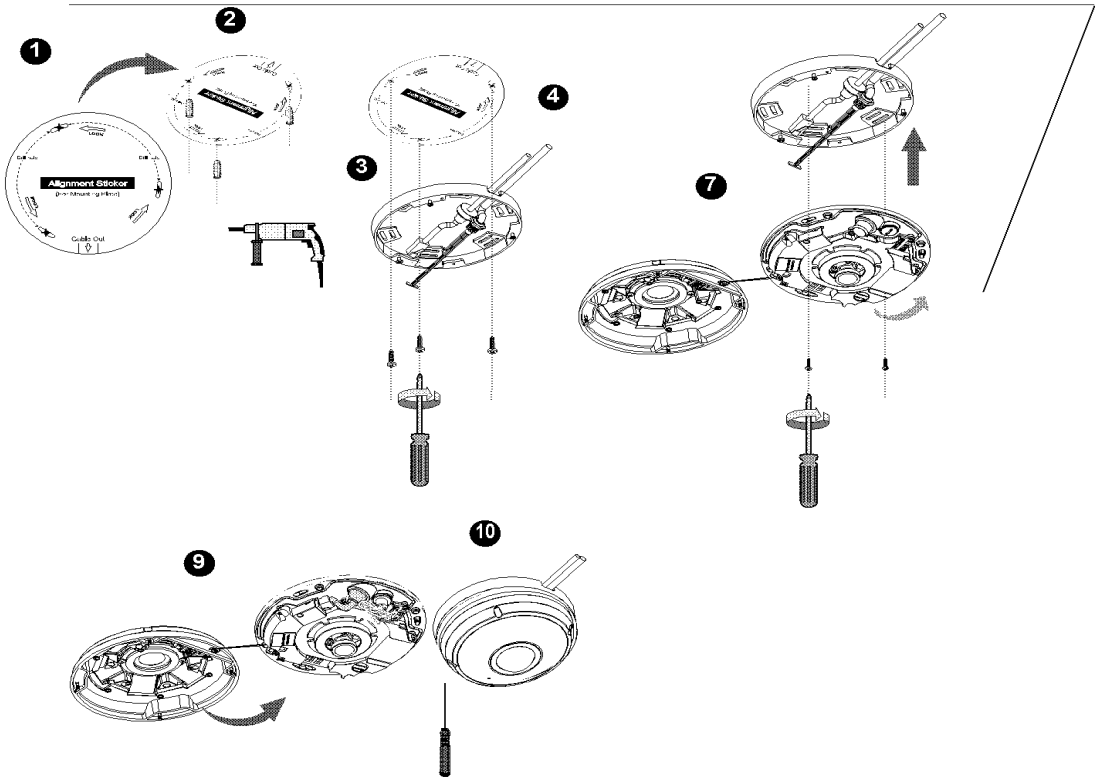
IMPORTANT:

Arrange the cables neatly to avoid getting in the way when the dome cover is attached.

Ceiling/Wall Mount with Mounting Plate

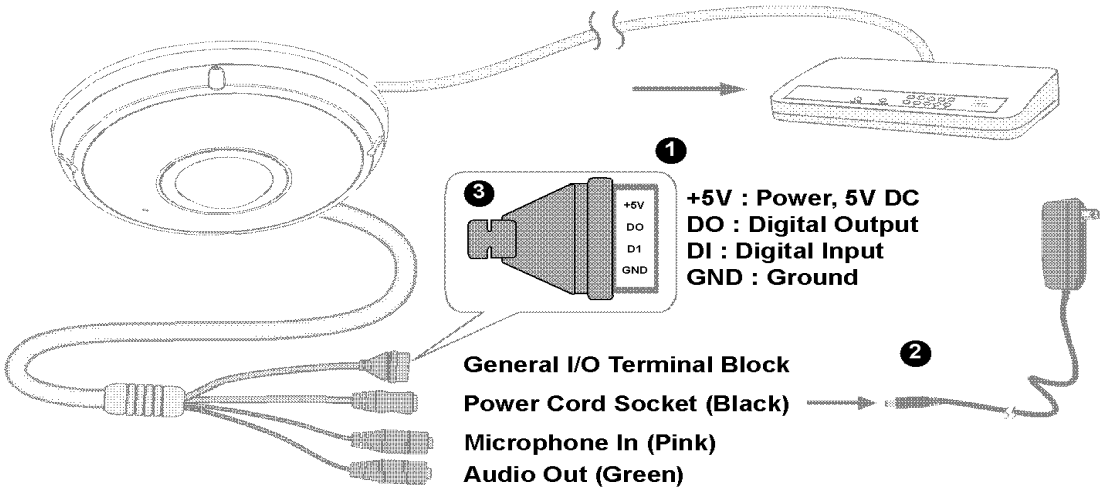
(Choose this mounting type if you would like to feed the cables form the side)

1. Attach the supplied alignment sticker for the supplied mounting plate to the ceiling/wall.
2. Using the three circles on the sticker, drill three holes into the ceiling. Then hammer the three supplied plastic anchors into the holes.
3. Arrange and feed the cables through the side of the mounting plate.
4. Secure the mounting plate to the ceiling/wall with three supplied screws.
5. Connect the Ethernet cable to the socket.
6. Connect two white headers to the J12 and J7 connectors.
7. Attach the camera base to the mounting plate and turn counter-clockwise as shown below. Then secure the supplied screws to fix the camera base.
8. You will find a desiccant bag attached to the camera. Replace the desiccant bag with the one shipped within the accessory bag.
9. Attach the dome cover.
10. Secure the four screws with the supplied stardriver. Make sure all camera parts are securely installed.



General Connection (without PoE)

1. Connect RJ45 Ethernet cable to a switch.
2. Connect the power cable from the Network Camera to a power outlet.
3. If you have external devices such as sensors and alarms, make the connection from the general I/O terminal block.



⚠ IMPORTANT:

If DC power is preferred, it should comply with: O/P: 12VDC, 2A min., L.P.S. per IEC 60950-1.

Internet connection with static IP

Choose this connection type if you are required to use a static IP for the Network Camera. Please refer to LAN configuration on page 84 for details.

Internet connection via PPPoE (Point-to-Point over Ethernet)

Choose this connection type if you are connected to the Internet via a DSL Line. Please refer to PPPoE on page 105 for details.

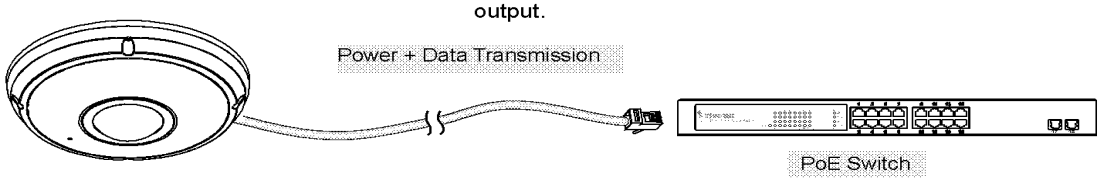
Set up the Network Camera through Power over Ethernet (PoE)

When using a PoE-enabled switch

The Network Camera is PoE-compliant, allowing transmission of power and data via a single Ethernet cable. Follow the below illustration to connect the Network Camera to a PoE-enabled switch via an Ethernet cable.

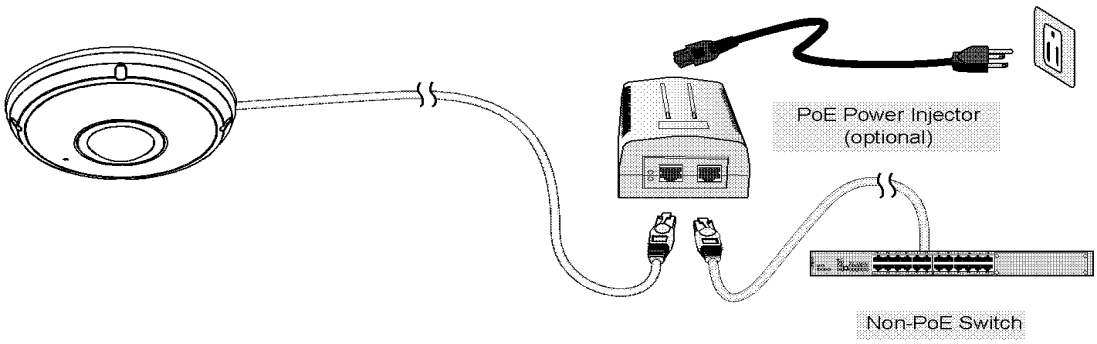
NOTE:

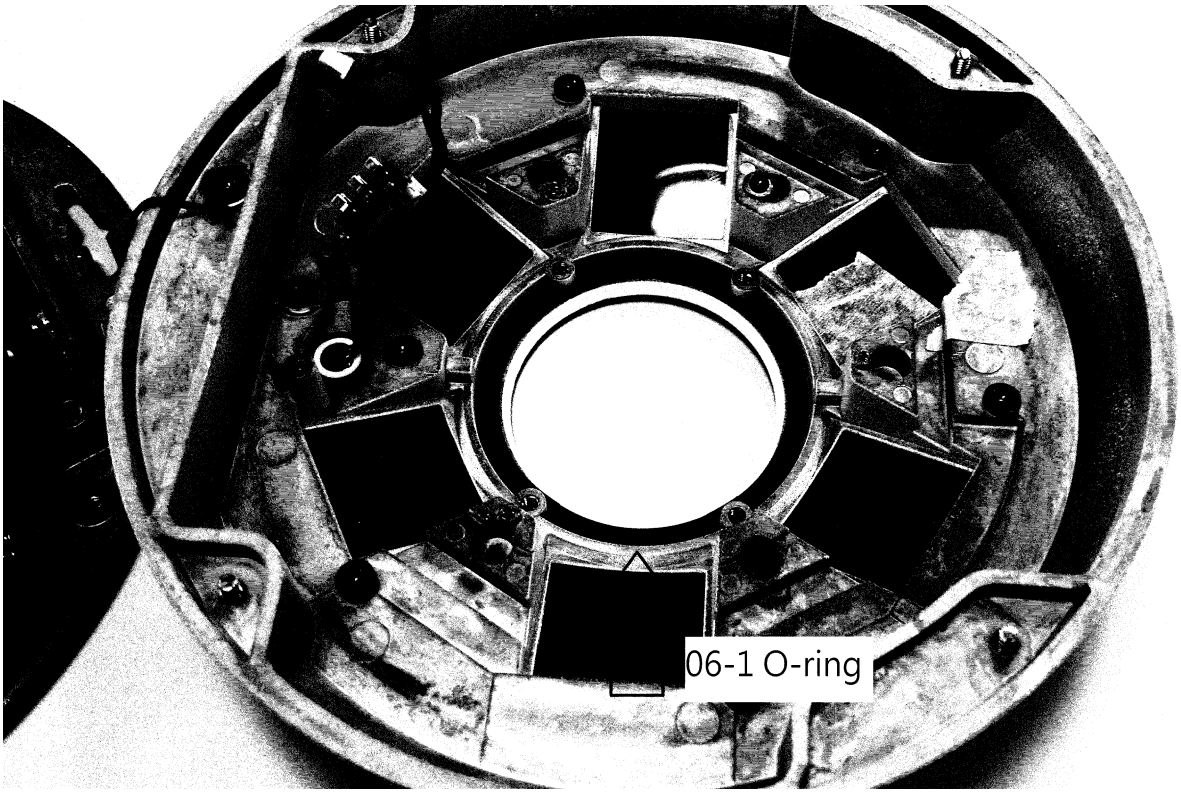
1. The camera is only to be connected to PoE networks without routing to outside plants.
2. For PoE connection, use only UL listed I.T.E. with PoE output.

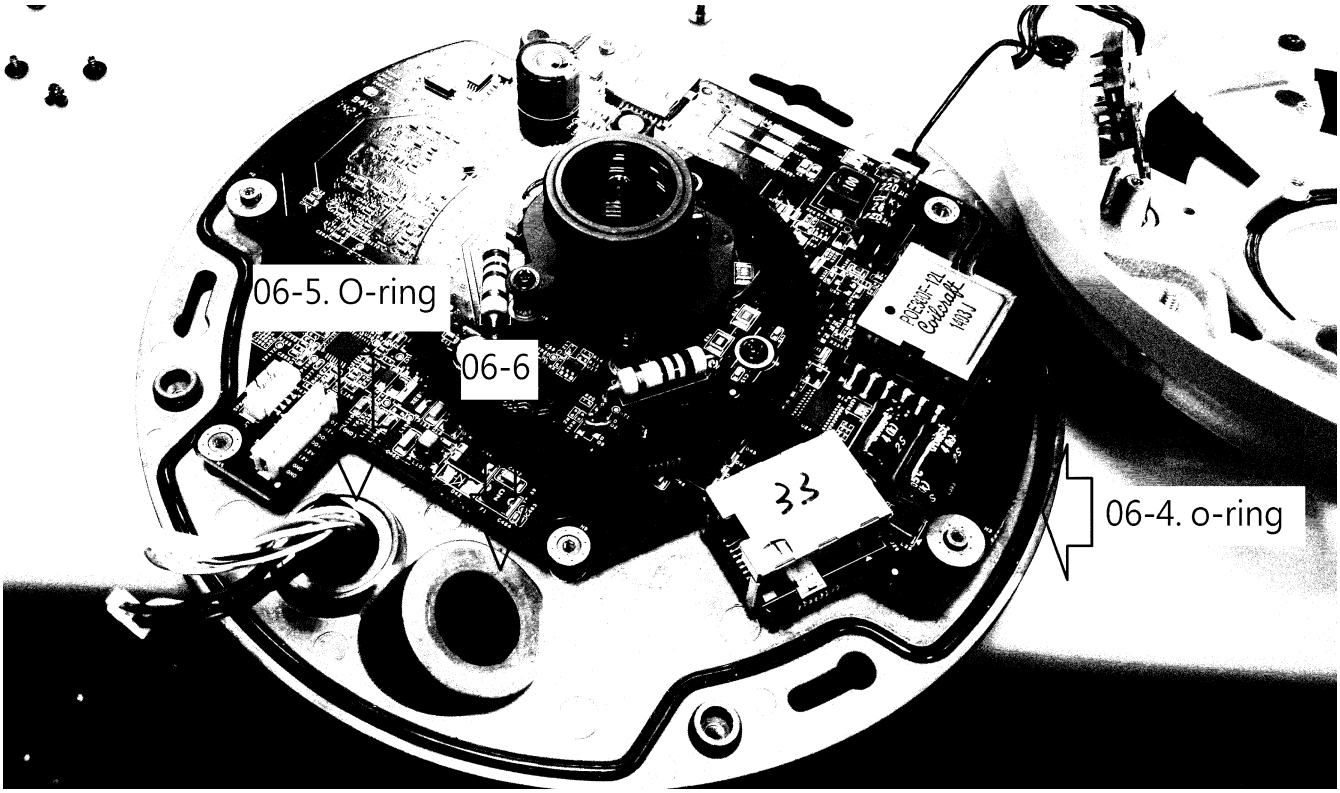


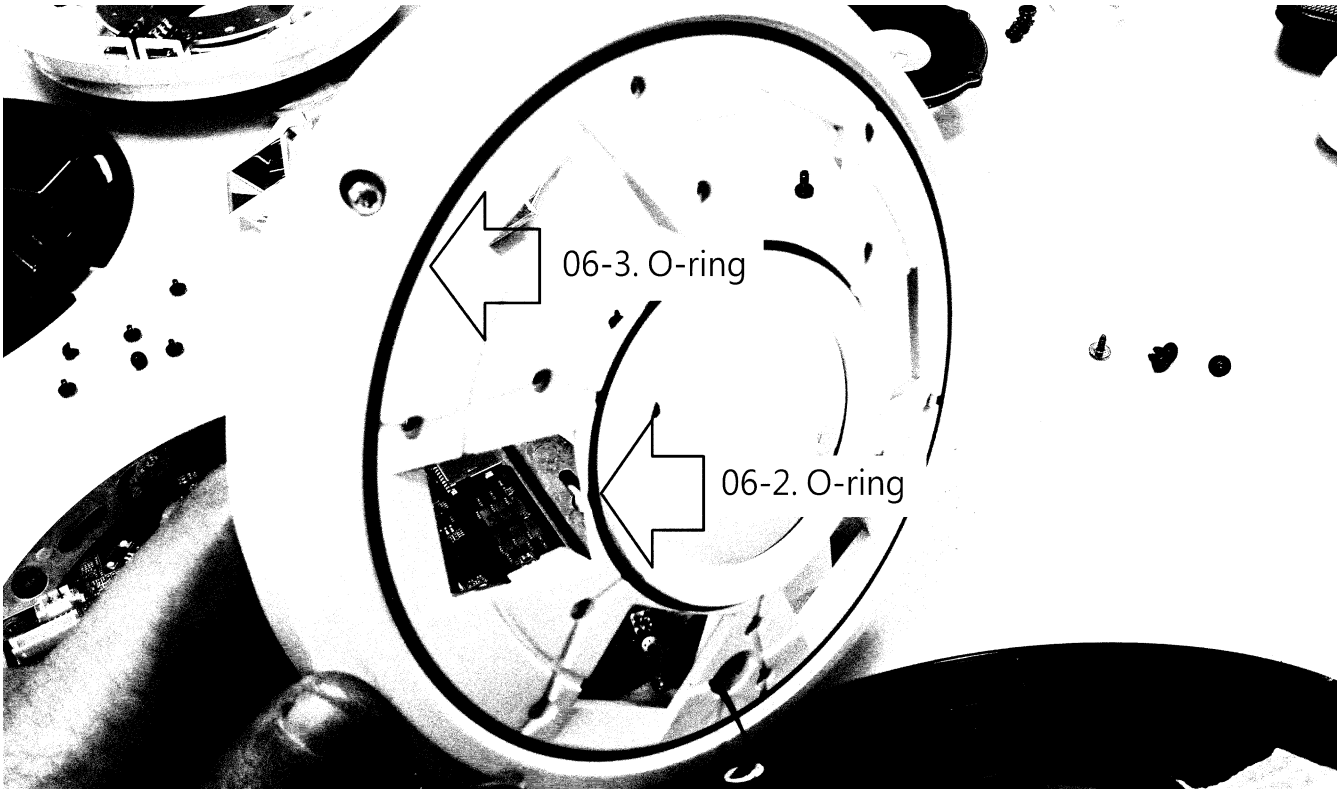
When using a non-PoE switch

If your switch/router does not support PoE, use a PoE power injector (optional) to connect between the Network Camera and a non-PoE switch.




06-1 O-ring


06-5. O-ring
06-6
06-4. o-ring


06-3. O-ring
06-2. O-ring

Test Report issued under the responsibility of:

TEST REPORT
UL 60950-22
Information technology equipment
Safety – Part 22: Equipment to be installed outdoors

Report Reference No. ..... :	Refer main report
Date of issue ..... :	Refer main report
Total number of pages.....	11
CB Testing Laboratory..... :	--
Address ..... :	--
Applicant's name ..... :	Refer main report
Address ..... :	Refer main report
Test specification:	
Standard..... :	UL 60950-22 Edition 1 - Revision Date 2011/12/19
Test procedure..... :	N/A
Non-standard test method..... :	N/A
Test Report Form No. ..... :	IEC 60950_22A
Test Report Form(s) Originator..... :	The Standards Institution of Israel Ltd.
Master TRF ..... :	Dated 2007-03

If this Test Report Form is used by non-IECEE members, the IECEE/IEC logo and the reference to the CB Scheme procedure shall be removed.

This report is not valid as a CB Test Report unless signed by an approved CB Testing Laboratory and appended to a CB Test Certificate issued by an NCB in accordance with IECEE 02.

Test item description..... :	Network Camera
Trade Mark..... :	--
Manufacturer..... :	Refer main report
Model/Type reference..... :	FE9382-EHV
Ratings ..... :	PoE 37-57V, 0.54-0.35A; DC 12V, 1.3A

Summary of testing:

The manufacturer submitted representative production sample of Network Camera, model FE9382-EHV.

The following tests were conducted according to CSA C22.2 NO. 60950-22-07 Edition 1, Revision Date 2011/12/01 & UL 60950-22 Edition 1, Revision Date 2011/12/19.

Test of "Effect of Ultraviolet (UV) Radiation on Materials (4.3.13.3, Part 22 8.2)" was waived, because the material of lens cover (TEIJIN / L-1225Z(#1)(f1)) and IR LED cover (SABIC / 43R(f1)) suited for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.

Test of "Resistance to Corrosion (Part 22 8.3, Annex A)" was waived, because the material of enclosure was Aluminum.

Tests of "Tensile Strength and Elongation (Part 22 8.5, Annex D.2)" and "Compression - Gaskets, Closed Cell Construction (Part 22 8.5.1, Annex D.3)" were waived, because the same materials of gaskets (MOMENTIVE / TSE2186U(aq)) were used in reports E324690-A61 and E324690-A50.

Test of "Water Spray (Part 22 9.1, Annex B)" was waived, because the equipment complied with IP66.

Test of "Impact Test (4.2.5, 4.2.1, Part 22 10.2)" was waived, because the same enclosure/gesket/cable gland were used in reports E324690-A61.

The results reported relate only to the items tested.

Tests performed (name of test and test clause):	**Testing location:**
N/A	**N/A**

Test item particulars ..... :	
Temperature range ..... :	-40 to 55 degree C
Overvoltage category..... :	☐ OVC I ☐ OVC II ☐ OVC III ☐ OVC IV ☒ not directly connected to the mains
IP protection class ..... :	IP 66
Possible test case verdicts:	
- test case does not apply to the test object.....:	N/A or N
- test object does meet the requirement .....:	P (Pass)
- test object does not meet the requirement .....:	F (Fail)
Testing.....:	
Date of receipt of test item.....:	N/A
Date (s) of performance of tests.....:	N/A

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(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.

This Test Report Form is intended for the investigation of safety of equipment to be installed outdoors in accordance with UL 60950-22. It can only be used together with the UL 60950-1 requirements.

General product information:

Refer main report.

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
4	CONDITIONS FOR OUTDOOR EQUIPMENT		P
4.1	Ambient air temperature		P
	Suitability for use at any temperature in the range specified by the manufacturer. If not specified by the manufacturer, the range is taken as -33°C to +40°C	-40 to 55 degree C.	P
4.2	AC mains supply		N
	Suitability for the highest Overvoltage Category expected in the installation location		N
	Components used to reduce the Overvoltage Category comply with IEC 61643-series		N
	Reference to installation instructions .....:		N
4.3	Rise of earth potential		
	Special earthing conditions	Class III equipment.	N
	Reference to installation instructions .....:		N
5	MARKING AND INSTRUCTIONS		P
	Special installation features for protection from conditions in the OUTDOOR LOCATION (see 1.7.2 of IEC 60950-1)		P
	OUTDOOR ENCLOSURE classification according to IEC 60529 (IP Code)	The unit is considered as outdoor equipment.	N
6	PROTECTION FROM ELECTRICAL SHOCK IN AN OUTDOOR LOCATION		P
6.1	Voltage limits of user-accessible parts in OUTDOOR LOCATIONS (2.2.2 and 2.2.3 of IEC 60950-1 with voltage limits of IEC60950-22)		P
	Voltages under normal conditions (V) .....:	Accessible parts are less than 21.2 Vp or 30Vdc and are classified as SELV.	P
	Voltages under fault conditions (V).....:	Single fault did not cause excessive voltage in accessible SELV circuits. Limits of 15 V a.c., 21,2 V peak, or 30 V d.c. for longer than 0,2 s under single fault conditions.	P
6.2	Limited current circuits in outdoor locations		N
	The requirements of 2.4 of IEC60950-1 apply without change		N

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
7	WIRING TERMINALS FOR CONNECTION OF EXTERNAL CONDUCTORS		N
	The mains supply terminations powered via the normal building installation wiring are as specified in 3.3 of IEC 60950-1	Class III equipment.	N
	The mains supply terminations powered directly from the mains distribution system are as specified in IEC 60364		N
8	CONSTRUCTION REQUIREMENTS FOR OURDOOR ENCLOSURES		P
8.1	General		P
	Protection against corrosion by use of suitable materials or by application of a protective coating		P
	Parts serving as a functional part of an OUTDOOR ENCLOSURE (e.g., dials, connectors, etc.) comply with the same environmental protection requirements as for the OUTDOOR ENCLOSURE		P
	Use of OUTDOOR ENCLOSURE to carry current during normal operation	The enclosure does not carry current.	N
	Connection of a conductive part of an OUTDOOR ENCLOSURE to protective earth for carrying fault currents (see 2.6 of IEC 60950-1 and 8.3 of this standard)		N
8.2	Resistance to ultra-violet radiation		P
	Resistance of non-metallic parts of an OUTDOOR ENCLOSURE to degradation by ultra-violet (UV) radiation	Test of "Effect of Ultraviolet (UV) Radiation on Materials (4.3.13.3, Part 22 8.2)" was waived, because the material of lens cover (TEIJIN / L-1225Z(#1)(f1)) and IR LED cover (SABIC / 43R(f1)) suited for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.	P
	Parts providing mechanical support:	UL certified components.	N
	Tensile strength test (ISO 527)		N
	Flexural strength test (ISO 178)		N
	Parts providing impact resistance:	UL certified components.	N

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
	Charpy impact test (ISO 179)		N
	Izod impact test (ISO 180)		N
	Tensile impact test (ISO 8256)		N
	All parts:	UL certified components.	N
	Flammability classification (1.2.12 and annex A of IEC 60950-1)	UL certified components.	N
8.3	Resistance to corrosion		P
8.3.1	General		P
	Resistance of metallic parts of an OUTDOOR ENCLOSURE to the effects of water-borne contaminants	Metal enclosure material is Aluminium.	P
	Alternate method for 8.3.2-8.3.4 (IEC 61587-1)		N
8.3.2	Test apparatus		N
	Salt-spray test (IEC 60068-2-11)		N
	Test in a water-saturated sulphur dioxide atmosphere (water-saturated sulphur dioxide atmosphere as described in Annex A; chamber as described in ISO 3231)		N
8.3.3	Test procedure		N
8.3.4	Compliance criteria		N
8.4	Bottoms of FIRE ENCLOSURES		N
	Comply with 4.6.2 of IEC 60950-1	No opening.	N
	Bottom of FIRE ENCLOSURE of OUTDOOR EQUIPMENT mounted directly and permanently on a non-combustible surface (e.g., concrete or metal)		N
8.5	Gaskets		P

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
	If gaskets are used as the method for protection against the ingress of potential contaminants, requirements of 8.5.1 through 8.5.3 apply	Tests of "Tensile Strength and Elongation (Part 22 8.5, Annex D.2)" and "Compression - Gaskets, Closed Cell Construction (Part 22 8.5.1, Annex D.3)" were waived, because the same materials of gaskets (MOMENTIVE / TSE2186U(aq)) were used in reports E324690-A61 and E324690-A50. UL certified cable gland is used for hole of LAN cable.	P
8.5.1	General		P
8.5.2	Oil resistance	Equipment not intended to be subjected to oil or coolant.	N
8.5.3	Securing means		P
9	PROTECTION OF EQUIPMENT WITHIN AN OUTDOOR ENCLOSURE		P
9.1	Protection from moisture (see Table 2)	Test of "Water Spray (Part 22 9.1, Annex B)" was waived, because the equipment complied with IP66.	P
9.2	Protection from plants and vermin	There is no opening in the unit.	P
9.3	Protection from excessive dust	The presence of excessive dust is not a consideration.	P

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
10	MECHANICAL STRENGTH OF ENCLOSURES		P
10.1	General		P
10.2	Impact test (4.2.5 of IEC 60950-1)	Test of "Impact Test (4.2.5, 4.2.1, Part 22 10.2)" was waived, because the same enclosure/gesket/cable gland were used in reports E324690-A61.	P
	Compliance criteria:		P
	- after test the level of protection remains in accordance with 9.1of this standard		P
	- after test the requirements of 4.2.1 of IEC 60950-1 are met		P
11	OUTDOOR EQUIPMENT CONTAINING VENTED BATTERIES		N
	Adequate ventilation in the compartment housing a vented battery, where gassing is possible during normal usage or over-charging	No vented battery was provided.	N
	Protection against the risk of ignition of local concentrations of hydrogen and oxygen in a compartment containing both a battery and electrical components		N
	Hydrogen gas concentration measurement test		N
	Measured hydrogen gas concentration (% by volume) ..... :		—
	Max. allowed gas concentration for the mixture location in proximity to an ignition source (% by volume) ..... :		—
	Max. allowed gas concentration for the mixture location not in proximity to an ignition source (% by volume) ..... :		—
	Overcharging of rechargeable battery (see 4.3.8 of IEC 60950-1)		
A	ANNEX A, WATER-SATURATED SULPHUR DIOXIDE ATMOSPHERE (see 8.3.2 and 8.3.3)		N
B	ANNEX B, WATER SPRAY TEST (see 9.1)		P
C	ANNEX C, ULTRAVIOLET LIGHT CONDITIONING TEST (see 8.2)		N

TRF No. IEC60950_22A

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
C.1	Test apparatus.....:		N
C.2	Mounting of test samples.....:		N
C.3	Carbon-arc light-exposure apparatus .....:		N
C.4	Xenon-arc light-exposure apparatus.....:		N
D	ANNEX D, GASKET TESTS (see 8.5)		P
D.1	Gasket tests		P
D.2	Tensile strength and elongation tests (for gaskets that can stretch)	Tests of "Tensile Strength and Elongation (Part 22 8.5, Annex D.2)" and "Compression - Gaskets, Closed Cell Construction (Part 22 8.5.1, Annex D.3)" were waived, because the same materials of gaskets (MOMENTIVE / TSE2186U(aq)) were used in reports E324690-A61 and E324690-A50.	P
	Tensile strength (%) .....:	Not less than 75%.	P
	Elongation (%) .....:	Not less than 60%.	P
	Visible deterioration, deformation, melting, cracking or hardening of the material .....:	Intact.	P
D.3	Compression test (for gaskets with closed cell construction)		P
	Initial thickness of the specimen (mm) .....:	Tests of "Tensile Strength and Elongation (Part 22 8.5, Annex D.2)" and "Compression - Gaskets, Closed Cell Construction (Part 22 8.5.1, Annex D.3)" were waived, because the same materials of gaskets (MOMENTIVE / TSE2186U(aq)) were used in reports E324690-A61 and E324690-A50.	P
	Thickness of the specimen after test a) (mm), compression set after test a) (%).....:	Refer E324690-A50.	P
	Thickness of the specimen after test b) (mm), compression set after test b) (%).....:	Refer E324690-A50.	P

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict
	Thickness of the specimen after test c) (mm), compression set after test c) (%).....:	Refer E324690-A50.	P
	Visible cracks or deterioration .....:	Intact.	P
D.4	Oil immersion test	No intended function.	N
	Swelling (%).....:		N
	Shrinking (%).....:		N
E	ANNEX E, RATIONALE		—
E.1	General		—
E.2	Electric shock		—
E.3	Energy related hazards		—
E.4	Fire		—
E.5	Mechanical hazards		—
E.6	Heat related hazards		—
E.7	Radiation		—
E.8	Chemical hazards		—
E.9	Biological hazards		—
E.10	Explosion hazards		—

IEC 60950-22			
Clause	Requirement + Test	Result - Remark	Verdict

IEC 60950-22:2005 – COMMON MODIFICATIONS		
Contents	Add the following annexes: Annex ZA (normative) Normative references to international publications with their corresponding European publications Annex ZB (normative) Special national conditions	P
General	Delete all the "country" notes in the reference document according to the following list: 4.1 Note 3 4.3 Note 8.5 Note 10.2 Note D.3 Note D.4 Note	P

ZA	NORMATIVE REFERENCES TO INTERNATIONAL PUBLICATIONS WITH THEIR CORRESPONDING EUROPEAN PUBLICATIONS	—

ZB	SPECIAL NATIONAL CONDITIONS		N
4.1	In **Finland**, **Norway** and **Sweden**, the temperature in winter may be extremely low. For OUTDOOR EQUIPMENT this will demand special design so that the equipment can withstand transport, erection and operation/service at temperatures down to -50°C		N
10.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the minimum ambient temperature. See 4.1 of this annex.		N
D.3	In **Finland**, **Norway** and **Sweden** there are additional requirements for the minimum ambient temperature. See 4.1 of this annex.		N

Date – August 11, 2014 Page 1 of 2

E324690
4786486279

To C.T Wu
3013BTAI

Reference: File E324690 Project 4786486279

Subject: LETTER REPORT FOR IP66 EVALUATION ON NETWORK CAMERA, MODEL FE8181V

Hello C.T Wu,

We have completed our investigation, and this letter will serve as our report. For the file record, our evaluation only covers the applicable tests needed for IP66 in accordance with the requirements of IEC 60529, Degrees of Protection provided by enclosures, 2.2 Ed, Revision Date October 1, 2013.

Sample of Model FE8181V was tested and considered representative of the Model FE8181V. The following table details the models tested, the test, the standard clauses, and the results.

Model	Test	Standard Clause	Results
Network Camera, Model FE8181V	IP 6X	IEC 60529, Edition 2.2, Revision Date October 1, 2013, CLAUSE 12	No any openings on the enclosure, this test was not considered necessary.
	IP 6X	IEC 60529, Edition 2.2, Revision Date October 1, 2013, CLAUSE 13	Compliance
	IP X6	IEC 60529, Edition 2.2, Revision Date October 1, 2013, CLAUSE 14	Compliance

See the attached Appendix containing the applicable test data discussed in the table above.

Please be sure to profile the Data Sheets in the DAP database when completing your project.

優力國際安全認證有限公司
台北市112北投區大業路260號1樓
電話：+886.2.2896.7790 / 傳真：+886.2.2891.7644 / 網址：ul.com.tw

Date – August 11, 2014 Page 1 of 2

E324690
4786486279

Should you have any questions or comments concerning the above, please feel free to contact me.

Sincerely,

Iris Lin (Ext. 62097)
Associate Project Engineer
Consumer Technology (CTECH) Division,
UL Verification Services
3013BTAI

Reviewed by:

Terence She
Associate Project Engineer
Consumer Technology (CTECH) Division,
UL Verification Services
3013BTAI

Project No. 4786486279 File E324690 Page 1 of 9

Tested by: _____ Date _____
Printed Name Signature

Total Number of pages in this package: (Fill in when using printed copy as record)

CLIENT INFORMATION	
Company Name	VIVOTEK INC
Address	6TH FL, 192 LIEN CHENG RD CHUNG HO DISTRICT NEW TAIPEI , 235 TW

AUDIT INFORMATION:
Description of Tests
Per Standard No. IEC 60529, Edition 2.1 + Corr. 1:2003 + Corr. 2:2007 + Corr. 3:2009
Per Standard No. CENELEC EN 60529:1991 + A1:2000

[X] Tests Conducted by +	Morning Lee Printed name	Morning Lee Signature
[] UL Staff conducting or witnessing testing (WTDP, TMP, WMT only) **[]** UL Staff supervising UL Staff in training **[]** Authorized Signatory (CTDP, TPTDP, TCP, PPP, SMT)	Printed name	Signature, and include date for CTDP, TPTDP, TCP, PPP, WMT, TMP, SMT
Reviewed and accepted by qualified Project Handler	Iris Lin Printed Name	Iris Lin Signature

TESTS TO BE CONDUCTED:

Test No.	Done +++	Test Name	**[X]** Comments/Parameters **[ ]** Tests Conducted by ++
1	2014-08-07	DUST TEST FOR ENCLOSURE DESIGNATION ~~{ IP5X }~~ { IP6X }	Passed

Instructions -
+ - When all tests are conducted by one person, printed name and signature can be inserted here instead of including printed name and signature on each page containing data. Must indicate number of pages in the data package.
++ - When a test conducted by more than one person, printed name and signature of person conducting the test can be inserted next to the test name instead of including printed name and signature on each page containing data. Must indicate number of pages in the data package.
+++ - Use of this field is optional and may be employed differently.

Project No. 4786486279 File E324690 Page 2 of 9

Tested by: _____ Date _____
Printed Name Signature

Special Instructions -

[X] Unless specified otherwise in the individual Methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be recorded at the time the test is conducted.

Ambient Temperature, C	15-35	Relative Humidity, %	25-75	Barometric Pressure, mBar	860-1060

[ ] No general environmental conditions are specified in the Standard(s) or have been identified that could affect the test results or measurements.

RISK ANALYSIS RELATED TO TESTING PERFORMANCE:

The following types of risks have been identified. Take necessary precautions. This list is not all inclusive.

[X] Electric shock	**[ ]** Radiation
[ ] Energy related hazards	**[ ]** Chemical hazards
[ ] Fire	**[ ]** Noise
[ ] Heat related hazards	**[ ]** Vibration
[X] Mechanical	**[ ]** Other (Specify):

Project No. 4786486279 File E324690 Page 3 of 9

Tested by: _____ Date _____
Printed Name Signature

TEST LOCATION: (To be completed by Staff Conducting the Testing)					
[X]UL or Affiliate	[]WTDP	[]CTDP	[]TPTDP	[]TCP	[]PPP
	[]WMT	[]TMP	[]SMT		
Company Name:	Underwriters Laboratories Taiwan Co., Ltd.				
Address:	No.2, Wenming 1st St., Guishan Township, Taoyuan County 333, Taiwan				

TEST EQUIPMENT INFORMATION

[X] UL test equipment information is recorded on Meter Use in UL's Laboratory Project Management (LPM) database.

Inst. ID No.	Instrument Type	Test Number +, Test Title or Conditioning	Function /Range	Last Cal. Date, YYYY-MM-DD	Next Cal. Date, YYYY-MM-DD
N/A	N/A	N/A	N/A	N/A	N/A

+ - If Test Number is used, the Test Number must be identified on the data sheet pages or on the Data Sheet Package cover page.

The following additional information is required when using client's or rented equipment, or when a UL ID Number for an instrument number is not used. The Inst. ID No. below corresponds to the Inst. ID No. above.

Inst. ID No.	Make/Model/Serial Number/Asset No.
N/A	N/A

Project No. 4786486279 File E324690 Page 4 of 9

Tested by: _____ Date _____
Printed Name Signature

TEST SAMPLE IDENTIFICATION:

The table below is provided to provide correlation of sample numbers to specific product related information. Refer to this table when a test identifies a test sample by "Sample No." only.

Sample Card No.	Date Received, YYYY-MM-DD	[X] Test No.	Sample No.	Manufacturer, Product Identification and Ratings
1932061	2014-08-06	1	1	Vivotek Inc Network Camera Model FE8181V IP66

+ - If Test Number is used, the Test Number or Numbers the sample was used in must be identified on the data sheet pages or on the Data Sheet Package cover page.

[X] This document contains data using color and if printed, should be printed in color to retain legibility and the information represented by the color.

Project No. 4786486279 File E324690 Page 5 of 9

Tested by: _____ Date _____
Printed Name Signature

DUST TEST FOR ENCLOSURE DESIGNATION ~~[IP5X] [~~ IP6X ~~]~~:
Clause 13.4 of CENELEC EN 60529:1991 + A1:2000
Clause 13.4 of IEC 60529, Edition 2.1 + Corr. 1:2003 + Corr. 2:2007 + Corr. 3:2009

METHOD

This method is further supported by 00-LC-S0367.

[ ] The following joint(s), intended to be opened during installation or in normal operation, **[**was**]** **[**were**]** opened and re-closed in accordance with the manufacturer's instructions.

	Joint	
Sample No.	Type	Between

[ ] Samples as indicated in the table below were each mounted in an enclosure having an IP54 rating.

All samples were each mounted and supported in the worst case intended mounting position in a closed dust chamber which maintained talcum powder in suspension. The effective volume of the test chamber was ~~[~~2.33m^3 ~~] [~~_____m^3~~]~~, sufficient to allow uniform distribution of the dust.

[ ] The method of mounting the sample under test was _____.

[X] ~~[~~The sample~~] [~~Each sample~~]~~ under test was connected to a vacuum pump to maintain the pressure below atmospheric pressure. The connection was made using ~~[~~a specially provided hole~~] [~~_____~~].~~

~~[~~The sample~~] [~~Each sample~~]~~ under test was exposed to the talcum powder atmosphere ~~[~~for a period of 8 hours.~~] [~~until there were at least 80 volume changes where the maximum flow rate was 60 volume changes per hour, the maximum vacuum was 20 mbar and the test duration was 2 hours minimum, 8 hours maximum. See the table under "RESULTS" for actual test conditions.~~]~~

The talcum powder used passed through a square meshed sieve having a nominal wire diameter of 0.050 mm and a nominal width between wires of 0.075mm. The amount of talcum powder installed in the test chamber was
~~[~~2kg/m^3 of test chamber volume~~] [~~_____ kg~~].~~

Ambient	Shall be 15°C to 35°C
Humidity	Shall be 25% to 75%
Barometric Pressure	Shall be 86 to 106 kPa (645 mmHg to 795 mmHg)

[X] If box checked by engineering, connect device(s) to vacuum pump and adjust vacuum to 20 mbar maximum until flow meter indicates no more than 60 volume changes per hour. The volume changes per hour are determined by dividing the enclosure volume into the flow rate. The test duration is (1) two hours if the volume changes per hour is 40 - 60 or (2) if the vacuum is 20 mbar and the volume changes per hour is less than 40, eight hours or until 80 volume changes have occurred, whichever is less.

Note: Devices intended for panel mounting are to be installed in an enclosure having at

Project No. 4786486279 File E324690 Page 6 of 9

Tested by: _____ Date _____
Printed Name Signature

least the same IP rating, connected to the vacuum pump and exposed for eight hours.

[ ] Identification tests on the powder inside the metallic enclosure were performed after the dust test as follows because it was suspected that the thermal endurance to heat and cold conditioning might have formed zinc oxide corrosion on the enclosure surface.

1. A sample of the white powder was collected in a glass or plastic Petri dish. The powder was carefully removed from the sample in a manner so that no scrapings of the underlying metal were transferred to the dish.

2. An infrared spectrum analysis was performed on a portion of the collected sample and on a sample of unused talc dust. The spectra were overlaid to determine whether the powder was talc. If the spectra match, the powder is talc and the test results are confirmed. If the spectra do not match, the following steps are to be performed to determine the presence of zinc.

3. Two drops of concentrated nitric acid were placed on the surface of the metal. After two minutes, two drops of de-ionized water were placed on the surface and three drops of the solution were transferred to a spot plate depression.

4. Four drops of 6M NaOH were added to make the solution alkaline and stirred. After one minute, another four drops of 6M NaOH were added and stirred. The first addition of NaOH precipitated the zinc as zinc hydroxide and the latter addition dissolved the zinc hydroxide.

5. A ball of surgical absorbent cotton was placed in the solution and the liquid was drawn off with a medicine dropper using the cotton as a filter.

6. Four drops of 3M hydrochloric acid were added to four drops of the filtrate and stirred thoroughly. Another four drops of 3M hydrochloric acid were added and stirred.

7. Three drops of cobaltous sulfate and three drops of alkali mercuric thiocyanate were added. The mixture was stirred for 15 seconds with a glass rod rubbing the side of the spot plate, starting precipitation of the zinc, if present.

Project No. 4786486279 File E324690 Page 7 of 9

Tested by: _____ Date _____
Printed Name Signature

Test Date: 2014-08-07

RESULTS
TALC DUST TEST CONDITIONS

Sample No.	[Model] ~~[Cat.]~~ No.	Internal Enclosure Volume, dm^3	Flow Rate, ~~dm^3/h~~ l/min	Test Duration, h	No. of Volume Changes During Test	Vacuum, ~~mbar~~ kpa	Ambient, °C	Barometric Pressure, mmHg	Relative Humidity, %
1	FE818 1V	470	0.013	8	0.013	1.5	22.4	730	67.2

[X] ~~[~~For sample No. 1 ~~]~~ ~~[For sample Nos. _____]~~ talcum powder did not enter the enclosure (IP6X rating).

~~**[ ]** [For sample No. _____] [For sample Nos. _____] the talcum powder inside the enclosure did not contact live parts, did not deposit in the area of specified electrical spacings nor did it affect operation (IP5X rating).~~

~~**[ ]** [For sample No. _____] [For sample Nos. _____] talcum powder entered the enclosure [and contacted live parts deposited in the area of specified electrical spacings or affected operation.]~~

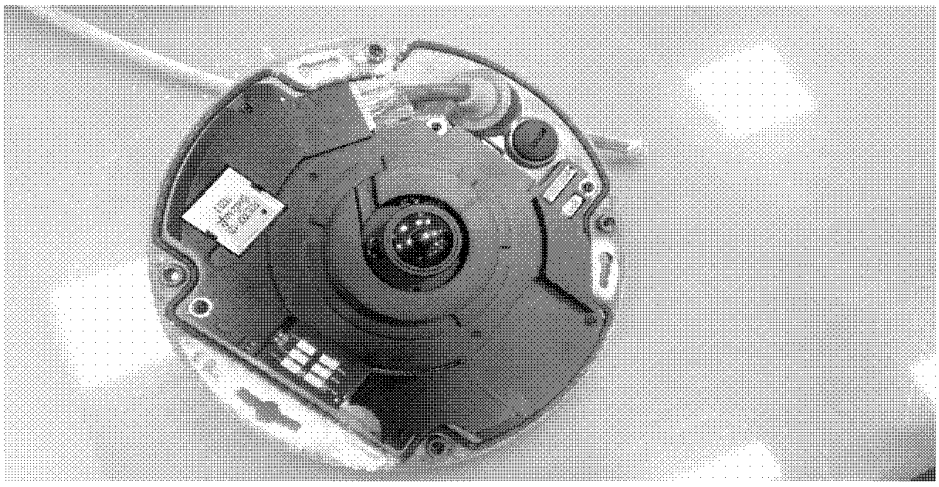
~~**[ ]** [For sample No. _____] [For sample Nos. _____] the identification tests indicated that the powder was talc dust.~~

~~**[ ]** [For sample No. _____] [For sample Nos. _____] the identification tests resulted in a blue precipitate indicating that zinc was present.~~

Project No. 4786486279 File E324690 Page 8 of 9

Tested by: _____ Date _____

Printed Name Signature



Morning Lee, 2014-08-07

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Tested by: _____ Date _____

Printed Name Signature

END OF DATASHEET PACKAGE. THIS PAGE INTENTIONALLY LEFT BLANK.

Project No. 4786486279 File E324690 Page 1 of 6

Tested by: _____ Date _____
Printed Name Signature

Total Number of pages in this package: (Fill in when using printed copy as record)

CLIENT INFORMATION	
Company Name	VIVOTEK INC
Address	6TH FL, 192 LIEN CHENG RD CHUNG HO DISTRICT NEW TAIPEI , 235 TW

AUDIT INFORMATION:
Description of Tests
Per Standard No. IEC 60529, Edition 2.1 + Corr. 1:2003 + Corr. 2:2007 + Corr. 3:2009
Per Standard No. CENELEC EN 60529:1991 + A1:2000

[X] Tests Conducted by +	Tick Lin Printed name	Tick Lin Signature
[] UL Staff conducting or witnessing testing (WTDP, TMP, WMT only) **[]** UL Staff supervising UL Staff in training **[]** Authorized Signatory (CTDP, TPTDP, TCP, PPP, SMT)	Printed name	Signature, and include date for CTDP, TPTDP, TCP, PPP, WMT, TMP, SMT
Reviewed and accepted by qualified Project Handler	Iris Lin Printed Name	Iris Lin Signature

TESTS TO BE CONDUCTED:			
Test No.	Done +++	Test Name	**[X]** Comments/Parameters **[ ]** Tests Conducted by ++
1	X	WATER SPRAY TEST FOR ENCLOSURE DESIGNATION IPX6	Passed

Instructions -
+ - When all tests are conducted by one person, printed name and signature can be inserted here instead of including printed name and signature on each page containing data. Must indicate number of pages in the data package.
++ - When a test conducted by more than one person, printed name and signature of person conducting the test can be inserted next to the test name instead of including printed name and signature on each page containing data. Must indicate number of pages in the data package.
+++ - Use of this field is optional and may be employed differently.

Project No. 4786486279 File E324690 Page 2 of 6

Tested by: _____ Date _____
Printed Name Signature

Special Instructions -

[X] Unless specified otherwise in the individual Methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be recorded at the time the test is conducted.

Ambient Temperature, C	15-35	Relative Humidity, %	25-75	Barometric Pressure, mBar	860-1060

[ ] No general environmental conditions are specified in the Standard(s) or have been identified that could affect the test results or measurements.

RISK ANALYSIS RELATED TO TESTING PERFORMANCE:

The following types of risks have been identified. Take necessary precautions. This list is not all inclusive.

[X] Electric shock	**[ ]** Radiation
[ ] Energy related hazards	**[ ]** Chemical hazards
[ ] Fire	**[ ]** Noise
[ ] Heat related hazards	**[ ]** Vibration
[X] Mechanical	**[ ]** Other (Specify):

Project No. 4786486279 File E324690 Page 3 of 6

Tested by: _____ Date _____
Printed Name Signature

TEST LOCATION: (To be completed by Staff Conducting the Testing)					
[X]UL or Affiliate	**[]**WTDP	**[]**CTDP	**[]**TPTDP	**[]**TCP	**[]**PPP
	[]WMT	**[]**TMP	**[]**SMT		
Company Name:	Underwriters Laboratories Taiwan Co., Ltd.				
Address:	1st Fl, 260 Da-Yah Road, Peitou, Taipei City, Taiwan 112				

TEST EQUIPMENT INFORMATION

[X] UL test equipment information is recorded on Meter Use in UL's Laboratory Project Management (LPM) database.

Inst. ID No.	Instrument Type	Test Number +, Test Title or Conditioning	Function /Range	Last Cal. Date, YYYY-MM-DD	Next Cal. Date, YYYY-MM-DD
N/A	N/A	N/A	N/A	N/A	N/A

+ - If Test Number is used, the Test Number must be identified on the data sheet pages or on the Data Sheet Package cover page.

The following additional information is required when using client's or rented equipment, or when a UL ID Number for an instrument number is not used. The Inst. ID No. below corresponds to the Inst. ID No. above.

Inst. ID No.	Make/Model/Serial Number/Asset No.
N/A	N/A

Project No. 4786486279 File E324690 Page 4 of 6

Tested by: _____ Date _____
Printed Name Signature

TEST SAMPLE IDENTIFICATION:

The table below is provided to provide correlation of sample numbers to specific product related information. Refer to this table when a test identifies a test sample by "Sample No." only.

Sample Card No.	Date Received, YYYY-MM-DD	[X] Test No.	Sample No.	Manufacturer, Product Identification and Ratings
1932061	2014-08-06	1	1	Vivotek Inc Network Camera Model FE8181V IP66

+ - If Test Number is used, the Test Number or Numbers the sample was used in must be identified on the data sheet pages or on the Data Sheet Package cover page.

[ ] This document contains data using color and if printed, should be printed in color to retain legibility and the information represented by the color.

Project No. 4786486279 File E324690 Page 5 of 6

Tested by: _____ Date _____
Printed Name Signature

Test Date: 2014-08-07

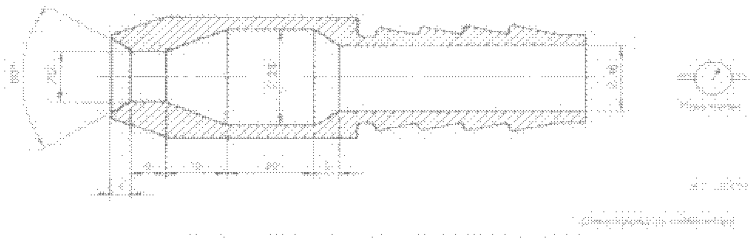
WATER SPRAY TEST FOR ENCLOSURE DESIGNATION IPX6:
Clause 14.2.6 OF CENELEC EN 60529:1991 + A1:2000
Clause 14.2.6 OF IEC 60529, Edition 2.1 + Corr. 1:2003 + Corr. 2:2007 + Corr. 3:2009

[ ] Note To Lab Technician: Dielectric Voltage Withstand Test to be conducted.

METHOD

A sample of the Network Camera, Model FE8181V, was mounted to an enclosure per installation instructions to 10 inch pound torque. The enclosure was placed in its normal upright mounting position. The unit was subjected to a stream of water from a test nozzle as shown below (Reference Fig. 6 of EN 60529) having a 12.5 mm internal diameter, delivering 100 liters of water per minute ± 5 percent with water pressure at the nozzle adjusted to achieve the specified delivery rate. The core of the substantial stream of water measured approximately 120 mm in diameter at 2.5 m distance from the nozzle. The distance from nozzle to the tested enclosure surface was between 2.5 and 3 meters. The test duration per square meter of the enclosure surface area to be sprayed was 1 minute with a minimum total test duration of 3 minutes. The temperature of the water did not differ by more than 5°K from the temperature of the test specimen.

[ ] The enclosure under test was not provided with any internal parts.



RESULTS

~~[~~ No water ~~][Water]~~ entered the enclosure.

Ambient Temperature	23.0°C	(shall be 15 to 35°C, preferably 25°C)
Relative Humidity	64.8%RH	(shall be 25 to 75%, preferably 50%
Barometric Pressure	1000.3 mBar	(shall be 86 to 106 kPa (860 to 1060 mBar))

Project No. 4786486279 File E324690 Page 6 of 6

Tested by: _____ Date _____
Printed Name Signature

END OF DATASHEET PACKAGE. THIS PAGE INTENTIONALLY LEFT BLANK.

Test Record No. 1

The manufacturer submitted representative production sample of Network Camera, models FE9182-H, FE9382-EHV.

Test of "Effect of Ultraviolet (UV) Radiation on Materials (4.3.13.3, Part 22 8.2)" was waived, because the material of lens cover (TEIJIN / L-1225Z(#1)(f1)) and IR LED cover (SABIC / 43R(f1)) suited for outdoor use with respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL 746C.

Unless otherwise indicated, All tests were conducted by PERFECTLINK INTERNATIONAL CORP / 4F, NO.16-1, SEC. 2, ZHONGYANG S RD, BEITOU DIST, TAIPEI CITY 112, TAIWAN under TPTDP.

Test of "Resistance to Corrosion (Part 22 8.3, Annex A)" was waived, because the material of enclosure was Aluminum.

Tests of "Tensile Strength and Elongation (Part 22 8.5, Annex D.2)" and "Compression - Gaskets, Closed Cell Construction (Part 22 8.5.1, Annex D.3)" were waived, because the same materials of gaskets (MOMENTIVE / TSE2186U(aq)) were used in reports E324690-A61 and E324690-A50.

Test of "Water Spray (Part 22 9.1, Annex B)" was waived, because the equipment complied with IP66.

Test of "Impact Test (4.2.5, 4.2.1, Part 22 10.2)" was waived, because the same enclosure/gasket/cable gland were used in reports E324690-A61.

The following tests were conducted:

Test	Testing Location/Comments
End Product Reference Page	
General Guidelines	
Input: Single-Phase (1.6.2)	
SELV Reliability Test Including Hazardous Voltage Measurements (2.2.2, 2.2.3, 2.2.4, Part 22 6.1)	
Limited Power Source Measurements (2.5)	
Steady Force (4.2.1 - 4.2.4)	
Impact (4.2.5, 4.2.1, Part 22 10.2)	
Stress Relief (4.2.7, 4.2.1)	
Loading - Wall and Ceiling Mounted Equipment (4.2.10)	
Heating (4.5.1, 1.4.12, 1.4.13)	
Component Failure (5.3.1, 5.3.4, 5.3.7)	
Abnormal Operation (5.3.1 - 5.3.9)	
Overload of Operator Accessible Connector (5.3.7)	

Test results are valid only for the tested equipment. These tests are considered representative of the products covered by this Test Report. The test methods and results of the above tests have been reviewed and found to be in accordance with the requirements in the Standard(s) referenced at the beginning of this Test Report.

The following tests were waived:

Test	Rationale for Waiving
Resistance to Corrosion (Part 22 8.3, Annex A)	
Tensile Strength and Elongation (Part 22 8.5, Annex D.2)	
Compression - Gaskets, Closed Cell Construction (Part 22 8.5.1, Annex D.3)	
Water Spray (Part 22 9.1, Annex B)	

The following supplements are provided as a part of this Test Record. NOTE: These supplements are only available to the Applicant via the CDA system.

Type	Supplement Id	Description
Attachment	2-01	CRD
Datasheet	2-02	Datasheet