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晶睿通訊股份有限公司
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VIVOTEK INC
6TH FL, 192 LIEN CHENG RD
CHUNG HO DISTRICT
NEW TAIPEI
235 TAIWAN

Date: 2016/02/25
Subscriber: 100504413
PartySite: 125336
File No: E324690
Project No: 4787311596
PD No: 16O06207
Type: R
PO Number: C1291601004

Subject: **Procedure And/Or Report Material**

The following material resulting from the investigation under the above numbers is enclosed.

Issue Date	Vol	Sec	Pages	Revised Date
	X1		Index Page(s)	
2016/02/18	X1	A89	Cert of Compliance	
2016/02/18	X1	A89	Add New Proc/Report Sect	

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Please file revised pages and illustrations in place of material of like identity. New material should be filed in its proper numerical order.

NOTE: Follow-Up Service Procedure revisions DO NOT include Cover Pages, Test Records and Conclusion Pages. Report revisions DO NOT include Authorization Pages, Indices, Section General Pages and Appendixes.

Please review this material and report any inaccuracies to UL's Customer Service Professionals. Contact information for all of UL's global offices can be found at http://ul.com/aboutul/locations.

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TPI File

File		Volume	Page	Date:
E324690	Index	X1	1	2016-02-18

Index

Product Type	Model/Type Reference	Report Reference #	Status
NVR	NR7401	E324690-A1-UL	
Business PTZ Internet Camera with Audio and PoE	PVC300	E324690-A2-UL	
Internet Camera with Audio and PoE	VC220	E324690-A3-UL	
Indoor/Outdoor WDR Day/Night PoE Network Camera	VC240	E324690-A5-UL	
Network Camera	IP8151	E324690-A7-UL	
Network Camera	IP8151P	E324690-A8-UL	
Video Sever	CIVS-SENC-1P	E324690-A26-UL	
Network Camera	IP8173H	E324690-A41-UL	
Network Camera	IP8371E	E324690-A42-UL	
Network Camera	IB8381-E, IB8381	E324690-A65-UL	
Network Camera	FE9381-EHV and FE9181-H	E324690-A89-UL	

CERTIFICATE OF COMPLIANCE

Certificate Number	20160218-E324690
Report Reference	E324690-A89-UL
Issue Date	2016-FEBRUARY-18

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 - FE9381-EHV and FE9181-H.
	Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	UL 60950-1, Information Technology Equipment - Safety - Part 1: General Requirements. CAN/CSA C22.2 No. 60950-1-07, 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:	FE9381-EHV and FE9181-H
Rating:	For Model FE9381-EHV I/P: 36-57Vdc, 0.36-0.23A (for unit supplied by PoE) or 12Vdc, 0.9A (for unit supplied by adapter). For Model FE9181-H I/P: 36-57Vdc, 0.16-0.1A (for unit supplied by PoE) or 12Vdc, 0.37A (for unit supplied by adapter). (Optionally provided on marking plate)
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: Jonathan Chen Reviewed by: Stanley Tsai

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, consists of electronic components mounted on PWB and housed in metal/plastic enclosure.

--The EUT installs to the wall or ceiling.

-- Intended to be supplied by UL Listed AC/DC adapter or PoE.

Model Differences

Model FE9181-H is similar to Model FE9381-EHV except for construction, input rated current, Tma.
Model FE9181-H is for indoor use.
Model FE9381-EHV is for outdoor use.

Technical Considerations

- Equipment mobility : stationary
- Connection to the mains : No direct connection
- Operating condition : continuous
- Access location : operator accessible
- Over voltage category (OVC) : OVC I
- Mains supply tolerance (%) or absolute mains supply values : No direct connection
- 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 : IP66 for Model FE9381-EHV; IPX0 for Model FE9181-H
- Altitude of operation (m) : Up to 2000 meters
- Altitude of test laboratory (m) : less than 2000 meters
- Mass of equipment (kg) : For Model FE9381-EHV: 0.51kg: For Model FE9181-H: 0.34kg
- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer’s specification of: 55 degree C for Model FE9381-EHV; 50 degree C

for Model FE9181-H

- The product was investigated to the following additional standards: (1) IEC 60529, Degrees of Protection Provided by Enclosures, Edition 2.1, Revision Date October 2009; (2) UL60950-22, Information Technology Equipment - Safety - Part 22: Equipment to be Installed Outdoors, Edition 1, Issue Date April 23, 2007; (3) IEC TR 62101
- The following circuit locations (with circuit/schematic designation) were investigated as a limited power source (LPS): All output ports
- The following are available from the Applicant upon request: Installation (Safety) Instructions / Manual
- The outdoor equipment/enclosure is: IP rated 66 for Model FE9381-EHV
- The outdoor equipment/enclosure was evaluated for use in an ambient range of: -40 degree C to 55 degree C for Model FE9381-EHV
- Based on installation manual, the operating environment of PoE circuitry is regarded as Network Environment 0 per IEC TR 62102. Therefore, the PoE circuitry is classified as SELV circuit.
- Based on product specifications, the equipment is to be supplied by UL Listed power supply suitable for use at (1) Tma of 55 degree C, with SELV circuit output & complied with LPS, and is rated 12 Vdc, 0.9A minimum for Model FE9381-EHV; (2) ma of 50 degree C, with SELV circuit output & complied with LPS, and is rated 12 Vdc, 0.37A minimum for Model FE9181-H
- For the compliance with UL 60950-22, all interconnecting cables are to be routed inside UL Listed flexible conduits marked "outdoor".
- Correlation marking: Each accessory is to be shipped with installation instructions containing the following correlation marking for proper installation and usage (On the label or manual or smallest package). "For PoE input connection, use only with UL Listed I.T.E. with PoE output."
- Liquid-tight Rubber Washer: AVC Industrial Corp. / type P-WS-PG7-A-SW is identical to AVC Industrial Corp. / type P-WS-M12-A-SW (E324690-A13-UL) except for shape and size.
- Rubber Seal Plug: AVC Industrial Corp. / type 612015801G is identical to AVC Industrial Corp. / type P-WS-M12-A-SW (E324690-A13-UL) except for shape and size.
- O-Ring: Chen Yuan Hsing Yeh Co., Ltd. / type 612014701G is identical to Chen Yuan Hsing Yeh Co., Ltd. / type 612014801G except for shape and size.

Additional Information

N/A

Additional Standards

The product fulfills the requirements of: N/A

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

Correlation marking	Correlation marking: Each accessory is to be shipped with installation instructions containing the following correlation marking for proper installation and usage (On the label or manual or smallest package). "For PoE input connection, use only with UL Listed I.T.E. with PoE output."
Manual	When using a PoE-enabled switch: The camera is only to be connected to PoE networks without routing to outside plants.

Special Instructions to UL Representative

The Field Representative should verify the Tma (maximum ambient temperature) is minimum (1) 55 degree C for Model FE9381-EHV, (2) from 50 degree C for Model FE9181-H, the updated version of UL reports for power adapter which was/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:

All models

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

All 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:

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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 (For Models FE9381-EHV and FE9181-H used) (Optional)	Interchangeable	Interchangeable	O/P: 12Vdc, 0.9A minimum, Comply with L.P.S., Ambient 55 degree C minimum.	QQGQ	UL	
01a. Power Adaptor (For Model FE9181-H used only) (Alternate) (Optional)	Interchangeable	Interchangeable	O/P: 12Vdc, 0.37A minimum, Comply with L.P.S., Ambient 50 degree C minimum.	QQGQ	UL	
01b. Power Adaptor (For Models FE9381-EHV and FE9181-H used) (Alternate) (Optional)	Interchangeable	Interchangeable	O/P: 12Vdc, 0.9A minimum, Ambient 55 degree C minimum.	EPBU/7	UL	
01c. Power Adaptor (For Model FE9181-H used only) (Alternate) (Optional)	Interchangeable	Interchangeable	O/P: 12Vdc, 0.37A minimum, Ambient 50 degree C minimum.	EPBU/7	UL	
02. Label	Interchangeable	Interchangeable	70 degree C if maximum surface temperature not specified.	PGDQ2 or PGJI2	UL	
03. Metal Enclosure (For Model FE9381-EHV used)	--	--	Aluminum, 2.5 mm thick minimum. See Enclosure Diagram 4-02 for details.	--	--	
03a. Plastic enclosure (For Model FE9181-H used only)	FORMOSA CHEMICALS & FIBRE CORP PLASTICS DIV	AC3100	HB minimum. 1.2 mm thick minimum. See Enclosure Diagram 4-01 for details.	QMFZ2	UL	
04. Lens cover (For Model FE9381-EHV used)	Teijin Polycarbonate China Ltd	L-1225Z(#1)(f1)	HB minimum. 1.8 mm thick minimum, 115 degree C, outdoor used.	QMFZ2	UL	
04a. Lens cover (For Model FE9381-EHV used) (Alternate)	Teijin Limited Resin And Plastic	L-1225Z(#1)(f1)	HB minimum. 1.8 mm thick minimum, 115 degree C, outdoor used.	QMFZ2	UL	
05. Wall Mount Bracket	--	--	Aluminum. Weight 0.07kg.	--	--	

(Optional)			Enclosure Diagram 4-03 for details.			
06. Connectors and Receptacles (Secondary/ SELV circuit)	Interchangeable	Metal/Plastic	Copper alloy pins housed in bodies of plastic rated V-2 minimum	QMFZ2	UL	
06a. Connectors and Receptacles (Secondary/ SELV circuit) (Alternate)	Interchangeable	Interchangeable	Minimum 57 V.	ECBT2, RTRT2	UL	
07. Wiring, internal secondary SELV circuits	Interchangeable	Interchangeable	FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1; minimum 30 V, 80 degree C.	AVLV2	UL	
08. Interconnecting Cable (Optional)	Interchangeable	Interchangeable	Maximum 3.05 m long. FEP, PTFE, PVC, TFE, neoprene, polyimide or marked VW-1 or FT-1. Minimum 60 degree C, 30V, for PoE function: minimum 57V	AVLV2	UL	
08a. Interconnecting Cable (Optional)	Interchangeable	Interchangeable	Maximum 3.05 m long, jacketed, type CMP, CMR, CMG, CM, CMX, CMUC, or CMH.	DUZX or ZPFW2	UL	
08b.Interconnecting Cable (Optional)	Interchangeable	Interchangeable	--	DUXR/2	UL	
09. Insulating Tubing/Sleeving (Optional) (For Model FE9381-EHV used)	Interchangeable	Interchangeable	Marked “Outdoor”	--	UL	
10. Internal plastic parts/Materials	Interchangeable	Interchangeable	HB minimum	QMFZ2	UL	
11. PWB	--	--	V-1 minimum, 105 degree C minimum.	ZPMV2	UL	
12. Transformer	Interchangeable	Interchangeable	105 degree C. See Enclosure 4-06 and 4-07 for detail	--	--	
13. O-ring (between	Chen Yuan Hsing	612014801G	EPDM/SILICONE rubber,	QMFZ2	UL	

Plastic Lens and Enclosure)	Yeh Co., Ltd.		overall see enclosure 4-04 for detail. Material is Silicone (QMFZ2), rated HB minimum.			
14. O-ring (between Upper Enclosure and Bottom Enclosure)	Chen Yuan Hsing Yeh Co., Ltd.	612014701G	EPDM/SILICONE rubber, overall see enclosure 4-05 for detail. Material is Silicone (QMFZ2), rated HB minimum.	QMFZ2	UL	
15. Rubber Seal Plug (for LAN port terminal)	AVC Industrial Corp.	GEW16-08-05SG	HB minimum	QMFZ2	UL	
15a. Rubber Seal Plug (for LAN port terminal) (Alternate)	AVC Industrial Corp.	612015801G	EPDM/SILICONE, HB minimum	QMFZ2	UL	
16. Liquid-tight rubber washer (for General I/O terminal)	AVC Industrial Corp.	P-WE-PG7-A-B	EPDM/SILICONE, HB minimum Material is Silicone (QMFZ2, Dow Corning Toray Co Ltd, Type SH881U), HB min., 80 degree C	QMFZ2	UL	
17. Electric Double Layer Capacitors (BT2) (optional)	ELNA Co., Ltd.	DHL-5R5D224T	5.5Vdc, 0.22F	--	--	

Enclosures

Type	Supplement Id	Description
Photographs	3-01	Overall view 01 for Model FE9381-EHV
Photographs	3-02	Overall view 02 for Model FE9381-EHV
Photographs	3-03	Internal view 01 for Model FE9381-EHV
Photographs	3-04	Internal view 02 for Model FE9381-EHV
Photographs	3-05	Main board view 01 for Model FE9381-EHV
Photographs	3-06	Main board view 02 for Model FE9381-EHV
Photographs	3-07	Main board view 03 for Model FE9381-EHV
Photographs	3-08	Overall view 01 for Model FE9181-H
Photographs	3-10	Overall view 02 for Model FE9181-H
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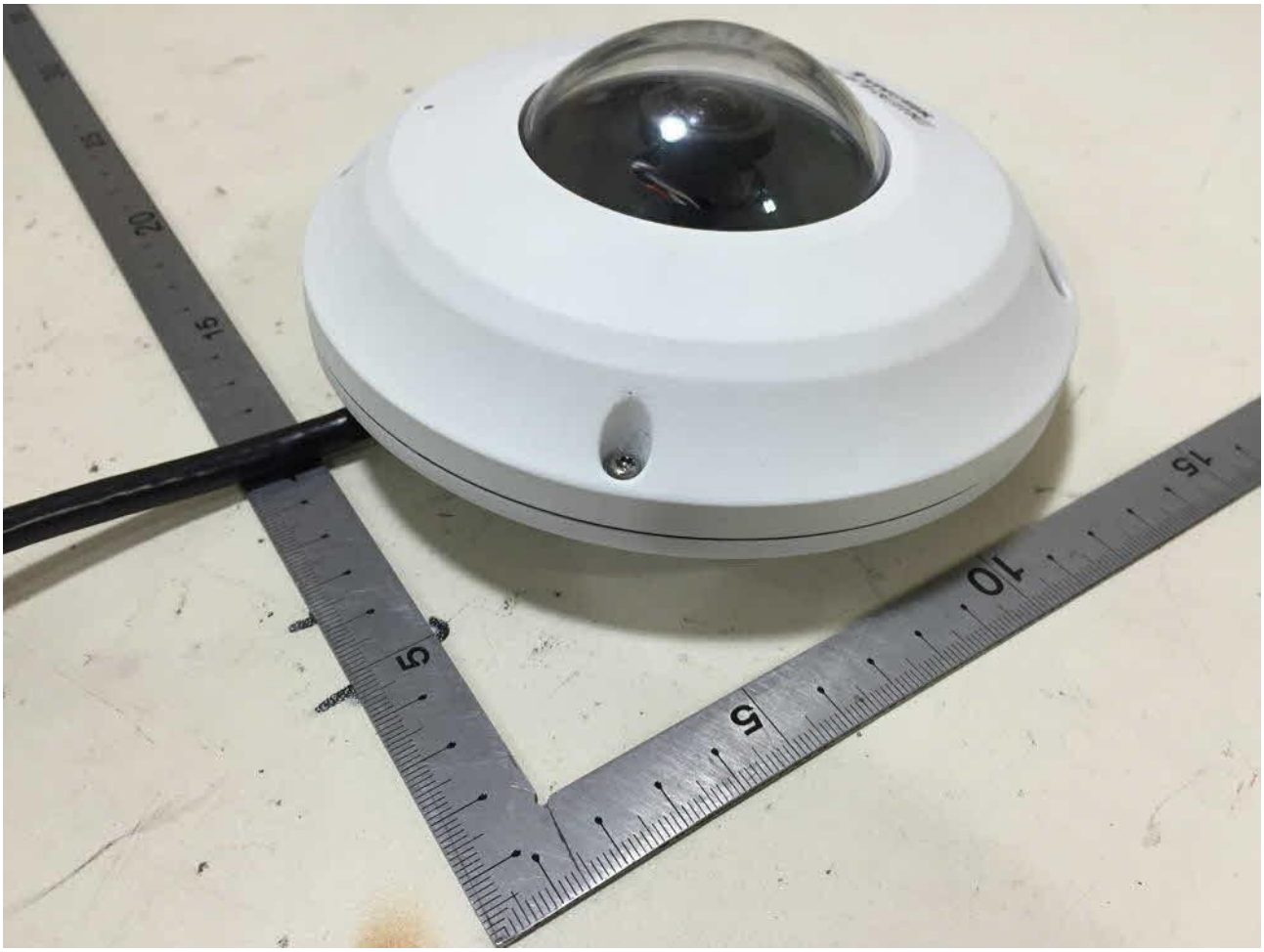
Photographs	3-12	Internal view 01 for Model FE9181-H
Photographs	3-13	Internal view 02 for Model FE9181-H
Photographs	3-14	Main board view 01 for Model FE9181-H
Photographs	3-15	Main board view 02 for Model FE9181-H
Photographs	3-16	Main board view 03 for Model FE9181-H
Diagrams	4-01	Drawing of Enclosure for Model FE9181-H
Diagrams	4-02	Drawing of Enclosure for Model FE9381-EHV
Diagrams	4-03	Wall Mount Bracket dimension drawing
Diagrams	4-04	Drawing of O-Ring (between Plastic Lens and Enclosure) for Model FE9381-EHV
Diagrams	4-05	Drawing of O-Ring (between Upper Enclosure and Bottom Enclosure) for Model FE9381-EHV
Diagrams	4-06	Spec of PoE Transformer (T1)
Diagrams	4-07	Alternate - Spec of PoE Transformer (T1)
Manuals	6-01	Manual for Model FE9381-EHV
Miscellaneous	7-01	Wiring Harness drawing
Miscellaneous	7-03	Part 22 TRF Report for Model FE9381-EHV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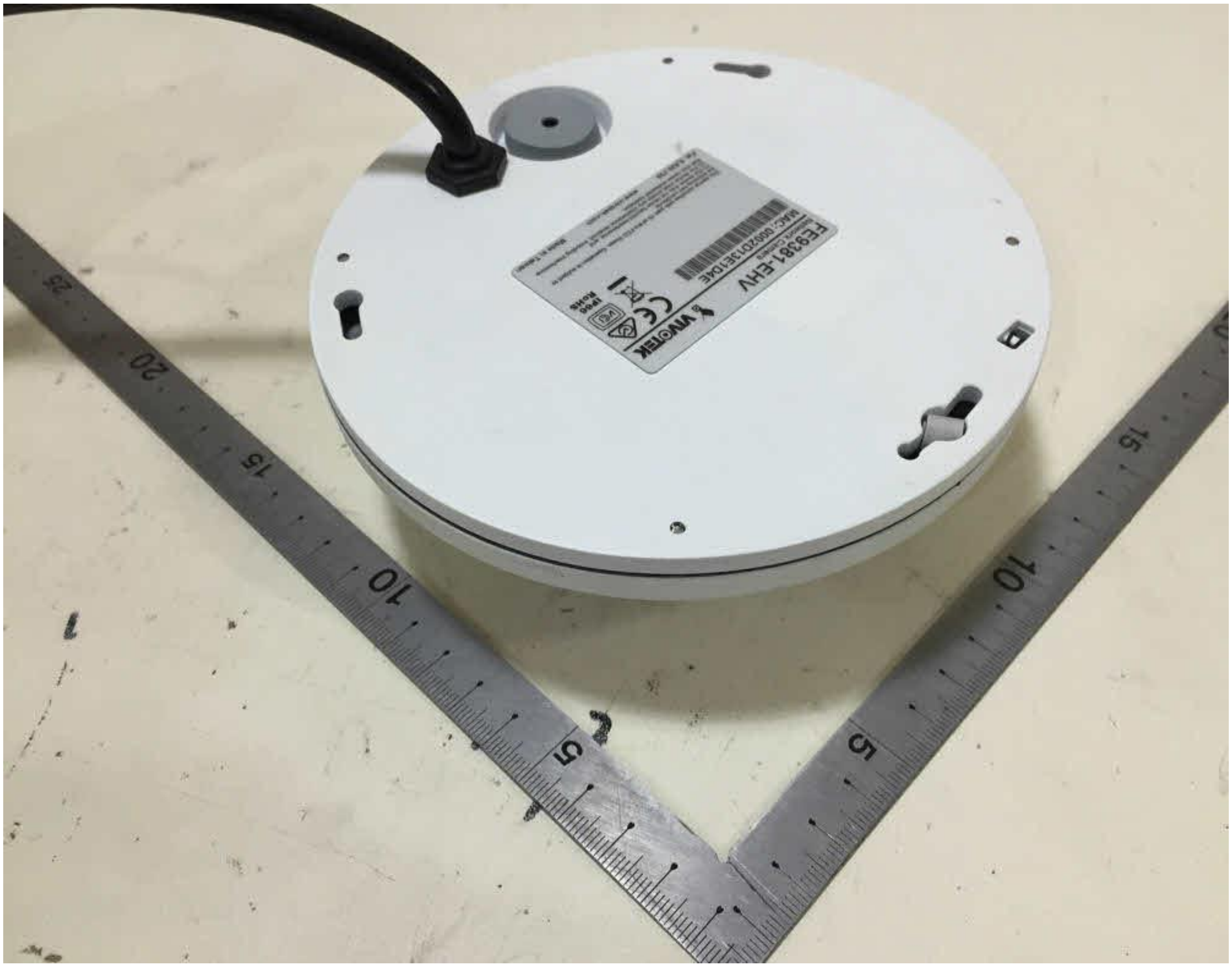
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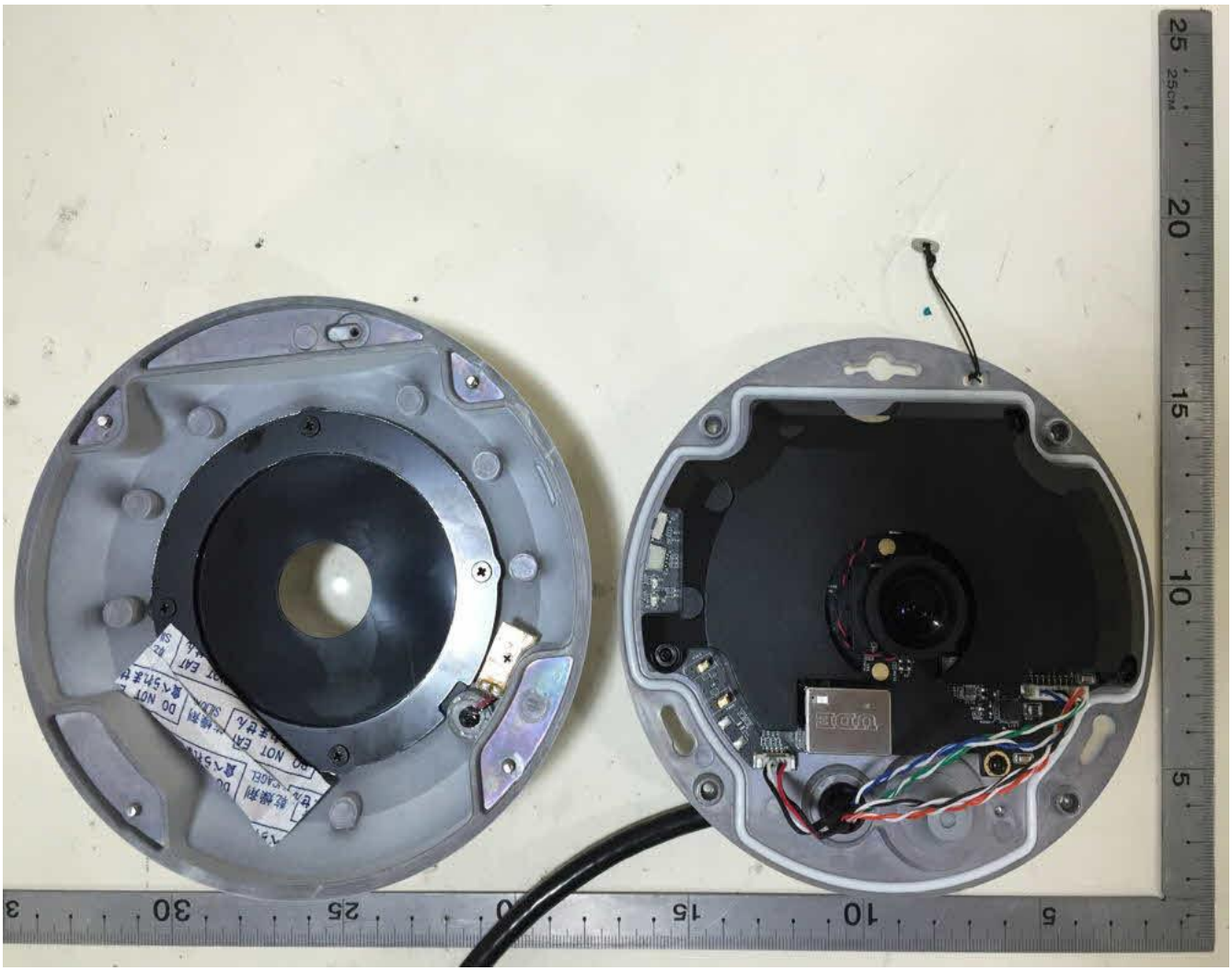
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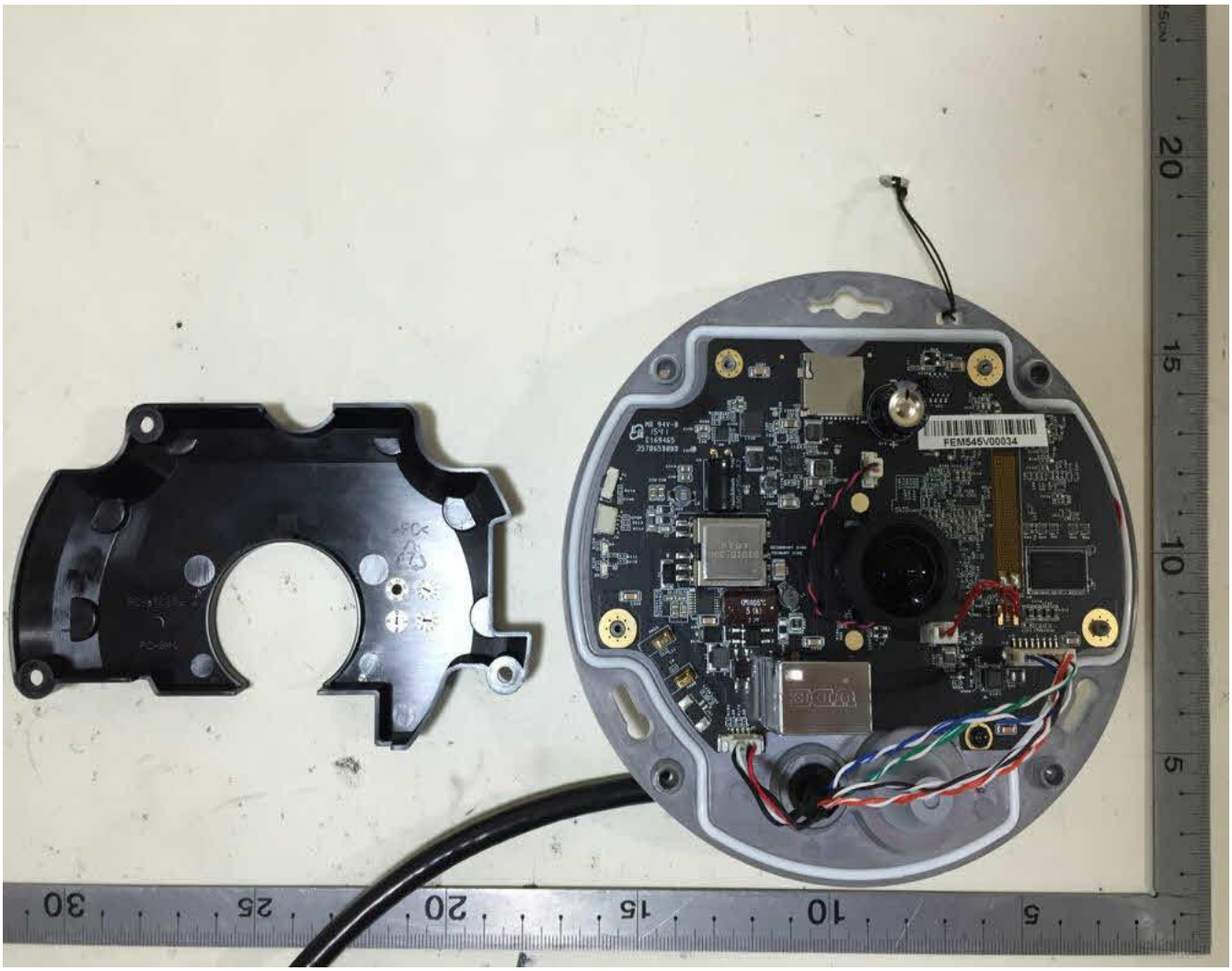
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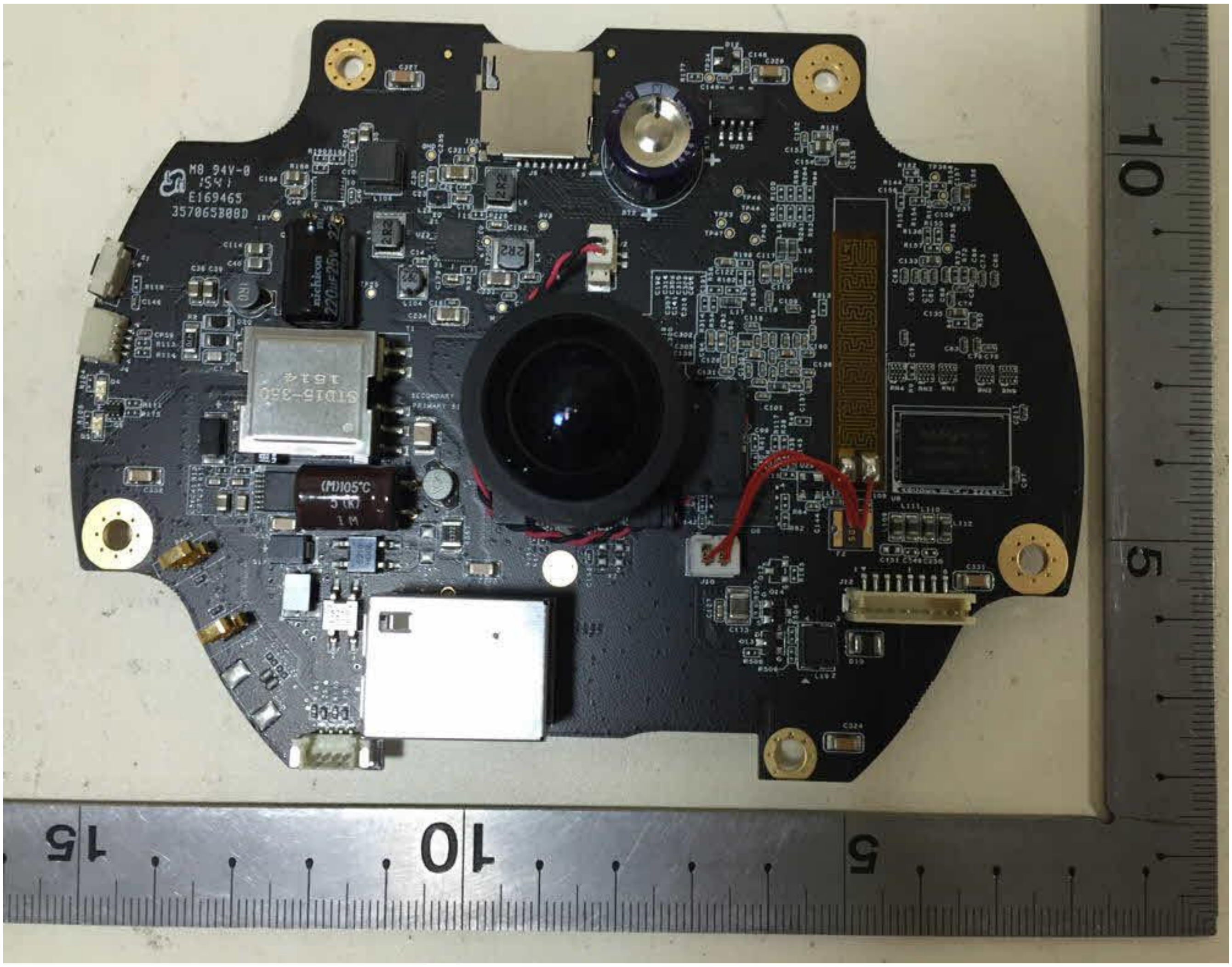

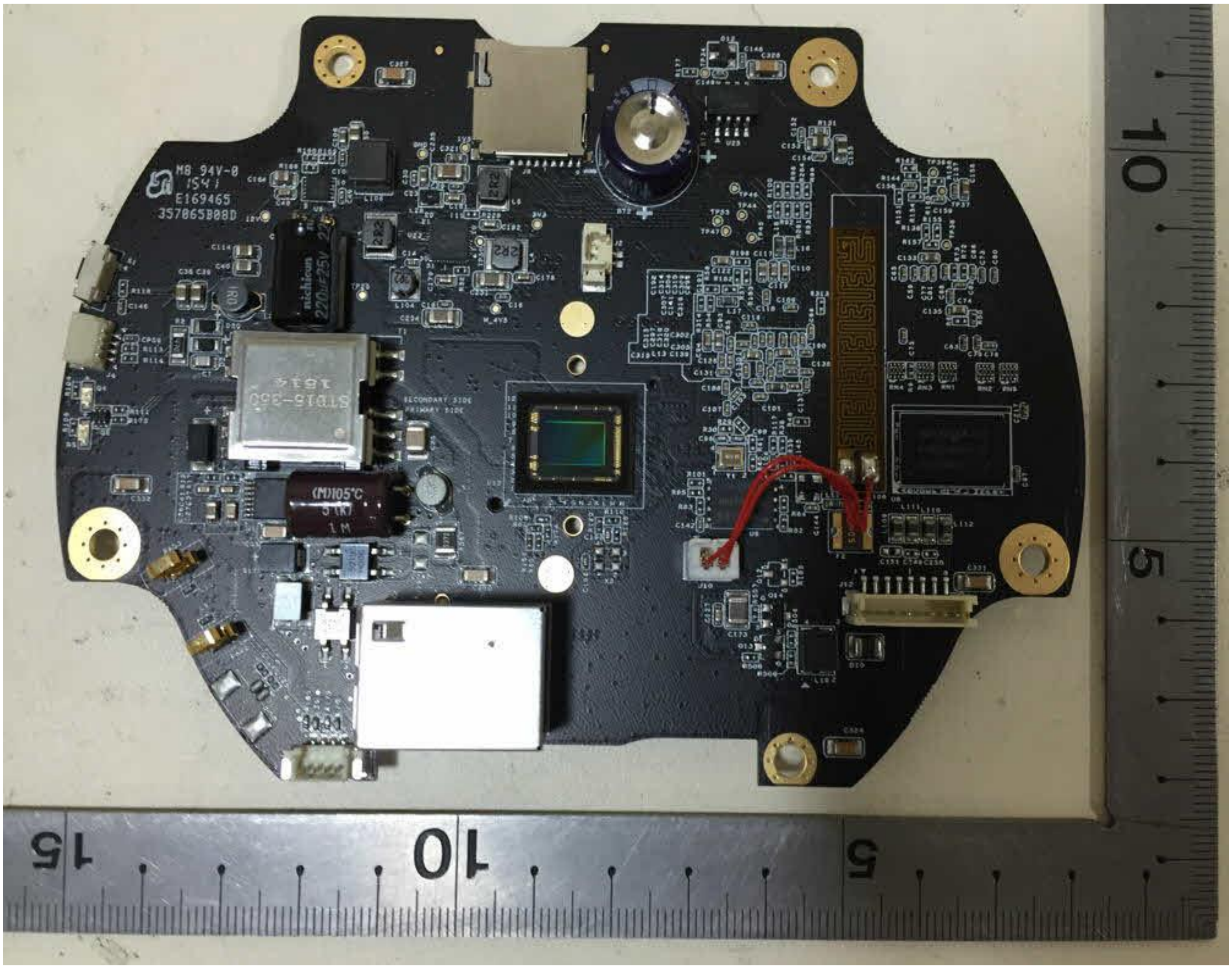

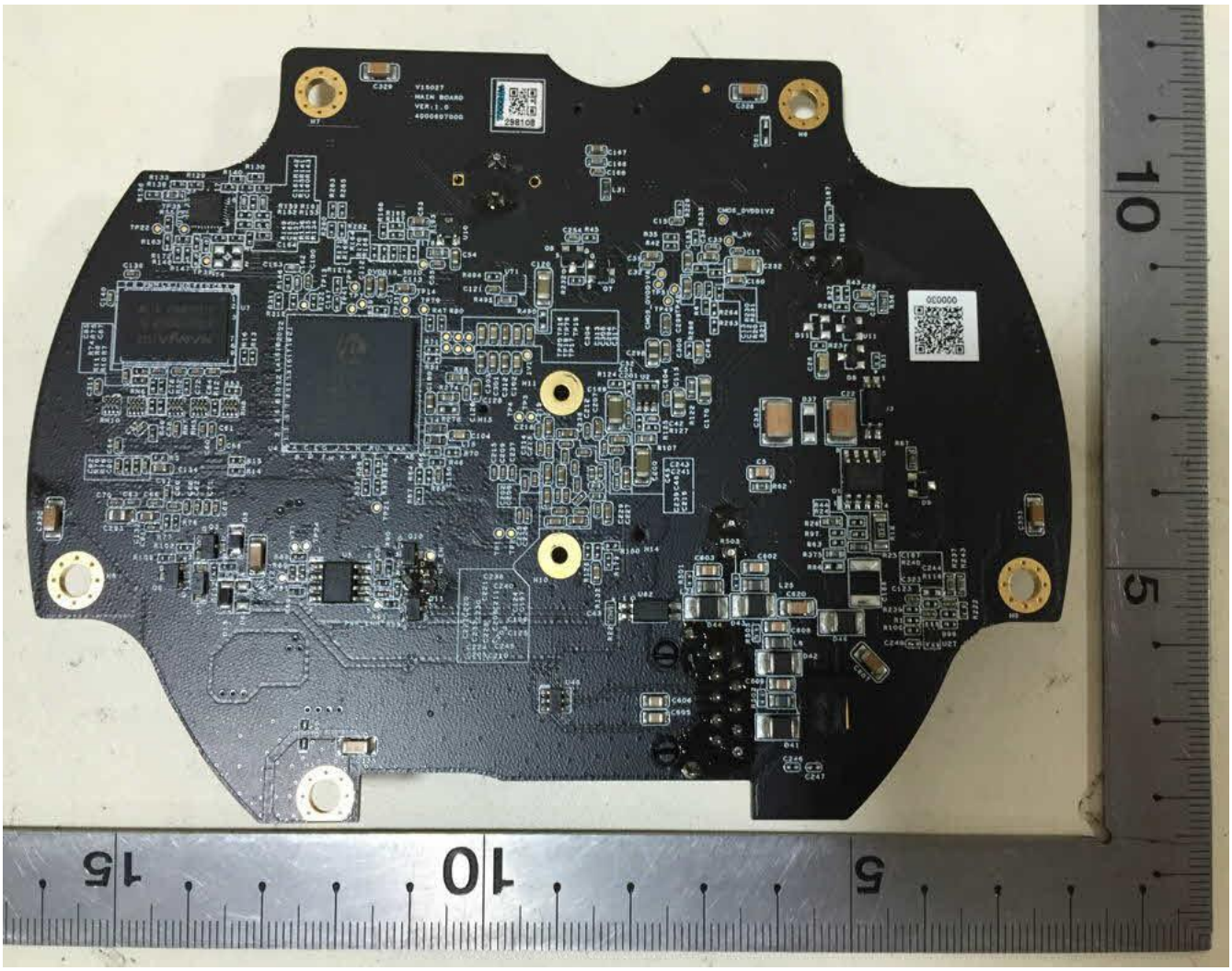
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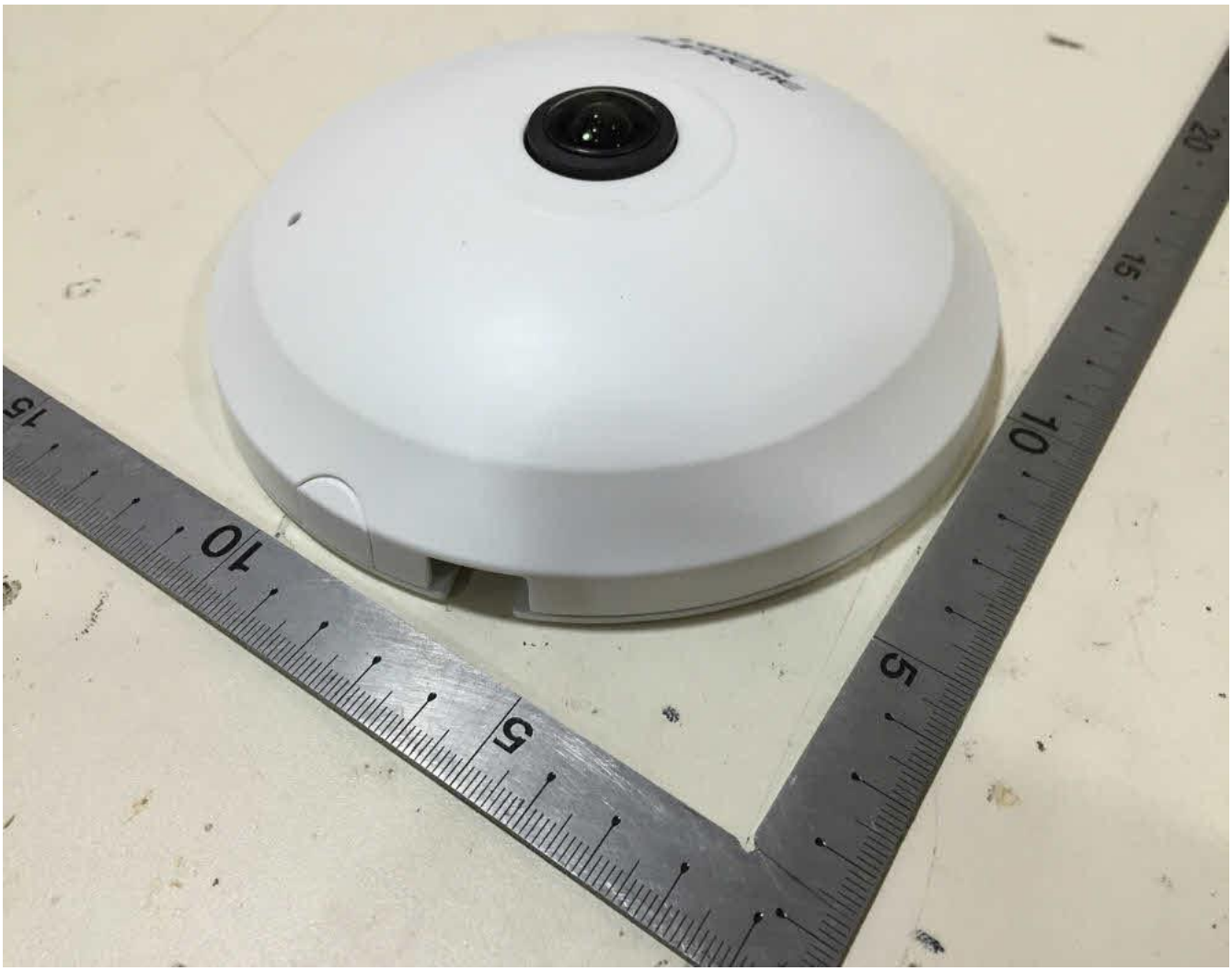
SUPREME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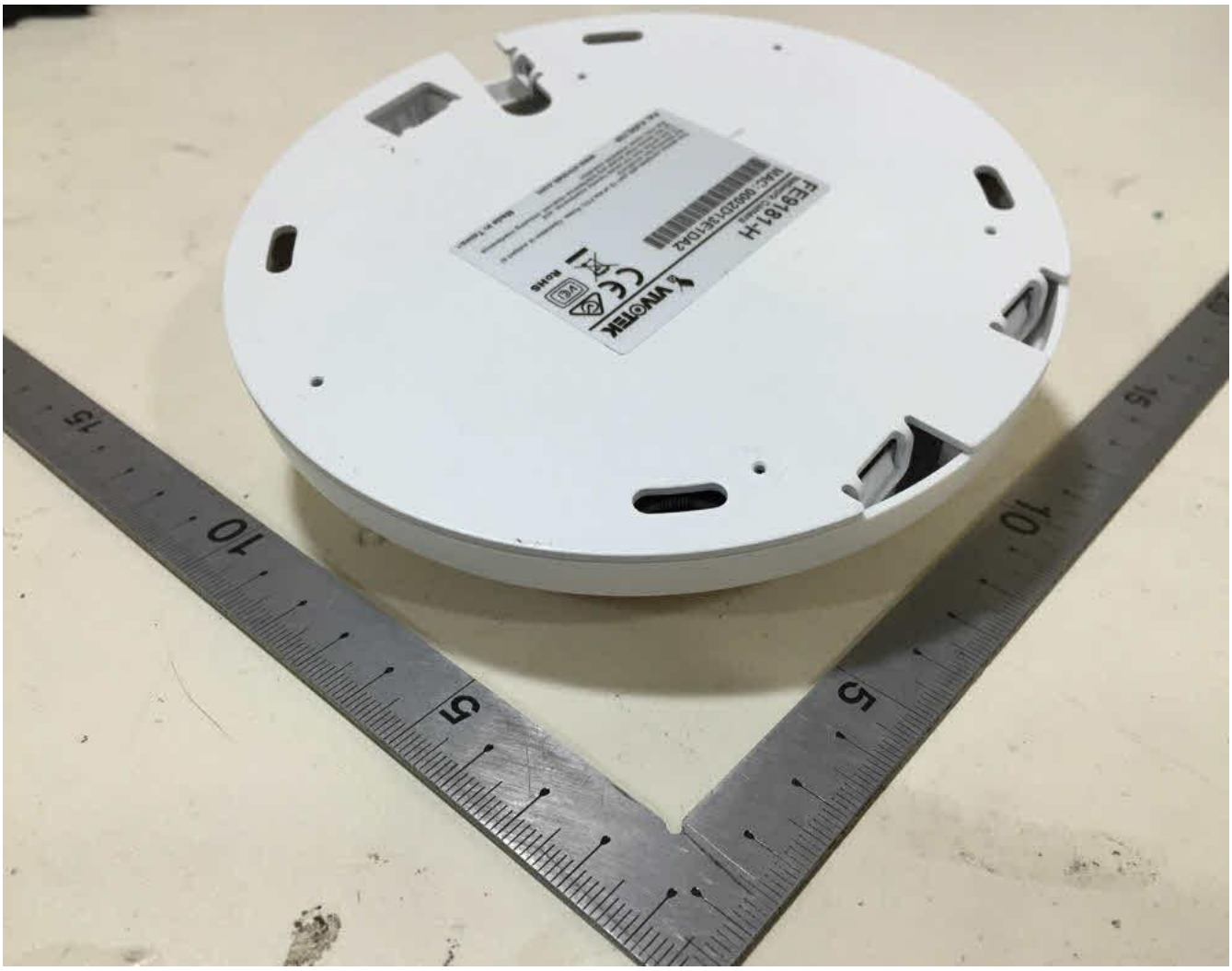
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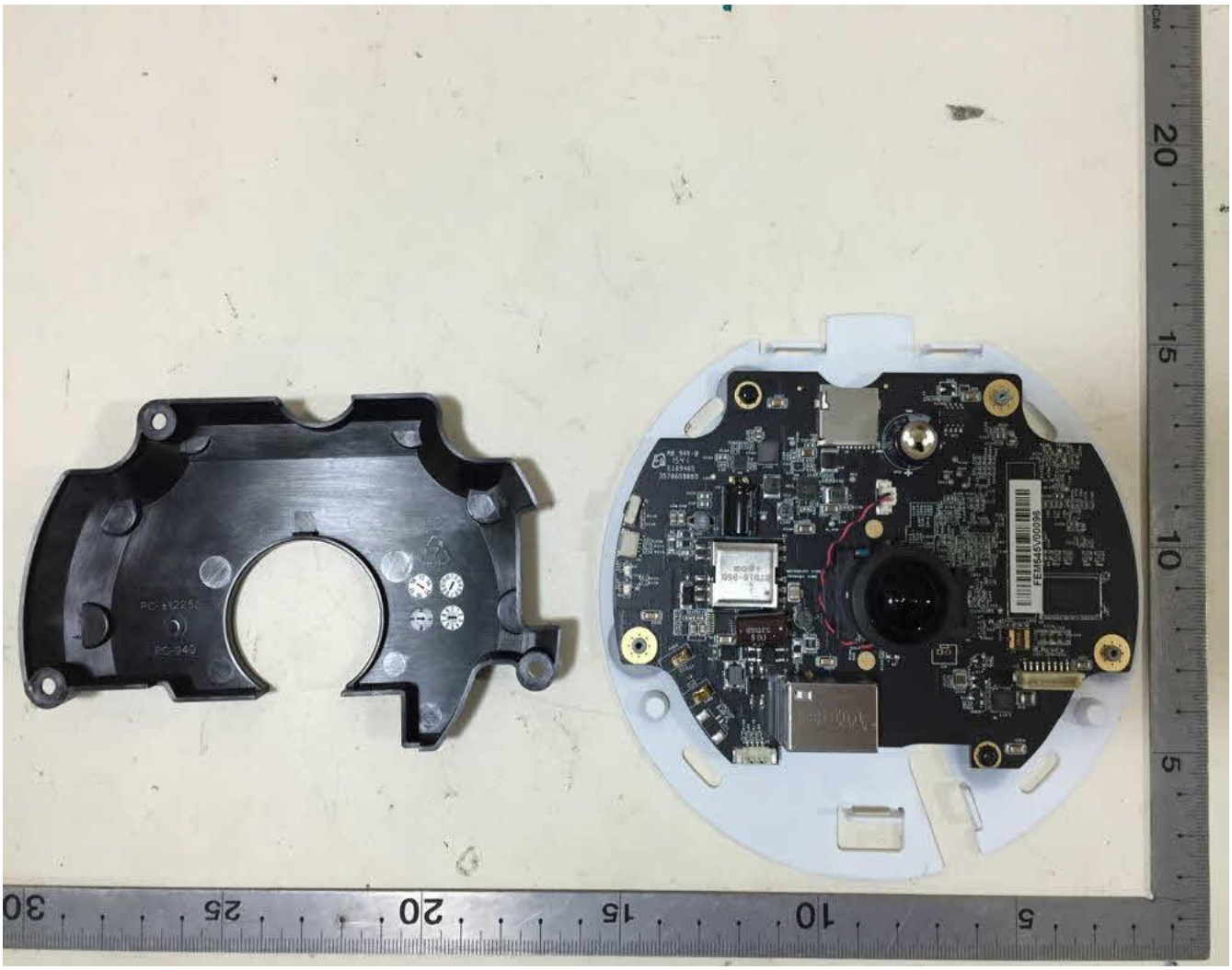

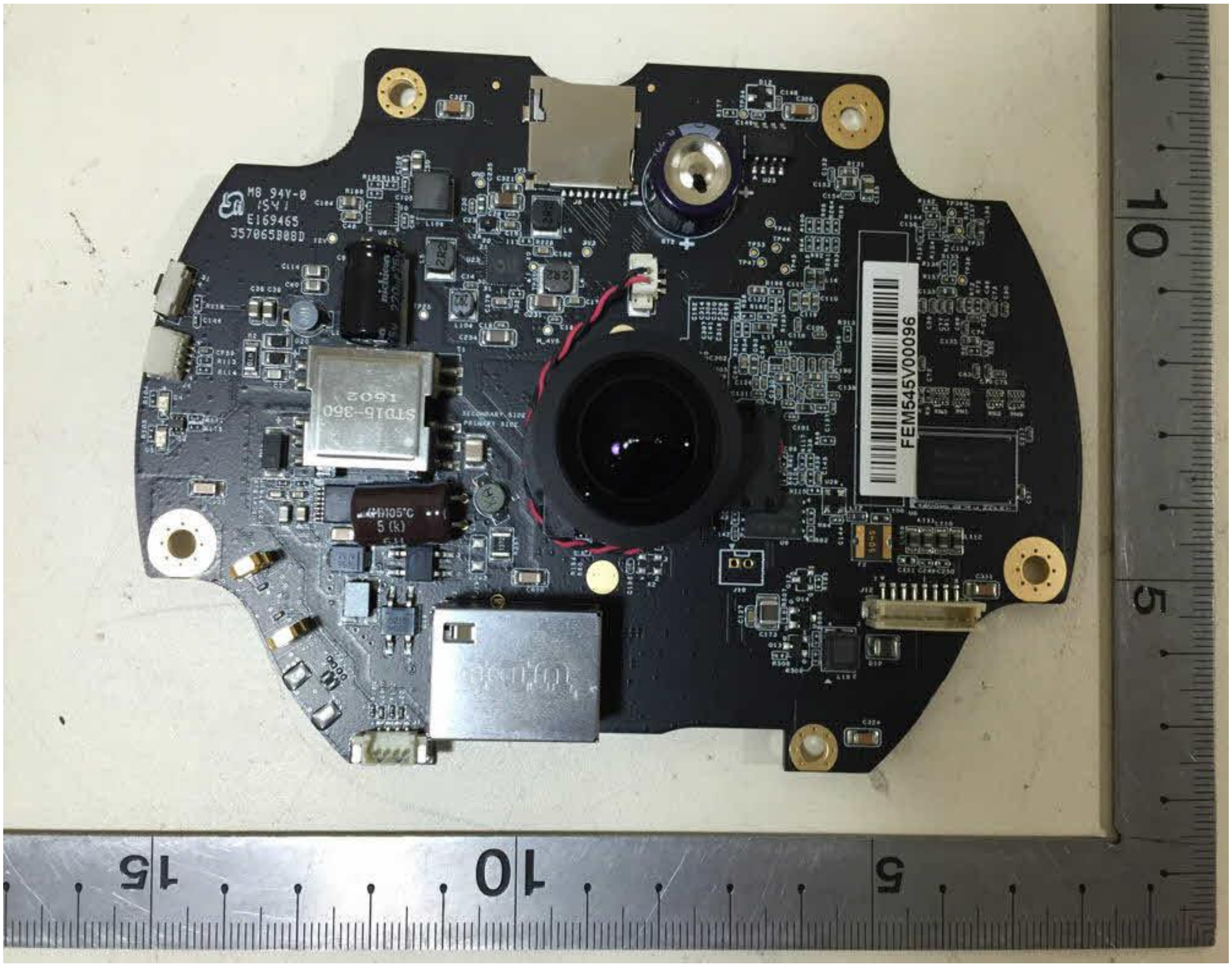
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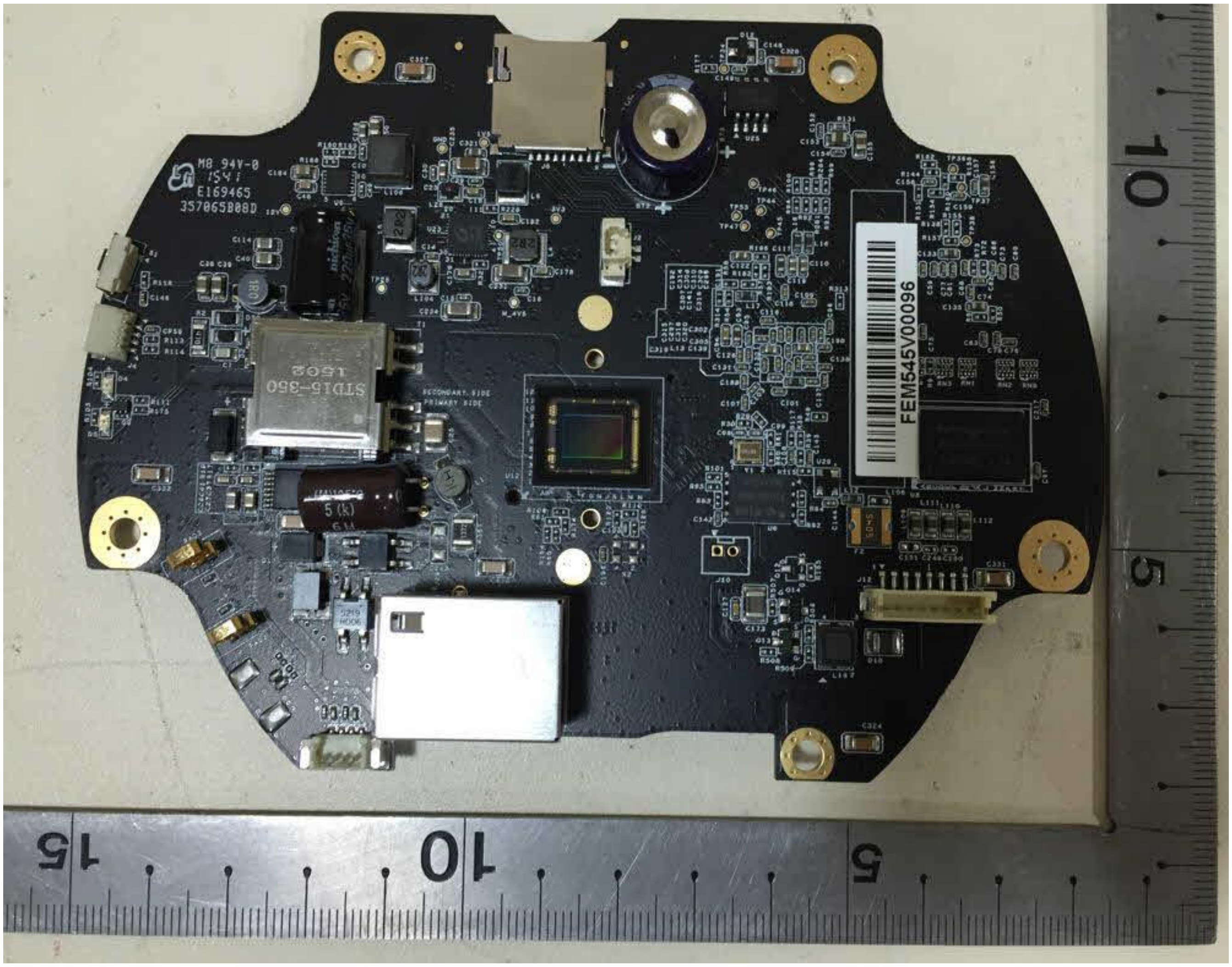
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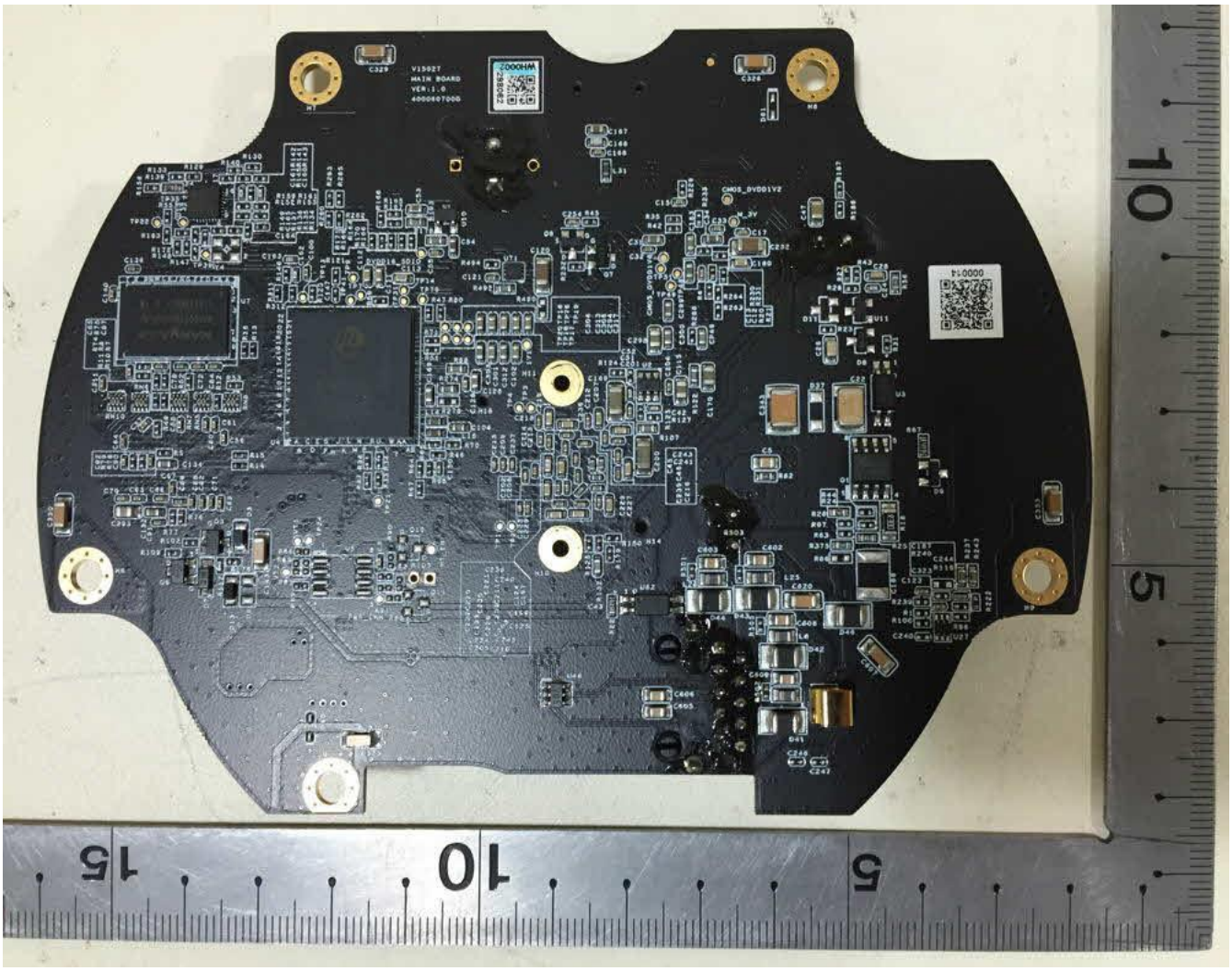
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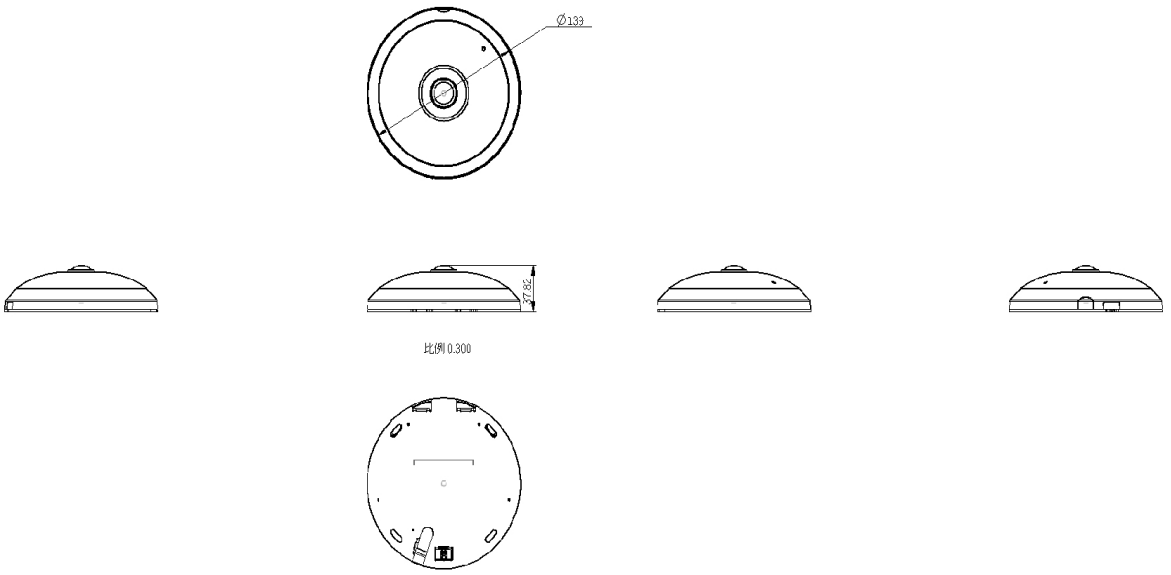
File E324690 Vol. X1 Sec. A89 DIA-01 Issued: 2016-02-18

機密|CONFIDENTIAL

REVISIONS

REV	DESCRIPTION	ENGINEER	REQUIRE	DATE
1.0	New Edition			16-Feb-16



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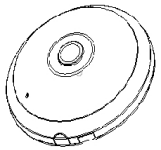

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN mm

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

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PART NO.					
ENGR	Howard	MODEL	FE9181		
DRN	Howard	DRAWING TITLE	FE9181		
CHK	Joy				
APRV	Arway	DRAWING NO.	FORM-V_2014-12-13		
M'TL		ISSUE DATE	16-Feb-16	REVISION	1.0
FINISH		SCALE	1.000	UNIT	mm
W1-RD-03-01-3	第三角法	SIZE	A3	SHEET	OF 1

比例 0.300

File E324690 Vol. X1 Sec. A89 DIA-02 Issued: 2016-02-18

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REVISIONS				
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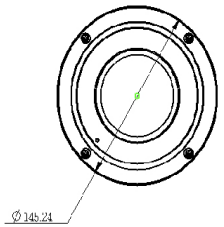
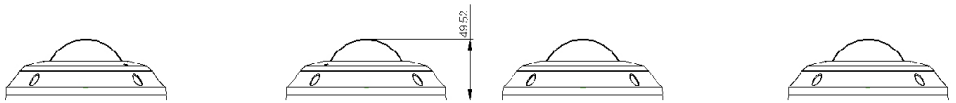
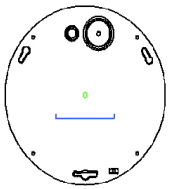
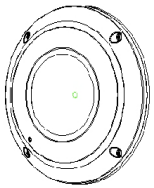




比例 0.300





UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN mm

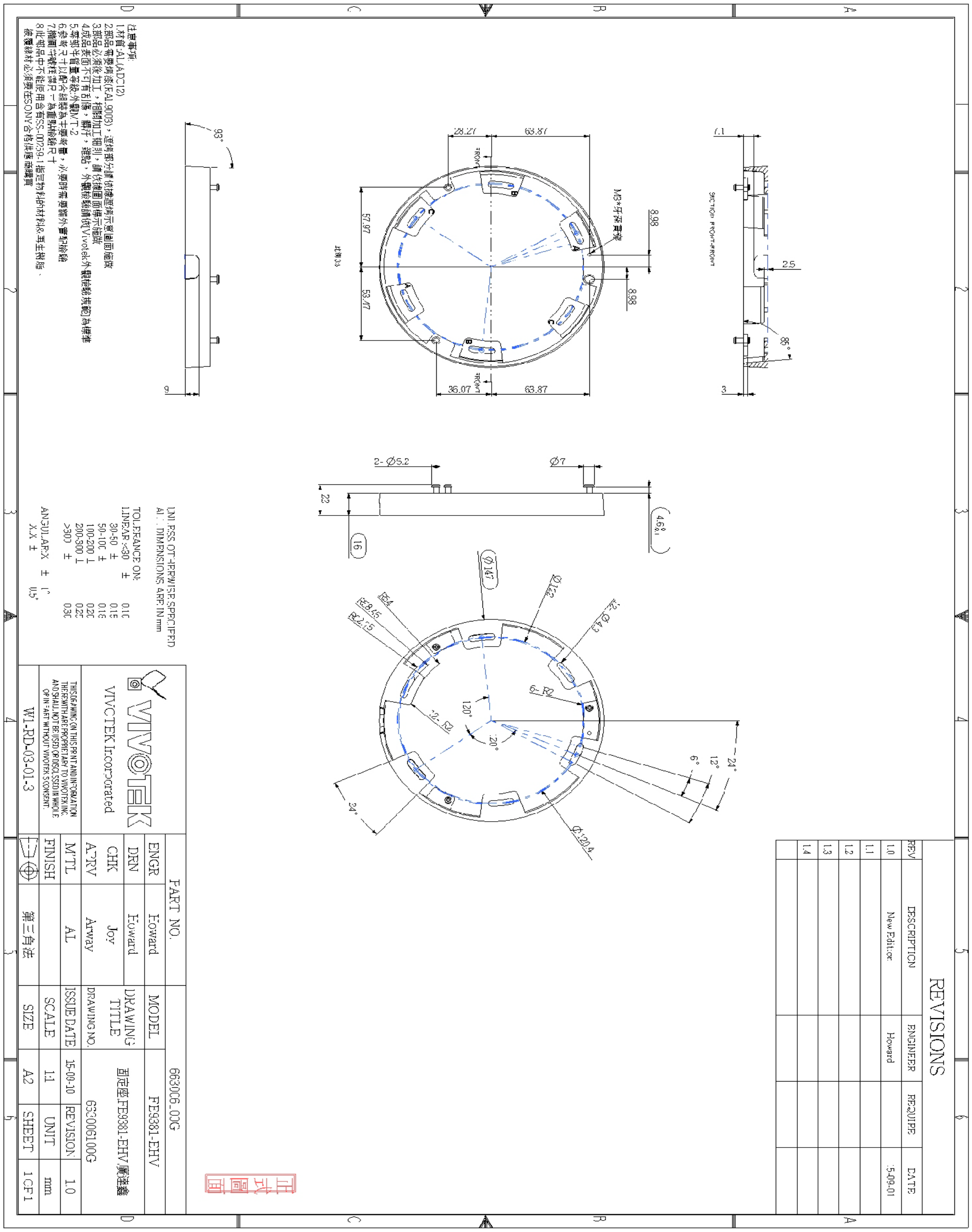
TOLERANCE ON:
LINEAR <30 ± 0.10
30-50 ± 0.15
50-100 ± 0.18
100-200 ± 0.20
200-300 ± 0.25
>300 ± 0.30

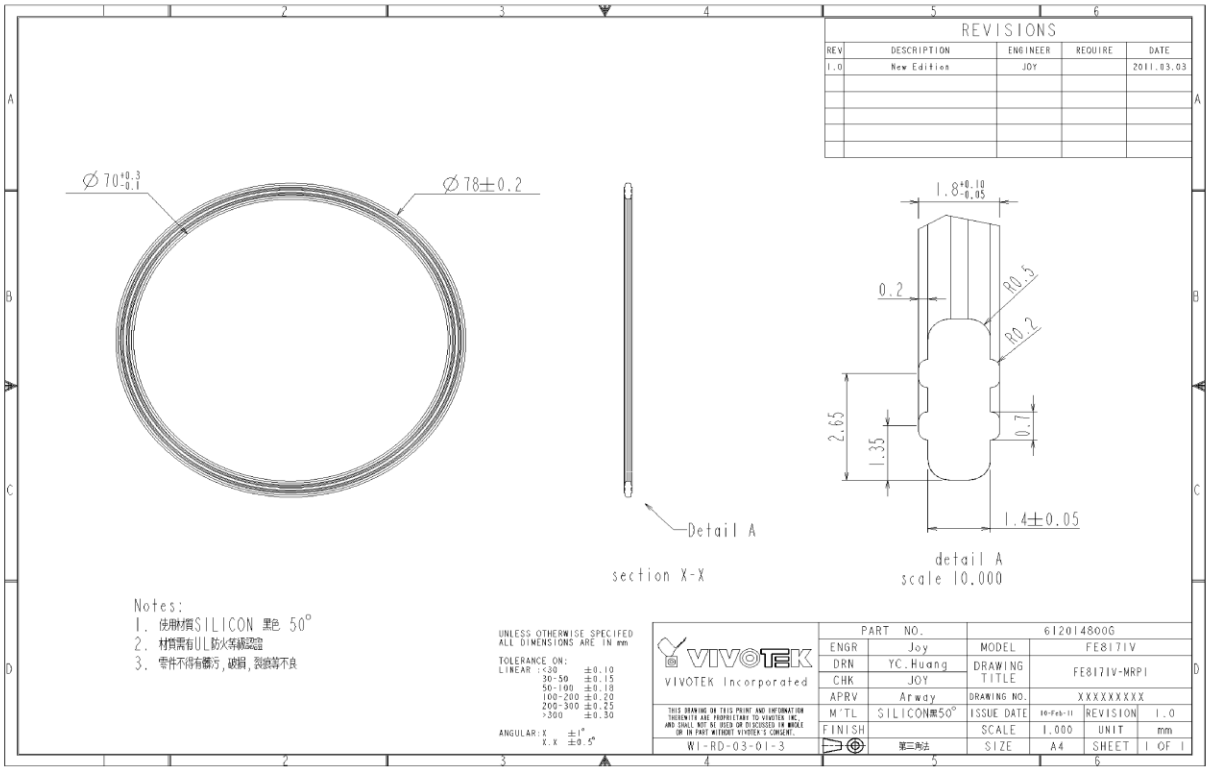
ANGULAR:X ± 1°
X.X ± 0.5°

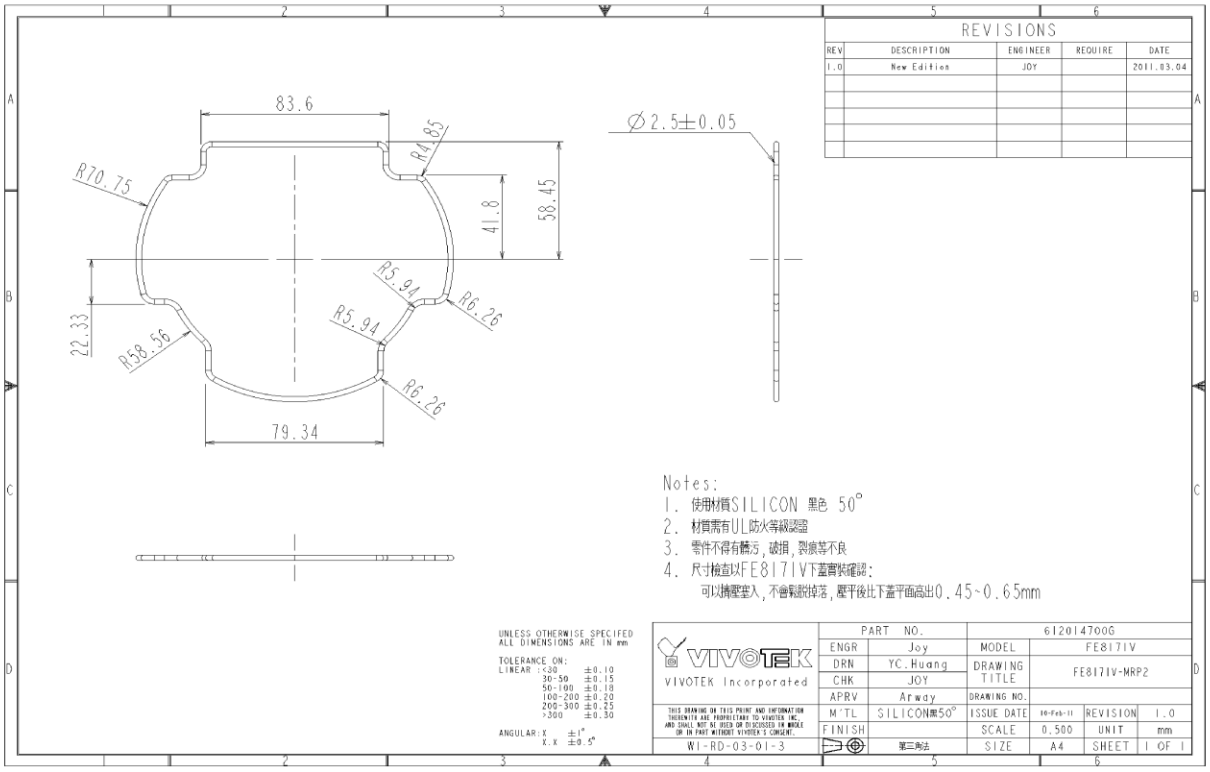
VIVOTEK Incorporated

THIS DRAWING ON THE PRINT AND INFORMATION THEREWITH ARE PROPRIETARY TO VIVOTEK INC AND SHALL NOT BE USED OR DISCLOSED IN WHOLE OR IN PART WITHOUT WRITTEN CONSENT

PART NO.					
ENGR	Howard	MODEL	FE9381-EHV		
DRN	Howard	DRAWING TITLE	FE9381-EHV-SVIEW		
CHK	Joy				
APRV	Arway	DRAWING NO.	FORM-V:_2014-12-13		
M'TL		ISSUE DATE	16-Feb-16	REVISION	1.0
FINISH		SCALE	1.000	UNIT	mm
W1-RD-09-01-3	第三角法	SIZE	A3	SHEET	OF 1


REVISIONS
VIVOTEK Incorporated
FE9381-EHV
663006.00G
W1-RD-03-01-3


REVISIONS
REV | DESCRIPTION | ENGINEER | REQUIRE | DATE
1.0 | New Edition | JOY | | 2011.03.03
Ø70 +0.3 -0.1
Ø78±0.2
Detail A
section X-X
1.8 +0.10 -0.05
0.2
R0.3
R0.2
2.65
1.35
0.7
1.4±0.05
detail A
scale 10.000
Notes:
1. 使用材質SILICON 黑色 50°
2. 材質需有UL 防火等級認證
3. 零件不得有髒污, 破損, 裂痕等不良
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
VIVOTEK Incorporated
THIS DRAWING OR THIS PRINT AND INFORMATION THEREWITH ARE PROPRIETARY TO VIVOTEK INC. AND SHALL NOT BE USED OR DISCLOSED IN WHOLE OR IN PART WITHOUT VIVOTEK'S CONSENT.
WI-RD-03-01-3
PART NO. 6120148006
ENGR Joy
DRN YC.Huang
CHK JOY
APRV Arway
M'TL SILICON黑50°
FINISH
MODEL FE8171V
DRAWING TITLE FE8171V-MRPI
DRAWING NO. XXXXXXXX
ISSUE DATE 10-Feb-11
REVISION 1.0
SCALE 1.000
UNIT mm
SIZE A4
SHEET 1 OF 1
第三角法



REVISIONS

REV	DESCRIPTION	ENGINEER	REQUIRE	DATE
1.0	New Edition	JOY		2011.03.04

Notes:
1. 使用材質SILICON 黑色 50°
2. 材質需有UL防火等級認證
3. 零件不得有髒污, 破損, 裂痕等不良
4. 尺寸檢查以FE8171VT蓋實裝確認:
   可以擠壓塞入, 不會鬆脫掉落, 壓平後比下蓋平面高出0.45~0.65mm

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
VIVOTEK Incorporated

THIS DRAWING ON THIS PRINT AND INFORMATION THEREWITH ARE PROPRIETARY TO VIVOTEK INC. AND SHALL NOT BE USED OR DISCLOSED IN WHOLE OR IN PART WITHOUT VIVOTEK'S CONSENT.

WI-RD-03-01-3

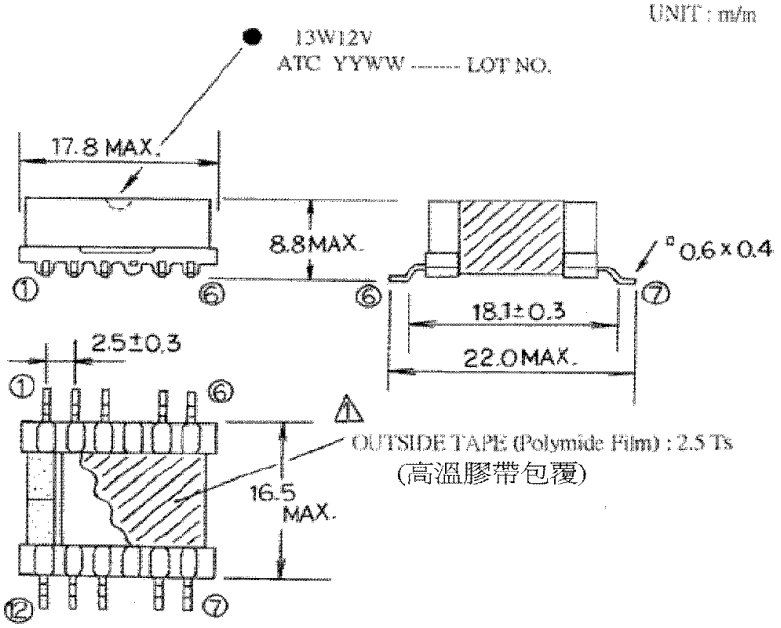
PART NO.		6120147006			
ENGR	Joy	MODEL	FE8171V		
DRN	YC.Huang	DRAWING TITLE	FE8171V-MRP2		
CHK	JOY				
APRV	Arway	DRAWING NO.			
M'TL	SILICON黑50°	ISSUE DATE	10-Feb-11	REVISION	1.0
FINISH		SCALE	0.500	UNIT	mm
第三角法		SIZE	A4	SHEET	1 OF 1

ATC 碩哲科技股份有限公司
ISO9001 ACROPARTS TECHNOLOGY CO.,LTD.

13W12V Series Specification

6 Configuration and Dimensions:

UNIT : m/m



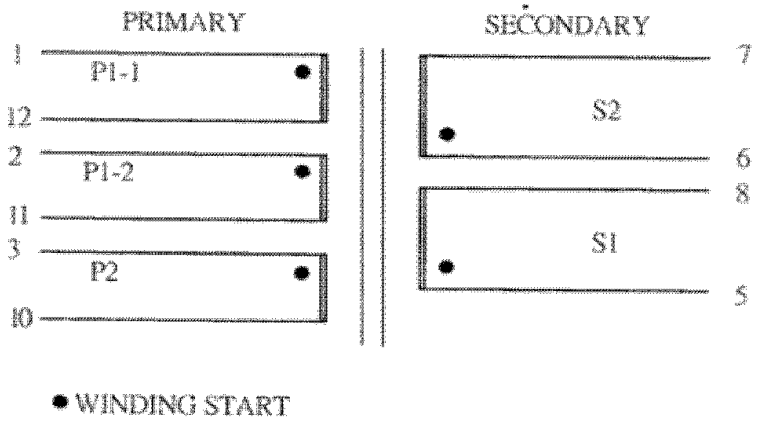
REMARKS: 1. PIN 4,9 CUT OFF.
2. LABEL ON TOP SIDE.
3. FIXING TAPE FOR CORE: 1 mil, 2 Ts MIN.
4. LOT NO.: YY WW

WEEK
YEAR

ATC 碩哲科技股份有限公司
ISO9001 ACROPARTS TECHNOLOGY CO.,LTD.

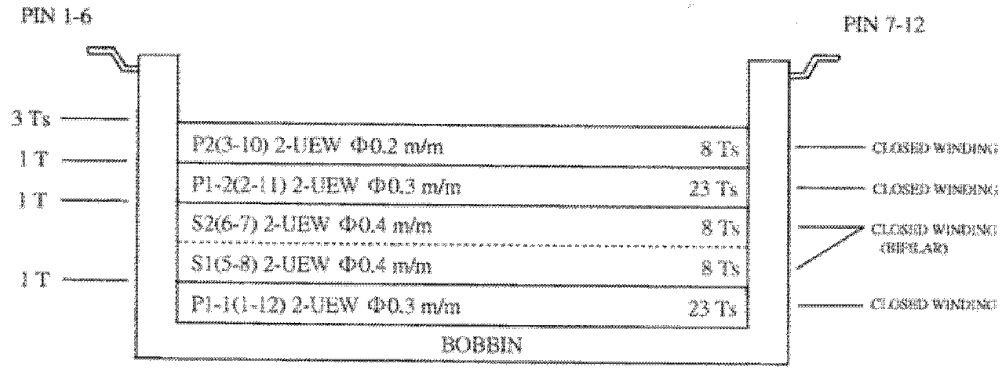
13W12V Series Specification

8 SCHEMATIC



8 WINDING CONSTRUCTION

INSULATION TAPE: 1 mil x 9.0 m/m



碩哲科技股份有限公司
ISO9001 ACROPARTS TECHNOLOGY CO.,LTD.

13W12V Series Specification

6 PART MATERIAL IDENTIFICATION :

PART MATERIAL IDENTIFICATION

NO.	ITEM	MATERIAL	CLASS	UL FILE NO.	MANUFACTURER
1.	CORE	FERRITE JPP-4			A-CORE ELECTRICAL CO., LTD.
		PC40, PC44			TDK CORPORATION
		NC-2H			NICERA CERAMIC CORPORATION
		P4			ACME ELECTRONICS CORPORATION
2.	BOBBIN	PHENOLIC PM-9820, PM-9630	150℃	E41429(M)	SUMITOMO BAKELITE CO., LTD.
		LCP E4008	130℃	E54705(M)	SUMITOMO CHEMICAL CO., LTD.
3.	TAPE	POLYESTER CAT.NO. 35660Y	130℃	E50292(S)	SYMBIO INC.
		⚠ CAT.NO. KA180	200℃		
		3M NO. 1350-1 or 56 or 1298	130℃	E17385(N)	MINNESOTA MINING & MFG CO ELECTRICAL SPECIALTIES DIV
		⚠ NO. 92	180℃		
		CAT NO. CT, PZ	130℃	E165111	JINGHANG YAHUA PRESSURE SENSITIVE GLUE CO., LTD.
		⚠ CAT.NO. PF	180℃		
		CAT NO. 370S, 371F	130℃	E175868(S)	BONDTEC PACIFIC CO., LTD.
		⚠ CAT.NO. 911	200℃		
4.	WIRE	POLYURETHANE ENAMELLED COPPER DD-NYU	130℃	E84081(S)	PACIFIC ELECTRIC WIRE & CABLE CO., LTD.
		UEW-2	130℃	E174837	JUNG SHING WIRE CO., LTD.
		UEW	130℃	E152187	TA WIN INDUSTRIES(M) SDN BHD
		UEW	130℃	E223922(S)	HUNG CHENG INDUSTRY CO., LTD.
5.	SOLDER	LEAD FREE BAR Sn/Cu			THOUSAND ISLAND METAL FOIL CO., LTD. (or EQU.)
6.	VARNISH	BC-346A, BC-359	200℃	E317427	JOHN C DOLPH COMPANY.(or EQU.)
7.	LUG	TIN PLATED CP WIRE			OPTIONAL

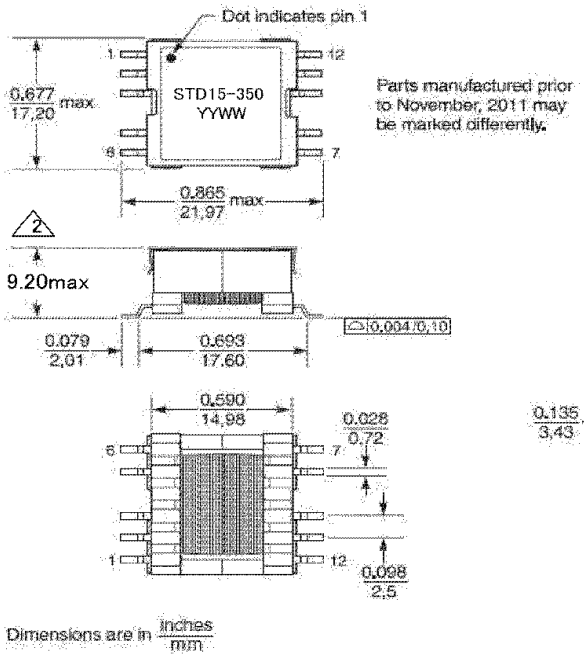
承 認 書 Specifications	分類番号 Classified No.	TTS-ASST00367	2/3
品 名 TITLE	STD15-350		

電気特性 Electric Characterisrics

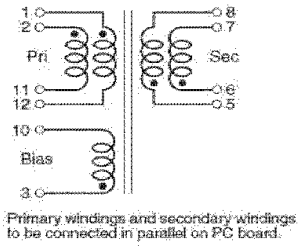
Part number	Power	Inductance at 0 A ±10%uH	Inductance at Ipk min(uH)	DCR max(Ω) pri	DCR max(Ω) sec	DCR max(Ω) bias	Leakage inductance max(uH)	Turns ratio pri : sec	Turns ratio pri : bias	Ipk (A)	Output (REF)
STD15-350	13	35	31.5	0.095	0.017	0.150	0.6	1:0.35	1:0.35	2.0	12V, 1.1A

1. 1500Vrms.one minute isolation primary and bias to secondary.
2. Inductance is for the primary, measured at 250kHz, 0.3Vrms.
3. Peak primary current drawn at minimum input voltage.
4. DCR for the primary and for the secondary are with the windings connected in parallel.
5. Leakage inductance is for the primary windings with the secondary windings shorted.
6. Turns ratios are with the primary the secondary windings connected in parallel.
7. Output of the secondary is with the windings connected in parallel. Bias winding output is 12V, 20mA.
8. Electrical specifications at 25℃.
9. Ambient temperature −40℃ to + 125℃.
10. Storage temperature −40℃ to + 125℃.
11. Packaging −40℃ to + 80℃.

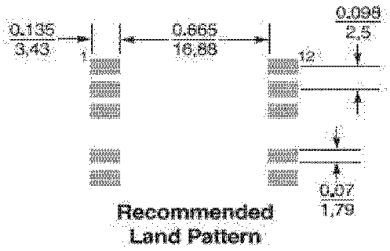
外形、寸法 Externals and Dimensions



Schematics



Primary windings and secondary windings to be connected in parallel on PC board.



Dimensions are in inches / mm

TO: Issued :

1. Description : Transformer
2. Lot No. :
3. Trade Name : STD15-350
4. Quantity :

MATERIAL LIST

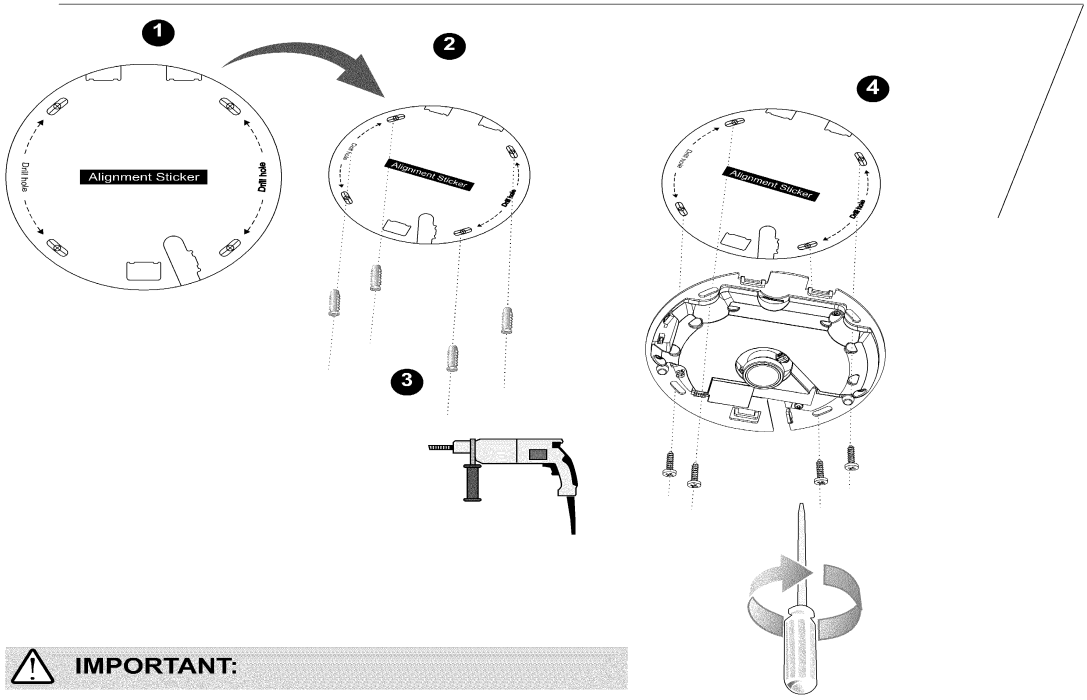
No.	Item	Trade name	Material	File No.	Temp Clas	Manufacture
①	Core	P4 EFD15	Ferrite	------	------	ACME Electronics Material Co., Ltd.
		DMR40 EPC15	Ferrite	----	----	Hengdian Group Dmegc Magnetics Co., Ltd.
		TP4 EFD15	Ferrite	------	------	TDG Holding Co., Ltd.
②	Bobbin	EFD15	Phenolic	E41429 UL94V-0	150 °C	Sumitomo Bakelite Co., Ltd.
③	Magnet Wire	UEW	Polyurethane Copper Wire	E174837	130 °C	Jung Shing Wire Co., Ltd.
				E197768	130 °C	Ta YA Electric Wire Factory
				E85640	130 °C	TAI-1 Copper Co., Ltd.
				E221719	155 °C	Zhejiang Hongbo Electric Line & Wire Co., Ltd.
④	Insulation Tape	201	Polyimide film	E229667	180 °C	Shanghai Jinzhang Insulating Material Co., Ltd.
		631S	Polyester	E56086	130 °C	Teraoka Seisakusho Co., Ltd.
		CT	Polyester	E165111	130 °C	Jingjiang Yahua Pressure Sensitive Glue Co., Ltd.
⑤	Holder	EFD15	Stainless Steel	------	------	Optional
⑥	Solder	Sn95-1Ag-4CU	Lead-Free	------	------	ALPHA Metal Co., Ltd.
		SN100C3	Lead-Free	------	------	AIM Solder Corporation
⑦	Varnish △1	TVB2024	Epoxy ester	E83702	130 °C	Kyocera Chemical Corporation

We certify that each material of above parts is properly employed such as above table.

AUDIX TECHNOLOGY (XIAMEN) Co.,LTD.

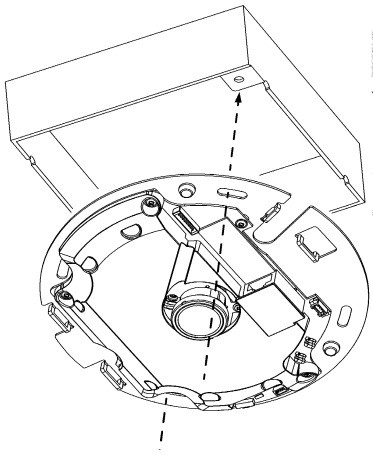
Ceiling or Wall Mount

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:

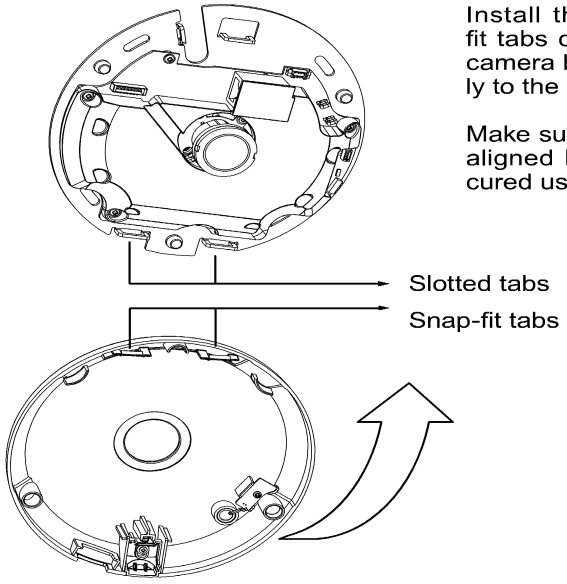
Arrange the cables neatly to avoid getting in the way when the dome cover is attached.



NOTE:

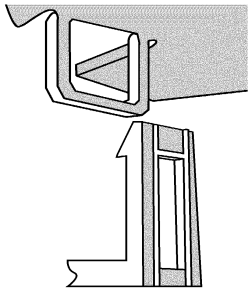
You may also install the camera to a U.S. standard 4 in. junction box. You can align the camera's curved slots with the mounting holes on a junction box. Use diagonal mounting positions on the camera to match those on a junction box.

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.

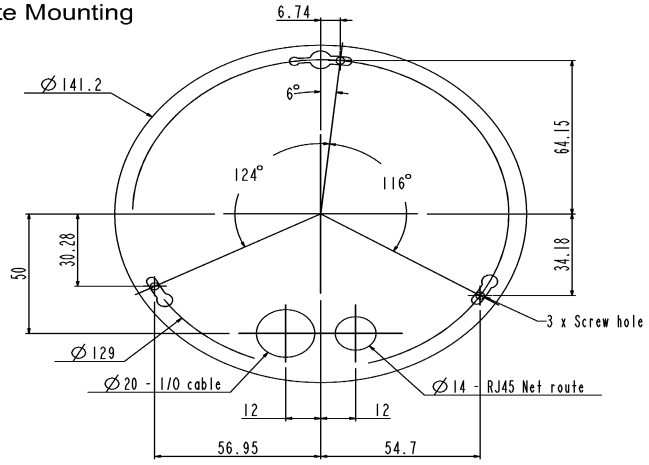
Make sure the dome cover and the base plate are flush-aligned before pressing down. The dome cover is secured using a snap-fit mechanism.



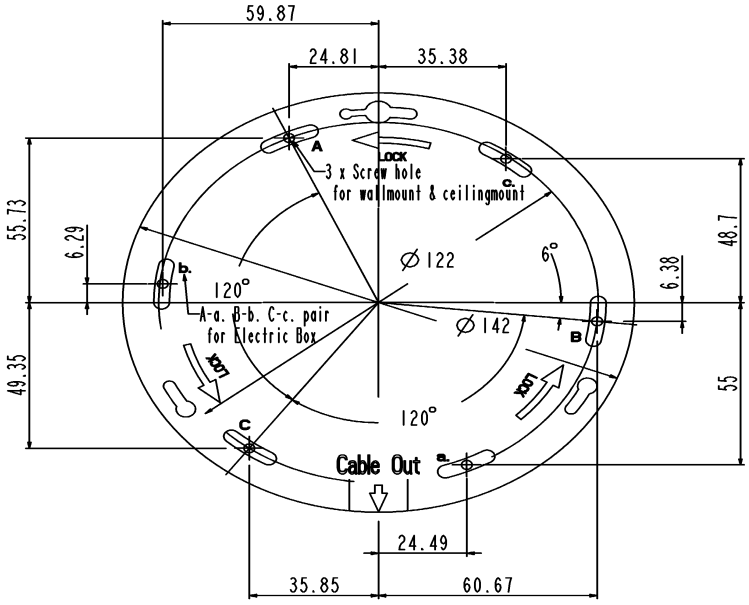
Mounting Positions

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

Camera Base Plate Mounting Positions

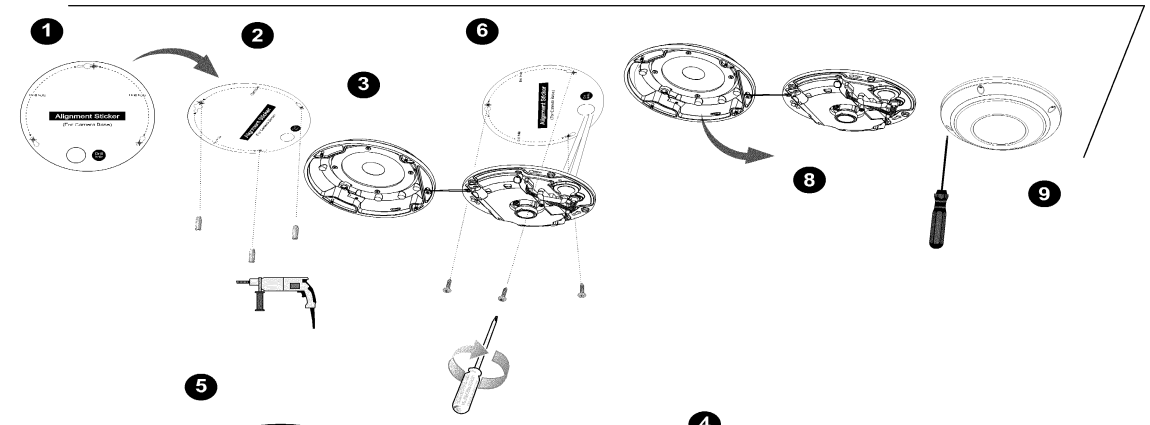


Camera Mounting Plate Mounting Positions



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.



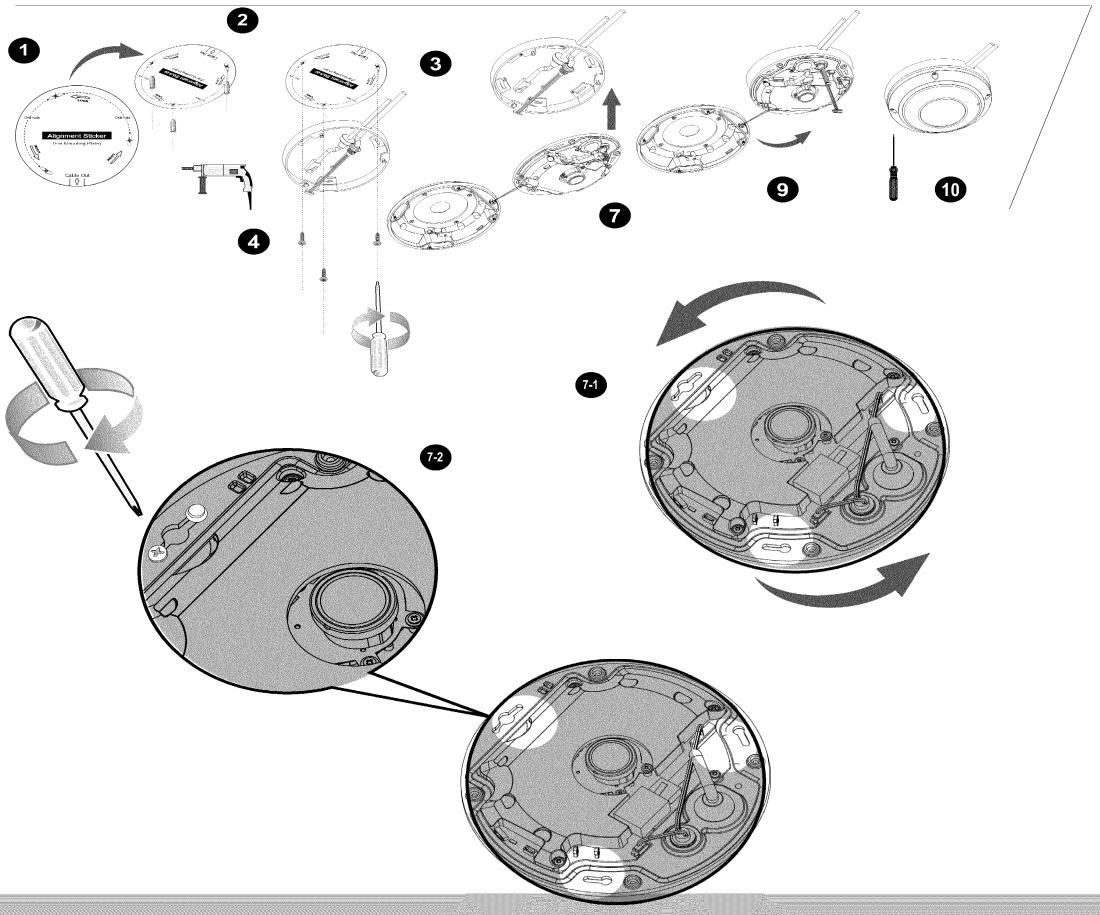
IMPORTANT:

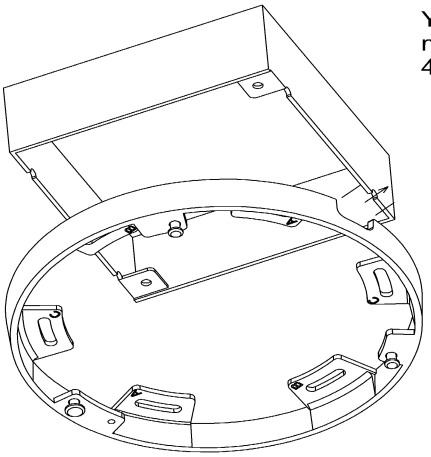
Arrange the cables neatly to avoid getting in the way when the dome cover is attached.

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 (Figure 7-1). Then secure the supplied screws to fix the camera base (Figure 7-2).
8. You will find a dessicant bag attached to the camera. Replace the dessicant 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.



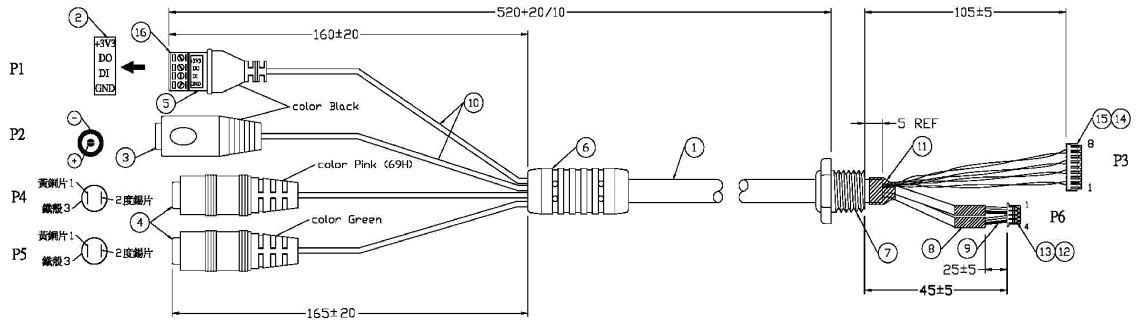


You may also use the diagonal holes on the mounting plate, marked as A, B, or C, to install the camera to a U.S. standard 4 in. junction box.

REV.	DESCRIPTION	DATE
A	INITIAL RELEASE	2011.3.8
	增加item #16	2011.6.27

RoHS Compliant

All Materials Must Be RoHS Compliant



ITEM	DESCRIPTION
16	MC420-3504Z
15	TERMINAL: JST SZH-003T-P0.5 or EQUIV.
14	HOUSING: JST ZHR-8 or EQUIV.
13	TERMINAL: MOLEX 5008-8000 or EQUIV.
12	HOUSING: MOLEX 51021-0400 or EQUIV.
11	HEAT SHRINKABLE TUBE F34 Ø7*10mm
10	PVC TUBE Ø2.6*155mm
9	HEAT SHRINKABLE TUBE Ø1.0
8	HEAT SHRINKABLE TUBE Ø1.5
7	Molding SR, M12
6	Molding SR, SC05165
5	ME040-3504T
4	STEREO JACK Ø3.5, 635-318
3	DC JACK 5.5*2.1
2	LABEL
1	CABLE: #26*4P+ #26 COAX*2C+AE

P1	P2	P3	COLOR	
1		4	綠/白	+3V3
2		3	綠	DO
3		2	橙/白	DI
4		1	橙	GND
	+	5	棕/白	DC+
		6	棕	
	−	7	藍/白	DC−
		8	藍	

P4	P5	P6	COLOR	
1, 2		2	白	AUDIO IN
3		1	白地	
	1, 2	4	紅	AUDIO OUT
	3	3	紅地	

NOTE:
1. 需單條包裝----PE BAG 145mm*195mm

PETER'S CO., LTD.	THIRD ANGLE PROJECTION	UNIT:	INCH
	DATE: 2011.3.8		
DRAWN: J.C.	CHECKED: Cliff		
PETERS PART NO.: PP110308001	APPROVED: Leo		
SIZE: A4 / MODLE NO.:	CUSTOMER PART NO.: 631403800Z		REV.: A
SCALE: NONE	TITLE: CABLE ASSY		SHEET: 1/1

FM 0316

Test Report issued under the responsibility of:

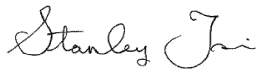
TEST REPORT
IEC 60 950-22
Information technology equipment
Safety – Part 22: Equipment to be installed outdoors

Report Reference No. ..... :	OFF- 4787311596-A-1
Date of issue ..... :	2016-02-04
Total number of pages.....	23
CB Testing Laboratory..... :	UNDERWRITERS LABORATORIES TAIWAN CO LTD
Address ..... :	1ST FI, 260 DA-YEH RD, PEI TOU DISTRICT, TAIPEI CITY, TAIWAN 112
Applicant's name ..... :	VIVOTEK INC.
Address ..... :	6TH FL, 192 LIEN CHENG RD CHUNG HO DISTRICT NEW TAIPEI 235 TAIWAN
Test specification:	
Standard ..... :	IEC 60 950-22 : 2005 (1st Edition)
Test procedure ..... :	CB / CCA
Non-standard test method..... :	N/A
Test Report Form No. ..... :	IEC60950_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..... :	VIVOTEK INC.
Manufacturer..... :	VIVOTEK INC.
Model/Type reference ..... :	FE9381-EHV
Ratings ..... :	(Optional) 36-57Vdc, 0.36-0.23A (for unit supplied by PoE) or 12Vdc, 0.9A (for unit supplied by adapter)

Testing procedure and testing location:		
☒ **CB Testing Laboratory**:	UNDERWRITERS LABORATORIES TAIWAN CO LTD	
Testing location/ address .....:	1ST FI, 260 DA-YEH RD, PEI TOU DISTRICT, TAIPEI CITY, TAIWAN 112	
☐ **Associated CB Test Laboratory:**		
Testing location/ address .....:		
Tested by (name + signature) .....:	Jonathan Chen	
Approved by (+ signature).....:	Stanley Tsai	
☐ Testing procedure: TMP		
Tested by (name + signature) .....:		
Approved by (+ signature).....:		
Testing location/ address .....:		
☐ Testing procedure: WMT		
Tested by (name + signature) .....:		
Witnessed by (+ signature).....:		
Approved by (+ signature).....:		
Testing location/ address .....:		
☐ Testing procedure: SMT		
Tested by (name + signature) .....:		
Approved by (+ signature).....:		
Supervised by (+ signature).....:		
Testing location/ address .....:		
☐ Testing procedure: RMT		
Tested by (name + signature) .....:		
Approved by (+ signature).....:		
Supervised by (+ signature).....:		
Testing location/ address .....:		

Summary of testing:

The following tests were waived:

Test	Rationale for Waiving
Tensile Strength and Elongation (Part 22 8.5, Annex D.2)	Refer E324690-A15 Model FE8171V.
Compression - Gaskets, Closed Cell Construction (Part 22 8.5.1, Annex D.3)	Refer E324690-A15 Model FE8171V.
Degrees of protection provided by enclosures (IP Code), IEC 60529, Edition 2.1 + Corr. 1:2003 + Corr. 2:2007 + Corr. 3:2009: 13.4 – DUST TEST FOR ENCLOSURE DESIGNATION IP6X 14.2.6 – WATER SPRAY TEST FOR ENCLOSURE DESIGNATION IPX6.	Refer E324690-A15 Model FE8171V.

The following tests were conducted according to Information Technology Equipment - Safety - Part 22: Equipment to be Installed Outdoors, UL 60950-22 First Edition, dated April 23, 2007. CAN/CSA-C22.2 No. 60950-22-07 First Edition, Dated April 2007.

Tests performed (name of test and test clause):	Testing location:
4.2.5, 4.2.1, PART 22 10.2 – IMPACT TEST PART 22 9.1, ANNEX B – WATER SPRAY TEST	UNDERWRITERS LABORATORIES TAIWAN CO LTD/ 1ST FI, 260 DA-YEH RD, PEI TOU DISTRICT, TAIPEI CITY, TAIWAN 112.

Summary of compliance with National Differences:

N/A

Copy of marking plate

N/A

Test item particulars ..... :	
Temperature range ..... :	-40 degree c to 55 degree C
Overvoltage category..... :	☒ OVC I ☐ OVC II ☐ OVC III ☐ OVC IV
IP protection class ..... :	IP66
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.....:	2016-01-27
Date (s) of performance of tests.....:	2016-02-03

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:

Report Summary:

All applicable tests according to the referenced standard(s) have been carried out.

Product Description:

The equipment is a Class III Network Camera, consists of electronic components mounted on PWB and housed in metal/plastic enclosure.
The EUT installs to the wall or ceiling.
Intended to be supplied by UL Listed AC/DC adapter or PoE.

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°C to 55°C	P
4.2	AC mains supply		N
	Suitability for the highest Overvoltage Category expected in the installation location	Class III equipment.	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 UL 60950-1)	Precautions in the installation instruction.	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 UL 60950-1 with voltage limits of UL60950-22)		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 UL60950-1 apply without change		N

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 UL 60950-1	Not directly connected to mains.	N
	The mains supply terminations powered directly from the mains distribution system are as specified in IEC 60364	Not directly connected to mains.	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	Metallic enclosure was made of aluminium.	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	All relevant parts comply with applicable requirements	P
	Use of OUTDOOR ENCLOSURE to carry current during normal operation	Outdoor enclosure does not carry current during normal operation.	P
	Connection of a conductive part of an OUTDOOR ENCLOSURE to protective earth for carrying fault currents (see 2.6 of UL 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	The materials of enclosure are Aluminium and plastic. Plastic (Lens) cover are UL approved component (UL 746C, Sections 25 (UV Exposure) and 57 (UV Light Exposure Test) and sufficiently resistant to degradation by ultra-violet (UV) radiation.	P
	Parts providing mechanical support:		N
	Tensile strength test (ISO 527)		N
	Flexural strength test (ISO 178)		N
	Parts providing impact resistance:		N
	Charpy impact test (ISO 179)		N
	Izod impact test (ISO 180)		N
	Tensile impact test (ISO 8256)		N
	All parts:		N
	Flammability classification (1.2.12 and annex A of UL 60950-1)		N
8.3	Resistance to corrosion		P

8.3.1	General	Metallic enclosure was made of aluminum and after evaluated/reviewed the data provided from manufacturer, the construction complied with requirements.	P
	Resistance of metallic parts of an OUTDOOR ENCLOSURE to the effects of water-borne contaminants		N
	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 UL 60950-1	No bottom 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
	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	Refer to Report No. E324690-A15 for test result in detail.	P
8.5.1	General		N
8.5.2	Oil resistance		N
8.5.3	Securing means	mechanical means used	P

9	PROTECTION OF EQUIPMENT WITHIN AN OUTDOOR ENCLOSURE		P
9.1	Protection from moisture (see Table 2)	Also IEC 60529 tests applied	P
9.2	Protection from plants and vermin	No openings on the enclosure.	N
9.3	Protection from excessive dust	Also IEC 60529 tests applied	P

10	MECHANICAL STRENGTH OF ENCLOSURES		P
10.1	General		P
10.2	Impact test (4.2.5 of UL 60950-1)	(see separate test report UL 60950-1)	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 UL 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 such 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 UL 60950-1)		N

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
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)	Refer to Report No. E324690-A15 for test result in detail.	P
	Tensile strength (%) .....:		N
	Elongation (%) .....:		N
	Visible deterioration, deformation, melting, cracking or hardening of the material .....:	There was no visible cracking or other adverse effect of the conditioned material.	P
D.3	Compression test (for gaskets with closed cell construction)	Refer to Report No. E324690-A15 for test result in detail.	P
	Initial thickness of the specimen (mm) .....:		N
	Thickness of the specimen after test a) (mm), compression set after test a) (%).....:		N
	Thickness of the specimen after test b) (mm), compression set after test b) (%).....:		N
	Thickness of the specimen after test c) (mm), compression set after test c) (%).....:		N
	Visible cracks or deterioration .....:		N
D.4	Oil immersion test		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 60950-22:2005 – 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	
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	

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

ZB	SPECIAL NATIONAL CONDITIONS		
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	This National Condition has been removed in EN 60950-22:2006 + A11:2008.	N
10.2	In **Finland**, **Norway** and **Sweden** there are additional requirements for the minimum ambient temperature. See 4.1 of this annex.	This National Condition has been removed in EN 60950-22:2006 + A11:2008.	N
D.3	In **Finland**, **Norway** and **Sweden** there are additional requirements for the minimum ambient temperature. See 4.1 of this annex.	This National Condition has been removed in EN 60950-22:2006 + A11:2008.	N

8.2	TABLE: Resistance to ultra-violet radiation	
8.2a)	Tensile strength test (ISO 527)	N
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples ..... :		—
Conditioning for Set 1 of samples ..... :		—
Conditioning for Set 2 of samples (including Annex C)..... :		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Tensile strength (MPa)	Test sample #	Tensile strength (MPa)

Arithmetic mean for Set 1 (MPa)..... :	
Arithmetic mean for Set 2 (MPa)..... :	
Retention (%) ..... :	

Supplementary information:

8.2	TABLE: Resistance to ultra-violet radiation	
8.2b)	Flexural strength test (ISO 178)	N
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples ..... :		—
Conditioning for Set 1 of samples ..... :		—
Conditioning for Set 2 of samples (including Annex C)..... :		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Flexural strength (MPa)	Test sample #	Flexural strength (MPa)

Arithmetic mean for Set 1 (MPa)..... :	
Arithmetic mean for Set 2 (MPa)..... :	
Retention (%) ..... :	

Supplementary information:

8.2	TABLE: Resistance to ultra-violet radiation	
8.2c)	Charpy impact test (ISO 179) - unnotched	N
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples ..... :		—
Conditioning for Set 1 of samples ..... :		—
Conditioning for Set 2 of samples (including Annex C)..... :		—
Test method (according to Tables 2 and 3 of ISO 179) ..... :		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Charpy impact strength (kJ/m^2)	Test sample #	Charpy impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%) ..... :	

Supplementary information:

8.2	TABLE: Resistance to ultra-violet radiation	
8.2d)	Charpy impact test (ISO 179) - notched	N
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples ..... :		—
Conditioning for Set 1 of samples ..... :		—
Conditioning for Set 2 of samples (including Annex C)..... :		—
Test method (according to Tables 2 and 3 of ISO 179) ..... :		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Charpy impact strength (kJ/m^2)	Test sample #	Charpy impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%) ..... :	

Supplementary information:

8.2	TABLE: Resistance to ultra-violet radiation	
8.2e)	Izod impact test (ISO 180) - unnotched	N
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples ..... :		—
Conditioning for Set 1 of samples ..... :		—
Conditioning for Set 2 of samples (including Annex C)..... :		—
Test method (according to Table 1 of ISO 180) ..... :		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Izod impact strength (kJ/m^2)	Test sample #	Izod impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%) ..... :	
Supplementary information:	

8.2	TABLE: Resistance to ultra-violet radiation	
8.2f)	Izod impact test (ISO 180) - notched	N
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples ..... :		—

Conditioning for Set 1 of samples ..... :		—
Conditioning for Set 2 of samples (including Annex C)..... :		—
Test method (according to Table 1 of ISO 180) ..... :		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Izod impact strength (kJ/m^2)	Test sample #	Izod impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%)..... :	

Supplementary information:

8.2	TABLE: Resistance to ultra-violet radiation	
8.2g)	Tensile impact test (ISO 8256) - unnotched	N
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples ..... :		—
Conditioning for Set 1 of samples ..... :		—
Conditioning for Set 2 of samples (including Annex C)..... :		—
Test method (A or B)		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Tensile impact strength (kJ/m^2)	Test sample #	Tensile impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%) ..... :	

Supplementary information:

8.2	TABLE: Resistance to ultra-violet radiation	
8.2h)	Tensile impact test (ISO 8256) - notched	N
Material identification (manufacturer, type designation) ..... :		—
Shape and dimensions of test samples ..... :		—
Conditioning for Set 1 of samples ..... :		—
Conditioning for Set 2 of samples (including Annex C)..... :		—
Test method (A or B)		—
Test conditions (T °C, RH %)..... :		—

Set 1 (without Annex C conditioning)		Set 2 (after Annex C conditioning)	
Test sample #	Tensile impact strength (kJ/m^2)	Test sample #	Tensile impact strength (kJ/m^2)

Arithmetic mean for Set 1 (kJ/m^2)..... :	
Arithmetic mean for Set 2 (kJ/m^2)..... :	
Retention (%) ..... :	

Supplementary information:

List of test equipment used:
(Note: This is an example of the required attachment. Other forms with a different layout but containing similar information are also acceptable.)

Clause	Measurement / testing	Testing / measuring equipment / material used	Range used	Calibration date

ATTACHMENT

US - UL60950-22, First Edition - SPECIAL NATIONAL CONDITIONS			
4	Applicable parts of Chapter 8 of the NEC may be applicable to ITE installed outdoors with connections to communication systems		P
4.2	Power supply cords are to be suitable outdoor use type as required by Section 400-4 of the NEC, i.e., marked “water resistant,” “outdoor,” “W” or “W-A.”		N
4.2	Surge Arrestors and Transient Voltage Surge Suppressors installed external to the ITE are required to comply with the appropriate NEC requirements.		N
5	Outdoor Enclosures are required to be classified and marked in accordance with UL 50		N
7	Applicable parts of the NEC, NFPA 70; and the National Electrical Safety Code, ANSI/IEEE C2, are required, as appropriate.		N
7	Wiring terminals intended to supply Class 2 outputs are required per Article 725 of the NEC to be marked.		N
11	Requires stationary installations of storage batteries external to the ITE to comply with Article 480 of the NEC		N
OTHER DIFFERENCES			
1.2	For protection of ITE against direct lightning strikes, reference is made to NFPA 780 for additional requirements.		P
2	All references to IEC 60950-1 in this standard are replaced by the equivalent UL 60950-1 Standards. All relevant Standards referenced in the Part 1 Standard (Annex P, including P.1 and P.2) also apply to this Part 22 Standard and are not listed below. All references to clauses and subclauses in IEC 60950-1 are to the second edition.		P

Test Record No. 1

--The manufacturer submitted representative production samples of Network Camera, Models FE9381-EHV and FE9181-H.

--Only limited tests were performed on Model FE9381-EHV because of similarity in construction to Model FE8172V, except for mainboard, input rating & Tma, see Report No. E324690-A25 previously evaluated unit.

--Only limited tests were performed on Model FE9181-H because of similarity in construction to Model FE8172, except for mainboard & input rating, see Report No. E324690-A25 previously evaluated unit.

-- Unless otherwise indicated, all tests were conducted by PERFECTLINK INTERNATIONAL CORP., located on 4TH FL 16-1 SEC 2 ZHONGYANG S RD, BEITOU DISTRICT, TAIPEI, TAIWAN, 112, under WTDP.

-- Tests noted by the initials "UL" were conducted at UL.

--Waived the following tests on Model FE9381-EHV because of similarity in construction to Model FE8171V, see Report No. E324690-A15 previously evaluated unit.
Degrees of protection provided by enclosures (IP Code), IEC 60529, Edition 2.1 + Corr. 1:2003 + Corr. 2:2007 + Corr. 3:2009:
13.4 - DUST TEST FOR ENCLOSURE DESIGNATION IP6X.
14.2.6 - WATER SPRAY TEST FOR ENCLOSURE DESIGNATION IPX6.
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)	
Impact (4.2.5, 4.2.1, Part 22 10.2)	UL
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)	
Overload of Operator Accessible Connector (5.3.7)	
Water Spray (Part 22 9.1, Annex B)	UL

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
Steady Force (4.2.1 - 4.2.4)	Refer to Report No. E324690-A25
Tensile Strength and Elongation (Part 22 8.5, Annex D.2)	Refer E324690-A15 Model FE8171V
Compression - Gaskets, Closed Cell Construction (Part 22 8.5.1, Annex D.3)	Refer E324690-A15 Model FE8171V

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
Datasheet	2-01	Test Datasheet under WTDP
Datasheet	2-02	Test Datasheet conducted at UL
Attachment	2-03	CRD form