



Thank you for giving UL the opportunity to partner with you.

Please note, Follow-Up Procedure Revisions or Report Revisions do not include Authorization Pages, Indices, Section General, and/or Appendices unless revisions were required or requested.

Should you have any questions, after reviewing the material, or need to report any inaccuracies, please reach out to your UL representative or find UL contact details for your local Customer Service Department at

<https://www.ul.com/about/locations>.

Please find attached the related material

For your convenience, the below describes the related updates:

For revised/new documentation, please reference 2020-10-18 in the page headings. If there are illegible images in this package, legible images may be found online via MyHome@UL under My UL Reports/CDA.

|                                          |
|------------------------------------------|
| E158873-volX13-Index                     |
| E158873-20201018-CertificateofCompliance |
| E158873-A6036-DescriptionUL              |
| Figure-22-Total                          |
| E158873-A6036-TestRecordUL               |

This material is provided on behalf of UL LLC (UL) or any authorized licensee of UL.

Times change, Trust Remains™

---

|         |       |        |      |           |
|---------|-------|--------|------|-----------|
| File    |       | Volume | Page | Date:     |
| E158873 | Index | X13    | 1    | 18-Oct-20 |

## Index

| <u>Product Type</u>    | <u>Model/Type Reference</u>         | <u>Report Reference #</u> | <u>Status</u> |
|------------------------|-------------------------------------|---------------------------|---------------|
| NETWORK VIDEO RECORDER | XRN-6410B4, XRN-3210B4              | E158873-A6027-UL          |               |
| NETWORK VIDEO RECORDER | PRN-6410B4, PRN-3210B4, XRP-4210B4  | E158873-A6028-UL          |               |
| NETWORK VIDEO RECORDER | XRN-6410DB4                         | E158873-A6029-UL          |               |
| NETWORK VIDEO RECORDER | PRN-6410DB4, XRP-4310DB4            | E158873-A6030-UL          |               |
| NETWORK CAMERA         | PNM-9002VQ                          | E158873-A6031-UL          |               |
| NETWORK CAMERA         | XNF-9010RV, XNF-9010RVM, XNF-9010RS | E158873-A6032-UL          |               |
| NETWORK CAMERA         | PNM-9000QB                          | E158873-A6033-UL          |               |
| NETWORK CAMERA         | XNP-9300RW, XNP-8300RW, XNP-6400RW  | E158873-A6034-UL          |               |
| NETWORK CAMERA         | TNV-8010C                           | E158873-A6035-UL          |               |
| OUTDOOR NETWORK CAMERA | PNM-8082VT                          | E158873-A6036-UL          |               |

# CERTIFICATE OF COMPLIANCE

**Certificate Number** E158873  
**Report Reference** E158873-A6036-UL  
**Date** 2020-October-26

**Issued to:** Hanwha Techwin Co Ltd  
6, Pangyo-ro 319beon-gil, Bundang-gu  
Seongnam-siGyeonggi-do 13488 KR

**This is to certify that  
representative samples of** AUDIO/VIDEO, INFORMATION AND COMMUNICATION  
TECHNOLOGY EQUIPMENT

See Addendum Page for Product Designation(s).

Have been investigated by UL in accordance with the  
Standard(s) indicated on this Certificate.

**Standard(s) for Safety:** UL 62368-1/CAN/CSA C22.2 No. 62368-1-14 - Audio/video,  
information and communication technology equipment Part  
1: Safety requirements

**Additional Information:** See the UL Online Certifications Directory at  
<https://iq.ulprospector.com> for additional information

This Certificate of Compliance does not provide authorization to apply the UL Mark. Only the UL Follow-Up  
Services Procedure provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's  
Follow-Up Services.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please  
contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>



# CERTIFICATE OF COMPLIANCE

Certificate Number E158873  
Report Reference E158873-A6036-UL  
Date 2020-October-26

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

OUTDOOR NETWORK CAMERA

PNM-8082VT



Bruce Mahrenholz, Director North American Certification Program

UL LLC

Any information and documentation involving UL Mark services are provided on behalf of UL LLC (UL) or any authorized licensee of UL. For questions, please contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>





## UL TEST REPORT AND PROCEDURE

|                                    |                                                                                                                                                                                                                                                                                        |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Standard:</b>                   | UL 62368-1, 2nd Ed, 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements)<br>CAN/CSA C22.2 No. 62368-1-14, 2nd Ed, Issued: 2014-12-01 (Audio/video, information and communication technology equipment Part 1: Safety requirements) |
| <b>Certification Type:</b>         | Listing                                                                                                                                                                                                                                                                                |
| <b>CCN:</b>                        | AZOT, AZOT7 (Audio/video, Information and Communication Technology Equipment)                                                                                                                                                                                                          |
| <b>Complementary CCN:</b>          | N/A                                                                                                                                                                                                                                                                                    |
| <b>Product:</b>                    | OUTDOOR NETWORK CAMERA                                                                                                                                                                                                                                                                 |
| <b>Model:</b>                      | PNM-8082VT                                                                                                                                                                                                                                                                             |
| <b>Rating:</b>                     | PoE (53 Vdc), 0.32 A, 16.5 W                                                                                                                                                                                                                                                           |
| <b>Applicant Name and Address:</b> | HANWHA TECHWIN CO LTD<br>6, PANGYO-RO 319BEON-GIL, BUNDANG-GU<br>SEONGNAM-SI GYEONGGI-DO 13488 KOREA                                                                                                                                                                                   |

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.

UL authorizes the applicant to reproduce the latest pages of the referenced Test Report consisting of the first page of the Specific Technical Criteria through to the end of the Conditions of Acceptability.

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

Prepared By: Lawrence Lee / Project Handler Reviewed By: SeungTae Kim / Reviewer

### 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

OUTDOOR NETWORK CAMERA has been designed for INDOOR or OUTDOOR use and integrated a bracket for wall or ceiling mount.

It is a commercial equipment supplied from PoE (Power over Ethernet) and installed by service personnel.

### Model Differences

N/A

### Test Item Particulars

|                                                                                              |                                               |
|----------------------------------------------------------------------------------------------|-----------------------------------------------|
| Classification of use by                                                                     | Instructed person                             |
| Supply Connection                                                                            | External Circuit - not Mains connected<br>ES1 |
| Supply % Tolerance                                                                           | None                                          |
| Supply Connection – Type                                                                     | PoE (Power over Ethernet)                     |
| Considered current rating of protective device as part of building or equipment installation | N/A                                           |
| Equipment mobility                                                                           | wall-mounted                                  |
| Over voltage category (OVC)                                                                  | OVC I                                         |
| Class of equipment                                                                           | Class III                                     |
| Access location                                                                              | N/A                                           |
| Pollution degree (PD)                                                                        | PD 2                                          |
| Manufacturer's specified maximum operating ambient (°C)                                      | 60                                            |
| IP protection class                                                                          | IP 66                                         |
| Power Systems                                                                                | N/A                                           |
| Altitude during operation (m)                                                                | 2000 m or less                                |
| Altitude of test laboratory (m)                                                              | 2000 m or less                                |
| Mass of equipment (kg)                                                                       | 2.55                                          |

### Technical Considerations

- ☐ The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 60 °C
- ☐ The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual

- ☐ The product was investigated to the following additional standard : UL 60950-22, Second Edition, March 31, 2017, CSA CAN/CSA-C22.2 No. 60950-22-17, Issued March 31, 2017
- ☐ • The outdoor equipment/enclosure was evaluated for use in an ambient temperature range of: -20 °C to +55 °C

**Additional Information**

4789598249

- Maximum Normal Load: Continuous operation with Heater and Fan on.

**Additional Standards**

The product fulfills the requirements of: UL 60950-22 2nd Edition Issued March 31, 2017

CSA CAN/CSA-C22.2 No. 60950-22-17, Issued March 31, 2017

**Markings and Instructions**

| Clause Title                                                   | Marking or Instruction Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Equipment identification marking – Manufacturer identification | Listee's or Recognized companys name, Trade Name, Trademark or File Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Equipment identification marking – model identification        | Model Number                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Equipment rating marking – ratings                             | "Input Ratings (voltage, frequency/dc, current/power)", "Output Ratings (voltage, frequency/dc, current/power)"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| Replaceable batteries                                          | <p>"CAUTION: Risk of Explosion if Battery is replaced by an Incorrect Type. Dispose of Used Batteries According to the Instructions."/"ATTENTION: Risque d'explosion si la batterie est remplacée par un type incorrect. Mettre au rebus les batteries usagées selon les instructions." (Marking)</p> <p>Alternatively, symbol</p> <div style="text-align: center;">   </div> <p>(ISO 7000-0434 and/or ISO 7000-1641) on product where visible, with the above wording in the instruction manual.</p> |
| Outdoor installation                                           | "Type 3R" or "Rainproof"/"Étanche"; "Type 3" or "Raintight"                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Hard Copy                                                      | <p>A. IMPORTANT</p> <p>B. Please check 'Manuals' from our website, before connecting to the supply.</p> <p>C. Company website URL (<a href="https://www.~~">https://www.~~</a>)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| Website Manual -1                                              | This product is intended to be supplied by a Listed Power Supply Unit marked "Class 2" or "LPS" or "PS2" and rated from PoE (53 Vdc), 0.32 A.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|                                                         |                                                                                                                                                                                                                                    |
|---------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Website Manual -2                                       | The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3.af shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1 or PS2 as defined in UL62368-1. |
| <b>Special Instructions to UL Representative</b><br>N/A |                                                                                                                                                                                                                                    |

|              |                                                                                                                                                                                        |                 |                     |            |           |              |
|--------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------------|------------|-----------|--------------|
| <b>BD1.0</b> | <b>TABLE: Production-Line Testing Requirements</b>                                                                                                                                     |                 |                     |            |           |              |
| <b>BD1.1</b> | <b>Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.</b>                                                       |                 |                     |            |           |              |
| Model        | Component                                                                                                                                                                              | Removable parts | Test probe location | Test V rms | Test V dc | Test Time, s |
| N/A          | N/A                                                                                                                                                                                    | N/A             | N/A                 | N/A        | N/A       | N/A          |
| <b>BD1.2</b> | <b>Earthing Continuity Test Exemptions – This test is not required for the following models:</b>                                                                                       |                 |                     |            |           |              |
|              | All models                                                                                                                                                                             |                 |                     |            |           |              |
| <b>BD1.3</b> | <b>Electric Strength Test Exemptions – This test is not required for the following models:</b>                                                                                         |                 |                     |            |           |              |
|              | All models                                                                                                                                                                             |                 |                     |            |           |              |
| <b>BD1.4</b> | <b>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.</b> |                 |                     |            |           |              |
|              | All models                                                                                                                                                                             |                 |                     |            |           |              |

|              |                                                            |          |      |            |                |
|--------------|------------------------------------------------------------|----------|------|------------|----------------|
| <b>BE1.0</b> | <b>Sample and Test Specifics for Follow-Up Tests at UL</b> |          |      |            |                |
| Model        | Component                                                  | Material | Test | Sample (s) | Test Specifics |
| N/A          | N/A                                                        | N/A      | N/A  | N/A        | N/A            |

| 4.1.2                                                                | TABLE: List of critical components          |                                                  |                                                                    |                            |                          | Pass          |
|----------------------------------------------------------------------|---------------------------------------------|--------------------------------------------------|--------------------------------------------------------------------|----------------------------|--------------------------|---------------|
| Object / part No.                                                    | Manufacturer/<br>trademark                  | Type / model                                     | Technical data                                                     | Product Category<br>CCN(s) | Mark(s) of<br>conformity | Supplement ID |
| Cover-Dome<br>Enclosure (Plastic)                                    | MITSUBISHI<br>ENGINEERING-<br>PLASTICS CORP | S-2000V+(f1), S-<br>2001V+(f1), S-<br>2003V+(f1) | Min. 2.0 mm thickness,<br>rated Min. V-2, 115<br>deg. C.           | QMFZ2/8                    | UL (E41179)              |               |
| Cover-Dome Center<br>Enclosure (Plastic)                             | LOTTE CHEMICAL<br>CORPORATION               | HN-1068(+)(f1)                                   | Min. 2.0 mm thickness,<br>rated Min. V-0, 130<br>deg. C.           | QMFZ2/8                    | UL (E115797)             |               |
| External Side<br>Enclosure (Metal)                                   | Interchangeable                             | Interchangeable                                  | Aluminium, Min. 2.5<br>mm thickness.                               | -                          | -                        |               |
| External Bottom<br>Enclosure (Metal)                                 | Interchangeable                             | Interchangeable                                  | Aluminium, Min. 3.0<br>mm thickness.                               | -                          | -                        |               |
| Internal Plastic Part<br>Materials                                   | Interchangeable                             | Interchangeable                                  | Min. HB                                                            | QMFZ2/8                    | UL                       |               |
| Connectors and<br>Receptacles<br>(Secondary circuits)                | Interchangeable                             | Interchangeable                                  | Min. V-2                                                           | ECBT2                      | UL                       |               |
| Connectors and<br>Receptacles<br>(Secondary circuits)<br>- Alternate | Interchangeable                             | Interchangeable                                  | Copper alloy pins<br>housed in bodies of<br>plastic rated Min. V-2 | QMFZ2                      | UL                       |               |
| Internal Wiring<br>(Secondary)                                       | Interchangeable                             | Interchangeable                                  | Marked VW-1; Min. 30<br>V, 80 deg. C                               | AVLV2                      | UL                       |               |
| Cable                                                                | Interchangeable                             | Interchangeable                                  | Marked VW-1; Min. 30<br>V, 80 deg. C                               | AVLV2                      | UL                       |               |
| Outdoor Label                                                        | Interchangeable                             | Interchangeable                                  | Max Temp 100 deg. C,<br>Min Temp -40 deg. C                        | PGDQ2 or PGJL2             | UL                       |               |
| Gasket                                                               | Namyang Vina                                | OVMQ50GR                                         | Gasket Test was<br>conducted under<br>E158873-A6033.               | -                          | -                        |               |
| Thermal Pad                                                          | KOMOTECH CO<br>LTD                          | KGP-1(a)                                         | Min. 0.2 mm thickness,<br>rated V-0, 150 deg. C                    | QMFZ2/8                    | UL (E245303)             |               |

|                                      |                                                     |                 |                                                                                              |         |              |  |
|--------------------------------------|-----------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------|---------|--------------|--|
| Transformer(T1)                      | SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO.,LTD   | PDT25125SR      | 130 deg. C, See enclosure for more detail.                                                   | -       | -            |  |
| LINE FILTER (LF1)                    | TNC Co.Ltd                                          | CV320070SB      | 7.0 mH, 105 deg. C, See enclosure for more detail.                                           | -       | -            |  |
| FAN Motor                            | MINEBEAMITSUMI INC.                                 | BM4515-04W-B5X  | Operation Voltage DC 10.2V-13.8V, Max. 250mA                                                 | GPWV2/8 | UL (E89936)  |  |
| Stepping Motor                       | Shenzhen bovi Phoelectoelectric Technology Co.,Ltd. | BGM06002AX      | Operation Voltage DC 3.0V, Max 1mA Max. starting pulse rate 1200 pps                         | -       | -            |  |
| Thermal Pad                          | KOMOTECH CO LTD                                     | KGP-1(a)        | Min. 0.2 mm thickness, rated V-0, 150 deg. C                                                 | QMFZ2/8 | UL (E245303) |  |
| Lithium Battery (BAT1)               | SEIKO INSTRUMENTS INC MICRO-ENERGY DIV              | ML414H          | Lithium (Coin), Rechargeable, Max. Charging Voltage: 3.4 Vdc, Max. Charging Current: 300 mAh | BBCV2   | UL (MH15628) |  |
| Opto-coupler (LS1)                   | LITE-ON TECHNOLOGY CORP                             | LTV-816         | Isolation Voltage: 5 000. Max. Operation Temperature: 110 deg.C                              | FPQU2/8 | UL (E113898) |  |
| Heater resister (24 ea*3, R1 to R24) | Interchangeable                                     | Interchangeable | Each 10ohm, 0.025W                                                                           | -       | -            |  |

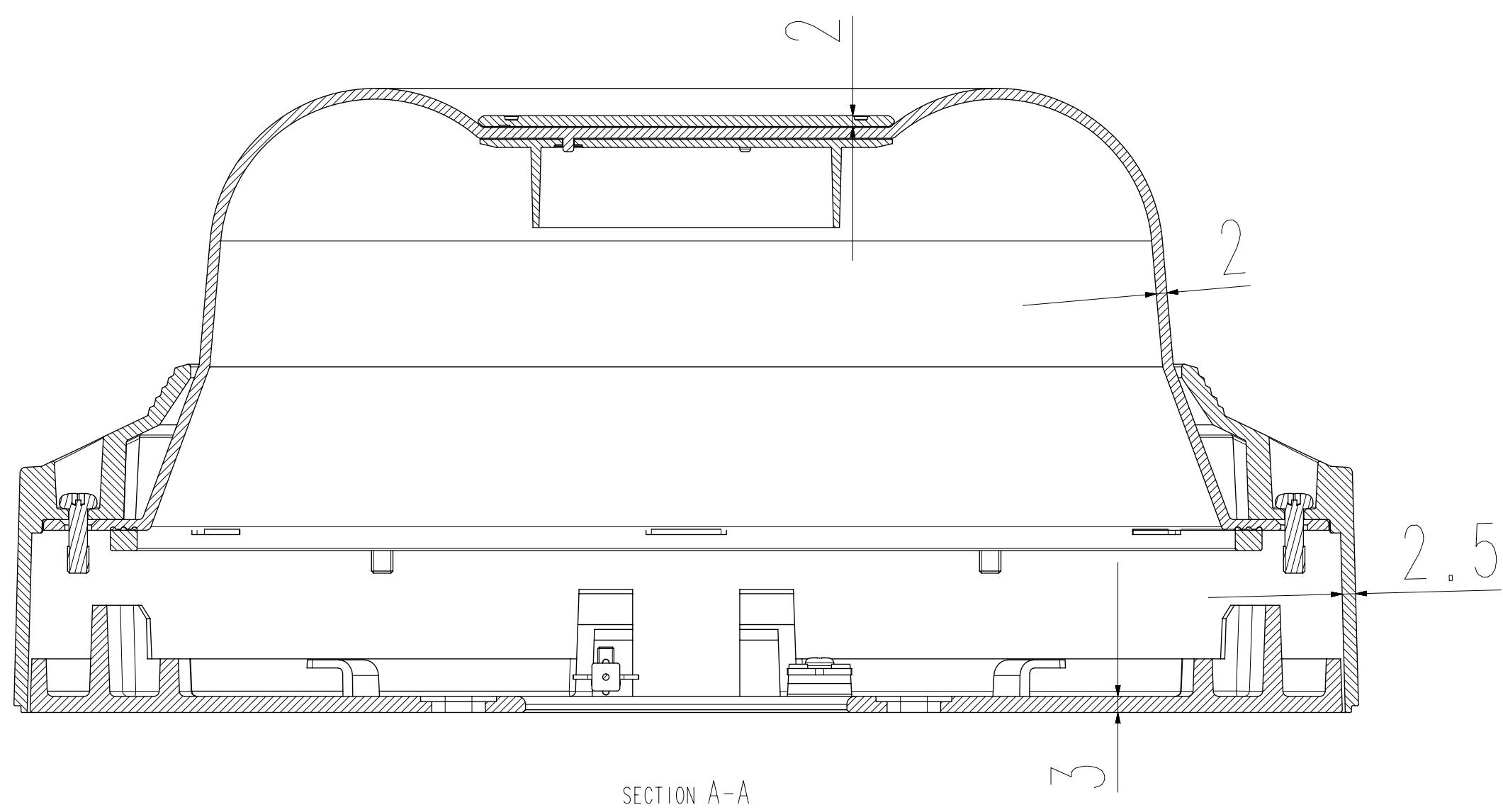
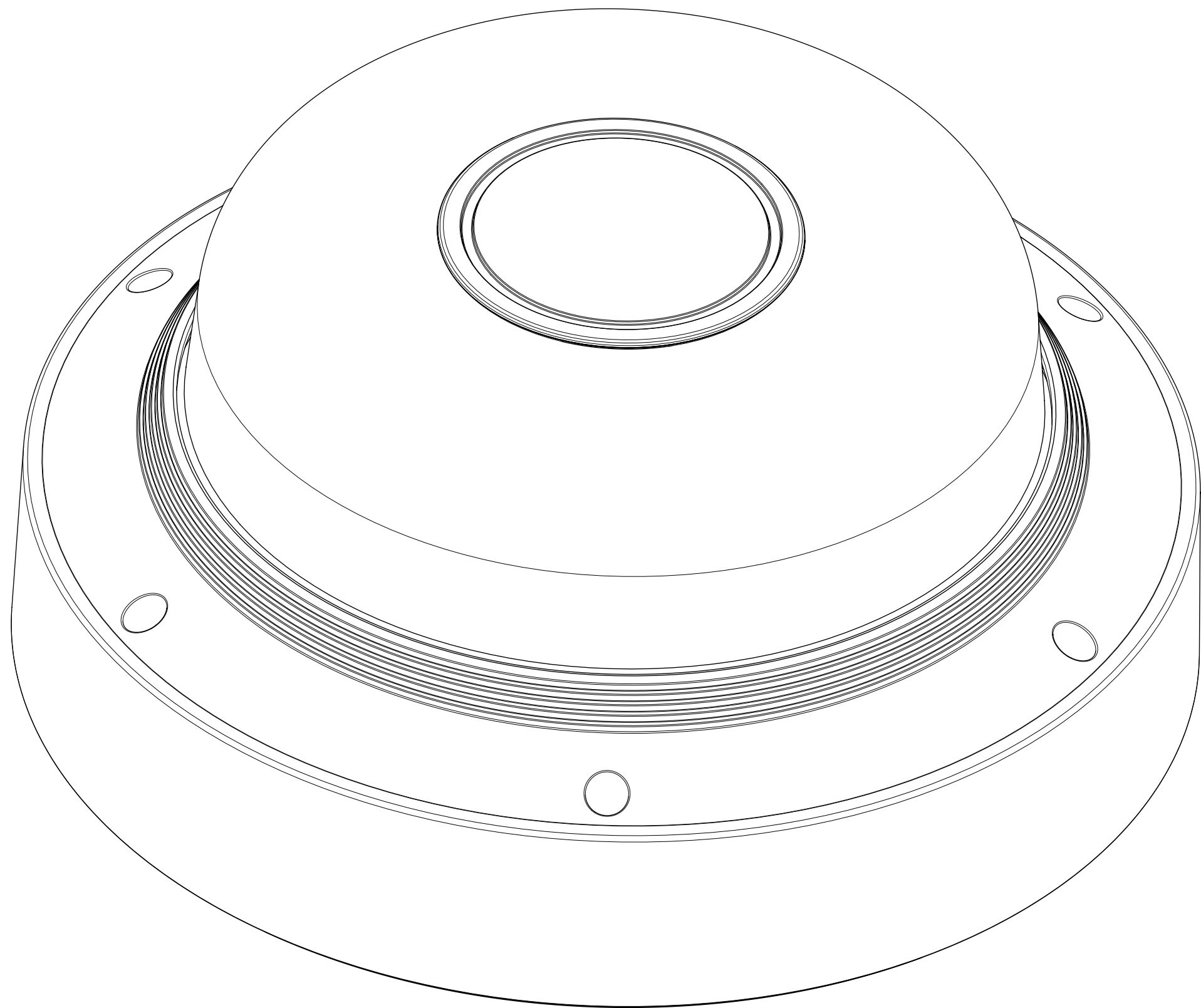
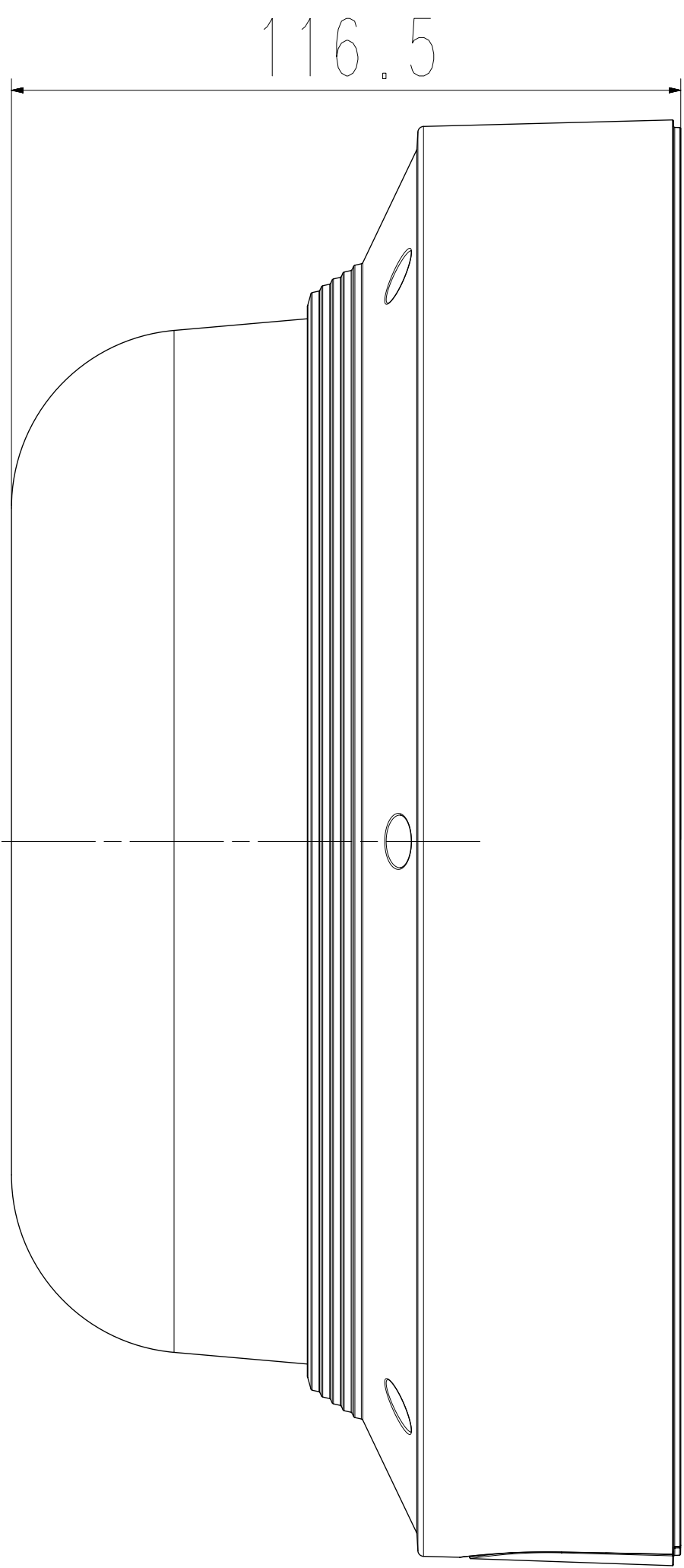
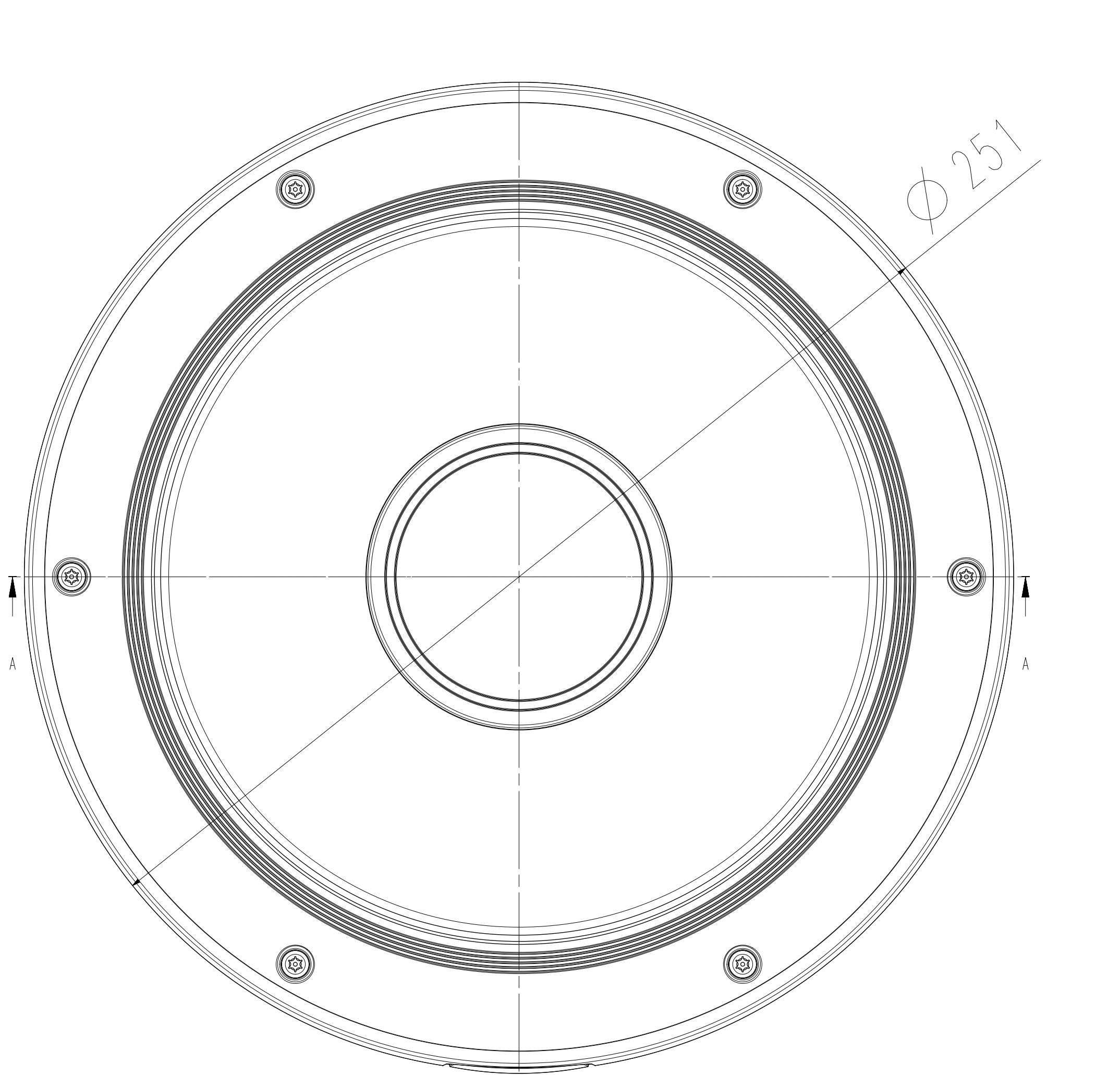
**Enclosures**

| Type          | Supplement Id | Description                       |
|---------------|---------------|-----------------------------------|
| Photographs   | 03-01         | Front View                        |
| Photographs   | 03-02         | Rear View                         |
| Photographs   | 03-03         | Internal View-1                   |
| Photographs   | 03-04         | Internal View-2                   |
| Photographs   | 03-05         | Lens View-1                       |
| Photographs   | 03-06         | Lens View-2                       |
| Photographs   | 03-07         | Lens board                        |
| Photographs   | 03-08         | Main board top                    |
| Photographs   | 03-09         | Main board bottom                 |
| Photographs   | 03-10         | Sensor board top                  |
| Photographs   | 03-11         | Sensor board bottom               |
| Photographs   | 03-12         | Fan top                           |
| Photographs   | 03-13         | Fan bottom                        |
| Photographs   | 03-14         | Heater board top                  |
| Photographs   | 03-15         | Heater board bottom               |
| Diagrams      | 04-01         | Enclosure Dimension               |
| Manuals       | 06-01         | Manual                            |
| Miscellaneous | 07-01         | PoE Transformer (T1) spec         |
| Miscellaneous | 07-02         | Line Filter (LF1) spec            |
| Miscellaneous | 07-03         | Dual language safety labeling CRD |
| Miscellaneous | 07-04         | Label                             |
| Miscellaneous | 07-05         | IEC 60950-22 Report               |



The following Page(s) are related to Diagrams-01. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

| NO | PART NAME             | CODE NO.   | MATERIAL   | Q'TY | REMARK |
|----|-----------------------|------------|------------|------|--------|
| 1  | ASSY-TOTAL-PNM-8082VT | PNM-8082VT | Check note | 1    | -      |



| STANDARD TOLERANCE |         |          |          |         |          |           |
|--------------------|---------|----------|----------|---------|----------|-----------|
| DIV                | 1st     | 2nd      | 3rd      | 4th     | 5th      | 6th       |
| 0-16               | ±0.1    | ±0.05    | ±0.03    | ±0.02   | ±0.01    | ±0.005    |
| 16-63              | ±0.05   | ±0.025   | ±0.015   | ±0.01   | ±0.005   | ±0.0025   |
| 63-250             | ±0.025  | ±0.0125  | ±0.0075  | ±0.005  | ±0.0025  | ±0.00125  |
| 250-1000           | ±0.0125 | ±0.00625 | ±0.00375 | ±0.0025 | ±0.00125 | ±0.000625 |

| UNIT           | mm    | DESIGN | CHECK | APPROVAL | PART NAME  | ASSY-TOTAL-PNM-8082VT |
|----------------|-------|--------|-------|----------|------------|-----------------------|
| SCALE          | 1 / 1 | DK KIM |       | BM JUN   | MODEL NAME | PNM-8082VT            |
| Hanwha Techwin |       |        |       |          | CODE NO.   | PNM-8082VT            |





The following Page(s) are related to Manuals-01. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

## IMPORTANT SAFETY INSTRUCTIONS

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean the contaminated area on the product surface with a soft, dry cloth or a damp cloth. (Do not use a detergent or cosmetic products that contain alcohol, solvents or surfactants or oil constituents as they may deform or cause damage to the product.)
7. Do not block any ventilation openings, Install in accordance with the manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/ accessories specified by the manufacturer.
12. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lighting storms or when unused for long periods of time.
14. Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. This product is intended to be supplied by a Listed Power Supply Unit marked "Class 2" or "LPS" and rated from PoE(53 Vdc), 0.32 A. (PNM-8082VT)
16. This product is intended to be supplied by isolation power.
17. If you use excessive force when installing the product, the camera may be damaged and malfunction. If you forcibly install the product using non-compliant tools, the product may be damaged.
18. Do not install the product in a place where chemical substances or oil mist exists or may be generated. As edible oils such as soybean oil may damage or warp the product, do not install the product in the kitchen or near the kitchen table. This may cause damage to the product.
19. When installing the product, be careful not to allow the surface of the product to be stained with chemical substance. Some chemical solvents such as cleaner or adhesives may cause serious damage to the product's surface.
20. If you install/disassemble the product in a manner that has not been recommended, the production functions/ performance may not be guaranteed. Install the product by referring to "Installation & connection" in the user manual.



21. Installing or using the product in water can cause serious damage to the product.

22. This device has been verified using STP cable. The use of appropriate GND grounding and STP cable is recommended to effectively protect your product and property from transient voltage, thunderstroke, communication interruption.

## WARNING

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECT THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

Apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

To prevent injury, this apparatus must be securely attached to the Wall/ceiling in accordance with the installation instructions.

## CAUTION

|                                                                                                                                                                                                       |                                                          |                                                                                     |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                                                                                    | <b>CAUTION</b><br>RISK OF ELECTRIC SHOCK.<br>DO NOT OPEN |  |
| <b>CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK.</b><br><b>DO NOT REMOVE COVER (OR BACK).</b><br><b>NO USER SERVICEABLE PARTS INSIDE.</b><br><b>REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</b> |                                                          |                                                                                     |

## EXPLANATION OF GRAPHICAL SYMBOLS



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.

### Class I construction

An apparatus with CLASS I construction shall be connected to a MAINS socket outlet with a protective earthing connection.

### Battery

Batteries(battery pack or batteries installed) shall not be exposed to excessive heat such as sunshine, fire or the like.

[The battery cannot be replaced.](#)

### Disconnection Device

Disconnect the main plug from the apparatus, if it's defected. And please call a repair man in your location.

**When used outside of the U.S., it may be used HAR code with fittings of an approved agency is employed.**

### CAUTION

RISK OF EXPLOSION IF BATTERY IS REPLACED BY AN INCORRECT TYPE.  
DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS.

### ATTENTION

IL Y A RISQUE D'EXPLOSION SI LA BATTERIE EST REMPLACÉE PAR UNE BATTERIE DE TYPE INCORRECT.

METTRE AU REBUT LES BATTERIES USAGÉES CONFORMÉMENT AUX INSTRUCTIONS.

These servicing instructions are for use by qualified service personnel only.

To reduce the risk of electric shock do not perform any servicing other than that contained in the operating instructions unless you are qualified to do so.

[The Test Monitor Out port of the product is provided for easier installation, and is not recommended for monitoring purposes.](#)

[When a new product box is opened \(or during the initial use of the product\), moisture might build up on the glass of the camera. The built-up moisture disappears naturally within a few hours after powered on.](#)

[Do not arbitrarily loosen or tighten the gore valve.](#)

**The ITE is to be connected only to PoE networks without routing to the outside plant.**

**The wired LAN hub providing power over the Ethernet (PoE) in accordance with IEEE 802.3at shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1 [or PS2 as defined in UL62368-1.](#)**

**Unit is intended for installation in a Network Environment 0 as defined in IEC TR 62102. As such, associated Ethernet wiring shall be limited to inside the building.**

Please read the following recommended safety precautions carefully.

- Do not place this apparatus on an uneven surface.
- Do not install on a surface where it is exposed to direct sunlight, near heating equipment or heavy cold area.
- Do not place this apparatus near conductive material.
- Do not attempt to service this apparatus yourself.
- Do not place a glass of water on the product.
- Do not install near any magnetic sources.
- Do not block any ventilation openings.
- Do not place heavy items on the product.
- Please wear protective gloves when installing/removing the camera.  
The high temperature of the product surface may cause a burn.

User's Manual is a guidance book for how to use the products.

The meaning of the symbols are shown below.

- Reference : In case of providing information for helping of product's usages
- Notice : If there's any possibility to occur any damages for the goods and human caused by not following the instruction

※ Please read this manual for the safety before using of goods and keep it in the safe place.

[We do not guarantee the quality of third-party products \(e.g. lenses, accessories\) that you separately purchase.](#)



The following Page(s) are related to Miscellaneous-01. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

|                           |                                                                                     |                                                                                       |                                                                                       |
|---------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 客户名称<br>CUSTOMER          |                                                                                     |                                                                                       |                                                                                       |
| 客户料号<br>MODEL NO.         | EP23-001075A                                                                        |                                                                                       |                                                                                       |
| 产品名称<br>PART NAME         | POWER TRANSFORMER                                                                   |                                                                                       |                                                                                       |
| 产品型号<br>PART TYPE         | PDT25125SR                                                                          |                                                                                       |                                                                                       |
| 版本<br>REV                 | X5                                                                                  |                                                                                       |                                                                                       |
| 签名<br>SIGNATURE           | 制图:<br>Drawn by                                                                     | 审核:<br>Checked by                                                                     | 批准:<br>Approved by                                                                    |
|                           |  |  |  |
| 客户承认<br>CUSTOMER APPROVAL |                                                                                     |                                                                                       |                                                                                       |
|                           | 承认印:<br>SIGNET                                                                      | 签名:<br>SIGNATURE                                                                      |                                                                                       |

深圳市联泰兴电子科技有限公司

SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD

地址：深圳市宝安区石岩街道应人石工业区伟泰路 1 栋（P. C: 518108）

ADD: No.1 Block, WeiTai Rd. Ying Ren Shi Industry Park, Shi Yan Sub-District, Bao'An ShenZhen,

TEL: +86-755-29810619

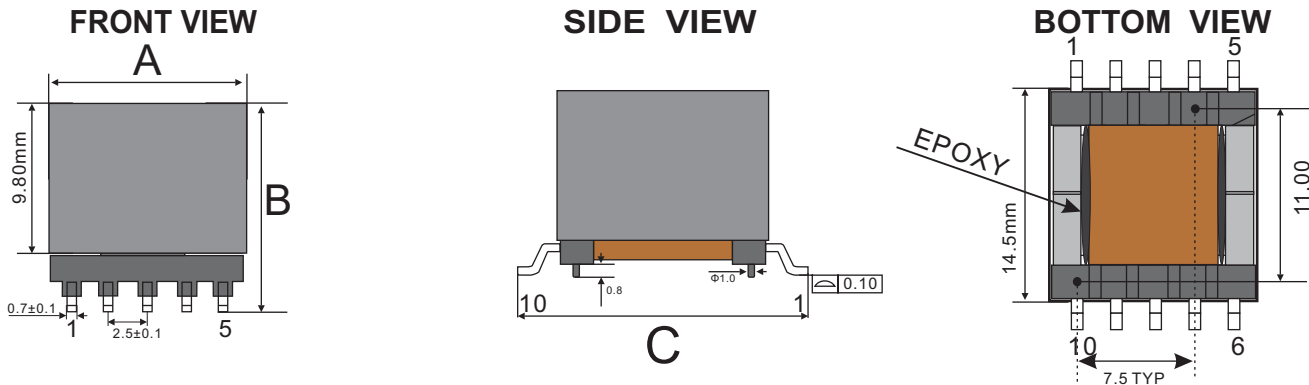
29810976

FAX: +86-755-29810159

Http://www.group-tek.com

E-mail:sale1@group-tek.com

2. Mechanical Dimensions:



- Note:
- 1.Wrap 2Ts of 7mm kapton tape around the finished part.
  - 2.Fixed the cores with glue,and fixed the case with glue.

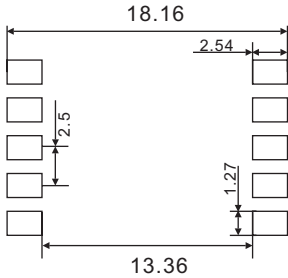
Unit: mm

| A<br>MAX | B<br>MAX | C<br>MAX |
|----------|----------|----------|
| 15.0     | 14.8     | 17.8     |

Marking information

|                         |
|-------------------------|
| PDT25125SR<br>GROUP-TEK |
| ● YYWW                  |

Suggested PCB Paad Layout

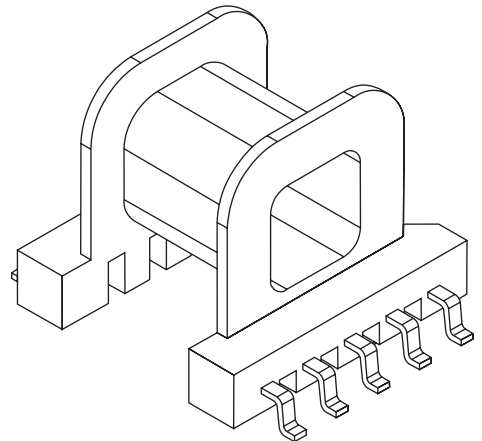
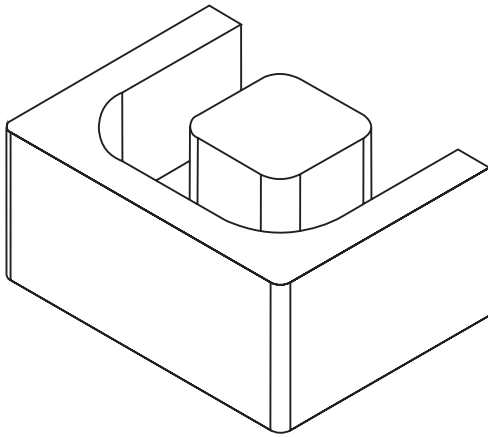


### 5.Winding Information:

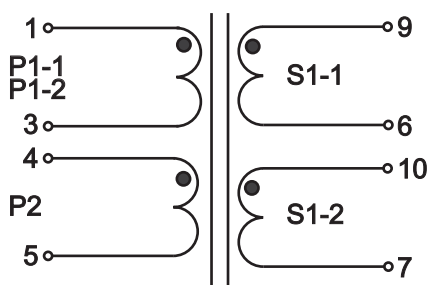
| WINDING SEQ. | ST-FN | WIRE/FOIL               | TURNS | WRAP INSUL.             | MARGIN TAPE | SLEEVE | NOTE |
|--------------|-------|-------------------------|-------|-------------------------|-------------|--------|------|
| P1-1         | 1--3  | 4*0.21mm 2UEW           | 16    | 1T w8.0mm (kapton tape) | N/A         | N/A    | 1    |
| S1-1         | 9--6  | 4*0.27mm 2UEW (Red)     | 6     | 1T w8.0mm (kapton tape) | N/A         | N/A    | 1    |
| P1-2         | 1--3  | 2*0.21mm 2UEW (Natural) | 16    | 1T w8.0mm (kapton tape) | N/A         | N/A    | 1    |
| S1-2         | 10--7 | 4*0.27mm 2UEW           | 6     | 1T w8.0mm (kapton tape) | N/A         | N/A    | 1    |
| P2           | 4--5  | 3*0.17mm 2UEW           | 6     | 2T w8.0mm (kapton tape) | N/A         | N/A    | 1    |

#### NOTE :

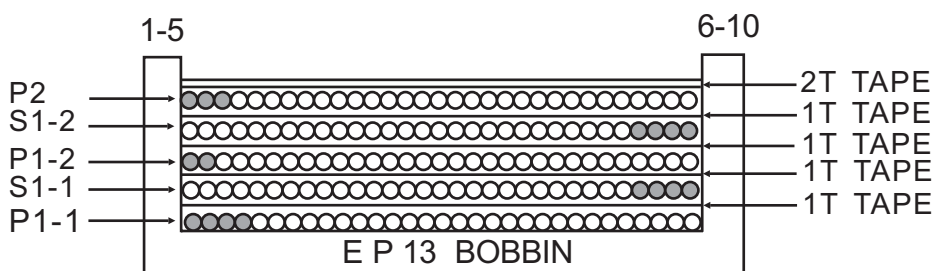
1. -Place the bobbin pin 1 left side of operator.



### 6.Schematic:



### 7.Winding construction



● :Start terminal

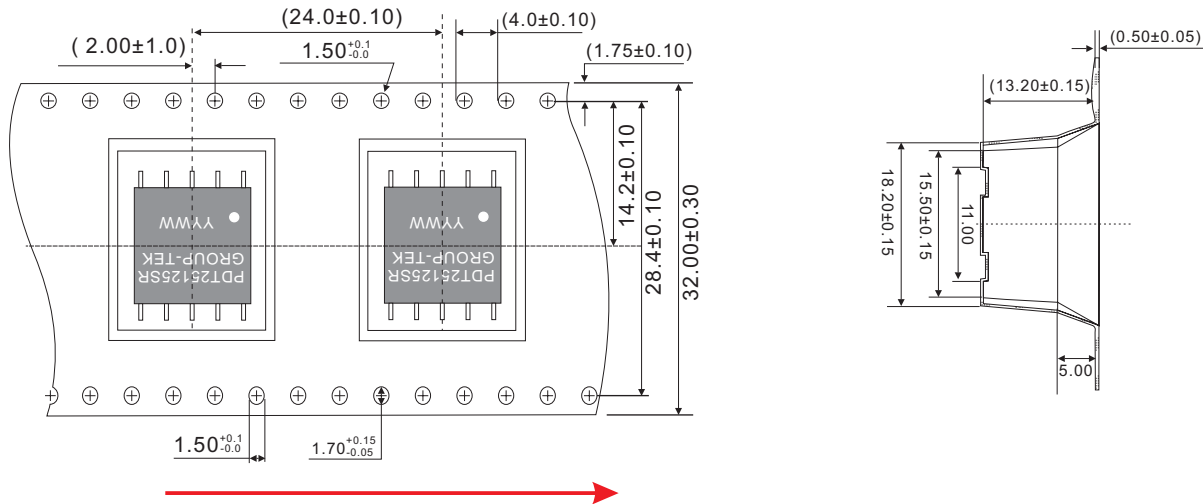
### 8.Material List:

| NO. | ITEM.  | MATERIALS                                                                           | SUPPLIERS/MANUFAXTURES                                      | UL FILE NO.   |
|-----|--------|-------------------------------------------------------------------------------------|-------------------------------------------------------------|---------------|
| 1   | BOBBIN | PHENOLIC T375J<br>UL RATING: 94V-0                                                  | ZHEN HUI PRECISION PLASTIC &HARDWARE<br>(SHEN ZHEN) CO LTD. | E331681       |
| 2   | CORE   | TP2A                                                                                | TTS Technology Co.,Ltd.                                     | N/A           |
| 3   | WIRE   | POLYURETHANE ENAMELED<br>TYPE NO: 2UEW<br>THERMAL RATING:180°C                      | ZHU HAI SUNTEK WIRE COLTD                                   | OBMW2.E234867 |
| 4   | TAPE   | FLAME RETARDANT POLYIMIDE<br>FILM TAPE TYPE NO.:KAPTON TAPE<br>THERMAL RATING:180°C | Shen zhen Weichuangda Packing material Co.,Ltd              | E331581       |
| 5   | SOLDER | SN/CU: 99.3/0.7                                                                     | Gao Xin stannum industry Co.,Ltd                            | N/A           |
| 6   | Glue   | E-504H-1                                                                            | Dong Guan city eatto electronic material Co.,Ltd            | E218090       |
| 7   | INK    | VIC-120                                                                             | Shenshen Huarui samwo group Co.,Ltd                         | N/A           |
| 8   | CASE   | PHENOLIC T375J<br>UL RATING: 94V-0                                                  | ZHEN HUI PRECISION PLASTIC &HARDWARE<br>(SHEN ZHEN) CO LTD. | E331681       |

### 9.PACKING INFORMATION:

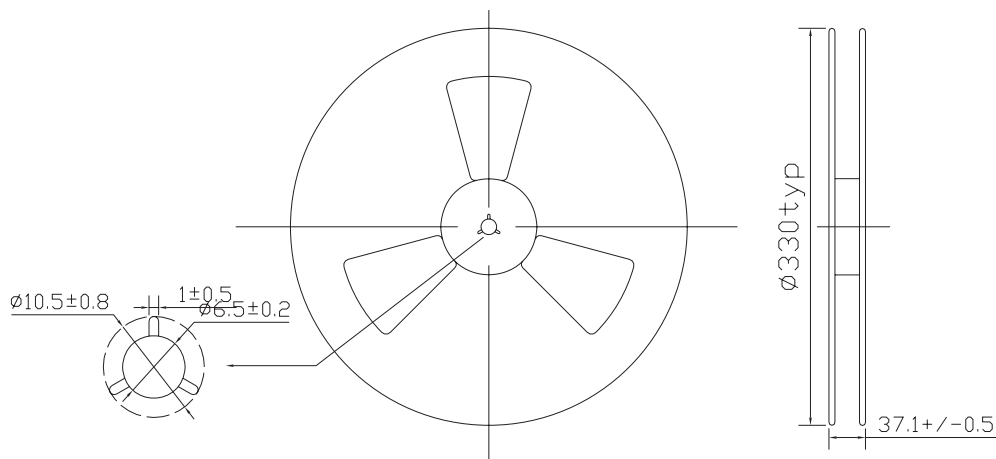
| DESCRIPTION              | QTY |
|--------------------------|-----|
| PIECES PER REEL          | 150 |
| PIECES PER POCKET        | 1   |
| PIECES PER BOX           | 450 |
| REEL PER BOX             | 3   |
| GROSS WEIGHT PER BOX(KG) | TBD |
| NET WEIGHT PER BOX(KG)   | TBD |

### 1. Tape Size: Tape and Reel Package (包装图)



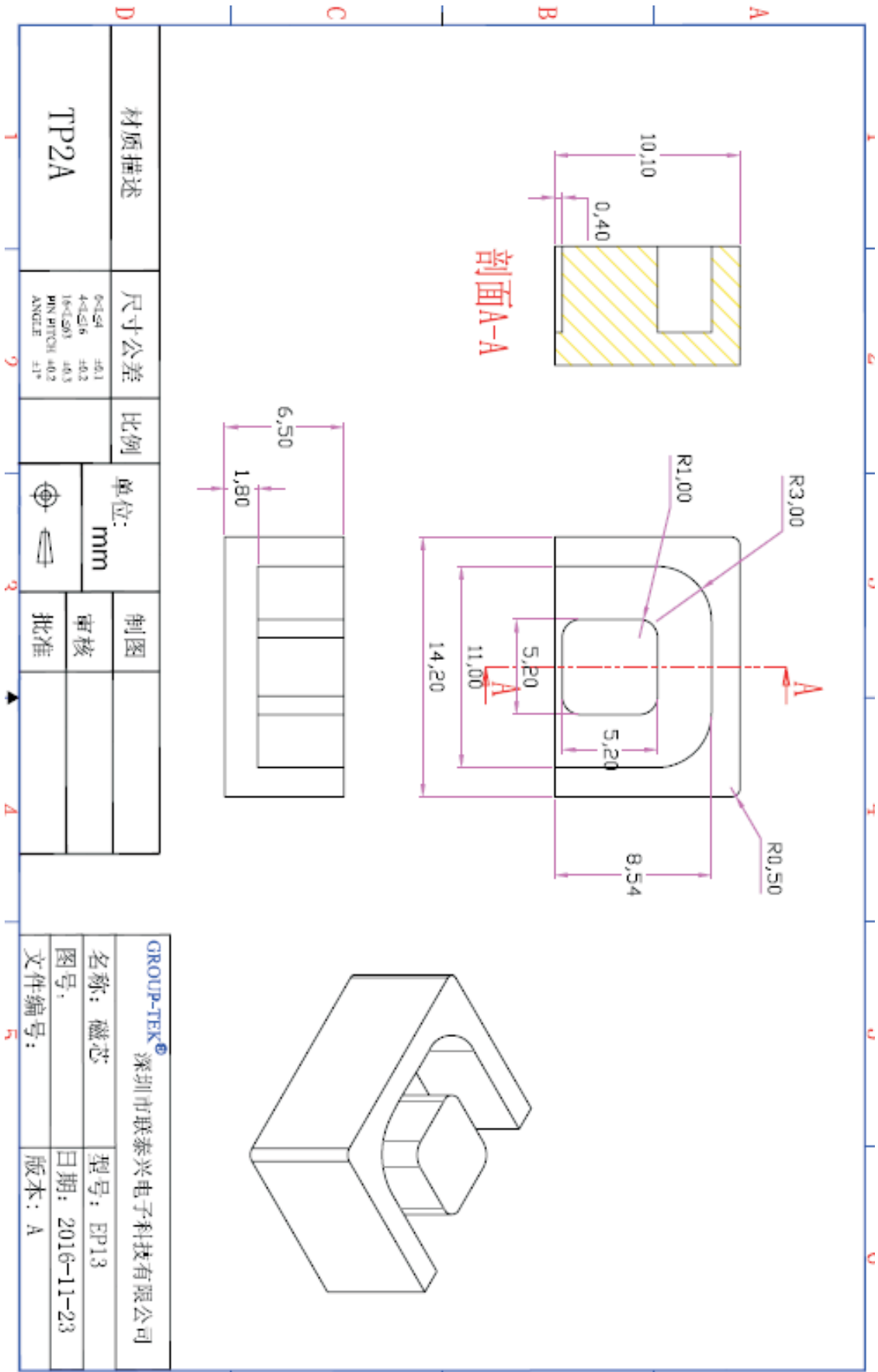
### 2. Reel Size:

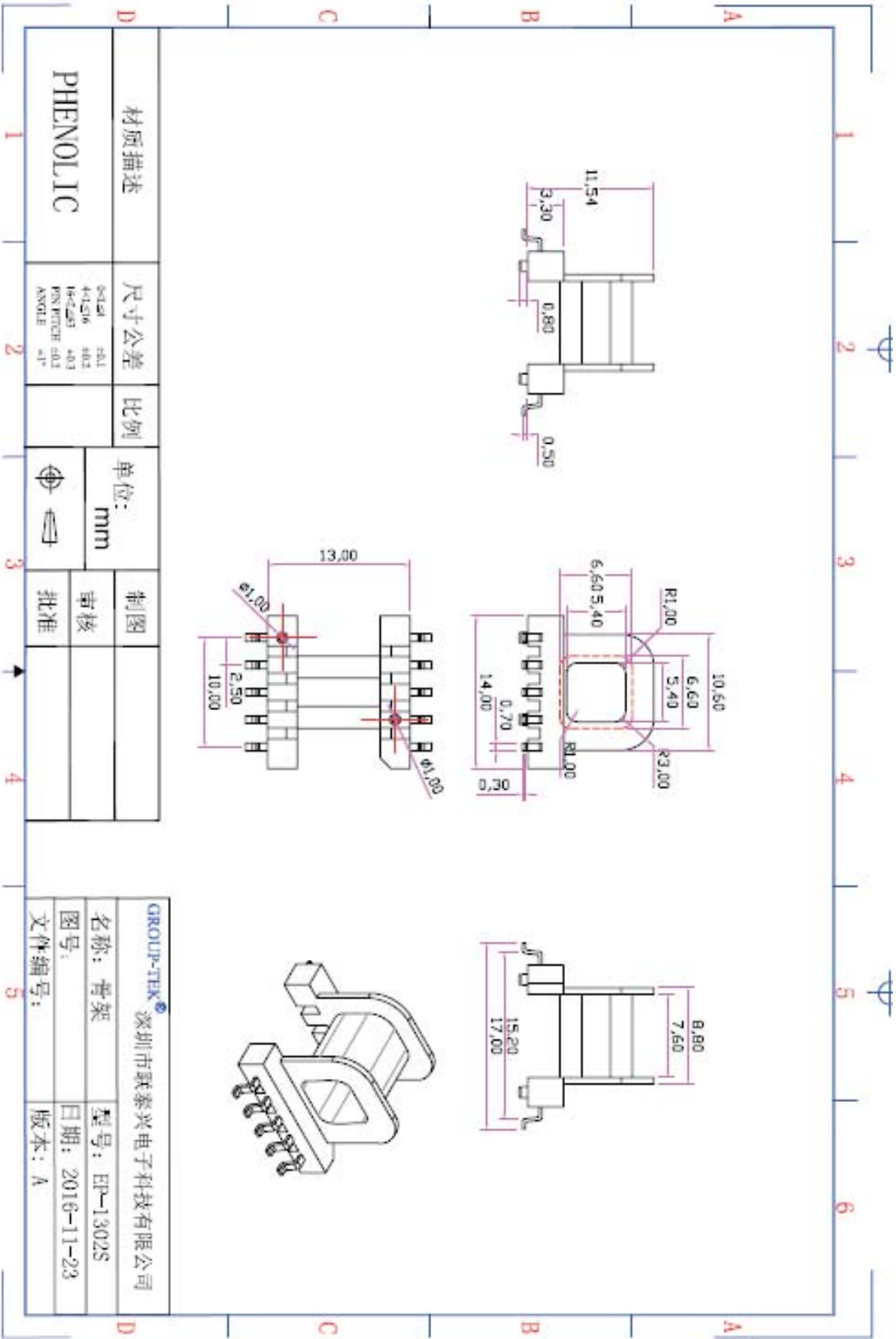
Part Orientation>>Feed Direcyion>>



### 3. Packaging:

- 3.1 Quantity per reel: 150pcs.
- 3.2 Quantity per carton: 450pcs.
- 3.3 Carton size: 37.3\*37.3\*21.2cm.
- 3.4 Unit weight: TBD.
- 3.5 Carton weight: TBD.







The following Page(s) are related to Miscellaneous-02. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

# SPECIFICATIONS

TO MESSRS : 한화테크윈

---

CUSTOMER'S MODEL :

---

CUSTOMER'S PART NO :

---

ITEM : LINE FILTER

---

TNC SPEC NO. : CV320070SB

---

| APPROVED | REFERENCE |
|----------|-----------|
|          |           |

DATE : 2018. 02. 23

---

**TNC (株)TNC**

#304-29 Asan Valley, DunPo-Myeon, Asan-Si, Chung Cheong  
Nam-Do, KOREA 336-871  
TEL : 82-41-530-9600  
FAX : 82-41-530-9697

NOTICE : After received this approval sheet and finished it's approval,  
please return back one copy. In case of you don't any reply until  
initial order date, this approval sheet is to be standard approval  
and initial order date is to be approved date for concerning item.

|                |             |             |     |
|----------------|-------------|-------------|-----|
| SPECIFICATIONS | ITEM        | LINE FILTER | Rev |
|                | TNC SPEC NO | CV320070SB  | 0   |

## 2. ELECTRICAL CHARACTERISTIC

| NO | ITEM                 | TERMINAL         | SPECIFICATION       |       |           | REMARKS                              |
|----|----------------------|------------------|---------------------|-------|-----------|--------------------------------------|
| 1  | RATED VOLTAGE        | LINE TO LINE     | AC 300V             |       |           |                                      |
| 2  | RATED CURRENT        | START-FINISH     | 2.0A                |       |           |                                      |
| 3  | INDUCTANCE           | START-FINISH     | 16KHz               | 7.0mH | + 50%-30% | HP-4194A<br>1V (25℃±2℃)              |
| 4  | TEMPERATURE RISE     | AT RATED CURRENT | 55℃ MAX             |       |           |                                      |
| 5  | DC RESISTANCE        | START-FINISH     | 130.0 mΩ MAX        |       |           | HIOKI 3540<br>(25℃±2℃)               |
| 6  | WITHSTANDING VOLTAGE | LINE TO LINE     | AC 1,500V 1 MINUTE. |       |           | TOS-5101<br>CUT OFF CURRENT<br>(5mA) |

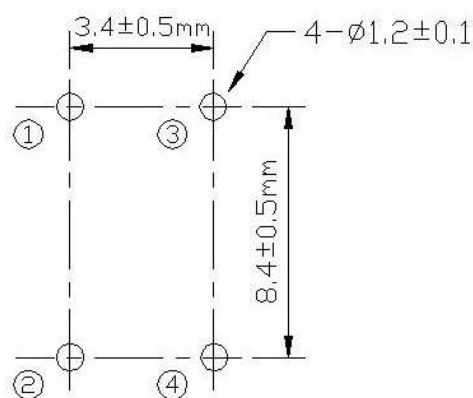
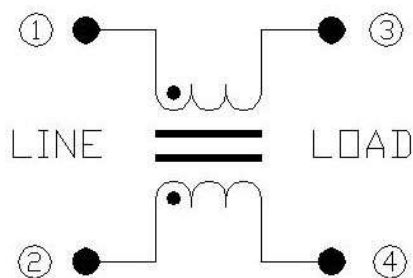
## 3. OPERATING TEMPERATURE RANGE

-40℃ TO +105℃ INCLUDING TEMPERATURE RISE.

## 4. KEEP TEMPERATURE RANGE

-40℃ ~ +105℃.

## 5. CIRCUIT DIAGRAM



Minimum PCB Piercing HOLE

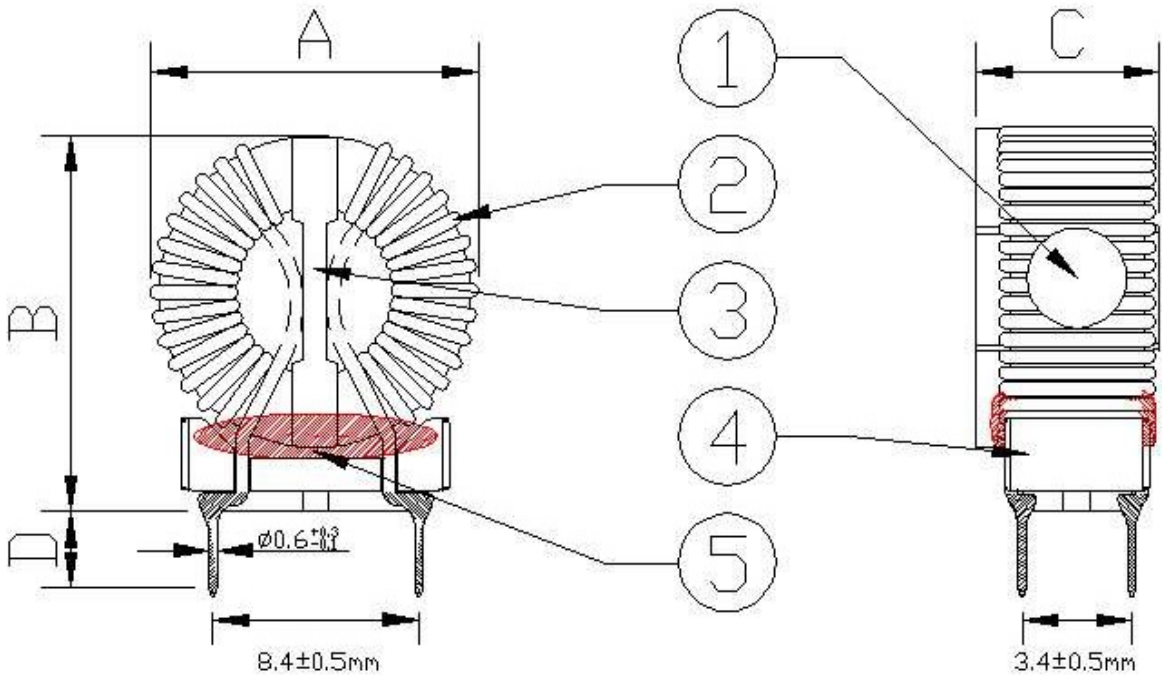
|                                                                                                 |                                                                                                      |                                                                                                       |                                                                                                        |      |
|-------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|------|
|  TNC CO.,LTD | DESIGN                                                                                               | CHECK                                                                                                 | APPROVAL                                                                                               | PAGE |
|                                                                                                 |  RYU.H.E.<br>R&D |  KIM.J.S.<br>R&D |  PARK.J.W.<br>R&D | 3/14 |

|                |             |             |     |
|----------------|-------------|-------------|-----|
| SPECIFICATIONS | ITEM        | LINE FILTER | Rev |
|                | TNC SPEC NO | CV320070SB  | 0   |

6. WINDING SPECIFICATION

| NO | TERMINAL |        | WIRE      | TURNS  | WINDING METHOD | UNBALANCE SPECIFICATION          |
|----|----------|--------|-----------|--------|----------------|----------------------------------|
|    | START    | FINISH |           |        |                |                                  |
| L1 | 1        | 3      | UEW 0.40Φ | 35±2Ts | HANDMADE       | BETWEEN L1 AND L2<br>(0.2mH MAX) |
| L2 | 2        | 4      |           |        |                |                                  |

7. SHAPE AND DIMENSION



| DIMENSION | A          | B          | C         | D                                        |
|-----------|------------|------------|-----------|------------------------------------------|
|           | 15.5mm MAX | 18.5mm MAX | 9.5mm MAX | Not include solder fillet<br>2.6 ± 0.5mm |

|                                       |                                       |                                       |                                        |      |
|---------------------------------------|---------------------------------------|---------------------------------------|----------------------------------------|------|
| <div>TNC</div> <div>TNC CO.,LTD</div> | DESIGN                                | CHECK                                 | APPROVAL                               | PAGE |
|                                       | <div>RYU.H.E</div> <div>R&amp;D</div> | <div>KIM.J.S</div> <div>R&amp;D</div> | <div>PARK.J.W</div> <div>R&amp;D</div> | 4/14 |

|                |             |             |     |
|----------------|-------------|-------------|-----|
| SPECIFICATIONS | ITEM        | LINE FILTER | Rev |
|                | TNC SPEC NO | CV320070SB  | 0   |

## 8. MATERIAL LIST

| No. | NAME           | SPECIFICATION                               |                    | MANUFACTURER                                                          | COLOR       | UL No.  |
|-----|----------------|---------------------------------------------|--------------------|-----------------------------------------------------------------------|-------------|---------|
| 1   | Ferrite Core   | MA100 R-13/7/5<br>R10KF TR13X7X5C           |                    | JFE Ferrite Corp<br>LAIWU CHAINWELL<br>ELECTRONIC&MATERIAL<br>CO.,LTD | GRAY        |         |
| 2   | Enamel Wire    | UEW 0.40Φ<br>/ 35±2Ts                       | UEW                | HWA IL ELECTRONICS CO.,LTD                                            | YELLOW      | E140246 |
|     |                |                                             | UEW                | SHANDONG PENGTAI STOCK CO LTD                                         | YELLOW      | E166187 |
|     |                |                                             | UEW                | SIAM PACIFIC ELECTRIC WIRE & CABLE CO.,LTD                            | YELLOW      | E142108 |
| 3   | Coil Separator | LCP<br>L304T40                              |                    | TORAY INDUSTRIES INC                                                  | BLACK       | E41797  |
|     |                | NYLON<br>A 50H1(r3)(f2)                     |                    | SOLVAY ENGINEERING<br>PLASTICS GBU                                    | BLACK       | E44716  |
| 4   | Coil Base      | Phenolic (PF 2736(a)(b))<br>UL 94 V-0 Class |                    | Hexion GmbH                                                           | BLACK       | E61040  |
|     |                | Phenolic (T375HF)<br>UL 94 V-0 Class        |                    | CHANG CHUN Plastics<br>Co.,Ltd                                        | BLACK       | E59481  |
| 5   | Epoxy          | EPOXY<br>RESIN                              | NA-010             | ND Chemical                                                           | WHITE       |         |
|     |                |                                             | EA610A /<br>EA610B | Chemtech Co.,Ltd                                                      | Transparent |         |

|                                                                                                 |                                                                                      |                                                                                       |                                                                                       |      |
|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|------|
|  TNC CO.,LTD | DESIGN                                                                               | CHECK                                                                                 | APPROVAL                                                                              | PAGE |
|                                                                                                 |  |  |  | 5/14 |

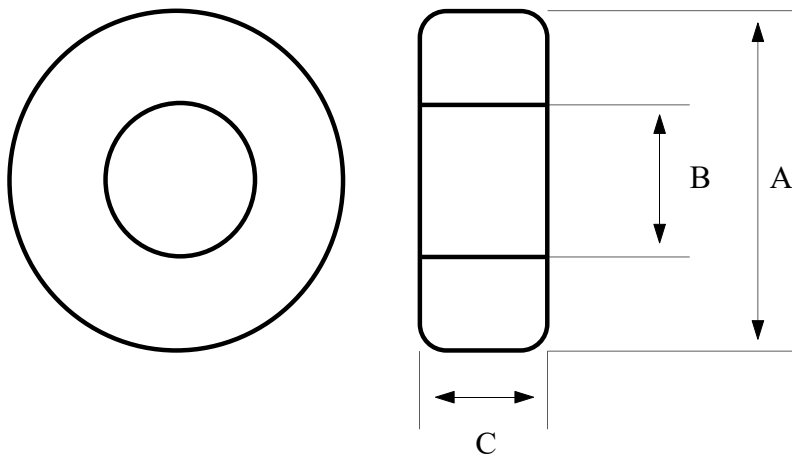
|                |             |             |     |
|----------------|-------------|-------------|-----|
| SPECIFICATIONS | ITEM        | LINE FILTER | Rev |
|                | TNC SPEC NO | CV320070SB  | 0   |

## 14. FERRITE CORE SPECIFICATION

### - Characteristics

| Symbol                   | Unit                  | MA100 R-13/7/5 | R10KF TR13X7X5C |
|--------------------------|-----------------------|----------------|-----------------|
| $\mu_i$                  | -                     | 10,000±30%     | 10,000±30%      |
| Bms                      | mT                    | 415            | 390             |
| Hcms                     | A/m                   | 3.0            | 7.0             |
| Brms                     | mT                    | 76             | 100             |
| Tc                       | °C                    | >115           | >120            |
| TAN $\delta$ / $\mu iac$ | *10 <sup>-6</sup>     | <1.9           | <7.0            |
| $\alpha_{\mu r}$         | *10 <sup>-6</sup> /°C | -0.5~2.0       | 0~1.5           |
| $\rho$                   | $\Omega.m$            | 0.1            | 0.15            |
| d                        | g/cm <sup>3</sup>     | 5.0            | 4.8             |

### - Dimension (Before Coating)



A: 13.0 ±0.35      B: 7.0 ±0.3      C: 5.0 ±0.3



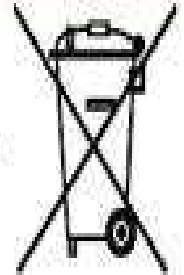
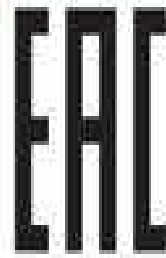
The following Page(s) are related to Miscellaneous-03. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

Standard SCC Requirements and Guidance - Product Certification Body Accreditation Program Edition/ Revision Date 2016-04-06

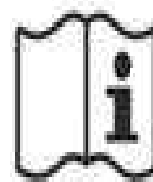
| Clause/Par. Reference and Construction Requirement                                                                                                                                                                                                                                                                                                            | Comply |    |     | Comments/Measurements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Inst. ID No. |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
|                                                                                                                                                                                                                                                                                                                                                               | Yes    | No | N/A |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |
| 9.2.3 CBs shall include dual language safety labeling within their product certification requirements, if so required by the standard or by the authority having jurisdiction.                                                                                                                                                                                |        |    |     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |              |
| The manufacturer has confirmed they have the ability to include English and French safety labeling exactly as specified in the product standard; or, if NOT specified in the product standard, the ability to include English and French safety labelling consisting of markings associated with the signal words DANGER, WARNING, and CAUTION when required. | X      |    |     | The ability of the manufacturer to include these markings was verified by either (1) visual inspection of the markings on the actual product or (2) draft of labels that will be applied to the product or (3) written confirmation from the customer of the markings that will appear on the product. If the product standard provides the exact translation, the evidence must match the exact translation. If the product standard does NOT provide the exact translation, the evidence must simply include both the English and French text (no verification of translation is required). | N/A          |

| Clause/Par. Reference and Construction Requirement                                                                                                             | Comply |    |     | Comments/Measurements                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Inst. ID No. |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|----|-----|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|
|                                                                                                                                                                | Yes    | No | N/A |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |              |
| Manufacturer has a method to manage distribution of products, IF all products with the Canadian certification mark are NOT going to include the dual language. | X      |    |     | Evaluation staff are to only verify that the manufacturer has a method to control distribution.<br>Evaluation staff do not have to record the method of control nor are the evaluation staff expected to verify the effectiveness of the method of control. This requirement to verify that a method exists will be noted in the FUS Procedure. The UL Field Engineer will verify the method during surveillance.<br>If the manufacturer is going to include the dual language on all products with the Canadian certification mark, then this item is N/A; no further action required. | N/A          |





NETWORK CAMERA  
MODEL: PNM-8082VT  
PoE(53V ... ) 0.32A



Rainproof  
IP66

M/C: PNM-8082VT/KUS Fac. ID: D



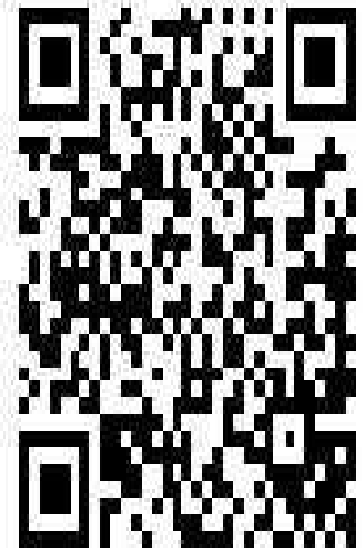
2020.08 S/N: ZQJQ70GN800005D

MAC ADDRESS: 00-09-18-66-84-B4

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

HANWHA TECHWIN CO.,LTD.

MADE IN KOREA



The following Page(s) are related to Miscellaneous-05. The next supplement, if applicable, will be identified with a new Supplement Page Heading.



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

**Report Number** .....: E158873-A6036

**Date of issue** .....: N/A

**Total number of pages** .....: 22

**Name of Testing Laboratory preparing the Report**.....: N/A

**Applicant's name**.....: HANWHA TECHWIN CO LTD

**Address** .....: 6, PANGYO-RO 319BEON-GIL, BUNDANG-GU  
 SEONGNAM-SI GYEONGGI-DO 13488 KOREA

**Test specification:**

**Standard** .....: IEC 60950-22(ed.2)

**Test procedure** .....: CB Scheme

**Non-standard test method**.....: N/A

**Test Report Form No.**.....: IEC60950\_22B

**Test Report Form(s) Originator**.....: The Standards Institution of Israel

**Master TRF** .....: Dated 2016-04

**Copyright © 2016 IEC System of Conformity Assessment Schemes for Electrotechnical Equipment and Components (IECEE System). All rights reserved.**

This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.

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.**

**General disclaimer:**

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 CB Testing Laboratory. The authenticity of this Test Report and its contents can be verified by contacting the NCB, responsible for this Test Report.

|                                                                                                   |                                          |                           |
|---------------------------------------------------------------------------------------------------|------------------------------------------|---------------------------|
| <b>Test item description .....</b>                                                                |                                          | See Report E158873- A6036 |
| <b>Trade Mark .....</b>                                                                           |                                          | --                        |
| <b>Manufacturer.....</b>                                                                          |                                          | See Report E158873- A6036 |
| <b>Model/Type reference .....</b>                                                                 |                                          | See Report E158873-A6036  |
| <b>Ratings .....</b>                                                                              |                                          | See Report E158873-A6036  |
| <b>Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):</b> |                                          |                           |
| <input type="checkbox"/>                                                                          | <b>CB Testing Laboratory:</b>            | N/A                       |
| <b>Testing location/ address .....</b>                                                            |                                          |                           |
| <input type="checkbox"/>                                                                          | <b>Associated CB Testing Laboratory:</b> |                           |
| <b>Testing location/ address .....</b>                                                            |                                          |                           |
| <b>Tested by (name, function, signature) .....</b>                                                |                                          |                           |
| <b>Approved by (name, function, signature) ..</b>                                                 |                                          |                           |
| <input type="checkbox"/>                                                                          | <b>Testing procedure: CTF Stage 1:</b>   | N/A                       |
| <b>Testing location/ address .....</b>                                                            |                                          |                           |
| <b>Tested by (name, function, signature) .....</b>                                                |                                          |                           |
| <b>Approved by (name, function, signature) ..</b>                                                 |                                          |                           |
| <input type="checkbox"/>                                                                          | <b>Testing procedure: CTF Stage 2:</b>   | N/A                       |
| <b>Testing location/ address .....</b>                                                            |                                          |                           |
| <b>Tested by (name + signature) .....</b>                                                         |                                          |                           |
| <b>Witnessed by (name, function, signature) .</b>                                                 |                                          |                           |
| <b>Approved by (name, function, signature) ..</b>                                                 |                                          |                           |
| <input type="checkbox"/>                                                                          | <b>Testing procedure: CTF Stage 3:</b>   | N/A                       |
| <input type="checkbox"/>                                                                          | <b>Testing procedure: CTF Stage 4:</b>   | N/A                       |
| <b>Testing location/ address .....</b>                                                            |                                          |                           |
| <b>Tested by (name, function, signature) .....</b>                                                |                                          |                           |
| <b>Witnessed by (name, function, signature) .</b>                                                 |                                          |                           |
| <b>Approved by (name, function, signature) ..</b>                                                 |                                          |                           |
| <b>Supervised by (name, function, signature) :</b>                                                |                                          |                           |

|                                                                                                                                                                                                                |                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| <b>List of Attachments (including a total number of pages in each attachment):</b><br>N/A                                                                                                                      |                                                                                                                 |
| <b>Summary of testing:</b>                                                                                                                                                                                     |                                                                                                                 |
| <b>Tests performed (name of test and test clause):</b><br><br>4.2.5, 4.2.1, PART 22 10.2 IMPACT TEST<br>PART 22, 9.1, ANNEX B – WATER SPRAY TEST                                                               | <b>Testing location:</b><br><br>CTK Co., Ltd. / 142, Dongbu-ro, Cheoin-gu, Yongin-si, Gyeonggi-do, 17141, Korea |
| <b>Summary of compliance with National Differences (List of countries addressed):</b><br>See Report E158873-A6036                                                                                              |                                                                                                                 |
| <input type="checkbox"/> The product fulfils the requirements of _____ (insert standard number and edition and delete the text in parenthesis, leave it blank or delete the whole sentence, if not applicable) |                                                                                                                 |

**Copy of marking plate:**

**The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.**

See Report E158873-A6036

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
| <b>Test item particulars .....</b> :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                  |
| <b>Temperature range .....</b> : -40 ~ 60 deg C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                  |
| <b>Overvoltage category .....</b> : <input checked="" type="checkbox"/> OVC I <input type="checkbox"/> OVC II <input type="checkbox"/> OVC III <input type="checkbox"/> OVC IV                                                                                                                                                                                                                                                                                                                                                        |                                                                                                  |
| <b>IP protection class .....</b> : IP 66                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                  |
| <b>Possible test case verdicts:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                  |
| - test case does not apply to the test object .....: N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                  |
| - test object does meet the requirement .....: P (Pass)                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                  |
| - test object does not meet the requirement .....: F (Fail)                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                  |
| <b>Testing .....</b> :                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                  |
| <b>Date of receipt of test item .....</b> : See Report E158873-A6036                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                  |
| <b>Date (s) of performance of tests .....</b> : See Report E158873-A6036                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                  |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                  |
| <b>General remarks:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                                                  |
| <p>"(See Enclosure #)" refers to additional information appended to the report.<br/>         "(See appended table)" refers to a table appended to the report.</p> <p>Throughout this report a <input checked="" type="checkbox"/> comma / <input type="checkbox"/> point is used as the decimal separator.</p> <p><b>This Test Report Form is intended for the investigation of safety of equipment to be installed outdoors in accordance with IEC 60950-22. It can only be used together with the IEC 60950-1 requirements.</b></p> |                                                                                                  |
| <b>Manufacturer's Declaration per sub-clause 4.2.5 of IECEE 02:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                  |
| The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided.....:                                                                                                                                                                                                                                                             | <input type="checkbox"/> <b>Yes</b><br><input checked="" type="checkbox"/> <b>Not applicable</b> |
| <b>When differences exist; they shall be identified in the General product information section.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                  |
| <b>Name and address of factory (ies) .....</b> : N/A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                  |
| <b>General product information:</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                  |
| See Report E158873-A6036                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                  |

| IEC 60950-22 |                                                                                                                                                                                                                       |                                                                                                           |            |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|------------|
| Clause       | Requirement + Test                                                                                                                                                                                                    | Result - Remark                                                                                           | Verdict    |
| <b>4</b>     | <b>CONDITIONS FOR OUTDOOR EQUIPMENT</b>                                                                                                                                                                               |                                                                                                           | <b>P</b>   |
| <b>4.1</b>   | <b>Ambient air temperature</b>                                                                                                                                                                                        |                                                                                                           | <b>P</b>   |
|              | 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                                                         | Manufacturer declares an operating ambient range of -40 to 60 deg. C                                      | <b>P</b>   |
| <b>4.2</b>   | <b>Mains supply</b>                                                                                                                                                                                                   |                                                                                                           | <b>N/A</b> |
| 4.2.1        | General                                                                                                                                                                                                               | Overvoltage Category I                                                                                    | <b>N/A</b> |
|              | Suitability for the highest mains transient voltage expected in the installation location                                                                                                                             |                                                                                                           | <b>N/A</b> |
|              | Components within outdoor equipment that reduce mains transient voltage or the prospective fault current comply with IEC 61643-series                                                                                 |                                                                                                           | <b>N/A</b> |
| 4.2.2        | Mains transient voltage on AC mains supply                                                                                                                                                                            |                                                                                                           | <b>N/A</b> |
| 4.2.3        | Mains transient voltage on DC mains supply                                                                                                                                                                            |                                                                                                           | <b>N/A</b> |
| <b>4.3</b>   | <b>Rise of earth potential</b>                                                                                                                                                                                        |                                                                                                           | <b>N/A</b> |
|              | Special earthing conditions                                                                                                                                                                                           |                                                                                                           | <b>N/A</b> |
|              | Reference to installation instructions .....                                                                                                                                                                          |                                                                                                           | <b>N/A</b> |
| <b>5</b>     | <b>MARKING AND INSTRUCTIONS</b>                                                                                                                                                                                       |                                                                                                           | <b>P</b>   |
|              | Special installation features for protection from conditions in the outdoor location (see 1.7.2 of IEC 60950-1:2005)                                                                                                  | Operating/Safety instructions made available to the installer including outdoor installation precautions. | <b>P</b>   |
|              | outdoor enclosure classification according to IEC 60529 (IP Code)                                                                                                                                                     | See Clause 9.1. Marked IP66                                                                               | <b>P</b>   |
| <b>6</b>     | <b>PROTECTION FROM ELECTRICAL SHOCK IN AN OUTDOOR LOCATION</b>                                                                                                                                                        |                                                                                                           | <b>N/A</b> |
| <b>6.1</b>   | <b>Voltage limits of user-accessible parts in outdoor locations</b><br>(2.2.2 and 2.2.3 of IEC 60950-1:2005/AMD2:2013 with voltage limits of IEC60950-22)                                                             |                                                                                                           | <b>N/A</b> |
|              | Voltages under normal conditions (V) .....                                                                                                                                                                            |                                                                                                           | <b>N/A</b> |
|              | Voltages under fault conditions (V) .....                                                                                                                                                                             |                                                                                                           | <b>N/A</b> |
| <b>6.2</b>   | <b>Limited current circuits in outdoor locations</b>                                                                                                                                                                  |                                                                                                           | <b>N/A</b> |
|              | The requirements of 2.4 of IEC60950-1:2005/AMD1:2009/AMD2:2013 apply without change                                                                                                                                   |                                                                                                           | <b>N/A</b> |
| <b>6.3</b>   | <b>Protection for socket-outlet in outdoor locations</b>                                                                                                                                                              |                                                                                                           | <b>N/A</b> |
|              | Use of residual current protective device (RCD) with rated residual operating current not exceeding 30 mA in the mains supply to socket-outlets intended for general use and with a rated current not exceeding 20 A. |                                                                                                           | <b>N/A</b> |

| IEC 60950-22 |                                                                                                                                                                                    |                      |            |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|------------|
| Clause       | Requirement + Test                                                                                                                                                                 | Result - Remark      | Verdict    |
|              | RCD is an integral part of the equipment                                                                                                                                           |                      | N/A        |
|              | RCD is part of the building installation (installation instructions)                                                                                                               |                      | N/A        |
| <b>7</b>     | <b>WIRING TERMINALS FOR CONNECTION OF EXTERNAL CONDUCTORS</b>                                                                                                                      |                      | <b>N/A</b> |
|              | The mains supply terminations powered via the normal building installation wiring are as specified in 3.3 of IEC 60950-1:2005/AMD2:2013                                            |                      | N/A        |
|              | The mains supply terminations powered directly from the mains distribution system are as specified in IEC 60364                                                                    |                      | N/A        |
| <b>8</b>     | <b>CONSTRUCTION REQUIREMENTS FOR OUTDOOR ENCLOSURES</b>                                                                                                                            |                      | <b>P</b>   |
| <b>8.1</b>   | <b>General</b>                                                                                                                                                                     |                      | <b>P</b>   |
|              | 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 |                      | N/A        |
|              | Use of outdoor enclosure to carry current during normal operation                                                                                                                  |                      | N/A        |
|              | Connection of a conductive part of an outdoor enclosure to protective earth for carrying fault currents (see 2.6 of IEC60950-1:2005/AMD1:2009/AMD2:2013 and 8.3 of this standard)  |                      | N/A        |
| <b>8.2</b>   | <b>Resistance to ultra-violet radiation</b>                                                                                                                                        |                      | <b>P</b>   |
|              | Resistance of non-metallic parts of an outdoor enclosure to degradation by ultra-violet (UV) radiation                                                                             | UL R/C Plastic used. | P          |
|              | Parts providing mechanical support:                                                                                                                                                |                      | N/A        |
|              | Tensile strength test (ISO 527)                                                                                                                                                    |                      | N/A        |
|              | Flexural strength test (ISO 178)                                                                                                                                                   |                      | N/A        |
|              | Parts providing impact resistance:                                                                                                                                                 |                      | N/A        |
|              | Charpy impact test (ISO 179)                                                                                                                                                       |                      | N/A        |
|              | Izod impact test (ISO 180)                                                                                                                                                         |                      | N/A        |
|              | Tensile impact test (ISO 8256)                                                                                                                                                     |                      | N/A        |
|              | All parts:                                                                                                                                                                         |                      | N/A        |
|              | Flammability classification (1.2.12 and annex A of IEC 60950-1:2005)                                                                                                               |                      | N/A        |
| <b>8.3</b>   | <b>Resistance to corrosion</b>                                                                                                                                                     |                      | <b>P</b>   |
| 8.3.1        | General                                                                                                                                                                            |                      | P          |

| IEC 60950-22 |                                                                                                                                                             |                                                                                                                                                        |         |
|--------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| Clause       | Requirement + Test                                                                                                                                          | Result - Remark                                                                                                                                        | Verdict |
|              | Resistance of metallic parts of an outdoor enclosure to the effects of water-borne contaminants                                                             | Aluminum used.                                                                                                                                         | P       |
|              | Alternate method for 8.3.2-8.3.4 (IEC 61587-1)                                                                                                              |                                                                                                                                                        | N/A     |
| 8.3.2        | Test apparatus                                                                                                                                              |                                                                                                                                                        | N/A     |
|              | Salt-spray test (IEC 60068-2-11)                                                                                                                            |                                                                                                                                                        | N/A     |
|              | 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/A     |
| 8.3.3        | Test procedure                                                                                                                                              |                                                                                                                                                        | N/A     |
|              | Alternate test procedure                                                                                                                                    |                                                                                                                                                        | N/A     |
| 8.3.4        | Compliance criteria:                                                                                                                                        |                                                                                                                                                        | N/A     |
|              | No rust other than surface corrosion of the protective coating; no cracking or other deterioration that will jeopardize the safety aspects as follows:      |                                                                                                                                                        | N/A     |
|              | – continued protection against access to hazardous parts, including after mechanical strength tests; and                                                    |                                                                                                                                                        | N/A     |
|              | – continued protection against ingress of dust and water; and                                                                                               |                                                                                                                                                        | N/A     |
|              | – continued provision of earth continuity                                                                                                                   |                                                                                                                                                        | N/A     |
| <b>8.4</b>   | <b>Bottoms of fire enclosures</b>                                                                                                                           |                                                                                                                                                        | N/A     |
|              | Comply with 4.6.2 of IEC 60950-1:2005                                                                                                                       | No openings                                                                                                                                            | N/A     |
|              | Bottom of fire enclosure of outdoor equipment mounted directly and permanently on a non-combustible surface (e.g., concrete or metal)                       |                                                                                                                                                        | N/A     |
| <b>8.5</b>   | <b>Gaskets</b>                                                                                                                                              |                                                                                                                                                        | P       |
| 8.5.1        | General                                                                                                                                                     | UL R/C Gasket used.                                                                                                                                    | P       |
| 8.5.2        | Oil resistance                                                                                                                                              |                                                                                                                                                        | N/A     |
| 8.5.3        | Securing means                                                                                                                                              |                                                                                                                                                        | N/A     |
| <b>9</b>     | <b>PROTECTION OF EQUIPMENT WITHIN AN OUTDOOR ENCLOSURE</b>                                                                                                  |                                                                                                                                                        | P       |
| <b>9.1</b>   | <b>Protection from moisture</b>                                                                                                                             |                                                                                                                                                        | P       |
|              | Adequate protection from the effect of moisture on the enclosed equipment (see Table 2)                                                                     | Internal environment considered Pollution Degree 2 based on measures taken to prevent ingress of moisture and dust.<br>No water entered the enclosure. | P       |
| <b>9.2</b>   | <b>Protection from plants and vermin</b>                                                                                                                    |                                                                                                                                                        | P       |

| IEC 60950-22 |                                                                                                                                                                                          |                                      |         |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|---------|
| Clause       | Requirement + Test                                                                                                                                                                       | Result - Remark                      | Verdict |
|              | Adequate protection if entry by plants and vermin is a consideration                                                                                                                     | Entry by plants and vermin unlikely. | P       |
| <b>9.3</b>   | <b>Protection from excessive dust</b>                                                                                                                                                    |                                      | P       |
| 9.3.1        | General                                                                                                                                                                                  | No openings in enclosure.            | P       |
|              | Adequate protection against the ingress of the dust through the use of an appropriately rated IP5X or IP6X enclosure, or equivalent                                                      |                                      | P       |
| 9.3.2        | IP5X equipment                                                                                                                                                                           |                                      | N/A     |
| 9.3.3        | IP6X equipment                                                                                                                                                                           |                                      | P       |
| <b>10</b>    | <b>MECHANICAL STRENGTH OF ENCLOSURES</b>                                                                                                                                                 |                                      | P       |
| <b>10.1</b>  | <b>General</b>                                                                                                                                                                           |                                      | P       |
|              | Adequate mechanical strength and protection against access to energized parts and other hazards within the equipment throughout the intended ambient operating range                     |                                      | P       |
| <b>10.2</b>  | <b>Impact test (4.2.5 of IEC 60950-1)</b>                                                                                                                                                |                                      | P       |
|              | Low temperature conditioning for polymeric enclosures                                                                                                                                    | -40 deg. C                           | P       |
|              | Compliance criteria:                                                                                                                                                                     |                                      | P       |
|              | - after test the level of protection remains in accordance with 9.1 of this standard                                                                                                     |                                      | P       |
|              | - after test the requirements of 4.2.1 of IEC 60950-1: 2005/ AMD1:2009/AMD2:2013 are met                                                                                                 |                                      | N/A     |
| <b>11</b>    | <b>OUTDOOR EQUIPMENT CONTAINING VENTED BATTERIES</b>                                                                                                                                     |                                      | N/A     |
| <b>11.1</b>  | <b>Risk of explosion from lead acid, NiCd and NiMH batteries</b>                                                                                                                         |                                      | N/A     |
|              | Adequate ventilation in the compartment housing a valve regulated or vented battery, where gassing is possible during normal usage or over-charging                                      |                                      | N/A     |
|              | Protection against the risk of ignition of local concentrations of hydrogen and oxygen in a compartment containing both a battery and electrical components                              |                                      | N/A     |
|              | Construction of the ventilation system to ensure explosive gases venting in case of any potential fault, including distortion of the battery cases due to overheating or thermal runaway |                                      | N/A     |
|              | Ventilation tubes used for conducting explosive gas from the battery cases to the outside air                                                                                            |                                      | N/A     |
|              | Adequate ventilation under single-fault failure conditions in case of mechanical or forced-air ventilation                                                                               |                                      | N/A     |

| IEC 60950-22 |                                                                                                                          |                 |         |
|--------------|--------------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause       | Requirement + Test                                                                                                       | Result - Remark | Verdict |
|              | Enclosures with mechanical or electromechanical dampers                                                                  |                 | N/A     |
| <b>11.2</b>  | <b>Ventilation preventing an explosive gas concentration</b>                                                             |                 | N/A     |
|              | Comply with M.7 of IEC 62368-1:2014                                                                                      |                 | N/A     |
| <b>11.3</b>  | <b>Ventilation test</b>                                                                                                  |                 | N/A     |
|              | Measured hydrogen gas concentration<br>(% by volume) .....                                                               |                 | —       |
|              | Max. allowed gas concentration for the mixture<br>location in proximity to an ignition source<br>(% by volume) .....     |                 | —       |
|              | Max. allowed gas concentration for the mixture<br>location not in proximity to an ignition source<br>(% by volume) ..... |                 | —       |
|              | Overcharging of rechargeable battery<br>(see 4.3.8 of IEC 60950-1:2005/AMD2:2013)                                        |                 | N/A     |
| <b>A</b>     | <b>ANNEX A, WATER-SATURATED SULPHUR DIOXIDE ATMOSPHERE<br/>(see 8.3.2 and 8.3.3)</b>                                     |                 | N/A     |
|              | Test chamber .....                                                                                                       |                 | N/A     |
|              | Test method .....                                                                                                        |                 | N/A     |
| <b>B</b>     | <b>ANNEX B, WATER SPRAY TEST (see 9.1)</b>                                                                               |                 | N/A     |
|              | Test apparatus .....                                                                                                     |                 | N/A     |
|              | Test method .....                                                                                                        |                 | N/A     |
| <b>C</b>     | <b>ANNEX C, ULTRAVIOLET LIGHT CONDITIONING TEST (see 8.2)</b>                                                            |                 | N/A     |
| C.1          | Test apparatus .....                                                                                                     |                 | N/A     |
| C.2          | Mounting of test samples .....                                                                                           |                 | N/A     |
| C.3          | Carbon-arc light-exposure apparatus .....                                                                                |                 | N/A     |
| C.4          | Xenon-arc light-exposure apparatus .....                                                                                 |                 | N/A     |
| <b>D</b>     | <b>ANNEX D, GASKET TESTS (see 8.5)</b>                                                                                   |                 | N/A     |
| D.1          | Gasket tests                                                                                                             |                 | N/A     |
| D.2          | Tensile strength and elongation tests<br>(for gaskets that can stretch)                                                  |                 | N/A     |
|              | Tensile strength (%) .....                                                                                               |                 | N/A     |
|              | Elongation (%) .....                                                                                                     |                 | N/A     |
|              | Visible deterioration, deformation, melting, cracking<br>or hardening of the material .....                              |                 | N/A     |
| D.3          | Compression test<br>(for gaskets with closed cell construction)                                                          |                 | N/A     |
|              | Initial thickness of the specimen (mm) .....                                                                             |                 | N/A     |

| IEC 60950-22 |                                                                                           |                 |         |
|--------------|-------------------------------------------------------------------------------------------|-----------------|---------|
| Clause       | Requirement + Test                                                                        | Result - Remark | Verdict |
|              | Thickness of the specimen after test a) (mm),<br>compression set after test a) (%):.....: |                 | N/A     |
|              | Thickness of the specimen after test b) (mm),<br>compression set after test b) (%):.....: |                 | N/A     |
|              | Thickness of the specimen after test c) (mm),<br>compression set after test c) (%):.....: |                 | N/A     |
|              | Visible cracks or deterioration .....                                                     |                 | N/A     |
| D.4          | Oil immersion test                                                                        |                 | N/A     |
|              | Swelling (%) .....                                                                        |                 | N/A     |
|              | Shrinking (%) .....                                                                       |                 | N/A     |
| <b>E</b>     | <b>ANNEX E, RATIONALE</b>                                                                 |                 | —       |
| 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 |

|                                                                   |                                             |                                       |                        |
|-------------------------------------------------------------------|---------------------------------------------|---------------------------------------|------------------------|
| 8.2                                                               | TABLE: Resistance to ultra-violet radiation |                                       |                        |
| 8.2a)                                                             | Tensile strength test (ISO 527)             |                                       | N/A                    |
| Material identification<br>(manufacturer, type designation) ..... |                                             |                                       | —                      |
| Shape and dimensions of test samples.....                         |                                             |                                       | —                      |
| Conditioning for Set 1 of samples .....                           |                                             |                                       | —                      |
| Conditioning for Set 2 of samples<br>(including Annex C) .....    |                                             |                                       | —                      |
| Test conditions (T °C, RH %) .....                                |                                             |                                       | —                      |
|                                                                   |                                             |                                       |                        |
| Set 1<br>(without Annex C conditioning)                           |                                             | Set 2<br>(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:                                        |                                             |                                       |                        |
|                                                                   |                                             |                                       |                        |

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

|                                                                   |                                             |                                       |                         |
|-------------------------------------------------------------------|---------------------------------------------|---------------------------------------|-------------------------|
| 8.2                                                               | TABLE: Resistance to ultra-violet radiation |                                       |                         |
| 8.2b)                                                             | Flexural strength test (ISO 178)            |                                       | N/A                     |
| Material identification<br>(manufacturer, type designation) ..... |                                             |                                       | —                       |
| Shape and dimensions of test samples .....                        |                                             |                                       | —                       |
| Conditioning for Set 1 of samples.....                            |                                             |                                       | —                       |
| Conditioning for Set 2 of samples<br>(including Annex C) .....    |                                             |                                       | —                       |
| Test conditions (T °C, RH %)......                                |                                             |                                       | —                       |
|                                                                   |                                             |                                       |                         |
| Set 1<br>(without Annex C conditioning)                           |                                             | Set 2<br>(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:                                        |                                             |                                       |                         |
|                                                                   |                                             |                                       |                         |

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

|                                                                   |                                             |                                       |                                |
|-------------------------------------------------------------------|---------------------------------------------|---------------------------------------|--------------------------------|
| 8.2                                                               | TABLE: Resistance to ultra-violet radiation |                                       |                                |
| 8.2c)                                                             | Charpy impact test (ISO 179) - unnotched    |                                       | N/A                            |
| Material identification<br>(manufacturer, type designation) ..... |                                             |                                       | —                              |
| Shape and dimensions of test samples .....                        |                                             |                                       | —                              |
| Conditioning for Set 1 of samples .....                           |                                             |                                       | —                              |
| Conditioning for Set 2 of samples<br>(including Annex C) .....    |                                             |                                       | —                              |
| Test method<br>(according to Tables 2 and 3 of ISO 179) .....     |                                             |                                       | —                              |
| Test conditions (T °C, RH %). ....                                |                                             |                                       | —                              |
|                                                                   |                                             |                                       |                                |
| Set 1<br>(without Annex C conditioning)                           |                                             | Set 2<br>(after Annex C conditioning) |                                |
| Test sample #                                                     | Charpy impact strength (kJ/m²)              | Test sample #                         | Charpy impact strength (kJ/m²) |
|                                                                   |                                             |                                       |                                |
|                                                                   |                                             |                                       |                                |
|                                                                   |                                             |                                       |                                |
|                                                                   |                                             |                                       |                                |
| Arithmetic mean for Set 1 (kJ/m²) .....                           |                                             |                                       |                                |
| Arithmetic mean for Set 2 (kJ/m²) .....                           |                                             |                                       |                                |
| Retention (%) .....                                               |                                             |                                       |                                |
|                                                                   |                                             |                                       |                                |
| Supplementary information:                                        |                                             |                                       |                                |
|                                                                   |                                             |                                       |                                |

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

|                                                                   |                                             |                                       |                                             |
|-------------------------------------------------------------------|---------------------------------------------|---------------------------------------|---------------------------------------------|
| 8.2                                                               | TABLE: Resistance to ultra-violet radiation |                                       |                                             |
| 8.2d)                                                             | Charpy impact test (ISO 179) - notched      |                                       | N/A                                         |
| Material identification<br>(manufacturer, type designation) ..... |                                             |                                       | —                                           |
| Shape and dimensions of test samples .....                        |                                             |                                       | —                                           |
| Conditioning for Set 1 of samples .....                           |                                             |                                       | —                                           |
| Conditioning for Set 2 of samples<br>(including Annex C) .....    |                                             |                                       | —                                           |
| Test method<br>(according to Tables 2 and 3 of ISO 179) .....     |                                             |                                       | —                                           |
| Test conditions (T °C, RH % ).....                                |                                             |                                       | —                                           |
|                                                                   |                                             |                                       |                                             |
| Set 1<br>(without Annex C conditioning)                           |                                             | Set 2<br>(after Annex C conditioning) |                                             |
| Test sample #                                                     | Charpy impact strength (kJ/m <sup>2</sup> ) | Test sample #                         | Charpy impact strength (kJ/m <sup>2</sup> ) |
|                                                                   |                                             |                                       |                                             |
|                                                                   |                                             |                                       |                                             |
|                                                                   |                                             |                                       |                                             |
|                                                                   |                                             |                                       |                                             |
|                                                                   |                                             |                                       |                                             |
| Arithmetic mean for Set 1 (kJ/m <sup>2</sup> ) .....              |                                             |                                       |                                             |
| Arithmetic mean for Set 2 (kJ/m <sup>2</sup> ) .....              |                                             |                                       |                                             |
| Retention (%) .....                                               |                                             |                                       |                                             |
|                                                                   |                                             |                                       |                                             |
| Supplementary information:                                        |                                             |                                       |                                             |
|                                                                   |                                             |                                       |                                             |

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

|                                                                   |                                             |                                       |                              |
|-------------------------------------------------------------------|---------------------------------------------|---------------------------------------|------------------------------|
| 8.2                                                               | TABLE: Resistance to ultra-violet radiation |                                       |                              |
| 8.2e)                                                             | Izod impact test (ISO 180) - unnotched      |                                       | N/A                          |
| Material identification<br>(manufacturer, type designation) ..... |                                             |                                       | —                            |
| Shape and dimensions of test samples .....                        |                                             |                                       | —                            |
| Conditioning for Set 1 of samples .....                           |                                             |                                       | —                            |
| Conditioning for Set 2 of samples<br>(including Annex C) .....    |                                             |                                       | —                            |
| Test method<br>(according to Table 1 of ISO 180) .....            |                                             |                                       | —                            |
| Test conditions (T °C, RH %). ....                                |                                             |                                       | —                            |
|                                                                   |                                             |                                       |                              |
| Set 1<br>(without Annex C conditioning)                           |                                             | Set 2<br>(after Annex C conditioning) |                              |
| Test sample #                                                     | Izod impact strength (kJ/m²)                | Test sample #                         | Izod impact strength (kJ/m²) |
|                                                                   |                                             |                                       |                              |
|                                                                   |                                             |                                       |                              |
|                                                                   |                                             |                                       |                              |
|                                                                   |                                             |                                       |                              |
| Arithmetic mean for Set 1 (kJ/m²).....                            |                                             |                                       |                              |
| Arithmetic mean for Set 2 (kJ/m²).....                            |                                             |                                       |                              |
| Retention (%) .....                                               |                                             |                                       |                              |
|                                                                   |                                             |                                       |                              |
| Supplementary information:                                        |                                             |                                       |                              |
|                                                                   |                                             |                                       |                              |

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

|                                                                   |                                             |                                       |                                           |
|-------------------------------------------------------------------|---------------------------------------------|---------------------------------------|-------------------------------------------|
| 8.2                                                               | TABLE: Resistance to ultra-violet radiation |                                       |                                           |
| 8.2f)                                                             | Izod impact test (ISO 180) - notched        |                                       | N/A                                       |
| Material identification<br>(manufacturer, type designation) ..... |                                             |                                       | —                                         |
| Shape and dimensions of test samples.....                         |                                             |                                       | —                                         |
| Conditioning for Set 1 of samples.....                            |                                             |                                       | —                                         |
| Conditioning for Set 2 of samples<br>(including Annex C) .....    |                                             |                                       | —                                         |
| Test method<br>(according to Table 1 of ISO 180) .....            |                                             |                                       | —                                         |
| Test conditions (T °C, RH %)......                                |                                             |                                       | —                                         |
|                                                                   |                                             |                                       |                                           |
| Set 1<br>(without Annex C conditioning)                           |                                             | Set 2<br>(after Annex C conditioning) |                                           |
| Test sample #                                                     | Izod impact strength (kJ/m <sup>2</sup> )   | Test sample #                         | Izod impact strength (kJ/m <sup>2</sup> ) |
|                                                                   |                                             |                                       |                                           |
|                                                                   |                                             |                                       |                                           |
|                                                                   |                                             |                                       |                                           |
|                                                                   |                                             |                                       |                                           |
| Arithmetic mean for Set 1 (kJ/m <sup>2</sup> ).....               |                                             |                                       |                                           |
| Arithmetic mean for Set 2 (kJ/m <sup>2</sup> ).....               |                                             |                                       |                                           |
| Retention (%) .....                                               |                                             |                                       |                                           |
|                                                                   |                                             |                                       |                                           |
| Supplementary information:                                        |                                             |                                       |                                           |
|                                                                   |                                             |                                       |                                           |

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

|                                                                   |                                             |                                       |                                 |
|-------------------------------------------------------------------|---------------------------------------------|---------------------------------------|---------------------------------|
| 8.2                                                               | TABLE: Resistance to ultra-violet radiation |                                       |                                 |
| 8.2g)                                                             | Tensile impact test (ISO 8256) - unnotched  |                                       | N/A                             |
| Material identification<br>(manufacturer, type designation) ..... |                                             |                                       | —                               |
| Shape and dimensions of test samples.....                         |                                             |                                       | —                               |
| Conditioning for Set 1 of samples.....                            |                                             |                                       | —                               |
| Conditioning for Set 2 of samples<br>(including Annex C) .....    |                                             |                                       | —                               |
| Test method (A or B) .....                                        |                                             |                                       | —                               |
| Test conditions (T °C, RH %)......                                |                                             |                                       | —                               |
|                                                                   |                                             |                                       |                                 |
| Set 1<br>(without Annex C conditioning)                           |                                             | Set 2<br>(after Annex C conditioning) |                                 |
| Test sample #                                                     | Tensile impact strength (kJ/m²)             | Test sample #                         | Tensile impact strength (kJ/m²) |
|                                                                   |                                             |                                       |                                 |
|                                                                   |                                             |                                       |                                 |
|                                                                   |                                             |                                       |                                 |
|                                                                   |                                             |                                       |                                 |
| Arithmetic mean for Set 1 (kJ/m²).....                            |                                             |                                       |                                 |
| Arithmetic mean for Set 2 (kJ/m²).....                            |                                             |                                       |                                 |
| Retention (%) .....                                               |                                             |                                       |                                 |
|                                                                   |                                             |                                       |                                 |
| Supplementary information:                                        |                                             |                                       |                                 |
|                                                                   |                                             |                                       |                                 |

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

|                                                                   |                                             |                                       |                                 |
|-------------------------------------------------------------------|---------------------------------------------|---------------------------------------|---------------------------------|
| 8.2                                                               | TABLE: Resistance to ultra-violet radiation |                                       |                                 |
| 8.2h)                                                             | Tensile impact test (ISO 8256) - notched    |                                       | N/A                             |
| Material identification<br>(manufacturer, type designation) ..... |                                             |                                       | —                               |
| Shape and dimensions of test samples.....                         |                                             |                                       | —                               |
| Conditioning for Set 1 of samples.....                            |                                             |                                       | —                               |
| Conditioning for Set 2 of samples<br>(including Annex C) .....    |                                             |                                       | —                               |
| Test method (A or B) .....                                        |                                             |                                       | —                               |
| Test conditions (T °C, RH %)......                                |                                             |                                       | —                               |
|                                                                   |                                             |                                       |                                 |
| Set 1<br>(without Annex C conditioning)                           |                                             | Set 2<br>(after Annex C conditioning) |                                 |
| Test sample #                                                     | Tensile impact strength (kJ/m²)             | Test sample #                         | Tensile impact strength (kJ/m²) |
|                                                                   |                                             |                                       |                                 |
|                                                                   |                                             |                                       |                                 |
|                                                                   |                                             |                                       |                                 |
|                                                                   |                                             |                                       |                                 |
| Arithmetic mean for Set 1 (kJ/m²).....                            |                                             |                                       |                                 |
| Arithmetic mean for Set 2 (kJ/m²).....                            |                                             |                                       |                                 |
| Retention (%) .....                                               |                                             |                                       |                                 |
|                                                                   |                                             |                                       |                                 |
| Supplementary information:                                        |                                             |                                       |                                 |
|                                                                   |                                             |                                       |                                 |

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

| TABLE: Critical components information                                                 |                         |              |                |          | N/A                                 |
|----------------------------------------------------------------------------------------|-------------------------|--------------|----------------|----------|-------------------------------------|
| Object / part No.                                                                      | Manufacturer/ trademark | Type / model | Technical data | Standard | Mark(s) of conformity <sup>1)</sup> |
| (see separate test report E158873-A6015)                                               |                         |              |                |          |                                     |
|                                                                                        |                         |              |                |          |                                     |
|                                                                                        |                         |              |                |          |                                     |
|                                                                                        |                         |              |                |          |                                     |
|                                                                                        |                         |              |                |          |                                     |
| Supplementary information:                                                             |                         |              |                |          |                                     |
| <sup>1)</sup> Provided evidence ensures the agreed level of compliance. See OD-CB2039. |                         |              |                |          |                                     |

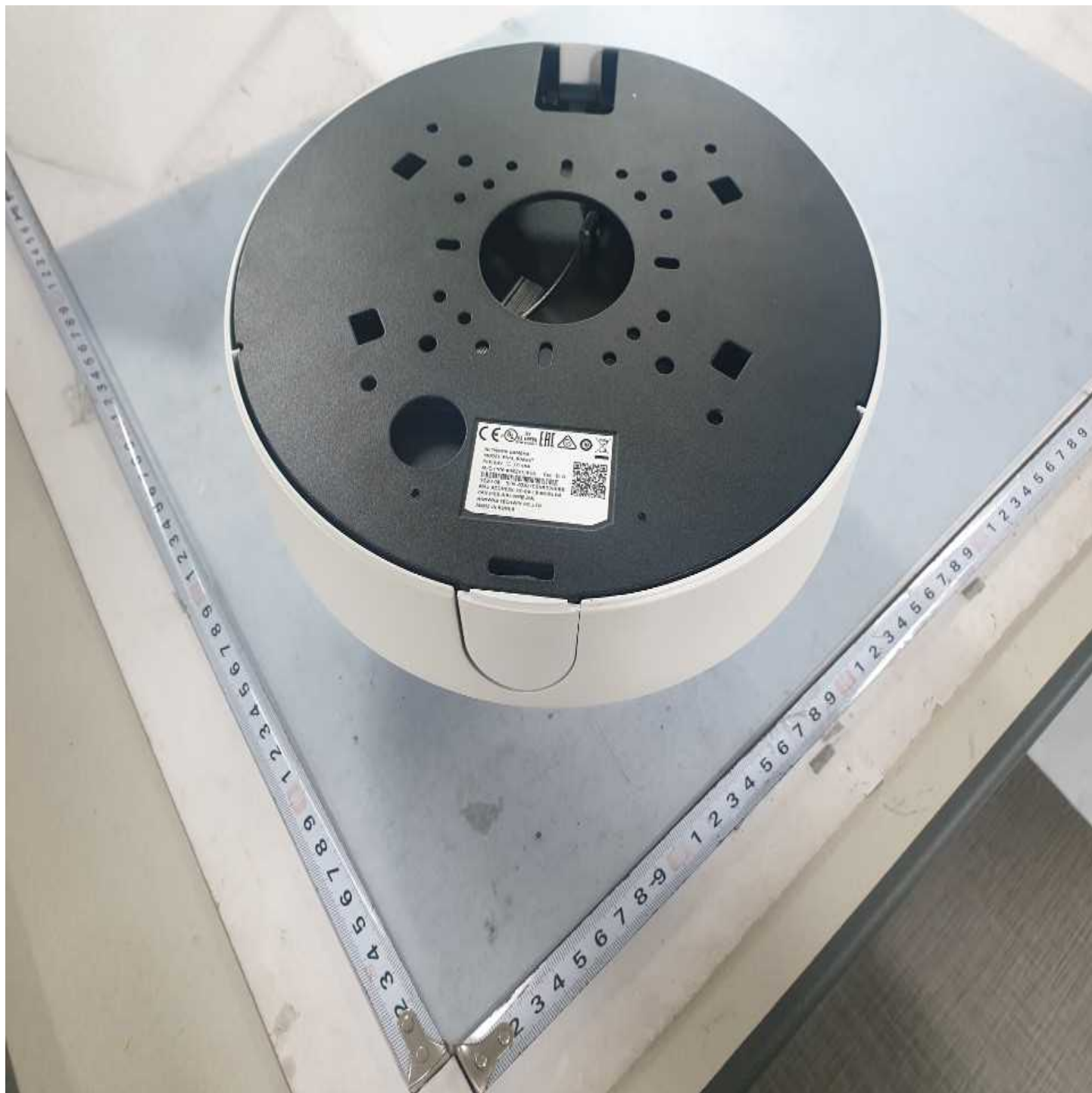
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------|
| <p align="center"><b>ATTACHMENT TO TEST REPORT IEC 60950-22</b><br/> <b>NATIONAL DIFFERENCES</b><br/> <b>Information Technology Equipment – Safety – Part 22: Equipment to be Installed Outdoors</b><br/> <b>Part 1: General requirements</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                  |
| Differences according to .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | CSA/UL 60950-22:2017, Issued for Canada and USA; |
| Attachment Form No.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | IEC60950_22B                                     |
| Attachment Originator .....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | UL                                               |
| Master Attachment.....                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Date 2017_03                                     |
| <p>Copyright © 2014 Worldwide System for Conformity Testing and Certification of Electrotechnical Equipment and Components (IECEE), Geneva, Switzerland. All rights reserved.</p> <p>This publication may be reproduced in whole or in part for non-commercial purposes as long as the IECEE is acknowledged as copyright owner and source of the material. IECEE takes no responsibility for and will not assume liability for damages resulting from the reader's interpretation of the reproduced material due to its placement and context.</p> <p>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.</p> <p>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.</p> |                                                  |

| IEC 60950-22 - Canada and US National Differences |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                 |         |
|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause                                            | Requirement + Test                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Result - Remark | Verdict |
| 1.2                                               | For protection of ITE against direct lightning strikes, reference is made to NFPA 780 and CAN/CSA-B72-M87 (R2003) for additional requirements.                                                                                                                                                                                                                                                                                                                                                                                                                |                 | N/A     |
| 2                                                 | All references to IEC 60950-1 in this standard are replaced by the equivalent UL 60950-1 and CSA 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 sub-clauses in IEC 60950-1 are to the second edition. If the relevant clause or subclause has been renumbered in IEC 60950-1, second edition, the first edition reference is identified in parentheses directly after the second edition reference. |                 | P       |
| 4                                                 | Applicable parts of Chapter 8 of the NEC and Rules 54 and 60 of the CEC may be applicable to ITE installed outdoors with connections to communication systems.                                                                                                                                                                                                                                                                                                                                                                                                |                 | N/A     |
| 4.2.1                                             | Power supply cords are to be suitable outdoor use type as required by Section 400-4 of the NEC and Rule 4-012 of the CEC, i.e., marked "water resistant," "outdoor," "W" or "W-A."                                                                                                                                                                                                                                                                                                                                                                            |                 | N/A     |
| 4.2.1                                             | Surge Arrestors and Transient Voltage Surge Suppressors installed external to the ITE are required to comply with the appropriate NEC and CEC requirements.                                                                                                                                                                                                                                                                                                                                                                                                   |                 | N/A     |

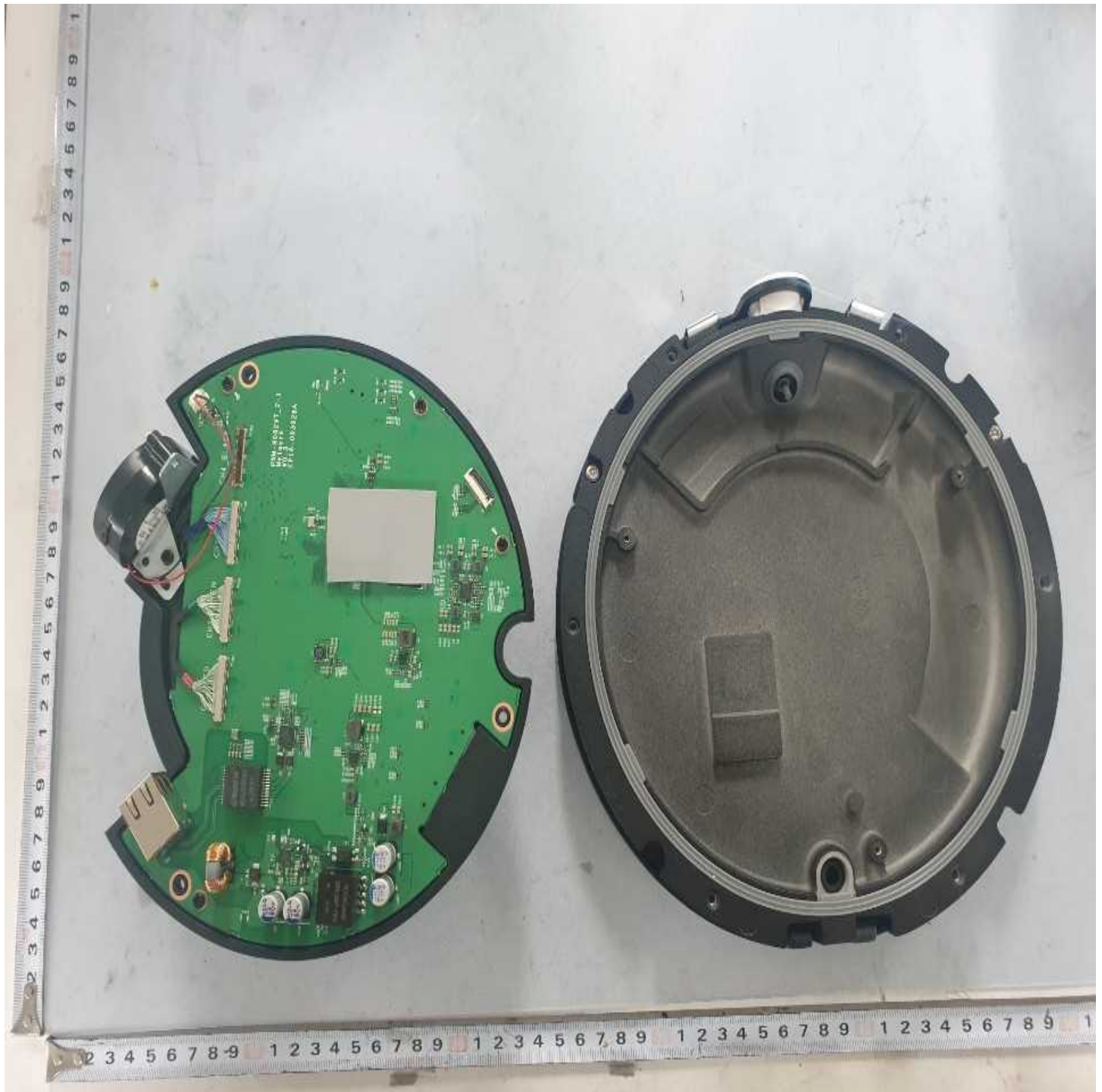
| IEC 60950-22 - Canada and US National Differences |                                                                                                                                                                                                                                                                                                                      |                 |         |
|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------|
| Clause                                            | Requirement + Test                                                                                                                                                                                                                                                                                                   | Result - Remark | Verdict |
| 5                                                 | Outdoor Enclosures are required to be classified and marked in accordance with UL 50 or 50E, or CAN/CSA C22.2 No. 94 or 94.2                                                                                                                                                                                         |                 | P       |
| 6.3                                               | Receptacles, rated 125-V, single phase, 15- or 20-A accessible to either ordinary, instructed, or skilled persons shall be provided with GFCI Protection for Personnel if the equipment containing the receptacles is installed outdoors. The protection devices shall comply with UL 943, and CAN/CSA C22.2 No.144. |                 | N/A     |
| 7                                                 | Applicable parts of the NEC, NFPA 70; the National Electrical Safety Code, ANSI/IEEE C2; and Canadian Electrical Code, Part I, CSA C22.1; Canadian Electrical Code, Part III, CSA C22.3, are required, as appropriate.                                                                                               |                 | P       |
| 7                                                 | Wiring terminals intended to supply Class 2 outputs are required per Article 725 of the NEC and Rule 16 of the CEC to be marked.                                                                                                                                                                                     |                 | N/A     |
| 11                                                | Requires stationary installations of storage batteries external to the ITE to comply with Article 480 of the NEC and Rule 26-540 of the CEC.                                                                                                                                                                         |                 | N/A     |





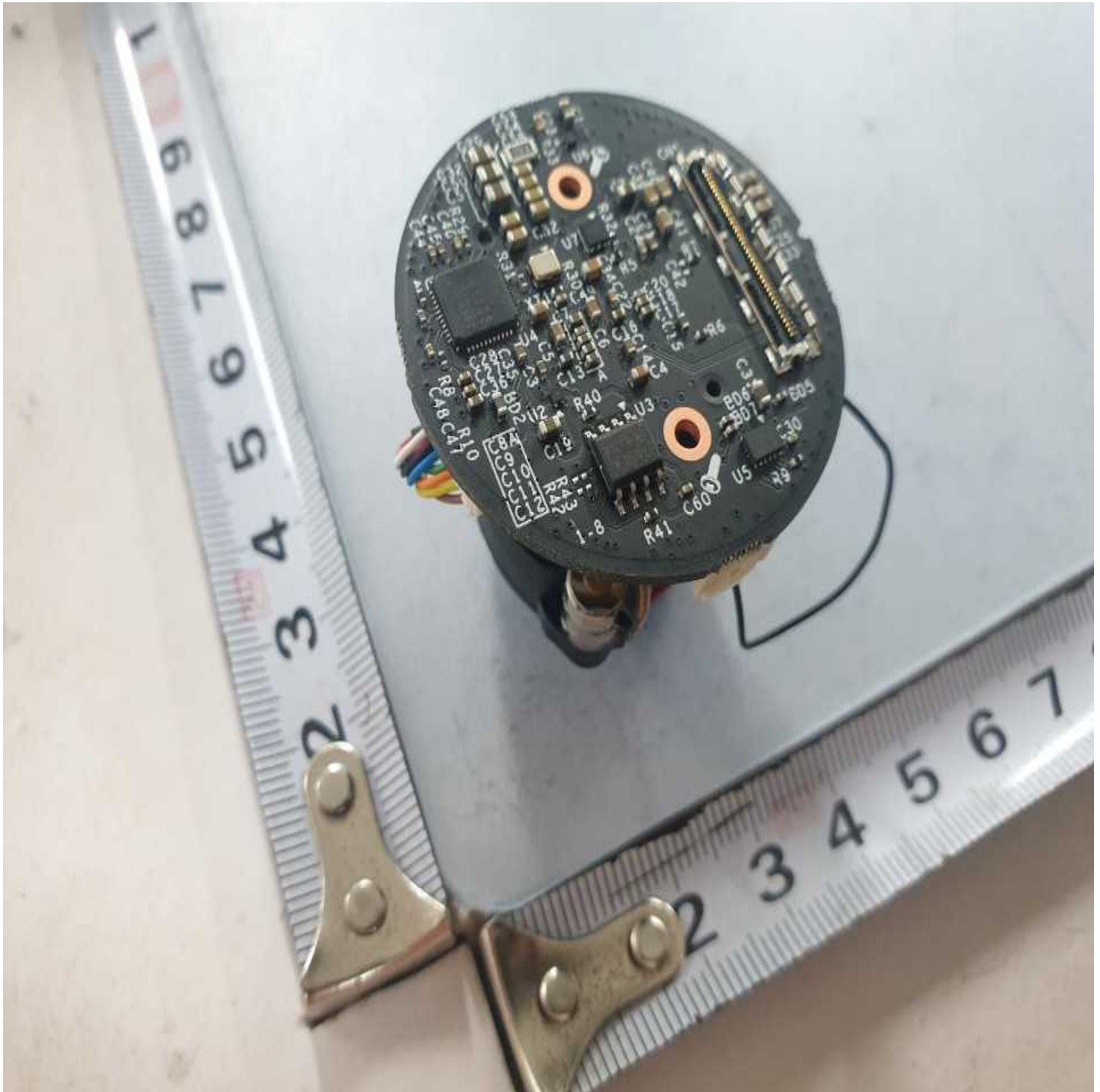




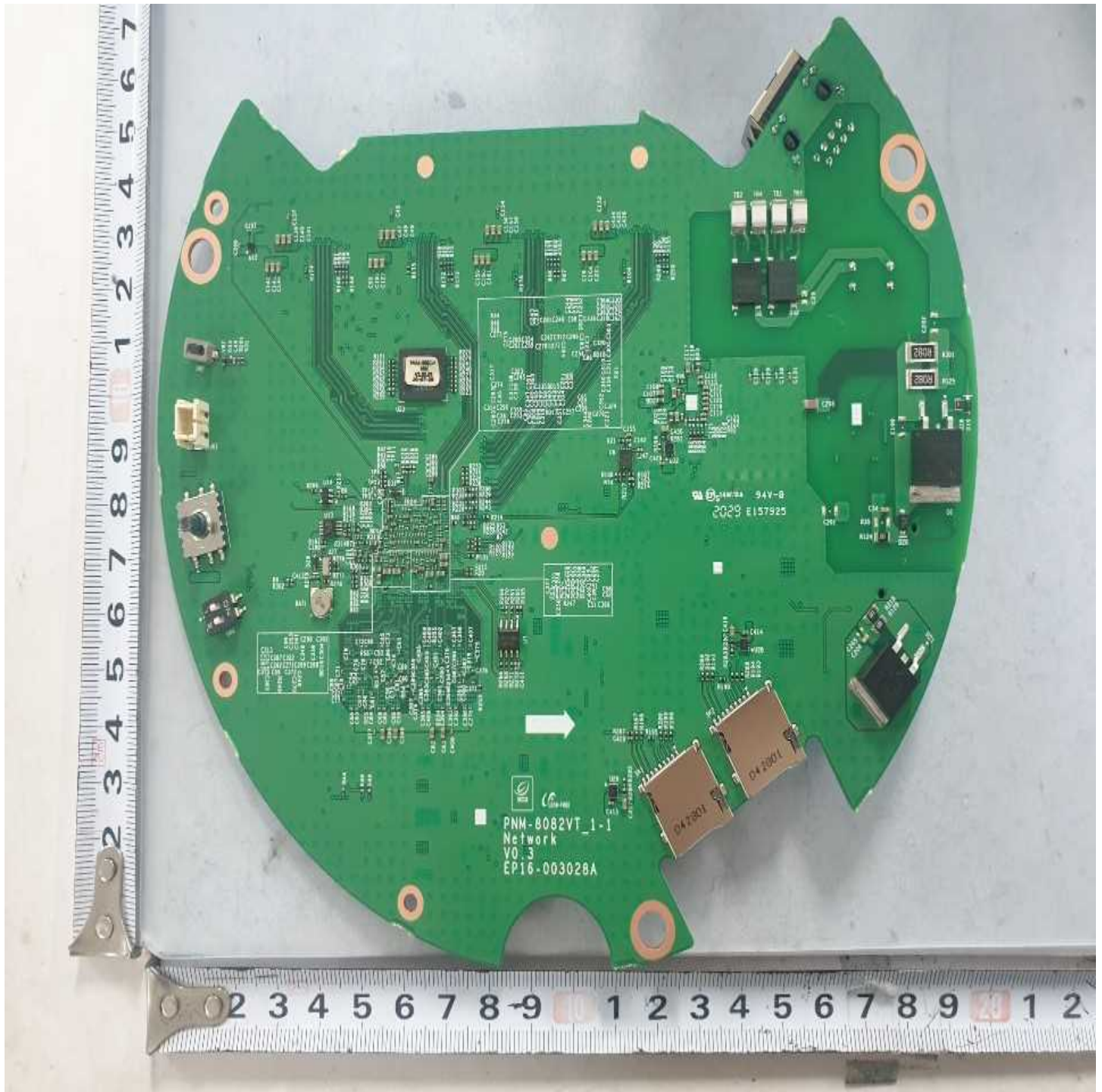


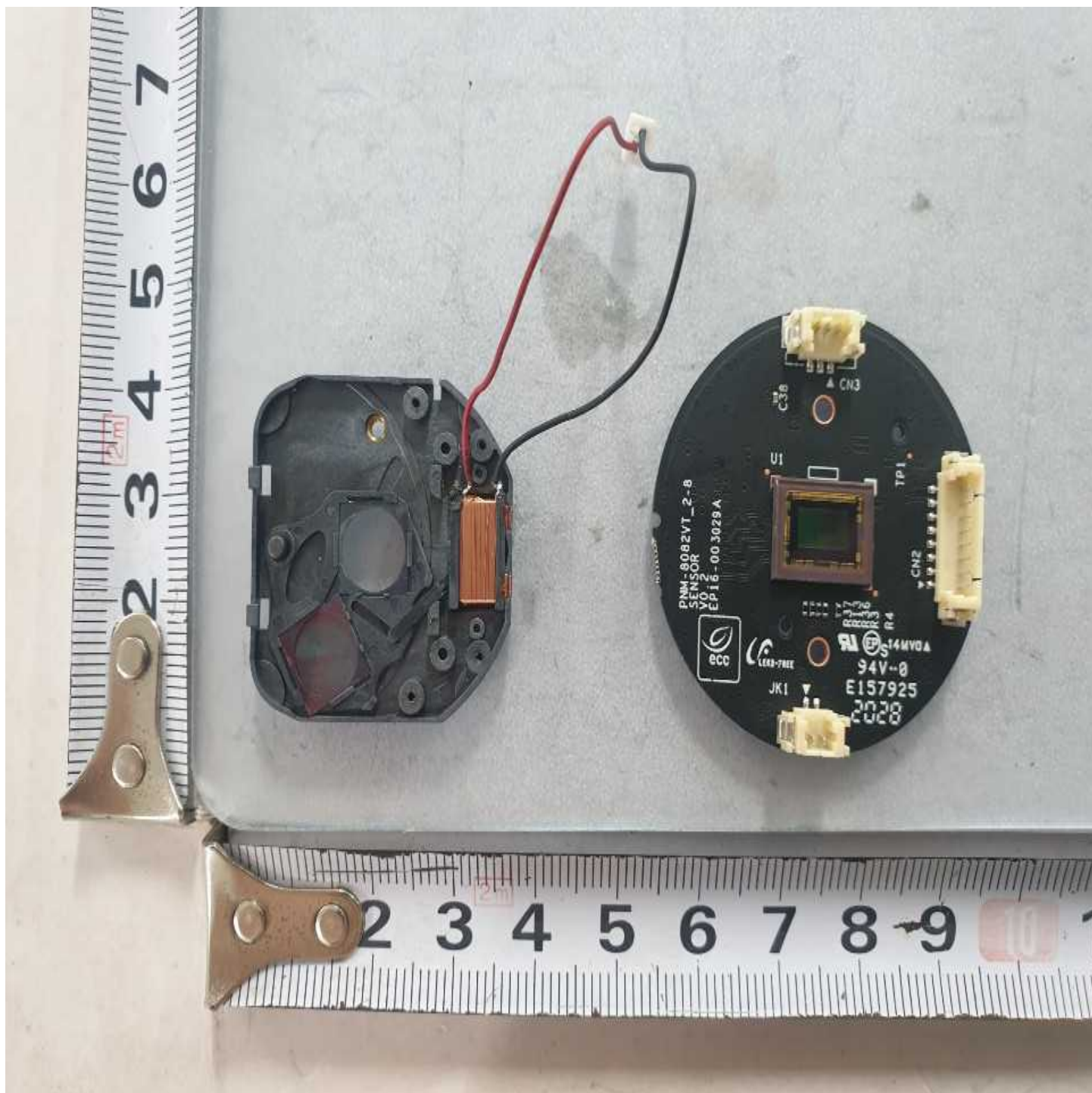


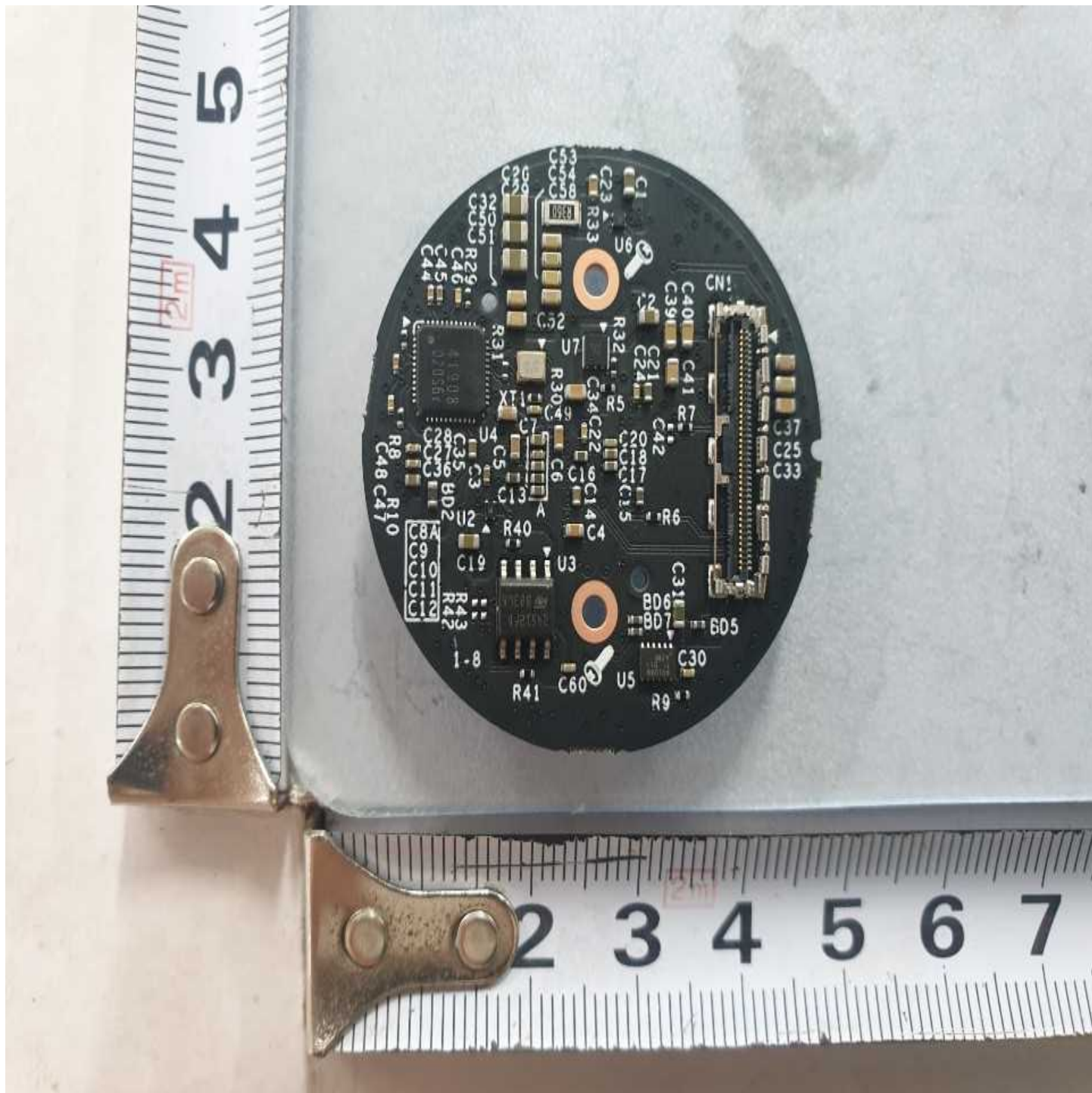


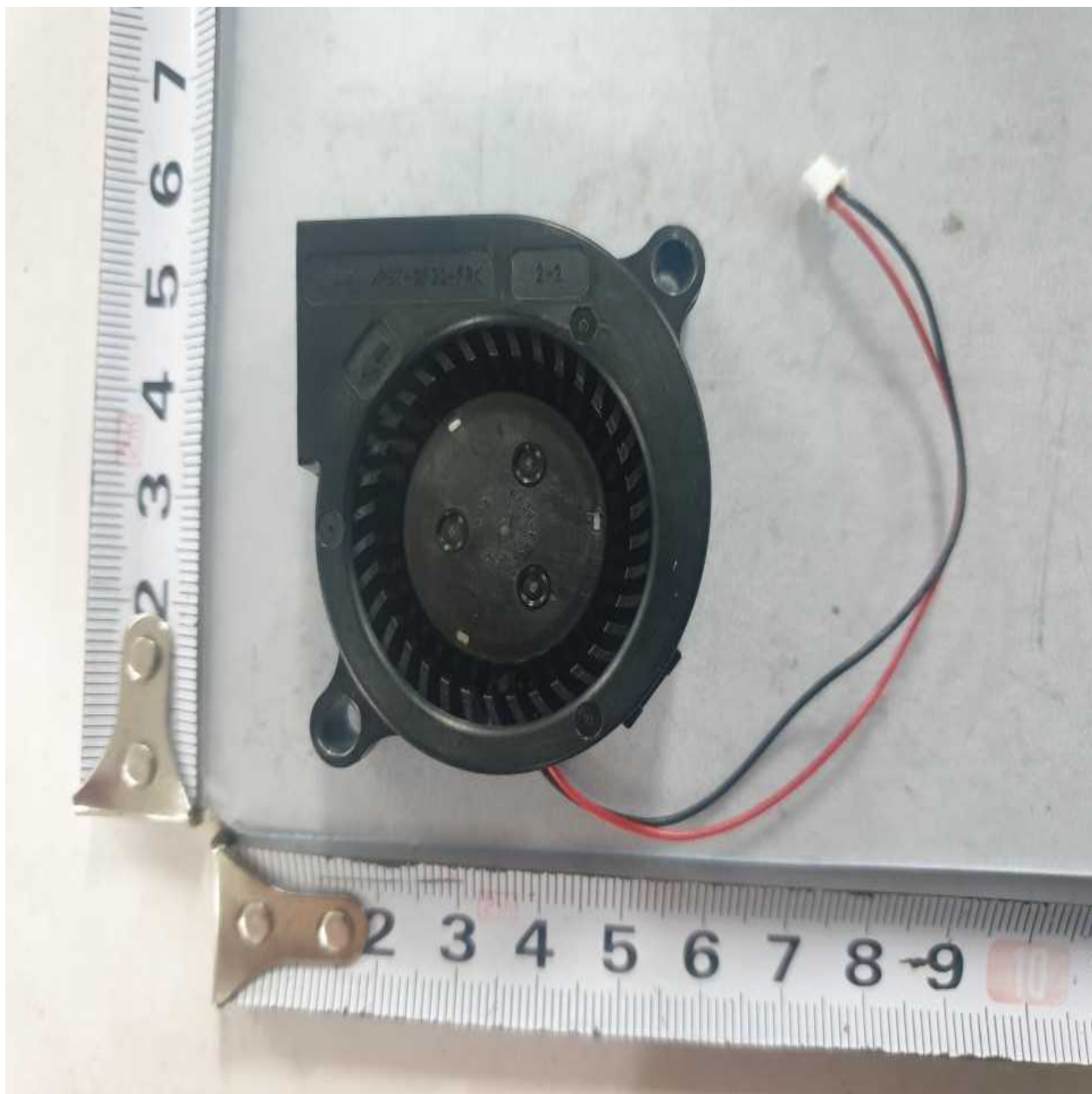






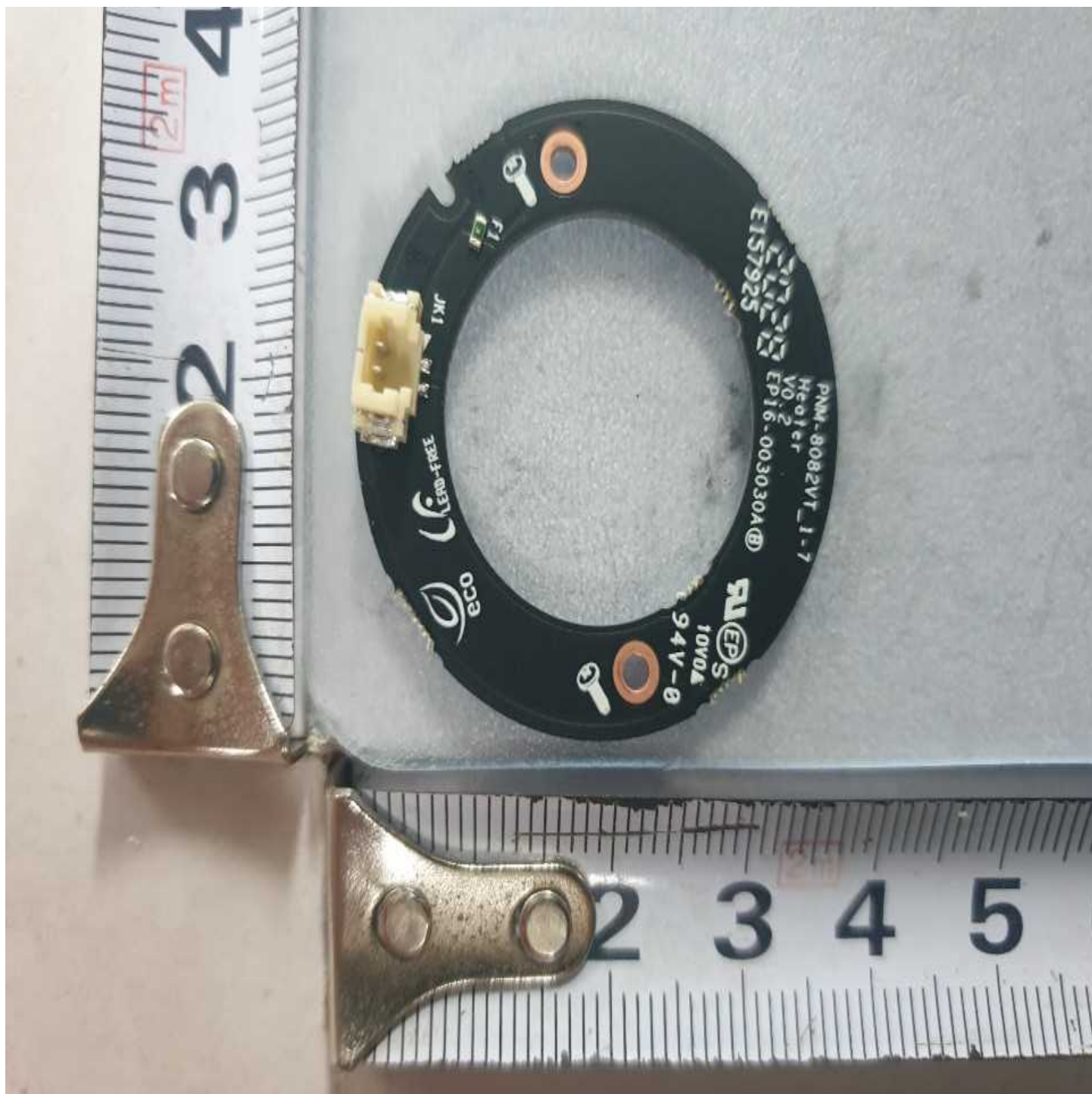












**Test Record No. 1**

1. Test result relate only to the items tested.
2. The manufacturer submitted representative production samples of OUTDOOR NETWORK CAMERA, PNM-8082VT.
3. Only the test listed were considered necessary.

The following tests were conducted:

| <b>Tests performed (name of test and test clause):</b>                                              | <b>Testing location:</b><br>CTK Co., Ltd., 386-1 Ho-dong Yongin-shi, Kyungki-do, 449-100, Korea |
|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
| MAXIMUM OPERATING TEMPERATURE FOR MATERIALS, COMPONENTS AND SYSTEMS (5.4.1.4, 6.2, 9.2.5 ANNEX B.2) |                                                                                                 |
| DETERMINATION OF WORKING VOLTAGE (5.4.1.8)                                                          |                                                                                                 |
| WALL OR CEILING MOUNTING TESTS (8.7)                                                                |                                                                                                 |
| INPUT TEST: SINGLE PHASE (B.2.5)                                                                    |                                                                                                 |
| SIMULATED ABNORMAL OPERATING CONDITIONS (B.3)                                                       |                                                                                                 |
| SIMULATED SINGLE FAULT CONDITIONS (B.4)                                                             |                                                                                                 |
| PROTECTION CIRCUITS FOR BATTERIES (ANNEX M.3.2)                                                     |                                                                                                 |
| <b>The following tests were waived:</b>                                                             | <b>Rationale for Waiving</b>                                                                    |
|                                                                                                     |                                                                                                 |
|                                                                                                     |                                                                                                 |

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 supplements are provided as part of this Test Record. NOTE: These supplements are only available to the Applicant via the myUL™ Client Portal.

| Type      | Supplement Id | Description              |
|-----------|---------------|--------------------------|
| Datasheet | 02-01         | Datasheet                |
| Datasheet | 02-02         | Datasheet (Outdoor test) |

