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:

| |
|---|
| E158873-volX13-Index |
| E158873-20211116-CertificateofCompliance |
| E158873-A6107-DescriptionUL |
| Figure-11-Total |
| E158873-A6107-TestRecordUL |

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Times change, Trust Remains™

| File | | Volume | Page | Date: |
|---|---|---|---|---|
| E158873 | Index | X13 | 1 | 14-Dec-21 |

# Index

| Product Type | Model/Type Reference | Report Reference # | Status |
|---|---|---|---|
| NETWORK VIDEO RECORDER | XRN-6410B4, XRN-3210B4 | E158873-A6027-UL | |
| NETWORK VIDEO RECORDER | PRN-6410B4, PRN-3210B4, XRP-4210B4, PRN-6400B4, PRN-3200B4 | E158873-A6028-UL | |
| NETWORK VIDEO RECORDER | XRN-6410DB4 | E158873-A6029-UL | |
| NETWORK VIDEO RECORDER | PRN-6410DB4, XRP-4310DB4, PRN-6400DB4 | 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, TNV-8011C | E158873-A6035-UL | |
| OUTDOOR NETWORK CAMERA | PNM-8082VT | E158873-A6036-UL | |
| THERMAL CAMERA | TNM-3620TDY | E158873-A6037-UL | |
| DIGITAL VIDEO RECORDER | HRX-1621* (* is Blank or N or P : P=PAL, N=NTSC) | E158873-A6038-UL | |
| NETWORK CAMERA | PNM-9022V | E158873-A6039-UL | |
| NETWORK CAMERA | PNM-9322VQP | E158873-A6040-UL | |
| DIGITAL VIDEO RECORDER | HRX-821* (* is Blank or N or P : P=PAL, N=NTSC) | E158873-A6041-UL | |
| NETWORK I/O BOX | SPM-4210 | E158873-A6042-UL | |
| NETWORK VIDEO RECORDER | XRN-2011*, XRN-2010*, XRN-3010*, XRN-1610*, XRN-2010P/DM, XRN-3010P/DM, XRN-3010A, XRN-2011A, XRN-2010A, XRN-1610A (* is blank or N or P: N=NTSC, P=PAL) | E158873-A6043-UL | |
| PUBLIC VIEW MONITOR | SMT-2730PV | E158873-A6044-UL | |
| PUBLIC VIEW MONITOR | SMT-3230PV | E158873-A6045-UL | |
| CAMERA HOUSING | SHB-9000H | E158873-A6046-UL | |
| PUBLIC VIEW MONITOR | SMT-1030PV | E158873-A6047-UL | |
| NETWORK CAMERA | XNP-9250R, XNP-8250R, XNP-6400R | E158873-A6049-UL | |
| NETWORK CAMERA | XNP-9250, XNP-8250, XNP-6400 | E158873-A6050-UL | |
| NETWORK CAMERA | ONO-9081R | E158873-A6051-UL | |
| NETWORK CAMERA | ONV-9081R | E158873-A6052-UL | |
| NETWORK VIDEO RECORDER | XRN-1620B2 | E158873-A6053-UL | |

| | | | |
|---|---|---|---|
| NETWORK VIDEO RECORDER | XRN-1620SB1 | E158873-A6054-UL | |
| NETWORK VIDEO RECORDER | XRN-820S | E158873-A6055-UL | |
| NETWORK CAMERA | SCO-6020 | E158873-A6056-UL | |
| NETWORK CAMERA | TNF-9010 | E158873-A6057-UL | |
| NETWORK VIDEO RECORDER | PRN-3210B2, PRN-1610B2, XRN-6410RB2, XRN-3210RB2, XRN-6410B2, XRN-3210B2, PRN-3200B2, PRN-3205B2, PRN-1600B2, PRN-1605B2 | E158873-A6058-UL | |
| NETWORK CAMERA | PNB-A6001 | E158873-A6059-UL | |
| NETWORK CAMERA | PND-A6081RV, PND-A6081RF | E158873-A6060-UL | |
| NETWORK CAMERA | PNO-A6081R | E158873-A6061-UL | |
| LENS MODULE | SLA-T2480*, SLA-T2480V*, SLA-T4680*, SLA-T4680V*, SLA-T4680D, SLA-T4680DW, SLA-T4680DS, SLA-T2415, SLA-T2815B, SLA-T2480A, SLA-T2480VA, SLA-T4680A, SLA-T4680VA (* is blank or N or P: N = NTSC, P=PAL) | E158873-A6062-UL | |
| NETWORK CAMERA | PNV-A6081R | E158873-A6063-UL | |
| NETWORK CAMERA | XNB-6001*, XNB-H6240A, XNB-H6242A | E158873-A6064-UL | |
| NETWORK THERMAL CAMERA | TNO-3030T, TNO-3020T, TNO-3010T, TNO-3040T, TNO-3050T | E158873-A6067-UL | |
| NETWORK CAMERA | QNP-6320, QNP-6250, QNP-6251 | E158873-A6068-UL | |
| NETWORK CAMERA | QNP-6320H, QNP-6250H | E158873-A6069-UL | |
| NETWORK CAMERA | XNV-C9083R, XNV-C8083R, XNV-C7083R, XNV-C6083R | E158873-A6070-UL | |
| NETWORK CAMERA | TID-600R | E158873-A6071-UL | |
| DIGITAL VIDEO RECORDER | HRX-1632, HRX-835 | E158873-A6072-UL | |
| LED MONITOR | SMT-4343 | E158873-A6073-UL | |
| NETWORK CAMERA | TNO-7180R | E158873-A6075-UL | |
| NETWORK CAMERA | XND-C9083RV, XND-C8083RV, XND-C7083RV, XND-C6083RV | E158873-A6076-UL | |
| NETWORK CAMERA | PNM-9031RV | E158873-A6077-UL | |
| NETWORK CAMERA | QNO-7082R | E158873-A6078-UL | |
| NETWORK CAMERA | QND-7082R | E158873-A6080-UL | |
| NETWORK CAMERA | QNV-7082R | E158873-A6081-UL | |
| NETWORK CAMERA | XNO-C9083R, XNO-C8083R, XNO-C7083R, XNO-C6083R | E158873-A6082-UL | |
| NETWORK CAMERA | XNV-9083R, XNV-8083R, XNV-8093R, XNV-6083R | E158873-A6083-UL | |
| NETWORK CAMERA | XND-9083RV, XND-8083RV, XND-8093RV, XND-6083RV | E158873-A6084-UL | |
| NETWORK CAMERA | QNO-7032R, QNO-7022R, QNO-7012R | E158873-A6088-UL | |
| NETWORK CAMERA | XNB-9003, XNB-8003, XNB-6003 | E158873-A6089-UL | |

| | | | |
|---|---|---|---|
| NETWORK CAMERA | XNO-9083R, XNO-8083R, XNO-6083R | E158873-A6091-UL | |
| NETWORK CAMERA | QNV-7012R, QNV-7022R, QNV-7032R | E158873-A6092-UL | |
| NETWORK CAMERA | QND-7012R, QND-7022R, QND-7032R | E158873-A6093-UL | |
| NETWORK CAMERA | QNP-6320R, QNP-6250R | E158873-A6094-UL | |
| NETWORK CAMERA | LNO-6072R | E158873-A6102-UL | |
| NETWORK CAMERA | LNV-6012R, LNV-6022R, LNV-6032R, ANV-L6012R | E158873-A6103-UL | |
| NETWORK CAMERA | LNV-6072R | E158873-A6104-UL | |
| NETWORK CAMERA | LND-6012R, LND-6022R, LND-6032R | E158873-A6105-UL | |
| NETWORK CAMERA | LND-6072R | E158873-A6106-UL | |
| NETWORK CAMERA | LNO-6012R, LNO-6022R, LNO-6032R, ANO-L6012R, ANO-L6022R | E158873-A6107-UL | |
| NETWORK CAMERA | TNV-7010RC, TNV-7011RC | E158873-A6109-UL | |

# CERTIFICATE OF COMPLIANCE

| | |
|---|---|
| **Certificate Number** | UL-CA-2144303-1 |
| **Report Reference** | E158873-20211116 |
| **Date** | 20-Dec-2021 |
| **Issued to:** | Hanwha Techwin Co Ltd<br>6, Pangyo-ro 319beon-gil, Bundang-gu Seongnam-si, Gyeonggi-do 13488<br>Republic of Korea |
| **This is to certify that representative samples of** | AZOT7 - Audio/Video, Information and Communication Technology Equipment Certified for Canada<br>See Addendum Page for Product Designation(s).<br><br>Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate. |
| **Standard(s) for Safety:** | CSA C22.2 NO. 62368-1, 3rd Ed., Issue Date: 2019-12-13 |
| **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

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# CERTIFICATE OF COMPLIANCE

**Certificate Number** UL-CA-2144303-1
**Report Reference** E158873-20211116
**Date** 20-Dec-2021

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

| Model | Category Description |
|---|---|
| ANO-L6012R | NETWORK CAMERA |
| ANO-L6022R | NETWORK CAMERA |
| LNO-6012R | NETWORK CAMERA |
| LNO-6022R | NETWORK CAMERA |
| LNO-6032R | NETWORK CAMERA |

Bruce Mahrenholz, Director North American Certification Program

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# CERTIFICATE OF COMPLIANCE

| | |
|---|---|
| **Certificate Number** | UL-US-2152746-1 |
| **Report Reference** | E158873-20211116 |
| **Date** | 20-Dec-2021 |
| **Issued to:** | Hanwha Techwin Co Ltd<br>6, Pangyo-ro 319beon-gil, Bundang-gu Seongnam-si,<br>Gyeonggi-do 13488<br>Republic of Korea |
| **This is to certify that representative samples of** | AZOT - Audio/Video, Information and Communication Technology Equipment<br>See Addendum Page for Product Designation(s).<br><br>Have been investigated by UL in accordance with the Standard(s) indicated on this Certificate. |
| **Standard(s) for Safety:** | UL 62368-1, 3rd Ed., Issue Date: 2019-12-13 |
| **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.

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# CERTIFICATE OF COMPLIANCE

**Certificate Number** UL-US-2152746-1
**Report Reference** E158873-20211116
**Date** 20-Dec-2021

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

| Model | Category Description |
|---|---|
| ANO-L6012R | NETWORK CAMERA |
| ANO-L6022R | NETWORK CAMERA |
| LNO-6012R | NETWORK CAMERA |
| LNO-6022R | NETWORK CAMERA |
| LNO-6032R | NETWORK CAMERA |

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# UL TEST REPORT AND PROCEDURE

| | |
|---|---|
| **Standard:** | UL 62368-1, 3rd Ed, Issued: 2019-12-13 (Audio/video, information and communication technology equipment Part 1: Safety requirements)<br>CAN/CSA C22.2 No. 62368-1:19, 3rd Ed, Issued: 2019-12-13 (Audio/video, information and communication technology equipment Part 1: Safety requirements) |
| **Certification Type:** | Listing |
| **CCN:** | AZOT, AZOT7 (Audio/video, Information and Communication Technology Equipment) |
| **Complementary CCN:** | N/A |
| **Product:** | NETWORK CAMERA |
| **Model:** | LNO-6012R, LNO-6022R, LNO-6032R, ANO-L6012R, ANO-L6022R |
| **Rating:** | PoE (48 Vdc), 0.14 A |
| **Applicant Name and Address:** | 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.

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Prepared By: Lawrence Lee / Project Handler Reviewed By: HanQ Choi / Reviewer

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**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**

NETWORK CAMERA has been designed for INDOOR 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**

LNO-6012R is basic model.

LNO-6022R, LNO-6032R, ANO-L6012R, ANO-L6022R were identical to basic model exept model designation or color.

**Test Item Particulars**

| | |
|---|---|
| Product group | end product |
| Classification of use by | Instructed person |
| Supply Connection | not mains connected:<br>ES1 |
| Supply tolerance | None |
| Supply connection – type | PoE (Power over Ethernet) |
| Considered current rating of protective device | N/A |
| Equipment mobility | wall/ceiling-mounted |
| Over voltage category (OVC) | OVC I |
| Class of equipment | Class III |
| Special installation location | N/A |
| Pollution degree (PD) | PD 2 |
| Manufacturer’s specified Tma (°C) | 55 |
| IP protection class | IPX0 |
| Power systems | not AC mains |
| Altitude during operation (m) | 2000 m or less |
| Altitude of test laboratory (m) | 2000 m or less |
| Mass of equipment (kg) | 0.392 |

**Technical Considerations**

- The product was submitted and evaluated for use at the maximum ambient temperature (Tma) permitted by the manufacturer's specification of : 55 °C
- The product is intended for use on the following power systems : No direct connection
- Considered current rating of protective device as part of the building installation (A) : N/A
- Mains supply tolerance (%) or absolute mains supply : No direct connection
- The Risk Group of a lamp or lamp system (including LEDs) is : RG 1
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual

**Additional Information**

4790131769
- Standard Upgrade from UL/CSA 60950-1 to UL/CSA 62368-1 3rd Ed.
- This report is based on previously conducted testing and review of product construction of original and revision report (Refer to E158873-X1.A265). Refer to Section "Test performed - Input: Single-Phase (1.6.2), Determination of Working Voltage; Working Voltage Measurement (2.10.2), Battery (4.3.8), Heating (4.5.1, 1.4.12, 1.4.13), Component Failure (5.3.1, 5.3.4, 5.3.7)" covering parts of applicables performance tests and rationale for waived tests.
- 8.7 – WALL OR CEILING MOUNTING TESTS and B.2.5 – INPUT TEST: SINGLE PHASE were tested.
- Maximum Normal Load: Continuous operation with IR LED on.

4790206640
- Add model name; ANO-L6012R, ANO-L6022R.

**Additional Standards**

The product fulfills the requirements of: N/A

**Markings and Instructions**

| Clause Title | Marking or Instruction Details |
|---|---|
| Equipment identification marking – Manufacturer identification | Listee's or Recognized Company's 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) |
| Hard Copy | A. IMPORTANT<br>B. Please check 'Manuals' from out website, before connecting to the supply.<br>C. Company website URL (https://www.~~) |
| 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 (48 Vdc), 0.14 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. |
| **Special Instructions to UL Representative**<br>N/A | |

| BD1.0 | TABLE: Production-Line Testing Requirements | | | | | |
|---|---|---|---|---|---|---|
| **BD1.1** | **Electric Strength Test Special Constructions – Refer to Generic Inspection Instructions, Part AC for further information.** | | | | | |
| 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 |
| **BD1.2** | **Earthing Continuity Test Exemptions – This test is not required for the following models:** | | | | | |
| | All model | | | | | |
| **BD1.3** | **Electric Strength Test Exemptions – This test is not required for the following models:** | | | | | |
| | All model | | | | | |
| **BD1.4** | **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.** | | | | | |
| | All model | | | | | |

| BE1.0 | Sample and Test Specifics for Follow-Up Tests at UL | | | | |
|---|---|---|---|---|---|
| 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/ trademark | Type / model | Technical data | Product Category CCN(s) | Mark(s) of conformity | Supplement ID |
| Transparent cover enclosure (Plastic) | SABIC INNOVATIVEPLASTIC US LLC | HF1130R(f2) | Min. 1.5 mm thickness, V-2, 130 deg.C, see enclosure for dimension | QMFZ2 | UL (E121562) | |
| External side enclosure (Plastic) | COVESTRO DEUTSCHLAND AG [PC RESINS] | 6165 X + (z)(f1) | Min. 1.6 mm thickness, V-0, 115 deg.C, see enclosure for dimension | QMFZ2/8 | UL (E41613) | |
| Internal plastic parts (Interface) | LOTTE ADVANCED MATERIALS CO LTD | NH-1035(+) | Min. 1.5 mm thickness, rated Min. V-0, 80 deg.C. | QMFZ2/8 | UL (E115797) | |
| Transformer (T2) | SHENZHEN GROUP-TEK ELECTRONICS TECHNOLOGY CO., LTD | PDT2431SR | 130 deg.C, see enclosure for more detail. | - | - | |
| 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) | |
| Thermal Pad | KOMOTECH CO LTD | KGP-1 | Min. 0.2 mm thickness, rated V-0, 150 deg.C | QMFZ2/8 | UL (E245303) | |
| Internal Wiring (Secondary) | Interchangeable | Interchangeable | Marked VW-1; Min. 30 V, 80 deg.C | AVLV2 | UL | |
| Connectors and Receptacles (Secondary circuits) | Interchangeable | Interchangeable | - | ECBT2 | UL | |

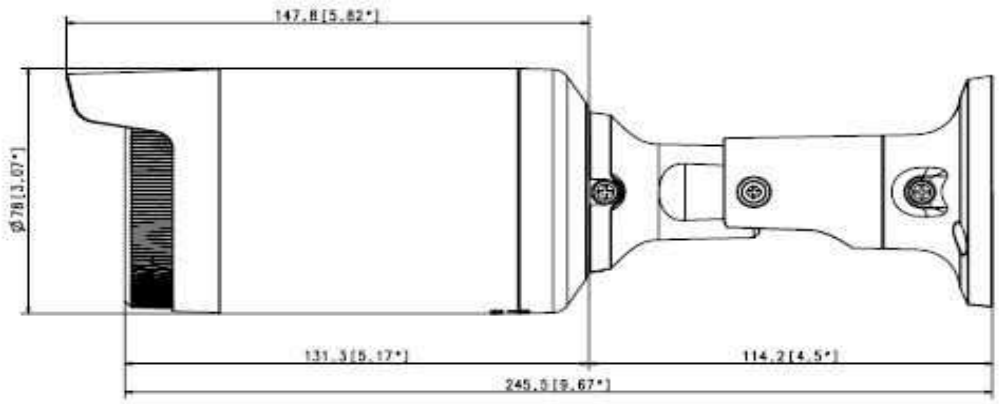
| | | | | | | |
|---|---|---|---|---|---|---|
| Connectors and Receptacles (Secondary circuits) - Alternate | Interchangeable | Interchangeable | Copper alloy pins housed in bodies of plastic rated Min. V-2 | QMFZ2 | UL | |
| FPWB | Interchangeable | Interchangeable | Min. V-0, 80 deg.C. | QMFZ2 or QMTS2 | UL | |
| PWB | Interchangeable | Interchangeable | Min. V-0, 130 deg.C | ZPMV2 | UL | |
| Label | Interchangeable | Interchangeable | Min. 55 deg.C if max. surface temperature not specified. | PGDQ2 or PGJI2 | UL | |
| IR LED (2 EA, LD1, LD2) | LITEON OPTOELECTRONICS | LTE-R38386A-S-SS | Vf=2.5Vdc(max), Angle: 90 deg | - | - | |

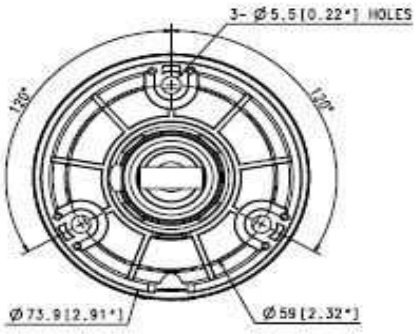
# Enclosures

| Type | Supplement Id | Description |
|---|---|---|
| Photographs | 03-01 | External View - 1 |
| Photographs | 03-02 | External View - 2 |
| Photographs | 03-03 | Internal View - 1 |
| Photographs | 03-04 | Internal View - 2 |
| Photographs | 03-05 | Power board - Top |
| Photographs | 03-06 | Power board - Bottom |
| Diagrams | 04-01 | Diagram |
| Manuals | 06-01 | Manual |
| Miscellaneous | 07-01 | Dual language safety labeling CRD |
| Miscellaneous | 07-02 | Transformer (T2) Specification |
| Miscellaneous | 07-03 | Label |

## LNO-6012R/6022R/6032R/LNO-6072R

Unit : mm [inch]



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 , 0.14A.
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.

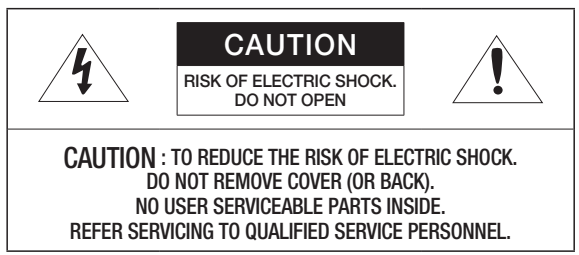
## WARNING

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 OPENNINGS 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




## 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.

Please use the input power with just one camera and other devices must not be connected.

**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 802-3af shall be a UL Listed device with the output evaluated as a Limited Power Source as defined in UL60950-1.**

**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.

## WARNING

To prevent damage which may caused by IR LED, don't stare at operating lamp.

For below models only.

LND-6012R/LND-6022R/LND-6032R/LND-6072R

LNO-6012R/LNO-6022R/LNO-6032R/LNO-6072R

LNV-6012R/LNV-6022R/LNV-6032R/LNV-6072R

| Risk Group 1 |
| --- |
| **WARNING IR emitted from this product.<br>Do not stare at operating lamp.** |
| Product tested against IEC 62471 |

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

Compliance Review Conducted by: Lawrence Lee Date

Printed Name Signature

Where a clause specifies a dimension, the measurement instrument(s) used to measure the dimension shall be identified (this should correlate to the measurement instrument list at the beginning of the package). The applicable dimension may be recorded in the comment column, if necessary as determined by the Level 2 Staff or Level 3 Reviewer.

CONSTRUCTION COMPLIANCE REVIEW RECORD

Sample Identification -

| Sample Card No. | Date Received | Sample No. | Manufacturer, Product Identification and Ratings |
|---|---|---|---|
| N/A | 2021-10-01 | #1 | Manufacturer: HANWHA TECHWIN<br>Product: NETWORK CAMERA<br>Model: LNO-6012R<br>Rating: PoE (48 Vdc), 0.14 A |
| N/A | 2021-10-01 | #2 | Manufacturer: HANWHA TECHWIN<br>Product: NETWORK CAMERA<br>Model: LNO-6032R<br>Rating: PoE (48 Vdc), 0.14 A |

Measurement Instrument Information -

| Inst. ID No. | Instrument Type | Function/Range | Last Cal. Date | Next Cal. Date |
|---|---|---|---|---|
| C-S1-D03 | Digital Vernier Caliper | 200 mm | 2021-03-03 | 2022-03-03 |
| C-S1-B01 | Electronic Balance | 100000g | 2021-03-06 | 2022-03-06 |

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

| Inst. ID No. | Make/Model/Serial Number/Asset No. |
|---|---|
| - | - |



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Compliance Review Conducted by: Lawrence Lee Date

Printed Name Signature

CONSTRUCTION COMPLIANCE REVIEW:

The sample was reviewed for compliance with the construction requirements in the following Standard and compliance with applicable construction requirements is noted below.

| | | | |
|---|---|---|---|
| Standard | CSA C22.2 NO. 62368-1, AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT - PART 1: SAFETY REQUIREMENTS | Edition/ Revision Date | Edition 3, Issue Date 12/13/2019 |
| Standard | SCC Requirements and Guidance – Product Certification Body Accreditation Program | Edition/ Revision Date | 2nd/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.<br><br>If the product standard provides the exact translation, the evidence must match the exact translation.<br><br>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 |



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Compliance Review Conducted by: Lawrence Lee Date

Printed Name Signature

| 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. 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><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 |



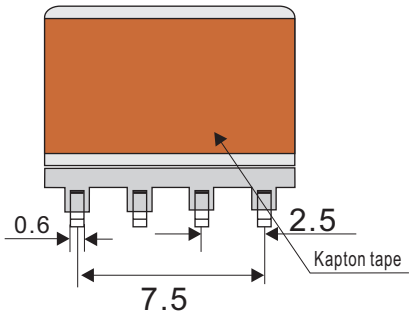
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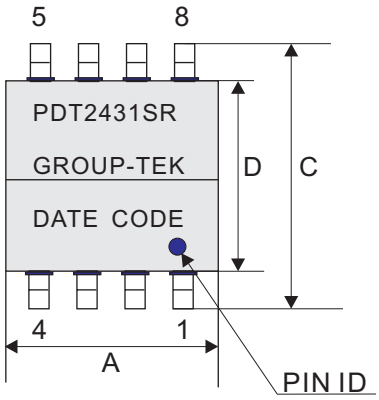
The following Page(s) are related to Miscellaneous-02. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

## 2. Mechanical Dimensions:

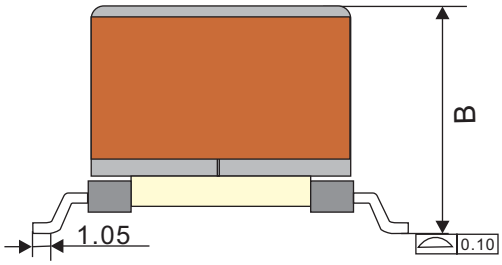
### FRONT VIEW




### TOP VIEW




### SIDE VIEW



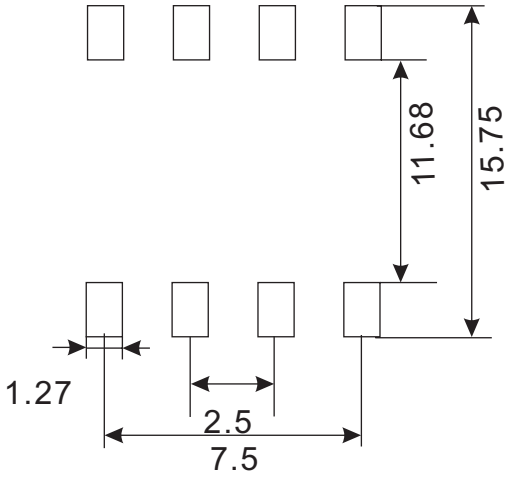

Note:
1.Wrap 2Ts of 6mm tape around the finished part.

Unit: mm

| A MAX | B MAX | C MAX | D TYP |
|---|---|---|---|
| 12.7 | 11.43 | 15.24 | 10.60 |

### SUGGESTED PAD LAYOUT

Unit: mm Tolerances:+/-0.2




## 3.Electrical Characteristics :

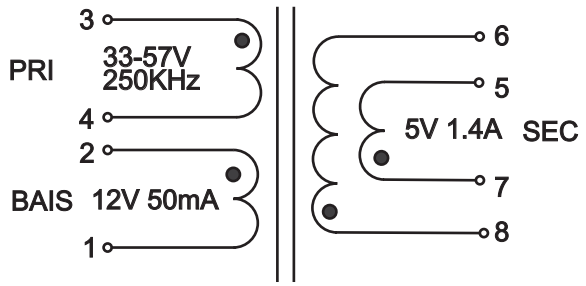
| Specifications Test: at 25 °C. Operating Temperature: -40 to +125°C | | | |
|---|---|---|---|
| NO. | ITEM | TEST CONDITION | SPECIFICATION |
| 1 | Inductance | (3-4)@200kHZ, 0.1v | 155uH+/-10%. |
| 2 | Inductance | (2-1)@200kHZ, 0.1v | 30uH+/-15%. |
| 3 | Inductance | (7-5)//(8-6)@200kHZ, 0.1v | 5.3uH+/-15%. |
| 4 | Leakage Inductance | (3-4) with shorted other@200kHZ, 0.1v | 3.6uH MAX. |
| 5 | DCR | (3-4) @ 25°C | 0.414 Ω Max. |
| 6 | | (7+8)-(5+6) @ 25°C | 0.06Ω Max. |
| 7 | | (2-1) @ 25°C | 0.822Ω Max. |
| 8 | HI-POT | PRI TO SEC | 1500Vac 1mA 3Sec. |
| 9 | T/R | (3-4):(9+10-7+8):(2-1) | 33:6:14±2%. |

## 5.Winding Information:

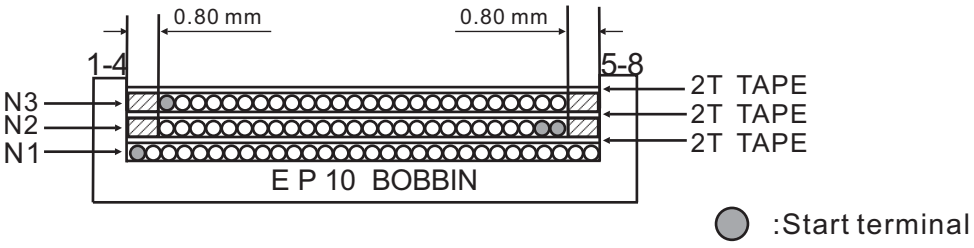
| WINDING SEQ. | ST-FN | WIRE/FOIL | TURNS | WRAP INSUL. | MARGIN TAPE | SLEEVE | NOTE |
|---|---|---|---|---|---|---|---|
| 1 | 3--4 | 0.30mm 2UEW | 33 | 2T w6.0mm | N/A | N/A | 1 |
| 2 | 8--6<br>7--5 | 0.30mm 2UEW R<br>0.30mm 2UEW N | 6 | 2T w6.0mm | 2T W0.80mm | N/A | 1 |
| 3 | 2--1 | 0.23mm 2UEW | 14 | 2T w6.0mm | 2T W0.80mm | N/A | 1 |

NOTE :
1. -Place the bobbin pin 1 right side of operator.

## 6.Schematic:




## 7.Winding construction



## 8.Material List

| NO. | ITEM. | MATERIALS | SUPPLIERS/MANUFACTURES | UL FILE NO. |
|---|---|---|---|---|
| 1 | BOBBIN | PHENOLIC T375J<br>UL RATING: 94V-0<br>THERMAL RATING:150°C | CHANG CHUN PLASTIC CO LTD. | QMFZ2.E59481 |
| 2 | CORE | Ep10 PG232A | High-tech Electronics Co.,Ltd. | N/A |
| 3 | WIRE | POLYURETHANE ENAMELED<br>TYPE NO: 2UEW 0.23mm 0.30mm<br>THERMAL RATING:180°C | Shing Shun Magnet wire(HuiZhou) Co.,Ltd | E255839 |
| 4 | TAPE | ADHESIVE POLYESTER<br>TAPE TYPE NO.:CT*(c)(g)<br>THERMAL RATING:130°C<br>yellow tape: for inner coils | JingJiang yahua pressure sensitive glue Co., Ltd | E165111 |
| 5 | TAPE | ADHESIVE POLYESTER TAPE<br>TYPE NO.:519(kapton tape)<br>THERMAL RATING:200°C Kapton<br>tape: for outside of core | Shen zhen yanda electronic Technology Co.,Ltd | E309332 |
| 6 | SOLDER | SN/CU: 99.3/0.7 | Gao Xin stannum industry Co.,Ltd | N/A |
| 7 | Glue | E-500(TX)<br>THERMAL RATING:130°C | Dong Guan city eatto electronic material Co.,Ltd | E218090 |
| 8 | INK | VIC-120 | Shenshen Huarui samwo group Co.,Ltd | N/A |

## 9.PACKING INFORMATION:

| DESCRIPTION | QTY |
|---|---|
| PIECES PER REEL | 250 |
| PIECES PER POCKET | 1 |
| PIECES PER BOX | 750 |
| REEL PER BOX | 3 |
| GROSS WEIGHT PER BOX(KG) | TBD |
| NET WEIGHT PER BOX(KG) | TBD |


ITE
US LISTED
NETWORK CAMERA, LNO-6012R
PoE(48V ⎓ ) 0.14A
M/C: LNO-6012R/VUS Fac. ID: V
[DATE] S/N: ABCDEABCDEABCDE
MAC ADDRESS: XX-XX-XX-XX-XX-XX
CAN ICES-3(A)/NMB-3(A)
HANWHA TECHWIN CO.,LTD.
MADE IN VIETNAM

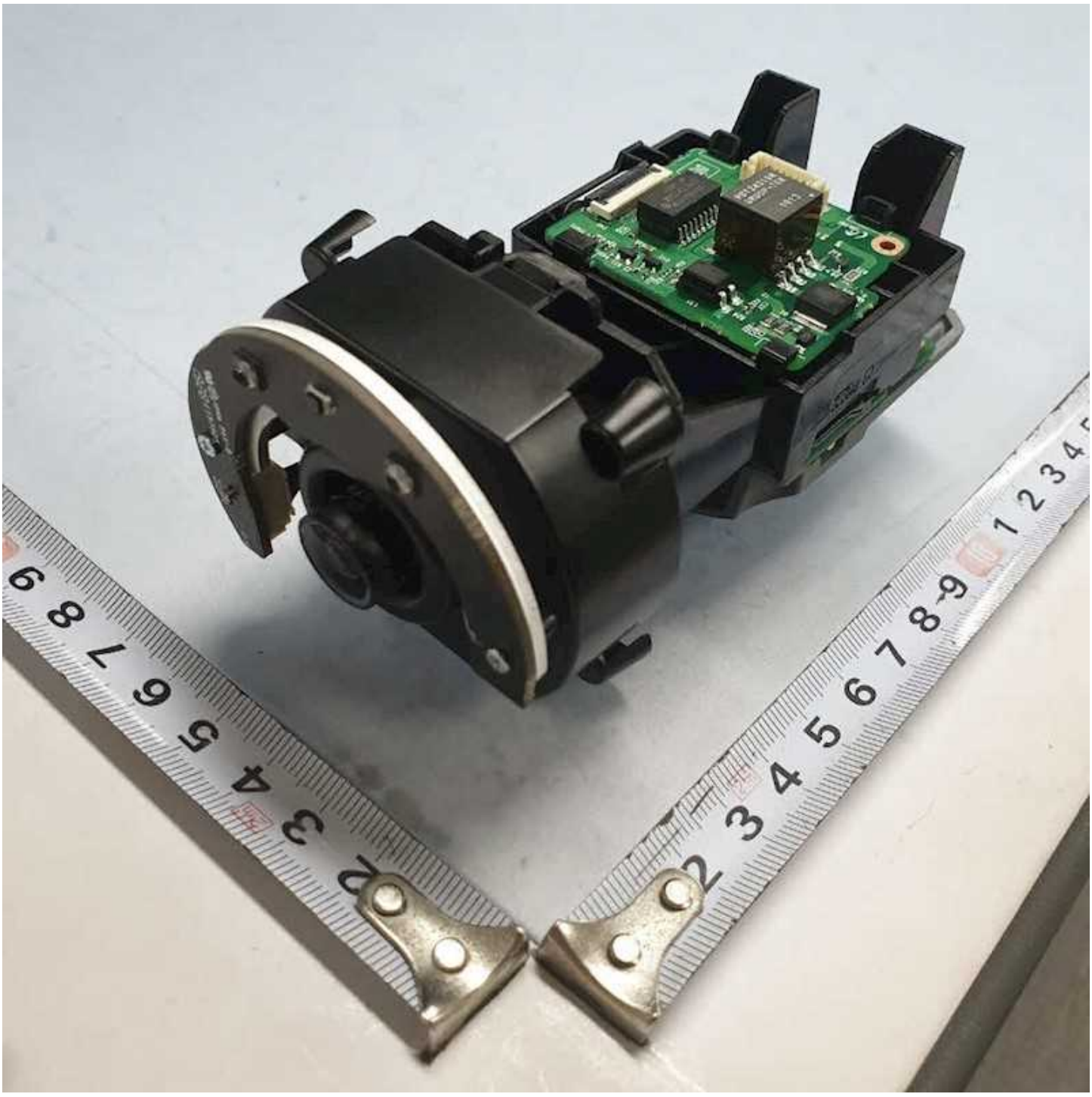
Photographs-01 Page-1



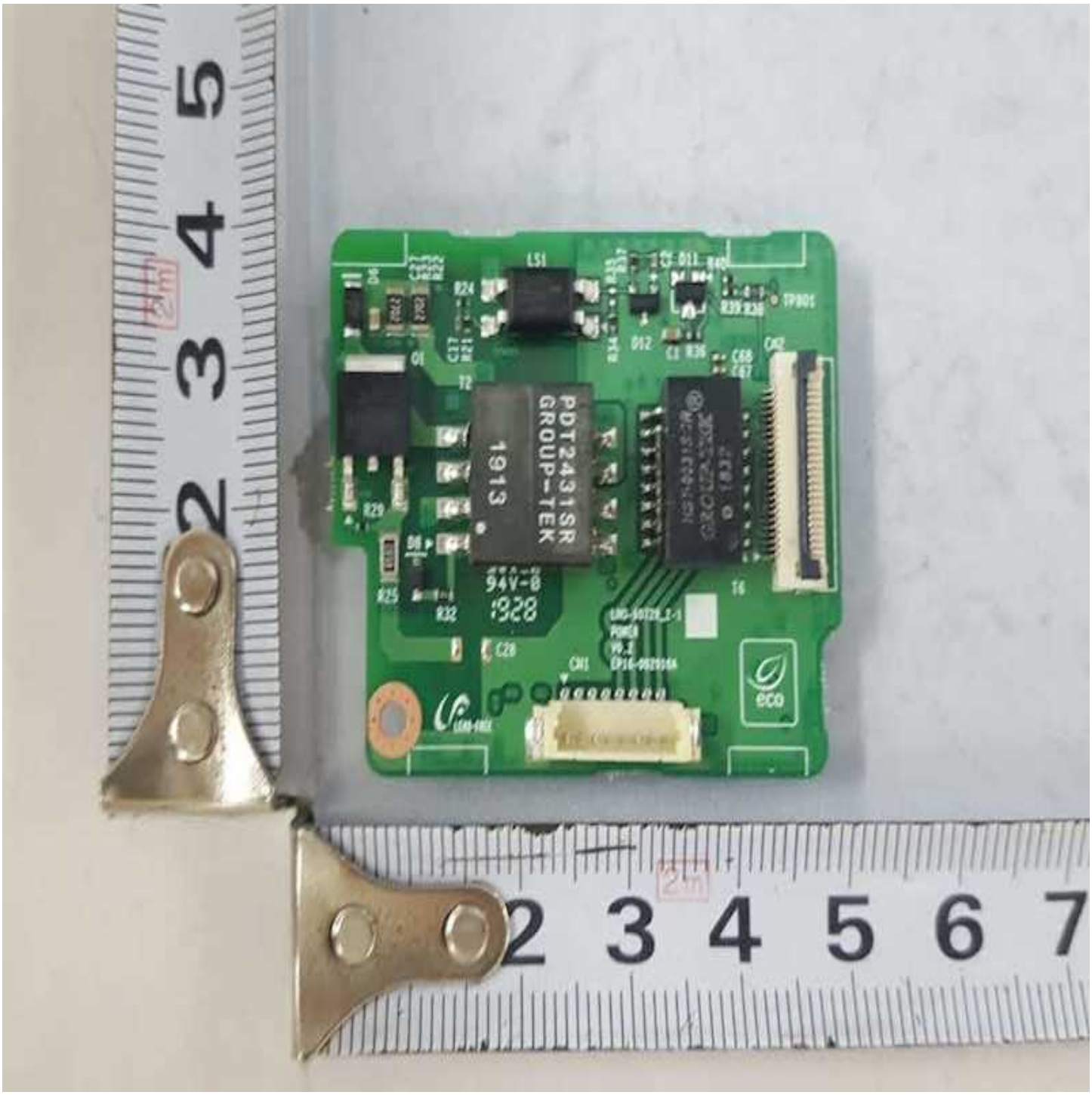


Photographs-03 Page-1

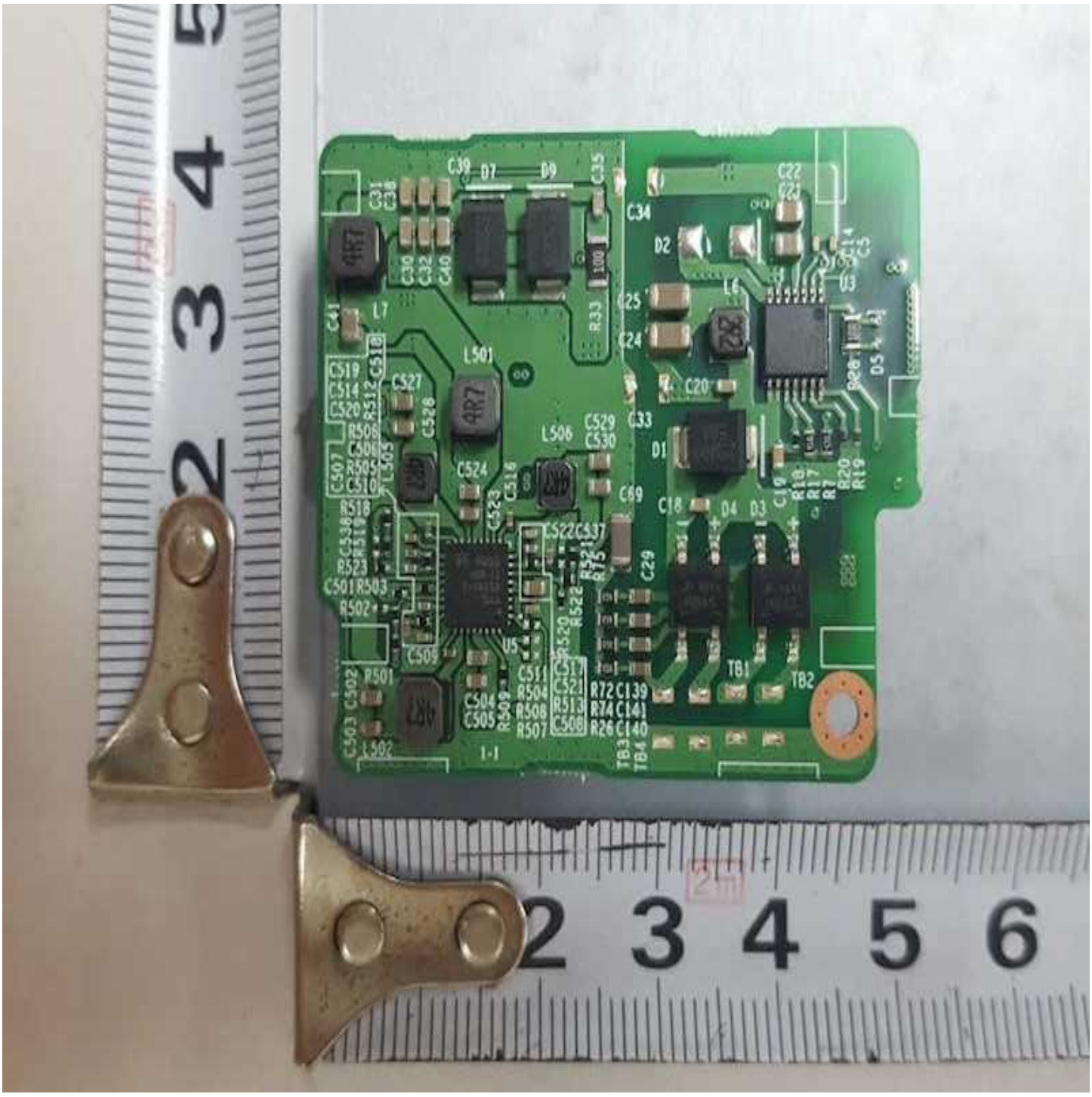




Photographs-05 Page-1



Photographs-06 Page-1



**Test Record No. 1**

1. Test result relate only to the items tested.
2. The manufacturer submitted representative production samples of NETWORK CAMERA, LNO-6012R, LNO-6032R.
3. Only the test listed were considered necessary.

The following tests were conducted:

| **Tests performed (name of test and test clause):** | **Testing location:**<br>CTK Co., Ltd., 386-1 Ho-dong Yongin-shi, Kyungki-do, 449-100, Korea |
|---|---|
| 8.7 - WALL, CEILING, OR OTHER STRUCTURE MOUNTING TESTS | |
| B.2.5 – INPUT TEST: SINGLE PHASE | |
| **The following tests were waived:** | **Rationale for Waiving** |
| 5.4.1.8 – DETERMINATION OF WORKING VOLTAGE | Test data accepted based on UL Report (E158873-X1.A265) under UL 60950-1 - Determination of Working Voltage; Working Voltage Measurement (2.10.2) were conducted and meet criteria in 5.4.1.8 – DETERMINATION OF WORKING VOLTAGE of UL 62368-1 3rd Ed. |
| B.1.5, B.2.6, 5.4.1.4, 6.3, 9.3 - NORMAL OPERATING CONDITIONS TEMPERATURE MEASUREMENT | Test data accepted based on UL Report (E158873-X1.A265) under UL 60950-1 - Heating (4.5.1, 1.4.12, 1.4.13) were conducted and meet criteria in B.1.5, B.2.6, 5.4.1.4, 6.3, 9.3 – NORMAL OPERATING CONDITIONS TEMPERATURE MEASUREMENT of UL 62368-1 3rd Ed. |
| B.4 - SIMULATED SINGLE FAULT CONDITIONS | Test data accepted based on UL Report (E158873-X1.A265) under UL 60950-1 - Component Failure (5.3.1, 5.3.4, 5.3.7) were conducted and meet criteria in B.4 – SIMULATED SINGLE FAULT CONDITIONS of UL 62368-1 3rd Ed. |
| M.3.2 - PROTECTION CIRCUITS FOR BATTERIES | Test data accepted based on UL Report (E158873-X1.A265) under UL 60950-1 - Battery (4.3.8) were conducted and meet criteria in M.3.2 – PROTECTION CIRCUITS FOR BATTERIES of UL 62368-1 3rd Ed. |
| | |

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 |

**Test Record No. 2**

No test was considered necessary in order to below revision.
- Add model name; ANO-L6012R, ANO-L6022R.

The following tests were conducted:

| **Tests performed (name of test and test clause): None** | **Testing location: None** |
|---|---|
| | |
| **The following tests were waived: None** | **Rationale for Waiving** |
| | |
| | |

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 |
|---|---|---|
| | | |