The table below describes the files that were selected to be included as part of this package.

Supplements, such as Figures and Illustrations, will appear as X number of Figures, X number of Illustrations, etc., rather than naming each one.

E158873-A6217-DescriptionUL
Figure-15-Total

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UL TEST REPORT AND PROCEDURE

Standard:	UL 62368-1, 3rd Ed, 2021-10-22 (Audio/video, information and communication technology equipment Part 1: Safety requirements) CAN/CSA C22.2 No. 62368-1:19, 3rd Ed, 2021-10-22 (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:	BARCODE READER
Model:	TNS-9060IBC
Rating:	24 Vdc, 1.48 A
Applicant Name and Address:	HANWHA VISION CO LTD 6, PANGYO-RO 319BEON-GIL, BUNDANG-GU 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: SeulKi Park / 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

BARCODE READER consist of LED body part and camera body part. LED and camera body parts are connected by cable.

Model Differences

N/A

Test Item Particulars

Product group	end product
Classification of use by	Instructed person
Supply Connection	not mains connected: ES1
Supply tolerance	None
Supply connection – type	24 Vdc
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 Outdoor: minimum -40
IP protection class	IP 66, 67
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)	3.40

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 : Exempt
- The following are available from the Applicant upon request : Installation (Safety) Instructions / Manual
- The outdoor equipment/enclosure was evaluated for use in an ambient range of : -40 °C to 55 °C

Additional Information

4791371736
- Maximum Normal Load: Continuous operating with LED on (Sutter speed 900us).

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 Company’s name, Trade Name, File Number
Equipment identification marking – model identification	Model Number
Equipment rating marking – ratings	Input Ratings (voltage, current)
Outdoor enclosure type	"Rainproof", IP66, 67
Hard Copy	A. IMPORTANT or ATTENTION or similar wording B. Please check 'Manuals' from out website, before connecting to the supply. C. Company website URL (https://www.~~) or QR Cord.

Special Instructions to UL Representative

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

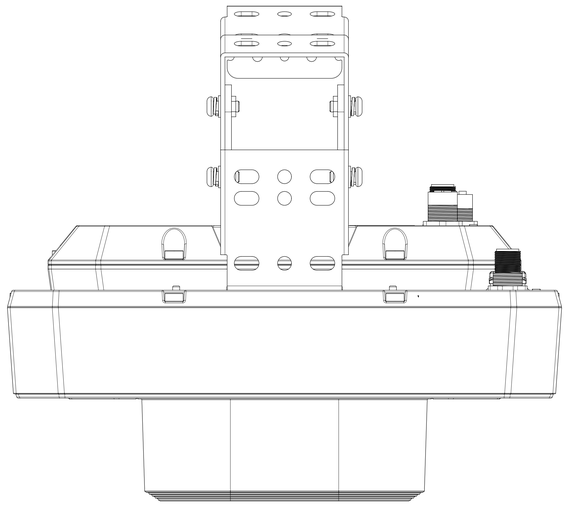
4.1.2	TABLE: List of critical components					Pass
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Product Category CCN(s)	Mark(s) of conformity	Supplement ID
Enclosure Lens top (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.5 mm thickness. see enclosure for dimension.	-	-	
Enclosure Lens bottom (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.5 mm thickness. see enclosure for dimension.	-	-	
Enclosure Len cover (Glass)	Interchangeable	Interchangeable	Glass, Min. 2.0 mm thickness.	-	-	
Enclosure LED cover (Plastic)	LOTTE CHEMICAL CORPORATION	QC-1220UR (f1)	Min. 2.0 mm thickness, rated Min. V-2, 130 deg. C	QMFZ2	UL (E115797)	
Enclosure LED top (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.5 mm thickness. see enclosure for dimension.	-	-	
Enclosure LED bottom (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.5 mm thickness. see enclosure for dimension.	-	-	
Internal part (Metal)	Interchangeable	Interchangeable	Aluminum, Min. 2.0 mm thickness. see enclosure for dimension.	-	-	
Opto-coupler (LS1)	LITE-ON TECHNOLOGY CORP	LTV-356T	Isolation Voltage: 3750. Max. Operation Temperature: 110 deg. C	FPQU2/8	UL (E113898)	
Fuse (F1) – LED Drive Board	LITTELFUSE INC	454*	125 Vac, 5 A	JDYX2	UL (E10480)	

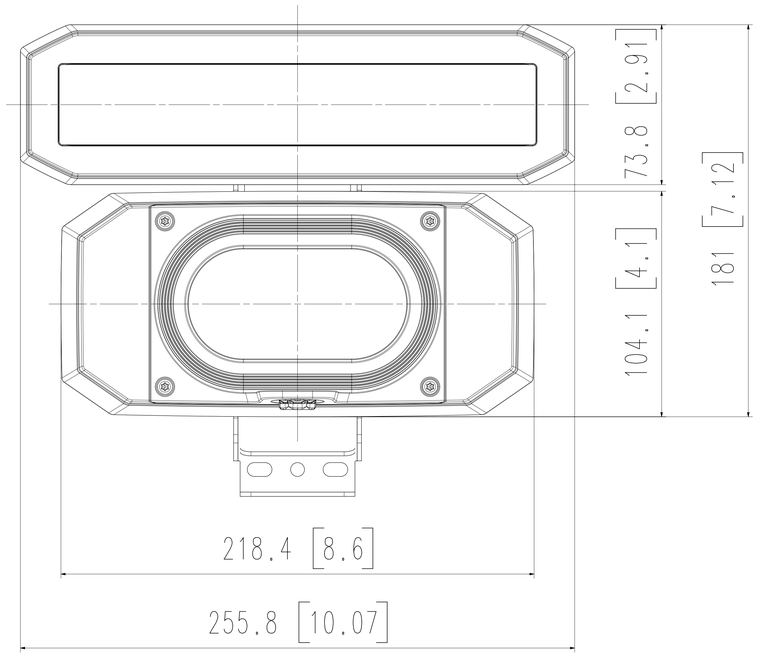
Fuse (F1) – Main board	LITTELFUSE INC	454*	125 Vac, 1.5 A	JDYX2	UL (E10480)	
Rechargeable battery (BAT1)	SEIKO INSTRUMENTS INC MICRO-ENERGY DIV	ML414H	Lithium, Rechargeable, Max Charging Voltage, 3.4 V dc, Max Charging current: 300 mA	BBCV2	UL (MH15628)	
Lithium Battery Protection Circuit	Interchangeable	Interchangeable	Diode (D1, 80 V, 300 mA) and Resistor (R84, 3.3 Kohm) in series	-	-	
Gasket – Dark blue	Namyang Vina	O-VMQ-50-BL	Gasket Test was conducted under E158873-A6034	-	-	
Gasket - Orange	Namyang Vina	O-VMQ-50-OR	Gasket Test was conducted under E158873-A6034	-	-	
Thermal Pad	KOMOTECH CO LTD	KGP-1(a)	Min. 0.2 mm thickness, rated V-0, 150 deg. C	QMFZ2/8	UL(E245303)	
PWB	EXPRESS ELECTRONICS LTD	14MV0	Min. V-0, 130 deg. c	ZPMV2	UL (E157925)	
PWB - Alternate	Interchangeable	Interchangeable	Min. V-0, 130 deg. c	ZPMV2	UL	
Outdoor Label	Interchangeable	Interchangeable	Suitable for use on each type of surface to which applied, rated for maximum and minimum surface temperature specified, or Min. 55 deg. C to Max -40 deg. C if not specified.	PGDQ2 or PGJI2	UL	
LED Left (LD1 – LD24) LED Right (LD1 – LD24) Total (48 ea)	OSRAM Opto Semiconductors. GmbH	GW PUSTA1.EM	VF = Max. 3.10 V, IF= Max. 3 A	-	-	

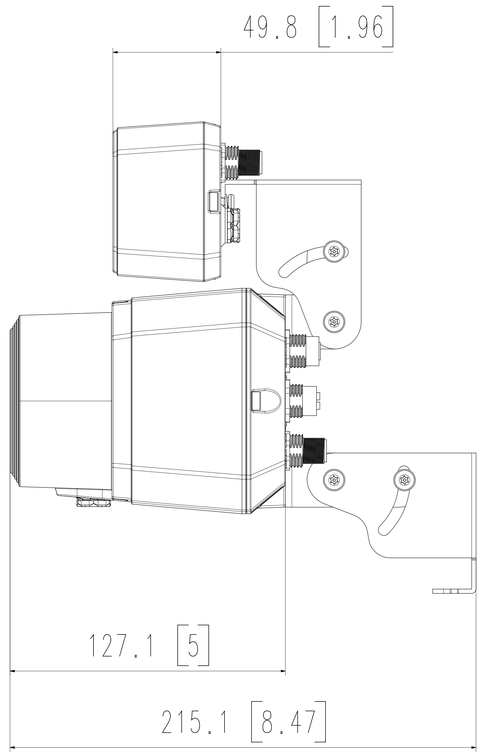
Enclosures

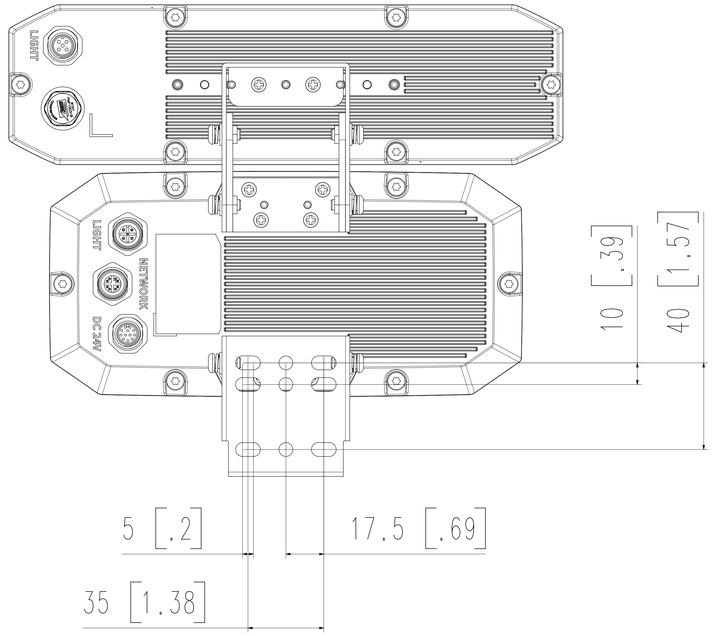
Type	Supplement Id	Description
Photographs	03-01	External View - 1
Photographs	03-02	External View - 2
Photographs	03-03	External view - 3
Photographs	03-04	Internal view - 1
Photographs	03-05	Internal View - 2
Photographs	03-06	LED Board
Photographs	03-07	LED Driver Board
Photographs	03-08	Camera Body Main board - Top
Photographs	03-09	Camera Body Main board - Bottom
Photographs	03-10	Camera Body Sensor Board - Top
Photographs	03-11	Camera Body Sensor Board - Bottom
Diagrams	04-01	Enclosure Diagram
Diagrams	04-02	Heatsink Diagram
Manuals	06-01	Manual
Miscellaneous	07-01	Label

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









No.	MODEL NAME	DATE
3	MODEL2	
2	MODEL1	
1	TNS-9050IBC	'23.11.16

Unit:mm[inch] | SCALE:1/1 | Hanwha Vision

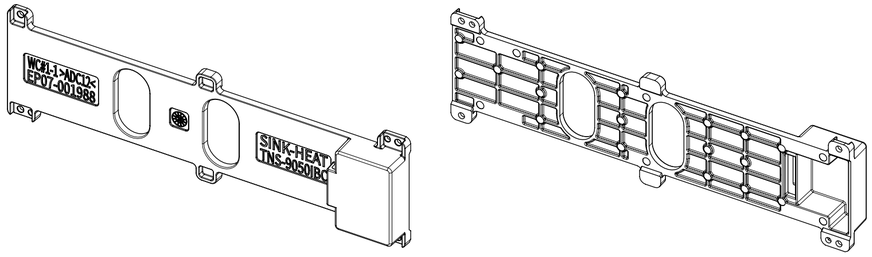
A0

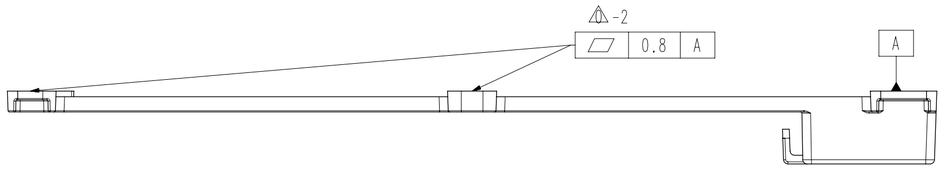
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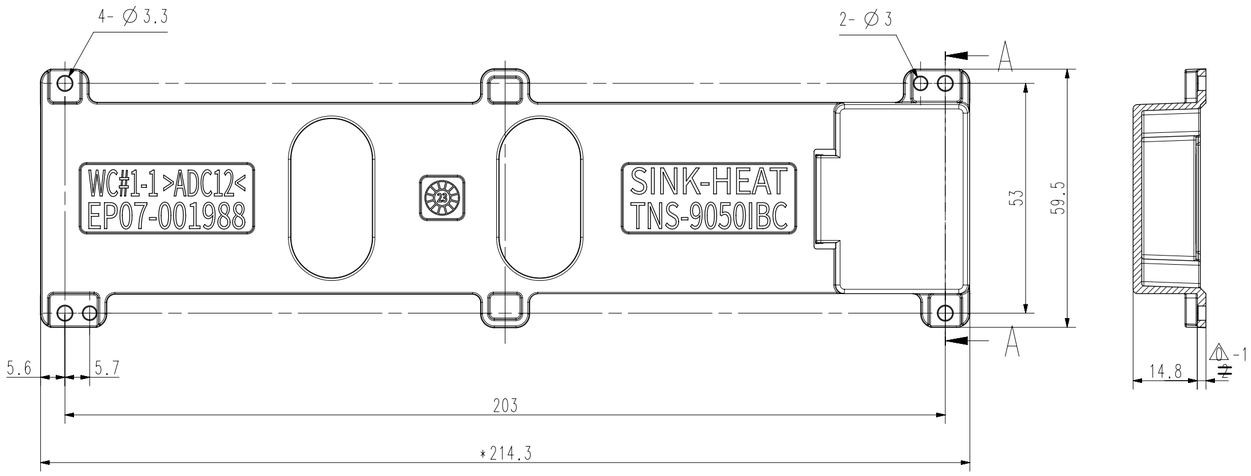
The following Page(s) are related to Diagrams-02. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

This parts should not contain any substances which are specified in AH60-0033K

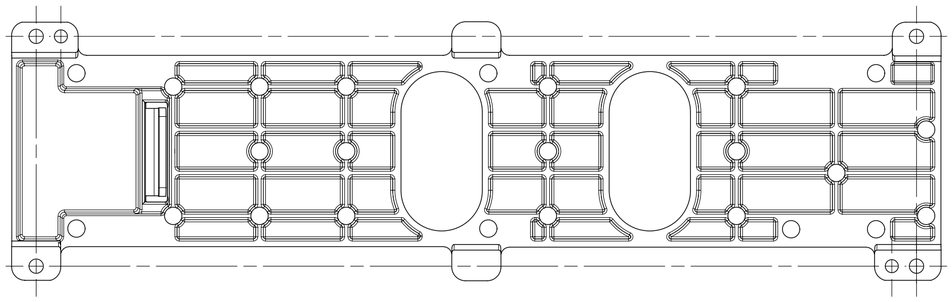
NO	PART NAME	CODE NO.	MATERIAL	Q'TY	REMARK
1	HEAT-SINK_LED-MODULE_TNS-9050IBC	EP07-001988A	Check note	1	-







SECTION A-A



NOTE

1. Material and Basic wall thickness : ADC12, t2.5

2. Gate, P/L, Ejector Pin location must be handled with HVC designer.
3. Ejector pin stain must be less than 0.3 depth (⊠), no flash is allowed.
4. Undescribed edge round must be less than R0.5, undescribed corners must be less than R0.3.
5. No Deformation, Air bubble, Shrinkage is allowed.
6. Every Flash on P/L must be less than 0.1.
7. Undescribed draft angles must be less than 0.5°.
8. * marks (Key dimensions) must be carefully handled.
9. Surface cutting level of Gate and Over-Flow must be equivalent with other surface cutting level.
10. Part Name, Code Number, Mold Number, Material, Model Name must be carved on the inner side of the part.
 - Location and Specs. must be handled with HVC designer.
11. External look and printing specification must follow separately distributed Design Specification data.
 - Including Surface cutting, Chromate, Sanding, Spray, Silk Print specifications.
12. Reliability must satisfy HVC standards.
13. Delivery packing specifications must be discussed separately.
14. All other issues must be handled with HVC designer.

STANDARD TOLERANCE

DIV	Lvl 1	Lvl 2	Lvl 3	Lvl 4	Lvl 5
0-16	±0.05	±0.1	±0.1	±0.2	±0.3
16-63	±0.05	±0.1	±0.2	±0.3	±0.4
63-250	±0.1	±0.2	±0.3	±0.4	±0.4
250-1000	±0.2	±0.3	±0.4	±0.5	±0.6

Process	Casting→Cutting→Sanding→Machining/Tapping→Degrease →Chromate

Hanwha Vision APPROVAL 23.09.04

A2

CHANGE

⚠-1 Delete dimension

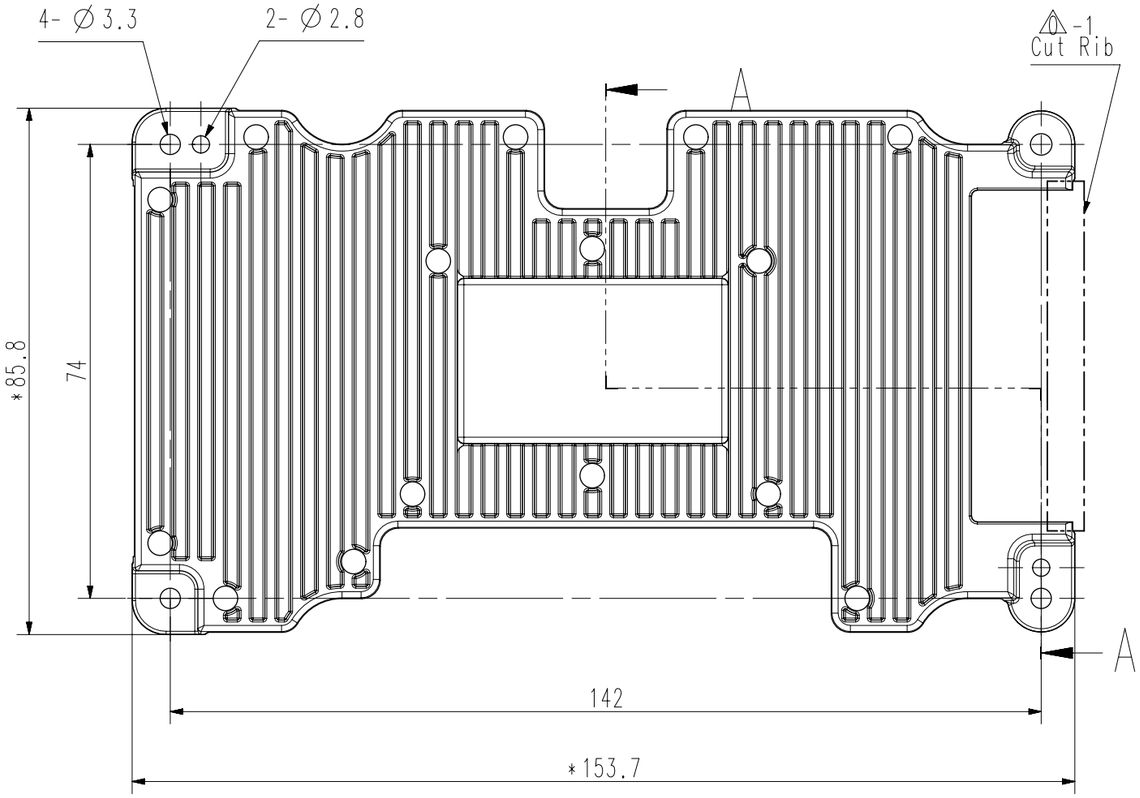
⚠-2 Add flatness spec (0.8mm)

-23.12.12 P.J.KIM-

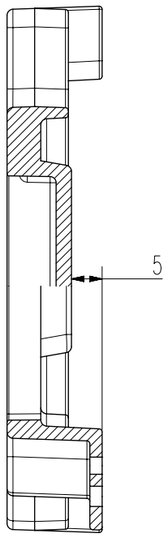
UNIT	mm	DESIGN	CHECK	APPROVAL	PART NAME	HEAT-SINK_LED-MODULE_TNS-9050IBC
SCALE	1/1	P.J.KIM	T.K.CHANG	Y.S.CHOI	MODEL NAME	TNS-9050IBC
		23.08.17	23.08.17	23.08.17		
Hanwha Vision					CODE NO.	EP07-001988A

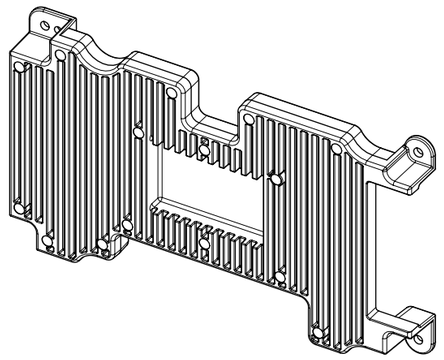
This parts should not contain any substances which are specified in AH60-0033K

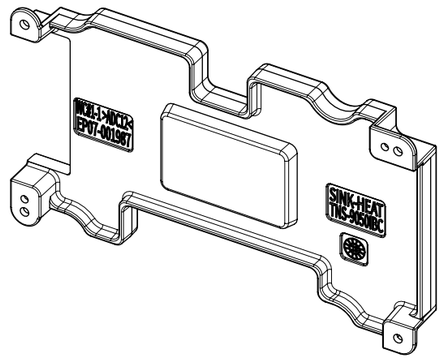
NO	PART NAME	CODE NO.	MATERIAL	Q'TY	REMARK
1	HEAT-SINK_MAIN_TNS-9050IBC	EP07-001987A	Check note	1	-

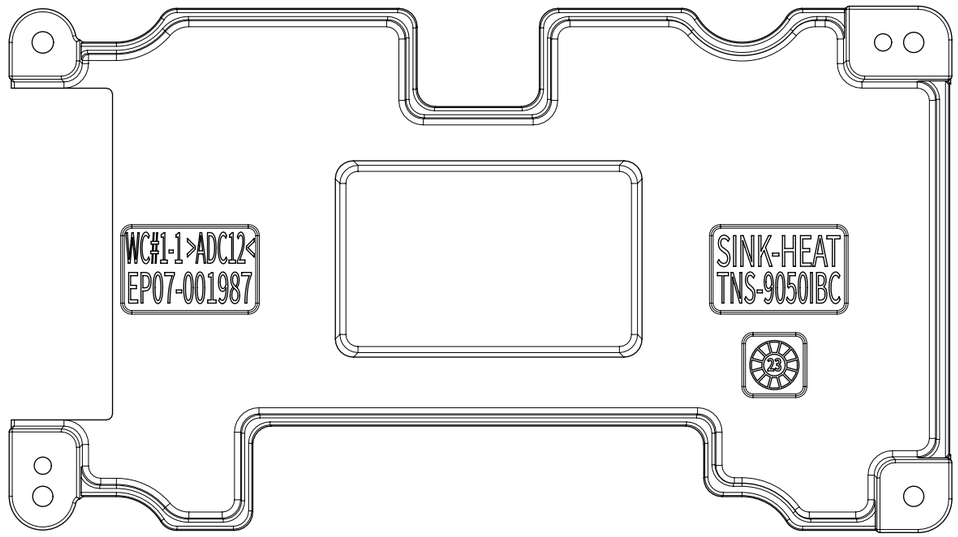


SECTION A-A









NOTE

1. Material and Basic wall thickness : ADC12, t2.5

2. Gate, P/L, Ejector Pin location must be handled with HVC designer.
3. Ejector pin stain must be less than 0.3 depth (⊔), no flash is allowed.
4. Undescribed edge round must be less than R0.5, undescribed corners must be less than R0.3.
5. No Deformation, Air bubble, Shrinkage is allowed.
6. Every Flash on P/L must be less than 0.1.
7. Undescribed draft angles must be less than 0.5° .
8. * marks (Key dimensions) must be carefully handled.
9. Surface cutting level of Gate and Over-Flow must be equivalent with other surface cutting level.
10. Part Name, Code Number, Mold Number, Material, Model Name must be carved on the inner side of the part.
 - Location and Specs. must be handled with HVC designer.
11. External look and printing specification must follow separately distributed Design Specification data.
 - Including Surface cutting, Chromate, Sanding, Spray, Silk Print specifications.
12. Reliability must satisfy HVC standards.
13. Delivery packing specifications must be discussed separately.
14. All other issues must be handled with HVC designer.

Hanwha Vision APPROVAL 23.09.04

STANDARD TOLERANCE

DIV	Lvl 1	Lvl 2	Lvl 3	Lvl 4	Lvl 5
0-16	±0.05	±0.1	±0.1	±0.2	±0.3
16-63	±0.05	±0.1	±0.2	±0.3	±0.4
63-250	±0.1	±0.2	±0.3	±0.4	±0.4
250-1000	±0.2	±0.3	±0.4	±0.5	±0.6

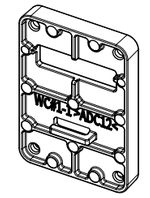
Process	Casting→Cutting→Sanding→Machining/Tapping→Degrease →Chromate

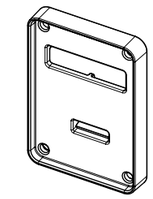
CHANGE	
A3	⚠-1 Cut Rib -23.10.16 P.J.KIM-

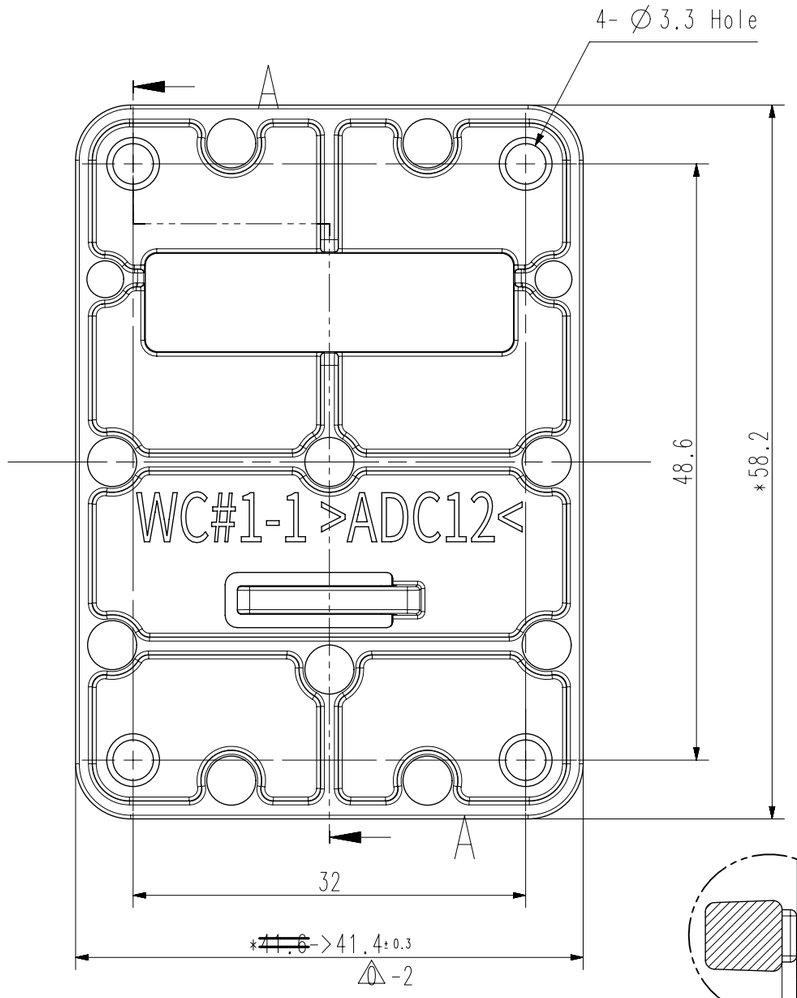
UNIT	mm	DESIGN	CHECK	APPROVAL	PART NAME	HEAT-SINK_MAIN_TNS-9050IBC
SCALE	1/1	P.J.KIM	T.K.CHANG	Y.S.CHOI	MODEL NAME	TNS-9050IBC
		23.08.17	23.08.17	23.08.17		
Hanwha Vision					CODE NO.	EP07-001987A

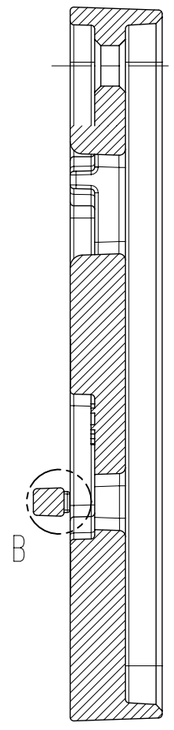
This parts should not contain any substances which are specified in AH60-0033K

NO	PART NAME	CODE NO.	MATERIAL	Q'TY	REMARK
1	HEAT-SINK_SENSOR_TNS-9050IBC	EP07-001986A	Check note	1	-

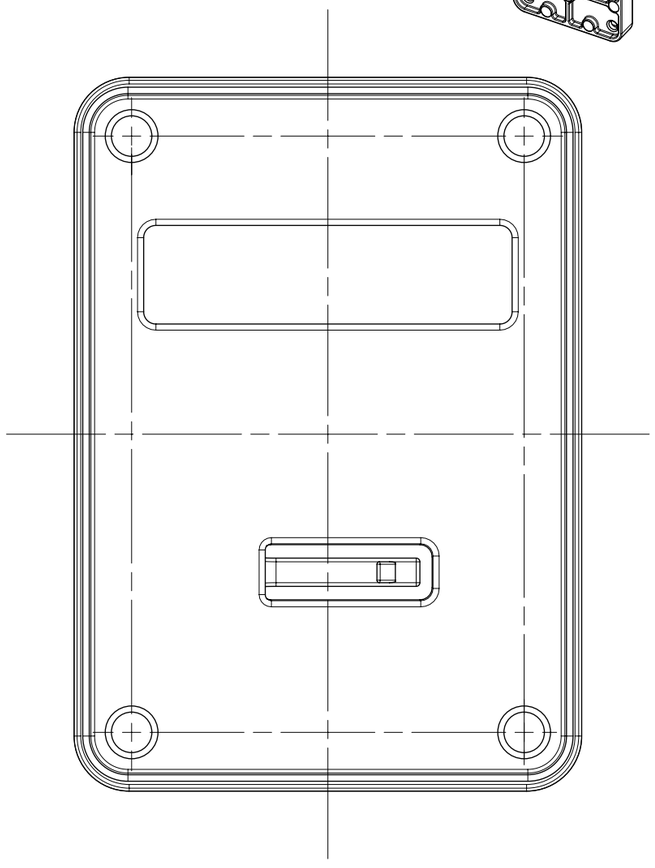








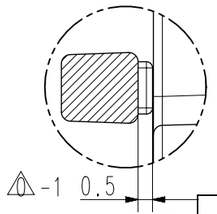
SECTION A-A



NOTE

1. Material and Basic wall thickness : ADC12, t2.5

2. Gate, P/L, Ejector Pin location must be handled with HVC designer.
3. Ejector pin stain must be less than 0.3 depth (⊔), no flash is allowed.
4. Undescribed edge round must be less than R0.5, undescribed corners must be less than R0.3.
5. No Deformation, Air bubble, Shrinkage is allowed.
6. Every Flash on P/L must be less than 0.1.
7. Undescribed draft angles must be less than 0.5°.
8. * marks (Key dimensions) must be carefully handled.
9. Surface cutting level of Gate and Over-Flow must be equivalent with other surface cutting level.
10. Part Name, Code Number, Mold Number, Material, Model Name must be carved on the inner side of the part.
 - Location and Specs. must be handled with HVC designer.
11. External look and printing specification must follow separately distributed Design Specification data.
 - Including Surface cutting, Chromate, Sanding, Spray, Silk Print specifications.
12. Reliability must satisfy HVC standards.
13. Delivery packing specifications must be discussed separately.
14. All other issues must be handled with HVC designer.



DETAIL B
SCALE 5:1

STANDARD TOLERANCE

DIV	Lvl 1	Lvl 2	Lvl 3	Lvl 4	Lvl 5
0-16	±0.05	±0.1	±0.1	±0.2	±0.3
16-63	±0.05	±0.1	±0.2	±0.3	±0.4
63-250	±0.1	±0.2	±0.3	±0.4	±0.4
250-1000	±0.2	±0.3	±0.4	±0.5	±0.6

Process	Casting→Cutting→Sanding→Machining/Tapping→Degrease→Chromate

Hanwha Vision APPROVAL 23.09.04 Hanwha Vision

A3

CHANGE

-1 Add rib height 0.5 -23.11.08 P.J.KIM-

-2 Dimension realization -23.12.13 P.J.KIM-

UNIT	mm	DESIGN	CHECK	APPROVAL	PART NAME	HEAT-SINK_SENSOR_TNS-9050IBC
SCALE	2/1	P.J.KIM	T.K.CHANG	Y.S.CHOI	MODEL NAME	TNS-9050IBC
		23.08.17	23.08.17	23.08.17	CODE NO.	EP07-001986A

Hanwha Vision

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 isolation power.
16. If you use excessive force when installing the product, the barcode reader may be damaged and malfunction. If you forcibly install the product using non-compliant tools, the product may be damaged.
17. 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.
18. 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.
19. 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.
20. Installing or using the product in water can cause serious damage to the product.
21. Install cables and wires away from high-voltage power sources and wiring. This will reduce the risk of damage or malfunction due to overvoltage, line noise, electrostatic discharge (ESD), power surges, and other causes of power supply issues.
22. The safety of any system incorporating this product is the responsibility of the assembler of the system.
23. 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.
24. The operating temperature of the product is -40°C to +55°C (-40°F ~ +131°F).

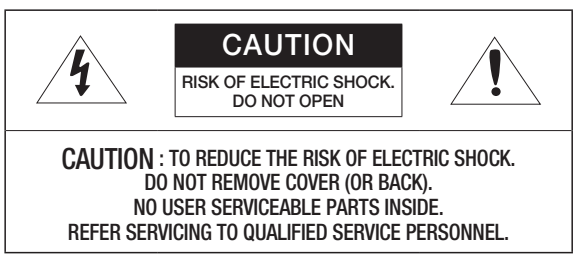
WARNING

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



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.

Prohibition of battery abuse

- Do not install and use the wrong type of battery.
- Do not leave the battery in a mechanically crush or cut it because it can explode.
- Do not leave the battery in a high temperature environment.
- Do not leave the battery in a low-pressure environment.

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 barcode reader and other devices must not be connected.

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

Do not arbitrarily loosen or tighten the gore valve.

Do not expose the image sensor to laser light. Image sensors can be damaged by direct, or reflected, laser light. If your application requires laser light that might strike the image sensor, use a lens filter at the corresponding laser wavelength. For suggestions, contact your local integrator or application engineer.

There are no user serviceable parts in this product. The product will not be covered by the warranty if it is disassembled or repaired by the user.

Ensure that the cable bend radius begins at least six inches from the connector. Cable shielding can be degraded or cables can be damaged or wear out faster if a service loop or bend radius is tighter than 10x the cable diameter.

Make sure to connect/disconnect the power input and LED light cables with the power off.
Connecting them while the power is on may cause a malfunction or damage to the product.
A network camera near the LED lights may expose to horizontal line noise (caused by the flicker phenomenon).

In this case, be sure to set the anti-flicker function of the network camera to <ON>.

If horizontal line noise occurs even when the anti-flicker function is set to <ON>, adjust the camera to prevent overlapping angles between LED lights and the network camera.

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 barcode reader.
  The high temperature of the product surface may cause burn.

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

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.

In particular installation environments, there might be interference in radio communications. When interference of electromagnetic waves occurs between the product and radio communication device, it is recommended to keep a certain distance between the two or change the direction of the receiving antenna.

INSTALLATION

- The jack connected to the external cable of this barcode reader is not waterproof. You are recommended to install this product below the edge of eaves to prevent the cable from being externally exposed.

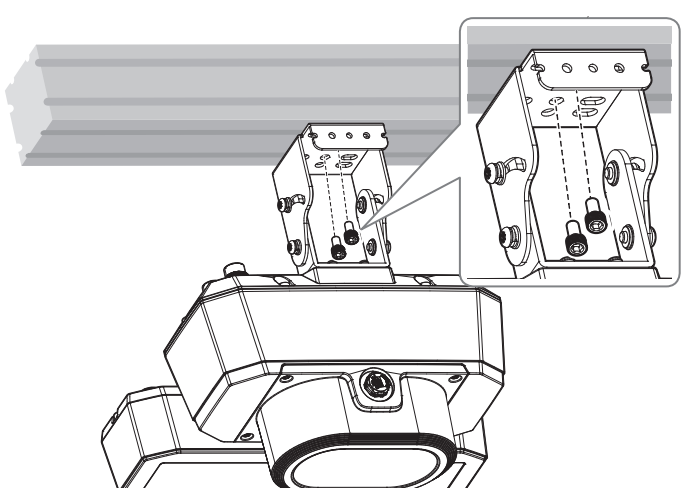
Precautions before installation

Ensure you read out the following instructions before installing the barcode reader:

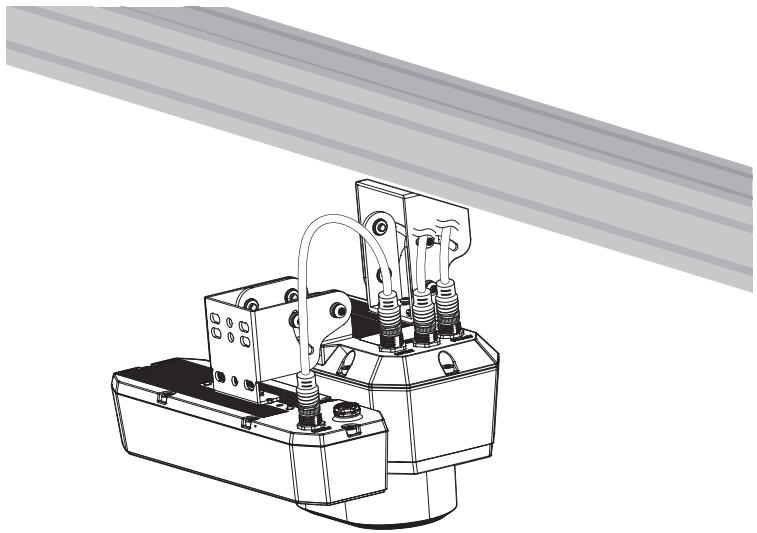
- Select an installation site that can hold at least 5 times the barcode reader's weight.
- Stuck-in or peeled-off cables can cause damage to the product or a fire.
- For safety purposes, keep anyone away from the installation site.
  And put aside personal belongings from the site, just in case.
- If the product is forcibly installed with excessive force, it may malfunction and damage the barcode reader.
  Forcing assembly using non-standard tools may damage the product.
- Make sure to connect/disconnect the power input and LED light cables with the power off.
  Connecting them while the power is on may cause a malfunction or damage to the product.
- A network camera near the LED lights may expose to horizontal line noise (caused by the flicker phenomenon).
  In this case, be sure to set the anti-flicker function of the network camera to <ON>.
  If horizontal line noise occurs even when the anti-flicker function is set to <ON>, adjust the camera to prevent overlapping angles between LED lights and the network camera.

Installation

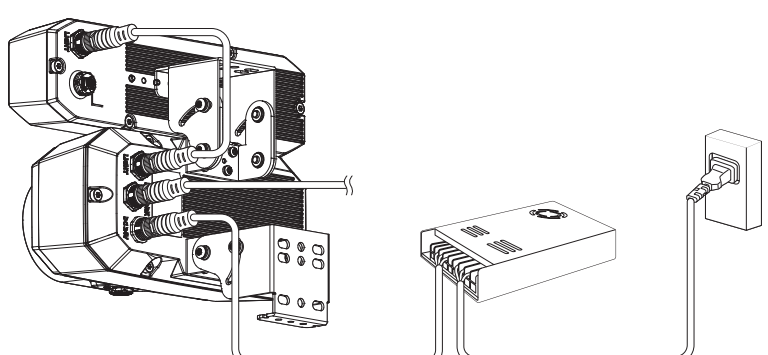
1. Secure the bracket to the installation surface using two or more appropriate screws.



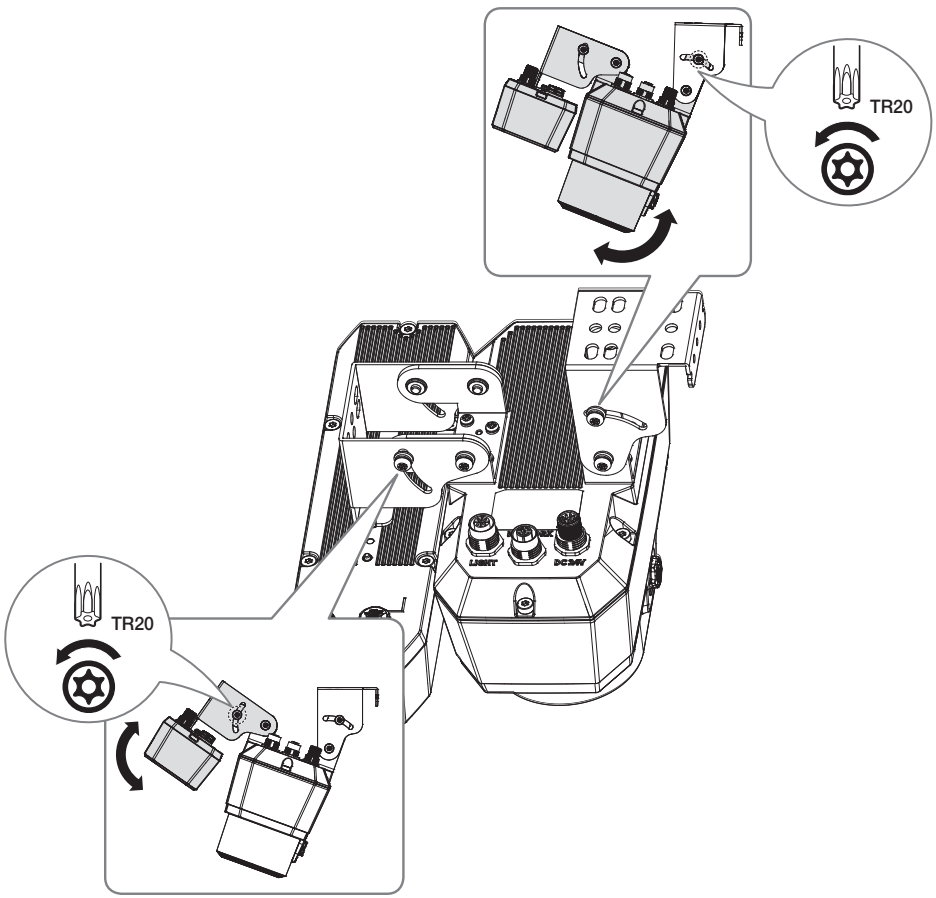
2. Connect the network, power and light cables. Make sure to use cables that meet the specifications (300 V, 80 °C, VW-1 (UL approved)).



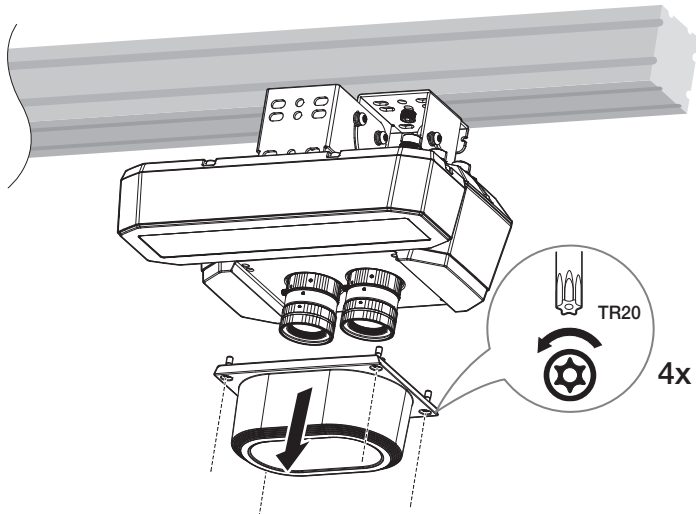
3. After completing the cable installation, supply power.



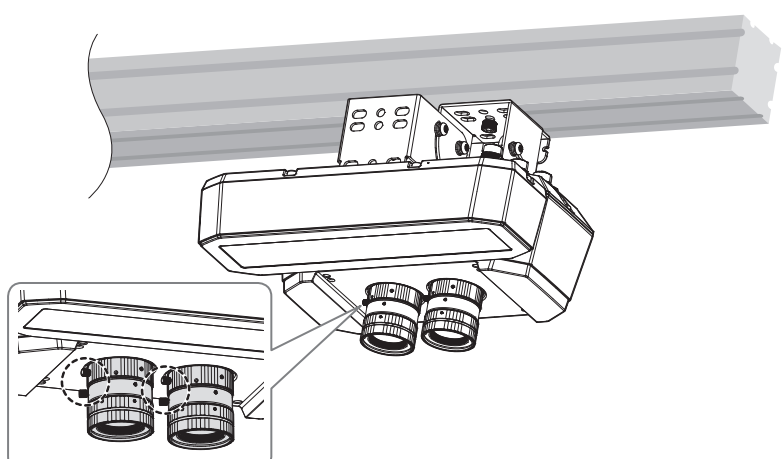
4. You can adjust the orientation of the barcode reader and LED module by loosening the direction adjustment screws of the barcode reader and LED module using the Torx L wrench provided.
   - Once the barcode reader and LED module are oriented, tighten the direction adjustment screws to secure them.



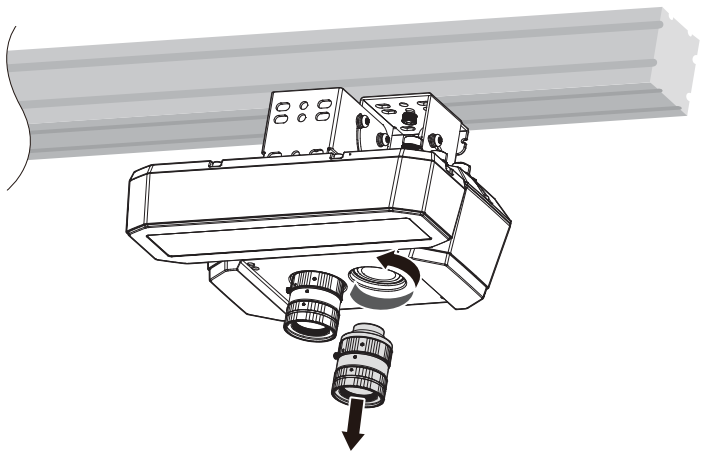
5. Remove the lens cover by loosening the fastening screws using the Torx L wrench provided.



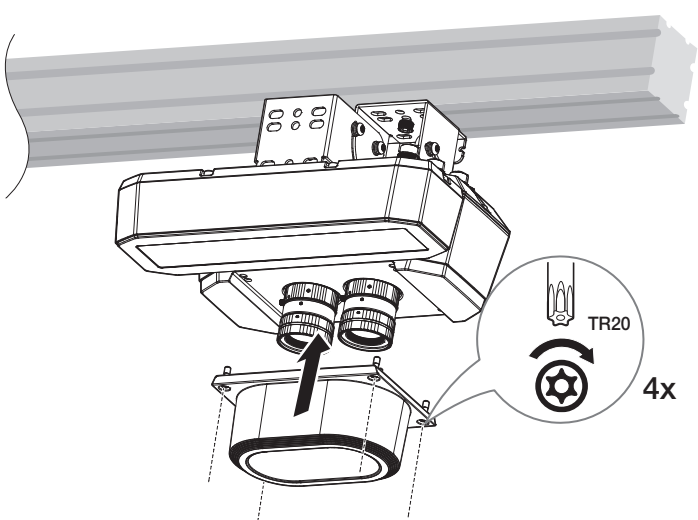
6. After adjusting the focus of the color and mono lenses, turn the fixing screws of the lenses to secure them.
   - Make sure that the iris value is set to 8.



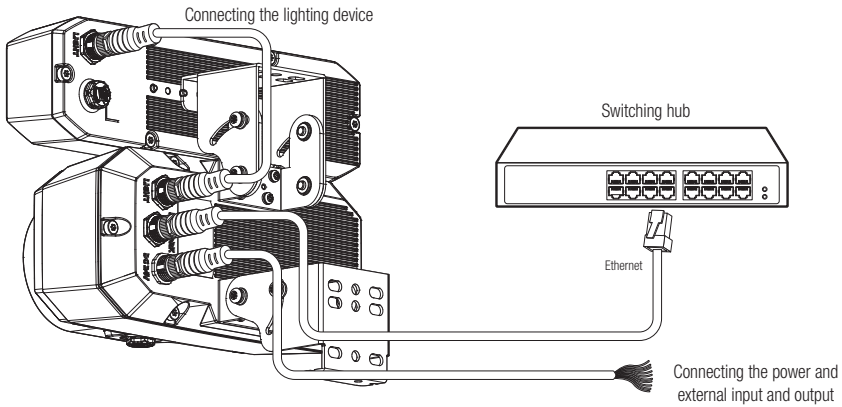
- To replace a lens, remove the existing lens and install the new one as shown below.



7. Assemble the lens cover.



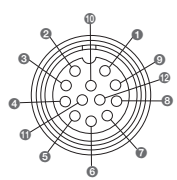
CONNECTING WITH OTHER DEVICE



Connecting the Power and I/O Ports

You can use the M12 power and I/O cables to connect the power and I/O ports of the barcode reader.

[Pin Map for the Barcode reader Connector]



❶	NOT USE	❼	DC 24V
❷	NOT USE	❽	GND
❸	NOT USE	❾	GND
❹	NOT USE	❿	GND
❺	DC 24V	⓫	ALARM IN
❻	DC 24V	⓬	NOT USE

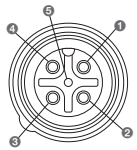
- The DC 24 V wire and all three GND wires must be connected to their respective terminals for current capacity.
- If you want to connect an external device, you must turn it off before doing it.
- Before connecting a power plug to an outlet, connect the power cable to the barcode reader and adapter first.

Connecting the Light Terminal (Accessories provided)

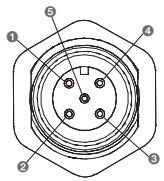
You can use the M12 sensor cable to connect a lighting device.

[Pin Map for the Barcode reader Connector]

<Barcode reader>



<LED module>



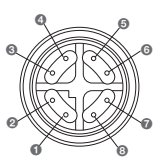
❶	+24V DC
❷	Intensity Control
❸	GND
❹	Strobe
❺	LED DRIVER ON/OFF

▪ Third-party LED modules are not compatible. Randomly connecting devices may cause a product malfunction or damage.

Connecting the Network

You can use the M12-RJ45 conversion cable to connect the barcode reader to a network.

[Pin Map for the Barcode reader Connector]



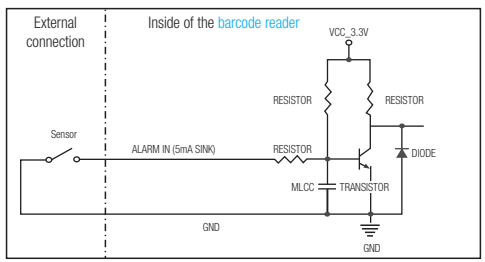
❶	WHT/ORG	TxRx A+
❷	ORG	TxRx A-
❸	WHT/GRN	TxRx B+
❹	GRN	TxRx B-
❺	WHT/BRN	TxRx D+
❻	BRN	TxRx D-
❼	WHT/BLU	TxRx C+
❽	BLU	TxRx C-

To connect the external sensor

Connect one strand of each signal line (2-strand) of the sensors to the [**ALARM IN**] port, and connect the other strand to the [**GND**] port.

▪ For ALARM IN and GND ports, refer to the pin map in “Connecting the Power and I/O Ports.” (Page 10)

Alarm In Wiring Diagram (Example)



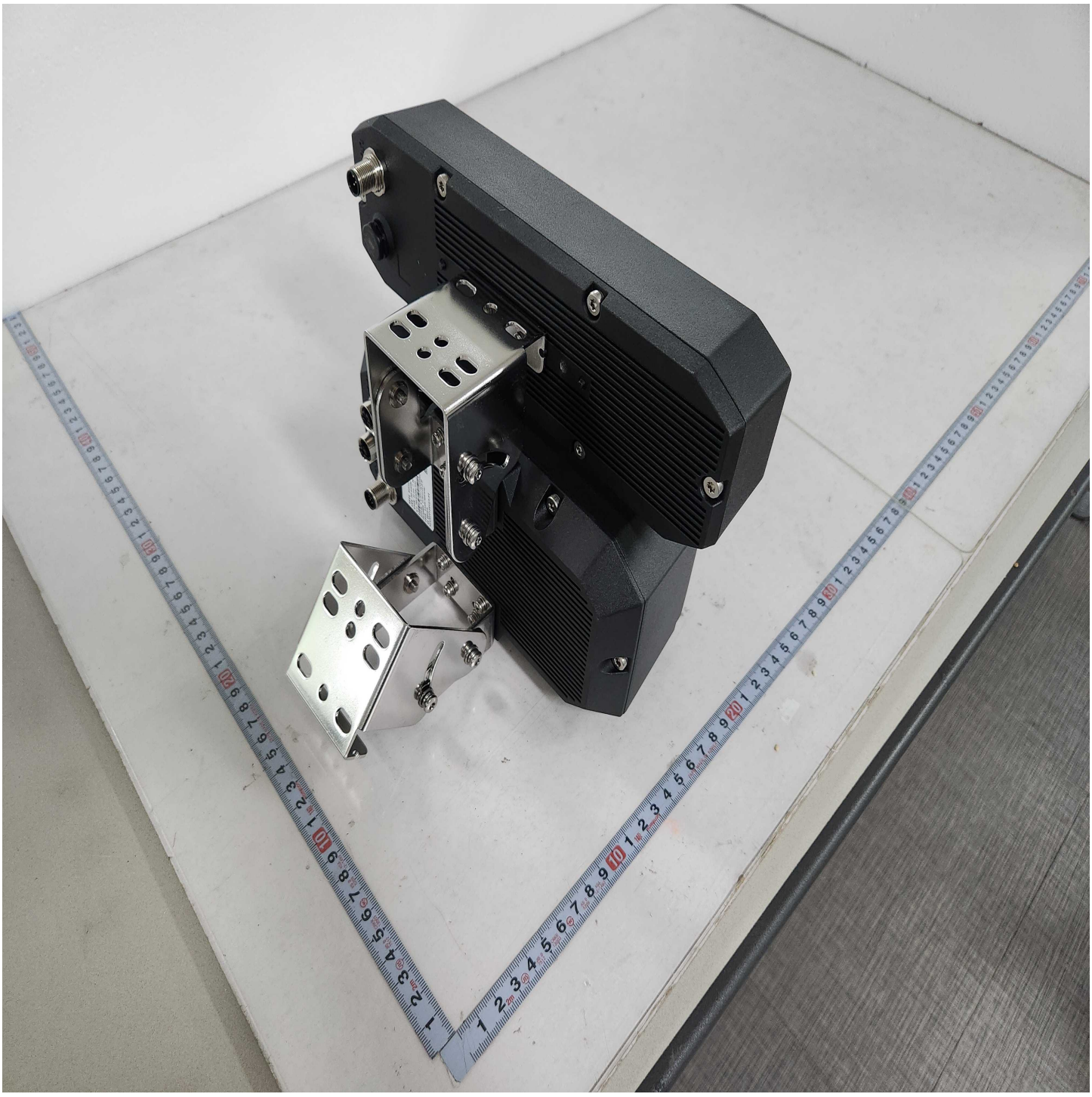

ITE
US LISTED
9T96 E158873
UK
CA
10
BARCODE READER, TNS-9060IBC
DC 24V ⎓ 1.48A
M/C: TNS-9060IBC/KEX Fac.ID:D
DATE S/N:Serial No.
MAC ADDRESS: XX-XX-XX-XX-XX-XX
CAN ICES-3(A)/NMB-3(A)
HANWHA VISION CO.,LTD.
Made in Korea
Rainproof/Étanche
IP66 and IP67

Photographs-01 Page-1



Photographs-02 Page-1





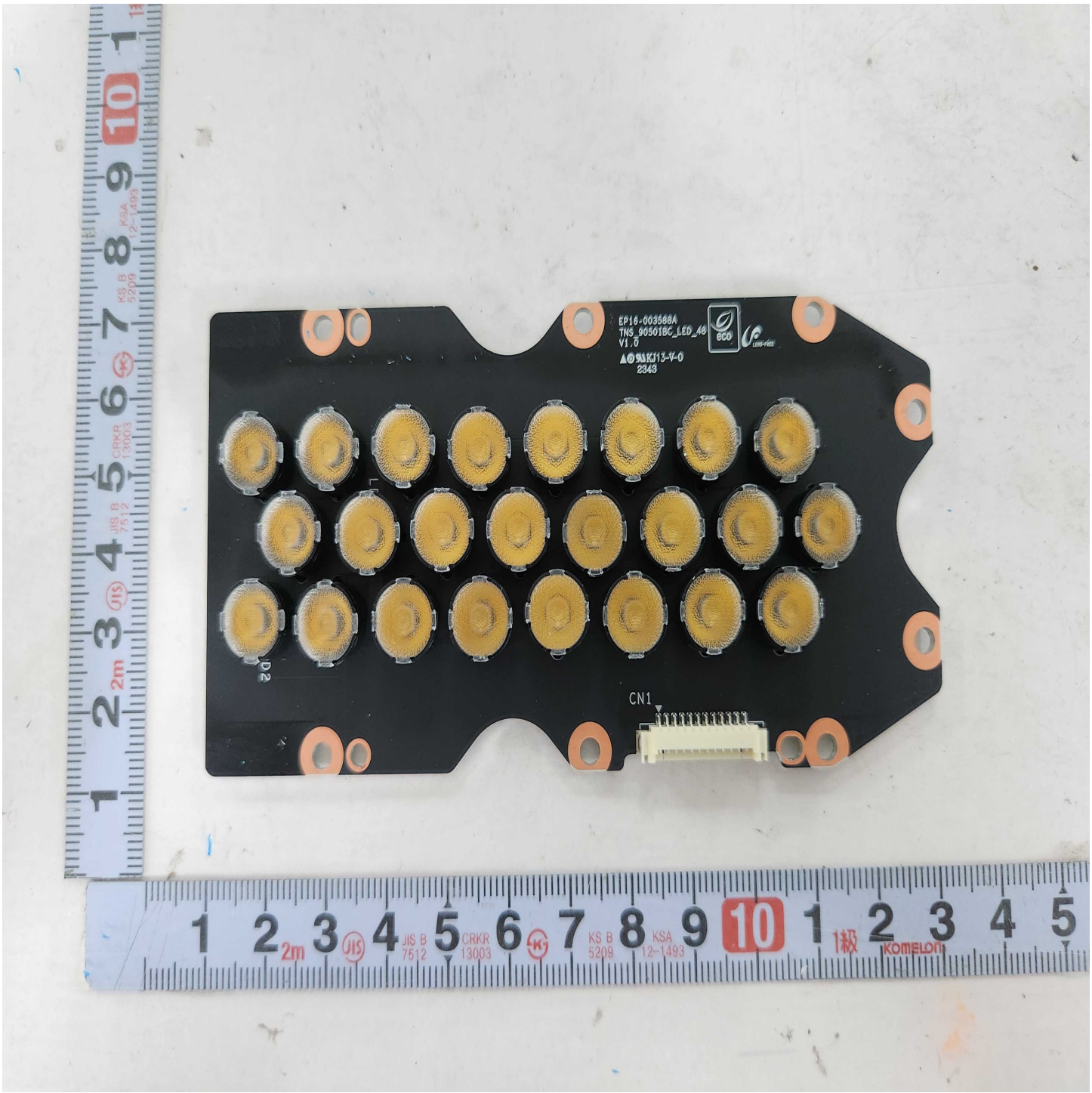
Photographs-04 Page-1



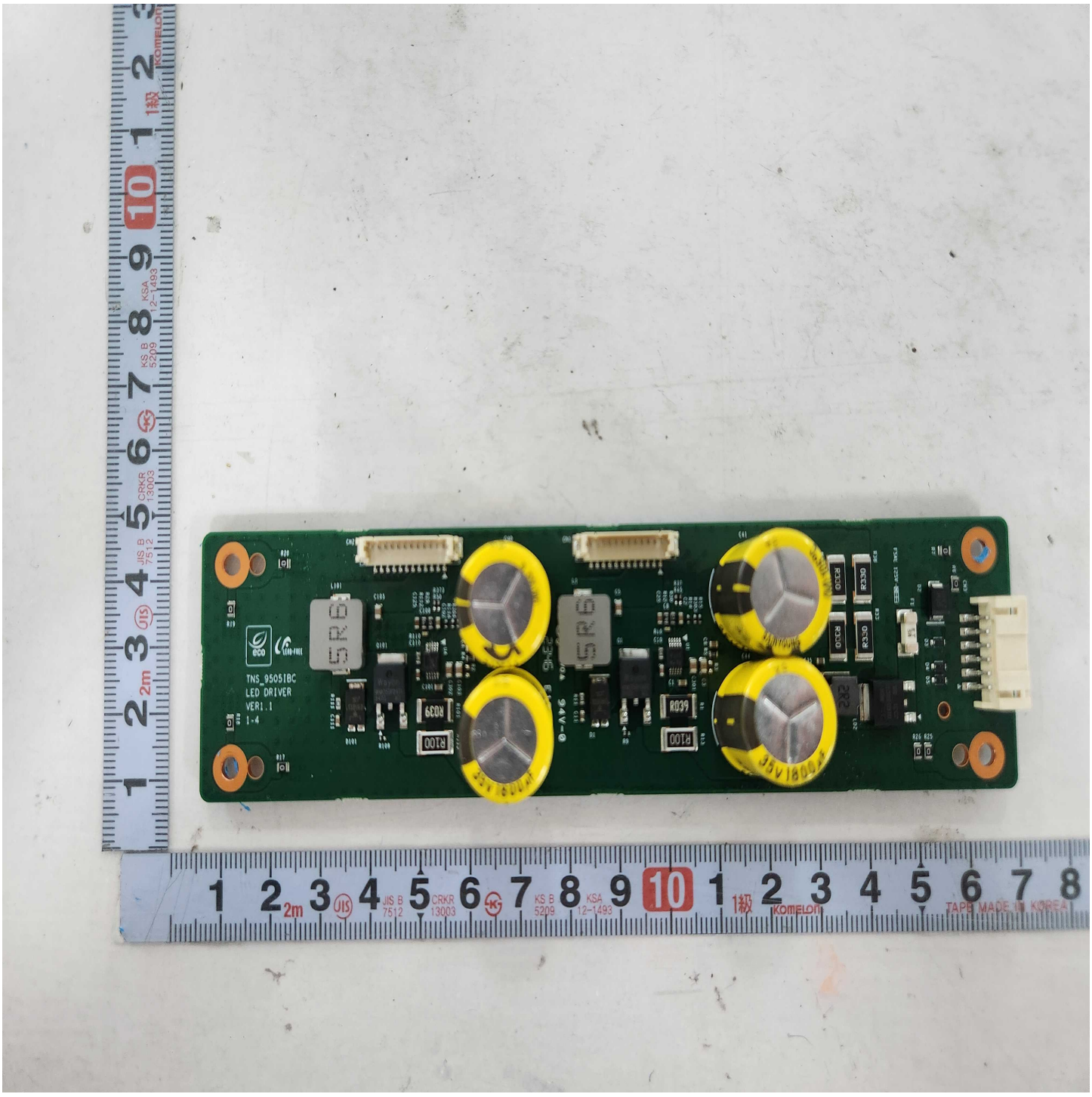
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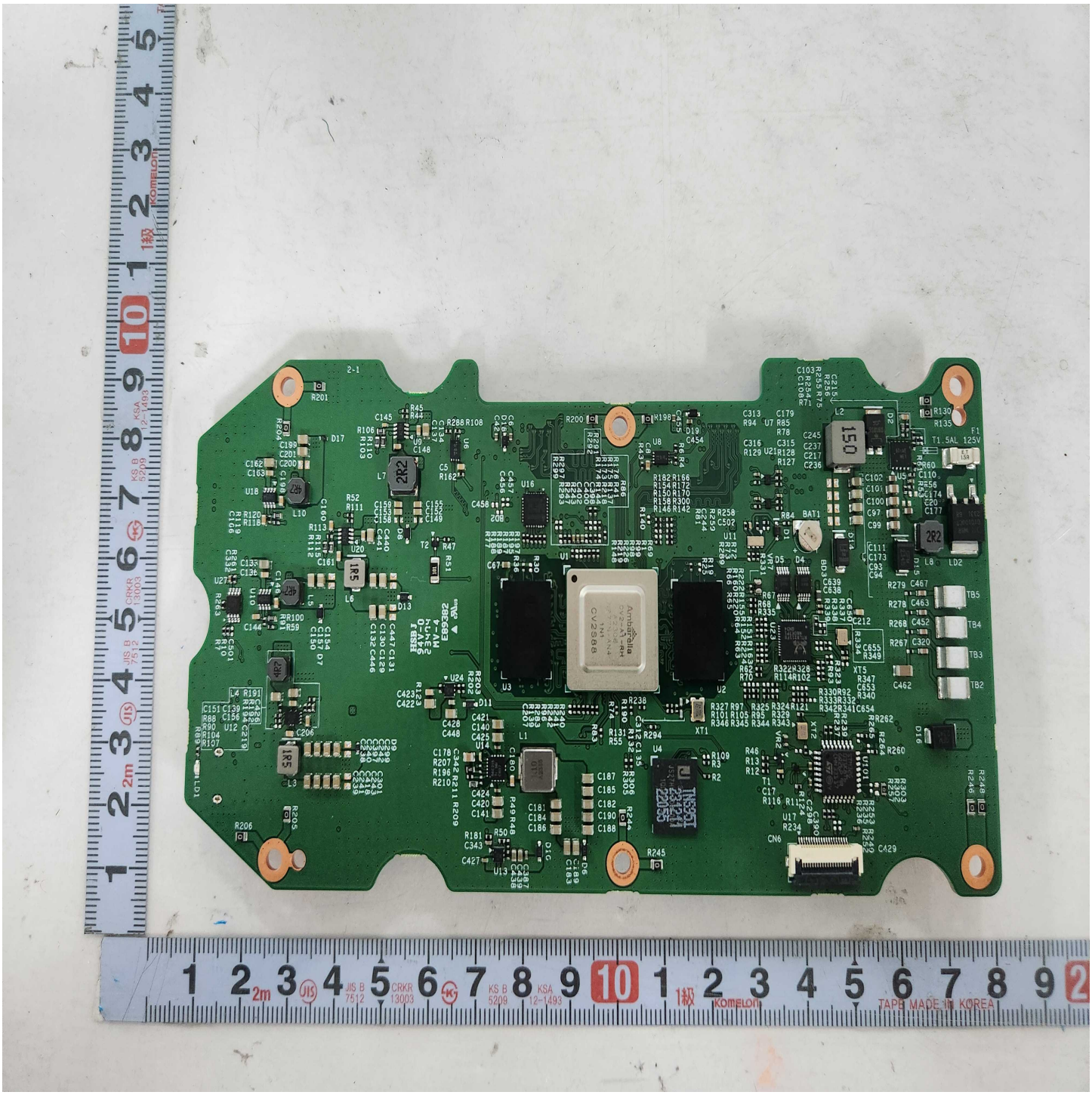
Photographs-06 Page-1



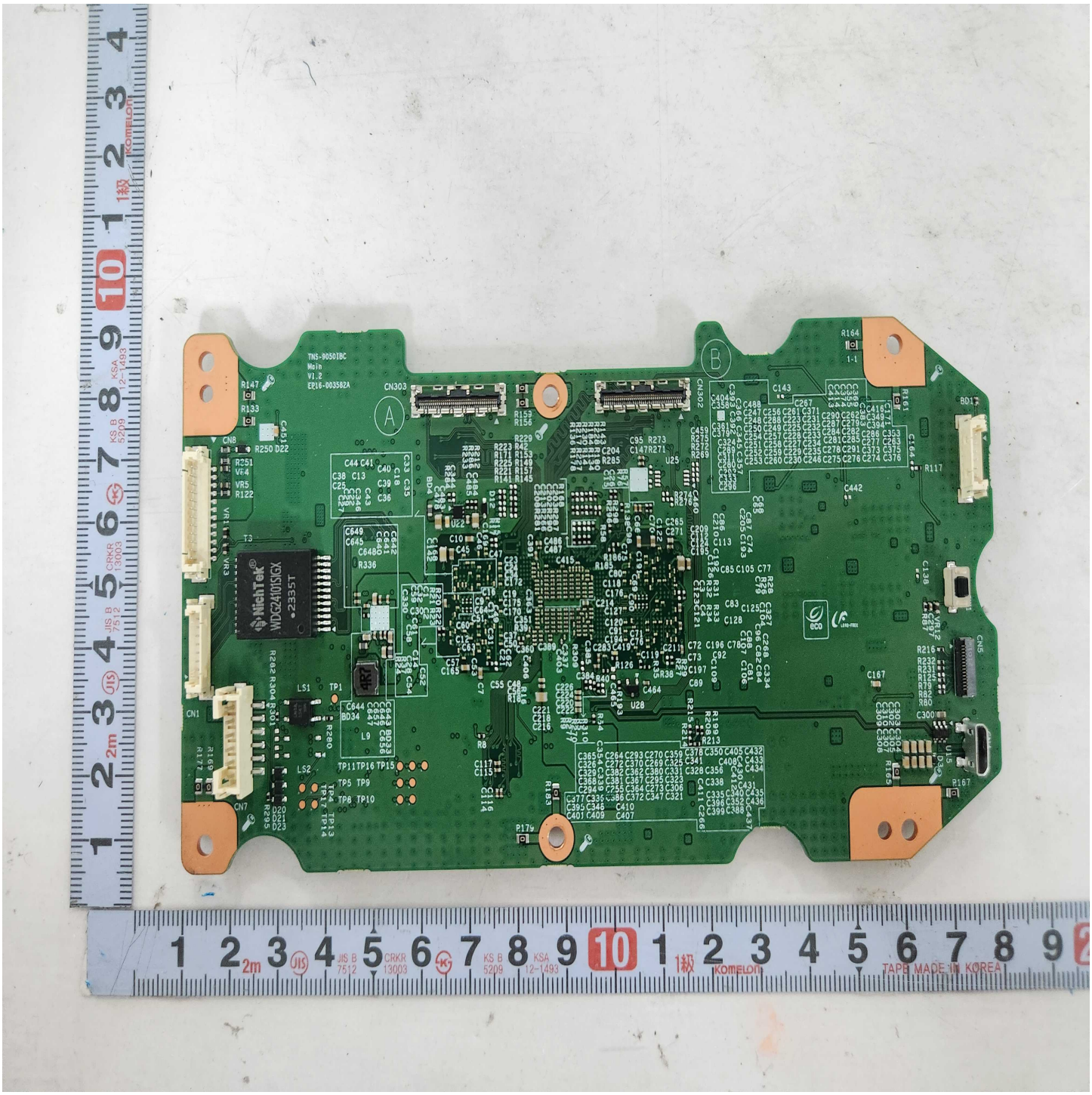
Photographs-07 Page-1



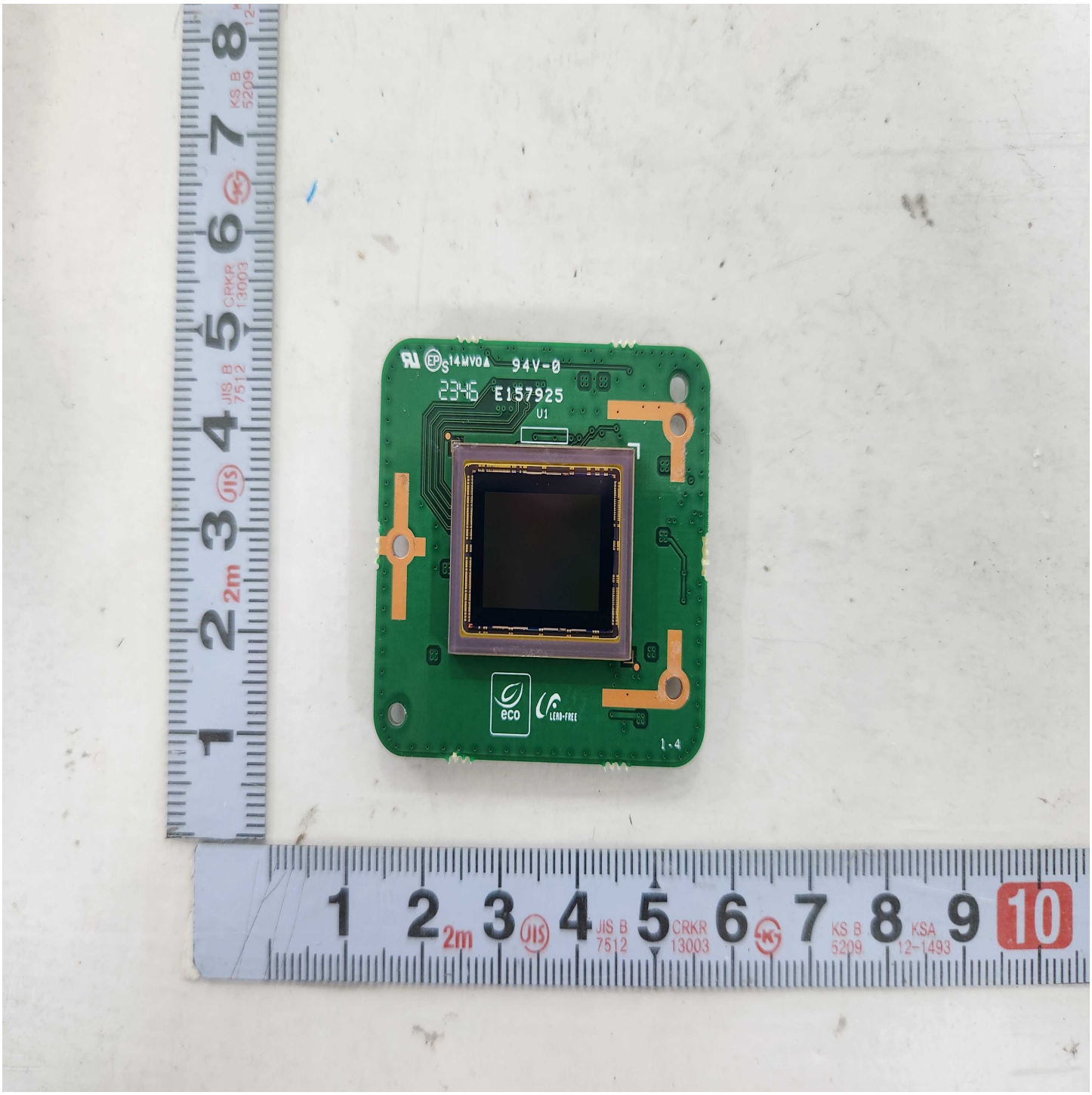
Photographs-08 Page-1



Photographs-09 Page-1



Photographs-10 Page-1



Photographs-11 Page-1

