LG Innotek

INSTALLATION MANUAL

Network Camera

Please read this manual carefully before operating your set and retain it for future reference.

MODEL
RNDF-BP02A

5PKA00129L

Ipsolute

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

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

This lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated 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.

WARNING: TO PREVENT FIRE OR ELECTRIC SHOCK HAZARD, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE.

WARNING: Do not ins tall this equipment in a confined space such as a book case or similar unit.

CAUTION: The apparatus should not be exposed to water (dripping or splashing) and no objects filled with liquids, such as vases, should be placed on the apparatus.

CAUTION: Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
Slots and openings in the cabinet are provided for ventilation and to ensure reliable operation of the product and to protect it from over heating. The openings shall be never be blocked by placing the product on a bed, sofa, rug or other similar surface. This product shall not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instruction has been adhered to.

CAUTION: Do not use high voltage products around this product. (ex. Electrical swatter) This product may malfunction due to electrical shock.

CAUTION: No naked flame sources, such as lighted candles, should be placed on the apparatus.

WARNING: Wiring methods shall be in accordance with the National Electric Code, ANSI/NFPA 70.

WARNING: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

WARNING: To reduce a risk of fire or electric shock, do not expose this product to rain or moisture.

WARNING: The product has been dropped or the case is broken, turn off the power and unplug the power cord. (This may cause fire, electric shock, or injury.)

WARNING: If the product has no video out or sound, please stop using. Unplug the power cable immediately and contact the service center. (This may cause fire or electric shock.)

CAUTION: This installation should be made by a qualified service person and should conform to all local codes.

CAUTION: To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

CAUTION: Prevent the power cable from being severely bent or having pressure exerted on it by a heavy object.

CAUTION: It is permitted to use ancillary equipment (e.g. A UPS) to prevent the damage from mains supply voltage reductions.

CAUTION: The power plug is the disconnecting device. In case of an emergency, the Power Plug must remain readily accessible.

NOTICE: For safety marking information including product identification and supply ratings, please refer to the main label on the bottom or the other surface of the product.
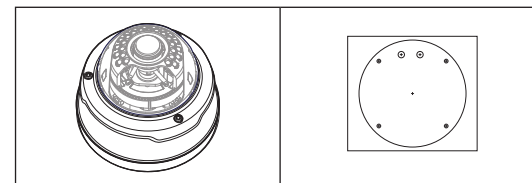
Disposal of your old appliance

1. This crossed-out wheeled bin symbol indicates that waste electrical and electronic products (WEEE) should be disposed of separately from the municipal waste stream.

2. Old electrical products can contain hazardous substances so correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health. Your old appliance may contain reusable parts that could be used to repair other products, and other valuable materials that can be recycled to conserve limited resources.

3. You can take your appliance either to the shop where you purchased the product, or contact your local government waste office for details of your nearest authorised WEEE collection point. For the most up to date information for your country please see www.lg.com/global/recycling

NOTE:
Please make sure the product is installed appropriate places where secured from flood, such as under the eaves, to operate properly. This product is certified as IP66 standard. However, if there is any flood concerns, it is highly recommended to use an outdoor Housing When you install the camera inside an outdoor Housing, please use one of the following methods:
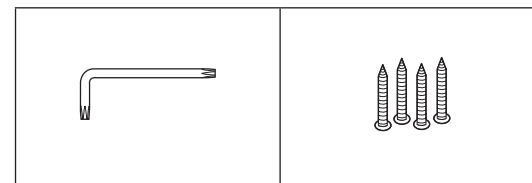
1. Remove the front glass of Housing before installing the camera.
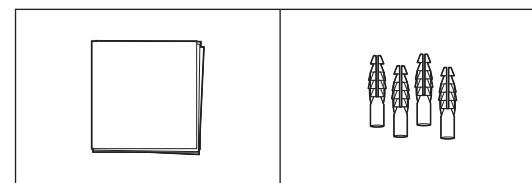2. To keep the front glass of Housing, remove the front cover, and then put the camera close to the front glass.

Power Supply
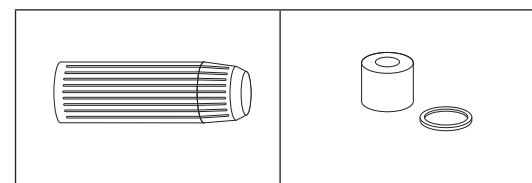This camera must always be operated DC 12 V Certified/Listed Adaptor which comply with LPS.

Handling of the unit
Be careful not to spill water or other liquids on the unit. Be cautions not to get combustible or metallic material inside the body. If used with foreign matter inside, the camera is liable to fail or to get cause of fire or electric shock.

- Remove dust or dirt on the surface of the lens with a blower.
- Use a dry soft cloth to clean the body. If it is very dirty, use a cloth dampened with a small quantity of neutral detergent then wipe dry.
- Avoid the use of volatile solvents such as thinners, alcohol, benzene and insecticides. They may damage the surface finish and/or impair the operation of the camera.
- This camera is designed for mounting on the ceiling or wall. If you install this camera upside down, it may cause malfunction.

Operating and storage location
Avoid viewing a very bright object (such as light fittings) during an extended period. Avoid operating or storing the unit in the following locations.

- Extremely hot or cold places (operating temperature -10 °C to 60 °C, however, we recommend that the unit be used within a temperature range of 0 °C to 45 °C)
- Damp or dust place
- Places exposed to rain
- Places subject to strong vibration
- Close to generators of powerful electromagnetic radiation such as radio or TV transmitters.

Symbols

~	Refers to alternating current(AC).
⎓	Refers to direct current(DC).
▣	Refers to class II equipment.
⏻	Refers to stand-by.
I	Refers to "ON" (power).
⚡	Refers to dangerous voltage.

Components

Camera	Template Label
Wrench	Tapping Screws (4EA)
Installation Manual	Anchor (4EA)
Water-proof Connector	Rubber fitting and Rubber Ring

LG Innotek

Specification

RNDF-BP02A		
Camera	Image Device	1/3" Progressive Scan CMOS
	Lens Type	2.8-12mm Vari-Focal Lens
	Day / Night	ICR
	Minimum illumination	Color : 0.6Lux @(F1.2,AGC ON)
		B/W : 0 Lux with IR LED on
	IR Distance	20m
	Image Enhance	Backlight compensation, Saturation, Brightness, Contrast, Sharpness, White balance, Exposure, Flip or Rotate Mode, Corridor, Privacy mask
Video / Audio	Compression	H.265 / H.264 / MJPEG
	Resolutions	3MP(2048*1536), 1296P(2304*1296), 1080P, 960P, 720P(1280*720)
	Maximum Frame rate	60Hz : 30fps @ 3MP, 1296P, 1080P, 960P, 720P 50Hz : 25fps @ 3MP, 1296P, 1080P, 960P, 720P
	Multi-Streaming	Up to 3
	ROI (Smart-Codec)	Support (Up to 8 zones)
	Video Analytics	Perimeter, Line Crossing, Stationary Object, Face Detection, Cross Counting
	Text Overlay	Support
	Audio Compression	G711A, G711U, ADPCM, G726
	2-way Audio	Support
Event	Event Trigger	Motion Detection, Port Alarm
	Event Notification	Relay Out, Email, FTP
	Pre-Alarm Recording	Support
Interface	Analog Out	1 BNC Out
	Audio In / Out	1 In / 1 Out
	Alarm In / Out	1 In / 1 Out
	SD Slot	Micro SD (Up to 128GB)

| **Network**	Ethernet	RJ-45 10, 100 BASE-T
	Security	Password protection, IP Filter
	Open Protocol	ONVIF
	Protocol	TCP/IP, UDP, ICMP, HTTP, HTTPS, FTP, DHCP, DNS, DDNS, RTP, RTSP, RTCP, PPPoE, NTP, UPnP, SMTP, SNMP, IGMP, 802.1X, QoS, IPv6, Bonjour
	Integrated Software	Mobile Application(iPhone, iPad, Android)
	Connections	Max. 10
General	Power Source	DC 12V, PoE
	Maximum Power Consumption	5W (DC 12V), 6W (PoE 48V)
	Maximum Input Current	417mA (DC 12V), 125mA (PoE)
	Operating conditions	-10℃ ~ 60℃ 0% RH to 95% RH
	Protection	IP66, IK10
	Dimensions	146.9 x 146.9 x 112.5 mm
	Weight	844 g

Note that design and specification of this unit may change from the manual as quality and improvement without prior notice.

Open Source Notice Information

To obtain the source code under GPL, LGPL, MPL and other open source licenses, that is contained in this product, please visit http://secu-iot.lginnotek.com.

In addition to the source code, all referred license terms, warranty disclaimers and copyright notices are available for download.

Part Names and Functions
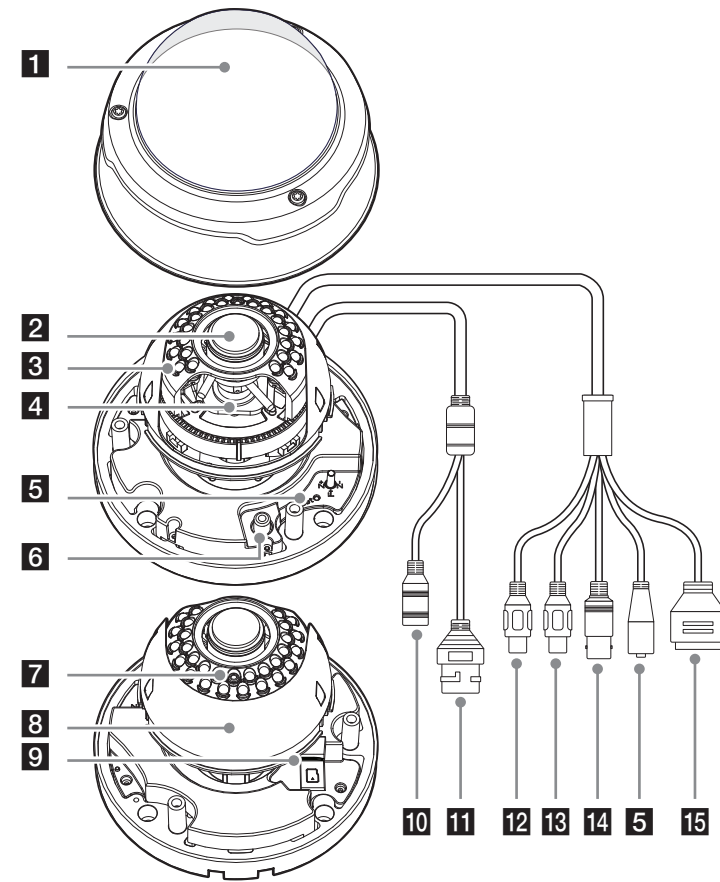
1 **Dome Cover**

2 **Camera Lens**

3 **IR LED**

> ⓘ Do not stare at operating IR LED within hazard distances (1 m).

4 **Zoom & Focus adjustment bar**

5 **RESET button**

Push the button more than 3 seconds, this would restore the camera settings to the factory default.

6 **Video Out Connector**

Use this jack for checking the picture with portable monitor when install the camera.

7 **IR Sensor**

8 **Lens Cover**

9 **micro SD card slot**

Insert the micro SD card.

10 **Power input connector**

Connects to a DC 12 V power supply using proper cables. This camera must always be operated a DC 12 V. Certified/Listed Adaptor which comply with LPS.

11 **Network/PoE Connector**

Connects to a PC or a network via a hub with a 10 BASE-T/100 BASE-TX cable attached RJ-45 connector.

> ⓘ Power over Ethernet (PoE) is a technology that integrates power into a standard LAN infrastructure. It enables power to be provided to the network device, such as a network camera, using the same cable as that used for network connection. It eliminates the need for power outlets at the device locations and enables easier application of uninterruptible power supplies (LPS).

12 **AUDIO IN connector**

13 **AUDIO OUT connector**

14 **VIDEO output connector (BNC type)**

15 **ALARM IN & OUT**

Provides physical interface for sensor and Alarm/Relay.
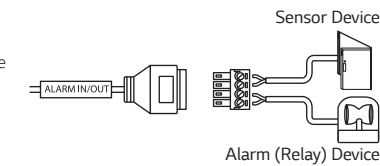
Connections
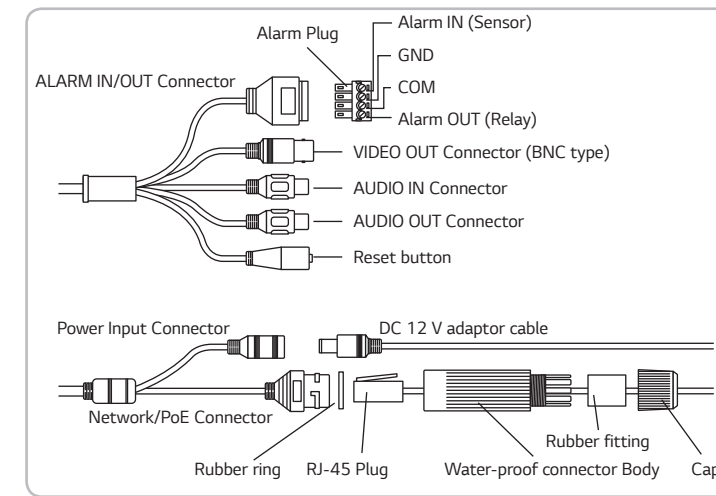
Precautions

- Be sure to switch off the unit before installation and connection.
- The installation should be made by qualified service personnel or system installers.
- Do not expose the power and connection cables to moisture, which may cause damage to the unit.

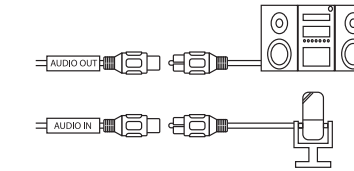### Connecting Alarm Device

The alarm connector is used to connect alarm devices such as sensors, door switches, etc.

Connect a sensor device and an alarm (relay) device to the alarm plug and insert the plug to the ALARM IN/OUT connector.

Connecting Microphone and Speaker Device

Optionally connect an active speaker and/or external microphone.

Connect an active speaker's AUDIO IN connector to the AUDIO OUT connector of the camera. Connect an external microphone to the AUDIO IN connector of the camera.

Connecting Power Source

Use one of the power connection method listed below.

To use the power adapter
Connect a DC 12 V power source to the power input connector.
(Recommended power adapter is DC 12 V/1.5 A or above)
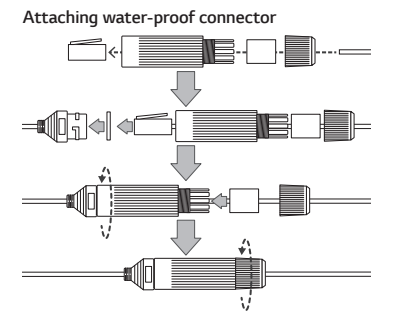
To use the PoE (Power over Ethernet) device
Connect the PoE cable to the network connector on the unit. You must use the "IEEE802.3af" standard PoE device.

> ⓘ If the camera doesn't work properly after connecting PoE device, please check if the PoE device supplies enough power.

Connecting Network

Connect the IP camera to your network using a standard RJ-45 network cable and water-proof connector described in the figure.

Attaching water-proof connector

1. Pass the Ethernet cable through the water-proof connector's cap, rubber fitting and body.
2. Crimp the RJ-45 plug to the end of the Ethernet cable.
3. Insert the rubber ring to the network connector.
4. Connect the RJ-45 plug to the network connector.
5. Insert the water-proof connector body and rotate it to fix.
6. Insert the rubber fitting and the cap to the body and rotate the cap to fix.

Installation

Using the micro SD card

You can record your surveillance environment with the micro SD card even if the network is disconnected condition.
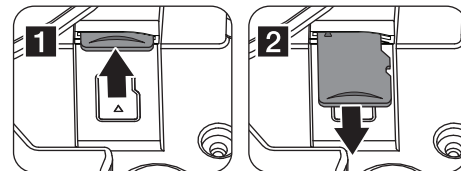
To insert the micro SD card
1. Remove the Dome Cover.
2. Insert the micro SD card carefully as shown in the figure. Make sure the micro SD card terminal position before inserting micro SD card. Push the back end of the micro SD card to fix it at the last step.
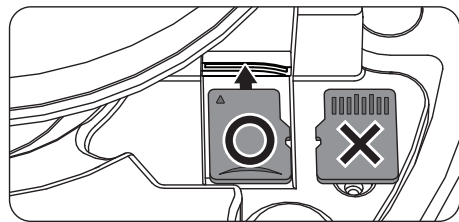
> ⓘ
> - Do not apply too much force when you insert the micro SD card. The micro SD card may be damaged.
> - If you insert the micro SD card in the wrong position, the micro SD card may be damaged or it may cause the malfunction of the micro SD Card Slot.
> - Keep the terminal part of the micro SD card in clean. Be careful the terminal part of the micro SD card not to dusty.
> - As the micro SD card is consumable, the micro SD card end its days and may be not able to save data if you use it more than over certain times. In this case, replace micro SD card to buy a new one.

Remove the micro SD card
1. Press the back end of the micro SD card to release the lock condition.
2. Take the micro SD card out carefully from the camera. It may cause a malfunction of the micro SD card or the micro SD card slot if you use the power too much at lock status.


> ⚠ LG Innotek is not responsible for deleted data caused by user mishandling when you insert or remove the micro SD card.
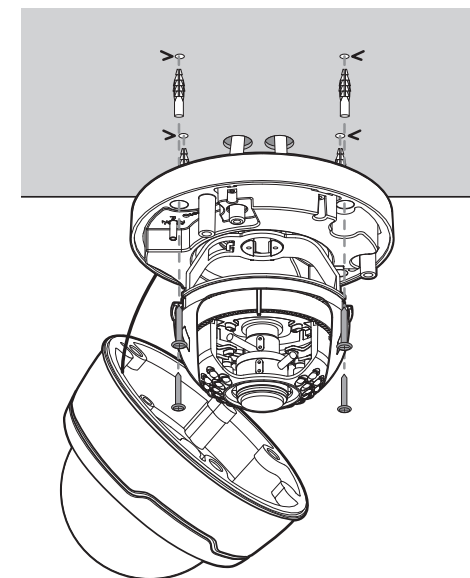
Mounting the camera

Follow the instructions below to mount the camera to a ceiling.

1. Attach the template label on the mounting location of the ceiling.
2. Make holes on the screwing locations and cable access location.
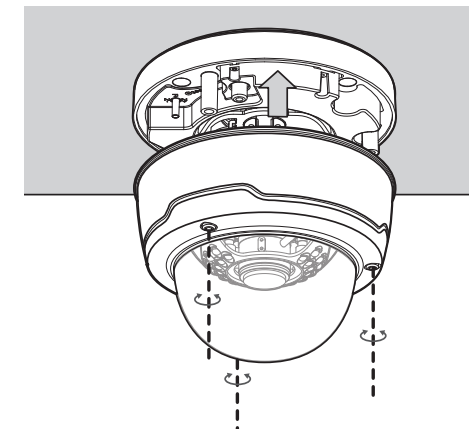3. Disassemble the dome cover.

> ⓘ Be careful not to hurt by the dome cover that hanging from the bracket.
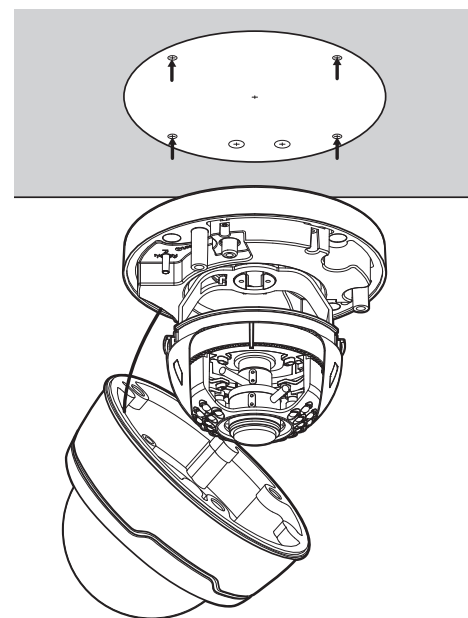
4. Make the required connections through the cable access hole.
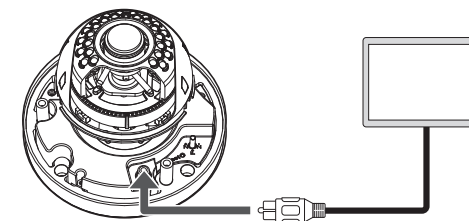5. Fix the camera on the ceiling by using anchors and tapping screws.

Camera Adjustment

1. Connect the portable monitor to the video out connector using the test monitor cable.

6. Assemble the dome cover and rotate the fixing screws to fix it to the camera body.

2. Adjust the Pan / Tilt / Rotate position of the camera.
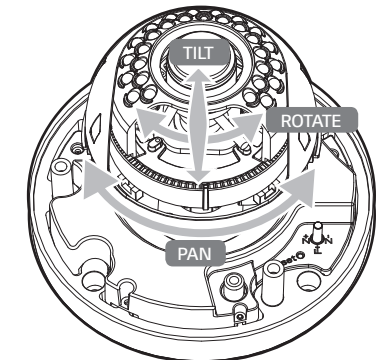
> ⓘ
> - Make sure when you assemble the camera in the right direction.
> - Do not make too much force when adjusting Pan, Tilt, Rotate. The camera could be damaged.
> - When you adjust the camera, be careful not to hurt your hands.
> - Disassemble the lens cover and reassemble after completing camera adjustment.

3. Adjust the zoom and focus.