

OWNER'S MANUAL

High Definition Network Camera

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

MODEL
LW352 series
LW355 series



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.

FCC WARNING: This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

REGULATORY INFORMATION: FCC Part 15

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

- A suitable conduit entries, knock-outs or glands shall be provided in the cable entries of this product in the end user.
- Caution: Danger of explosion if battery is incorrectly replaced. Replaced only with the same or equivalent type recommended by the manufacturer. Dispose of used batteries according to the manufacturer's instructions.
- Holes in metal, through which insulated wires pass, shall have smooth well rounded surfaces or shall be provided with brushings.

This Class A digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe A est conforme à la norme NMB-003 du Canada.

Warning: Do not install this equipment in a confined space such as a bookcase or similar unit.

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.

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

To disconnect power from mains, pull out the mains cord plug. When installing the product, ensure that the plug is easily accessible.



LG Electronics hereby declares that this/these product(s) is/are in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC and 2011/65/EU.

Contact office for compliance of this product:

- LG Electronics Inc.
EU Representative, Krijgsman 1, 1186 DM Amstelveen, The Netherlands
- Please note that this is NOT a Customer Service contact point. For Customer Service Information, see Warranty Card or contact the dealer that you purchased this product.

Disposal of your old appliance



- All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities.
- The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health.
- For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.

Important Safety Instructions

- Read these instructions.
- Keep these instructions.
- Heed all warnings.
- Follow all instructions.
- Do not use this apparatus near water.
- Clean only with dry cloth.
- Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

- 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.
- Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- Only use attachments/accessories specified by the manufacturer.
- 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.



- Unplug this apparatus during lightning storms or when unused for long periods of time.
- 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.

Handling of the unit

Be careful not to spill water or other liquids on the unit. Be cautious 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.

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.

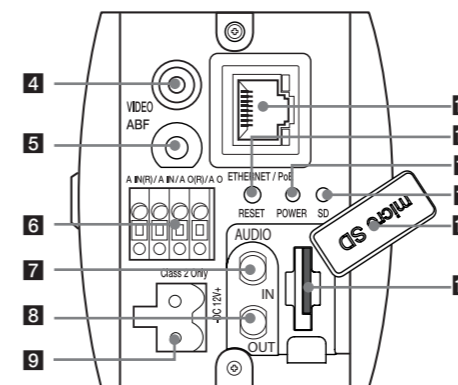
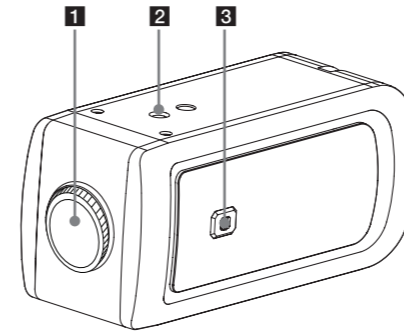
- Extremely hot or cold places (operating temperature -10 °C to 50 °C, however, we recommend that the unit be used within a temperature range of 0 °C to 45 °C)
- Damp or dust place
- Places exposed to rain
- Places subject to strong vibration
- Close to generators of powerful electromagnetic radiation such as radio or TV transmitters.

Specification

ITEM		LW352	LW355	
Camera	Image Device	6.49 mm (1/2.8 type) Progressive Scan CMOS (3.0 Mega Pixels)		
	Lens	DC-Iris, CS Mountable (Optimization of 6.49 mm (1/2.8 type) Lens of 3 Mega Pixels or above)		
	Illumination	Color	0.4 lx (F1.2, Gain : High)	
		B/W	0.005 lx (F1.2, Gain : High)	
	Resolution	Up to 2 040 x 1 536		
	Day/Night	ICR		
	WDR	Support		
	Image Enhancement	Backlight Compensation, 2D+3D-DNR, Exposure Control, Sens Up Control, AGC, White Balance, Privacy Masking, EIS, Sharpness, Digital Zoom		
Video	Video Out	RJ-45 (Network), RCA (Installation)		
	Compression	H.264, MJPEG		
	Frame Rate (Maximum)	20 fps @ 2 040 x 1 536, 1 280 x 1 024 30 fps @ 1 920 x 1 080, 1 280 x 720		
	Multi-Streaming	Dynamic Profile (Up to 7)		
Audio	Audio In/Out	1/1 (Line level input / output)		
	Compression	G.711, G.726		
	2-way Audio	Support		
Event	Alarm In/Out	1/1		
	Motion Detection	Support		
	Event Notification	Relay Out, Email, FTP		
	Pre Event Buffering	Support		
Video Analytics	Intruder Detection	Not support	Support	
	Crossing Line	Not support	Support	
	Object Removal	Not support	Support	
	Object Counting	Not support	Support	
	Tampering	Not support	Support	

Network	Ethernet	10/100 Ethernet	
	Security	Password Protection, HTTPS(SSL, TLS)	
		Protocol	IPv4 and IPv6
Management	Integrated Client	LG Ipsolute VMS	
	Open Protocol	ONVIF 2.2 Profile S,PSIA 1.1	
	Remote S/W	LV510, Mobile application (iPhone, Android, iPad)	
	Connections	Up to 10	
	Misc.	Power Source	PoE (IEEE 802.3af), DC 12 V (±20 %)
Power consumption	DC 12 V	Maximum 580 mA	Maximum 680 mA
		PoE	Maximum 200 mA
	Operating Temperature	-10 °C to 50 °C	
	Operating Humidity	0 % RH to 80 % RH	
Weight	508 g		
Dimension (W x H x D)	57.2 mm x 68 mm x 149 mm		

Part Names and Functions



1 Lens mount cap

2 Camera installation hole

3 Lens iris output connector (LENS)

This 4-pin connector is used to send the Iris control signal and power supply to an auto-iris type lens.

4 VIDEO OUT

5 ABF Auto Back Focus button

ABF Auto Back Focus is an adjustable function for the back focus automatically. Before you use it, you should set the zoom and focus of the lens approximately. If you press this button, the camera will be activated to adjust the back focus automatically. If you keep pressing this button about 4 seconds, the focus reset function will be activated.

6 External device connectors

- A IN(R)/A IN (Sensor input) Terminals: Provides physical interface for sensor.
- A OUT(R)/A OUT (Relay output) Terminals: Provides physical interface for Alarm/Relay.

7 AUDIO IN (Line Level Input)

Input for a mono microphone, or a line-in mono signal.

8 AUDIO OUT (Line Level Output)

Connect to an active speaker with a built-in amplifier.

9 Power input terminal

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.

10 ETHERNET/PoE Port

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

NOTE:

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).

11 RESET button

Push the button more than 3 seconds, this would restore the factory default network related settings.

12 Power indicator

Lights when the camera is powered.

13 micro SD card condition indicator

Lights when the micro SD card is activated normally. Blinks when the recording is in progress on the micro SD card.

14 micro SD card slot cover

15 micro SD card slot

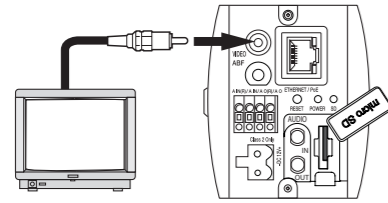
Connection & Installation

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 Display Device

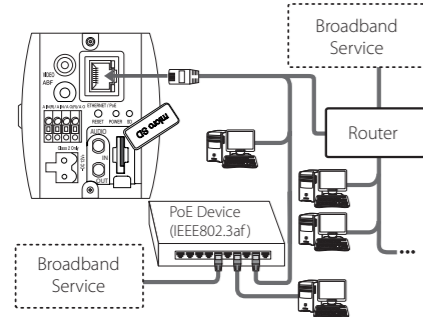
Connect the video signal between the IP camera and the monitor.



Connecting Network

You can control and monitor the system via network. With the remote control (monitoring), you can change the system configuration or monitor the image via network. After the installation, check the network settings for the remote control and monitoring work.

Connect the IP camera to your network using a standard RJ-45 network cable as shown below.

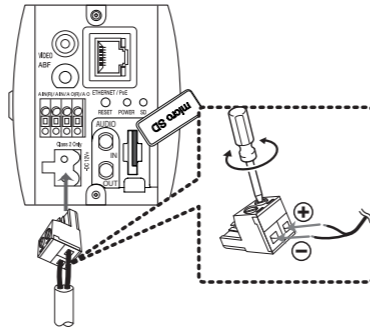


Connecting Power Source

Connect power, using one of the methods listed below:

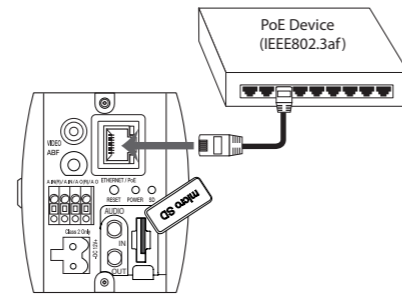
To use the power adapter

Connect a DC 12 V power source to the power input terminal as shown below. (Recommended power adapter is DC 12 V/1.5 A or above)
Connect a power source to the power input terminal with ⊕ and ⊖ aligned correctly as shown below.



To use the PoE (Power over Ethernet) device

Connect the PoE cable to the LAN port on the unit. You must use the "IEEE802.3af" standard PoE device.



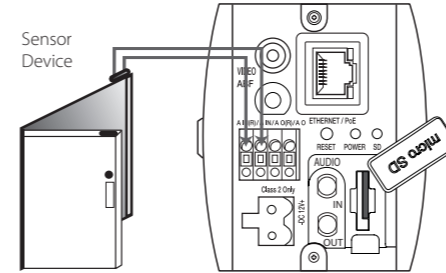
NOTE:
If the camera doesn't work properly after connecting PoE device, please check if the PoE device supplies enough power.

Connecting Alarm Device

Alarm terminals are used to connect the alarm (relay) devices such as sensors, door switches, etc.

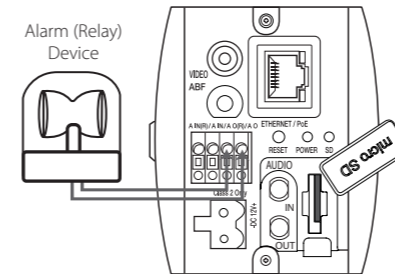
A IN(R)/A IN (Sensor Input)

Connect the sensor device to the sensor input terminal.



A OUT(R) / A OUT (Relay Output)

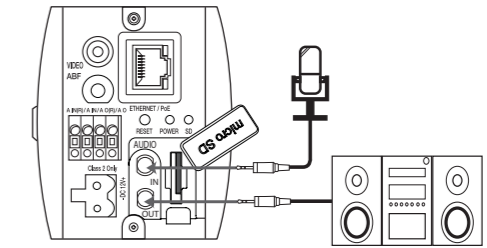
Connect the alarm (relay) device to the relay output terminal. Alarm signal is outputted at an event occurrence.



NOTE:
The Photo MOS Relay is rated for 100 mA at 20 V DC or 100 mA at 28 V AC.

Connecting Microphone and Speaker Device

Optionally connect an active speaker and/or external microphone with a built-in amplifier.



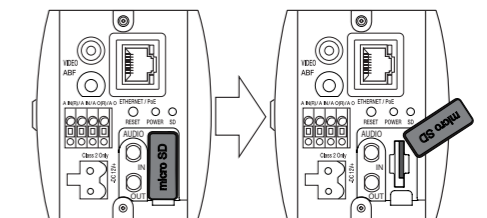
NOTE:
Keep the microphone away from the speaker to avoid howling.

Using the micro SD card

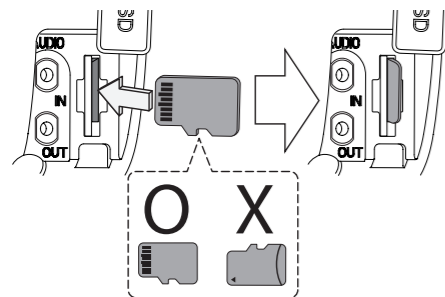
You can record your surveillance environment with the micro SD card even if the network is disconnected condition.

To insert the micro SD card

1. Open the micro SD Card Slot Cover.



2. Insert the micro SD card carefully as shown in the following illustrations. Make sure the micro SD card terminal position before insert the micro SD card. Push the back end of the micro SD card to fix it at the last step.

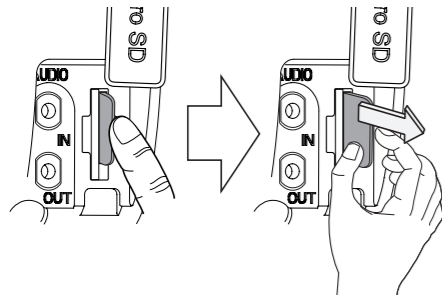


NOTES:

- Do not use the power too much 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.



CAUTION:

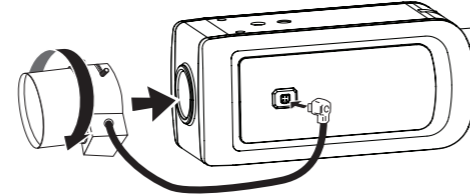
- If you install the micro SD card on the camera and remove with the micro SD card condition indicator lights on, you must unmount the micro SD card by using the [SD Card > Configuration > Disk Management > Unmount] menu. The micro SD card data is compromised or the camera may not operate normally, if you remove the card without use [Unmount] function.
- LG Electronics is not responsible for deleted data caused by user mishandling when you insert or remove the micro SD card.

Recommended the micro SD card specification

Maker	Capacity	Block Size (FAT 32)	Note
LG	Less than 32 GB	32 kbyte	Speed of reading and writing more than 10 MB/Second (Class 6)
Sandisk			
Transcend			

Mounting the Lens

1. Remove the lens mount cap from the camera.
2. Install the C\$ mount type lens. Carefully align the lens mount with the camera opening, then turn the lens slowly to install it. The proper installation is that you face each flat (non-hood) side toward the corner.



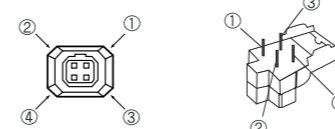
3. Connect the lens plug to the lens iris output connector (LENS) on the side of the camera. When using lenses from other makers, the plug shape may not correspond to the terminal on the camera. In such a case, remove the original plug and using a soldering iron, connect a lens iris plug according to the diagram.

NOTES:

- Recommended DC-Iris Lens
- | Maker | Model name |
|----------|------------------|
| COMPUTAR | AG3Z3112FCS-MPIR |
- We recommend using 6.49 mm (1/2.8 Type) Lens of 3 Mega Pixel or above.

Lens iris output connector

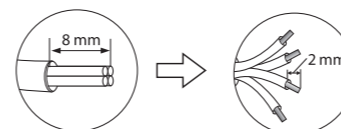
Pin layout for the lens iris output connector.



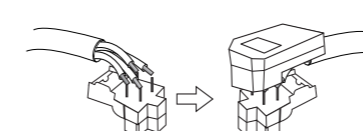
No.	DC type lenses	VIDEO type lenses
1	Damping -	Vcc (+9 V)
2	Damping +	Not used
3	Drive +	Video
4	Drive -	Ground

Rewire the lens iris plug

1. Cut off the plug of the lens cable, cut off approximately 8 mm of the insulation, and then strip approximately 2 mm of the ends of the cable sheaths.



2. Solder the ends of the cable wires to the ends of the pins, and then attach the cover of the lens iris plug.



Focus adjustment

After installing the lens, you should adjust the focus as shown below steps.

1. Keep pressing the ABF button about 4 seconds to initialize the focus.
2. Set the zoom level of the lens approximately.
3. Set the focus of the lens approximately.
4. Press the ABF button. The camera will be activated to adjust the focus automatically.

Camera Installation

Select a location that is strong enough to bear the full weight and install the camera securely.

