GeoVision Inc.
The Vision of Security

GV-IPCam

Hardware Manual



- Cube Camera
- Mini Fixed Dome
- Mini Fixed Rugged Dome
- Target Mini Fixed Dome
- Target Mini Fixed Rugged Dome

Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

ICH265HISIV105-A

Caution

Risk of explosion if battery is replaced by an incorrect type.
Dispose of used batteries according to the instructions.

Safety Notice

The GV-IPCAM uses a Lithium battery as the power supply for its internal real-time clock (RTC). The battery should not be replaced unless required!

If the battery does need replacing, please observe the following:

- Danger of Explosion if battery is incorrectly replaced
- Replace only with the same or equivalent battery, as recommended by the manufacturer
- Dispose of used batteries according to the manufacturer's instructions

© 2016 GeoVision, Inc. All rights reserved.
Under the copyright laws, this manual may not be copied, in whole or in part, without the written consent of GeoVision.

Every effort has been made to ensure that the information in this manual is accurate. GeoVision, Inc. makes no expressed or implied warranty of any kind and assumes no responsibility for errors or omissions. No liability is assumed for incidental or consequential damages arising from the use of the information or products contained herein. Features and specifications are subject to change without notice. Note: no memory card slot or local storage function for Argentina.

GeoVision, Inc.
9F, No. 246, Sec. 1, Neihu Rd.,
Neihu District, Taipei, Taiwan
Tel: +886-2-8797-8377
Fax: +886-2-8797-8335
http://www.geovision.com.tw

Trademarks used in this manual: *GeoVision*, the *GeoVision* logo and GV series products are trademarks of GeoVision, Inc.

December 2016

Contents

Contents i

Options iii

Note for USB Storage and WiFi Adapter v

Note for Installing Camera Outdoor vi

Chapter 1 Mini Fixed Dome & Mini Fixed Rugged Dome 1

1.1 Packing List 4
1.2 Features 6
1.3 Overview 9
1.3.1 GV-MFD120 / 130 / 320 9
1.3.2 GV-MFD1501 Series / 2401 Series / 2501 Series / 3401 Series / 5301 Series 11
1.3.3 GV-MDR 13
1.4 Installation 16
1.4.1 GV-MFD Series 16
1.4.2 GV-MDR Series 18
1.5 Connecting the Camera 23
1.5.1 Wire Definition 23
1.5.2 Power and Network Connection 24
1.5.3 Vehicle Installation 25
1.6 Loading Factory Default 26

Chapter 2 Target Mini Fixed Dome 27

2.1 Packing List 28
2.2 Features 29
2.3 Overview 31

2.4 Installation 33
2.5 Connecting the Camera 36
2.6 Loading Factory Default 37

Chapter 3 Target Mini Fixed Rugged Dome 38

3.1 Packing List 39
3.2 Features 41
3.3 Overview 43
3.4 Installation 44
3.5 Connecting the Camera 51
3.6 Loading Factory Default 52

Chapter 4 Cube Camera 53

4.1 Packing List 54
4.2 Features 55
4.3 Overview 56
4.4 Installation 57
4.5 Connecting the Camera 59
4.6 Loading Factory Default 60

Chapter 5 Advanced Cube Camera 61

5.1 Packing List 62
5.2 Features 63
5.3 Overview 64
5.4 Installation 66
5.5 Connecting the Camera 68
5.6 Loading Factory Default 69

Options

Optional devices can expand your camera's capabilities and versatility. Contact your dealer for more information.

Device	Description
Power Adapter	The power adapter is available for all Mini Fixed Dome, Cube Camera, and Advanced Cube Camera. Contact your sales representative for the countries and areas supported.
GV-PA191 PoE Adapter	The GV-PA191 PoE adapter is designed to provide power and network connection to the cameras over a single Ethernet cable.
GV-POE Switch	The GV-POE Switch is designed to provide power along with network connection for IP devices. The GV-POE Switch is available in various models with different numbers and types of ports.
GV-Mount Accessories	The GV-Mount Accessories provide a comprehensive lineup of accessories for installation on ceiling, wall corner and pole. For details, see *GV-Mount Accessories Installation Guide* on the Software DVD.
GV-WiFi Adapter	The GV-WiFi Adapter is a plug-and-play device designed to connect GV-MFD1501 series / 2401 series / 2501 series / 3401 series / 5301 series to wireless network. This product complies with IEEE 802.11 b/g/n (Draft 3.0) standards for wireless networking.

Device	Description
Plastic PG21 Conduit Connector	The plastic PG21 conduit connector is used for running the wires of Target Mini Fixed Rugged Dome through a 1/2” conduit pipe. The connector is not supported by GV-EFD4700.

Note for USB Storage and WiFi Adapter

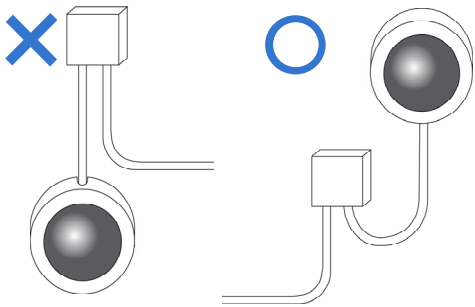
Mind the following limitations and requirements for using USB storage and GV-WiFi Adapter:

1. The USB hard drive must be of 2.5'' or 3.5'', version 2.0 or above.
2. The USB hard drive's storage capacity must not exceed 2TB.
3. USB flash drives and USB hubs are not supported.
4. External power supply is required for the USB hard drive.
5. To connect a GV-WiFi Adapter, make sure it is connected before the camera is powered on.

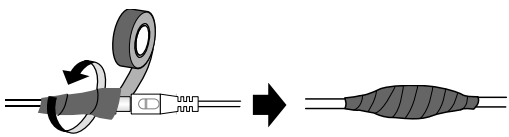
Note for Installing Camera Outdoor

When installing **Mini Fixed Rugged Dome** outdoor, be sure that:

1. The camera is set up above the junction box to prevent water from entering the camera along the cables.



2. Any PoE, power, audio and I/O cables are waterproofed using waterproof silicon rubber or the like.



3. The silica gel bag loses its effectiveness when the dry camera is opened. To prevent the lens from fogging up, replace the silica gel bag every time you open the camera, and conceal the gel bag in camera within 2 minutes of exposing to open air.

Chapter 1 Mini Fixed Dome & Mini Fixed Rugged Dome

The Mini Fixed Dome (GV-MFD) and Mini Fixed Rugged Dome (GV-MDR) are fixed, mini-sized ceiling-mount network cameras.

The GV-MDR series is designed for outdoor surveillance, conforming to IK10 and IP67 standards. The camera is adjustable in 3 axis (pan, tilt and rotate) and can be connected through PoE.

The GV-MFD series is designed for indoor surveillance. Adjustable in 2 axis (pan and tilt), the camera also supports PoE.

The **super low lux** models can provide color live view in near darkness and the **WDR Pro** models can process scenes of contrasting intensity of lights. For details, see *1.2 Features*.

Mini Fixed Dome (GV-MFD)

Model No.		Specifications	Description
GV-MFD120	Fixed Lens	Fixed Iris, f: 4 mm, F/1.5, 1/3'' M12 Mount	1.3 MP Low Lux, H.264, Color
GV-MFD130 GV-MFD320		Fixed Iris, f: 2.54 mm, F/2.8, 1/2.5'' M12 Mount	1.3 MP / 2 MP / 3 MP / 5MP, H.264, Color
GV-MFD1501-0F GV-MFD2401-0F GV-MFD2501-0F GV-MFD3401-0F GV-MFD5301-0F		Fixed Iris, f: 2.8 mm, F/2.0, 1/3'' M12 Mount	1.3 MP Super Low Lux / 2 MP / 2 MP Super Low Lux / 3 MP / 5 MP, H.264, Color
GV-MFD1501-1F GV-MFD2501-1F		Fixed Iris, f: 4 mm, F/1.5, 1/3'' M12 Mount	
GV-MFD1501-2F GV-MFD2401-2F GV-MFD2501-2F GV-MFD3401-2F GV-MFD5301-2F		Fixed Iris, f: 8 mm, F/1.6, 1/3'' M12 Mount	
GV-MFD1501-3F GV-MFD2401-3F GV-MFD2501-3F GV-MFD3401-3F GV-MFD5301-3F		Fixed Iris, f: 12 mm, F/1.6, 1/3'' M12 Mount	
GV-MFD1501-4F GV-MFD2401-4F		Fixed Iris, f: 2.1 mm, F/1.8, 1/3'' M12 Mount	
GV-MFD1501-5F GV-MFD2401-5F GV-MFD2501-5F GV-MFD3401-5F GV-MFD5301-5F		Fixed Iris, f: 3.8 mm, F/1.8, 1/3'' M12 Mount	

Model No.		Specifications	Description
GV-MFD2501-6F GV-MFD3401-6F	Fixed Lens	Fixed Iris, f: 2.3mm, F/2.2, 1/3'' M12 Mount	2 MP Super Low Lux / 3 MP WDR Pro, H.264, Color

Mini Fixed Rugged Dome (GV-MDR)

Model No.		Specifications	Description
GV-MDR220 GV-MDR320 GV-MDR520	Fixed Lens	Fixed Iris, f: 2.54 mm, F/2.8, 1/2.5'' M12 Mount	2 MP / 3 MP / 5MP, H.264, Color
GV-MDR1500-1F GV-MDR3400-1F GV-MDR5300-1F		Fixed Iris, f: 2.8 mm, F/2.0, 1/3'' M12 Mount	1.3 MP super low lux / 2 MP WDR Pro / 2 MP super low lux / 3 MP WDR Pro / 5 MP, H.264, Color
GV-MDR1500-2F GV-MDR3400-2F GV-MDR5300-2F		Fixed Iris, f: 3.8 mm, F/1.8, 1/3'' M12 Mount	

1.1 Packing List

GV-MFD

- Mini Fixed Dome
- Torx Wrench
- Self Tapping Screw x 2
- Screw Anchor x 2
- Cable stopper
- 2-pin terminal block (for GV-MFD120 / 130 / 320)
- Short-Body RJ-45 Plug (for GV-MFD1501 series / 2401 series / 2501 series / 3401 series / 5301 series)
- USB / Audio Y-cable (for GV-MFD1501 series / 2401 series / 2501 series / 3401 series / 5301 series)
- Power Adapter
- GV-IPCAM H.264 Software DVD
- GV-Software DVD
- Warranty Card

Note: The power adapter can be excluded upon request.

GV-MDR

- Mini Fixed Rugged Dome
- Torx Wrench
- Self Tapping Screw x 2
- Screw Anchor x 2
- Cable stopper
- Cable Connector
- Installation sticker
- Silica gel bag x 2
- Adhesive Tape for Silica Gel Bag x 2
- Ferrite core for vehicle installation
- GV-IPCAM H.264 Software DVD
- GV-Software DVD

Note:

1. The power adapter can be excluded upon request.
2. When purchasing **GV-MDR1500 / 3400 / 5300**, choose one of the two LAN connector types (for motor vehicles or for general use). For details, see *LAN Connector*, *1.3.3 GV-MDR*.

1.2 Features

- Image sensor

GV-MFD

Camera Model	Image Sensor
GV-MFD120	1/3'' progressive scan low lux CMOS
GV-MFD130 GV-MFD320	1/2.5'' progressive scan CMOS
GV-MFD1501 series	1/3'' progressive scan super low lux CMOS
GV-MFD2501 series	1/2.8'' progressive scan super low lux CMOS
GV-MFD2401 series GV-MFD3401 series	1/3.2'' progressive scan CMOS
GV-MFD5301 series	1/2.5'' progressive scan CMOS

GV-MDR

Camera Model	Image Sensor
GV-MDR1500 Series	1/3'' progressive scan super low lux CMOS
GV-MDR220 GV-MDR320 GV-MDR520 GV-MDR5300 Series	1/2.5'' progressive scan CMOS
GV-MDR3400 Series	1/3.2'' progressive scan CMOS

- Megapixel lens
- Dual streams from H.264 or MJPEG
- Frame rate

GV-MFD

Camera Model	Frame Rate
GV-MFD120 GV-MFD130 GV-MFD1501 series	Up to 30 fps at 1280 x 1024
GV-MFD2401 series GV-MFD2501 series	Up to 30 fps at 1920 x 1080
GV-MFD320 GV-MFD3401 series	Up to 20 fps at 2048 x 1536
GV-MFD5301 series	Up to 10 fps at 2560 x 1920

GV-MDR

Camera Model	Frame Rate
GV-MDR1500 series	Up to 30 fps at 1280 x 1024
GV-MDR220	Up to 30 fps at 1920 x 1080
GV-MDR320 GV-MDR3400 series	Up to 20 fps at 2048 x 1536
GV-MDR520 GV-MDR5300 series	Up to 10 fps at 2560 x 1920

- Day and night function (electronic)
- Wide Dynamic Range (WDR)
- Wide Dynamic Range Pro (WDR Pro for GV-MFD2401 series / 3401 series and GV-MDR3400 series)
- Defog
- Vandal resistance (IK10 for metal casing, GV-MDR series only)
- Ingress protection (IP67 for GV-MDR series only)
- EN50155 compliance for rolling stock applications (for GV-MDR series only)
- Endurable to low environment temperatures (-30°C ~ 50°C / -22°F ~ 122°F) (for GV-MDR series only)

- 2-axis mechanism (GV-MFD series); 3-axis mechanism (GV-MDR series)

Camera Type	Pan	Tilt	Rotate
GV-MFD series	-45° ~ +45°	0° ~ 90°	N/A
GV-MDR series	-45° ~ +45°	0° ~ 90°	0° ~ 360°

- Micro SD card slot (SD/SDHC) for local storage
- NAS recording
- Recording assigned by GV-Edge Recording Manager (Windows & Mac)
- USB slot for GV-WiFi adapter or USB hard drive (for GV-MFD1501 Series / 2401 series / 2501 series / 3401 series / 5301 series)
- Built-in microphone
- DC / PoE (IEEE 802.3af, for GV-MFD Series)
- PoE (IEEE 802.3af, for GV-MDR Series)
- Two-way audio (for GV-MFD1501 Series / 2401 series / 2501 series / 3401 series / 5301 series)
- 3D noise reduction (for GV-MFD1501 Series / 2501 Series, GV-MDR1500 Series)
- 2D noise reduction (except for GV-MFD1501 Series / 2501 Series, GV-MDR1500 Series)
- Motion detection
- Tampering alarm
- Privacy mask
- Text overlay
- IP address filtering
- Support for iPhone, iPad, Android and 3GPP
- 31 languages on Web interface
- ONVIF (Profile S) conformant

1.3 Overview

1.3.1 GV-MFD120 / 130 / 320



Figure 1-1

No.	Name	Description
1	Default Button	Resets the camera to factory default. For details, see *1.6 Loading Factory Default*.
2	Lens	Receives image inputs.
3	Tilt Screw	Loosens the screw to adjust tilt angle.
4	Microphone	Provides one-way audio.
5	Pan Screw	Loosens the screw to pan.

No.	Name	Description
6	LED Indicators	See *LED Indicators* below.
7	Memory Card Slot	Inserts a micro SD card (SD/SDHC, version 2.0 only, Class 10) to store recording data.

LED Name	Description
1. Link	Turns on when the network is connected.
2. ACT	Turns on when data are being transmitted.
3. PWR	Turns on when power is on.
4. SW RDY (Status)	Turns on when the system is ready.

1.3.2 GV-MFD1501 Series / 2401 Series / 2501 Series / 3401 Series / 5301 Series

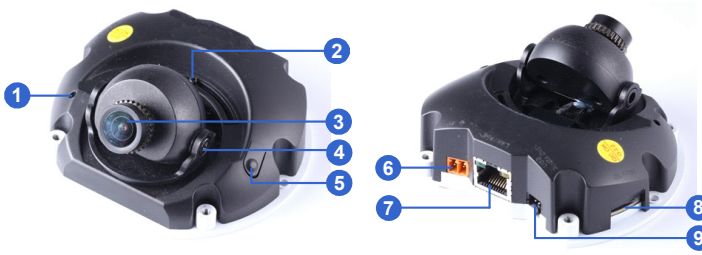


Figure 1-2

No.	Name	Description
1	Microphone	Receives sound.
2	Pan Screw	Loosens the screw to pan.
3	Lens	Receives image inputs.
4	Tilt Screw	Loosens the screw to adjust tilt angle.
5	Default Button	Resets the camera to factory default. For details, see *1.6 Loading Factory Default*.
6	DC 5V Power Port	Connects to power.
7	LAN / PoE	Connects to a 10/100 Ethernet or PoE.
8	Memory Card Slot	Inserts a micro SD card (SD/SDHC, version 2.0 only, Class 10) to store recording data.
9	USB and Audio Out	Connects to a GV-WiFi Adapter/USB hard drive and a speaker through the supplied Y cable.

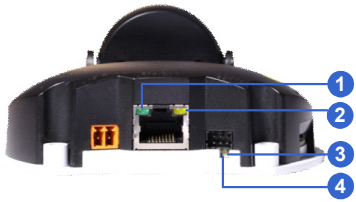


Figure 1-3

LED Name	Description
1. Link	Turns on (green) when the network is connected.
2. ACT	Turns on (orange) when data are being transmitted.
3. Status	Turns on (red) when the system is ready.
4. Power	Turns on (green) when power is on.

Note: For details on limitations and requirements of the USB port, refer to *Note for USB Storage and WiFi Adapter* at the beginning of this manual.

1.3.3 GV-MDR

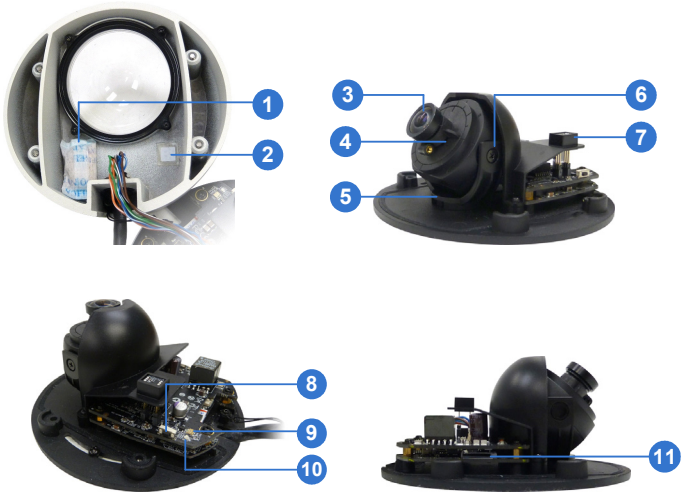


Figure 1-4

No.	Name	Description
1	Silica gel bag	Absorbs the moisture inside the camera.
2	Conceal paper	Prevents water or moisture from entering the camera.
3	Lens	Receives image inputs.
4	Rotation Disc	Rotates the camera lens.
5	Pan Disc	Pans the camera lens.
6	Tilt Screw	Loosens to tilt the camera.
7	Microphone	Provides one-way audio.

No.	Name	Description
8	Default Button	Resets the camera to factory default. For details, see *1.6 Loading Factory Default*.
9	Power and status LED	Turns red when the power is on. Flashes orange light twice when the system is ready.
10	LAN LED	Turns on when the network is connected.
11	Memory Card Slot	Inserts a micro SD card (SD/SDHC, version 2.0 only, Class 10) to store recording data.

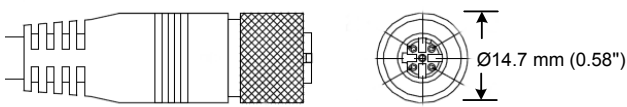
IMPORTANT: In case of damage and possible condensation inside the camera housing, be sure not to touch or remove the conceal paper.

LAN Connector

Two types of LAN connector are available for GV-MDR1500 series / 3400 series / 5300 series. Select an option based on your installation environment.

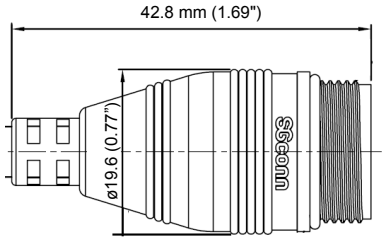
1. **Waterproof M12 4-Pin Female Connector**

   The M12 connector is used for motor vehicles.



2. **Small Waterproof Connector**

   For this connector type, see *1.4.2 GV-MDR* to install the supplied cable connector.



1.4 Installation

To install a Mini Fixed Dome, make sure the installing site is shielded from rain and moisture.

1.4.1 GV-MFD Series

1. Unscrew the housing cover using the supplied torx wrench.
2. Put the camera on the desired location and make 2 marks on the ceiling for screw anchors. If you want to run the cables inside the ceiling, make a round mark with a diameter of 2.5 cm.
3. Drill the marks and insert the screw anchors.
4. Secure the Mini Fixed Dome to the ceiling with the self-tapping screws.
5. Connect the camera to network and power. For details, see *1.5 Connecting the Camera*.
6. Access the live view. For details, see *2.1 Accessing the Live View, GV-IPCam Firmware Manual*.
7. Adjust the angles based on the live view.

Pan Adjustment



Figure 1-5

Tilt Adjustment

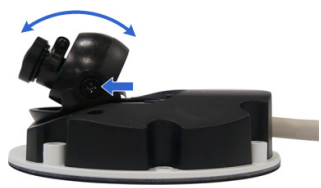


Figure 1-6

8. Adjust image clarity using the GV-IP Device Utility program. For details, see *2.3 Adjusting Image Clarity, GV-IPCam Firmware Manual*.
9. Insert a Micro SD card (SD/SDHC, version 2.0 only, Class 10) into the memory card slot (No. 7, Figure 1-1).
10. Secure the housing cover using the supplied torx wrench.
11. Optionally conceal the cable opening with the supplied cable stopper.



Figure 1-7

1.4.2 GV-MDR Series

1. Paste the installation sticker on the desired location. The arrow should point toward the direction that the camera faces.
2. Drill one hole on each of the two curves for screw anchors. Drill the circle (30 mm in diameter) if you want to run the cable into the ceiling.

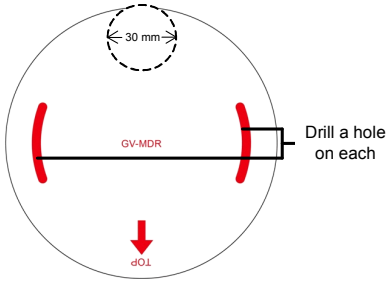


Figure 1-8

3. Insert the screw anchors.
4. Unscrew the housing cover using the supplied torx wrench.
5. Secure the camera body to the ceiling with the self-tapping screws.



Figure 1-9

6. Install the cable connector to waterproof the cable. You should have 5 parts:



Figure 1-10

A. Prepare an Ethernet cable with the RJ-45 connector on one end only.



Figure 1-11

B. Connect the Ethernet cable to the camera cable.

C. Paste the sticker to the camera cable and slide in all the components as shown below.



Figure 1-12

D. Move all the components toward the RJ-45 connector, fit item 4 to item 2, secure item 3 to the camera cable and finally secure item 5 to item 2 tightly.



Figure 1-13

IMPORTANT: Item 5 must be secured tightly to waterproof the cable.

---

7. Access the live view. For details, see *2.1 Accessing the Live View, GV-IPCam Firmware Manual*.
8. Adjust the angles based on the live view.

Pan Adjustment



Figure 1-14

Tilt Adjustment

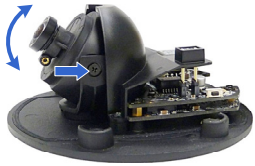


Figure 1-15

Rotational Adjustment



Figure 1-16

9. Adjust image clarity using the GV-IP Device Utility program. For details, see 2.*2 Adjusting Image Clarity, GV-IPCam Firmware Manual*.
10. Insert a Micro SD card (SD/SDHC, version 2.0 only, Class 10) into the memory card slot (No. 11, Figure 1-2).
11. Replace the silica gel bag.

IMPORTANT: The silica gel bag loses it effectiveness when the dry camera is opened. To prevent the lens from fogging up, replace the silica gel bag every time you open the camera, and conceal the gel bag in camera within 2 minutes of exposing to open air.

---

12. Secure the housing cover using the supplied torx wrench.

13. Optionally conceal the cable opening with the supplied cable stopper.

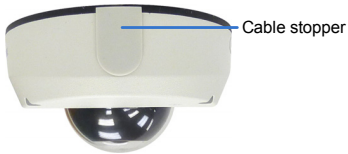


Figure 1-17

1.5 Connecting the Camera

Refer to the wire definition and illustrations below to connect the power and network.

1.5.1 Wire Definition

GV-MFD120 / 130 / 320

The data cable provides connections for power and network access. The wires are illustrated and defined below:



Figure 1-18

No.	Wire Color	Definition
1	Yellow	DC 12V+
2	Orange	GND
3	Gray	PoE, Ethernet

GV-MDR Series

Power and network connectivity is provided through a PoE cable.

Wire Color	Definition
Gray	PoE, Ethernet

1.5.2 Power and Network Connection

Use one of the following methods to power on and connect your camera to network:

- **Wired connection with PoE:** Use a Power over Ethernet (PoE) adapter to connect the camera to the network, and the power will be provided at the same time.
- **Wired connection with network cable (GV-MFD Series only):** Connect the camera with a standard network cable and use the power adapter to supply power. For details, see *Powering On for GV-MFD Series* below to assemble the terminal block with power adapter.
- **Wireless connection (GV-MFD1501 Series / 2401 Series / 2501 Series / 3401 Series / 5301 Series only):** Connect the camera with a GV-WiFi Adapter (optional accessory) and use the power adapter to supply power.

Powering On the GV-MFD120 / 130 / 320

1. Insert the orange wire of the camera to the left pin (-) and the yellow wire to the right pin (+) of the terminal block.

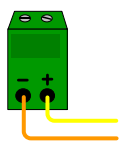


Figure 1-19

2. Connect the power adapter to the terminal block.



Figure 1-20

3. Connect the camera to network using a network cable.

1.5.3 Vehicle Installation

To install the **Mini Fixed Rugged Dome** on a vehicle, clip the ferrite core to the camera cable. In accordance to EN 50155, the ferrite core is used for reduction of the cable-based and radiated interferences, ensuring stable image quality. The ferrite core must be attached as close as possible to the camera with the maximum distance of 15 cm.

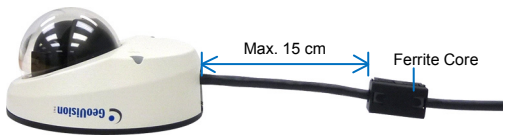


Figure 1-21

1.6 Loading Factory Default

1. Keep the power and network cables (or PoE) connected to the camera.
2. Press and hold the **default** button.

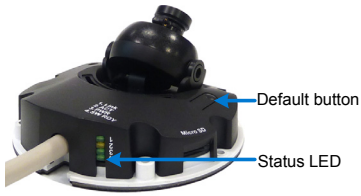


Figure 1-22

(GV-MFD120 / 130 / 320)



Figure 1-23

(GV-MFD1501 Series / 2401 Series / 2501 Series / 3401 Series / 5301 Series)

3. Release the **default** button when the **status LED** blinks. This shall take about 8 seconds.
4. When the **status LED** fades, the process of loading default settings is completed and the camera reboots automatically.

Chapter 2 Target Mini Fixed Dome

The Target Mini Fixed Dome (GV-EFD) is an indoor, fixed, mini-sized network camera equipped with an automatic IR-cut filter and IR LEDs for day and night surveillance. Adjustable in 2 axis (pan and tilt), it offers an entry-level surveillance solution with all the essential features and excellent image quality.

Model No.		Specifications	Description
GV-EFD1100-0F GV-EFD2100-0F	Fixed Lens	Fixed Iris, f: 2.8 mm, F/2.0, 1/2.7" M12 Mount	1.3 MP / 2 MP, H.264, Low Lux
GV-EFD4700-0F		Fixed Iris, f: 2.8 mm, F/2.0, 1/2.7" M12 Mount	4 MP, H.265, Super Low Lux, WDR Pro
GV-EFD1100-2F GV-EFD2100-2F		Fixed Iris, f: 3.8 mm, F/1.8, 1/2.7" M12 Mount	1.3 MP / 2 MP, H.264, Low Lux
GV-EFD4700-2F		Fixed Iris, f: 3.8 mm, F/1.8, 1/2.7" M12 Mount	4 MP, H.265, Super Low Lux, WDR Pro

2.1 Packing List

- Target Mini Fixed Dome (for GV-EFD1100 Series / 2100 Series)
- H.265 Mini Fixed Dome (for GV-EFD4700 Series)
- Screw x 2
- Screw Anchor x 2
- Focus Adjustment Ring
- GV-IPCAM Software DVD
- GV-Software DVD
- Warranty Card

Note: Power adapters can be purchased upon request.

2.2 Features

- Image sensor

Camera Model	Image Sensor
GV-EFD1100 Series	1/3'' progressive scan low lux CMOS
GV-EFD2100 Series	1/2.8'' progressive scan low lux CMOS
GV-EFD4700 Series	1/3" progressive scan super low lux CMOS

- Frame rate:

Camera Model	Frame Rate
GV-EFD1100 Series	Up to 30 fps at 1280 x 1024
GV-EFD2100 Series	Up to 30 fps at 1920 x 1080
GV-EFD4700 Series	Up to 25 fps at 2560 x 1440 Up to 30 fps at 2048 x 1520

- Dual streams from H.264 or MJPEG

  Dual streams from H.265, H.264 or MJPEG (for GV-EFD4700 Series)
- Min. illumination at 0.02 lux (for GV-EFD4700 Series)
- Intelligent IR
- Day and night function (with removable IR-cut filter)
- Megapixel lens
- 2-axis mechanism (pan / tilt)
- Build-in microphone
- DV 12V / PoE (IEEE 802.3af)
- Wide Dynamic Range (WDR)

  Wide Dynamic Range Pro (WDR Pro) (for GV-EFD4700 Series)
- 3D noise reduction (for GV-EFD4700 Series)
- Smart streaming (for GV-EFD4700 Series)
- Defog
- Motion detection

- Tampering alarm
- Text overlay
- Privacy mask
- IP address filtering
- NAS Recording (for GV-EFD1100 / 2100 Series)
- Recording assigned by GV-Edge Recording Manager (Windows & Mac)
- Support for iPhone, iPad, Android and 3GPP
- 31 languages on Web interface
- ONVIF (Profile S) conformant

Note: For optimal performance and compatibility, it is highly recommended to use GV-EFD1100 / 2100 Series with a GV-NAS System.

2.3 Overview

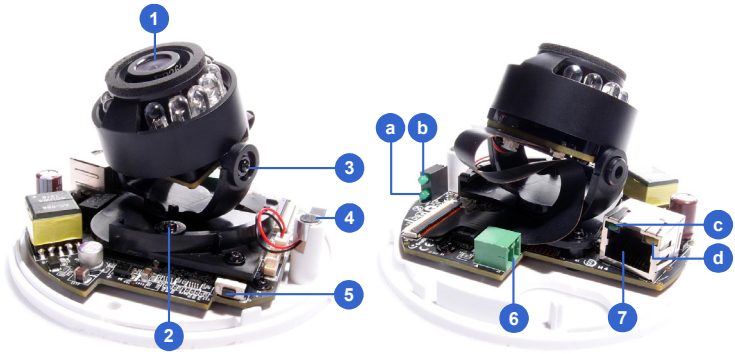


Figure 2-1

No.	Name	Description
1	Lens	Receives image inputs.
2	Pan Screw	Loosens the screw to adjust pan angle.
3	Tilt Screw	Loosens the screw to adjust tilt angle.
4	Microphone	Receives sound.
5	Default Button	Resets the camera to factory default. For details, see *2.6 Loading Factory Default*.
6	DC 12V Port	Connects to power.
7	LAN / PoE	Connects to a 10/100 Ethernet or PoE.
a	Status	Turns on (green) when the system is ready.
b	Power	Turns on (green) when power is on.
c	Link	Turns on (green) when the network is connected.
d	ACT	Turns on (orange) when data are being transmitted.

Note: The TV-out function can only be used during installation to adjust the focus of the camera. To use the TV out function, connect the supplied black BNC connector to a monitor and select your signal format (NTSC or PAL) at the **TV Out** field on the Web interface. The default signal format is NTSC. For details, see *4.1.1 Video Settings, GV-IPCam Firmware Manual*.

2.4 Installation

The Target Mini Fixed Dome can be installed on the wall or the ceiling. Before installing the camera, make sure the installing site is shielded from rain and moisture.

1. Open the housing cover by turning.



Figure 2-2

2. Place the camera where you want to install it, and make 2 marks on the ceiling or the wall for screw anchors. If you want to run the cables inside the ceiling or the wall, make a round mark with a diameter of 2.5 cm.

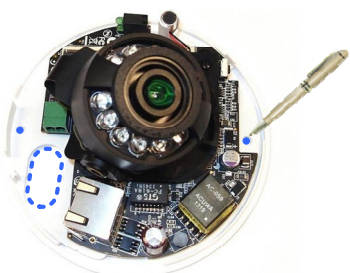


Figure 2-3

3. Drill the marks and insert the screw anchors.
4. Thread the power and / or network cable(s) through the oval-shaped hole or the cable opening on the side.

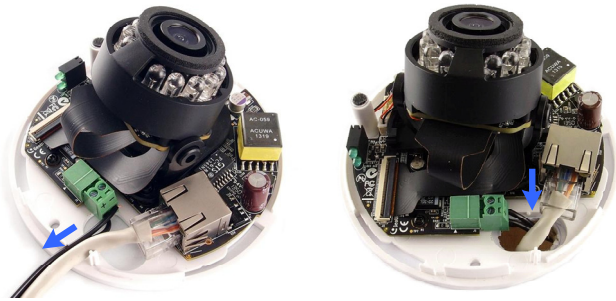


Figure 2-4

5. Connect the camera to network and power. For details, see *2.5 Connecting the Camera*.
6. Secure the camera to the ceiling or the wall with the supplied screws.
7. Access the live view. For details, see *2.1 Accessing the Live View, GV-IPCam Firmware Manual*.

Note: The TV-out function can only be used during installation to adjust the focus of the camera. To use the TV out function, connect the supplied black BNC connector to a monitor and select your signal format (NTSC or PAL) at the **TV Out** field on the Web interface. The default signal format is NTSC. For details, see *4.1.1 Video Settings, GV-IPCam Firmware Manual*.

---

8. Adjust image clarity using the GV-IP Device Utility program. For details, see *2.2 Adjusting Image Clarity, GV-IPCam Firmware Manual*.

9. Loosen the tile screw, pan screw or rotational screw. Adjust the angles based on the live view as needed, and tighten the screws again.

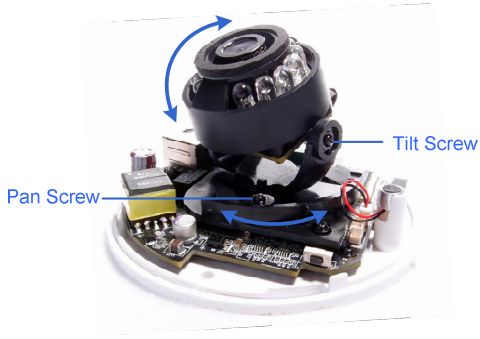


Figure 2-5

10. Place the housing cover back and turn to secure it.

2.5 Connecting the Camera

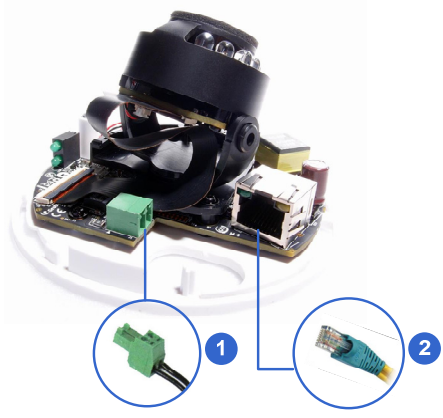


Figure 2-6

1. Connect power using one of the following methods:
   - Plug the power adapter to the 12V terminal block. The power adapter is an optional device. For detail, see *Options* in the manual.
   - Use the Power over Ethernet (PoE) function and the power will be provided over the network cable.

   The power and status LEDs shall turn on (green).
2. Use a standard network cable to connect the camera to your network.
3. You are ready to access the live view, adjust the image clarity and configure the basics. See *Getting Started, Chapter 2, GV-IPCam Firmware Manual*.

2.6 Loading Factory Default

1. Keep the power and network cables (or PoE) connected to the camera.
2. Press and hold the **default** button for about 8 seconds.



Figure 2-7

3. Release the **default** button when the **status LED** blinks.



Figure 2-8

4. When the **status LED** fades, the process of loading default settings is completed and the camera reboots automatically.

Chapter 3 Target Mini Fixed Rugged Dome

The Target Mini Fixed Rugged Dome (GV-EDR) is an outdoor, fixed, mini-sized network camera equipped with an automatic IR-cut filter and IR LEDs for day and night surveillance. Adhering to IK10 and IP67 standards, it offers an entry-level outdoor surveillance solution with all the essential features and excellent image quality.

For GV-EDR4700, with its super low lux CMOS image sensor and WDR Pro, it is capable of not only providing a color live view in near darkness but also under contrasting light intensities. GV-EDR4700 can support H.265 video codec to achieve better compression ratio while maintaining high quality pictures at reduced network bandwidths.

Model No.		Specifications	Description
GV-EDR1100-0F GV-EDR2100-0F GV-EDR4700-0F	Fixed Lens	Fixed Iris, f: 2.8 mm, F/2.0, 1/2.7” M12 Mount	1.3 MP / 2 MP, H.264, Low Lux, 4 MP, H.265, Super Low Lux
GV-EDR1100-2F GV-EDR2100-2F GV-EDR4700-2F		Fixed Iris, f: 3.8 mm, F/1.8, 1/2.7” M12 Mount	

3.1 Packing List

- Target Mini Fixed Rugged Dome
- Screw x 2
- Screw Anchor x 2
- Focus Adjustment Ring
- Installation Sticker
- Conduit Converter
- RJ-45 Connector
- Waterproof Rubber Sets (for RJ-45 Cat.5 and 12V DC / for RJ-45 Cat.6)

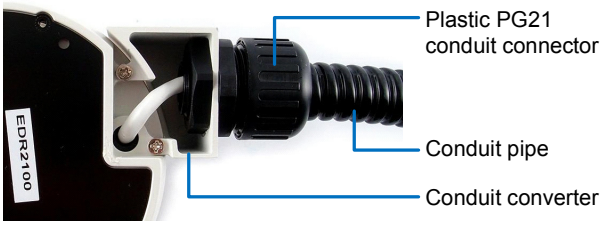


Cat.5 (Ø 5 mm) Cat.6 (Ø 6 mm)

- Torx Wrench
- Silica Gel Bag x 2
- Adhesive Tape for Silica Gel Bag x 2
- Concave Hexagon Wrench
- Ruler
- Screw for Conduit Converter x 2
- GV-IPCAM Software DVD
- GV-Software DVD
- Warranty Card

Note: Power adapters can be purchased upon request.

Note: You can choose to run the wires through a conduit pipe. After you have threaded all the wires, install the supplied conduit converter with a PG21 conduit connector and a self-prepared conduit pipe (of 1/2'', 3/4'' or 1'') to the camera. Do not use a 1/2'' pipe if you use the power adapter for power supply because the adapter cannot be threaded through. A plastic PG21 conduit connector for 1/2" pipe can be purchased upon request.



3.2 Features

- Image sensor

Camera Model	Image Sensor
GV-EDR1100 Series	1/3'' progressive scan low lux CMOS
GV-EDR2100 Series	1/2.8'' progressive scan low lux CMOS
GV-EDR4700 Series	1/3" progressive scan super low lux CMOS

- Dual streams from H.264 or MJPEG
- Dual streams from H.265, H.264 or MJPEG (for GV-EDR4700 Series)
- Frame rate

Camera Model	Frame Rate
GV-EDR1100 Series	30 fps at 1280 x 1024
GV-EDR2100 Series	30 fps at 1920 x 1080
GV-EDR4700 Series	25 fps at 2560 x 1440

- Day and night function (with removable IR-cut filter)
- 2-axis mechanism (pan / tilt)
- DV 12V / PoE (IEEE 802.3af)
- Wide Dynamic Range (WDR)
- Wide Dynamic Range Pro (WDR Pro) (for GV-EDR4700 Series)
- Intelligent IR
- 3D noise reduction (for GV-EDR4700 Series)
- Smart streaming (for GV-EDR4700 Series)
- Defog
- Ingress protection (IP67)
- Vandal resistance (IK10 for metal casing)
- Motion detection
- Tampering alarm

- Text overlay
- Privacy mask
- IP address filtering
- Megapixel lens
- NAS Recording (excluding GV-EDR4700 Series)
- Recording assigned by GV-Edge Recording Manager (Windows & Mac)
- Support for iPhone, iPad, Android and 3GPP
- 31 languages on Web interface
- ONVIF (Profile S) conformant

Note: For optimal performance and compatibility, it is highly recommended to use a GV-NAS System.

3.3 Overview

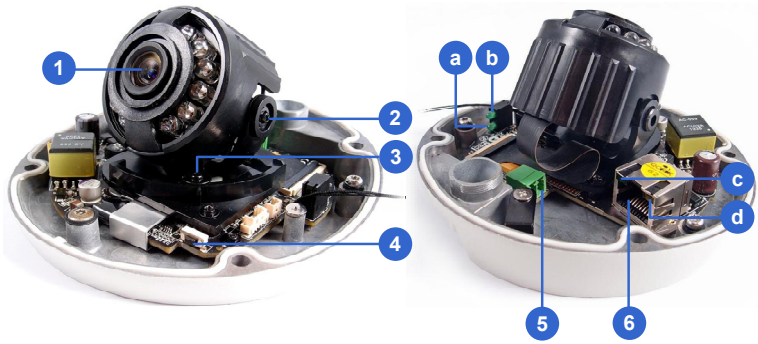


Figure 3-1

No.	Name	Description
1	Lens	Receives image inputs.
2	Tilt Screw	Loosens the screw to adjust tilt angle.
3	Pan Screw	Loosens the screw to adjust pan angle.
4	Default Button	Resets the camera to factory default. For details, see *3.6 Loading Factory Default*.
5	DC 12V Port	Connects to power.
6	LAN / PoE	Connects to a 10/100 Ethernet or PoE.
a	Status	Turns on (green) when the system is ready.
b	Power	Turns on (green) when power is on.
c	Link	Turns on (green) when the network is connected.
d	ACT	Turns on (orange) when data are being transmitted.

3.4 Installation

The Target Mini Fixed Rugged Dome can be installed on the wall or ceiling. You must use the supplied waterproof rubber set to waterproof the cable.

1. Paste the installation sticker where you want to install, and drill two holes that are at a diagonal. To run the cables inside the wall or ceiling, drill a larger opening as shown below.

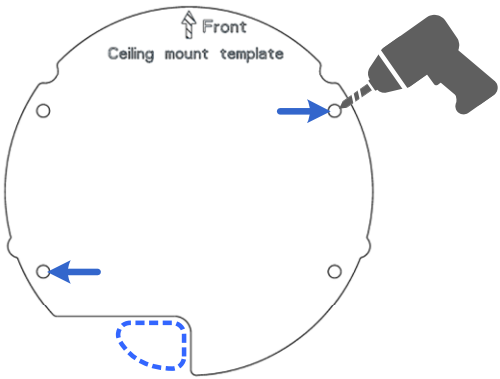


Figure 3-2

2. Insert the supplied screw anchors into the two drilled holes.
3. Open the camera's housing cover using the supplied torx wrench.



Figure 3-3

4. Unscrew the three screws as indicated below. A back plate can be separated from the bottom.

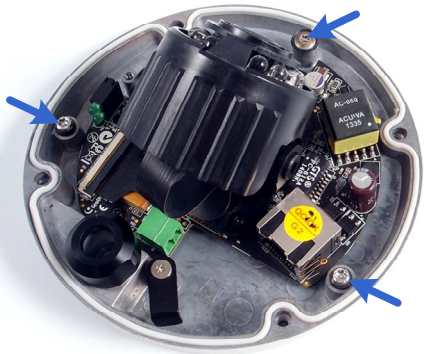


Figure 3-4

5. Use the 2 supplied screws to secure the back plate onto the ceiling or the wall where the screw anchors were inserted.



Figure 3-5

6. Prepare an Ethernet cable with the RJ-45 connector on one end only.

7. Remove the waterproof cap from the cable opening and thread the power and / or network cable(s) through the opening.

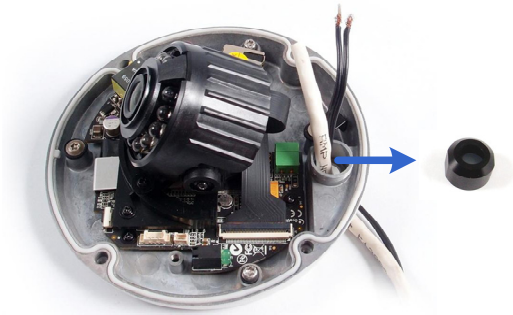


Figure 3-6

8. Install the supplied waterproof rubber set onto the cable(s). The rubber set has two parts. According to the below situation, replace Part 1 if necessary.
   - For users of PoE with a Cat.5 Ethernet cable, stay with Part 1a on the camera body.
   - For users of PoE with a Cat.6 Ethernet cable, change Part 1a to the supplied Waterproof rubber set (1b).
   - For users of DC 12V, change Part 1a to the supplied Waterproof rubber set (1c).

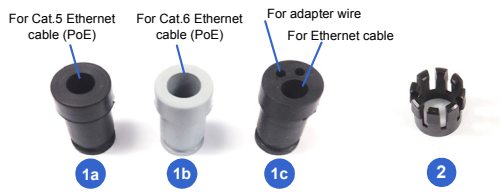


Figure 3-7

A. Slide the waterproof rubber set, and the waterproof cap you previously removed through the cable(s) as shown below.



Figure 3-8

B. Connect the supplied RJ-45 connector to the Ethernet cable.

C. If you are using a power adapter, insert the striped wire to the left pin (+) and the other wire to the right pin (-).

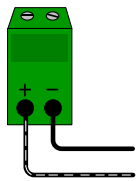


Figure 3-9

D. Fit item 1 to item 2, and insert them in the cable opening. Use the supplied ruler to make sure the length of the cable(s) from the bottom of the opening to the end of the cable is under 10 cm.

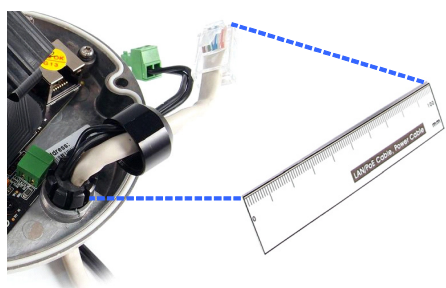


Figure 3-10

E. Cap the cable opening with the waterproof cap. Use the supplied concave hexagon wrench to tighten.

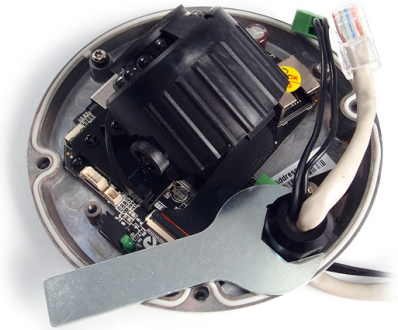


Figure 3-11

9. Thread the cable(s) under the black cable holder. You can loosen the screw on the cable holder if needed.



Figure 3-12

10. Connect the camera to network and power. For details, see *3.5 Connecting the Camera*.
11. Secure the camera to the back plate by tightening the three screws as shown in Step 4.

12. Access the live view. For details, see *2.1 Accessing the Live View, GV-IPCam Firmware Manual*.
13. Adjust image clarity using the GV-IP Device Utility program. For details, see *2.2 Adjusting Image Clarity, GV-IPCam Firmware Manual*.
14. Loosen the tile screw and pan screw, adjust the angles based on the live view as needed, and tighten the screws again.



Figure 3-13

15. Attach the silica gel bag to the place indicated below, and secure the housing cover using the torx wrench.

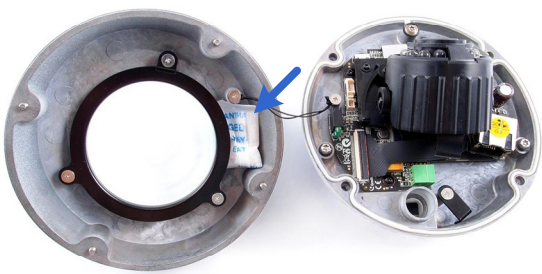


Figure 3-14

IMPORTANT:

1. The gel bag loses its effectiveness when the dry camera is opened. To prevent the lens from fogging up, replace the silica gel bag every time you open the camera and conceal the silica gel bag within 2 minutes of exposing to open air.
2. Make sure the housing cover is properly secured to prevent water from entering and damaging the inner housing.

3.5 Connecting the Camera

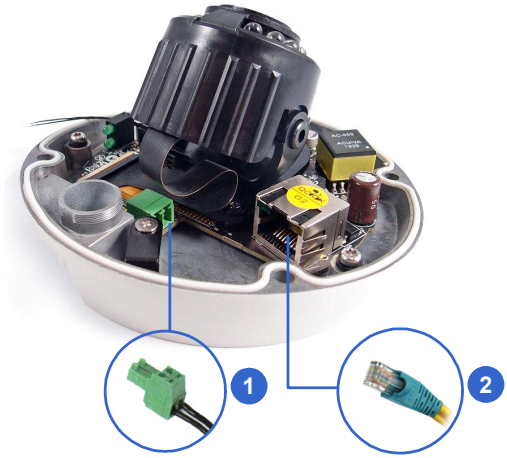


Figure 3-15

1. Connect power using one of the following methods:
   - Plug the power adapter to the 12V terminal block. The power adapter is an optional device. For detail, see *Options* in the manual.
   - Use the Power over Ethernet (PoE) function and the power will be provided over the network cable.

   The power and status LEDs shall turn on (green).
2. Use a standard network cable to connect the camera to your network.
3. You are ready to access the live view, adjust the image clarity and configure the basics. See *Getting Started, Chapter 2, GV-IPCam Firmware Manual*.

3.6 Loading Factory Default

1. Keep the power and network cables (or PoE) connected to the camera.
2. Press and hold the **default** button for about 8 seconds.

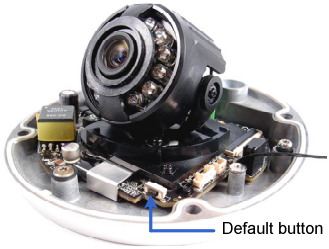


Figure 3-16

3. Release the **default** button when the **status LED** blinks.

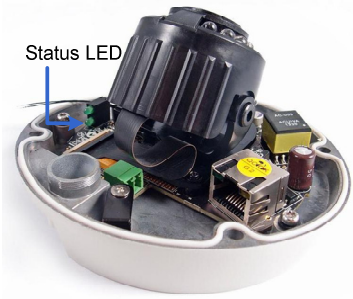


Figure 3-17

4. When the **status LED** fades, the process of loading default settings is completed and the camera reboots automatically.

Chapter 4 Cube Camera

The Cube Camera is a light weighted network camera designed for indoor usage. Its simple design allows for fast and easy installation and fixed-spot surveillance once installed. Four models are available:

Model No.		Specification	Description
GV-CB120	Fixed Lens	Fixed Iris, f: 3.35 mm, F/2.4, 1/3" M12 mm lens mount	1.3 MP, H.264, Cube Camera
GV-CB220			2 MP, H.264, Cube Camera

4.1 Packing List

- Cube Camera
- Supporting Rack



- Screw x 3



- Screw Anchor x 3



- GV-IPCAM H.264 Software DVD
- Power Adapter
- GV-Software DVD
- Warranty Card

Note: The power adapter can be excluded upon request.

4.2 Features

- 1/2.5'' progressive scan CMOS
- Dual streams from H.264 or MJPEG
- Frame rate

Camera Model	Frame Rate
GV-CB120	30 fps at 1280 x 1024
GV-CB220	30 fps at 1920 x 1080

- Day and night function (electronic)
- Wide Dynamic Range (WDR)
- Defog
- Two-way audio
- Micro SD card slot (SD/SDHC) for local storage
- 2D noise reduction
- Motion detection
- Tampering alarm
- Text overlay
- Privacy mask
- IP address filtering
- Megapixel lens
- Support for iPhone, iPad, Android and 3GPP
- 31 languages on Web interface
- ONVIF (Profile S) conformant

4.3 Overview

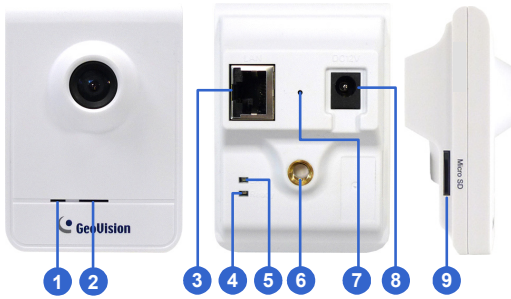


Figure 4-1

No.	Name	Description
1	Microphone	Receives sounds.
2	Speaker	Plays sounds.
3	LAN	Connects to a 10/100 Ethernet.
4	Status LED	Turns red when the system powers on. Turns orange when the system is ready.
5	LAN LED	Turns green when the camera is connected to the Internet through wires.
6	Stand screw	Connects to the Supporting Rack.
7	Default Button	Resets the camera to factory default. For details, see *2.6 Loading Factory Default*.
8	Power port	Connects to the power adapter.
9	Memory Card Slot	Inserts a micro SD card (SD/SDHC, version 2.0 only, Class 10) to store recording data.

4.4 Installation

Follow the steps below to install, connect to and adjust your Cube Camera and Wireless Cube Camera.

1. Put the supporting rack on the desired location and make marks for screw anchors.

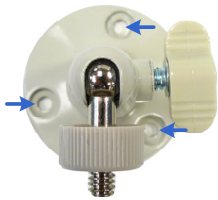


Figure 4-2

2. Drill the marks and insert the screw anchors.
3. Secure the supporting rack onto the wall using the supplied screws.
4. Screw the camera onto the supporting rack and fasten the indicated screw.



Figure 4-3

5. Connect the network and power cables to the camera. See *4.5 Connecting the Camera*.
6. Access the live view. See *2.1 Accessing the Live View, GV-IPCam Firmware Manual*.
7. Adjust the angle of the camera based on live view and fasten the indicated screw.



Figure 4-4

4.5 Connecting the Camera



Figure 4-5

1. Use a standard network cable to connect the camera to your network.
2. Power on using the power adapter.
3. The status LED of the camera will be orange.

IMPORTANT: Be sure to use the GeoVision power adapter to power up the camera. To use your own power cable, make sure you look up the power source value indicated at the camera's back panel.

4.6 Loading Factory Default

1. Keep the power and network cables connected to the camera.
2. Use a pin to press and hold the **default** button on the panel.

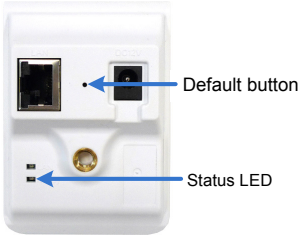


Figure 4-6

3. Release the **default** button when the **status LED** blinks. This shall take about 8 seconds.
4. When the **status LED** turns orange, the process of loading default settings is completed and the camera is ready for use.

Chapter 5 Advanced Cube Camera

The Advanced Cube Camera integrates the passive infrared (PIR) sensor and the alarm LED to illuminate the scene automatically when the motion is detected. It also offers wireless connection to the network for flexible installation. It is small, light, and easy-to-use for indoor security. We provide four models:

Model No.		Specification	Description
GV-CA120	Fixed Lens	Fixed Iris, f: 3.35 mm, F/2.4, 1/3" M12 mm lens mount	1.3 MP, H.264, Cube Camera
GV-CA220			2 MP, H.264, Cube Camera
GV-CAW120			1.3 MP, H.264, Wireless Cube Camera
GV-CAW220			2 MP, H.264, Wireless Cube Camera

5.1 Packing List

- Advanced Cube Camera
- Supporting Rack



- Screw x 3



- Screw Anchor x 3



- GV-IPCAM H.264 Software DVD
- Power Adapter
- GV-Software DVD
- Warranty Card

Note: The power adapter can be excluded upon request.

5.2 Features

- 1/2.5'' progressive scan CMOS
- Dual streams from H.264 or MJPEG
- Frame rate

Camera Model	Frame Rate
GV-CA120 / CAW120	30 fps at 1280 x 1024
GV-CA220 / CAW220	30 fps at 1920 x 1080

- Micro SD card slot (SD/SDHC) for local storage
- Passive infrared (PIR) sensor for detecting movement and activating the white illumination LED
- DC 5V / PoE (IEEE 802.3af, for GV-CA120 / 220 only)
- Day and night function (electronic)
- Wide Dynamic Range (WDR)
- Defog
- Wireless connectivity: WiFi 802.11b/g/n (for GV-CAW120 / 220 only)
- NAS recording
- Recording assigned by GV-Edge Recording Manager (Windows & Mac)
- Two-way audio
- 2D noise reduction
- Motion detection
- Tampering alarm
- Text overlay
- Privacy mask
- IP address filtering
- Megapixel lens
- Smart device access
- 31 languages on Web interface
- ONVIF (Profile S) conformant

5.3 Overview

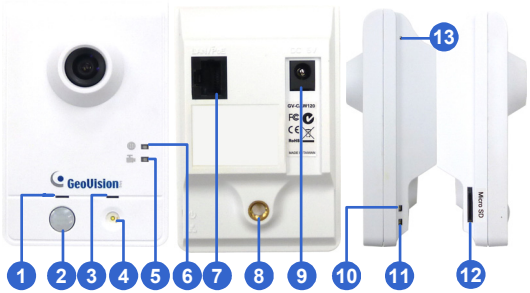


Figure 5-1

No.	Name	Description
1	Speaker	Plays sounds for tampering and motion alarm, and listens to the audio around the camera. To set up alarm sound, see *4.3.9 Speaker, GV-IPCam Firmware Manual.*
2	PIR sensor	Passive infrared sensor.
3	Microphone	Receives sounds.
4	White Illumination LED	When the PIR sensor detects the movement, the white illumination LED lights up in a low light scene. To set up the LED, *see 4.1.1 Video Settings, GV-IPCam Firmware Manual.*
5	Monitoring LED	Reflects monitoring status of the camera. See the below table.
6	Live View LED	Reflects live view status of the camera. See the below table.
7	LAN / PoE	Connects to a 10/100 Ethernet or PoE.

No.	Name	Description
8	Stand screw	Connects to the Supporting Rack.
9	Power port	Connects to the power adapter.
10	Ready LED	Reflects system status of the camera. See the below table.
11	LAN LED	Reflects LAN status of the camera. See the below table.
12	Memory Card Slot	Inserts a micro SD card (SD/SDHC, version 2.0 only, Class 10) to store recording data.
13	Default	Resets the camera to factory default. For details, see *5.6 Loading Factory Default*.

IMPORTANT: The White Illumination LED can reach high temperatures. Be sure not to touch the LED with bare hand.

LED	Status	Description
Live View 		• Turns on orange light when you see the live view.
Monitoring 		• Turns on red light when you start monitoring.
Ready 		• Turns on green light when the system is ready. • Flashes green light when you load default value.
LAN 		• Turns on green light when you connect the LAN Network. • Turns on blue light when you connect the Wi-Fi Network (for GV-CAW120 / 220 only).

5.4 Installation

Follow the steps below to install, connect to and adjust your Advanced Cube Camera and Wireless Advanced Cube Camera.

1. Put the supporting rack on the desired location and make marks for screw anchors.

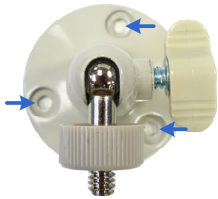


Figure 5-2

2. Drill the marks and insert the screw anchors.
3. Secure the supporting rack onto the wall using the supplied screws.
4. Screw the camera onto the supporting rack and fasten the indicated screw.



Figure 5-3

5. Connect the network and power cables to the camera. See *5.5 Connecting the Camera*.
6. Access the live view. See *2.1 Accessing the Live View, GV-IPCam Firmware Manual*.
7. Adjust the angle of the camera based on live view and fasten the indicated screw.



Figure 5-4

8. For GV-CAW120/220, to connect to the Internet through wireless service, follow the steps in *2.1.3 Configuring the Wireless Connection, GV-IPCam Firmware Manual*.

5.5 Connecting the Camera

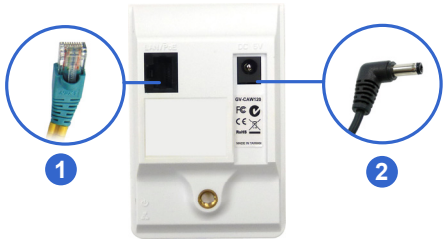


Figure 5-5

1. Use a standard network cable to connect the camera to your network.
2. Connect power using one of the following methods:
   - plugging the power adapter to the power port.
   - using the Power over Ethernet (PoE) function and the power will be provided over the network cable.
3. When the ready LED of the camera shines green, the camera is ready for use.

Note: PoE function is only supported for GV-CA120 and GV-CA220.

5.6 Loading Factory Default

1. Keep the power and network cables connected to the camera.
2. Use a pin to press and hold the **default** button on the panel.

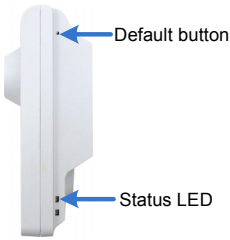


Figure 5-6

3. Release the **default** button when the **status LED** blinks. This shall take about 8 seconds.
4. When the **status LED** turns green, the process of loading default settings is completed and the camera is ready for use.