GeoVision inc
The Vision of Security

use IP

Quick Start Guide

GV-LPR2812-DL

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

LPR2812-QG-A

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.

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

April 2025

Scan the following QR codes for product warranty and technical support policy:

[Warranty]

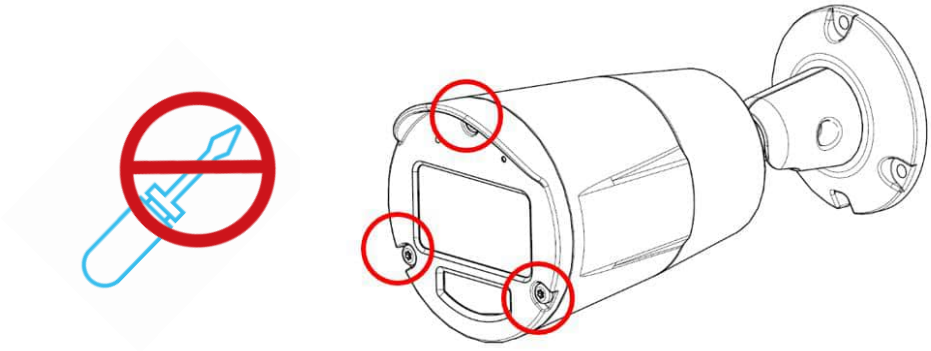
[Technical Support Policy]

Contents

Caution

1. Do not lift a camera by its cable.

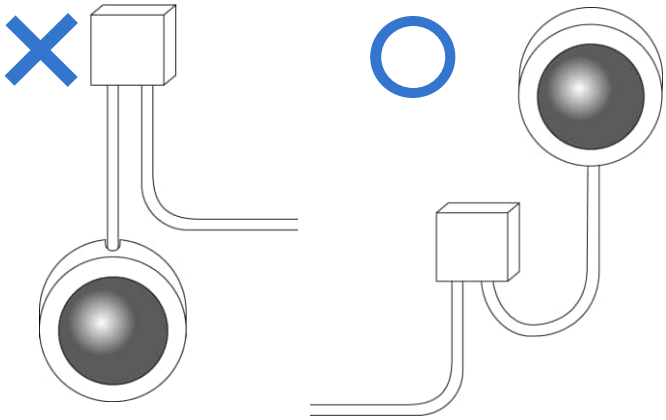
2. Do not remove the screws from the front cover.



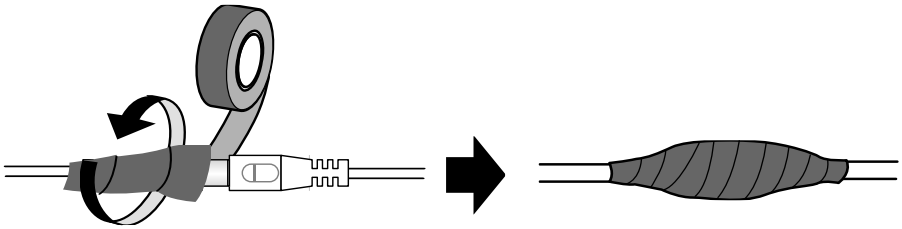
Note for Installing Camera Outdoor

When installing the camera 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 screws are tightened and the cover is in place after opening the camera cover.

Note for Powering the Camera

The camera is powered by PoE. If you want to power the camera using the power connector, an optional power adapter is required.

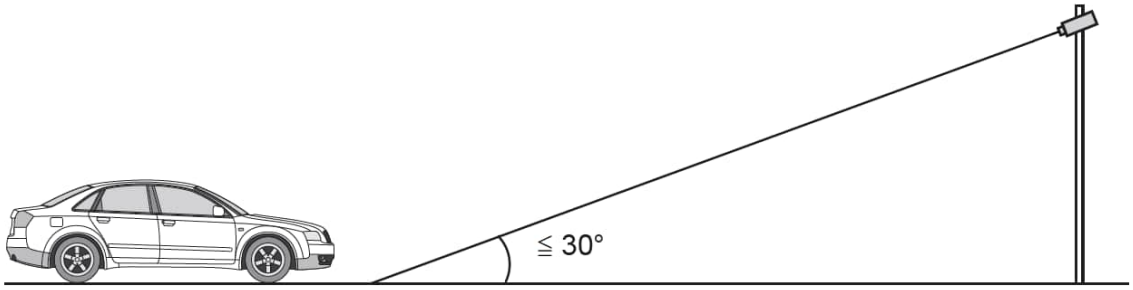
Note for the Desiccant Bag

When the camera is shipped, a desiccant bag is placed inside. When you open the dry camera, the desiccant bag loses its effectiveness. To keep the lens from fogging up, replace the desiccant bag every time you open the camera and store it within 2 minutes of being exposed to open air.

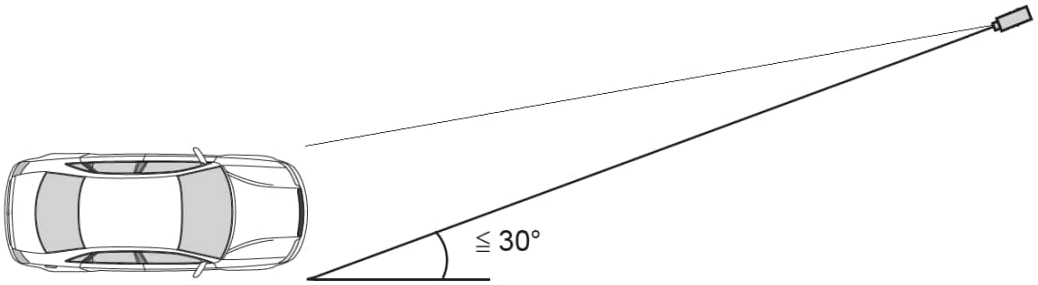
Installation and Recognition Parameters

View Angle

- **Vertical View Angle ≦ 30°:** The vertical view angle of the camera shall be within 30 degrees to the ground.



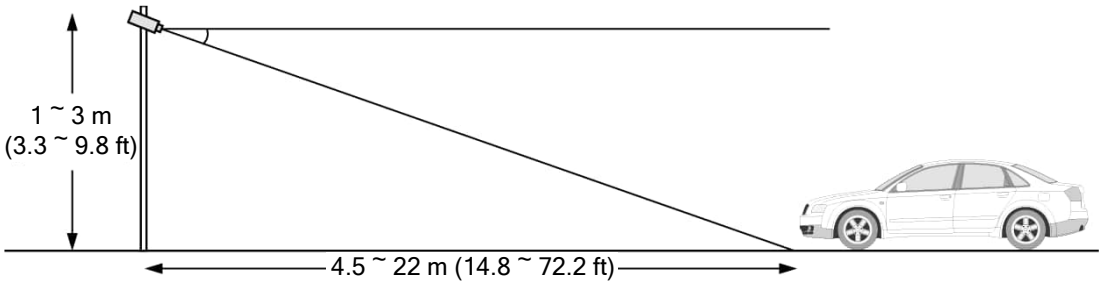
- **Horizontal View Angle ≦ 30°:** The horizontal view angle of the camera shall be within 30 degrees relative to the recognition target.



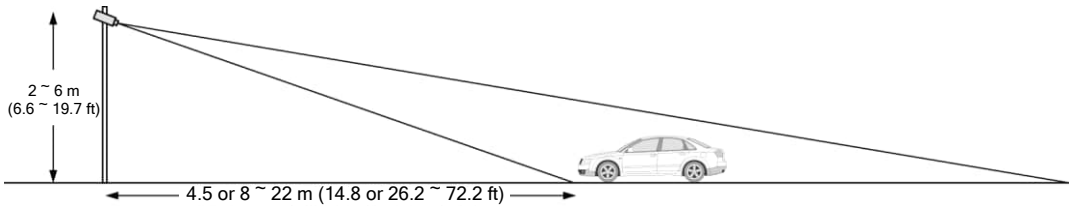
Camera Position

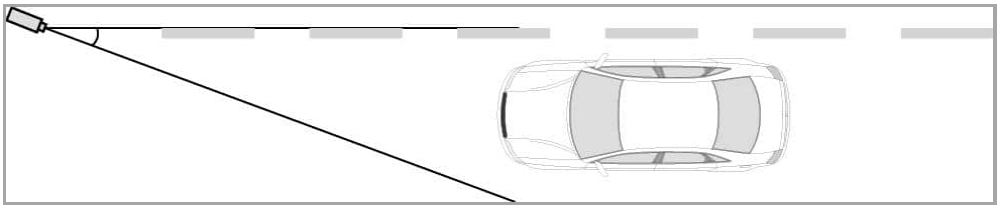
Installation Scenario		Recommended Height in m (ft)	Recognition Distance in m (ft)	Maximum Speed in km/h (mi/h)
Parking Entrance/Exit		1 ~ 3 (3.3 ~ 9.8)	4.5 ~ 22 (14.8 ~ 72.2)	30 (18)
Roadside	**1-Laned**	2 ~ 6 (6.6 ~ 19.7)		100 (62)
	2-Laned		8 ~ 22 (26.2 ~ 72.2)	60 (37)
Centered-Top	**1-Laned**	5 ~ 6 (16.4 ~ 19.7)		100 (62)
	2-Laned			60 (37)

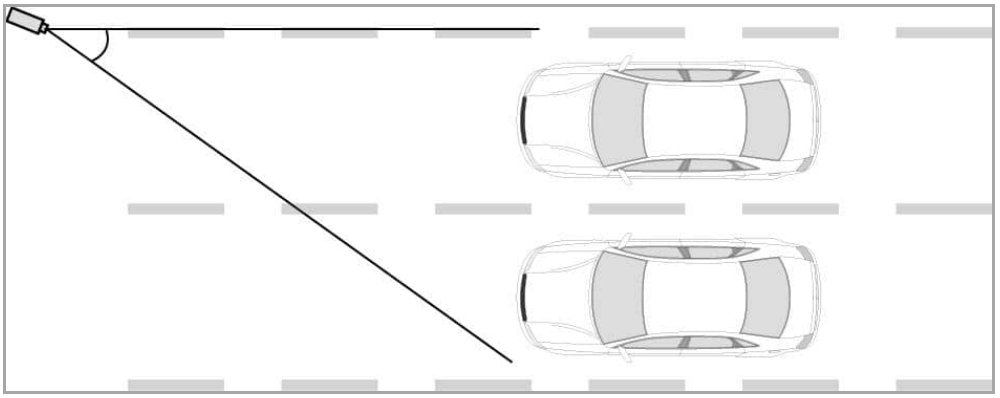
- **Parking Entrance/Exit:** For installing at a parking entrance/exit, the camera shall be mounted at a recommended height of 1 ~ 3 meters (3.3 ~ 9.8 ft) with an optimal recognition distance of 4.5 ~ 22 meters (14.8 ~ 72.2 ft) while the speed of the target vehicle cannot be more than 30 km/h (18 mi/h).



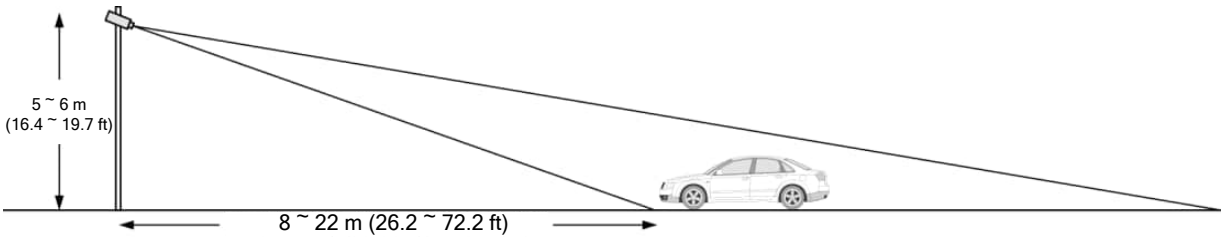
- **Roadside:** For installing at the side of a road, the camera shall be mounted at a recommended height of 2 ~ 6 meters (6.6 ~ 19.7 ft), with an optimal recognition distance of 4.5 ~ 22 or 8 ~ 22 meters (14.8 ~ 72.2 or 26.2 ~ 72.2 ft), respectively for single-laned and dual-laned roads, while the speed of the target vehicle cannot exceed 100 or 60 km/h (62 or 37 mi/h).

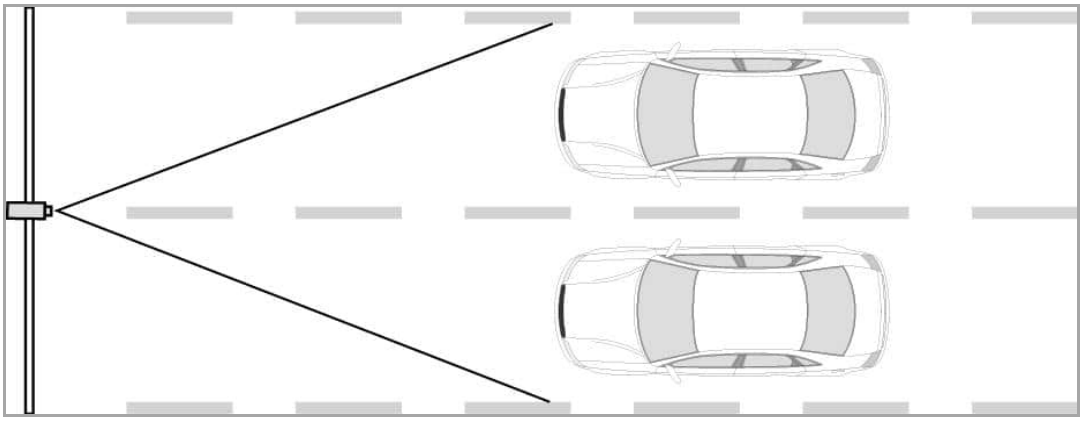






- **Centered-Top:** For installing at the top of the center of a road, the camera shall be mounted at a recommended height of 5 ~ 6 meters (16.4 ~ 19.7 ft), with an optional recognition distance of 8 ~ 22 meters (26.2 ~ 72.2 ft), while the speed of the target vehicle cannot exceed 100 or 60 km/h (62 or 37 mi/h), respectively for single-laned and dual-laned roads.

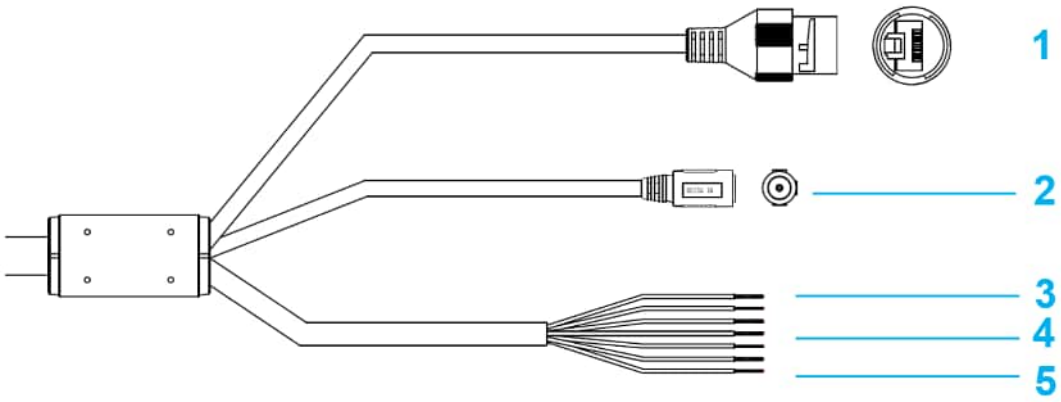




Note: The captured plate should be no less than 50 pixels in height. To check the height, copy the license plate image, open and paste into Paint, and save it in BMP format. Right-click the BMP file, select **Properties** and click the **Summary** tab to find the height information.

Chapter 1 Overview

1.1 Cables



No	Cable and Color	Definition
1	LAN / PoE	Ethernet / PoE connection.
2	DC 12V + / DC 12V –	Power input interface.
3	Alarm Out / COM (Yellow / Green)	Alarm output and COM interfaces.
4	Alarm IN / Alarm GND (Blue / Purple)	Alarm input interfaces
5	Audio IN / Audio Out / Audio GND (Gray / White / Black)	Audio input (connect to MIC) / output interface and audio ground interface.
6	RS485 A (+) / RS485 B (-) / RS485 GND (Orange / Red / Brown)	RS485 interface. This interface provides a transparent data channel used for half-duplex transmission between the camera and the connected device.

Chapter 2 Installation

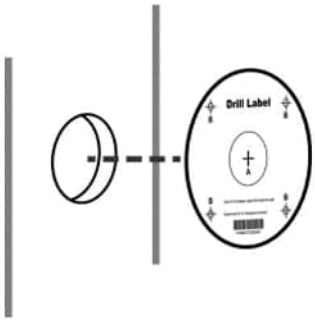
2.1 Removing the Anti-moisture Sticker

Before mounting the camera in its installation location, remove the anti-moisture sticker to allow the air vent to function properly.

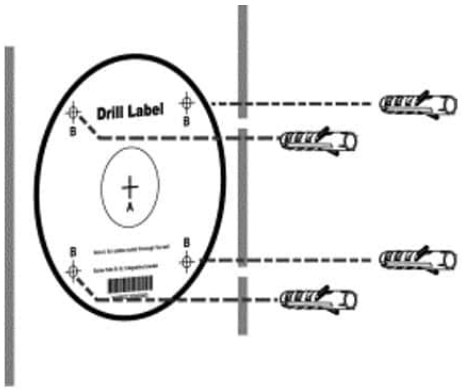
2.2 Mounting on the Wall

This section describes the conventional camera installation. For optional installation with **GV-Mount** accessories, see *Chapter 10 Option Installation.*

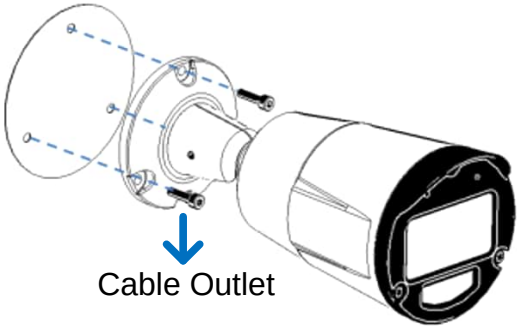
1. Check that the cable outlet on the wall is large enough for the pigtails to pass through. Attach the drilling sticker to the camera installation location, ensuring that the center of the sticker matches the cable outlet on the wall.



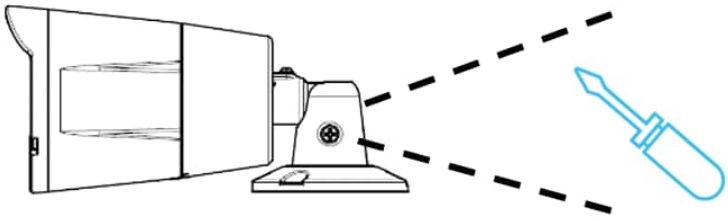
2. Use a 5 mm drill bit to drill four 35 mm deep holes in the positions marked by the drilling sticker. Use a hammer to carefully drive the screw anchors into the holes.

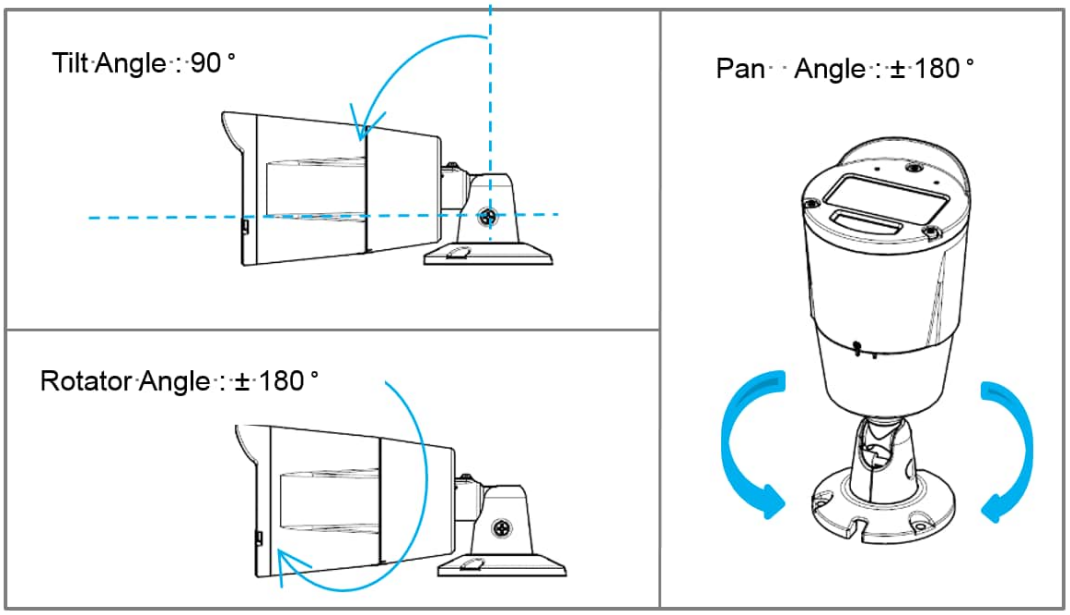


3. Connect external cabling to camera pigtails, insulate the connections, and route the wiring through the wall. Fasten the tapping screws. To keep water out of the camera, place the cable outlet at the base pointing downwards and seal it with waterproof glue or caulking.



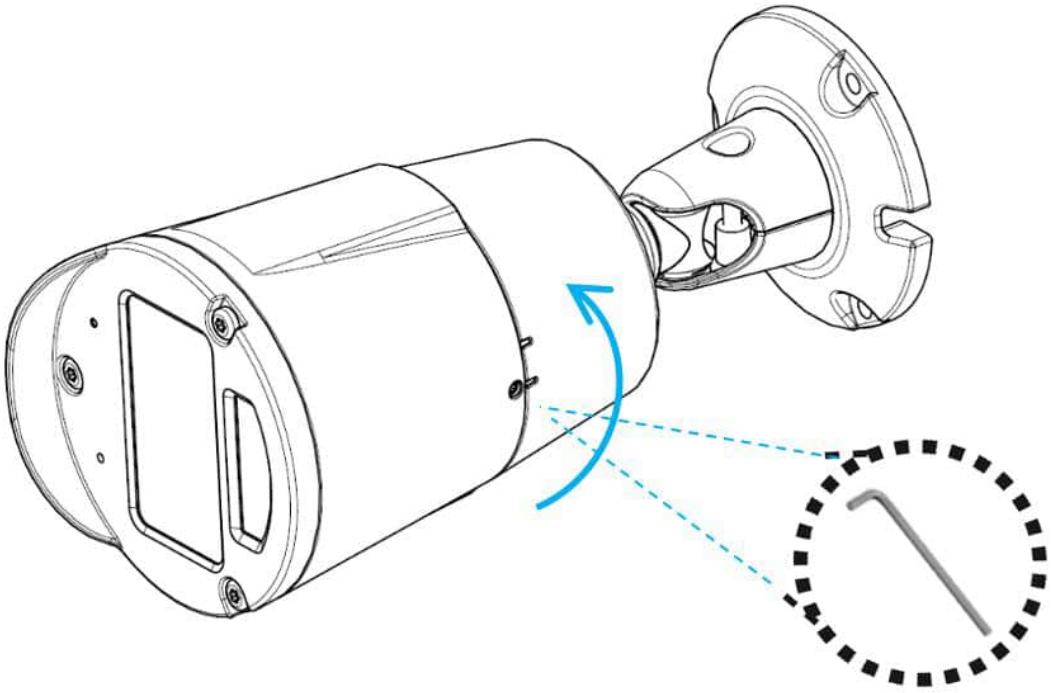
4. Loose the Philips head screw and adjust the camera to the desired angle. Re-tighten the screw.





2.3 Removing the Front Cover

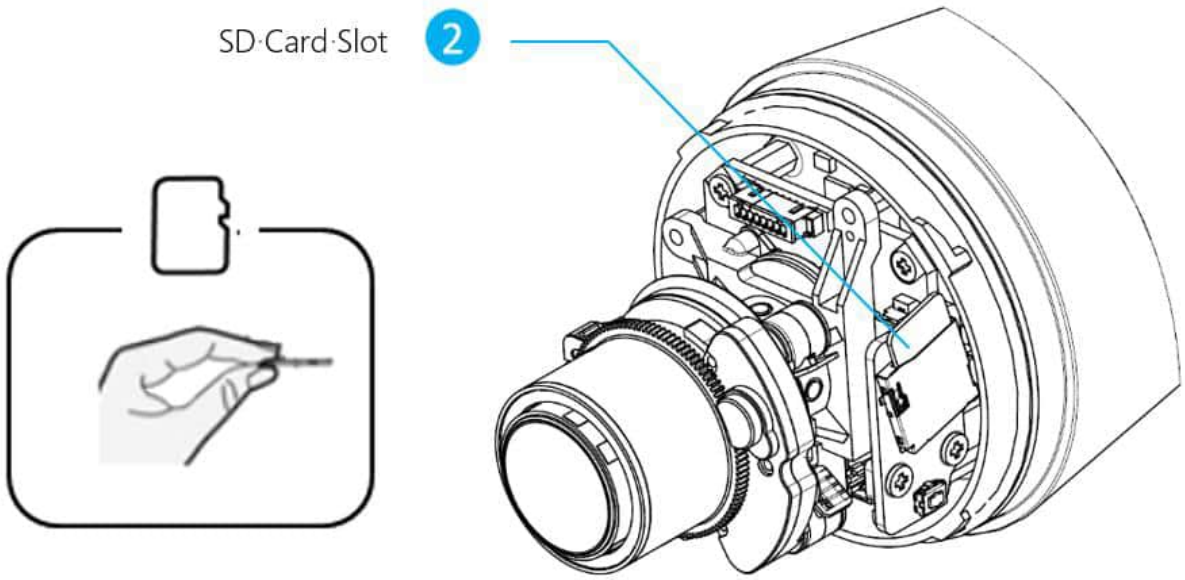
Use an Allen key screwdriver to remove the front cover of the camera, and rotate it to open it. Then, you can see the Reset button and SD card slot.



IMPORTANT: When the camera is delivered, a microSD card has been formatted and installed. If you open the front cover, you must change the desiccant bag in the camera to prevent the lens from fogging up. See *2.5 Replace the Desiccant Bag* in the quick start guide.

2.4 Changing the microSD card

- The SD card slot only accepts class 10 or higher microSD cards. To change a microSD card, the camera must be turned off. Otherwise, a system exception can occur. To format the SD card, go to the camera's Web interface.
- Insert the memory card into the camera. To avoid accidentally dropping the SD card into the camera, tilt the camera maintenance position upward and insert it into the SD card slot from the top.

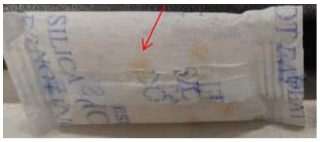
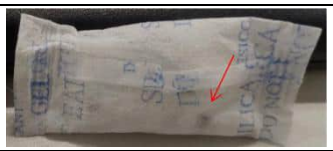


IMPORTANT: When the camera is delivered, a microSD card has been formatted and installed. If you open the front cover, you must change the desiccant bag in the camera to prevent the lens from fogging up. See *2.5 Replace the Desiccant Bag* in the quick start guide.

2.5 Replacing the Desiccant Bag

If the camera's front cover is open or the lens is fogged, replace the existing desiccant bag within the camera. Users must prepare additional desiccant bags themselves.

The color of the silica gel beads among the desiccant can be used to determine whether the desiccant bag is still functioning.

Bright Yellow – Dry	Light Green – Some moisture is absorbed	Dark Green – A considerable amount of moisture was absorbed
		

Chapter 3 Accessing the Network Camera

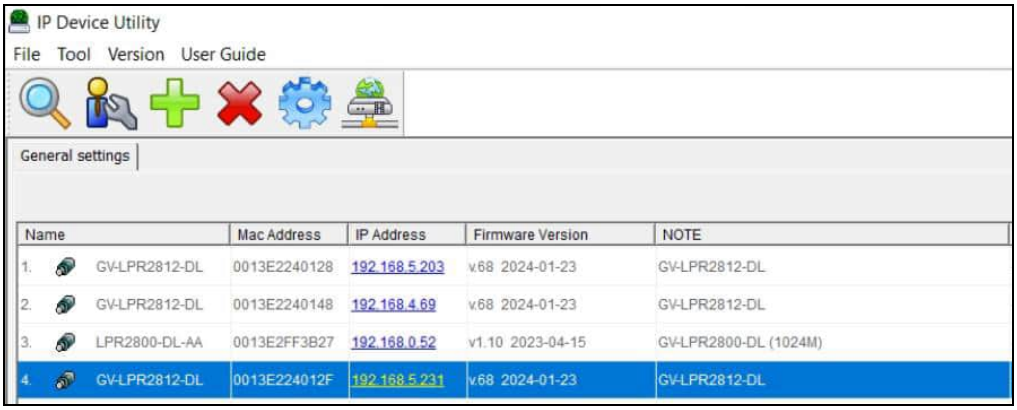
3.1 Looking Up the Dynamic IP Address

By default, when the camera is connected to a LAN with the DHCP server, it is automatically assigned with a dynamic IP address. Follow the steps below to look up its IP address.

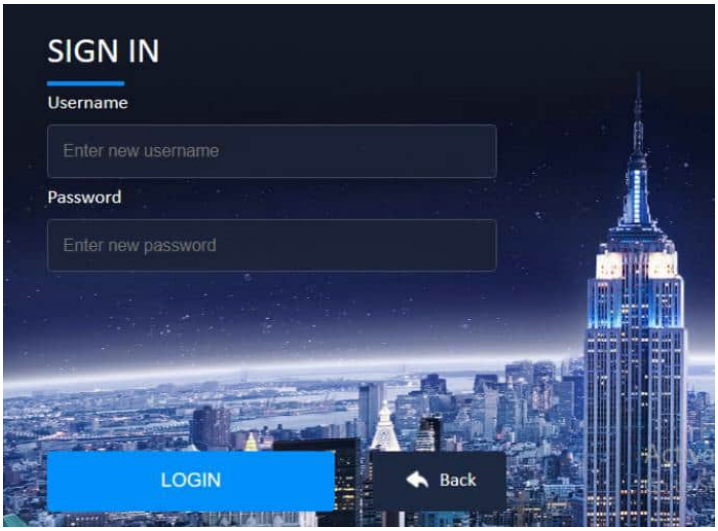
Note: The camera's default login username and password are **admin** and **admin**. To use the camera, first-time users must change the default credentials.

---

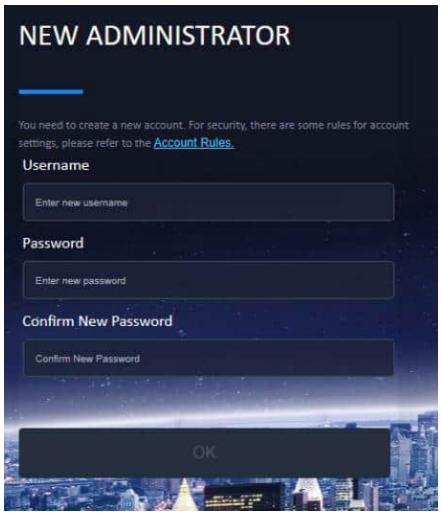
1. Make sure the PC used to configure the IP address is under the same LAN as the camera. Download and install **GV-IP Device Utility** from the GeoVision's website.
2. On the GV-IP Utility window, click the button to search for the IP devices connected in the same LAN. Click the **Name** or **Mac Address** column to sort.
3. Find the camera with its Mac Address, click on its IP address, and select **Web Page**.



4. On the camera's login page, enter the default username and password: admin.



5. You are requested to change the default username and password.

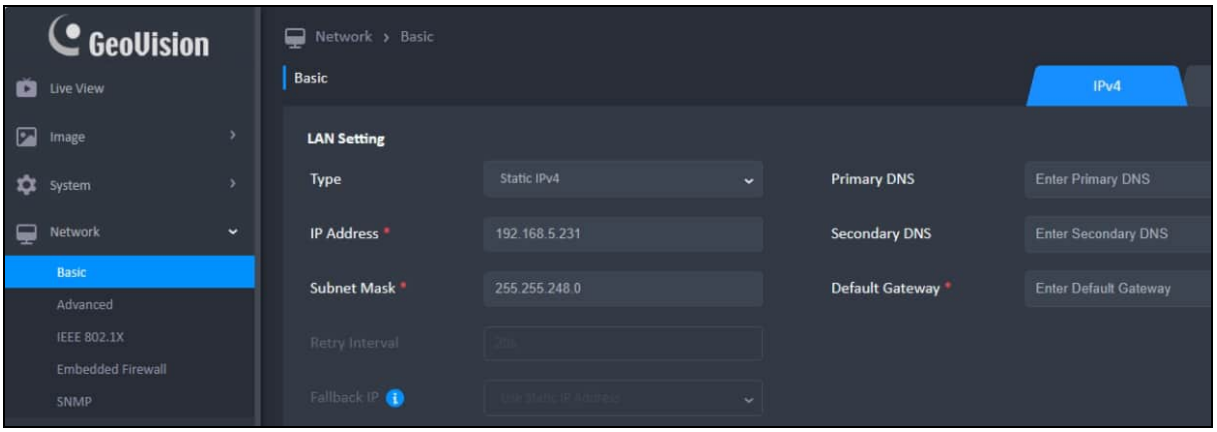


6. Log into the camera again with the new username and password.

3.2 Configuring the IP Address

If the camera is connected to a LAN without the DHCP server, the default IP address will be https://192.168.0.10. Follow the steps below to modify the IP address to avoid IP conflict with other GV-IP devices on the same LAN.

1. Open your Web browser, and type the default IP address **https://192.168.0.10**.
2. Type the default username and password of **admin**. Click **Login**.
3. On the New Administrator page, enter a new username and password.
4. Log in the camera again with the new username and password.
5. On the Camera's Web interface, select **Network** > **Basic**.
6. Select **Static IPv4** for Type, and enter the static IP address and other parameters.

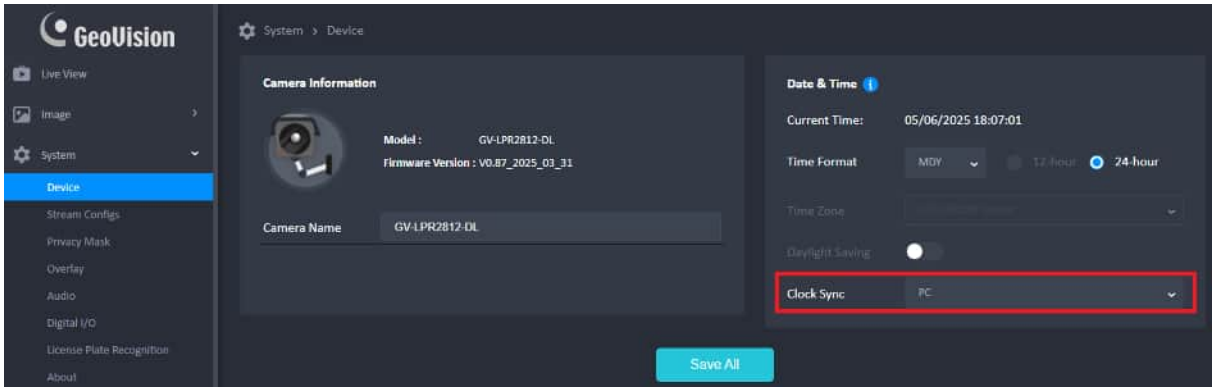


7. Click **Save All**. You can now log in the camera using the assigned static IP address.

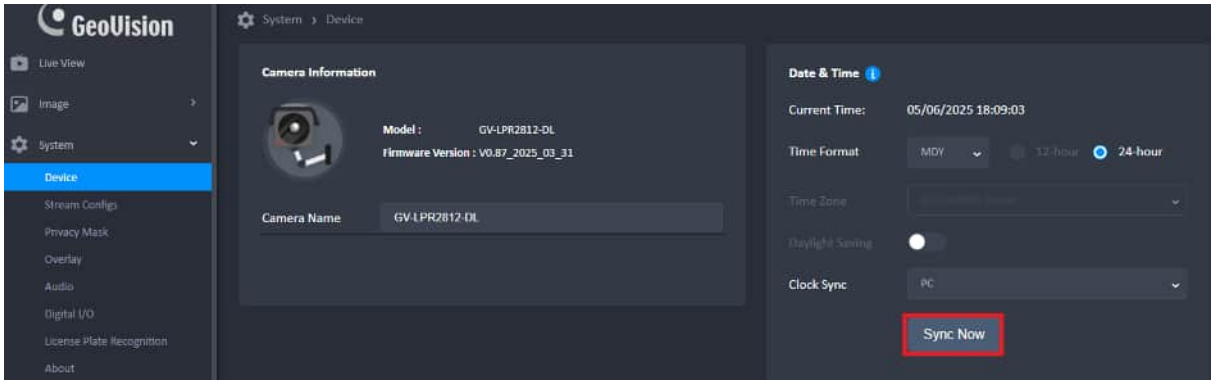
3.3 Adjusting the Time Zone

When you first use the camera, you must set the time zone based on the location you are.

1. On the camera's Web interface, select **System** > **Device**.
2. Select **PC** for Clock Sync, and click **Save All**.

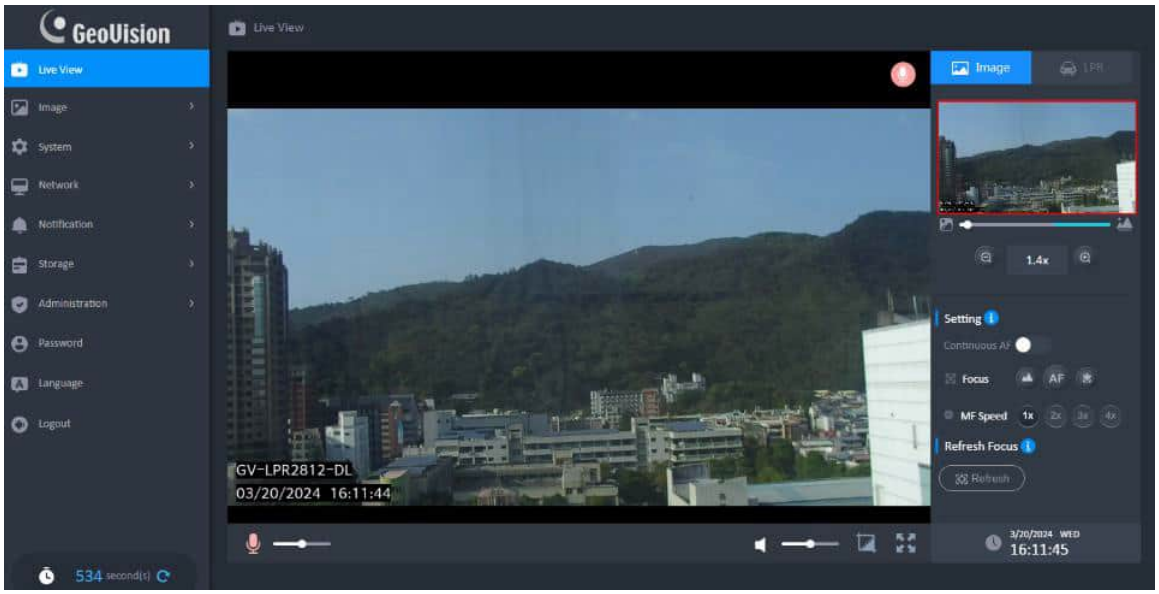


3. Click **Sync Now** to sync the time and date of the camera to your time zone.



Chapter 4 The Web Interface

To play live stream, the user must click the play button.



The Tool Bar is hidden after idle for 3 seconds, but it will be displayed when the mouse cursor moves on the screen.

Icon	Description	Icon	Description
	When the microphone is installed on the local computer, this icon appears. Click the icon, which will turn red, to activate the talking capability.		Click the icon to save the current image in JPG format to a local folder.
	Click the icon to activate the speaker function, and drag the slider to adjust the volume.		Displays in full screen.

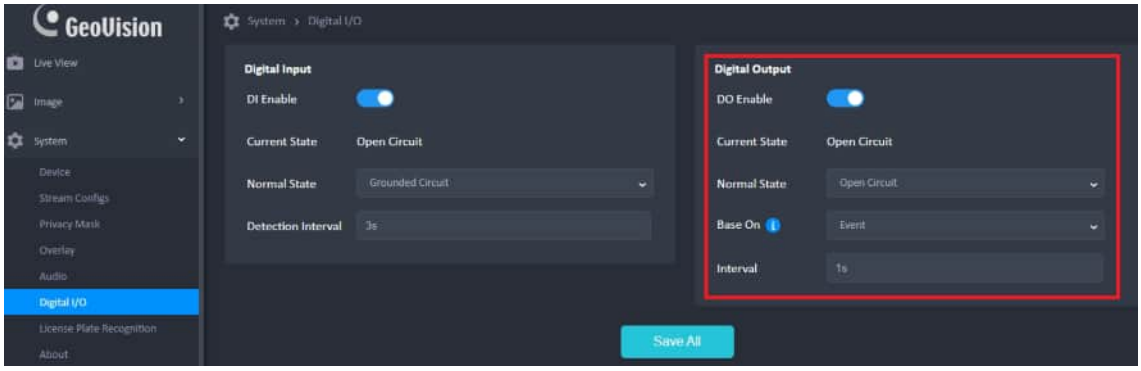
For details, see the user's manual.

Chapter 5 Configuring the Gate Output

When detected license plate numbers match those in the database, the camera can open a gate or barrier to allow vehicles to pass. To open a gate, configure the following digital output and notification settings through the web interface:

To enable the output:

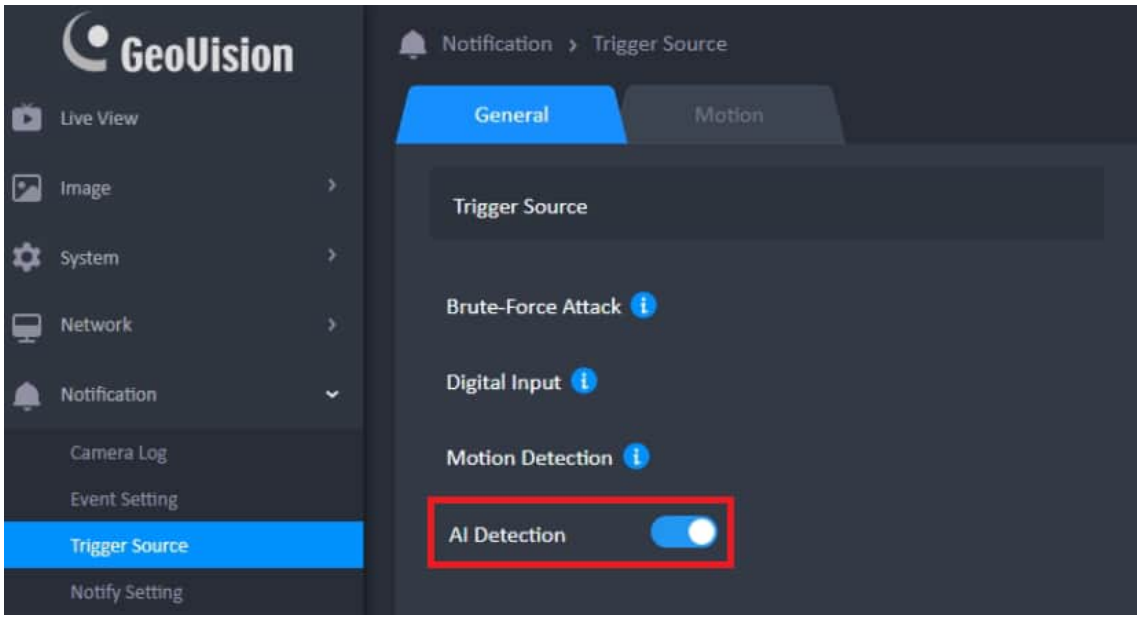
1. To enable the gate output, go to **System** > **Digital I/O**, and enable the output.



2. Set the **Normal State** based on the output device's circuit state, select **Event** for the **Based On**, and set the **Interval** for up to 600 seconds to trigger the output device.

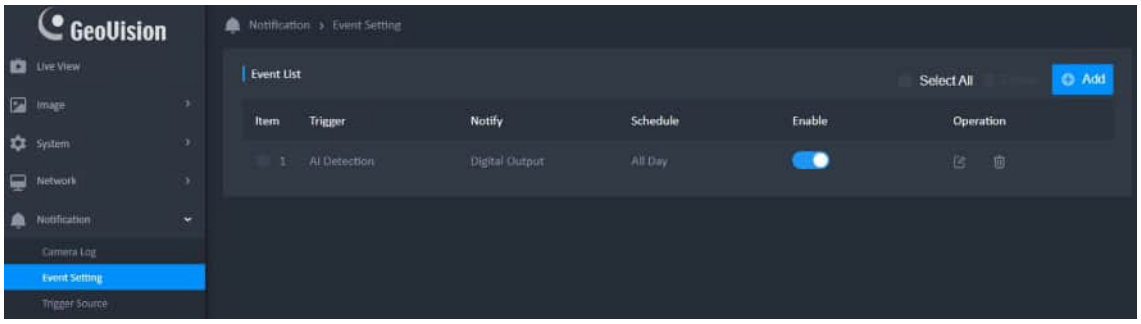
To enable AI detection:

3. To enable AI detection for LPR recognition, go to **Notification** > **Trigger Source**.

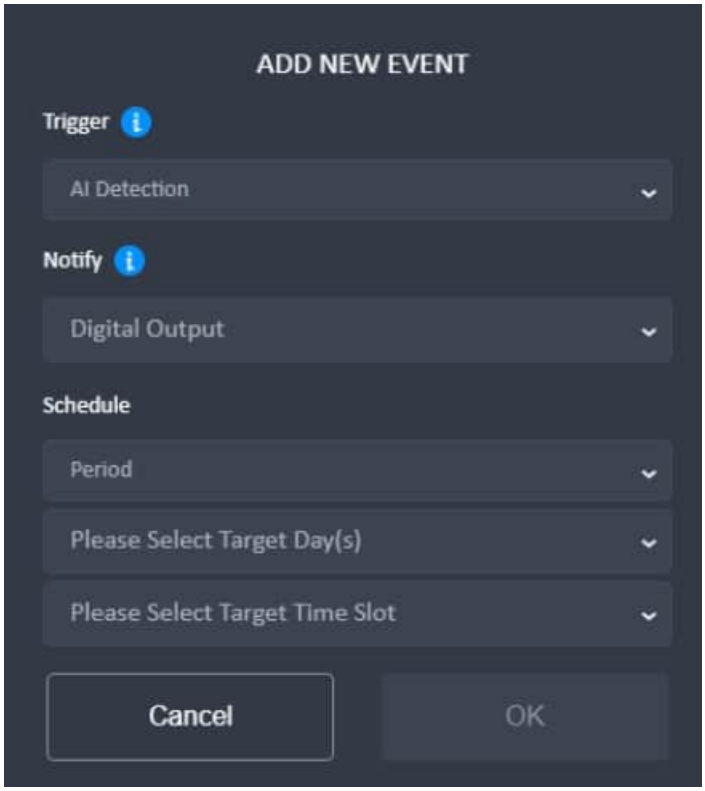


To enable event notifications:

4. Go to **Notification** > **Event Setting**.



5. To add the output-triggered event to the notification, click the **Add** button.
6. On the dialog box, configure the following settings:



- **Trigger:** Select **AI Detection** for LPR recognition.
- **Notify:** Select **Digital Output** to trigger the gate output when detected license plate numbers matches those in the database.
- **Schedule:** Optionally configure the schedule for the camera to perform LPR recognition.

7. Click **OK**.

Chapter 6 Upgrading Camera Firmware

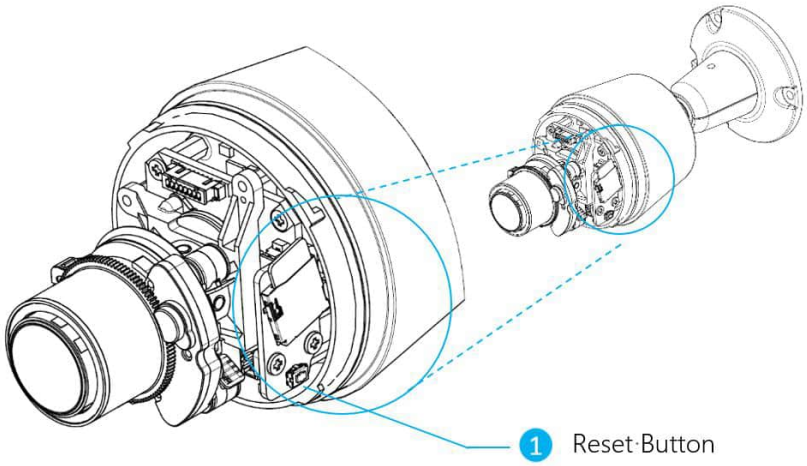
GeoVision periodically releases updated firmware on the company website. To load the new firmware into the camera, refer to the document.

Chapter 7 Restoring to Factory Default

If for any reason the camera is not responding correctly, you can restore the camera back to its factory default settings using the Web interface or on the camera.

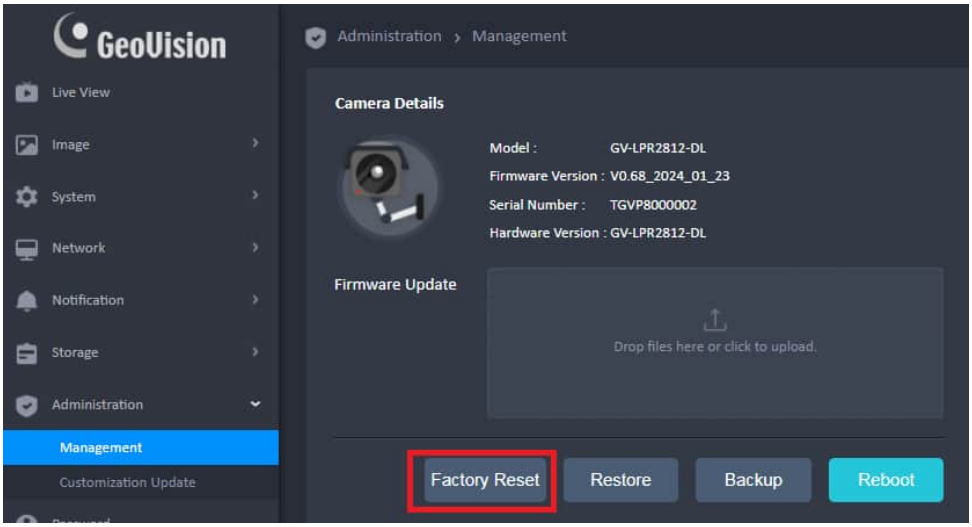
On the Camera

1. Open the front cover of the camera. See *2.3 Removing the Front Cover* in the Quick Start Guide.
2. Press and hold the reset button for more than 10 seconds.



On the Web Interface

1. On the Web interface, click **Administration** > **Management.**
2. Click the **Factory Reset** button to restore all system settings to factory default.



Chapter 8 GV-ASManager Integration

To add the camera to the GV-ASManager access control system, follow the steps below.

Step 1 Enabling Connection with GV-ASManager

Activate the setting that allows the camera to connect to GV-ASManager. See *section 8.1* later.

Step 2 Adding the Camera to GV-ASManager

Establish communication between the camera and GV-ASManager by adding it to the system. See *section 8.2* later.

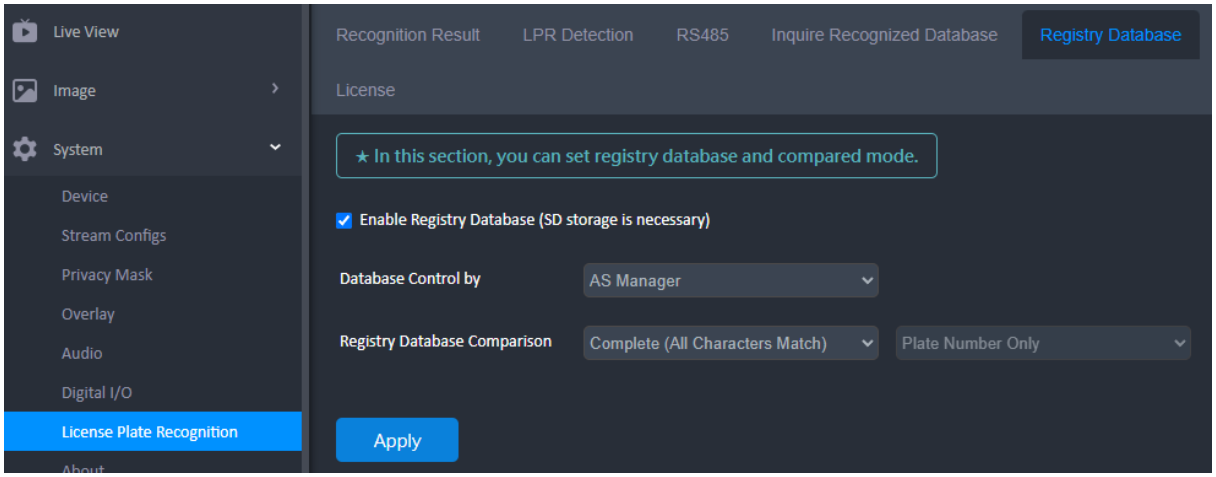
Note:

1. GV-LPR2812-DL is supported by GV-ASManager V6.1.2 or later.
2. For GV-ASManager integration, ensure the camera's date and time are set to the local time zone. See *3.3 Adjusting Time Zone*.

8.1 Enabling Connection with GV-ASManager

To enable connection with GV-ASManager on the camera, first ensure that a SD card is inserted and properly formatted. Then, access the camera's Web interface and follow the steps below.

1. On the camera's Web interface, select **System** > **License Plate Recognition** > **Registry Database**.



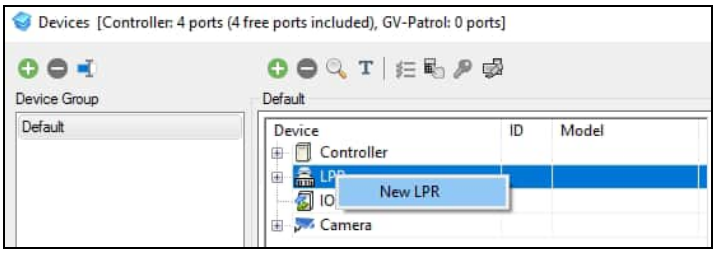
2. Select **Enable Registry Database (SD Storage is necessary)**, and **ASManager** for Database Control by.
3. Use the **Registry Database Comparison** drop-down list to select one of these options:
   - **Complete (All Characters Match):** License plates are only considered as recognized when all characters are matched.
   - **Like (One Character Mismatch):** Recognition results can tolerate 1 mismatched character not being the first or the last character.
   - **Somewhat Like (Two Characters Mismatch):** Recognition results can tolerate 2 mismatched characters not being the first and the last character.
4. Click **Apply**.

IMPORTANT: To open a gate when a detected license plate is recognized as a registered vehicle, you must complete the procedures outlined in *Chapter 5 Configuring the Gate Output*.

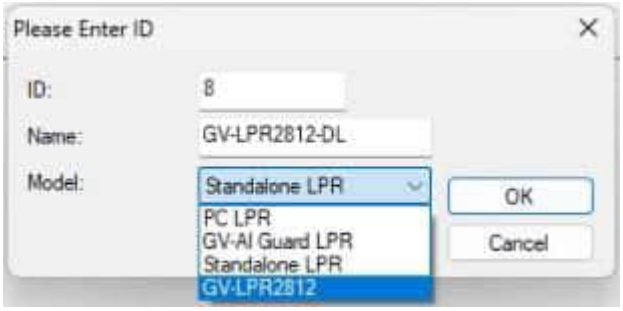
8.2 Adding the Camera to GV-ASManager

To add the camera to GV-ASManager, follow the steps below.

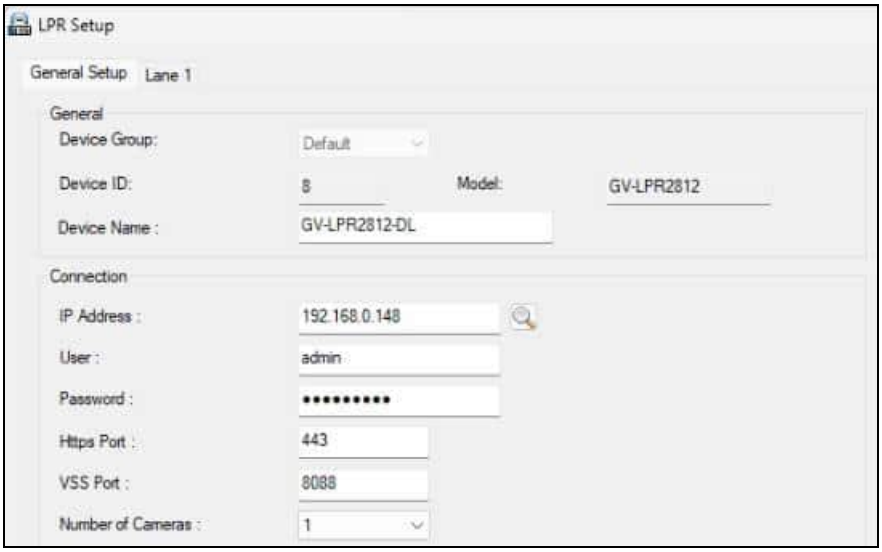
1. On the GV-ASManager's menu bar, click **Setup** > **Devices**. The Devices dialog box appears.
2. Under **Device Group**, define a group for the camera to be added. Otherwise, use the **Default** group.
3. Right-click **LPR** > **New LPR**.



4. Type **ID** and **Name** of the camera, select **GV-LPR2812**, and click **OK**.



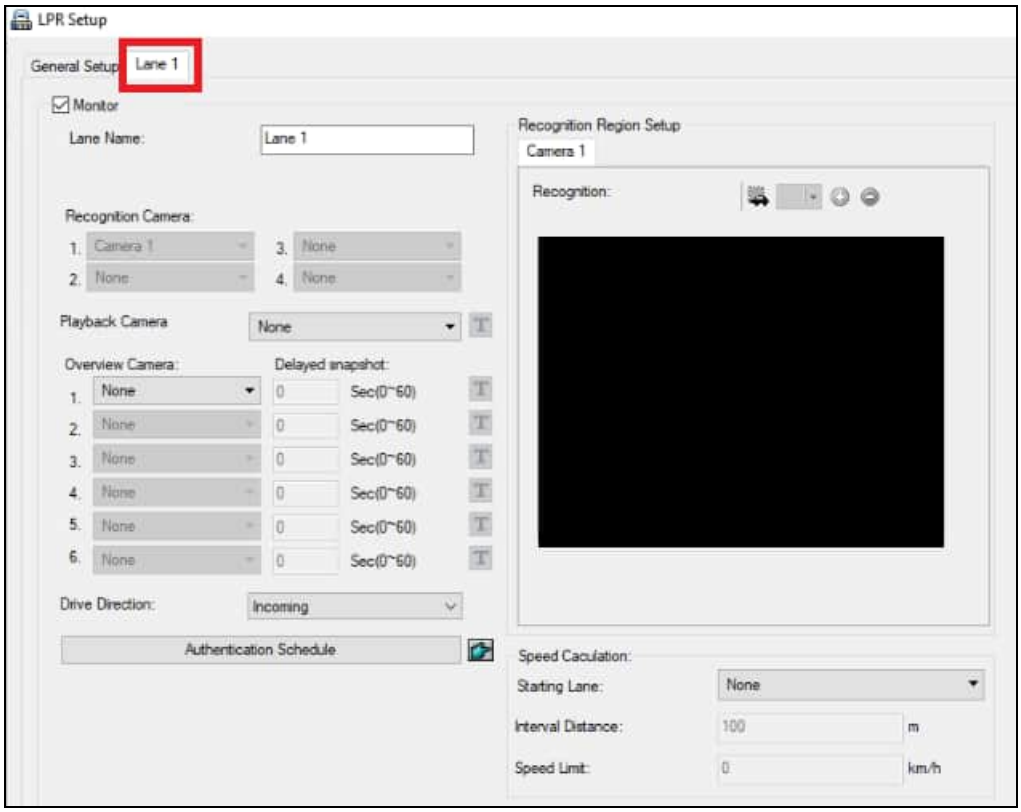
5. Set up the following connection information.



[Connection] Type the **IP Address**, **User Name** and **Password** of the camera. You can also click the **Search** button to detect cameras on the same LAN.

- **Https Port:** Default is 443.
- **VSS Port:** Default is 8088.

6. To configure a LPR channel, select the **Lane 1** tab. This dialog box appears.



7. Select **Monitor** to enable the following basic settings.

   [Drive Direction] Select **Incoming** to assign the lane as the entrance of the parking lot or select **Outgoing** to set the lane as the exit of the parking lot.

   [Authentication Schedule] Optionally, set up the schedule for different access modes at different time periods. By default, it is **License Plate Mode** that requires vehicles with authorized plate numbers to be recognized for access granted.

8. Click **OK**.

Chapter 9 UHF RFID Reader Integration

9.1 Connecting the Reader

The GV-LPR2812-DL camera can be connected to the GV-RU9003 UHF RFID reader to enable integrated license plate recognition and RFID tag-based access management. When a registered license plate is detected, GV-RU9003 reads the corresponding RFID tag on the vehicle to perform actions such as opening a gate or barrier, or triggering an output alarm.

GV-RU9003	GV-LPR2812-DL
D485+ (Orange-White)	RS-485 A + (Orange)
D485- (Orange)	RS-485 B - (Red)

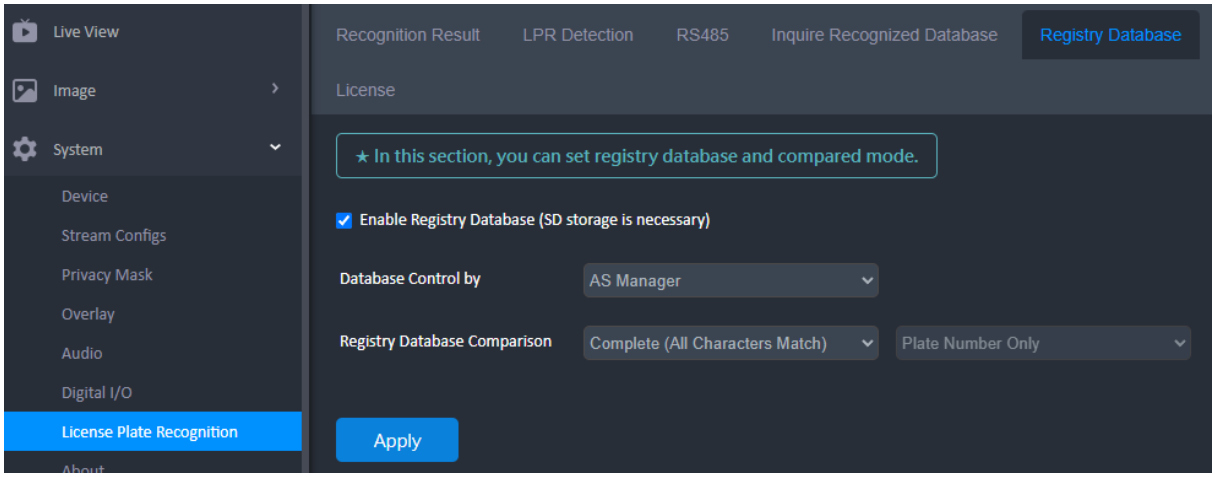
9.2 Configuring Reader Integration

When used with the GV-RU9003 UHF RFID Reader, the GV-LPR2812-DL camera can operate in two modes: connected to **GV-ASManager** for centralized access control management, or as a **standalone device** for independent operation.

First of all, connect the camera to GV-RU9003 as described in *9.1 Connecting UHF RFID Reader*.

Connecting to GV-ASManager

5. On the camera's Web interface, select **System** > **License Plate Recognition** > **Registry Database**.

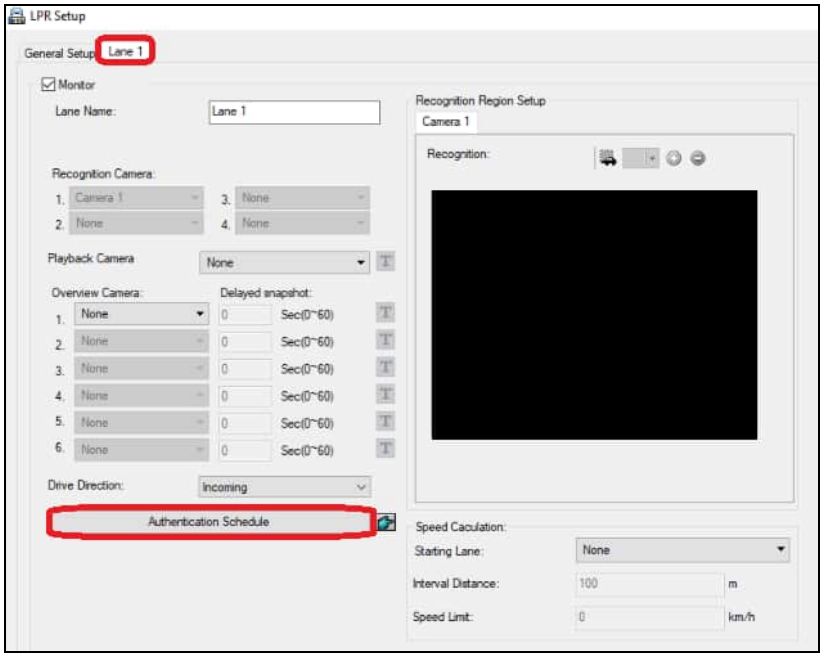


   A. Select **Enable Registry Database (SD Storage is necessary)**, and **ASManager** for Database Control by.

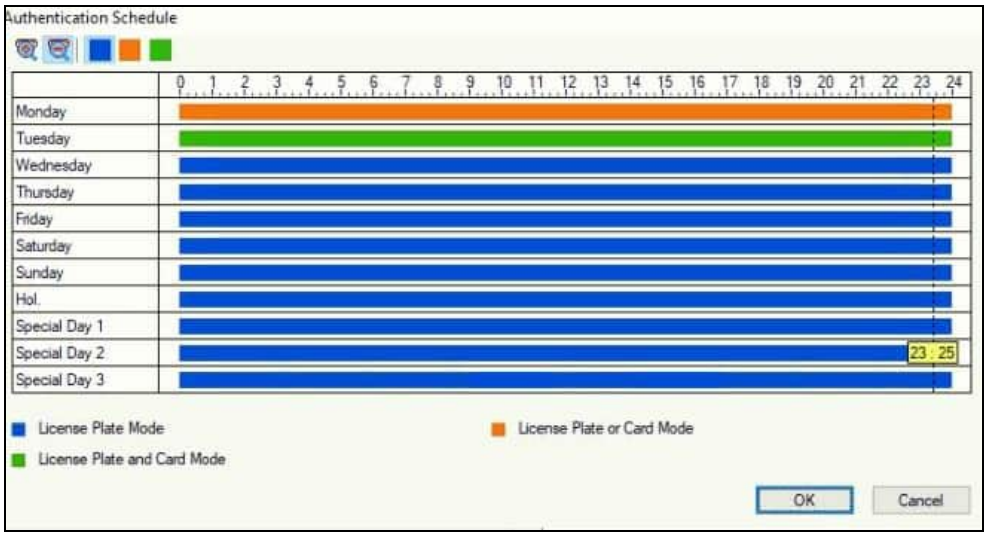
   B. Select one type of license plate comparison for Register Database Comparison. For details, see Step 3, *8.1 Enabling Connection with GV-ASManager* above.

   C. Click **Apply**.

6. In GV-ASManager, navigate to the LPR setup, select the **Lane** associated with the camera, and select **Authentication Schedule**.

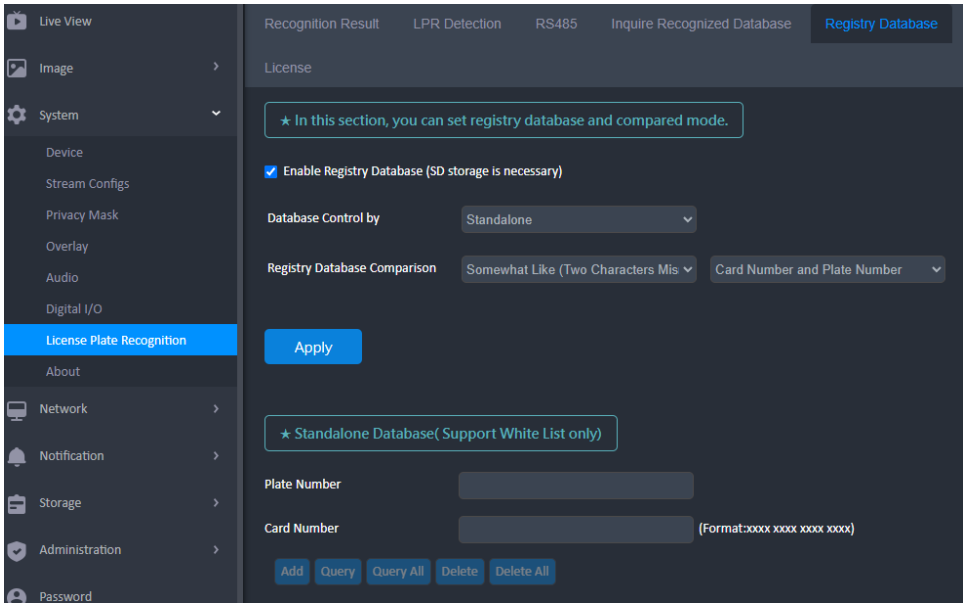


7. Configure either **License Plate or Card Mode** or **License Plate and Card Mode** for access granted.



Functioning as a Standalone

1. Select **Standalone** for Database Control by.
2. Select one type of license plate comparison for Register Database Comparison. For details, see *5. Registry Database* in the user's manual.
3. Select **Card Number and Plate Number** for the integration with GV-RU9003.
4. Click **Apply**.
5. Under Standalone Database (Support White List Only), type license plates and click **Add** to create your database. Click **Query/Query All** to search for certain/all license plates. Click **Delete/Delete All** to remove certain/all license plates.



Chapter 10 Optional Installation

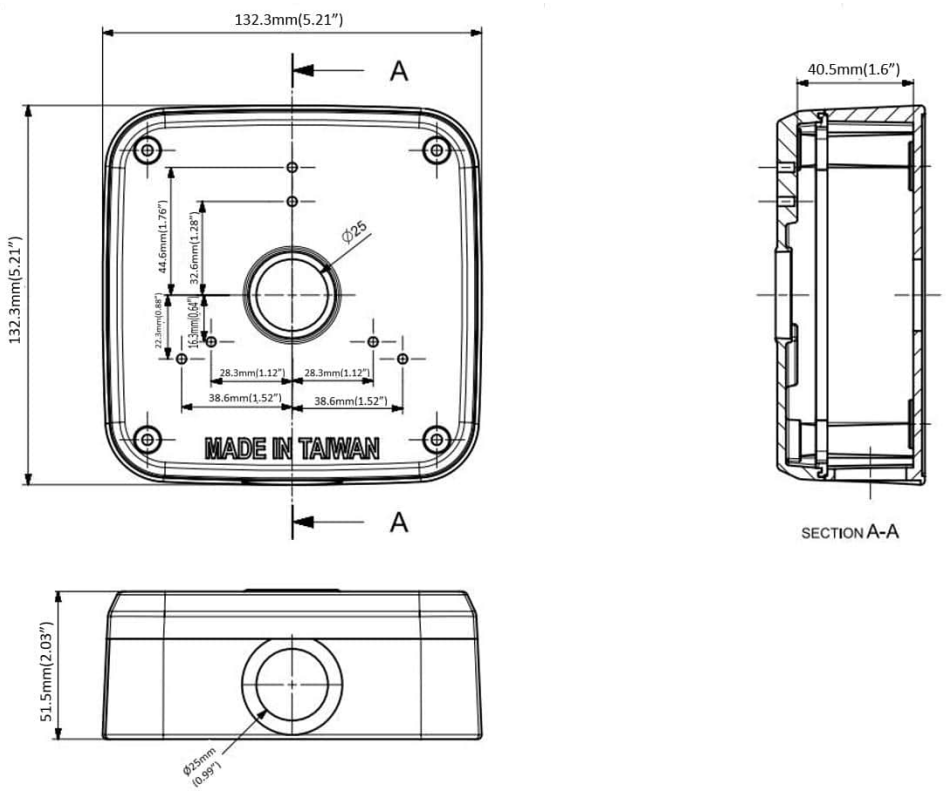
10.1 Power Box Mounting

You can optionally purchase **Junction Box Mounting GV-Mount514** to fit your mounting environment.

Packing List

1.	GV-Mount514	2.	Long Screw x 4
3.	Short Screw (M4 x 10 mm) x 4	4.	Screw Anchor x 4
5.	Plastic MG25A Conduit Connector	6.	Rubber Plug x 3
7.	Drill Template Paster		

Dimensions



GV-Mount514 Installation

1. Unscrew the cover from the power box.

2. Stick the drill template paster to the wall.
3. Drill 4 mounting holes according to the drill template.
4. Insert the 4 screw anchors to the mounting holes.
5. Position the power box on the wall with the bottom hole facing down. Align the screw holes with the 4 mounting holes on the wall.

6. Secure the power box to the wall using the 4 supplied long screws.

7. Prepare a corrugated tube with the appropriate outer diameter to fit the conduit connector and the necessary length to accommodate your Ethernet cable. Thread the Ethernet cable through the tube.

8. Choose from the two methods below to route the Ethernet cable:

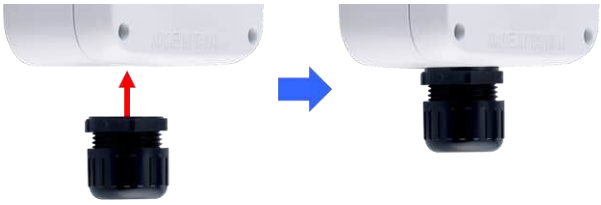
   A. **In-Wall Routing:**

   - Drill a hole through the protective pad at the back of the power box, aligning it with the center hole on the power box.
   - Thread the Ethernet cable from the wall through the center hole on the power box into the open space.

   B. **External Routing:**

   - Loosen and remove the ring from the conduit connector, as it is not required for the installation.

   - Secure the conduit connector to the bottom of the power box by rotating it.



   - Loosen and remove the cap from the conduit connector.
   - Insert the Ethernet cable into the main body of the conduit connector.
   - Slide the cap over the cable and tighten it onto the conduit connector by rotating it.

Note:

1. If the In-Wall Routing method is chosen, secure the threaded rubber plugs to the bottom of the power box, preventing moisture from reaching the cables inside.
2. If the In-Wall Routing method was chosen and a hole has already been drilled in the protective pad, but you decide to switch to the External Routing method, firmly press the rubber plug from inside the power box into the back of the power box to seal it, preventing moisture from the wall from reaching the cables inside.

9. Drill a hole in the middle of the supplied side-slit rubber plug. Thread the camera cable through the center hole of the box cover, and attach the side-slit rubber plug around the camera cable near the camera base, as shown in the figure below.

The rubber plug

Note: The size of the hole should be approximately Ø 7 mm to accommodate the Ø 6.51 mm camera cable.

10. Press firmly to embed the side-slit rubber plug onto the box cover.
11. Use the 3 supplied short screws to secure the camera to the box cover at the indicated holes below.

12. Connect the Ethernet cable to the camera cable, and secure the box cover to the power box.

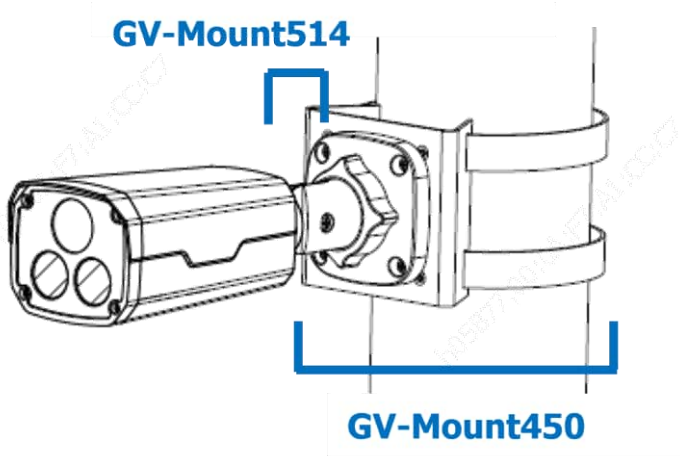
Note: When screwing the box cover, ensure the waterproof ring is securely attached to the cover.

The Power Box cover

The waterproof ring

10.2 Pole Mounting

The pole mounting requires **GV-Mount450** and **GV-Mount514**.

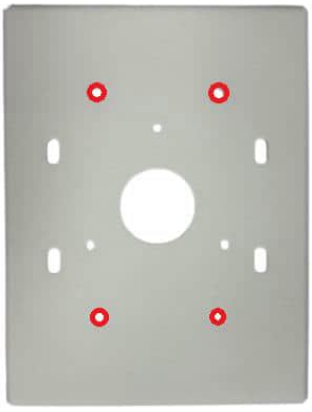


GV-Mount450 Packing List

1. GV-Mount450	2. Steel Strap x 2
3. Screw x 4	

GV-Mount450 + GV-Mount514 Installation

1. Unscrew the cover from the GV-Mount514 power box.
2. Align and attach the GV-Mount514 back plate to the GV-Mount450 plate using the 4 supplied screws.



(GV-Mount450 plate)

3. Thread the 2 steel straps onto the GV-Mount450 plate
4. To install the camera to the GV-Mount514 power box, follow Step 7 ~ 12 in 7.1 Power Box Mounting.

   Secure the camera onto a pole by tightening the steel straps.