



# Getting Started

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This chapter provides information about getting started with and understanding the IP camera. It includes the following sections:

- [Overview, page 1-1](#)
- [Physical Description, page 1-2](#)
- [Power Adapters, page 1-4](#)
- [Hardware Installation, page 1-4](#)
- [LED Definitions, page 1-11](#)
- [Hardware Reset, page 1-12](#)
- [MicroSD/SDHC/SDXC Card Capacity, page 1-12](#)
- [Network Deployment, page 1-12](#)

## Overview

The Cisco Video Surveillance 8400 IP Cameras is a high-definition, full-functioned video endpoint with industry-leading image quality and processing power. The camera is capable of 5MP resolution at 30 frames per second (fps) while optimizing network usage with either H.264, H.235, or MJPEG compression. Contact closures and two-way audio allow integration with microphones, speakers, and access control systems. With its open, standards-based design, the camera provides an ideal platform for integration and operation as independent devices or as part of a Cisco video surveillance network.

Key features and benefits of the camera include:

- True high-definition video—The camera streams crisp and clear 5MP video at 30 fps while maintaining low network bandwidth.
- Quad streaming—The camera can stream H.264, H.265, and MJPEG video simultaneously. Each video stream can be configured with individual resolution, quality, and frame-rate settings.
- Day/night operation—The camera provides true day/night functionality, and includes an infrared (IR) filter that automatically switches to night mode in low-light scenes. This function can be set to manual, automatic, or scheduled control.
- Flexible power option—The camera supports Power over Ethernet (PoE) 802.3at or 12 VDC.
- Mounting options—The camera can be installed to either a ceiling or wall.

- Motion Detection and Event notification—The camera can examine designated areas for activity and notify users or other applications when it detects activity that exceeds a predefined sensitivity and threshold. The camera also provides one digital input and one digital output that can be used to initiate specific actions when an alarm is detected.

#### Important

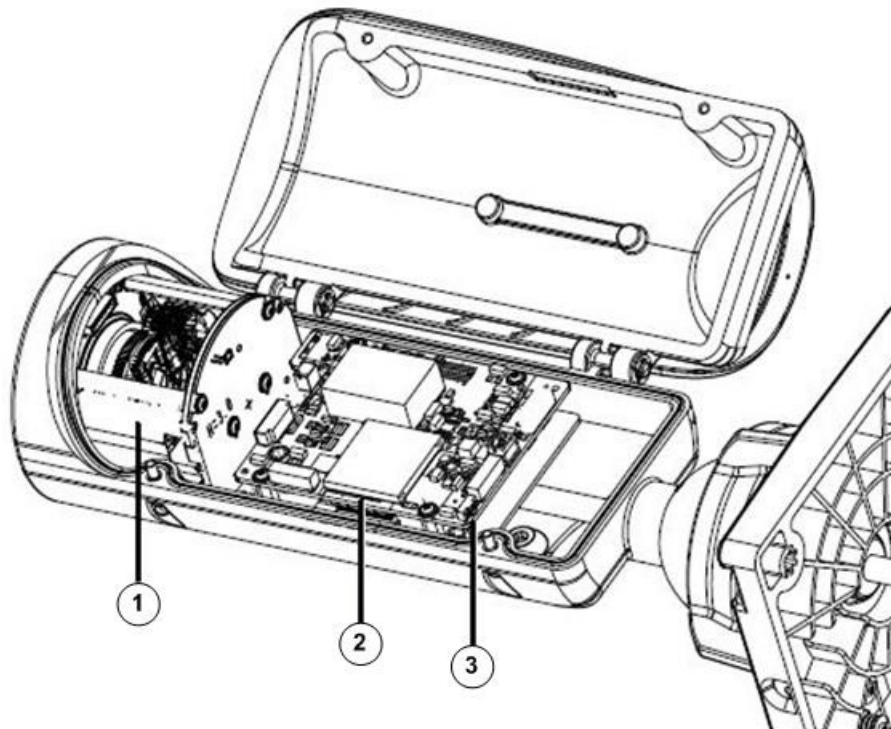
The camera is able to operate in low temperature environments. However, when starting the camera in a very low temperature condition, for example,  $-40^{\circ}\text{C}$ , the embedded heater may take half an hour to warm up the camera. When the temperature within the canister reaches  $-10^{\circ}\text{C}$ , the camera automatically starts.

## Physical Description

### Front Panel

Figure 1-1 shows the front panel of the Cisco Video Surveillance 8400 IP Camera.

**Figure 1-1** Cisco Video Surveillance 8400 IP Camera Front Panel

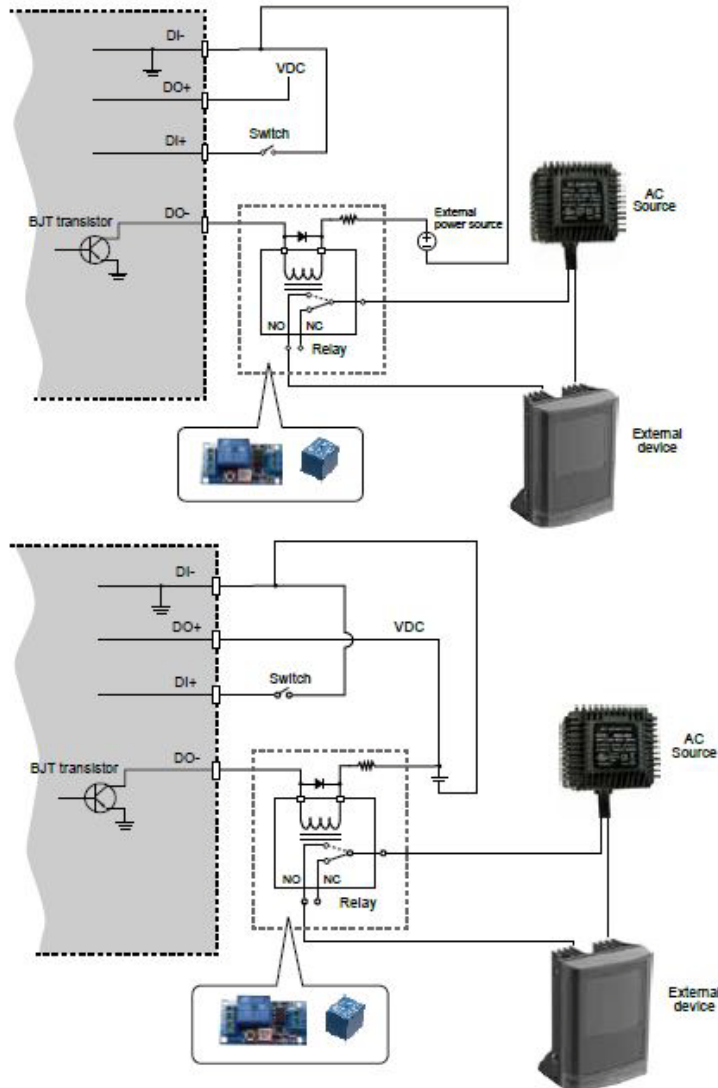


1	Motorized or fixed lens
2	SD/SDHC/SDXC card slot
3	Reset button

This come with an embedded heater and requires an 802.3at PoE switch.

## DI/DO Diagram

The following figure provides the DI/DO diagram:



- The DO+ pin provides output of 12V, and the max. load is 50mA.
- The max. voltage for DO- pins is 80VDC (external power). In order to control AC devices, the above diagram can be taken in consideration. The diagram uses a relay to control the ON/OFF condition of the AC device.
- An external relay can be triggered by using DO+ or by an external power source, depending on the type of relay you use.
- In case of using an individual relay (instead of using a relay module), for protection against voltage or current spikes, a transient voltage suppression diode must be connected in parallel with the inductive load.

# Power Adapters

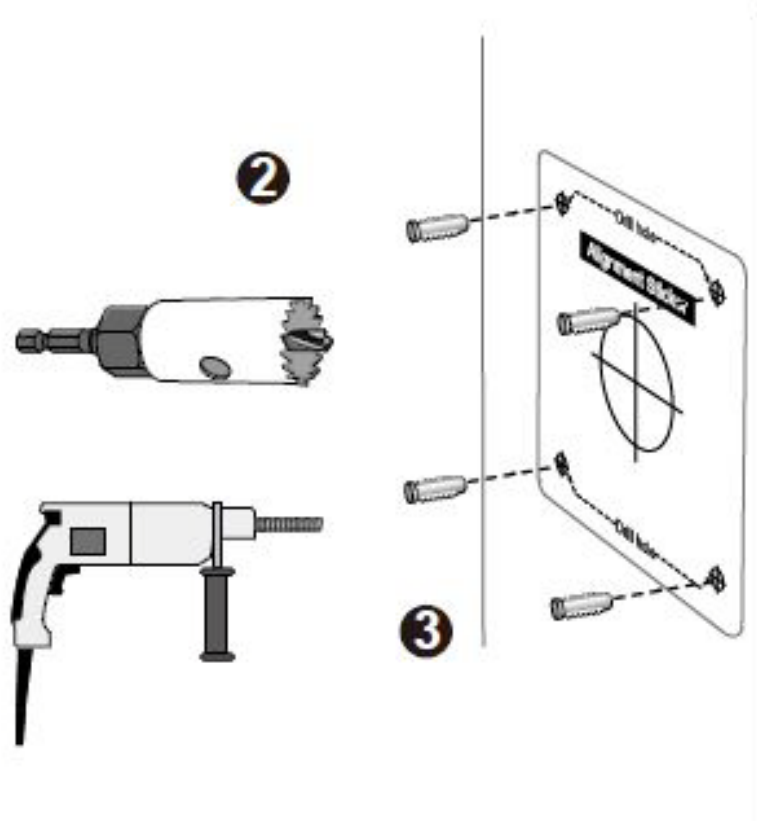
**Figure 1-2** Power Adapters

CIVS-IPC-8400	This product is intended to be supplied by a Listed Power Adapter with LPS, rated PoE 36~57Vdc, 0.75~0.45A min.; or 12Vdc, 1.7A min
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## Hardware Installation

To perform the hardware installation of the Cisco Video Surveillance 8400 IP Camera, follow these steps:

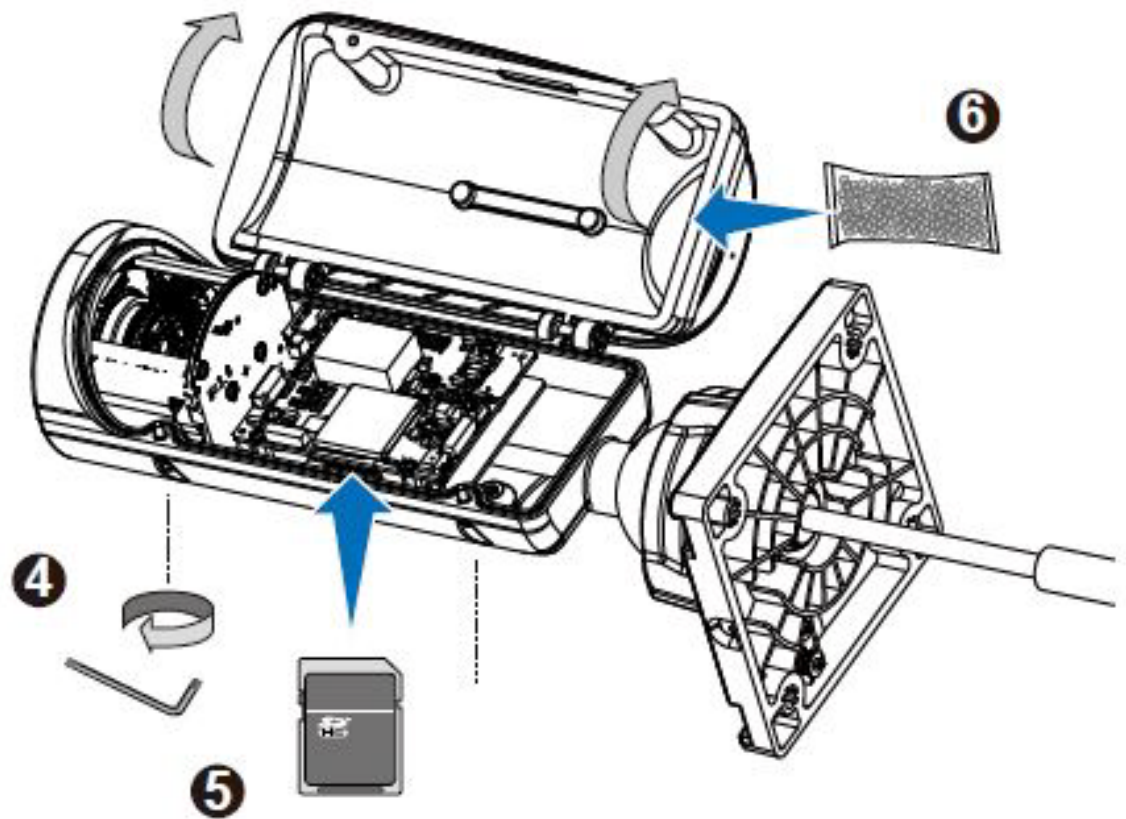
- Step 1** Make a note of the MAC address of the camera.  
The MAC address is printed on the label that is attached to the camera.
- Step 2** Attach the included alignment sticker to a preferred location.
- Step 3** Drill holes for mounting screws and a cabling hole.



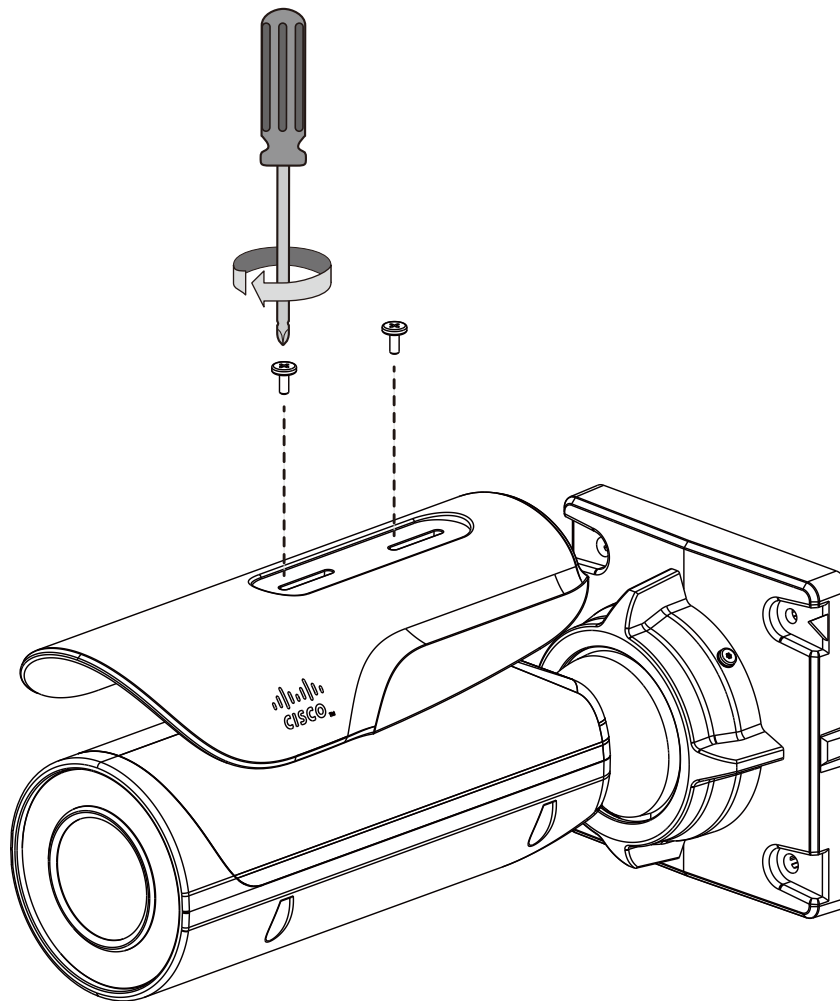
- Step 4** Loosen the anti-tamper screws to open the top cover.

**Step 5** Insert an SD card (user-supplied).

**Step 6** Replace the desiccant bag whenever you open the top cover. This ensures the components are free from the moisture

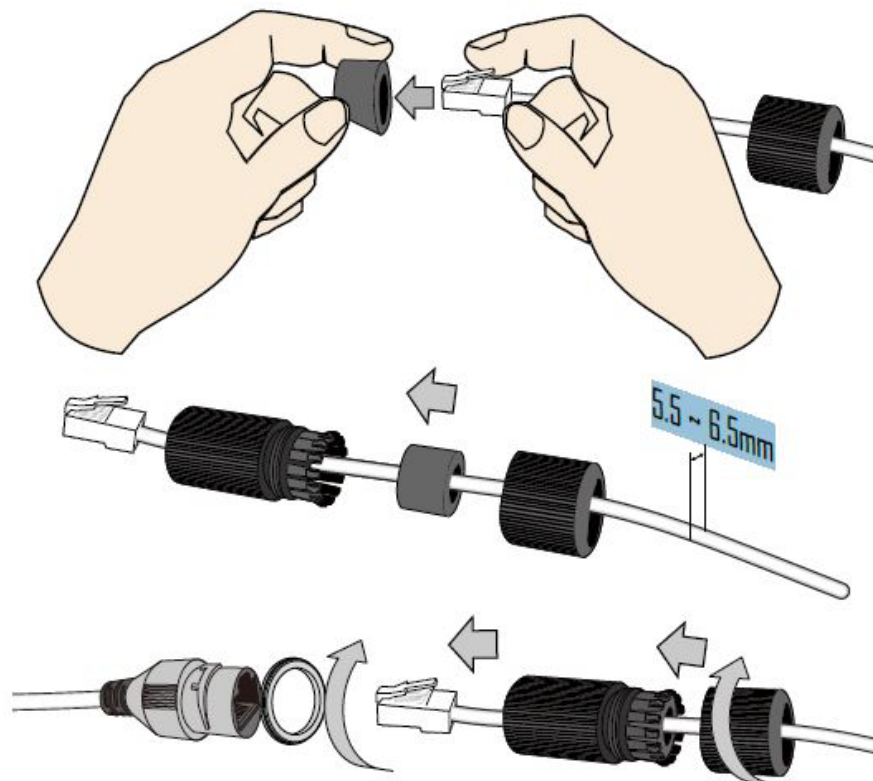


**Step 7** Install the sun shield.

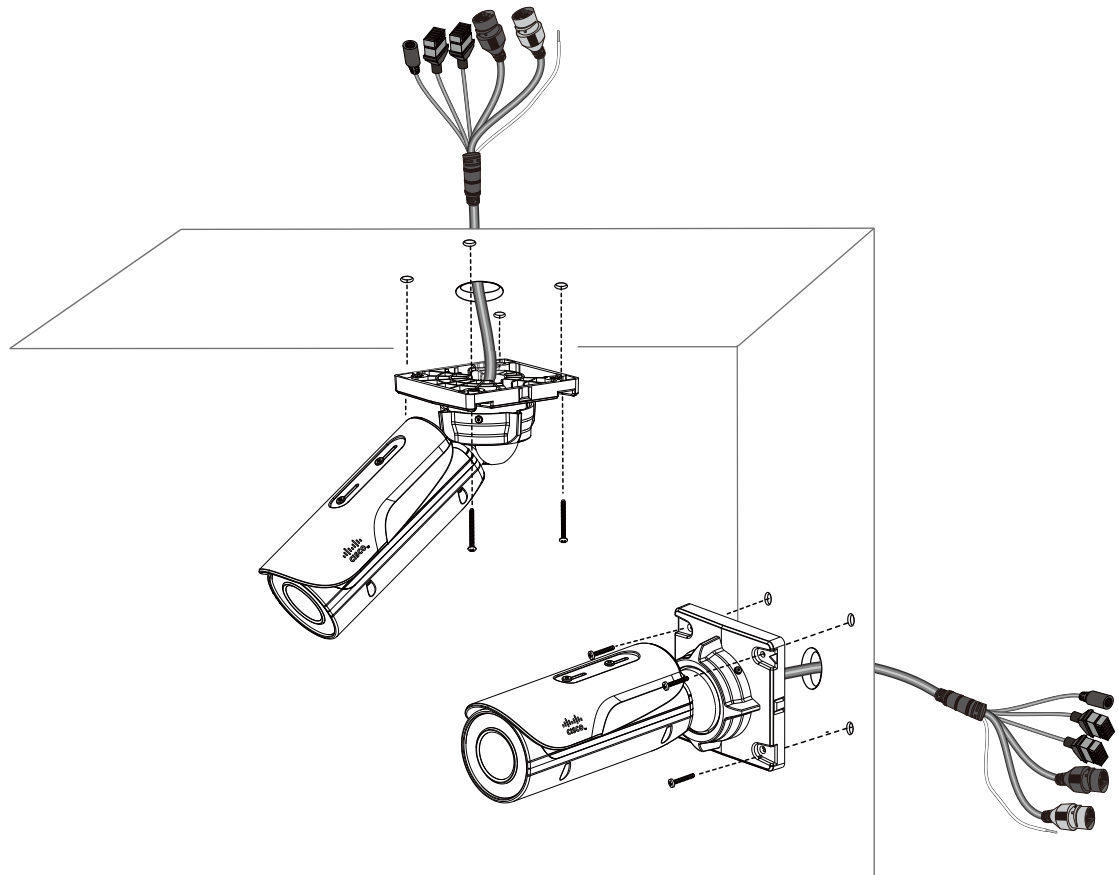


- Step 8** When connecting the LAN cable, use the cable housing to make sure the connections are waterproof.
- Pass the cable through the seal dome, and squeeze the rubber seal through an RJ45 connector.
  - You can then pass the cable through the cable gland body.

- c. Connect the Ethernet cable to the camera RJ45 connector with a seal ring. Fasten up these components. Make sure enough pressure is exerted on the rubber seal. 5.5 ~ 6.5mm.
- d. Connect the other interfaces, such as I/O wires.

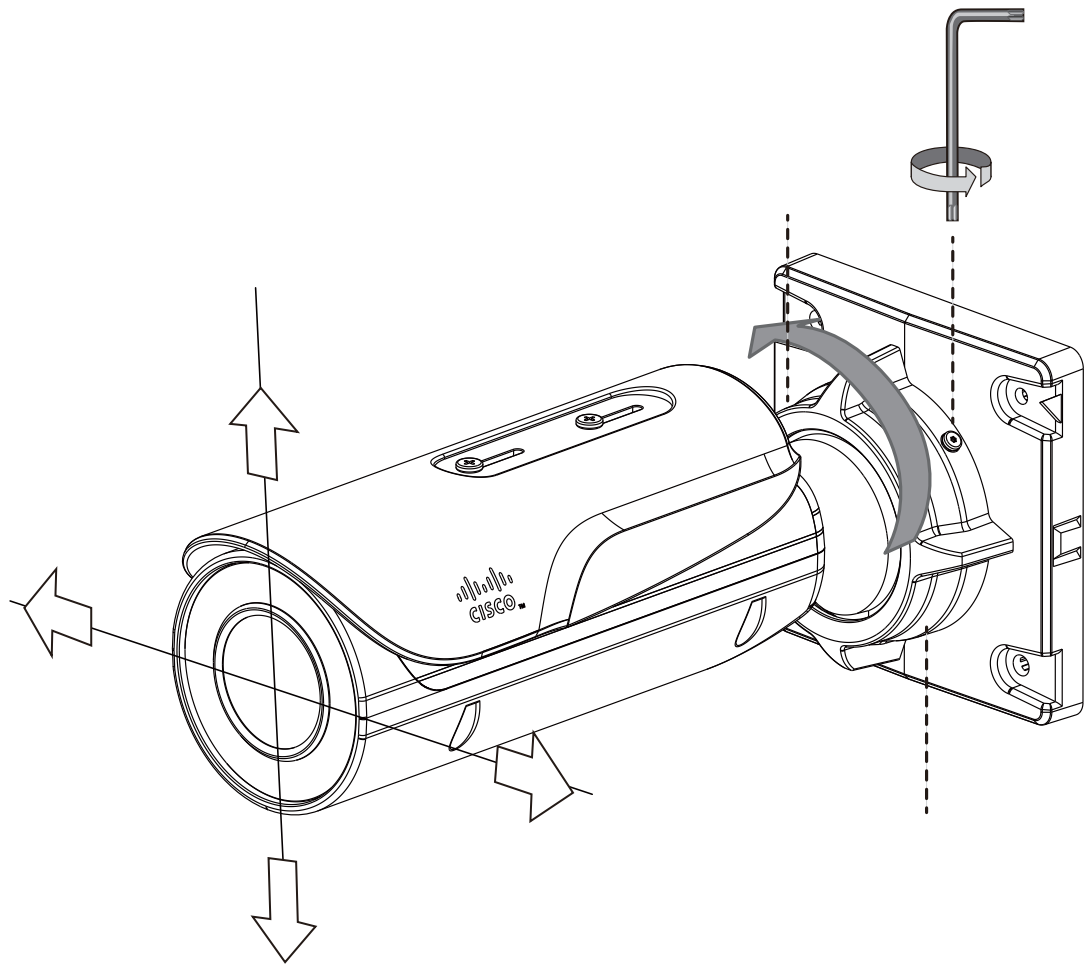


**Step 9** Secure the camera to a wall or ceiling.



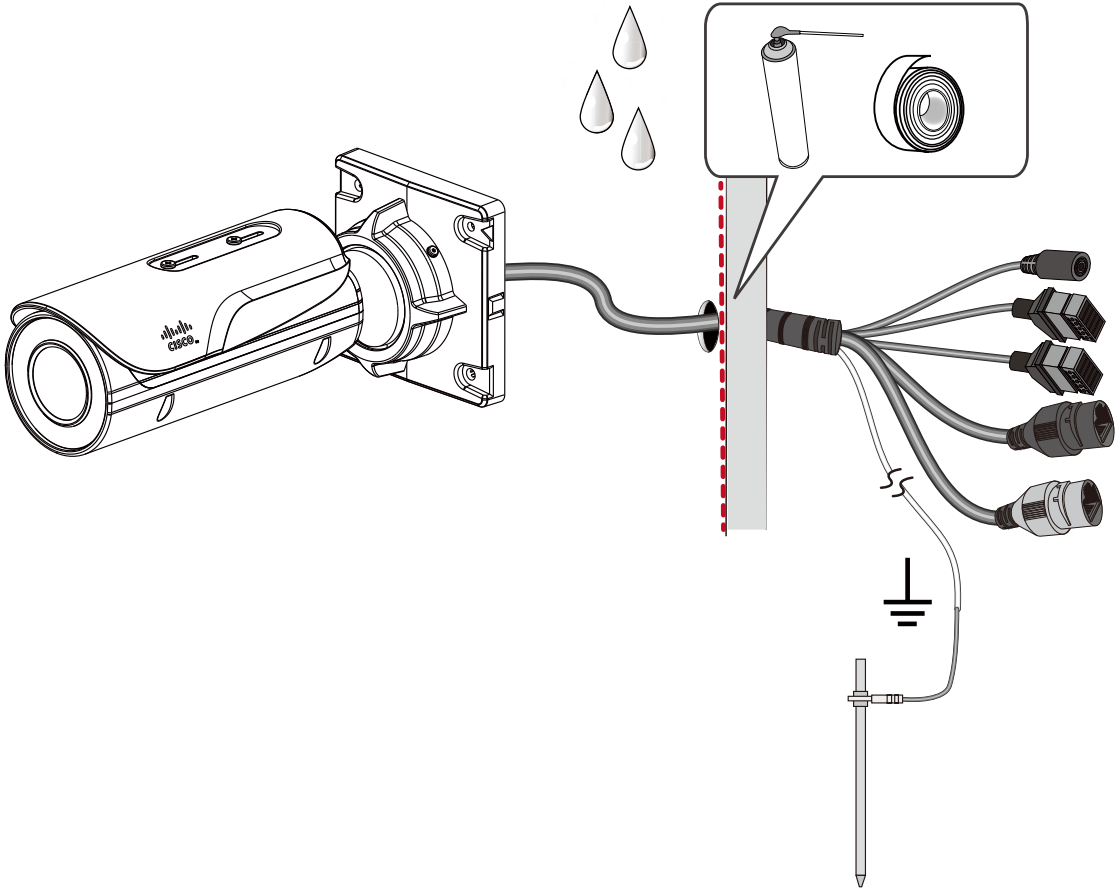
**Step 10** Adjust the shooting direction by loosening the hex and anti-tamper screws on the fastening ring. Aim the camera at the area of your interest. Tighten the fastening ring when done with the adjustment.



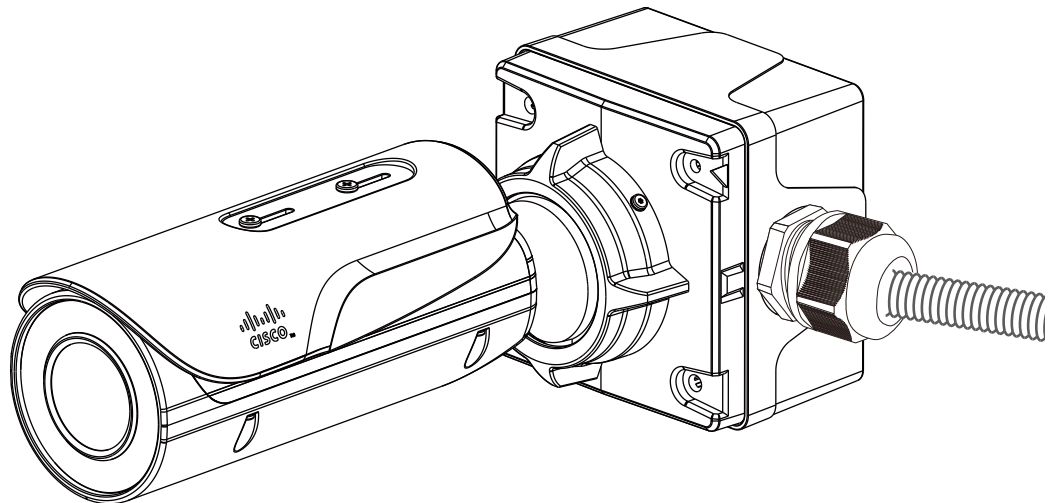


**Step 11** If your cables pass through a hole on a wall or ceiling, make sure the passage is waterproof using sealant foam, heat shrink tubing, or putties. Make sure the interfaces, for example, DC connectors and terminal connectors, if unused, are also wrapped up using waterproof putties.

Connect the ground wire to a metal conduit or other ground path.



You can also purchase the CIVS-8KA-JBOX junction box to place all cabling connections within the protection of the box.



**Step 12** With a live view displayed on your laptop, adjust the zoom and focus to obtain an optimal image. Check the live view to ensure the image is in focus.

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## LED Definitions

[Table 1-1](#) describes the LEDs on the Cisco Video Surveillance IP Camera.

**Table 1-1 IP Camera LEDs**

Item	LED Status	Description
1	Steady red	Powered and system booting, or network failed
	Red LED off	Power off
	Green LED off	Network disconnected
2	Steady red and green LED blinks every 1 second	Connected to network
3	Green LED blinks every 1 second and red LED blinks consecutively every 0.15 second	Upgrading firmware
4	Green and red LEDs blink every 0.15 second, green and red light on, then blink again	Restoring defaults
5	Red LED is on, green LED blinks and red LED is constantly on	Status after a reset (network connected)
	Green and red LEDs are constantly on	Status after a reset (network disconnected)

## Hardware Reset

The recessed button (see [Figure 1-1 on page 1-2](#)) is used to reset the system or restore the factory default settings. Sometimes resetting the system can return the camera to normal operation. If the system problems remain after reset, restore the factory settings and install again.

- **Reset**—Press the recessed reset button. Wait for the camera to reboot.
- **Restore**—Press and hold the reset button until the status LED rapidly blinks. All settings will be restored to factory default. Upon successful restore, the status LED will blink green and red during normal operation.

## MicroSD/SDHC/SDXC Card Capacity

The camera is compliant with SD/SDHC/SDXC 16GB / 8GB / 32GB / 64GB and other preceding standard SD cards.

## Network Deployment

The following sections provide information about deploying the camera on a network:

- [General Connection \(PoE\), page 1-13](#)
- [Network Connection, page 1-14](#)

## General Connection (PoE)

### Using a PoE-Enabled Switch

The camera is PoE-compliant, allowing transmission of power and data via a single Ethernet cable. [Figure 1-3](#) illustrates how to connect the camera to a PoE-enabled switch via an Ethernet cable.

**Figure 1-3** Connecting the Camera to a PoE-Enabled Switch



### Using a Non-PoE Switch

Use a PoE power injector (optional) to connect between the camera and a non-PoE switch, as shown in [Figure 1-4](#).

**Figure 1-4** Connecting the Camera to a Non-PoE Switch



#### Note

- The camera is only to be connected to PoE networks without routing to outside plants.
- For a PoE connection, use only UL listed I.T.E. with PoE output.

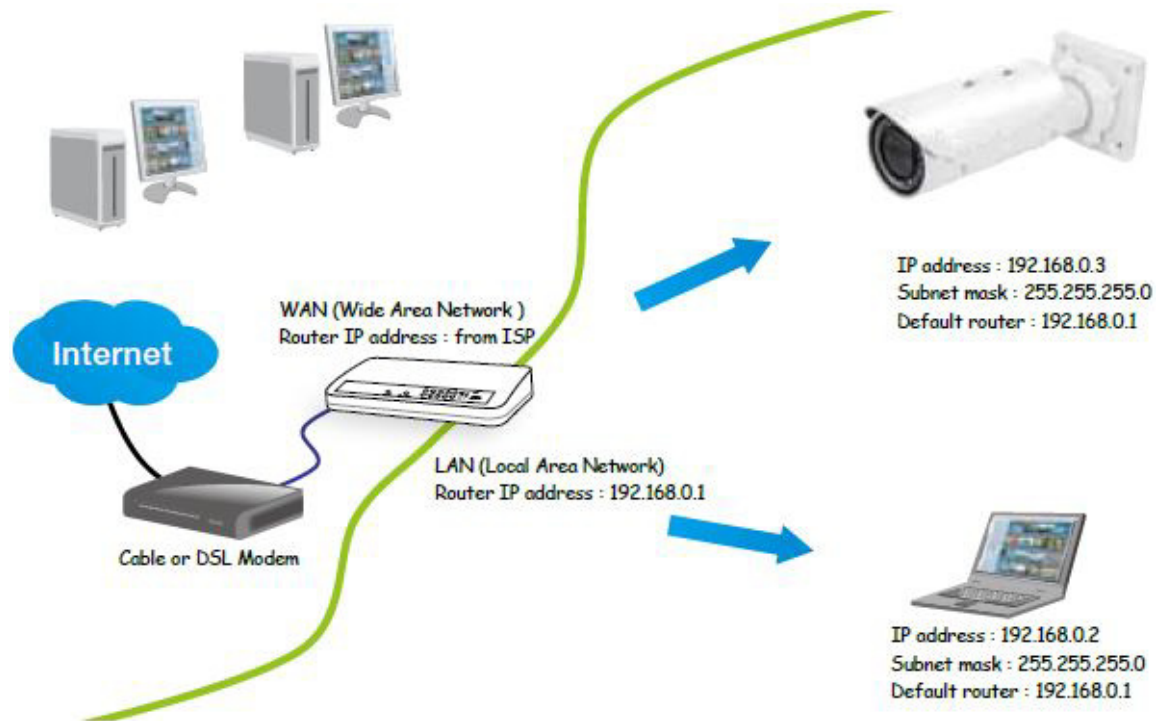
## Network Connection

### Internet Connection via a Router

- To set up the camera over the Internet, make sure you have a router and follow these steps:

**Step 1** Connect your camera behind a router, the Internet environment is illustrated in [Figure 1-5](#).

**Figure 1-5** Connecting the Camera Via a Router



**Step 2** In this case, if the Local Area Network (LAN) IP address of your camera is 192.168.0.3, forward the following ports for the camera on the router.:

- HTTP port: default is 80
- RTSP port: default is 554
- RTP port for video: default is 5556
- RTCP port for video: default is 5557

If you have changed the port numbers on the Network page, open the ports accordingly on your router. For information about how to forward ports on the router, see your router documentation.

**Step 3** Find out the public IP address of your router provided by your Internet Service Provider (ISP).

Use the public IP and the secondary HTTP port to access the camera from the Internet. See the [“Network > General settings”](#) section on [page 5-19](#) for more information.

**Internet Connection with Static IP**

Choose this connection type if you are required to use a static IP for the camera. See the [“Network > General settings”](#) section on page 5-19 for more information.

**Internet Connection via Point-to-Point over Ethernet (PPPoE)**

Choose this connection type if you are connected to the Internet via a DSL Line. See description of PPPoE (Point-to-point over Ethernet) in the [“Network Type Tab”](#) section on page 5-19.

Configure the router, virtual server or firewall, so that the router can forward any data coming into a preconfigured port number to a camera on the private network, and allow data from the camera to be transmitted to the outside of the network over the same path.

From	Forward to
122.146.57.120:8000	192.168.2.10:80
122.146.57.120:8001	192.168.2.11:80
...	...

When properly configured, you can access a camera behind the router using the HTTP request such as: `http://122.146.57.120:8000`.

If you change the port numbers on the Network configuration page, open the ports accordingly on your router. For example, you can open a management session with your router to configure access through the router to the camera within your local network. See your network administrator for router configuration if you have troubles with the configuration.

For more information about network configuration options (such as that of streaming ports), choose **Configuration > Network Settings** in the IP camera web-based interface. Cisco also provides the automatic port forwarding feature as an NAT traversal function with the precondition that your router must support the UPnP port forwarding feature.

