



Getting Started

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

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- [Physical Description, page 1-2](#)
- [LED Definitions, page 1-3](#)
- [Mounting Positions, page 1-4](#)
- [Hardware Installation, page 1-5](#)
- [Hardware Reset, page 1-22](#)
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- [DI/DO Diagram, page 1-23](#)
- [Network Deployment, page 1-25](#)

Overview

The Cisco Video Surveillance 8070 IP Camera is a high-definition (HD), fully functioning video endpoint that is equipped with a 12-megapixel sensor and a fisheye lens that can deliver impressive 180° panoramic views and 360° surround views. This IP camera provides industry-leading image quality and processing power, and can be deployed in both indoor and outdoor environments.

Key features and benefits of the Cisco Video Surveillance cameras include:

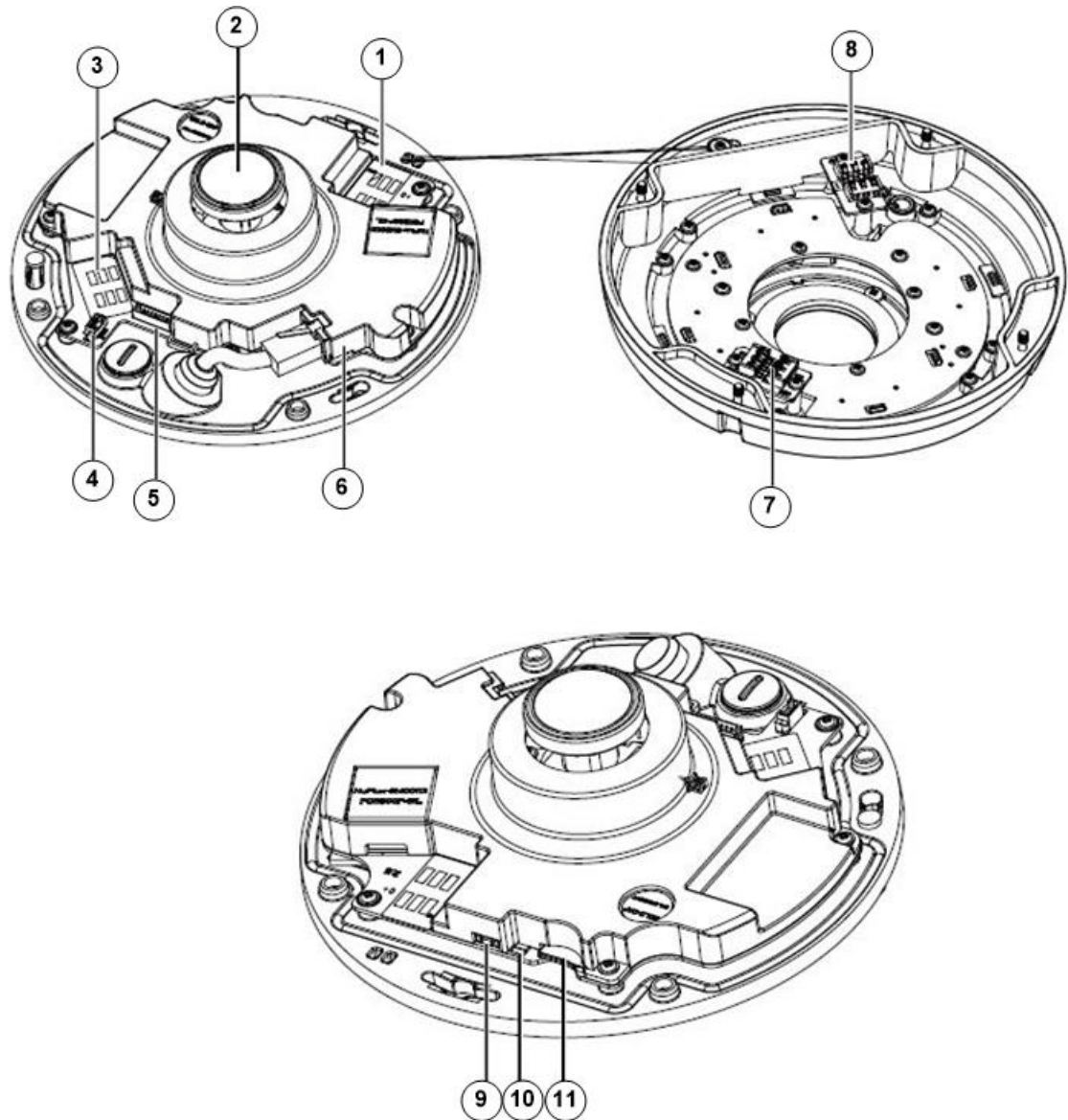
- Outstanding multi-view layouts—360° surround views and multiregion client dewarped views, with Digital PTZ functionality.
- True high-definition video—This 12-megapixel camera streams crisp and clear video at resolutions up to 2816 x 2816, while maintaining low network bandwidth.
- Dual streaming—The camera can stream H.264, H.265, and MJPEG video simultaneously. Each video stream can be configured with independent resolution, quality, and frame-rate settings.
- Day/night operation—The camera provides true day-night functionality and includes an infrared-cut filter that automatically switches to night mode in low-light scenes. This function can be set to manual, automatic, or scheduled control.
- Flexible power options—The camera supports Power over Ethernet plus (PoE+) (802.3at compliant) or 12V DC.
- Mounting options—The cameras can be installed to a ceiling or wall.

Physical Description

The following figures illustrate the cameras:

- [Figure 1-1](#)—Cisco Video Surveillance 8070 IP Camera inner view
- [Figure 1-2](#)—Cisco Video Surveillance 8070 IP Camera outer view

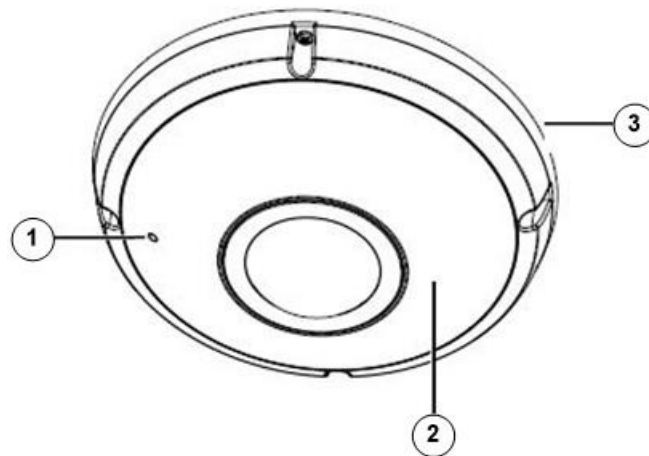
Figure 1-1 Cisco Video Surveillance 8070 IP Camera Inner View



1	Contacts
2	Lens
3	Contacts
4	Header (J3)—DI/DO and audio combo header

5	Header (J7)—DI/DO and audio combo header
6	Ethernet 10/100 RJ45 socket
7	Contacts for IR units (B)
8	Contacts for IR units (B)
9	Reset button
10	Status LEDs
11	MicroSD/SDHC/SDXC card slot

Figure 1-2 Cisco Video Surveillance 8070 IP Camera Outer View



1	Built-in microphone
2	IR lights hidden beneath panel
3	Vandal-proof dome cover

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
	Red LED off	Power off
2	Steady Red + blinking Green every 1 second (Green LED on for 1 second and off for another)	Network heartbeat

Table 1-1 IP Camera LEDs (continued)

Item	LED Status	Description
3	Blinking Red every 0.15 second + blinking Green every 1 second (Red LED on for 0.15 second and Green LED on for 1 second and off for another)	Upgrading firmware
4	Blinking Red every 0.15 second + blinking Green every 0.15 second	Restoring defaults

Mounting Positions

Figure 1-3 shows the mounting hole positions and the dimensions of the base plate.

Figure 1-3 Camera Base Plate Mounting Positions

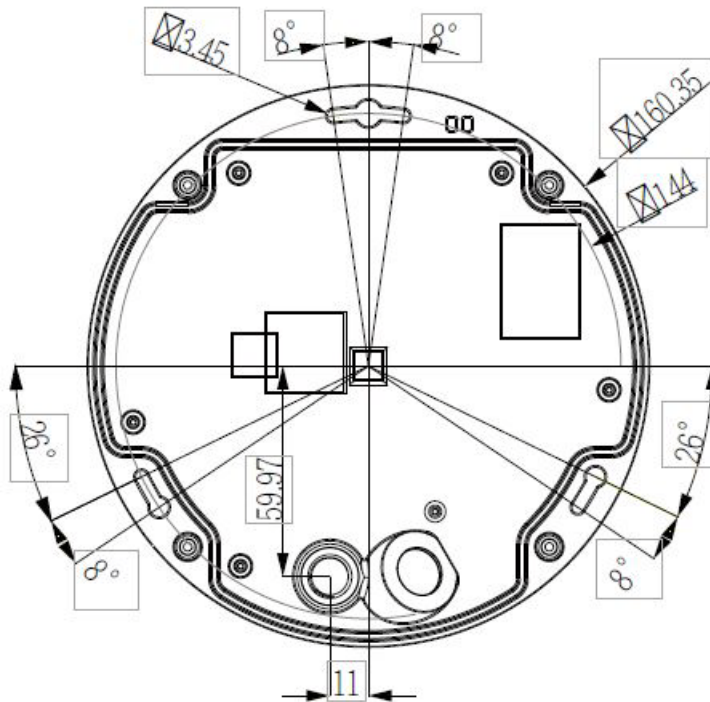
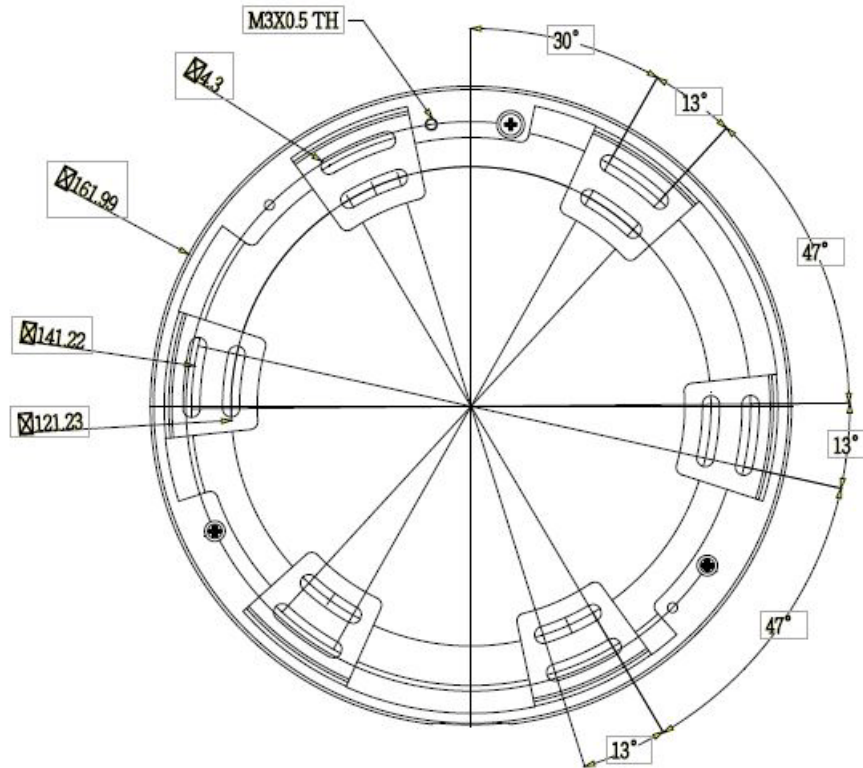


Figure 1-4 Camera Mounting Plate Mounting Positions



Power Adapters

Figure 1-5 Power Adapters

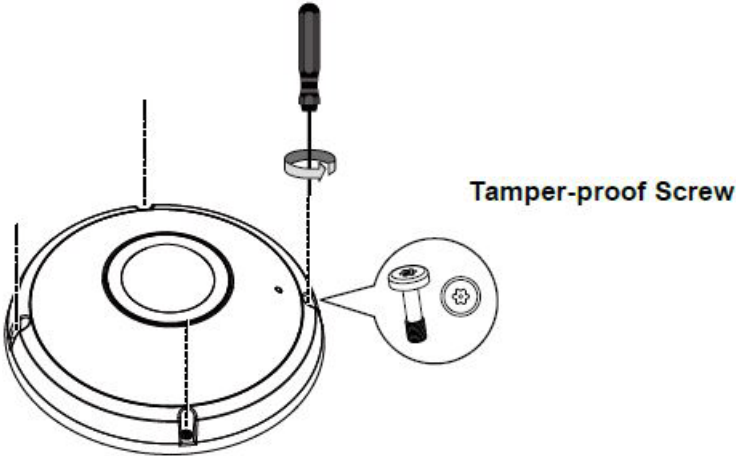
CIVS-IPC-8070	This product is intended to be supplied by a Listed Power Adapter with LPS, rated 0.68-0.44A for PoE 37-57V; 1.67A for DC12V
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Hardware Installation

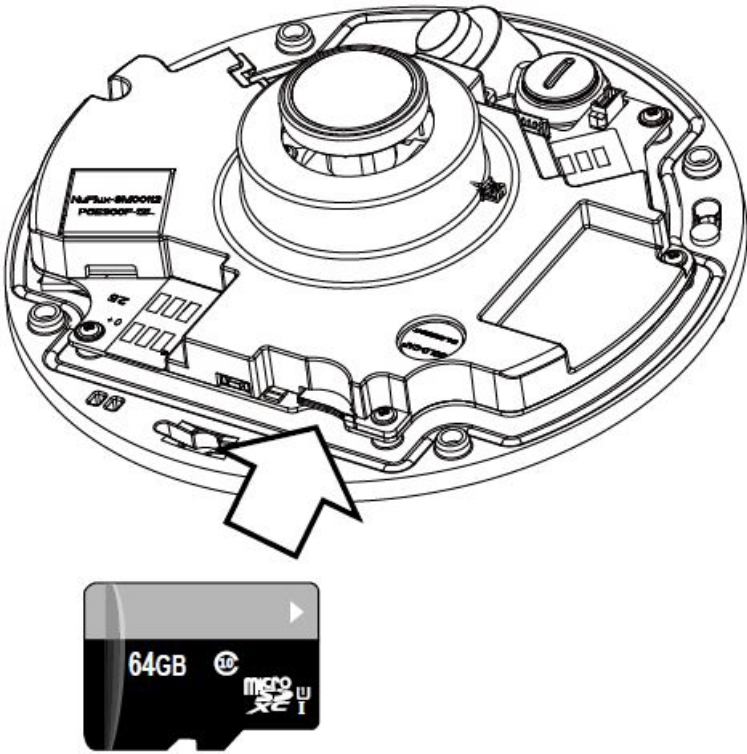
To install the Cisco Video Surveillance 8070 IP Camera, on a ceiling or wall, follow these steps:

-
- 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.

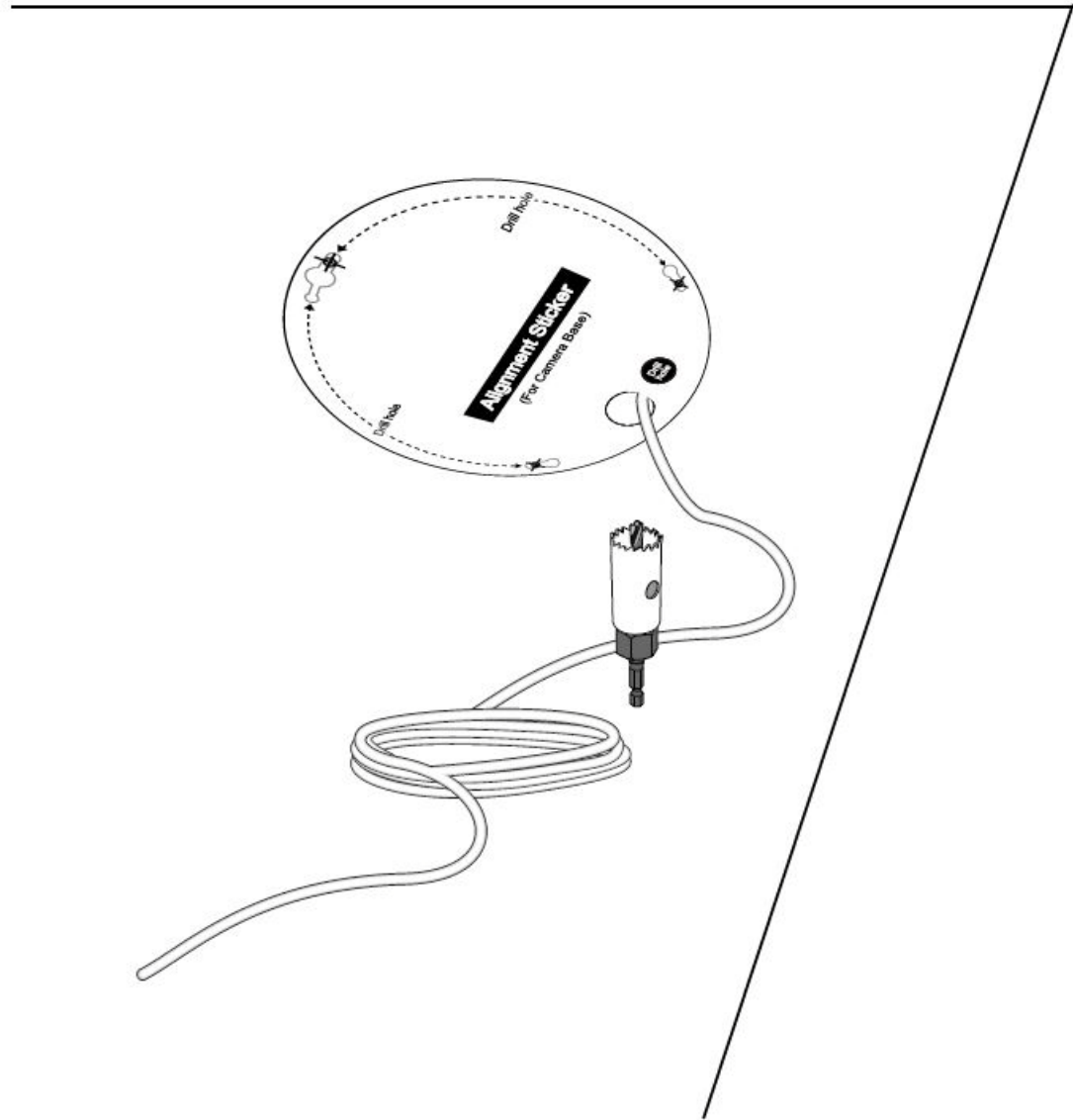
Step 2 Use the supplied screwdriver to loosen the four screws and detach the dome cover from the camera base.



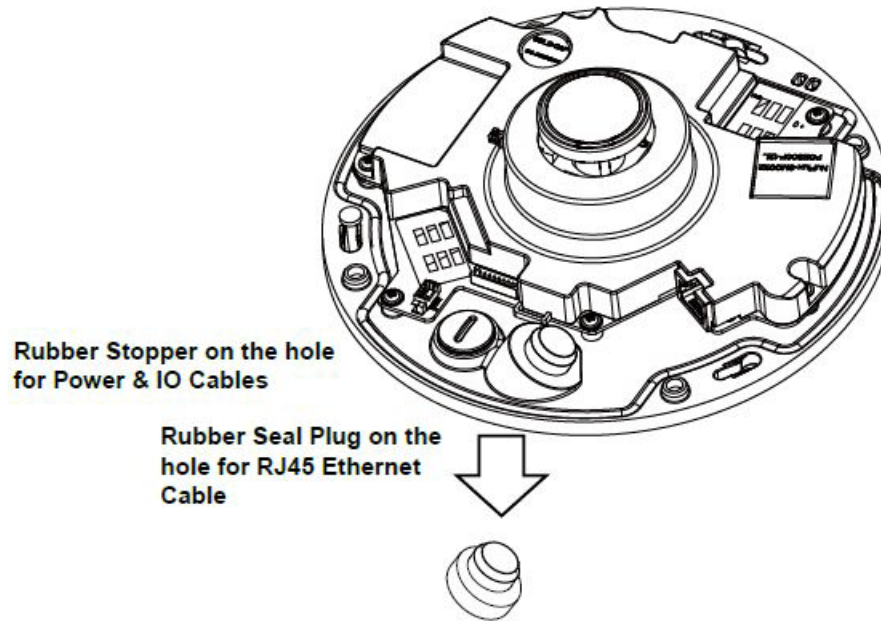
Step 3 If edge recording is preferred, install a microSD card in the camera.



Step 4 Prepare the wiring, and drill a cabling hole with the aid of the included alignment sticker.



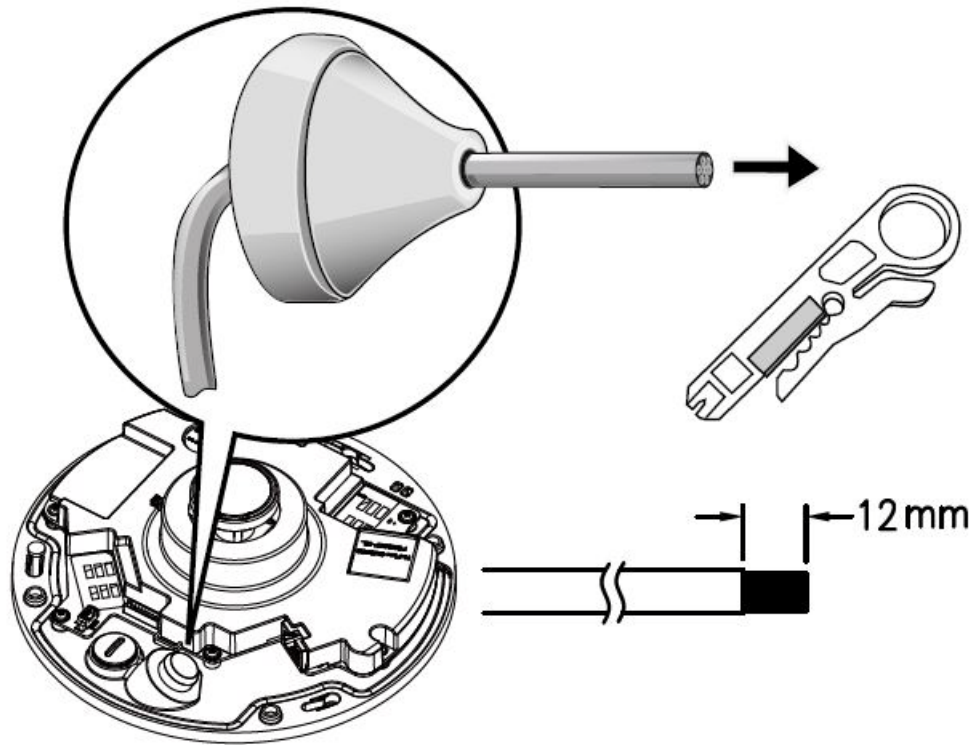
Step 5 Remove the stoppers and route cables through the openings.



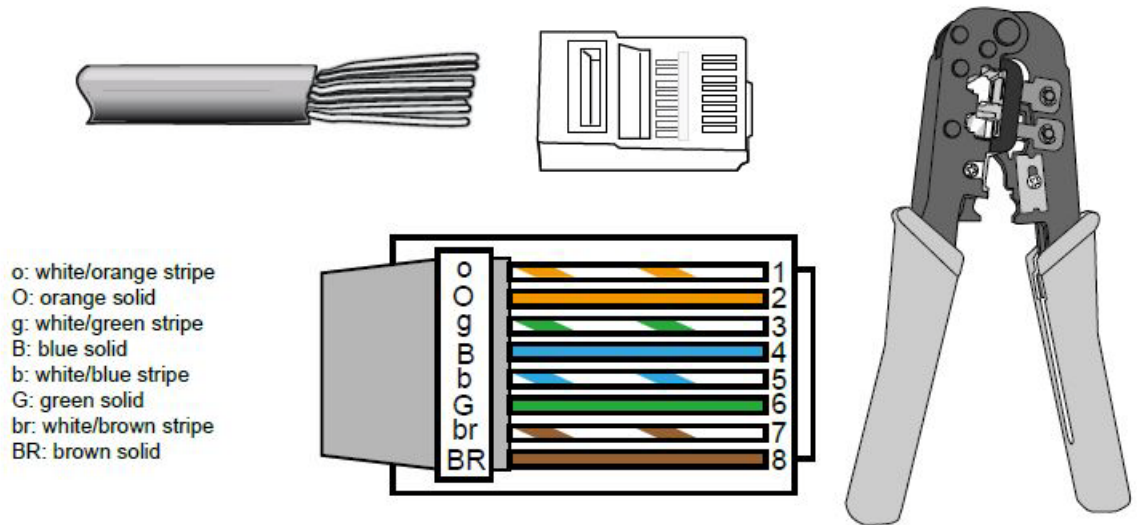
Step 6 Drill a hole on the rubber seal plug and insert an Ethernet cable through the opening. Strip part of the sheath from the Ethernet cable.

Recommended cable gauge: 5 to 8mm.

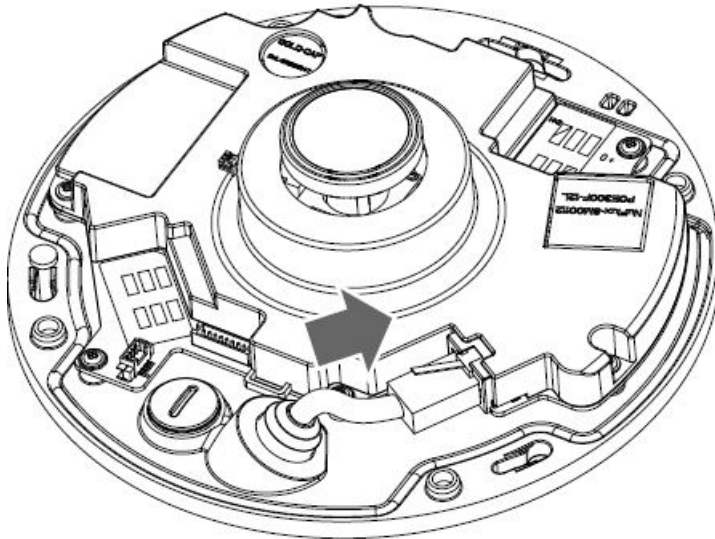
Step 7 Drill a hole on the rubber seal plug and insert an Ethernet cable through the opening. Strip part of the sheath from the Ethernet cable.



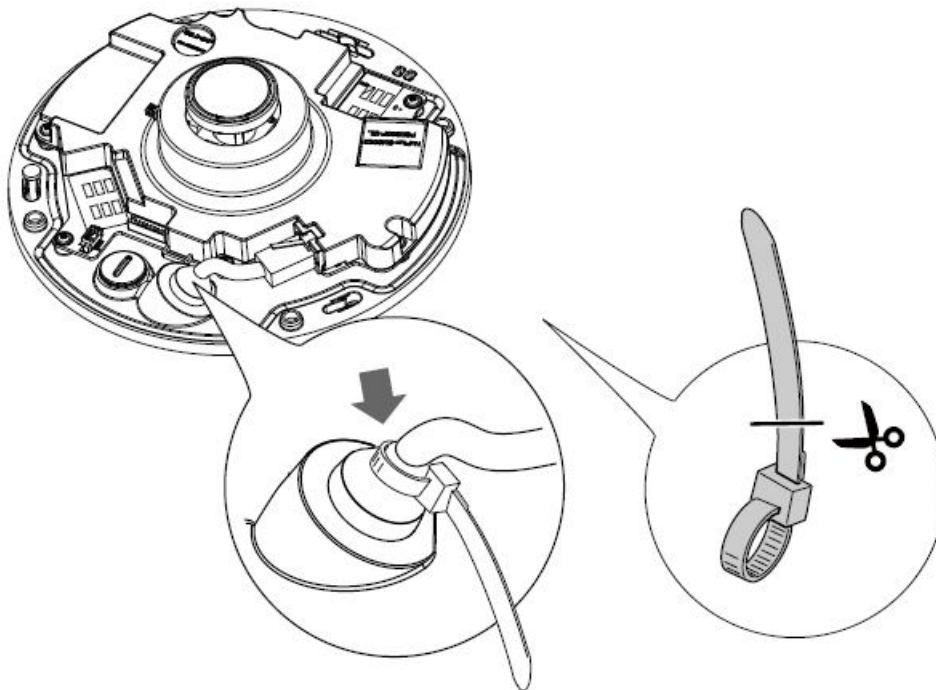
Step 8 You will need an RJ45 crimping tool to attach the Ethernet wires to a connector. When done, connect the cable to the camera's Ethernet RJ45 socket.



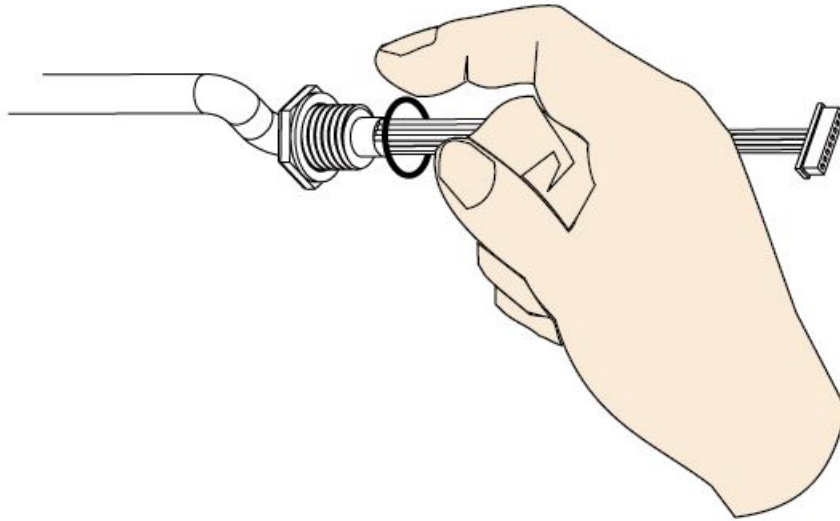
- Step 9** Feed the Ethernet cable from the bottom of the camera and through the hole. Attach the rubber seal plug for water proofing.



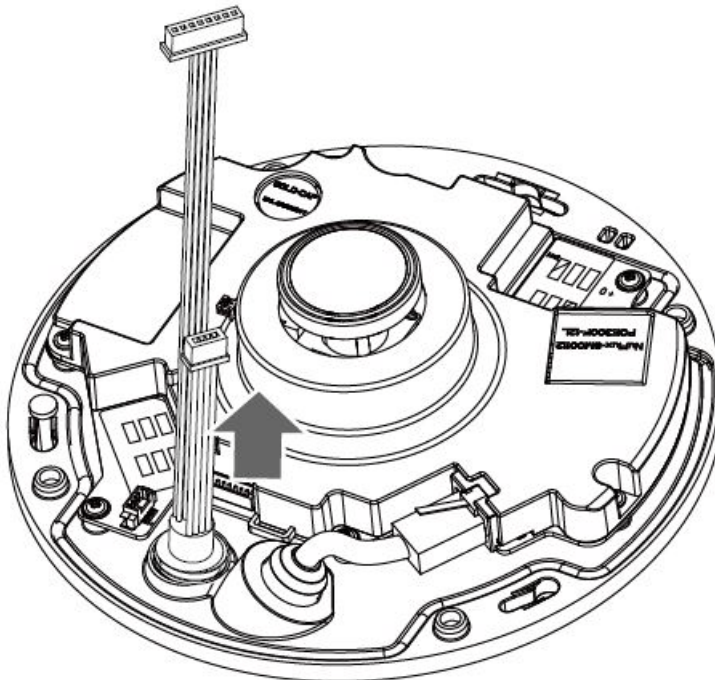
- Step 10** Use the included cable tie to fasten the top of the rubber seal so that the position of the Ethernet cable will not alter. When done, cut the excessive part of the cable tie.



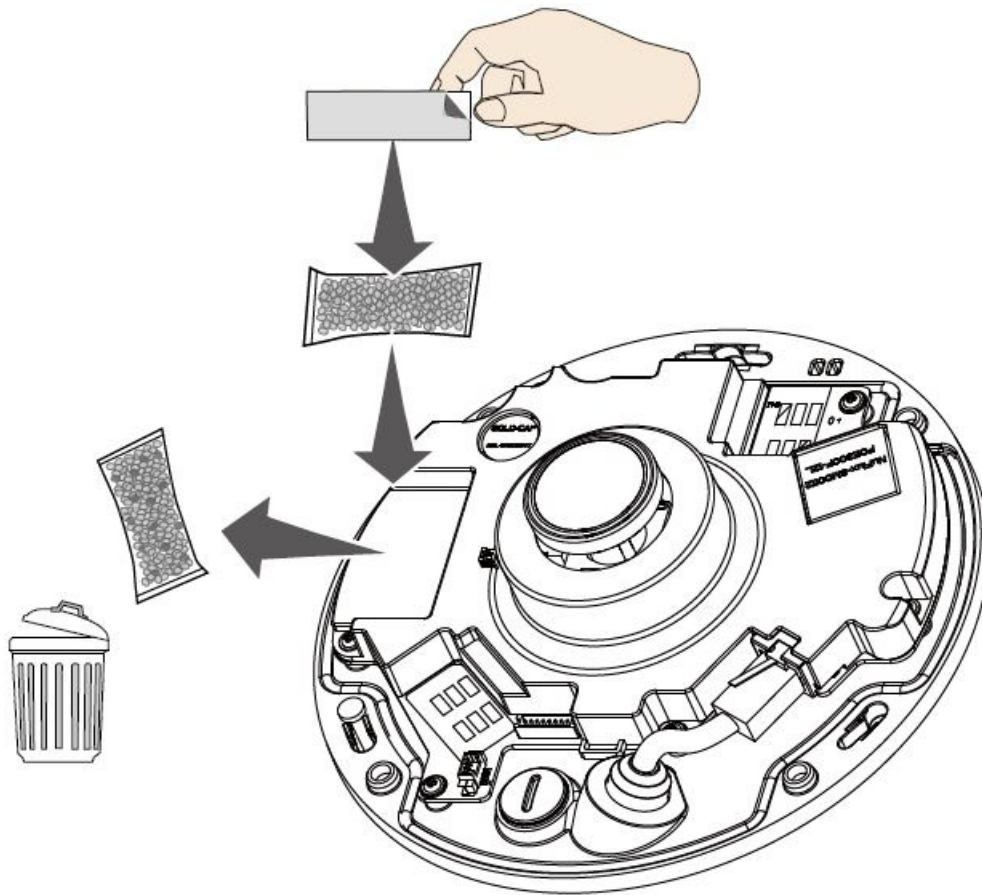
- Step 11** If the DI/DO combo cable is preferred, install the supplied rubber washer to the cable as shown in the picture. Feed the cable from the bottom of the camera and tighten the plastic nut for waterproofing.



If you are not powering the camera over a PoE switch, use the DC 12V connector on the DI/DO combo cable.



Replace the desiccant bag on the camera. This is very important to reduce the moisture level inside the camera. Replace it whenever you open the camera dome cover.



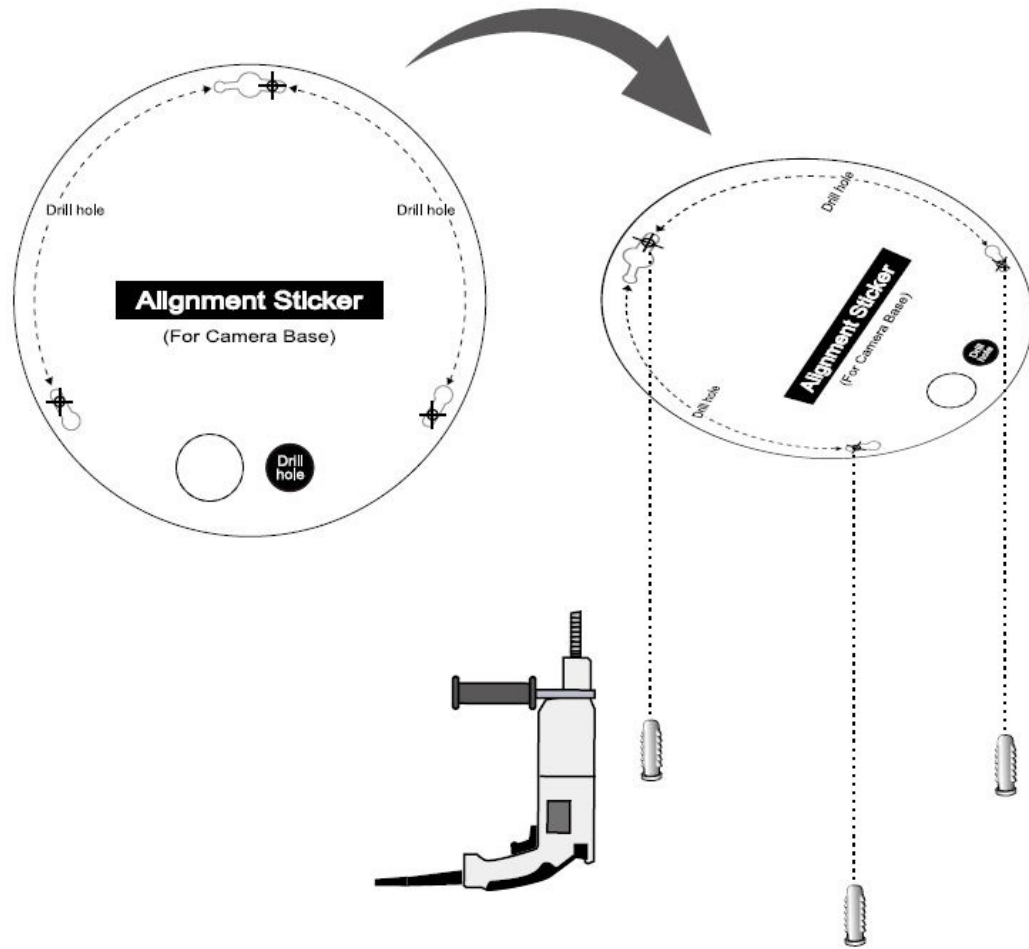
Step 12 To perform a direct installation, take the following actions.

To perform an installation using the mount bracket, skip to [Step 13](#).

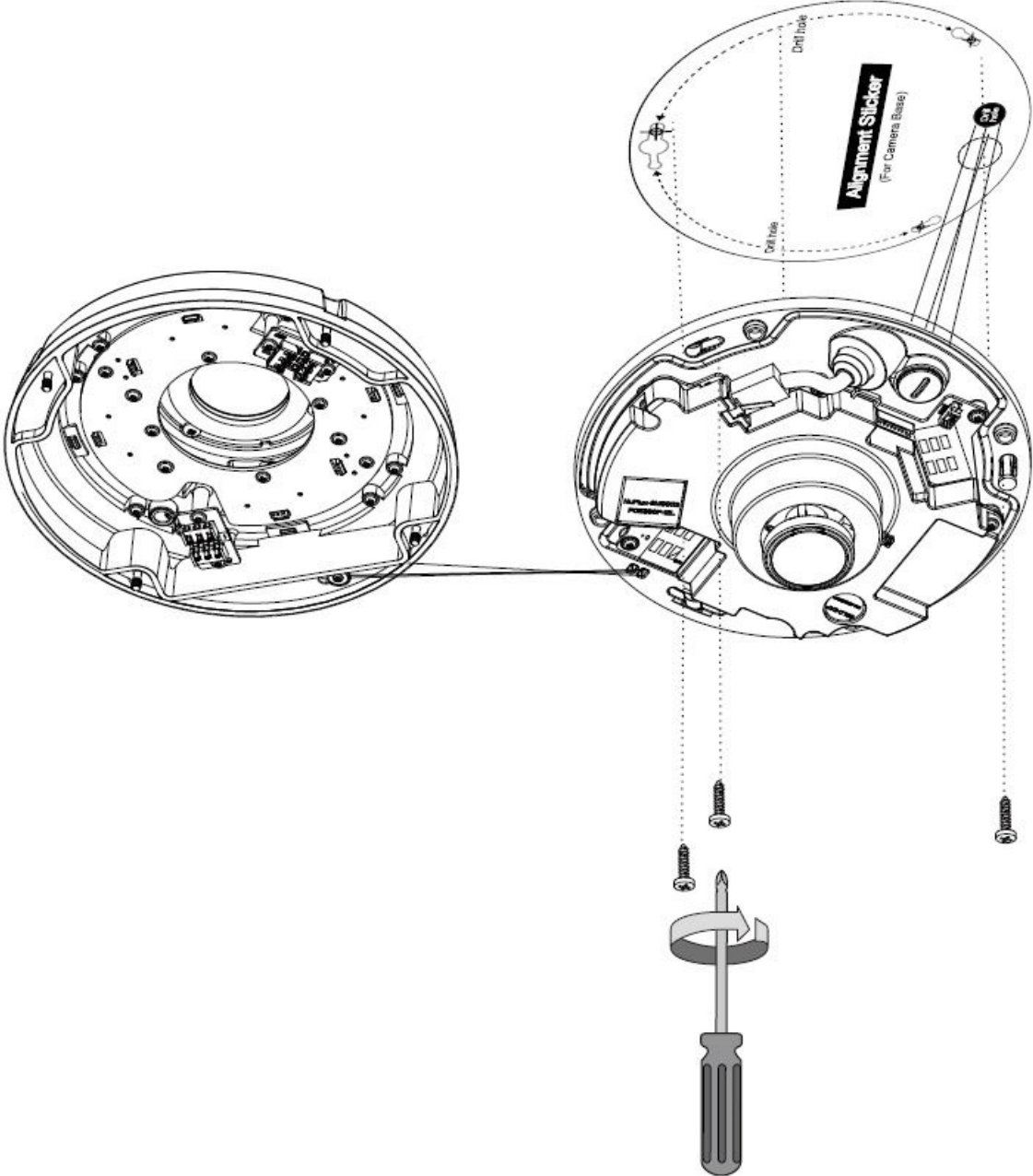
Direct installation instructions:

- a. Attach the supplied alignment sticker for camera base to the ceiling/wall. Using the three circles on the sticker, drill three pilot holes into the ceiling. Then hammer the three supplied plastic anchors into the holes.

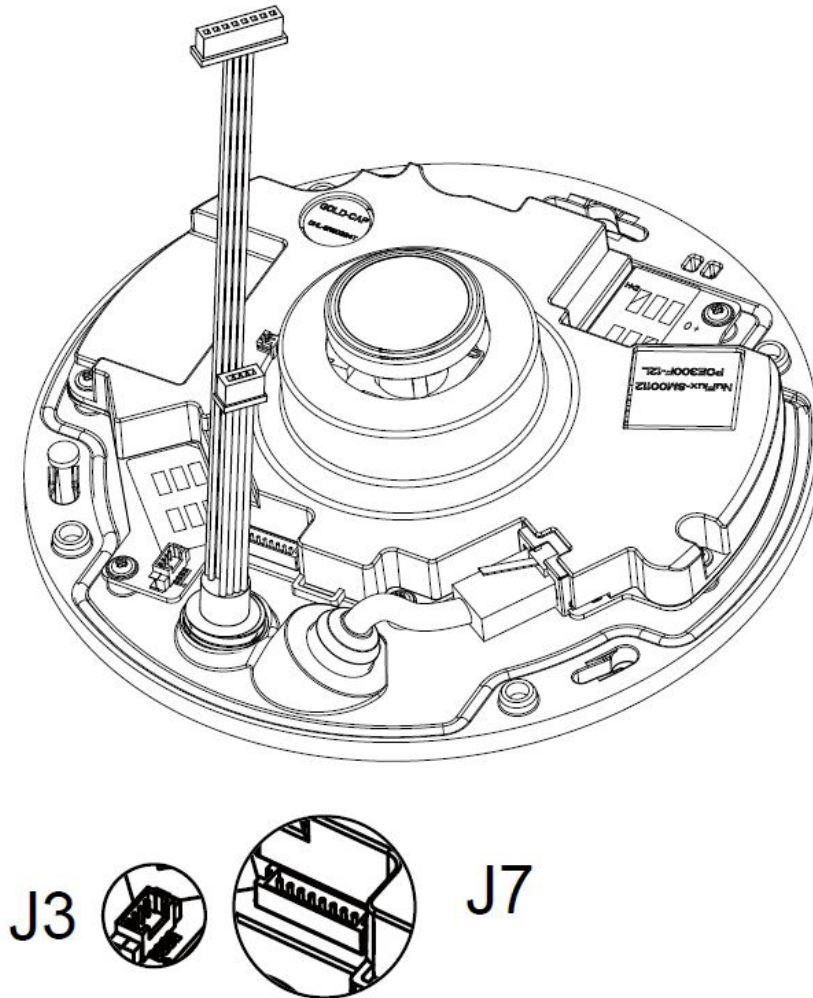
If preferred, drill a cabling hole on the ceiling or wall, and feed the cables through the hole.



- b. Secure the camera base to the ceiling/wall with three supplied screws.



- c. Connect the white headers of the DI/DO combo cable to the J3 and J7 headers on the camera.



J3

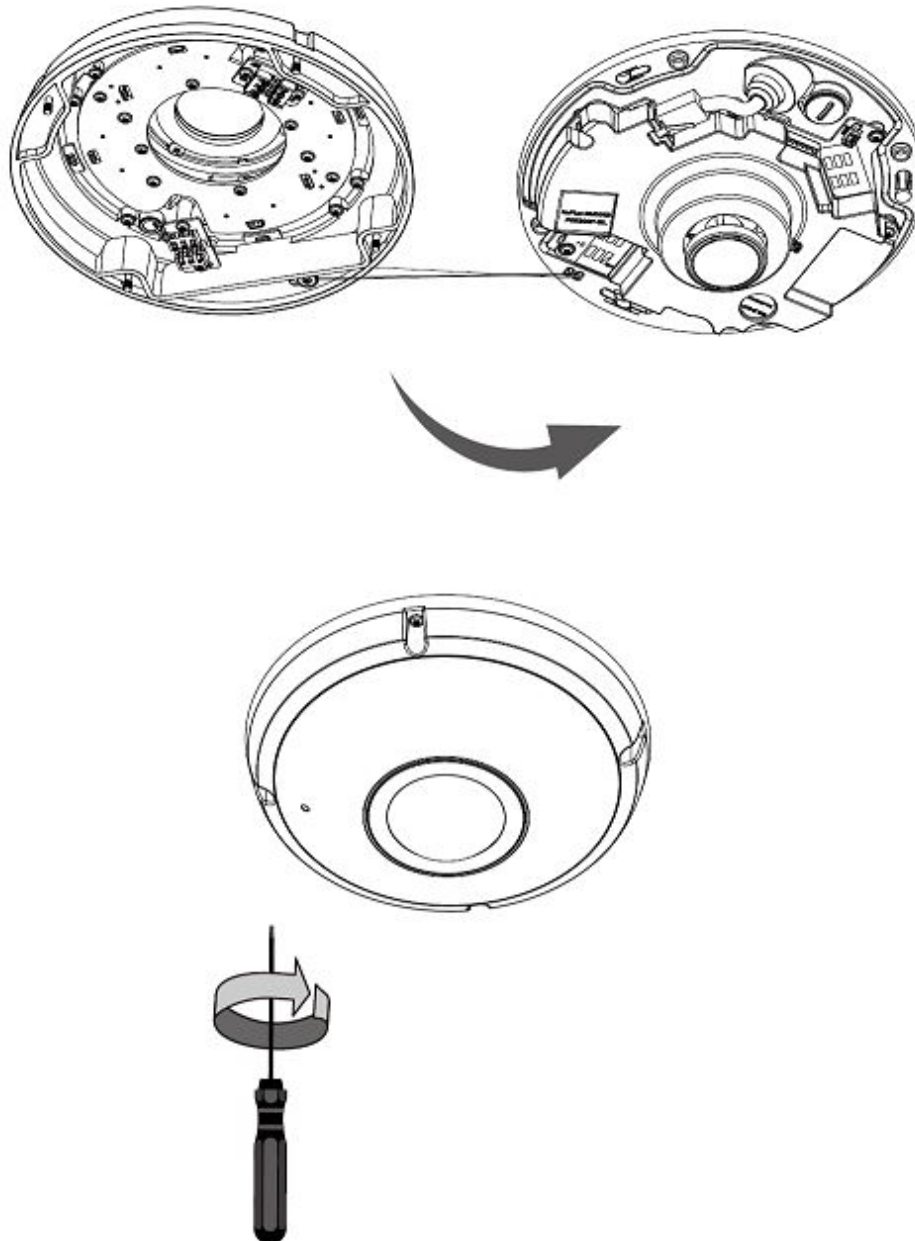


J7

- d. Attach the dome cover. Secure the four screws using the supplied T10 stardriver. Make sure all camera parts are securely installed.

Arrange the cables neatly to avoid getting in the way when the dome cover is attached.

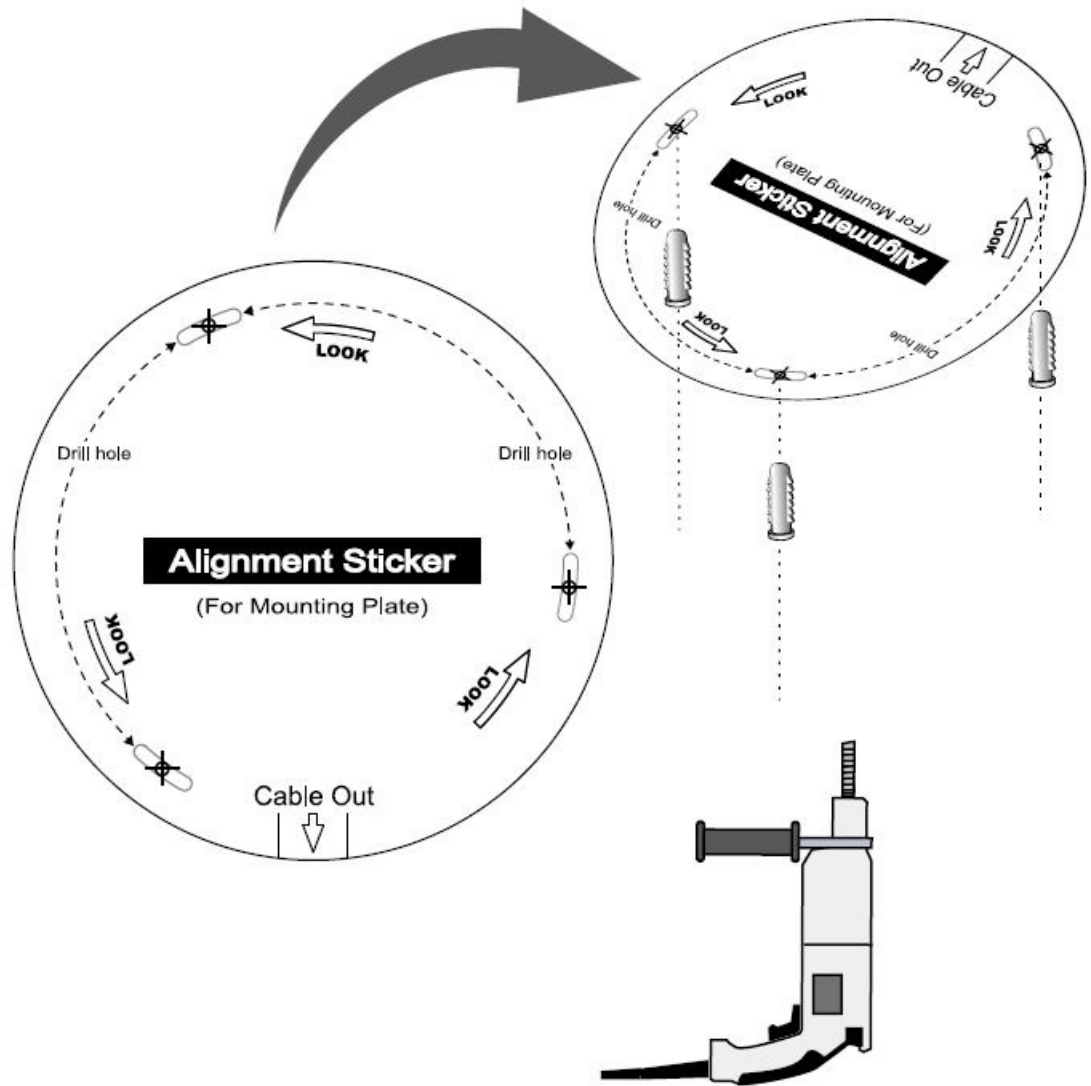
After you attach the dome cover, continue with [Step 14](#).



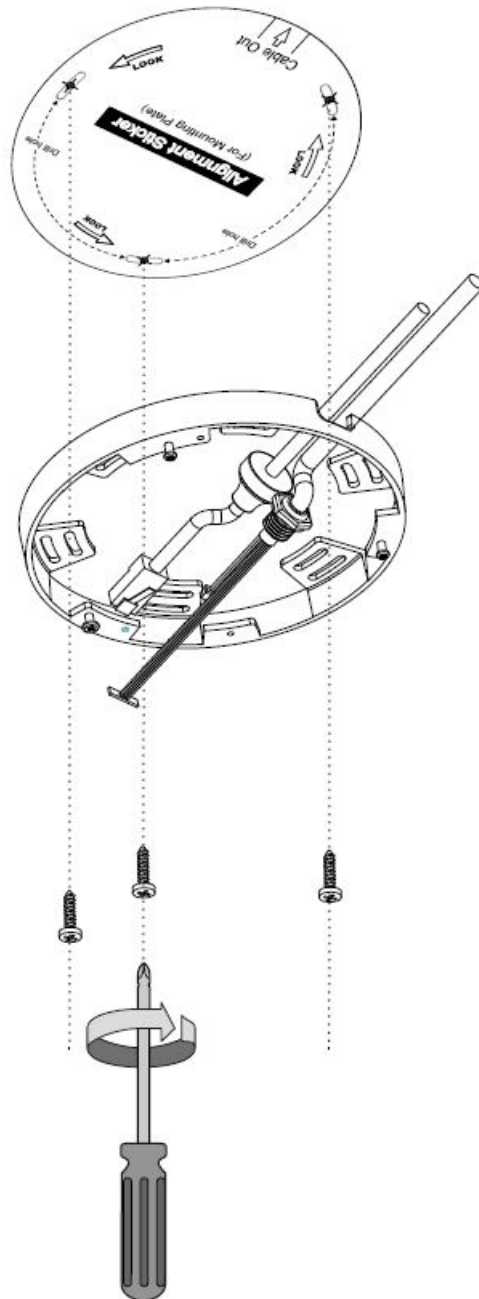
Step 13 To perform an installation using the mount bracket:

- a. Attach the supplied alignment sticker for the supplied mounting plate to the ceiling or wall. (There are two different alignment stickers.)

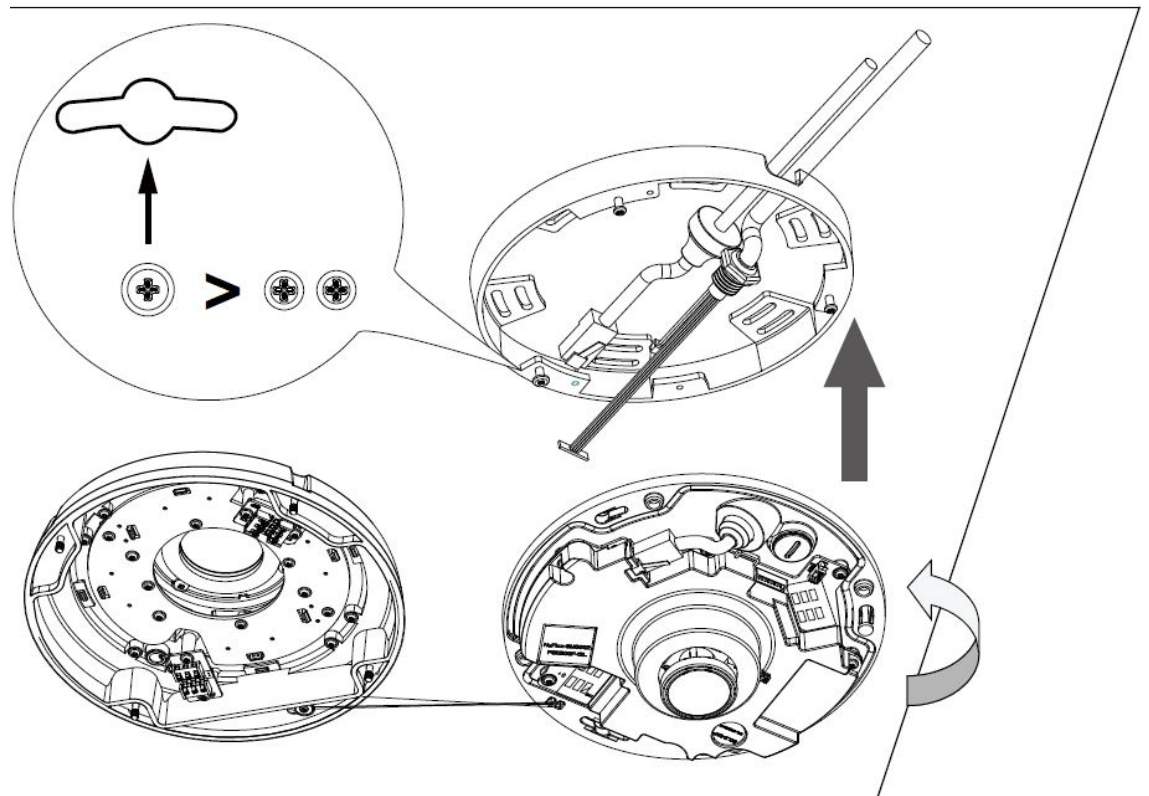
Using the three circles on the sticker, drill three holes into the ceiling. Then hammer the three supplied plastic anchors into the holes.



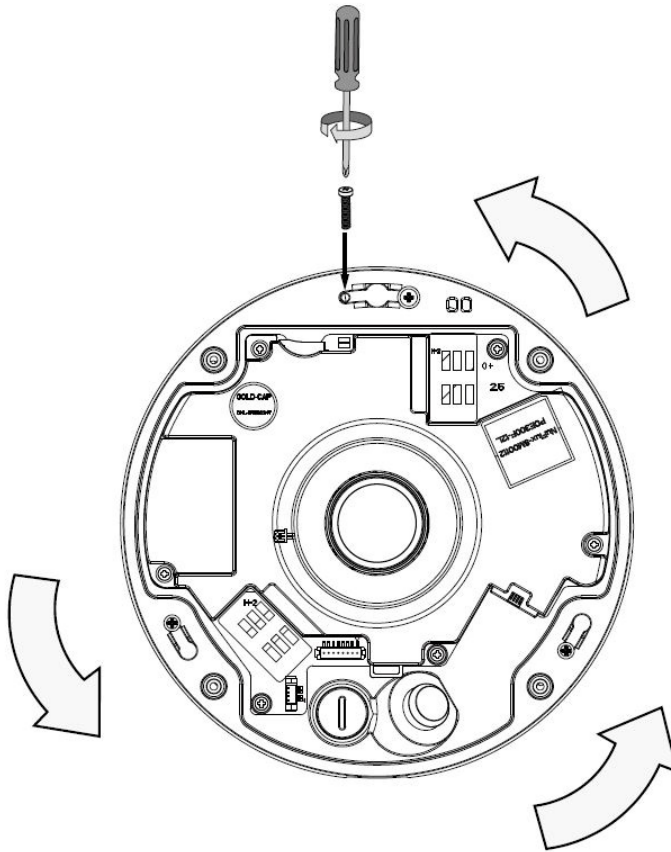
- b. Arrange and feed the cables through the side of the mount bracket. Secure the mount bracket to the ceiling or wall using the supplied screws.



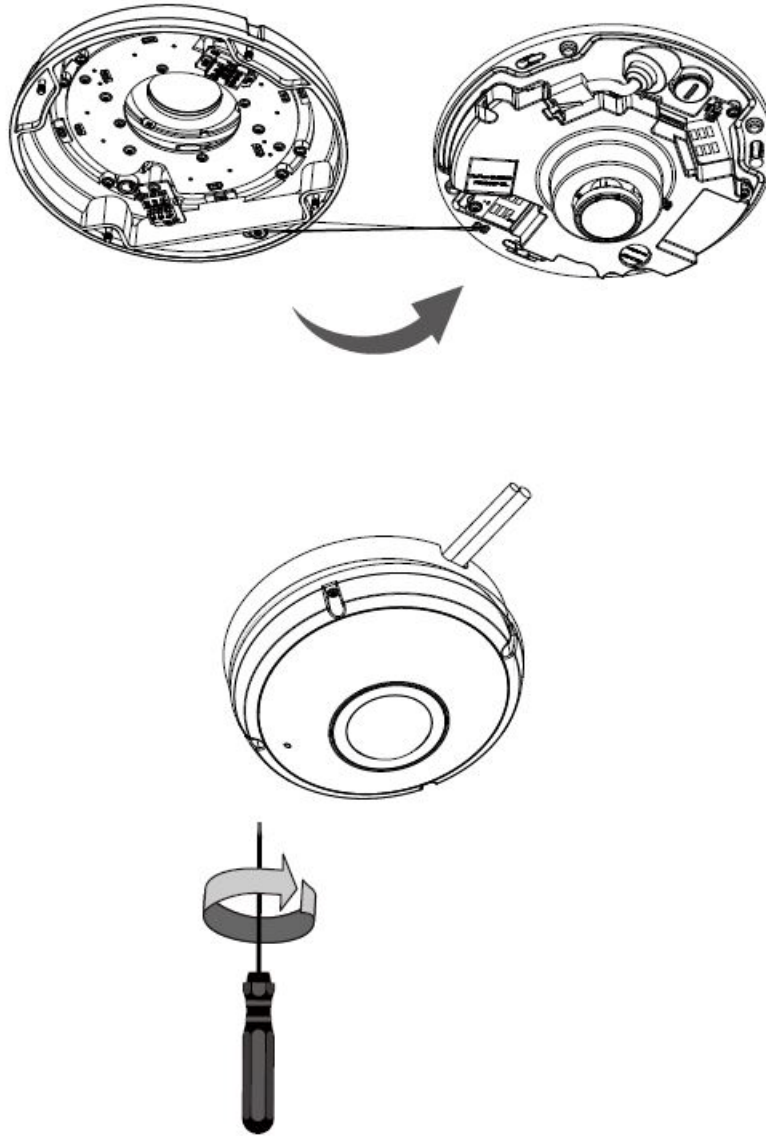
- c. Install the camera to the mount bracket. Align the double-sided keyhole slot with the largest rivet head on the mount bracket. Turn the camera counter-clockwise as shown in the following figure:



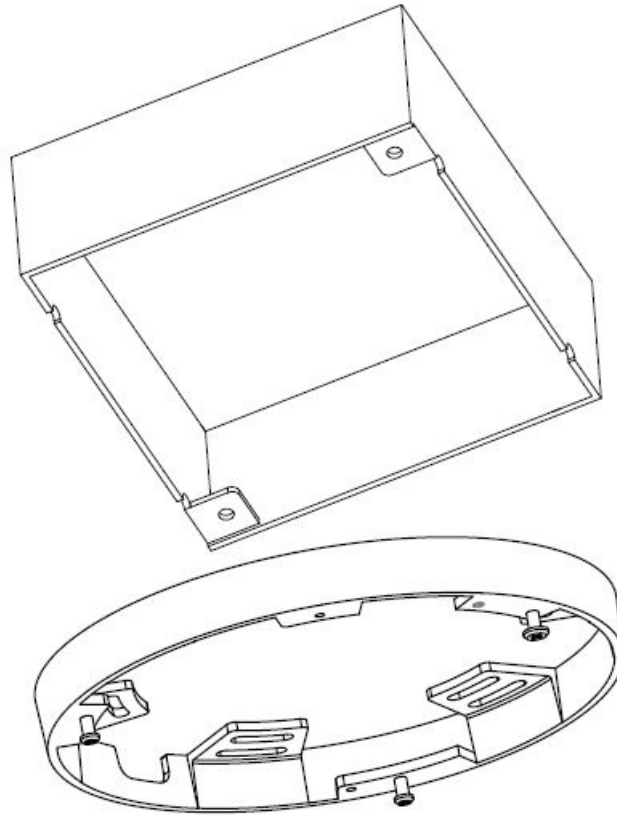
- d. A small mount hole will be revealed through the keyhole slot. Secure the camera by tightening a flat-head screw.



- e. Install the dome cover using the T10 star driver.



- f. You may also use the diagonal holes on the mounting plate to install the camera to a U.S. standard 4 in. junction box.



- Step 14** If you are using the DI/DO combo cable, take these actions:
- a. Connect RJ45 Ethernet cable to a switch.
 - b. Connect the power cable from the Network Camera to a power outlet.
 - c. If you have external devices such as sensors and alarms, make the connection from the general I/O terminal block.

Important: If DC power is preferred, it should comply with O/P: 12VDC, 2A min., L.P.S. per IEC 60950-1.

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 for approximately 30 seconds until the status LED rapidly blinks. All settings will be restored to factory default.

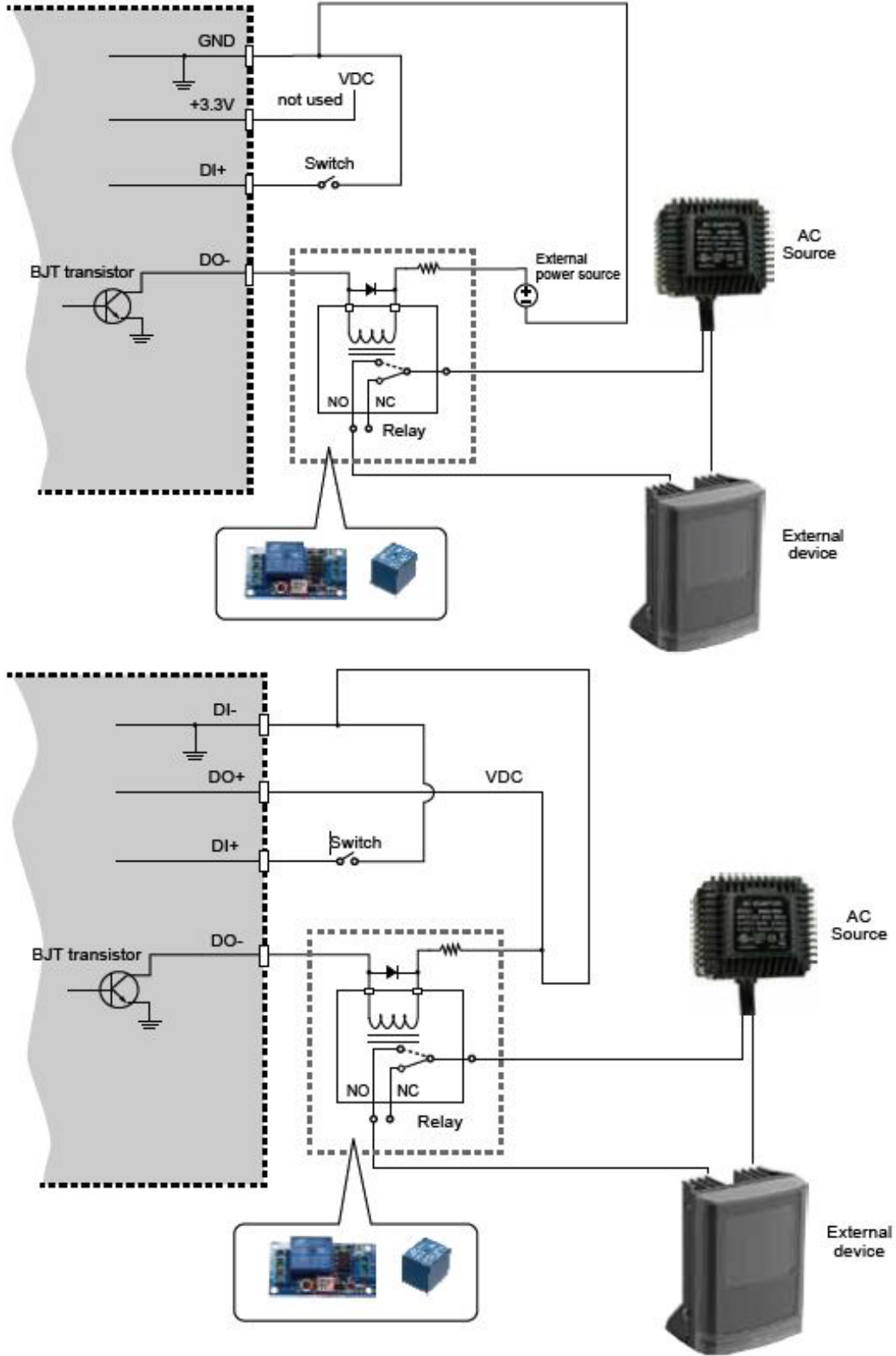
MicroSD/SDHC/SDXC Card Capacity

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

DI/DO Diagram

- The DO+ pin (5V) provides $5V \pm 10\%$ output voltages, and the max. load is 50mA.
- The max. voltage for DO- pins is 30VDC (external power).
In order to control AC devices, [Figure 1-6](#) can be taken into consideration. This figure uses a relay to control the ON/OFF condition of the AC device.
- An external relay can be triggered by using the 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.

Figure 1-6 DI/DO Diagram



Network Deployment

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

- [Setting up the Network Camera over the Internet, page 1-25](#)
- [Set up the Network Camera through Power over Ethernet \(PoE\), page 1-27](#)

Setting up the Network Camera over the Internet

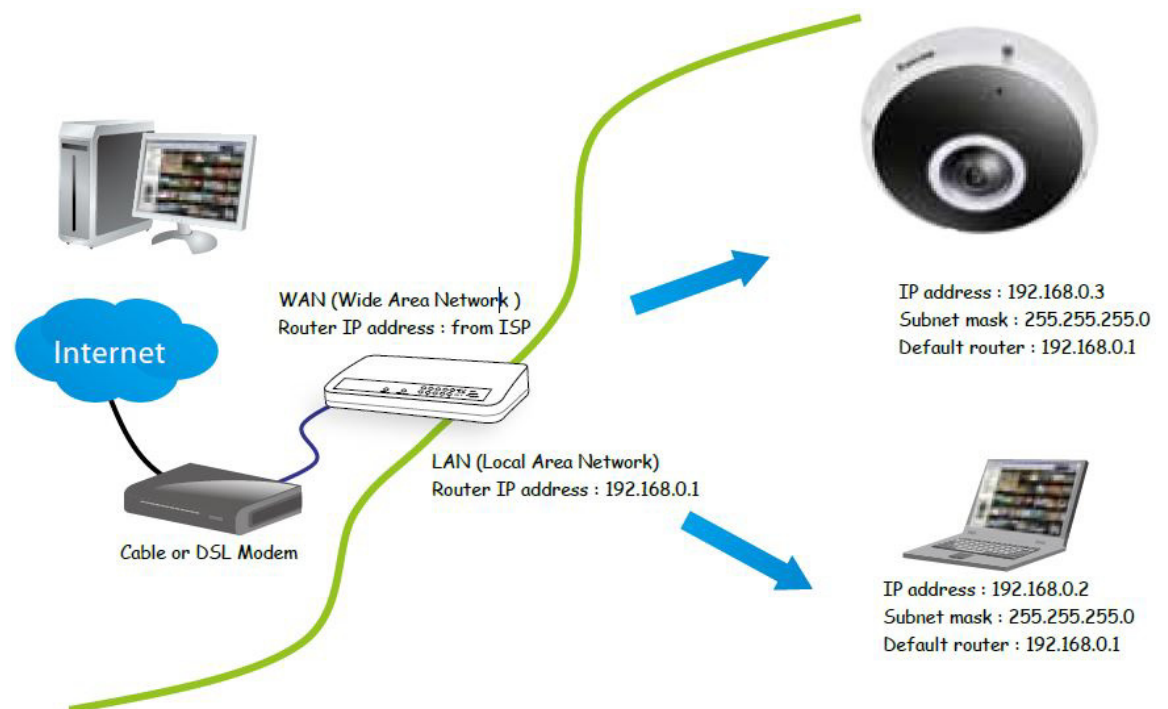
There are several ways to set up the Network Camera over the Internet. The first way is to set up the Network Camera behind a router. The second way is to utilize a static IP. The third way is to use PPPoE.

Internet Connection via a Router

Before enabling the access to the Network 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 1-7](#).

Figure 1-7 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.:
- Secondary HTTP port: 8080
 - RTSP port: 554
 - RTP port for audio: 5558

- RTCP port for audio: 5559
- RTP port for video: 5556
- RTCP port for video: 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 5-24 for more information.

For example, your router and IP settings may look like this:

Device	IP Address: Internal Port	IP Address: External Port (Mapped Port on the Router)
Public IP of router	122.146.57.120	
LAN IP of router	192.168.2.1	
Camera 1	192.168.2.10:80	122.146.57.120:8000
Camera 2	192.168.2.11:80	122.146.57.120:8001
...

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 trouble with the configuration.

For more information about network configuration options (such as that of streaming ports), choose **Configuration > Network** 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.

Internet connection with static IP

Choose this connection type if you are required to use a static IP for the Network Camera. See the “[Network > General settings](#)” section on page 5-24 for more information.

Internet connection via PPPoE (Point-to-Point over Ethernet)

Choose this connection type if you are connected to the Internet via a DSL Line. See the description of PPPoE (Point-to-point over Ethernet) in the “[Network Type](#)” section on page 5-24.

Set up the Network Camera through Power over Ethernet (PoE)

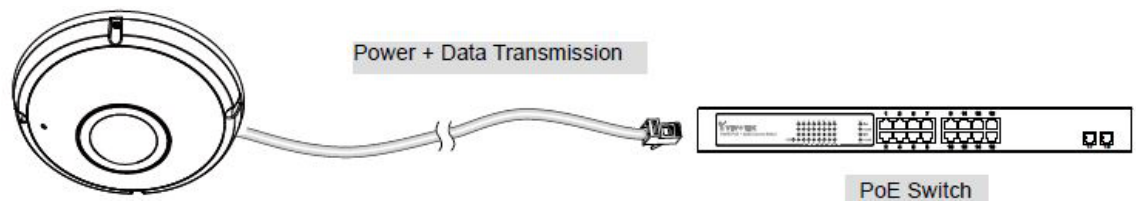
Using a PoE-Enabled Switch

The camera is PoE-compliant, allowing transmission of power and data via a single Ethernet cable. [Figure 1-8](#) illustrates how to connect the camera to a PoE-enabled switch via an Ethernet cable.

The camera is only to be connected to PoE networks without routing to outside plants.

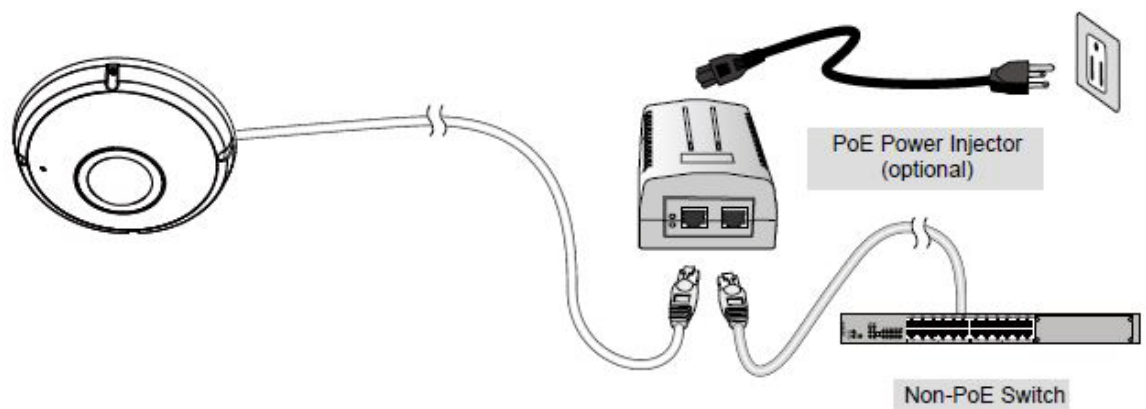
For PoE connection, use only UL listed I.T.E. with PoE output.

Figure 1-8 Connecting the Camera to a PoE-Enabled Switch via an Ethernet Cable

**Using a Non-PoE Switch**

If your switch/router does not support PoE, use a PoE power injector (optional) to connect between the Network Camera and a non-PoE switch., as shown in [Figure 1-9](#).

Figure 1-9 Connecting the Camera to a Non-PoE Switch

**Tip**

If you encounter problems with displaying live view or the onscreen plug-in control, you may try to remove the plug-ins that might have been installed on your computer. Remove the following folder: C:\Program Files (x86)\Camera Stream Controller\.

If you forget the root (administrator) password for the camera, you can restore the camera defaults by pressing the reset button for longer than 5 seconds.

If DHCP is enabled in your network, and the camera cannot be accessed, run the Shepherd utility to search the network. If the camera has been configured with fixed IP that does not comply with your local network, you may see its default IP 169.254.x.x. If you still cannot find the camera, you can restore the camera to its factory defaults.

If you change your network parameters, e.g., added a connection to a LAN card, restart the Shepherd utility.
