



Cisco Video Surveillance 6500PD IP Camera Installation Guide

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Cisco Video Surveillance 6500PD IP Camera Installation Guide
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Preface	v
Overview	v
Organization	v
Obtaining Documentation, Obtaining Support, and Security Guidelines	v

CHAPTER 1

Overview	1-1
Introduction	1-1
Package Contents	1-1
IP Camera Physical Details	1-2
Front View	1-2
Back View	1-3
P-iris Lens	1-5

CHAPTER 2

Camera Installation	2-1
Installation Guidelines	2-1
Warnings Before Installation	2-1
Installing the IP Camera	2-4

CHAPTER 3

Performing the Initial Setup of the IP Camera	3-1
--	-----

CHAPTER 4

Camera Management	4-1
Understanding the IP Camera User Interface	4-1
IP Camera Window Links	4-1
IP Camera Windows	4-2
Powering the IP Camera On or Off	4-4
Resetting the IP Camera	4-4
Viewing Live Video	4-4

INDEX



Preface

Overview

This document, *Cisco Video Surveillance 6500PD IP Camera Installation Guide*, provides information about installing and deploying the Cisco Video Surveillance 6500PD High-Definition IP Camera.

Organization

This manual is organized as follows:

Chapter 1, “Overview”	Provides an overview of the IP camera and its features.
Chapter 2, “Camera Installation”	Provides instructions for physically installing the IP camera.
Chapter 3, “Performing the Initial Setup of the IP Camera”	Provides instructions for performing the initial network setup of the IP camera.
Chapter 4, “Camera Management”	Provides instructions for accessing and understanding the IP camera user interface, adjusting its focus and, powering the IP camera on and off, and resetting the IP camera.

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Overview

This chapter describes the Cisco Video Surveillance 6500PD High-Definition IP Camera, and includes the following topics:

- [Introduction, page 1-1](#)
- [Package Contents, page 1-1](#)
- [IP Camera Physical Details, page 1-2](#)

Introduction

The Cisco Video Surveillance 6500PD IP camera offers a feature-rich digital camera solution for a video surveillance system. The camera provides high-definition (HD) video and simultaneous H.264 and MJPEG compression, streaming up to 30 frames per second (fps) at 1080p (1920 x 1080) resolution.

Package Contents

The Cisco Video Surveillance IP Camera package includes the following items:

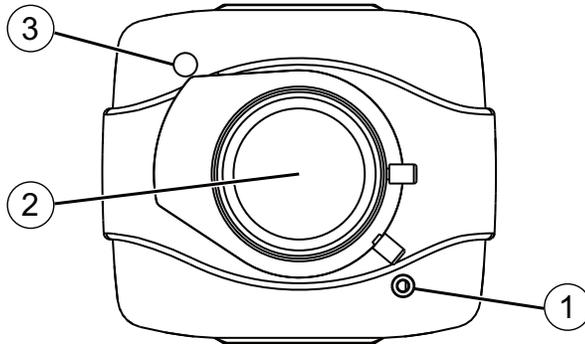
- Camera (qty. 1)
- L-type hex key for back focus (qty. 1)
- L-type hex key for SD (qty. 1)
- Cisco Pointer Card (qty. 1)
- Cisco RoHS document (qty. 1)
- DC power connector (qty. 1)
- Extra set of labels (qty. 3)

IP Camera Physical Details

Front View

Figure 1-1 and the table that follows describe the front view of the IP camera.

Figure 1-1 Front View of IP Camera

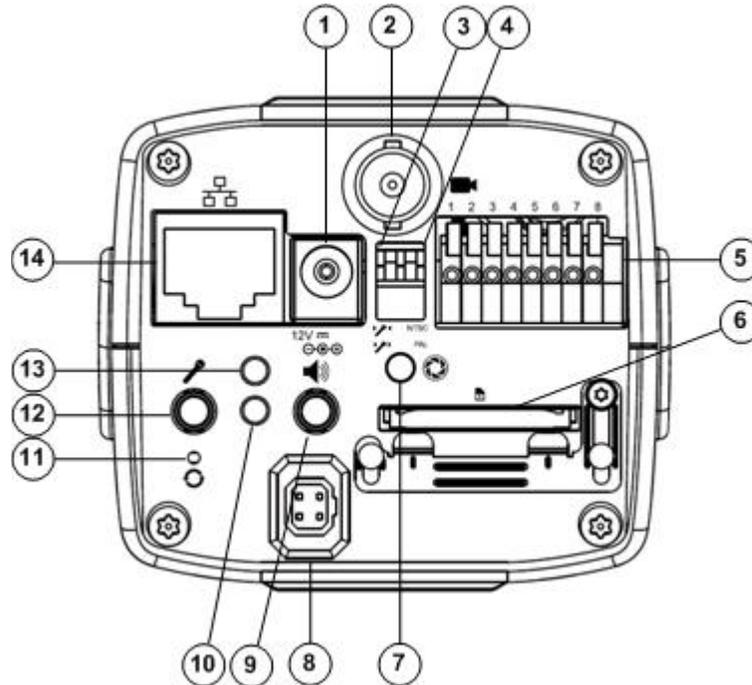


1	Internal microphone	Built-in microphone.
2	Camera lens	The IP camera supports a variety of C- and CS-mount lenses. For best performance, Cisco recommends that you use a P-iris lens.
3	Light sensor	Senses the level of ambient light to determine when to switch day/night mode.

Back View

Figure 1-2 and the table that follows describe the back view of the IP camera.

Figure 1-2 Back View of IP Camera



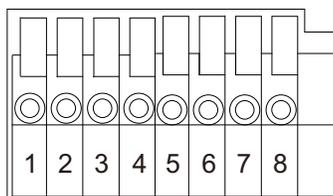
1	Power cord socket	Connection to an optional PoE power injector if your router or switch does not support PoE
2	BNC video out	Connects to an optional video monitor that has a BNC connector
3	Microphone switch	Switches the microphone operation between to following options: <ul style="list-style-type: none"> • Internal (up)—switches to the built-in internal microphone on the IP camera. • External (down)—switches to the external Microphone In connector.
4	Video output switch	Switches the video output between to following standards: <ul style="list-style-type: none"> • NTSC 60Hz (up)—switches camera operation to the National Television System Committee (NTSC) standard. • PAL 50Hz (down)—switches camera operation to the Phase Alternating Line (PAL) standard.
5	General Purpose I/O (GPIO) terminal block	GPIO terminal block that is used to connect external input and output devices. For more information, see Figure 1-3 .

6	SD/SDHC card slot	The IP camera is compliant with Micro SD/SDHC (up to 32GB) and other preceding standard SD cards.
7	Focus assist button	Used in conjunction with an analog display to fine tune the IP camera focus.
8	P-iris lens connector	Connection for the cable from a P-iris lens. For more information, see Figure 1-4 .
9	Audio out	Audio output port for the IP camera.
10	Power LED	Indicates whether the IP camera is receiving power.
11	Recessed reset button	Recessed button that reboots the IP camera or resets it to a default state. You can use a pin or paper clip to depress it. Depending on how long you depress the recessed reset button, you can do either of the following: <ul style="list-style-type: none"> Reset—Press and release the recessed reset button. Wait for the IP Camera to reboot. Restore—Press and hold the recessed reset button until the status LED rapidly blinks. All settings will be restored to factory default. Upon successful restoration, the status LED will blink green and red during normal operation.
12	Audio in	Audio input port for the IP camera.
13	Network status LED	Indicates network activity.
14	Ethernet 10/100 RJ45 socket	Accepts a standard LAN cable to connect the IP camera to a 10/100BaseT router or switch.

General Purpose I/O Terminal Block

[Figure 1-3](#) shows the pin locations and descriptions.

Figure 1-3 GPIO Terminal Block Pin Locations and Descriptions

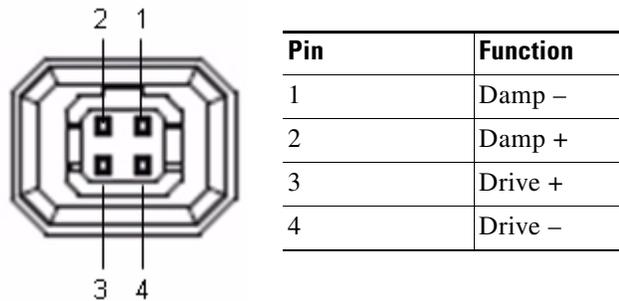


Pin	Description
1	Power +12V
2	Digital Output
3	Digital Input
4	Ground
5	AC 24V Input
6	AC 24V Input
7	RS-485+
8	RS-485-

P-iris Lens Connector Pinouts

Figure 1-4 describes the pinouts of the P-iris lens connector on the IP camera.

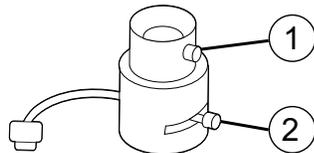
Figure 1-4 P-iris Lens Connector Pinouts



P-iris Lens

Figure 1-5 and the table that follows describe the P-iris lens for the IP camera.

Figure 1-5 P-iris Lens



1	Focus Controller	Adjusts the focus range for the IP camera field of view.
2	Zoom controller	Adjusts the zoom factor for the IP camera field of view.



Camera Installation

This chapter provides information and instructions for installing the Cisco Video Surveillance 6500PD IP Camera, and includes the following topics:

- [Installation Guidelines, page 2-1](#)
- [Warnings Before Installation, page 2-1](#)
- [Installing the IP Camera, page 2-4](#)

Installation Guidelines

This section describes how to install the IP camera. Before installing, review these guidelines:

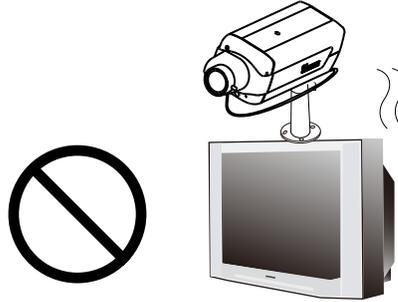
- The IP camera requires a network cable and a connection to a standard 10/100BaseT router or switch. To power the IP camera with Power over Ethernet (PoE), a switch must be 802.3af compliant.
- If you are using the IP camera on a network connection that does not provide PoE, you must use a Cisco 12 VDC power adapter (Cisco part number CIVS-PWRPAC-12V) or a third-party 24 VAC power adapter.
- If you are using an input device, output device, or pan/tilt control device, you must configure additional settings after installing and performing the initial set up of the IP camera before the external device can fully operate. For detailed information about these settings, see the *Cisco Video Surveillance 6000 Series IP Camera Configuration Guide*.
- If you do not connect an external device (input, output, or pan/tilt control) when you perform the following installation procedure, you can install any of these devices later.

Warnings Before Installation

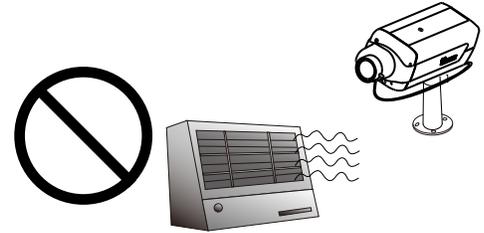
- **Power off the Network Camera as soon as smoke or unusual odors are detected.**
Contact your distributor in the event of this happening.
- **Keep the Network Camera away from water. If the Network Camera becomes wet, power off immediately.**
Contact your distributor in the event of this happening.

Warnings Before Installation

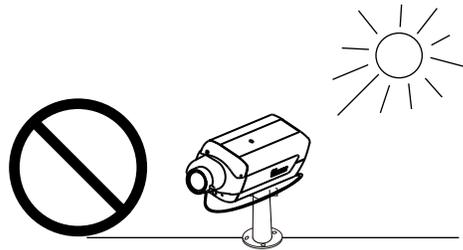
- Do not place the Network Camera around heat sources, such as a television or oven.



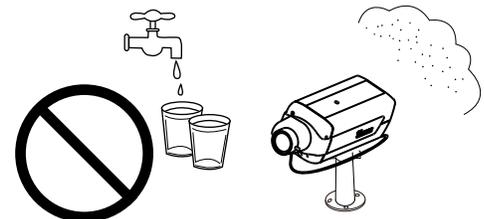
- Refer to your user's manual for the operating temperature.



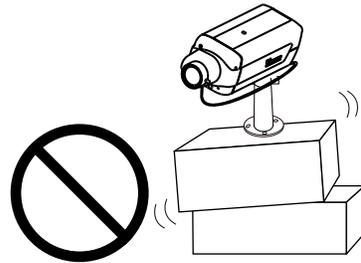
- Keep the Network Camera away from direct sunlight.



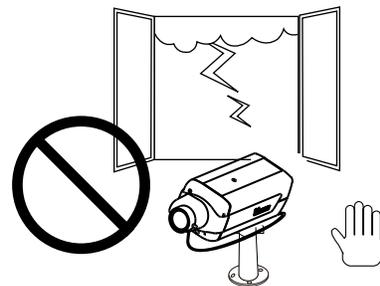
- Do not place the Network Camera in high humidity environments.



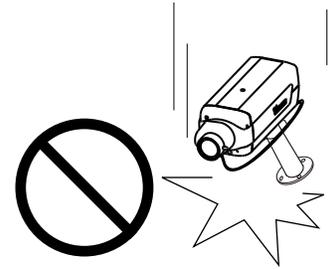
- Do not place the Network Camera on unsteady surfaces.



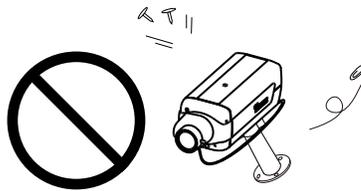
- Do not touch the Network Camera during a lightning storm.



- Do not disassemble the Network Camera.
- Do not drop the Network Camera.



- Do not insert sharp or tiny objects into the Network Camera.




Warning

Installation of the equipment must comply with local and national electrical codes. Statement 1074


Warning

The power supply must be placed indoors. Statement 331



Note If you use the IP camera outdoors, place the camera and the power supply in a suitable NEMA enclosure.


Warning

This product must be connected to a power-over-ethernet (PoE) IEEE 802.3af compliant power source or an IEC60950 compliant limited power source. Statement 353


Caution

Inline power circuits provide current through the communication cable. Use the Cisco provided cable or a minimum 24AWG communication cable.



Note The power adapter that you use with the IP camera must provide power that is within +/-10% of the required power.



Note The equipment is to be connected to a Listed class 2, limited power source.

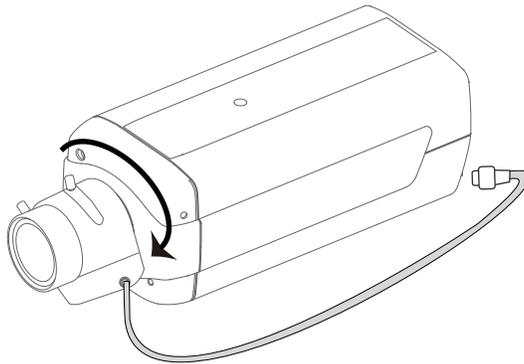
Installing the IP Camera

To install the Cisco Video Surveillance 6500PD IP Camera, perform the following steps:

Procedure

- Step 1** Turn the lens clockwise into the lens opening until it stops (see [Figure 2-1](#)). If necessary, turn it counterclockwise slowly until it gets the best attitude. The IP camera accepts CS-mount lenses with a lens protrusion of up to 5 mm.

Figure 2-1 Mounting the IP Camera Lens

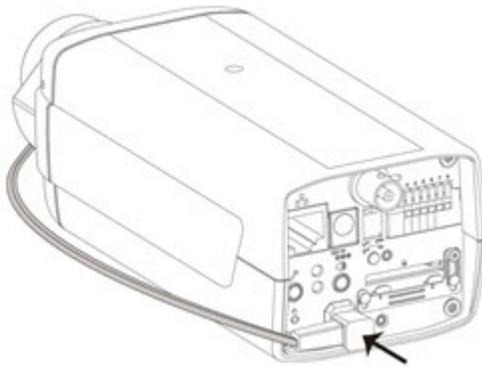


Ensure that the lens is clean because any dirt may degrade the quality of video images.

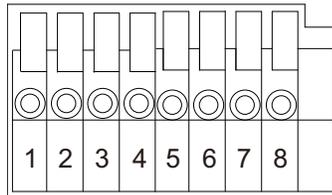
Note Save the lens opening dust cap and replace the dust cap if you remove the lens.

- Step 2** Connect the P-iris lens cable to the P-iris lens connector on the back of the IP camera (see [Figure 2-2](#)).

Figure 2-2 Mounting the IP Camera Lens



- Step 3** *Optional.* Use the GPIO terminal block ports on the back of the IP camera to connect an external device that triggers alarms (connect through input port) or responds to alarms (connect through output port). [Figure 2-3](#) shows the GPIO terminal block pin locations and descriptions.

Figure 2-3 GPIO Terminal Block Pin Locations and Descriptions

Pin	Description
1	Power +12V
2	Digital Output
3	Digital Input
4	Ground
5	AC 24V Input
6	AC 24V Input
7	RS-485+
8	RS-485-

Step 4 Connect an STP (shielded twisted pair) Category 5 or higher network cable to the LAN port on the back of the camera and to a 10/100/BaseT router or switch.

If your network provides PoE, the IP camera powers on. Skip to [Step 6](#).

Step 5 If you are using the IP camera on a network connection that does not provide PoE, connect a 12 VDC power adapter to the camera using the provided power connector.

Step 6 Wait for the camera to boot and check the LEDs on the IP camera.

- The red status LED lights steadily.
- The green network LED blinks repeatedly.

Step 7 Mount the IP camera in the desired location.

Connect the mounting device to the threaded mounting hole on the bottom or top of the IP camera, depending on your installation requirement.

Step 8 *Optional.* Use mini cable with BNC connector to temporarily attach an NTSC or PAL compliant analog video display device to the analog video out port on the rear of the camera and adjust the IP camera field of view.

**Note**

The mini cable with BNC adapter is included in the audio/video cables accessory kit, which you can purchase from Cisco (Cisco part number CIVS-IPCA-1021=).

Analog video is enabled by default to allow you to adjust the camera field of view during installation. However, it is not supported as a normal camera feed and is automatically disabled when any of the following camera settings are made:

- The primary video stream frame rate is set higher than 15 fps.
- The secondary video stream is enabled.

**Note**

We recommend that you disable analog video after installation. To disable analog video, see the *Cisco Video Surveillance 6000 Series IP Camera Configuration Guide*.

After you install the IP camera, follow the instructions in [Chapter 3, “Performing the Initial Setup of the IP Camera”](#) to access and configure the camera.



Performing the Initial Setup of the IP Camera

After you install IP camera as described in the [Chapter 2, “Camera Installation,”](#) or after you perform a factory reset procedure, you must access the IP camera and make initial configuration settings. These settings include administrator and root passwords, and whether the IP camera can be accessed through an HTTP connection in addition to the default HTTPS (HTTP secure) connection.

To make these configuration settings, you connect to the IP camera from any PC that is on the same network as the IP camera. The PC must meet these requirements:

- Operating system—Microsoft Windows 7 (32-bit and 64-bit)
- Browser—Internet Explorer 8.0 (32-bit only)

In addition, you must know the IP address and default login credentials of the IP camera. By default, when the IP camera powers on, it attempts to obtain an IP address from a DHCP server in your network. If the camera cannot obtain an IP address through DHCP within 90 seconds, it uses a default IP address of 192.168.0.100. The default login credentials (Username/Password) are admin/admin.

To connect to the IP camera for the first time and make initial configuration settings, perform the following steps. You can change these configuration settings in the future as described in the *Cisco Video Surveillance 6000 Series IP Camera Configuration Guide*.

Before you Begin

The Microsoft .NET Framework version 2.0 or later must be installed on the PC that you use to connect to the IP camera. You can download the .NET Framework from the Microsoft website.

Procedure

- Step 1** Start Internet Explorer, enter **HTTPS://ip_address** in the address field, and press **Enter**.
Replace *ip_address* with the IP address that the IP camera obtained through DHCP or, if the camera was unable to obtain this IP address, enter **192.168.0.100**.
The Login window appears.
- Step 2** Enter the default login credentials:
Username: **admin**
Password: **admin**
The Initialization window appears.

- Step 3** In the Password and Confirm Password fields of the admin row, enter a password for the IP camera administrator.
- You must enter the same password in both fields. The password is case sensitive and must contain at least eight characters, which can be letters, numbers, and special characters, but no spaces. Special characters are: ! " # \$ % & ' () * + , - . : ; < = > ? @ [\] ^ _ ` { | } ~.
- Step 4** In the Password and Confirm Password fields of the Root row, enter a password that is used when accessing the IP camera through a Secure Shell (SSH) connection.
- You must enter the same password in both fields. The password is case sensitive and must contain at least eight characters, which can be letters, numbers, and special characters, but no spaces. Special characters are: ! " # \$ % & ' () * + , - . : ; < = > ? @ [\] ^ _ ` { | } ~.
- You use the root password if you need to troubleshoot the IP camera through a SSH connection with the assistance of the Cisco Technical Assistance Center.
- Step 5** In the Access Protocols area, check the **Enable HTTP** check box if you want to allow both HTTP and HTTPS connections to the IP camera.
- By default, only the Enable HTTPS check box is checked, which allows only HTTPS (secure) connections to the IP camera.
- Step 6** Click **Apply**.
- The IP camera reboots and the Login window appears.
- Step 7** After the IP camera reboots, start Internet Explorer and, in the Address field, enter the following:
protocol://ip_address
 where:
- *protocol* is **HTTPS** or **HTTP**. (You can use HTTP only if you enabled it in [Step 5](#).)
 - *ip_address* is the IP address that you used in [Step 1](#).
- Step 8** If you are prompted to install ActiveX controls, which are required to view video from the IP camera, follow the on-screen prompts to do so.
- The Home (System Information) window appears.
-



Camera Management

This chapter provides information and instructions for managing the Cisco Video Surveillance 6500PD IP Camera, and includes the following topics:

- [Understanding the IP Camera User Interface, page 4-1](#)
- [Powering the IP Camera On or Off, page 4-4](#)
- [Resetting the IP Camera, page 4-4](#)
- [Viewing Live Video, page 4-4](#)

Understanding the IP Camera User Interface

After you log in to the IP camera, you can access the IP camera windows and perform a variety of administrative and user procedures.

The links and activities that you can see and access in the IP camera windows depend on your IP camera privilege level.

- Administrator—Can access all IP camera windows, features, and functions.
- Viewer—Can access the Camera Video & Control window with limited controls, and can access the **Refresh**, **Logout**, **About**, and **Help** links from that window.

IP Camera Window Links

The IP Camera user interface includes links that you use to access various windows and perform other activities. [Table 4-1](#) describes each link and lists the IP camera privilege level that you must have to access the link.

Table 4-1 *Links in the IP Camera Windows*

Link	Description	Privilege Level
Refresh	Updates the information in the window that is currently displayed.	Administrator User
Home	Displays the Home window.	Administrator

Table 4-1 *Links in the IP Camera Windows (continued)*

Link	Description	Privilege Level
View Video	Displays the Camera Video & Control window. You may be prompted to install ActiveX controls when trying to access this window for the first time. ActiveX controls are required to view video from the IP camera. Follow the on-screen prompts to install ActiveX controls.	Administrator User
Setup	Provides access to the configuration menus for the IP camera.	Administrator
Logout	Logs you out from the IP camera.	Administrator User
About	Displays a pop-up window with model, version, and copyright information for the IP camera.	Administrator User
Help	Displays reference information for the window that is currently displayed.	Administrator User

IP Camera Windows

The IP camera user interface includes these main windows:

- Home window—Displays the system information that is described in [Table 4-2](#).
- Setup window—Provides access to the IP camera configuration windows.
- Camera Video & Control window—Displays live video from the camera and lets you control a variety of camera and display functions.

Table 4-2 Home Window Information

Field	Description
General Information	
ID	Identifier of the IP camera.
Name	Name of the IP camera.
Current Time	Current date and time of the IP camera.
S/N	Serial number of the IP camera.
Firmware	Version of the firmware that is installed on the IP camera.
Codec	Version of the codec that is running on the IP camera.
Part Number	Cisco manufacturing part number of the IP camera.
Top Assembly Revision	Cisco assembly revision number.
Network Status	
MAC Address	MAC address of the IP camera.
Configuration Type	Method by which the IP camera obtains its IP address.
LAN IP	IP address of the LAN to which the IP camera is connected.
Subnet Mask	Subnet mask of the LAN to which the IP camera is connected.
Gateway Address	IP address of the gateway through which the IP camera is connected.
Primary DNS	IP address of the primary DNS server, if configured for the IP camera.
Secondary DNS	IP address of the secondary DNS server, if configured for the IP camera.
IO Port Status	
Input Port 1	Current state of input port 1 on the IP camera.
Output Port 1	Current state of output port 1 on the IP camera.
Stream 1 and Stream 2	
User	IP camera user name of each user who is accessing the primary video stream (Stream 1) or the secondary video stream (Stream 2) through a client PC or a third-party device. By default, users appear in order of start time. To display users in ascending order of any information in any corresponding column, click the column heading. Click a column heading again to reverse the display order.
IP Address	IP address of the client device.
Start Time	Time and date that the client accessed the video stream for this session.
Elapsed Time	Length of time that the client has been accessing the video stream.

Powering the IP Camera On or Off

The IP camera does not include an on/off switch. You power it on or off by connecting it to or disconnecting it from a power source. When you power off the IP camera, configuration settings are retained.

To power on the IP camera, take either of these actions:

- Use an STP (shielded twisted pair) Category 5 or higher network cable to connect the IP camera to a network switch that provides 802.3af compliant PoE.
- Use an optional 12 VDC or 24VAC power adapter to connect the IP camera to a wall outlet

To power off the IP camera, take either of these actions:

- If the IP camera is receiving PoE, disconnect the network cable
- If the IP camera is receiving power through the power adapter, unplug the adapter from the wall or disconnect it from the camera

Resetting the IP Camera

You reset the IP camera by pressing the Reset button on the IP Camera (see [Figure 1-1 on page 1-2](#)). There are various reset types, as described in [Table 4-3](#).

You also can also perform these reset operations from the Maintenance Settings window as described in the *Cisco Video Surveillance 6000 Series IP Camera Configuration Guide*.

Table 4-3 **Resetting the IP Camera**

Reset Type	Procedure	Remarks
Reboot.	Press and immediately release the Reset button.	This action is equivalent to powering the IP camera down and then powering it up. Settings that are configured for the IP camera are retained.
Factory reset.	Press and hold the button for at least 15 seconds.	Sets all IP camera options to their default values. After you perform this procedure, follow the steps in Chapter 3 , “Performing the Initial Setup of the IP Camera.”

Viewing Live Video

After you install and set up the Cisco Video Surveillance IP Camera, you can connect to the IP camera through Internet Explorer and access the Camera Video & Control window to view live video.

The Camera Video & Control window also provides for controlling the video display, configuring preset positions, and controlling certain IP camera functions. Available controls depend on the privilege level of the user.

Table 4-4 Camera Video & Control Window Controls

Control	Description
Video Control	
Video Codec drop-down list 	Choose the codec for video transmission (H.264 or MJPEG).
Video Resolution display 	Displays the resolution for video transmission. The resolutions in this depends on the video standard that you selected.
Viewer	
Video viewer drop-down list 	<p>Choose the viewer to use for video. Options are:</p> <ul style="list-style-type: none"> • ActiveX—Available only if you are using accessing the IP camera through Microsoft Internet Explorer. Allows you to configure several IP camera options, such as motion detection and privacy zone. • QuickTime—Allows viewing of H.264 streams only. Does not allow you to configure several IP camera options, such as motion detection and privacy zone. • VLC —Allows viewing of H.264 and MJPEG streams. Does not allow you to configure several IP camera options, such as motion detection and privacy zone. <p>The default video viewer value is ActiveX.</p>
Image tools	
Hotspot Zoom button 	<p>Click this latch button to enables the digital zoom feature, which provides five-step digital zooming in for the normal (not full screen) video display. Click this button again to disable the digital zoom feature.</p> <p>To perform a digital zoom, engage the Hotspot Zoom button and click the video display. The first five clicks zoom the display. The sixth click returns to unzoomed display.</p>
Hotspot Pan+Tilt button 	Not supported.
Save Snapshot button 	<p>Captures and saves a the current video image as a .gif file or a .jpg file in the location of your choice and with the file name of your choice.</p> <p>When you click this button, the Snapshot window appears. Click Save and follow the on-screen prompts to save the image with the name and in the location that you want.</p>
Flip button 	Rotates the video image by 180 degrees.
Mirror button 	Reverses the video image.

Table 4-4 Camera Video & Control Window Controls (continued)

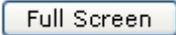
Control	Description
Restore button 	Displays the default video image, which is not rotated and not reversed.
Full Screen button 	Displays the video image in full screen mode. To return to normal display mode, click the full screen image.
Audio Control	
Enable/Disable Speaker toggle button	<p>Click the Disable Speaker button  to mute audio that is sent from the IP camera to the PC that you are using. The button changes to the Enable Speaker button .</p> <p>Click the Enable Speaker button to unmute audio. The button changes to the Disable button.</p>
Mute/Un-Mute Microphone toggle button	<p>Click the Mute Microphone button  to mute the audio stream that is captured and sent to the IP camera from the internal or external microphone of the PC that you are using. When you click this button, the speaker that is attached to the IP camera does not play audio that is transmitted from your PC.</p> <p>Note If you are simultaneously accessing other IP cameras in different browser sessions on the same PC, clicking this button in one browser session does not mute the audio that the PC sends to the other IP cameras.</p> <p>When you click the Mute Microphone button, it changes to the Un-Mute Microphone button .</p> <p>Click the Un-Mute Microphone button to unmute audio that is sent to the IP camera. The button changes to the Mute Microphone button.</p>
Restore button 	Resets audio controls to their default values.
Speaker Volume slider 	When the speaker is unmuted, drag this slider to adjust the volume at which your PC speakers play the audio from the IP camera, or enter a value from 0 through 100 in the field and press the Enter key. The default value is 50.
Microphone Sensitivity slider 	Drag this slider to adjust the gain of the PC microphone (that is, how sensitive it is to the audio that it picks up and that is sent to the IP camera), or enter a value from 0 through 100 in the field and press the Enter key. The default value is 50.

Table 4-4 Camera Video & Control Window Controls (continued)

Control	Description
Camera Settings controls	
Note	To display these controls click the Expand icon  next to Camera Settings under the video image. The icon changes to the Collapse icon  . Click the Collapse icon to hide these controls. If you make changes to any of the Camera Settings options, click the Save button to save the changes.
Picture Adjustments	
Brightness slider	To control the brightness of the video image, drag the slider to select a value from 1 through 10. A higher value increases the brightness and a lower value decreases the brightness. For example, if the IP camera is facing a bright light and the video appears too dark, you can increase the brightness. The default value is 5.
Contrast slider	To control contrast of the video image, drag the slider to select a value from 1 through 10. A higher value increases the contrast and a lower value decreases the contrast. The default value is 5.
Sharpness slider	To control the sharpness of the video from the IP camera, drag the slider to select a value from 1 through 100. A higher value increases the sharpness and a lower value decreases the sharpness. The default value is 50.
Saturation slider	To control the saturation of the video from the IP camera, drag the slider to select a value from 1 through 10. A higher value increases the saturation and a lower value decreases the saturation. High saturation provides a vivid, intense color for a video image. With less saturation, the video image appears more muted and gray. The default value is 50.
Restore button	Resets brightness, contrast, sharpness, and saturation to their default values.
White Balance Mode drop-down menu	Choose one the following white balance modes: <ul style="list-style-type: none"> • Auto—White balance automatically set by camera and suitable for most conditions. • Manual—Choose this option if you want to set the white balance by setting RGain (Red Gain) and BGain (Blue Gain) manually. The default setting is Auto.
Exposure Control	
Exposure level drop-down menu	Choose a value to increase or decrease the exposure level of the video image. The default value is 0.0.
Exposure mode drop-down menu	Choose one of these options: <ul style="list-style-type: none"> • Manual—Choose this option if you want to set Exposure time and Gain control manually. • Auto —Suitable for most conditions. The default setting is Auto.

Table 4-4 Camera Video & Control Window Controls (continued)

Control	Description
Flickerless check box	<p>Appears when you choose Manual from the Exposure mode drop-down menu.</p> <p>Flickering can occur when a combination of indoor and outdoor light get to the IP camera, due to a difference in capture frequency and actual indoor lighting frequency. Check this check box to limit the range of exposure time, which prevents flickering.</p>
Exposure time slider	<p>Appears when you choose Manual from the Exposure mode drop-down menu.</p> <p>To control the minimum length of time in seconds that the IP camera keeps its iris open for each frame, drag the left slider box. To control the maximum length of time in seconds that the IP camera keeps its iris open for each frame, drag the right slider box.</p> <p>When capturing video, the IP camera automatically selects the optimum value between the minimum and maximum values that you configure.</p> <p>If the Flickerless check box is not checked, the minimum exposure value is 1/32000 and the maximum value is 1/5. If the Flickerless check box is checked, the minimum exposure value is 1/120 and the maximum value is 1/5.</p>
Gain control slider	<p>Appears when you choose Manual from the Exposure mode drop-down menu.</p> <p>To control the minimum gain of the IP camera, drag the left slider box. To control the maximum gain, drag the right slider box. A value of 0 does not boost the gain, so the image may appear darker in a darker environment. A higher value increases the exposure of the image, which can cause the image to look brighter, but can also cause the image to appear more noisy.</p> <p>When capturing video, the IP camera automatically selects the optimum value between the minimum and maximum values that you configure.</p>
Iris mode drop down menu	<p>Appears only when you choose Auto from the Exposure mode drop-down menu. Choose one of these options for the IP camera iris:</p> <ul style="list-style-type: none"> • Indoor—Suitable for indoor conditions • Outdoor—Suitable for outdoor conditions

Table 4-4 Camera Video & Control Window Controls (continued)

Control	Description
Measurement Window	<p>Choose one of the following options to control how the IP camera calculates exposure:</p> <ul style="list-style-type: none"> • Full View—The entire IP camera image is considered for the exposure calculation. • Custom—Lets you draw up to 4 Inclusion regions and up to 4 Exclusion regions for the exposure calculation. <p>To designate regions, right-click the video image, choose Draw Region, then hold down the left mouse button and draw the region, which is indicated by a green rectangle.</p> <p>A region is an Inclusion region by default.</p> <p>To move a region, left-click it and drag its window to the desired area.</p> <p>To resize a region, left-click it and drag a box in the edge or corner of the region.</p> <p>To remove a region, left-click it, then right-click it and choose Delete Region.</p> <ul style="list-style-type: none"> • BLC—Back Light Compensation causes only the middle part of the IP camera image, indicated by a white dashed rectangle, to be considered for the exposure calculation.
Region Properties	<p>Appears when you click a custom region that you created.</p> <p>To expand region properties information, click the + icon next to Region Properties. The icon changes to a – icon, which you click to collapse region properties information.</p> <ul style="list-style-type: none"> • Location—X and Y coordinates, respectively, of the top left corner of the selected custom region. To expand location information, lick the + icon next to Location. The icon changes to a – icon, which you click to collapse region location information. • Region Type—Type of the region (Inclusion or Exclusion). To change the region type, left-click that region, click Region Type, then choose one of the following values from the drop-down menu that appears on the Region Type line. Alternatively, you can double-click Inclusion or Exclusion to toggle between these values. <ul style="list-style-type: none"> – Inclusion—The region is used to calculate the exposure value – Exclusion—The region is ignored in the exposure value calculation
Advanced Settings	
Enable Low Light Compensation check box	In a low-light environment, check this check box to reduce noise in the video image.
Enable DRX check box	In situations in which there is significant contrast between light and dark parts of an image, check this check box to cause the IP camera to continually adjust the image for optimal appearance.

Table 4-4 Camera Video & Control Window Controls (continued)

Control	Description
Strength drop-down menu	Appears when you check the Enable DRX check box. Choose Low , Medium , or High to specify the relative adjustment that the IP camera makes between the light and dark parts of an image.
Gamma Curve	Select a gamma curve value to adjust the monitor gray-scale for video from the IP camera.

Motion Detection

Note To display these controls click the Expand icon  next to Motion Detection under the video image. The icon changes to the Collapse icon . Click the Collapse icon to hide these controls.

If you make changes to any of the Motion Detection options, click the **Save** button to save the changes.

Enable Motion Detection check box	<p>Enables the motion detection feature.</p> <p>When motion detection is enabled, the IP camera monitors activity in the video field areas that you specify. If activity at a defined level occurs in any of these areas, the IP camera generates an alert and takes the configured actions.</p> <p>To designate regions, right-click the video image, choose Draw Region, then hold down the left mouse button and draw the region, which is indicated by a green rectangle (for an inclusion region) or a red rectangle (for an exclusion region).</p> <p>You can draw up to 4 Inclusion regions and up to 4 Exclusion regions for a total of up to 8 regions.</p> <p>To move a region, left-click it and drag its window to the desired area.</p> <p>To resize a region, left-click it and drag a box in the edge or corner of the region.</p> <p>To remove a region, left-click it, then right-click it and choose Delete Region.</p>
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Table 4-4 Camera Video & Control Window Controls (continued)

Control	Description
Region Properties	<p>To expand region properties information, click the + icon next to Region Properties. The icon changes to a – icon, which you click to collapse region properties information.</p> <ul style="list-style-type: none"> • IsActive—To indicate whether the IP camera monitors a region for motion detection, left-click that region, click IsActive, then choose True (consider region) or False (do not consider region) from the drop-down menu that appears on the IsActive line. Alternatively, you can double-click True or False to toggle between these values. • Location—X and Y coordinates, respectively, of the top left corner of the selected custom region. To expand location information, click the + icon next to Location. The icon changes to a – icon, which you click to collapse region location information. • Name—Name of the region. By default, the system assigns the name RegionX, where X is a number 1 through 8. To rename a region, click its name (which appears in bold type on this line) and type a unique name of up to 32 characters. • Region Type—Type of the region. To change the region type, left-click that region, click Region Type, then choose one of the following values from the drop-down menu that appears on the Region Type line. Alternatively, you can double-click Inclusion or Exclusion to toggle between these values. <ul style="list-style-type: none"> – Inclusion—The IP camera examines this region for motion – Exclusion—The IP camera ignores motion in this area
Sensitivity slider	<p>Becomes available when you left-click a motion detection region.</p> <p>Designates the relative amount of activity that the IP camera must detect in the area before it generates an alert. A lower value means that more, or faster, activity is required to trigger an alert. A higher value means that less, or slower, activity is required. The default value is 80.</p>
Threshold slider	<p>Becomes available when you left-click a motion detection region.</p> <p>Designates the percentage of pixels that the IP camera must identify as changed in the area before it generates an alert. The camera monitors for pixel changes at the defined sensitivity level. The default threshold value is Low.</p>

Table 4-4 Camera Video & Control Window Controls (continued)

Control	Description
Privacy Zone	
Note	To display these controls click the Expand icon  next to Privacy Zone under the video image. The icon changes to the Collapse icon  . Click the Collapse icon to hide these controls. If you make changes to any of the Privacy Zone options, click the Save button to save the changes.
Enable Privacy Region check box	Enables the Privacy Zone feature. You can create up to four user-defined masking zones that can used to provide regions of privacy in the camera field of view. When the Privacy Zone feature is enabled, video within privacy each region is not recorded in the camera, nor sent in the video stream. Instead of the actual video, privacy regions display as solid rectangles that you choose from the Region Color drop-down list. To designate regions, right-click the video image, choose Draw Region , then hold down the left mouse button and draw the region, which is indicated by a green rectangle. To move a region, left-click it and drag its window to the desired area. To resize a region, left-click it and drag a box in the edge or corner of the region. To remove a region, left-click it, then right-click it and choose Delete Region .
Region Color drop-down menu	Choose the color in which the system displays the zones that are defined by privacy regions. You can choose Red , Green , Black , or Blue .
Privacy Zone properties	To expand region properties information, click the + icon next to Privacy Zone Properties . The icon changes to a – icon, which you click to collapse region properties information. <ul style="list-style-type: none"> • Name—Name of the region. By default, the system assigns the name RegionX, where X is a number 1 through 4. To rename a region, click its name (which appears in bold type on this line) and type a unique name of up to 32 characters . • IsActive—To indicate whether the IP camera displays a region as a privacy mask, left-click that region, click IsActive, then choose True (mask the region) or False (do not mask the region) from the drop-down menu that appears on the IsActive line. Alternatively, you can double-click True or False to toggle between these values.



A

- About link [4-2](#)
- ActiveX controls [4-2](#)

B

- brightness [4-7](#)

C

- camera
 - See* IP camera
- camera settings, controls in Camera Video/Control window [4-7](#)
- Camera Video & Control window
 - description [4-2](#)
 - displaying [4-2](#)
- connecting, to the IP camera
 - for the first time [3-1](#)
 - PC requirements for [3-1](#)
- contrast [4-7](#)

D

- DHCP, obtaining IP address through [3-1](#)

F

- factory reset [4-4](#)

H

- help, for IP camera windows [4-2](#)
- Home window
 - description [4-2](#)
 - displaying [4-1](#)
- HTTP, allowing access through [3-2](#)

I

- installing, IP camera [2-1](#)
- IP address
 - default for IP camera [3-1](#)
 - obtaining from DHCP server [3-1](#)
- IP camera
 - accessing through a web browser [3-1](#)
 - connecting to for the first time [3-1](#)
 - installation [2-1](#)
 - logging out of [4-2](#)
 - mounting [2-5](#)
 - P-iris lens connector pinouts [1-5](#)
 - P-iris lens description [1-5](#)
 - powering off [4-4](#)
 - powering on [4-4](#)
 - windows [4-2](#)

L

- lens, P-iris, connecting [2-4](#)
- live video, viewing
 - See also* video
 - through home window [4-4](#)
 - through third-party device or software [4-4](#)

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log out, of IP camera [4-2](#)

M

motion detection

controls [4-10, 4-12](#)

enabling [4-10](#)

sensitivity [4-11](#)

mounting, IP camera [2-5](#)

P

password

requirements for [3-2](#)

password, requirements for [3-2](#)

pinouts, for P-iris lens connector [1-5](#)

P-iris lens

connecting [2-4](#)

connector pinouts [1-5](#)

description [1-5](#)

power

powering off the IP camera [4-4](#)

powering on the IP camera [4-4](#)

Power over Ethernet (PoE) [2-1](#)

power adapter, supported [2-1](#)

Power over Ethernet (PoE) [2-1](#)

R

rebooting, IP camera [4-4](#)

Refresh link [4-1](#)

reset

factory default values [4-4](#)

reboot [4-4](#)

S

saturation [4-7](#)

Setup window

description [4-2](#)

displaying [4-2](#)

sharpness [4-7](#)

V

video

codec, controls in Camera Video/Control window [4-5](#)

resolution, controls in Camera Video/Control window [4-5](#)

viewing live

through Home window [4-4](#)

through third-party device or software [4-4](#)

See also live video

View Video link [4-2](#)