

**COSTAR**  
VIDEO SYSTEMS

**CDI2112SV**  
**User Manual**





# Precautions






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## Precautions

Fully understand this document before using this device, and strictly observe rules in this document when using this device. If you install this device in public places, provide the tip "You have entered the area of electronic surveillance" in an eye-catching place. Failure to correctly use electrical products may cause fire and severe injuries. To prevent accidents, carefully read the following context:

## Symbols

This document may contain the following symbols whose meanings are described accordingly.

Symbol	Description
 <b>DANGER</b>	It alerts you to fatal dangers which, if not avoided, may cause deaths or severe injuries.
 <b>WARNING</b>	It alerts you to moderate dangers which, if not avoided, may cause minor or moderate injuries.
 <b>CAUTION</b>	It alerts you to risks. Neglect of these risks may cause device damage, data loss, device performance deterioration, or unpredictable results.
 <b>TIP</b>	It provides a tip that may help you resolve problems or save time.
 <b>NOTE</b>	It provides additional information.

### **DANGER**

To prevent electric shocks or other dangers, keep power plugs dry and clean.

### **WARNING**

- Strictly observe installation requirements when installing the device. The manufacturer shall not be held responsible for device damage caused by users' non-conformance to these requirements.

- Strictly conform to local electrical safety standards and use power adapters that are marked with the LPS standard when installing and using this device. Otherwise, this device may be damaged.
- Use accessories delivered with this device. The voltage must meet input voltage requirements for this device.
- If this device is installed in places with unsteady voltage, ground this device to discharge high energy such as electrical surges in order to prevent the power supply from burning out.
- When this device is in use, ensure that no water or any liquid flows into the device. If water or liquid unexpectedly flows into the device, immediately power off the device and disconnect all cables (such as power cables and network cables) from this device.
- Do not focus strong light (such as lighted bulbs or sunlight) on this device. Otherwise, the service life of the image sensor may be shortened.
- If this device is installed in places where thunder and lightning frequently occur, ground the device nearby to discharge high energy such as thunder strikes in order to prevent device damage.



## CAUTION

- Avoid heavy loads, intensive shakes, and soaking to prevent damages during transportation and storage. The warranty does not cover any device damage that is caused during secondary packaging and transportation after the original packaging is taken apart.
- Protect this device from fall-down and intensive strikes, keep the device away from magnetic field interference, and do not install the device in places with shaking surfaces or under shocks.
- Clean the device with a soft dry cloth. For stubborn dirt, dip the cloth into slight neutral cleanser, gently wipe the dirt with the cloth, and then dry the device.
- Do not jam the ventilation opening. Follow the installation instructions provided in this document when installing the device.
- Keep the device away from heat sources such as radiators, electric heaters, or other heat equipment.
- Keep the device away from moist, dusty, extremely hot or cold places, or places with strong electric radiation.
- If the device is installed outdoors, take insect- and moisture-proof measures to avoid circuit board corrosion that can affect monitoring.
- Remove the power plug if the device is idle for a long time.
- Before unpacking, check whether the fragile sticker is damaged. If the fragile sticker is damaged, contact customer services or sales personnel. The manufacturer shall not be held responsible for any artificial damage of the fragile sticker.

# Special Announcement

All complete products sold by the manufacturer are delivered along with nameplates, operation instructions, and accessories after strict inspection. The manufacturer shall not be held responsible for counterfeit products.

This manual may contain misprints, technology information that is not accurate enough, or product function and operation description that is slightly inconsistent with the actual product. The manufacturer will update this manual according to product function enhancement or changes and regularly update the software and hardware described in this manual. Update information will be added to new versions of this manual without prior notice.

This manual is only for reference and does not ensure that the information is totally consistent with the actual product. For consistency, see the actual product.

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# 1 Overview

## 1.1 Hardware connection

Figure 1-1 shows the multi-head cable used by Vandal Dome Network Camera, which is described in Table 1-1.

Figure 1-1 Multi-head cable

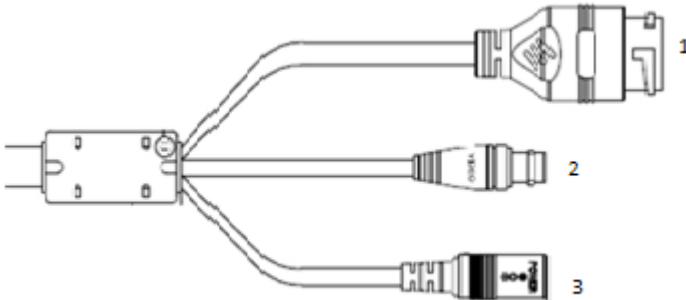


Table 1-1 Multi-head cable description

NO.	Color	Port	Description
1	N/A	RJ45	Connects to a standard Ethernet cable.
2		Video Out BNC	Analog Video Out
3		Power Port	Connects to a 12V direct current (DC) power supply.

Figure 1-2 shows the SD card slot, which is described in Table 1-2.

Figure 1-2 SD card slot

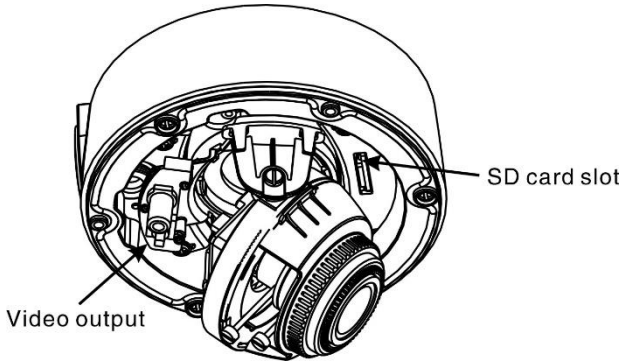


Table 1-2 Hardware port connection

Port	Description
SD card slot	<p>Installs an SD card.</p> <p>NOTE</p> <ul style="list-style-type: none"> <li>• Before installing an SD card, verify that the SD card is not in the write protection state.</li> <li>• Before removing an SD card, verify that the SD card is not in the write protection state. Otherwise, some data may be lost or the SD card may be damaged.</li> <li>• Before installing or removing an SD card when the camera is running, stop video recording first.</li> </ul>
SD card indicator	<p>Indicates the SD card status. The status is described as follows:</p> <ul style="list-style-type: none"> <li>• Off: No SD card is inserted.</li> <li>• On: An SD card is inserted.</li> </ul>
RESET button	<p>Restores the camera to the factory settings by pressing and holding this button for more than five seconds.</p>
Network indicator	<p>When plug into the network cable, the red indicator on and the green indicator is flashing which in the adjacent position.</p>



# 1.2 Features

## Network Features

- Supports the complete TCP/IP protocol suite.
- Support video, audio, and alarm data.
- Provides a built-in web browser and supports access using Microsoft Internet Explorer.
- Supports network data transmission and remote access.
- Supports Point-to-Point Protocol over Ethernet (PPPoE), Dynamic Host Configuration Protocol (DHCP), and Dynamic Domain Name System (DDNS) protocols.
- Supports matching Power over Ethernet (PoE) that complies with the IEEE802.3af standard. The IP camera can connect to a switch or router supporting the PoE function to implement PoE.
- Supports remote upgrade and maintenance.

## Image Processing Features

- Supports multiple streams. Single-stream or dual-stream mode can be selected based on the site requirement. Encoding parameters for the main stream and sub stream can be configured separately.
- Supports dynamic stream parameters based on different image quality requirements.
- Supports independent hardware compression, constant bit rate (CBR), and Variable bit rate (VBR). Videos can be compressed using the Motion Joint Photographic Experts Group (MJPEG) or H.264 standard. The frame rate and bit rate can be configured.

## I/O Features

- Support bidirectional intercom, and unidirectional broadcast.
- Provides a 10/100 Mbit/s self-adaptive Ethernet port.

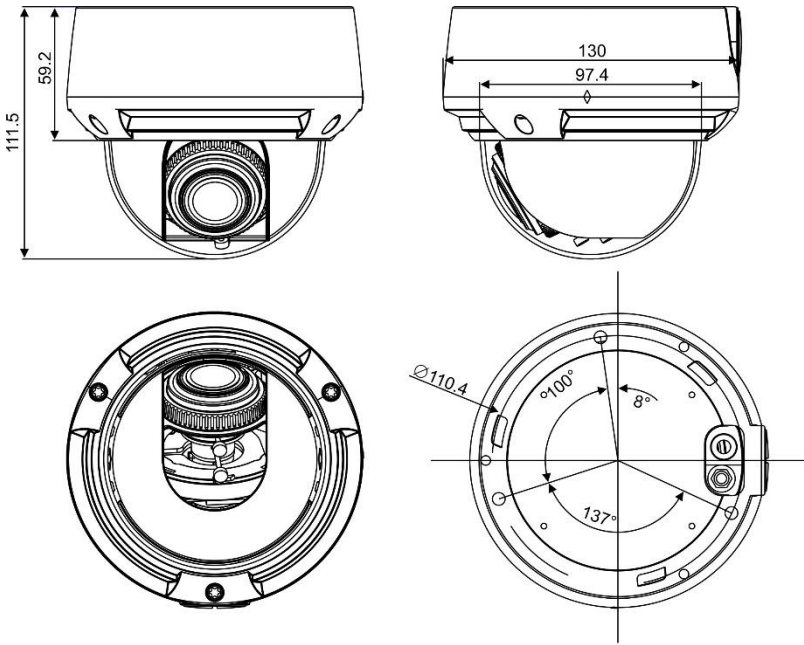
## Other Features

- Supports the heartbeat function that allows the management host to learn the running status of the IP camera in real time.
- Supports level-based user rights management.

# 2 Device Dimensions

Figure 2-1 shows the vandal dome camera dimensions.

Figure 2-1 Dimensions (unit: mm)














# 3 Device Installation

## 3.1 Installation Preparation

When installing the camera, you may require the following tools and accessories listed in Table 3-1. You need to prepare only listed tools as accessories are delivered with the camera.

Table 3-1 Installation tools

Tool	Appearance
Phillip Head Screwdriver (self-provided)	
Claw hammer (self-provided)	
Impact drill (self-provided)	
Level (self-provided)	
Black Screws (delivered with the camera)	
Phillip Head Screws (delivered with the camera)	
T15 Screwdriver (delivered with the camera)	
Phillip Head Screws (delivered with the camera)	

Tool	Appearance
Video cables (delivered with the camera)	
Plug Wrench (delivered with the camera)	
White anchors (delivered with the camera)	



### **WARNING**

To avoid moisture influence, install the dome cover at least half an hour after the camera is installed and powered on.

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## 3.2 Installation Modes

You can install the vandal dome camera in the ceiling mount, wall mount, wall side mount bracket, or ceiling bracket installation mode depending on the actual installation scenario. This section describes how to install the camera in the ceiling and wall mount modes.



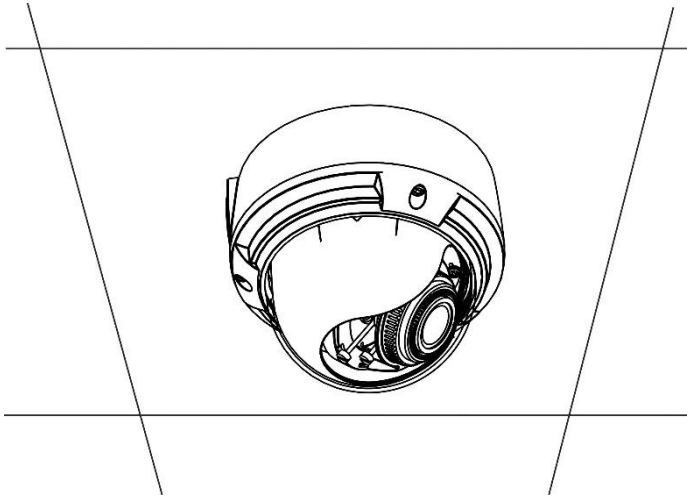
### **NOTE**

- Do not detach the protective film from the dome cover before all the installation steps are complete.
- Keep the dome cover clean during the installation. Do not contact the dome by hand or with other materials to avoid affecting video image quality.

### 3.2.1 Ceiling Mount Installation

The ceiling mount installation mode can be subdivided into installation by the white lower cover and direct installation by the main body black base cover. The ceiling mount installation mode applies to indoor ceilings or eaves, as shown in Figure 3-1.

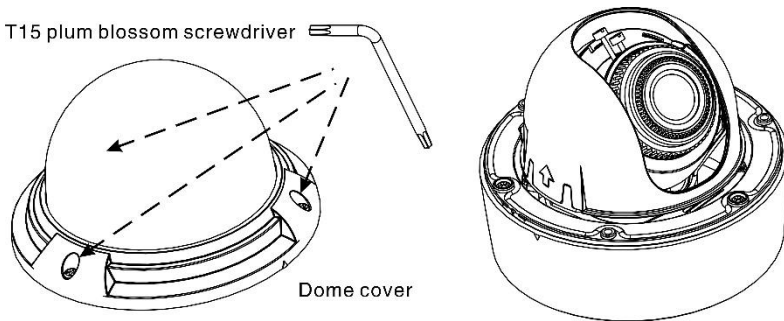
Figure 3-1 Ceiling mount installation



#### Installation by the White Lower Cover

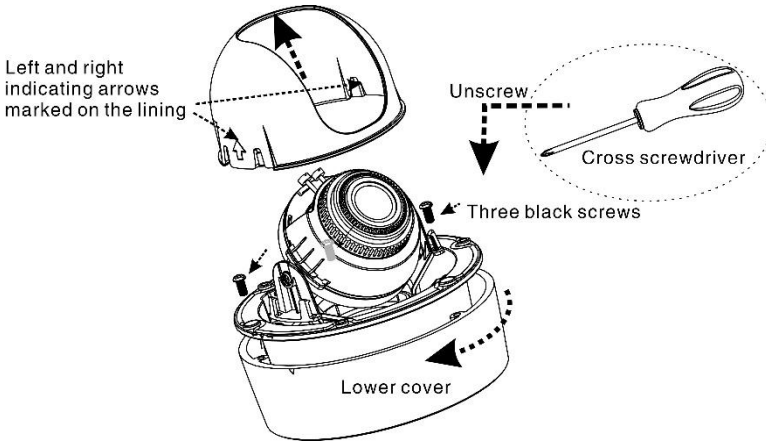
- Step 1 Use the T15 Screwdriver in the accessory package to unscrew the three white plum blossom screws on the dome cover. The camera is opened, as shown in Figure 3-2.

Figure 3-2 Opening the camera



- Step 2 Press the left and right indicating arrows marked on the lining to remove and put the lining aside. Use a Phillip Head Screwdriver to unscrew the three black screws and put the screws aside. Turn the lower cover clockwise for 5 degrees and remove the lower cover. See Figure 3-3.

Figure 3-3 Removing the lining and lower cover



- Step 3 Fetch the positioning labeling from the accessory package, remove the release paper from the positioning labeling, and stick the labeling to the place where the camera is to be installed.



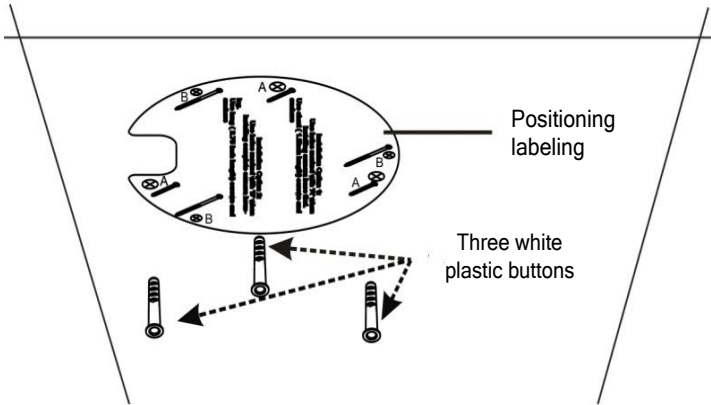
**NOTE**

In the ceiling mount installation mode, you can route cables from the top or from aside. Select the routing method depending on the installation scenario.

- If you use the top routing method (which has high requirements on installation), drill a routing opening with a diameter of 30 mm in the gap of the positioning labeling.
- If the ceiling or eaves do not allow the routing opening, use the aside routing method. When you route cables from aside, align the gap of the positioning labeling with the cable routing direction and use the Plug Wrench to unscrew a plug on the lower cover to facilitate cable routing.

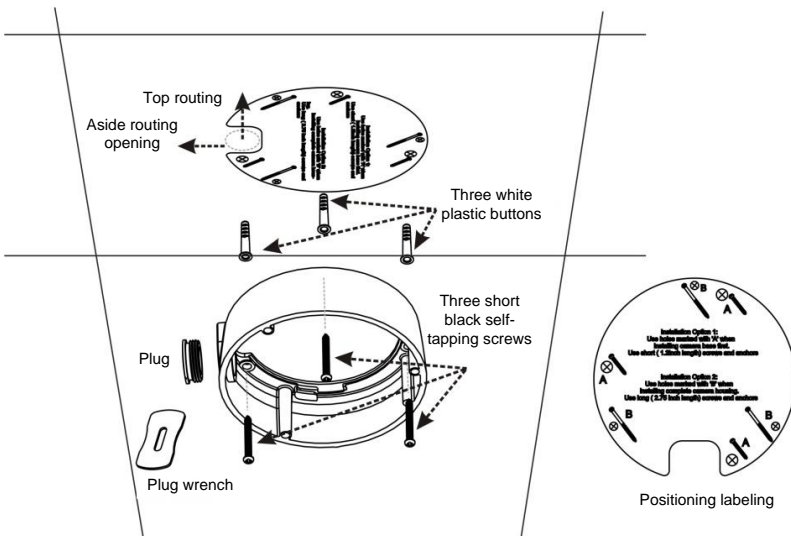
- Step 4 Use a drill with a diameter of 5.5 mm to drill three round holes with a depth of 40 mm in the places marked with "A" on the positioning labeling. Use a hammer or any other rigid object to nail the three white plastic buttons into the round holes. Ensure that the wall surface is level and the plastic buttons align with the wall surface. See Figure 3-4.

Figure 3-4 Nailing the white plastic buttons



Step 5 Fetch the lower cover, aim the three through-holes on the bottom of the lower cover at the three white plastic buttons in the wall, and use three black self-tapping screws with a length of 30 mm to fix the lower cover on the wall. See Figure 3-5.

Figure 3-5 Fixing the lower cover



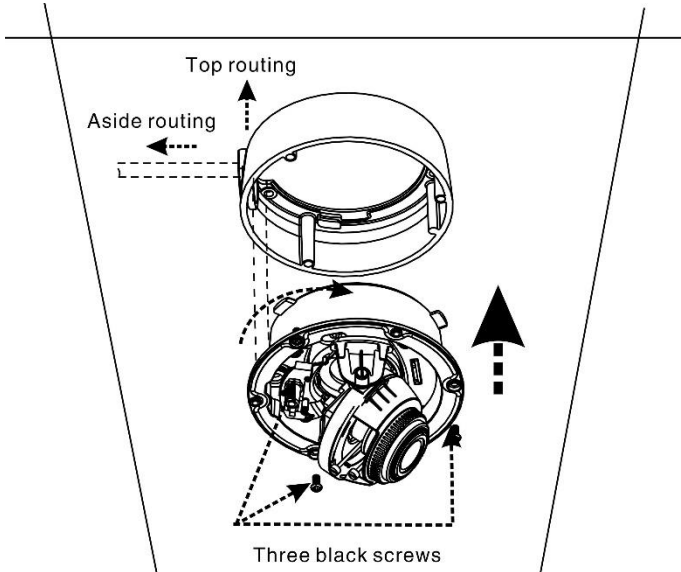
Step 6 Route the multi-head composite cables of the main body obtained in Step 2. See Figure 3-6.

 **NOTE**

- If you use the top routing method, route the multi-head composite cables through the routing opening with a diameter of 30 mm on the top.
- If you use the aside routing method, route the multi-head composite cables through the aside opening on the lower cover.

Step 7 Turn the main body clockwise for about 5 degrees to assembly it with the lower cover that has been fixed on the wall in Step 5. Then screw the three black screws in Step 2 by using a Phillip Head Screwdriver to fix the main body to the lower cover. See Figure 3-6. The accessory package contains spare black screws.

Figure 3-6 Fixing the main body to the lower cover



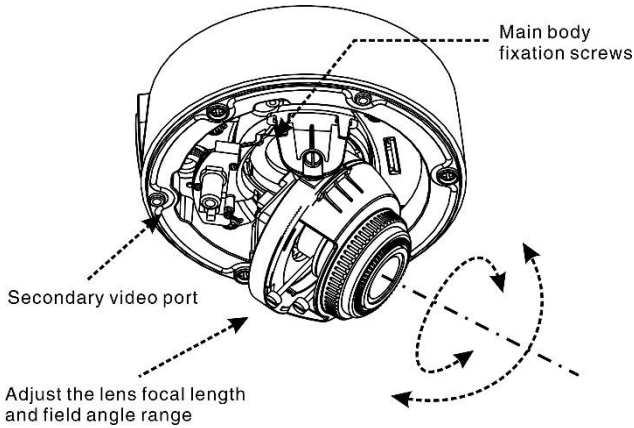
Step 8 Use the video cable in the accessory package to connect the second video port. Then view the video, adjust the lens angle horizontally and vertically, and adjust the lens focal length and field angle range, and insert the SD card. See Figure 3-7.

 **NOTE**

After adjustment, use a straight screwdriver to fasten the main body fixation screws if the main body becomes loose.

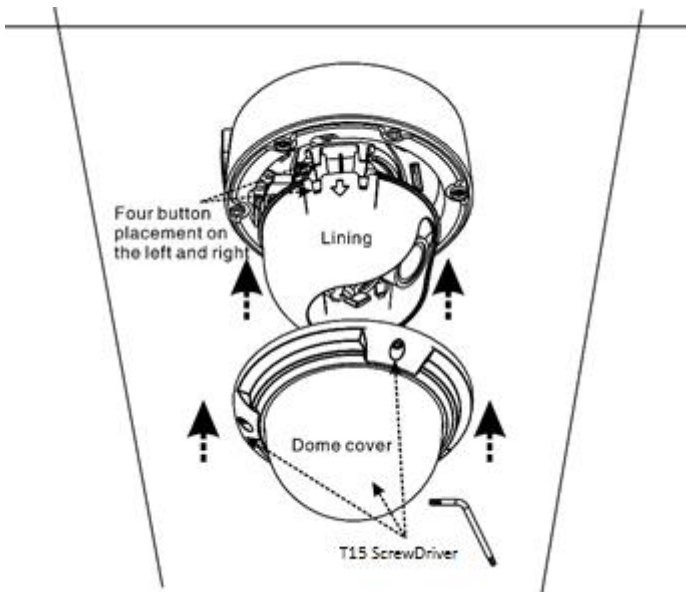


Figure 3-7 Fastening screws



Step 9 Assemble the lining that has been removed in Step 2 with the main body and buckle the four button placements with the main body bracket. Aim the three white plum blossom screws, which have been unscrewed from the dome cover in Step 1, at the three threaded holes on the main body black cover. Then prop the dome cover with one hand and screw the plum blossom screws by using the T15 Screwdriver with the other hand to fasten the dome cover. See Figure 3-8.

Figure 3-8 Assembling the lining and fastening the dome cover



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## Direct Installation by the Main Body Base Cover

Step 1 Fetch the positioning labeling from the accessory package, remove the release paper from the positioning labeling, and stick the labeling to the place where the camera is to be installed.



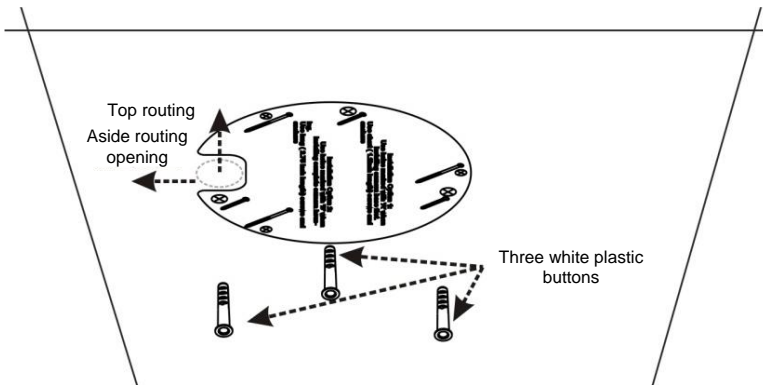
### NOTE

In the ceiling mount installation mode, you can route cables from the top or from aside. Select the routing method depending on the installation scenario.

- If you use the top routing method (which has high requirements on installation), drill a routing opening with a diameter of 30 mm in the gap of the positioning labeling.
- If the ceiling or eaves do not allow the routing opening, use the aside routing method. When you route cables from aside, align the gap of the positioning labeling with the cable routing direction and use the Plug Wrench to unscrew a plug on the lower cover to facilitate cable routing.

Step 2 Use a drill with a diameter of 5.5 mm to drill three round holes with a depth of 40 mm in the places marked with "B" on the positioning labeling. Use a hammer to nail the three white plastic buttons into the round holes. Ensure that the wall surface is level and the plastic buttons align with the wall surface. See Figure 3-9.

Figure 3-9 Drilling round holes and nailing plastic buttons



Step 3 Unscrew the three black screws on the main body black base cover and keep the lower cover immobile.

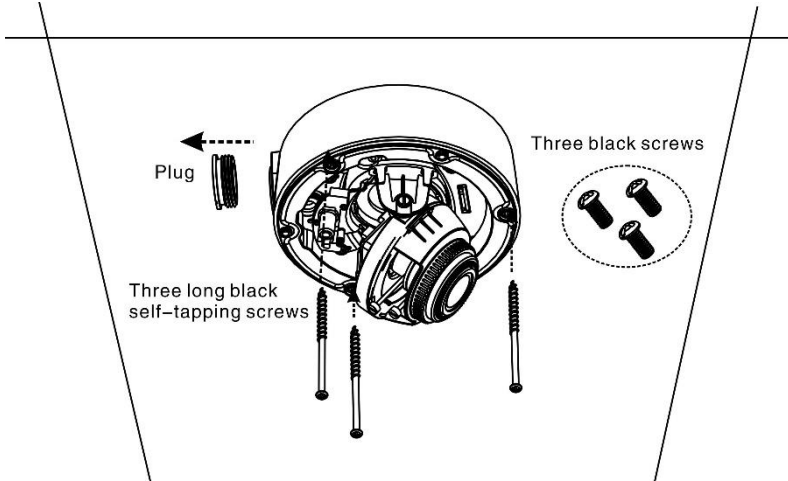
Step 4 Route the multi-head composite cables of the camera.

 **NOTE**

- If you use the top routing method, route the multi-head composite cables through the routing opening with a diameter of 30 mm on the top.
- If you use the aside routing method, route the multi-head composite cables through the aside opening on the lower cover.

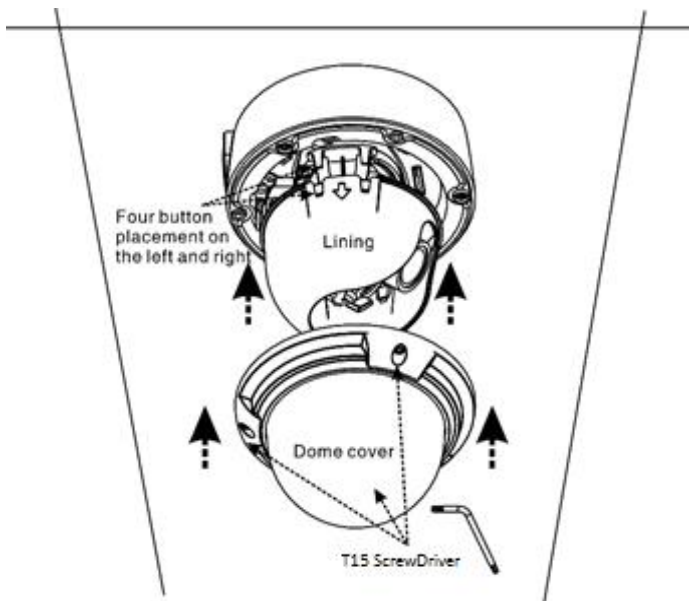
**Step 5** Fetch three black self-tapping screws from the accessory package. Then prop the camera with one hand and screw the self-tapping screws by using a Phillip Head Screwdriver with the other hand to fasten the camera on the wall. See Figure 3-10.

Figure 3-10 Fastening the camera



**Step 6** Buckle the lining with the main body bracket and screw the three plum blossom screws by using the T15 Screwdriver to fasten the dome cover. See Figure 3-11.

Figure 3-11 Assembling the lining and fastening the dome cover

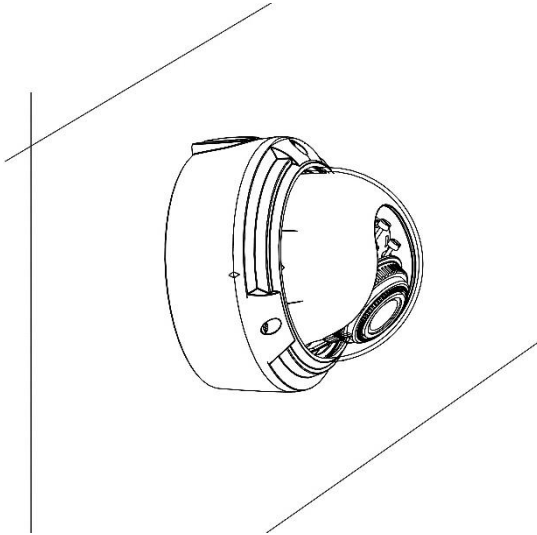


----End

### 3.2.2 Wall Mount Installation

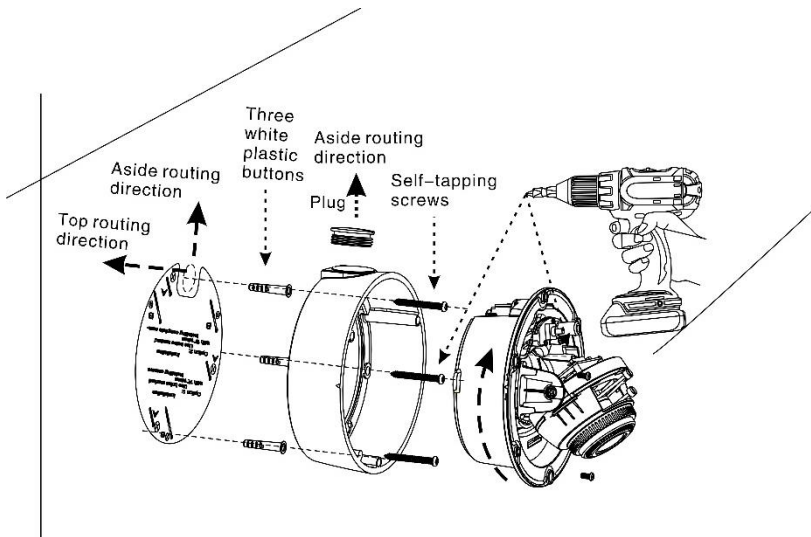
The wall mount installation mode can be subdivided into installation by the white lower cover and direct installation by the main body black base cover. The wall mount installation mode applies to walls and the side routing mode is generally adopted, as shown in Figure 3-12.

Figure 3-12 Wall mount installation



When sticking the positioning labeling, you must first decide the aside routing direction. See Figure 3-13.

Figure 3-13 Deciding the aside routing direction



 **NOTE**

The wall mount installation mode is similar to the ceiling mount installation mode. Therefore, wall mount installation details are outside the scope of this section.

# 4 Quick Configuration

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## 4.1 Login and Logout



### CAUTION

You must use Internet Explorer 6 or a later version to access the web management system; otherwise, some functions may be unavailable.

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#### Login system

Step 1 Open the Internet Explorer, enter the IP address of IP camera (default value: 192.168.0.129) in the address box, and press Enter. The login page is displayed.

Step 2 Input the User name and password.



#### NOTE

- The default name is **admin**. The default password is **admin**. Change the password when you log in the system for first time to ensure system security.
- You can change the system display language on the login page.

Step 3 Click Login.

The main page is displayed.

----End

#### logout

To logout of system, click **Sign out** in the upper right corner of the main page, the login page is display after you log out of the system.

## 4.2 Browsing Video

User can browse the real-time video in the web management system.

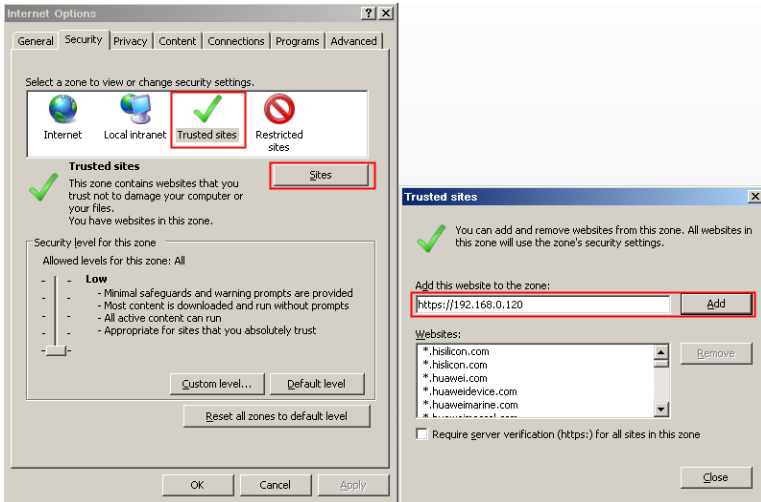
#### Preparation

To ensure the real-time video can be play properly, you must perform the following operation when you log in to the web for the first time:

1. Open the Internet Explorer. **Choose Tools > Internet options > Security > Trusted sites > Sites.**

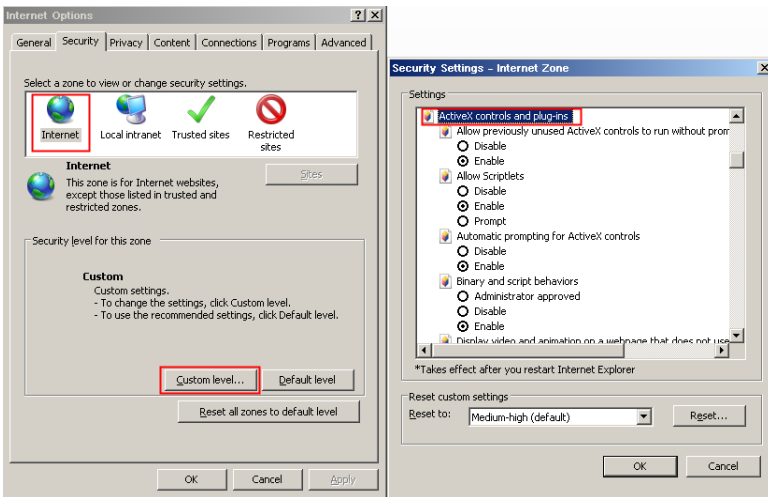
In the display dialog box, click **Add**, as shown in Figure 4-1.

Figure 4-1 Adding the a trusted site



2. In the Internet Explorer, choose **Tool > Internet Options > Security > Customer level**, and set **Download unsigned ActiveX control** and **initialize and script ActiveX controls not marked as safe for scripting under ActiveX controls and plug-ins** to **Enable**, as shown in Figure 4-2.

Figure 4-2 Configuring ActiveX control and plug-ins



3. Download and install the player control as prompted.





## NOTE

The login page is display when the control is loaded.

### 4.2.1 Download the right control in the Internet Explorer

Real-time video page pop-ups the message **clicks to play live video with ActiveX control to reduce latency**.

Click the message, jump to download ActiveX control interface, once downloading is complete, you can watch more fluent video screen.

Unable to display video picture, and need to download and install the control

Real-time video page pop-up the message **click to download the latest version of Flash Play live video** and **click to play video with ActiveX control to reduce latency**.

Click the message **click to play live video with ActiveX control to reduce latency**, jump download Adobe Flash Player Plugin control interface, once downloading is complete, you can watch video screen.

Click the message **click to download the latest version of Flash Play live video**, jump to download ActiveX control interface, once downloading is complete, you can watch more fluent video screen.

### 4.2.2 In the Google, Firefox, or Safari browsers watch real-time video

Google, Firefox, and Safari browsers only support Adobe Flash Player Plugin to play video. When Adobe Flash Plugin control version is too low, browser will automatically clew you to download the latest control.

## 4.3 Setting Local Network Parameters

### Description

Local network parameters include:

- IP protocol
- IP address
- Subnet mask
- Default gateway
- Dynamic Host Configuration Protocol (DHCP)
- Preferred Domain Name System (DNS) server
- Alternate DNS server
- MTU

Procedure

- Step 1 Choose **Device Configuration > Local Network**, the **Local Network** page is displayed.
- Step 2 Set the parameters according to Table 4-1.

Table 4-1 Local network parameters

Parameter	Description	Setting
IP Protocol	IPv4 is the IP protocol that uses an address length of 32 bits.	[Setting method] Select a value from the drop-down list box. [Default value] IPv4
Obtain an IP address automatically	The device automatically obtains the IP address from the DHCP server.	[Setting method] Click the button on to enable <b>obtain IP address automatically</b> .  NOTE To query the current IP address of the device, you must query it on the platform based on the device name.
DHCP IP	IP address that the DHCP server assigned to the device.	N/A
IP Address	Device IP address that can be set as required.	[Setting method] Enter a value manually. [Default value] 192.168.0.129
Subnet Mask	Subnet mask of the network adapter.	[Setting method] Enter a value manually. [Default value] 255.255.255.0
Default Gateway	This parameter must be set if the client accesses the device through a gateway.	[Setting method] Enter a value manually. [Default value] 192.168.0.1
Preferred DNS Server	IP address of a DNS server.	[Setting method] Enter a value manually. [Default value] 192.168.0.1

Parameter	Description	Setting
Alternate DNS Server	IP address of a domain server. If the preferred DNS server is faulty, the device uses the alternate DNS server to resolve domain names.	[Setting method] Enter a value manually. [Default value] 192.168.0.2
MTU	Set the maximum value of network transmission data packets.	[Setting method] Enter a value manually. Note The MTU value is range from 800 to 1500, the default value is 1380, please do not change it arbitrarily.

Step 3 Click **Apply**.

- If the message "Apply succeed!" is displayed, click **Confirm**. The system saves the settings. The message "Set network parameter success, Please login system again" is displayed. Use the new IP address to log in to the web management system.
- If the message "Invalid IP Address", "Invalid Subnet Mask", "Invalid default gateway", "Invalid primary DNS", or "Invalid space DNS" is displayed, set the parameters correctly.



**NOTE**

If you set only the **Subnet Mask**, **Default Gateway**, **Preferred DNS Server**, and **Alternate DNS Server** parameters, you do not need to log in to the system again.

----End

# 5 Technical Specifications

Table 5-1 2.0 mega pixel CMOS

Items	parameters	Description
2.0 mega pixel CMOS	Image sensor	1/2.9" CMOS sensor
	Effective Pixels	1984(H) × 1105(V)
	Minimum illumination	Color: 0.05Lux@ (F1.2, AGC ON) B&W: 0.01Lux@(F1.2, AGC ON)
	Electronic shutter speed	1/5 seconds to 1/20k seconds
	Video resolution and frame rate	50Hz: 25fps 60Hz: 30fps The main stream: 1920*1080/1280*720 The secondary stream: D1/CIF/QCIF/VGA/QVGA/640*360
	Video bit rate	Primary stream: 1080p: 500 kbps to 12 Mbps 720p: 200kbps to 8Mbps Secondary stream: 100 kbps to 6 Mbps
	Aperture	Fixed iris

Table 5-2 Technical specifications

Items	parameters	Description
Camera function	Video standard	Configurable
	Digital zoom	Support
	Day & Night mode	Auto/Color/B&W
	Removable optical filter	Supported, day: IR CUT; night: fully transparent
	Gain control	Auto/Manual
	White balance	Auto

Items	parameters	Description
	Fisheye correction	Not supported
	Wide dynamic range	Support
	BLC	Support
	Highlight compensation	Support
	DNR	Auto/manual(support for 3D noise reduction)
	Digital image stabilization	Not supported
Lens	Lens type	Vari-focal lens
	Focal length of the lens	2.8~12mm
External interface	Network interface	RJ-45, 10/100Base-T self-adaptive Ethernet port
	RS485	Not supported
	Alarm interface	Passive alarm(one alarm input and one alarm output)
	Audio interface	RCA interface(one audio input) RCA interface(one audio output)
	CVBS interface	Support for analog video output interface RCA/3.5
	SD card interface	Micro SD
Video	Video encoding format	H.264, HP, MP and MJPEG
	Multi-stream	Support for double stream
	Stream type	CBR、VBR
	S/N Ratio	≥54dB
Audio	Audio encoding format	Support for G711
	Audio bit rate	64kbps(G.711)
	Intercom	Support
	Embedded	Not supported

Items	parameters	Description
	loudspeaker	
	Embedded microphone	Not supported
Network	Network protocol	IPv4/ Ipv6, RTSP/RTP/RTCP, TCP/UDP, HTTPS, DHCP, DNS, DDNS, PPPoE, SMTP
	Streaming mode	Unicast
	Number of users in concurrent access	6(up to two 1080p/720p videos)
Function	Corridor mode	Support
	Defogging	Support
	Video buffering	Support
	Region of interest ROI	Support
	User rights	Two roles: administrator and common users. The administrator can assign common users different rights.
	Security mode	User name and password-based authentication
	Support for SDK development	Linux C/Windows C++ SDK
	Other functions	A reset button, the heartbeat mechanism
Storage	Local storage type	Support for SD, SDHC cards
	Capacity	32G
	SD card availability	Unavailable
WEB applications	Language	Simplified Chinese, English, Spanish, Portuguese, Polish and Italian
	Management and maintenance	Management and maintenance via the web is not supported. An independent upgrade tool is available.
Environmental features	Heating function	Support
	Power supply	DC12V(-15%~+10%) /PoE (802.3af)

Items	parameters	Description
	Power consumption	3W(heater OFF) 5W(heater ON)
	Operating temperature	-25℃—+55℃
	Operating humidity	Humidity: <90% (non-condensing)
	Protection level	IP66
Physic features	Dimension	φ130mm×111.5mm
	Net weight	800g

# A Hazardous Substance Declaration

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Component	Hazardous Substance or Element					
	Plumbum (Pb)	Mercury (Hg)	Cadmium (Cd)	Hexavalent Chromium (Cr6+)	Polybrominated Biphenyls (PBB)	Polybrominated Diphenyl Ethers (PBDE)
Structural part	×	○	○	○	○	○
Board/circuit module	×	○	○	○	○	○
Cable connector	×	○	○	○	○	○
Accessories	×	○	○	○	○	○
<p>○: indicates that the concentration of the hazardous substance in all homogeneous substances of the component is within the limit specified in SJ/T 11363-2006 <b>Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products</b>.</p> <p>×: indicates that the concentration of the hazardous substance in at least one homogeneous substance of the component exceeds the limit specified in SJ/T 11363-2006 <b>Requirements for Concentration Limits for Certain Hazardous Substances in Electronic Information Products</b>.</p>						