



# Pinhole Network Camera

## Quick Start Guide



# Foreword

## General

This manual introduces the functions, configuration, general operation, and system maintenance of network camera.

## Safety Instructions

The following categorized signal words with defined meaning might appear in the manual.

Signal Words	Meaning
 <b>WARNING</b>	Indicates a medium or low potential hazard which, if not avoided, could result in slight or moderate injury.
 <b>CAUTION</b>	Indicates a potential risk which, if not avoided, could result in property damage, data loss, lower performance, or unpredictable result.
 <b>NOTE</b>	Provides additional information as the emphasis and supplement to the text.

## Revision History

Version	Revision Content	Release Date
V1.0.3	Updated the dimension figure of back-end device.	July 2021
V1.0.2	Updated "Important Safeguards and Warnings".	April 2021
V1.0.1	Updated the dimension figures of L5.	November 2020
V1.0.0	First release.	September 2020

## About the Manual

- The manual is for reference only. Slight differences might be found between the manual and the product.
- We are not liable for losses incurred due to operating the product in ways that are not in compliance with the manual.
- The manual will be updated according to the latest laws and regulations of related jurisdictions. For detailed information, see the paper user's manual, use our CD-ROM, scan the QR code or visit our official website. The manual is for reference only. Slight differences might be found between the electronic version and the paper version.
- All designs and software are subject to change without prior written notice. Product updates might result in some differences appearing between the actual product and the manual. Please contact customer service for the latest program and supplementary documentation.
- There might be errors in the print or deviations in the description of the functions, operations and technical data. If there is any doubt or dispute, we reserve the right of final explanation.
- Upgrade the reader software or try other mainstream reader software if the manual (in PDF format) cannot be opened.

- All trademarks, registered trademarks and the company names in the manual are the properties of their respective owners.
- Please visit our website, contact the supplier or customer service if there is any problem occurring when using the device.
- If there is any uncertainty or controversy, we reserve the right of final explanation.

# Important Safeguards and Warnings

## Electrical Safety

- All installation and operation shall conform to your local electrical safety codes.
- The power supply must conform to the requirements of ES1 in IEC 62368-1 standard and be no higher than PS2. Note that the power supply requirements are subject to the device label.
- Make sure that the power supply is correct before operating the device.
- A readily accessible disconnecting device shall be incorporated in the building installation wiring.
- Prevent the power cable from being trampled or pressed, especially the plug, power socket and the junction extruded from the device.

## Environment

- Do not aim the device at strong light to focus, such as lamp light and sun light; otherwise it might cause over brightness or light marks, which are not the device malfunction, and affect the longevity of Complementary Metal-Oxide Semiconductor (CMOS).
- Do not place the device in a damp, dusty extremely hot or cold environment, or the locations with strong electromagnetic radiation or unstable lighting.
- Keep the device away from any liquid to avoid damage to the internal components.
- Keep the indoor device away from rain or damp to avoid fire or lightning.
- Keep sound ventilation to avoid heat accumulation.
- Transport, use and store the device within the range of allowed humidity and temperature.
- Heavy stress, violent vibration or water splash are not allowed during transportation, storage and installation.
- Pack the device with standard factory packaging or the equivalent material when transporting the device.
- Install the device in the location where only the professional staff with relevant knowledge of safety guards and warnings can access. The accidental injury might happen to the non-professionals who enter the installation area when the device is operating normally.

## Operation and Daily Maintenance

- Do not touch the heat dissipation component of the device to avoid scald.
- Carefully follow the instructions in the manual when performing any disassembly operation about the device; otherwise, it might cause water leakage or poor image quality due to unprofessional disassembly. Please contact after-sale service for desiccant replacement if there is condensed fog on the lens after unpacking or when the desiccant turns green. (Not all models are included with the desiccant).
- We recommend using the device together with lightning arrester to improve lightning protection effect.
- We recommend grounding the device to enhance reliability.
- Do not touch the image sensor (CMOS) directly. Dust and dirt could be removed with air blower, or you can wipe the lens gently with soft cloth that is moistened with alcohol.
- You can clean the device body with soft dry cloth, and for stubborn stains, use the cloth with mild detergent. To avoid possible damage on device body coating which could cause performance

decrease, do not use volatile solvent such as alcohol, benzene, diluent and so on to clean the device body, nor can strong, abrasive detergent be used.

- Dome cover is an optical component. Do not touch or wipe the cover with your hands directly during installation or operation. For removing dust, grease or fingerprints, wipe gently with moistened oil-free cotton with diethyl or moisten soft cloth. You can also remove dust with an air blower.

 **WARNING**

- Strengthen the protection of network, device data and personal information by adopting measures which include but not limited to using strong password, modifying password regularly, upgrading firmware to the latest version, and isolating computer network. For some device with old firmware versions, the ONVIF password will not be modified automatically along with the modification of the system password, and you need to upgrade the firmware or manually update the ONVIF password.
- Use standard components or accessories provided by manufacturer and make sure that the device is installed and maintained by professional engineers.
- Do not expose the surface of the image sensor to laser beam radiation in an environment where a laser beam device is used.
- Do not provide two or more power supply sources for the device unless otherwise specified. A failure to follow this instruction might cause damage to the device.

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# 1 Introduction

## 1.1 Cable



Waterproof all the cable joints with insulating tape and waterproof tape to avoid short circuit and water damage. For the detailed operation, see the *FAQ Manual*.

Figure 1-1 Front panel (1-channel)

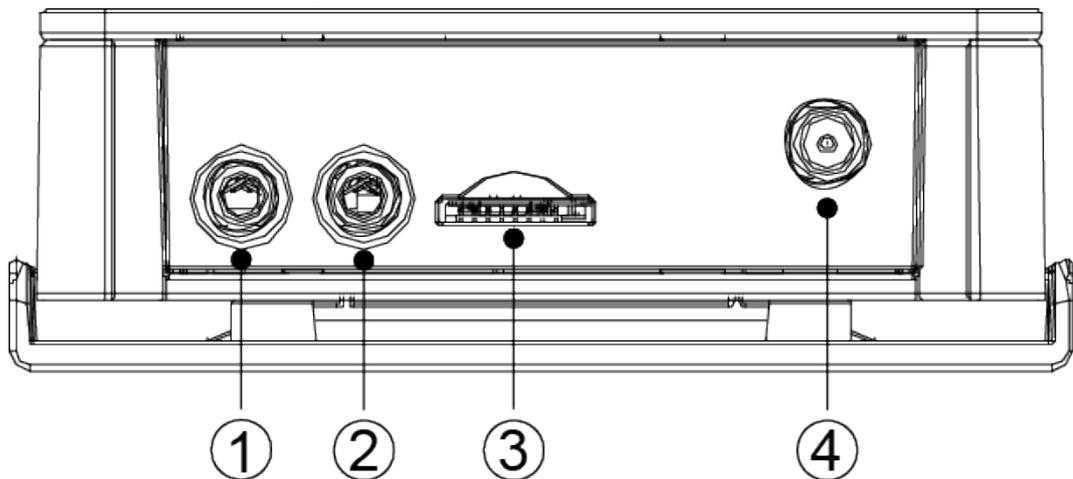


Figure 1-2 Front panel (2-channel)

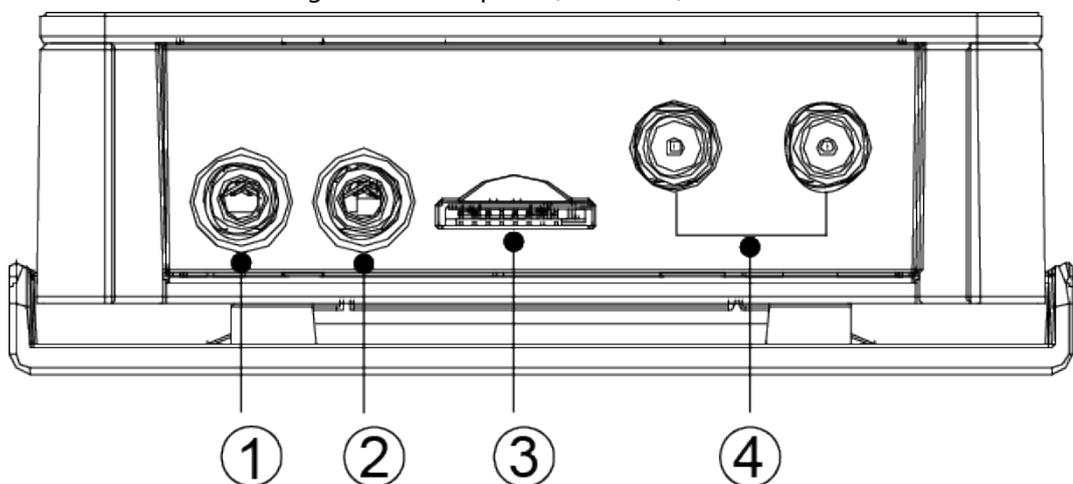
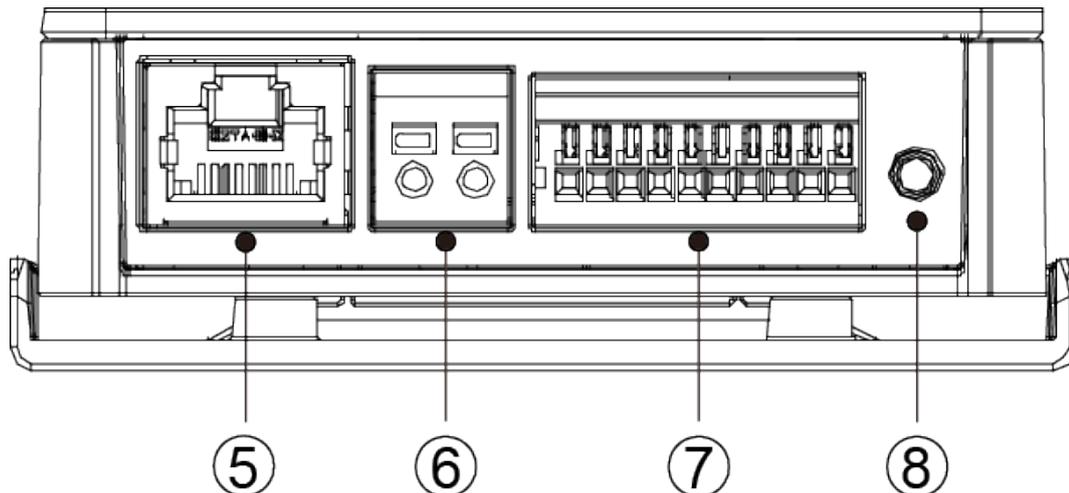


Figure 1-3 Back panel



For more information about ports, see Table 1-1.

Table 1-1 Port information

No.	Port Name		Description
1	AUDIO OUT	Audio output	Connects to speaker to output audio signal.
2	AUDIO IN	Audio input	Connects to sound pickups to receive audio signal.
3	SD	SD card slot	It is to install SD card to realize local storage.  <ul style="list-style-type: none"> <li>When installing SD card, make sure that the SD card is not in read-only state.</li> <li>When removing SD card, make sure that the SD card is not in read-write state; otherwise the data in SD card might be lost, and the card might be damaged.</li> <li>Before hot swapping the SD card, stop recording video.</li> </ul>
4	LAN	Ethernet port	<ul style="list-style-type: none"> <li>Connects to network with network cable.</li> <li>Provides power to the device with PoE.</li> </ul>
5	VIN	Video input	Get the image data before connecting to the lens.  1-channel lens is available on select model, and the lens should be purchased by yourselves..
6	POWER	12 VDC Power	Inputs 12 VDC power. Be sure to supply power as instructed in the manual.  <ul style="list-style-type: none"> <li>Power on after connecting the lens to the back-end device; otherwise the device might be damaged.</li> <li>Device abnormality or damage might occur if power is not supplied correctly.</li> </ul>

No.	Port Name		Description
7	I/O	Alarm I/O	Includes alarm signal input and output ports, and the number of I/O ports might vary on different devices. For detailed information, see Table 1-2.
8	RESET	Reset button	Restores device factory default configuration. Press the button for 10 s, the configuration can be restored to factory default settings.

For more information about I/O port, see Table 1-2.

Table 1-2 Alarm information

Port	Port Name	Description
I/O Port	G (adjacent to TX)/TX/RX	G is the ground terminal of RS-232 serial port; TX is the sending terminal of RS-232 serial port; RX is the receiving terminal of RS-232 serial port.
	IN1/IN2	Alarm input port, receives on-off signal of external alarm source.
	G (adjacent to IN2)	 Different alarm input devices connect to the same ground terminal, which is G (adjacent to IN2).
	N1/N2	Alarm output port, outputs alarm signal to alarm device.  N and C with the same number should be used together when connecting to alarm output device. N2 and C2 are reserved ports.

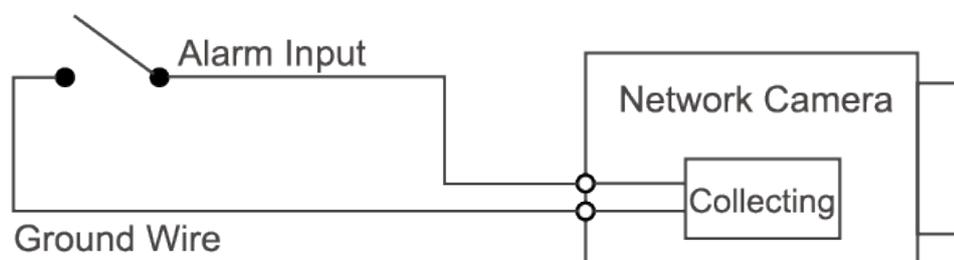
## 1.2 Connecting Alarm Input/Output

The camera can connect to external alarm input/output device through digital input/output.

**Step 1** Connect alarm input device to the alarm input end of the I/O port. See Figure 1-4. Device collects different states of alarm input port when the input signal is idling and being grounded.

- Device collects logic "1" when input signal is connected to +3V to +5V or idling.
- Device collects logic "0" when input signal is grounded.

Figure 1-4 Alarm input



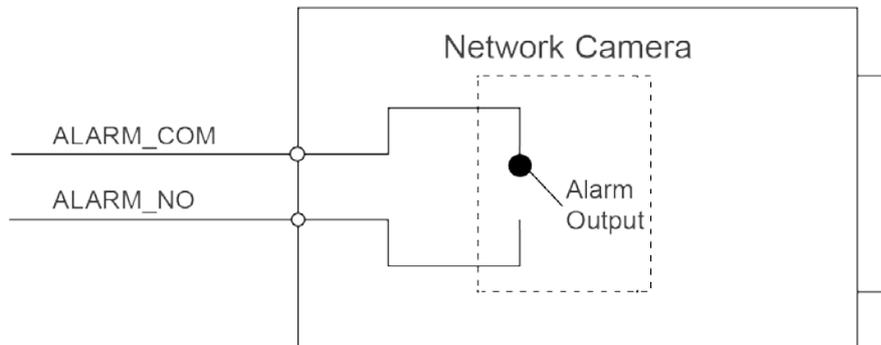
**Step 2** Connect alarm output device to the alarm output end of the I/O port. The alarm output is

relay switch output, which can only connect to NO alarm devices.

NO1 and COM1 or NO2 and COM2 constitute a switch to provide the alarm output, which is shown in Figure 1-5.

The switch is open normally and closed when there is alarm output.

Figure 1-5 Alarm output



**Step 3** Log in to web interface, and configure alarm input and alarm output in alarm setting.

- The alarm input on the web interface is corresponding to the alarm input end of the I/O port. There will be high-level and low-level alarm-signal generated by the alarm input device when alarm occurs, and set the input mode to NO if the signal is high-level and to NC if the signal is low-level.
- The alarm output on the web interface is corresponding to the alarm output end of the device, which is also the alarm output end of the I/O port.

## 2 Network Configuration

Device initialization and IP setting can be finished with the "ConfigTool" or on web interface. For more information, see the *Web Operation Manual*.



- Device initialization is available on select models, and it is required at first-time use and after device is being reset.
- Device initialization is available only when the camera (whose IP is 192.168.1.108 by default) and the PC stays in the same network segment.
- Plan usable network segment properly to connect the device to the network.
- The following figures and interfaces are for reference only, and the actual product shall prevail.

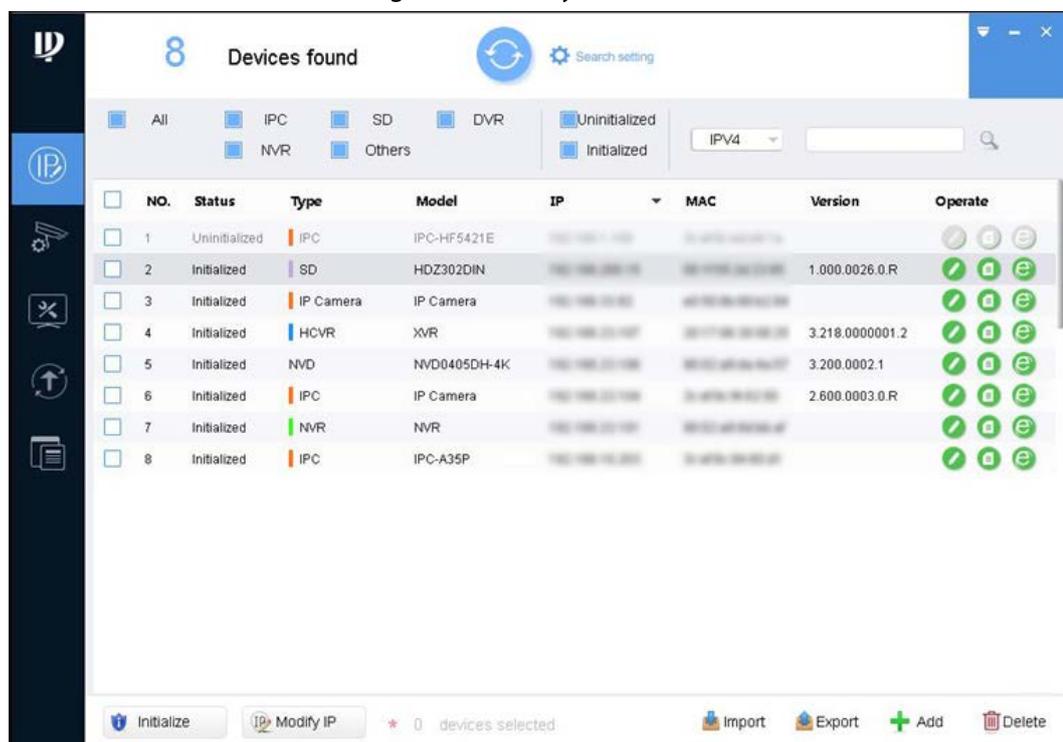
### 2.1 Initializing Device

**Step 1** Double-click "ConfigTool.exe" to open the tool.

**Step 2** Click .

The **Modify IP** interface is displayed.

Figure 2-1 Modify IP



**Step 3** Click **Search setting**.

The **Setting** interface is displayed.

**Step 4** Enter the start IP address and end IP address of the network segment in which you want to search devices, and then click **OK**.

All the devices found in the network segment are listed.

**Step 5** Select one or several devices in uninitialized status, and then click **Initialize**.

The **Device initialization** interface is displayed.

- Step 6 Select the devices that need initialization, and then click **Initialize**.  
The password setting interface is displayed.

Figure 2-2 Password setting

- Step 7 Set and confirm the password of the devices, then enter a valid email address, and then click **Next**.

The final setting interface is displayed.



Password can be modified or reset in **System Settings**.

- Step 8 Select the options according to your needs, and then click **OK**.

The **Initialization** interface is displayed after initialization is completed. Click the success icon (✓) or the failure icon (⚠) for the details.

- Step 9 Click **Finish**.

The device status on the **Modify IP** interface (Figure 2-1) turns to **Initialized**.

## 2.2 Modifying Device IP Address



- You can modify IP address of one or multiple devices at one time. This section is based on

modifying IP addresses in batches.

- Modifying IP addresses in batches is available only when the corresponding devices have the same login password.

**Step 1** Do **Step 1** to **Step 4** in "2.1 Initializing Device" to search devices in your network segment.



After clicking **Search setting**, enter the username and password, and make sure that they are the same as what you set during initialization; otherwise there will be wrong password notice.

**Step 2** Select the devices whose IP addresses need to be modified, and then click **Modify IP**. The **Modify IP Address** interface is displayed.

Figure 2-3 Modify IP address

**Step 3** Select **Static** mode, and then enter start IP, subnet mask, and gateway.



- IP addresses of multiple devices will be set to the same if you select the **Same IP** check box.
- If DHCP server is available in the network, devices will automatically obtain IP addresses from DHCP server when you select **DHCP**.

**Step 4** Click **OK**.

## 2.3 Logging in to Web Interface

**Step 1** Open IE browser, enter the IP address of the device in the address bar, and then press Enter key.

If the setup wizard is displayed, finish the settings as instructed.

**Step 2** Enter the username and password in the login box, and then click **Login**.

**Step 3** For the first-time login, click **Click Here to Download Plugin**, and then install the plugin as instructed.

The main interface is displayed when the installation is finished.

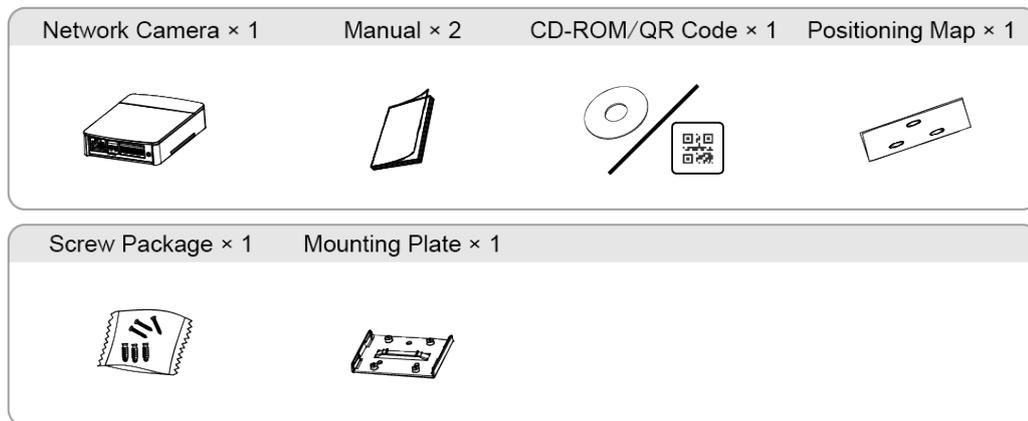
## 3 Installation

### 3.1 Packing List



- The tool required for the installation such as electric drill is not provided in the package.
- The operation manual and related tool information are contained in the disk or the QR code, and the actual package shall prevail.

Figure 3-1 Packing list



### 3.2 Dimensions



The following figures are for reference only, and the actual product shall prevail.

Figure 3-2 Back-end device (unit: mm [inch])

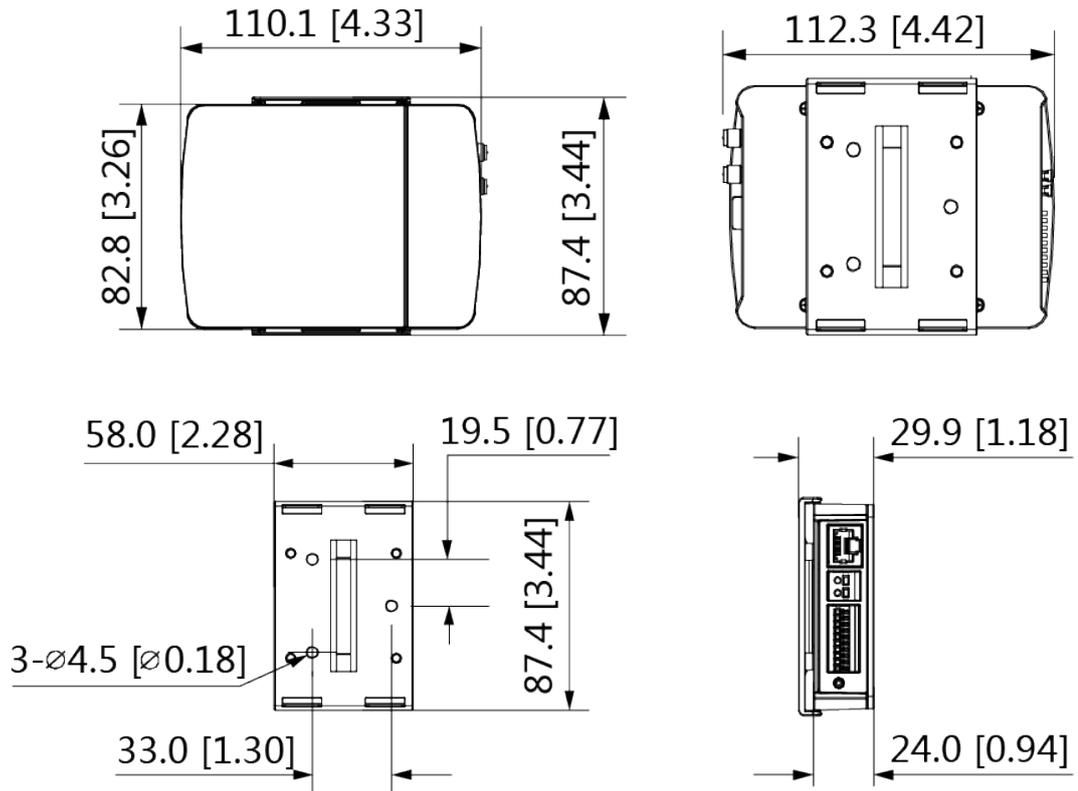


Figure 3-3 Model L1 (unit: mm [inch])

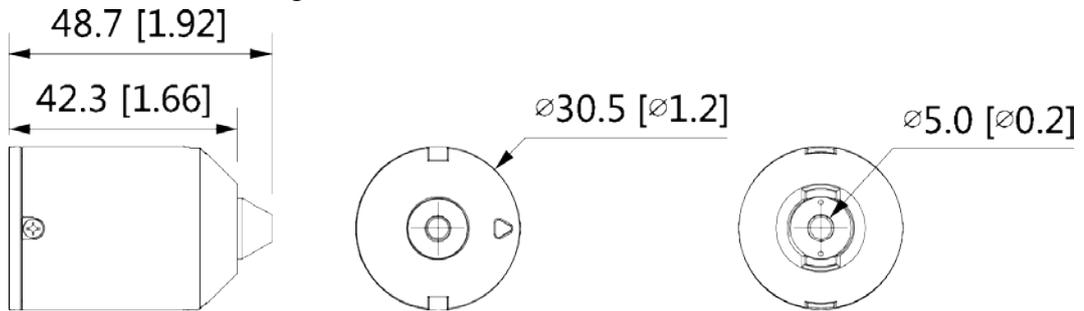


Figure 3-4 Model L3 (unit: mm [inch])

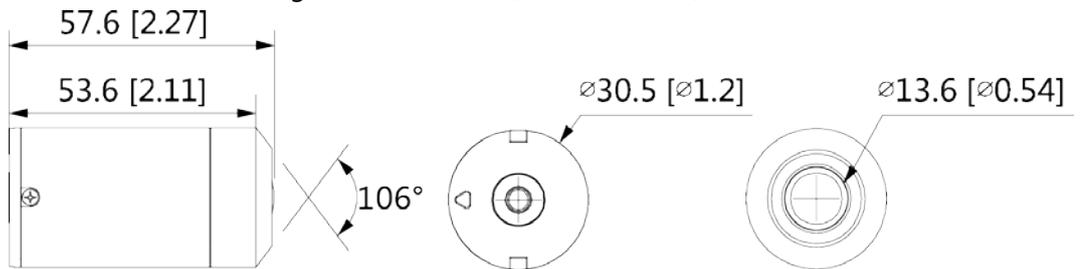


Figure 3-5 Model L4 (unit: mm [inch])

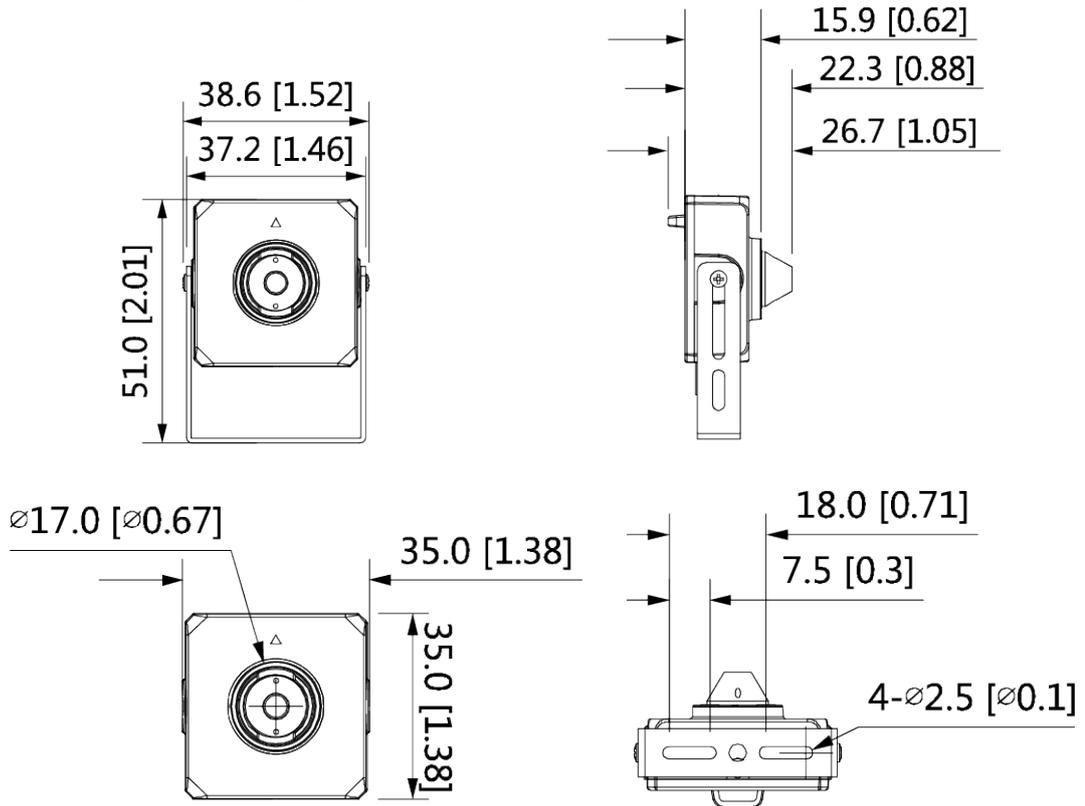


Figure 3-6 Model L5-3.6 mm (unit: mm [inch])

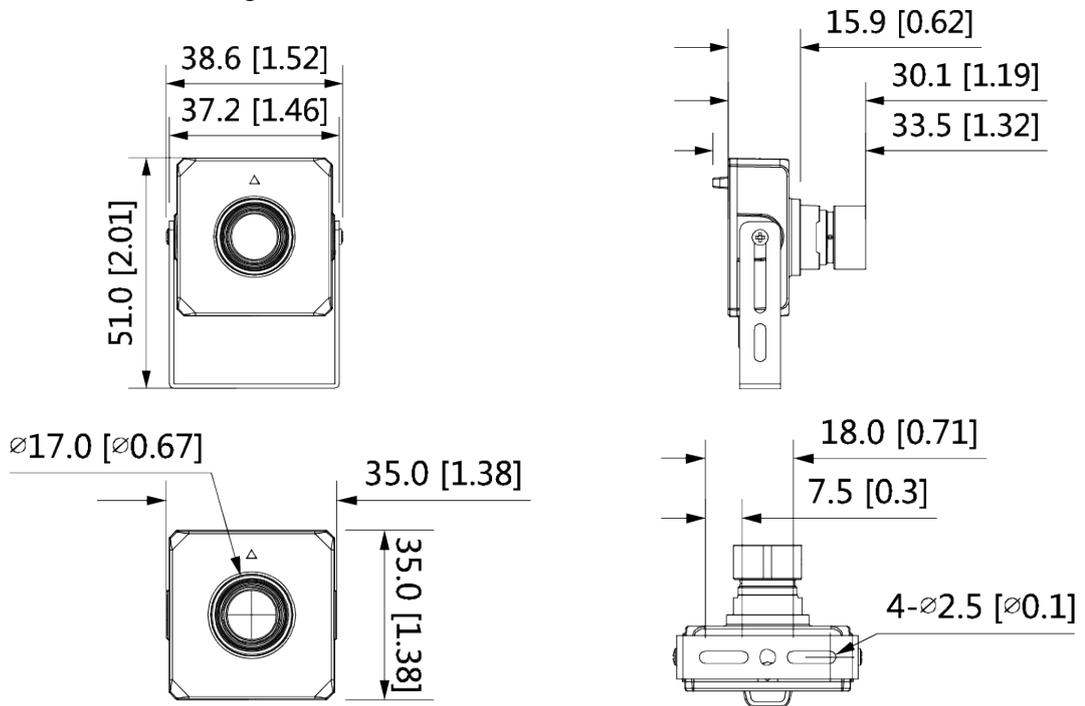
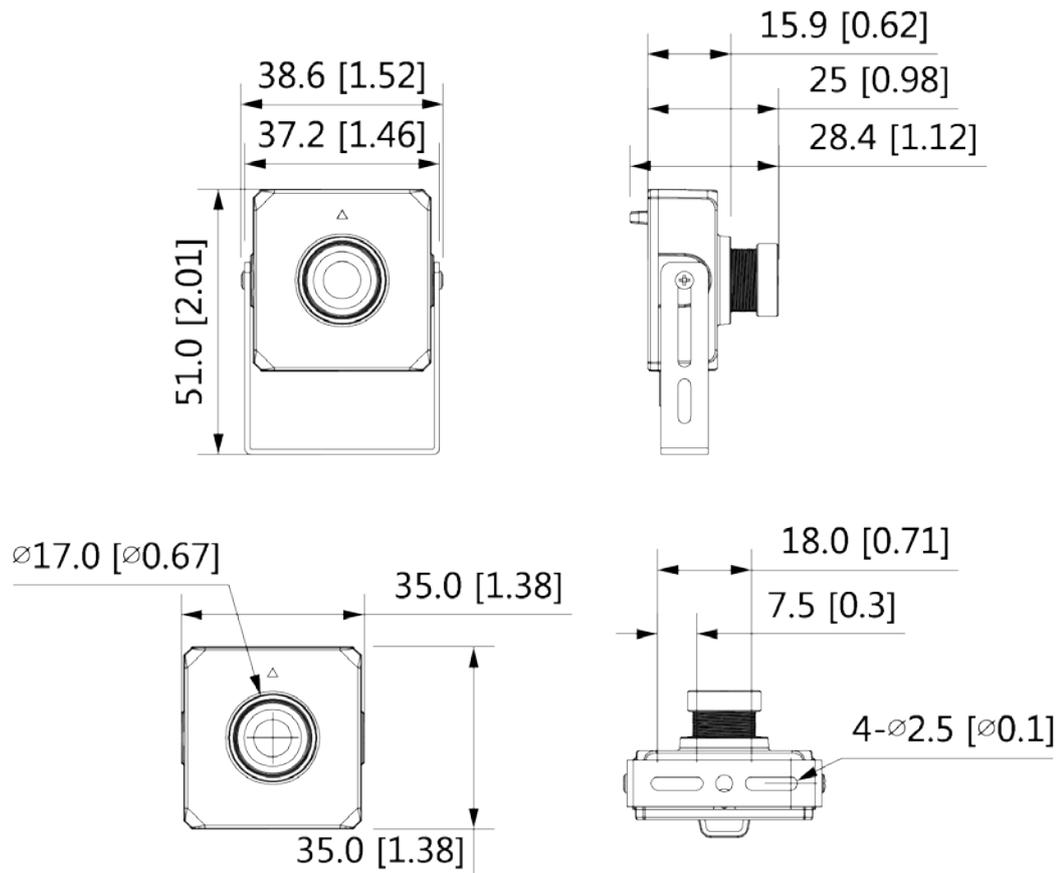


Figure 3-7 Model L5-2.8 mm (unit: mm [inch])



### 3.3 Installing Camera

The camera is separating design, and the lens and the back-end device shall be installed separately. After finishing installation, connect the lens and the back-end device, and then power on the camera.



- When installing or removing the lens, make sure that the power is cut off; otherwise, device abnormality or damage could occur.
- Make sure that the mounting surface is strong enough to hold at least three times the weight of the device and bracket.

Figure 3-8 Back-end device installation

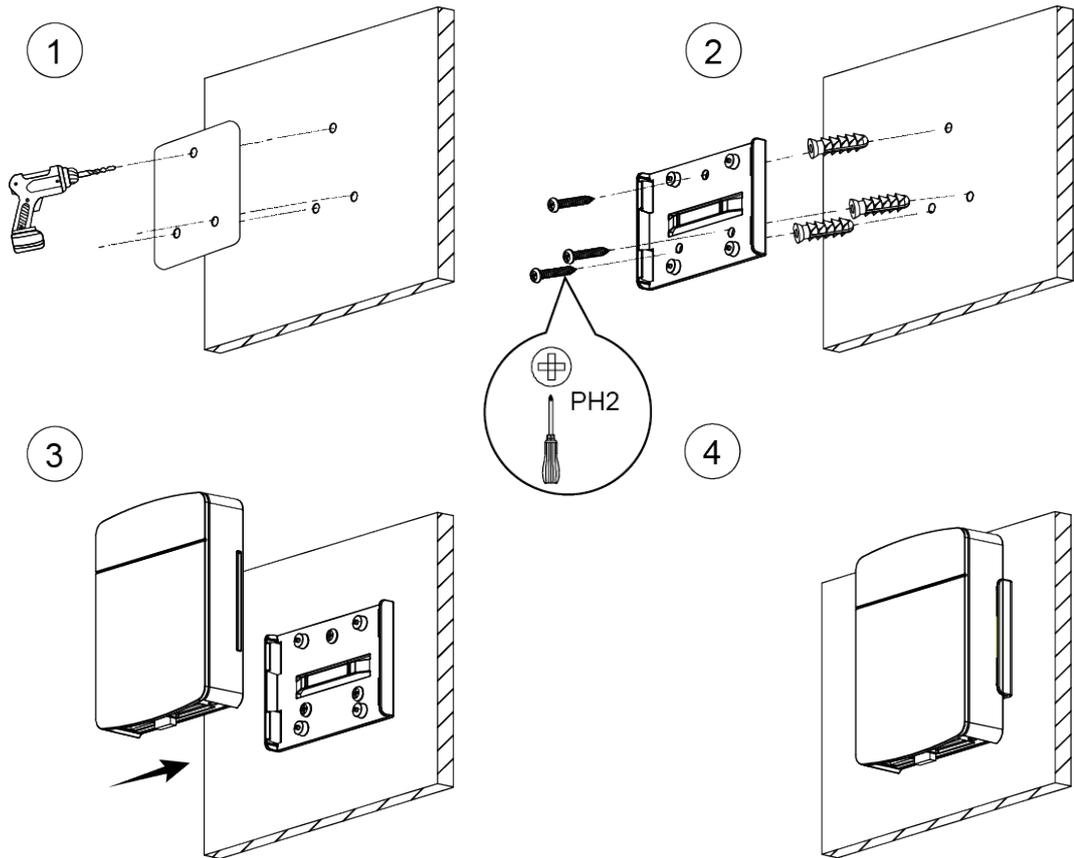


Figure 3-9 Lens installation (model L1)

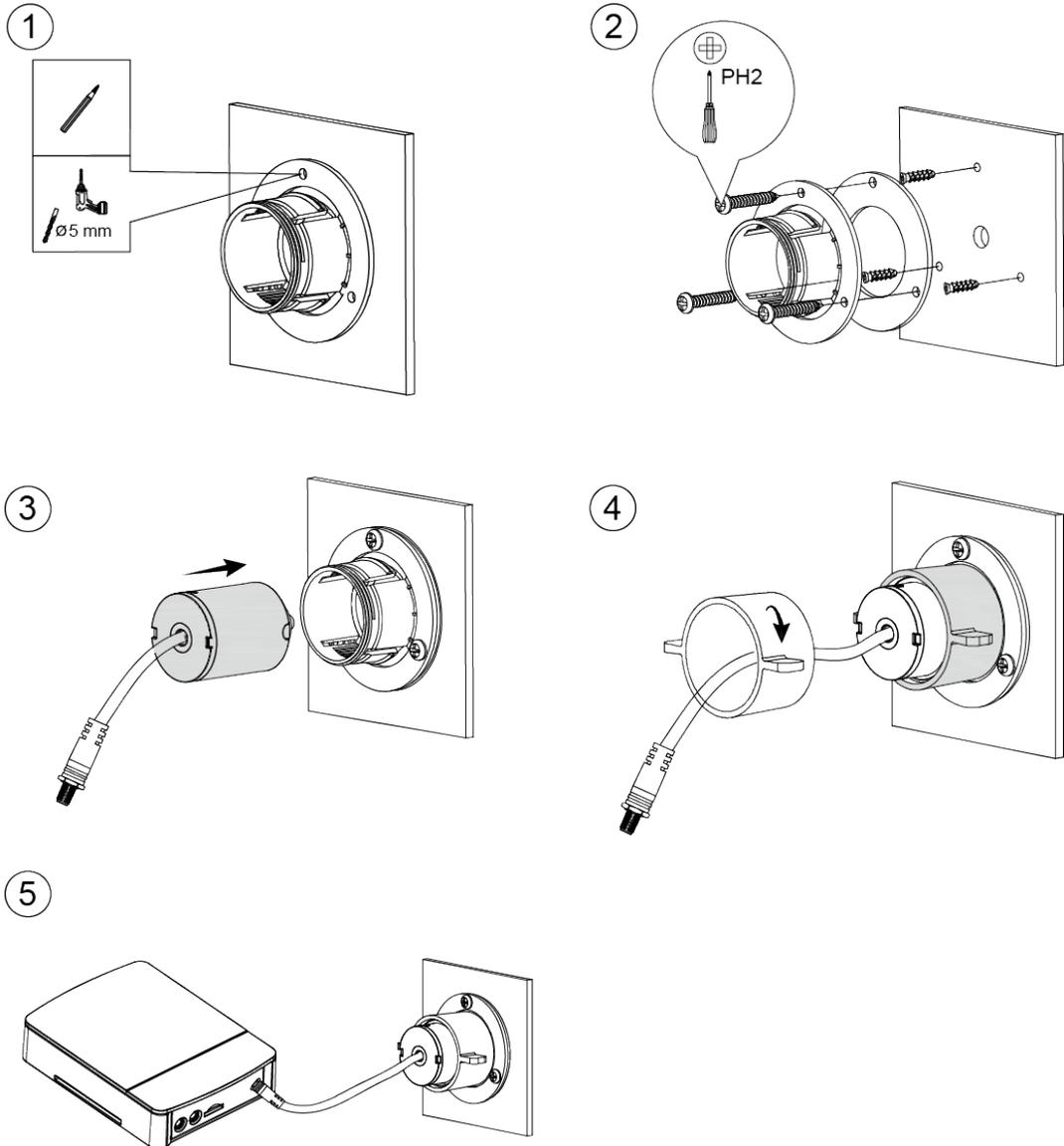


Figure 3-10 Lens installation (model L3)

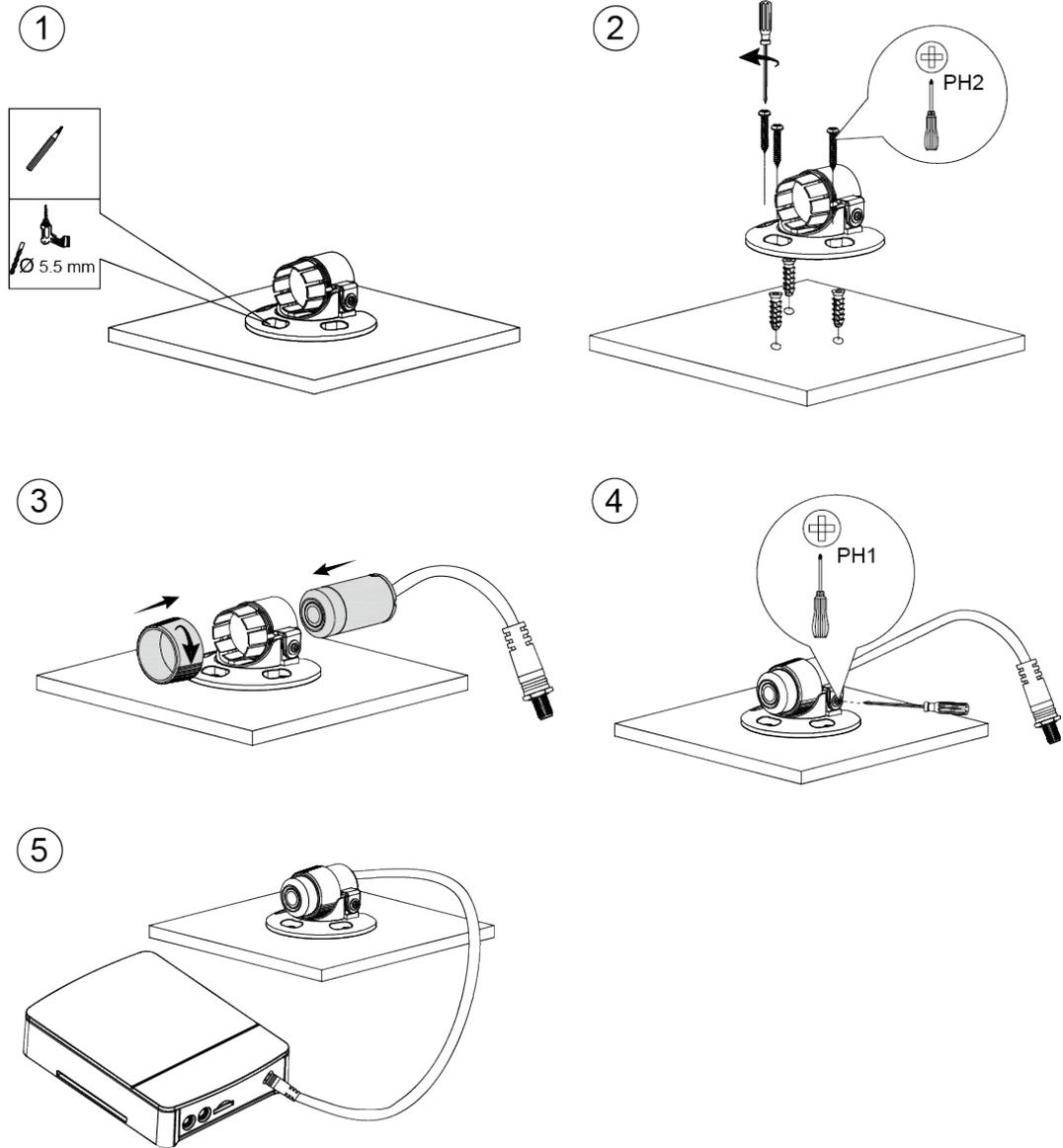
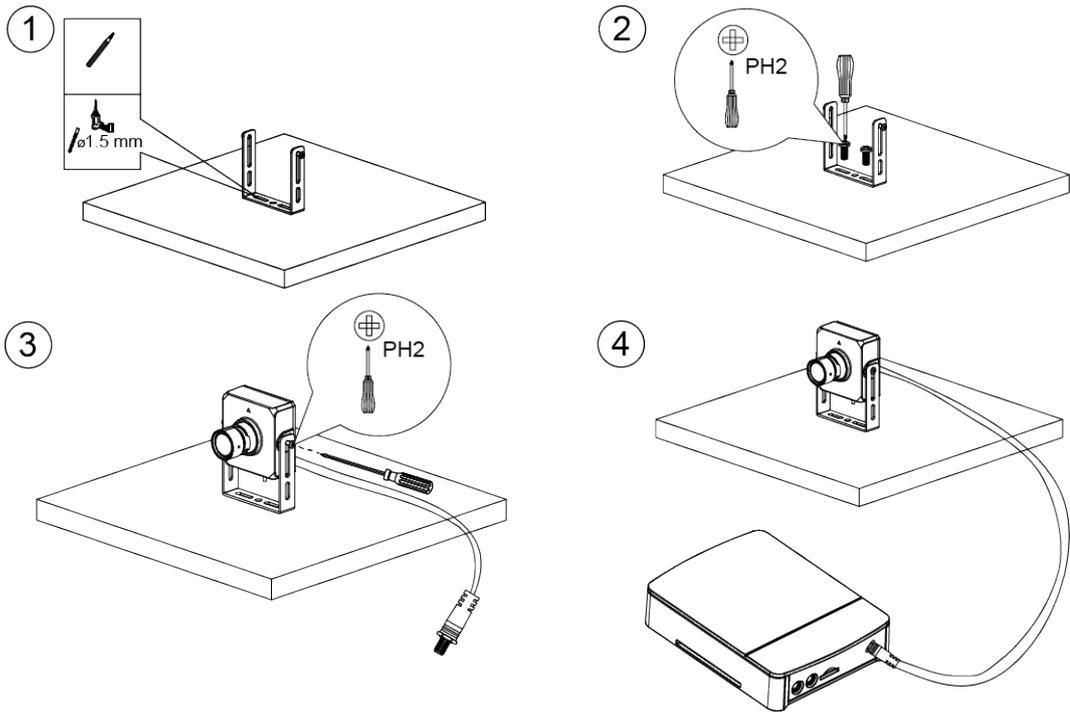


Figure 3-11 Lens installation (model L4 and model L5)



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