

### Network Camera

Model No. **WV-SFR311/WV-SFR310**  
**WV-SFN311/WV-SFN310**



(This illustration represents WV-SFN311.)



- This manual describes the installation procedures, network camera installation, cable connections, and the angle of view adjustment.
- Before reading this manual, be sure to read the Important Information.
- This manual describes how to install the network camera using model WV-SFN311 as an example.

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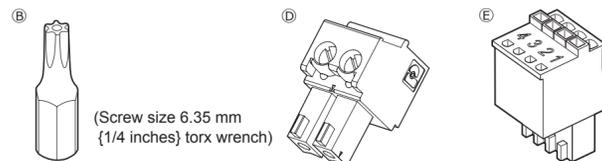
## Standard accessories

Important Information ..... 1 pc. CD-ROM\*1 ..... 1 pc.  
Installation Guide (this document) ..... 1 set Code label\*2 ..... 1 pc.  
Warranty card ..... 1 set

\*1 The CD-ROM contains the operating instructions and different kinds of tool software programs.  
\*2 This label may be required for network management. The network administrator shall retain the code label.

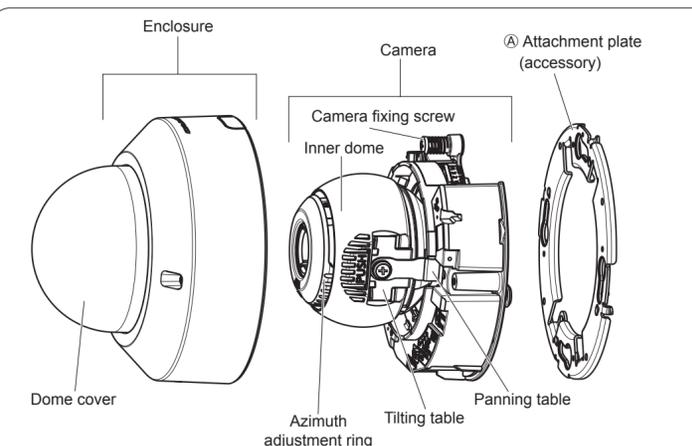
The following parts are used during installation procedures.

Ⓐ Attachment plate ..... 1 pc. Ⓔ External I/O terminal plug ..... 1 pc.  
Ⓑ Bit ..... 1 pc. Ⓕ MONITOR OUT conversion plug ..... 1 pc.  
Ⓒ Template A (for the attachment plate) 1 sheet. Ⓖ Cable tie ..... 2 pcs.  
Ⓓ Power cord plug ..... 1 pc. (of them, 1 for spare)



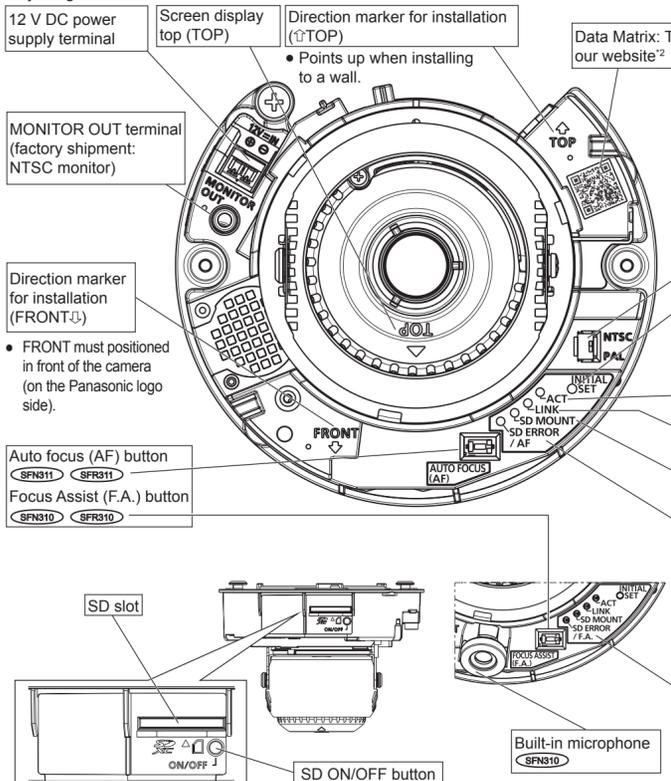
(Screw size 6.35 mm {1/4 inches} torx wrench)

\* The external I/O terminal plug and power cord plug are attached to the camera.



## Major operating controls

The component names of the camera are as follows. Refer to the illustration when installing or adjusting the camera.



\*1 SDXC/SDHC/SD memory card is described as SD memory card.  
\*2 Depending on the scanning application used, the Data Matrix may not be able to be read correctly. In this case, access the site by directly entering the following URL.  
http://security.panasonic.com/pss/security/support/qr\_sp\_select.html

### NTSC/PAL switch

- The MONITOR OUT terminal output can be switched for the NTSC monitor/PAL monitor.

### IMPORTANT:

- This is valid if the [Monitor out] is set to [Switch priority] ([Switch priority] is selected by default).  
For details, refer to the Operating Instructions (included in the CD-ROM).

### INITIAL SET button

- How to initialize the camera  
Follow the steps below to initialize the network camera.  
① Turn off the power of the camera. When using a PoE hub, disconnect the LAN cable from the camera. When using an external power supply, disconnect the power cable plug from the 12 V DC power supply terminal.  
② Turn on the power of the camera while holding down the INITIAL SET button, and then keep holding down the button for 5 seconds or more. About 2 minutes later, the camera will start up and the settings including the network settings will be initialized.

### IMPORTANT:

- When the camera is initialized, the settings including the network settings will be initialized. Note that the CRT key (SSL encryption key) used for the HTTPS protocol will not be initialized.
- Before initializing the settings, it is recommended to write down the settings in advance.
- Do not turn off the power of the camera during the process of initialization. Otherwise, it may fail to initialize and may cause malfunction.

### ACT indicator

- When data is being sent via the network camera Blinks green (accessing)

### LINK indicator

- When the camera is able to communicate with the connected device Lights orange

### SD MOUNT indicator

- When an SD memory card<sup>1</sup> is inserted and could be recognized Lights off → Blinks green → Lights off
- When data can be saved after the SD memory card is inserted and the SD ON/OFF button is pressed Lights off → Lights green
- When data can be saved to the SD memory card Lights green
- When the SD memory card is removed after holding down the SD ON/OFF button for about 2 seconds Lights green → Blinks green → Lights off
- When data cannot be saved to the SD memory card because an abnormality was detected or the SD memory card is configured not to be used Lights off

### SD ERROR/AF indicator (SFR311, SFR311, F.A. indicator (SFR310, SFR310)

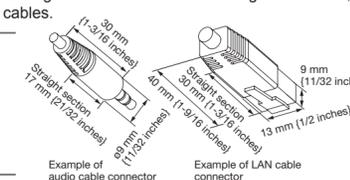
- When AF (Auto Focus) operation is being executed (SFR311, SFR311) Blinks red (Interval of 1 time/ second)
- When the focus assist function is activated (SFR310, SFR310) Blinks red (1 time)
- When the focus ring is positioned near the best focus position (SFR310, SFR310) Lights red
- When the set is being started Lights red
- When an SD memory card is recognized normally Lights red → Lights off
- When an abnormality is detected in SD card or the SD slot is not used after the camera has started. Lights red

## Making connections

Turn off each system's power supply before making a connection. Before making connections, prepare the required peripheral devices and cables.

### Note:

- Since the connector storage section does not have a sufficient space, use audio cables and a LAN cable that do not exceed the sizes described in the illustrations.

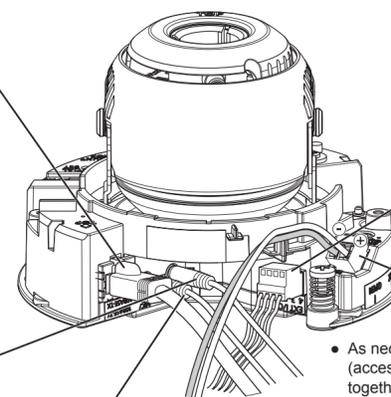


### Connect a LAN cable (category 5 or better, straight, STP: For Europe)

Connect a LAN cable (category 5 or better, straight, STP: For Europe) to the network connector.

### IMPORTANT:

- Use all 4 pairs (8 pins) of the LAN cable.
- The maximum cable length is 100 m (328 feet).
- Make sure that the PoE device in use is compliant with IEEE802.3af standard.
- When connecting both the 12 V DC power supply and the PoE device for power supply, 12 V DC will be used for power supply.\*
- If a 12 V DC power supply and a PoE hub or router are used at the same time, network connections may not be possible. In this case, disable the PoE settings. Refer to the operating instructions of the PoE hub or router in use.
- In the situation where a 12 V DC power supply and a PoE hub or router are used at the same time and the 12 V DC power supply is then disconnected, the power supply may be stopped and the camera may restart depending on the PoE hub or router used.
- When the LAN cable is disconnected once, reconnect the cable after around 2 seconds. When the cable is quickly reconnected, the power may not be supplied from the PoE device.



- As necessary, use a cable tie (accessory) to tie the cables together.

### Connect an external amplifier-embedded speaker to the audio output cable (SFR311, SFR311)

Connect a stereo mini plug (ø3.5 mm) (Audio output is monaural.). Use an external powered speaker.

- Output impedance : Approx. 600 Ω (unbalanced)
- Recommended cable length : Less than 10 m (32.8 feet)
- Output level : -20 dBV

### IMPORTANT:

- Connect/disconnect the audio cables and turn on the power of the camera after turning off the power of the audio output devices. Otherwise, loud noise may be heard from the speaker.
- Make sure that the stereo mini plug is connected to this cable. When a monaural mini plug is connected, audio may not be heard.  
When connecting a monaural speaker with amplifier, use a locally procured conversion cable (mono-stereo).

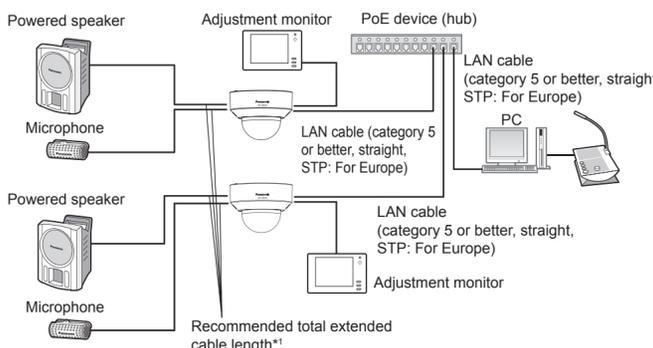
### Microphone/line input cable (SFR311, SFR311)

Connect a monaural mini plug (ø3.5 mm).

- Input impedance: Approx. 2 kΩ (unbalanced)
- Recommended cable length: Less than 1 m (3.28 feet) (for microphone input) Less than 10 m (32.8 feet) (for line input)
- Recommended microphone: Plug-in power type (option) Supply voltage: 2.5 V ±0.5 V
- Recommended sensitivity of microphone: -48 dB ±3 dB (0 dB=1 V/Pa, 1 kHz)
- Input level for the line input: Approx. -10 dBV

### When connecting to a network using a PoE hub

Before starting the installation, check the entire system configuration. The following illustration gives a wiring example of how to connect the camera to the network via a PoE device (hub).



### Connect the alarm input/output cable

Connect the cables of external devices to the EXT I/O terminal plug (accessory).  
① When connecting an external device, remove 8 mm - 9 mm (5/16 inches - 11/32 inches) of the outer jacket of the cable and twist the cable core to prevent the short circuit first. Specification of cable (wire): 20 AWG - 26 AWG, Single core, twisted  
② Push down the button of the desired terminal on the external I/O terminal plug with a ball-point pen, and release the button when the cable of the external device is fully inserted into the terminal hole.

### Note:

- Check whether the stripped part of the wire is not exposed and is securely connected.

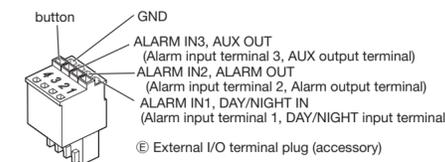
### <Ratings>

- ALARM IN1 (DAY/NIGHT IN), ALARM IN2, ALARM IN3  
Input specification : No-voltage make contact input (4 V - 5 V DC, internally pulled up)  
OFF : Open or 4 V - 5 V DC  
ON : Make contact with GND (required drive current: 1 mA or more)

### ALARM OUT, AUX OUT

- Output specification : Open collector output (maximum applied voltage: 20 V DC)  
Open : 4 V - 5 V DC by internal pull-up  
Close : Output voltage 1 V DC or less (maximum drive current: 50 mA)

\* The default of EXT I/O terminals is "Off".



### IMPORTANT:

- Do not connect 2 wires or more directly to a terminal. When it is necessary to connect 2 or more wires, use a splitter.
- Off, input, and output of the external I/O terminal 2 and 3 can be switched by configuring the setting. Refer to the Operating Instructions on the provided CD-ROM for further information about the EXT I/O terminal 2 and 3 (ALARM IN2, 3) settings ("Off", "Alarm input", "Alarm output" or "AUX output").
- Install external devices so that they do not exceed the rating of the network camera.
- When using the EXT I/O terminals as the output terminals, ensure they do not cause signal collision with external signals.

### Connect the power cable

### Caution:

- A READILY ACCESSIBLE DISCONNECT DEVICE SHALL BE INCORPORATED TO THE EQUIPMENT POWERED BY 12 V DC POWER SUPPLY.
- ONLY CONNECT 12 V DC CLASS 2 POWER SUPPLY (UL 1310/CSA 223) or LIMITED POWER SOURCE (IEC/EN/UL/CSA 60950-1).

Connect the output cable to the power cable plug (accessory).

- Loosen the screw of the power cable plug (accessory), strip 3 mm to 7 mm (1/8 inches to 9/32 inches) from the end of the wire, twist the stripped part of the wire sufficiently to avoid short circuit, and then connect the output cable to the power cable plug (accessory).
- Tighten the screw of the power cable plug. (Recommended tightening torque: 0.34 N·m (0.25 lbf·ft))

### Note:

- Check whether the stripped part of the wire is not exposed and is securely connected.
- When connecting an external power supply to the camera, use the 16 AWG to 24 AWG single-wired or stranded wired cables.

### IMPORTANT:

- The 12 V DC power supply shall be insulated from the commercial AC power.
- Be sure to use the power cable plug provided with this product.
- Be sure to fully insert the power cable plug into the 12 V DC power supply terminal. Otherwise, it may damage the camera or cause malfunction.
- When installing the camera, make sure that excessive force is not applied to the power cable.
- Be sure to use an AC adaptor compliant with the Specifications (written in the indication label on the bottom side of this unit) regarding power source and power consumption.

### <Required cable>

LAN cable (category 5 or better, straight, STP: For Europe)  
Use a LAN cable (category 5 or better, cross) when directly connecting the camera to a PC.

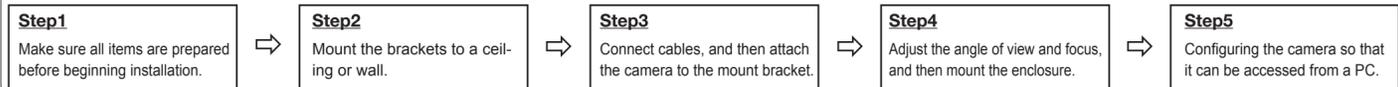
- \*1 Recommended cable length from the speaker : less than 10 m (32.8 feet)  
Recommended cable length from the microphone : less than 1 m (3.28 feet)

### IMPORTANT:

- The adjustment monitor is used for checking the adjustment of the angular field of view when installing the camera or when servicing. It is not provided for recording/monitoring use.
- Depending on the monitor, some characters (camera title, preset ID, etc.) may not be displayed on the screen.
- Use a switching hub or a router which is compliant with 10BASE-T/100BASE-TX.
- If a PoE hub is not used, each network camera must be connected to a 12 V DC power supply.
- When using 12 V DC, power supply from a PoE hub or router is not required.

# Installation

The installation tasks are explained using 5 steps.



## Step1 Preparations

There are 4 methods to install the camera to a ceiling or wall as described below. Prepare the required parts for each installation method before starting the installation. The following are the requirements for the various installation methods.

Installation method	Recommended screw	Minimum pull-out strength (per 1 pc.)
(1) Mount the camera on the two-gang junction box using the attachment plate.	M4 screws x 4	196 N {44 lbf}
(2) Directly mount the camera onto the ceiling or wall using the attachment plate (when wiring can be installed in the ceiling or wall).	M4 screws x 4	196 N {44 lbf}
(3) Mount the camera in the ceiling using WV-Q174B ceiling mount brackets (approx. 280 g {0.62 lbs}).*1	—	There is sufficient strength in the ceiling
(4) When mounting the camera on an insufficiently strong ceiling using the WV-Q105 ceiling mount brackets (approximately 150 g {0.33 lbs}).*1	anchor bolt x 2	*2

\*1 For information on mounting the camera using WV-Q174B or WV-Q105, refer to the Instruction Manual provided with the WV-Q174B or WV-Q105.

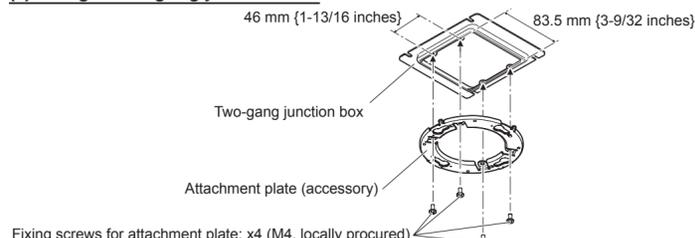
\*2 Make sure that the installed mount bracket can support more than 5 times of the weight of the camera.

### IMPORTANT:

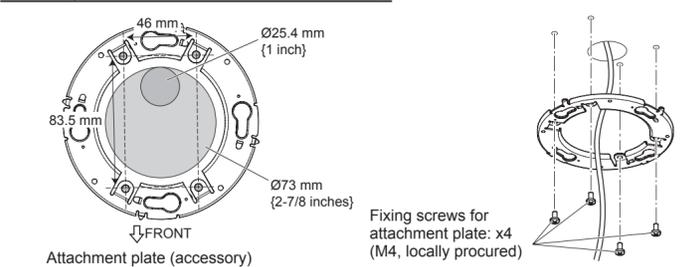
- Procure 4 screws (M4) to secure the attachment plate (accessory) to a ceiling or a wall.
- The minimum required pull-out capacity of a single screw or anchor bolt is 196 N {44 lbf} or more when mounting with the installation method [1] and [2] above.
- When mounting the camera on a concrete ceiling, use an AY plug bolt (M4) for securing. (Recommended tightening torque: 1.6 N·m {1.18 lbf·ft})
- Select screws according to the material of the ceiling that the camera will be mounted to. In this case, wood screws and nails should not be used.
- If a ceiling board such as plaster board is too weak to support the total weight, the area shall be sufficiently reinforced.

## Step2 Fixing the attachment plate

### (1) Using a two-gang junction box



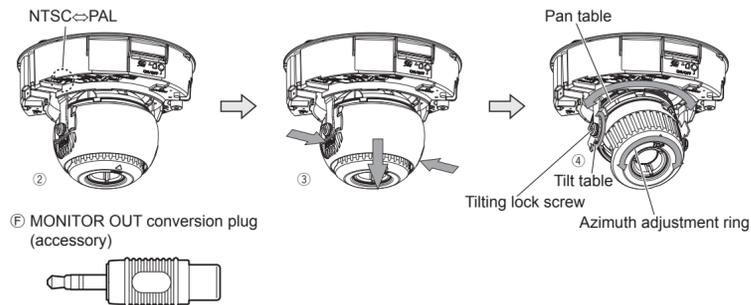
### (2) Using the Attachment plate (accessory)



- If the mounting direction of the camera has already been determined Align the FRONT direction (the direction of FRONT-⇨ marker on the camera that indicates the installation direction when installing the camera) of © template A with the desired direction, and drill through a 25.4 mm {1 inch} diameter hole.
- If the mounting direction of the camera is not determined yet or if you want to change the direction of the camera after it has been installed If you want to be able to change the direction of the camera, drill through a 73 mm {2-7/8 inches} diameter hole in the center. By doing so you can adjust the mounting direction of the camera in 90° increments.

## Step4 Adjustment

- Turn on power for the camera by either connecting a LAN cable or a 12 V DC power cable.
- Connect the MONITOR OUT conversion plug (accessory) to the MONITOR OUT terminal of the camera, and then connect the monitor for adjustment with a RCA pin cable (locally procured).
  - The camera is set to be connected to the NTSC monitor for adjustment at factory shipment.
- Press the PUSH position on both sides of the inner dome and remove the inner dome.
- Adjust the angle of the camera with the tilt table, pan table, and azimuth adjustment ring.
  - Horizontal position (Panning): ±180°
  - Vertical position (Tilting): ±85°
  - Image tilt adjustment: -225° (Left) to +120° (Right)
  - Tighten the cross slot tilting lock screw. (Recommended tightening torque: 0.59 N·m {0.44 lbf·ft})
- Adjust the zoom and focus while performing Step 4.



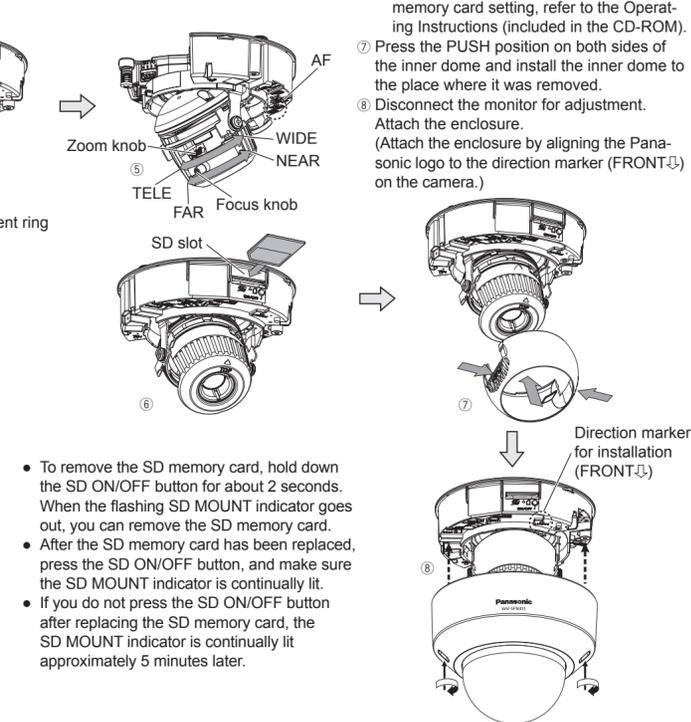
### Note:

- Depending on the adjustable range or the optical zoom, it must be noted that the shadow of the enclosure may be projected.
- When mounting the camera on a ceiling, adjust the tilt angle so that the TOP mark above the lens always comes to the top side.
- When the camera is installed to a wall, rotate the azimuth adjustment ring till the TOP mark above the lens always comes to the top side.
- When adjusting the viewing angle for cameras mounted to ceilings, the enclosure and installation auxiliary wire may be displayed on the screen depending on the direction the camera is facing. Move the enclosure and installation auxiliary wire so that they are not displayed on the screen.
- Remove the camera using the reverse order of the installation procedures.

### IMPORTANT:

- Securely tighten all the enclosure fixing screws (x2) of enclosure. Otherwise, camera dropping may result in injury. (Recommended tightening torque: 0.59 N·m {0.44 lbf·ft})
- Defocus may be caused by the reinstalled enclosure. In this case, perform the auto focus function from the setup menu. (SFR311) (SFR310)
- Remove the cover film from the dome cover.

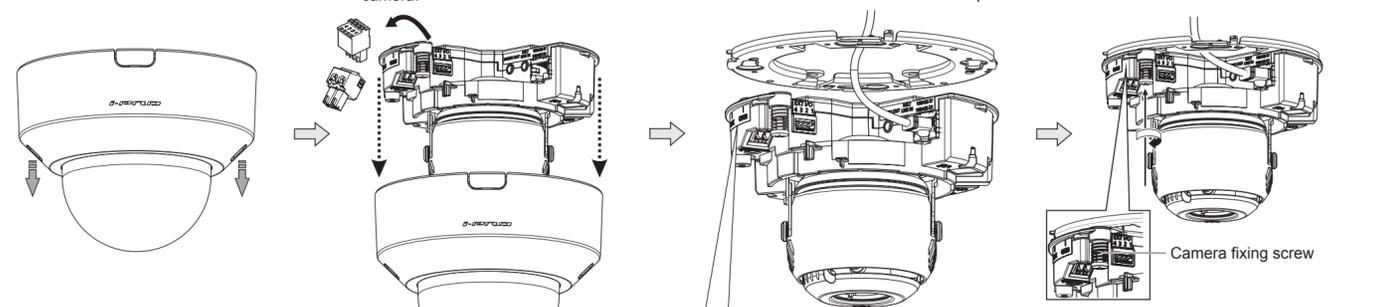
- Loosen the zoom knob and move the knob between TELE and WIDE to obtain the appropriate angle of view. Then, tighten the zoom knob.
- Move the focus knob between FAR and NEAR to obtain the appropriate focal length. Press the AF button to activate the auto focus function. (SFR311) (SFR310)
- Loosen the focus knob and move the knob between FAR and NEAR. Alternatively,



- To remove the SD memory card, hold down the SD ON/OFF button for about 2 seconds. When the flashing SD MOUNT indicator goes out, you can remove the SD memory card.
- After the SD memory card has been replaced, press the SD ON/OFF button, and make sure the SD MOUNT indicator is continually lit.
- If you do not press the SD ON/OFF button after replacing the SD memory card, the SD MOUNT indicator is continually lit approximately 5 minutes later.

## Step3 Mount the camera to the attachment plate

- Loosen 2 enclosure fixing screws of the enclosure.
- Remove the enclosure from the camera.
  - Remove the external I/O terminal plug and power cord plug attached to the camera.
- Connect cables to the camera according to the instructions in "Making connections", and temporarily fix the camera by inserting attachment mounting screws into the holes of the attachment plate.
- Secure the camera using the camera fixing screws.



### Note:

- Loosen 2 enclosure fixing screws using the bit (accessory).

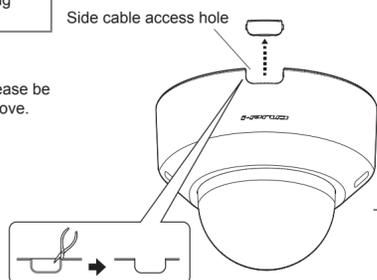
### IMPORTANT:

- Disconnect either the 12 V DC power source or PoE power source to prevent power from being supplied during mounting work.

- Do not remove the auxiliary wire. (SFR311) (SFR310)
- The camera is fixed only with special screws. Please be careful about the handling when you wish to remove. (SFR311) (SFR310)

### Using the side cable access hole

When installing the camera directly on the ceiling or wall with cables exposed, or when mounting the camera using the ceiling mount bracket WV-Q174B (option), cut out a portion of the dome cover to open a cable access hole.



### Note:

- After cables have been connected to the camera, align the OPEN mark of the camera side panel with the tab of the attachment plate, insert 2 attachment mounting screws into the attachment plate, and rotate the camera by approximately 15°. The LOCK mark is moved to the tab position of the attachment plate and the camera is temporarily secured.

## Step5 Configure the network settings

### Configuring the camera so that it can be accessed from a PC

The following are descriptions for when the camera with default settings is configured. If you are using firewall software on your PC, the Setup Program may not be able to find any cameras on your network. Configure the setting of the camera after temporarily invalidating the firewall software. Contact the network administrator or your Internet service provider for information about configuring the settings of the network.

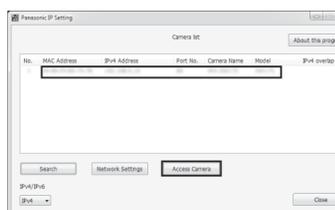
- Insert the provided CD-ROM into the CD-ROM drive of your PC.
  - The License Agreement will be displayed. Read the Agreement and choose "I accept the term in the license agreement", and click [OK].
  - The launcher window will be displayed. If the launcher window is not displayed, double click the "CDLauncher.exe" file on the CD-ROM.



### Note:

- Refer to "Using the CD-ROM" in the Operating Instructions on the provided CD-ROM for further information about CDLauncher.

- Click the [Run] button next to [IP Setting Software]. [Panasonic IP Setting] screen will be displayed. When a camera is found, information about it, such as its MAC address and IP address, is displayed.
- Select the camera you want to configure, and click [Access Camera].



### Note:

- When cameras are displayed in [Panasonic IP Setting] screen, click the camera with same MAC address as the MAC address printed on the camera that you want to configure.

- If the installation screen of the viewer software "Network Camera View 4S" is displayed, follow the instructions of the wizard to start the installation. (The viewer software is installed from the camera.)

- The "Live" page will be displayed.
- If you cannot install the viewer software "Network Camera View 4S" or if images are not displayed, click the [Install] button next to [Viewer Software] on the launcher window to install the software.
- Perform the [Time & date] settings in the "Setup" - "Basic" page before using the camera.

### Note:

- When no image is displayed on the "Live" page, refer to the Troubleshooting in the Operating Instructions on the provided CD-ROM.
- It is possible to enhance the network security by encrypting the access to cameras using the HTTPS function. Refer to the Operating instructions on the provided CD-ROM for how to configure the HTTPS settings.
- Click the [Setup] button on the "Live" page, the user authentication window will be displayed. Enter the default user name and password as follows, and log in.
  - User name: admin
  - Password: 12345
- When changing settings related to the network settings, such as connection mode, IP address, and subnet mask, click the [Network Settings] button in [Panasonic IP Setting] screen as shown in step 3, then change each setting.
- Due to security enhancements in "IP Setting Software", "Network settings" of the camera to be configured cannot be changed when around 20 minutes have passed after turning on the power of the camera. (When the effective period is set to "20 min" in the "Easy IP Setup accommodate period".) However, settings can be changed after 20 minutes for cameras in the initial set mode.
- "Network Camera Recorder with Viewer Software Lite" which supports live monitoring and recording images from multiple cameras is available. For further information, refer to our website (<http://security.panasonic.com/pss/security/support/info.html>).