Panasonic

Installation Guide

Included Installation Instructions

Network Camera

Model No. WV-SFN480

- This manual describes the installation procedures, network camera installation, cable connections, and the direction of the image adjustment.
- Before reading this manual, be sure to read the Important Information.

For U.S. and Canada:

Panasonic System Communications Company of North America, Unit of Panasonic Corporation of North America
www.panasonic.com/business/
For customer support, call 1.800.528.6747
Two Riverfront Plaza, Newark, NJ 07102-5490

Panasonic Canada Inc.
5770 Ambler Drive, Mississauga,
Ontario, L4W 2T3 Canada
(905)624-5010
www.panasonic.ca

For Europe and other countries:

Panasonic Corporation
http://www.panasonic.com

Panasonic Corporation
Osaka, Japan

Authorised Representative in EU:

Panasonic Testing Centre
Panasonic Marketing Europe GmbH
Winsbergring 15, 22525 Hamburg, Germany

PGQX1666WA Cs1114-3047 Printed in China

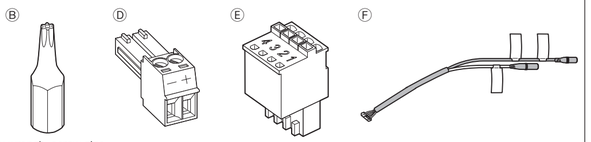
Standard accessories

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

*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.

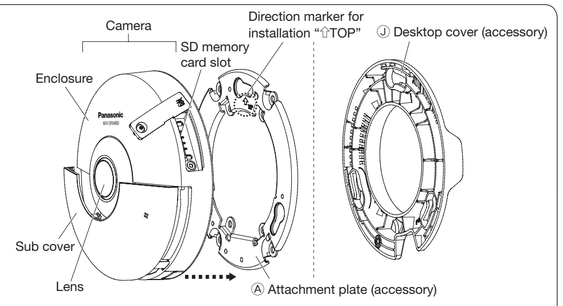
The following parts are used during installation procedures.

Ⓐ Attachment plate ..... 1 pc.
Ⓑ Bit (Hex wrench, screw size 6.35 mm {1/4 inches} T10) ..... 1 pc.
Ⓒ Template A ..... 1 sheet
Ⓓ Power cord plug ..... 1 pc.
Ⓔ External I/O terminal plug ..... 1 pc.
Ⓕ Audio cable ..... 1 pc.
Ⓖ Cable tie ..... 2 pcs. (incl. 1 spare)
Ⓗ Safety wire lug ..... 1 pc.
Ⓘ Wire lug fixing screws (M2.5 x 8 mm {5/16 inches}) ..... 2 pcs. (incl. 1 spare)
Ⓙ Desktop cover ..... 1 pc.
Ⓚ Safety wire ..... 1 pc.
Ⓛ Washer ..... 1 pc.
Ⓜ Spring washer ..... 1 pc.



(Hex wrench, screw size 6.35 mm {1/4 inches} T10)

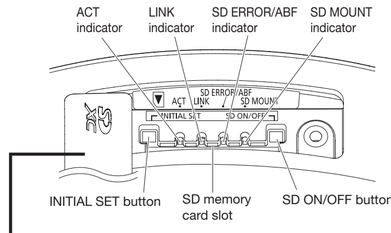
* The external I/O terminal plug and power cord plug are attached to the camera.



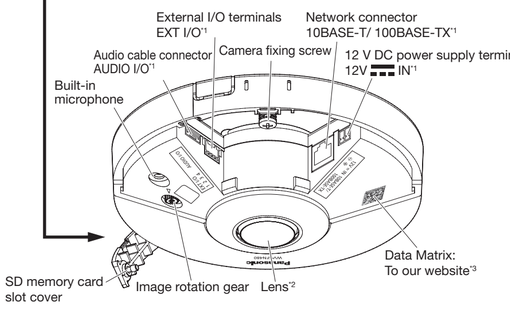
Major operating controls

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

<Inside view of the SD memory card slot cover (with SD memory card slot cover opened)>



<Inside view of the sub cover (with sub cover removed)>



*1 The detailed specifications on the right side of this page describe each terminal and cable.
*2 Do not directly touch the lens surface with your hands. Fingerprints, etc. may cause the image quality to deteriorate. Also, the lens may slightly retract when its surface is touched. This is not a malfunction.
*3 Data Matrix is our website address converted into a two-dimensional barcode. 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
*4 SDXC/SDHC/SD memory card is described as SD memory card.

INITIAL SET button

- How to initialize the camera
  Follow the steps below to initialize the network camera.
  ①Turn 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.
  ②Turn 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 ERROR/ABF indicator

• When ABF (Auto Back Focus) operation is being executed	Blinks red (Interval of 1 time/ second)
• When the set is being started	Lights red
• When an SD memory card*4 is recognized normally	Lights red → Lights off
• When the SD memory card slot is not used or an abnormality is detected in SD memory card after the camera has started	Lights red → Stays red

SD MOUNT indicator

• When an SD memory card 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 (recording) Lights green → Lights off (waiting for recording)
• 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 ON/OFF button

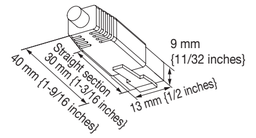
①When the SD ON/OFF button is pressed, data can be saved to the SD memory card.
②When the SD ON/OFF button is held down for about 2 seconds, the SD MOUNT indicator goes out, and the SD memory card can be removed.

Note:
- The ACT indicator, Link indicator, SD ERROR/ABF indicator, and SD MOUNT indicator inside the SD memory card slot cover can be turned off. (Indicators are set to light or blink in the default settings.)
  Turn off the indicators as required according to the installation environment. (☞ Operating Instructions (included in the CD-ROM))

Making connections

Before making connections, prepare the required peripheral devices and cables, and turn off each system's power supply.

Note:
- Since the connector storage section does not have a sufficient space, use a LAN cable that does not exceed the sizes described in the illustrations.

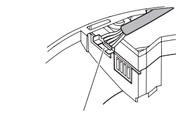


Example of LAN cable connector

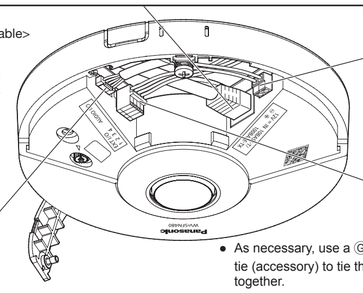
Connect a LAN cable

IMPORTANT:
- Use all 4 pairs (8 pins) of the LAN cable(category 5 or better, straight, STP).
- 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.
  * Depending on the PoE device used, if you stop the 12 V DC power supply after operating it and a PoE hub or router at the same time, the power supply may stop, causing the camera to restart.
- 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.

<How to remove the audio cable>



Audio cable connector hook
* Press the hook of the connector, and then remove the audio cable connector.



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

Connecting an external speaker with amplifier to the audio/monitor output plug of the audio cable

Connect a stereo mini plug (ø3.5 mm).*
- Output impedance : Approx. 600 Ω (unbalanced)
- Recommended cable length : Less than 10 m {32.8 feet}
- Output level : –20 dBV (can switch to monitor output)

* Use an external powered speaker.

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).

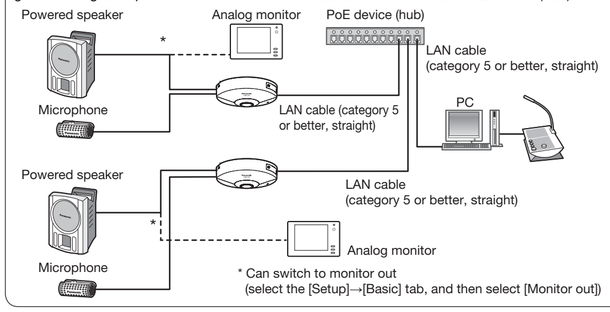
Note:
- Audio out is selected for the audio/monitor output plug by default. The plug can be used for monitor out by selecting the [Setup]→[Basic] tab, and then selecting [Monitor out]. (The ø3.5 mm monaural mini plug⇔RCA pin jack conversion cable is locally procured.)

Connecting the microphone to the MIC IN plug of the audio cable

Connect a stereo 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).



* Can switch to monitor out (select the [Setup]→[Basic] tab, and then select [Monitor out])

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).
①Loosen the screw of the power cable plug and strip 3 mm to 7 mm {1/8 inches to 9/32 inches} of the outer jacket. Expose the cable core (sufficiently twist any strand wires) and then insert the cable into the power cable plug.
②Tighten the screw of the power cable plug. (Recommended tightening torque: 0.34 N·m {0.25 lbf·ft})

Note:
- Fully insert the stripped cable core into the Ⓓ power cable plug (accessory), and check that the cable core of the wiring is not protruding out and shorting with the adjacent terminal.
- When connecting an external power supply to the camera, use the AWG 16 - AWG 24 single-wired or stranded wired cables.

IMPORTANT:
- Use 12 V DC power supply that is insulated from the commercial AC power.
- Be sure to use the Ⓓ power cord plug (accessory) provided with this product.
- Be sure to fully insert the Ⓓ power cord plug (accessory) 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.

Connect the alarm input/output cable

Connect the cables of external devices to the Ⓔ external I/O terminal plug (accessory).
①Strip 8 mm to 9 mm of the outer jacket of the cable. Expose the cable core (sufficiently twist any stand wires) and then insert the cable into the Ⓔ external I/O terminal plug (accessory).
Specification of cable (wire): AWG 20 - AWG 26, single-wired or stranded wired cables.
②Push 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:
- Fully insert the stripped cable core into the Ⓔ external I/O terminal plug (accessory), and check that the cable core of the wiring is not protruding out and shorting with the adjacent terminal.

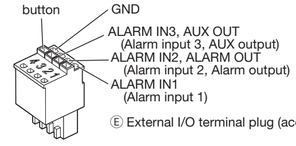
<Ratings>
- ALARM IN1, ALARM IN2, ALARM IN3

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 external I/O terminals is "Off".



Ⓔ External I/O terminal plug (accessory)

IMPORTANT:
- Be sure to use the Ⓔ external I/O terminal plug (accessory) provided with this product.
- Do not connect 2 wires or more directly to a terminal. When it is necessary to connect 2 or more wires, use a splitter.
- Install external devices so that they do not exceed the rating of the network camera.
- When using the external I/O terminals as the output terminals, ensure they do not cause signal collision with external signals.

Note:
- 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 external I/O terminal 2 and 3 (ALARM IN2, 3) settings ("Off", "Alarm input", "Alarm output" or "AUX output").

<Required cable>
LAN cable (category 5 or better, straight)
Use a LAN cable (category 5 or better, cross) when directly connecting the camera to a PC.

IMPORTANT:
- The analog monitor is used when servicing the camera. 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 4 steps.

Step1
Make sure all items are prepared before beginning installation.

⇨

Step2
Mount the brackets to a ceiling or wall.

⇨

Step3
Connect cables, and then attach the camera to the mount bracket.

⇨

Step4
Adjust the direction of the image.

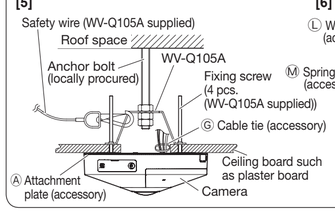
Step1 Preparations

There are 6 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.

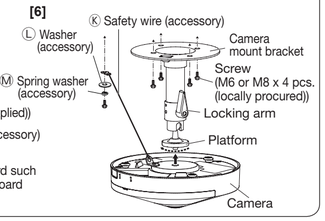
Installation method	Recommended screw	Minimum pull-out strength
[1] Mounting the camera on the two-gang junction box of the ceiling or wall using the Ⓐ attachment plate (accessory)	M4 screws x 4	196 N {44 lbf}/ 1pc.
[2] Directly mount the camera onto the ceiling or wall using the attachment plate	M4 screws x 4	196 N {44 lbf}/ 1pc.
[3] Placing the camera on a table using the Ⓙ desktop cover (accessory)	—	—
[4] Mounting the camera on a standard tripod stand (locally procured)*1	—	—
[5] When mounting the camera on an insufficiently strong ceiling using the WV-Q105A (ceiling mount brackets: approximately 150 g {0.33 lbs})*2	anchor bolt x 2	*3
[6] For mounting on ceiling*4 (mount bracket: approx. 260 g {0.57 lbs}, camera: 400 g {0.88 lbs})*2	M6 or M8 screws x 4	562 N {126 lbf}/ 1 pc.
	M4 x 1 (for the safety wire)	24.5 N {5.5 lbf}

*1 Size of the camera bracket mounting hole: 1/4-20UNC camera tripod mounting hole (depth 6.0 mm (1/4 inches)).
*2 Refer to the operating instructions included with the WV-Q105A or the mounting bracket (locally procured) for the procedure on installing the camera using the respective bracket.
*3 Make sure that the installed mount bracket can support more than 5 times of the total weight of the camera, brackets and anchor bolt itself.

[5]



[6]



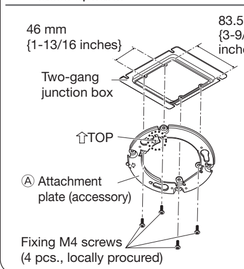
IMPORTANT:
- Procure 4 screws (M4) to secure the Ⓐ attachment plate (accessory) to a ceiling or a wall.
- When mounting the camera on a concrete ceiling, use an AY plug bolt (M4) for securing. (Recommended tightening torque: 1.6 N·m {1.18 lbf·ft})
- Select screws according to the material of the ceiling or wall that the camera will be mounted to. Do not use wood screws and nails.
- If a ceiling board such as plaster board is too weak to support the total weight, the area shall be sufficiently reinforced.

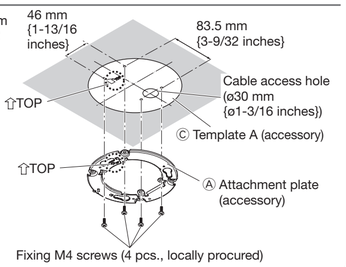
Step2 Fixing the attachment plate

(1) Using a two-gang junction box

(2) Using the attachment plate (accessory)

Note:
- The direction of "⇧TOP" on the Ⓐ attachment plate (accessory) determines the upwards direction of the image on the PC monitor.
- When mounting on a ceiling, determine the direction that you want images to be displayed upwards on the PC monitor, and then mount so that the Ⓐ attachment plate (accessory) aligns with "⇧TOP" on Ⓒ template A (accessory).
- When installing on a wall, attach the Ⓐ attachment plate (accessory) so that "⇧TOP" faces upward.



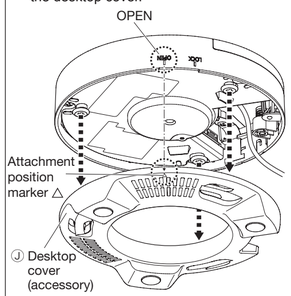


Step3 Camera mounting (continued)

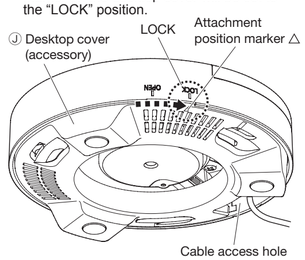
■ When installing the camera on a desktop or standard tripod stand (locally procured)

When installing the camera on a desktop or standard tripod stand (locally procured), attach the Ⓙ desktop cover (accessory) to the camera. The Ⓐ attachment plate (accessory) is not used when installing the camera on a desktop or standard tripod stand (locally procured).

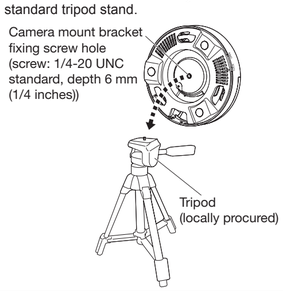
①Connect the cables to the camera.
②Align the attachment position marker on the desktop cover with "OPEN" on the side of the camera, and engage the camera attachment fixing screws in the rear of the camera with the camera mounting holes of the desktop cover.



③Rotate the desktop cover in the direction of the arrow to secure the camera. Process the wiring by passing the cables through the cable access hole in the desktop cover. Make sure that the attachment position marker on the desktop cover will be set to the "LOCK" position.



④When mounting on a standard tripod stand (locally procured), attach the desktop cover to the camera before mounting on the standard tripod stand.



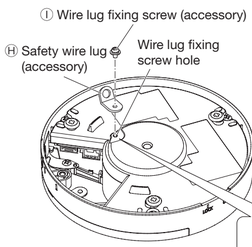
Note:
The screw hole in the Ⓙ desktop cover (accessory) is not used.

IMPORTANT:
- Because the bottom side of the camera may become hot, make sure to use the camera with the Ⓙ desktop cover (accessory) attached.
- The specified operating temperatures for the camera are -10 °C to +40 °C {14 °F to 104 °F} when it is installed on a desktop or standard tripod stand.
- Use a standard tripod stand with a tripod head of ø75 mm or less.
- When mounting on a standard tripod stand, take care because knocking over the tripod or damaged screws may cause the camera to fall.
- Use a standard tripod stand that is capable of supporting a load more than the weight of the camera (440 g {0.97 lbs}).

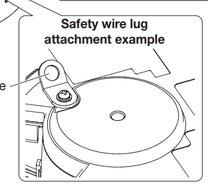
■ When mounting the camera on the WV-Q105A or the mounting bracket (locally procured)

Refer to the operating instructions included with the WV-Q105A or the mounting bracket (locally procured) for the procedure on installing the camera using the respective bracket. The following are descriptions of Ⓚ safety wire (accessory) attachment when mounting the camera on the mounting bracket (locally procured).

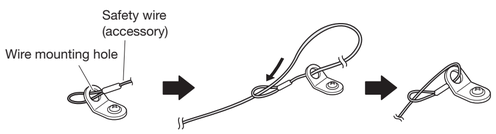
①Secure the Ⓗ safety wire lug (accessory) to the camera with the Ⓘ wire lug fixing screw (accessory). Secure the safety wire lug as shown in the following illustrations.



IMPORTANT:
- Make sure to attach the safety wire lug so that the wire mounting hole faces outward. When it is attached facing inward, it may touch the camera mount bracket.
- Use the Ⓘ wire lug fixing screw (accessory) to attach the Ⓗ safety wire lug (accessory). When using different length screws, it may damage the camera or cause the camera to fall. (Recommended tightening torque: 0.39 N·m {0.29 lbf·ft})



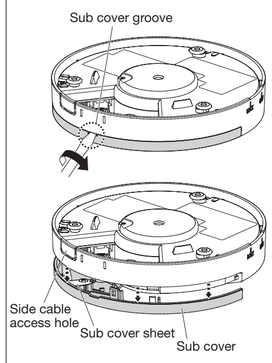
②Attach the safety wire (accessory) to the wire mounting hole of the safety wire lug. (The camera is not shown in the following illustrations.)



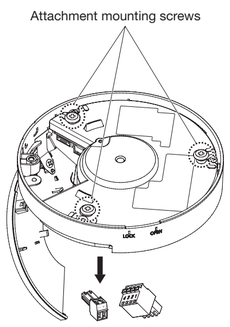
Step3 Camera mounting

■ When using the attachment plate

①Insert a thin slotted head screwdriver, etc. into the sub cover groove of the camera, rotate the slotted head screwdriver as shown in the illustration below, and then remove the sub cover.

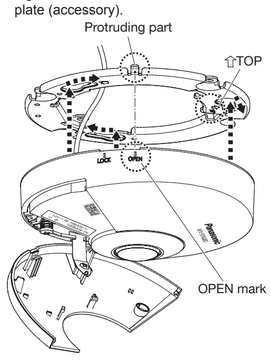


②Remove the Ⓓ power cord plug (accessory) and Ⓔ external I/O terminal plug (accessory) attached to the camera.
③Check the position of the 3 attachment mounting screws on the bottom side of the camera.

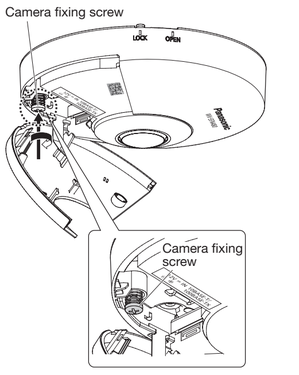


* Wiring and the sub cover are not shown in some illustrations from this point.

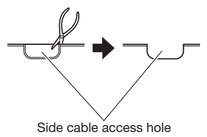
④Connect cables to the camera according to the instructions in "Making connections", and fix the camera by inserting attachment mounting screws into the holes of the Ⓐ attachment plate (accessory).



⑤Secure the camera using the camera fixing screw. (Recommended tightening torque: 0.78 N·m {0.58 lbf·ft})



Note:
- When installing the camera directly on the ceiling or wall with cables exposed, cut out a portion of the enclosure to open a cable access hole.



IMPORTANT:
- Because the sub cover is attached to the camera with the sub cover sheet, do not pull the sub cover with excessive force. Failure to observe this may damage the sub cover.
- To prevent injury and protect cables, smooth opened cable access holes of the enclosure with a file or other tool.
- To prevent filings or other substances entering inside the camera, open the sub cover when using a file or other tool to smooth the cable access holes.

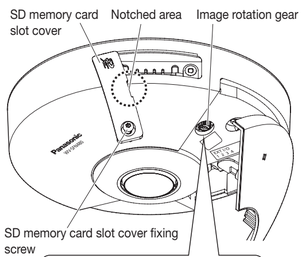
IMPORTANT:
- Disconnect either the 12 V DC power source or PoE power source to prevent power from being supplied while mounting the camera.

Note:
- After the cables have been connected to the camera, align the direction of the Panasonic logo on the camera with "⇧TOP" of the Ⓐ attachment plate (accessory). Align the OPEN mark on the side of the camera with the protruding part of the attachment plate, insert 3 attachment mounting screws into the attachment plate, rotate the camera approximately 15 °, and move the LOCK mark to the protruding part of the attachment plate to temporarily secure the camera.
- After connecting the cables, use a Ⓖ cable tie (accessory) for wiring processing as necessary.

IMPORTANT:
- Be sure to tighten the camera fixing screw. Failure to observe this may cause camera trouble due to camera falling. (Recommended tightening torque: 0.78 N·m {0.58 lbf·ft})

Step4 Adjustment

①Loosen the SD memory card slot cover fixing screw on the side of the camera using the Ⓑ bit (accessory), then insert the tip of a small slotted head screwdriver, etc. into the notched area to remove the SD memory card slot cover.
②Remove the cover film from the lens surface.
③Turn on the camera. The LINK indicator inside the SD memory card slot cover lights. Make sure that the ACT indicator is blinking. (Refer to the descriptions in "Major operating controls" for more information about the indicators.)
* After turning on the camera, there may be a sound produced from the lens for several seconds. This is not a malfunction.



* Part of the sub cover is not shown.

④Perform camera settings while referring to the included "Configure the settings of the camera" (leaflet), and check if camera images are displayed on the PC monitor.
⑤Align the upwards direction of the image while rotating the image rotation gear and checking the image on the PC monitor.

Rotate the image rotation gear using the bit (accessory), and align the upwards direction of the image as necessary.
Rotating the image rotation gear clockwise also rotates the PC image clockwise. Rotating the image rotation gear counterclockwise also rotates the PC image counterclockwise.

Adjustable range of the PC image
-45° to +45°

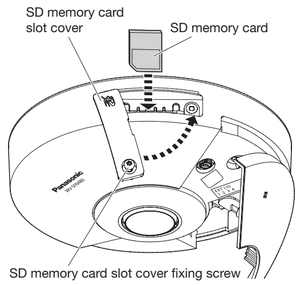
- The default position of the image rotation gear is 0°.
- When using Double Panorama, if the image rotation gear is in its default position, images are display at a 45° angle.
  If you want to divide Double Panorama images horizontally or vertically, adjust the image rotation gear.
  Adjustments to the image rotation gear are applied to all image capture modes, including Double Panorama.

Note:
- When Double Panorama or Panorama is selected for the Image capture mode, you can rotate the image at 90° intervals by using preset position settings. To make further fine adjustments to the image angle, adjust the image rotation gear. Refer to 11.1 and 11.5.4 of the Operating Instructions for more information.

Note:
Take care of the following points when using monitor out.
- Select "9M Fisheye" or "4M Fisheye" for "Image capture mode".
- Locally procure the ø3.5 mm monaural mini plug⇔RCA pin jack conversion cable.
- Select the [Setup]→[Basic] tab, and then select On (NTSC) or On (PAL) for [Monitor out].

⑥Insert an SD memory card into the slot, if necessary.
- Insert the SD memory card with its label facing down.

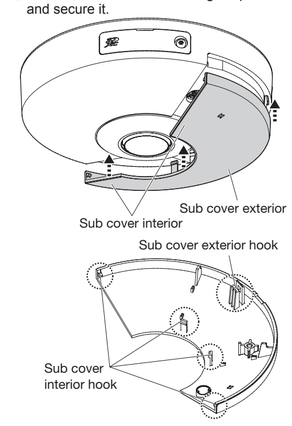
⑦Close the SD memory card slot cover, and tighten the SD memory slot cover slot cover fixing screw to secure the cover. (Recommended tightening torque: 0.39 N·m {0.29 lbf·ft})



* Part of the sub cover is not shown.

- To remove the SD memory card, hold down the SD ON/OFF button for about 2 seconds. When the 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.

⑧Return the sub cover to its original position and secure it.



- Secure the sub cover exterior hook first, then push in the interior hook.

IMPORTANT:
- Ensure that the SD memory card slot cover's fixing screw is firmly secured.
- Make sure that the sub cover is securely fixed.
- After the installation is completed, clean the lens surface with a soft cloth, etc.
- After the installation is complete, if the image is out of focus, turn off the camera, and then turn it on again. If the image is still out of focus, select the [Image/Position] tab from [Setup]→[Image/Audio], and then readjust the back focus from [Setup>>] of [Back focus].

*** When removing the camera, perform removal by following the installation procedure in the reverse order.**