



Panasonic®

Installation Guide

Included Installation Instructions

Network Camera

Model No. **WV-SP509/WV-SP508**



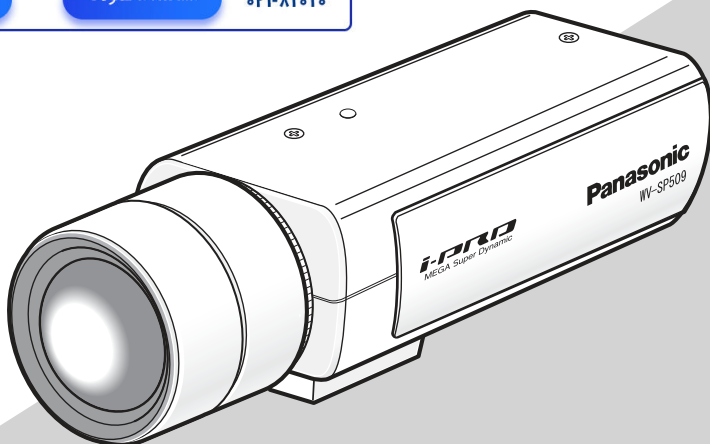
خرید دوربین‌های
تحت شبکه پاناسونیک



idehal.org
۰۲۱-۸۱۰۱۰

بیا خرید آنلاین

مشاهده محصولات



Lens: Option
(This illustration represents WV-SP509.)



Before attempting to connect or operate this product, please read these instructions carefully and save this manual for future use.

The model number is abbreviated in some descriptions in this manual.
This document is the Installation Guide for use in other countries except Japan.

WARNING:

- To prevent injury, this apparatus must be securely attached to the floor/wall/ceiling in accordance with the installation instructions.
- To prevent fire or electric shock hazard, do not expose this apparatus to rain or moisture.
- The installation shall be carried out in accordance with all applicable installation rules.
- The connections should comply with local electrical code.

For Canada

CAN ICES-3(A)/NMB-3(A)

For U.S.A

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications.

Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

FCC Caution: To assure continued compliance, (example - use only shielded interface cables when connecting to computer or peripheral devices). Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

For U.S.A

The model number and serial number of this product may be found on the surface of the unit. You should note the model number and serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. _____

Serial No. _____

For Europe

We declare under our sole responsibility that the product to which this declaration relates is in conformity with the standard or other normative document following the provisions of Directive 2004/108/EC.

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Nous déclarons sous notre propre responsabilité que le produit auquel se réfère la présente déclaration est conforme à la norme spécifiée ou à tout autre document normatif conformément aux dispositions de la directive 2004/108/CE.

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Vi erklærer oss alene ansvarlige for at produktet som denne erklæringen gjelder for, er i overensstemmelse med følgende norm eller andre normgivende dokumenter som følger bestemmelsene i direktiv 2004/108/EC.

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*SDXC/SDHC/SD memory card is described as SD memory card.

Important safety instructions

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.



- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

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- (1) ANY DAMAGE AND LOSS, INCLUDING WITHOUT LIMITATION, DIRECT OR INDIRECT, SPECIAL, CONSEQUENTIAL OR EXEMPLARY, ARISING OUT OF OR RELATING TO THE PRODUCT;
- (2) PERSONAL INJURY OR ANY DAMAGE CAUSED BY INAPPROPRIATE USE OR NEGLIGENT OPERATION OF THE USER;
- (3) ALL MALFUNCTIONS OR TROUBLES FROM UNAUTHORIZED DISASSEMBLE, REPAIR OR MODIFICATION OF THE PRODUCT BY THE USER, REGARDLESS OF THE CAUSE OF THE MALFUNCTION OR TROUBLE;
- (4) INCONVENIENCE OR ANY LOSS ARISING WHEN IMAGES ARE NOT DISPLAYED, DUE TO ANY REASON OR CAUSE INCLUDING ANY FAILURE OR PROBLEM OF THE PRODUCT;
- (5) ANY PROBLEM, CONSEQUENTIAL INCONVENIENCE, OR LOSS OR DAMAGE, ARISING OUT OF THE SYSTEM COMBINED BY THE DEVICES OF THIRD PARTY;
- (6) ANY CLAIM OR ACTION FOR DAMAGES, BROUGHT BY ANY PERSON OR ORGANIZATION BEING A PHOTOGENIC SUBJECT, DUE TO VIOLATION OF PRIVACY WITH THE RESULT OF THAT SURVEILLANCE-CAMERA'S PICTURE, INCLUDING SAVED DATA, FOR SOME REASON, BECOMES PUBLIC OR IS USED FOR ANY PURPOSE;
- (7) LOSS OF REGISTERED DATA CAUSED BY ANY FAILURE.

Preface

The network camera WV-SP509/WV-SP508 is designed to operate using a PC on a network (10BASE-T/100BASE-TX).

By connecting to a network (LAN) or the Internet, images and audio from the camera can be monitored on a PC via a network.

Note:

- It is necessary to configure the network settings of the PC and its network environment to monitor images from the camera on the PC. It is also necessary to install a web browser on the PC.
-

About notations

The following notations are used when describing the functions limited for specified models. The functions without the notations are supported by all models.

SP509

: The functions with this notation are available when using the model WV-SP509.

SP508

: The functions with this notation are available when using the model WV-SP508.

Main functions

H.264 and JPEG triple encoding

H.264 dual stream output and JPEG output can be simultaneously provided.

* H.264 stream1: 1920x1080/ max. 30 fps

H.264 stream2: 640x360/ max. 30 fps

Cropping function (the function of cutting out the image capture area)

At the same time as providing the whole image, it is possible to provide the part cut out from whole image. Up to 4 image capture areas can be specified, and it is also possible to control the sequence.

* It is possible to control its sequence and transmit the image cut out only when H.264 stream2 is provided.


VIQS function (Variable Image Quality on Specified area)

It is possible to provide specified areas with high quality image without changing the overall size of the data. Up to 2 areas can be specified.

The adjustment function of compensation for the distorted images

It is possible to compensate for lens distortion. The amount of compensation performed can be adjusted.

SDXC/ SDHC/ SD memory card slot equipped **SP509**

It is possible to save H.264 videos and JPEG images on the SDXC/ SDHC/ SD memory card manually at an alarm occurrence, during the period of the schedule, or on a web browser. It is also possible to save JPEG images at a network failure occurrence. (Download is possible.)
(Recommended SDXC/ SDHC/ SD memory card  page 35)

Introduction of Super Dynamic

(Operating Instructions (included in the CD-ROM))

MEGA Super Dynamic compensates brightness on a pixel-to-pixel so that it produces clearer images even if objects have various illumination intensities.

Auto back focus (ABF) function

Auto back focus (ABF) ensures easy installation and stable focus in both color and black & white modes.

About the user manuals

There are 2 sets of operating instructions for the WV-SP509, WV-SP508 as follows.

- Installation Guide: Explains how to install and connect devices.
- Operating Instructions (included in the CD-ROM): Explains how to perform the settings and how to operate this camera.

Adobe® Reader® is required to read these operating instructions on the provided CD-ROM.

When the Adobe Reader is not installed on the PC, download the latest Adobe Reader from the Adobe web site and install it.

"SP509, SP508" shown in the instructions and illustrations used in these operating instructions indicate the WV-SP509, WV-SP508.

English screens are used in these operating instructions.

System requirements for a PC

CPU:	Intel® Core™ 2 Duo 2.4 GHz or faster recommended
Memory:	512 MB or more (A minimum of 1 GB memory is required when using Microsoft® Windows® 7 or Microsoft® Windows Vista®.)
Network Interface:	10BASE-T/100BASE-TX 1 port
Audio interface:	Sound card (when using the audio function)
Monitor:	Image capture size: 1024 x 768 pixels or more Color: 24-bit True color or better
OS:	Microsoft® Windows® 7 Microsoft® Windows Vista® Microsoft® Windows® XP SP3
Web Browser:	Windows® Internet Explorer® 9.0 (32-bit) Windows® Internet Explorer® 8.0 (32-bit) Windows® Internet Explorer® 7.0 (32-bit) Microsoft® Internet Explorer® 6.0 SP3
Other:	CD-ROM drive (It is necessary to read the operating instructions and use the software on the provided CD-ROM.) DirectX® 9.0c or later Adobe® Reader® (It is necessary to view the PDF file on the provided CD-ROM.)

IMPORTANT:

- When using a PC that does not meet the above requirements, displaying of images may become slower or the web browser may become inoperable.
 - Audio may not be heard if a sound card is not installed on a PC. Audio may be interrupted depending on the network environment.
 - Microsoft Windows 7 Starter, Microsoft Windows Vista Starter and Microsoft Windows XP Professional 64-bit Edition are not supported.
 - When using IPv6 for communication, use Microsoft Windows 7 or Microsoft Windows Vista.
-

Note:

- For further information about PC system requirements and precautions for when using Microsoft Windows 7, Microsoft Windows Vista, or Windows Internet Explorer, click "Manual" - "Open" from the supplied CD-ROM and refer to "Notes on Windows® / Internet Explorer® versions".
- If using Microsoft Windows XP, screen tearing* may occur when the shooting scene drastically changes (for example, while shooting fast-moving subjects) due to the GDI restrictions of the OS.

* A phenomenon in which portions of the screen are displayed out of alignment

- For information on the operation verification of the supported operating systems and web browsers, refer to our website at <http://security.panasonic.com/pss/security/support/index.html>.
-

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Network security

As you will use this unit connected to a network, your attention is called to the following security risks.

- ① Leakage or theft of information through this unit
- ② Use of this unit for illegal operations by persons with malicious intent
- ③ Interference with or stoppage of this unit by persons with malicious intent

It is your responsibility to take precautions such as those described below to protect yourself against the above network security risks.

- Use this unit in a network secured by a firewall, etc.
- If this unit is connected to a network that includes PCs, make sure that the system is not infected by computer viruses or other malicious entities (using a regularly updated anti-virus program, anti-spyware program, etc.).
- Protect your network against unauthorized access by restricting users to those who log in with an authorized user name and password.
- Apply measures such as user authentication to protect your network against leakage or theft of information, including image data, authentication information (user names and passwords), alarm mail information, FTP server information and DDNS server information.
- After the unit is accessed by the administrator, make sure to close the browser.
- Change the administrator password periodically.
- Do not install the camera in locations where the camera or the cables can be destroyed or damaged by persons with malicious intent.

Precautions

Refer installation work to the dealer.

Installation work requires technique and experiences. Failure to observe this may cause fire, electric shock, injury, or damage to the product.

Be sure to consult the dealer.

Stop the operation immediately when something is wrong with this product.

When smoke goes up from the product, the smell of smoke comes from the product, or the exterior of the product has deteriorated, continued use will cause a fire or fall of the product resulting in injury, or damage to the product. Turn the power off immediately and contact qualified service personnel for service.

Do not attempt to disassemble or modify this product.

Failure to observe this may cause fire or electric shock.

Consult the dealer for the repair or inspections.

Do not insert any foreign objects.

This could permanently damage the apparatus.

Turn the power off immediately and contact qualified service personnel for service.

Select an installation area that can support the total weight.

Selecting an inappropriate installation surface may cause the product to fall down or topple over, resulting in injury.

Installation work shall be started after sufficient reinforcement.

Periodic inspections shall be conducted.

Rust on the metal parts or screws may cause a fall of the product resulting in injury or accidents.

Consult the dealer for the inspections.

Do not use this product in an inflammable atmosphere.

Failure to observe this may cause an explosion resulting in injury.

Avoid installing this bracket in the locations where salt damage occurs or corrosive gas is produced.

Otherwise, the mounting portions will deteriorate and accidents such as a fall of this product may occur.

The measures of protection against a fall of this product shall be taken.

Failure to observe this may cause a drop resulting in injury or accidents.

Be sure to install the safety wire.

The exclusively designed mount bracket shall be used.

Failure to observe this may cause a drop resulting in injury or accidents.

Use the exclusively designed mount bracket for installation.

The screws and bolts shall be tightened to the specified torque.

Failure to observe this may cause a drop resulting in injury or accidents.

Do not install this product in locations subject to vibration.

Loosening of mounting screws or bolts may cause a fall of the product resulting in injury.

Install this product in a location high enough to avoid people and objects from bumping the product.

Failure to observe this may cause a drop resulting in injury or accidents.

Do not strike or give a strong shock to this product.

Failure to observe this may cause fire or injury.

Turn the power off when do wiring of this product.

Failure to observe this may cause electric shock. In addition, short circuit or wrong wiring may cause fire.

Do not rub the edges of metal parts with your hand.

Failure to observe this may cause injury.

Do not touch this product, the power cable or the connected cables during thunder. (Including during installation work)

Failure to observe this may cause electric shock.

Keep SDXC/SDHC/SD memory cards (option) away from infants and children.

Otherwise, they may swallow the cards by mistake.

In this case, consult a doctor immediately.

Do not damage the power cable.

Do not damage, fabricate, twist, stretch, bundle, or forcibly bend the power cable. Do not place heavy objects. Keep away from heat sources.

Use of the damaged power cable may cause electric shock, short circuit, or fire.

Consult the dealer for repair.

Turn the power off when cleaning of this product.

Failure to observe this may cause injury.

[Precautions for use]

This system is designed to be used indoors. This product is not operable outdoors.

This product has no power switch.

When turning off the power, disconnect the power supply from the 12V DC power supply or the PoE device. (When using both the 12V DC power supply and the PoE device for power supply, disconnect both the connections.)

To keep on using with stable performance

Do not use this camera in hot and humid conditions for a long time. Failure to observe this causes component degradation resulting in life shortening of this product.

Do not expose this camera to direct heat sources such as a heater.

Handle this camera with care.

Do not drop this camera, nor apply shock or vibration to this camera. Failure to observe this may cause trouble.

About the PC monitor

Displaying the same image on a monitor for a long time may damage the monitor. It is recommended to use a screen-saver.

When an error is detected, this product will restart automatically.

This product will be inoperable for around 2 minutes after the restart just as when the power is turned on.

Product disposal/transfer

Data saved on this product or a storage device used with this product may lead to personal information leakage.

When it is necessary to dispose or give this product to someone, even when for repair, make sure that there is no data on this product.

Cleaning this product body

Be sure to turn off the power before cleaning. Do not use strong abrasive detergent when cleaning this camera. Otherwise, it may cause discoloration.

When using a chemical cloth for cleaning, read the caution provided with the chemical cloth product.

Transmission interval

Image transmission interval may become slow depending on the network environment, PC performance, shooting subject, access number, etc.

About SD memory card

- Before removing the SD memory card, make sure to select “Not use” for “SD memory card” on the [SD memory card] tab of “Basic” page on the setup menu first. (See Operating Instructions (included in the CD-ROM))
Refer to page 20 for descriptions of how to insert/remove an SD memory card.
- When using an unformatted SD memory card, format it using this camera. Recorded

data on the SD memory card will be deleted when formatted.

If an unformatted SD memory card or an SD memory card formatted with other devices is used, this product may not work properly or performance deterioration may be caused. Refer to the Operating Instructions (included in the CD-ROM) for how to format a SD memory card.

- When some SD memory cards are used with this product, the product may not work properly or performance deterioration may be caused.

Code label

The code labels (accessory) are required at inquiry for trouble. Use caution not to lose these labels. It is recommended to paste one of the labels onto the CD-ROM case.

About the MOS image sensor

- When continuously shooting a bright light source such as a spotlight, the color filter of the MOS image sensor may have deteriorated and it may cause discoloration. Even when changing the fixed shooting direction after continuously shooting a spotlight for a certain period, the discoloration may remain.
- When shooting fast-moving subjects or performing panning/tilting operations, objects crossing the shooting area may look to be bending askew.

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Precautions for Installation

Panasonic assumes no responsibility for injuries or property damage resulting from failures arising out of improper installation or operation inconsistent with this documentation.

This camera is designed to be used indoors.

This camera is not operable outdoors. Do not expose this camera to direct sunlight for hours and do not install the product near a heater or an air conditioner. Otherwise, it may cause deformation, discoloration and malfunction. Keep this camera away from water and moisture.

Installation place

Contact your dealer for assistance if you are unsure of an appropriate place in your particular environment.

- Make sure that the installation area is strong enough to hold this product, such as a concrete ceiling.
- Install the camera in the foundation area of the architecture or where sufficient strength is assured.
- If a ceiling board such as plaster board is too weak to support the total weight, the area shall be sufficiently reinforced.

Do not place the unit in the following places:

- Locations where it may get wet from rain or water splash
- Locations where a chemical agent is used such as a swimming pool
- Locations subject to moisture or oil smoke such as a kitchen
- Locations that have a specific environment that is subject to an inflammable atmosphere or solvents
- Locations where a radiation, an X-ray, a strong radio wave or a strong magnetic field is generated
- Locations where corrosive gas is produced, Locations where it may be damaged by briny air such as seashores

- Locations where the temperature is not within the specified range (page 32).
- Locations subject to vibrations (This product is not designed for on-vehicle use.)
- Locations subject to condensation as the result of severe changes in temperature

Be sure to remove this product if it is not in use.

Shielded (STP) LAN cables must be used with this unit to ensure compliance with EMC standards. *

* For Europe

Before installation

- When this camera and camera mount bracket are mounted on a ceiling or a wall, use the screws described on page 23. The screws to be used are not provided. Prepare the screws according to the material, structure, strength and other factors of the mounting area and the total weight of objects to be mounted.
- Ensure that the mounting surface, anchor and screws are sufficiently strong.
- Do not mount this product on a plaster board or a wooden section because they are too weak. If this product is unavoidably mounted on such a section, the section shall be sufficiently reinforced.

About the network connection

When connecting to a network using the network cable of this product, observe the following.

- When wiring for the network, design and engineer not to be affected by thunder.

Screw tightening

- The screws and bolts must be tightened with an appropriate tightening torque according to the material and strength of the installation area.
- Do not use an impact driver. Use of an impact driver may damage the screws or cause tightening excessively.
- When a screw is tightened, make the screw at a right angle to the surface. After tightening the screws or bolts, perform visual check to ensure tightening is enough and there is no backlash.

Fall prevention measures

When the external safety wire is connected, select a connection point resulting in that nothing will hit people after the mount bracket is damaged. Remove the slack of the safety wire adjusting the length of the wire and the position where to connect.

Angle adjustment

Be sure to loosen the screw of this product mount bracket when the camera angle is adjusted. If the camera angle is changed when the screw is tight, excessive force is applied to the camera mount bracket and camera, and accordingly they may be damaged. Be sure to tighten the screw securely after camera angle adjustment.

Radio disturbance

When this product is used near TV/radio antenna, strong electric field or magnetic field (near a motor, a transformer or a power line), images may be distorted and noise sound may be produced.

PoE (Power over Ethernet)

Use a PoE hub/device that is compliant with IEEE802.3af standard.

Router

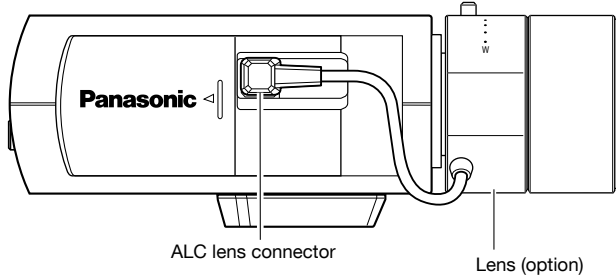
When connecting this product to the Internet, use a broadband router with the port forwarding function (NAT, IP masquerade). Refer to the Operating Instructions (included in the CD-ROM) for further information about the port forwarding function.

Time & date setting

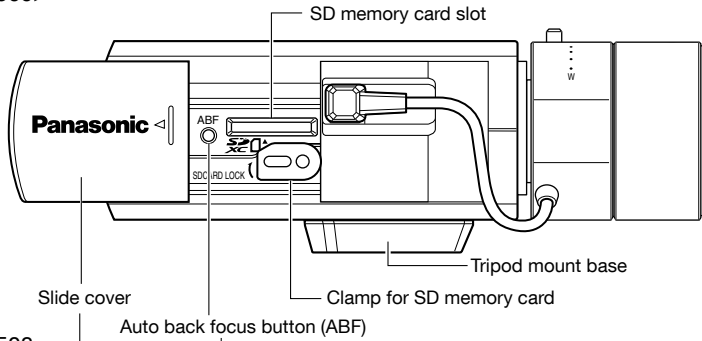
It is necessary to set the time & date before putting this product into operation. Refer to the "Operating Instructions" on the provided CD-ROM for descriptions of how to perform the settings.

Major operating controls

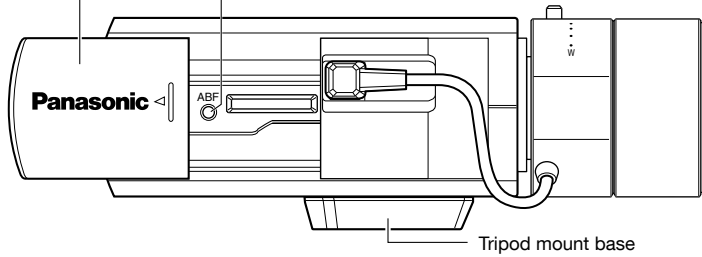
<Side view>



<WV-SP509>

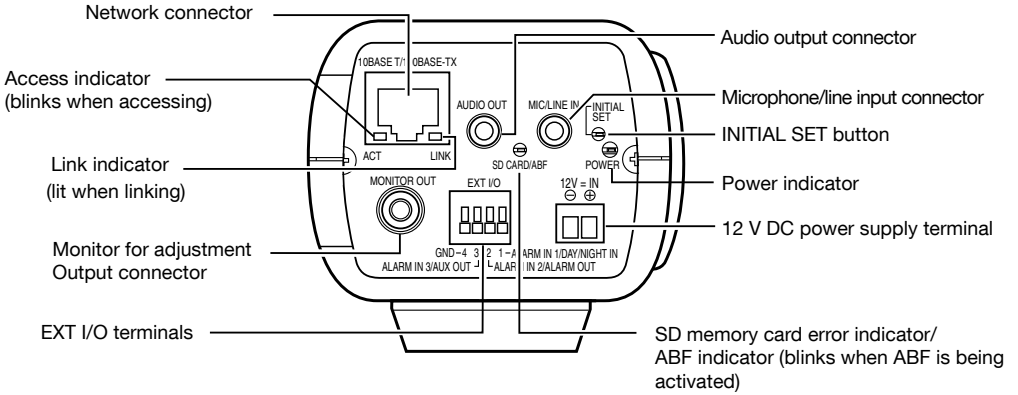


<WV-SP508>

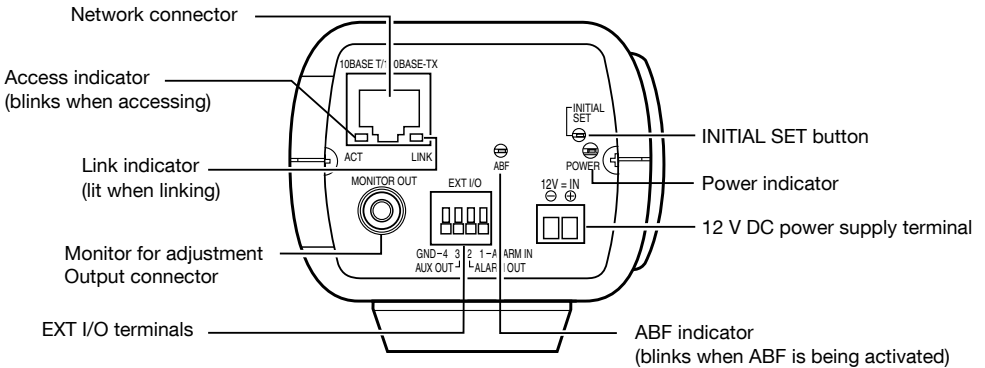


<Rear view>

<WV-SP509>



<WV-SP508>

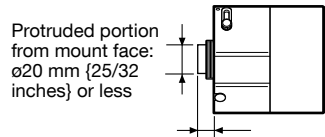
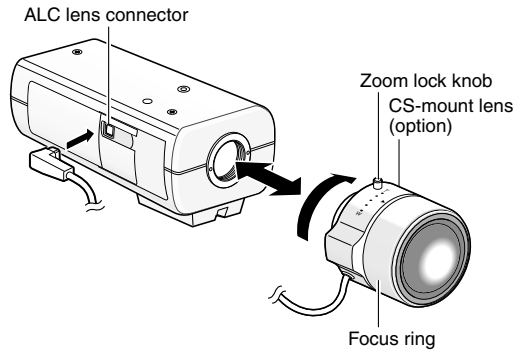


About the [INITIAL SET] button

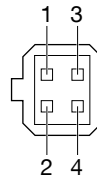
After turning off the power of the camera, turn on the power of the camera while holding down this button, and wait for around 5 seconds or more without releasing this button. Wait around 2 minutes after releasing the button. The camera will start up and the settings including the network settings will be initialized. Do not turn off the power of the camera during the process of the initialization. Before initializing the settings, it is recommended to write down the settings in advance.

Lens mounting

Slowly rotate the lens clockwise to mount the lens and connect the lens cable to the ALC lens connector of the camera.



Protruded portion from flange face: 4.5 mm (5/32 inches) or less



Pin No.	
1	Dump ⊖
2	Dump ⊕
3	Drive ⊕
4	Drive ⊖

Optional dedicated lens

Product name	Model number
ALC lens for 1/3 type CCD cameras 2x varifocal (High resolution)	WV-LZA62/2

* If a lens for 1/3 type video camera other than the above is mounted and the camera is used at resolution of 1280 x 720 or higher, the camera cannot achieve full performance of high resolution. It is recommended to use a dedicated high-resolution lens especially when the illuminance level of the photographic subject is low and the camera is used with the lens iris open.

How to adjust the focus

- 1 Before adjustment, reset the back focus position by holding down the auto back focus button for 5 seconds or more when the power is on. (This operation can also be performed on the setup menu. Refer to the Operating Instructions (included in the CD-ROM).)
- 2 Adjust the view angle and focus coarsely by adjusting the zoom and focus of the lens to center a subject in the screen, and then press the auto back focus button on the side of the camera (page 16) or perform the auto back focus function from the setup menu. Refer to the Operating Instructions (included in the CD-ROM) for how to perform the auto back focus function from the setup menu.

IMPORTANT:

- Press the auto back focus button twice quickly to perform basic adjustments in a short time. For more accurate adjustments use the detailed adjustments.
- After performing basic adjustments, make sure to press the auto back focus button once to perform detailed adjustments.

Note:

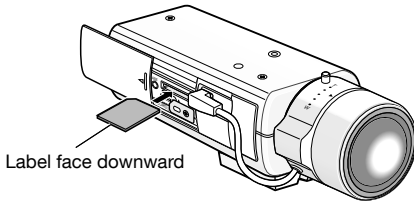
- The most common use of a varifocal lens and a zoom lens
Note that the adjustment method is different depending on the type. For further information, refer to the operating instructions for the lens to be used.
When using 8x or 10x lens, adjust the back focus after positioning the zoom ring at the "W" end and positioning the focus ring at a step short of the "F" end.
When using 2x or 3x lens, adjust the back focus after positioning the zoom ring at the "T" end and positioning the focus ring at a step short of the "F" end.
 - Depending on the lens to be used, if the zoom ring is fully rotated in the "W" direction, the periphery may become dark. In such a case, rotate the zoom ring in the "T" direction for readjustment.
 - When images in the near-infrared light area change from the color mode to the black & white mode, out-of-focus may be occurred according to the nature of optical property. In this case, the focus can be corrected by selecting "Auto" or "Preset" for "Adjusting method" on the setup menu (The focus will not automatically be adjusted according to the illumination level change once the focus is corrected.) Refer to the Operating Instructions (included in the CD-ROM) for how to configure the "Adjusting method" setting on the setup menu.
 - When shooting the following subjects, it may have difficulty adjusting the back focus position automatically.
In this case, adjust the back focus position manually from the setup menu.
Refer to the Operating Instructions (included in the CD-ROM) for how to perform the auto back focus function from the setup menu.
 - Subj. moves frequently
 - Subj. with large illuminance change
 - Subj. with low illuminance
 - Subj. through a window
 - Subj. with less contrast such as white wall
 - Subj. with heavy flicker
-

Insert/remove a SD memory card (WV-SP509 only)

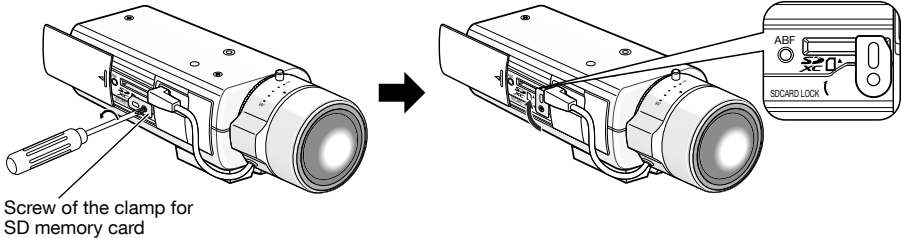
IMPORTANT:

- When inserting a SD memory card, make sure the direction.
- Before removing the SD memory card, make sure to select “Not use” for “SD memory card” on the [SD memory card] tab of the “Basic” page on the setup menu first. (Operating Instructions (included in the CD-ROM))

- 1** Open the slide cover on the side of the camera, and then insert a SD memory card into the SD memory card slot.



- 2** If necessary, loosen the screw of the clamp for SD memory card and tighten the screw after rotating the clamp 90 ° clockwise.
(Recommended tightening torque: 0.19 N·m {0.14 lbf·ft})



- 3** Close the slide cover on the side of the camera.
- 4** To remove the SD memory card, rotate the clamp for SD memory card 90 ° counterclockwise, push the memory card to unlock it, and remove the memory card from the SD memory card slot.

Installation

Connect the safety wire

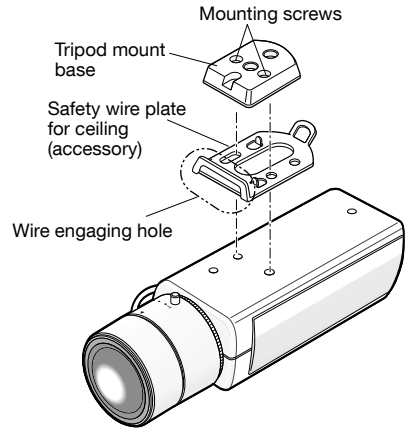
The following is an example of safety wire connection.

IMPORTANT:

- Be sure to install the safety wire. Ask your dealer for installation.

For mounting on ceiling

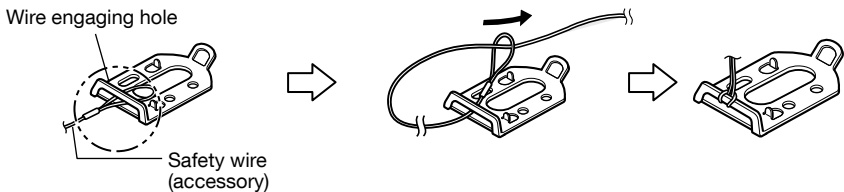
- 1 Remove the tripod mount base on the top of the camera.
- 2 Align the tripod mount base with the safety wire plate for ceiling (accessory) and attach them to the camera with the mounting screws.



IMPORTANT:

- Use the detached mounting screws to attach the tripod mount base. 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})

- 3 Engage the safety wires with the wire engaging holes respectively.



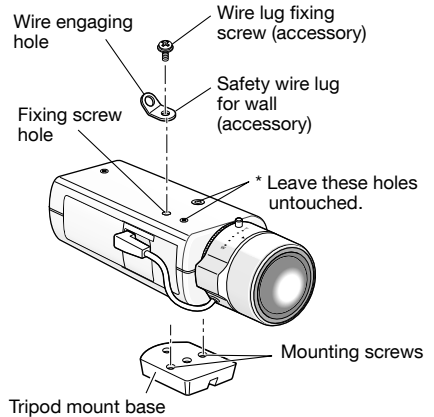
Pass the ring part of the safety wire through the wire engaging hole.

For mounting on wall

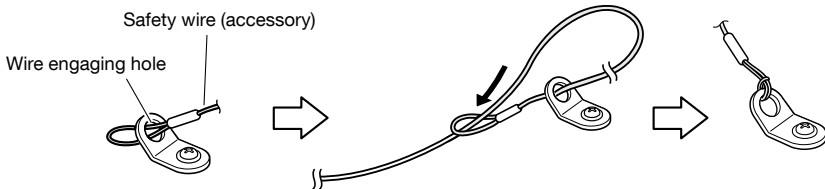
- 1 Put the tripod mount base on the bottom of the camera.
Secure the safety wire lug for wall (accessory) to the camera mount screw hole with the wire lug fixing screw (accessory).

IMPORTANT:

- Be sure to use the provided fixing screws for the safety wire lug and the removed screws for the camera mount base.
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})
-



- 2 Engage the safety wire (accessory) with the wire engaging hole.



- ① Pass the ring part of the safety wire through the wire engaging hole.

- ② Pass the other end of the safety wire through the ring part of the safety wire.

Camera mounting

The camera is mounted on the camera mount bracket (locally procured) and the safety wire is secured.

IMPORTANT:

- The installation area shall be strong enough to hold the camera and camera mount bracket.
 - The camera mount bracket (locally procured) shall be mounted on the foundation part of the construction or a part with adequate strength.
 - To prevent the mounting strength from becoming lower, do not use wooden screws to secure the camera mount bracket (locally procured).
-

1 Secure the camera mount bracket (locally procured) to an installation position, and mount the camera on the camera mount bracket.

Prepare mounting screws according to the material of the area where the camera mount bracket is to be installed. The installation method may be different depending on the material of the area where the bracket is to be installed.

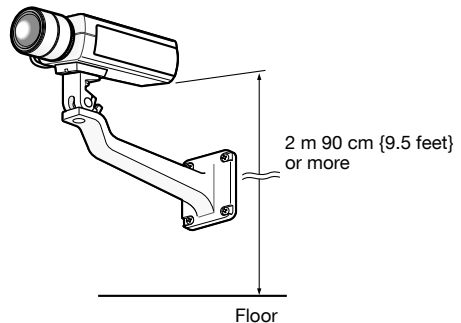
- When installing on steel: Fix with bolts and nuts (M6 or M8)
- When installing on concrete: Fix with anchor bolts (M6 or M8)

The mounting conditions of the camera mount bracket (locally procured) are described as follows:

Installation position	Recommended screw	Screw quantity	Minimum pull-out strength (per 1 pc.)
On ceiling	M6 or M8	3 pcs.	196 N {44.06 lbf}
On wall	M8	4 pcs.	921 N {207.05 lbf}

IMPORTANT:

- Refer to the operating instructions of the camera mount bracket (locally procured) for the mounting angle of the camera mount bracket for a ceiling or wall.
- When the camera mount bracket is mounted on a wall, be sure to observe the mounting height described on the illustration.



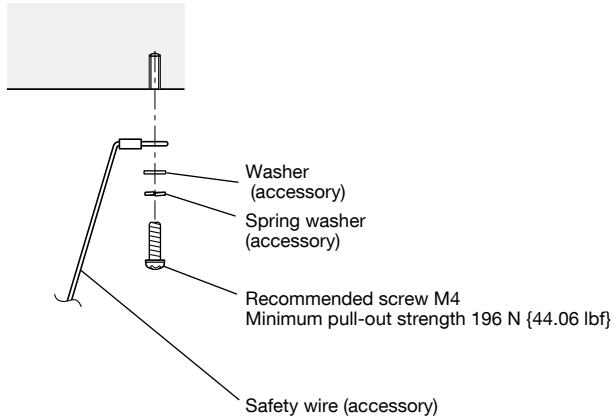
2 Secure the safety wire to the foundation part of the construction or a part with adequate strength (minimum pull-out strength 196 N {44.06 lbf}).

Prepare the fixing screw according to the material of the area where the safety wire is to be fixed.

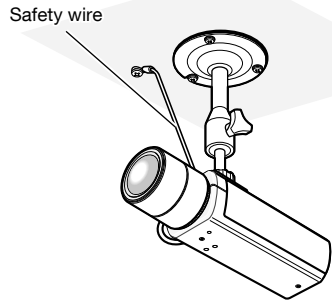
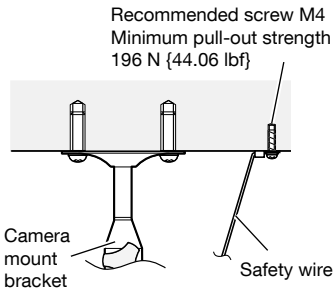
IMPORTANT:

- The safety wire shall be adjusted to remove slack.
- Be sure to install the safety wire to prevent a fall of the camera resulting in injury or accidents in case the camera comes off.
- To prevent the mounting strength from becoming lower, do not use wooden screws to secure the safety wire.

<For mounting on ceiling>

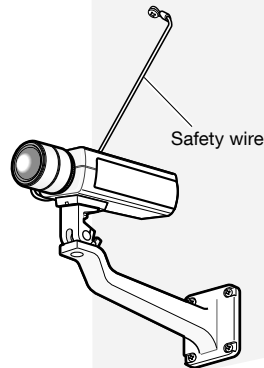
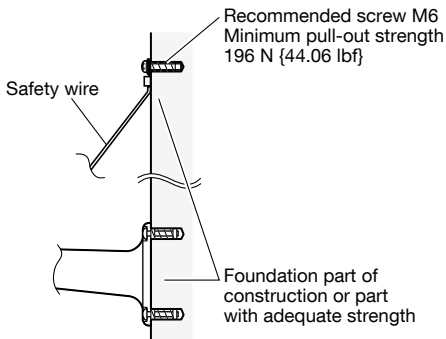


<Mounting sample>



<Mounting sample>

<For mounting on wall>



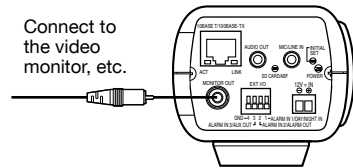
Connection

Caution:

- ONLY CONNECT 12 V DC CLASS 2 POWER SUPPLY (UL 1310/CSA 223) or LIMITED POWER SOURCE (IEC/EN/UL/CSA 60950-1).

Before starting the connection, turn off the power of this camera and the devices to be connected. Before start the connection, prepare the required devices and cables.

- 1 Connect the RCA pin cable to the monitor output connector for adjustment on the rear (only for adjustment of the angle field of view).



(This illustration represents WV-SP509.)

IMPORTANT:

- The monitor output connector is provided only for checking the adjustment the angle field of view on the video monitor when installing the camera or when servicing. It is not provided for recording/ monitoring use.
- Black bands may appear at the top, bottom, right and left of the screen. (There is no problem with adjustment since the angle field of view is not affected.)
- The video output on the monitor for adjustment does not guarantee the video performance or image quality.

- 2 Connect the microphone to MIC/LINE IN (for use of the audio reception function).

SP509

Input impedance: Approx. 2 k Ω

Recommended cable length: 1 m {3.3 feet} or less (for microphone input)
10 m {33 feet} or less (for LINE input)

Recommended microphone: Plug-in power type microphone (option)
Connect a monaural mini plug (ϕ 3.5 mm).

- Supply voltage: 2.5 V \pm 0.5 V
- Recommended sensitivity of microphone: -48 dB \pm 3 dB (0 dB=1 V/Pa, 1 kHz)

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.

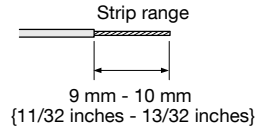
- 3 Connect an external speaker with amplifier to the audio output connector (for use of the audio transmission function).

SP509

Connect a stereo mini plug (ϕ 3.5 mm) (Audio output is monaural.).

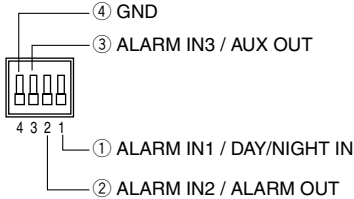
- Recommended cable length: 10 m {33 feet} or less

- 4** Connect external devices to the EXT I/O terminal.
 When connecting an external device, remove 9 mm - 10 mm {11/32 inches - 13/32 inches} of the outer jacket of the cable and twist the cable core to prevent the short circuit first.
 Specification of cable (wire): 22 AWG - 28 AWG
 Single core, twisted

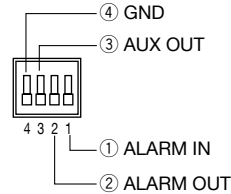


- Check whether the stripped part of the wire is not exposed and is securely connected.

<WV-SP509>



<WV-SP508>



IMPORTANT:

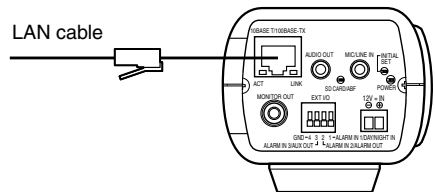
- Do not connect 2 wires or more directly to a terminal. When it is necessary to connect 2 or more wires, use a splitter.
- Input and output of the EXT I/O terminal 2 and 3 can be switched by configuring the setting. "Off" is selected by default. It is possible to determine whether or not to receive input from EXT I/O terminal 2 and 3 (ALARM IN2, 3) by selecting "Off", "Alarm input", "Alarm output" or "AUX output" for "Terminal 2" or "Terminal 3" on the [Alarm] tab on the "Alarm" page. Refer to the Operating Instructions (included in the CD-ROM) for further information.
- Connect an external device with verifying that the ratings are within the specifications above.
- When using the EXT I/O terminals as the output terminals, ensure they do not cause signal collision with external signals.

<Ratings>

- 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 (50 mA or less)
- ALARM IN / DAY/NIGHT IN*
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)
 * DAY/NIGHT IN is only for WV-SP509.

- 5** Connect a LAN cable (category 5 or better, STP*) to the network connector on the rear of the camera.

* For Europe



(This illustration represents WV-SP509.)

6 Connect the power supply.

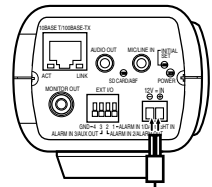
IMPORTANT:

- The 12 V DC power supply shall be insulated from the commercial AC power.
- The operating sound might be heard when the power is turned on, however it does not indicate any malfunction.

When using 12 V DC power supply*

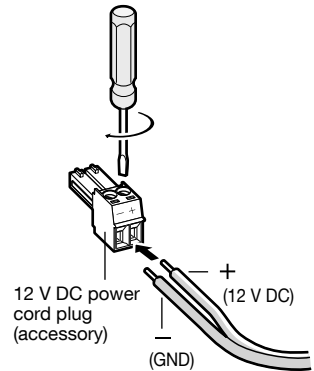
- ① Loosen the screw of the power cord plug (accessory).
- ② Connect the cable of the 12 V DC power supply* to the power cord plug.
Strip 3 mm to 7 mm {1/8 inches to 9/32 inches} from the end of the wire, and twist the stripped part of the wire sufficiently to avoid short circuit.
Specification of cable (wire): 16 AWG - 24 AWG
Single core, twisted
 - Check whether the stripped part of the wire is not exposed and is securely connected.
- ③ Tighten the screw of the power cord plug.
(Recommended tightening torque:
0.34 N·m {0.25 lbf·ft})
- ④ Connect the power cord plug to the 12 V DC power supply terminal on the rear of the camera.

* ONLY CONNECT 12 V DC CLASS 2 POWER SUPPLY (UL 1310/CSA 223) or LIMITED POWER SOURCE (IEC/EN/UL/CSA 60950-1).



To 12 V DC power supply*

(This illustration represents WV-SP509.)



IMPORTANT:

- Be sure to use the power cord plug provided with this product.
- Be sure to fully insert the power cord 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 regarding power source and power consumption (☞ page 32).

When using PoE (IEEE802.3af compliant)

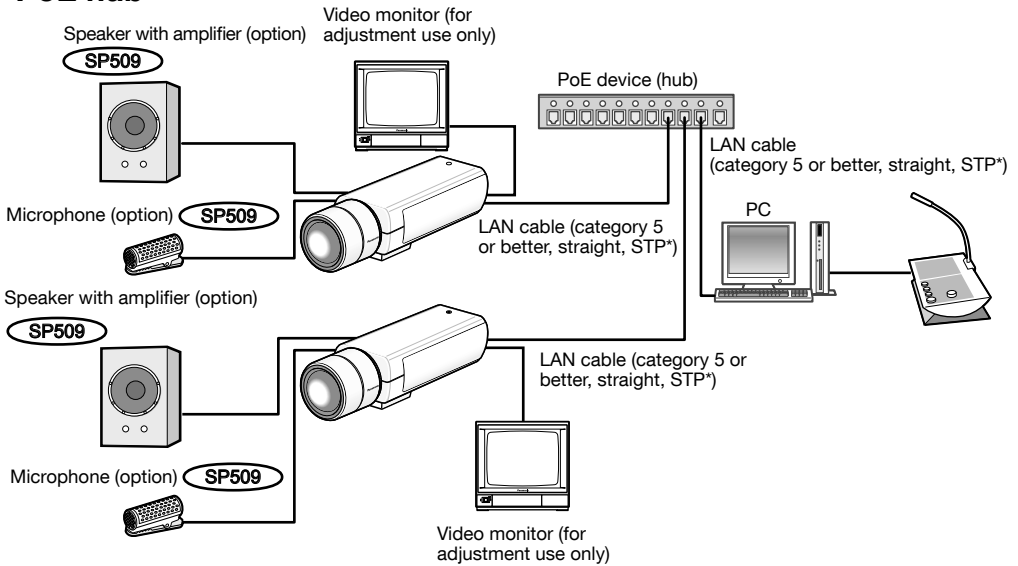
Connect a LAN cable (category 5 or better, straight, STP*) between a PoE device (such as a hub) and the network connector of the camera.

* For Europe.

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. Depending on the PoE device used, the power supply lamp may not light and the network connections may not be possible. In this case, disable the PoE device setting, and refer to the operating instructions of the PoE device in use.
 - When disconnecting the LAN cable once, reconnect the cable after around 2 seconds. When the cable is quickly connected, the power may not be supplied from the PoE device.
-

Connection example when connecting to a network using a PoE hub



<Required cable>

LAN cable (category 5 or better, straight, STP*)

* For Europe

IMPORTANT:

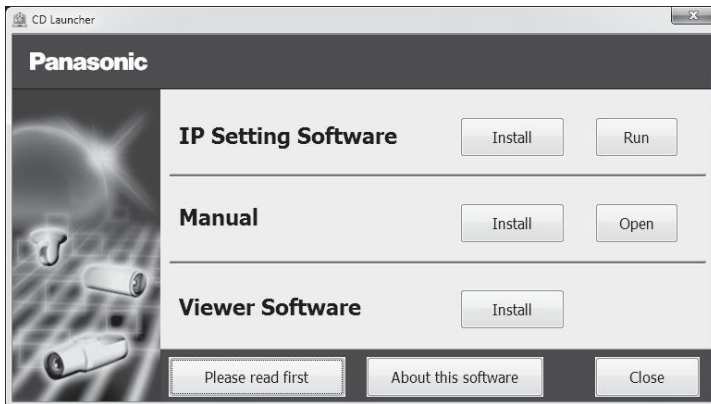
- The video monitor is used for checking the adjustment of the angular field of view when installing the camera or when servicing. It is not provided for recording/ monitoring use.
 - Use a switching hub or a router which is compliant with 10BASE-T/100BASE-TX.
 - Power supply is required for each network camera. When using a PoE device (hub), 12 V DC power supply is unnecessary.
-

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.

- 1 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.

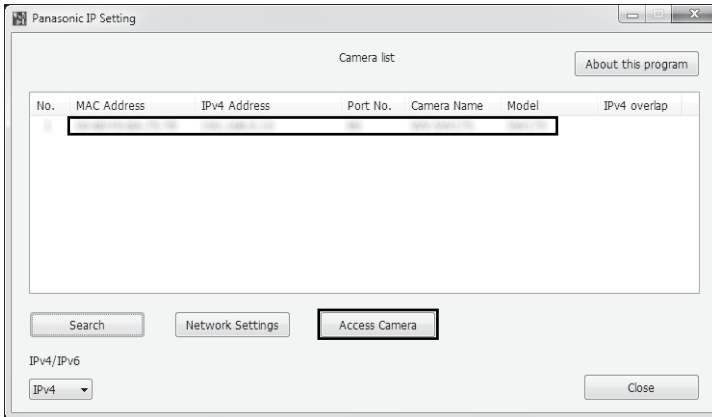


Note:

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

- 2 Click the [Run] button next to [IP Setting Software].
[Panasonic IP Setting] screen will be displayed. Click the [Network Settings] button after selecting the MAC address/IP address of the camera to be configured.

- 3 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.

- 4 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 [IP Setting Software] 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>).

Troubleshooting

Before asking for repairs, check the symptoms with the following table.

Contact your dealer if a problem cannot be solved even after checking and trying the solution in the table or a problem is not described below.

Symptom	Cause/solution	Reference pages
<p>Power is not turned on.</p>	<p>When using DC power supply</p> <ul style="list-style-type: none"> • Is 12 V DC power supply connected to the power supply terminal? → Check whether the connection is appropriately established. • Is the AC adaptor in use compliant with the Specifications? → Check the Specifications regarding AC adaptor. <p>When using a PoE device for power supply</p> <ul style="list-style-type: none"> • Are the PoE device and the network connector on the rear of the camera connected using a LAN cable (4-pair)? → Check whether the connection is appropriately established. • Depending on the PoE device, the power supply will stop when the demanded power exceeds its total power limit for all PoE ports. → Refer to the operating instructions of the PoE device in use. 	<p>27 - 28</p>
<p>The focus cannot be adjusted.</p>	<ul style="list-style-type: none"> • Is the zoom ring turned to the "W" (or "T") end? → Adjust the focus again by slightly moving the zoom ring to the direction of "T" (or "W"). 	<p>18 - 19</p>

Specifications

● Basic

Power source:	12 V DC, PoE (IEEE802.3af compliant)
Power consumption:	SP509 12 V DC: 570 mA, PoE 48 V: 125 mA (Class 2 devices) SP508 12 V DC: 550 mA, PoE 48 V: 120 mA (Class 2 devices) * ONLY CONNECT 12 V DC CLASS 2 POWER SUPPLY (UL 1310/CSA 223) or LIMITED POWER SOURCE (IEC/EN/UL/CSA 60950-1).
Ambient operating temperature:	-10 °C to +50 °C {14 °F to 122 °F}
Ambient operating humidity:	Less than 90 % (no condensation)
Monitor output (for adjusting the angular field of view):	VBS: 1.0 V [p-p]/75 Ω, composite signal, RCA jack
EXT I/O terminal cable:	SP509 : ALARM IN1/ DAY/ NIGHT IN, ALARM IN2/ ALARM OUT, ALARM IN3/ AUX OUT (x1 for each) SP508 : ALARM IN, ALARM OUT, AUX OUT (x1 each)
Microphone/Line input SP509 :	ø3.5 mm monaural mini jack Input impedance: Approx. 2 kΩ Applicable microphone: Plug-in power type Supply voltage: 2.5 V ±0.5 V Input level: Approx. -10 dBV
For microphone input :	
For line input :	
Audio output SP509 :	ø3.5 mm stereo mini jack (monaural output) Output impedance: Approx. 600 Ω Line level
Dimensions:	75 mm (W) x 65 mm (H) x 132.5 mm (D) {2-31/32 inches (W) x 2-9/16 inches (H) x 5-1/4 inches (D)} (excluding connectors/terminals)
Mass:	Approx. 420 g {0.93 lbs}
Finish:	Fine silver (501)

● Camera

Image sensor:	1/3 type MOS image sensor
Effective pixels:	Approx. 3.1 megapixels
Scanning area:	4.51 mm (H) X3.38 mm (V) {3/16 inches (H) x 1/8 inches (V)}
Scanning system:	Progressive
Minimum illumination SP509 :	Color: 0.5 lx {0.05 footcandle} (F1.4, Auto slow shutter: Off (1/30 s), Gain: On(High)) 0.03 lx {0.003 footcandle} (F1.4, Auto slow shutter: max. 16/30 s, Gain: On(High))* BW: 0.06 lx {0.006 footcandle} (F1.4, Auto slow shutter: Off (1/30 s), Gain: On(High)) 0.004 lx {0.0004 footcandle} (F1.4, Auto slow shutter: max. 16/30 s, Gain: On(High))*
Minimum illumination SP508 :	Color: 0.5 lx {0.05 footcandle} (F1.4, Auto slow shutter: Off (1/30 s), Gain: On(High)) 0.03 lx {0.003 footcandle} (F1.4, Auto slow shutter: max. 16/30 s, Gain: On(High))*

BW:	0.3 lx {0.03 footcandle} (F1.4, Auto slow shutter: Off (1/30 s), Gain: On(High)) 0.02 lx {0.002 footcandle} (F1.4, Auto slow shutter: max. 16/30 s, Gain: On(High))* * Converted value
Super Dynamic:	On/Off
Dynamic range:	52 dB typ. (only at Super-Dynamic On)
Gain (AGC):	On(Low)/ On(Mid)/ On(High)/ Off
Adaptive black stretch:	On/Off (only at Super-Dynamic Off)
Light control mode setting:	Indoor scene (50Hz/60Hz)/ Outdoor scene/ ELC/ Fix shutter
Shutter speed:	Off (1/30 s), 3/100, 3/120, 2/100, 2/120, 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 (only at Super-Dynamic Off) Off (1/30 s), Max. 2/30 s, Max. 4/30 s, Max. 6/30 s, Max. 10/30 s, Max. 16/30 s
Auto slow shutter:	
Day & Night (IR) SP509 :	On/ Off/ Auto1/ Auto2
Day & Night (electrical) SP508 :	Off/Auto
White balance:	ATW1/ ATW2/ AWC
Digital noise reduction:	High/Low
Video analytics	
Face detection*1:	On/Off (with the XML notification setting)
Privacy zone:	On/Off (up to 2 zones available)
VIQS:	On/Off (up to 2 zones available)
Camera title on screen:	Up to 20 characters (alphanumeric characters, marks) On/Off
Video motion detection (VMD alarm):	On/Off, (up to 4 areas available)
Back focus Adjustment:	Auto back focus/ Focus/ Adjusting method (Auto/ Preset/ Fix)
ALC lens drive:	DC drive
Lens mount:	CS-mount

*1 To use the "XML notification" and "Face detection" functions, you need to install the extension software.

● Network

Network:	10BASE-T/100BASE-TX, RJ45 connector
Resolution:	Imaging mode: 2 megapixel [16:9] H.264 1920x1080/ 640x360/ 320x180 max.30 fps JPEG(MJPEG) 1920x1080/ 640x360/ 320x180 max.30 fps
	Imaging mode: 1.3 megapixel [16:9] H.264 1280x720/ 640x360/ 320x180 max.30 fps JPEG(MJPEG) 1280x720/ 640x360/ 320x180 max.30 fps
	Imaging mode: 1.3 megapixel [4:3] H.264 1280x960/ VGA(640x480)/ QVGA(320x240) max.30 fps JPEG(MJPEG) 1280x960/ VGA(640x480)/ QVGA(320x240) max.30 fps
	Imaging mode: 3 megapixel [4:3] H.264 1280x960/ max.15 fps JPEG(MJPEG) 2048x1536/ max.15 fps

Image compression method: *1	H.264 Image quality: Low/ Normal/ Fine Transmission type: Unicast/Multicast Bit rate: Constant bit rate: 64 kbps/ 128 kbps/ 256 kbps/ 384 kbps/ 512 kbps/ 768 kbps/ 1024 kbps/ 1536 kbps/ 2048 kbps/ 3072 kbps/ 4096 kbps/ 6144 kbps/ 8192 kbps/ 10240 kbps/ 12288 kbps/ 14336 kbps Frame rate: 1 fps/ 3 fps/ 5 fps/ 7.5 fps/ 10 fps/ 12 fps/ 15 fps/ 20 fps/ 30 fps JPEG Image quality: 0 SUPER FINE/ 1 FINE/ 2/ 3/ 4 / 5 NORMAL/ 6/ 7/ 8/ 9 LOW (10 steps: 0-9) Transmission type: PULL/PUSH
Transmission interval:	0.1 fps - 30 fps (JPEG frame rate will be restricted when displaying both JPEG and H.264 images.)
Transmission the image cut out	2 megapixel [16:9] H.264 640x360/ 320x180 max.30 fps MJPEG 640x360/ 320x180 max.30 fps
	<hr/>
	1.3 megapixel [16:9] H.264 640x360/ 320x180 max.30 fps MJPEG 640x360/ 320x180 max.30 fps
	<hr/>
	1.3 megapixel [4:3] H.264 VGA(640x480)/ QVGA(320x240) max.30 fps MJPEG VGA(640x480)/ QVGA(320x240) max.30 fps
Audio compression method	SP509 : G.726 (ADPCM) 32 kbps/16 kbps G.711 64 kbps
Bandwidth control:	Unlimited/ 64 kbps/ 128 kbps/ 256 kbps/ 384 kbps/ 512 kbps/ 768 kbps/ 1024 kbps/ 2048 kbps/ 4096 kbps/ 8192 kbps
Protocol:	IPv6: TCP/IP, UDP/IP, HTTP, RTP, FTP, SMTP, DNS, NTP, SNMP, HTTPS, DHCPv6, MLD, ICMP, ARP IPv4: TCP/IP, UDP/IP, HTTP, RTSP, RTP, RTP/RTCP, FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP, HTTPS, UPnP, IGMP, ICMP, ARP
OS *2 *3:	Microsoft Windows 7 Microsoft Windows Vista Microsoft Windows XP SP3
Browser:	Windows Internet Explorer 9.0 (32-bit) Windows Internet Explorer 8.0 (32-bit) Windows Internet Explorer 7.0 (32-bit) Microsoft Internet Explorer 6.0 SP3
Maximum concurrent access number:	14 (Depends on network conditions)
FTP client:	Alarm image transmission, FTP periodic transmission (When the FTP transmission is failed, backup on an optional SD memory card is available. SP509)
Multi-screen:	Up to 16 camera images can be displayed simultaneously on a multi-screen (including the camera itself).
Compatible SDXC/SDHC/	Manufactured by Panasonic (SD speed class 4 or higher)

SD memory card (option) **SP509**: SDXC memory card: 64 GB
 SDHC memory card: 4 GB, 8 GB, 16 GB, 32 GB
 SD memory card: 2 GB
 (except miniSD card and microSD card)
 Cellular phone compatibility: JPEG image, AUX control (by access level)
 Mobile terminal compatibility: iPad, iPhone, iPod touch (iOS 4.2.1 or later)
 (As of October, 2013)*4 Android™ mobile terminals

- *1 Transmission for 2 streams can be individually set in the same compression method.
- *2 For further information about PC system requirements and precautions for when using Microsoft Windows 7, Microsoft Windows Vista, or Windows Internet Explorer, click "Manual" - "Open" from the supplied CD-ROM and refer to "Notes on Windows® / Internet Explorer® versions".
- *3 When using IPv6 for communication, use Microsoft Windows 7 or Microsoft Windows Vista.
- *4 For further information about compatible devices, refer to our website (<http://security.panasonic.com/pss/security/support/info.html>).

Standard accessories

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 the software.
- *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.

Power cord plug	1 pc.
Safety wire.....	1 pc.
Safety wire plate for ceiling	1 pc.
Safety wire lug for wall	1 pc.
Wire lug fixing screws (M2.5 x 8 mm {5/16 inches})	2 pcs. (of them, 1 for spare)
Washer	1 pc.
Spring washer	1 pc.

Optional accessories

User License Accessory (For H.264)

BB-HCA8A
 BB-HCA8CE

Information for Users on Collection and Disposal of Old Equipment and used Batteries



These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries should not be mixed with general household waste.

For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points, in accordance with your national legislation and the Directives 2002/96/EC and 2006/66/EC.

By disposing of these products and batteries correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.

For more information about collection and recycling of old products and batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.



For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

[Information on Disposal in other Countries outside the European Union]

These symbols are only valid in the European Union. If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.



Cd

Note for the battery symbol (bottom two symbol examples):

This symbol might be used in combination with a chemical symbol. In this case it complies with the requirement set by the Directive for the chemical involved.

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://panasonic.net>

Panasonic System Networks Co., Ltd.
Fukuoka, Japan

Authorised Representative in EU:

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

