

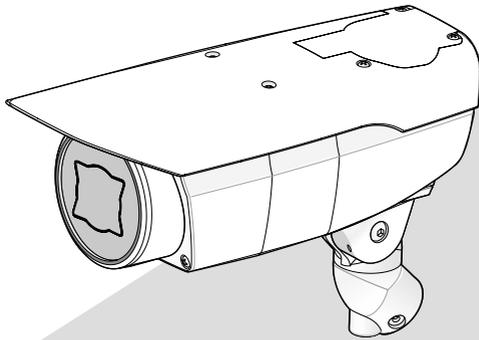
advidia®

Installation Guide

Included Installation Instructions

Network Camera

Model No. P-25



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.

WARNING:

- To prevent injury, this apparatus must be securely attached to the wall/ceiling in accordance with the installation instructions.
- All work related to the installation of this product should be made by qualified service personnel or system installers.
- The installation shall be carried out in accordance with all applicable installation rules.
- The connections should comply with local electrical code.
- Batteries (battery pack or batteries installed) shall not be exposed to excessive heat such as sunlight, fire or the like.

CAUTION:

- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- The network camera is only intended for a connection to an ethernet or PoE network without routing to the outside plant.

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.

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. _____

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

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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 block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 6) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 7) Only use attachments/accessories specified by the manufacturer.
- 8) 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.



- 9) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 10) 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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- (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 P-25 is designed to operate using a PC on a network (10BASE-T/100BASE-TX), and can be installed outdoors.

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.
-

Main functions

Equipped with a new codec engine

The redesigned codec engine can output up to 60 frames per second in Full-HD quality.

The equipped enhanced Super Dynamic function makes it possible to achieve 133 dB dynamic range.

By combining images taken at different shutter speeds and using pixel level brightness correction, more natural looking pictures can be taken even when objects have large differences in illumination.

* When frame rate is set to 60 fps, Off is displayed for Super Dynamic function.

Equipped with a high-sensitivity MOS sensor and noise reduction function (MNR)

The high-sensitivity sensor and new method of noise reduction (MNR: Multi-process Noise Reduction)*1 make it possible to take easy-to-view images even under low illumination conditions.

*1 With the multi-process noise reduction that prioritizes noise reduction for central areas and resolution for edge areas where noise is prominent, MNR is able to produce clear images while limiting noise across the entire image.

IR LED equipped

The equipped infrared LED makes it possible to take pictures at zero lx of objects as far as 30 m {98.43 feet} away.

Equipped with 2 SD memory card slots and enhanced image recording

- By using 2 SD memory cards sequentially, images can be recorded over long periods of time.
- The dual recording function (recording images on 2 SD memory cards simultaneously) makes it possible to back up data.

The camera conforms to the IP66*3 and Type 4X (UL50)*4, is compliant with NEMA 4X*5 ratings, and provides high dust resistance and waterproof performance.

Waterproofing treatment is not required for the camera body (waterproofing treatment is required for cable connections).

*3 IP66 rating: The applicable product has "Dust tight (6)" protection against foreign solids and has "Powerful water jets (6)" against water (IEC60529).

*4 Type 4X (UL50): "4X" is a grade of the waterproofing standard of UL.

*5 NEMA: Dust resistance and waterproof performance standards set by National Electrical Manufacturers Association (United States).

About the user manuals

There are 2 sets of operating instructions for the P-25 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.

The external appearance and other parts shown in this manual may differ from the actual product within the scope that will not interfere with normal use due to improvement of the product.

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:	A minimum of 1 GB or more (for 32-bit OSs), 2 GB or more (for 64-bit OSs) memory is required when using Microsoft® Windows® 8.1, Microsoft® Windows® 8, Microsoft® Windows® 7. A minimum of 1 GB or more memory is required when using 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® 8.1 Microsoft® Windows® 8 Microsoft® Windows® 7 Microsoft® Windows Vista®
Web browser:	Windows® Internet Explorer® 11 (32-bit) Windows® Internet Explorer® 10 (32-bit) Windows® Internet Explorer® 9 (32-bit) Windows® Internet Explorer® 8 (32-bit) Windows® Internet Explorer® 7 (32-bit)
Others:	CD-ROM drive (It is necessary to read the operating instructions and use the software on the provided CD-ROM.) Adobe® Reader® (It is necessary to view the PDF file on the provided CD-ROM.)

IMPORTANT:

- For information on the operation verification of the supported operating systems and web browsers, refer to our website at <http://advidia.com/cameras/>.
 - 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 RT, Microsoft Windows 7 Starter and Microsoft Windows Vista Starter are not supported.
 - When using Windows 8.1 or Windows 8, use it in the desktop. The software cannot be used in the Modern UI design.
-

Note:

- For further information about PC system requirements and precautions for when using Microsoft Windows 8.1, Microsoft Windows 8, 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".
-

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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 this 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. In this case, 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.

Fire or electrical shock may be caused if water or any foreign objects, such as metal objects, enter inside the unit. 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 this product to fall down or topple over, resulting in injury or accidents. 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 the product may occur.

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 or accidents.

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

Failure to observe this may cause injury.

Do not hang down from this product or use this product as a pedestal.

Failure to observe this may cause a drop resulting in 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.

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 must be tightened to the specified torque.

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

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

Failure to observe this may cause injury.

Do not install or clean the camera, or touch this product, the power cable or the connected cables during thunder storms.

Failure to observe this may cause electric shock.

Keep SD memory card away from infants and children.

Otherwise, they may swallow the card by mistake.

In this case, consult a doctor immediately.

The measures of protection against snowfall shall be taken.

In areas where lots of snow accumulates, the weight of snow may cause the product to fall resulting in injury or accidents. Protect the product against snowfall by installing under eaves.

Be sure to install the safety wire.

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.

Do not damage the power cable.

Do not damage, fabricate, twist, stretch, bundle,

or forcibly bend the power cable. Do not place heavy objects on it, and keep it away from heat sources.

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

Consult the dealer for repair.

Correctly perform all wiring

Short circuits in the wiring or incorrect wiring may cause fire or electrical shock.

Do not install this product on a place that is greatly influenced by wind.

Installation on a place where the wind speed is 60 m {196.85 feet} or more per second may cause a fall of the product resulting in injury or accidents.

Turn the power off when cleaning this product.

Failure to observe this may cause injury.

[Precautions for use]

This product has no power switch.

When turning off the power, disconnect the power supply from the 12 V DC power supply or the PoE device.

To keep on using with stable performance

Do not use this product 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 the product to direct heat sources such as a heater.

Do not touch the front cover (transparent cover) with your bare hands.

A dirty cover causes deterioration of picture quality.

Handle this product with care.

Do not drop this product, nor apply shock or vibration to the product. Failure to observe this may cause trouble. If a strong shock or vibration is applied to the front cover, it may cause damage or allow water to enter this product.

About the battery

A battery is installed inside the camera. Do not leave the battery exposed in environments of excessive heat as a result of sunlight or fire.

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.

About the automatic status detection function

When this product malfunctions due to exogenous noise, etc. for 30 seconds or more, the product will automatically reset and will return to normal state. When the product is reset, initialization will be carried out as when the power of the product is turned on. When the product repeatedly resets, exogenous noise level around the product may be high and that may cause malfunction. Contact your dealer for instructions.

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. Failure to observe this may cause injury. Do not use strong abrasive detergent when cleaning this product. Otherwise, it may cause discoloration. When using a chemical cloth for cleaning, read the caution provided with the chemical cloth product.

Cleaning the lens

Use a lens cleaning paper (used to clean camera lenses or lenses of spectacles). When using solvent, use an alcohol solvent and do not use a thinner or a glass cleaner.

Transmission interval

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

Periodically images on the screen appear to be distorted

When the camera is installed in a location where it is subject to small vibrations (for example, when it is installed near devices that vibrate), images may appear distorted and stretched lengthways. This phenomenon is a characteristic of image pickup devices that use CMOS sensors and is caused by the relationship between the periodic movements of the camera and the timing that the image sensor reads images. This is not a problem with the camera. To reduce the possibility of this phenomenon occurring, install the camera in a secure location.

About SD memory card

- To remove the SD memory card from the unit, press the [Setup] button on the "Live" page, select the [SD memory card] tab, and set the SD memory card operation to "Not use". Then, remove the SD memory card. Alternatively, hold down the SD ON/OFF button for about 2 seconds. When the flashing SD MOUNT lamp goes out, you can remove the SD memory card.
- When using an SD memory card, format it using this product. 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 on the provided CD-ROM for how to format an 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. Use the SD memory cards recommended in page 44.
- When using an SD memory card supporting Class 10 of the speed class, use a UHS-I (Ultra High Speed-I) compliant card.

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 become deteriorated and this 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 objects crossing the shooting area may look to be bending askew.

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.

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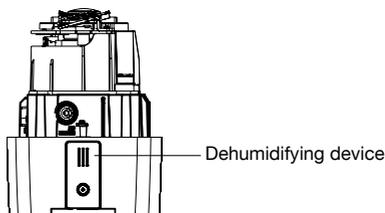
Equipment classification and power source indication label

Refer to the indication label on the bottom side of this unit for the equipment classification, power source, and other information.

: Direct current symbol

About the dehumidifying device

- This product has dehumidifying device to keep the inside at low moisture level, preventing condensation and quickly dissipating dew if produced.
- Dew may be produced depending on the conditions of temperature, humidity, winds, and rain, and it may take time to dehumidify.
- Never seal the surfaces of the dehumidifying device.



Precautions for installation

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

Installation area for this product

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 wall or ceiling board such as plaster board is too weak to support the total weight, the area shall be sufficiently reinforced.

Do not place this product in the following places:

- Locations where a chemical agent is used such as a swimming pool
- Locations subject to 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 40).
- Locations subject to vibrations, such as on vehicles, marine vessels, or above product lines (This product is not designed for on-vehicle use.)

Check before installation

Compatibility of devices is restricted. Before installation, check the ratings and dimensions of the devices to be used.

Contact your dealer for details.

Before installation

- Use the camera mount bracket (accessory) to install the camera on the ceiling or wall.
- Anchor bolts and screws used to mount the camera on the ceiling or wall are not supplied. Prepare bolts and screws that match the structure and materials of the installation location and satisfy the performance and reliability specifications shown below.
- Required screws:
Directly installed on a wall or ceiling:
M5 screw x4
Secure the camera to a two-gang junction box:
M4 screw with Spring washer and $\varnothing 7.5$
~10 Washer x4
Secure the adapter box: M5 screw x4
- Minimum pull-out strength: 539 N {121 lbf} (per 1 pc.)

Power supply

This product has no power switch.

When turning off the power, turn off a power supply or remove a power cable. When the power cable of the product is connected to the power supply device, the power will be supplied to the product.

Before cleaning the product, make sure that the power cable is not connected to the main power supply.

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.
- It is impossible to install this product in combination with a pan/tilt head.

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 checks to ensure that the tightening is sufficient enough so that there is no movement or looseness.

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.

Procure fixing screws separately.

The screws that secure this product are not supplied. Prepare them according to the material and strength of the area where the product is to be installed.

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.

Take notice of humidity.

Install this product when the humidity is low. If this product is installed during rainfall or at a high humidity, the inside may be exposed to moisture and the front cover may become foggy.

Heater unit

This product is equipped with an internal heater unit for use in cold climates. The heater unit turns on automatically when the temperature inside the product drops below 0 °C {32 °F}. However, in an extremely low-temperature environment below -30 °C {-22 °F}, snow and frost may not be defrosted from the front cover.

When using the product in cold climates, take notice of the ambient and internal temperatures of the product.

When this product is installed and operated in low temperatures below -10 °C {14 °F}, normal images may not be obtained immediately after startup. In such a case, wait around 2 hours or more, and turn on the power again.

Protection from lightning

When cables are used outdoors, there is a chance that they may be affected by lightning. In such a case, install a lightning arrester close to the camera, and make the length of the network cable between the camera and lightning arrester as short as possible to prevent the camera from being damaged by lightning.

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.

LAN cable

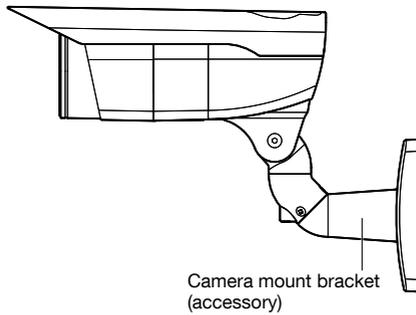
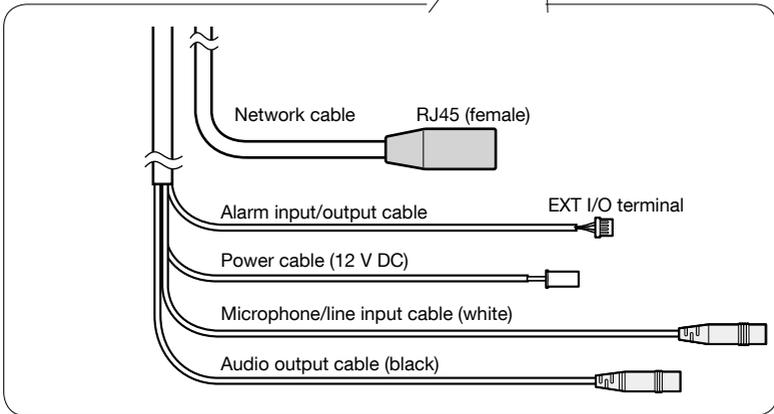
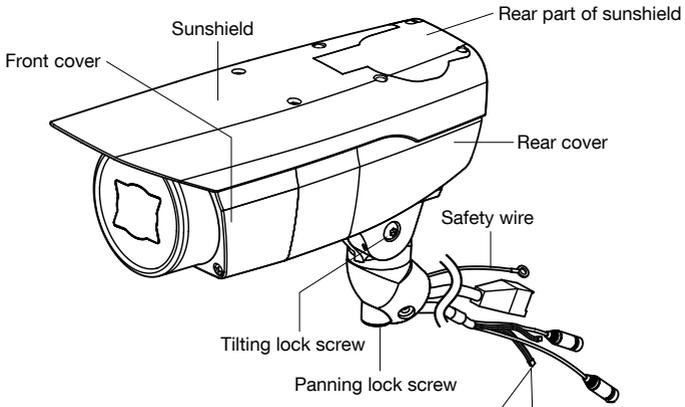
Shielded (STP) LAN cables must be used with this unit to ensure compliance with EMC standards.

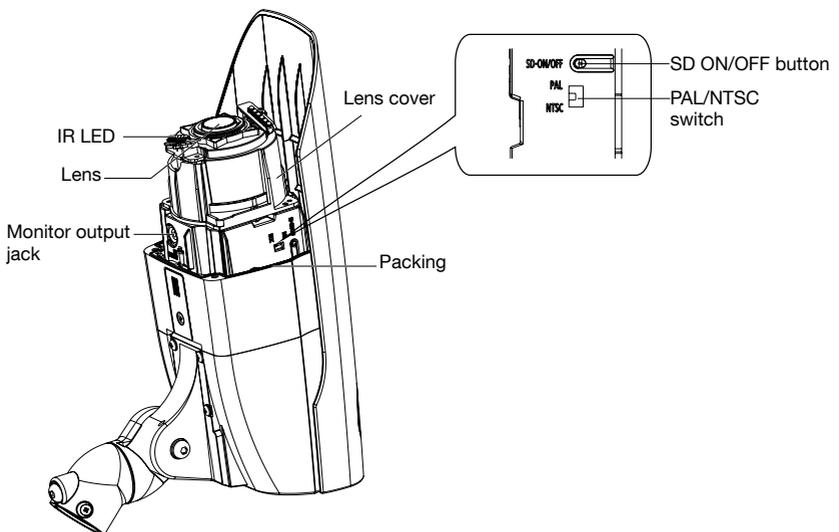
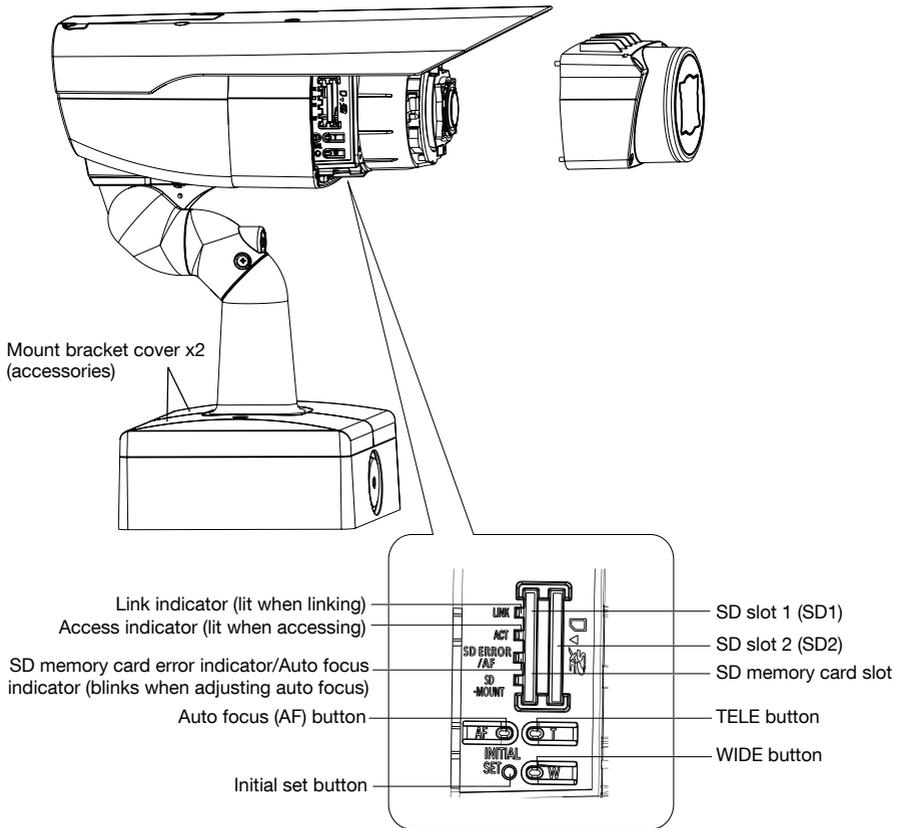
Time & date setting

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.

Make sure to remove this product if it will no longer be used.

Major operating controls





Preparations

- The camera mount bracket (accessory) can be directly mounted on the wall or ceiling using a junction box (locally procured) embedded in the wall or ceiling, or a wall or ceiling with a cable access hole.
- The screws that secure the camera mount bracket on a wall are not supplied. 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.

Installation place	Appropriate mount bracket	Recommended screw	Number of screw	Minimum pull-out strength (per 1 pc.)
Ceiling/wall	Directly mount	M5	4 pcs.	539 N {121 lbf}
Ceiling/wall	Junction box	M5	4 pcs.	539 N {121 lbf}
Ceiling/wall	Adaptor box (approx. 510 g {1.13 lbs})	M5	4 pcs.	539 N {121 lbf}

IMPORTANT:

- Prepare the mounting screws according to the material of the area where the camera mount bracket and the adapter box are to be installed. In this case, wood screws and nails should not be used.
- If a wall or ceiling board such as plaster board is too weak to support the total weight, the area shall be sufficiently reinforced.

Installations/Connections

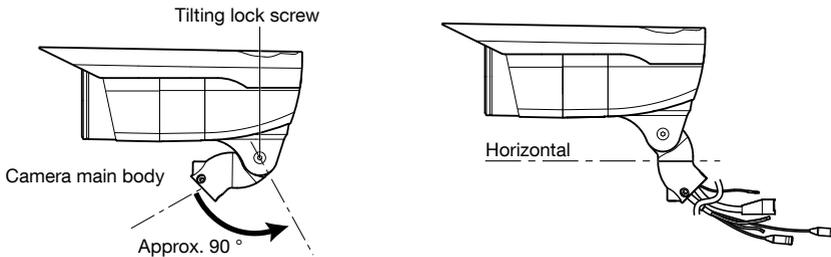
Secure the camera to the camera mount bracket

The tilt angle is locked downward at shipment.

- 1 Loosen the tilting lock screw approx. 1 rotation and adjust the tilt angle of the camera to the horizontal position.
- 2 Tighten the tilting lock screw again after tilt angle adjustment.

Note:

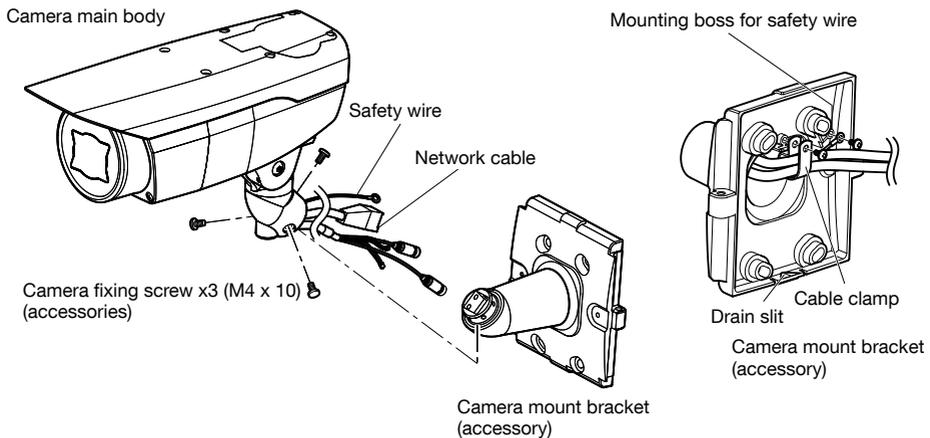
- Use a hexagonal wrench with width across flats of 4 mm (locally procured) to loosen or tighten the tilting lock screw.
-



- 3 Pass each cable and the safety wire through the camera mount bracket, and secure the camera to the camera mount bracket with the camera fixing screws x3 (accessories). Pass the network cable first through the camera mount bracket before passing through the other cables.

IMPORTANT:

- Ensure that the camera fixing screws are firmly secured.
Recommended tightening torque: 0.78 N·m {0.58 lbf·ft}
-



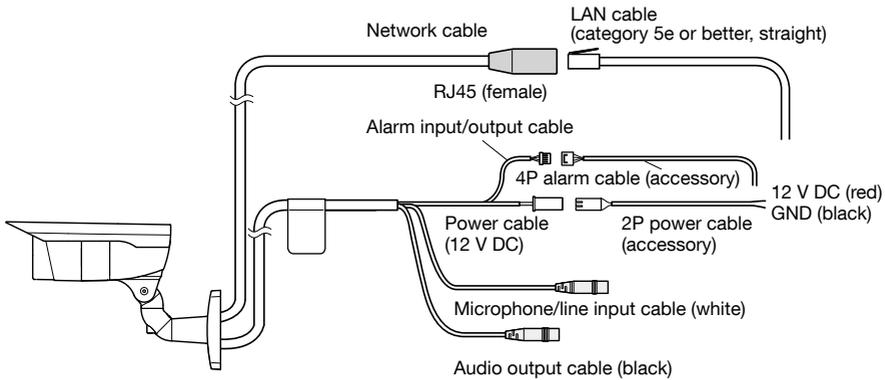
- 4** Remove the screws from the mounting boss of the safety wire and the mounting boss of the cable clamp.
- 5** Secure the safety wire with the screw from the mounting boss. Then, bundle the wire and the cable using the cable clamp and secure them with each screw from the mounting boss as illustrated.

IMPORTANT:

- Ensure that the safety wire is firmly secured.
Recommended tightening torque: 0.59 N·m {0.44 lbf·ft}

Connection

Turn off a circuit breaker before making a connection. Before starting the connection, prepare the required devices and cables.



<Required cable>

LAN cable (category 5e or better, straight)

- 1** Connect the microphone/line input cable and the microphone (for use of the audio reception function).

Input impedance: Approx. 2 kΩ (unbalanced)
 Recommended cable length: Less than 1 m {3.28'} (for microphone input)
 Less than 10 m {32.8'} (for line input)
 Recommended microphone: Plug-in power type microphone (option)
 Connect a monaural mini plug (ø3.5 mm).
 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

- 2** Connect an external amplifier-embedded speaker to the audio output cable.
Connect a stereo mini plug (ø3.5 mm) (Audio output is monaural.).
- Output impedance: Approx. 600 Ω (unbalanced)
 - Recommended cable length: Less than 10 m {32.8 ft}
 - Output level: -20 dBV
- * Use an external powered speaker.

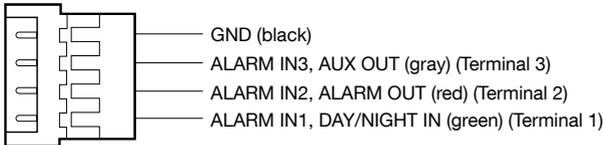
IMPORTANT:

- 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).

- 3** Connect the alarm input/output cable.

4P alarm cable



<Ratings>

- ALARM IN1(DAY/NIGHT IN), ALARM IN2, ALARM IN3
Input specification: No-voltage make contact input (4 V - 5 V DC, internally pulled up)
OFF: Open or 4 V - 5 V DC
ON: Make contact with GND (required drive current: 1 mA or more)
- ALARM OUT, AUX OUT
Output specification: Open collector output (maximum applied voltage: 20 V DC)
Open: 4 V - 5 V DC by internal pull-up
Close: Output voltage 1 V DC or less (maximum drive current: 50 mA)
* The default of EXT I/O terminals is "Off".

IMPORTANT:

- Be sure to use the 4P alarm cable provided with this product.
 - Off, input, and output of the external I/O terminal 2 and 3 can be switched by configuring the setting. Refer to the Operating Instructions on the provided CD-ROM for further information about the EXT I/O terminal 2 and 3 (ALARM IN2, 3) settings ("Off", "Alarm input", "Alarm output" or "AUX output").
 - When using the EXT I/O terminals as the output terminals, ensure they do not cause signal collision with external signals.
 - Install external devices so that they do not exceed the ratings above.
-

4 Connect a LAN cable (category 5e or better, straight to the network connector.

IMPORTANT:

- Use all 4 pairs (8 pins) of the LAN cable (category 5e or better, straight).
- The maximum cable length is 100 m (328 feet).
- Make sure that the PoE device in use is compliant with IEEE802.3af standard.
- When connecting both the 12 V DC power supply and the PoE device for power supply, 12 V DC will be used for power supply*.
* If a 12 V DC power supply and a PoE hub or router are used at the same time, network connections may not be possible. In this case, disable the PoE settings.
Refer to the operating instructions of the PoE hub or router in use.
* In the situation where a 12 V DC power supply and a PoE hub or router are used at the same time and the 12 V DC power supply is then disconnected, the power supply may be stopped and the camera may restart depending on the PoE hub or router used.
- When the LAN cable is disconnected once, reconnect the cable after around 2 seconds. When the cable is quickly reconnected, the power may not be supplied from the PoE device.
- When cables are used outdoors, there is a chance that they may be affected by lightning. In this case, install a lightning arrester just before where the cables connect to the camera.

5 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 12V DC CLASS 2 POWER SUPPLY (UL 1310/ CSA 223) or LIMITED POWER SOURCE (IEC/EN/UL/ CSA 60950-1).

Power cable

12 V DC	
Red	Positive
Black	Negative

Connect the output cable of the AC adapter to the 2P power cable.

IMPORTANT:

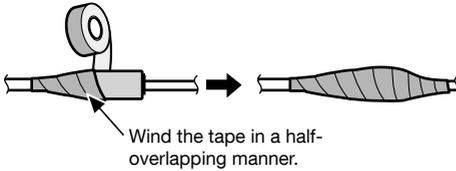
- The 12 V DC power supply shall be insulated from the commercial AC power.
 - Be sure to use the 2P power cable provided with this product.
 - Be sure to fully insert the 2P power cable into the 12 V DC power supply terminal. Otherwise, it may damage the camera or cause malfunction.
 - When installing the camera, make sure that excessive force is not applied to the power cable.
-

Waterproof treatment for the cable joint sections

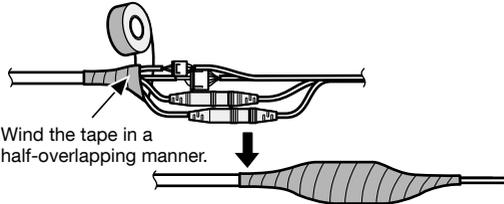
Adequate waterproof treatment is required for the cables when installing the camera with cables exposed or installing it under the eaves. The camera body is waterproof, but the cable ends are not waterproof.

Be sure to use the supplied waterproof tape (accessory) at the points where the cables are connected to apply waterproof treatment in the following procedure. Failure to observe this or use of a tape other than the provided waterproof tape (such as a vinyl tape) may cause water leakage resulting in malfunction.

LAN cable



Alarm input/output cable, power cable, microphone/ line input cable, audio output cable



IMPORTANT:

How to wind the supplied waterproof tape

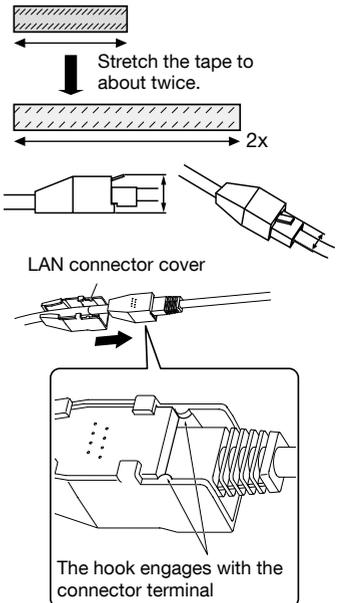
- Also waterproof the 2P power cable, 4P alarm cable, and external connections in the same way.
- Stretch the tape by approx. twice (see the illustration) and wind it around the cable. Insufficient tape stretch causes insufficient waterproofing.
- To prevent the LAN cable hook from coming loose easily, fit the LAN connector cover onto the pigtail cable as illustrated, and then slide it in the direction indicated by the arrow.

The connector of the LAN cable used with this camera must meet the following restrictions.

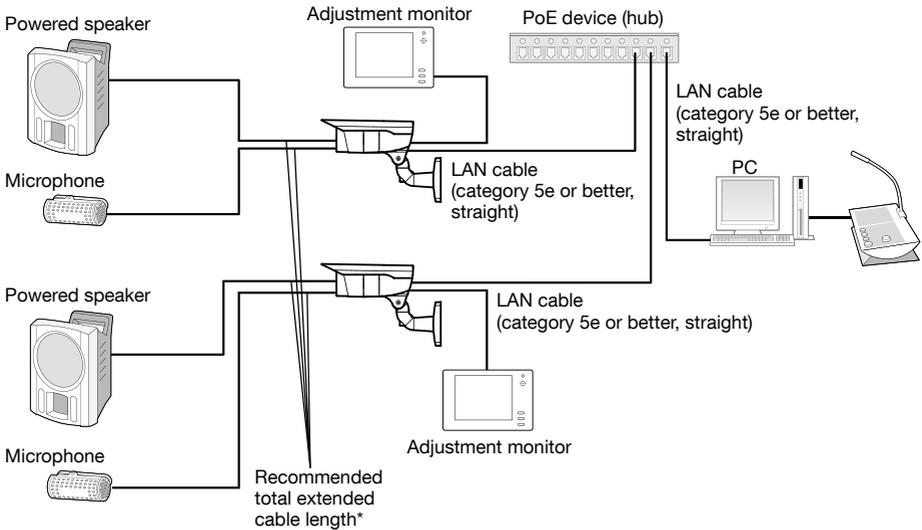
Height when inserted (From bottom to hook.): Max. 16 mm {5/8 inches}

Connector width: Max. 14 mm {9/16 inches}

- To install this product outdoors, be sure to waterproof the cables. Waterproof grade (IEC IP66 or equivalent) is applied to this product only when it is installed correctly as described in these operating instructions and appropriate waterproof treatment is applied. The internal parts of base brackets are not waterproofed.



Connection example when connecting to a network using a PoE hub



<Required cable>

LAN cable (category 5e or better, straight)

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

* Recommended cable length from the speaker: less than 10 m {32.8 feet}

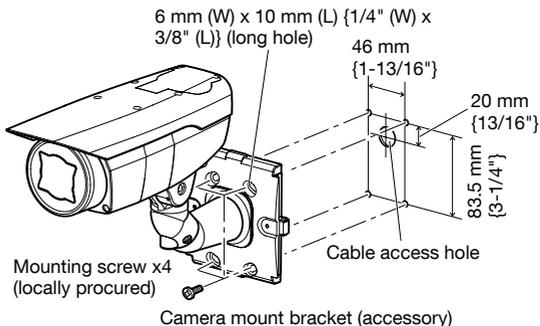
Recommended cable length from the microphone: less than 1 m {3.28 feet}

IMPORTANT:

- The adjustment monitor is used for checking the adjustment of the angular field of view when installing the camera or when servicing. It is not provided for recording/monitoring use.
 - Depending on the monitor, some characters (camera title, preset ID, etc.) may not be displayed on the screen.
 - Use a switching hub or a router which is compliant with 10BASE-T/100BASE-TX.
 - If a PoE hub is not used, each network camera must be connected to a 12 V DC power supply.
 - When using 12 V DC, power supply from a PoE hub or router is not required.
 - Network camera is intended for connection to an ethernet or PoE network without routing to the outside plant.
-

Secure the camera mount bracket when the camera is directly installed on a wall

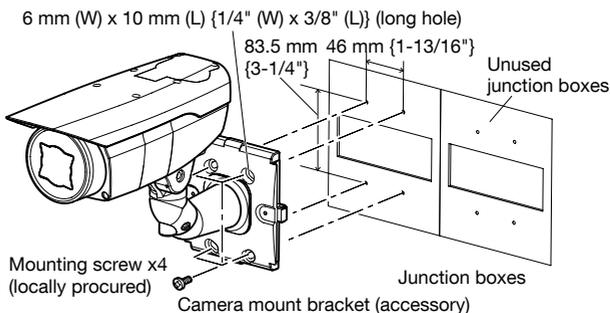
Use M5 screw x4 (locally procured) to secure the camera mount bracket to a wall or a junction box (locally procured).
 Required pull-out capacity of a single screw/bolt is 539 N {121 lbf} or more.



- If a junction box is used, putting the boxes side by side is recommended as illustrated. (Use unused junction boxes to pass cables through for easy cabling.)

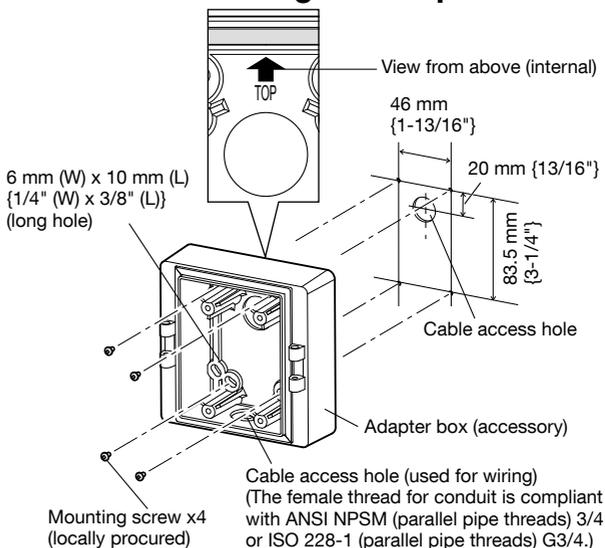
Use M4 screw with Spring washer and $\phi 7.5 \sim 10$ Washer x4 (locally procured) to secure the camera mount bracket (accessory) to a two-gang junction box.

Required pull-out capacity of a single screw/bolt is 539 N {121 lbf} or more.

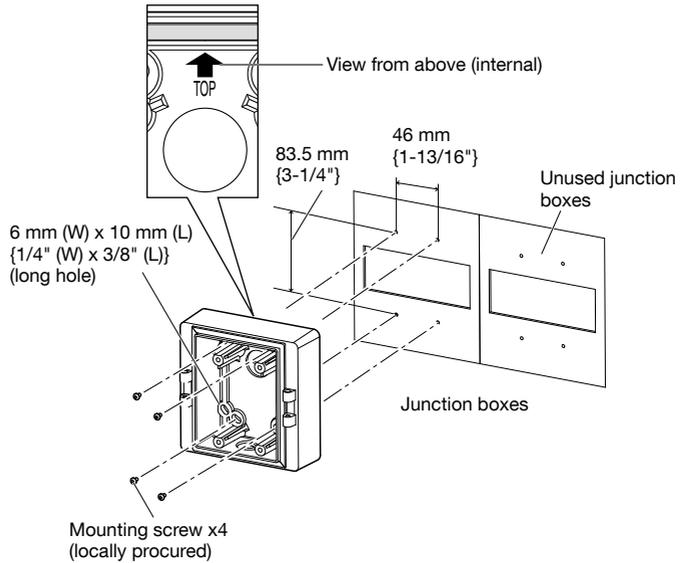


When the camera is installed on a wall using the adapter box

- 1 Use M5 screw x4 (locally procured) to secure the adapter box (accessory) to a wall or a junction box (locally procured).
 Required pull-out capacity of a single screw/bolt is 539 N {121 lbf} or more.



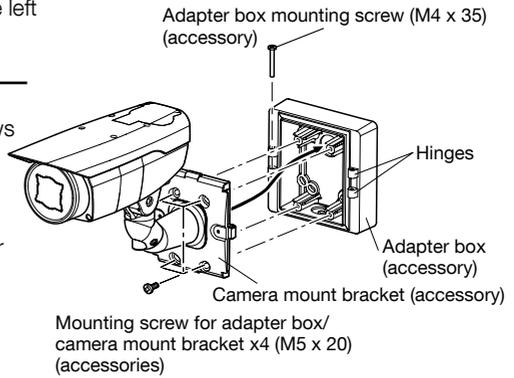
- If a junction box is used, putting the boxes side by side is recommended as shown in the illustration at right. (Use unused junction boxes to pass cables through for easy cabling.)



2 Attach the camera mount bracket to the left or right hinges of adapter box.

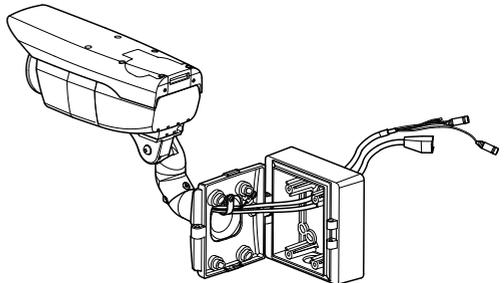
IMPORTANT:

- Ensure that the adapter box mounting screws (accessory) are firmly secured.
Recommended tightening torque:
M4: 0.78 N·m {0.58 lbf·ft}
- Ensure that the mounting screws for adapter box/ camera mount bracket (accessory) are firmly secured.
Recommended tightening torque:
M5: 1.86 N·m {1.37 lbf·ft}



Note:

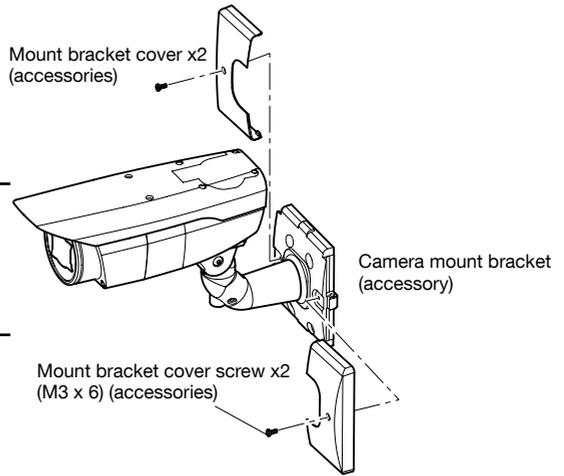
- The right or left hinges of the adapter box shall be selected so as to prevent the motion of the camera mount bracket from being interfered with by obstructions such as a wall when the camera mount bracket is connected to the hinges of the adapter box.



- 3** Secure the mount bracket cover x2 (accessories) to the camera mount bracket with the 2 mount bracket cover screws (accessories).

IMPORTANT:

- Ensure that the mount bracket cover screws are firmly secured.
Recommended tightening torque:
0.59 N·m {0.44 lbf·ft}
-



Insert/remove an SD memory card

IMPORTANT:

- Before inserting an SD memory card, make sure to turn off the power.
- When inserting an 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))

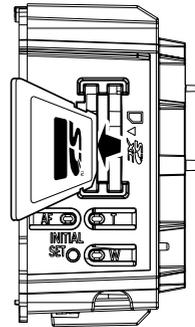
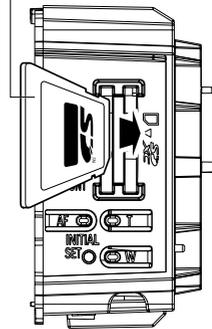
1 Loosen the 4 fixing screws of the front cover to remove the front cover.

2 Insert an SD memory card fully into the SD memory card slot until a click is heard.

3 Attach the front cover to the camera.
(☞ page 32)

4 When removing the SD memory card from the SD memory card slot, detach the front cover by following step 1, and push the card until a click is heard. After the SD memory card is removed, attach the front cover to the camera again.
(☞ page 32)

Label side

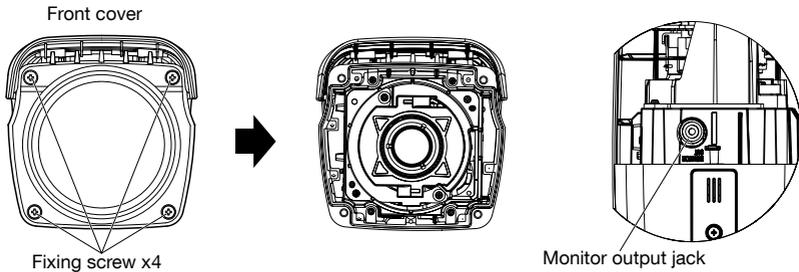


Adjustment

- 1** Be sure to view the monitor for adjustment when the camera angle is adjusted.

Supply power to this unit, connect the monitor for adjustment (e.g. a small LCD) to the monitor output jack, and adjust the camera angle (turn off the power after view angle adjustment for safety).

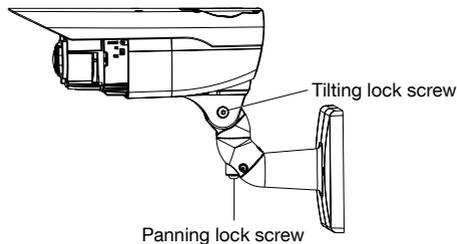
- ① Loosen the 4 fixing screws of the front cover to remove the front cover.
- ② Connect the monitor output jack and the monitor for adjustment with the RCA pin cable (locally procured).



- ③ Repeat the steps (1) and (2) to adjust the camera angle.
 - (1) Loosen the panning lock screw and rotate the camera head horizontally to adjust panning.
 - (2) Loosen the tilting lock screw and rotate the camera head vertically to adjust tilting.
 - (3) Tighten the panning lock screw and tilting lock screw after camera angle adjustment.

IMPORTANT:

- After camera angle adjustment, the panning lock screw and tilting lock screw shall be securely tightened. Recommended tightening torque: 2.45 N·m {1.8 lbf·ft}
-

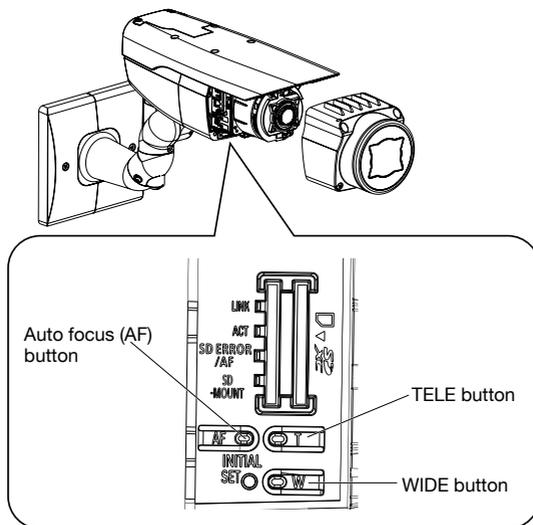


Notes:

- Use a hexagonal wrench with width across flats of 4 mm (locally procured) to loosen or tighten the panning lock screw and tilting lock screw.
 - Approximately 1 rotation of loosening the panning lock screw and tilting lock screw allows camera angle adjustment. Do not loosen the screws beyond necessity.
 - The camera body shall be held when the panning lock screw or tilting lock screw is loosened.
 - Focus adjustment (☞ page 30-31) shall be performed at the same time panning and tilting adjustments are performed.
-

2 Adjust the angular field of view and the focus.

Adjust the angular field of view in accordance with the distance between the camera lens and a photographic subject. These adjustments shall be performed together with the camera angle adjustment.



When adjusting the angular field of view and the focus from the setup menu

Refer to the Operating Instructions (included in the CD-ROM) for how to perform the manual focus adjustment from the setup menu.

When adjusting the angular field of view and the focus with the panel of the camera

- ① Press the TELE or WIDE buttons to move the knob between TELE and WIDE to obtain the appropriate angular field of view.

Note:

- While the button is held down, the angle of the view moves in the "T" or "W" direction.
- When the angular field of view is adjusted on the TELE side, optical zoom is applied until 3.2x, and if there are any adjustments above this, extra optical zoom is applied.
- When the image capture size under "VGA" is applied, the zoom factor can be adjusted up to 2x without deterioration of image quality.
- The zooming factor is displayed on the top right of the screen.
- When using the TELE or WIDE buttons to perform operations, the zoom factor stops once at 3.2x. If operations are continued, the angle of the view can be moved even more in the "T" or "W" directions.

- ② When the auto focus (AF) button is pressed, the auto focus (AF) indicator will light for around 10 seconds, and the focus is automatically adjusted.

IMPORTANT:

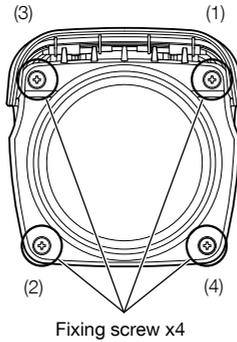
- Do not touch the lens.
 - Defocus may be caused by the reinstalled front cover. In this case, perform the auto focus function from the setup menu.
-

Note:

- When shooting in the following place or the following subjects, focus may not be adjusted automatically. In this case, adjust the focus manually from the setup menu. Refer to the Operating Instructions (included in the CD-ROM) for how to perform the manual focus adjustment from the setup menu.
 - Subj. with large illuminance change
 - Subj. with reflection or extra brightness
 - Place where the front cover easily becomes dirty
 - Subj. with less contrast such as white wall
 - Subj. moving frequently
 - Subj. with low illuminance
 - Subj. through a window
 - Subj. with heavy flicker
 - If the 2x extra optical zoom is applied when "1280x960", "1280x720" is selected for the image capture size, the image quality will be deteriorated because the effect of Extra Optical Zoom is not provided.
 - When images in the near-infrared light area change from color to black & white, out-of-focus may be occurred according to the nature of optical property. In this case, the focus can automatically 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 set "Adjusting method" on the setup menu.
-

Mounting the front cover

Mount the front cover.



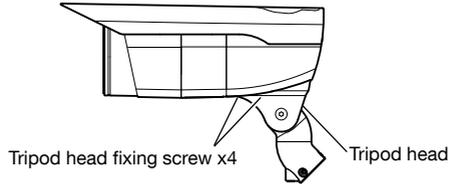
IMPORTANT:

- The tightening torque described below shall be followed for the 4 fixing screws of front cover.
Recommended tightening torque: 0.59 N·m {0.44 lbf·ft}
 - The tightening sequence of the 4 fixing screws of the front cover shall be observed and repeated twice as described in the illustration above.
((1) → (2) → (3) → (4), twice)
 - Make sure the packing has not come off or become askew. If this happens put it back into place.
 - Make sure the packing has no dust or other contaminants on it. Remove any dust or contaminants on the packing.
 - Remove the cover film from the clear part of the front cover section after the installation is complete.
Do not touch the clear part of the front cover section by hand directly after removing the cover film.
-

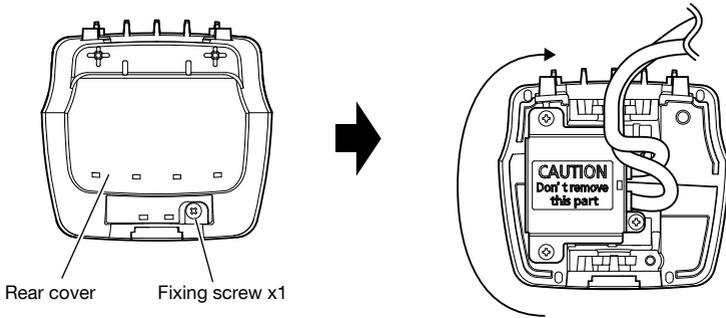
Attaching the mounting surface on the top surface of the camera body

When the mounting surface is changed to the top surface of the camera body

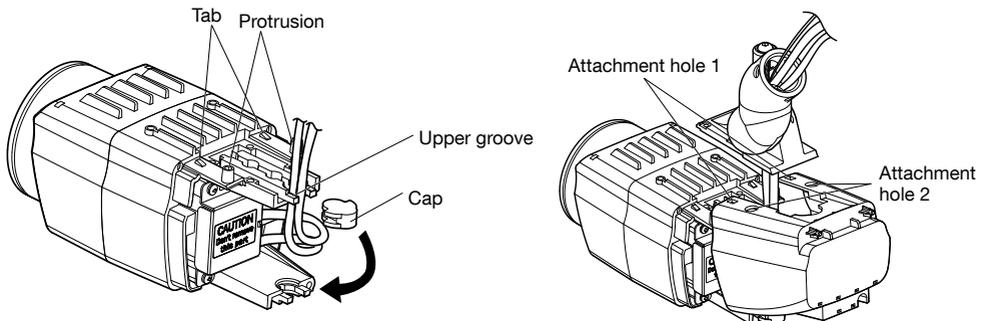
- 1** Remove the 4 sunshield fixing screws from the camera body and remove the sunshield.
- 2** Remove the 4 tripod head fixing screws from the camera body and remove the tripod head.



- 3** Loosen the fixing screw x1 and remove the rear cover, and remove the cap.
- 4** Rotate each cable in the direction of the arrow (clockwise) as illustrated and pass them between opening in the upper groove of the main body. Then, attach the cap to the lower groove, and secure the rear cover with the fixing screw x1.



Attach the rear cover to the front cover by hooking attachment hole 1 of the rear cover to the tab on the front cover while passing the protrusion of the front cover through attachment hole 2 of the rear cover.

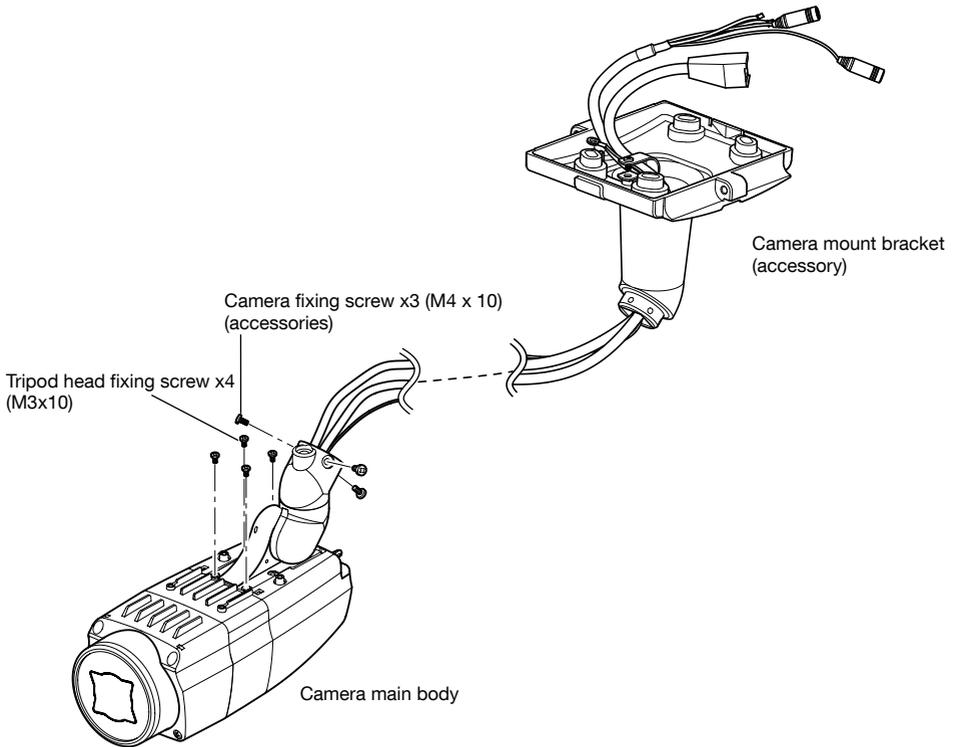


- 5** Mount the tripod head on the top of the camera body with the 4 tripod head mounting screws that were removed in the step 2.

IMPORTANT:

- Caution shall be taken to prevent each cable from being caught between the camera body and tripod head.
- Be sure to use the screws that were removed from the tripod head.
Recommended tightening torque: 0.59 N·m {0.44 lbf·ft}

- 6** Secure the camera to the camera mount bracket with the camera fixing screws x3. Pass each cable and the safety wire through the camera mount bracket, and connect the safety wire to the camera mount bracket. Then, bundle the wire and the cable using the cable clamp and secure them with each screw from the mounting boss to the camera mount bracket (page 19-20).



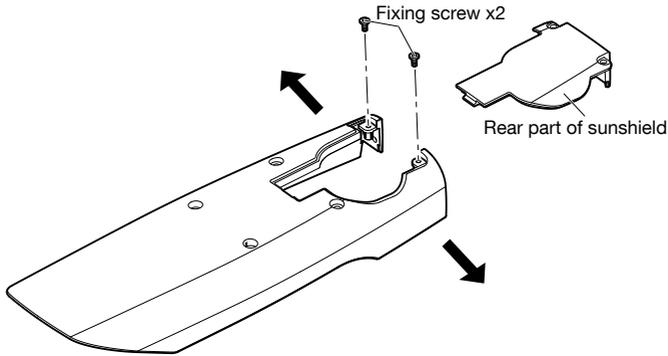
IMPORTANT:

- Be sure to use the screws that were removed from the camera mount bracket.
Recommended tightening torque: 0.78 N·m {0.58 lbf·ft}
 - Be sure to use the screws that were removed from the safety wire.
Recommended tightening torque: 0.59 N·m {0.44 lbf·ft}
-

7 Remove the sunshield backside.

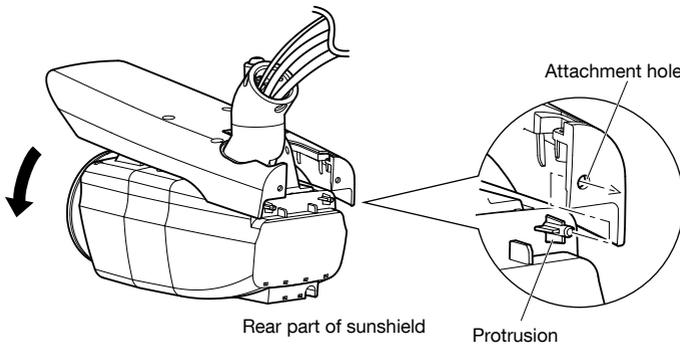
As illustrated, opening up the sunshield in both directions makes it easier to remove the rear part of the sunshield.

- When installing the camera to a ceiling, the rear part of the sunshield and the fixing screws are not used.



8 Mount the sunshield on the camera body with the 4 sunshield mounting screws after removing the sunshield backside.

- The sunshield is attached to the camera by inserting the protrusions on the rear cover of the camera into the attachment holes on the rear part of the sunshield.



IMPORTANT:

- Be sure to use the screws that were removed from the sunshield.
Recommended tightening torque: 0.59 N·m {0.44 lbf·ft}

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.

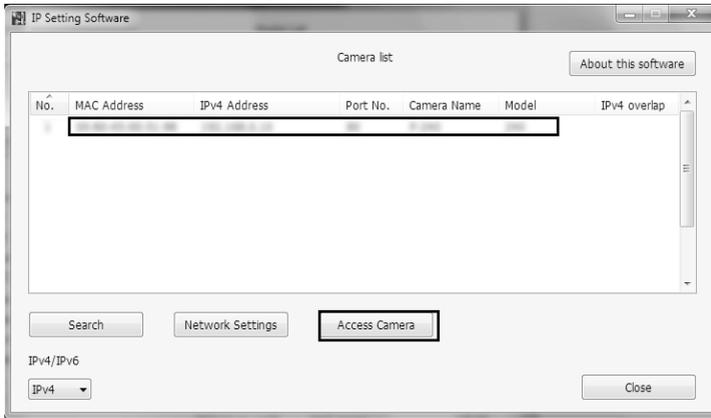


Note:

- 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].
[IP Setting Software] 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 [IP Setting Software] 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 “Advidia WebViewer Plugin” 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 “Advidia WebViewer Plugin” 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.
-

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 2P power supply cable? → Check whether the connection is appropriately established. • Is the AC adapter in use compliant with the Specifications? → Check the Specifications regarding AC adapter. <p>When using a PoE device for power supply</p> <ul style="list-style-type: none"> • Are the PoE device and the network cable of the camera connected using a LAN cable? → 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. • When connecting both of the 12 V DC power supply and the PoE device for power supply, the network connection may not be established. Turn down the power supply from the PoE device. 	<p>20-22</p>
<p>Audio input contains noise.</p>	<ul style="list-style-type: none"> • Check the following. • Grounding of the camera, a switching hub or peripheral devices are not done. • The camera is used near an electrical power line. • The camera is used near a device which produces strong magnetic field or radio waves (such as near a TV/radio antenna, a motor of an air conditioning system, a transformer, etc.) When audio input still contains noise even after checking the above possibilities, use a powered microphone or connect audio output with low output impedance. 	<p>15</p>

Symptom	Cause/solution	Reference pages
<p>When the IR LED lights a part or all of the screen appears blurred.</p>	<ul style="list-style-type: none"> • Is there a wall or other reflecting surface or object near the camera (including areas not displayed in images)? → Adjust the camera angle so that light from the IR LED is not reflected. 	<p>29-31</p>
<p>When the IR LED lights the camera switches between color mode and black-and-white mode.</p>	<ul style="list-style-type: none"> • The subject may be too close to the camera. → Adjust the distance between the camera and the subject. 	<p>29-31</p>
<p>The LINK indicator does not light in orange even when the network cable is connected to the camera.</p>	<ul style="list-style-type: none"> • Is the LAN cable connected appropriately? → Connect the LAN cable appropriately. • Is the hub or router connected to the camera operating appropriately? → Check if the hub or router in use is operating appropriately. • Isn't the LAN cable connected to the camera broken? → Replace the cable with another one. 	<p>22-24</p>
<p>SD ERROR/AF indicator lights red or blinks red.</p>	<ul style="list-style-type: none"> • Isn't the write protect switch of the inserted SD memory card set to "LOCK"? → Unlock the write protect switch of the SD memory card. • Hasn't the inserted SD memory card been formatted on a PC? → Use an SD memory card formatted on the camera. • Isn't the inserted SD memory card faulty? → Replace the card with a normal one. 	<p>Operating Instructions (included in the CD-ROM)</p>

Specifications

• Basic

Power source:	12 V DC, PoE (IEEE802.3af compliant)
Power consumption:	DC 12V : 930 mA/Approx. 11.2 W PoE DC48 V : 260 mA/Approx. 12.5 W (Class 0 device)
Ambient operating environment:	-40 °C to +50 °C {-40 °F to 122 °F}*1
Ambient operating humidity:	10 % to 90 % (no condensation)
Monitor output (for adjustment):	VBS: 1.0 V [p-p]/75 Ω, composite, RCA jack An NTSC or PAL signal can be outputted from camera(use the selector switch or software to select either NTSC or PAL signal).
External I/O terminals:	ALARM IN 1 (DAY/NIGHT IN)/ ALARM IN 2 (ALARM OUT)/ ALARM IN 3 (AUX OUT) (x1 each) DAY/NIGHT IN, ALARM OUT, and AUX OUT can be used by changing the settings of Terminal 1, Terminal 2, and Terminal 3.
Microphone/line input:	ø3.5 mm stereo mini jack Input impedance: Approx. 2 kΩ (unbalanced)
For microphone input:	Applicable microphone: Plug-in power type Supply voltage: 2.5 V±0.5 V Recommended sensitivity of microphone: -48 dB±3 dB (0 dB=1 V/Pa, 1 kHz)
For line input:	Input level: Approx. -10 dBV
Audio output:	ø3.5 mm stereo mini jack (stereo output) Output impedance: Approx. 600 Ω (unbalanced) External speaker with an amplifier Output level: -20 dBV
Waterproof*2:	Main body: IP66 (IEC60529), Type 4X (UL50), NEMA 4X compliant
Dimensions:	94 mm (W) x 89 mm (H) x 226 mm (L) {3-45/64 inches (W) x 3-1/2 inches (H) x 8-57/64 inches (L)}
Mass:	Approx. 1.4 kg {3.09 lbs}
Finish:	Main body: Aluminum die cast (Light gray) Dome cover: Clear polycarbonate resin

*1 When using this product without turning the power off. (However, the temperature inside the camera shall be -10 °C {14 °F} or higher.) Perform settings or startup operations when the ambient temperature is -30 °C {-22 °F} or higher. The auto focus function is not available until the heater unit of the camera raises the internal temperature of the camera.

*2 Only when installation work is properly performed according to the instructions in this book and appropriate waterproof treatment is performed.

• **Camera**

Image sensor:	Approx. 1/3 type MOS image sensor
Effective pixels:	Approx. 2.4 mega pixels
Scanning area:	5.28 mm (H) x 2.97 mm (V) {7/32 inches (H) x 1/8 inches (V)}
Scanning system:	Progressive
Minimum illumination:	Color: 0.04 lx {0.00372 foot-candle} (F1.3, Maximum shutter: Off (1/30 s), AGC: High) 0.003 lx {0.00028 foot-candle} (F1.3, Maximum shutter: max. 16/30 s, AGC: High)* BW : 0 lx {0.000 foot-candle} (F1.3, Maximum shutter: OFF (1/30 s), Gain: High, when the IR LED is lit) 0.01 lx {0.00093 foot-candle} (F1.3, Maximum shutter: Off (1/30 s), AGC: High) 0.0007 lx {0.00007 foot-candle} (F1.3, Maximum shutter: max. 16/30 s, AGC: High)* * Converted value
Super-Dynamic:	On (High)/ On (Normal)/ Off * When frame rate is set to 60 fps, Off is displayed for Super Dynamic function.
Dynamic range:	133 dB typ. (Super Dynamic: On)
Face SD (Super-Dynamic):	On/ Off (only when Super Dynamic: On)
Gain (AGC):	On (High)/ On (Mid)/ On (Low)/ Off
Adaptive black stretch:	On/ Off (only when Super Dynamic: Off)
Back light compensation (BLC):	On/ Off (only when Super Dynamic: Off)
Fog compensation:	On/ Off (only when Super Dynamic/ Adaptive black stretch: Off)
High light compensation (HLC):	On/ Off (only when Super Dynamic/ Back light compensation: Off)
Light control mode setting:	Outdoor scene/ Indoor scene (50 Hz)/ Indoor scene (60 Hz)/ Fix shutter
Shutter speed:	[2 mega pixel [16:9] (60 fps mode)] OFF(1/60), 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 Other than [2 mega pixel [16:9] (60 fps mode)] OFF(1/30), 3/100, 3/120, 2/100, 2/120, 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
Maximum shutter:	max. 1/1000 s, max. 1/500 s, max. 1/250 s, max. 1/120 s, max. 2/120 s, max. 1/100 s, max. 2/100 s, max. 1/60 s, max. 1/30 s, max. 2/30 s, max. 4/30 s, max. 6/30 s, max. 10/30 s, max. 16/30 s
Color/BW:	Off/ On/ Auto1 (Normal)/ Auto2 (IR Light)/ Auto3 (SCC)
IR LED Light:	Off/ Auto (High/ Mid/ Low), Irradiation distance: 30 m {98.43 feet}
White balance:	ATW1/ ATW2/ AWC
Digital noise reduction:	High/ Low
Privacy zone:	On/ Off (up to 8 zones available)
Camera title on screen:	On/ Off Up to 20 characters (alphanumeric characters, marks)
Video Motion Detection (VMD):	On/ Off, 4 areas available

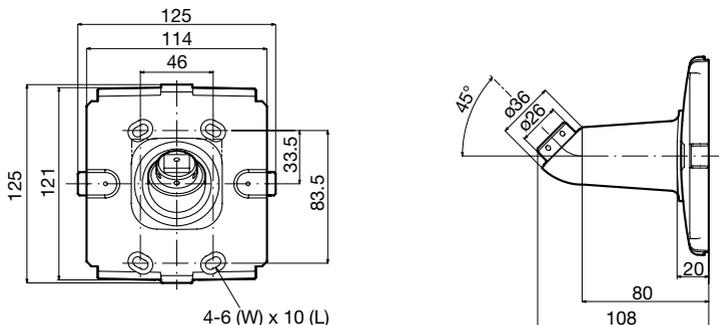
• **Lens**

Zoom ratio:	3.6x Varifocal Lens 10.8x Extra optical zoom* is available. * 16:9 mode must be selected
Digital (electronic) zoom:	Choose from 3 levels of x1, x2, x4
Focal length:	2.8 mm – 10 mm {1/8 inches – 13/32 inches}
Maximum aperture ratio:	1:1.3 (WIDE) – 1:3.0 (TELE)
Focus range:	0.3 m – ∞
Aperture range:	F1.3 – F11 [16:9 mode] Horizontal: 30.9 ° (TELE) – 105.4 ° (WIDE) Vertical: 17.4 ° (TELE) – 57.3 ° (WIDE) [4:3 mode] Horizontal: 25.8 ° (TELE) – 86.4 ° (WIDE) Vertical: 19.3 ° (TELE) – 63.9 ° (WIDE)

• **Camera Mount bracket**

Adjusting angle:	PAN: ±100 ° TILT: +30 ° ~ -90 °
Dimensions:	125 mm (W) x 125 mm (H) x 108 mm (L) {4-15/16 inches (W) x 4-15/16 inches (H) x 4-1/4 inches (L)}
Mass:	Approx. 220 g {0.49 lbs}
Finish:	Aluminum die cast, metallic silver coating

<Camera mount bracket dimensional drawing> (unit : mm)



• **Network**

Network:	10BASE-T/100BASE-TX, RJ45 connector
Resolution: H.264 JPEG (MJPEG)	2 mega pixel [16:9] (30 fps mode)/ 2 mega pixel [16:9] (60 fps mode) 1920x1080, 1280x720, 640x360, 320x180, 160x90 2 mega pixel [4:3] (30 fps mode) 1600x1200, 1280x960, 800x600, VGA, 400x300, QVGA, 160x120 3 mega pixel [4:3] (30 fps mode) * Used by super resolution techniques 2048x1536, 1280x960, 800x600, VGA, 400x300, QVGA, 160x120

<p>Image compression method: H.264*¹</p>	<p>Transmission priority: Constant bit rate / Variable bit rate / Frame rate / Best effort / Advanced VBR</p> <p>Frame rate: <When Variable bit rate, Frame rate, or Advanced VBR is selected> 1 fps / 3 fps / 5 fps* / 7.5 fps* / 10 fps* / 12 fps* / 15 fps* / 20 fps* / 30 fps* / 60 fps*</p> <p>* The frame rate is limited to "Max bit rate (per client)". When a value with an asterisk (*) on the right of it is selected, the actual frame rate may be lower than the value selected.</p> <p>Bit rate per client: 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* / 16384 kbps* / 20480 kbps* / 24576 kbps* / 30720 kbps* / 40960 kbps*</p> <p>* The available range of the H.264 bit rate varies depending on the setting selected for "image capture size".</p> <p>Image quality: <When Constant bit rate or Best effort is selected> Low/Normal/Fine <When Variable bit rate is selected> 0 SUPER FINE/1 FINE/2/3/4/5 NORMAL/6/7/8/9LOW</p> <p>Transmission type: Unicast/Multicast</p>
<p>JPEG (MJPEG)</p>	<p>Image quality: 0 SUPER FINE/ 1 FINE/ 2/ 3/ 4/ 5 NORMAL/ 6/ 7/ 8/ 9 LOW (10 steps: 0-9)</p> <p>Transmission type: Pull/ Push</p> <p>Refresh interval: 0.1 fps – 30 fps (JPEG frame rate will be restricted when displaying both JPEG and H.264 images.)</p>
<p>Cropping function:</p>	<ul style="list-style-type: none"> • Off/ JPEG(1)/ JPEG(2)/ JPEG(3)/ H.264(1)/ H.264(2)/ H.264(3)/ H.264(4)/ H.264(all) • Alarm action On/ Off
<p>Audio compression method:</p>	<p>G.726 (ADPCM) 32 kbps/ 16 kbps, G.711 64 kbps, AAC-LC*²</p>
<p>Bandwidth control:</p>	<p>Unlimited/ 64 kbps/ 128 kbps/ 256 kbps/ 384 kbps/ 512 kbps/ 768 kbps/ 1024 kbps/ 2048 kbps/ 4096 kbps/ 8192 kbps</p>
<p>Protocol:</p>	<p>IPv6: TCP/IP, UDP/IP, HTTP, HTTPS, FTP, SMTP, DNS, NTP, SNMP, DHCPv6, RTP, MLD, ICMP, ARP</p> <p>IPv4: TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTP/RTCP, FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP, UPnP, IGMP, ICMP, ARP</p>

OS* ³ :	Microsoft Windows 8.1 Microsoft Windows 8 Microsoft Windows 7 Microsoft Windows Vista
Browser* ³ :	Windows Internet Explorer 11 (32-bit) Windows Internet Explorer 10 (32-bit) Windows Internet Explorer 9 (32-bit) Windows Internet Explorer 8 (32-bit) Windows Internet Explorer 7 (32-bit)
Maximum concurrent access number:	14 (Number of sessions that can connect to cameras at the same time) * 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.)
Multi-screen:	Up to 16 camera images can be displayed simultaneously on a multi-screen. (Including the camera itself)
Compatible SDXC/SDHC/SD memory card* ⁴ * ⁵ :	Manufactured by Panasonic (SD speed class 4 or higher) 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: (As of June, 2015)* ⁶	iPad, iPhone, iPod touch (iOS 4.2.1 or later) Android™ mobile terminals

*1 Transmission for 4 streams can be individually set.

*2 AAC (Advanced Audio Coding - Low Complexity) is only used when recording audio on an SD memory card.

*3 For further information about PC system requirements and precautions for when using Microsoft Windows 8.1, Microsoft Windows 8, 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”.

*4 When repeatedly recording images on an SD memory card using the auto overwrite function, make sure to use an SD memory card with high reliability and durability.

*5 When using an SD memory card supporting Class 10 of the speed class, use a UHS-I (Ultra High Speed-I) compliant card.

*6 For further information about compatible devices, refer to our website (<http://advidia.com/cameras/>).

Standard accessories

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

The following parts are used during installation procedures.

4P alarm cable	1 pc.
2P power cable	1 pc.
Waterproof tape.....	1 pc.
Adapter box	1 pc.
Camera mount bracket.....	1 pc.
Mount bracket cover	2 pcs.
Adapter box mounting screw (M4 x 35 mm)	1 pc.
Mounting screws for adapter box/ camera mount bracket (M5 x 20 mm)	5 pcs. (of them, 1 for spare)
Camera fixing screw (M4 x 10 mm).....	4 pcs. (of them, 1 for spare)
Mount bracket cover screw (M3 x 6 mm).....	3 pcs. (of them, 1 for spare)
LAN connector cover.....	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.

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