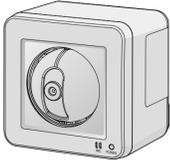


Panasonic

Installation Guide

Network Camera

Model No. **WV-SW174W/WV-SW174WE**



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 1.800.526.6747 Two Riverfront Plaza, Newark, NJ 07102-5490 Panasonic Canada Inc. 5770 Ambler Drive, Mississauga, Ontario, L4W 2T3 Canada (905)624-5010 www.panasonic.ca	For Europe and other countries: Panasonic Corporation http://www.panasonic.com Panasonic Corporation Osaka, Japan Authorised Representative in EU: Panasonic Testing Centre Panasonic Marketing Europe GmbH Winsbergring 15, 22525 Hamburg, Germany Cs0112-4047 PGQX100VA © Panasonic Corporation 2017 Printed in China
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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 floor/wall/ceiling in accordance with the installation instructions.
- The mains plug or an appliance coupler shall remain readily operable.
- The installation shall be carried out in accordance with all applicable installation rules.
- The connections should comply with local electrical code.

For U.S.A.
This product contains a CR Coin Cell Lithium Battery which contains Perchlorate Material - special handling may apply. See www.dtscc.ca.gov/hazardouswaste/perchlorate/

For U.S. and Canada: WV-SW174W
For Europe and other countries: WV-SW174WE

UL listed model No. WV-SW174W

For Canada
This Class A digital apparatus complies with Canadian ICES-003.

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.
This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

CAUTION:

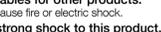
- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

For WV-SW174W/WV-SW174WE
- Operating near 2.4 GHz electrical appliances may cause interference. Move away from the electrical appliances.
- This equipment must be installed and operated in accordance with provided instructions and a minimum 20 cm (8 inches) spacing must be provided between antenna and all person's body (excluding extremities of hands, wrist and feet) during wireless modes of operation.
- The transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.
MEDICAL:
Consult the manufacturer of any personal medical devices, such as pacemakers, to determine if they are adequately shielded from external RF (radio frequency) energy. (The unit operates in the frequency range of 2.412 GHz to 2.482 GHz, and the power output level is 0.1 watts.) Do not use the unit in health care facilities if any regulations posted in the area restrict you not to do so. Hospitals or health care facilities may be using equipment that could be sensitive to external RF (radio frequency) energy.

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.
- 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.
 - 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.
- The screws and bolts must be tightened to the specified torque.**
Failure to observe this may cause electric shock or heat generation resulting in a fire.
- 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.
- 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.
- 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.
- Fully insert the power plug into the power outlet.**
Failure to observe this may cause electric shock or heat generation resulting in a fire.
 - Do not use damaged plugs or unstable power outlets.
- Always disconnect the power cable by holding the power plug.**
Failure to observe this may cause damage to the cord and fire or electric shock.
- Periodically remove dust or other materials from the power plug.**
A fire may be caused if dust or other materials accumulate on the plug and become moist from humidity.
- Perform all electrical wiring in accordance with the relevant electrical installation and wiring precautions and regulations.**
Incorrect electrical wiring may cause fire or electrical shock.
 - Have all electrical wiring performed by a licensed electrician.
- Perform the specified waterproofing when connecting the power cable and power plug.**
Failure to observe this may cause fire or electric shock.
 - Disconnect the power plug and wipe the plug with a dry cloth to remove dust.
- Turn the power off when wiring this product.**
Failure to observe this may cause electric shock. In addition, short circuit or wrong wiring may cause fire.
- 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 this product. Turn the power off immediately and contact qualified service personnel for service.
- Do not use this product in an inflammable atmosphere.**
Failure to observe this may cause an explosion resulting in injury.
- Avoid installing this product 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.
- Use only a dedicated power plug (polarized type).**
If other power plugs are used, the voltage and positive/negative polarities may differ and this may cause fire or electric shock.
- Do not overload the power outlet or wiring above the specified levels.**
Overloading by having many connections on one power outlet may cause heat generation resulting in a fire.
- Do not damage the power cable or power plug.**
Do not damage, fabricate, twist, stretch, bundle, or forcibly bend the power cable or power plug. Do not place heavy objects on the power cable or power plug. Keep the power cable and power plug away from heat sources. Using a damaged power cable or power plug may cause electric shock, short circuit, or fire.
 - Consult the dealer for repair.
- Do not damage internal wiring or plumbing when opening holes in ceiling or walls for installation or wiring, fixing power cables or performing any other installations.**
Failure to observe this may cause earth leakage, electric shock, or fire.
- Protect the power cable and power plug from becoming pinched in doorways or windows.**
Using damaged power cables and power plugs may cause a short circuit resulting in fire or electric shock.
- Do not use the power cables for other products.**
Failure to observe this may cause fire or electric shock.
- Do not strike or give a strong shock to this product.**
Failure to observe this may cause fire or injury.
- Do not rub the edges of metal parts with your hand.**
Failure to observe this may cause injury.
- Do not touch this product or the connected cables during thunder (even in the process of work).**
Failure to observe this may cause electric shock.
- Do not insert/remove the power plug with wet hands.**
Failure to observe this may cause electric shock.
- Unplug this unit from power supply if it emits smoke, an abnormal smell or makes unusual noise, has been dropped or is damaged in any way.**
These conditions can cause fire or electric shock.
 - Stop using the unit and contact an authorized service center.
- Do not place containers or other objects that contain water or other liquids on top of the unit.**
Fire or electrical shock may be caused if water or other liquids enter inside the unit.
 - If water or other liquids enter inside the unit, immediately disconnect the power cable and contact an authorized service center.



- Turn the power off when cleaning this product.**
Failure to observe this may cause fire or injury.
- Disconnect the power cable when not using the unit for extended periods of time or when performing maintenance.**
Failure to observe this may cause earth leakage or electric shock.

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. _____

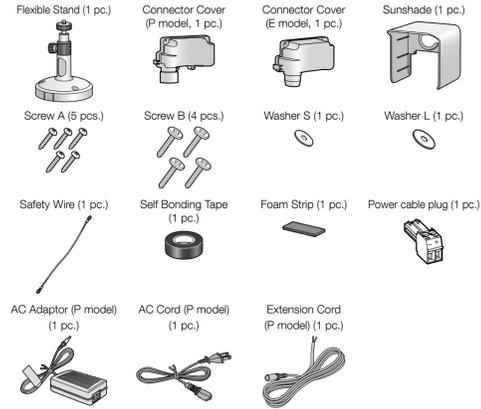
For U.S.A.

Main functions

- Corresponding to outdoor use**
This unit complies with waterproof and is able to install outdoors. (IEC 60529 compliant IP55)
- H.264 and JPEG triple encoding**
A total of 3 outputs, comprising of 2 H.264 outputs and 1 JPEG output, can be provided.
- Wireless LAN function (IEEE802.11 n/g/b)**
It is possible to monitor camera images and configure camera settings over a wireless network.
- Adaptive darkness correction mode**
Corrects the blacked-out parts of dark areas of objects that have different illumination intensities.
- Panning/tilting function and preset position function**
A single camera provides wide area monitoring.
- Interactive communication with audio**
By using the audio output connector and the microphone in connector, receiving audio from the cameras on a PC and transmitting audio from the PC to the cameras is available.
- WPS (Wi-Fi Protected Setup) function**
WPS enables the camera to automatically obtain the connection configuration information and the security configuration information of the wireless router. WPS can be configured by pressing the WIRELESS button (WPS indicator) (PBC method) or entering an 8 digit pin code (Pin code method).

Standard accessories

Confirm the following items are included in the camera's packaging.



Installation Guide (this document) (1 pc.)
Configure the settings of the camera (leaflet) ... (1 pc.)
Warranty card (P model) (1 pc.)
CD-ROM* (1 pc.)
Code label* (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.

Option

You will need the following additional items to install and configure the camera.

- [Locally procured]**
 - a PC (used to view settings and images)
 - a router, or a wireless router
 - a LAN cable (CAT-5 straight cable)
 - 12 V DC power supply (E model)
- Caution:** Only connect 12 V DC power supply.
- *FOR UL LISTED MODEL(S), ONLY CONNECT 12 V DC CLASS 2 POWER SUPPLY.

About the user manuals

There are 3 sets of operating instructions for the WV-SW174W (P model), WV-SW174WE (E model) as follows.
● Installation Guide: Explains how to install and connect devices.
● Configure the settings of the camera (leaflet): Explains how to configure the network.
● 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.
WV-SW174W or *SW174WE* shown in the instructions and illustrations used in these operating instructions indicates the WV-SW174W, WV-SW174WE.
The screens used in these operating instructions show the cases of P models.

System requirements for a PC

Refer to "Configure the settings of the camera" (leaflet) for information about the system requirements for a PC.

Monitor output:	VBS: 1.0 V (p-p)/75 Ω, composite, ø3.5 mm mini jack
EXT I/O terminal cable:	ALARM IN 1, ALARM IN 2/ ALARM OUT, ALARM IN 3/ AUX OUT, GND, 12 V DC
Microphone/Line input:	ø3.5 mm monaural mini jack, Input impedance: Approx. 2.2 kΩ For microphone input: Applicable microphone: Plug-in power type Supply voltage: 3.3 V ±0.5 V For line input: Input level: Approx. -10 dBV
Audio output:	ø3.5 mm stereo mini jack (monaural output) Output impedance: Approx. 560 Ω, Line level
Dustproof/ Waterproof:	IP55* * Only when installation work specified in this book is properly performed and appropriate waterproof treatment is performed
Dimensions:	100 mm (W) x 100 mm (H) x 84 mm (D) [3-15/16 inches (W) x 3-15/16 inches (H) x 3-5/16 inches (D)] (excluding projection)
Mass:	Main body: 370 g (0.82 lbs)
Finish:	Main body : PC/ABS resin, silver Dome section: Clear polycarbonate resin
● Camera	
Image sensor:	1/4 type MOS image sensor
Effective pixels:	Approx. 1.3 megapixels
Scanning area:	3.52 mm (H) x 2.64 mm (V) [1/8 inches (H) x 3/32 inches (V)]
Scanning system:	Progressive
Minimum illumination:	Color: 0.6 lx [0.06 footcandle] (F2.2, Auto slow shutter: Off (1/30 s), Gain: On (High)) 0.038 lx [0.0038 footcandle] (F2.2, Auto slow shutter: max. 16/30 s, Gain: On (High)) BW: 0.5 lx [0.05 footcandle] (F2.2, Auto slow shutter: Off (1/30 s), Gain: On (High)) 0.031 lx [0.0031 footcandle] (F2.2, Auto slow shutter: max. 16/30 s, Gain: On (High)) * Converted value
Wide dynamic range:	On/Off
Face WDR:	On/Off
Gain (AGC):	On (Low)/ On (Mid)/ On (High)/ Off
Adaptive black stretch:	On/Off
Light control mode setting:	Indoor scene (50 Hz/60 Hz/ELC)
ELC	ELC(1/30 s), ELC(2/100 s), ELC(3/120 s), ELC(2/100 s), ELC(2/120 s), (Maximum exposure time) ELC(1/100 s), ELC(1/120 s), ELC(1/250 s), ELC(1/500 s), ELC(1/1000 s), ELC(1/2000 s), ELC(1/4000 s), ELC(1/10000 s)
Auto slow shutter:	Off (1/30 s), Max. 2/30 s, Max. 4/30 s, Max. 6/30 s, Max. 10/30 s, Max. 16/30 s
Day & Night (electrical):	Off/Auto
White balance:	ATW1/ ATW2/ AWC
Digital noise reduction:	High/Low
Video analytics	On/Off (with the XML notification setting)
Face detection:	
Privacy zone:	Gray/Off (up to 2 zones available)
Camera title on screen:	Up to 20 characters (alphanumeric characters, marks), On/Off
Video motion detection (MDI alarm):	On/Off, (available at each preset)

● Lens	
Zoom ratio:	Extra zoom: 2x (at VGA resolution)
Digital (electronic) zoom:	8x (Max 16x combined with Extra Zoom at VGA)
Focal length:	1.95 mm
Maximum aperture ratio:	1: 2.2
Focus range:	∞ - 0.5 m
Angular field of view:	Horizontal: 85°, Vertical: 68°
● Panning/tilting platform	
Panning range:	-47.5° - +47.5°
Panning speed:	Manual: Approx. 5 °/s - 80 °/s, Preset: Up to approx. 80 °/s
Tilting range:	-45° - +10°
Tilting speed:	Manual: Approx. 5 °/s - 80 °/s, Preset: Up to approx. 80 °/s
Number of the preset positions:	64
Map shot:	Preset map-shot
Self return:	10 s/ 20 s/ 30 s/ 1 min/ 2 min/ 3 min/ 5 min/ 10 min/ 20 min/ 30 min/ 60 min
● Wireless	
Antenna:	1 x 1 (Diversity)
Transmission system:	SISO (Single Input/Single Output)-OFDM system, OFDM system, DSSS system
Communication standard:	International standard IEEE802.11 n/IEEE802.11 g/ IEEE802.11 b compliant
Frequency range/ Channel (center frequency):	WV-SW174W: IEEE802.11 n/g/b 2.412 GHz - 2.462 GHz (1 - 11ch) WV-SW174WE: IEEE802.11 n/g/b 2.412 GHz - 2.472 GHz (1 - 13ch)

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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-spware 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 E-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.

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
Power is not turned on.	● Is the 12 V DC power cable plug (accessory) firmly inserted into the 12 V DC power terminals of the camera? → Confirm the power plug is firmly inserted. ● Be sure to use the power cord plug provided with this product.

Data transfer rate:	IEEE802.11 n: 6.5 - 72.2 Mbps/ IEEE802.11 g: 6 - 54 Mbps *1 IEEE802.11 b: 1 - 11 Mbps
Access method:	Infrastructure mode
Authentication method:	Open System
Security:	WPA/WPA2-PSK (TKIP/AES) *2 WEP (64 bit/128 bit)
WPS:	PBC method (push button method), PIN method (PIN code method)
● Wireless hardware	
LED:	Wireless (wireless status display)
Interface:	WIRELESS button (for setting up WPS with the PBC method)
● Network	
Network:	10BASE-T/100BASE-TX, RJ45 connector
Resolution:	Aspect ratio: 4:3 H.264 1280x960/ VGA (640x480)/ QVGA (320x240) max.30 fps JPEG 1280x960/ VGA (640x480)/ QVGA (320x240) max.30 fps Aspect ratio: 16:9 H.264 1280x720/ 640x360/ 320x180 max.30 fps JPEG 1280x720/ 640x360/ 320x180 max.30 fps
Image compression method:	H.264 Image quality: Low/ Normal/ Fine Transmission type: Unicast/Multicast Bit rate: Constant bit rate/ Best effort: 64 kbps/ 128 kbps/ 256 kbps/ 384 kbps/ 512 kbps/ 768 kbps/ 1024 kbps/ 1536 kbps/ 2048 kbps/ 3072 kbps/ 4096 kbps/ 8192 kbps Frame rates: 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.264/4 images.)
Audio compression method:	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, HTTPS, RTP, FTP, SMTP, DNS, NTP, IPv4: TCP/IP, UDP/IP, HTTP, HTTPS, RTP, RTR, RTP/RTCP, FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP, URP/IR, ICMP, ARP
Maximum concurrent access number:	14 (Depends on network conditions)
FTP client:	Alarm image transmission, FTP periodic transmission
Multi-screen:	Up to 16 camera images can be displayed simultaneously on a multi-screen. (Including the camera itself)
Cellular phone compatibility:	JPEG image, panning/tilting/zoom control, AUX control (by access level)
Mobile terminal compatibility:	iPad, iPhone, iPod touch (iOS 4.2.1 or later) (As of January, 2012) *4 Android™ mobile terminals

*1 The actual line speed may be different depending on the network environment and the wireless devices connected.
*2 Depending on the wireless access point (wireless router) used, connections may not be possible between the camera and the wireless.
When connecting with 802.11n, select WPA-PSK(AES) or WPA2-PSK(AES) for security.
*3 Transmission for 2 streams can be individually set in the same compression method.
*4 For further information about compatible devices, refer to our website (<http://panasonic.net/psr/security/support/info.html>).

- Optional accessories**
 - User License Accessory (For H.264) BB-HCABA (P model)
 - BB-HCABCE (E model, Korea) * Required in Korea

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.

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.

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.
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.
Do not touch the lens cover with your bare hands.
A dirty lens cover causes deterioration of picture quality.
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 inoperative 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. Failure to observe this may cause injury. Do not use strong abrasive detergent when cleaning this product. Otherwise, it may cause discoloration. When the dirt is hard to remove, use a damp cloth and wipe the dirty areas. Then, wipe with a dry cloth to remove any moisture.
Transmission interval
Image transmission interval may become slow depending on the network environment, PC performance, shooting subject, access number, etc.
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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Flickering
Due to the influence of lighting, flickering may sometimes happen. In this case, select "Indoor scene" for "Light control mode". Select "Indoor scene(50 Hz)" or "Indoor scene(60 Hz)" in accordance with the power supply frequency in your locality. Refer to the Operating Instructions (included in the CD-ROM) for further information about the setting.
Under extremely strong lighting, flickering may happen even when "Indoor scene" is selected for "Light control mode". When the brightness (illumination) level on the screen is set to a relatively low level with the [Brightness] buttons, flickering may frequently happen. In such cases, either of the following can reduce flickering.
● Moderate the illumination intensities of objects by changing the camera direction.
● Set the brightness (illumination) level on the screen to a brighter level with the [Brightness] buttons.
White-out on images caused by the effect of light control mode
When "Indoor scene" is selected for "Light control mode", the tone of the brighter parts on the screen may be deteriorated than the case when "ELC" is selected.
Color blurring on detailed drawing patterns
When there are detailed drawing patterns on images, color blurring may happen over these parts.
Consumable parts
The following are consumables. Replace them in accordance with their lives. Their lives vary depending on use environment and conditions.
Lifetime is just an indication when using the camera at +20 °C [68 °F].
● Panning motor, tilting motor, flat cable for tilting: Approx. 3.7 million operations.
Lens and pan/tilt head
If a lens and pan/tilt head are not performed for a long period of time, the grease coating inside these parts may become sticky. That may obstruct the parts from moving. To prevent this, move the lens or pan/tilt head periodically.

Specifications

● Basic	
Power source:	12 V DC WV-SW174W: AC Adaptor INPUT: 100-120 V AC 50 Hz/60 Hz (Only use the Panasonic AC adaptor)
Power consumption:	12 V DC: 510 mA
Ambient operating temperature:	-20 °C to +50 °C [-4 °F to 122 °F]
Ambient operating humidity:	Less than 90 % (no condensation)

1 Check the installing place

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.

Installation area for this product

- Select an appropriate place for the installation area (such as a strong wall or ceiling) in your particular environment.
- Avoid installing the camera in locations where it can be exposed to direct sunlight or rain from all directions. Install the camera in an appropriate location such as on an exterior wall of a building.

Do not place this product in the following places:

- Locations where a chemical agent is used such as a swimming pool
- Locations subject to humidity, dust, steam and oil smoke
- 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 (-20 °C to +50 °C [-4 °F to +122 °F]).
- 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.

Before installation

- When this camera is mounted on a wooden ceiling or a wall, use the Screw B (accessory). Screws to be used for other materials 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.

Design and engineer the power supply system to turn on/off the power of this product.

The product has no power switch. When installing the product, use a power supply device equipped with the ON-OFF switch for servicing.

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.

Procurer fixing screws that are not made to be used with wooden surfaces separately.

The living screws supplied with this product are only for use with wooden surfaces. Required pull-out capacity of a single screw/bolt is 294 N (66.09 lbf) or more.

Do not remove or loosen the internal camera screws.

Do not loosen the internal camera screws. Otherwise, water exposure may cause damage or malfunction of camera, or camera dropping may result in injury.

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.

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. When connecting the camera to a wireless LAN, it is recommended to select the enhanced encryption "WPA2-PSK (AES)" or "WPA-PSK (AES)" for the wireless router's encryption settings.

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.

Determining the mounting position

IMPORTANT
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.

IMPORTANT
Do not install this on locations subject to vibrations.

IMPORTANT
Do not install near the strong light source.

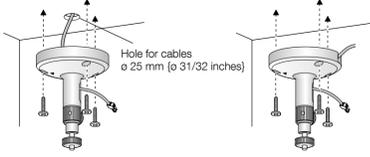
IMPORTANT
Do not install near any heat sources.

IMPORTANT
Do not install this by products that generates a strong radio wave or a strong magnetic field.

IMPORTANT
Do not install on locations subject to humidity and oil smoke.

Determining how to wire the cable

It is necessary to make a hole in the ceiling or wall to pass the cables through. Make a hole 25 mm (31/32 inches) in diameter.



Determining how to mount the camera

Installing the camera on the ceiling or wall

Make sure the flexible stand is firmly mounted on a beam of wood (25 mm (31/32 inches) and greater) etc. When there is no beam, apply a board on the other side of the ceiling or wall to make sure the camera does not drop.

At least 25 mm (31/32 inches)
Beam of wood

When mounting on a mortar or concrete surface

Prepare anchors for 4 mm (5/32 inches) diameter screws for mounting. Mortar ceilings or walls break easily when drilling. Be careful of pieces of mortar which may become loose and fall.

1. Place the flexible stand on the ceiling or wall where you plan to mount the flexible stand and mark the points where you are going to make holes.
2. Make holes with an electric drill. Insert anchors (locally procured) into the holes and push them inside the holes with a hammer.
3. Mount the flexible stand using the screws.

Drill for concrete (in case of tile, use a drill for tile) Perform waterproof treatment (caulking)

Tripod Mount

It is also possible to mount the camera on a standard tripod stand (locally procured).

2 Major operating controls

<Front view>

<Side and bottom view>

<Rear view>

External I/O terminals

Pin	Function
6	DC power output • Power output voltage 12 V • Power output current 100 mA
5	GND
4	GND
3	EXT I/O terminal 3 (ALARM IN 3/ AUX OUT)
2	EXT I/O terminal 2 (ALARM IN 2/ ALARM OUT)
1	EXT I/O terminal 1 (ALARM IN 1)

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 3 minute after releasing the button. The camera will start up and the settings including the network settings will be initialized. Before initializing the settings, it is recommended to write down the settings in advance. The initialization will be complete when the live indicator stops blinking orange and lights off. Note that the preset position settings and the CRT key (SSL encryption key) used for the HTTPS protocol will not be initialized.

IMPORTANT
Do not turn off the power of the camera during the process of initialization. Otherwise, it may fail to initialize and may cause malfunction.

About the [RESTART] button

When the camera is on, you can also restart the camera by pressing the RESTART button. Press and hold the RESTART button for about one second with a pointed object. Restarting is completed when the camera's pan/tilt performs its initial movement.

About the live indicator and the WIRELESS button (WPS indicator)

Refer to "Configure the basic settings [Basic]" of the Operating Instructions (included in the CD-ROM) for further information.

3 Connections

When connecting the camera using LAN cable

Configure your PC so that it can connect to the internet through the router.

- For E model, only connect 12 V DC power supply.

1. Connect the LAN cable (locally procured) to the LAN port of the camera and the LAN jack of the router.
2. Connect the cable of 12 V DC power supply or the extension cord (P model) to the power cord plug (accessory).
3. Connect the plug of the AC adaptor to the extension cord (P model).
4. Insert the power cord plug into the 12 V DC power supply terminal on the rear of the camera.

(This illustration shows an example of connecting the P model.)

5 Connect the AC cord to the AC adaptor, then plug the AC cord into the power outlet.

The lens will pan and tilt when the camera is turned on (the operating sound can be heard). When the network setting is completed, the live indicator stops blinking green and lights green.

After connecting the camera, refer to "Configure the settings of the camera" (leaflet) and perform the camera settings.

Connect the power cord plug

Caution:
● FOR UL LISTED MODEL(S), ONLY CONNECT 12 V DC CLASS 2 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.
3. Tighten the screw of the power cord plug.

IMPORTANT
● Be sure to use the AC adaptor provided with this product. (P model)
● Be sure to use the power cord plug provided with this product.
● When connecting the cable of 12 V DC power supply to the power cord plug, make sure to use the correct polarity. Using incorrect polarity may cause issues such as damage to the camera or malfunction.
● 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.

(This illustration shows an example of connecting the P model.)

WARNING
● Adequate waterproof treatment is required for the AC adaptor, the AC cord, and the extension cord. (The AC adaptor and the AC adaptor cord are not waterproof.)
Failure to observe this may cause fire or electric shock.
Never touch wet AC adaptors or AC cords. Consult the dealer for repair.

When connecting the camera using a wireless LAN

Use the camera's WIRELESS button (WPS indicator) to automatically perform wireless settings.

1. Turn on the camera without connecting the LAN cable to enable the wireless settings.
2. Select ON for the WPS function (Push-button method (PBC)) on the wireless router. (For more information, refer to the operating instructions included with your wireless router.)
3. Press and hold down the WIRELESS button for a second or more until the WIRELESS indicator blinks orange.

● The camera and the wireless router automatically start performing wireless settings. Settings may take up to 2 minutes to be performed.

● When the automatic wireless settings have successfully completed, the camera restarts about 5 seconds after the WIRELESS button stops blinking orange and lights green.

● During its reboot, when the wireless connection have been successfully completed about 90 seconds after the WIRELESS button has gone off, the WIRELESS button lights green again. The wireless settings are updated.

Note
● If about 2 minutes pass after the WIRELESS button starts blinking and the wireless connection is not completed, the WIRELESS button will blink red for about 10 seconds and then go off. If this happens the wireless settings have failed. Check the wireless router's settings and connection procedures, and then try performing the settings again.
● If the WPS settings fail to automatically configure, check the settings of the wireless router and the camera.
● If you want to turn off the WIRELESS button and live indicator's green light, select "Off" for the "Indicator" on the [Basic] tab of the "Basic" page.

IMPORTANT
● WPS function is unavailable when the wireless router is set to shared key authentication.
● When the wireless router or other devices are set to use the ESS-ID stealth function (Hidden SSID), the WPS function is unavailable.
● During the configuration of WPS setting, another wireless device may be temporarily caused interference by the wireless router.
● If the wireless router is configured to use the MAC address filtering feature, the WPS function may be unavailable. Check the settings of the wireless router.
● If the settings for the WPS function are performed when no wireless device to be connected to the wireless network, etc. the configuration will be automatically cancelled after 2 minutes. (Check the wireless router in use before configuration.)
● When there are multiple wireless routers on the same network which have the WPS function on (Registrars), the WPS function may not be able to configure automatically.

After connecting the camera, refer to "Configure the settings of the camera" (leaflet) and perform the camera settings.

● Confirm the status of the wireless connection on the [Status] tab of the "Wireless" page.

About the range of use for wireless communication

Do not use this product in the following areas or locations. (It may cause interference to radio communications or malfunction.)

- Indoor areas that have specified radio stations or mobile communications equipment
- Locations near microwave ovens or Bluetooth devices
- Indoor areas that use antitheft devices or 2.4 GHz frequency devices such as POS systems

Change the installation location of the camera when there are materials or objects such as the following between the camera and a wireless router. (When there are materials or objects that are difficult for radio waves to pass through in the installation area, wireless transmission may fail or the transmission speed may become slower.) (When there are materials or objects that reflect radio waves in the installation area, wireless transmission may fail or the transmission speed may become slower due to interference from reflected radio waves.)

- A metallic door or shutter
- A wall with an insulation material that contains aluminum foil
- A wall made of concrete, stone or brick
- Fireproof glass
- Several walls separated by open space
- A wall made of tin
- A steel shelf
- Fireproof glass

External I/O terminals

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

Strip range: Approx. 9 mm - 10 mm (11/32 inches - 13/32 inches)

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 external I/O terminal 2 and 3 can be switched by configuring the setting. The default of EXT I/O terminal 2 is "ALARM IN 2" and of EXT I/O terminal 3 is "ALARM IN 3". It is possible to determine whether or not to receive input from EXT I/O terminal 2 and 3 (ALARM IN 2, 3) by selecting "Off", "Alarm input", "Alarm output" or "AUX output" for "Terminal alarm 2" or "Terminal alarm 3" on the [Alarm] tab on the "Alarm setup" page. Refer to the Operating Instructions (included in the CD-ROM) for further information.
● The default of EXT I/O terminals is "Off". When "Off" is selected, it is possible to connect external devices as well as the input setting.
● When using the EXT I/O terminals as the output terminals, ensure they do not cause signal collision with external signals.
● In order for the EXT I/O terminal to detect alarm inputs when the terminal status is changed from Open to Close (On) or from Close to Open (Off), about 100 ms or more is needed. Because alarms cannot be detected for about 5 seconds after a detection is made, alarm inputs received within about 5 seconds after an alarm is detected are not detected.

Microphone/line input connector - Audio output terminal

You can connect an external microphone and external speaker to the camera to use the Listen and Talk features, respectively. The microphone cable should be no longer than 7 m (23 feet), if you use an external microphone, excessive cable length or a poor quality cable can cause degradation in audio quality.

an external microphone/line input (0.35 mm mini plug)
cable ø2 ±0.3 (Plug-in power 3.3 ±0.5 V)
an external powered speaker (0.35 mm stereo mini plug) (Output impedance 560 Ω line level)

To microphone
To speaker input terminal

Monitor out connector for adjustment

Connect a monaural mini plug (3.5 mm) (only for checking if images are displayed on the monitor).

● Recommended plug: L type

IMPORTANT
● The monitor out connector for adjustment is provided only for checking the adjustment of the angular 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 and bottom or right and left of the screen. (That does not affect the adjustment because the angular field of view is not changed.)

4 Mounting the Camera

Before installing the camera, check that the camera settings have been completed. Refer to "Configure the settings of the camera" (leaflet).

- For P models: Refer to "Mounting the Camera" (leaflet) for descriptions of how to mount the UL listed model(s).
- The connector cover for E model is used in the following procedures.

1. Remove the tab on the flexible stand (accessory). Then pass the cables through the notch.
2. Pass the cables through the connector cover (accessory), and then connect all cables. Attach the connector cover by fastening screw A (accessory). (Recommended tightening torque of the connector cover: 0.6 N·m (0.44 lbf·ft))
3. Attach the sunshade (accessory) by fastening screw A. (Recommended tightening torque of the sunshade: 0.6 N·m (0.44 lbf·ft))
4. Wrap the cables in the included foam strip (accessory) and insert the foam strip into the opening of the connector cover leaving about 10 mm (3/8 inches) of the foam exposed, as shown.
5. Wrap the first 20 cm (7 7/8 inches) of the cables (starting with the connector cover) using the included self bonding tape (accessory).

IMPORTANT
● When mounting the camera, make sure to wrap the AC adaptor cord (if used) and other cables (external microphone or speaker cable, video cable, etc.) around the hooks as shown to ensure secure connections.

12 V DC power supply terminal/Monitor out connector for adjustment/External I/O terminals cable hook Audio output terminal/Microphone/line input connector cable hook

Installing the camera on the ceiling or wall

Adjust the camera to a suitable position/direction while confirming the images actually displayed on the computer screen.

Note
Make sure the live indicator is always in the lower right corner when you mount.

1. Place the flexible stand on the ceiling or wall, and determine the mounting position of the stand.
2. Secure the safety wire (accessory) to the camera using screw A (accessory) and washer S (accessory).
3. Attach the camera by screwing the threaded mount into the stand mounting hole.

IMPORTANT
Adequate waterproof treatment is required for the cables when installing the camera outdoors. Failure to observe this may cause water leakage resulting in malfunction.

Do not cover the ventilation hole.

When using an extension cord, also wrap the connection parts of the extension cord with the tape.

4 Mount the flexible stand firmly to the ceiling or wall with screw B (accessory).

When mounting the flexible stand to the wall, position the flexible stand so that the "▲" marker is facing upward.

Ceiling

Wall

At least 165 mm

Keep a distance of 165 mm (6-1/2 inches) or more from a ceiling (Otherwise the camera cannot be mounted properly.)

Adjust the camera position and tighten the flexible stand grip and the tightening screw firmly.

The fixing position of the tightening screw can be adjusted according to the direction the camera is facing and its angle.

Adjust the length of the safety wire when it is taut, and secure it to the ceiling or wall using screw B (accessory) and washer L (accessory).

Attach the safety wire in a position so that if the camera were to become detached, it would not fall on nearby people.

Make sure to waterproof the opening of the duct so that water does not enter it.

Confirm that the cords have been waterproofed and that the portion of the cord protruding from the flexible stand is wrapped in self bonding tape, as shown.

It is possible to attach the stand to the stand mounting hole, the rear of the camera.

4 Mount the flexible stand firmly to the ceiling or wall with screw B (accessory).

When mounting the flexible stand to the wall, position the flexible stand so that the "▲" marker is facing upward.

Ceiling

Wall

At least 165 mm

Keep a distance of 165 mm (6-1/2 inches) or more from a ceiling (Otherwise the camera cannot be mounted properly.)

Adjust the camera position and tighten the flexible stand grip and the tightening screw firmly.

The fixing position of the tightening screw can be adjusted according to the direction the camera is facing and its angle.

Adjust the length of the safety wire when it is taut, and secure it to the ceiling or wall using screw B (accessory) and washer L (accessory).

Attach the safety wire in a position so that if the camera were to become detached, it would not fall on nearby people.

Make sure to waterproof the opening of the duct so that water does not enter it.

Confirm that the cords have been waterproofed and that the portion of the cord protruding from the flexible stand is wrapped in self bonding tape, as shown.

It is possible to attach the stand to the stand mounting hole, the rear of the camera.