

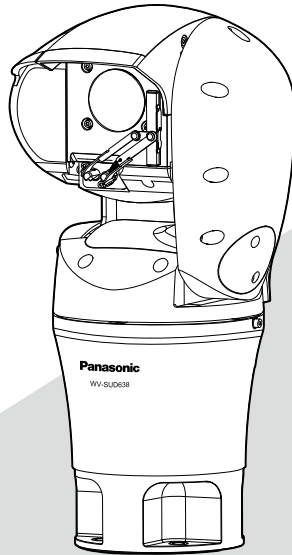
# Panasonic<sup>®</sup>

## Important Information

### Network Camera

Model No. **WV-SUD638**  
(Natural Silver)

**WV-SUD638-H / WV-SUD638-T**  
(Gray) (Brown)



\* For information about the installation tasks, refer to the provided installation guide. For information about how to perform the settings and how to operate the camera, refer to the operating instructions on the provided CD-ROM.

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/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.
- Apparatus shall be connected to a mains socket outlet with a protective earthing connection.
- 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.
- This apparatus must be earthed.
- This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.
- 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.

For Canada

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

For U.S.A.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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

For U.S.A.

The model number and serial number of this product may be found on the surface of the unit.

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

Model No. \_\_\_\_\_

Serial No. \_\_\_\_\_

: Watch your fingers

: Caution, infrared radiation

: Direct current symbol

: Alternating current symbol

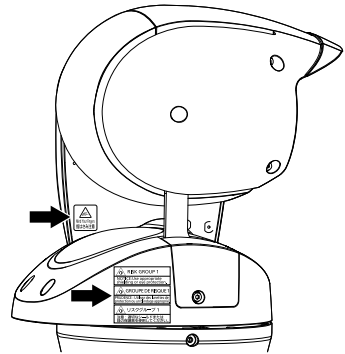
For Finland, Norway, Sweden

In **English**: "The equipment must be connected to an earthed mains socket-outlet".

In **Finnish**: "Laite on liitettävä suojakoskettimilla varustettuun pistorasiaan".

In **Norwegian**: "Apparatet må tilkoples jordet stikkontakt".

In **Swedish**: "Apparaten skall anslutas till jordat uttag".



	<b>RISK GROUP 1</b>
<b>NOTICE:</b> Use appropriate shielding or eye protection.	
	<b>GROUPE DE RISQUE 1</b>
<b>PRUDENCE :</b> Utilisez des lunettes de protection ou un blindage approprié.	
	<b>リスクグループ 1</b>
<b>注意 :</b> 適切なシールドまたは目の保護具を使用してください。	

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\* For information about the installation tasks, refer to the provided Installation Guide.

## 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 AS A PHOTOGRAPHED SUBJECT DUE TO VIOLATION OF PRIVACY CONCERNING A SURVEILLANCE CAMERA'S PICTURE OR SAVED DATA, FOR SOME REASON (INCLUDING USE WHEN USER AUTHENTICATION ON THE AUTHENTICATION SETTING SCREEN IS SET TO OFF), BECOMING PUBLIC OR BEING USED FOR ANY PURPOSE;
- (7) LOSS OF REGISTERED DATA CAUSED BY ANY FAILURE (INCLUDING INITIALIZATION OF THE PRODUCT DUE TO FORGOTTEN AUTHENTICATION INFORMATION SUCH AS A USER NAME AND PASSWORD).

# Preface

The PTZ (PAN, TILT, ZOOM) type network camera WV-SUD638 is designed to operate using a PC on a network for outdoor surveillance (10BASE-T/100BASE-TX).  
By connecting to a network (LAN) or the Internet, images and audio from the camera can be monitored on a PC via a network.

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**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 as standard with functions for installation in harsh outdoor environments**

- A housing that operates under a wind velocity of 60 m/s {approx. 134 mph} and does not break even under a windstorm of 80 m/s {approx. 179 mph}.
- A wiper equipped as a standard feature that ensures clear visibility even in rain, snow, or mud stains.
- A defroster equipped as a standard feature that warms the glass surface and thus makes shooting in frigid environments of  $-50\text{ }^{\circ}\text{C}$   $\{-58\text{ }^{\circ}\text{F}\}$  possible.

## **With Panasonic's proprietary hybrid image stabilizer\*1, stable images are achieved even in areas with excessive vibrations.**

## **A slashed installation cost with heavy salt damage prevention and a lighter design**

Glass fiber resin housing is used for the camera body. The additional cost of salt damage coating is eliminated in offshore airports or other heavy salt damage areas, and the lighter design decreases the installation cost.

## **The camera conforms to the IP67\*2, and provides high dust resistance and waterproof performance.**

Waterproofing treatment is not required for the camera body.

## **Equipped with a new codec engine**

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

## **Equipped with Super Dynamic (MEGA Super Dynamic) (→Operating Instructions (included in the CD-ROM))**

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

## **Equipped with 30x optical zoom lens and high accuracy preset position function**

A single camera provides wide area monitoring.

Up to 45x HD EX zoom with 2 mega pixel modes (image resolution of 1280×720 pixels).

## **Equipped as an option with extension unit WV-SUD6FRL1 (IR LED unit) (optional)**

The infrared lighting system automatically adjusts the illumination angle of the IR LED according to the zoom ratio of the lens, which allows you to shoot up to 150 m {Approx. 500 ft} away at night.

### \*1 Hybrid image stabilizer

Detects the vibration of camera with built-in gyro sensor. An instability correction method that corrects various instabilities by combining the panning/tilting correction which slowly corrects the large instability by rotating the panning/tilting motor according to the vibration, and the electronic instability correction.

\*2 IP67 rating: The applicable product has “Dust tight (6)” protection against foreign solids and has “no impact even when it is immersed in water (7)” (IEC60529/JIS C 0920).

## About the user manuals

There are 3 sets of operating instructions for the WV-SUD638 as follows.

- Important Information (this document): Provides information about the cautions required for safely using and installing this camera.
- Installation Guide: Explains how to install this camera.
- 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 and leaflets.

## 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).
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® 10 Microsoft® Windows® 8.1 Microsoft® Windows® 8 Microsoft® Windows® 7
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)
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.)



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**IMPORTANT:**

- For information on the operation verification of the supported operating systems and web browsers, refer to our website at <http://security.panasonic.com/support/>.
  - 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 Edge are not supported.
  - When using Microsoft Windows 8.1, Microsoft Windows 8, use it in the desktop. The software cannot be used in the Modern UI design.
- 
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**Note:**

- For further information about PC system requirements and precautions for when using Microsoft Windows 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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- Firefox is a registered trademark of Mozilla Foundation.
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- This product contains open source software licensed under GPL (GNU General Public License), LGPL (GNU Lesser General Public License), etc.
- Customers can duplicate, distribute and modify the source code of the software under license of GPL and/or LGPL.
- Refer to the “readme.txt” file on the provided CD-ROM for further information about open source software licenses and the source code.
- Please note that Panasonic shall not respond to any inquiries regarding the contents of the source code.

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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 set by using user authentication.
- 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. Keep the authentication information (your user name and password) in a safe place free from public view.
- 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 experience. Failure to observe this may cause fire, electric shock, injury, or damage to the product. Be sure to consult the dealer.

### **Entrust any work in high places to qualified service personnel.**

Installation work requires technique and experience. Failure to observe this may cause fire, electric shock, injury, or damage to the product. Be sure to consult the dealer.

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

Continuous usage even after smoke or odor coming out may cause fire. Unplug the power cord 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.

### **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.

### **Correctly perform all wiring**

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

### **Completely insert the power plug into the power outlet.**

Failure to do so may cause electric shock and/

or excessive heat resulting in a fire. Do not use damaged power plugs or power outlets.

**Securely connect the power cable.**

Loose connection may cause electric shock or heat resulting in fire.

**Regularly remove any dust, etc. from the power plug.**

Accumulated dust may cause an insulation defect from moisture, etc., resulting in a fire. Disconnect the power plug, then wiping with a dry cloth.

**Always hold the plug when unplugging the power cord.**

Otherwise, the cord may be damaged and result in a fire or electric shock.

**The screws and bolts must be tightened to the specified torque.**

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

**Install this product in a place with enough pull-out strength of the anchor.**

Failure to observe this may cause fall down or topple over 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 install this product in locations subject to continuous or large vibration.**

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

**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 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.

**Always inspect after an earthquake**

The mounting portions on the main body may be damaged and a fall may occur. Be sure to consult the dealer.

**Turn the power off when cleaning this product.**

Failure to observe this may cause electric shock.

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

Failure to observe this may cause a drop resulting in injury. Be sure to install the safety wire.

**The measures of protection against snow-fall shall be taken.**

Weight of snow may cause a fall of the product resulting in injury or accidents. Protect the product against snowfall by installing it under eaves.

**Do not forcibly pull on the cable.**

Failure to observe this may cause fire or electric shock.

**Do not damage cables or the like.**

The cable may be damaged if you put heavy objects on it or pinch it, resulting in fire or electric shock.

**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.

**Do not exceed the stated voltage capacity of the power outlet and wiring accessories.**

When you plug too many leads into a single socket over the rated power, overheating may cause fire.

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

Failure to observe this may cause fire or injury.

**Do not place this product in an unstable place.**

Failure to observe this may cause fall down or topple over resulting in injury or accidents.

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

Failure to observe this may cause injury or accidents.

**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 corrosive gas is produced.**

Otherwise, the mounting portions may deteriorate and thus the product may fall down, resulting in injury or accidents.

**Do not install this product in a place that is easily exposed to oil.**

Otherwise, the mounting portions may deteriorate and thus the product may fall down, resulting in injury or accidents.

**Do not damage the power cable and the power plug.**

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.

**Do not touch the main body during the rotating operation.**

Otherwise, your finger may get caught in the rotating unit, thus resulting in injury.

**Do not install beneath areas where layers of snow could fall.**

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

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

Installation in a place where the wind speed is 80 m/s {approx. 179 mph} (wind speed in the fore position is 60 m/s {approx. 134 mph} or more) or more may cause a fall of the product resulting in injury or accidents.

**Never touch the power plug with wet hands.**

This may result in electric shock.

**Do not attempt to disassemble or modify this product.**

Failure to observe this may cause fire, electric shock, or a drop resulting in injury or accidents. Consult the dealer for the repair or inspections.

**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.

**Be careful when installing this product.**

Dropping this product on your foot may cause injury.

**Do not use this product as a footstool or bench.**

Failure to observe this may cause injury.

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

Failure to observe this may cause injury.

**Do not install this product in a place where the temperature can get abnormally high.**

Parts may deteriorate, resulting in fire.

**Do not apply excessive force.**

Otherwise, mounting portions may get damaged and fall, resulting in injury or accidents.

**[Precautions for use]**

**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. Please ensure good heat dissipation of the installation location and avoid direct heat from a heater or the like.

**This product has no power switch.**

This product has no power switch.

To cut the power supply off from this product, unplug the power cord or turn the tested PoE injector OFF. Make sure that the power cord of the camera or the tested PoE injector can be

unplugged easily from the AC outlet. If the power cord cannot be unplugged easily due to installation conditions, connect the power cord to an outlet such as an AC outlet or a power control unit that goes through a circuit breaker of a distribution board with a cut-off capacity.

### **Handle this product with care.**

Do not drop this product, nor apply shock or vibration to the product. Doing so may result in failure or water penetration.

### **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.

### **Do not touch the front glass with your bare hands.**

A dirty front glass causes deterioration of picture quality.

### **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.

### **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 MOS sensors and is caused by the relationship between the periodic movements of the cam-

era 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 the dehumidifying device**

- This product has dehumidifying device to keep the inside at low moisture level.
- Dew may be produced depending on the conditions of temperature, humidity, winds, and rain, and it may take time to dehumidify.

### **What to do if “WARMING UP-PLEASE WAIT” appears on the display.**

This message indicates that the temperature inside the camera has become extremely low. In such a case, wait until the heater unit of the camera raises the internal temperature (for around 2 hours or more in low temperatures below  $-30^{\circ}\text{C}$  [ $-22^{\circ}\text{F}$ ]), and turn the power off and then back on again.

### **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.

### **Cleaning this product body**

Be sure to turn off the power before cleaning. Failure to observe this may cause injury. Do not use benzine, thinner, alcohol, or any other types of solvents or detergents. Otherwise, it may cause discoloration. When using a chemical cloth for cleaning, read the caution provided with the chemical cloth product.

\* Do not loosen or remove screws that are not described in the operating instructions.

\* Always refresh the position or restart the camera after caring as the direction of the camera might have changed. For more information, refer to the “Operating Instructions” that is included in the provided CD-ROM.

## Cleaning of the front glass

Use lens cleaning paper (used to clean camera or spectacles lenses) to remove any dirt on the front glass. (If dust or the like is adhered at this time, the front glass may get scratched. We recommend rinsing for stubborn stains.)

## Consumable parts

The following are consumables: Replace them in accordance with their operating lifetimes. Their operating lifetimes vary depending on the usage environment and conditions. The operating lifetimes below are just guides for when using the camera at +35 °C {95 °F}.

- Lens unit, panning motor, tilting motor, thin coaxial cable for tilting, panning main gear, tilting main gear, gear unit:  
Approximately 1 million actions
- Cooling fan: Approx 52,000 hours
- Slip ring: Approximately 1 million actions
- Wiper rubber: Approximately 0.12 million actions. Approximately 2 years.

\* If the [Execute] button of [Reset at exchange] is pressed at the time of replacing wiper rubber, the date of replacing the wiper rubber is recorded, and the count of operating wiper rubber and the standard count of replacements are displayed.

Refer to the operating instructions on the provided CD-ROM for how to perform the settings.

- Wiper motor: Approximately 0.8 million actions

## 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. Or perform position refresh periodically in the manner described in "Position refresh".

## Position refresh

During the use for a long period of time, the preset positions may become inaccurate. When "Position refresh" is set for the created schedule, the camera position will be corrected periodically. Refer to the Operating Instructions

on the provided CD-ROM for how to perform the settings.

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## 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.

## Equipment classification and power source indication label

Please remove the side cover of this product and read the indication label on the connector part for the classification, power source, and other information of this product.

## 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.

When abandoning the memory media, it is recommended to destroy it physically after deleting data by PC.

# 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.**

**For information about the installation tasks, refer to the provided Installation Guide.**

**In order to prevent injury, the product must be securely mounted to a ceiling or floor according to Installation Guide.**

**Always connect to the main power outlet with protective grounding.**

## **About grounding**

- Please make sure that the grounding is installed securely and correctly before usage. Please check the ground resistance value ( $100 \Omega$  or less) when using an outlet with a ground terminal.
- Always perform ground connection before connecting the power plug to the main power. In addition, always unplug the power plug from the main power before ground disconnection.

## **When installing this product in coastal areas**

- The camera has heavy salt damage resistance treatment applied, but this does not ensure complete resistance against corrosion. Please pay attention to the installation location such as in places where seawater does not splash directly.
- Especially when installing this product in coastal areas and area that are sprayed with snow-melting agent that are not exposed to rainwater, periodically clean by rinsing to remove adhered salt.
- Periodically inspect the camera when installing it in coastal areas or areas that are sprayed with snow-melting agent. (Replace parts as necessary.)
- Prepare the foundation of the installation site, installation support, and any other installation setting with heavy salt damage resistance treatment.

## **Installation area for this product**

Select an appropriate place for the installation area (such as a strong ceiling or floor) in your particular environment.

- Make sure that the installation area is strong enough to hold this product, such as a concrete ceiling or floor.
- Install the camera in the foundation area of the architecture or where sufficient strength is assured.
- Do not mount the product on a plaster board or a wooden section because they are too weak. If the product is unavoidably mounted on such a section, the section shall be sufficiently reinforced.
- The stabilizer may not be sufficiently effective depending on a place where the product is installed.

## **How to install the camera**

This product is for hanging and stationary use only. If used on walls or in tilted position, this product may fail to operate properly or its lifespan may be shortened.

## **Do not expose the camera to the high-intensity light source like sunlight.**

Due to the incidence angle of the high-intensity light source like sunlight or a lighting lamp, a picture that does not exist (reflected light) may enter the camera and create a phenomenon called ghosting in the screen. This phenomenon noticeably appears with LED lighting in particular.

## **Do not place this product in the following places:**

- Locations where a chemical agent is used such as a swimming pool
- Locations subject to moisture or oil smoke such as a kitchen

- Locations that have a specific environment that is subject to an inflammable atmosphere or solvents
- Locations where a radiation, an X-ray, a strong radio wave or a strong magnetic field is generated
- Locations directly exposed to seawater, or where corrosive gas is generated such as volcanic regions/hot springs
- Locations where the temperature is not within the specified range (☞ page 22)
- Locations subject to vibrations, such as on vehicles or above product lines (This product is not designed for on-vehicle use.)
- Locations subject to condensation as a result of severe changes in temperature (In case of installing the product in such locations, the inside of the front glass may become foggy or condensation may be formed.)
- Do not use an impact driver. Use of an impact driver may damage the screws or cause tightening excessively.
- When anchor bolts and screws are 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.

### 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 glass 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 around 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 glass. 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 -30 °C {-22 °F}, normal images may not be obtained immediately after startup. In such a case, wait until the internal temperature of the camera rises (for around 2 hours or more in temperatures below -30 °C {-22 °F}), turn the power off once, then turn it back on again.

### When installing the product in cold climates

Please note the following when installing in cold climates.

- In cold climates, snow may adhere to the front glass. Regularly operate the wiper and remove the snow.
- When using IR LED unit (WV-SUD6FRL1: option) in cold climates, it is recommended to use AC power supply. When using tested PoE injector for power supply, the heater unit of the front glass does not operate due to the limited available power supply, and snow tends to

### Sulfurization caused by rubber products

Do not place the product near rubber products (packing, rubber feet, etc.) that contain sulfur. There is a risk that sulfur components in rubber products may cause electrical parts and terminals, etc. to become sulfurized and corrode.

### Before installation

- Anchor bolts and screws used to mount the camera on the ceiling or floor are not supplied. Consider the material/structure according to the total mass/surrounding environment of the camera when making preparations. Fully consider the fixing screws for camera body or attachment plate fixing to installation area such as using corrosion resistance treated screws or performing caulking.

Required anchor bolts and screws:

M8 (4 pcs.)

Minimum pull-out strength: 1539 N {346 lbf} (per 1 pc.)

### Anchor bolts and screws tightening

- The anchor bolts and screws must be tightened with an appropriate tightening torque according to the material and strength of the installation area.



adhere to the front glass.

For further information on using the product in cold climates, refer to our website (<http://security.panasonic.com/support/info/>).

### **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.

### **When noise disturbance may happen**

Conduct the power distribution work to keep a distance of 1 m {3.28 feet} or more from the 120 V (for U.S. and Canada) or 220 V – 240 V (for Europe and other countries) power line. Or conduct the electric conduit work separately (Always connect the metal pipe with grounding).

### **Radio disturbance**

Noise may appear in video or audio near a strong electric field from a TV or radio antenna, motors and transformers, or a strong electric field/magnetic field from a power line (lamp line) of AC100 V or more.

### **Power supply from a tested PoE injector**

Connect the tested PoE injector to a normal hub/device.

This product will not operate with only the power supply from a PoE+ hub/device that is compliant with IEEE802.3at 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 on the provided CD-ROM for further information about the port forwarding function.

### **Time & date setting**

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

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

# 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
<b>Power is not turned on.</b>	<p><b>When using a tested PoE injector for power supply</b></p> <ul style="list-style-type: none"> <li>• Are the tested PoE injector and the RJ45 female connector (cable coupler) connected using an Ethernet cable (category 5e or better)? Check whether the connection is appropriately established.</li> <li>• Depending on the tested PoE injector, the power supply will stop when the demanded power exceeds its power limit. Refer to the operating instructions of the tested PoE injector in use.</li> </ul>	"Connecting" in Installation Guide
	<p><b>When using AC power supply</b></p> <ul style="list-style-type: none"> <li>• Is the power cable connected firmly to power that meets the required specifications? Check whether the connection is appropriately established.</li> <li>• Is the waterproof power supply connector attached to the camera firmly? Check if it is attached correctly and firmly.</li> </ul>	
<b>The camera does not move to the preset positions accurately.</b>	<ul style="list-style-type: none"> <li>• When the preset positions become inaccurate during use, it is possible to correct the positions by executing the position refresh function. In addition, when "Position refresh" is set for the created schedule, the camera position will be corrected periodically. In some situations, reconfigure the preset positions.</li> </ul>	Operating Instructions (included in the CD-ROM)
<b>When the camera is panning/tilting, the camera stops panning/tilting.</b>	<ul style="list-style-type: none"> <li>• The camera position may have become inaccurate. Carry out the refresh position function from the [Default reset] tab of the "Maintenance" page of the setup menu.</li> </ul>	Operating Instructions (included in the CD-ROM)
<b>The camera starts panning unpredictably.</b>	<ul style="list-style-type: none"> <li>• This may be caused by noise. Check the exogenous noise level around the camera.</li> </ul>	13
<b>Streaks remain on the front glass surface even after the wipers are used.</b>	<ul style="list-style-type: none"> <li>• The wiper is not in contact with the front glass, or the wiper rubber is deteriorated. Check if the wipers and the front glass are in contact. Contact your dealer to obtain and replace with the wiper rubber replacement part (PGVF2808ZAC1).</li> </ul>	–

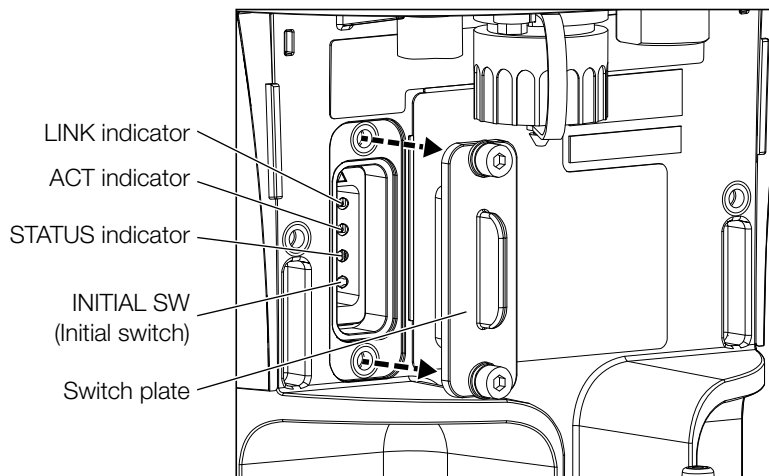
Symptom	Cause/solution	Reference pages
<p><b>When the power is turned on, the STATUS indicator lights or blinks orange.</b></p>	<ul style="list-style-type: none"> <li>• Is the ethernet cable connected appropriately? Connect the ethernet cable appropriately.</li> <li>• Is the hub or router connected to the camera operating appropriately? Check if the hub or router in use is operating appropriately.</li> <li>• Isn't the ethernet cable connected to the camera broken? Replace the cable with another one.</li> </ul>	<p>“Connecting” in Installation Guide</p>
<p><b>STATUS indicator keeps on blinking orange approx. in 2 seconds intervals.</b></p>	<ul style="list-style-type: none"> <li>• UPnP™ error has occurred since the power is not supplied to the router. Turn on the power of the router. Wait until the connections are established.</li> </ul>	<p>–</p>
	<ul style="list-style-type: none"> <li>• An error has occurred during the port update by the UPnP function. If the router in use does not support the UPnP function, perform the port forwarding setting for the router. In addition, deactivate the setting of auto port forwarding for the camera.</li> </ul>	<p>Operating Instructions (included in the CD-ROM)</p>
	<ul style="list-style-type: none"> <li>• UPnP function of the router is disabled. Refer to the operating instructions of the router to enable the UPnP function.</li> </ul>	<p>–</p>
<p><b>STATUS indicator never lights up.</b></p>	<ul style="list-style-type: none"> <li>• Is “Off” selected for “Indicator” on the “Basic” page? Select “On” or “On(Access)” for the indicator setting.</li> </ul>	<p>Operating Instructions (included in the CD-ROM)</p>
<p><b>STATUS indicator keeps on blinking red.</b></p>	<ul style="list-style-type: none"> <li>• The camera may be out of order. Contact your dealer.</li> <li>• Refer to the readme file on the provided CD-ROM for further information after checking the displayed contents of the “Maintenance” page - the [Status] tab - “Self check” of the setup menu.</li> </ul>	<p>–</p>
<p><b>STATUS indicator lights red.</b></p>	<ul style="list-style-type: none"> <li>• Camera is used in an inclined state. Re-check the installation state, and confirm that it is installed upright on the floor or hung straight from the ceiling.</li> </ul>	<p>Installation Guide</p>

Symptom	Cause/solution	Reference pages
<b>Audio input contains noise.</b>	<ul style="list-style-type: none"> <li>• Check the following.               <ul style="list-style-type: none"> <li>• Grounding of the camera, a switching hub or peripheral devices are not done.</li> <li>• The camera is used near an power line (lamp line) of AC100 V or more.</li> <li>• 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.)</li> </ul> </li> </ul> <p>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>	17
<b>The power cable insulation is damaged.</b>	<ul style="list-style-type: none"> <li>• The power cable and connectors are worn out. This may result in electric shock or a fire. Unplug the power cable from the AC outlet immediately, and refer to qualified service personnel.</li> </ul>	-
<b>The power cable, plug and connectors get hot during use.</b>		
<b>The power cable gets hot when bent or stretched.</b>		

## About the STATUS indicator

The live indicator will light or blink as follows depending on the camera status.

Operation status		Indicator status
When the power is turned on	Before the network connection is established	Lights orange → Lights off → Blinks orange → Lights orange
	When the network connection is established	Lights orange → Lights off → Blinks orange → Blinks green → Lights green
During the standby or connection (Cable is not connected.)		Lights orange
During the standby or connection (Cable is connected.)		Lights green
During the upgrade process		Blinks orange
During the initialization		Lights orange → Lights off → Blinks orange → Lights orange
Port forwarding error caused by the UPnP function		Blinks orange (in 2 seconds intervals (on for 1 second / off for 1 second))
Trouble happening on the camera		Blinks red
When the installation position of main body is abnormal		Lights red



# Specifications

## • Basic

Power source *1:	AC100~240 V 50 Hz/60 Hz or the tested PoE injector (60 W)
Power consumption *1:	AC100~240 V 50 Hz/60 Hz: 1.4 A/Approx. 61 W Tested PoE injector (60 W) DC 54 V: 1 A/Approx. 51 W
When the extension unit (IR LED unit) is attached:	AC100~240 V 50 Hz/60 Hz: 1.6 A/Approx. 71 W Tested PoE injector (60 W) DC 54 V: 1 A/Approx. 51 W
Operating environment	
Ambient operating temperature:	AC100~240V: -50 °C to +60 °C {-58 °F to 140 °F} (Power On range: -30 °C to +60 °C {-22 °F to 140 °F}) When using the tested PoE injector: -30 °C to +60 °C {-22 °F to 140 °F} When using the tested PoE injector and IR LED unit at the same time: -20 °C to +55 °C {-4 °F to 131 °F) * The upper limit value of ambient operating temperature indicates the use of WV-SUD638 (natural silver). In cases of products with other body colors, the upper limit value is +55 °C {131 °F}. * When WV-SUD6FRL1 (IR LED unit) is attached, the upper limit value of ambient operating temperature is +55 °C {131 °F}.
Ambient operating humidity:	10 % to 100 %
Storage environment	
Storage temperature:	-30 °C to +70 °C {-22 °F to 158 °F}
Storage humidity:	10 % to 95 % (no condensation)
External I/O terminals *2:	ALARM IN 1 (DAY/NIGHT IN / TIME ADJUSTMENT IN) (x1) ALARM IN 2 (ALARM OUT) (x1) ALARM IN 3 (AUX OUT) (x1) Relay connection terminal (x1)
Line input *2:	Input impedance: Approx. 2 kΩ (unbalanced) Input level: Approx. -10 dBV
Audio output *2:	Output impedance: Approx. 600 Ω (unbalanced) Output level: -20 dBV
Waterproof *3:	IP66 (IEC60529), Type 4X (UL50), NEMA 4X compliant IP67 (IEC60529)
Shock resistance:	Compliant with IK10 (IEC 62262) (Except for front glass)
Wind resistance:	Operational: up to 60 m/s {approx. 134 mph} (Except in the case of fore position) Non-destructive: up to 80 m/s {approx. 179 mph} (Except in the case of fore position)
Dimensions:	220 mm (W) × 450 mm (H) × 266 mm (D) {8-21/32 inches (W) × 1ft 5-23/32 inches (H) × 10-15/32 inches (D)}
Mass:	Approx. 8.5 kg {18.7 lbs}

Finish:	<b>Main body:</b> High-strength resin WV-SUD638 : Natural Silver WV-SUD638-H : Gray (N7) WV-SUD638-T : Brown (Environmental color) <b>Front glass:</b> Glass clear
Others:	Heavy salt damage resistance specifications (ISO14993 compliant) Vibration resistance specifications (IEC60068-2-6 compliant) Tamper-resistant side cover*4

\*1 Refer to our website (<http://security.panasonic.com/support/info/>) for further information about Power source and Power consumption.

\*2 The EXT I/O terminal, relay connection terminal, line input terminal and audio output terminal will be connected to the external through the waterproof EXT I/O connector.

\*3 Only when installation work is properly performed according to the instructions guide and appropriate waterproof treatment is performed. If PAN/TILT is activated when the unit is submerged under water, the waterproof function is not maintained.

\*4 Component that has a structure on which the screws that are accessible after installation cannot be screwed or unscrewed using an ordinary screwdriver.

## • Camera

Image sensor:	Approx. 1/3 type MOS image sensor
Effective pixels:	Approx. 2.4 mega pixels
Scanning area:	5.28 mm (H) × 2.97 mm (V) {7/32 inches (H) × 1/8 inches (V)}
Scanning system:	Progressive
Minimum illumination:	Color: 0.06 lx {0.00557 footcandle} (F1.6, Maximum shutter: Off (1/30 s), AGC: High) 0.004 lx {0.00037 footcandle} (F1.6, Maximum shutter: max. 16/30 s, AGC: High)* BW: 0 lx {0.000 footcandle} (F1.6; Maximum shutter: Off (1/30 s); AGC: High; When IR LED (WV-SUD6FRL1) is lit) 0.02 lx {0.00186 footcandle} (F1.6, Maximum shutter: Off (1/30 s), AGC: High) 0.001 lx {0.00009 footcandle} (F1.6, Maximum shutter: max. 16/30 s, AGC: High)* * Converted value
Super Dynamic:	On / Off * When 60 fps is selected, the Super Dynamic function is automatically set to off.
Dynamic range:	105 dB typ. (Super Dynamic: On)
Face SD (Super Dynamic):	On/ Off
Gain (AGC):	On (High)/ On (Mid)/ On (Low)/ Off
Adaptive black stretch:	On/ 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:	<b>2 mega pixel [16:9] (60 fps mode)</b> Off (1/60), 1/100, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000 <b>Other than 2 mega pixel [16:9] (60 fps mode)</b> 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
Day/Night:	Off/ On/ Auto1 (Normal)/ Auto2 (IR Light)/ Auto3 (SCC)
IR LED Light *1:	Off/ Auto (High/ Mid/ Low) Irradiation distance: 150 m {Approx. 500 ft} (Lens TELE)
White balance:	ATW1/ ATW2/ AWC
Digital noise reduction:	High/ Low
Stabilizer:	On/ Off
Privacy zone:	Filling/ Pixelate/ Off (up to 32 zones available)
VIQS:	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

\*1 When WV-SUD6FRL1 (IR LED unit) (optional) is loaded

#### • Lens

Zoom ratio:	30x Optical 45x with HD Extra Optical Zoom (2 mega pixel mode resolution 1280×720) (Motorized zoom/Motorized focus)
Digital (electronic) zoom:	Up to 24x
Focal length:	4.3 mm – 129 mm {5/32 inches – 5-3/32 inches}
Maximum aperture ratio:	1:1.6 (WIDE) – 1:4.7 (TELE)
Focus range:	2 m – ∞
Aperture range:	F1.6 (WIDE) – Close (Auto control or auto control by light intensity control setting)
Angular field of view:	[16:9 mode] Horizontal: 2.3° (TELE) – 64° (WIDE) Vertical: 1.3° (TELE) – 38° (WIDE) [4:3 mode] Horizontal: 1.8° (TELE) – 50° (WIDE) Vertical: 1.3° (TELE) – 38° (WIDE)



## • Rotating section

Panning range:	360° Endless panning
Panning speed:	Manual: Approx. 0.065 °/s – 100 °/s, Preset: Up to approx. 200 °/s (Excludes the case when the optional IR LED unit is attached, during fore position, when frozen, and during strong wind)
Tilting range *1:	Upright position: –45° – 0° (horizontal) – +90° (overhead) Fore position: –90° – 0° (horizontal) – +90° (overhead) Hanging position: –90° (underneath) – 0° (horizontal) – +30°
Tilting speed:	Manual: Approx. 0.065 °/s – 100 °/s, Preset: Up to approx. 200 °/s (Excludes the case when the optional IR LED unit is attached, during fore position, when frozen, and during strong wind)
Number of the preset positions:	256
Auto mode:	Auto track/ Auto pan/ Preset sequence/ 360° map-shot/ Preset map-shot/ Patrol
Self return:	10 s/ 20 s/ 30 s/ 1 min/ 2 min/ 3 min/ 5 min/ 10 min/ 20 min/ 30 min/ 60 min
Tilt flip	On/ Off
Map shot:	360° map-shot/Preset map-shot

\*1 Manually change the installation position of camera (upright or fore position) before installation. Installation position is automatically recognized when power is turned on.

## • Network

Network:	10BASE-T/100BASE-TX, RJ45 connector
Resolution: H.264 JPEG (MJPEG)	<p><b>2 mega pixel [16:9] (60 fps mode)</b></p> <p>H264 (1) max. 60 fps 1920×1080, 1280×720</p> <p>H264 (2) max. 30 fps 1920×1080, 1280×720, 640×360, 320×180, 160×90</p> <p>H264 (3), H264 (4) max. 30 fps 1280×720, 640×360, 320×180, 160×90</p> <p>JPEG (1), JPEG (2), JPEG (3) 1920×1080, 1280×720, 640×360, 320×180, 160×90</p> <p><b>2 mega pixel [16:9] (30 fps mode)</b></p> <p>H264 (1), H264 (2) max. 30 fps 1920×1080, 1280×720, 640×360, 320×180, 160×90</p> <p>H264 (3), H264 (4) max. 30 fps 1280×720, 640×360, 320×180, 160×90</p> <p>JPEG (1), JPEG (2), JPEG (3) 1920×1080, 1280×720, 640×360, 320×180, 160×90</p> <p><b>1.3 mega pixel [4:3] (30 fps mode)</b></p> <p>H264 (1), H264 (2), H264 (3), H264 (4) max. 30 fps 1280×960, 800×600, VGA, 400×300, QVGA, 160×120</p> <p>JPEG(1), JPEG(2), JPEG(3) 1280×960, 800×600, VGA, 400×300, QVGA, 160×120</p>

<p>Image compression method: H.264*1</p> <p>JPEG (MJPEG)</p>	<p><b>Transmission priority:</b> Constant bit rate/ Variable bit rate/ Frame rate/ Best effort/ Advanced VBR</p> <p><b>Frame rate:</b> &lt;When Variable bit rate, Frame rate, or Advanced VBR is selected&gt; 1 fps/ 3 fps/ 5 fps*/ 7.5 fps*/ 10 fps*/ 12 fps*/ 15 fps*/ 20 fps*/ 30 fps*/ 60 fps* * The frame rate is limited to “bit rate”. When a value with an asterisk (*) is selected, the actual frame rate may be lower than the value selected.</p> <p><b>Bit rate per client:</b> 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* * The available range of the H.264 bit rate varies depending on the setting selected for “image capture size / transmission priority”.</p> <p><b>Image quality:</b> &lt;When Constant bit rate or Best effort is selected&gt; Low/ Normal/ Fine &lt;When Variable bit rate is selected&gt; 0 SUPER FINE/1 FINE/ 2/ 3/ 4/ 5 NORMAL/ 6/ 7/ 8/ 9 LOW</p> <p><b>Transmission type:</b> Unicast/ Multicast</p> <p><b>Image quality:</b> 0 SUPER FINE/ 1 FINE/ 2/ 3/ 4/ 5 NORMAL/ 6/ 7/ 8/ 9 LOW (10 steps: 0 – 9)</p> <p><b>Transmission type:</b> Pull/ Push</p> <p><b>Refresh interval:</b> 0.1 fps – 30 fps (JPEG frame rate will be restricted when displaying both JPEG and H.264 images.)</p>
<p>Audio compression method:</p>	<p>G.726 (ADPCM) 32 kbps/ 16 kbps, G.711 64 kbps, AAC-LC 64 kbps, AAC-LC (HIGH QUALITY)*2 64 kbps/ 96 kbps/ 128 kbps</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/ 10240 kbps/ 15360 kbps/ 20480 kbps/ 25600 kbps/ 30720 kbps/ 35840 kbps/ 40960 kbps/ 51200 kbps</p>
<p>Protocol:</p>	<p>IPv6: TCP/IP, UDP/IP, HTTP, HTTPS, FTP, SMTP, DNS, NTP, SNMP, DHCPv6, RTP, MLD, ICMP, ARP IPv4: TCP/IP, UDP/IP, HTTP, HTTPS, RTSP, RTP, RTP/RTCP, FTP, SMTP, DHCP, DNS, DDNS, NTP, SNMP, UPnP, IGMP, ICMP, ARP</p>
<p>OS*3:</p>	<p>Microsoft Windows 10 Microsoft Windows 8.1 Microsoft Windows 8 Microsoft Windows 7</p>

Browser* <sup>3</sup> :	Windows Internet Explorer 11 (32-bit) Windows Internet Explorer 10 (32-bit) Windows Internet Explorer 9 (32-bit) Windows Internet Explorer 8 (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
Multi-screen:	Up to 16 camera images can be displayed simultaneously on a multi-screen. (Including the camera itself)
Cellular phone compatibility:	JPEG image, AUX control (by access level)
Mobile terminal compatibility: (As of September, 2016)* <sup>4</sup>	iPad, iPhone, iPod touch (iOS 4.2.1 or later) Android™ mobile terminals

\*1 Transmission for 4 streams can be individually set.

\*2 When "AAC-LC (HIGH QUALITY)" is selected, there are limitations about the following function.

- "Audio detection" is not available.
- HTTPS is not available.
- The maximum concurrent access number is limited to 5.

\*3 For further information about PC system requirements and precautions for when using Microsoft Windows or Windows Internet Explorer, click "Manual" - "Open" from the supplied CD-ROM and refer to "Notes on Windows® / Internet Explorer® versions".

\*4 For further information about compatible devices, refer to our website (<http://security.panasonic.com/support/info/>).

## Standard accessories

Important safety instructions.....	1 pc.
Installation Guide .....	1 set
Warranty card* <sup>1</sup> .....	1 set
CD-ROM* <sup>2</sup> .....	1 pc.
Code label* <sup>3</sup> .....	1 pc.

The following parts are used during installation procedures.

Waterproof power supply connector (plug side) .....	1 set
Waterproof EXT I/O connector (plug side) .....	1 set
Waterproof RJ45 connector (plug side).....	1 pc.
Washer nozzle mounting bracket A.....	1 pc.
Washer nozzle mounting bracket B.....	1 pc.
Fixing screws for the washer nozzle mounting bracket B .....	3 pcs.
	(of them, 1 for spare)
Attachment plate .....	1 pc.
Fixing screws for attachment plate.....	5 pcs. (of them, 1 for spare)
Fixing nuts for attachment plate.....	5 pcs. (of them, 1 for spare)
Spring washer .....	5 pcs. (of them, 1 for spare)
Flat washer .....	10 pcs. (of them, 2 for spare)
Safety wire.....	1 pc.
Wire clasper .....	1 pc.
Bit (Hex wrench, screw size 6.35 mm {1/4 inches} T20).....	1 pc.

\*1 This product comes with several types of warranties. Each warranty is only applicable to the products purchased in the regions indicated on the relevant warranty.

\*2 The CD-ROM contains the operating instructions and different kinds of tool software programs.

\*3 This label may be required for network management. The network administrator shall retain the code label.

## Optional accessories

Extention unit (IR LED)	WV-SUD6FRL1 : Natural Silver WV-SUD6FRL-H : Gray (N7) WV-SUD6FRL-T : Brown (Environmental color)
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## Disposal of Old Equipment and Batteries

### Only for European Union and countries with recycling systems



These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries must 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.

By disposing of them correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment.

For more information about collection and recycling, please contact your local municipality.

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



#### **Note for the battery symbol (bottom symbol)**

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

#### **For U.S. and Canada:**

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