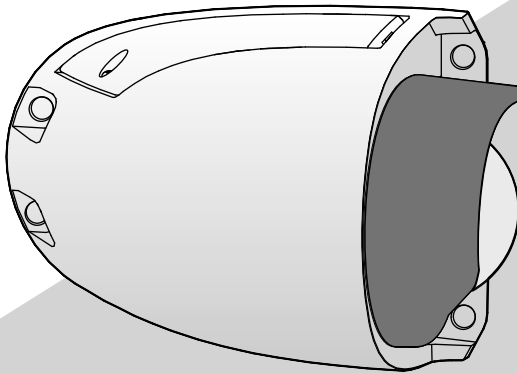


Panasonic®

Important Information

Network Camera

Model No. **WV-SBV131M/**
WV-SBV111M



(This illustration represents WV-SBV131M)



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

The model number is abbreviated in some descriptions in this manual.

WARNING:

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

CAUTION:

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

For Canada

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

For U.S.A.

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

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

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

For U.S.A.

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

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

Model No. _____

Serial No. _____

For Europe

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

Wir erklären in alleiniger Verantwortung, daß das Produkt, auf das sich diese Erklärung bezieht, mit der folgenden Norm oder normativen Dokument übereinstimmt. Gemäß den Bestimmungen der Richtlinie 2004/108/EC.

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

Nosotros declaramos bajo nuestra única responsabilidad que el producto a que hace referencia esta declaración está conforme con la norma u otro documento normativo siguiendo las estipulaciones de la directiva 2004/108/CE.

Noi dichiariamo sotto nostra esclusiva responsabilità che il prodotto a cui si riferisce la presente dichiarazione risulta conforme al seguente standard o altro documento normativo conforme alle disposizioni della direttiva 2004/108/CE.

Wij verklaren als enige aansprakelijke, dat het product waarop deze verklaring betrekking heeft, voldoet aan de volgende norm of ander normatief document, overeenkomstig de bepalingen van Richtlijn 2004/108/EC.

Vi erklærer os eneansvarlige for, at dette produkt, som denne deklaration omhandler, er i overensstemmelse med standard eller andre normative dokumenter i følge bestemmelserne i direktiv 2004/108/EC.

Vi deklarerar härmed vårt fulla ansvar för att den produkt till vilken denna deklaration hänvisar är i överensstämmelse med standarddokument eller annat normativt dokument som framställs i direktiv 2004/108/EC.

Ilmoitamme yksinomisella vastuullamme, että tuote, jota tämä ilmoitus koskee, noudattaa seuraavaa standardia tai muuta ohjeellista asiakirjaa, jotka noudattavat direktiivin 2004/108/EC sääöksiä.

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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 install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 6) 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.

Limitation of liability

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IN NO EVENT SHALL Panasonic Corporation BE LIABLE TO ANY PARTY OR ANY PERSON, EXCEPT FOR REPLACEMENT OR REASONABLE MAINTENANCE OF THE PRODUCT, FOR THE CASES, INCLUDING BUT NOT LIMITED TO BELOW:

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

Preface

The network cameras WV-SBV131M / WV-SBV111M are designed to operate using a PC on a network (10BASE-T/100BASE-TX).

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

Note:

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

About notations

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

<Vandal Resistant & Waterproof Full-HD model>

SBV131M The functions with this notation are available when using the model WV-SBV131M.

<Vandal Resistant & Waterproof HD dome model>

SBV111M The functions with this notation are available when using the model WV-SBV111M.

Main functions

H.264 and JPEG triple encoding

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

Equipped with SD memory card*¹ slot

It is possible to save H.264 videos and JPEG images on the SD memory card manually when an alarm occurs, during the period of the schedule, or on a Web browser. (Downloading is possible.) It is also possible to save JPEG images if a network failure occurs.

The camera conforms to the IP66*², Type 4X (UL50)*³ and IP6K9K*⁴, is compliant with NEMA 4X*⁵ ratings, and provides high dust resistance and waterproof performance.

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

Achieves high-level vibration resistance with EN50155*⁶ and MIL-STD-810G*⁷ compliance

The camera has a strong vibration resistant structure which is needed in on-vehicle installations.

Adoption of a scratch resistant dome cover with a compact and sleek design is optimal for cameras installed on the outside of a vehicle.

The hard coated dome cover that is resistant to scratches from contact with car wash machinery, roadside trees etc., is also protected by the dome cover guard.

Painting before installment

The dome guard is shipped mounted with a painting guard in order to facilitate any painting prior to installation.

Easy installation thanks to the click adjustment mechanism

The camera can be adjusted to the desired angle before checking the recording screen thanks to the click adjustment mechanism that is installed to PAN/TILT movable parts.

*1 The SDXC/SDHC/SD memory card is referred to as an SD memory card.

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

*3 Type 4X (UL50): 4X indicates the rank in the UL waterproof standard.

*4 This product is of a grade that complies with the protective structure as defined by part 9 of DIN40050 of the DIN standards (German Federal Standard), meaning; with respect to solid foreign objects, the interior will not be penetrated by dust and will be not be damaged by hot high-pressure washing water.

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

*6 The standards for assembly and performance that applies to electronic equipment used for rail vehicles

*7 MIL standard (US military product standards adopted by the United States Department of Defense and regulations)

About the user manuals

There are 3 sets of operating instructions for the WV-SBV131M/WV-SBV111M 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) memory is required when using Microsoft® Windows® 8.1, Microsoft® Windows® 8, Microsoft® Windows® 7.
Network interface:	10BASE-T/100BASE-TX 1 port
Monitor:	Image capture size: 1024 x 768 pixels or more Color: 24-bit True color or better
OS:	Microsoft® Windows® 8.1 Microsoft® Windows® 8 Microsoft® Windows® 7
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.)

IMPORTANT:

- For information on the operation verification of the supported operating systems and web browsers, refer to our website at <http://security.panasonic.com/pss/security/support/index.html>.
 - When using a PC that does not meet the above requirements, displaying of images may become slower or the web browser may become inoperable.
 - Microsoft Windows RT and Microsoft Windows 7 Starter 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.
-

Note:

- For further information about PC system requirements and precautions for when using Microsoft Windows 8.1, Microsoft Windows 8, Microsoft Windows 7, 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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- 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.
- Apply measures such as user authentication to protect your network against leakage or theft of information, including image data, authentication information (user names and passwords), alarm mail information, FTP server information and DDNS server information.
- After the unit is accessed by the administrator, make sure to close the browser.
- Change the administrator password periodically.
- Do not install the camera in locations where the camera or the cables can be destroyed or damaged by persons with malicious intent.

Precautions

Refer installation work to the dealer.

Installation work requires technique and 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.

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

Do not attempt to disassemble or modify this product.

Failure to observe this may cause fire or electric shock. Consult the dealer for the repair or inspections.

Do not insert any foreign objects.

Fire or electrical shock may be caused if water or any foreign objects, such as metal objects, enter inside the unit.

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

Select an installation area that can support the total weight.

Selecting an inappropriate installation surface may cause this product to fall down or topple over, resulting in injury or accidents. Installation work shall be started after sufficient reinforcement.

Periodic inspections shall be conducted.

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

Consult the dealer for the inspections.

Do not use this product in an inflammable atmosphere.

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

Avoid installing this 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.

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

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

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

Failure to observe this may cause fire or injury.

Turn the power off when do wiring of this product.

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

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

Otherwise, they may swallow the cards by mistake. In this case, consult a doctor immediately.

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

Failure to observe this may cause electric shock.

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

Failure to observe this may cause injury.

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

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

Correctly perform all wiring

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

Turn the power off when cleaning this product.

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.

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

This product has no power switch.

When turning off the power, disconnect the power supply from the PoE device. Before turning off the power, press the [Setup] button on the “Live” page, select the [SD memory card] tab, and set the SD memory card operation to “Not use”.

Handle this product with care.

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

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 subject the dome cover to strong impact.

Doing so may cause damage or immersion.

Do not touch the dome cover with your bare hands

A dirty dome cover causes deterioration of picture quality.

About the PC monitor

When displaying the same image on the monitor for a long time, the monitor may be damaged. It is recommended to use a screen-saver.

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

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

About the automatic status detection function

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

Transmission interval

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

Periodically images on the screen appear to be distorted

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

About SD memory card

- If the power for the camera is turned off when recording to an SD memory card, the recorded data may become unreadable. Make sure to stop recording before turning off the power to the camera. Furthermore, we recommend using a business-use SD memory card (SLC) that can tolerate power outages in order to reduce the damage caused when the power is accidentally turned off, such as from power outages.
- To remove the SD memory card from the unit, press the [Setup] button on the “Live” page, select the [SD memory card] tab, and set the SD memory card operation to “Not use”. Then, remove the SD memory card.
- When using an SD memory card, format it using this product. Recorded data on the SD memory card will be deleted when formatted. If an unformatted SD memory card or an SD memory card formatted with other devices is used, this product may not work properly or performance deterioration may be caused. Refer to the Operating Instructions on the provided CD-ROM for how to format an SD memory card.
- When some SD memory cards are used with this product, the product may not work properly or performance deterioration may be caused. Use the compatible SD memory cards in page 21.
- When using an SD memory card supporting Class 10 of the speed class, use a UHS-I (Ultra High Speed-I) compliant card.

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. 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.

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.

Cleaning the lens

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

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SEE [HTTP://WWW.MPEGLA.COM](http://www.mpegla.com)

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

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

: Direct current symbol

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 disposing of a device that stores data, we recommend you delete all of the stored data using a PC and then physically destroy the device.

Consumable parts

The part listed below is consumable. Replace it in accordance with its condition. The operating lifetimes vary depending on the usage environment and conditions.

Dome cover: PGKV1288ZAC1

The dome cover may be damaged depending on the usage environment. The dome cover will have to be replaced (must be purchased) if the damage affects the display. Consult with your dealer or construction contractor regarding the replacement.

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.

Power supply

This product has no power switch.

When turning off the power, disconnect the power supply from the PoE device. When the Ethernet cable of the product is connected to the PoE device, the power will be supplied to the product.

Before cleaning the product, make sure that the Ethernet cable is not connected to the PoE device.

Installation area for this product

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

- Mount onto a strong, flat surface.
Reinforce the mounting area if the surface is not strong enough. Mount the camera using a fixing bracket (locally procured) if the surface is not flat.
- 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.

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 where corrosive gas is produced, locations where it may be damaged by briny air such as seashores
- Locations where the temperature is not within the specified range (☞ page 17)
If the product is used in temperatures from $-40\text{ }^{\circ}\text{C}$ to $-30\text{ }^{\circ}\text{C}$ $\{-40\text{ }^{\circ}\text{F}$ to $-22\text{ }^{\circ}\text{F}\}$, it may take time to start up. (It may take about 40 minutes when $-40\text{ }^{\circ}\text{C}\{-40\text{ }^{\circ}\text{F}\}$.)

Check before installation

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

Contact your dealer for details.

Before installation

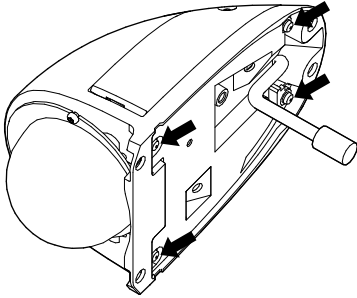
- Anchor bolts and screws used to mount the camera on the ceiling or wall are not supplied. Prepare bolts and screws that match the structure and materials of the installation location and satisfy the performance and reliability specifications shown below.
Required screws: M5 (4 pcs.)
Minimum pull-out strength: 539 N {121 lbf} (per 1 pc.)

Screw tightening

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

Do not remove or loosen the screws on the bottom of this product.

If the screws (4 pcs.) are loosened, water exposure may cause damage or malfunction of the product, or dropping may result in injury.



Take notice of humidity

Install this product when the humidity is low. If installation is performed when it is raining or in very humid conditions, the inside may be affected by humidity, causing mist-over inside the dome cover.

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 may be produced.

PoE (Power over Ethernet)

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

Use the on-vehicle PoE hub/device when the vehicle is in use.

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.

Ethernet cable

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

Time & date setting

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

Mounting direction

Rain, snow, insects etc. can easily attach to the front of the dome of the on-vehicle camera if it is faced towards the moving direction. This will obstruct the view of the camera, so please clean the dome on a regular basis.

About painting

Although the camera is made so that it can be easily painted, any problems or damages caused by painting will not be covered by the warranty.

Make sure to keep compliance with the following contents when painting.

- Be sure to treat the camera with a primer before painting in order to improve the adhesion of the coating.
- Use spray paint when painting this camera. Because the camera contains precision parts, it cannot be painted with a baked enamel finish or dip coating.
- Do not remove the dome paint guard, SD cover paint guard, SD cover fixing screw paint guard and the plastic cover that protects the Ethernet cable until after the paint has finished drying.
- Do not paint the bottom of the camera (where the indication label and moisture protection sheets are located).
- Do not paint the camera when it is disassembled or when it is held and hung by a cable. It will result in system failure or malfunctions such as cable disconnections.
- Dry the camera naturally after it is painted and do not apply heat, it can damage the precision components inside the camera.

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.

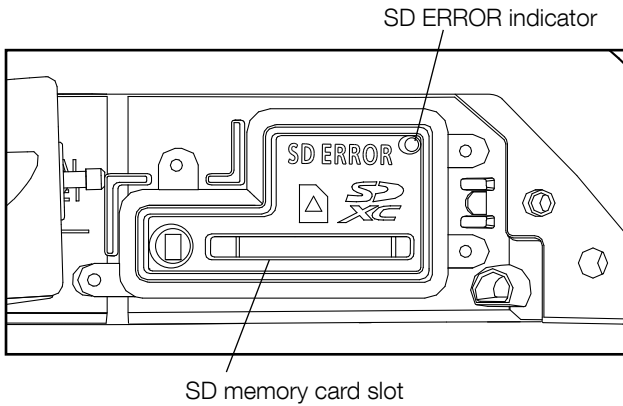
Contact your dealer if a problem cannot be solved even after checking and trying the solution in the table or a problem is not described below.

Symptom	Cause/solution	Reference pages
Power is not turned on.	<ul style="list-style-type: none"> • Are the PoE device and the network connector connected using a Ethernet cable (category 5e or better)? Check whether the connection is appropriately established. • Depending on the PoE device, the power supply will stop when the demanded power exceeds its total power limit for all PoE ports. Refer to the operating instructions of the PoE device in use. 	Installation Guide
The PC cannot recognize the camera when connected by an Ethernet cable	<ul style="list-style-type: none"> • Is the Ethernet cable connected appropriately? Connect the Ethernet cable appropriately. • Is the hub or router connected to the camera operating appropriately? Check if the hub or router in use is operating appropriately. • Isn't the Ethernet cable connected to the camera broken? Replace the cable with another one. 	Installation Guide
The SD ERROR indicator lights up red.	<p>This indicator lights up red when data cannot be saved on the SD memory card.</p> <ul style="list-style-type: none"> • Isn't the write protect switch of the inserted SD memory card set to "LOCK"? Unlock the write protect switch of the SD memory card. • Hasn't the inserted SD memory card been formatted on a PC? Use an SD memory card formatted on the camera. Or install the software to format the SD memory card on the PC. Refer to our website (http://security.panasonic.com/pss/security/support/info.html) for further information about the supported software. • Isn't the inserted SD memory card faulty? Replace the card with a normal one. 	Operating Instructions (included in the CD-ROM)

About the indicator

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

Indicator type and operation state	Change of indicator indication
SD ERROR indicator <ul style="list-style-type: none">• The SD memory card setting is set to "Not use".• The camera is being started.• When an SD memory card is recognized normally• When the SD memory card slot is not used or if an SD memory card error is detected after start-up:	Lights off Lights red Lights red → Lights off Lights red → Stays red



Specifications

• Basic

Power source *1:	PoE (IEEE802.3af compliant)
Power consumption *1:	PoE DC 48 V : 80 mA/Approx. 3.8 W (Class 1 device)
Operating environment Ambient operating temperature:	-40 °C to +60 °C {-40 °F to 140 °F} (Power On range: -30 °C to +60 °C {-22 °F to 140 °F})
Ambient operating humidity:	10 % to 90 % (no condensation)
Storage environment Storage temperature:	-40 °C to +65 °C {-40 °F to 149 °F}
Storage humidity:	10 % to 95 % (no condensation)
Waterproof *2:	IP66 (IEC60529), IP6K9K, Type 4X (UL50), NEMA 4X compliant
Shock resistance:	Compliant with IK10 (IEC 62262)
Other standard support:	EN50155 (railroad standard), ECE-R10 (E approval), MIL-STD-810G compliant
Dimensions:	100 mm {3-15/16 inches} (W), 80 mm {3-5/32 inches} (H), 161 mm {6-11/32 inches} (D)
Mass:	Approx. 750 g {1.65 lbs}
Finish:	Main body: Aluminum die cast Light gray Dome cover: Polycarbonate resin Clear (with hard coating)
Others:	Tamper-resistant dome cover *3

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

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

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

• **Camera**

	WV-SBV131M	WV-SBV111M
Image sensor:	1/3 type MOS image sensor	
Effective pixels:	Approx. 2.4 mega pixels	Approx. 1.3 mega pixels
Scanning area:	5.28 mm (H) x 3.30 mm (V) {7/32 inches (H) x 1/8 inches (V)}	4.86 mm (H) x 3.65 mm (V) {3/16 inches (H) x 5/32 inches (V)}
Scanning system:	Progressive	
Minimum illumination:	Color: 0.1 lx {0.00929 footcandle} (F2.2, Maximum shutter: Off (1/30 s), AGC: High) 0.007 lx {0.00065 footcandle} (F2.2, Maximum shutter: max. 16/30 s, AGC: High)* BW: 0.06 lx {0.00557 footcandle} (F2.2, Maximum shutter: Off (1/30 s), AGC: High) 0.004 lx {0.00037 footcandle} (F2.2, Maximum shutter: max. 16/30 s, AGC: High)* * Converted value	Color: 0.04 lx {0.00372 footcandle} (F2.2, Maximum shutter: Off (1/30 s), AGC: High) 0.003 lx {0.00028 footcandle} (F2.2, Maximum shutter: max. 16/30 s, AGC: High)* BW: 0.03 lx {0.00279 footcandle} (F2.2, Maximum shutter: Off (1/30 s), AGC: High) 0.002 lx {0.00019 footcandle} (F2.2, Maximum shutter: max. 16/30 s, AGC: High)* * Converted value
Wide dynamic range	On/ Off	
Gain (AGC):	On (High)/ On (Mid)/ On (Low)/ Off	
Adaptive black stretch:	On/ Off (only when Wide dynamic range: Off)	
Back light compensation (BLC):	On/ Off (only when Wide dynamic range: Off)	
Fog compensation:	On/ Off (only when Wide dynamic range: Off)	
High light compensation (HLC):	On/ Off (only when Wide dynamic range/ Back light compensation (BLC): Off)	
Light control mode setting:	Indoor scene (50 Hz)/ Indoor scene (60 Hz)/ ELC	
Maximum shutter:	max. 1/10000 s, max. 1/4000 s, max. 1/2000 s, max. 1/1000 s, max. 1/500 s, max. 1/250 s, max. 1/120 s, max. 1/100 s, max. 2/120 s, max. 2/100 s, max. 3/120 s, max. 3/100 s, max. 1/30 s, max. 2/30 s, max. 4/30 s, max. 6/30 s, max. 10/30 s, max. 16/30 s	
Color/BW (Electrical):	Off/ Auto	
White balance:	ATW1/ ATW2/ AWC	
Digital noise reduction:	High/ Low	
Privacy zone:	On/ Off (up to 8 zones available)	
VIQS:	On/ Off (Max. 8 locations)	
Camera title on screen:	On/ Off Up to 20 characters (alphanumeric characters, marks)	
Video Motion Detection (VMD):	On/ Off, 4 areas available	

• **Lens**

	WV-SBV131M	WV-SBV111M
Digital (electronic) zoom:	Choose from 3 levels of x1, x2, x4	
Zoom ratio:	x1 SBV131M Extra zoom x3 (16:9mode)/ x2.5 (4:3mode) SBV111M Extra zoom x2	
Focal length (f):	1.95 mm {1/16 inches}	
Maximum aperture ratio (F):	1:2.2	
Focus range:	0.5 m – ∞	
Aperture range:	E2.2	
Angular field of view:	[16:9 mode] Horizontal: 109 ° Vertical: 73 ° [4:3 mode] Horizontal: 97 ° Vertical: 79 °	[16:9 mode] Horizontal: 104 ° Vertical: 69 ° [4:3 mode] Horizontal: 104 ° Vertical: 85 °
Adjusting angle:	Horizontal (PAN): ±170 ° Vertical (TILT): ±90 ° Image rotation (YAW): -170 ° (Left) to +170 ° (Right)	

• **Network**

Network:	10BASE-T/100BASE-TX, M12 connector
Resolution: H.264 JPEG (MJPEG)	<p>SBV131M</p> <p>2 mega pixel [16:9] H.264 (1)(2) / JPEG (1)(2)(3) 1920x1080 / 1280x720 / 640x360 / 320x180 / 160x90 H.264 (3)(4) 1280x720 / 640x360 / 320x180 / 160x90</p> <p>2 mega pixel [4:3] H.264 (1)(2) / JPEG (1)(2)(3) 1600x1200 / 1280x960 / 800x600 / VGA / 400x300 / QVGA / 160x120 H.264 (3)(4) 1280x960 / 800x600 / VGA / 400x300 / QVGA / 160x120</p> <p>3 mega pixel [4:3] * Used by super resolution techniques H.264 (1)(2) / JPEG (1)(2)(3) 2048x1536 / 1280x960 / 800x600 / VGA / 400x300 / QVGA / 160x120 H.264 (3)(4) 1280x960 / 800x600 / VGA / 400x300 / QVGA / 160x120</p> <p>SBV111M</p> <p>1.3 mega pixel [16:9] H.264(1)(2)(3)(4) / JPEG (1)(2)(3) 1280x720 / 640x360 / 320x180 / 160x90</p> <p>1.3 mega pixel [4:3] H.264(1)(2)(3)(4) / JPEG (1)(2)(3) 1280x960 / 800x600 / VGA / 400x300 / QVGA / 160x120</p>

<p>Image compression method: H.264*1</p>	<p>Transmission priority: Constant bit rate / Variable bit rate / Frame rate / Best effort / Advanced VBR</p> <p>Frame rate: <When Variable bit rate, Frame rate, or Advanced VBR is selected> 1 fps / 3 fps / 5 fps* / 7.5 fps* / 10 fps* / 12 fps* / 15 fps* / 20 fps* / 30 fps* * 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>Bit rate per client: 64 kbps / 128 kbps* / 256 kbps* / 384 kbps* / 512 kbps* / 768 kbps* / 1024 kbps* / 1536 kbps* / 2048 kbps* / 3072 kbps* / 4096 kbps* / 6144 kbps* / 8192 kbps* / 10240 kbps* / 12288 kbps* / 14336 kbps* / 16384 kbps* / 20480 kbps* / 24576 kbps* / 30720 kbps* / 40960 kbps* * The available range of the H.264 bit rate varies depending on the setting selected for “image capture size”.</p> <p>Image quality: <When Constant bit rate or Best effort is selected> Low/Normal/Fine <When Variable bit rate is selected> 0 SUPER FINE/1 FINE/2/3/4/5 NORMAL/6/7/8/9/LOW</p> <p>Transmission type: Unicast/Multicast</p>
<p>JPEG (MJPEG)</p>	<p>Image quality: 0 SUPER FINE/ 1 FINE/ 2/ 3/ 4/ 5 NORMAL/ 6/ 7/ 8/ 9 LOW (10 steps: 0-9)</p> <p>Transmission type: Pull/ Push</p> <p>Refresh interval: 0.1 fps – 30 fps (JPEG frame rate will be restricted when displaying both JPEG and H.264 images.)</p>
<p>Protocol:</p>	<p>IPv6: TCP/IP, UDP/IP, HTTP, HTTPS, RTP, FTP, SMTP, DNS, NTP, SNMP, DHCPv6, 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*2:</p>	<p>Microsoft Windows 8.1 Microsoft Windows 8 Microsoft Windows 7</p>
<p>Browser*2:</p>	<p>Windows Internet Explorer 11 (32-bit) Windows Internet Explorer 10 (32-bit) Windows Internet Explorer 9 (32-bit) Windows Internet Explorer 8 (32-bit)</p>
<p>Maximum concurrent access number:</p>	<p>14 (Number of sessions that can connect to cameras at the same time) * Depends on network conditions</p>

FTP client:	Alarm image transmission, FTP periodic transmission (When the FTP transmission is failed, backup on an optional SD memory card is available.)
Multi-screen:	Up to 16 camera images can be displayed simultaneously on a multi-screen. (Including the camera itself)
Compatible SDXC/SDHC/SD memory card* ³ * ⁴ * ⁵ :	Manufactured by Panasonic (SD speed class 4 or higher) SDXC memory card: 64 GB, 128 GB SDHC memory card: 4 GB, 8 GB, 16 GB, 32 GB SD memory card: 2 GB (except miniSD card and microSD card)
Cellular phone compatibility:	JPEG image (by access level)
Mobile terminal compatibility: (As of Oct., 2015)* ⁶	iPad, iPhone, iPod touch (iOS 4.2.1 or later) Android™ mobile terminals

*1 Transmission for 4 streams can be individually set.

*2 For further information about PC system requirements and precautions for when using Microsoft Windows 8.1, Microsoft Windows 8, Microsoft Windows 7, or Windows Internet Explorer, click "Manual" - "Open" from the supplied CD-ROM and refer to "Notes on Windows® / Internet Explorer® versions".

*3 Refer to our website (<http://security.panasonic.com/pss/security/support/info.html>) for latest information about the compatible SD memory cards.

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

*5 Use the SD memory card that complies with UHS-1(Ultra High Speed-1) in the case of SD Speed Class 10.

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

Standard accessories

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

The following parts are used during installation procedures.

Lens adjuster	1 pc.
Template.....	1 pc.
Bit (Hex wrench, screw size 6.35 mm {1/4 inches} T10)	1 pc.
Dome cover guard.....	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.

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:

Panasonic System Communications Company of North America, Unit of Panasonic Corporation of North America

www.panasonic.com/business/
For customer support, call 1.800.528.6747
Two Riverfront Plaza, Newark, NJ 07102-5490

Panasonic Canada Inc.

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

For Europe and other countries:

Panasonic Corporation

<http://www.panasonic.com>

Panasonic Corporation
Osaka, Japan

Authorised Representative in EU:

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

