

# Panasonic

## Color CCTV Camera Operating Instructions

Model No. **WV-CF212**

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

Ns0902-0 3TR001242AAA Printed in China



**SA 1965**  
The lightning flash with arrow-head symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

**SA 1966**  
The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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.

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

Model No. WV-CF212  
Serial No. \_\_\_\_\_

**WARNING:**  
To reduce the risk of fire or electric shock, do not expose this appliance to rain or moisture.

## PREFACE

Panasonic's WV-CF212 series digital signal processing color CCD cameras uses a 1/4-inch interline transfer CCD image sensor having 768 horizontal pixels (picture elements), and digital signal

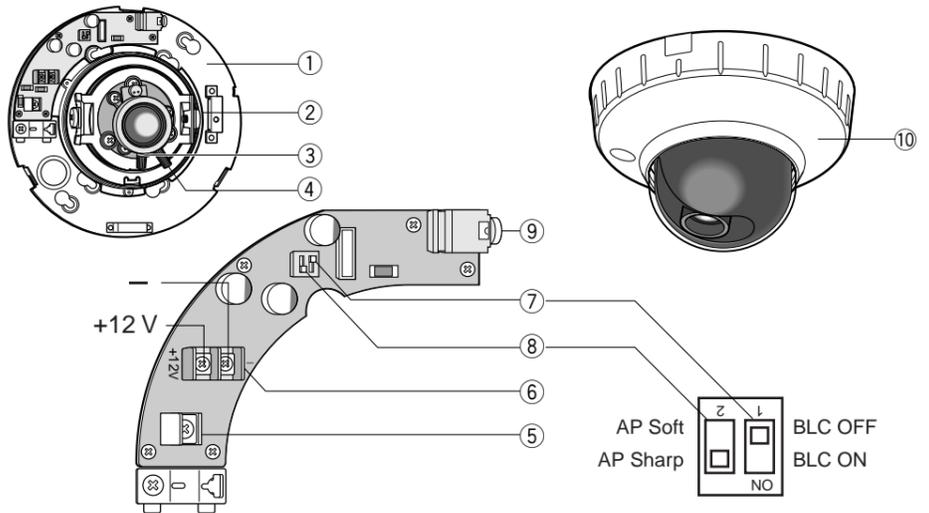
processing LSI's. This model is designed for video surveillance.

## PRECAUTIONS

- Do not attempt to disassemble the camera.**  
To prevent electric shock, do not remove screws or covers. There are no user-serviceable parts inside. Ask qualified service personnel for servicing.
- Handle the camera with care.**  
Do not abuse the camera. Avoid striking, shaking, etc. The camera could be damaged by improper handling or storage.
- Do not expose the camera to rain or moisture, or try to operate it in wet areas.**  
Turn the power off immediately and ask qualified service personnel for servicing. Moisture can damage the camera and also create the danger of electric shock.
- Do not use strong or abrasive detergents when cleaning the camera body.**  
Use a dry cloth to clean the camera when dirty. In case the dirt is hard to remove, use a mild detergent and wipe gently. Afterwards, wipe off the remained part of the detergent in it with a dry cloth.

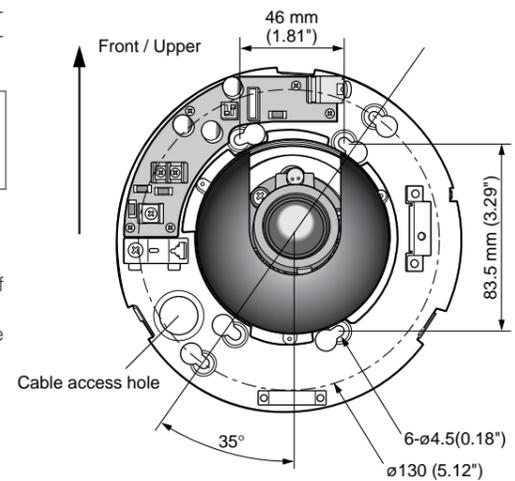
- Clean the lens faceplate with care.**  
Do not clean the lens with strong or abrasive detergents. Use lens tissue or a cotton tipped applicator and ethanol.
- Never face the camera towards the sun.**  
Do not aim the camera at bright objects. Whether the camera is in use or not, never aim it at the sun or other extremely bright objects. Otherwise, blooming or smear may be caused.
- Do not operate the camera beyond the specified temperature, humidity or power source ratings.**  
Use the camera under conditions where temperature is between -10 °C to +50 °C (14 °F to 122 °F), and humidity is below 90%. The input power source is 12 V DC, 240 mA.
- It is recommended to use a monitor whose resolution is at least equal to that of the camera.**

## MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS



- Camera Panel**
- Panning/Tilting/Azimuth Table**  
Adjusts the panning/tilting angle of the camera.
- Focus Lever**  
Fixes the focus position after adjusting.
- Zoom Lever**  
Fixes the zoom position after adjusting.
- Video Output Terminal**  
Connects to the video input connector of a monitor.
- DC 12 V Input Terminal**  
Connects to the 12 V DC, 240 mA power supply. Connection should be made in accordance with the ⊕/⊖ signs of PCB.
- Back Light Compensation Mode Selector (BLC ON, OFF)**  
**ON:** Select this when the brightness level of the background is higher than the object.  
**OFF:** Select this when you can view the object without backlight. The factory default setting is OFF.
- Aperture Level Selector (AP Sharp/Soft)**  
**Sharp:** Sharpens the image outline.  
**Soft:** Softens the image outline. The factory default setting is Sharp.  
**Note:** Set the selector to Soft when a quad system is connected to this camera.
- Video Jack (3.5 diam. mini jack)**  
Connect the LCD monitor and such devices with 3.5 diam. 2-pole L-type plug for checking images.
- Panel Cover**

### Installation dimensional drawing



## INSTALLATIONS

### WARNING

- The following installation should be made by qualified service personnel or system installers and should confirm to all local codes.
- Be sure to use a ceiling board/wall having enough strength to support this camera.

### Camera mounting position

#### Notes:

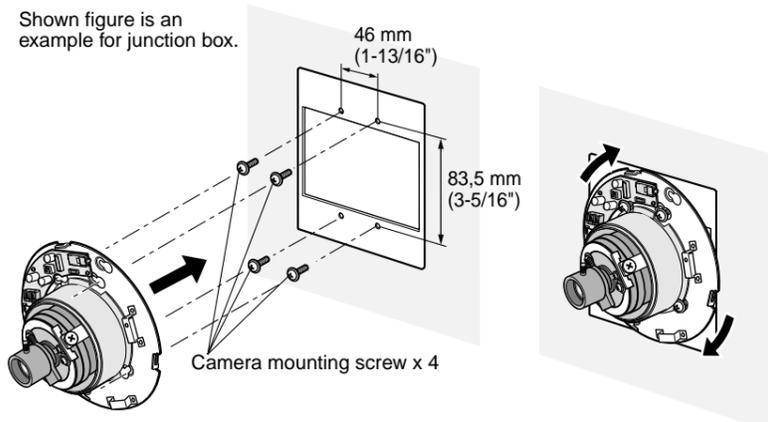
- Remove the panel cover before the mounting procedure. (Refer to Step 1 to 4 of "How to mount the camera" on the next page.)
- Procure four mounting screws locally.

### To mount the camera on a junction box

**Note:** If you mount the camera on a junction box, procure one locally that meets the dimensions in the figure below.

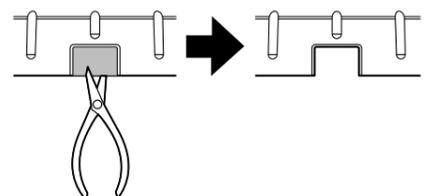
- Install the junction box to the wall/ceiling.
- Attach the four mounting screws to the junction box.
- Fix the camera and the junction box. Then, turn the camera clockwise.
- Fasten all the mounting screws.

Shown figure is an example for junction box.



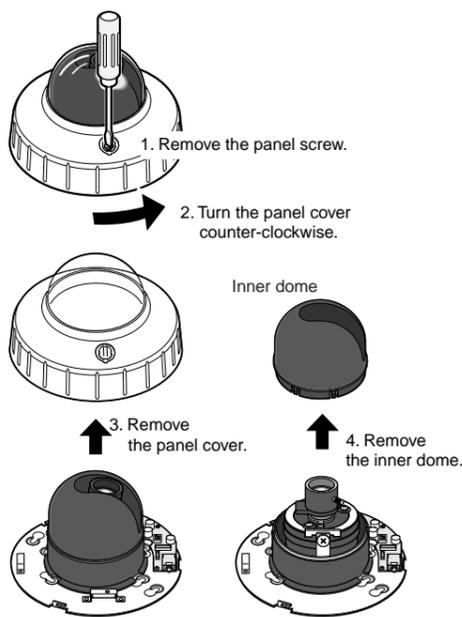
### To mount the camera directly on the wall/ceiling

- Cut out the panel according to the concave. (Refer to the figure on the right.)
- Prepare a space, which is ø155 mm (6.1") or larger, on the wall/ceiling.
- Attach the four mounting screws to the wall/ceiling. (Refer to "Installation dimensional drawing".)
- Fix the camera and the wall/ceiling. Then, turn the camera clockwise.
- Fasten all the mounting screws.



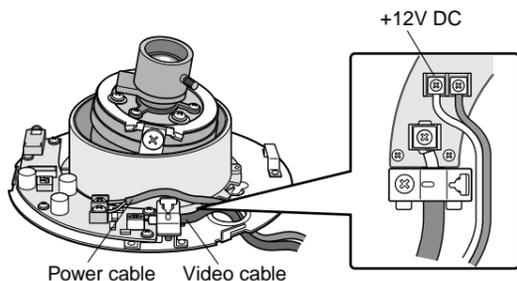
## How to mount the camera

1. Remove the panel screw with a phillips screwdriver. (Refer to the illustration on the right.)
2. Turn the panel cover counter-clockwise.
3. Remove the panel cover.
4. Remove the inner dome.
5. Mount the camera on the junction box or ceiling/wall. (Refer to "Camera mounting position".)



6. Connect the power cable and the video cable to the camera.

**Note:** The illustration on the right assumes that you will use a junction box. Pass the cables through the cable access hole. If you mount the camera directly on the wall/ceiling, cut out the panel according to the concave. (Refer to the previous page.)

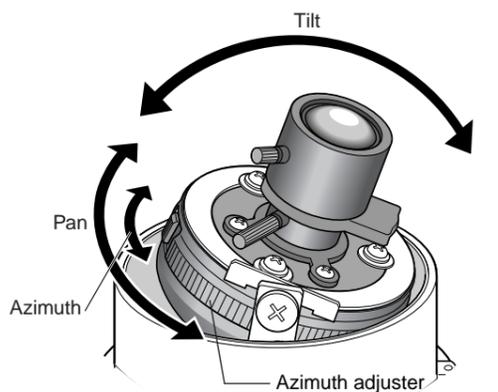


- Connect them to 12 V DC (10.5 V to 16 V) class 2 power supply only.
- To prevent fire or electric shock hazard, use a UL listed cable (VW-1, style 1007) for the Input Terminal.

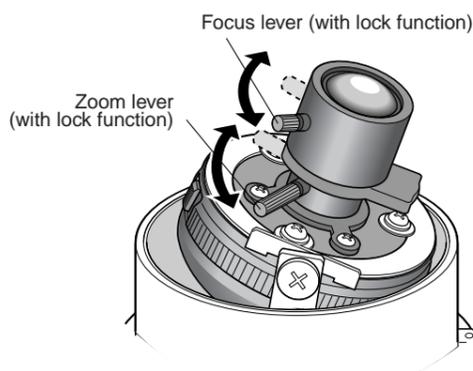
7. Adjust the panning, tilting and azimuth while watching the LCD monitor. If the image is slanting, move the azimuth adjuster to obtain a leveled image.

### Notes:

- You can check images by connecting an LCD monitor to the video jack. However, images are not available on the monitor connected to the video cable connector.
- The signal from the video jack can cause smear on the LCD monitor when a high-luminance area is displayed.
- When you adjust panning/tilting/azimuth, avoid holding the lens unit.



8. Adjust the zoom.
  - (1) Loosen the zoom lock screw at the tip of the zoom lever by turning counter-clockwise.
  - (2) Adjust the zoom by moving the zoom lever.
  - (3) Turn the zoom lock screw clockwise to tighten the zoom lever after adjustment.



9. Adjust the focus.
  - (1) Loosen the focus lock screw at the tip of the focus lever by turning it counter-clockwise.
  - (2) Adjust the focus by moving the focus lever.
  - (3) Turn the focus lock screw clockwise to tighten the focus level after adjustment.

**Note:** The focus should be adjusted after the adjustments of panning, tilting, azimuth and zoom.

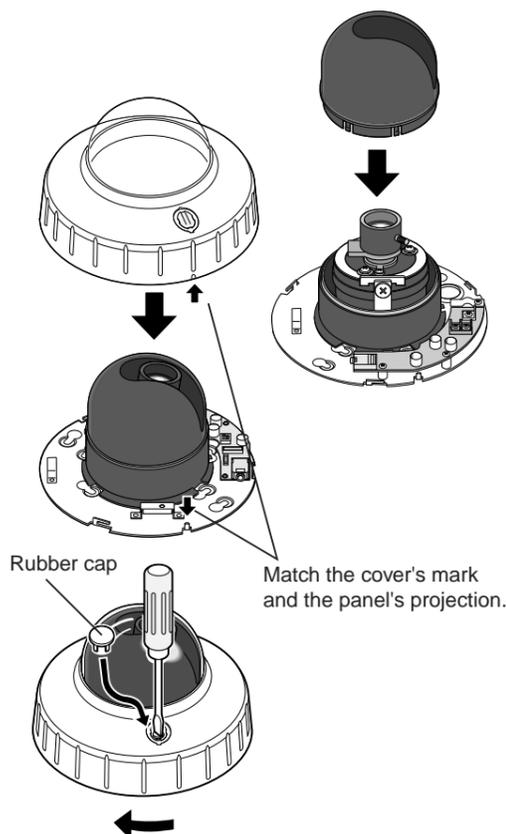
10. After all the adjustments and connections attach the inner dome to the camera.
11. Attach the panel cover to the camera. The mark of the panel cover and the projection of the camera panel should be put together.

### Notes:

- Avoid covering the lens with the still part the dome.
- Avoid pinching the cables between the camera panel and the panel cover.

12. Fasten the panel screw with a phillips screwdriver. (Refer to the illustration on the right.)

13. Attach the supplied rubber cap to the camera, as shown in the figure on the right.



## CONNECTIONS

### WARNING

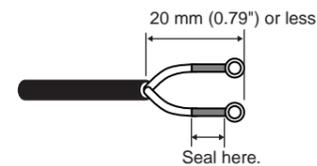
The following connections should be made by qualified service personnel or system installers.

### Video Cable

Type of coaxial cable	RG-59/U (3C-2V)	RG-6U (5C-2V)	RG-11/U (7C-2V)	RG-15/U (10C-2V)
Recommended maximum cable length	(m) 250	500	600	800
	(ft) 825	1 650	1 980	2 640

### Cable Preparation

Power cable (with sealing at the side of the camera)



### Power Cable

Connect the power cord to the 12 V DC input terminal.

Resistance of copper wire [at 20 °C (68 °F)]

Copper wire size (AWG)	#24 (0.22mm <sup>2</sup> )	#22 (0.33mm <sup>2</sup> )	#20 (0.52mm <sup>2</sup> )	#18 (0.83mm <sup>2</sup> )
Resistance Ω/m	0.078	0.050	0.03	0.018
Resistance Ω/ft	0.026	0.017	0.010	0.006

- Calculation of the relation among the cable length, resistance, and power supply:
 
$$10.5 \text{ V DC} \leq V_A - 2(R \times 0.24 \times L) \leq 16 \text{ V DC}$$

L : Cable length (m)  
R : Resistance of copper wire (Ω/m)  
V<sub>A</sub> : DC output voltage of power supply unit

## SPECIFICATIONS

Pick-up device:	768 (H) x 492 (V) pixels, interline transfer CCD
Scanning area:	4.92 (H) x 3.70 (V) mm (equivalent to scanning area of 1/4" pick-up tube)
Synchronization:	Internal or multiplexed vertical drive (VD2), selectable
Scanning system:	2 : 1 interlace
Scanning:	525 lines / 60 fields / 30 frames
Horizontal:	15.734 kHz
Vertical:	59.94 Hz
Horizontal resolution:	480 lines
Video output:	1.0 V [p-p] NTSC composite 75 Ω
Automatic Gain Control (AGC):	+18 dB
Automatic Tracing White Balance (ATW):	ON only
Signal-to-noise ratio:	50 dB (equivalent to AGC Off, weight On)
Electronic light control:	equivalent to continuous variable shutter speed between 1/60 s and 1/15 000 s
Minimum illumination:	2.0 lx (0.2 foot-candle) at F1.4 (WIDE) 1.2 lx (0.12 foot-candle) at 20 IRE or more
Back Light Compensation (BLC):	On or Off
Detail:	Sharp or Soft, selectable
Panning range:	±100°
Tilting range:	±75°
Azimuth range:	±100°
Ambient operating temperature:	-10 °C to +50 °C (14 °F to 122 °F)
Ambient operating humidity:	Less than 90 %
Power source and power consumption:	12 V DC, 240 mA
Dimensions:	ø155 mm x 87 mm (H) ø 6-1/10" x 3-2/5" (H)
Weights:	0.48 kg (1.06 lbs.)

Weights and dimensions indicated are approximate. Specifications are subject to change without notice.

## STANDARD ACCESSORIES

Operating Instructions (this book).....	1 pc
Rubber cap .....	1 pc

### Panasonic Digital Communications & Security Company

#### Unit Company of Matsushita Electric Corporation of America

Executive Office: One Panasonic Way 3E-7, Secaucus, New Jersey 07094

#### Regional Offices:

Northeast: One Panasonic Way, Secaucus, NJ 07094 (201) 348-7303

Southern: 1225 Northbrook Parkway, Suite 1-160, Suwanee, GA 30024 (770) 338-6838

Midwest: 1707 North Randall Road, Elgin, IL 60123 (847) 468-5211

Western: 6550 Katella Ave., Cypress, CA 90630 (714) 373-7840

### Panasonic Canada Inc.

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

### Panasonic Sales Company

#### Division of Matsushita Electric of Puerto Rico Inc.

Ave. 65 de Infanteria, Km. 9.5  
San Gabriel Industrial Park, Carolina,  
Puerto Rico 00985 (809)750-4300