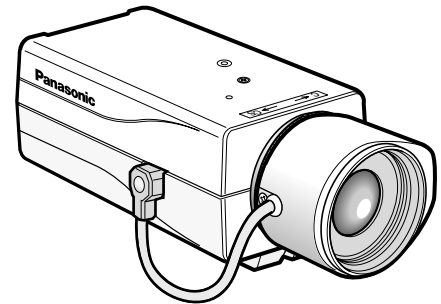


Panasonic

## Color CCTV Camera Operating Instructions

Model Nos. **WV-CP240EX**  
**WV-CP242EX**  
**WV-CP244EX**



(Lens Option)

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

Ns1005-0 3TR004221AAA Printed in China

**Caution:**  
Before attempting to operate this product, please read the label on the surface of the unit.

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

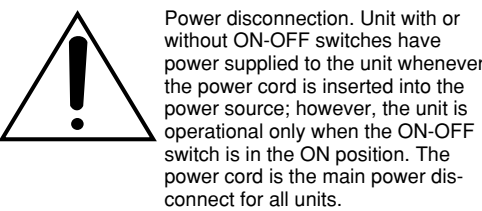
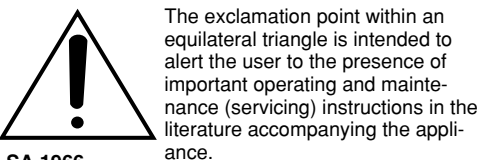
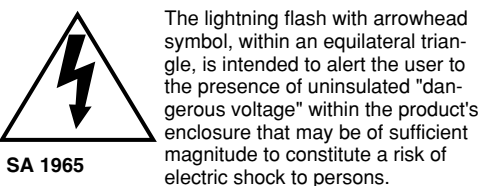
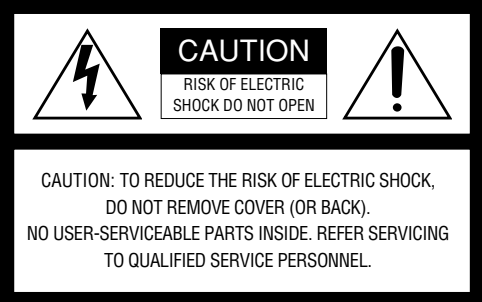
For U.S.A.

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

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

The serial number of this product may be found on the surface 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. \_\_\_\_\_  
Serial No. \_\_\_\_\_



**WARNING:**  
• This apparatus must be earthed.  
• To prevent fire or electric shock hazard, do not expose this apparatus to rain or moisture.  
• The apparatus should not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, should be placed on the apparatus.  
• All work related to the installation of this product should be made by qualified service personnel or system installers.

## PREFACE

Panasonic's WV-CP240EX/CP242EX/CP244EX series digital signal processing color CCD cameras introduce a new level of high picture quality and high resolution through the use of a 1/3-inch

interline transfer CCD image sensor having 768 horizontal pixels (picture elements), and digital signal processing LSI's. This model offers cutting-edge technology for advanced video surveillance.

## FEATURES

- The following functions are built in.
  - Auto Light Control (ALC)/Electronic Light Control (ELC)
  - Automatic Gain Control (AGC) +15 dB and Automatic Tracing White Balance (ATW)
  - Camera synchronization mode selectable between internal (INT), Line-locked (LL) for WV-CP240EX and WV-CP244EX and Multiplexed Vertical Drive (VD2).
- Minimum illumination of 1.5 lx (0.15 foot-candle) at F1.4
- Signal-to-noise ratio of 50 dB (Equivalent to AGC Off)
- Horizontal resolution of 480 TV lines
- Auto iris lens control selectable between video signal and DC power supply.

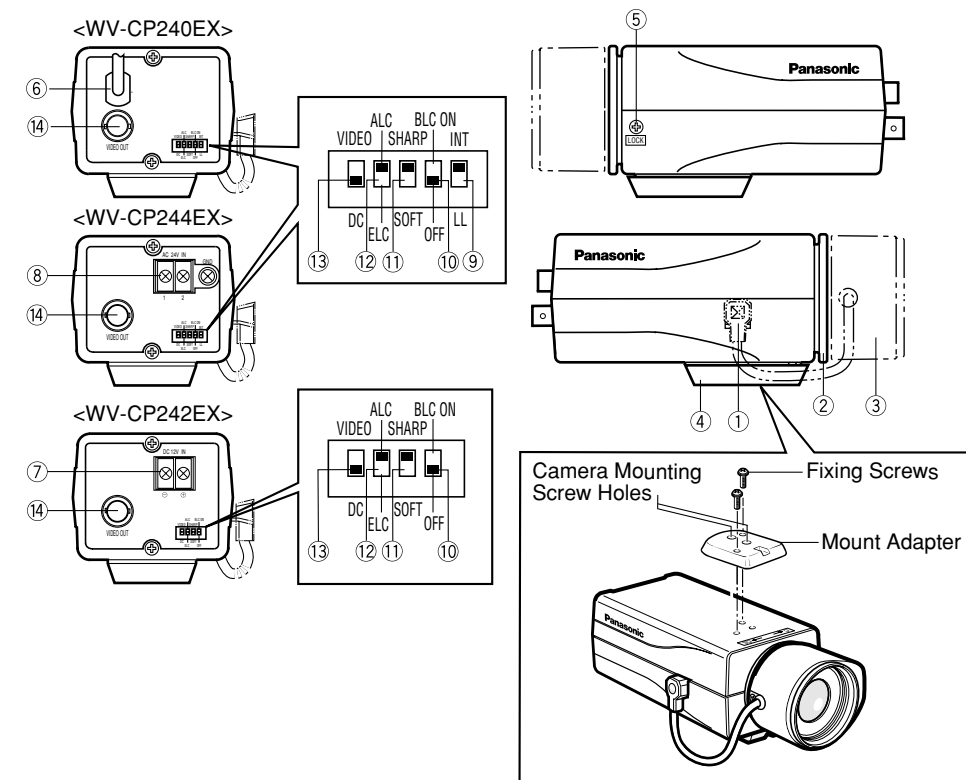
## PRECAUTIONS

- 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 a 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.**  
This product is designed for indoor use or locations where it is protected from rain and moisture. Turn the power off immediately and ask a 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 it is 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 CCD faceplate with care.**  
Do not clean the CCD 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 its specified temperature, humidity or power source ratings.**  
Use the camera under conditions where temperature is between -10 °C - +50 °C [14 °F - 122 °F], and humidity is below 90 %. The input power source is 120 V AC 60 Hz for WV-CP240EX, 12 V DC for WV-CP242EX, and 24 V AC 60 Hz for WV-CP244EX.

**Caution:**  
To prevent fire or electric shock hazard, use a UL listed cable (WV-1, style 1007) for the DC 12 V or AC 24 V Input Terminal.

## MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS

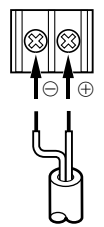


- ALC Lens Connector**  
Supplies power and control signals to an auto iris lens (not supplied).
- Flange-back Adjusting Ring**  
This ring adjusts the back-focal distance or picture focus. Rotate this ring clockwise for a C-mount lens or counterclockwise for a CS-mount lens.
- Lens (option)**
- Mount Adapter**  
The camera mounting screw hole is for mounting the camera onto a mounting bracket. The camera is originally designed to be mounted from the bottom, however, a top-mounting type is also available. To mount from the bottom of the camera by removing two fixing screws. Attach the mount adapter to the top as shown in the diagram, then mount the camera on the mounting bracket. Make sure that two original screws are used when mounting the mount adapter; longer type screws may damage inner components, too shorter type screws may cause the camera drop.
- Focus Fixing Screw**
- Power Cord (only for WV-CP240EX)**  
Connect this power cord to an electrical outlet of 120 V AC 60 Hz.
- DC 12 V Input Terminal [DC 12V IN] (only for WV-CP242EX)**  
This terminal is for connecting the 12 V DC power supply cord.
- AC 24 V Input Terminal [AC 24V IN] (only for WV-CP244EX)**  
This terminal is for connecting the 24 V AC 60Hz power supply cord.
- Synchronization Mode Selector [INT, LL] (only for WV-CP240EX and WV-CP244EX)**  
Selects the camera synchronization mode as either internal sync mode (INT) or line-lock mode (LL).  
**INT:** Sets to internal 2:1 interlace.  
**LL:** Sets to Line-Lock mode.
- Back Light Compensation Mode Selector [BLC ON, OFF]**  
Lets you select the mode according to the position of the object and light conditions on the screen.  
**ON:** Select this mode when a strong light such as a spotlight is in the background.  
**OFF:** Normal picture.
- Detail/Aperture Level Selector [SHARP, SOFT]**  
The detail/aperture level can be selected with this selector. Set it to the desired position while observing the picture on the monitor.  
**SHARP:** Normal position.  
**SOFT:** Select this position when a Quad System is connected to this camera.
- Automatic Light Control/Electronic Light Control Selector [ALC, ELC]**  
Lets you select the mode according to the lens type used.  
**ALC:** Select this mode when an auto iris lens (ALC lens) is used with this camera.  
**ELC:** Select this mode when a fixed iris lens or manual iris lens is used with this camera.
- Lens Drive Signal Selector [VIDEO, DC]**  
Lets you select the mode according to the type of auto iris lens drive signal to be supplied to the lens from the auto iris lens connector.  
**VIDEO:** Select this mode if you are using a auto iris lens that requires a video drive signal.  
**DC:** Select this mode if you are using a auto iris lens that requires a DC drive signal.
- Video Output Connector [VIDEO OUT]**  
This connector is for connecting with the VIDEO IN connector of the video monitor. Whenever the multiplexed vertical drive (VD2) signal is supplied to this connector, the camera synchronization mode is automatically set to Vertical Drive.

**Cautions:**  
• Connect to 12 V DC (10.5 V-16 V) or 24 V AC (19.5 V-28 V) class 2 power supply only. Make sure to connect the grounding lead to the GND terminal when the power is supplied from a 24 V AC power source.  
• To prevent fire or electric shock hazard, use a UL listed cable (WV-1, style 1007) for the DC 12 V or AC 24 V Input Terminal.

## CONNECTIONS

- WV-CP240EX (120 V AC 60 Hz)**  
Connect the power cord to an electrical outlet of 120 V AC 60 Hz.
- WV-CP242EX (12 V DC)**  
Connect the power cord to the DC 12 V IN terminal on the rear panel of the WV-CP242EX.



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

- Calculation of maximum cable length between camera and power supply :

$$10.5 \text{ V DC} \leq V_A - (R \times 0.42 \times L) \leq 16 \text{ V DC}$$

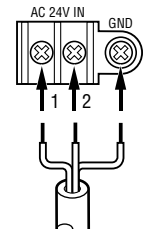
L : Cable length (meters)  
R : Resistance of copper wire (Ω/meter)  
V<sub>A</sub> : DC output voltage of power supply unit

$$L \text{ standard} = \frac{V_A - 12}{0.42 \times R} \text{ (meters)}$$

$$L \text{ minimum} = \frac{V_A - 16}{0.42 \times R} \text{ (meters)}$$

$$L \text{ maximum} = \frac{V_A - 10.5}{0.42 \times R} \text{ (meters)}$$

- WV-CP244EX (24 V AC 60 Hz)**  
Connect the power cable to the AC 24 V IN terminal on the rear panel of the WV-CP244EX.



Copper wire size (AWG)	#24 (0.22 mm)	#22 (0.33 mm)	#20 (0.52 mm)	#18 (0.83 mm)
Length of Cable (Approx.) (m)	95	150	255	425
(ft)	314	495	842	1403

**Caution:**  
To prevent fire or electric shock hazard, use a UL listed cable (WV-1, style 1007) for the DC 12 V or AC 24 V Input Terminal.

## Video Cable

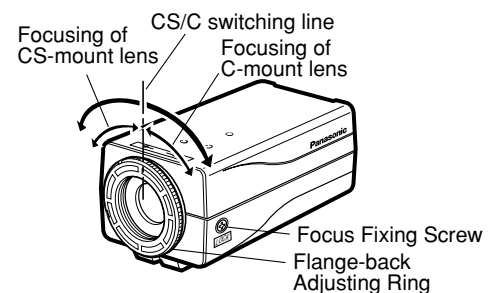
- It is recommended to use a monitor whose resolution is at least equal to that of the camera.
- The maximum extensible coaxial cable length between the camera and the monitor is shown below.

Type of coaxial cable	RG-59/U (3C-2V)	RG-6/U (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

## FOCUS OR FLANGE-BACK ADJUSTMENT

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

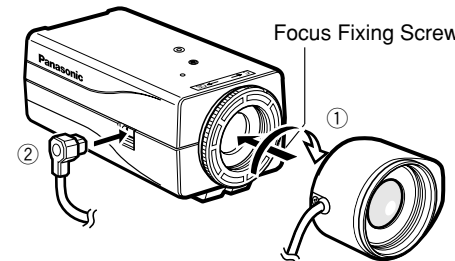
- Loosen the focus fixing screw on the side of the camera.



## Mounting the Lens

**Caution:**  
Before you mount the lens, loosen the screw on the side of the camera, and rotate the flange-back adjusting ring clockwise until it stops. If the ring is not at the end, the inner lens or CCD image sensor may be damaged.

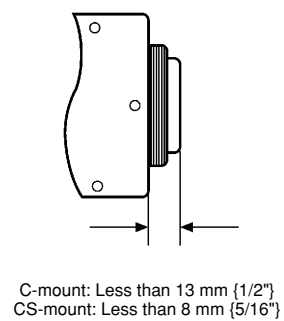
- Mount the lens by turning it clockwise on the lens mount of the camera.
- Connect the lens cable to the ALC Lens Connector on the side of the camera.



## Caution for Mounting the Lens

The lens mount should be a C-mount or CS-mount (1"-32UN) and the lens weight should be less than 450 g (0.99 lbs). If the lens is heavier, both the lens and camera should be secured by using the supporter.

The protrusion at the rear of the lens should be as shown in the diagram.



C-mount: Less than 13 mm [1/2"]  
CS-mount: Less than 8 mm [5/16"]

## SPECIFICATIONS

Pick-up Device:	768 (H) x 494 (V) pixels, Interline Transfer CCD
Scanning Area:	4.92 (H) x 3.70 (V) mm (Equivalent to scanning area of 1/3" pick-up tube)
Synchronization:	Internal, Line-locked 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 TV lines
Video Output:	1.0 V[P-P] NTSC composite 75 Ω / BNC connector
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:	1.5 lx [0.15 foot-candle] at F1.4 1.1 lx [0.11 foot-candle] at F1.2
Detail:	SHARP or SOFT, selectable
Lens Mount:	C-mount or CS-mount, selectable
Ambient Operating Temperature:	-10 °C - +50 °C [14 °F - 122 °F]
Ambient Operating Humidity:	Less than 90 %
Power Source and Power Consumption:	WV-CP240EX: 120 V AC 60 Hz, 3.6 W WV-CP242EX: 12 V DC, 270 mA WV-CP244EX: 24 V AC 60 Hz, 3.3 W
Dimensions (without lens):	67 mm (W) x 65 mm (H) x 123 mm (D) [2-5/8" (W) x 2-9/16" (H) x 4-13/16" (D)]
Weights (without lens):	WV-CP240EX: 0.48 kg [1.06 lbs] WV-CP242EX: 0.3 kg [0.66 lbs] WV-CP244EX: 0.33 kg [0.73 lbs]

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

## STANDARD ACCESSORIES

Body Cap	1 pc.
Operating Instructions (this document)	1 pc.
Warranty card	1 pc.

## OPTIONAL ACCESSORIES

Lenses:	WV-LA2R8C3B, WV-LA4R5C3B, WV-LA9C3B, WV-LF4R5C3A, WV-LF9C3A, WV-LZA61/2S, WV-LZ62/8S
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