

# Panasonic

## Colour CCTV Cameras Operating Instructions

Model No. **WV-CP250**  
**WV-CP254E**

(Lens: Option)

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

Ns0503-1103 3TR001752BAA Printed in China



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead 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.



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.



Turn the power off at the mains to disconnect the main power for all unit.

We declare under our sole responsibility that the product to which this declaration relates is in conformity with the standards or other normative documents following the provisions of Directives EEC/73/23 and EEC/89/336.

Wij verklaren als enige aansprakelijke, dat het product waarop deze verklaring betrekking heeft, voldoet aan de volgende normen of andere normatieve documenten, overeenkomstig de bepalingen van Richtlijn 73/23/EEC en 89/336/EEC.

Vi erklærer os eneansvarlige for, at dette produkt, som denne deklaration omhandler, er i overensstemmelse med standarder eller andre normative dokumenter i følge bestemmelserne i direktivene 73/23/EEC og 89/336/EEC.

**WARNING:** To prevent fire or electric shock hazard, do not expose this appliance to rain or moisture. The apparatus shall not be exposed to dripping or splashing and that no objects filled with liquids, such as vases, shall be placed on the apparatus.

**CAUTION:** An ALL-POLE MAINS SWITCH with a contact separation of at least 3 mm in each pole shall be incorporated in the electrical installation of the building. (WV-CP250 only)

### PREFACE

Panasonic's WV-CP250/CP254E series digital signal processing colour 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 752 horizontal pixels (picture elements), and digital signal processing LSI's. This model offers cutting-edge technology for advanced video surveillance.

### FEATURES

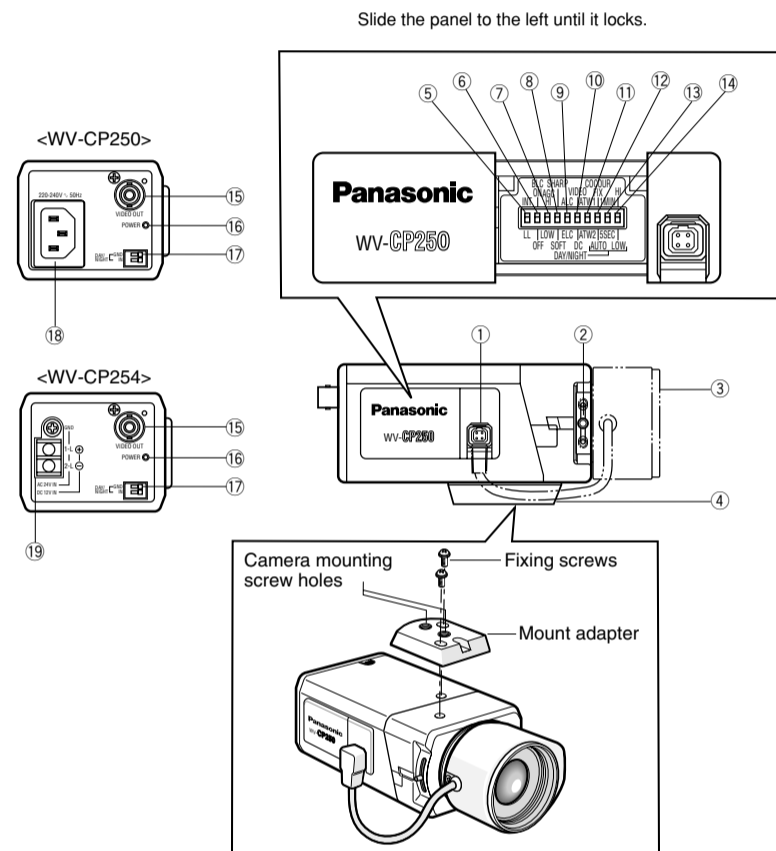
- The following functions are built in.
  - (1) Auto Light Control (ALC)/Electronic Light Control (ELC)
  - (2) Automatic Gain Control (AGC) and Automatic Tracing White Balance (ATW)
  - (3) Camera synchronization mode selectable between internal (INT), Line-locked (LL) and Multiplexed Vertical Drive (VD2).
- Minimum Illumination of 1.0 lx (0.1 foot-candle) at colour mode, 0.15 lx (0.015 foot-candle) at black and white mode with F1.4 lens.

- Signal-to-noise ratio of 50 dB (min) (at AGC OFF, weight ON)
- Horizontal resolution of 480 lines
- Auto iris lens control selectable between video signal and DC power supply.
- Auto black-and-white mode enables the camera to switch between colour and black and white picture in response to light input.

### 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 person 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 a qualified service person 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 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 the 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 220 V - 240 V AC 50 Hz for WV-CP250, and 24 V AC 50 Hz or 12 V DC for WV-CP254E.

### MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS



- Auto Iris Lens Connector**  
Supplies power and control signals to an auto iris lens (not supplied).
- Focus Lock Knob**  
This knob adjusts the back-focal distance or picture focus.
- 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 top, remove the mount adapter 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.
- Synchronization Mode Selector (INT, LL)**  
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.  
**Note:** Do not set the switch to the LL position when supplying 12 V DC to avoid a synchronization error.
- 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  
The factory default setting is OFF.
- AGC Level Selector**  
AGC level can be selected with this selector. AGC automatically controls the gain of Image brightness level.  
**HI:** This setting raises more the gain and brightness of images under low light conditions.  
**LOW:** Normal position
- 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.
- Auto-Tracing White Balance mode (ATW) Selector**  
The ATW mode can be selected with this selector.  
**ATW1:** Normal picture  
**ATW2:** ATW in sodium lamp mode

- Day/Night Mode Selector**  
This function switches the condition of pictures from colour to black and white in low light conditions.  
**COLOUR FIX:** Colour picture reverts to black-and-white picture when an external day/night switching signal is received (refer to Day/Night connections).  
**Note:** When using this unit with infrared rays or lighting of which colour temperature is 3 000 K or less, select this mode without fail, and short-circuit the Day/Night input terminals if you select the black-and-white picture.  
(The AUTO mode may cause hunting.)  
**AUTO:** The camera selects black-and-white mode if the picture is dark, or colour mode if the picture is bright enough.  
**Notes:**
  - When using this unit with a video servo control lens, you may not switch from the black-and-white mode to the colour mode depending on lens iris.
  - In such a case, operate the lens adjuster to open the aperture.
  - This function may not be activated automatically when a backlight or a strong light source causes excessive contrast in the picture. In such cases, use the Day/Night input terminals.
- Duration Time Selector**  
This selector is available when the Day/night switch position is 'AUTO'. Switching time (5 sec. or 1 minute ) is selectable.
- BW Level Selector**  
Selects the luminance level. This selector is available when the Day/night switch position is 'AUTO'. According to the luminance level, this camera automatically switches the condition of picture from colour to black-and-white, or in reverse.  
**HI:** Colour picture switches to black-and-white pictures at approx. 7 lx with F1.2 lens.  
**LOW:** Colour picture switches to black-and-white pictures at approx. 5 lx with F1.2 lens. The factory default setting is HI.
- 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.
- Power Indicator (POWER)**
- Day/Night Input Terminal (DAY/NIGHT IN/ GND)**  
This terminal is used for connecting the camera to an external day/night detecting sensor. Terminals opened: colour picture  
Terminals shortened: black-and-white picture
- AC Inlet Socket**  
Plug the power cord (supplied as a standard accessory) into this socket and connect it to an AC outlet.
- AC/DC Compatible Input Terminal (DC 12 V IN/AC 24 V IN)**  
This terminal is for connecting the 12 V DC or 24 V AC power supply cord.  
**Note:** Do not exceed the ratings of the voltage or current when connecting the external device.

**Caution:** 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.

### CONNECTIONS

#### A. WV-CP250 (220 V - 240 V AC 50 Hz)

Connect the power cord to an electrical outlet of 220V - 240V AC 50Hz.

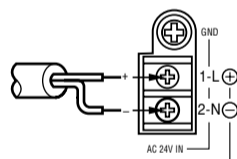
- Notes:**
- Connect the power cord firmly.
  - The power cord should be long enough for panning and tilting. If the cable is too short, the power cord plug may be pulled off the camera when the camera pans or tilts.

#### B. WV-CP254E (12 V DC/24 V AC)

The WV-CP254E has an AC/DC compatible input terminal. The 12 V DC or 24 V AC power supply cord can be connected to this terminal. The camera detects the power source automatically.

##### 1. 12 V DC Power Supply

Connect the power cord to the AC/DC compatible input terminal on the rear panel of the camera.



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	0.030	0.018
Resistance Ω/ft	0.026	0.017	0.010	0.006

- Calculation of maximum cable length between camera and power supply  
 $10.8 \text{ V DC} \leq V_A - (R \times 0.42 \times L) \leq 16 \text{ V DC}$   
 L : Cable length (m)  
 R : Resistance of copper wire (Ω/m)  
 V<sub>A</sub> : DC output voltage of power supply unit

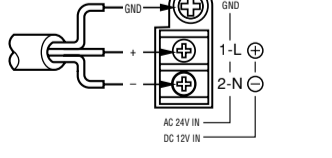
$$L \text{ standard} = \frac{V_A - 12}{0.42 \times R} \text{ (m)}$$

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

$$L \text{ maximum} = \frac{V_A - 10.8}{0.42 \times R} \text{ (m)}$$

##### 2. 24 V AC Power Supply

Connect the power cable to the AC/DC compatible input terminal on the rear panel of the camera.



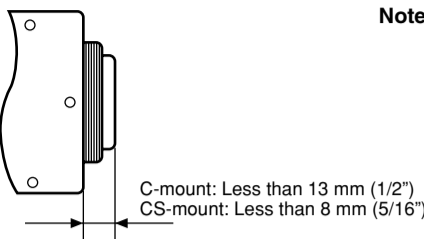
Recommended wire gauge sizes for 24 V AC line

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> )
Length of cable (Approx.) (m)	95	150	255	425
(ft)	314	495	842	1 403

Be sure to use a 12 V DC or 24 V AC power supply device that complied with safety standards.

### 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 below.



### FOCUS OR FLANGE-BACK ADJUSTMENT

- Loosen the focus lock knob.
- Adjust the focus lock knob to obtain a focused point while watching the monitor screen.
- Tighten the focus lock knob.

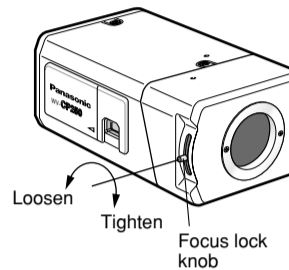
**Caution:** Tightening the knob by force will cause damage to the knob or deviation of focus.

**Note:** The object may be out of focus when using a source of near-infrared light than using the visible light.

### Day/Night Connections

Connect an optical sensor to the Day/Night Input terminals.

- Day/Night Input terminals with a capacity of 5 V DC pull-up input, 0.2 mA or more.  
**OFF:** break contacts: colour picture  
**ON:** make contacts: black-and-white picture  
**Note:** To activate the Day/Night function, set Day/Night Mode Selector to COLOUR FIX.



### SPECIFICATIONS

Pick-up device:	752 (H) x 582 (V) pixels, interline transfer CCD
Scanning area:	5.59 (H) x 4.68 (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:	625 lines / 50 fields / 25 frames
Horizontal:	15.625 kHz
Vertical:	50 Hz
Horizontal resolution:	480 lines
Video output:	1.0 V <sub>[p-p]</sub> PAL composite 75 Ω / BNC connector
Signal-to-noise ratio:	50 dB (min) (at AGC Off, weight On)
Electronic light control:	equivalent to continuous variable shutter speed between 1/50 s and 1/15 000 s
Minimum illumination:	1.0 lx (0.1 foot-candle) at colour mode, 0.15 lx (0.015 foot-candle) at black and white mode with F1.4 lens
Aperture:	SHARP or SOFT, selectable
Lens mount:	CS-mount
Ambient operating temperature:	-10 °C - +50 °C (14 °F - 122 °F)
Ambient operating humidity:	less than 90 %
Power source and power consumption:	WV-CP250: 220 V - 240 V AC 50 Hz, 3.9 W WV-CP254E: 12 V DC 300 mA 24 V AC 50 Hz, 3.3 W
Dimensions (without lens):	70 mm (W) x 55 mm (H) x 118 mm (D) 2-3/4" (W) x 2-3/16" (H) x 4-5/8" (D)
Weights (without lens):	WV-CP250: 0.460 kg (1.01 lbs) WV-CP254E: 0.450 kg (0.99 lbs) selectable COLOUR FIX (→ external terminal active) or AUTO
Day/Night	

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

### STANDARD ACCESSORIES

Operating Instructions (this document)	1 pc.
The following parts are for installation: Body cap	1 pc.
ALC lens connector (YFE4191J100)	1 pc.
AC Power Cord (only for WV-CP250)	1 pc.

### OPTIONAL ACCESSORIES

Lenses:	WV-LA2R8C3B, WV-LA4R5C3B, WV-LA9C3B, WV-LA210C3, WV-LA408C3, WV-LA908C3, WV-LZ61/10, WV-LZ62/2, WV-LZ62/8, WV-LF4R5C3A, WV-LF9C3A, WV-LFY3C3, WV-LFY45C3, WV-LFY9C3, WV-LZ61/15, WV-LZ61/2, WV-LZF61/2
C-mount Adapter:	WV-AD20E

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