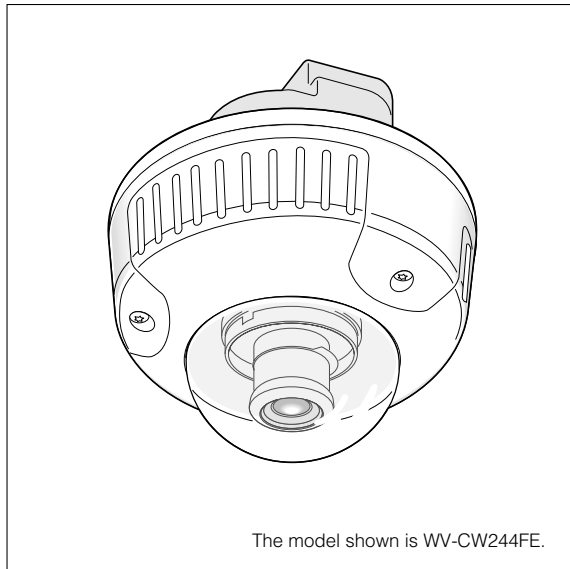


Panasonic

Colour CCTV Cameras Operating Instructions

Model No. **WV-CW240S**
WV-CW244FE



The model shown is WV-CW244FE.

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

ENGLISH

DEUTSCH

FRANÇAIS

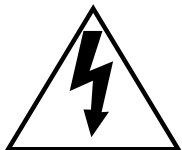
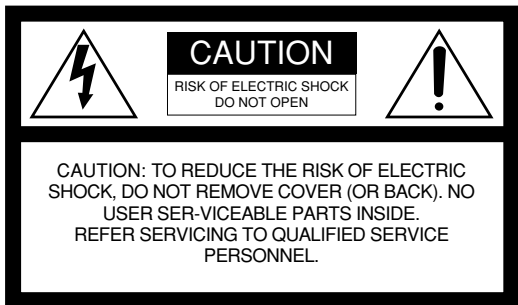
ESPAÑOL

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ENGLISH VERSION



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.

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 book as a permanent record of your purchase to aid identification in the event of theft.

Model No. _____

Serial No. _____

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.

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 Richtlijnen 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.

Vi deklarerar härmed vårt fulla ansvar för att den produkt till vilken denna deklaration hänvisar är i överensstämmelse med standarddokument, eller andra normativa dokument som framställs i EEC-direktiv nr. 73/23 och 89/336.

Ilmoitamme yksinomaisella vastuullamme, että tuote, jota tämä ilmoitus koskee, noudattaa seuraavia standardeja tai muita ohjeellisia asiakirjoja, jotka noudattavat direktiivien 73/23/EEC ja 89/336/EEC säädöksiä.

Vi erklærer oss alene ansvarlige for at produktet som denne erklæringen gjelder for, er i overensstemmelse med følgende normer eller andre normgivende dokumenter som følger bestemmelsene i direktivene 73/23/EEC og 89/336/EEC.

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

WARNING: This apparatus must be earthed.

IMPORTANT

The wires in this mains lead are coloured in accordance with the following code.

Green-and-yellow:	Earth
Blue:	Neutral
Brown:	Live

As the colours of the wire in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows.

The wire which is coloured **green-and-yellow** must be connected to the terminal in the plug which is marked with the letter **E** or by the earth symbol \perp or coloured **green** or **green-and-yellow**.

The wire which is coloured **blue** must be connected to the terminal in the plug which is marked with the letter **N** or coloured **black**.

The wire which is coloured **brown** must be connected to the terminal in the plug which is marked with the letter **L** or coloured **red**.

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PREFACE

The WV-CW240 series is a 1/3" CCD colour camera designed for use in a video surveillance system. The camera features a high picture quality thanks to the use of digital signal processing LSIs, and easy installation.

FEATURES

- Mounting method: Flush mounting/WV-CW244FE, Surface mounting/WV-CW240S
- Signal processing: Automatic Light Control (ALC), Automatic Gain Control (AGC), Automatic Tracing White Balance (ATW), etc.
- Synchronization: Internal, Line-Lock, (only when 24 V AC or 220 V - 240 V AC supplied) and Multiplexed Vertical Drive (VD2)
- Minimum illumination: 1.0 lx (0.1 foot-candle) at WIDE
- Signal-to-noise ratio: 50 dB (Equivalent to AGC OFF)
- Horizontal resolution: 480 TV lines
- Optional heater unit available for the camera used at temperatures between -10°C and -30°C (14°F and -22°F).

PRECAUTIONS

- 1.** This product should be installed and connected by qualified service personnel or system installers in conformity with local codes.
- 2.** Use a class 2 power source supplying 12 V DC or 24 V AC.
- 3.** To prevent fire or electric shock hazard, use a UL listed cable (VW-1, style 1007) to connect the power supply to the camera. (WV-CW244FE)
- 4.** Be sure to use a ceiling board/wall having enough strength to support this camera.
- 5. Handle the camera with care.**

Do not abuse the camera. Avoid striking, shaking, etc. The camera could be damaged by improper handling or storage.
- 6. Do not use strong or abrasive detergents.**

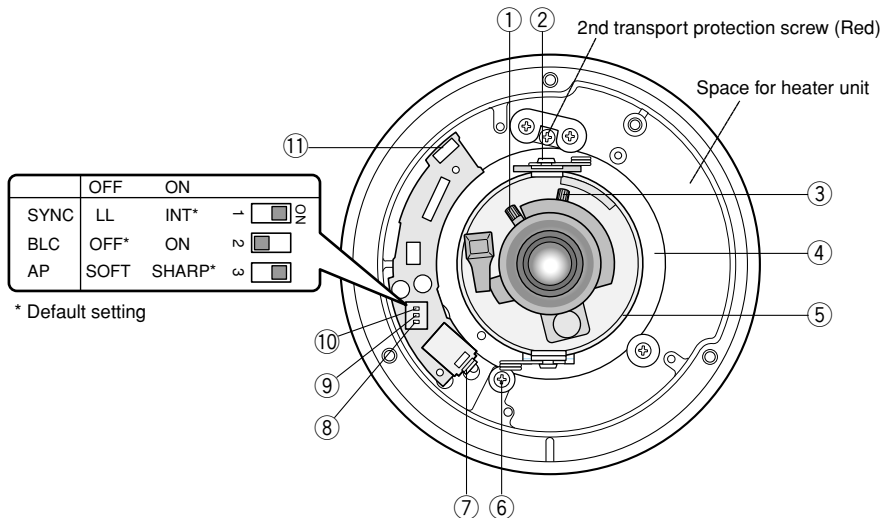
Use a dry cloth to clean the camera body when dirty.
In case the dirt is hard to remove, use a mild detergent and wipe gently. Afterwards, wipe off the remaining detergent with a dry cloth.
- 7. Clean the lens faceplate with care.**

Do not clean the lens with strong or abrasive detergents. Use lens tissue or a cotton tipped applicator and ethanol.
- 8. 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.
- 9. Do not operate the camera beyond its specifications.**

Use the camera under conditions where temperature is between -10°C to $+50^{\circ}\text{C}$ (14°F to 122°F), and humidity is below 90 %. The input power source for WV-CW240S is 220 V - 240 V 50 Hz, and for WV-CW244FE is 24 V AC 50 Hz or 12 V DC.
- 10.** Use a monitor whose resolution is at least equal to that of the camera.

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS



① **Focus lock lever**

Fixes the focus position after adjusting.

② **Tilting lock screw**

Fixes the tilting position after adjusting.

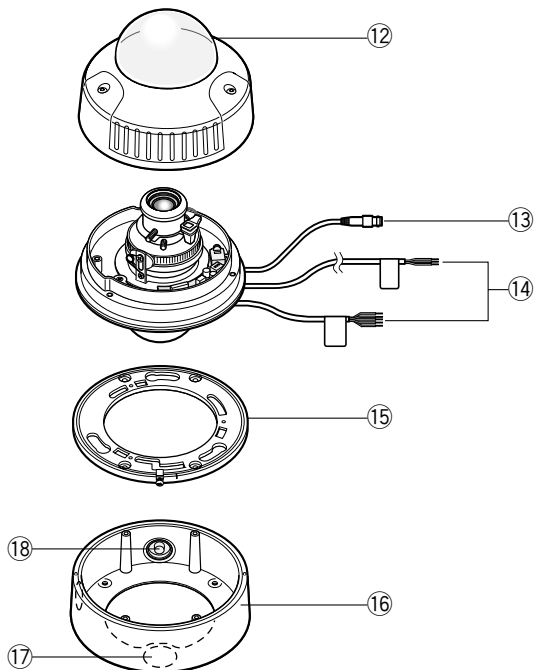
③ **Zoom lock lever**

Fixes the zoom position after adjusting.

④ **Panning table**

Adjusts the panning angle of the camera.

- ⑤ **Azimuth adjuster**
Adjusts the azimuth angle to obtain a level image.
- ⑥ **Pan lock screw**
Fixes the panning position after adjusting.
- ⑦ **Video jack (3.5-diam. mini jack)**
For connecting an LCD monitor to adjust the camera images. Use an L-type plug to save space.
- ⑧ **Aperture Level Selector**
SHARP: Sharpens the image outline.
SOFT: Softens the image outline.
The default setting is SHARP.
- ⑨ **Back Light Compensation Selector**
ON: Compensates the background if it is brighter than the object.
OFF: Does not compensate.
The default setting is OFF.
- ⑩ **Synchronization Mode Selector**
Specifies a source for synchronization.
INT: Internal 2:1 interlace.
LL: Line-lock mode driven by 24 V AC or 220 V-240 V AC.
The default setting is INT.
Note: Do not set the switch to LL (Line-Lock) position when supplying 12 V DC to avoid synchronization error.
- ⑪ **Heater power connector**
Supplies power to the optional heater unit when it is built in the camera. Connect here a harness sticking out from the heater unit.



⑫ **Dome cover**

⑬ **Video output cable with BNC connector**

Connects with the video connector of the monitor.

⑭ **Camera power cable**

For WV-CW240S: Supplies 220 V - 240 V AC 50 Hz to the camera. The camera will supply the optional heater unit with 24 V AC power that is transformed from the supplied 220 V - 240 V AC.

For WV-CW244FE: Supplies 24 V AC 50 Hz or 12 V DC to the camera. The black and grey cords will supply 24 V AC to the optional heater unit from an external power source.

⑮ **Camera attachment**

⑯ **Camera mounting bracket**

Only WV-CW240S (surface mount type) is supplied with a mounting bracket for ceiling installation.

⑰ **Cable access hole**

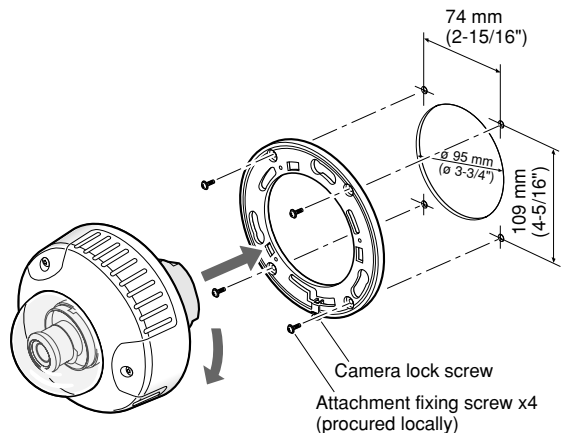
⑱ **Sideway cable exit**

INSTALLATION

■ Installation Plans & Preparations

● WV-CW244FE

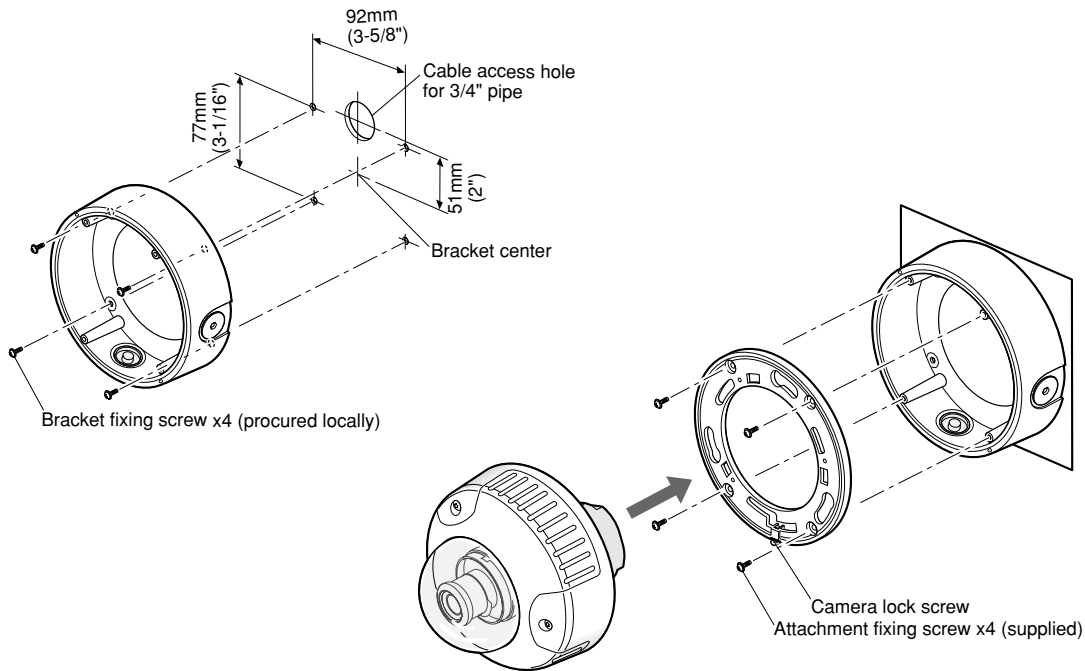
“F” stands for flush mounting. This model can be installed on the wall or ceiling prepared with a 95 mm diameter hole.



1. Space
Prepare a space larger than $\varnothing 160$ mm.
2. Flush-mount hole
Drill a hole having a 95 mm diameter on the wall or ceiling.
3. Attachment fixing screws
Locally procure four screws (M4) that are suitable for the installation surface to fix the attachment on the surface.
4. Cable route
Cables will go behind the wall or ceiling.
5. Waterproof Process
When necessary, apply waterproof process to the camera and relevant portions.

● WV-CW240S

"S" stands for surface mounting. This model can be installed on the surface of the wall or ceiling using the supplied bracket.

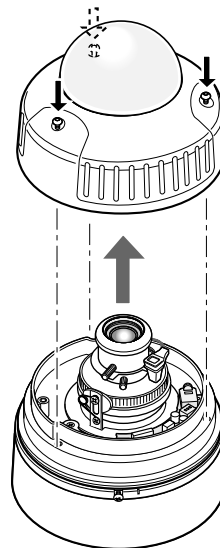


1. Space
Prepare a space larger than $\varnothing 160$ mm.
2. Bracket Fixing Screws
To fix the bracket, procure four M4 screws suitable for the surface and structure of the wall/ceiling.
3. Attachment Fixing Screws
Four screws are supplied as standard accessories.
4. Cable route
 - When routing cables through the wall/ceiling, drill a hole as shown in the figure.
 - When routing cables sideway, open the sideway cable exit unscrewing the lid by use of a hexagon wrench. Screw the detached lid to the cable access hole on the bottom of the bracket.
5. Waterproof Process
When necessary, apply waterproof process to the camera and relevant portions.

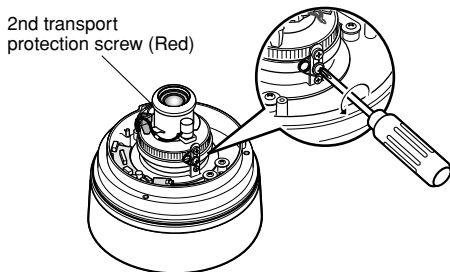
■ Mounting the Camera

● Disassembling of the camera

1. Remove the dome cover by loosening three tamper-proof screws using the supplied bit.

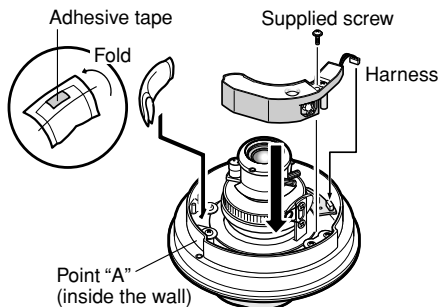


2. Remove the two red-coloured screws provided for transport protection using a Philips screwdriver.



● Heater unit installation

See OPTIONAL HEATER UNIT for details.



● Mounting the camera

1. Fix the camera to the installation surface.

WV-CW244FE

- Fix the attachment on the surface using four screws (locally procured).
- Place the camera on the attachment and rotate it clockwise.
- Fasten the camera lock screw.

WV-CW240S

- Fix the bracket on the surface using four screws (locally procured).
- Fix the attachment on the bracket using four screws (supplied).
- Place the camera on the attachment and rotate it clockwise.
- Fasten the camera lock screw.

2. Perform connections referring to ■ **Connections**.

3. Reinstall the camera to the bracket or attachment referring to step 1 above.

4. Adjust the image referring to ■ **Image Adjustment**.

5. Apply waterproof means referring to ● **Waterproof Process**.

■ Connections

● Video Output Connection

Connect the video output connector to the monitor or other system device with the procured coaxial cable. The maximum extensible length is shown in the table.

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

● Wire colours & functions

24 V AC (WV-CW244FE)

Wire colour	Function	Note
Brown	24 V AC Live	For camera
Blue	24 V AC Neutral	3.0 W
Green/Yellow	GND	
Black	24 V AC Live	For optional heater
Grey	24 V AC Neutral	12.1 W

Caution: Be sure to connect the GND (grounding) lead of the camera and grounding terminal of the power supply when using a 24 V AC power source.

12 V DC (WV-CW244FE)

Wire colour	Function	Note
Brown	12 V DC Positive	For camera
Blue	12 V DC Negative	265 mA
Green/Yellow	Not used	
Black	24 V AC Live	For optional heater
Grey	24 V AC Neutral	12.1 W

220 - 240 V (WV-CW240S)

Wire colour	Function	Note
Brown	220-240 V AC Live	4.1 W (camera)
Blue	220-240 V AC Neutral	13 W (with heater)
Green/Yellow	GND	

Caution: See page 3 for mains lead connection.

● Cable Length and Wire Gauge

24 V AC

The recommended cable length and thickness are shown in the table for reference. The voltage supplied to the power terminals of the camera should be within 19.5 V AC and 28 V AC.

Recommended wire gauge for 24 V AC line.

Copper wire size (AWG)		#24 (0.22 mm ²)	#22 (0.33 mm ²)	#20 (0.52 mm ²)	#18 (0.83 mm ²)
Length of Cable (Approx.)	(m)	95	150	255	425
	(ft)	314	495	842	1 403

12 V DC

Use the formula below to calculate the power cable and power supply. The voltage supplied to the power terminals of the camera should be within 10.5 V DC and 16 V DC.

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

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

$$10.5 \text{ V DC} \leq V_A - 2(R \times I \times L) \leq 16 \text{ V DC}$$

L : Cable length (m) (ft)

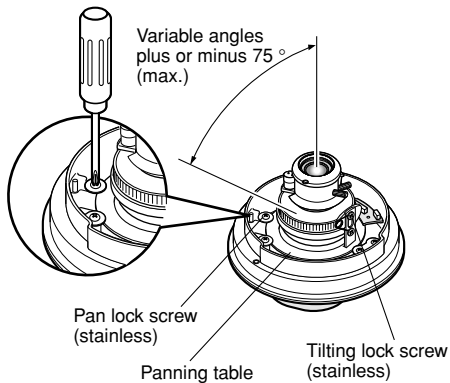
R : Resistance of copper wire (Ω/m) (Ω/ft)

V_A : DC output voltage of power supply unit

I : DC current consumption (A). See specifications.

■ Image Adjustment

You can manually adjust the pan/tilt/azimuth angles, focus, and zoom while observing the connected monitor.



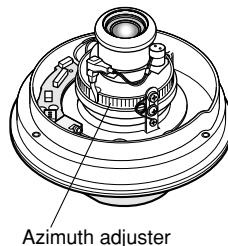
Notes:

- Do not hold the camera by lens unit to adjust panning, tilting, or azimuth.
- The video output to the BNC will be interrupted while an LCD monitor is connected to the video jack.

1. Connect an LCD monitor to the video jack.

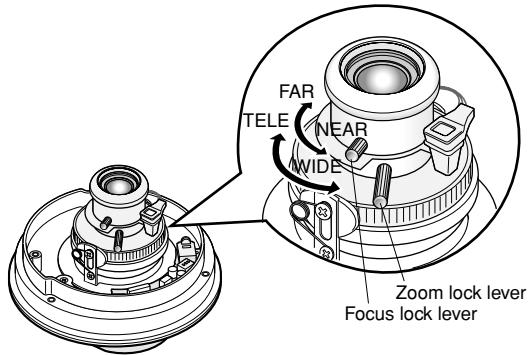
2. Pan/tilt/azimuth adjustment

- Loosen the two screws locking the pan and tilt tables.
- Pan and tilt the table to aim the camera at what you need to watch.
- Turn the azimuth adjuster to obtain a level image.
- Tighten the two screws after adjusting.



3. Zoom

- Unlock the zoom lever.
- Move the lever to adjust the zoom.
- Lock the lever.



4. Focus

- Unlock the focus lever.
- Move the lever to adjust the focus.
- Lock the lever.

5. Reinstalling the dome cover

- Attach the dome cover to the camera.
- Tighten the three tamper-proof screws.

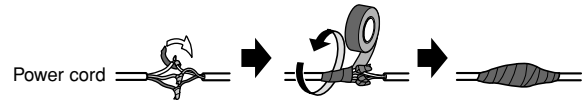
● Waterproof Process

When necessary, apply waterproof process to protect the camera from water soak.

Using butyl rubber tapes is recommended, not using ordinary vinyl tapes.

1. Power cord

First, tape the individual wires, finally all of them as a whole.



2. Connector junctions

Tape the BNC-BNC junction point.



SPECIFICATIONS

Pick-up device:	752 (H) x 582 (V) pixels, Interline transfer CCD
Scanning area:	4.8 (H) x 3.6 (V) mm (Equivalent to 1/3" pick-up tube)
Scanning:	625 lines/50 fields/25 frames
Horizontal:	15.625 kHz
Vertical:	50 Hz
Synchronization:	Internal, Line-lock (only 24 V AC or 220-240 V AC), or Multiplexed vertical drive (VD2)
Video output:	1.0 V [P-P] PAL composite 75 Ω /BNC connector
Horizontal resolution:	480 lines
Signal-to-noise ratio:	50 dB (Equivalent to AGC Off, weight On)
Minimum illumination:	1.0 lx (0.1 footcandle) (WIDE),
Detail:	SHARP or SOFT, selectable
White balance:	ATW
Lens Mount:	CS-mount
Lens	
Focal length:	3.8 mm - 8 mm
Maximum aperture ratio:	1:1.4 (Wide), 1:1.8 (Tele)
Angular field of view:	Horizontal: 35.6° - 73.6° Vertical: 26.6° - 53.4°
Focusing range:	1.2 m - ∞ (3.9 ft - ∞)
Ambient operating temperature:	-10°C - +50°C (14°F - 122°F) -30°C - +50°C (-22°F - 122°F) (When the optional heater unit built in)
Ambient operating humidity:	Less than 90 %
Power source and	
Power consumption:	WV-CW244FE: 12 V DC, 265 mA (Camera) 24 V AC 50 Hz, 3.0 W (Camera) 24 V AC 50 Hz, 12.1 W (Heater unit)

	WV-CW240S:	220 V - 240 V AC 50 Hz 4.1 W (Camera) 13 W (with heater)
Dimensions:	WV-CW244FE:	160.5 mm (H) 154 mm (D) 6-5/16" (H) 6-1/16" (D)
	WV-CW240S:	161 mm (H) 160 mm (D) 6-3/8" (H) 6-5/16" (D)
Weights:	WV-CW244FE:	1.4 kg (3.1 lbs.)
	WV-CW240S:	2.1 kg (6.4 lbs.)

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

STANDARD ACCESSORIES

Operating Instructions (this document) 1 pc.

The following are for installation.

Attachment 1 pc.

Tamperproof screw bit 1 pc.

Camera mounting bracket (supplied only to WV-CW240S) 1 pc.

Attachment fixing screw (supplied only to WV-CW240S) 4 pcs.

OPTIONAL ACCESSORIES

Heater unit WV-CW3HE

OPTIONAL HEATER UNIT

■ Optional Heater Unit WV-CW3HE

● Introduction

Installing this heater unit enables the camera to operate under in a low-temperature environment of -30°C (-22°F). The heater turns on automatically when the temperature inside the camera drops below $+10^{\circ}\text{C}$ (50°F) and turns off when it rises.

A small fan inside the unit will minimize condensation on the surface of the dome cover caused by changes in ambient temperature unless temperatures change too rapidly. The fan will stop when there is no possibility of condensation.

● Precautions

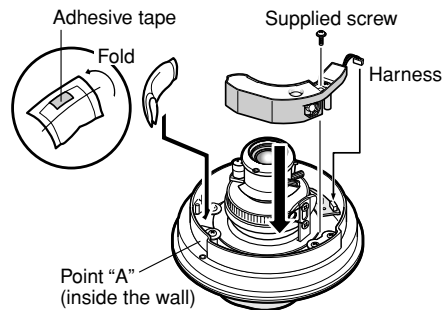
- This product should be installed and connected by qualified service personnel or system installers.
- Do not use the same 24 V AC power source supplying the power to the camera for the heater unit. Connect another 24 V AC power source to the heater unit. If the same power source is used, turning the heater on and off may disturb the camera images.
- When servicing, pay attention to high temperature on the surface of the unit. Disconnect the harness and wait until it cools.
- When you install the camera in a low-temperature location and start operating it, it may take time (around 30 minutes) for the inside of the camera to warm up. Cut power once then supply power again.

● Installation

1. Open the dome cover. (See Disassembling the camera.)
2. Place the heater unit in the camera and fix it with the supplied screw.
3. Insert the harness into the heater unit connector of the camera.
4. Fold the desiccant pack in half, and attach with adhesive tape to point "A" shown in the figure.

Note: Attach the desiccant pack so that it does not block ventilation holes or hang over the top of the wall.

5. Attach the dome cover while paying attention not to pinch the harness cable.
6. Connect the heater power cable of the camera. (See Connection.)



● Specifications

Required power:	24 V AC, 50 Hz
Power consumption:	12.1 W maximum
Dimensions:	29 mm (H) x 83 mm (W) x 89.5 mm (D) [1-1/8" (H) x 3-1/4" (W) x 3-1/2" (D)]
Weights:	45 g (0.1 lbs.)

● Accessories

Fixing screw (M3 x 12)	1 pc.
Desiccant pack	1.pc.

Matsushita Electric Industrial Co., Ltd.

Osaka, Japan

<http://www.panasonic.co.jp/global/>