



Panasonic

Operating Instructions Color CCTV Camera

Model No. **WV-CF364E**

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.

sF0310-0 3TR006405AZA Printed in China

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 2006/95/EC and 2004/108/EC.

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 2006/95/EC en 2004/108/EC.

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

Model No. _____
Serial No. _____



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.

Power disconnection. Unit with or without ON-OFF switches have power supplied to the unit whenever the power cord is inserted into the power source. Unplug the power cord to disconnect the main power for all units.

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.
- The connections should comply with local electrical code.

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- (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 THE PURPOSE OTHER THAN SURVEILLANCE.

Preface

The WV-CF364 is surveillance color CCTV camera equipped with a 1/3 inch CCD solid-state image sensor with 752 horizontal pixels. This camera can be mounted on a ceiling or a wall without any difficulty.

Features

WV-CF364 is provided with the adaptive black stretch function, high resolution of 540 TV lines (horizontal), and minimum illuminance of 0.6 lx (C/L), 0.05 lx (B/W), (F1.3(WIDE)) thanks to the adoption of the newly developed digital signal processor.

Important Safety Instructions

- 1) Read these instructions.
- 2) Keep these instructions.
- 3) Heed all warnings.
- 4) Follow all instructions.
- 5) Do not use this apparatus near water.
- 6) Clean only with dry cloth.
- 7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
- 9) Only use attachments/accessories specified by the manufacturer.
- 10) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
- 11) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 12) 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.



Precautions

This apparatus has no power switch.

Power is supplied from an external 12 V DC or 24 V AC power-supply device. Refer to service personnel for how to turn on/off the power.

To keep on using with stable performance

- Parts of this product may deteriorate and it may shorten lifetime of this product when using in locations subject to high temperatures and high humidity (Recommended ambient temperature: below +35 °C). Do not expose this product to direct heat such as from a heater.
- Use the appliance at temperature within -10 °C - +50 °C and humidity below 90 %. (When using the appliance without turning the power off)

Do not drop metallic parts through holes.

This could permanently damage the apparatus. Turn the power off immediately and contact qualified service personnel for service.

Do not rub your hands along the metallic edges.

This could cause injury.

Do not attempt to disassemble this product.

To prevent electric shock, do not remove screws or covers. There are no user-serviceable parts inside. Ask qualified service personnel for servicing.

Handle this product with care.

Do not abuse this product. Avoid striking, shaking, etc. This product could be damaged by improper handling or storage.

Do not touch the dome cover with your bare hands.

A dirty dome cover causes deterioration in picture quality.

Cleaning this product body

Turn the power off when cleaning this product. Use a dry cloth to clean this product.

Do not use strong abrasive detergent when cleaning this product body. When the dirt is hard to remove, use a mild detergent and wipe gently. Then, wipe off the remaining detergent with a dry cloth.

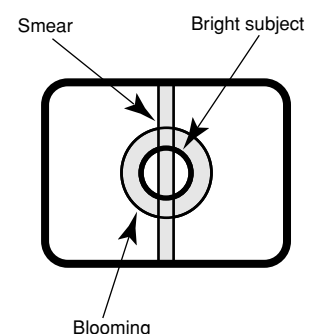
Otherwise it may cause discoloration. When using a chemical cloth for cleaning, read the caution provided with the chemical cloth product.

Discolouration on the CCD color filter

When continuously shooting a bright light source such as a spotlight, the color filter of the CCD may have deteriorated and it may cause discoloration. Even when changing the fixed shooting direction after continuously shooting a spotlight for a certain period, the discoloration may remain.

Do not aim this product at strong light sources.

A light source such as a spot light causes a blooming (light bleeding) or a smear (vertical lines).



Use this product for indoor use only.

Do not expose this product to direct sunlight for hours and do not install the product near a heater or an air conditioner, otherwise it may cause deformation, discoloration and malfunction. Keep this product away from water.

Avoid installing in the following locations.

- Locations where it may get wet from rain or water splash
- Locations where a chemical agent is used such as a swimming pool (not only outdoor)
- Locations subject to steam and oil smoke such as a kitchen
- Locations near flammable gas or vapor
- Locations where radiation or x-ray emissions are produced
- Locations subject to strong magnetic field or radio waves
- 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 $-10\text{ }^{\circ}\text{C}$ - $+50\text{ }^{\circ}\text{C}$.
- Locations subject to vibrations (this product is not designed for on-vehicle use.)

Installing place

Contact your dealer for assistance if you are unsure of an appropriate place in your particular environment.

Do not install this product in a humid or dust-laden environment.

Otherwise, lifetime of the internal parts may be shortened.

Be sure to remove this apparatus if it is not in use.

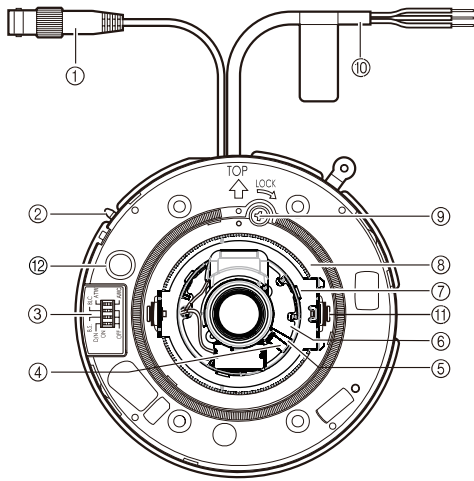
Radio interference

When the product is used near TV/radio antenna, strong electric field or magnetic field (near a motor or a transformer), images may be distorted and noise sound may be produced.

Mounting screws

It is necessary to procure screws or bolts to mount the product. Prepare them according to the material and strength of the area where the camera is to be installed. The screws and bolts must be tightened with an appropriate tightening torque according to the material and strength of the installation area.

Major Operating Controls and Their Functions



1 Video output connector

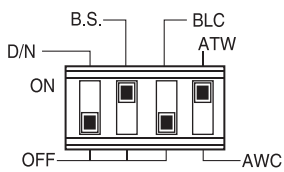
Composite video signals are transmitted. If this unit is connected to the multiplex unit, the multiplexed VD2 that is prioritized over INT is automatically selected.

2 Marker

This marker is used when the top cover is installed.

3 Dip switch

Selects ON/OFF of white balance, backlight compensation, Adaptive Black Stretch or day/night mode.



• Day/night mode selector [D/N]

ON: The camera selects black-and-white mode if the picture is dark, or color mode if the picture is bright enough. Switches from color to black-and-white images when the ambient brightness (illuminance) of the camera is approx. 0.6lx or less.

OFF: Color picture is displayed normally.

Default setting: OFF

Note:

- To obtain color images, a sufficient level of illuminance (approx.30 lx or more) is required.
- The switching illuminance level varies with subjects,light sources.
- The switching illuminances described above are reference values. The switching illuminance shall be decided based on the actual installation environment.

• Adaptive Black Stretch selector [B.S.]

ON: The dark area of the object is automatically corrected to lighten it.

OFF: Does not compensate.

Default setting: ON

Important:

In the case of "ON" setting, noise may be increased in the dark area of the object.

In addition, darkness and brightness may be emphasized in the vicinity of the boundary between the dark and bright areas.

• Backlight compensation selector [BLC]

ON: Compensates the background auto-

matically if it is brighter than the object.

OFF: This mode is used when the front of the object is extremely bright.

Default setting: OFF

Note:

Under some conditions, such as extremely strong backlight, the desired compensation effect may not be achieved even if the mode is set to ON to detect the backlight level.

• White balance selector[ATW/AWC]

ATW: Activates the automatic color temperature tracking mode. The camera continuously measures the color temperature of the light source and automatically adjusts the white balance.

The adjustment of the color temperature ranges from approx. 2 700 K to 6 000 K.

AWC: Activates the automatic white balance control mode. This adjustment is suitable for a location where a light source is stable. The adjustment of the color temperature ranges from approx. 2 000 K to 10 000 K.

Default setting:ATW

4 Focus lock lever

Fixes the focus position after adjusting.

5 Zoom lock lever

Fix the zoom position after adjusting.

6 Azimuth adjuster

Adjusts the azimuth angle of the camera.

7 Tilting table

Adjusts the tilting position of the camera.

8 Panning table

Adjusts the panning position of the camera.

9 Panning table lock screw [LOCK]

Fixes the panning table.

10 Power cable

Supplies 24 V AC or 12 V DC from an external power source.

11 Tilting lock screws (left,right)

Fixes the tilting position.

12 Monitor output jack (RCA jack)

Connects the LCD monitor and such devices for checking images.

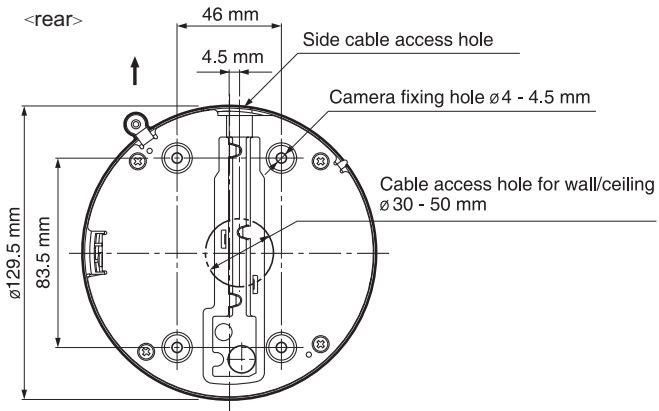
Installations and Connections

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

Preparations

Important:

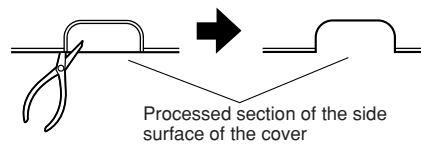
- Procure 4 mounting screws according to the material of the installation area. In this case, wood screws and nails should not be used. Recommended tightening torque is as follows:
M4: 1.6 N·m {16 kgf·cm}
- Required pull-out capacity of a single screw/bolt is 196 N {20 kgf} or more.
- If a ceiling board such as plaster board is too weak to support the total weight, the area shall be sufficiently reinforced.
- The protection sheet attached to the dome cover should be peeled off after installation.



• Direct mounting

If the camera is directly mounted on a wall/ceiling, align the camera mounting position with the position of the hole through which the cables run and make the hole.

If no hole is made through a wall/ceiling and open wiring along a wall/ceiling is used, please remove the dust guard cap,take out the cable,don't forget put back the dust guard cap.Then process the cover so that the cables can be run through the side of the cover.



• Using a two-gang junction box

When using a two-gang junction box (4"x4"), procure one locally that meets the dimensions in the figure.

Next locally procure four camera mounting screws suitable for the installation surface and structure of the wall/ceiling or two-gang junction box.

Disassembling the Camera

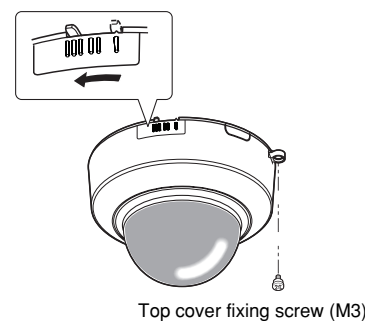
1. Peel off the protection sheet from the top cover.

Don't remove completely as this protects the dome during installation.



2. Remove the top cover.

- Screw off the screw for fixing the top cover.
- Adjust the marker on this unit to "I" on the top cover, and turn the top cover counter-clockwise to remove it.
- The clear dome cover and the inner dome cover are joined into a single unit. Therefore, never try to remove them.

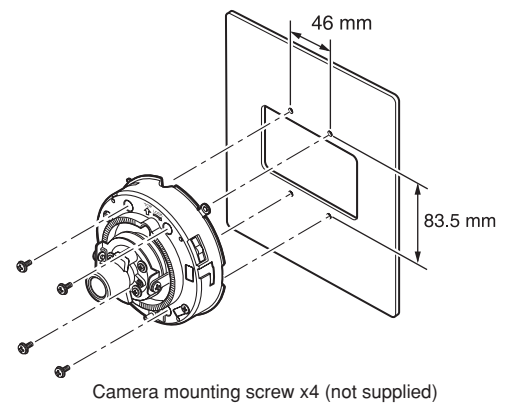


• To mount the camera directly on the wall/ceiling

1. Prepare the mounting space.
2. Place the camera onto the wall/ceiling and mark four screw positions with a pen.
3. Mount the camera onto the wall/ceiling with 4 screws (procured locally).
4. Fasten all of the mounting screws.

• To mount the camera on a two-gang junction box

1. Install the two-gang junction box onto the wall/ceiling.
2. Mount the camera onto the two-gang junction box with 4 screws (procured locally).
3. Fasten all of the mounting screws.



The mounting requirements are shown as follows.

Mounting place	Model	Recommended screw and tightening torque	Number of screws	Minimum pullout strength
Ceiling/wall	(Direct mounting)	M4,1.6N·m {16 kgf·cm}	4 pcs.	196 N/pc.{20 kgf/pc.}
Ceiling	WV-Q168(Approx.280 g)	-	-	*

*Make sure that the installed mount bracket can support more than 5 times of the weight of the camera.

Connections

Video output connection

Important:
When connecting the coaxial cable to the video output connector, make sure that the connector of the coaxial cable is locked firmly.

Connect the video output connector to the monitor, or other system devices, with the pro-cured coaxial cable.

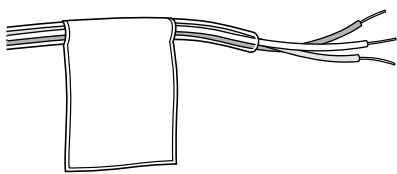
The maximum extensible cable length is shown in the table.

Cable type	Extensible length
RG-59/U (3C-2V)	Approx. 250 m
RG-6/U (5C-2V)	Approx. 500 m
RG-11/U (7C-2V)	Approx. 600 m
RG-15/U (10C-2V)	Approx. 800 m

Power connection

Connect the three-conductor cable of the camera to the power supply. The wire colours and functions are shown in the table.

Wire colour	12 V DC	24 V AC
Brown	Positive	Live
Blue	Negative	Neutral
Green/yellow	Grounding	Grounding



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.

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.

Image Adjustment

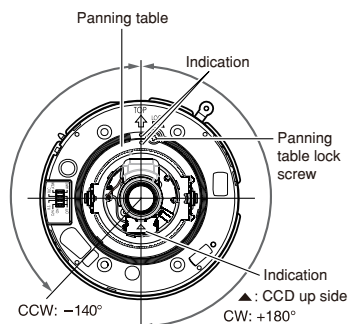
1. Pan, tilt and azimuth adjustment

Important:

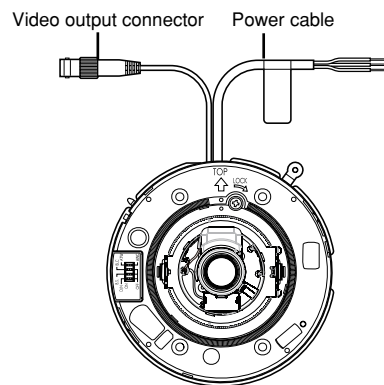
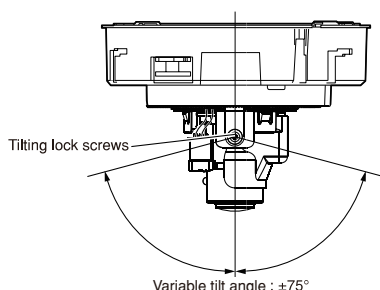
- Do not touch the iris motor. Failure to observe this may cause trouble.
- Do not hold the camera by the lens unit when adjusting panning, tilting, or azimuth.

At the same time as the pan and tilt adjustments, make the zoom and focus adjustments in Step 2.

- Rotate the panning table to adjust the panning position of the camera. (Range: 320°)
 - The adjusting range is from +180° (clockwise) to -140° (counterclockwise).
 - Tighten the panning table lock screw after adjusting.



- Rotate the tilting table to adjust the tilting position of the camera (Range: ±75°).
 - This lens can also be rotated in the reverse direction, but the image azimuth is reversed. In such a case, turn the panning table to the 180° side to correct the azimuth image.
 - When used at an angle that is close to horizontal, it must be noted that the shadow of the dome cover may be projected.
 - Fasten the tilting lock screws of both sides after adjusting.



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)	20	30	45	75

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 10.8 V DC and 16 V DC.

Resistance of copper wire [at 20 °C]

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

$$10.8 \text{ V DC} \leq V_A - 2(R \times I \times L) \leq 16 \text{ V DC}$$

L: Cable length (m)

R: Resistance of copper wire (Ω/m)

V_A: DC output voltage of power supply unit

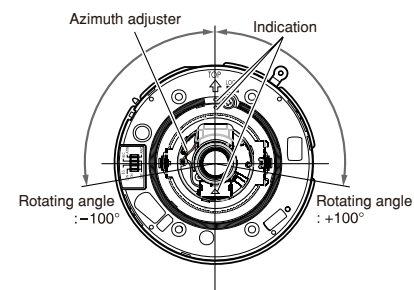
I: DC current consumption (A)

See specifications.

Important:

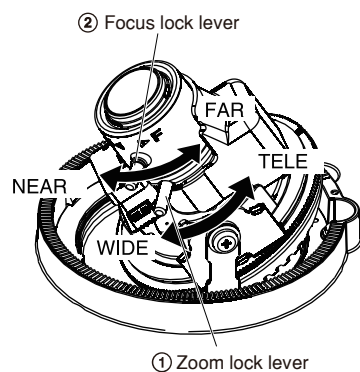
Tighten the panning table lock screw and tilting lock screw. (Recommended tightening torque: 0.59 N·m {6 kgf·cm})

- Rotate the azimuth adjuster to adjust the azimuth angle of the image (Range: ±100°).



2. Zoom and focus adjustment

At the same time as adjusting the pan and tilt (Step 2), adjust the zoom and focus.



- Loosen the zoom lock lever and move the lever between TELE and WIDE to obtain the appropriate angle of view. Tighten the zoom lock lever.
- Loosen the focus lock lever and move the lever between FAR and NEAR to obtain the optimum focus. Tighten the focus lock lever.

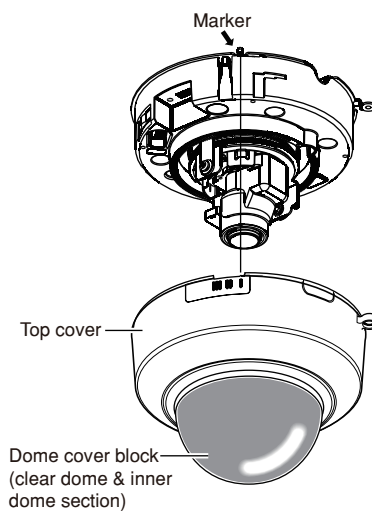
Note:

To change the angle of view by moving the zoom lock lever, also move the focus lock lever to adjust the focus.

Assembling the Camera

1. Mount the top cover.

- Adjust the marker of this unit to "I" on the top cover to install the top cover.



- Adjust the inner dome.

Rotate the top cover clockwise to adjust the marker to "II".
Turn the dome cover block to the right and left, watching the monitor. Make adjustments so that no eclipse is caused.

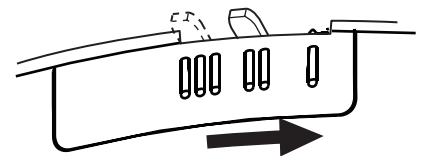


Important:

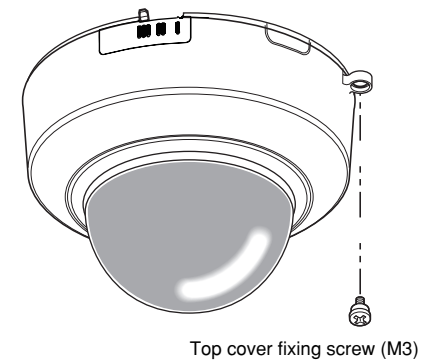
For inner dome adjustments, adjust the marker to the position of "II".

If the dome cover block is moved with unreasonable force, it may break.

- Rotate the top cover clockwise to adjust the marker to "III".



- Fix the top cover and the camera main unit by means of an accessory fixing screw (M3).



Specifications

Power source and power consumption:

AC 24 V, 50 Hz, 2.7 W
DC 12 V, 220 mA

Image sensor:

1/3 inch interline transfer CCD

Effective pixels:

752 (H) x 582 (V)

Scanning area:

4.9 (H) x 3.7 (V) mm

Scanning system:

2 : 1 interlace

Scanning lines:

625 lines

Scanning frequency:

Horizontal: 15.625 kHz

Vertical: 50.00 Hz

Synchronization:

Internal, multiplexed vertical drive (VD2)

Resolution:

Horizontal: 540 TV lines (at center)

Vertical: 400 TV lines (at center)

Video output:

1.0 V[p-p] PAL composite 75 Ω

White balance:

ATW/AWC

Signal-to-noise ratio:

50 dB (equivalent to AGC Off, weight On)

Minimum illumination:

0.6 lx (C/L), 0.05 lx (B/W), F1.3 (WIDE)

Switch function:

White balance selector (ATW/AWC), Backlight compensation selector (ON/OFF), Adaptive Black Stretch selector (ON/OFF), Day/night mode selector (ON/OFF)

Lens:

3.6x variable focal lens

Focal length:

2.8 mm - 10.0 mm

F number:

F1.3 (WIDE) - F3.1 (TELE)

Focus range:

∞ - 1.2 m

Angle of view:

Horizontal: 100°50' (WIDE) - 27°39' (TELE)

Vertical: 73°51' (WIDE) - 20°45' (TELE)

Adjusting angle:

Panning range: +180° to -140°

Tilting range: ±75°

Azimuth range: ±100°

Ambient temperature:

-10 °C - +50 °C

Ambient humidity:

Less than 90 %

Dimensions:

ø129.5 mm x 93 mm (H)

Weight:

430 g

※Weights and dimensions indicated are approximate.

Standard Accessories

CD-ROM* 1 pc.

Operating Instructions (this document) .1 pc.

* The CD-ROM contains the operating instructions(PDF).

Optional Accessories

Ceiling Mount Bracket.....WV-Q168

Dome Cover (smoke type).....WV-CF5S

Information on Disposal for Users of Waste Electrical & Electronic Equipment (private households)



This symbol on the products and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.

For proper treatment, recovery and recycling, please take these products to designated collection points, where they will be accepted on a free of charge basis. Alternatively, in some countries you may be able to return your products to your local retailer upon the purchase of an equivalent new product.

Disposing of this product correctly will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

For business users in the European Union

If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

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If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

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