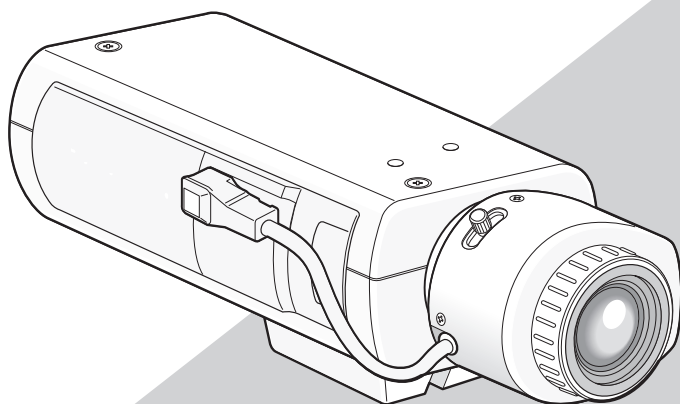


PRO

Installation Guide Color CCTV Camera

Model No. **WV-CP630**
WV-CP634



This illustration represents WV-CP630.

Lens: Option

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.

WARNING:

- 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.
- To prevent injury, this apparatus must be securely attached to the floor/wall/ceiling in accordance with the installation instructions.
- The mains plug or an appliance coupler shall remain readily operable.
- The installation shall be carried out in accordance with all applicable installation rules.
- This product has no power switch.
When turning off the power, turn off a Power Supply or remove a power cable.
- The connections should comply with local electrical code.

For Canada

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

For U.S.A

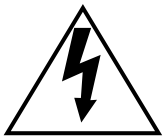
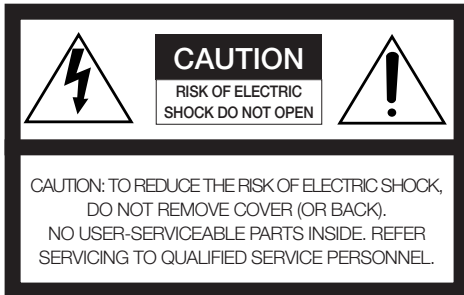
NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment 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.

For U.S.A

The model number and serial number of this product may be found on the surface of the unit. You should note the model number and 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.

Contents

| | |
|--|----|
| Important safety instructions | 4 |
| Limitation of liability | 5 |
| Disclaimer of warranty | 5 |
| Preface | 6 |
| Features | 6 |
| About the user manuals | 7 |
| Trademarks and registered trademarks | 7 |
| Precautions | 8 |
| Precautions for installation | 10 |
| Major operating controls and their functions | 12 |
| Installation and connection | 15 |
| Optional dedicated lens | 15 |
| Setup menu | 25 |
| List of setup menu | 25 |
| Basic operation | 26 |
| Screen transition diagram | 28 |
| Troubleshooting | 29 |
| Specifications | 30 |
| Standard accessories | 31 |

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) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
- 10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
- 11) Only use attachments/accessories specified by the manufacturer.
- 12) 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.



- 13) Unplug this apparatus during lightning storms or when unused for long periods of time.
- 14) 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.

Limitation of liability

THIS PUBLICATION IS PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR NON-INFRINGEMENT OF THE THIRD PARTY'S RIGHT.

THIS PUBLICATION COULD INCLUDE TECHNICAL INACCURACIES OR TYPOGRAPHICAL ERRORS. CHANGES ARE ADDED TO THE INFORMATION HEREIN, AT ANY TIME, FOR THE IMPROVEMENTS OF THIS PUBLICATION AND/OR THE CORRESPONDING PRODUCT (S).

Disclaimer of warranty

IN NO EVENT SHALL i-PRO Co., Ltd. BE LIABLE TO ANY PARTY OR ANY PERSON, EXCEPT FOR REPLACEMENT OR REASONABLE MAINTENANCE OF THE PRODUCT, FOR THE CASES, INCLUDING BUT NOT LIMITED TO BELOW:

- (1) ANY LOSS OR DAMAGE, INCLUDING WITHOUT LIMITATION, DIRECT OR INDIRECT, SPECIAL, CONSEQUENTIAL OR EXEMPLARY, ARISING OUT OF OR RELATING TO THE PRODUCT;
- (2) ANY INCONVENIENCE, LOSS, OR DAMAGE CAUSED BY INAPPROPRIATE USE OR NEGLIGENT OPERATION OF THE USER;
- (3) UNAUTHORIZED DISASSEMBLE, REPAIR OR MODIFICATION OF THE PRODUCT BY THE USER;
- (4) INCONVENIENCE OR ANY LOSS ARISING WHEN IMAGES ARE NOT DISPLAYED, DUE TO ANY REASON OR CAUSE INCLUDING ANY FAILURE OR PROBLEM OF THE PRODUCT;
- (5) ANY PROBLEM, CONSEQUENTIAL INCONVENIENCE, OR LOSS OR DAMAGE, ARISING OUT OF THE SYSTEM COMBINED BY THE DEVICES OF THIRD PARTY;
- (6) ANY CLAIM OR ACTION FOR DAMAGES, BROUGHT BY ANY PERSON OR ORGANIZATION BEING 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 ANY PURPOSE.

Preface

This product is a 1/3-type CCD color CCTV camera. Connection of this product to a video monitor allows users to use this product as a monitoring camera.

- WV-CP630: 120 V AC power supply, with color / black-and-white mode switch function
- WV-CP634: 24 V AC, 12 V DC power supply, with color / black-and-white mode switch function

Features

Introduction of newly developed high-resolution CCD

The introduction of the newly developed CCD with 976 horizontal pixels has led to a horizontal resolution of as high as 700 TV lines.

Super Dynamic 6

For photographic subjects which contain high contrast between the bright and dark areas, light compensation on the pixel level will result in more natural-looking images.

Auto back focus function (ABF) equipped

Moving the CCD inside the camera to an optimal position with the operation button of this unit or the setup menu allows users to automatically adjust the back focus.

The back focus is adjustable with the setup menu through the system controller (option) even after installation of this unit.

The auto back focus function also allows users to correct out of focus when changing between color and black-and-white images.

High sensitivity achieved because of noise reduction function

Sensitivity at the following minimum illuminations has been accomplished for color images because of the introduction of low noise circuit design (F1.4) :

0.08 lx (color), 0.008 lx (black-and-white)

Day/Night conversion function equipped

No setup change is required at night because the image automatically changes from the color mode to the black-and-white mode at low illuminance.

Bright images can be captured at night because of automatic switching of IR filters at low illuminance.

Motion detection function (VMD) equipped

The motion of an object is detectable. The acts of covering the camera with a cloth, a cap or other acts and changing the camera direction during surveillance can be detected.

Note:

- The VMD function is not the dedicated function to prevent thefts, fires, etc. We are not responsible for any accidents or damages caused by applying the function for the above purposes.
-

About the user manuals

The operating instructions of the camera consist of 2 sets: this book and operating instructions (PDF).

This book explains how to install the camera.

Refer to the "Operating Instructions (PDF)" on the provided CD-ROM for descriptions of how to perform the unit settings. Adobe® Reader® is required to read PDF. When the Adobe® Reader® is not installed on the PC, download the latest Adobe® Reader® from the Adobe web site and install it.

Trademarks and registered trademarks

Adobe, Acrobat Reader and Reader are either registered trademarks or trademarks of Adobe Systems Incorporated in the United States and/or other countries.

Precautions

Refer installation work to the dealer.

Installation work requires technique and experiences. Otherwise injury or damage to this product may result.

Be sure to consult the dealer.

Do not insert any foreign objects.

This could permanently damage this product.

Turn the power off immediately and contact qualified service personnel for service.

Do not attempt to disassemble or modify this product.

Failure to observe this may cause fire or electric shock.

Consult the dealer for the repair or inspections.

Stop operation immediately when something is wrong with this product.

When smoke goes up from this product or the smell of smoke comes from this product, continued use will result in fire, injury, or damage to the product.

Turn the power off immediately and contact qualified service personnel for service.

Select an installation area that can support the total weight.

Selecting an inappropriate installation surface may cause the product to fall down or topple over, resulting in injury.

Installation work shall be started after sufficient reinforcement.

Periodic inspections shall be conducted.

Rust on the metal parts or screws may cause the product to fall down resulting in injury or accidents.

Consult the dealer for the inspections.

This product shall be installed in a vibration-free place.

Failure to observe this may cause screws and bolts to be loosened and consequently to fall resulting in injury.

Install this product in a location high enough to avoid people and objects from bumping the product.

Failure to observe this may cause a drop resulting in injury or accidents.

Do not strike or give a strong shock to this product.

Failure to observe this may cause injury or fire.

Turn the power off when do wiring of this product.

Failure to observe this may cause electric shock. A short circuit or wrong wiring may cause fire.

Do not use this product in an atmosphere of flammable gases.

Failure to observe this may cause injury by explosion.

Avoid installing this product in locations where it is subject to damage by salt or corrosive gas.

Otherwise the mounting fixtures will deteriorate, causing the product to fall down and leading to accidents.

Tighten screws and mounting fixtures to the specified torque.

Failure to observe this may cause a drop resulting in injury or accidents.

[Precautions for use]

This product is designed to be used indoors.

This product is not operable outdoors.

This product has no power switch.

When turning off the power, turn off a circuit breaker.

To keep on using with stable performance

Parts of this product may deteriorate and it may shorten the lifetime of this product when using in locations subject to high temperatures and high humidity. (Recommended operating temperature: +35 °C {95 °F} or lower)

Do not expose this product to direct heat sources such as a heater.

Handle this product with care.

Do not drop this product, nor apply shock or vibration to this product.

Failure to observe this may cause trouble.

Noise on monitor

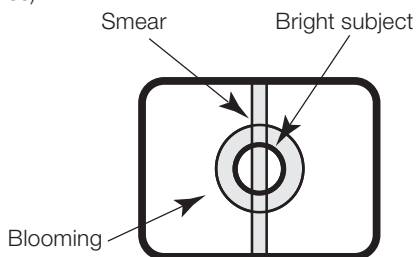
This product is equipped with a super sensitive CCD. Therefore, noise may appear on the monitor. This phenomenon is not trouble.

Discoloration 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).



Cleaning this product body

Turn the power off when cleaning this product. Do not use strong abrasive detergent when cleaning this product. Otherwise, it may cause discoloration.

Precautions for installation

i-PRO Co., Ltd. assumes no responsibility for injuries or property damage resulting from failures arising out of improper installation or operation inconsistent with this documentation.

This product is designed to be used indoors.

This product is not operable outdoors. Do not expose the 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 the product away from water and moisture.

Installing place

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

- Make sure that the installation area is strong enough to hold the product, such as a concrete ceiling.
- Install the camera in the foundation area of the architecture or where sufficient strength is assured.
- If a ceiling board such as plaster board is too weak to support the total weight, the area shall be sufficiently reinforced.

Avoid installing this product in the following locations.

- Location where it may get wet from rain or water splash.
- Locations where a chemical agent is used such as a swimming pool.
- 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 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°C to $+50^{\circ}\text{C}$ (14°F to 122°F).
- Locations subject to vibrations (This product is not designed for on-vehicle use.)
- Locations subject to condensation as the result of severe changes in temperature.

Avoid moist or dusty places to install this system.

Otherwise, lifetime of the internal parts may be shortened.

Avoid installing this product in a place with a high level of noise.

Installation near an air conditioner, an air cleaner, a vending machine, or the like causes noise.

Avoid installing and connecting during a lightning storm. Otherwise, an electric shock or fire may be caused.

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

Do not damage the power plug or cable.

Keep the camera cable away from the lighting cable.

Failure to observe this may cause noise.

Radio interference

When the camera 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. In such a case, run the camera cable through specialized steel conduit tubes.

Locally procure the screws

Screws are not supplied with this product.

Prepare the screws according to the material, structure, strength and other factors of the mounting area and the total weight of objects to be mounted.

Screw tightening

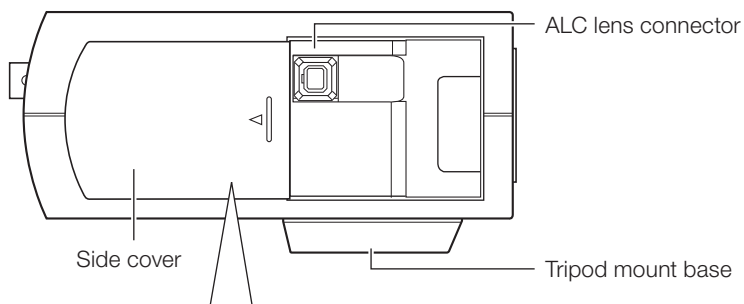
- The screws and bolts must be tightened with an appropriate tightening torque according to the material and strength of the installation area.
- Do not use an impact driver. Failure to observe this may cause overtightening and consequently damage to the screws.
- When a screw is tightened, make the screw at a right angle to the surface. After tightening the screws or bolts, perform visual check to ensure tightening is enough and there is no backlash.

Power cord (only for WV-CP630)

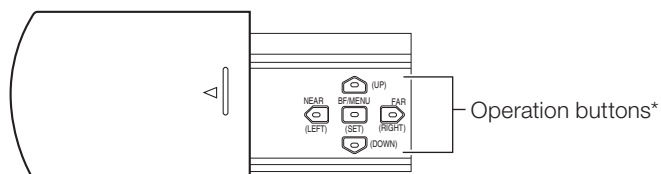
Connect the power cord securely. Run the power cord so that no load is applied to the cord when panning or tilting the camera. (Failure to observe this may disconnect the power cord, and accordingly no image is displayed.)

Major operating controls and their functions






Side view (WV-CP630)



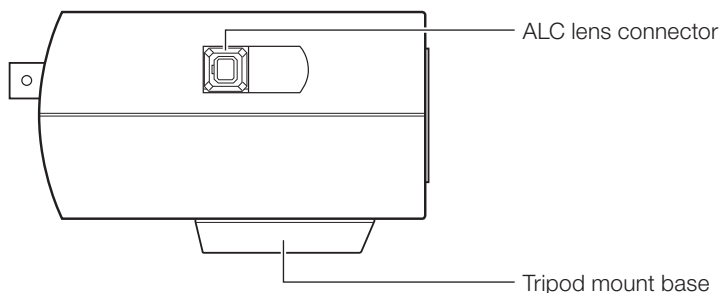
Inside the side cover
(Slide the cover leftward to the lock position.)



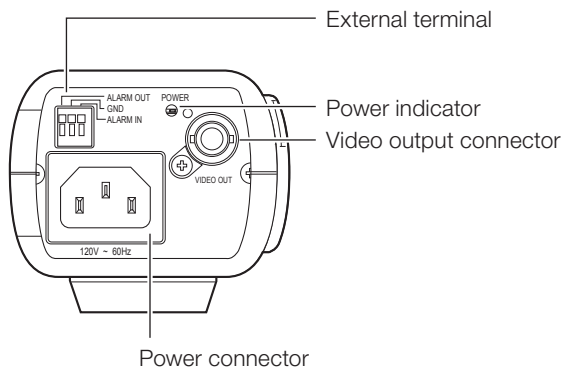
* The following names are assigned to each button in this book:

-  : Up button (UP) (Pressing and holding for 3 s, SD6 ON/OFF)
-  : Down button (DOWN) (Pressing and holding for 3 s, image upside-down)
-  : Left button (LEFT), FOCUS NEAR
-  : Right button (RIGHT), FOCUS FAR
-  : Setting button (SET), BF/MENU

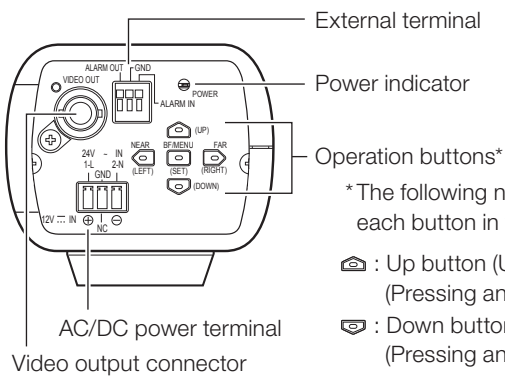
Side view (WV-CP634)








Rear view (WV-CP630)



Rear view (WV-CP634)



* The following names are assigned to each button in this book:

-  : Up button (UP)
(Pressing and holding for 3 s, SD6 ON/OFF)
-  : Down button (DOWN)
(Pressing and holding for 3 s, image upside-down)
-  : Left button (LEFT), FOCUS NEAR
-  : Right button (RIGHT), FOCUS FAR
-  : Setting button (SET), BF/MENU

Side cover (only for WV-CP630)

When the operation buttons are used, the side cover is slide leftward to the lock position.

ALC lens connector

The ALC connector is connected to this ALC lens connector.

Tripod mount base

This socket is used to mount the camera mount bracket (option). The tripod socket can be mounted on either top or bottom of the camera head.

(Tripod socket hole: 1/4-20 UNC for tripod)

Operation buttons

This buttons are used to perform various settings in the setup menu.

Video output connector

The Coaxial cable (locally procured) is connected to this video output connector.

Power indicator

This indicator lights up when the power is on.

External terminal (see page 21)**Power connector (only for WV-CP630)**

The included power cord is connected to this power connector.

**AC/DC power terminal
(only for WV-CP634)**

The power supply of 24 V AC or 12 V DC is connected to this terminal.

Installation and connection

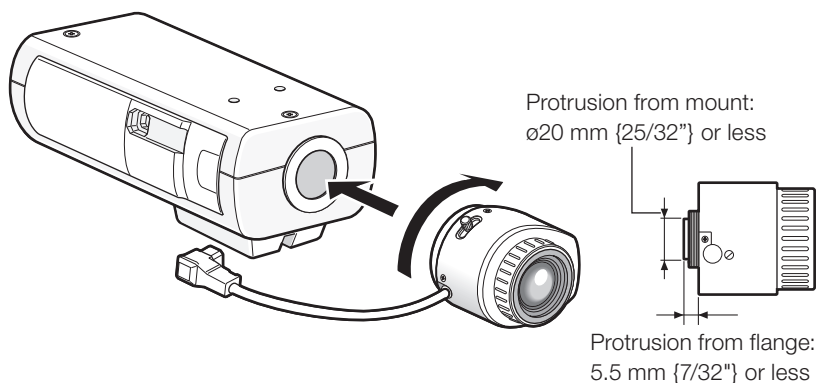
Cautions:

- ONLY CONNECT WV-CP634 TO 24 V AC OR 12 V DC CLASS 2 POWER SUPPLY (UL 1310/ CSA 223) or LIMITED POWER SOURCE (IEC/EN/UL/CSA 60950-1).
- Be sure to connect the grounding lead to the GND terminal.

1 Rotate the lens (option) clockwise slowly to mount the lens.

Important:

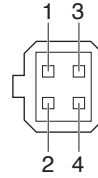
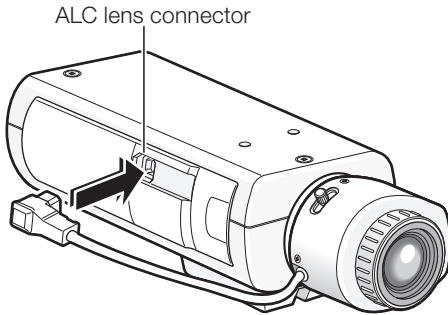
- For use of C-mount lens, use the C-mount adaptor (option).
- For prevention of damage to the camera body, use a lens with protrusion of 5.5 mm {7/32"} or less from the flange surface.



Optional dedicated lens

| Lens type | | Model No. |
|-----------------------------------|---------------|-------------|
| ALC lens for 1/3 type CCD cameras | 2x vari-focal | WV-LZA61/2S |
| | 8x vari-focal | WV-LZ62/8S |

2 Connect the lens cable to the ALC lens connector of the camera.



| Pin No. | |
|---------|---------|
| 1 | Dump ⊖ |
| 2 | Dump ⊕ |
| 3 | Drive ⊕ |
| 4 | Drive ⊖ |

3 Connect the safety wire.

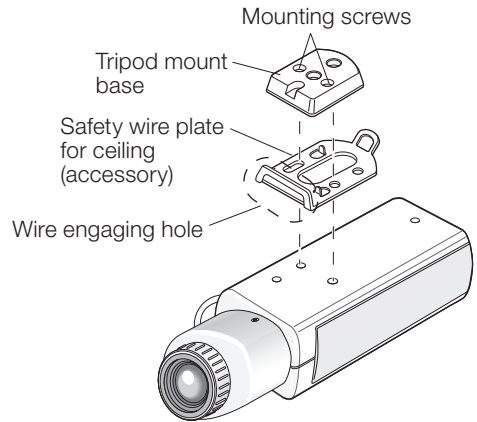
The following is an example of safety wire connection.

Important:

- Be sure to install the safety wire. Ask your dealer for installation.

For mounting on ceiling

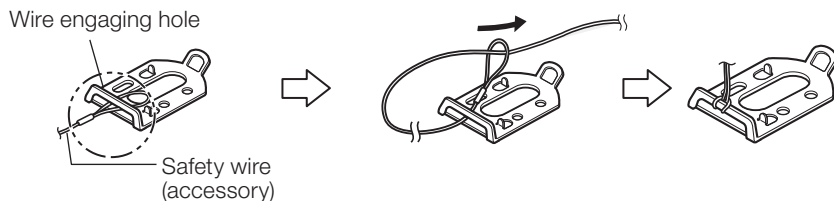
- ① Remove the tripod mount base on the top of the camera.
- ② Align the tripod mount base with the safety wire plate for ceiling (accessory) and attach them to the camera with the mounting screws.



Important:

- Use the detached mounting screws to attach the tripod mount base. When using different length screws, it may damage the camera or cause the camera to fall.
(Recommended tightening torque: 0.39 N·m {0.29 lbf·ft})

- ③ Engage the safety wires with the wire engaging holes respectively.



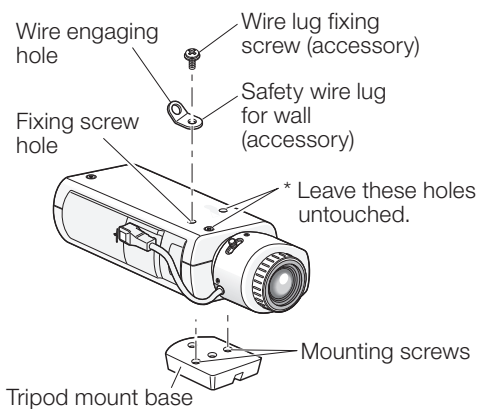
Pass the ring part of the safety wire through the wire engaging hole.

For mounting on wall

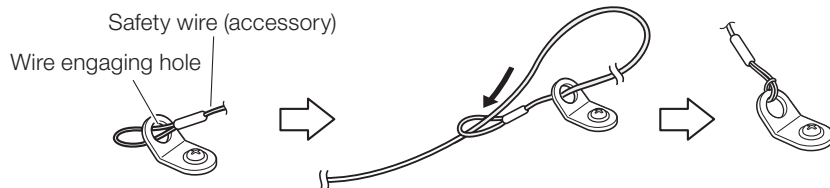
- ① Put the tripod mount base on the bottom of the camera.
- Secure the safety wire lug for wall (accessory) to the camera mount screw hole with the wire lug fixing screw (accessory).

Important:

- Be sure to use the provided fixing screws for the safety wire lug and the removed screws for the camera mount base.
- When using different length screws, it may damage the camera or cause the camera to fall.
- (Recommended tightening torque:
0.39 N·m {0.29 lbf·ft})



- ② Engage the safety wire (accessory) with the wire engaging hole.



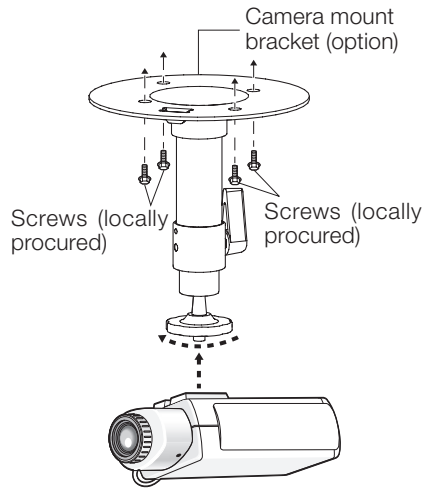
- ① Pass the ring part of the safety wire through the wire engaging hole.
- ② Pass the other end of the safety wire through the ring part of the safety wire.

4 Secure the camera mount bracket (option) to an installation position, and mount the camera on the camera mount bracket.

Important:

- If the total weight of the camera and lens exceeds 1 kg {2.2 lbs.}, use a housing to take measures against camera drop.
- Prepare mounting screws according to the material of the area where the camera mount bracket (option) is to be installed. The installation method may be different depending on the material of the area where the bracket is to be installed.
 - When installing on steel:
Fix with bolts and nuts (M6 or M8).
 - When installing on concrete:
Fix with anchor bolts or AY plug bolts (M6 or M8).
Recommended tightening torque (M6):
5.0 N·m {3.69 lbf·ft}
Recommended tightening torque (M8):
6.2 N·m {4.57 lbf·ft}

<Installation sample on a ceiling>



- The mounting conditions of the camera mount bracket are described as follows:

| Installation position | Recommended screw | Screw quantity | Minimum pull-out strength (per 1 pc.) |
|-----------------------|-------------------|----------------|---------------------------------------|
| On ceiling | M6 or M8 | 4 pcs. | 562 N {126 lbf} |
| On wall | M8 | 4 pcs. | 921 N {207.05 lbf} |

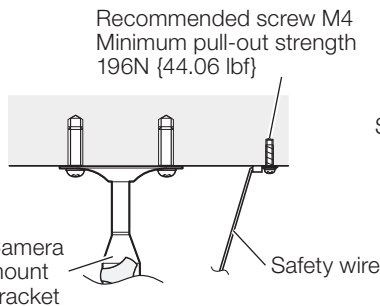
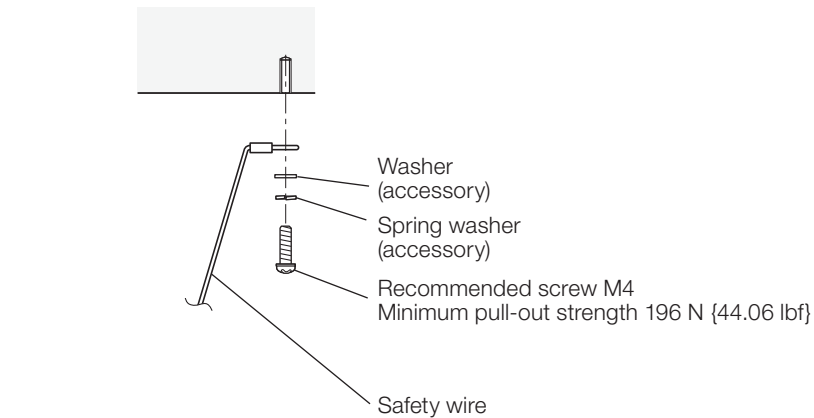
5 Secure the safety wire to the foundation part of the construction or a part with adequate strength (minimum pull-out strength 196 N {44.06 lbf}).

Prepare the fixing screw according to the material of the area where the safety wire is to be fixed. For mounting on ceiling, use the safety wire, washer (accessory) and spring washer (accessory).

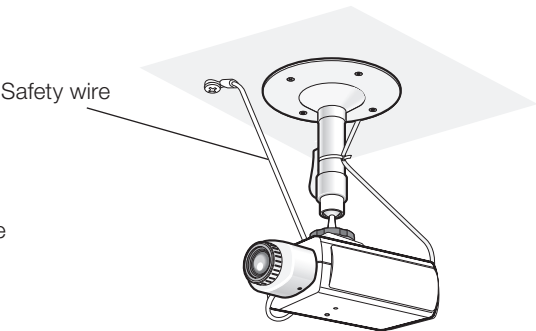
Important:

- The safety wire shall be adjusted to remove slack.
- Be sure to install the safety wire to prevent a fall of the camera resulting in injury or accidents in case the camera comes off.
- To prevent the mounting strength from becoming lower, do not use wooden screws to secure the safety wire.

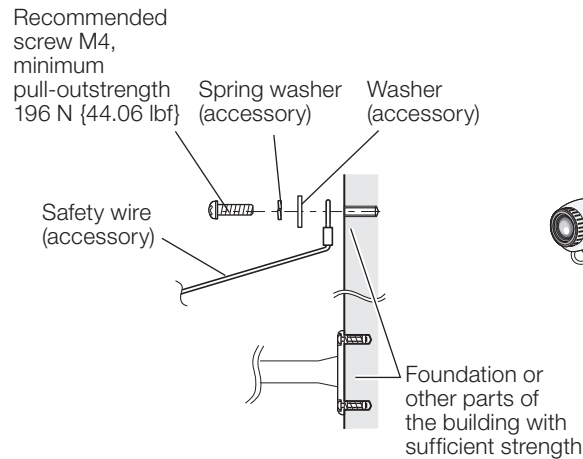
<For mounting on ceiling>



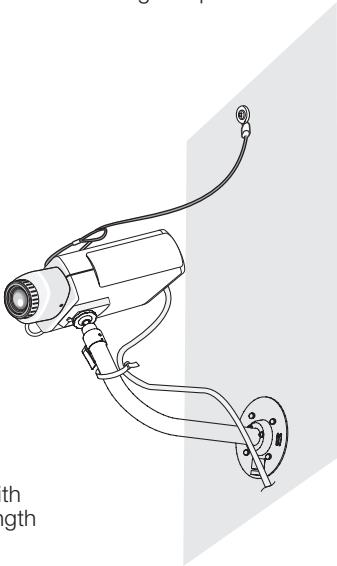
<Mounting sample>



<For mounting on wall>



<Mounting sample>

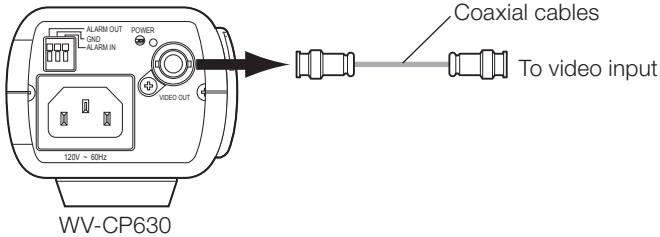


6 The video output cable is connected to this video output connector.

Important:

- Be sure to turn off the power of each device before connection.
- Be sure to secure the coaxial cable connectors.

Connect a coaxial cable to the video output connector.

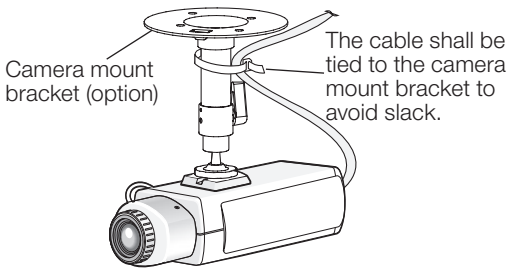


7 Use a cable tie (locally procured) to attach the coaxial cable to the camera mount bracket.

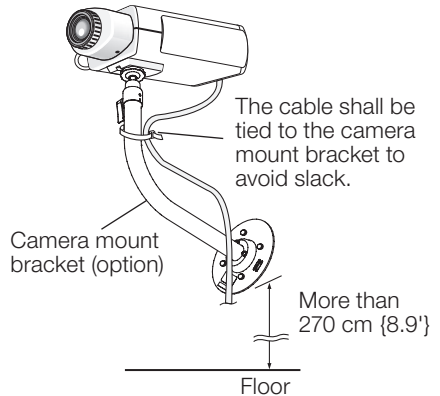
Important:

- The cable tie shall be made of metallic or durable material to be strong enough because the tie plays the role of camera drop prevention measures in case.
- When the camera mount bracket is mounted on a wall, be sure to observe the mounting height described on the illustration above.

<Installation sample on a ceiling>



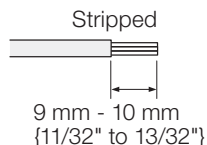
<Installation sample on a wall>



8 Connect external devices to the external I/O terminal.

When connecting an external device, remove 9 mm to 10 mm {11/32 to 13/32 inches} of the outer jacket of the cable and twist the cable core to prevent the short circuit first.

Specification of cable (wire): 22 AWG - 28 AWG, Single core, twisted



Important:

- Check whether the stripped part of the wire is not exposed and is fully inserted.
- Do not connect 2 wires or more directly to a terminal. When it is necessary to connect 2 or more wires, use a splitter.
- Connect an external device with verifying that the ratings are within the specifications above.

Alarm output

Output specification: Open collector output (max. voltage: 16 V DC)

Off: Internally pulled up
2 V to 4 V DC

On: Output voltage 1 V DC or less (max. drive current: 100 mA)

Functions: Alarm output (ALARM)
Color/BW switching output (BW)

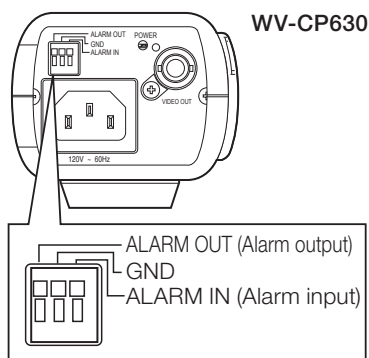
Alarm input

Input specification: No-voltage make contact input (3 to 5 V DC, internally pulled up)

Off: Open or 3 to 5 V DC

On: Make contact with GND (required drive current: 0.2 mA or more)

Functions: Alarm input (ALARM)
VMD enabling input (VMD PERMIT)
Color/BW switching input (BW)
Scene file switching input (SCENE 1)

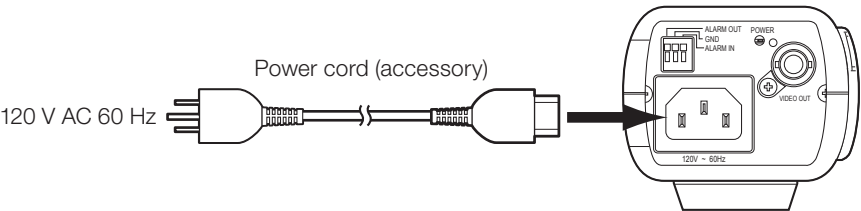


The external terminal is the same between WV-CP630 and WV-CP634.

9 Turn on the power.

WV-CP630

The included power cord is connected to this power connector.
Connect between the power connector on the rear side of the camera and a plug socket with the supplied power cord.



WV-CP634

Important:

- The power supply of 24 V AC/12 V DC shall be insulated against 120 V AC.
- The power supply is automatically selected either 24 V AC or 12 V DC. No setting is required with this camera.

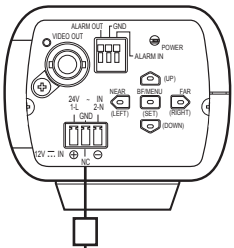
- ① Loosen the screw of the power cord plug (accessory).
- ② Connect the power supply (option) of 24 V AC or 12 V DC to the power cord plug.
Strip the end of the wire by 3 mm to 7 mm {1/8" to 1/4"}, and twist the stripped part of the wire sufficiently to avoid short circuit.

- Specification of cable (wire)
AWG #16 - #28, Single core, twisted
- * Check whether the stripped part of the wire is not exposed and is securely connected.

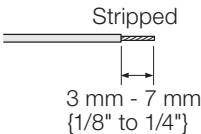
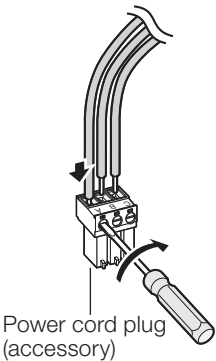
<Ratings>

| | 24 V AC | 12 V DC |
|---|---------|---------|
| A | 2-N | ⊖ (GND) |
| B | GND | NC |
| C | 1-L | ⊕ |

- ③ Tighten the screw of the power cord plug.
 - ④ Connect the power cord plug to the AC/DC power terminal on the rear side of the camera.
- * Make sure that the power cord plug is inserted fully into the AC/DC power supply terminal.



To 24 V AC/12 V DC power supply



10 Adjust the camera angle by loosening the screw of the camera mount bracket while viewing the video monitor.

Be sure to loosen the screw of the camera mount bracket when the camera angle is adjusted. If the camera angle is changed when the screw is tight, excessive force is applied to the camera mount bracket and camera, and accordingly they may be damaged. Be sure to tighten the screw securely after camera angle adjustment.

11 Adjust the focus.

To use the varifocal lens/zoom lens

- Reset the back focus position to the CS mount default position before the back focus adjustment (Press the right and left buttons simultaneously for more than 2 seconds, or move the cursor to "MANUAL-ADJ" of "BACK-FOCUS" in the setup menu and press the right and left buttons simultaneously for more than 2 seconds after pressing the setting button.).
- Be aware that the adjustment method varies with varifocal lens or zoom lens models. For further information, refer to the operating instructions for the lens.
- The adjustment procedure for general varifocal lenses is described as follows: For further information, refer to the operating instructions for the lens to be used.
 - ① Display a subject that exists as far as possible to adjust the back focus (10 m {33'} or more recommended).
 - ② For 8-, or 10-fold magnification lenses, adjust the back focus (F_∞ see below) after setting the zoom to the WIDE end and setting the focus to the FAR end.
For 2-, or 3-fold magnification lenses, adjust the back focus (F_∞ see below) after setting the zoom to the TELE end and setting the focus to the FAR end.
 - ③ Adjust the view angle and focus coarsely by adjusting the zoom and focus of the lens to center a subject in the screen, and then perform the main adjustment of the back focus (F_∞ see below).

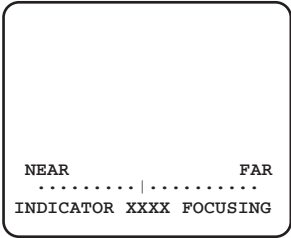
To use a fixed-focal lens

- For a fixed focus lens with focus adjustment, adjust the back focus (F_∞ see below) after setting the focus of the lens to the FAR end.

How to adjust the back focus

Use the operation buttons (F_∞ pages 12 and 13) for this adjustment.
The back focus is also adjustable in the setup menu. Refer to the operating instructions (PDF) for further information.

- ① Press the setting button after adjusting the view angle while viewing the video monitor.
- ② The focus position indicator is displayed in the lower part of the screen, and the back focus is automatically adjusted.



- ③ To perform fine adjustment of the back focus after automatic back focus adjustment, use the right or left button. (No operation for 10 seconds or more closes the setup menu.)

Note:

- When an auto iris lens is used to record a subject, the originally adjusted focus may be slightly off depending on the iris state resulting from the focal depth of the lens. In such a case, open the aperture by darkening the subject as much as possible in the same way of taking picture, and then adjust the focus. Defocus can be prevented.
 - For adjustment according to "How to adjust the back focus", the focus can automatically be adjusted under the optimal follow-up conditions even though the illuminance changes (Note: The adjusted focal point is not necessarily the same as the optimal focal point at a certain illuminance.).
 - The out-of-focus level in the near-infrared light region may be higher than that in the visible light region.
Setting "C/L \leftrightarrow B/W" of "BACK-FOCUS SETUP" to "AUTO" or "PRESET" in the setup menu (see the setup instructions (PDF) allows users to adjust the focus in both the near-infrared light and visible light regions (The variation in illuminance is not followed after focus adjustment.).
 - When a lens that has an extended range for lens focusing is used, adjust the back focus after setting the focus to a position at a short distance from the FAR end. If adjustment is performed in the extended range, appropriate adjustment.
-

Setup menu

Performing each setting item in the setup menu should be completed in advance to use this unit. Perform the settings for each item in accordance with the installation conditions and customer requirements.

List of setup menu

| Setup item | Description |
|---------------------|--|
| CAMERA ID | This item specifies the camera title. The camera title that indicates the camera location and other information about the camera is created with alphanumeric characters and symbol, and then displayed on the screen. |
| CAMERA | Performs the camera operation settings. |
| SCENE 1/ SCENE 2 | Selects a scene file. It is possible to register and save the settings as a scene file in case that it is necessary to change the settings such when shooting at night. |
| ALC/ELC | Selects the method of controlling the quantity of light in accordance with the lens to be used. |
| SHUTTER | Specifies the electronic shutter speed. |
| AGC | Specifies gain adjustment. |
| SENS UP | Specifies electronic sensitivity enhancement. |
| WHITE BAL | Specifies white balance adjustment. |
| DNR | Selects the level of the digital noise reduction function. |
| D&N (IR) | Performs each setting regarding the black-and-white mode such as switching between color and black-and-white images. |
| VMD | Performs settings regarding VMD (Video Motion Detection). |
| SYSTEM | Performs the settings regarding the camera system such as synchronization and privacy zone. |
| SYNC | Specifies the synchronization type. |
| ALARM IN/OUT | Performs the settings of the alarm input/output terminal. |
| PRIVACY ZONE | Hides undesired portions in the camera shooting area. |
| STABILIZER | Decides whether or not to enable the image stabilizer. |
| EL-ZOOM | Switches the electronic zoom on and off. |
| UPSIDE-DOWN | Flips the camera images vertically or horizontally. |
| LDC | Adjusts the Lens distortion correction to convert the image so that it matches the square monitor. |
| BACK-FOCUS | Selects the back focus setting type and performs fine adjustment. |
| SPECIAL | |
| CHROMA GAIN | Adjusts the chroma level (color density). |
| AP GAIN | Adjusts the aperture level. |
| PEDESTAL | Adjusts the pedestal (brightness) level. |
| HUE | Adjusts the chroma phase (hue). |
| DISPLAY | Performs the image display setting. |
| PIX OFF | Corrects image defects such as flaws. |
| COMMUNICATION | Performs the communication setting of the system with a receiver into which this unit is integrated. |
| CAMERA RESET | Restores the settings in the setup menu to the default settings. |
| SER.NO. | Displays the serial number of this unit. |
| LANGUAGE | Selects a language to be used in the setup menu. |

Basic operation

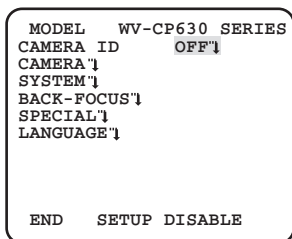
The operations in the setup menu are performed with the operation buttons after calling up the setup menu on the connected video monitor.

The description below explains how to operate the setup menu basically.

Screenshots of WV-CP630 are shown as an example.

Screenshot 1

Hold down the [SET] button for about 2 seconds to call up the top screen of the setup menu.



Step 1

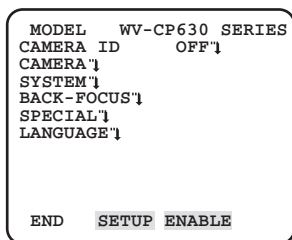
Press the [UP] or [DOWN] button to move the cursor to "END".

Step 2

Press the [RIGHT] button to move the cursor to "SETUP", and press the [SET] button to change the setup mode from "DISABLE" to "ENABLE".

Screenshot 2

The setup mode changes to "ENABLE", and the setup menu becomes ready to be set.

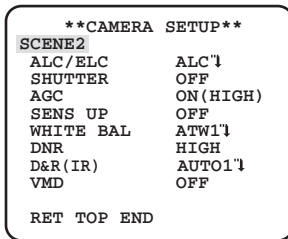


Step 3

Move the cursor to the item to be set, and press the [SET] button.

Screenshot 3

The selected setup screen in the setup menu appears on the screen.



Note:

- If the top screen of the setup menu is called up with the operation buttons while the camera is operated, the setup mode is always "DISABLE" to prevent operation errors.
To perform settings in the setup menu, change the setup mode to "ENABLE".
 - The cursor is a reversely highlighted part.
-

Step 4

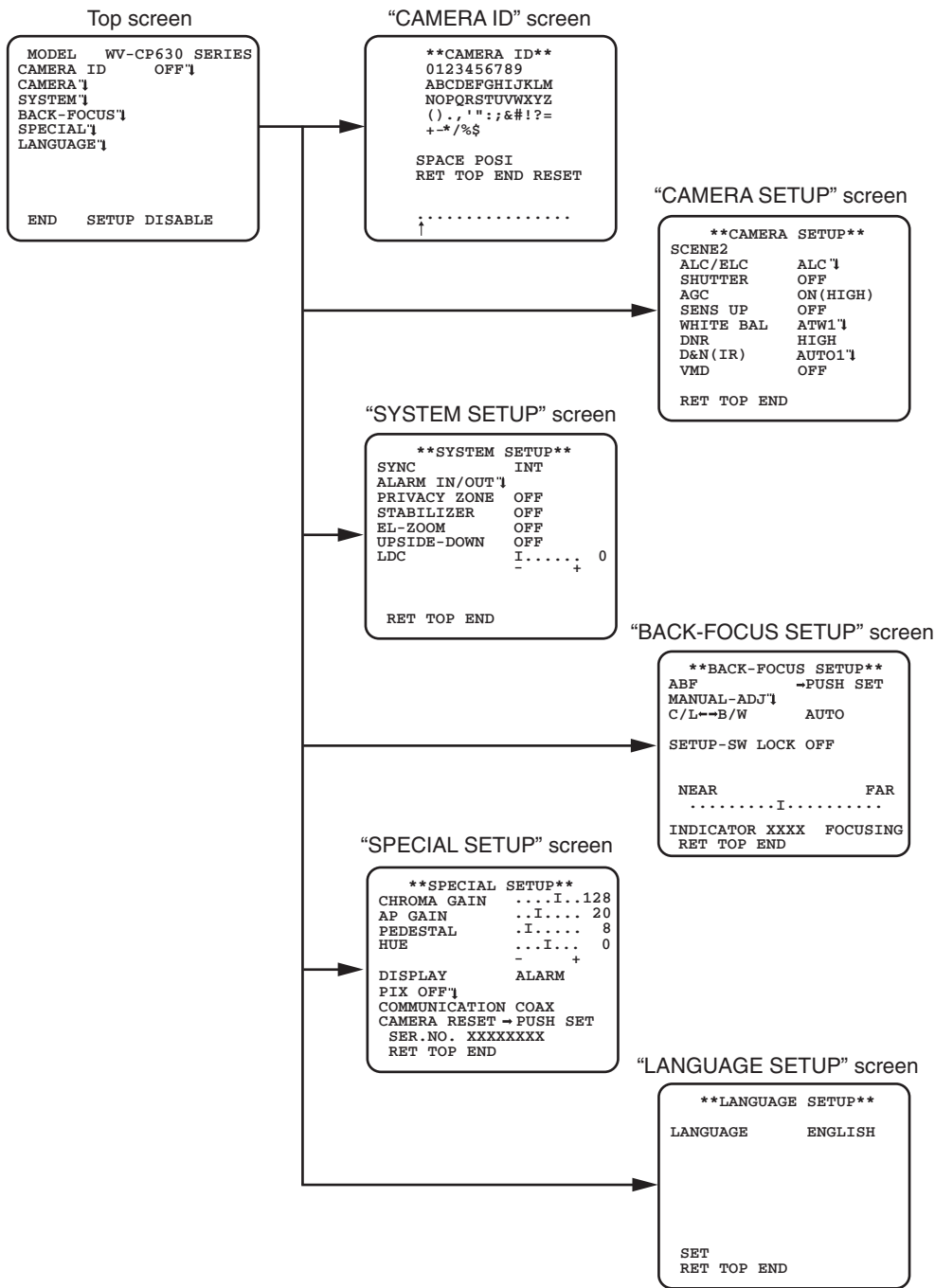
Perform the settings for each item.

- **Selection of setting item:**
Press the [UP] button or [DOWN] button to move the cursor.
- **Change of settings:**
Press the [RIGHT] button or [LEFT] button.
- **Display of advanced setup screen:**
Press the [SET] button when "↕" is attached to the target setting item.
- **Return to previous setup screen:**
Move the cursor to "RET" and press the [SET] button.
- **Return to the top screen:**
Move the cursor to "TOP" and press the [SET] button, to display the top screen of the setup menu.

Step 5

Move the cursor to "END" and press the [SET] button to return to the camera image screen, or wait about 5 minutes and the setup menu will automatically close.

Screen transition diagram



Troubleshooting

Before asking for repairs, confirm the causes with the following table.

Contact your dealer if a problem cannot be solved even after checking and trying the solution in the table or a problem is not described below.

| Symptom | | Cause/solution | Reference page |
|--|---|--|----------------|
| No image displayed | ▶ | <ul style="list-style-type: none"> Are the power cord and coaxial cable connected appropriately? → Check whether the connection is appropriately established. | 20~22 |
| | ▶ | <ul style="list-style-type: none"> Is the monitor brightness appropriately adjusted, or is the contrast appropriately adjusted? → Check whether the monitor settings are appropriate. | — |
| | ▶ | <ul style="list-style-type: none"> Is the lens cap detached? → Check whether the lens cap is removed. | — |
| Blurred image | ▶ | <ul style="list-style-type: none"> Is the lens of the camera soiled with dirt or dust? → Check whether the lens of the camera is clean. | — |
| | ▶ | <ul style="list-style-type: none"> Is the focus adjusted correctly? → Check if the focus is adjusted correctly. | 23~24 |
| Damaged power cord sheathing | ▶ | <ul style="list-style-type: none"> The power cord, power connector, or power plug is damaged. Continuous use of the damaged cord, connector, or plug may cause electric shock or fire. Disconnect the power plug immediately and request repair from your dealer. | — |
| Heated portion of power line consisting of power cord, connector, and power plug during use | ▶ | | |
| The temperature of power cord rises or falls when the power cord is bent or stretched during use | ▶ | | |

Specifications

General

| | WV-CP630 | WV-CP634 |
|-------------------------------|--|---|
| Power source | 120 V AC 60 Hz | 24 V AC 60 Hz, 12 V DC |
| Power consumption | 2.0 W | 24 V AC: 2.3 W, 12 V DC: 190 mA |
| Image sensor | 1/3-type interline transfer CCD | |
| Effective pixels | 976 (H) × 494 (V) | |
| Scanning area | 4.8 mm (H) × 3.6 mm (V) {3/16 inches (H) × 5/32 inches (V)} | |
| Scanning system | 2:1 interlace | |
| Scanning line | 525 lines | |
| Horizontal scanning frequency | 15.734 kHz | |
| Vertical scanning frequency | 59.94 Hz | |
| Synchronization | Internal (INT), multiplexed vertical drive (VD2) | |
| Horizontal resolution | 700 TV lines | |
| Vertical resolution | 350 TV lines | |
| Video output | 1.0 V [p-p] NTSC composite video signal 75 Ω | |
| External I/O | 1 input, 1 output | |
| Signal-to-noise ratio | 52 dB (AGC OFF) | |
| Dynamic range | 52 dB typ. (Super Dynamic 6 ON) | |
| Minimum illumination | 0.08 lx (color mode) | |
| | 0.008 lx (black-and-white mode) | |
| ALC lens drive | DC drive | |
| Lens mount | CS-mount | |
| Ambient operating temperature | -10 °C to +50 °C {14 °F to 122 °F} | |
| Ambient operating humidity | 10 % to 90 % | |
| Dimensions | 75 (W) × 65 (H) × 132.5 (D) mm {2-15/16" (W) × 2-9/16" (H) × 5-7/32" (D)} | 72 (W) × 65 (H) × 103.5 (D) mm {2-27/32" (W) × 2-9/16" (H) × 4-1/16" (D)} |
| Mass | 430 g {0.95 lbs} (Power cord excluded) | 350 g {0.77 lbs} |
| Camera title | English letter, numbers and symbols: up to 16 characters. | |
| Light control mode setting | ALC/ALC+/ELC | |
| Super Dynamic 6 | ON/OFF | |
| Fog compensation | ON/OFF | |
| High light compensation (HLC) | ON (1)/ON (2)/OFF | |
| Shutter speed | OFF (1/60), 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000, 1/120000 (s) | |
| Auto gain control | ON (HIGH, MID, LOW)/OFF | |
| Sensitivity up | OFF/AUTO (×2, ×4, ×6, ×10, ×16, ×32)/FIX (×2, ×4, ×6, ×10, ×16, ×32, ×64, ×128, ×256, ×512) | |
| White balance | ATW1/ATW2/AWC | |
| Digital noise reduction | LOW/HIGH | |
| Day&Night (IR) | AUTO1/AUTO2/ON/OFF | |

| | WV-CP630 | WV-CP634 |
|----------------------------|--|----------|
| Video motion detection | OFF/MOTION DETECTION/SCENE CHANGE | |
| Alarm in/out | In/Out | |
| Number of scene file | 2 | |
| Privacy zone | ON (1)/ON (2)/OFF | |
| Image stabilizer | ON/OFF | |
| Electronic zoom | ON (up to 2x)/OFF | |
| Auto back focus | ABF/MANUAL/switching between color and BW interlocking | |
| Upside-down | ON/OFF | |
| Lens distortion correction | 0 to 255 | |

※ Values of mass and dimensions are approximate. The specification is subject to change without notice.

Standard accessories

- CD-ROM*1 pc.
- Installation Guide (this book)1 pc.
- * The CD-ROM contains the operating instructions (PDF).

- The following parts are used during installation procedures.
- Power cord (only for WV-CP630)1 pc.
 - Power cord plug (only for WV-CP634).....1 pc.
 - Safety wire.....1 pc.
 - Safety wire plate for ceiling1 pc.
 - Safety wire lug for wall1 pc.
 - Wire lug fixing screws
(M2.5 x 8 mm {5/16 inches}).....2 pcs. (of them, 1 for spare)
 - Washer.....1 pc.
 - Spring washer1 pc.

i-PRO Americas Inc.

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