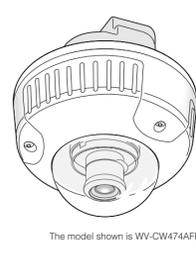


Panasonic

Colour CCTV Cameras Operating Instructions

Model Nos. **WV-CW474AFE**
WV-CW470AS



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

N0304-0 3TR002452AAA Printed in Japan

Caution: Before attempting to connect or operate this product, please read the marking on the top.

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.

Vi erklærer under our sole responsibility, at dette produkt, som denne deklaration omhandler, er i overensstemmelse med følgende normer eller andre normative dokumenter i følge bestemmelserne i direktivene 73/23/EEC og 89/336/EEC.

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CAUTION
RISK OF ELECTRIC SHOCK DO NOT OPEN

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

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

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

WARNING: All work related to the installation of this product should be made by qualified service personnel or system installers.

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.

PREFACE

Panasonic's WV-CW474AF/CW470AS series colour digital camera introduces a new level of high picture quality and high resolution through the use of a 1/3-inch interline transfer CCD image sensor having 752 horizontal pixels (picture elements), and digital signal processing LSIs. This model offers cutting-edge technology for advanced video surveillance.

PRECAUTIONS

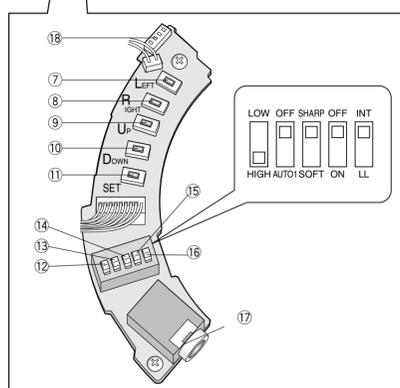
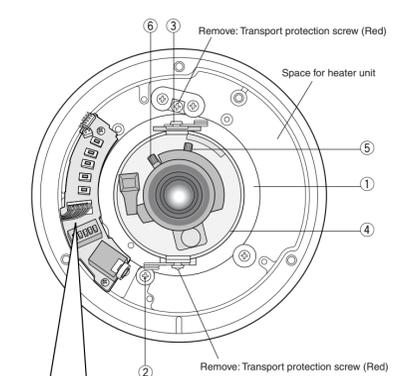
- Do not attempt to disassemble the camera.**
To prevent electric shock, do not remove screws or covers. There are no user-serviceable parts inside. Ask qualified service personnel for servicing.
- Handle the camera with care.**
Do not abuse the camera. Avoid striking, shaking, etc. The camera could be damaged by improper handling or storage.
- The installation should be made by qualified service personnel or system installers.**
- Do not use strong or abrasive detergents when cleaning the camera body.**
Use a dry cloth to clean the camera when dirty. When the dirt is hard to remove, use a mild detergent and wipe gently. Then wipe off the remaining detergent with a dry cloth.
- Clean the lens with care.**
Do not clean the lens with strong or abrasive detergents. Use lens tissue or a cotton tipped applicator and ethanol.

- Never face the camera towards the sun.**
Do not aim the camera at bright objects. Whether the camera is in use or not, never aim it at the sun or other extremely bright objects. Otherwise, blooming or smear may be caused.
- Do not operate the camera beyond the specified temperature, humidity or power source ratings.**
Use the camera at temperatures within -10°C to +50°C (-14°F - 122°F), and humidity below 90%. The input power source for WV-CW474AFE is 24 V AC 50 Hz or 12 V DC and for WV-CW470AS is 220 V - 240 V AC 50 Hz.
- Turn the circuit breaker off which supplies the camera with the power when abnormal conditions are encountered.**

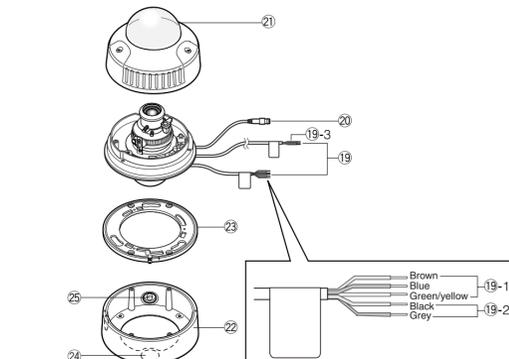
FEATURES

- The following functions are built in.
 - Auto Light Control (ALC)
 - The SUPER-D II function eliminates interference by strong background lighting which makes the camera picture dark, such as a spotlight. Dynamic range of 48 dB (Typ)
 - Internal, Line-Locked, Multiplexed Vertical Drive (VD2) Sync
 - Auto/Manual White Balance Function
 - Electronic Shutter Function
- Signal-to-noise ratio of 50 dB (Equivalent to AGC Off)
- Minimum illumination of 2.0 lx (0.20 footcandle) (WIDE) (Colour mode)
Minimum illumination of 0.2 lx (0.02 footcandle) (WIDE) (Black-and-white mode)
Minimum illumination of 0.8 lx (0.08 footcandle) (WIDE) with the WV-CW25E optional dome cover (Colour mode)
Minimum illumination of 0.1 lx (0.01 footcandle) (WIDE) with the WV-CW25E optional dome cover (Black-and-white)
- 480 lines of horizontal resolution (Colour normal mode)
510 lines of horizontal resolution (Colour High Resolution mode)
570 lines of horizontal resolution (Black-and-white mode)
- High quality picture:
 - 2H type vertical enhancer for greater picture sharpness
 - Chroma averaging circuit for better colour signal-to-noise ratio
 - Minimum of aliasing on fine objects
 - Expanded dynamic range by use of knee circuit
 - Highlight aperture correction for greater picture detail of bright objects
- Selectable electronic sensitivity enhancing modes including AUTO, MANUAL and OFF
- Built-in Digital Motion Detector
- Auto black-and-white mode enables the camera to switch between colour and black-and-white picture in response to Light input.
- Electronic zoom function magnifies a scene 2-fold and changes the angle of view.

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS



- Panning table**
Adjusts the panning angle of the camera.
- Pan lock screw**
Fixes the panning position.
- Tilting lock screw**
Fixes the tilting position.
- AZIMUTH (Angle adjuster)**
Shoots in a straight-angle field of view when aiming at an object in a slanting direction even if the tilt angle has been set.
- Zoom lock lever**
Fixes the zoom position.
- Focus lock lever**
Fixes the focus position.
- LEFT button (L)**
Moves the cursor to the left, selects the mode and adjusts some levels.
- RIGHT button (R)**
Moves the cursor to the right, selects the mode and adjusts some levels.
- UP button (U)**
Moves the cursor upward and selects items in the CAM SET UP menu.
- DOWN button (D)**
Moves the cursor downward and selects items in the CAM SET UP menu.
- SET button (S)**
Activates an item selected in the CAM SET UP menu.
- BW AUTO1 LEVEL switch (SW5)**
Selects the illuminance level in LOW or HIGH mode for B/W. The factory default setting is HIGH.
- BW switch (SW4)**
Switches to AUTO1 between colour and black-and-white picture in response to light input. The factory default setting is OFF.
- AP gain switch (SW3)**
Selects the aperture gain level to SHARP or SOFT. The factory default setting is SHARP.
- UPSIDE DOWN switch (SW2)**
Turns the picture upside down by selecting ON. The factory default setting is OFF.
- Sync switch (SW1)**
Switches internal sync (INT) mode or line-lock (LL) mode. The factory default setting is INT.
LL: Line-lock mode is driven by 24 V AC or 220 V - 240 V AC.
- Motor output Jack (3.5 mm in Diam. mini jack)**
Connects the LCD monitor and such devices with 3.5 mm in diam. 2-pole L-type plug for checking images.
- Optional heater connector DC out**
When an optional heater unit is installed in the camera, the harness exiting from the unit will be connected to this.



19-1 Camera power cable for WV-CW474AFE (24 V AC 50 Hz or 12 V DC)

Caution: Connect to 12 V DC (10.5 - 16 V) or 24 V AC (19.5 V-28 V) class 2 power supply only. Make sure to connect the grounding lead to the GND terminal when the power is supplied from a 24 V AC power source.

19-2 Power cable for heater unit WV-CW3HE (24 V AC 50 Hz) (applicable only to WV-CW474AFE)

Caution: Connect to 24 V AC (19.5 V-28 V) class 2 power supply only.

19-3 Camera power cable for WV-CW470AS (220 V - 240 V AC 50 Hz)

Caution: Connect to 220 V - 240 V AC 50 Hz. The optional heater unit operates on 24 V AC that has been supplied through the camera.

20 Video output cable with BNC connector
Connects with the video connector of the monitor.

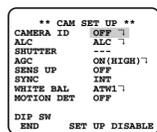
- Dome cover**
- Camera mounting bracket**
The WV-CW470AS is supplied with a mounting bracket for ceiling installation.
- Camera attachment**
- Cable access hole**
- Sideway cable exit**

SETUP

1. CAMERA SETUP MENU

This camera utilizes an on-screen user setup menu. Check the current settings on the menu.

Opening the Setup Menu
Press and hold down (S) for 2 seconds or more.



The CAM SET UP menu appears on the monitor as shown at right. Check the current settings on the menu.

Refer to the following sections for a detailed description of menu items. If you decide not to make any changes after checking the current settings, move the cursor to END in the bottom line, and press (S) to close the setup menu.

Note: If no button is pressed for 6 minutes while a setup menu is being displayed on the monitor screen, it is automatically closed and the mode returns to the normal camera picture.

2. SETUP OPERATION

This camera utilizes an on-screen user setup menu (CAM SET UP). To set items on the CAM SET UP menu, use the following buttons on the SW board.

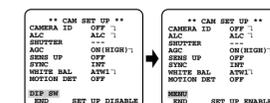
- Left Button (L):** Moves the cursor to the left. Use this button to select or adjust the parameters of the selected item. The parameter changes each time this button is pressed.
- Right Button (R):** Moves the cursor to the right. Use this button to select or adjust the parameters of the selected item. The parameter changes each time this button is pressed.
- Up Button (U):** Moves the cursor upwards. Use this button to select an item or adjust the parameters.
- Down Button (D):** Moves the cursor downwards. Use this button to select an item or adjust the parameters.
- Set Button (S):** Executes selections and displays a submenu for an item with the \rightarrow mark.

- To reset the parameter to the factory default setting, move the cursor to the parameter to be reset and press (L) and (R) simultaneously.
- To return to the previous menu or page, move the cursor to RET and press (S).
- To close the setup menu, move the cursor to END and press (S).

All Reset Operation
All Reset allows you to reset all setup menu items to the factory default settings if you are unsure about the correct settings. Proceed as follows:
(1) Make sure that the CAM SET UP menu is not displayed (a camera picture is displayed).
(2) While pressing both (L) and (R), press (S) for a few seconds. The message ALL RESET momentarily appears on the monitor screen. This resets all adjustments and parameters to the factory default settings except for the PIX OFF setting.

Editing the CAM SET UP Menu
Important Notice: When SET UP DISABLE appears in the bottom line of the CAM SET UP menu, you cannot change the currently active settings. This is to prevent accidental changing of the settings.

To edit the CAM SET UP menu (change settings), press (U) and (D) or (L) and (R) to move the cursor to SET UP DISABLE in the bottom line. Press (S). SETUP DISABLE changes to SETUP ENABLE. Move the cursor to DIP SW. Press (S). DIP SW changes to MENU. Then move the cursor to the item(s) you want to change.



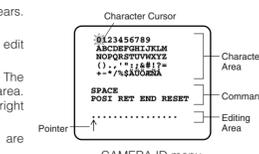
Notes:
• When DIP SW is selected for CAM SET UP menu, five modes can be set with the DIP switches.
• To operate the camera functions with the system controller, select MENU in the CAM SET UP menu.

Important Notice: When the setup menu is closed after changing the parameters in the menu, the new values are stored in the EEPROM (Electrically Erasable and Programmable Read-Only Memory). These values remain valid until new values are stored, even if the power of the camera is off.

SETTING PROCEDURES

1. Camera Identification (CAMERA ID) Setting
You can use the camera identification (CAMERA ID) to assign a name to the camera. The camera ID consists of up to 16 alphanumeric characters. The camera ID display can be switched on or off on the monitor screen.

To edit the CAMERA ID
1. Move the cursor to CAMERA ID. The factory default setting is OFF.
2. Press (S). The CAMERA ID menu appears. The cursor on the letter "0" is highlighted.
3. Move the cursor to the character you want to edit by pressing (L) / (R) / (U) / (D).
4. After selecting the character, press (S). The selected character appears in the editing area. (The pointer in the editing area moves to the right automatically at this moment.)
5. Repeat the steps above until all characters are edited.

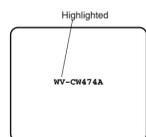


To enter a blank space in the CAMERA ID
Move the cursor to SPACE and press (S).

To replace a specific character in the CAMERA ID
1. Move the cursor to the editing area by pressing (D).
2. Move the pointer to the character to be replaced by pressing (L) or (R). Then move the cursor to the character area and select a new character.
3. Press (S) to determine the CAMERA ID.

To erase all characters in the editing area
Move the cursor to RESET and press (S). All characters in the editing area disappear.

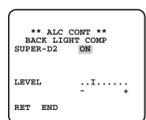
To determine the display position of the CAMERA ID
1. Move the cursor to POSI, and press (S). The display at right appears and the CAMERA ID is highlighted.
2. Move the CAMERA ID to the desired position by pressing (L) / (R) / (U) / (D).
3. Press (S) to fix the position of the CAMERA ID. The mode returns to the previous CAMERA ID menu.



Notes:
• The CAMERA ID stops at the edges of the monitor screen.
• The CAMERA ID moves faster if any of (L) / (R) / (U) / (D) is kept pressed for a second or more.

2. Light Control Setting (ALC)
2-1. ALC Mode with SUPER-D2 ON Super Dynamic2 Function (SUPER-D2)
The important object in a scene is usually placed in the center of the monitor screen. In the SUPER-D2 mode, more photometric weight is given to the center of the screen (where the important object is located) than to the edge of the screen (where a bright backlight would most likely be located). The SUPER-D2 function eliminates interference by strong background lighting which makes the camera picture dark, such as a spotlight.

- Move the cursor to ALC and press (S). The ALC CONT menu appears.
- Move the cursor to SUPER-D2 and select ON.
- If you want to adjust the video output level, move the "I" cursor for LEVEL. Adjust to the desired level by pressing (L) or (R).



(To be continued reverse page)

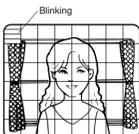
SETTING PROCEDURES

2-2. ALC Mode with SUPER-D2 OFF

1. Move the cursor to SUPER-D2 and select OFF. The MASK SET appears on the menu.



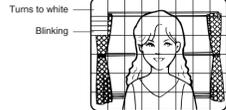
2. Move the cursor to MASK SET and press (S). The 48 mask areas appear on the monitor screen. The cursor is blinking in the upper left corner of the screen.



3. Move the cursor to the area where backlight is bright and press (S) to mask that area. The mask turns to white. (When the cursor is moved on an area that has already been masked, the mask and cursor start blinking.)



4. Repeat step 3 to mask the desired area. To cancel masking, move the cursor to that area and press (S).
5. After masking is completed, press (S) for 2 seconds or more. The ALC CONT menu appears.
6. If you want to change the video output level (picture contrast), move the "I" cursor for LEVEL and adjust the level.



Note: If ON is selected for SUPER-D2, a shadow (black line) may appear at the boundary between the bright and the dim scene. This is a natural phenomenon and does not indicate trouble.

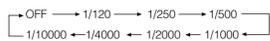
3. Shutter Speed Setting (SHUTTER)

Note: To select electronic shutter speed, select OFF for SUPER-D2 in the ALC CONT menu.

Move the cursor to SHUTTER and select the electronic shutter speed.

The preset values for SHUTTER (electronic shutter speed) change by pressing (L) or (R) as follows:

The factory default setting is ---. **Note:** When SUPER D2 is set to ON, a dotted line appears for the shutter speed, and you cannot select it.



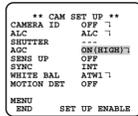
4. Gain Control Setting

You can set the gain (brightness level portion of an image) to automatic level adjustment.

Move the cursor to AGC and select automatic level adjustment [AGC ON (LOW, MID, HIGH)/OFF (fixed level)].

• Gain Control [AGC ON (LOW/MID/HIGH)/OFF]

Move the cursor to AGC and select ON (LOW), ON (MID), ON (HIGH) or OFF. The factory default setting is ON (HIGH).

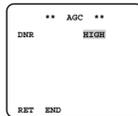


• Digital Noise Reduction (DNR)

DNR may be used to improve quality under low light conditions. There are 2 levels of DNR, which may be selected depending on local site conditions.

You may need to try different settings to find the most suitable conditions for your application.

Move the cursor to DNR and select LOW or HIGH.



LOW: DNR level is low.
HIGH: DNR level is high.
The factory default setting is HIGH.

5. Electronic Sensitivity Enhancement (SENS UP)

There are two modes for SENS UP.

AUTO: If you select X10 AUTO, for example, the sensitivity is automatically raised to X10 max.

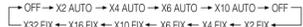
When AUTO is selected, AGC is automatically set to ON.

FIX: If you select X32 FIX, for example, the sensitivity is raised to just X32.

The factory default setting is OFF.

Move the cursor to SENS UP and select the parameter for electronic sensitivity enhancement.

The preset values for SENS UP (electronic sensitivity enhancement) change by pressing (L) or (R) as shown right:



Notes:

- When ON is selected for SUPER-D2 in the ALC CONT menu, FIX is not available for this item.
- When you select AUTO for SENS UP and ON for SUPER-D2, the SENS UP function has priority so that the SUPER-D2 function is not activated automatically.
- While the SENS UP function is selected, noise, spots or a whitish phenomenon may appear in the picture when the sensitivity of the camera is increased. This is a normal phenomenon.

6. Synchronization Setting (SYNC)

You can select internal sync (INT) mode, line-lock (LL) mode or the VD2 signal (multiplexed vertical drive signal) mode.

Important Notices:

1. The priority for the sync modes is as follows:
(1) Multiplexed Vertical Drive (VD2) (Highest priority)
(2) Line-lock (LL)
(3) Internal Sync (INT) (Lowest priority)
2. The line-lock mode has a submenu for line-lock vertical phase adjustment. If the camera installation is relocated, check the vertical phase adjustment again since the AC line phase may be different.

6-1. Line-lock Sync Mode (LL)

1. Move the cursor to SYNC and select LL.

Note: The settings in this menu can be made only when the multiplexed vertical drive signal (VD2) is not supplied to the camera.

2. After confirming that the cursor is on LL, press (S). The vertical phase adjustment menu appears on the monitor screen.
3. Supply the video output signal of the camera to be adjusted and the reference camera video output signal to a dual-trace oscilloscope.

4. Set the oscilloscope to the vertical rate and expand the vertical sync portion on the oscilloscope.

5. Move the cursor to COARSE. The cursor is highlighted.

6. Press (L) or (R) to match the vertical phase for both video output signals as closely as possible. (COARSE adjustment can be incremented in 16 steps by 22.5 degrees by pressing (L) or (R).)

7. Move the cursor to FINE.

8. Press (L) or (R) to match the vertical phase for both video output signals as closely as possible.

(FINE adjustment can be made by up to 22.5 degrees by pressing (L) or (R).)

Notes:

- When the "I" cursor reaches the "+" end, it jumps back to "-". At the same time, COARSE is incremented by one step to enable a continuous adjustment. The reverse takes place when the "I" cursor reaches the "-" end.
- When (L) or (R) is kept pressed for a second or more, the "I" cursor moves faster.
- To reset COARSE and FINE to the values preset at the factory, press (L) and (R) simultaneously. COARSE and FINE adjustments are preset at the factory to zero-crossing of the AC line phase.
- If the AC line contains noise (spike noise, etc.), the stability of the vertical phase of the camera video output signal may be disturbed.
- This mode functions only when unit operates on AC power.

7. White Balance Setting (WHITE BAL)

7-1. Auto-Tracing White Balance Mode (ATW)

You can select one of three modes for white balance adjustment as follows:

The factory default setting is ATW1.

• ATW1 (Auto-Tracing White Balance 1)

Move the cursor to WHITE BAL and select ATW1.

In this mode, the colour temperature is monitored continuously and thereby white balance is automatically set. The colour temperature range for the proper white balance is approximately 2 600 - 6 000K. Proper white balance may not be obtained under the following conditions:

1. The colour temperature is out of the 2 600 - 6 000K range.
 2. When the scene contains mostly high colour temperature objects, such as a blue sky or sunset.
 3. When the scene is dim.
- In these cases, select the AWC mode.

• ATW2 (Auto-Tracing White Balance 2)

Auto-tracing white balance in sodium light mode (ATW2)

When that you select ATW2 for sodium light, white balance is set automatically (no operation needed).

Note: ATW1 and ATW2 do not appear for WHITE BAL on the system controller setup menu.

• Automatic White Balance Control Mode (AWC)

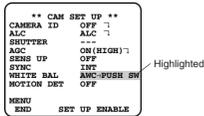
In this mode, accurate white balance is obtained within a colour temperature range of approximately 2 300-10 000K.

1. Move the cursor to WHITE BAL and select AWC → PUSH SW.

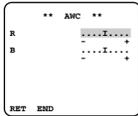
2. Press (S) to start the white balance setup. The PUSH SW is highlighted to indicate that the white balance is being set.

3. When the white balance setting is completed, the PUSH SW returns to normal display.

Note: If white balance is not set, the PUSH SW is being highlighted.



4. When you want to adjust the white balance manually, press (R) to select AWC and press (S). The AWC menu appears on the monitor screen. (When ATW is selected, pressing (S) displays the ATW menu.)



Manual Fine Adjustment for AWC/ATW

You can set the white balance items manually.

1. Move the cursor to R.
2. Press (L) or (R) to obtain the optimum amount of red gain.
3. Move the cursor to B.
4. Press (L) or (R) to obtain the optimum amount of blue gain.

8. Motion Detector Setting (MOTION DET)

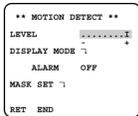
The motion detector detects the moving objects in the scene by monitoring changes in brightness level. You can select the level of sensitivity for motion detection.

When this camera is connected to a compatible intelligent CCTV system, the camera transmits an alarm signal by multiplexing it with the video signal.

1. Move the cursor to MOTION DET and select ON.

The factory default setting is OFF.

2. Press (S). The MOTION DETECT menu appears on the monitor screen.



3. Move the cursor to MASK SET and press (S). MASK SET lets you set 48 mask areas. To set MASK SET, proceed as described in steps 2 to 4 of "ALC mode with SUPER-D2 OFF".

4. Move the cursor to ALARM and select ON or OFF to set the alarm for DISPLAY MODE.

5. Move the cursor to DISPLAY MODE and press (S) to see the current setting. The masks that detect the brightness changes start blinking.

6. To raise detection sensitivity, press (S) to return to the MOTION DETECT menu.

7. To obtain the optimum detection level, move the "I" cursor to adjust the level.

8. Repeat the procedures above to obtain a satisfactory setting.

Notes:

- Masking or adjusting the detection level is needed to prevent malfunction under the following conditions:
 - When shooting an object under flickering fluorescent light.
 - When leaves or curtains etc. are swayed by the wind.
 - When the object is lighted by lighting equipment that constantly turns on and off.
 - It takes about 0.2 seconds for the alarm signal to reach the alarm terminal of the VTR after the camera detects the object.
- Because the alarm signal is multiplexed on the video signal, it may be mistakenly interpreted by other video equipment as a time code signal.
- Therefore, when the camera is not used in a Panasonic Intelligent CCTV System, select OFF to prevent the above from occurring.
- The camera will deactivate the detector for a few minutes after the power of the camera is turned on or the BW setting in the Special Menu is set to something other than OFF.
- The motion detector function is not designed specifically for prevention of theft, fire, etc.

9. Special Menu

This menu lets you adjust and set up the video signal of the camera to meet your requirements.

Move the cursor to END in the bottom line of the CAM SET UP menu and press (L) and (R) simultaneously (holding down (L) and (R) for 2 seconds or more). The SPECIAL menu appears on the monitor screen.



9-1. Camera Picture Upside Down Positioning (UP SIDE DOWN)

1. Move the cursor to UP SIDE DOWN.
2. Select ON when you want to turn the picture upside down.

9-2. Chroma Level Setting (CHROMA GAIN)

1. Move the cursor to CHROMA GAIN.
2. While observing the vectorscope or colour video monitor, move the "I" cursor to adjust the chroma level.

9-3. Aperture Gain Setting (AP SHARP/AP SOFT)

1. Move the cursor to AP SHARP.
2. To select AP SOFT, press (S).
3. While observing the waveform monitor or colour video monitor, move the "I" cursor to adjust the aperture gain level.

9-4. Pedestal Level Setting (PEDESTAL)

1. Move the cursor to PEDESTAL.
2. While observing the waveform monitor or colour video monitor, move the "I" cursor to adjust the pedestal level (black level).

9-5. Resolution Setting

1. Move the cursor to RESOLUTION.
2. For high resolution display, select HIGH. **NORMAL:** Sets the horizontal resolution to more than 480 lines. **HIGH:** Sets the horizontal resolution to more than 510 lines. **Note:** After selecting HIGH, noise may increase when the SENS UP function is activated under low illumination.

9-6. Electronic Zoom (EL-ZOOM)

1. Move the cursor to EL-ZOOM.
2. Select ON or OFF using (L) or (R). The factory default setting is OFF. **ON:** x2 electronic zoom is available. **OFF:** The electronic zoom function is disabled.
3. While the cursor is on EL-ZOOM, press (S). The EL-ZOOM setting menu appears.
4. Move the cursor to PUSH SET for ZOOM and press (S) to display the ZOOM setting menu.
5. Press (U) or (D) to zoom in or out the image.
6. Move the cursor to PUSH SET for PAN/TILT and press (S). The PAN/TILT setting menu appears.
7. Press (U) or (D) (L) or (R) to change the angular field of view.
8. To return to the EL-ZOOM setting menu, press (S).



9-7. Black and White Mode (BW MODE)

Move the cursor to BW MODE and press (S). The BW MODE menu appears. You can set up the BW mode on this menu.

BW Setting

1. Move the cursor to BW and select AUTO1, 2, ON or OFF using (L) or (R). Factory default setting: OFF.

AUTO1: The camera selects black and white mode if the picture is dark, or colour mode if the picture is bright enough.

AUTO2: Applying AUTO1 may cause malfunction when using a source of near-infrared light at night because the illuminance changes significantly when switching between the colour picture and a black-and-white picture. This can be prevented by using the AUTO2 setting to detect the type of light source.

- **Notes:**
 - Because the type of light source is detected based on information received from the CCD image pickup element, an object that is constantly moving or has the same colour as its background may not always be properly recognized. When choosing the AUTO2 mode, make sure to use a light source having a wavelength of 800 nm or more.
 - The object may be out of focus when using a source of near-infrared light than using the visible light.

ON: The black and white mode is selected.

OFF: The colour mode is selected.

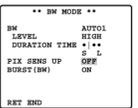
2. If you have selected AUTO1, 2 the LEVEL and the DURATION TIME appear on the menu.
3. Select HIGH or LOW for the threshold level at which the camera automatically switches to BW or colour mode. Default: HIGH. The illuminance shown below is based on the assumption that the camera is used in an area lit by halogen lamps, and that AGC on the menu is set to MID. **Note:** When near-infrared lamps are used, the image may be displayed out of focus and mode switching may not perform automatically.

4. Move the I cursor to set DURATION TIME. Default: 30 seconds. The camera determines whether to switch the mode when the time set for holding a picture motionless on the screen has elapsed.

Available duration times: (S) 10 s ↔ 30 s ↔ 60 s ↔ 300 s (L)

9-8. PIX SENS UP Setting

Move the cursor to PIX SENS UP and select OFF or X2 AUTO.



X2 AUTO: Sensitivity will be automatically doubled at the maximum in the black and white mode.

OFF: Sensitivity will not be enhanced.

Notes:

- "X2 AUTO" is not available when AGC is set to OFF. "X2 AUTO" is automatically set to OFF.
- When the picture becomes stable, the luminance may change for a moment.

9-9. BURST (BW) Setting

Move the cursor to BURST (BW) and select ON or OFF. Default: ON.

ON: The burst signal is supplied along with the black and white composite video.

OFF: The burst signal is not output.

- **Notes:**
 - Selecting ON is recommended for usual cases including when synchronizing the camera to peripheral components.
 - When storing images to a recorder, try both ON and OFF, then select either one suitable for the recorder. Synchronization characteristics depend on the recorder.

To reset to the factory settings (CAMERA RESET)

1. Move the cursor to CAMERA RESET. The PUSH SW is highlighted.
2. While holding down (L) and (R), press (S) for 2 seconds or more. The camera is reset to the factory settings except for PIX OFF setting.

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 scanning area of 1/3" pick-up tube)
Scanning: 625 lines/50 fields/25 frames
Horizontal: 15.625 kHz
Vertical: 50.00 Hz
Synchronization: Internal, Line-locked or Multiplexed vertical drive (VD2) Sync selectable
Video Output: 1.0 Vp-P PAL composite 75 Ω BNC connector
Horizontal Resolution: 480 lines (C/L Normal), 510 line (C/L HIGH), 570 lines (B/W)
Signal-to-Noise Ratio: 50 dB (Equivalent to AGC OFF, weight On, AP On)
Dynamic Range: 48 dB (Typ)
Minimum Illumination: 2.0 lx (0.20 footcandle) (WIDE) (C/L), 0.2 lx (0.02 footcandle) (WIDE) (B/W)
When the optional WV-CW2C dome cover is installed:
0.8 lx (0.08 footcandle) (C/L), 0.1 lx (0.01 footcandle) (WIDE) (B/W)

Gain Control: ON (HIGH, MID, LOW)/OFF selectable
White Balance: ATW1, ATW2 or AWC (SET UP MENU) selectable
Aperture: Set Variable (SET UP MENU)
Super Dynamic II: ON or OFF (SET UP MENU) selectable
Electronic Shutter Speed: OFF, 1/120, 1/250, 1/500, 1/1 000, 1/2 000, 1/4 000, 1/10 000 s selectable

Lens: 3.8 mm - 8 mm
Focal length: 1:1.4 (Wide), 1:1.8 (Tele)
Maximum aperture ratio: Horizontal: 35.6° - 73.6°
Angular field of view: Vertical: 26.6° - 53.4°
1.2 m - ∞ (3.9 ft - ∞)
Focusing range: -10°C +50°C (-14°F - 122°F)
Ambient Operating Temperature: Less than 90 %
Ambient Operating Humidity: Power Source and Power Consumption:

WV-CW474AFE: 24 V AC 50 Hz 3.8 W (camera), 12 V DC 367 mA (camera)
WV-CW470AS: 12.1 W (optional heater unit) 220 V - 240 V AC 50 Hz 5.2 W (camera)

Dimensions: WV-CW474AFE: 160.5 mm (H) x 154 mm (D) 6-5/16" (H) x 6-1/16" (D)
WV-CW470AS: 161 mm (H) x 160 mm (D) 6-3/8" (H) x 6-5/16" (D)
Weights: WV-CW474AF: 1.45 kg (3.2 lbs.)
WV-CW470AS: 2.15 kg (4.7 lbs.)

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

STANDARD ACCESSORIES

Operating Instructions (this document) 1 pc.
Instructions 1 pc.
The following are for installation.
Tamperproof screw bit 1 pc.
Camera mounting bracket (supplied only to WV-CW470AS) 1 pc.
Camera fixing screw (supplied only to WV-CW470AS) 4 pcs.

OPTIONAL ACCESSORIES

Heater unit WV-CW3HE
Smoke dome cover WV-CW2SE

Matsushita Electric Industrial Co., Ltd.

Osaka, Japan

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