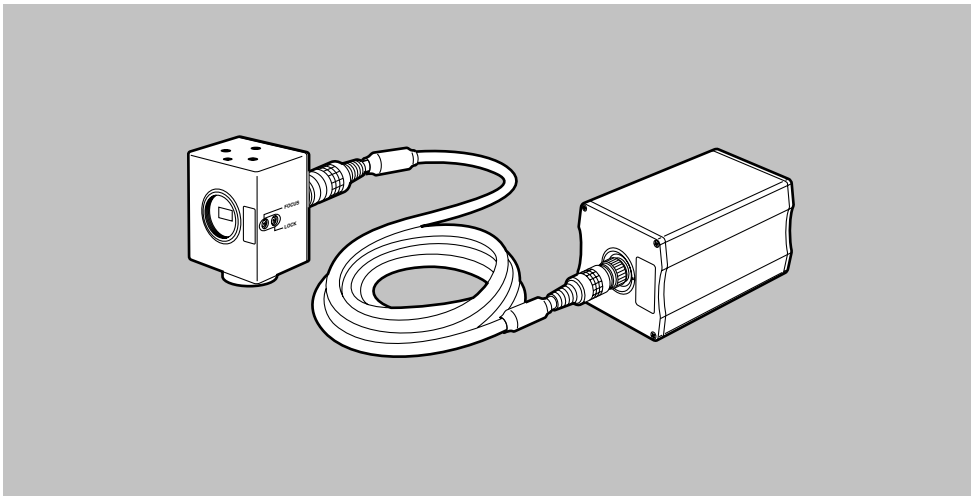
SECTION 1

OPERATING INSTRUCTIONS

Operating Instructions

1/3-inch Camera With Separate Head

Model AW-E300SP



Panasonic®

Before attempting to connect, operate or adjust this product, please read these instructions completely.

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 TO 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 (service) instructions in the literature accompanying the appliance.

WARNING:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

FCC Note:
This device complies with Part 15 of the FCC Rules. To assure continued compliance follow the attached installation instructions and do not make any unauthorized modifications.

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.

▭ indicates safety information.

Contents

Introduction

- Featuring digital video signal processing, this 1/3-inch 3-CCD system color camera with its separate head achieves a high picture quality and high reliability as well as many and varied functions despite its compact size and light weight.
- The head is separate which means that it can easily be mounted on a microscope (C mount), for instance.
- Using a menu screen format, the camera's shooting conditions and functions can easily be set and changed.
- The camera can be connected to a peripheral unit such as an RCB or RCU for expanding the capabilities of the system to suit the intended applications.
- A wide range of applications can be supported by installing optional cards.

Features

High picture quality, high reliability, many and varied functions, a compact size and light weight achieved by incorporating digital video signal processing

- Resolution: 800 lines (high band DTL ON), S/N ratio: 62 dB (DNR ON)
- Minimum illumination: 1.5 lux (f/1.4 'night eye' mode)

Many and varied functions despite compact size

- Setting of camera parameters using menu screens enabled
- Auto functions such as ATW, ELC and AGC incorporated
- CCD readout (field, frame) switching supported
  The vertical resolution can be improved by switching to the frame mode, and this is useful for capturing still images and other kinds of image processing.
- Synchro scan function provided to reduce horizontal line noise when computer screens are shot
- Functions for controlling camera by computer incorporated
- Extension of cable (standard length of 3 meters) between head unit and main unit up to 10 meters possible

Faithful image reproduction assured by many compensation circuits

- Even areas with dark colors reproduced clearly by chroma detail enhancement
- Natural detail enhancement enabled even for dark areas by dark detail circuit
- Natural dynamic range reproduced by digital highlight chroma
- Faithful reproduction of colors enabled by digital color matrix

Full spectrum of video productions supported

- Conditions optimally suited to each application selectable from 4 operation modes (halogen light mode, fluorescent light mode, outdoor mode and user mode)
- SMPTE color bar display provided
- Remote control enabled by RCU or RCB

Special Notes on Operation

- Turn the power off before connecting or disconnecting cables.
- Connection or disconnection of any studio cable, RCB cable or other cable to any unit of equipment must be performed while power is off.

While the camera is in automatic mode:

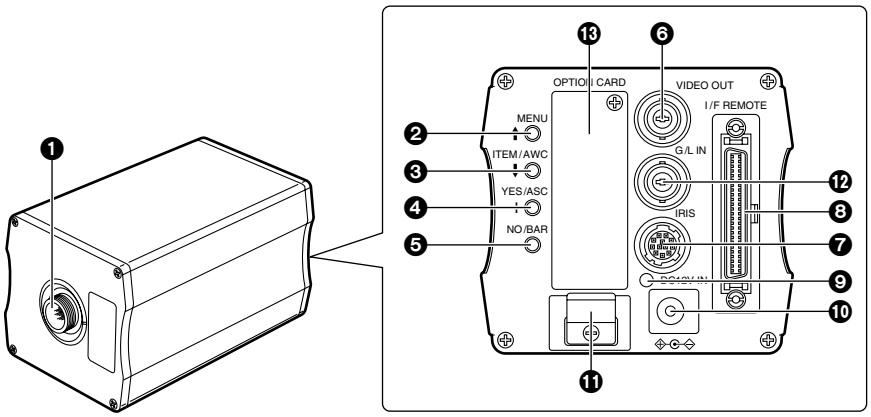
- Shooting of bright objects in ELC operation mode may result in a smeared picture unique to the CCD.
- The ATW function under fluorescent illumination can adversely change the white balance.

Precautions

- Do not attempt to disassemble the camera, Remote Control Unit (RCU) or other units. In order to prevent electric shock, do not remove screws or covers. There are no user-serviceable parts inside.
- Do not mishandle the camera. Avoid striking, shaking, etc. The camera contains precision components which could be damaged by improper handling or storage.
- Do not let the lens remain uncovered when the camera is not in use. If the lens is not installed, do not leave the lens mount hole uncovered.
- Do not touch the surface of the lens or prism.
- Do not use strong or abrasive detergents when cleaning the camera body.
- Do not aim the camera toward the sun, irrespective of whether it is turned on or not.
- Do not expose the camera or Remote Control Unit (RCU) to rain or moisture, and do not try to operate the equipment in wet conditions. Do not operate the camera or RCU if it is wet.
- Do not operate the camera or Remote Control Unit (RCU) outdoors during a thunder storm.
- Do not use the camera where it will be subject to high temperatures or high humidity.
- Do not leave the camera and Remote Control Unit (RCU) turned on when not in use. Do not unnecessarily turn the camera power on and off repeatedly. Do not block the ventilation slots.
- Refer any servicing to qualified service personnel.
- Handle the camera with care.
- Place the lens cap on the lens when the camera is not in use. If the lens is not installed, protect the surface of the prism by placing the body cap over the lens mount hole.
- Use a mild blower or lens cleaning tissue designed for coated lenses to clean the surface of the lens or prism if it requires cleaning.
- Use a dry cloth to clean the camera if it is dirty. If the dirt is hard to remove, use mild detergent and wipe gently.
- Use caution when operating the camera near spot lights or bright lights, as well as any objects and surfaces which may reflect light.
- If the camera or RCU gets wet, turn the power off immediately and have the unit checked by an authorized service facility.
- Follow normal safety precautions to avoid personal injury.
- Use the camera in an environment where the temperature is within 14°F to 113°F (–10°C to +45°C), and the relative humidity is within 30 % to 90 %.
- Always turn the power off when the camera is not going to be used. Operate the camera and RCU only when there is adequate ventilation.
- Operating a wireless device that generates powerful radio waves near the camera may adversely affect the output images.

Parts and Their Functions

■ Main unit



❶ Cable connector

This is used to connect the camera to the camera head unit using a cable.

❷ MENU switch [MENU (↑)]

The menu will appear on the screen when this switch is pressed for about 5 seconds. When it is pressed while a menu is displayed, the menu item immediately above is selected.

❸ ITEM/AWC switch [ITEM/AWC (↓)]

When this switch is pressed while a menu is displayed, the menu item immediately below is selected. While a menu is not displayed (when the camera is in the shooting mode), it serves as the automatic white balance control (AWC) switch.

❹ YES/ABC switch [YES/ABC (+)]

When this switch is pressed while a menu is displayed, the sub-menu of a menu item appears on the screen. When it is pressed while a sub-menu is displayed, the higher of the two settings shown is selected. While a menu is not displayed, it serves as the automatic black balance control (ABC) switch.

❺ NO/BAR switch [NO/BAR (–)]

When this switch is pressed while the main menu is displayed, the next item down can be selected. When it is pressed while a sub-menu is displayed, the lower of the two settings shown is selected. When it is pressed for about 5 seconds while a menu is not displayed, the color bar signals and camera (shooting mode) are switched.

Parts and Their Functions

❻ Video output connector [VIDEO OUT]
The composite video signals are output from this connector.
(1 V [p-p], 75 Ω, BNC connector)

❼ Iris connector [IRIS]
This is the standard input connector of the lens which comes with an auto iris function.

❽ Interface/remote connector [I/F REMOTE]
This is used to connect the remote control unit (RCU: WV-RC700A or WV-RC550), remote control box (RCB: WV-CB700A), etc.
The AW-CA50A26 RCU cable is required to connect the WV-RC700A or WV-RC550.
The AW-CA50T10 RCB cable is required to connect the WV-CB700A.

❾ Power LED
This lights up red when DC power is supplied to the DC 12V input socket ❿.

❿ DC 12V input socket [DC 12V IN]
The DC 12 V power supply (2 A or above) is connected here using the AW-CA4T1 DC power cable.

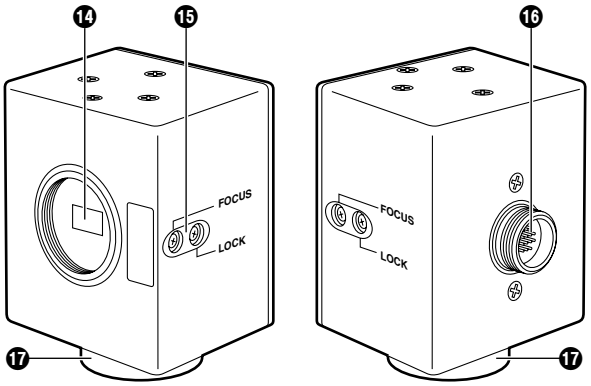
⓫ Cable clamp
This clamps the AW-CA4T1 DC power cable which has been connected to the DC 12V input socket ❿ to prevent the cable from becoming disconnected.

⓬ Genlock input connector [G/L IN]
The external sync (black burst) signals are supplied to this connector to achieve genlock with the camera.

⓭ Option card slot
This slot is used by the option cards.
For further details, refer to the operating instructions of the option card concerned.

Parts and Their Functions

■ Camera head unit



⓮ Lens mount

A 1/3-inch C mount lens or microscope adapter, etc. is attached here.

⓯ Flange back adjust screw [FOCUS/LOCK]

When the flange back needs to be adjusted, remove the cap, loosen the LOCK screw, and adjust by turning the FOCUS screw. (Adjustment range: ±0.2 mm)
Upon completion of the adjustment, re-tighten the LOCK screw.

⓰ Cable connector

This is used to connect the head unit to the main unit using a cable.

⓱ Camera mounting adapter
(mounting screw holes: M2.6×10, spring washers provided)

This is used to secure the head unit when it is to be installed on a wall or ceiling or a tripod is to be used. The head unit can be mounted on the top or bottom surface.

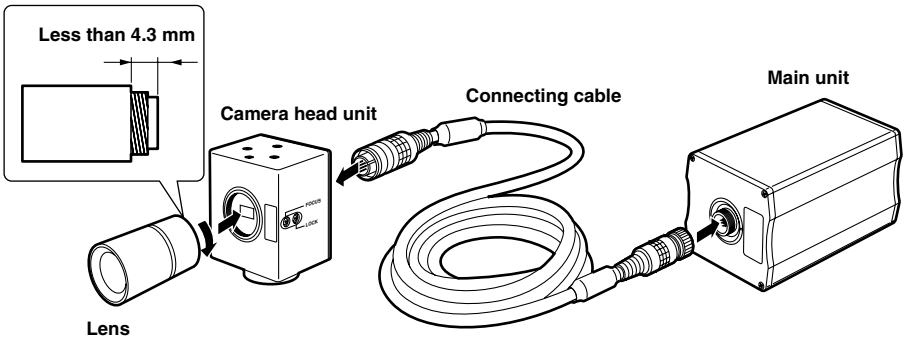
Installation

You must ask your dealer to take charge of installing, adjusting and connecting this unit.

■ Attaching the lens

Remove the lens mount cap, align the lens with the thread ridges on the lens mount and screw it firmly into place.

- A 1/3-inch C mount type of lens can be used.
  Be absolutely sure that a lens whose mount threads extend no more than 4.3 mm from the lens mount surface is used. Use of any other kind of lens may damage the camera unit.
- Some lenses need to be attached in a different way. Therefore, reference should also be made to the operating instructions that accompany the lens.



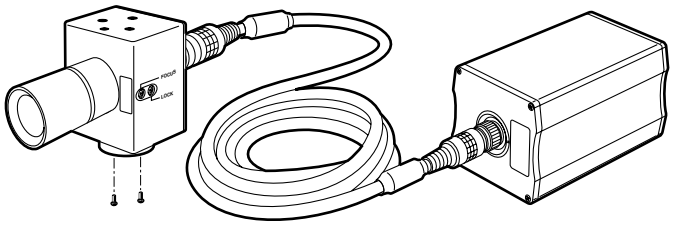
■ Installation on a camera stand (tripod, etc.)

①Mount the camera mounting adapter onto the top or bottom surface of the camera head unit.

②Use the screw holes (1/4-20UNC) in the camera mounting adapter to secure the camera stand (tripod, etc.) firmly.

Preventing the head unit from falling off or dropping

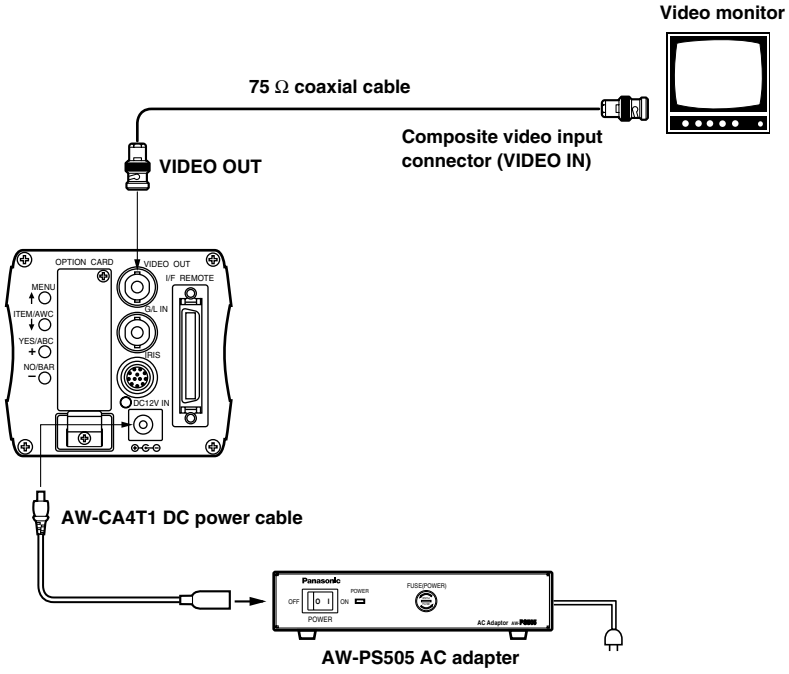
Check that the stand can adequately withstand the total weight including the weight of the connecting cable and other parts. Use the prescribed tool to mount the head unit securely, and be absolutely sure to take steps to prevent the camera from dropping.



System Configuration (Connections)

■ Connecting equipment with a composite video input connector

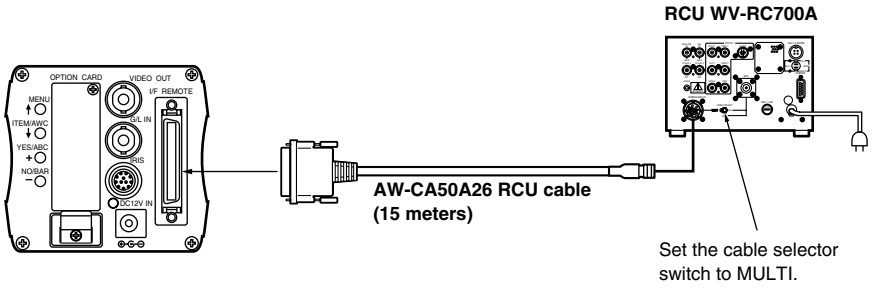
- Connect the output from the camera's video output connector to the video monitor, VTR or other such unit which is provided with a composite video input connector.
- Use the AW-PS505 AC adapter for the power supply.
  Use the AW-CA4T1 as the DC power cable.



System Configuration (Connections)

■ Connecting a remote control unit (RCU)

- Use the AW-CA50A26 RCU cable to connect the RCU (WV-RC700A or WV-RC550) and the camera.
- The distance between the WV-RC700A and the camera can be extended up to a maximum of 300 meters.
  The distance between the WV-RC550 and the camera can be extended up to a maximum of 100 meters.
  Use the WV-CA26U15 (15 meters), WV-CA26U30 (30 meters) and WV-CA26U100 (100 meters) studio cables and the WV-CA26T26 cable joint adapter for extension.
- The power for the camera is supplied from the RCU.

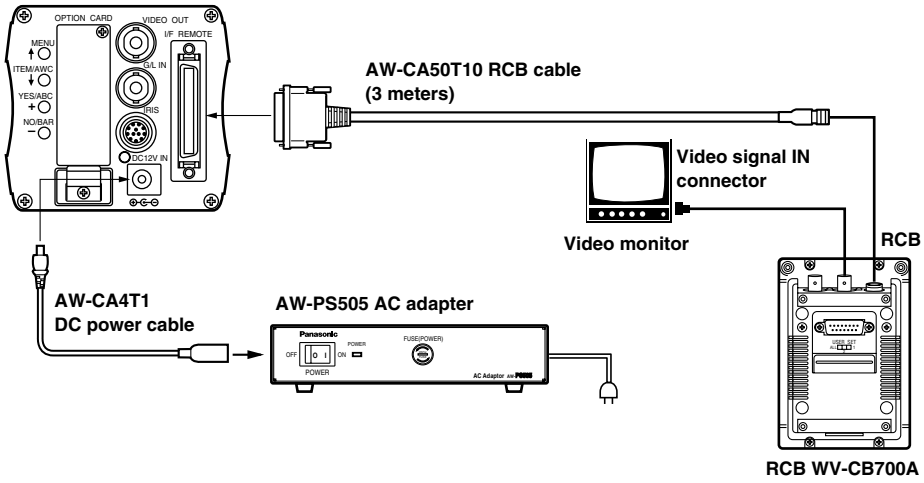


①Before proceeding to connect the RCU to the camera, set the RCU's power switch to OFF.
②If the WV-RC700A is to be used, set the cable selector switch on the RCU to MULTI.
③Connect the 50-pin end of the RCU cable to the interface/remote connector on the camera, and connect the 26-pin end to the RCU.
④When the RCU's power is set to ON, the camera's power LED lights up, and the camera is controlled from the RCU.

System Configuration (Connections)

■ Connecting a remote control box (RCB)

- Use the AW-CA50T10 RCB cable to connect the RCB (WV-CB700A) and the camera.



①Before proceeding with the connections, set the AC adapter's power switch to OFF and the RCB ON/OFF switch on the RCB panel to OFF.

②Connect the 50-pin end of the RCB cable to the interface/remote connector on the camera, and connect the 10-pin end to the RCB.

③Once the AC adapter's power switch is set to ON and the RCB ON/OFF switch is set to ON, the camera can be controlled from the RCB.

④Upon completion of shooting, first set the RCB ON/OFF switch to OFF and then set the AC adapter's power switch to OFF.

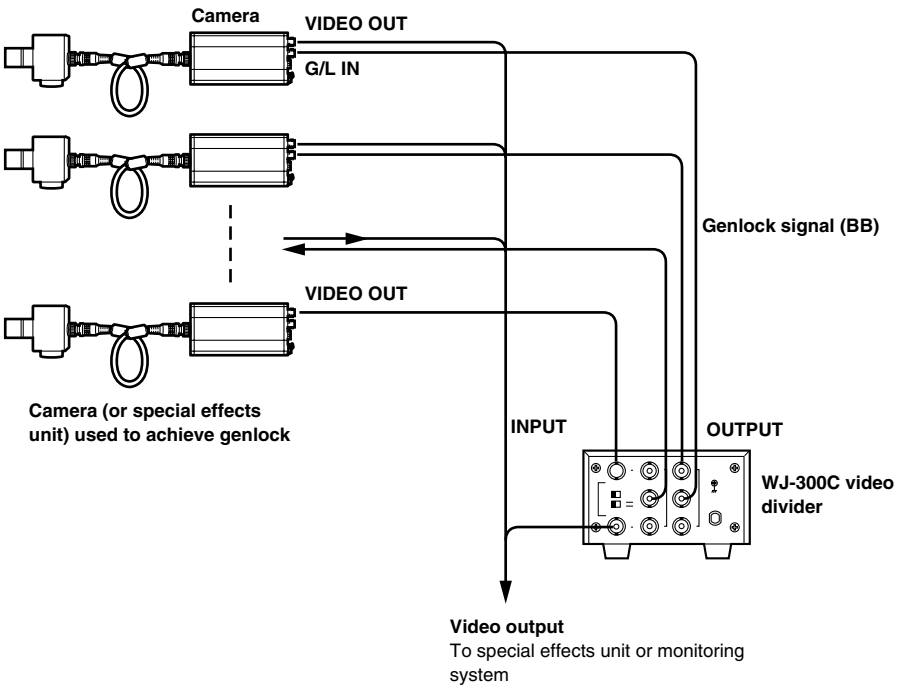
<Notes>

- The camera's setting will not be stored in the memory if the AC adapter's power switch is set to OFF before the RCB ON/OFF switch is set to OFF.
- Since use of a cable which is too long causes a deterioration in the RCB's monitor output due to attenuation, this output should be used only for monitoring (verification) purposes.
- Genlock input signals cannot be supplied from the RCB.

System Configuration (Connections)

■ Connecting multiple cameras (achieving genlock)

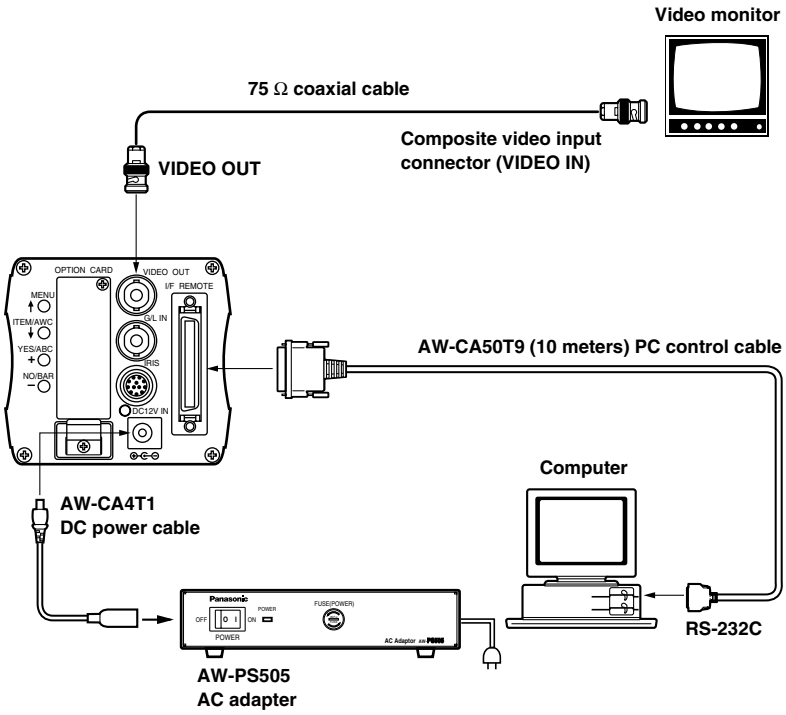
- Input the sync signal (BB) to the genlock input connector.
- Do not turn off the power of the camera which is used to achieve genlock.
- The genlock adjustment must be performed when genlock is to be achieved. (See page 25)



System Configuration (Connections)

■ Connections for exercising control from a computer

The AW-CA50T9 PC control cable and the dedicated software program are required for the camera to be controlled from the computer. Ask your dealer for details.



System Configuration (Connections)

■ Reference: Model numbers of related equipment

Read the operating instructions of the equipment concerned along with these instructions.

Remote control unit:
WV-RC700A
Remote control unit:
WV-RC550
Remote control box:
WV-CB700A
RCU rack-mounting chassis:
WV-Q70
Connecting cable:
WV-CA9T5 (D-sub 9-pin—BNC, approx. 5 meters)
Studio cable:
WV-CA26U15, WV-CA26U30, WV-CA26U100
Cable joint adapter:
WV-CA26T26
RCB cable:
AW-CA50T10
RCU able:
AW-CA50A26
PC control cable:
AW-CA50T9
DC power cable:
AW-CA4T1
RGB cable:
AW-CA50T6
Studio card 1 (with RGB/YPrPb output):
AW-PB301
Studio card 2 (with no RGB/YPrPb output):
AW-PB305
RGB card:
AW-PB302
AC adapter:
AW-PS505

Operating Mode Selection

The user can select the camera's functions to match the operating conditions from the four modes which have been preset. Select the mode that suits the shooting conditions and the user's preferences.

Halogen light mode
This mode is suited to shooting indoors at wedding receptions, parties, seminars and other indoor events. Its settings can be changed using a simple menu.

Fluorescent light mode
This mode is suited to shooting indoors under fluorescent lighting. Its settings can be changed using a simple menu.

Outdoor mode
This mode is suited to shooting outdoors. Its settings can be changed using a simple menu.

User mode
This mode's settings can be changed using a detailed menu.

Operating Mode Selection

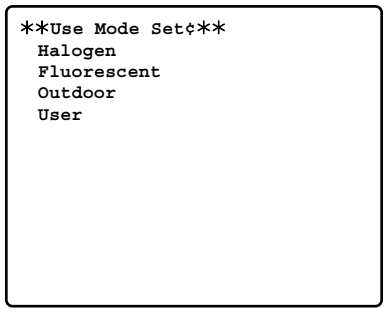
■ How to select the operating mode

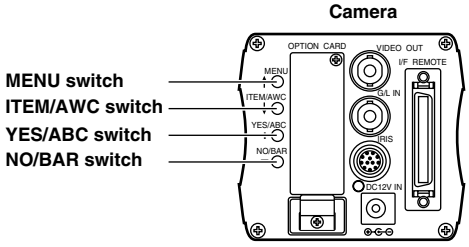
● Operations using the camera by itself

①When the camera's power is turned on while the MENU switch is held down, the Use Mode Set screen appears on the monitor.

②Each time the MENU switch, ITEM/AWC switch or NO/BAR switch is pressed, the flashing operating mode changes. Make the desired operating mode flash by pressing of these switches.

③When the YES/ABC switch is pressed, the flashing item is set, and the setting screen appears for about 5 seconds, after which the shooting mode is restored. After this, the camera will operate the mode which has been set.

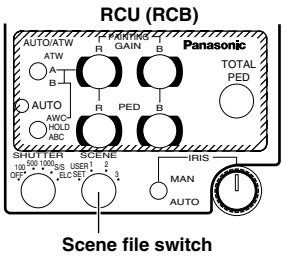




● Operations using the RCU or RCB

The operating mode can be selected using the scene file switch on the RCU or RCB.

Operating mode	RCU (RCB) scene file switch
Halogen light mode	1
Fluorescent light mode	2
Outdoor mode	3
User mode	USER SET



Operating Procedures

1. Turn on the power to the units concerned.

2. Adjust the subject brightness to the appropriate level.

3. Select the operating mode.
Once this mode is selected, it need not be changed so long as the camera is to be used under the same conditions.

4. Adjust the flange back of the lens, and adjust the iris and focus.
- This adjustment must be performed when using the camera for the first time or when the lens has been changed.

5. Adjust the white balance.
- This adjustment must be performed when using the camera for the first time or when the camera has not been used for a prolonged period.
- It must be performed when the lighting conditions or brightness has changed.
- Once this adjustment has been performed, it need not be repeated so long as the camera is to be used under the same conditions.

6. Adjust the black balance.
- This adjustment must be performed when using the camera for the first time or when the camera has not been used for a prolonged period.
- It must be performed when the ambient temperature has changed significantly or at the turning of the seasons.
- Once this adjustment has been performed, it need not be repeated so long as the camera is to be used under the same conditions.

7. Start shooting.
Upon completion of shooting, turn off the power to the units concerned.

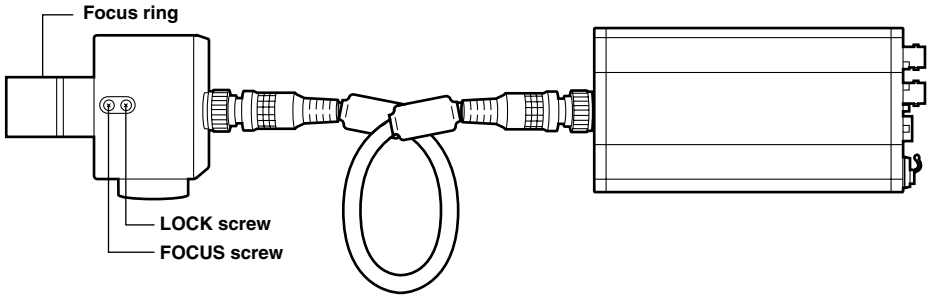
8. To change the camera's settings to match other applications or conditions, refer to page 27 and following.
The settings performed when the camera was shipped are appropriate for most situations.

Adjustments

■ Flange back adjustment

This adjustment will bring the subject into focus across the whole range from the maximum telephoto position to the widest angle position of the zoom lens.
Perform this adjustment when back focusing is not achieved with a fixed focus lens.
(Adjustment range: ±0.2 mm)

①Shoot a dark subject to open the iris.
②Reduce the distance between the camera and subject to less than 2 meters, remove the cap over the camera's flange back adjust screw, and loosen the LOCK screw.
③Set the lens to the maximum telephoto position, and bring the subject into focus using the focus ring.
④Set the lens to the widest angle position, and turn the FOCUS screw to bring the subject into focus.
⑤Repeatedly adjust the focus ring and FOCUS screw until the subject is focused within the the zoom range. Upon completion of the adjustment, tighten up the LOCK screw.



Adjustments

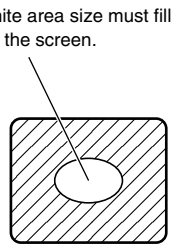
■ White balance adjustment

Automatic adjustment (AWC: AWC A/AWC B)

- Use the camera in the AWC mode if the lighting conditions at the shooting site will remain unchanged.
- When “AWC A” or “AWC B” has been selected for the white balance on the Color Set sub-menu (pages 32, 38), the color temperature conditions of two locations can be preset (stored in the memory) using A/B.
- When the camera is to be used under the same conditions as those of the settings, simply perform the adjustment once, and set the menu or RCU (RCB) switch to A or B. After this, there is no need to perform the adjustment again.
- When new settings are established, the previous settings will be erased from the memory.

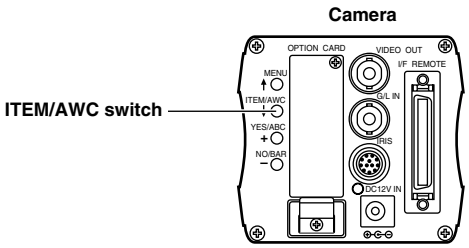
①Select “AWC A” or “AWC B” for the white balance.

②Shoot a white subject (such as a white wall or white handkerchief) to fill the screen.
The size of the white subject must be at least 10% of the screen, and it must appear in the middle. Keep shiny objects or very bright objects off the screen.



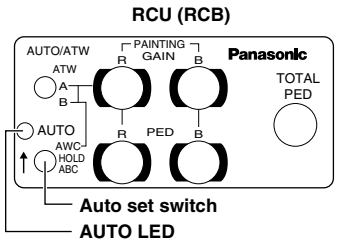
When performing the adjustment using the camera

③ The white balance can be set by pressing the ITEM/AWC switch for at least 2 seconds in the shooting mode.



When performing the adjustment using the RCU (RCB)

④The white balance can be set when the auto set switch is set to “AWC.” The AUTO LED flashes while the white balance is being set.
The AUTO LED goes off to indicate the successful completion of the setting, and it lights to indicate a failed setting procedure. Repeat the setting procedure in the latter case.



Adjustments

Manual adjustment

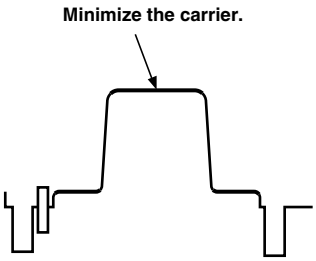
When performing the adjustment using the camera

Manual adjustment can be performed only in the user mode.

①Select “AWC A” or “AWC B” for the white balance.

②Shoot a white subject to fill the screen, and attain the automatic white balance.

③Vary the R (red) and B (blue) gain using Painting on the color set sub-menu, and adjust it so that the carrier in the white area of the video signals is minimized (or so that the white area of the image turns white). (Perform this adjustment using an oscilloscope or waveform monitor.)



Waveform from white balance setting chart

When performing the adjustment using the RCU (RCB)

After having attained the automatic white balance, adjust the R (red) and B (blue) gain using the R and B gain controls of the RCU (RCB).

<Notes>

- The white balance may not be attained properly if the subject brightness is insufficient.
- After setting the white balance, the level is stored for a prolonged period in the memory inside the camera even when the camera’s power is turned off. There is no need to set it again provided that the status of the subject’s color temperature remains unchanged. However, if the setting conditions change (if the shooting location changes from outdoors to indoors or vice versa, for example), set the white balance again.
- If the white balance is set when using the camera by itself, the setting for the R (red) and B (blue) gain adjustment using Painting will return to ±0. (The Painting settings are valid only in the user mode.)

Automatic color temperature tracking (ATW)

It is a good idea to use the camera in the ATW mode if the lighting conditions at the shooting site are likely to change (prolonged shooting outdoors, etc.).

When “ATW” is selected as the white balance setting, compensation is provided automatically so that the white balance is attained automatically even when the light source or color temperature changes to ensure that the images look natural.

<Note>

The white balance may shift if there is no white on the screen.

3200 K, 5600 K presettings

When “P SET 3200K” or “P SET 5600K” is selected as the white balance setting, the status is established in which the white balance is set at a color temperature of 3200 K or 5600 K, respectively.

Adjustments

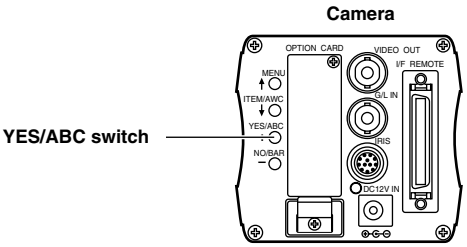
■ Black balance adjustment

This adjustment is performed when using the camera for the first time, when the camera has not been used for a prolonged period or when the lighting conditions have changed, causing the white balance to change significantly which in turn has caused the black balance to alter.

- Close the lens before proceeding.
- If the black balance is set when using the camera by itself, the setting for the R (red) and B (blue) gain adjustment using Painting will return to ±0. (The Painting settings are valid only in the user mode.)

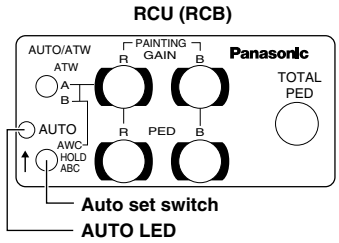
When performing the adjustment using the camera

The black balance is set in about 10 seconds when the YES/ABC switch is held down for two or more seconds.
After the black balance has been set, the black balance can be finely adjusted by varying the R pedestal and B pedestal using Painting on the color set sub-menu in the user mode.



When performing the adjustment using the RCU (RCB)

The black balance is set when the auto set switch is set to “ABC.” The AUTO LED flashes while the black balance is being set.
The AUTO LED goes off to indicate a successful completion of the setting, and it lights to indicate a failed setting procedure. Repeat the setting procedure in the latter case.



Adjustments

■ Black level (total pedestal) adjustment

This adjustment is performed to align the black level (pedestal level) of multiple cameras. Ask your dealer to perform it.
(This adjustment is performed using an oscilloscope or waveform monitor.)

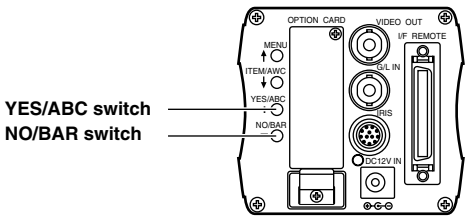
When performing the adjustment using the camera

①Close the lens.
②Select the black level using the brightness setting on the sub-menu (or iris/shutter/gain settings in the user mode).
③Adjust the black level to 5 IRE (0.035 V) using the YES/ABC switch or NO/BAR switch.

```
**Brightness Set**
  Picture Level                ±0
  Light PEAK/AVG                0
  Light Area             Top cut
  Auto ND (ELC)              OFF
  Auto Gain Up               OFF
  Manu Gain Up               0dB
  Pedestal                   ±0
  Contrast(Gamma)            MID


Return
```

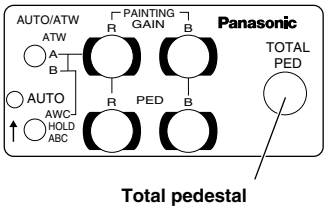
Camera



When performing the adjustment using the RCU (RCB)

Adjust the black level to 5 IRE (0.035 V) using the total pedestal control.

RCU (RCB)



Total pedestal

Adjustments

■ Genlock adjustment

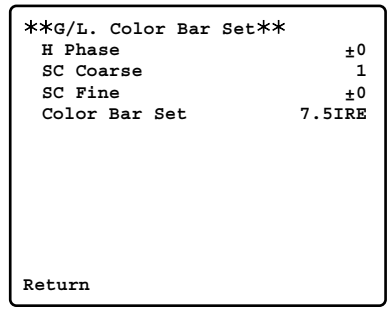
When multiple cameras are to be used or the camera is to be used in combination with other equipment, the phase adjustments must be performed using the camera or RCU (RCB) in order to achieve genlock and bring the phases into alignment. Ask your dealer to perform it.

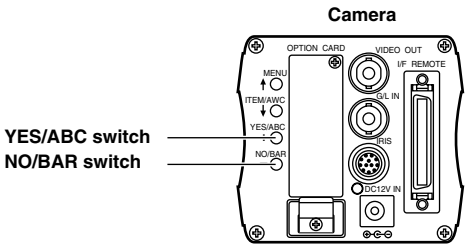
Horizontal phase adjustment

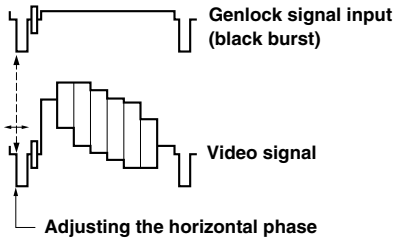
Monitor the genlock signal input (black burst signal) and video signal output waveforms on a dual-trace oscilloscope, and bring the horizontal phase into alignment using the camera or RCU (RCB).

When performing the adjustment using the camera

①Hold down the NO/BAR switch for at least 5 seconds or so, and set to color bar signals.
②Select “H phase” as the genlock/color bar setting on the sub-menu.
③Bring the horizontal phase into alignment using the YES/ABC switch or NO/BAR switch.

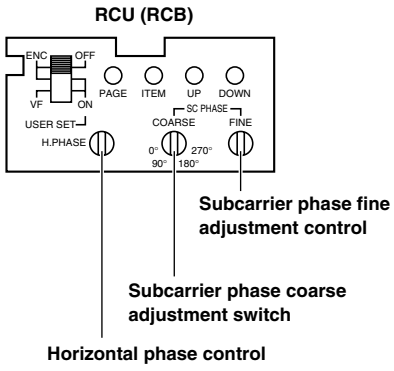






When performing the adjustment using the RCU (RCB)

Use the horizontal phase control to perform the adjustment.



<Note>

When adjusting the horizontal phase from the RCU (RCB), set the BAR/CAM switch to BAR before performing the adjustment.
The horizontal phase cannot be adjusted if this switch is set to CAM. Upon completion of the adjustment, be absolutely sure to return the BAR/CAM switch to CAM.

Adjustments

Color phase adjustment

Align the camera's color phase to the reference color tones such as the program output (color bar output which has been split) of a color special effects unit.

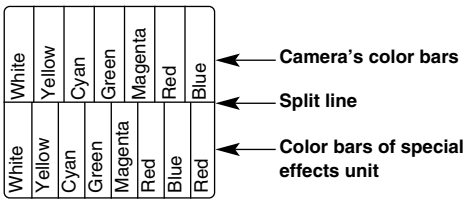
Adjusting the color phase with the vectorscope makes it possible to obtain an even finer adjustment.

When performing the adjustment using the camera

①Hold down the NO/BAR switch for at least 5 seconds or so, and set to color bar signals.

②Select "SC coarse" for the genlock color bar setting on the sub-menu, and use the YES/ABC switch or NO/BAR switch to perform the coarse adjustment.

③Select "SC fine," and use the YES/ABC switch or NO/BAR switch to adjust finely so that the color phase is brought into alignment.



When performing the adjustment using the RCU (RCB)

Use the "subcarrier phase coarse adjustment switch" and "subcarrier phase fine adjustment control" to perform the adjustment.

<Note>

When adjusting the color phase from the RCU (RCB), set the BAR/CAM switch to BAR before performing the adjustment.

The color phase cannot be adjusted if this switch is set to CAM.

Upon completion of the adjustment, be absolutely sure to return the BAR/CAM switch to CAM.

Menu Item Settings and Changes

■ Setting the menu items

- The unit's 4 operation modes (halogen light mode, fluorescent light mode, outdoor mode and user mode) each have a main menu.
- Each item on the main menu has a sub-menu, and each sub-menu has several setting items.
- Although the setting items were preset to the optimum values or levels for each operation mode before the unit was shipped, they can be changed to suit the actual shooting conditions.
- The settings can be performed from the camera or RCU (RCB).

Setting procedure

①Settings using the camera itself

Hold down the MENU switch for at least 5 seconds.

Settings using RCU (RCB)

Set the user set switch inside the pocket to ON.

The main menu screen for the operation mode selected now appears. Refer to page 18 for details on selecting the operation mode.

②Each time the MENU switch, ITEM/AWC switch or NO/BAR switch is pressed, the flashing item changes.

③When the YES/ABC switch is pressed, the sub-menu screen for the flashing item appears.

④Select the item to be set or changed using the menu screen or ITEM/AWC switch.

⑤Change the setting using the YES/ABC switch or NO/BAR switch.

⑥Select "Return" using the MENU switch or ITEM/AWC switch, and press the YES/ABC switch. Operation now returns to the main menu.

⑦When the settings are completed

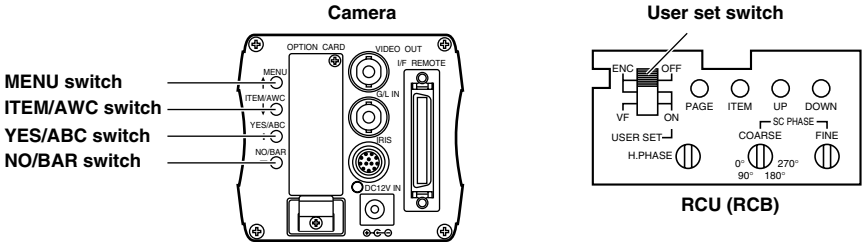
Settings using the camera itself

Select "End," and press the YES/ABC switch.

Settings using RCU (RCB)

Set the user set switch inside the pocket to OFF.

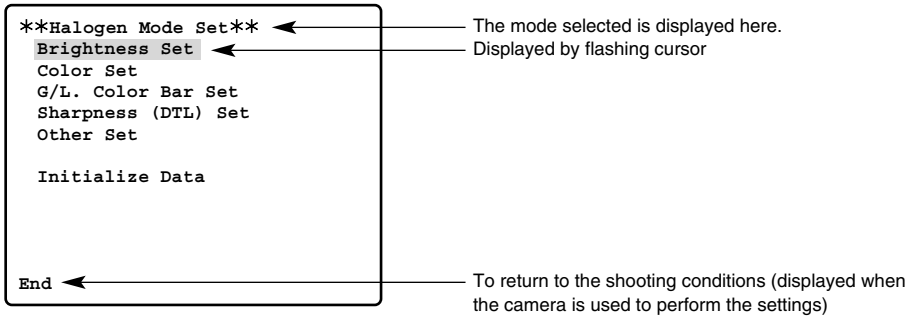
The camera will now operate under these setting conditions.



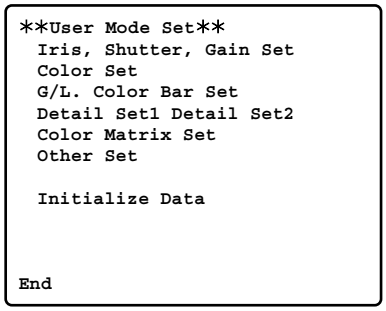
Menu Item Settings and Changes

Main menu screen

Main menus for halogen light mode, fluorescent light mode and outdoor mode



Main menu for user mode



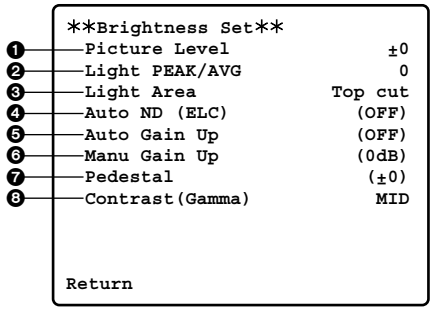
<Notes>

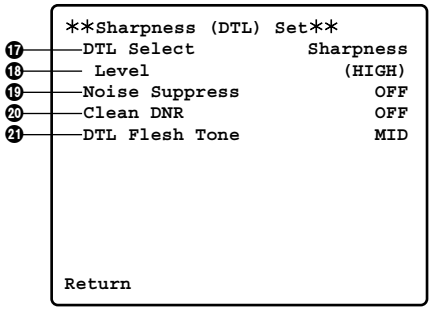
- Composite signals are supplied to the video output whether the RCU (RCB) user set switch is at the ENC or VF position.
- “End” appears when the camera is used to perform the settings.

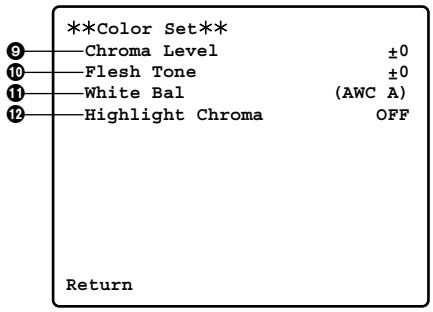
Menu Item Settings and Changes

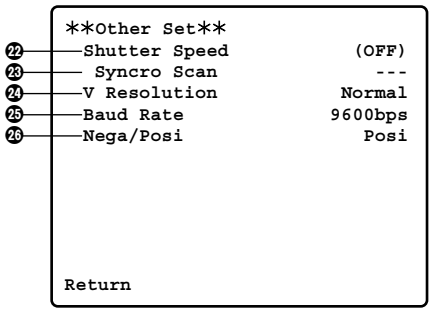
(in halogen light mode, fluorescent light mode or outdoor mode)

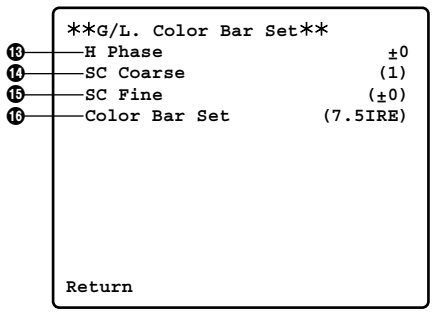
■ Halogen light, fluorescent light and outdoor mode sub-menu screens











<Notes>

- When the RCU (RCB) is used, items whose settings are enclosed in the parentheses are set using the switches or controls on the RCU (RCB).
- To return to the initial (factory) settings, refer to page 42.

Menu Item Settings and Changes

(in halogen light mode, fluorescent light mode or outdoor mode)

❶ Picture level adjustment [Picture Level: –50 to +50]

This is for adjusting the convergence level of Auto Iris, Auto Gain Up and Auto ND (ELC). (The auto iris is adjusted when a motor-driven lens is used.)

❷ Light-metering detection ratio adjustment [Light PEAK/AVG: P50 to A50]

This enables the ratio of the average level (A) to peak level (P) at which Auto Iris, Auto Gain Up and Auto ND (ELC) are detected to be adjusted.

❸ Light metering method selection

[Light Area: All, center, top cut, bottom cut, R/L cut]

This enables the light-metering method for Auto Iris, Auto Gain Up and Auto ND (ELC) to be selected.

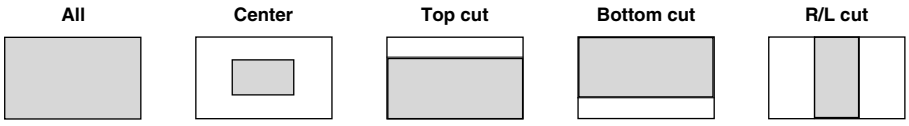
All : Light metering over the entire screen area; the light of the whole screen is metered.

Center : Light metering with priority given to the center of the screen; about one-third of the screen at the top and bottom and one-third on the left and right sides are cut off.

Top cut : Light metering with one-third at the top cut off; about one-third of the screen at the top is cut off.

Bottom cut : Light metering with one-third at the bottom cut off; about one-third of the screen at the bottom is cut off.

R/L cut : Light metering with one-third on the left and right sides cut off; about one-third of the screen on the left and right sides is cut off.



❹ Auto ND (ELC) selection [Auto ND (ELC): OFF or ON]

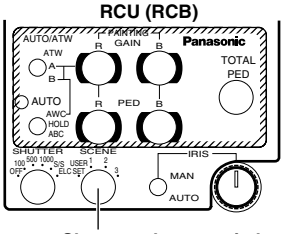
ON : The light quantity is automatically adjusted by controlling the electronic shutter speed.

OFF: The light quantity is not automatically adjusted by the electronic shutter speed.

<Notes>

- When “Auto ND” is selected as the electronic shutter speed setting ㉒ in the “Other set” sub-menu, this menu item is automatically set to ON; it is set to OFF if a setting other than “Auto ND” is selected for ㉒.
- When the shutter selector switch is set to “ELC” while the RCU (RCB) is being used, this item is set to ON; it is set to OFF if a setting other than “ELC” is selected for the switch.

RCU (RCB)



Shutter selector switch

Menu Item Settings and Changes

(in halogen light mode, fluorescent light mode or outdoor mode)

❺ Auto gain increase selection [Auto Gain Up: OFF, LOW or HIGH]

LOW : The function for automatically increasing the gain up to approximately 18 dB is activated, and the light quantity is thereby automatically adjusted.

HIGH : The function for automatically increasing the gain up to approximately 30 dB is activated, and if the light quantity is still insufficient, 'night eye' (digital gain increase) is added, and the light quantity is thereby automatically adjusted.

OFF : The function for automatically increasing the gain is not activated (the gain can still be increased manually).

<Note>

The auto gain increase function may not be activated when the camera alone is used. Similarly, it may not be activated when AUTO has been selected as the RCU's (RCB) iris switch setting.

❻ Manual gain increase selection [Manu Gain Up: 0 dB to 30 dB or N-Eye (night eye)]

This item can be set only when "OFF" has been selected for the auto gain increase selection ❺ setting.

0 dB:

This setting is the one which is normally used.

1 dB to 30 dB:

Use this setting when shooting in dark locations and an adequate video output cannot be obtained even if the lens iris is opened.

N-Eye:

This increases the sensitivity by adding the digital gain increase to the 30 dB gain increase.

<Note>

Only "0 dB," "9 dB" or "18 dB" can be set when the RCU (RCB) is used.

❼ Black level adjustment [Pedestal: -30 to +30]

This enables the black level (pedestal) of the luminance (Y) signal to be set. It is used to align the black level of two or more cameras.

❽ Contrast adjustment [Contrast: LOW, MID or HIGH]

This enables the contrast to be set in 3 stages.

❾ Chroma level adjustment [Chroma Level: –3 to +3]

This enables the chroma level to be set in ±3 stages.

❿ Flesh tone adjustment [Flesh Tone: –3 to +3]

This enables the flesh tones to be set in ±3 stages.

Menu Item Settings and Changes

(in halogen light mode, fluorescent light mode or outdoor mode)

⓫ White balance selection [White Bal: ATW, AWC A, AWC B, P SET

ATW:

Automatic operation is performed to ensure that the white balance is attained at all times.

AWC A, AWC B:

If the white balance is first set and the camera is then used under identical conditions, the need to repeat the white balance setting can be obviated by simply selecting AWC A or AWC B.

The colors can be finely adjusted after executing AWC by adjusting the red and blue gain when the camera is used in the user mode or when RCU (RCB) is used.

P SET 3200K:

The white balance which was adjusted under 3200K lighting is set.

P SET 5600K:

The white balance which was adjusted under 5600K lighting is set.

<Note>

When RCU (RCB) is used, P SET 3200K and P SET 5600K cannot be set.

⓬ Highlight chroma selection [Highlight Chroma: OFF, LOW or HIGH]

When this is set to LOW or HIGH, the dynamic range of the colors is increased to prevent whitening-out in very bright conditions.

⓭ Horizontal phase adjustment [H Phase: –206 to +49]

This enables the horizontal phase during genlock to be adjusted.

⓮ Color phase adjustment [SC Coarse: 1, 2, 3 or 4]

This enables the color phase during genlock to be coarsely adjusted.

⓯ Color phase fine adjustment [SC Fine: –511 to +511]

This enables the color phase during genlock to be finely adjusted.

⓰ Color bar setup selection [Color Bar Set: 0.0 IRE or 7.5 IRE]

This enables the setup level of the color bars to be selected.

⓱ Sharpness (detail)/super hard switching
[Sharpness/super-hard: sharpness/super-hard]

Set to “Super-hard” if the detail enhancement is inadequate even when “Sharpness” has been selected and the sharpness (detail)/super-hard level adjustment ⓲ has been set to LOW or HIGH.

<Note>

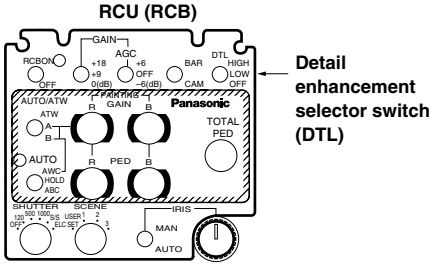
When OFF has been selected as the sharpness (detail)/super-hard level adjustment ⓲ setting, the detail enhancement feature will not work for “Sharpness” or “Super-hard.”

Menu Item Settings and Changes

(in halogen light mode, fluorescent light mode or outdoor mode)

⓲ Sharpness (detail)/super-hard level adjustment [Level: OFF, LOW or HIGH]

This enables the sharpness (detail) level to be adjusted when "Sharpness" has been selected for the sharpness (detail)/super hard switching ⓱ setting. When "Super-hard" has been selected, it enables the super-hard level to be adjusted. When RCU (RCB) is used, adjustment is possible using the detail enhancement selector switch (DTL).



⓳ Noise cancellation compensation level selection [Noise Suppress: OFF, LOW or HIGH]

This is for reducing the amount of screen noise when HIGH or LOW has been selected as the sharpness (detail)/super-hard level adjustment ⓲ setting.

⓴ Clean DNR selection [Clean DNR: OFF, LOW or HIGH]

This enables the clean DNR effect to be selected.

㉑ Flesh tone sharpness level selection [DTL Flesh Tone: LOW, MID or HIGH]

LOW : The roughness of the flesh tones is suppressed.
MID : Standard setting
HIGH : The detail enhancement of the flesh tones is boosted.

㉒ Electronic shutter speed selection [Shutter Speed: OFF, 1/100 to 1/10000, synchro scan or auto ND]

OFF:

The electronic shutter is set to OFF.

1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000:

The electronic shutter is actuated at the respective shutter speed. When the shutter is used at the 1/100 speed in a 50 Hz area, the flicker caused by fluorescent lighting is minimized.

Synchro scan:

The electronic shutter is actuated at the shutter speed set by the electronic shutter synchro scan setting ㉓.

Auto ND:

The light quantity is automatically adjusted by controlling the electronic shutter. (ELC)

<Notes>

- The speed cannot be set to 1/250, 1/2000, 1/4000 or 1/10000 by operating the RCU (RCB).
- When the auto ND setting is selected under fluorescent lighting, the flicker may increase.
- When ON is selected as the auto ND (ELC) selection ❹ setting on the "Brightness Set" sub-menu, the electronic shutter is automatically set to "Auto ND."

Menu Item Settings and Changes

(in halogen light mode, fluorescent light mode or outdoor mode)

㉓Electronic shutter synchro scan setting [Synchro Scan: 60.34 Hz to 15.75 kHz]

This can be set only when "Synchro scan" has been selected as the electronic shutter speed selection ㉒ setting. The horizontal bar noise can be reduced by adjusting the synchro scan frequency when shooting the screen of a work station, etc.

Refer to the table below for the light quantity that should be set at different shutter speeds and synchro scan frequencies.

Shutter speed	Synchro scan frequency	Light quantity ratio required
OFF	——	1
1/100	99.68Hz	2
1/250	250.0Hz	4
1/500	492.2Hz	8
1/1000	984.4Hz	16
1/2000	1.969kHz	32
1/4000	3.938kHz	64
1/10000	7.875kHz	160

㉔Image (CCD readout method) selection [V Resolution: Normal or fine]

Normal:

Normal image. (Field storage is used as the CCD storage method.)

Fine:

The vertical resolution is improved. (It is improved by frame storage and the electronic shutter with no accompanying increase in the residual image.)

㉕PC control communication speed selection [Baud Rate: 1200, 2400, 4800 or 9600 bps]

This is for selecting the baud rate at which the camera is to be controlled from a computer.

㉖Negative/positive selection [Nega/Posi: Posi or Nega]

Posi:

Normal images.

Nega:

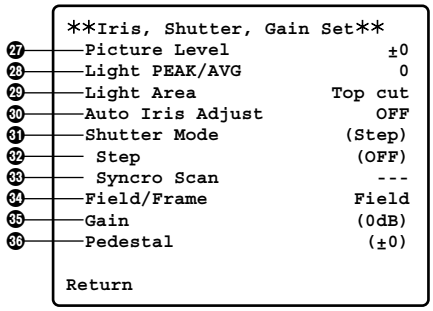
Images whose light and dark sections and colors are reversed.

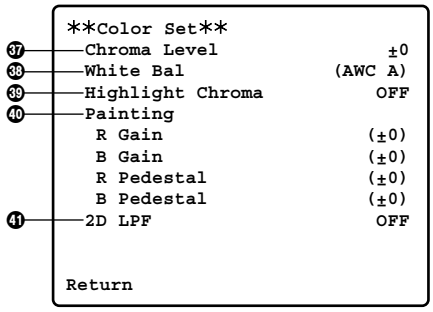
<Note>

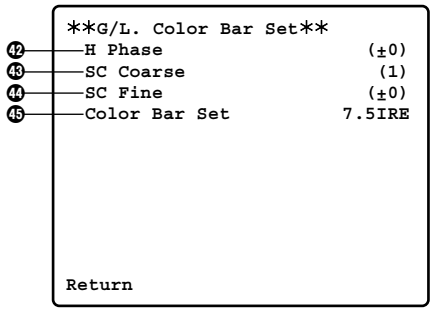
Negative images are shown only for composite outputs and Y/C outputs when the option cards are used.

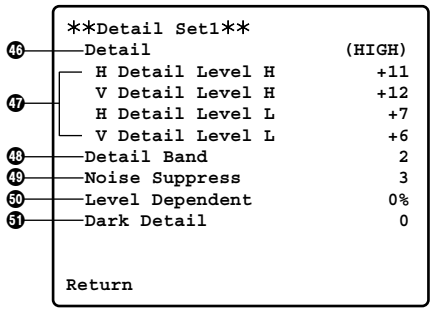
Menu Item Settings and Changes (in user mode)

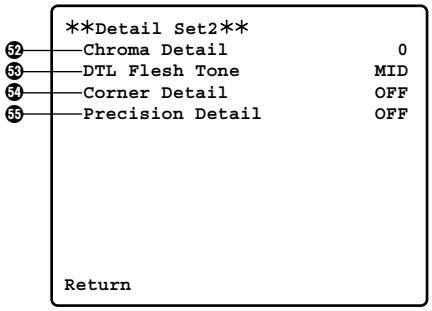
■ User mode sub-menu screens

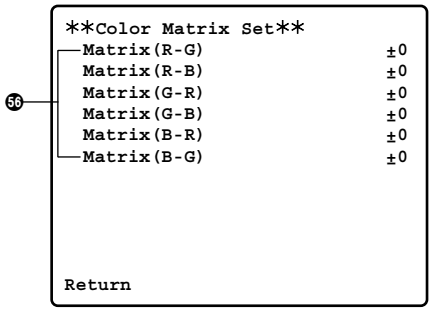


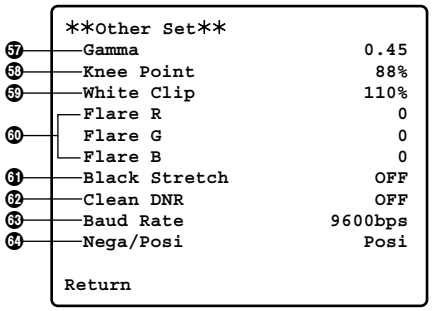












<Notes>

- When the RCU (RCB) is used, items whose settings are enclosed in the parentheses are set using the switches or controls on the RCU (RCB).
- To return to the initial (factory) settings, refer to page 42.

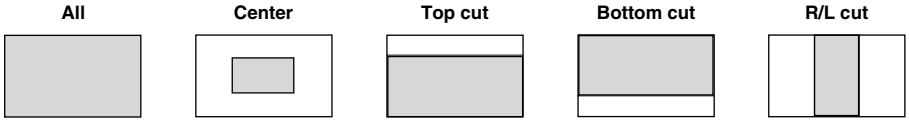
Menu Item Settings and Changes (in user mode)

㉗ Picture level adjustment [Picture Level: –50 to +50]
This is for adjusting the AGC/ELC convergence level.

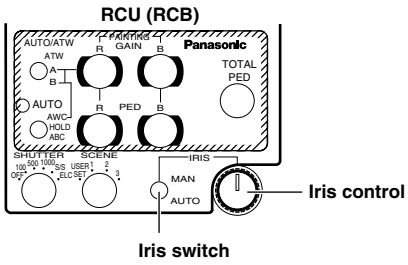
㉘ Light-metering detection ratio adjustment [Light PEAK/AVG: P50 to A50]
This enables the ratio of the average level (A) to peak level (P) at which AGC/ELC is detected to be adjusted.

㉙ Light metering method selection [Light Area: All, center, top cut, bottom cut, R/L cut]
This enables the AGC/ELC light-metering method to be selected.

All : Light metering over the entire screen area; the light of the whole screen is metered.
Center : Light metering with priority given to the center of the screen; about one-third of the screen at the top and bottom and one-third on the left and right sides are cut off.
Top cut : Light metering area with one-third at the top cut off; about one-third of the screen at the top is cut off.
Bottom cut : Light metering area with one-third at the bottom cut off; about one-third of the screen at the bottom is cut off.
R/L cut : Light metering area with one-third on the left and right sides cut off; about one-third of the screen on the left and right sides is cut off.



㉚ Auto iris fine level adjustment [Auto Iris Adjust: OFF or ON]
ON : When the iris switch on the RCU (RCB) is at AUTO, the AGC/ELC convergence level can be finely adjusted using the iris control.
OFF: The iris control does not work when the iris switch on the RCU (RCB) is at AUTO.



㉛ Electronic shutter mode selection [Shutter Mode: Step, ELC or synchro scan]
Step : The electronic shutter is actuated at the shutter speed selected for electronic shutter step selection ㉜.
ELC : The light quantity is automatically adjusted by controlling the electronic shutter.
Synchro scan:
The electronic shutter is actuated at the shutter speed set by the synchro scan setting ㉝.

<Note>
When “Frame1” is selected as the CCD readout method selection ㉞ setting, the electronic shutter mode cannot be set.

Menu Item Settings and Changes (in user mode)

㉜ Electronic shutter step selection [Step: OFF or 1/100 to 1/10000]

This can only be set when "Step" has been selected as the electronic shutter mode selection ㉛ setting.

OFF:

The electronic shutter is set to OFF.

1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000:

The electronic shutter is actuated at the respective shutter speed. When the shutter is used at the 1/100 speed in a 50 Hz area, the flicker caused by fluorescent lighting is minimized.

<Notes>

- The speed cannot be set to 1/250, 1/2000, 1/4000 or 1/10000 by operating the RCU (RCB).
- ELC may not operate when the camera alone is used.
  Similarly, it may not work when AUTO has been selected as the RCU (RCB) iris switch setting.
- When ELC is set under fluorescent lighting, the flicker may increase.

㉝ Electronic shutter synchro scan setting [Synchro Scan: 60.34 Hz to 15.75 kHz]

This can be set only when "Synchro scan" has been selected as the electronic shutter mode selection ㉛ setting.

The horizontal bar noise can be reduced by adjusting the synchro scan frequency when shooting the screen of a work station, etc.

Refer to the table below for the light quantity that should be set at different shutter speeds and synchro scan frequencies.

Shutter speed	Synchro scan frequency	Light quantity ratio required
OFF	——	1
1/100	99.68Hz	2
1/250	250.0Hz	4
1/500	492.2Hz	8
1/1000	984.4Hz	16
1/2000	1.969kHz	32
1/4000	3.938kHz	64
1/10000	7.875kHz	160

㉞ CCD readout method selection [Field/Frame: Field, frame1 or frame2]

Field : Field storage is used as the CCD storage method.

Frame1 : Frame storage is used, and the vertical resolution is improved as a result.

Frame2 : Field storage and the electronic shutter are used, and the vertical resolution is improved with no accompanying increase in the residual image as a result.

Menu Item Settings and Changes (in user mode)

㉟ Gain increase adjustment
[Gain: AGC HIGH, AGC LOW, 0 dB to 30 dB or N-Eye (night eye)]

AGC LOW : The function for automatically increasing the gain up to approximately 18 dB is activated, and the light quantity is thereby automatically adjusted.
AGC HIGH : The function for automatically increasing the gain up to approximately 30 dB is activated, and if the light quantity is still insufficient, 'night eye' (digital gain increase) is added, and the light quantity is thereby automatically adjusted.
0 dB : This setting is the one which is normally used.
1 dB to 30 dB : Use this setting when shooting in dark locations and an adequate video output cannot be obtained even if the lens iris is opened.
N-Eye : This increases the sensitivity by adding the digital gain increase to the 30 dB gain increase.

<Notes>

- "0 dB," "9 dB," "18 dB," "AGC LOW" and "AGC HIGH" can be set by operating the RCU (RCB).
- AGC may not operate when the camera alone is used.
  Similarly, it may not work when AUTO has been selected as the RCU (RCB) iris switch setting.

㊱ Black level adjustment [Pedestal: –30 to +30]
This enables the black level (pedestal level) of the luminance (Y) signal to be set. It is used to adjust the black level of two or more cameras.

㊲ Chroma level adjustment [Chroma Level: –3 to +3]
This enables the chroma level to be set in ±3 stages.

㊳ White balance selection [White Bal: ATW, AWC A, AWC B, P SET 3200K, P SET 5600K]

ATW:
Automatic operation is performed to ensure that the white balance is attained at all times.

AWC A, AWC B:
The color temperature conditions at two locations can be stored in the memory using A and B.
If the white balance is first set and the camera is then used under identical conditions, the need to repeat the white balance setting can be obviated by simply selecting AWC A or AWC B.
The colors can be finely adjusted after executing AWC by using R Gain and B gain in Painting adjustment ㊵ or by adjusting the R (red) and B (blue) gain controls on the RCU (RCB).

P SET 3200K:
The white balance which was adjusted under 3200K lighting is set.

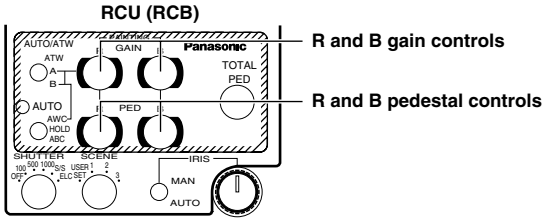
P SET 5600K:
The white balance which was adjusted under 5600K lighting is set.

<Note>
When RCU (RCB) is used, P SET 3200K and P SET 5600K cannot be set.

Menu Item Settings and Changes (in user mode)

㊴ Highlight chroma selection [Highlight Chroma: OFF, LOW or HIGH]
When this is set to LOW or HIGH, the dynamic range of the colors is increased to prevent whitening-out in very bright conditions.

㊵ Painting adjustment [Painting, R Gain, B Gain, R Pedestal, B Pedestal: –30 to +30]
R Gain, B Gain:
These enable the white balance after AWC to be finely adjusted when AWC A or AWC B has been selected as the white balance selection ㊳ setting.
When the RCU (RCB) is to be used for the adjustments, its R (red) and B (blue) gain controls are used.
If AWC is executed when using the camera by itself, the settings will return to ±0.
R Pedestal, B Pedestal:
These enable the black balance after ABC to be finely adjusted.
When the RCU (RCB) is to be used for the adjustments, its R (red) and B (blue) pedestal controls are used.
If ABC is executed when using the camera by itself, the settings will return to ±0.



㊶ 2-dimensional low-pass filter selection [2D LPF: OFF, LOW or HIGH]
This is for setting the 2-dimensional low-pass filter which reduces moire and cross color (color blur).

㊷ Horizontal phase adjustment [H Phase: –206 to +49]
This enables the horizontal phase during genlock to be adjusted.

㊸ Color phase adjustment [SC Coarse: 1, 2, 3 or 4]
This enables the color phase during genlock to be coarsely adjusted.

㊹ Color phase fine adjustment [SC Fine: –511 to +511]
This enables the color phase during genlock to be finely adjusted.

㊺ Color bar setup selection [Color Bar Set: 0.0 IRE or 7.5 IRE]
This enables the setup level of the color bars to be selected.

㊻ Detail level selection [Detail: OFF, LOW or HIGH]
This enables the detail enhancement amount to be set.
The detail is enhanced at the levels set by the horizontal and vertical detail level HIGH/LOW settings ㊼.

Menu Item Settings and Changes (in user mode)

㊼Horizontal detail level HIGH setting [H Detail Level H: +1 to +63]
Vertical detail level HIGH setting [V Detail Level H: +1 to +31]
Horizontal detail level LOW setting [H Detail Level L: 0 to +62]
Vertical detail level LOW setting [V Detail Level L: 0 to +30]
These are for setting the detail levels in the horizontal (H) and vertical (V) directions at the detail level selection ㊻ HIGH and LOW settings.
The HIGH setting must be higher than the LOW setting by at least "1" in both the horizontal and vertical directions.

㊽Detail band selection [Detail Band: 1 to 5]
This is for setting the detail enhancement band when HIGH or LOW has been selected for the detail level selection ㊻ setting. The higher the setting, the finer the detail.

㊾Noise suppression compensation level adjustment [Noise Suppress: 1 to 10]
This is for reducing the amount of screen noise when HIGH or LOW has been selected for the detail level selection ㊻ setting. However, if the setting is too high, the sharpness of detailed subjects is reduced.

㊿Level dependent compensation level adjustment [Level Dependent: 0% to 25%]
This is for reducing the amount of screen noise caused by the detail in the dark areas of the subject. However, if the setting is too high, the sharpness of hair, etc. may be lost.

51Dark detail compensation level adjustment [Dark Detail: 0 to 5]
This is for emphasizing the detail in the dark areas of the subject. It can be set only when "0%" has been selected as the level dependent compensation level adjustment ㊿ setting.

52Chroma detail compensation level adjustment [Chroma Detail: 0 to 15]
This is for emphasizing the detail in the high-chroma areas of the subject.

53Flesh tone detail level selection [DTL Flesh Tone: LOW, MID or HIGH]
LOW : The roughness of the flesh tones is suppressed.
MID : Standard setting
HIGH : The detail enhancement of the flesh tones is boosted.

54Corner detail selection [Corner Detail: OFF or ON]
This enables the corner detail, which enhances the resolution of the peripheral areas, to be set to ON or OFF when HIGH or LOW has been selected for the detail level selection ㊻ setting.

55Precision detail level selection [Precision Detail: OFF, LOW or HIGH]
This is for narrowing the detail width to suppress the glaring caused by the detail.

Menu Item Settings and Changes (in user mode)

㊻ Color matrix compensation level adjustment
[Matrix (R-G), (R-B), (G-R), (G-B), (B-R), (B-G): –31 to +31]
These are for adjusting the color matrix compensation.
(R-G) : The colors between red and magenta are toned up or down.
(R-B) : The colors between red and yellow are toned up or down.
(G-R) : The colors between green and cyan are toned up or down.
(G-B) : The yellowish green color is toned up or down.
(B-R) : The colors between blue and cyan are toned up or down.
(B-G) : The purple color is toned up or down.

㊼ Gamma correction level setting [Gamma: 0.35 to 0.55]
This enables the gamma correction level to be set.

㊽ Knee compensation level setting [Knee Point: 88% to 98% or dynamic]
88% to 98%:
The level of the knee-compensated video signals can be set (knee point).
Dynamic:
The knee compensation level is automatically adjusted to match the light quality.

㊾ White clip level setting [White Clip: 95% to 110%]
The peak level of the white-clipped video signals can be set.

㊿ Flare compensation level adjustment [Flare R/G/B: 0 to 100]
These enable the flare compensation level to be adjusted.
<Note>
The flare compensation level is set prior to shipment.

(61) Black stretch selection [Black Stretch: ON or OFF]
This makes it possible to set the black stretch which compensates for blacking-out under low-brightness conditions to ON or OFF.

(62) Clean DNR selection [Clean DNR: HIGH, LOW or OFF]
This enables the clean DNR effect to be selected.

(63) PC control communication speed selection
[Baud Rate: 1200, 2400, 4800 or 9600 bps]
This is for selecting the baud rate at which the camera is to be controlled from a computer.

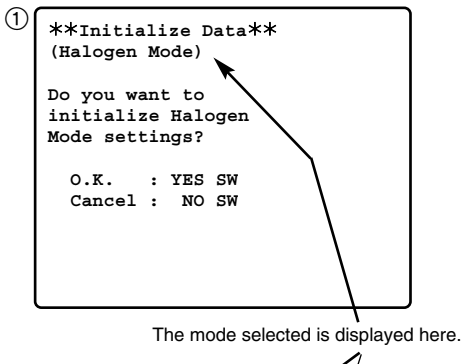
(64) Negative/positive selection [Nega/Posi: Posi or Nega]
Posi : Normal images.
Nega : Images whose light and dark sections and colors are reversed.
<Note>
Negative images are shown only for composite outputs and Y/C outputs when the option cards are used.

Returning to Initial Settings

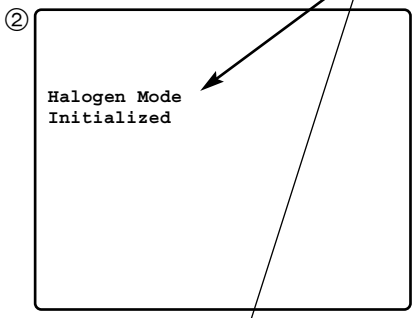
The initial (factory) settings can be restored when, for example, mistakes have been made in the settings in the respective mode.

1. Select Initialize Data on the main menu for the selected mode, and press the YES/ABC switch. The Initialize Data sub-menu screen shown on the right will now appear for about 10 seconds.

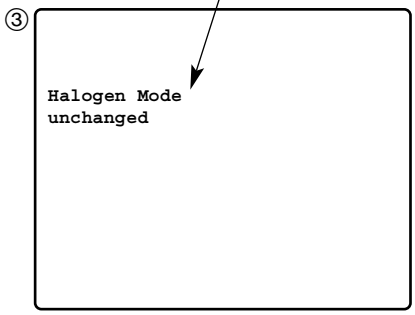
Initialize Data sub-menu



2. Once the Initialize Data sub-menu screen has appeared, press the YES/ABC switch within 10 about seconds to initialize the settings. A message is then displayed on the screen such as the one shown in ②, and operation returns to the main menu.



3. If, after the Initialize Data sub-menu screen has appeared, the NO/BAR switch is pressed or the YES/ABC switch is not pressed within 10 about seconds, a message such as the one shown in ③ will be displayed on the screen, and operation will return to the main menu without initializing the settings.



<Note>

When an option card is being used, the Option Card Set sub-menu does not return to the initial settings even if the “return to initial settings” operation is performed.

Returning to Initial Settings

■ Initial settings (factory settings)

● Initial settings in halogen light, fluorescent light and outdoor modes

	Item	Halogen mode	Fluorescent mode	Outdoor mode
Brightness Set	Picture Level Light PEAK/AVG Light Area Auto ND (ELC) Auto Gain Up Manu Gain Up Pedestal Contrast (Gamma)	±0 0 Top cut OFF OFF 0dB ±0 MID	±0 0 Top cut OFF OFF 0dB ±0 MID	±0 0 Top cut ON HIGH --- –10 MID
Color Set	Chroma Level Flesh Tone White Bal High-light Chroma	±0 ±0 AWC A OFF	+1 ±0 AWC A OFF	+2 ±0 ATW OFF
G/L. Color Bar Set	H Phase SC Coarse SC Fine Color Bar Set	±0 1 ±0 7.5 IRE	±0 1 ±0 7.5 IRE	±0 1 ±0 7.5 IRE
Sharpness (DTL) Set	DTL Select Level Noise Suppress Clean DNR DTL Flesh Tone	Sharpness HIGH OFF OFF MID	Sharpness HIGH OFF OFF MID	Sharpness HIGH OFF OFF MID
Other Set	Shutter Speed Synchro Scan V Resolution Baud Rate Nega/Posi	OFF --- Normal 9600bps Posi	OFF --- Normal 9600bps Posi	Auto ND --- Normal 9600bps Posi

Returning to Initial Settings

● **Initial settings in user mode**

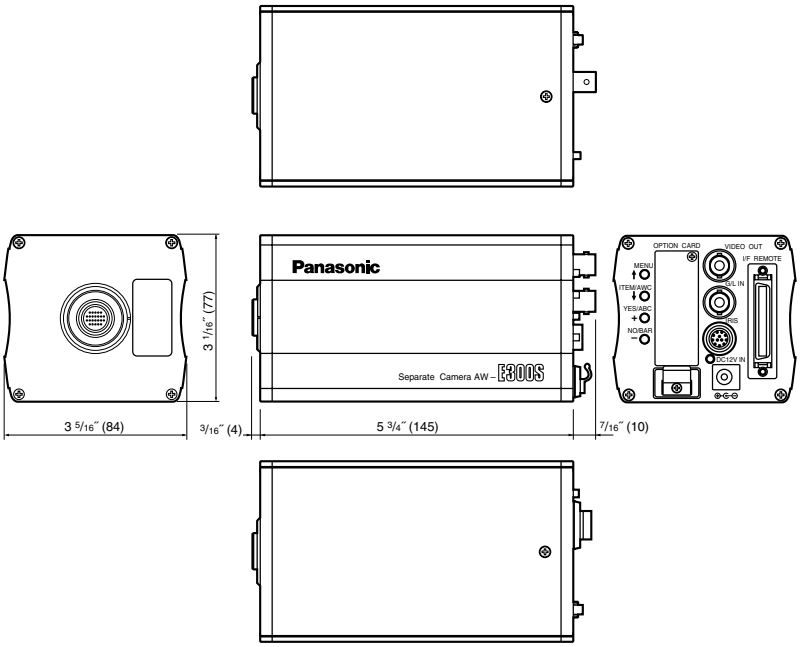
	Item	User mode
Iris, Shutter, Gain Set	Picture Level	±0
	Light PEAK/AVG	0
	Light Area	Top cut
	Auto Iris Adjust	OFF
	Shutter Mode	Step
	Step	OFF
	Synchro Scan	---
	Field/Frame	Field
	Gain	0dB
	Pedestal	±0
Color Set	Chroma Level	±0
	White Bal	AWC A
	High-light Chroma	OFF
	Painting R Gain	±0
	B Gain	±0
	R Pedestal	±0
	B Pedestal	±0
	2D LPF	OFF
G/L. Color Bar Set	H Phase	±0
	SC Coarse	1
	SC Fine	±0
	Color Bar Set	7.5 IRE
Detail Set 1	Detail	HIGH
	H Detail Level H	+11
	V Detail Level H	+12
	H Detail Level L	+7
	V Detail Level L	+6
	Detail Band	2
	Noise Suppress	3
	Level Dependent	0%
	Dark Detail	0
Detail Set 2	Chroma Detail	0
	Flesh DTL Level	MID
	Corner Detail	OFF
	Precision Detail	OFF

	Item	User mode
Color Matrix Set	Matrix(R-G)	±0
	Matrix(R-B)	±0
	Matrix(G-R)	±0
	Matrix(G-B)	±0
	Matrix(B-R)	±0
	Matrix(B-G)	±0
Other Set	Gamma	0.45
	Knee Point	88%
	White Clip	110%
	Flare R	0
	Flare G	0
	Flare B	0
	Black Stretch	OFF
	Clean DNR	OFF
	Baud Rate	9 600bps
	Nega/Posi	Posi

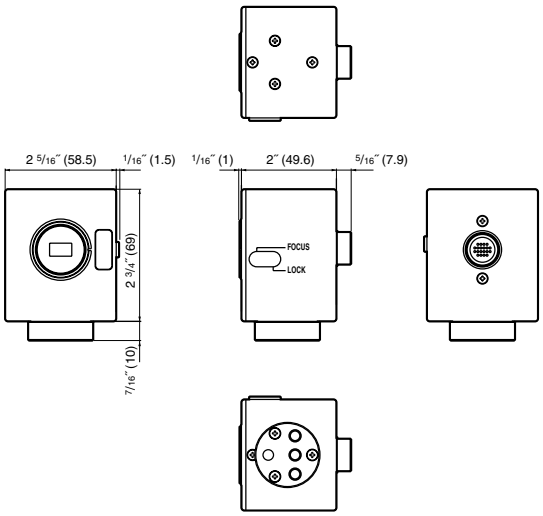
Outline Drawings

■ Main unit

Unit: inch (mm)



■ Camera head unit



Specifications

Power requirements: DC 12V
Power consumption: 0.8 A

Operating temperature range:
14°F to +113°F (–10°C to +45°C)
Allowable humidity:
30 % to 90 %
Dimensions (W×H×D):
Main unit:
3 5/16″×3 1/16″×6 5/16″
(84×77×159 mm)
Camera head unit:
3 1/8″×2 3/8″×2 5/16″
(79×60×58.5 mm)
Weight:
Main unit:
Approx. 1.408 lb (0.64 kg)
Camera head unit:
Approx. 0.506 lb (0.23 kg)
Finish:
AV ivory-colored paint (color approximates Munsell 7.9Y6.8/0.8)
Optical system:
1/3-inch prism optical system, f/1.4
Pickup device:
1/3-inch IT-type CCD 3-panel system
Total number of pixels:
811(H)×508(V) for NTSC
Number of effective pixels:
768(H)×494(V) for NTSC
Pickup area:
4.8(H)×3.6(V) mm
Scanning system:
NTSC 2:1 interlace, 525 lines, 60 fields, 30 frames
Scanning frequency:
15.734 kHz horizontal, 59.94 Hz vertical
Synchronization system:
Internal sync/gen-lock
Gen-lock input:
1.0 V [p-p] black burst signal (BNC connector, 50-pin D-sub connector)
Video outputs:
NTSC composite 1.0 V [p-p]/75 Ω (BNC connector, 50-pin D-sub connector)
YC:
1.0 V [p-p] for Y, 0.286 V [p-p] for C (50-pin D-sub connector)
Standard illumination:
2,000 lux (3,200K, f/8)
Minimum illumination:
1.5 lux (f/1.4, 'night eye' mode)
S/N ratio:
62 dB (with DNR ON)
Horizontal resolution:
800 lines (high band DTL ON)
Registration:
0.05%
Detail enhancement:
Horizontal/vertical (works for both)
White balance:
Automatically adjusted for A and B in 2 memories, fine adjustment, ATW, 3200K, 5600K
Black balance:
Automatically adjusted
Gain switching:
AGC LOW/HIGH, 0 dB to 30 dB, N-Eye
Iris:
Auto, manual

Specifications

Electronic shutter:
Synchro scan:
60.34 Hz to 15.75 kHz
Step shutter:
OFF, 1/100, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
ELC:
Target level variable

Operation mode selection:
halogen light, fluorescent light, outdoor, user

Color bars:
SMPTE color bars (setup: 0/7.5%)

Lens mount:
1/3-inch C mount

Switches:
Back panel:
MENU, ITEM/AWC, YES/ABC, NO/BAR
Menu item setting:
Gain, Shutter, White Balance, Detail Level (OFF/LOW/HIGH), Corner Detail, Precision Detail Level, Black Stretch, High Light Chroma, Skin Color Detail, Photometric Measurement Method (ALL/CENTER/TOP CUT/BOTTOM CUT/R/L CUT) CCD Read Out Mode (FIELD/FRAME 1/FRAME 2) Clean DNR, Color Bar Setup, Use Mode, Nega/Posi, PC Control Access Speed

Adjustment function:
Menu adjustment:
R/B Gain, R/B Pedestal, Black Level, Video Level, Detecting Ratio, Genlock Horizontal Phase/Color Phase, Gamma Compensation Level, Knee Compensation Level, White Clip Level, Horizontal Detail Level, Vertical Detail Level, Detail Band Level, Noise Suppress Compensation Level, Level Dependent Compensation Level, Chroma Detail Compensation Level, Dark Detail Compensation Level, Matrix Compensation Level, Flare Correction Level

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

■ Accessories

Connection cable for the camera head and the main unit (3m ×1)

Panasonic

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Printed in Japan
VQT9257

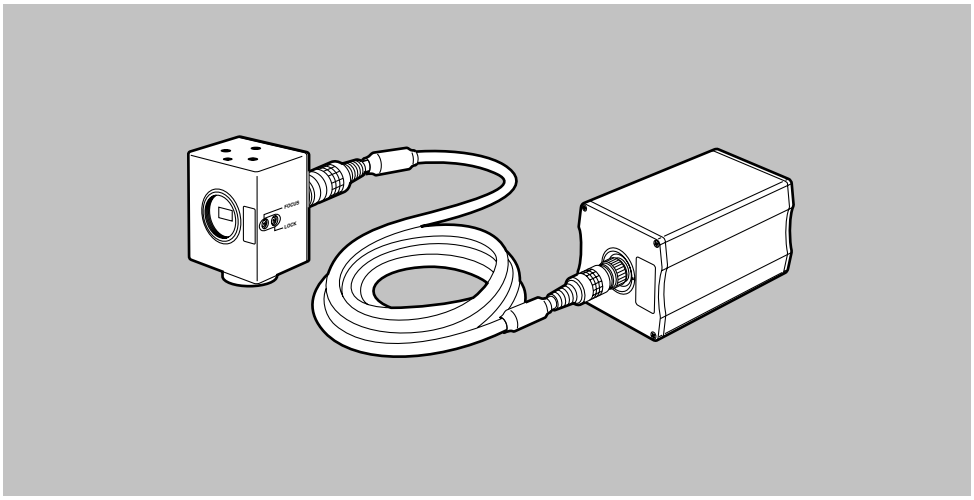
F0301W D P

Operating Instructions

ENGLISH
DEUTSCH
FRANÇAIS
ITALIANO

1/3-inch Camera With Separate Head

Model AW-E300SE



Panasonic

Before attempting to connect, operate or adjust this product, please read these instructions completely.

■ **DO NOT REMOVE PANEL COVER BY UNSCREWING.**

To reduce the risk of electric shock, do not remove cover. No user serviceable parts inside.

Refer servicing to qualified service personnel.

WARNING:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, KEEP THIS EQUIPMENT AWAY FROM ALL LIQUIDS-USE AND STORE ONLY IN LOCATIONS WHICH ARE NOT EXPOSED TO THE RISK OF DRIPPING OR SPLASHING LIQUIDS, AND DO NOT PLACE ANY LIQUID CONTAINERS ON TOP OF THE EQUIPMENT.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

 indicates safety information.

ENGLISH

Contents

Introduction

- Featuring digital video signal processing, this 1/3-inch 3-CCD system colour camera with its separate head achieves a high picture quality and high reliability as well as many and varied functions despite its compact size and light weight.
- The head is separate which means that it can easily be mounted on a microscope (C mount), for instance.
- Using a menu screen format, the camera's shooting conditions and functions can easily be set and changed.
- The camera can be connected to a peripheral unit such as an RCB or RCU for expanding the capabilities of the system to suit the intended applications.
- A wide range of applications can be supported by installing optional cards.

Features

High picture quality, high reliability, many and varied functions, a compact size and light weight achieved by incorporating digital video signal processing

- Resolution: 800 lines (high band DTL ON), S/N ratio: 62 dB (DNR ON)
- Minimum illumination: 1.5 lux (f/1.4 'night eye' mode)

Many and varied functions despite compact size

- Setting of camera parameters using menu screens enabled
- Auto functions such as ATW, ELC and AGC incorporated
- CCD readout (field, frame) switching supported
  The vertical resolution can be improved by switching to the frame mode, and this is useful for capturing still images and other kinds of image processing.
- Synchro scan function provided to reduce horizontal line noise when computer screens are shot
- Functions for controlling camera by computer incorporated
- Extension of cable (standard length of 3 meters) between head unit and main unit up to 10 meters possible

Faithful image reproduction assured by many compensation circuits

- Even areas with dark colours reproduced clearly by chroma detail enhancement
- Natural detail enhancement enabled even for dark areas by dark detail circuit
- Natural dynamic range reproduced by digital highlight chroma
- Faithful reproduction of colours enabled by digital colour matrix

Full spectrum of video productions supported

- Conditions optimally suited to each application selectable from 4 operation modes (halogen light mode, fluorescent light mode, outdoor mode and user mode)
- Full colour bar display provided
- Remote control enabled by RCU or RCB

Special Notes on Operation

- Turn the power off before connecting or disconnecting cables.
- Connection or disconnection of any studio cable, RCB cable or other cable to any unit of equipment must be performed while power is off.

While the camera is in automatic mode:

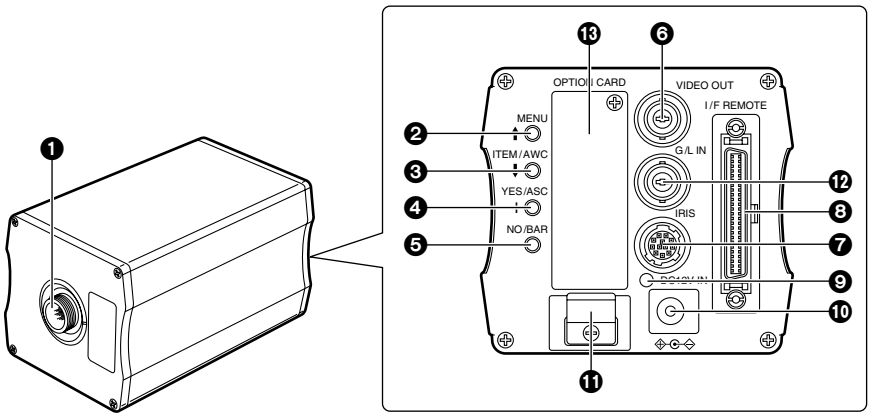
- Shooting of bright objects in ELC operation mode may result in a smeared picture unique to the CCD.
- The ATW function under fluorescent illumination can adversely change the white balance.

Precautions

- Do not attempt to disassemble the camera, Remote Control Unit (RCU) or other units. In order to prevent electric shock, do not remove screws or covers. There are no user-serviceable parts inside.
- Do not mishandle the camera. Avoid striking, shaking, etc. The camera contains precision components which could be damaged by improper handling or storage.
- Do not let the lens remain uncovered when the camera is not in use. If the lens is not installed, do not leave the lens mount hole uncovered.
- Do not touch the surface of the lens or prism.
- Do not use strong or abrasive detergents when cleaning the camera body.
- Do not aim the camera toward the sun, irrespective of whether it is turned on or not.
- Do not expose the camera or Remote Control Unit (RCU) to rain or moisture, and do not try to operate the equipment in wet conditions. Do not operate the camera or RCU if it is wet.
- Do not operate the camera or Remote Control Unit (RCU) outdoors during a thunder storm.
- Do not use the camera where it will be subject to high temperatures or high humidity.
- Do not leave the camera and Remote Control Unit (RCU) turned on when not in use. Do not unnecessarily turn the camera power on and off repeatedly. Do not block the ventilation slots.
- Refer any servicing to qualified service personnel.
- Handle the camera with care.
- Place the lens cap on the lens when the camera is not in use. If the lens is not installed, protect the surface of the prism by placing the body cap over the lens mount hole.
- Use a mild blower or lens cleaning tissue designed for coated lenses to clean the surface of the lens or prism if it requires cleaning.
- Use a dry cloth to clean the camera if it is dirty. If the dirt is hard to remove, use mild detergent and wipe gently.
- Use caution when operating the camera near spot lights or bright lights, as well as any objects and surfaces which may reflect light.
- If the camera or RCU gets wet, turn the power off immediately and have the unit checked by an authorized service facility.
- Follow normal safety precautions to avoid personal injury.
- Use the camera in an environment where the temperature is within –10°C to +45°C, and the relative humidity is within 30 % to 90 %.
- Always turn the power off when the camera is not going to be used. Operate the camera and RCU only when there is adequate ventilation.
- Operating a wireless device that generates powerful radio waves near the camera may adversely affect the output images.

Parts and Their Functions

■ Main unit



❶ Cable connector

This is used to connect the camera to the camera head unit using a cable.

❷ MENU switch [MENU (↑)]

The menu will appear on the screen when this switch is pressed for about 5 seconds. When it is pressed while a menu is displayed, the menu item immediately above is selected.

❸ ITEM/AWC switch [ITEM/AWC (↓)]

When this switch is pressed while a menu is displayed, the menu item immediately below is selected. While a menu is not displayed (when the camera is in the shooting mode), it serves as the automatic white balance control (AWC) switch.

❹ YES/ABC switch [YES/ABC (+)]

When this switch is pressed while a menu is displayed, the sub-menu of a menu item appears on the screen. When it is pressed while a sub-menu is displayed, the higher of the two settings shown is selected. While a menu is not displayed, it serves as the automatic black balance control (ABC) switch.

❺ NO/BAR switch [NO/BAR (–)]

When this switch is pressed while the main menu is displayed, the next item down can be selected. When it is pressed while a sub-menu is displayed, the lower of the two settings shown is selected. When it is pressed for about 5 seconds while a menu is not displayed, the colour bar signals and camera (shooting mode) are switched.

Parts and Their Functions

❻ Video output connector [VIDEO OUT]
The composite video signals are output from this connector.
(1 V [p-p], 75 Ω, BNC connector)

❼ Iris connector [IRIS]
This is the standard input connector of the lens which comes with an auto iris function.

❽ Interface/remote connector [I/F REMOTE]
This is used to connect the remote control unit (RCU: WV-RC700A or WV-RC550), remote control box (RCB: WV-CB700A), etc.
The AW-CA50A26 RCU cable is required to connect the WV-RC700A or WV-RC550.
The AW-CA50T10 RCB cable is required to connect the WV-CB700A.

❾ Power LED
This lights up red when DC power is supplied to the DC 12 V input socket ❿.

❿ DC 12V input socket [DC 12V IN]
The DC 12 V power supply (2 A or above) is connected here using the AW-CA4T1 DC power cable.

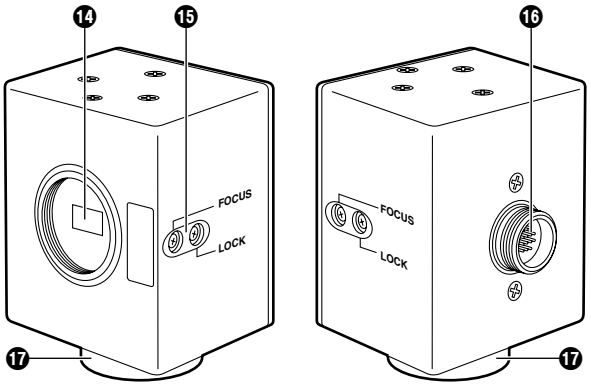
⓫ Cable clamp
This clamps the AW-CA4T1 DC power cable which has been connected to the DC 12 V input socket ❿ to prevent the cable from becoming disconnected.

⓬ Genlock input connector [G/L IN]
The external sync (black burst) signals are supplied to this connector to achieve genlock with the camera.

⓭ Option card slot
This slot is used by the option cards.
For further details, refer to the operating instructions of the option card concerned.

Parts and Their Functions

■ Camera head unit



⓮ Lens mount

A 1/3-inch C mount lens or microscope adapter, etc. is attached here.

⓯ Flange back adjust screw [FOCUS/LOCK]

When the flange back needs to be adjusted, remove the cap, loosen the LOCK screw, and adjust by turning the FOCUS screw. (Adjustment range: ±0.2 mm)
Upon completion of the adjustment, re-tighten the LOCK screw.

⓰ Cable connector

This is used to connect the head unit to the main unit using a cable.

⓱ Camera mounting adapter

(mounting screw holes: M2.6×10, spring washers provided)

This is used to secure the head unit when it is to be installed on a wall or ceiling or a tripod is to be used. The head unit can be mounted on the top or bottom surface.

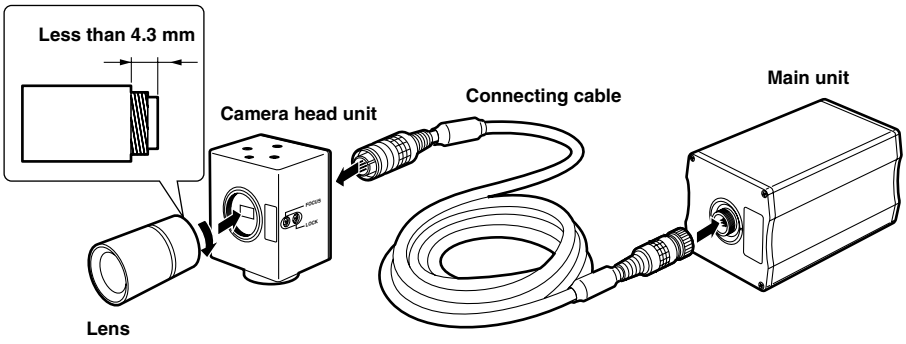
Installation

You must ask your dealer to take charge of installing, adjusting and connecting this unit.

■ Attaching the lens

Remove the lens mount cap, align the lens with the thread ridges on the lens mount and screw it firmly into place.

- A 1/3-inch C mount type of lens can be used.
  Be absolutely sure that a lens whose mount threads extend no more than 4.3 mm from the lens mount surface is used. Use of any other kind of lens may damage the camera unit.
- Some lenses need to be attached in a different way. Therefore, reference should also be made to the operating instructions that accompany the lens.



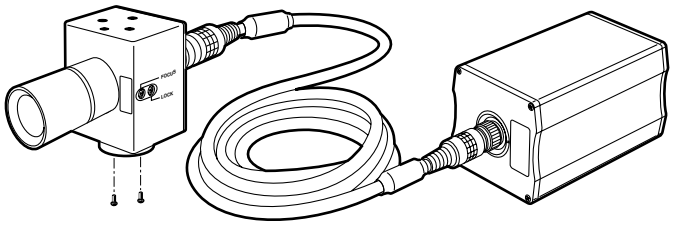
■ Installation on a camera stand (tripod, etc.)

①Mount the camera mounting adapter onto the top or bottom surface of the camera head unit.

②Use the screw holes (1/4-20UNC) in the camera mounting adapter to secure the camera stand (tripod, etc.) firmly.

Preventing the head unit from falling off or dropping

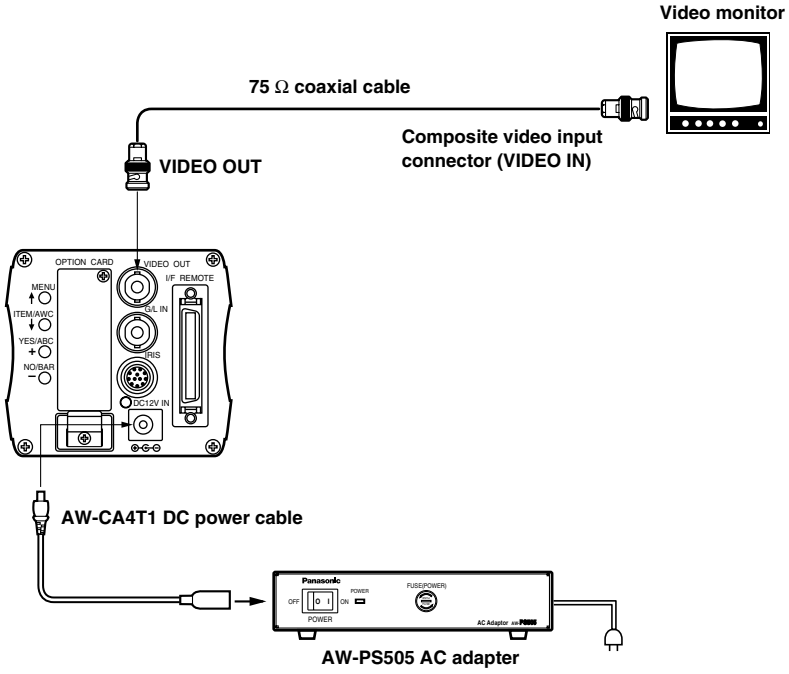
Check that the stand can adequately withstand the total weight including the weight of the connecting cable and other parts. Use the prescribed tool to mount the head unit securely, and be absolutely sure to take steps to prevent the camera from dropping.



System Configuration (Connections)

■ Connecting equipment with a composite video input connector

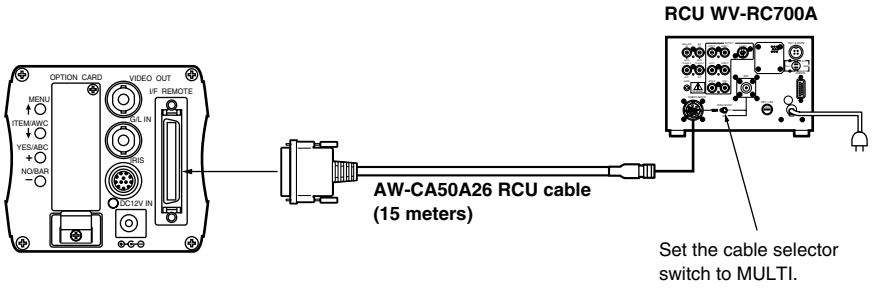
- Connect the output from the camera's video output connector to the video monitor, VTR or other such unit which is provided with a composite video input connector.
- Use the AW-PS505 AC adapter for the power supply.
  Use the AW-CA4T1 as the DC power cable.



System Configuration (Connections)

■ Connecting a remote control unit (RCU)

- Use the AW-CA50A26 RCU cable to connect the RCU (WV-RC700A or WV-RC550) and the camera.
- The distance between the WV-RC700A and the camera can be extended up to a maximum of 300 meters.
  The distance between the WV-RC550 and the camera can be extended up to a maximum of 100 meters.
  Use the WV-CA26U15 (15 meters), WV-CA26U30 (30 meters) and WV-CA26U100 (100 meters) studio cables and the WV-CA26T26 cable joint adapter for extension.
- The power for the camera is supplied from the RCU.

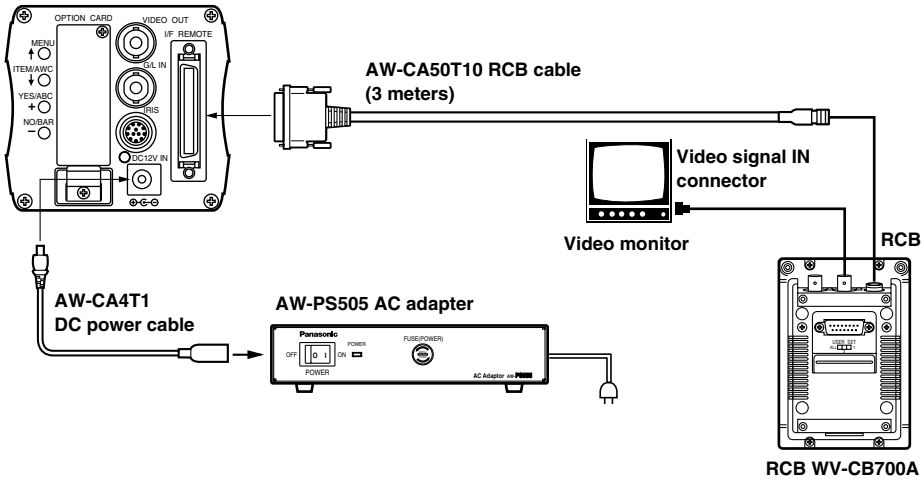


①Before proceeding to connect the RCU to the camera, set the RCU's power switch to OFF.
②If the WV-RC700A is to be used, set the cable selector switch on the RCU to MULTI.
③Connect the 50-pin end of the RCU cable to the interface/remote connector on the camera, and connect the 26-pin end to the RCU.
④When the RCU's power is set to ON, the camera's power LED lights up, and the camera is controlled from the RCU.

System Configuration (Connections)

■ Connecting a remote control box (RCB)

- Use the AW-CA50T10 RCB cable to connect the RCB (WV-CB700A) and the camera.



①Before proceeding with the connections, set the AC adapter's power switch to OFF and the RCB ON/OFF switch on the RCB panel to OFF.
②Connect the 50-pin end of the RCB cable to the interface/remote connector on the camera, and connect the 10-pin end to the RCB.
③Once the AC adapter's power switch is set to ON and the RCB ON/OFF switch is set to ON, the camera can be controlled from the RCB.
④Upon completion of shooting, first set the RCB ON/OFF switch to OFF and then set the AC adapter's power switch to OFF.

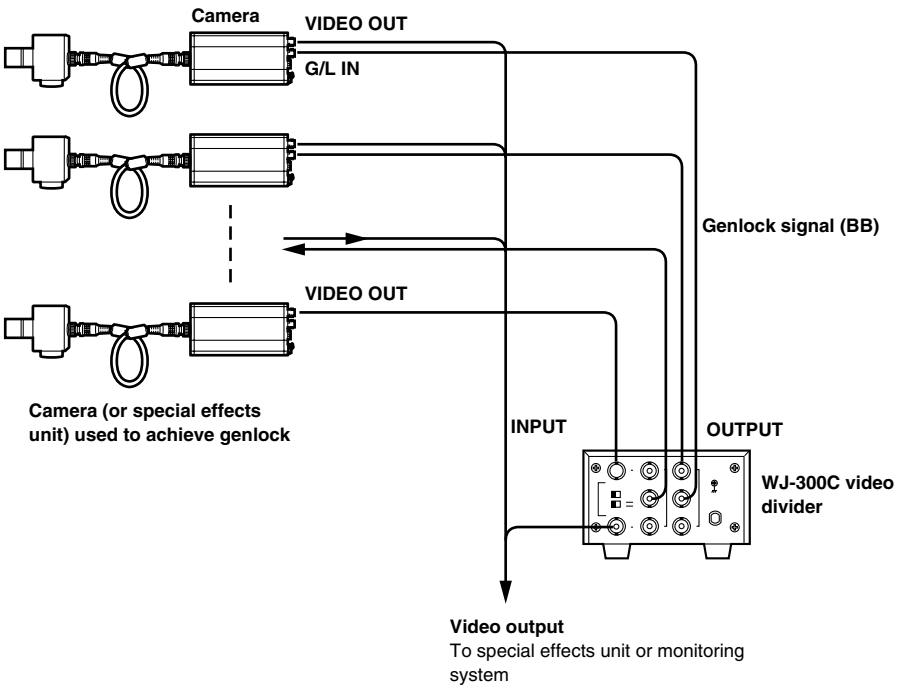
<Notes>

- The camera's setting will not be stored in the memory if the AC adapter's power switch is set to OFF before the RCB ON/OFF switch is set to OFF.
- Since use of a cable which is too long causes a deterioration in the RCB's monitor output due to attenuation, this output should be used only for monitoring (verification) purposes.
- Genlock input signals cannot be supplied from the RCB.

System Configuration (Connections)

■ Connecting multiple cameras (achieving genlock)

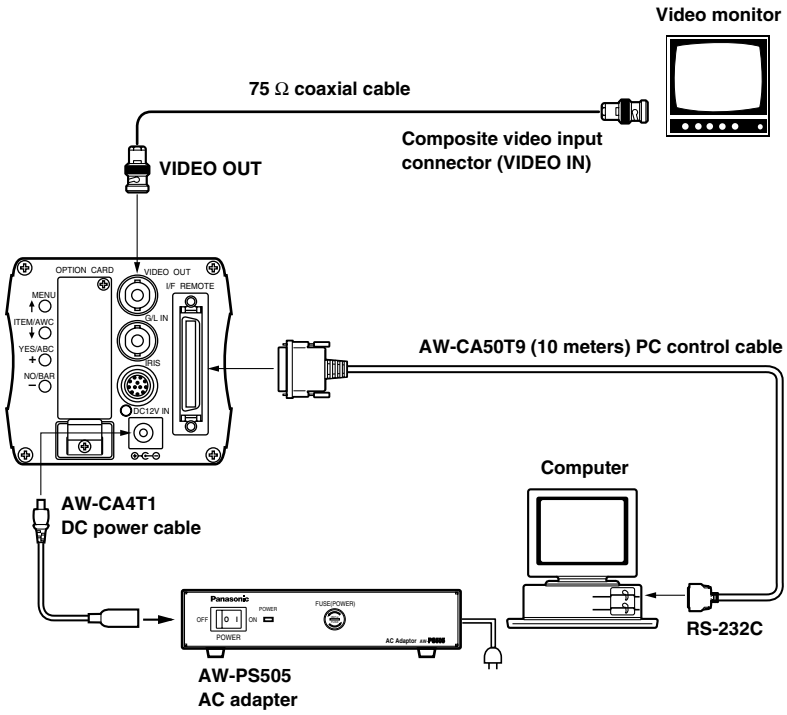
- Input the sync signal (BB) to the genlock input connector.
- Do not turn off the power of the camera which is used to achieve genlock.
- The genlock adjustment must be performed when genlock is to be achieved. (See page 24)



System Configuration (Connections)

■ Connections for exercising control from a computer

The AW-CA50T9 PC control cable and the dedicated software programme are required for the camera to be controlled from the computer. Ask your dealer for details.



System Configuration (Connections)

■ Reference: Model numbers of related equipment

Read the operating instructions of the equipment concerned along with these instructions.

Remote control unit:
WV-RC700A
Remote control unit:
WV-RC550
Remote control box:
WV-CB700A
RCU rack-mounting chassis:
WV-Q70
Connecting cable:
WV-CA9T5 (D-sub 9-pin—BNC, approx. 5 meters)
Studio cable:
WV-CA26U15, WV-CA26U30, WV-CA26U100
Cable joint adapter:
WV-CA26T26
RCB cable:
AW-CA50T10
RCU able:
AW-CA50A26
PC control cable:
AW-CA50T9
DC power cable:
AW-CA4T1
RGB cable:
AW-CA50T6
Studio card 1 (with RGB/YPrPb output):
AW-PB301
Studio card 2 (with no RGB/YPrPb output):
AW-PB305
RGB card:
AW-PB302
AC adapter:
AW-PS505

Operating Mode Selection

The user can select the camera's functions to match the operating conditions from the four modes which have been preset. Select the mode that suits the shooting conditions and the user's preferences.

Halogen light mode
This mode is suited to shooting indoors at wedding receptions, parties, seminars and other indoor events. Its settings can be changed using a simple menu.

Fluorescent light mode
This mode is suited to shooting indoors under fluorescent lighting. Its settings can be changed using a simple menu.

Outdoor mode
This mode is suited to shooting outdoors. Its settings can be changed using a simple menu.

User mode
This mode's settings can be changed using a detailed menu.

Operating Mode Selection

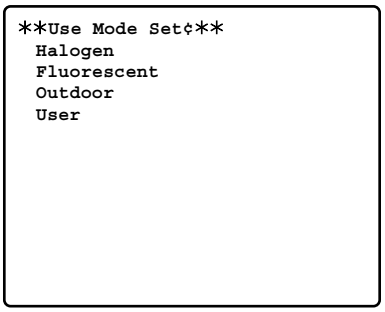
■ How to select the operating mode

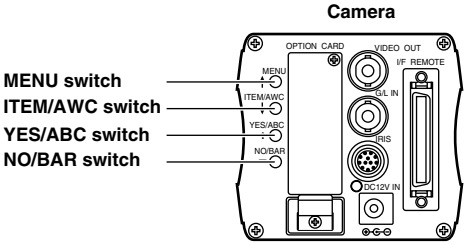
● Operations using the camera by itself

①When the camera's power is turned on while the MENU switch is held down, the Use Mode Set screen appears on the monitor.

②Each time the MENU switch, ITEM/AWC switch or NO/BAR switch is pressed, the flashing operating mode changes. Make the desired operating mode flash by pressing of these switches.

③When the YES/ABC switch is pressed, the flashing item is set, and the setting screen appears for about 5 seconds, after which the shooting mode is restored. After this, the camera will operate the mode which has been set.

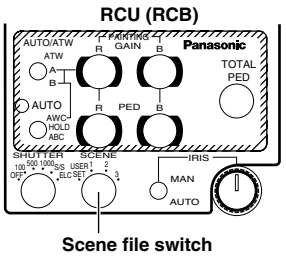




● Operations using the RCU or RCB

The operating mode can be selected using the scene file switch on the RCU or RCB.

Operating mode	RCU (RCB) scene file switch
Halogen light mode	1
Fluorescent light mode	2
Outdoor mode	3
User mode	USER SET



Operating Procedures

1. Turn on the power to the units concerned.

2. Adjust the subject brightness to the appropriate level.

3. Select the operating mode.
Once this mode is selected, it need not be changed so long as the camera is to be used under the same conditions.

4. Adjust the flange back of the lens, and adjust the iris and focus.
- This adjustment must be performed when using the camera for the first time or when the lens has been changed.

5. Adjust the white balance.
- This adjustment must be performed when using the camera for the first time or when the camera has not been used for a prolonged period.
- It must be performed when the lighting conditions or brightness has changed.
- Once this adjustment has been performed, it need not be repeated so long as the camera is to be used under the same conditions.

6. Adjust the black balance.
- This adjustment must be performed when using the camera for the first time or when the camera has not been used for a prolonged period.
- It must be performed when the ambient temperature has changed significantly or at the turning of the seasons.
- Once this adjustment has been performed, it need not be repeated so long as the camera is to be used under the same conditions.

7. Start shooting.
Upon completion of shooting, turn off the power to the units concerned.

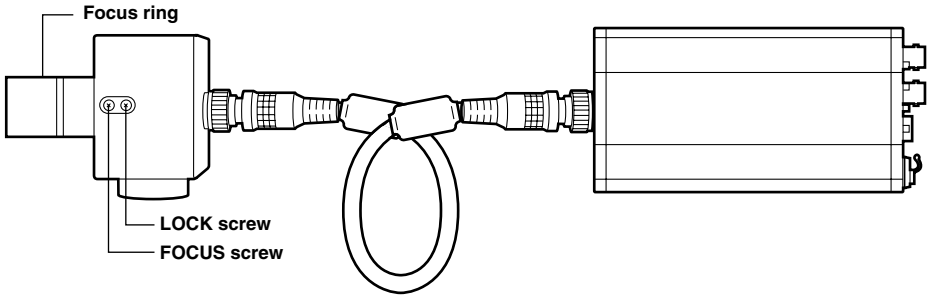
8. To change the camera's settings to match other applications or conditions, refer to page 26 and following.
The settings performed when the camera was shipped are appropriate for most situations.

Adjustments

■ Flange back adjustment

This adjustment will bring the subject into focus across the whole range from the maximum telephoto position to the widest angle position of the zoom lens.
Perform this adjustment when back focusing is not achieved with a fixed focus lens.
(Adjustment range: ±0.2 mm)

①Shoot a dark subject to open the iris.
②Reduce the distance between the camera and subject to less than 2 meters, remove the cap over the camera's flange back adjust screw, and loosen the LOCK screw.
③Set the lens to the maximum telephoto position, and bring the subject into focus using the focus ring.
④Set the lens to the widest angle position, and turn the FOCUS screw to bring the subject into focus.
⑤Repeatedly adjust the focus ring and FOCUS screw until the subject is focused within the the zoom range. Upon completion of the adjustment, tighten up the LOCK screw.



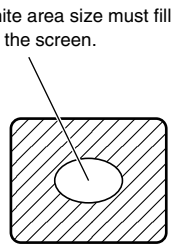
■ White balance adjustment

Automatic adjustment (AWC: AWC A/AWC B)

- Use the camera in the AWC mode if the lighting conditions at the shooting site will remain unchanged.
- When “AWC A” or “AWC B” has been selected for the white balance on the Colour Set sub-menu (pages 31, 37), the colour temperature conditions of two locations can be preset (stored in the memory) using A/B.
- When the camera is to be used under the same conditions as those of the settings, simply perform the adjustment once, and set the menu or RCU (RCB) switch to A or B. After this, there is no need to perform the adjustment again.
- When new settings are established, the previous settings will be erased from the memory.

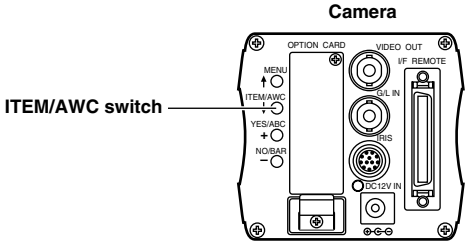
①Select “AWC A” or “AWC B” for the white balance.

②Shoot a white subject (such as a white wall or white handkerchief) to fill the screen.
The size of the white subject must be at least 10% of the screen, and it must appear in the middle. Keep shiny objects or very bright objects off the screen.



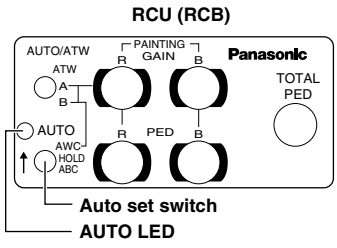
When performing the adjustment using the camera

③ The white balance can be set by pressing the ITEM/AWC switch for at least 2 seconds in the shooting mode.



When performing the adjustment using the RCU (RCB)

④The white balance can be set when the auto set switch is set to “AWC.” The AUTO LED flashes while the white balance is being set.
The AUTO LED goes off to indicate the successful completion of the setting, and it lights to indicate a failed setting procedure. Repeat the setting procedure in the latter case.



Adjustments

Manual adjustment

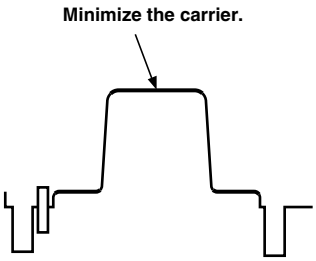
When performing the adjustment using the camera

Manual adjustment can be performed only in the user mode.

①Select “AWC A” or “AWC B” for the white balance.

②Shoot a white subject to fill the screen, and attain the automatic white balance.

③Vary the R (red) and B (blue) gain using Painting on the colour set sub-menu, and adjust it so that the carrier in the white area of the video signals is minimized (or so that the white area of the image turns white). (Perform this adjustment using an oscilloscope or waveform monitor.)



Waveform from white balance setting chart

When performing the adjustment using the RCU (RCB)

After having attained the automatic white balance, adjust the R (red) and B (blue) gain using the R and B gain controls of the RCU (RCB).

<Notes>

- The white balance may not be attained properly if the subject brightness is insufficient.
- After setting the white balance, the level is stored for a prolonged period in the memory inside the camera even when the camera’s power is turned off. There is no need to set it again provided that the status of the subject’s colour temperature remains unchanged. However, if the setting conditions change (if the shooting location changes from outdoors to indoors or vice versa, for example), set the white balance again.
- If the white balance is set when using the camera by itself, the setting for the R (red) and B (blue) gain adjustment using Painting will return to ±0. (The Painting settings are valid only in the user mode.)

Automatic colour temperature tracking (ATW)

It is a good idea to use the camera in the ATW mode if the lighting conditions at the shooting site are likely to change (prolonged shooting outdoors, etc.).

When “ATW” is selected as the white balance setting, compensation is provided automatically so that the white balance is attained automatically even when the light source or colour temperature changes to ensure that the images look natural.

<Note>

The white balance may shift if there is no white on the screen.

3200 K, 5600 K presettings

When “P SET 3200K” or “P SET 5600K” is selected as the white balance setting, the status is established in which the white balance is set at a colour temperature of 3200 K or 5600 K, respectively.

Adjustments

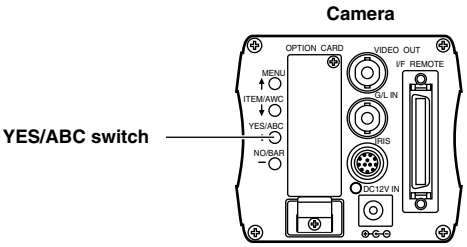
■ Black balance adjustment

This adjustment is performed when using the camera for the first time, when the camera has not been used for a prolonged period or when the lighting conditions have changed, causing the white balance to change significantly which in turn has caused the black balance to alter.

- Close the lens before proceeding.
- If the black balance is set when using the camera by itself, the setting for the R (red) and B (blue) gain adjustment using Painting will return to ±0. (The Painting settings are valid only in the user mode.)

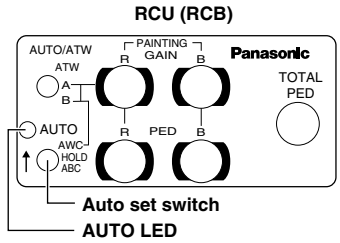
When performing the adjustment using the camera

The black balance is set in about 10 seconds when the YES/ABC switch is held down for two or more seconds.
After the black balance has been set, the black balance can be finely adjusted by varying the R pedestal and B pedestal using Painting on the colour set sub-menu in the user mode.



When performing the adjustment using the RCU (RCB)

The black balance is set when the auto set switch is set to “ABC.” The AUTO LED flashes while the black balance is being set.
The AUTO LED goes off to indicate a successful completion of the setting, and it lights to indicate a failed setting procedure. Repeat the setting procedure in the latter case.



Adjustments

■ Black level (total pedestal) adjustment

This adjustment is performed to align the black level (pedestal level) of multiple cameras. Ask your dealer to perform it.
(This adjustment is performed using an oscilloscope or waveform monitor.)

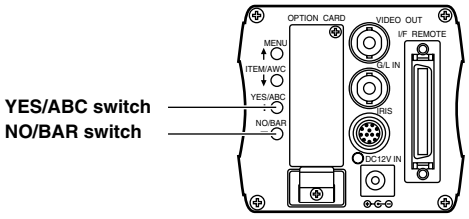
When performing the adjustment using the camera

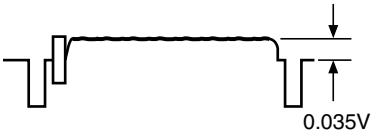
①Close the lens.
②Select the black level using the brightness setting on the sub-menu (or iris/shutter/gain settings in the user mode).
③Adjust the black level to 0.035 V using the YES/ABC switch or NO/BAR switch.

```
**Brightness Set**
  A.Iris Level                ±0
  A.Iris PEAK/AVG              0
  A.Iris Area           Top cut
  Auto ND (ELC)               OFF
  Auto Gain Up                OFF
  Manu Gain Up                0dB
  Pedestal                    ±0
  Contrast(Gamma)             MID


Return
```

Camera

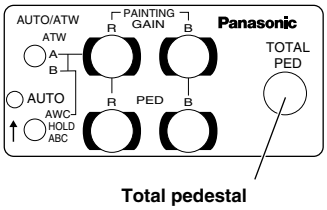




When performing the adjustment using the RCU (RCB)

Adjust the black level to 0.035 V using the total pedestal control.

RCU (RCB)



ENGLISH

Adjustments

■ Genlock adjustment

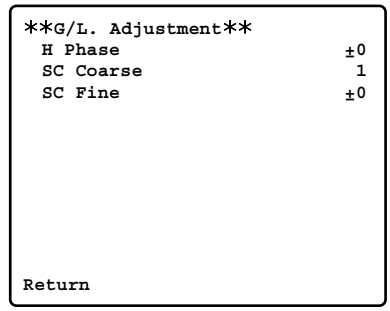
When multiple cameras are to be used or the camera is to be used in combination with other equipment, the phase adjustments must be performed using the camera or RCU (RCB) in order to achieve genlock and bring the phases into alignment. Ask your dealer to perform it.

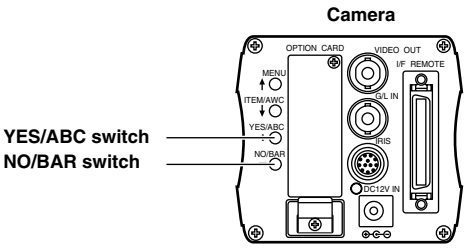
Horizontal phase adjustment

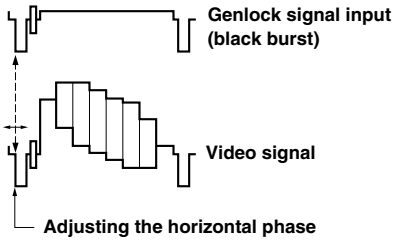
Monitor the genlock signal input (black burst signal) and video signal output waveforms on a dual-trace oscilloscope, and bring the horizontal phase into alignment using the camera or RCU (RCB).

When performing the adjustment using the camera

①Hold down the NO/BAR switch for at least 5 seconds or so, and set to colour bars.
②Select “H phase” as the genlock/colour bar setting on the sub-menu.
③Bring the horizontal phase into alignment using the YES/ABC switch or NO/BAR switch.

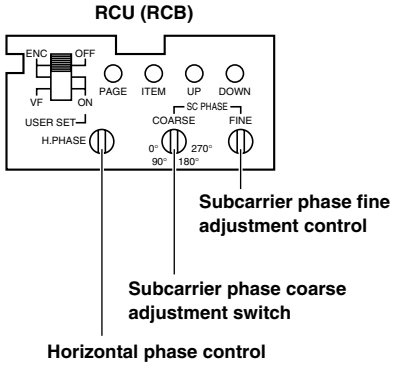






When performing the adjustment using the RCU (RCB)

Use the horizontal phase control to perform the adjustment.



<Note>

When adjusting the horizontal phase from the RCU (RCB), set the BAR/CAM switch to BAR before performing the adjustment.
The horizontal phase cannot be adjusted if this switch is set to CAM. Upon completion of the adjustment, be absolutely sure to return the BAR/CAM switch to CAM.

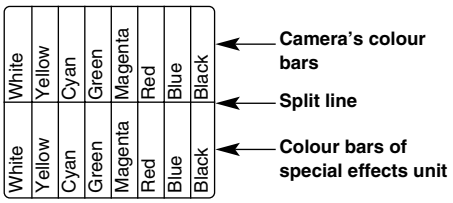
Adjustments

Colour phase adjustment

Align the camera's colour phase to the reference colour tones such as the programme output (colour bar output which has been split) of a colour special effects unit.
Adjusting the colour phase with the vectorscope makes it possible to obtain an even finer adjustment.

When performing the adjustment using the camera

①Hold down the NO/BAR switch for at least 5 seconds or so, and set to colour bars.
②Select "SC coarse" for the genlock colour bar setting on the sub-menu, and use the YES/ABC switch or NO/BAR switch to perform the coarse adjustment.
③Select "SC fine," and use the YES/ABC switch or NO/BAR switch to adjust finely so that the colour phase is brought into alignment.



When performing the adjustment using the RCU (RCB)

Use the "subcarrier phase coarse adjustment switch" and "subcarrier phase fine adjustment control" to perform the adjustment.

<Note>

When adjusting the colour phase from the RCU (RCB), set the BAR/CAM switch to BAR before performing the adjustment.
The colour phase cannot be adjusted if this switch is set to CAM.
Upon completion of the adjustment, be absolutely sure to return the BAR/CAM switch to CAM.

Menu Item Settings and Changes

■ Setting the menu items

- The unit's 4 operation modes (halogen light mode, fluorescent light mode, outdoor mode and user mode) each have a main menu.
- Each item on the main menu has a sub-menu, and each sub-menu has several setting items.
- Although the setting items were preset to the optimum values or levels for each operation mode before the unit was shipped, they can be changed to suit the actual shooting conditions.
- The settings can be performed from the camera or RCU (RCB).

Setting procedure

①Settings using the camera itself

Hold down the MENU switch for at least 5 seconds.

Settings using RCU (RCB)

Set the user set switch inside the pocket to ON.

The main menu screen for the operation mode selected now appears. Refer to page 17 for details on selecting the operation mode.

②Each time the MENU switch, ITEM/AWC switch or NO/BAR switch is pressed, the flashing item changes.

③When the YES/ABC switch is pressed, the sub-menu screen for the flashing item appears.

④Select the item to be set or changed using the menu screen or ITEM/AWC switch.

⑤Change the setting using the YES/ABC switch or NO/BAR switch.

⑥Select "Return" using the MENU switch or ITEM/AWC switch, and press the YES/ABC switch. Operation now returns to the main menu.

⑦When the settings are completed

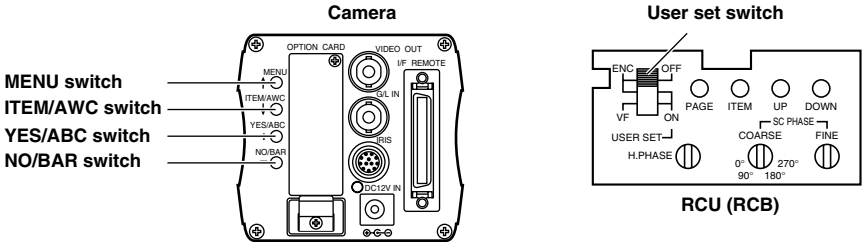
Settings using the camera itself

Select "End," and press the YES/ABC switch.

Settings using RCU (RCB)

Set the user set switch inside the pocket to OFF.

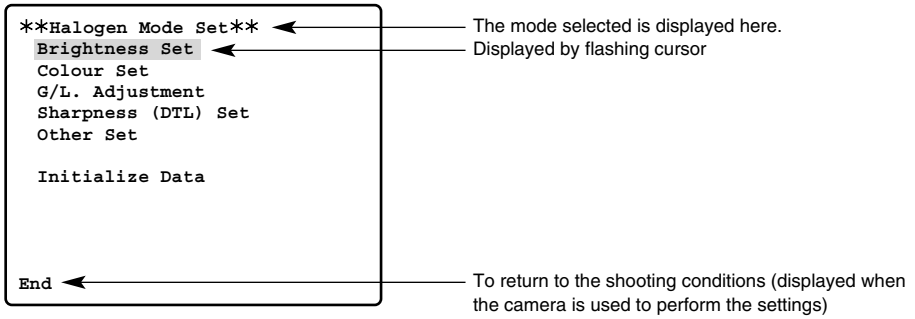
The camera will now operate under these setting conditions.



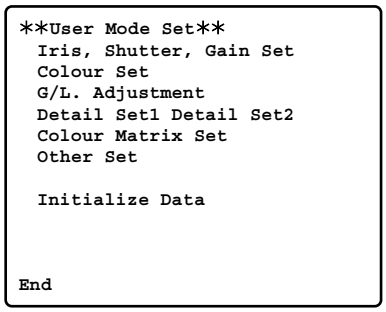
Menu Item Settings and Changes

Main menu screen

Main menus for halogen light mode, fluorescent light mode and outdoor mode



Main menu for user mode



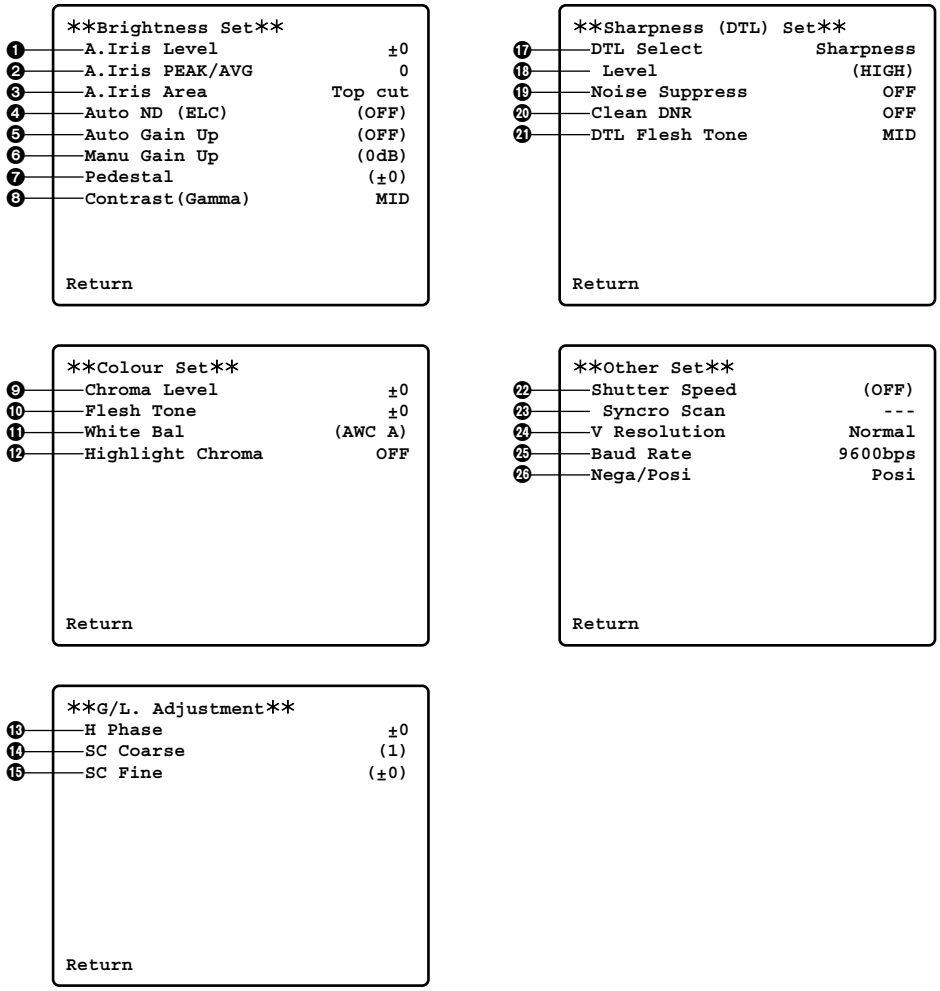
<Notes>

- Composite signals are supplied to the video output whether the RCU (RCB) user set switch is at the ENC or VF position.
- “End” appears when the camera is used to perform the settings.

Menu Item Settings and Changes

(in halogen light mode, fluorescent light mode or outdoor mode)

■ Halogen light, fluorescent light and outdoor mode sub-menu screens



<Notes>

- When the RCU (RCB) is used, items whose settings are enclosed in the parentheses are set using the switches or controls on the RCU (RCB).
- To return to the initial (factory) settings, refer to page 41.

Menu Item Settings and Changes

(in halogen light mode, fluorescent light mode or outdoor mode)

❶ Picture level adjustment [A. Iris Level: –50 to +50]

This is for adjusting the convergence level of Auto Iris, Auto Gain Up and Auto ND (ELC). (The auto iris is adjusted when a motor-driven lens is used.)

❷ Light-metering detection ratio adjustment [A. Iris PEAK/AVG: P50 to A50]

This enables the ratio of the average level (A) to peak level (P) at which Auto Iris, Auto Gain Up and Auto ND (ELC) are detected to be adjusted.

❸ Light metering method selection

[A. Iris Area: All, centre, top cut, bottom cut, R/L cut]

This enables the light-metering method for Auto Iris, Auto Gain Up and Auto ND (ELC) to be selected.

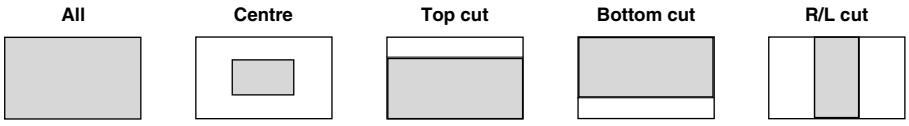
All : Light metering over the entire screen area; the light of the whole screen is metered.

Centre : Light metering with priority given to the centre of the screen; about one-third of the screen at the top and bottom and one-third on the left and right sides are cut off.

Top cut : Light metering with one-third at the top cut off; about one-third of the screen at the top is cut off.

Bottom cut : Light metering with one-third at the bottom cut off; about one-third of the screen at the bottom is cut off.

R/L cut : Light metering with one-third on the left and right sides cut off; about one-third of the screen on the left and right sides is cut off.



❹ Auto ND (ELC) selection [Auto ND (ELC): OFF or ON]

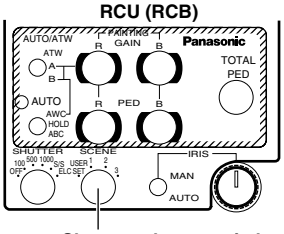
ON : The light quantity is automatically adjusted by controlling the electronic shutter speed.

OFF: The light quantity is not automatically adjusted by the electronic shutter speed.

<Notes>

- When “Auto ND” is selected as the electronic shutter speed setting ㉒ in the “Other set” sub-menu, this menu item is automatically set to ON; it is set to OFF if a setting other than “Auto ND” is selected for ㉒.
- When the shutter selector switch is set to “ELC” while the RCU (RCB) is being used, this item is set to ON; it is set to OFF if a setting other than “ELC” is selected for the switch.

RCU (RCB)



Shutter selector switch

Menu Item Settings and Changes

(in halogen light mode, fluorescent light mode or outdoor mode)

❺ Auto gain increase selection [Auto Gain Up: OFF, LOW or HIGH]

LOW : The function for automatically increasing the gain up to approximately 18 dB is activated, and the light quantity is thereby automatically adjusted.

HIGH : The function for automatically increasing the gain up to approximately 30 dB is activated, and if the light quantity is still insufficient, 'night eye' (digital gain increase) is added, and the light quantity is thereby automatically adjusted.

OFF : The function for automatically increasing the gain is not activated (the gain can still be increased manually).

<Note>

The auto gain increase function may not be activated when the camera alone is used. Similarly, it may not be activated when AUTO has been selected as the RCU's (RCB) iris switch setting.

❻ Manual gain increase selection [Manu Gain Up: 0 dB to 30 dB or N-Eye (night eye)]

This item can be set only when "OFF" has been selected for the auto gain increase selection ❺ setting.

0 dB:

This setting is the one which is normally used.

1 dB to 30 dB:

Use this setting when shooting in dark locations and an adequate video output cannot be obtained even if the lens iris is opened.

N-Eye:

This increases the sensitivity by adding the digital gain increase to the 30 dB gain increase.

<Note>

Only "0 dB," "9 dB" or "18 dB" can be set when the RCU (RCB) is used.

❼ Black level adjustment [Pedestal: –30 to +30]

This enables the black level (pedestal) of the luminance (Y) signal to be set. It is used to align the black level of two or more cameras.

❽ Contrast adjustment [Contrast: LOW, MID or HIGH]

This enables the contrast to be set in 3 stages.

❾ Chroma level adjustment [Chroma Level: –3 to +3]

This enables the chroma level to be set in ±3 stages.

❿ Flesh tone adjustment [Flesh Tone: –3 to +3]

This enables the flesh tones to be set in ±3 stages.

Menu Item Settings and Changes

(in halogen light mode, fluorescent light mode or outdoor mode)

⓫ White balance selection [White Bal: ATW, AWC A, AWC B, P SET]

ATW:

Automatic operation is performed to ensure that the white balance is attained at all times.

AWC A, AWC B:

If the white balance is first set and the camera is then used under identical conditions, the need to repeat the white balance setting can be obviated by simply selecting AWC A or AWC B.

The colours can be finely adjusted after executing AWC by adjusting the red and blue gain when the camera is used in the user mode or when RCU (RCB) is used.

P SET 3200K:

The white balance which was adjusted under 3200K lighting is set.

P SET 5600K:

The white balance which was adjusted under 5600K lighting is set.

<Note>

When RCU (RCB) is used, P SET 3200K and P SET 5600K cannot be set.

⓬ Highlight chroma selection [Highlight Chroma: OFF, LOW or HIGH]

When this is set to LOW or HIGH, the dynamic range of the colours is increased to prevent whitening-out in very bright conditions.

⓭ Horizontal phase adjustment [H Phase: –206 to +49]

This enables the horizontal phase during genlock to be adjusted.

⓮ Colour phase adjustment [SC Coarse: 1, 2, 3 or 4]

This enables the colour phase during genlock to be coarsely adjusted.

⓯ Colour phase fine adjustment [SC Fine: –511 to +511]

This enables the colour phase during genlock to be finely adjusted.

⓱ Sharpness (detail)/super hard switching
[Sharpness/super-hard: sharpness/super-hard]

Set to “Super-hard” if the detail enhancement is inadequate even when “Sharpness” has been selected and the sharpness (detail)/super-hard level adjustment ⓲ has been set to LOW or HIGH.

<Note>

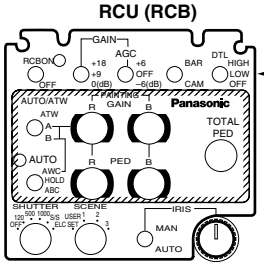
When OFF has been selected as the sharpness (detail)/super-hard level adjustment ⓲ setting, the detail enhancement feature will not work for “Sharpness” or “Super-hard.”

Menu Item Settings and Changes

(in halogen light mode, fluorescent light mode or outdoor mode)

⓲ Sharpness (detail)/super-hard level adjustment [Level: OFF, LOW or HIGH]

This enables the sharpness (detail) level to be adjusted when "Sharpness" has been selected for the sharpness (detail)/super hard switching ⓱ setting. When "Super-hard" has been selected, it enables the super-hard level to be adjusted. When RCU (RCB) is used, adjustment is possible using the detail enhancement selector switch (DTL).



⓳ Noise cancellation compensation level selection [Noise Suppress: OFF, LOW or HIGH]

This is for reducing the amount of screen noise when HIGH or LOW has been selected as the sharpness (detail)/super-hard level adjustment ⓲ setting.

⓴ Clean DNR selection [Clean DNR: OFF, LOW or HIGH]

This enables the clean DNR effect to be selected.

㉑ Flesh tone detail level selection [DTL Flesh Tone: LOW, MID or HIGH]

LOW : The roughness of the flesh tones is suppressed.
MID : Standard setting
HIGH : The detail enhancement of the flesh tones is boosted.

㉒ Electronic shutter speed selection [Shutter Speed: OFF, 1/120 to 1/10000, synchro scan or auto ND]

OFF:
The electronic shutter is set to OFF.

1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000:
The electronic shutter is actuated at the respective shutter speed.

Synchro scan:
The electronic shutter is actuated at the shutter speed set by the electronic shutter synchro scan setting ㉓.

Auto ND:
The light quantity is automatically adjusted by controlling the electronic shutter. (ELC)

<Notes>

- The speed cannot be set to 1/250, 1/2000, 1/4000 or 1/10000 by operating the RCU (RCB).
- When the auto ND setting is selected under fluorescent lighting, the flicker may increase.
- When ON is selected as the auto ND (ELC) selection ❹ setting on the "Brightness Set" sub-menu, the electronic shutter is automatically set to "Auto ND."

Menu Item Settings and Changes

(in halogen light mode, fluorescent light mode or outdoor mode)

㉓ Electronic shutter synchro scan setting [Synchro Scan: 60.34 Hz to 15.75 kHz]

This can be set only when "Synchro scan" has been selected as the electronic shutter speed selection ㉒ setting. The horizontal bar noise can be reduced by adjusting the synchro scan frequency when shooting the screen of a work station, etc.

Refer to the table below for the light quantity that should be set at different shutter speeds and synchro scan frequencies.

Shutter speed	Synchro scan frequency	Light quantity ratio required
OFF	——	1
1/120	120.2 Hz	2
1/250	250.0 Hz	4
1/500	492.2 Hz	8
1/1000	984.4 Hz	16
1/2000	1.969 kHz	32
1/4000	3.938 kHz	64
1/10000	7.875 kHz	160

㉔ Image (CCD readout method) selection [V Resolution: Normal or fine]

Normal:

Normal image. (Field storage is used as the CCD storage method.)

Fine:

The vertical resolution is improved. (It is improved by frame storage and the electronic shutter with no accompanying increase in the residual image.)

㉕ PC control communication speed selection [Baud Rate: 1200, 2400, 4800 or 9600 bps]

This is for selecting the baud rate at which the camera is to be controlled from a computer.

㉖ Negative/positive selection [Nega/Posi: Posi or Nega]

Posi:

Normal images.

Nega:

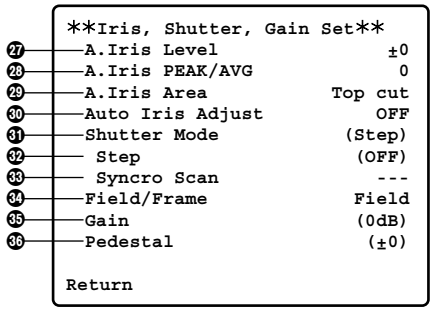
Images whose light and dark sections and colours are reversed.

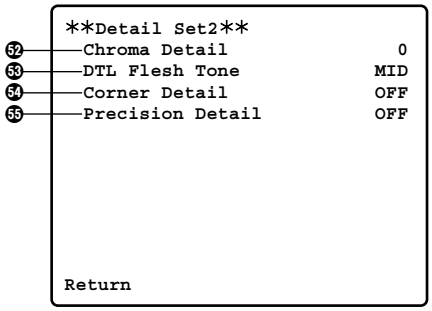
<Note>

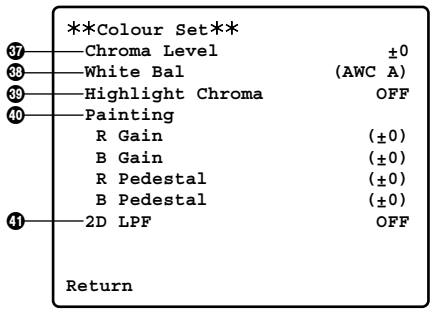
Negative images are shown only for composite outputs and Y/C outputs when the option cards are used.

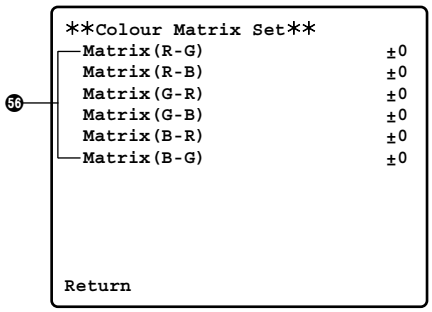
Menu Item Settings and Changes (in user mode)

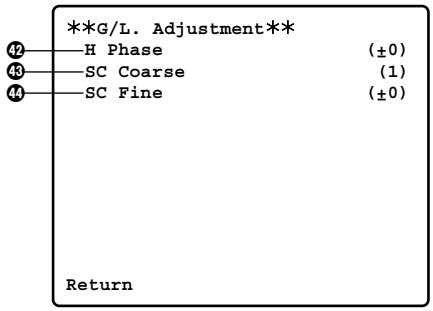
■ User mode sub-menu screens

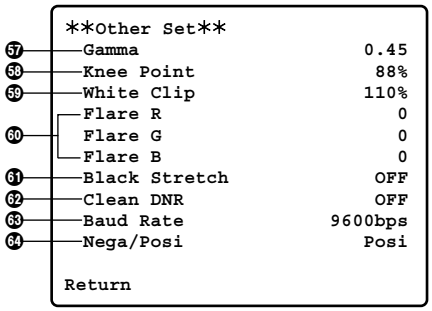


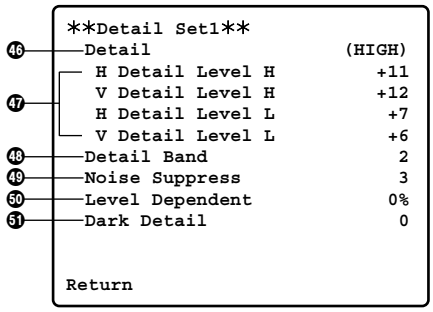












<Notes>

- When the RCU (RCB) is used, items whose settings are enclosed in the parentheses are set using the switches or controls on the RCU (RCB).
- To return to the initial (factory) settings, refer to page 41.

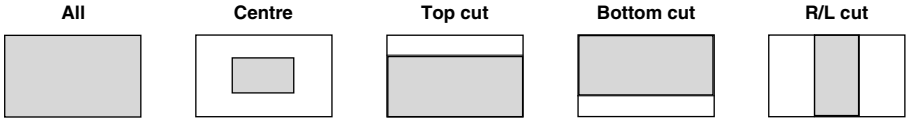
Menu Item Settings and Changes (in user mode)

㉗ Picture level adjustment [A. Iris Level: –50 to +50]
This is for adjusting the AGC/ELC convergence level.

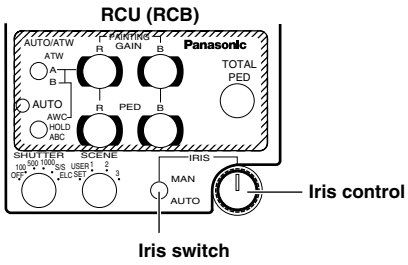
㉘ Light-metering detection ratio adjustment [A. Iris PEAK/AVG: P50 to A50]
This enables the ratio of the average level (A) to peak level (P) at which AGC/ELC is detected to be adjusted.

㉙ Light metering method selection
[A. Iris Area: All, centre, top cut, bottom cut, R/L cut]
This enables the AGC/ELC light-metering method to be selected.

All : Light metering over the entire screen area; the light of the whole screen is metered.
Centre : Light metering with priority given to the centre of the screen; about one-third of the screen at the top and bottom and one-third on the left and right sides are cut off.
Top cut : Light metering area with one-third at the top cut off; about one-third of the screen at the top is cut off.
Bottom cut : Light metering area with one-third at the bottom cut off; about one-third of the screen at the bottom is cut off.
R/L cut : Light metering area with one-third on the left and right sides cut off; about one-third of the screen on the left and right sides is cut off.



㉚ Auto iris fine level adjustment [Auto Iris Adjust: OFF or ON]
ON : When the iris switch on the RCU (RCB) is at AUTO, the AGC/ELC convergence level can be finely adjusted using the iris control.
OFF: The iris control does not work when the iris switch on the RCU (RCB) is at AUTO.



㉛ Electronic shutter mode selection [Shutter Mode: Step, ELC or synchro scan]
Step : The electronic shutter is actuated at the shutter speed selected for electronic shutter step selection ㉜.
ELC : The light quantity is automatically adjusted by controlling the electronic shutter.
Synchro scan:
The electronic shutter is actuated at the shutter speed set by the synchro scan setting ㉝.

<Note>
When “Frame1” is selected as the CCD readout method selection ㉞ setting, the electronic shutter mode cannot be set.

Menu Item Settings and Changes (in user mode)

㉜ Electronic shutter step selection [Step: OFF or 1/120 to 1/10000]

This can only be set when “Step” has been selected as the electronic shutter mode selection ㉛ setting.

OFF:

The electronic shutter is set to OFF.

1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000:

The electronic shutter is actuated at the respective shutter speed.

<Notes>

- The speed cannot be set to 1/250, 1/2000, 1/4000 or 1/10000 by operating the RCU (RCB).
- ELC may not operate when the camera alone is used.
  Similarly, it may not work when AUTO has been selected as the RCU (RCB) iris switch setting.
- When ELC is set under fluorescent lighting, the flicker may increase.

㉝ Electronic shutter synchro scan setting [Synchro Scan: 60.34 Hz to 15.75 kHz]

This can be set only when “Synchro scan” has been selected as the electronic shutter mode selection ㉛ setting.

The horizontal bar noise can be reduced by adjusting the synchro scan frequency when shooting the screen of a work station, etc.

Refer to the table below for the light quantity that should be set at different shutter speeds and synchro scan frequencies.

Shutter speed	Synchro scan frequency	Light quantity ratio required
OFF	——	1
1/120	120.2 Hz	2
1/250	250.0 Hz	4
1/500	492.2 Hz	8
1/1000	984.4 Hz	16
1/2000	1.969 kHz	32
1/4000	3.938 kHz	64
1/10000	7.875 kHz	160

㉞ CCD readout method selection [Field/Frame: Field, frame1 or frame2]

Field : Field storage is used as the CCD storage method.

Frame1 : Frame storage is used, and the vertical resolution is improved as a result.

Frame2 : Field storage and the electronic shutter are used, and the vertical resolution is improved with no accompanying increase in the residual image as a result.

Menu Item Settings and Changes (in user mode)

㉟ Gain increase adjustment
[Gain: AGC HIGH, AGC LOW, 0 dB to 30 dB or N-Eye (night eye)]

AGC LOW : The function for automatically increasing the gain up to approximately 18 dB is activated, and the light quantity is thereby automatically adjusted.

AGC HIGH : The function for automatically increasing the gain up to approximately 30 dB is activated, and if the light quantity is still insufficient, 'night eye' (digital gain increase) is added, and the light quantity is thereby automatically adjusted.

0 dB : This setting is the one which is normally used.

1 dB to 30 dB : Use this setting when shooting in dark locations and an adequate video output cannot be obtained even if the lens iris is opened.

N-Eye : This increases the sensitivity by adding the digital gain increase to the 30 dB gain increase.

<Notes>

- "0 dB," "9 dB," "18 dB," "AGC LOW" and "AGC HIGH" can be set by operating the RCU (RCB).
- AGC may not operate when the camera alone is used.
  Similarly, it may not work when AUTO has been selected as the RCU (RCB) iris switch setting.

㊱ Black level adjustment [Pedestal: –30 to +30]

This enables the black level (pedestal level) of the luminance (Y) signal to be set. It is used to adjust the black level of two or more cameras.

㊲ Chroma level adjustment [Chroma Level: –3 to +3]

This enables the chroma level to be set in ±3 stages.

㊳ White balance selection [White Bal: ATW, AWC A, AWC B, P SET 3200K, P SET 5600K]

ATW:

Automatic operation is performed to ensure that the white balance is attained at all times.

AWC A, AWC B:

The colour temperature conditions at two locations can be stored in the memory using A and B.

If the white balance is first set and the camera is then used under identical conditions, the need to repeat the white balance setting can be obviated by simply selecting AWC A or AWC B.

The colours can be finely adjusted after executing AWC by using R Gain and B gain in Painting adjustment ㊵ or by adjusting the R (red) and B (blue) gain controls on the RCU (RCB).

P SET 3200K:

The white balance which was adjusted under 3200K lighting is set.

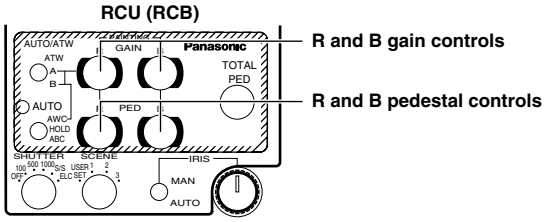
P SET 5600K:

The white balance which was adjusted under 5600K lighting is set.

Menu Item Settings and Changes (in user mode)

㊴ Highlight chroma selection [Highlight Chroma: OFF, LOW or HIGH]
When this is set to LOW or HIGH, the dynamic range of the colours is increased to prevent whitening-out in very bright conditions.

㊵ Painting adjustment [Painting, R Gain, B Gain, R Pedestal, B Pedestal: –30 to +30]
R Gain, B Gain:
These enable the white balance after AWC to be finely adjusted when AWC A or AWC B has been selected as the white balance selection ㊳ setting.
When the RCU (RCB) is to be used for the adjustments, its R (red) and B (blue) gain controls are used.
If AWC is executed when using the camera by itself, the settings will return to ±0.
R Pedestal, B Pedestal:
These enable the black balance after ABC to be finely adjusted.
When the RCU (RCB) is to be used for the adjustments, its R (red) and B (blue) pedestal controls are used.
If ABC is executed when using the camera by itself, the settings will return to ±0.



㊶ 2-dimensional low-pass filter selection [2D LPF: OFF, LOW or HIGH]
This is for setting the 2-dimensional low-pass filter which reduces moire and cross colour (colour blur).

㊷ Horizontal phase adjustment [H Phase: –206 to +49]
This enables the horizontal phase during genlock to be adjusted.

㊸ Colour phase adjustment [SC Coarse: 1, 2, 3 or 4]
This enables the colour phase during genlock to be coarsely adjusted.

㊹ Colour phase fine adjustment [SC Fine: –511 to +511]
This enables the colour phase during genlock to be finely adjusted.

㊻ Detail level selection [Detail: OFF, LOW or HIGH]
This enables the detail enhancement amount to be set.
The detail is enhanced at the levels set by the horizontal and vertical detail level HIGH/LOW settings ㊼.

Menu Item Settings and Changes (in user mode)

㊼Horizontal detail level HIGH setting [H Detail Level H: +1 to +63]
Vertical detail level HIGH setting [V Detail Level H: +1 to +31]
Horizontal detail level LOW setting [H Detail Level L: 0 to +62]
Vertical detail level LOW setting [V Detail Level L: 0 to +30]
These are for setting the detail levels in the horizontal (H) and vertical (V) directions at the detail level selection ㊻ HIGH and LOW settings.
The HIGH setting must be higher than the LOW setting by at least "1" in both the horizontal and vertical directions.

㊽Detail band selection [Detail Band: 1 to 5]
This is for setting the detail enhancement band when HIGH or LOW has been selected for the detail level selection ㊻ setting. The higher the setting, the finer the detail.

㊾Noise suppression compensation level adjustment [Noise Suppress: 1 to 10]
This is for reducing the amount of screen noise when HIGH or LOW has been selected for the detail level selection ㊻ setting. However, if the setting is too high, the sharpness of detailed subjects is reduced.

㊿Level dependent compensation level adjustment [Level Dependent: 0% to 25%]
This is for reducing the amount of screen noise caused by the detail in the dark areas of the subject. However, if the setting is too high, the sharpness of hair, etc. may be lost.

(51)Dark detail compensation level adjustment [Dark Detail: 0 to 5]
This is for emphasizing the detail in the dark areas of the subject. It can be set only when "0%" has been selected as the level dependent compensation level adjustment ㊿ setting.

(52)Chroma detail compensation level adjustment [Chroma Detail: 0 to 15]
This is for emphasizing the detail in the high-chroma areas of the subject.

(53)Flesh tone detail level selection [DTL Flesh Tone: LOW, MID or HIGH]
LOW : The roughness of the flesh tones is suppressed.
MID : Standard setting
HIGH : The detail enhancement of the flesh tones is boosted.

(54)Corner detail selection [Corner Detail: OFF or ON]
This enables the corner detail, which enhances the resolution of the peripheral areas, to be set to ON or OFF when HIGH or LOW has been selected for the detail level selection ㊻ setting.

(55)Precision detail level selection [Precision Detail: OFF, LOW or HIGH]
This is for narrowing the detail width to suppress the glaring caused by the detail.

Menu Item Settings and Changes (in user mode)

㊻ Colour matrix compensation level adjustment
[Matrix (R-G), (R-B), (G-R), (G-B), (B-R), (B-G): –31 to +31]
These are for adjusting the colour matrix compensation.
(R-G) : The colours between red and magenta are toned up or down.
(R-B) : The colours between red and yellow are toned up or down.
(G-R) : The colours between green and cyan are toned up or down.
(G-B) : The yellowish green colour is toned up or down.
(B-R) : The colours between blue and cyan are toned up or down.
(B-G) : The purple colour is toned up or down.

㊼ Gamma correction level setting [Gamma: 0.35 to 0.55]
This enables the gamma correction level to be set.

㊽ Knee compensation level setting [Knee Point: 88% to 98% or dynamic]
88% to 98%:
The level of the knee-compensated video signals can be set (knee point).
Dynamic:
The knee compensation level is automatically adjusted to match the light quality.

㊾ White clip level setting [White Clip: 95% to 110%]
The peak level of the white-clipped video signals can be set.

㊿ Flare compensation level adjustment [Flare R/G/B: 0 to 100]
These enable the flare compensation level to be adjusted.
<Note>
The flare compensation level is set prior to shipment.

(61) Black stretch selection [Black Stretch: ON or OFF]
This makes it possible to set the black stretch which compensates for blacking-out under low-brightness conditions to ON or OFF.

(62) Clean DNR selection [Clean DNR: HIGH, LOW or OFF]
This enables the clean DNR effect to be selected.

(63) PC control communication speed selection
[Baud Rate: 1200, 2400, 4800 or 9600 bps]
This is for selecting the baud rate at which the camera is to be controlled from a computer.

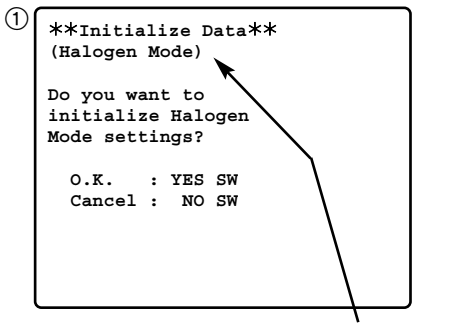
(64) Negative/positive selection [Nega/Posi: Posi or Nega]
Posi : Normal images.
Nega : Images whose light and dark sections and colours are reversed.
<Note>
Negative images are shown only for composite outputs and Y/C outputs when the option cards are used.

Returning to Initial Settings

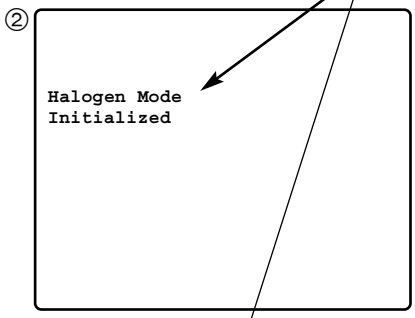
The initial (factory) settings can be restored when, for example, mistakes have been made in the settings in the respective mode.

1. Select Initialize Data on the main menu for the selected mode, and press the YES/ABC switch. The Initialize Data sub-menu screen shown on the right will now appear for about 10 seconds.

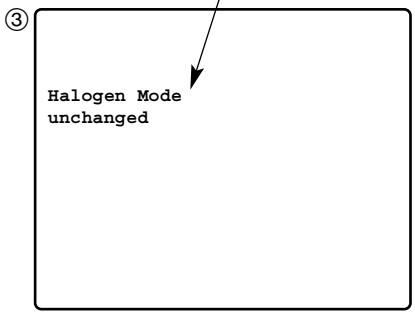
Initialize Data sub-menu



2. Once the Initialize Data sub-menu screen has appeared, press the YES/ABC switch within 10 about seconds to initialize the settings. A message is then displayed on the screen such as the one shown in ②, and operation returns to the main menu.



3. If, after the Initialize Data sub-menu screen has appeared, the NO/BAR switch is pressed or the YES/ABC switch is not pressed within 10 about seconds, a message such as the one shown in ③ will be displayed on the screen, and operation will return to the main menu without initializing the settings.



<Note>

When an option card is being used, the Option Card Set sub-menu does not return to the initial settings even if the “return to initial settings” operation is performed.

Returning to Initial Settings

■ Initial settings (factory settings)

● Initial settings in halogen light, fluorescent light and outdoor modes

	Item	Halogen mode	Fluorescent mode	Outdoor mode
Brightness Set	A.Iris Level	±0	±0	±0
	A.Iris PEAK/AVG	0	0	0
	A.Iris Area	Top cut	Top cut	Top cut
	Auto ND (ELC)	OFF	OFF	ON
	Auto Gain Up	OFF	OFF	HIGH
	Manu Gain Up	0dB	0dB	---
	Pedestal	±0	±0	–10
	Contrast (Gamma)	MID	MID	MID
Colour Set	Chroma Level	±0	+1	+2
	Flesh Tone	±0	±0	±0
	White Bal	AWC A	AWC A	ATW
	High-light Chroma	OFF	OFF	OFF
G/L. Adjustment	H Phase	±0	±0	±0
	SC Coarse	1	1	1
	SC Fine	±0	±0	±0
Sharpness (DTL) Set	DTL Select	Sharpness	Sharpness	Sharpness
	Level	HIGH	HIGH	HIGH
	Noise Suppress	OFF	OFF	OFF
	Clean DNR	OFF	OFF	OFF
	DTL Flesh Tone	MID	MID	MID
Other Set	Shutter Speed	OFF	OFF	Auto ND
	Synchro Scan	---	---	---
	V Resolution	Normal	Normal	Normal
	Baud Rate	9600bps	9600bps	9600bps
	Nega/Posi	Posi	Posi	Posi

Returning to Initial Settings

● **Initial settings in user mode**

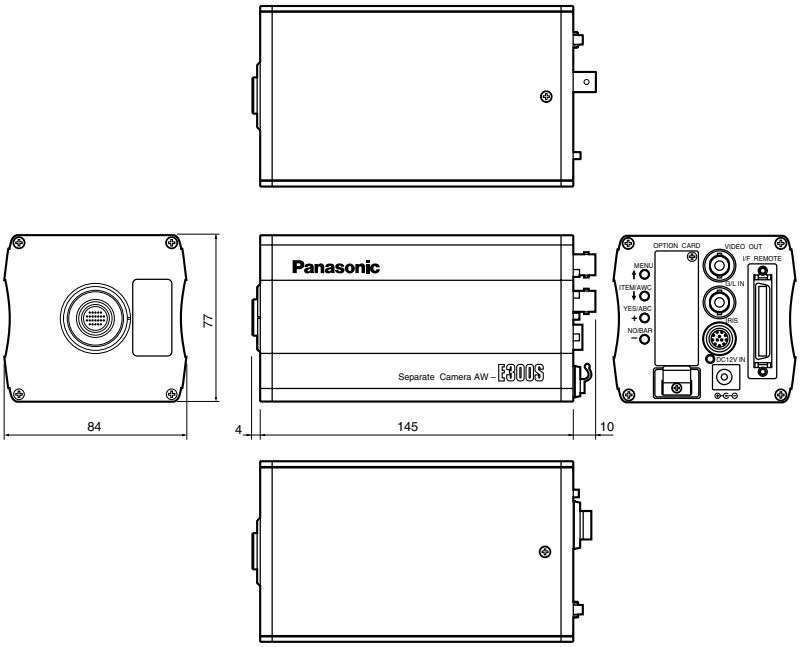
	Item	User mode
Iris, Shutter, Gain Set	A.Iris Level	±0
	A.Iris PEAK/AVG	0
	A.Iris Area	Top cut
	Auto Iris Adjust	OFF
	Shutter Mode	Step
	Step	OFF
	Synchro Scan	---
	Field/Frame	Field
	Gain	0dB
	Pedestal	±0
Colour Set	Chroma Level	±0
	White Bal	AWC A
	High-light Chroma	OFF
	Painting R Gain	±0
	B Gain	±0
	R Pedestal	±0
	B Pedestal	±0
	2D LPF	OFF
G/L. Adjustment	H Phase	±0
	SC Coarse	1
	SC Fine	±0
Detail Set 1	Detail	HIGH
	H Detail Level H	+11
	V Detail Level H	+12
	H Detail Level L	+7
	V Detail Level L	+6
	Detail Band	2
	Noise Suppress	3
	Level Dependent	0%
	Dark Detail	0
Detail Set 2	Chroma Detail	0
	Flesh DTL Level	MID
	Corner Detail	OFF
	Precision Detail	OFF

	Item	User mode
Colour Matrix Set	Matrix(R-G)	±0
	Matrix(R-B)	±0
	Matrix(G-R)	±0
	Matrix(G-B)	±0
	Matrix(B-R)	±0
	Matrix(B-G)	±0
Other Set	Gamma	0.45
	Knee Point	88%
	White Clip	110%
	Flare R	0
	Flare G	0
	Flare B	0
	Black Stretch	OFF
	Clean DNR	OFF
	Baud Rate	9 600bps
	Nega/Posi	Posi

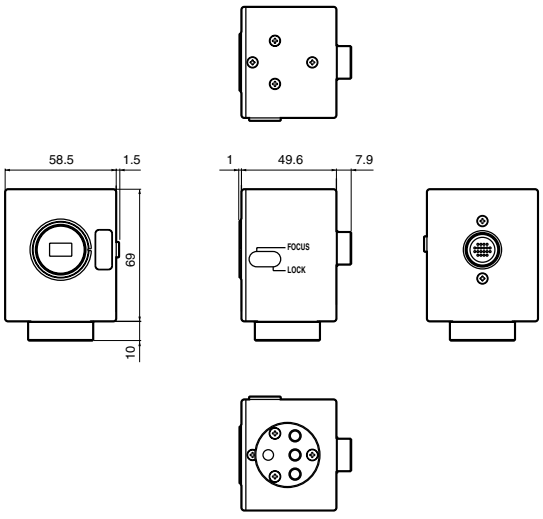
Outline Drawings

■ Main unit

Unit: mm



■ Camera head unit



Specifications

Power requirements: DC 12V
Power consumption: 0.8 A

Operating temperature range:
–10°C to +45°C
Allowable humidity:
30 % to 90 %
Dimensions (W×H×D):
Main unit:
84×77×159 mm
Camera head unit:
79×60×58.5 mm
Weight:
Main unit:
Approx. 0.64 kg
Camera head unit:
Approx. 0.23 kg
Finish:
AV ivory-coloured paint (colour approximates Munsell 7.9Y6.8/0.8)
Optical system:
1/3-inch prism optical system, f/1.4
Pickup device:
1/3-inch IT-type CCD 3-panel system
Total number of pixels:
795(H)×596(V)
Number of effective pixels:
752(H)×582(V)
Pickup area:
4.8(H)×3.6(V) mm
Scanning system:
2:1 interlace, 625 lines, 50 fields, 25 frames
Scanning frequency:
15.625 kHz horizontal, 50 Hz vertical
Synchronization system:
Internal sync/gen-lock
Gen-lock input:
1.0 V [p-p] black burst signal (BNC connector, 50-pin D-sub connector)
Video outputs:
Composite 1.0 V [p-p]/75 Ω (BNC connector, 50-pin D-sub connector)
YC:
1.0 V [p-p] for Y, 0.3V [p-p] for C (50-pin D-sub connector)
Standard illumination:
2,000 lux (3,200K, f/8)
Minimum illumination:
1.5 lux (f/1.4, 'night eye' mode)
S/N ratio:
60 dB (with DNR ON)
Horizontal resolution:
800 lines (high band DTL ON)
Registration:
0.05%
Detail enhancement:
Horizontal/vertical (works for both)
White balance:
Automatically adjusted for A and B in 2 memories, fine adjustment, ATW, 3200K, 5600K
Black balance:
Automatically adjusted
Gain switching:
AGC LOW/HIGH, 0 dB to 30 dB, N-Eye
Iris:
Auto, manual

Specifications

Electronic shutter:
Synchro scan:
50.24 Hz to 15.63 kHz
Step shutter:
OFF, 1/120, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
ELC:
Target level variable

Operation mode selection:
halogen light, fluorescent light, outdoor, user

Colour bars:
Full colour bars (setup: 0)

Lens mount:
1/3-inch C mount

Switches:
Back panel:
MENU, ITEM/AWC, YES/ABC, NO/BAR
Menu item setting:
Gain, Shutter, White Balance, Detail Level (OFF/LOW/HIGH), Corner Detail, Precision Detail Level, Black Stretch, High Light Chroma, Skin Colour Detail, Photometric Measurement Method (ALL/CENTRE/TOP CUT/BOTTOM CUT/R/L CUT) CCD Read Out Mode (FIELD/FRAME 1/FRAME 2) Clean DNR, Colour Bar Setup, Use Mode, Nega/Posi, PC Control Access Speed

Adjustment function:
Menu adjustment:
R/B Gain, R/B Pedestal, Black Level, Video Level, Detecting Ratio, Genlock Horizontal Phase/Colour Phase, Gamma Compensation Level, Knee Compensation Level, White Clip Level, Horizontal Detail Level, Vertical Detail Level, Detail Band Level, Noise Suppress Compensation Level, Level Dependent Compensation Level, Chroma Detail Compensation Level, Dark Detail Compensation Level, Matrix Compensation Level, Flare Correction Level

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

■ Accessories

Connection cable for the camera head and the main unit (3 m ×1)

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