

CCTV Cameras
WV-BP310/WV-BP314

Operating Instructions



(Lens : option)

Panasonic®

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



SA 1965

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.



SA 1966

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

WARNING:

TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

For U.S.A.

Warning:

This equipment generates and uses radio frequency energy and if not installed and used properly, i.e., in strict accordance with the instruction manual, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment.

The serial number of this product may be found on the bottom of the unit.

You should note the serial number of this unit in the space provided and retain this book as a permanent record of your purchase to aid identification in the event of theft.

Model No. _____

Serial No. _____

CAUTION:

Before attempting to connect or operate this product, please read the label on the bottom.

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PREFACE

Panasonic's WV-BP310 series cameras introduce a new level of high picture quality through the use of a 1/3 inch interline transfer CCD having 771 horizontal pixels (picture elements). High performance-to-cost ratio is achieved through the use of newly developed Sync IC's and ability to shoot indoor scenes with a fixed iris lens by use of Electronic Light Control (ELC) function.

FEATURES

- Minimum illumination of 0.008 footcandle (0.08 lux) at F1.4 and signal-to-noise ratio of 46 dB by employing a 1/3 inch interline transfer CCD image sensor with 771 (H) x 492 (V) pixels.
- 570 lines of horizontal resolution
- Either optional standard C-mount or Special C-mount (CS-mount) auto iris control lens can be used with.
- Selectable auto iris control signal for the lens either a video signal or DC control signal.
- Various Sync functions, including Gen-lock.
- Ability to shoot indoor scene with a fixed iris lens by use of the Electronic Light Control (ELC) function.

PRECAUTIONS

1. Do not attempt to disassemble the camera.

To prevent electric shock, do not remove screws or cover.

There are no user-serviceable parts inside.

Refer servicing to qualified service personnel.

2. Handle the camera with care.

Do not abuse the camera. Avoid striking or shaking it.

The camera could be damaged by improper handling or storage.

3. Do not expose the camera to rain or moisture, or try to not operate it in wet areas.

Do take immediate action if ever the camera does become wet. Turn the power off and refer servicing to qualified service personnel. Moisture can damage the camera and can also create the danger of electric shock.

4. Never face the camera towards the sun.

Whether the camera is in use or not, never face it towards the sun. Do use caution when operating the camera in the vicinity of spot lights or other bright lights and light reflecting objects.

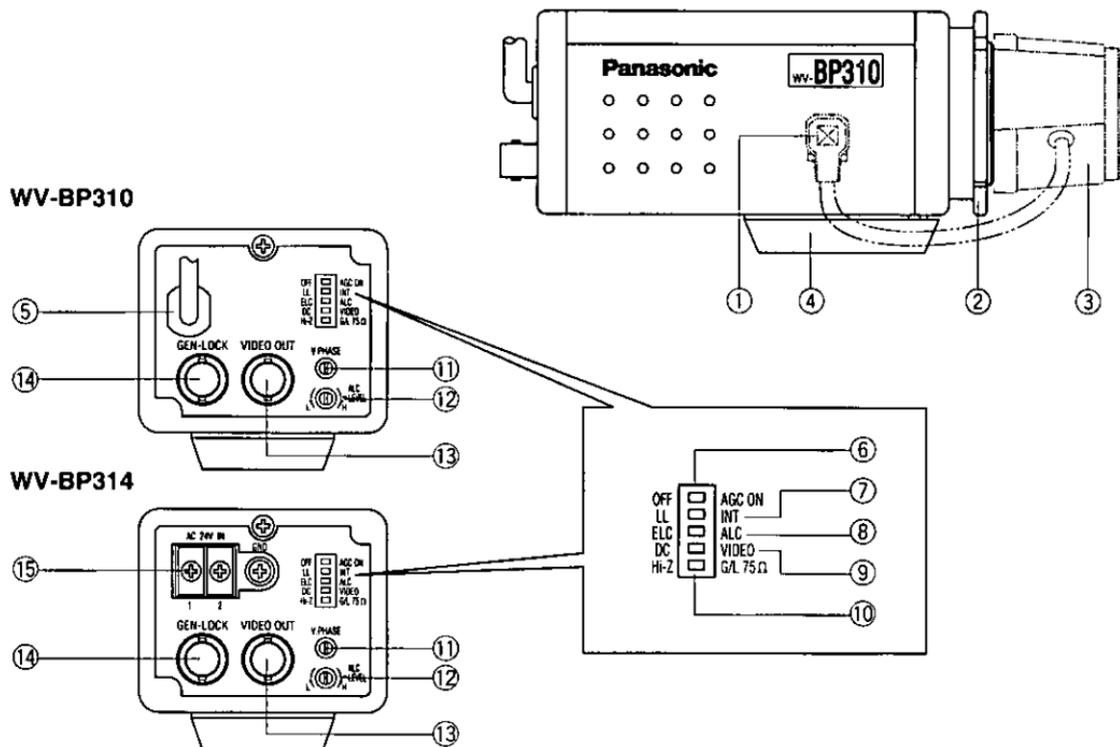
5. Do not operate the camera beyond its temperature, humidity or power source ratings.

Do not use the camera in an extreme environment where high temperature or high humidity exist. Use the camera under conditions where the temperature is within -22°F - 122°F (-30°C - $+50^{\circ}\text{C}$), and the humidity is below 90%. The input power source is 120V AC 60 Hz for WV-BP310 or 24V AC 60 Hz for WV-BP314.

Caution:

To prevent fire or shock hazard, the UL listed wire VW-1, style 1007 should be used for AC 24V Input Terminals.

MAJOR OPERATING CONTROLS AND THEIR FUNCTIONS



(1) Auto Iris Lens Connector

This 4-pin female connector supplies the power and either video signal or DC control signal to the auto iris lens.

A 4-pin male connector, which can be mated with the camera's female connector, is supplied as a standard accessory (Part No. YFE4191J100).

This male connector can be installed on lenses which have incompatible type connector.

See page 16 for installation details

(2) Flange-back Adjusting Ring

This ring is used to adjust the back focal length or picture focus by rotating this ring to clockwise for C-mount lens or counterclockwise for special C-mount (CS-mount) lens.

(3) Lens (Option)

See pages 10, 11, 12, 13 and 14 for details on lens selection.

(4) Camera Mounting Screw Hole

This threaded hole(1/4"-20) is used to mount the camera onto a mounting bracket or tripod.

(5) Power Cord

(6) AGC On/Off Switch (AGC ON/OFF)

This switch is used to select the gain of the video amplifier as follows;

ON: When the lens iris is fully opened under a low light condition, a clear picture is obtained by automatic increase of the gain.

OFF: A natural and low-noise picture is obtained under a low light condition.

(7) Sync Selection Switch (INT/LL)

This switch is used to select the camera synchronization mode.

INT: When no signal is supplied to the Gen-lock Connector, the camera synchronization mode is set to internal 2 : 1 interlace.

Whenever the Gen-lock video signal is supplied to the Gen-lock Connector, the camera synchronization mode is automatically set to external synchronization.

LL: The camera synchronization mode is set to the Line-lock even if the Gen-lock video signal is supplied to the Gen-lock Connector.

Note: Set this switch to the INT position for Gen-lock operation.

(8) Electronic Light Control / Automatic Light Control Selection Switch (ELC/ALC)

This switch is used to select the lens as follows.

ALC: Choose this position when using an auto iris lens.

ELC: Choose this position when using a fixed or manual iris lens.

(9) Lens Selection Switch (VIDEO/DC)

This switch is used to select the supplied auto iris control signal to the lens from the Auto Iris Lens Connector(1).

DC: Choose this position when the auto iris control lens requiring DC control signal such as lenses shown on pages 10, 11, 12 and 13.

VIDEO: Choose this position when the auto iris control lens requiring video signal such as WV-LA8B, WV-LA16B, WV-LA25B, WV-LA50B, is mounted on the camera.

(10) Gen-lock Termination Switch (G/L 75Ω / Hiz)

When looping through the Gen-lock video input signal, set this switch to the Hi-Z position and in all other cases, set this switch to the 75-ohm position.

(11) Vertical Phase Control (V.PHASE)

The vertical phase of the camera signal can be adjusted to match the vertical phase of the line power.

(12) Auto Iris Level Control (ALC LEVEL, L(Low)/ H(High))

This control adjusts the control level of the auto iris control when the Lens Selection Switch (9) is set to the DC position and the auto iris lens which requires the DC control voltage such as WV-LA12 etc., is mounted on the camera.

Note: When the Lens Selection Switch (9) is set to the VIDEO position, the auto iris control level should be adjusted by the lens.

(13) Video Output Connector (VIDEO OUT)

A 1.0 Vp-p/75 ohms composite video signal is provided at this connector.

Whenever the multiplexed vertical drive (VD2) signal is supplied to this connector, the camera synchronization mode is automatically set to Vertical Drive Lock.

(14) Gen-lock Video Input Connector (GEN-LOCK)

A composite B/W or color 1.0 Vp-p/75 ohms video signal, or black burst 0.3 Vp-p/75 ohms or composite sync 4 Vp-p/75 ohms should be supplied to this connector for external synchronization.

(15) AC 24V In Terminal (AC 24V IN)

This terminal accepts 24V AC power source (19.5V-28V). Be sure to connect grounding lead to the GND terminal.

Cautions :

1. Connect this to a 24V AC class 2 power supply only.
2. To prevent fire or shock hazard, the UL listed wire VW-1, style 1007 should be used for the cable for AC 24V Input Terminal.

CONNECTIONS

Power Source

■ WV-BP310

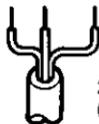
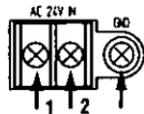
1. Connect the AC Power Cord (5) to a electrical outlet of 120V AC 60 Hz.

■ WV-BP314

1. A power supply of 24V AC 60 Hz is required.
2. Connect the power cable to the 24V AC In Terminal (15) on the rear panel of the camera.

Recommended wire gauge sizes for 24V AC line.

Copper wire size (AWG)		#24 (0.22mm ²)	#22 (0.33mm ²)	#20 (0.52mm ²)	#18 (0.83mm ²)
Length of Cable (Approx.)	(ft)	314	495	842	1403
	(m)	95	150	255	425



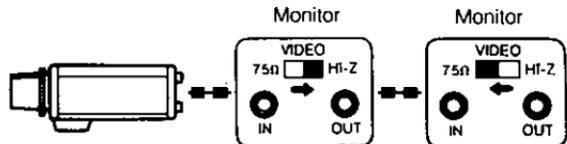
24 VAC, 60 Hz
(19.5 V - 28 V)

Caution:

To prevent fire or shock hazard, the UL listed wire VW-1, style 1007 should be used for the cable for AC 24V Input Terminal.

Video Cable

1. It is recommended to use a video monitor whose resolution is at least equal to the camera's.
2. Terminate the camera output with 75-ohm resistor at the furthest end of its cable run.
 - It is recommended to use 75-ohm coaxial cable.
 - Always set the last monitor's termination switch to 75 ohms, and set the termination switches of intermediate monitors to HIGH (HI-Z) position.



- The maximum extensible coaxial cable length between the camera and the monitor is shown in the table 1. Since cable quality varies among manufactures, please verify video quality before final installation, if maximum lengths are to be used.

Table 1

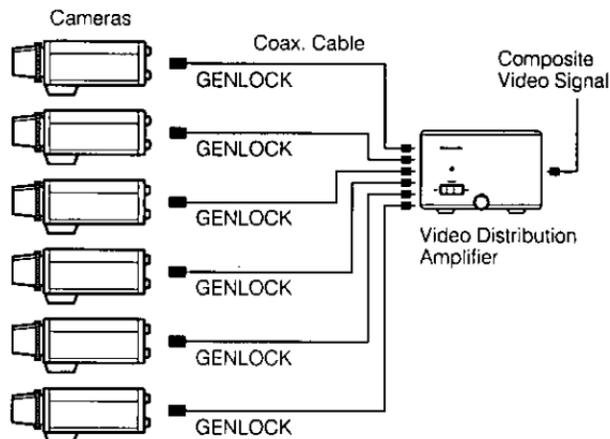
Type of coaxial cable		RG-59/U (3C-2V)	RG-6U (5C-2V)	RG-11/U (7C-2V)	RG-15/U (10C-2V)
Recommended maximum cable length	(ft)	825	1,650	1,980	2,640
	(m)	250	500	600	800

3. Wiring precautions:

- Do not bend coaxial cable into a curve whose radius is smaller than 10 times the cables diameter.
 - Never staple the cable-not even with circular staples. Impedance mismatching will occur.
 - Never crush or pinch the cable.
- All of these will change the impedance of the cable and cause poor picture quality.

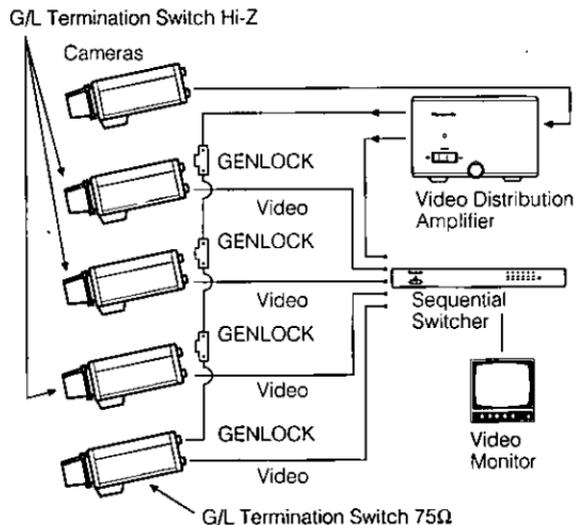
Gen-Lock Video Cable

Connect the coaxial cable for gen-lock video signal between the Gen-lock Video Input Connector (14) and the reference composite video output (B/W or color 1.0 Vp-p/75 ohms) or composite sync (4 Vp-p/75 ohms) or black burst (0.3 Vp-p/75 ohms) of the production system.



* The Gen-lock termination Switch of all cameras should be set to 75 ohm position.

- **Gen-Lock (Looping through)**



- * The Gen-lock Termination Switch of the furthest camera should be set to 75 ohm position and that of all other cameras should be set to Hi-Z position.

Note: The gen-lock input signal should meet with EIA standard and should not contain jitter such as VTR playback signal.

LENSES

1. Selection of Lens

<Auto Iris Lenses>

Models Specifications	WV-LA2.8 (Wide Angle)	WV-LA6B2 (Wide Angle)	WV-LA12B2 (Standard)	WV-LA18 (Telephoto)	WV-LA36 (Telephoto)	
Image Size	1/2" (6.4 (H) x 4.8 (V) mm)					
Focal Length	2.8 mm	6 mm	12 mm	18 mm	36 mm	
Maximum Aperture Ratio	1 : 1.4	1 : 1.4	1 : 1.4	1 : 1.4	1 : 1.8	
Angular Field of View 1/3°	H	87.5°	43.5°	22.8°	15.5°	7.7°
	V	69.2°	33.0°	17.1°	11.5°	5.7°
Focusing Range	Adjusted by Camera			0.89 ft - ∞ (0.27 m - ∞)	3.3 ft - ∞ (1 m - ∞)	
Mount	CS-mount, 1"-32UN					
Filter Size	None	None	None	M37.5 mm P = 0.5	M37.5 mm P = 0.5	
Dimensions	ø1-11/16" x 1-1/4" (ø43 x 32 mm)	ø1-11/16" x 1-3/8" (ø43 x 35.3 mm)	ø1-11/16" x 1-3/8" (ø43 x 35.3 mm)	ø1-11/16" x 1-5/8" (ø43 x 41 mm)	ø1-11/16" x 1-5/8" (ø43 x 41 mm)	
Weights	0.09 lbs. (40g)	0.11 lbs. (50g)	0.09 lbs. (40g)	0.15 lbs. (70g)	0.18 lbs. (80g)	

- Dimensions and weights indicated are approximate.
- Specifications are subject to change without notice.

<Auto Iris Lenses>

Models Specifications	WV-LZ81/6A (Motorized Zoom)	WV-LZ81/10 (Motorized Zoom)	WV-LA4R5C3A (Wide Angle)	WV-LA9C3A (Standard)	WV-LZ61/10 (Motorized Zoom)	
Image Size	1/2" (6.4 (H) x 4.8 (V) mm)		1/3" (4.8 (H) x 3.6 (V) mm)			
Focal Length	8.5 - 51 mm (6X)	8 - 80 mm (10X)	4.5 mm	9 mm	6 - 60 mm (10X)	
Maximum Aperture Ratio	1 : 1.2 (Wide) 1 : 1.3 (Tele)	1 : 1.4 (Wide) 1 : 1.7 (Tele)	1 : 1.2	1 : 1.2	1 : 1.6 (Wide) 1 : 2.6 (Tele)	
Angular Field of View 1/3"	H	Wide : 31.4° Tele : 5.5°	Wide : 33.5° Tele : 3.5°	56.4°	29.6°	Wide : 43.7° Tele : 4.6°
	V	Wide : 23.5° Tele : 4.1°	Wide : 25.2° Tele : 2.6°	43.3°	22.2°	Wide : 33.0° Tele : 3.5°
Focusing Range	3.3 ft - ∞ (1m - ∞)	3.6 ft - ∞ (1.1m - ∞)	Adjusted by Camera		4.0 ft - ∞ (1.2m - ∞)	
Mount	CS-mount, 1"-32UN					
Filter Size	M49 mm, P = 0.75	M55 mm, P = 0.75	None		M35.5 mm, P = 0.5	
Dimensions	3-3/8"(W) x 2-7/16"(H) x 4"(D) [86(W) x 62(H) 102(D) mm]	3-3/16"(W) x 2-5/8"(H) x 4-5/8"(D) [81(W) x 66(H) 117.5(D) mm]	ø1-11/16" x 1-1/2" (ø43 x 38.5 mm)	ø1-11/16" x 1-1/2" (ø43 x 38.5 mm)	2-13/16"(W) x 2-1/16" (H) x 2-3/4"(D) [71(W) x 52(H) 70.5(D) mm]	
Weights	0.93 lbs. (420g)	0.97 lbs. (440g)	0.09 lbs. (42g)	0.09 lbs. (40g)	0.46 lbs. (210g)	

- Dimensions and weights indicated are approximate.
- Specifications are subject to change without notice.

<Auto Iris Lenses>

Models		WV-LA4510 (Wide Angle)	WV-LA608 (Wide Angle)	WV-LA1208 (Standard)	WV-LZ83/6 (Motorized Zoom)
Specifications					
Image Size		1/2" (6.4 (H) x 4.8 (V) mm)			
Focal Length		4.5 mm	6 mm	12 mm	8.5 - 51 mm (6X)
Maximum Aperture Ratio		1 : 1.0	1 : 0.75	1 : 0.8	1 : 0.8 (Wide) 1 : 1.0 (Tele)
Angular Field of View 1/3"	H	56.9°	43.8°	23.8°	Wide : 31.3° Tele : 5.5°
	V	43.6°	33.1°	17.6°	Wide : 23.4° Tele : 4.1°
Focusing Range		Adjusted by Camera			4.0 ft - ∞ (1.2m - ∞)
Mount		CS-mount, 1"-32UN			
Filter Size		None	M46 mm, P = 0.75	M46 mm, P = 0.75	M67 mm, P = 0.75
Dimensions		2-1/8"(W) x 1-11/16"(H) x 1-1/16"(D) [54.5(W) x 43(H) x 43 (D) mm]	2-1/2"(W) 2-1/16"(H) x 2-3/16"(D) [64(W) x 52(H) x 55 (D) mm]	2-7/8"(W) x 2-5/8"(H) x 2-7/8"(D) [73(W) x 66(H) x 72.5(D) mm]	3-1/2"(W) x 3"(H) x 4-13/16"(D) [90(W) x 77(H) 123(D) mm]
Weights		0.19 lbs. (85g)	0.34 lbs. (155g)	0.56 lbs. (255g)	1.63 lbs. (740g)

- **When using the above lenses with the camera, be sure to read instruction manual of lenses.**
- Dimensions and weights indicated are approximate.
- Specifications are subject to change without notice.

<Auto Iris Lenses>

Specifications \ Models	WV-LA210C3 (Wide angle)	WV-LA408C3 (Wide angle)	WV-LA908C3 (Standard)	
Image Size	1/3" (4.8(H) x 3.6(V) mm)			
Focal Length	2.1 mm	4.5 mm	9 mm	
Maximum Aperture Ratio	1 : 1.0	1 : 0.75	1 : 0.75	
Angular Field of View	H	107.6°	57.2°	31.3°
	V	88.0°	43.7°	23.5°
Focusing Range	Adjusted by Camera			
Mount		CS-mount, 1"-32UN		
Filter Size	None	M40.5 mm, P=0.5	M40.5 mm, P=0.5	
Dimensions	2-7/16"(W) x 2-1/16"(H) x 1-5/8"(D) [62.5(W) x 52(H) x 41(D) mm]	2-7/16"(W) x 2-1/16"(H) x 2-1/4"(D) [62.5(W) x 52(H) x 57.5(D) mm]	2-7/16"(W) x 2-1/16"(H) x 2-1/4"(D) [62.5(W) x 52(H) x 57.5(D) mm]	
Weight	0.24 lbs. (110g)	0.31 lbs. (140g)	0.30 lbs. (135g)	

- **When using the above lenses with the camera, be sure to read instruction manual of lenses.**
- Dimensions and weights indicated are approximate.
- Specifications are subject to change without notice.

<Manual and Fixed Iris Lenses>

Models Specifications	WV-LM4R5A (Wide Angle)	WV-LM6B2 (Wide Angle)	WV-LM12B2 (Standard)	WV-LF6 (Wide Angle)	WV-LF12 (Standard)	WV-LF4R5C3A (Wide Angle)	WV-LF9C3A (Standard)	
Image Size	1/2" (6.4 (H) x 4.8 (V) mm)					1/3" (4.8 (H) x 3.6 (V) mm)		
Focal Length	4.5 mm	6 mm	12 mm	6 mm	12 mm	4.5 mm	9 mm	
Maximum Aperture Ratio	1 : 1.4	1 : 1.4	1 : 1.4	1 : 1.4	1 : 1.4	1 : 1.2	1 : 1.2	
Angular Field of View 1/3"	H	56.9°	43.5°	22.8°	43.5°	22.2°	56.4°	29.6°
	V	43.6°	33.0°	17.1°	32.9°	16.7°	43.3°	22.2°
Iris	Manual	Manual	Manual	Fixed	Fixed	Fixed	Fixed	
Focusing Range	Adjusted by Camera							
Mount	CS-mount, 1"-32UN							
Filter Size	M37.5 mm, P = 0.5	None	None	M34 mm, P = 0.5	M34 mm, P = 0.5	M30.5 mm, P = 0.5	M30.5 mm, P = 0.5	
Dimensions	ø1-3/4" x 1-5/8" (ø44 x 41 mm)	ø1-11/16" x 1-3/8" (ø43 x 35.3 mm)	ø1-11/16" x 1-3/8" (ø43 x 35.3 mm)	ø1-1/2" x 1-5/8" (ø38 x 41 mm)	ø1-1/2" x 1-5/8" (ø38 x 41 mm)	ø1-3/8" x 1-7/16" (ø34.4 x 36 mm)	ø1-3/8" x 1-7/16" (ø34.4 x 36 mm)	
Weights	0.20 lbs. (93g)	0.10 lbs. (45g)	0.08 lbs. (35g)	0.08 lbs. (38g)	0.07 lbs. (33g)	0.06 lbs. (29g)	0.05 lbs. (23g)	

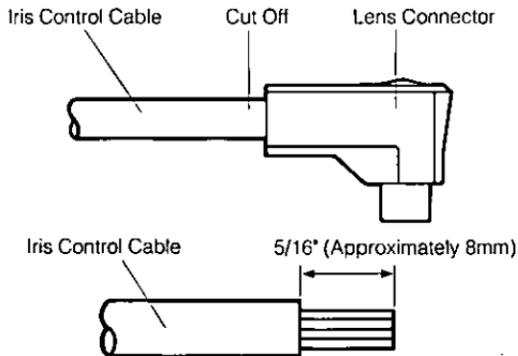
- Dimensions and weights indicated are approximate.
- Specifications are subject to change without notice.

2. Installation of Auto Iris Lens Connector

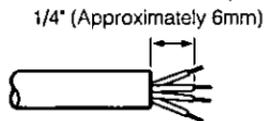
When you use an auto iris lens other than listed on pages 10, 11, 12 and 13, for example a video servo ALC lens, install the lens connector (YFE4191J100) coming with the camera as follows.

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

- (1) Cut off the iris control cable at the edge of lens connector and then cut off the outer cable cover as shown in the diagram.



- (2) Cut off the inner cable covers of the iris control cable as shown in the diagram.



- (3) Put the heat shrinkable tubes or equivalent tubes on the inner cables of the iris control cable.
- (4) Solder the inner cables of the iris control cable at the pin-plug block according to the following pin assignment and cover the heat shrinkable tubes or equivalent tubes over the soldered area and heat on the tubes to shrink them.

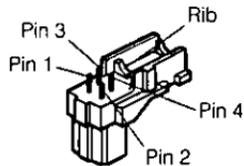
Pin 1: Power source; +9V DC, 50mA Max.

Pin 2: Not used

Pin 3: Video signal; 1.3 Vp-p/40 kohms

Pin 4: Shield, ground

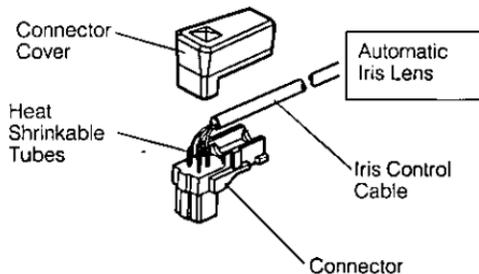
(Set the Lens Selection Switch (9) to the VIDEO position)



- (5) Both the connector cover and connector should be positioned to interlock.

Note:

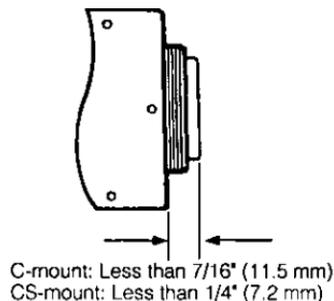
Cut off the rib on the connector, when the iris control cable is too thick and the connector cover and connector can not be interlocked.



3. Mounting the Lens

When you use the lens other than listed on pages 10, 11, 12, 13 and 14, lens mount should be C-mount or special C-mount (CS-mount 1"-32UN) and lens weight should be less than 0.99 lbs. (450g). If not, both the lens and camera should be secured.

The protrusion of the rear of the lens should be as shown below.



Caution:

Always set the Flange-back adjusting ring to fully clockwise (C-mount side) by loosening one screw on the ring before mounting the lens, otherwise the inner glass and CCD image sensor could be damaged by the lens.

- (1) Mount the lens by turning it clockwise onto the lens mount of the camera.
- (2) Connect the lens cable to the Auto Iris Lens Connector on the camera when an auto iris lens is used.

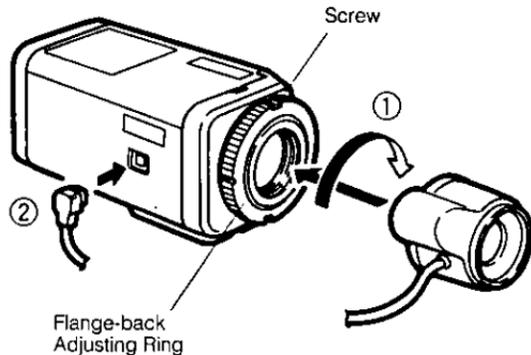
- (3) Set the Lens Selection Switch (9) to the proper position as follows.

DC: The mounted lens is one of the lenses listed on pages 10, 11, 12 and 13 or one that requires the DC control signal for auto iris control.

VIDEO: The mounted lens requires video signal for auto iris control.

NOTE:

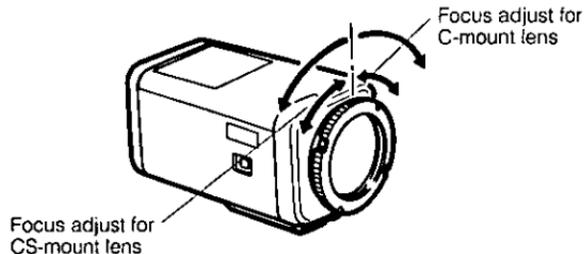
Refer to item-9 on page 6 for the lens selection switch.



FOCUS OR FLANGE-BACK ADJUSTMENT

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

1. Loosen screws on the flange-back adjusting ring.



2. Turn the flange-back adjusting ring to the desired position.

Caution:

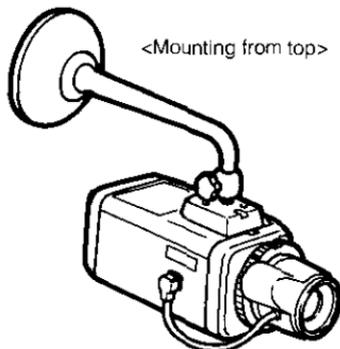
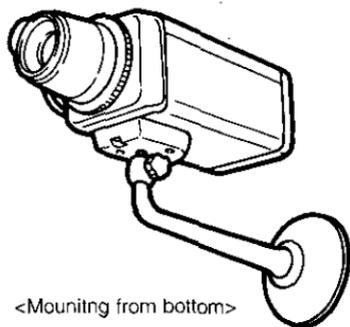
Do not turn this ring too much to counterclockwise as this could damage the inner glass and CCD image sensor.

3. Tighten the screws on the flange-back adjusting ring.

INSTALLATION OF CAMERA

- **Mounting from the bottom**

This camera is designed to be mounted from the bottom, as shown below. The mounting hole is a standard photographic pan-head screw size (1/4" - 20).

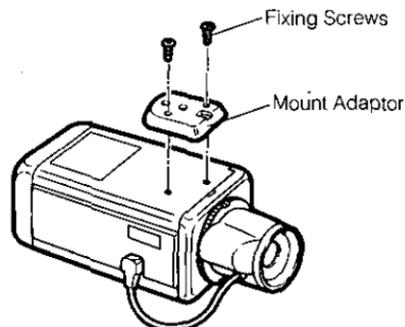


- **Mounting from the top**

Remove the mount adaptor from the bottom of the camera by removing the two fixing screws. Attach the mount adaptor to the top as shown in the diagram, then mount the camera on the mounting bracket.

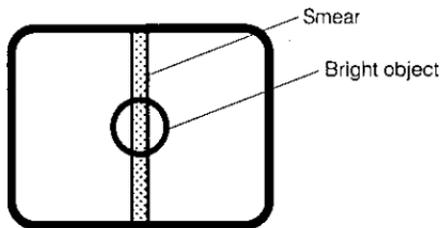
Make sure that the two original fixing screws are used when mounting the mount adaptor as longer length screws may damage inner components.

Note: When installing the camera, use such a camera mounting bracket as to support the load of four times of the total weight.



PREVENTION OF BLOOMING AND SMEAR

When the camera is aimed at a bright light, such as a spot light, or a surface that reflects bright light, smear or blooming may appear. Therefore, the camera should be operated carefully in the vicinity of extremely bright objects to avoid smear or blooming.



LENS MAINTENANCE AND CLEANING

1. Remove the lens connector.
2. Remove the lens, and inspect the camera CCD faceplate through the lens mount opening to assure that the faceplate is free of smudges or particles of dirt.
3. Clean the CCD faceplate, if necessary, using lens tissue or a cotton tipped applicator and ethanol.
4. Install the new lens.

SPECIFICATIONS

Pick-up Device:	771 (H) x 492 (V) pixels, Interline Transfer CCD
Scanning Area:	4.8 (H) x 3.6 (V) mm (Equivalent to scanning area of 1/3" pick-up tube)
Synchronization:	Internal, External, Line-locked or Multiplexed vertical drive (VD2) selectable
Scanning System:	2 : 1 interlace
Scanning:	525 lines / 60 fields / 30 frames
Horizontal:	15.734 KHz
Vertical:	59.94 Hz
Horizontal Resolution:	570 lines
Video Output:	1.0 Vp-p NTSC composite 75 ohms / BNC connector
Signal-to-Noise Ratio:	46 dB (AGC OFF)
Electronic Light Control:	Equivalent to continuous variable shutter speed between 1/60 sec. and 1/10,000 sec.
Minimum Illumination:	0.008 footcandle (0.08 lux) at F1.4, AGC ON
Gain Control:	Selectable AGC ON (+24 dB) or OFF
Lens Mount:	C-mount or Speciald C-mount (CS-mount) selectable
Ambient Operating Temperature:	-22°F - 122°F (-30°C - +50°C)
Ambient Operating Humidity:	Less than 90%
Power Source:	WV-BP310: 120V AC 60 Hz WV-BP314: 24V AC 60 Hz
Power consumption:	WV-BP310: 3.6W WV-BP314: 3.4W

Dimensions (without lens): 2-5/8" (W) x 2-3/16" (H) x 4-13/16" (D)
[67 (W) x 55 (H) x 123 (D) mm]

Weights (without lens): WV-BP310: 1.3 lbs. (0.61kg)
WV-BP314: 1.0 lbs. (0.46kg)

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

STANDARD ACCESSORIES

ALC Lens Connector (YFE4191J100) 1 pc.
Body Cap 1 pc.

OPTIONAL ACCESSORIES

Lenses : WV-LA2.8, WV-LA6B2, WV-LA12B2, WV-LA18, WV-LA36, WV-LA4510, WV-LA608, WV-LA1208,
WV-LA4R5C3A, WV-LA9C3A, WV-LA210C3, WV-LA408C3, WV-LA908C3, WV-LZ81/6A, WV-LZ81/10,
WV-LZ83/6, WV-LZ61/10, WV-LM4R5A, WV-LM6B2, WV-LM12B2, WV-LF6, WV-LF12, WV-LF4R5C3A,
WV-LF9C3A

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