





# HC7501

## INSTRUCTION MANUAL

	<b>CAUTION</b> RISK OF ELECTRIC SHOCK DO NOT OPEN	
<p>CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK. DO NOT REMOVE COVER (OR BACK). NO USER SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.</p>		



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



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

### CAUTION

- Do not use any power supply other than specified.

### WARNING

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

\* The CAUTION label is attached on the bottom of camera.

### INFORMATION

This equipment has been tested and found to comply with the limits for 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, use, 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.

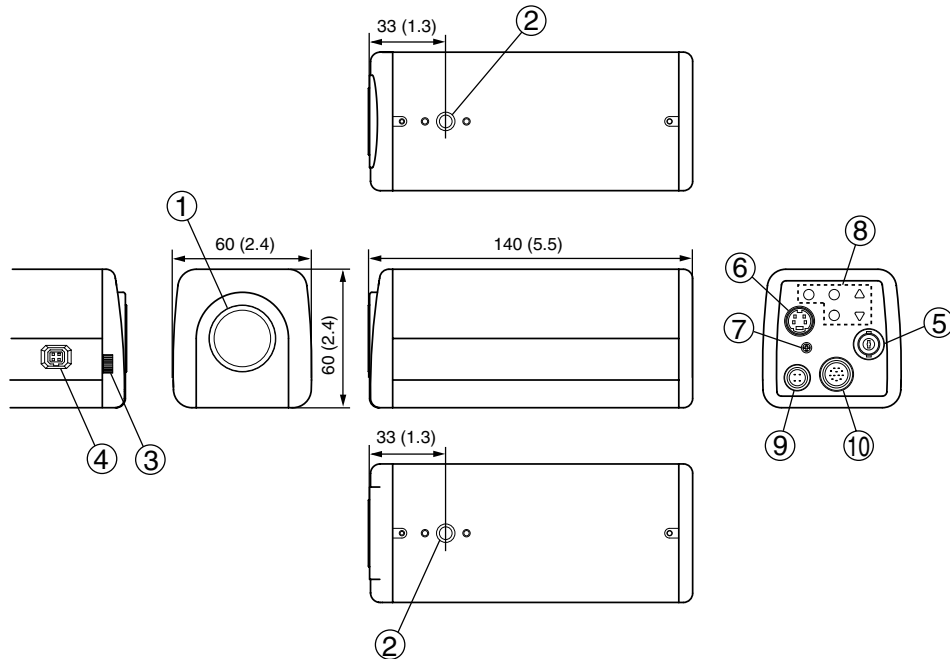
**USER-INSTALLER CAUTION:** Your authority to operate this FCC verified equipment could be voided if you make changes or modifications not expressly approved by the party responsible for compliance to Part of the FCC Rules.

## **IMPORTANT SAFETY INSTRUCTIONS**

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with dry cloth.
7. Do not block any ventilation openings, install in accordance with the manufacturer's instructions.
8. Do not install near heat sources such as radiators, heat registers, stoves or other apparatus (including amplifiers) that produce heat.
9. Only use attachment/accessories specified by the manufacturer.
10. Unplug this apparatus during lighting storms or when unused for long periods of time.
11. Refer all servicing to qualified personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have been fallen onto the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

# PART NAMES AND FUNCTIONS

All dimensions in mm (inch)



- ① **Lens mount**  
Mount a CS-mount lens. For C-mount lens or C-mount coupler, use supplied C-mount ring.
- ② **Camera mount**  
For mounting a camera on bracket, tripod, etc. (1/4"-20UNC thread)
- ③ **Back focus dial**  
Refer to "HOW TO USE" on page 4 for details.
- ④ **IRIS terminal**  
Connect when an automatic iris lens is used.
- ⑤ **VIDEO OUT terminal**  
Connect to a monitor TV, etc. (BNC connector)
- ⑥ **S-VIDEO OUT terminal**  
Connect to a VCR with S-video terminal. (MiniDIN4Pjack)
- ⑦ **SC-phase adjustment**  
Adjustment the SC phase of external synchronous control.
- ⑧ **Camera control switches**  
[Display button, Shift button, Select button, Data button (up, down)]  
Refer to "CAMERA CONTROLS (OSD)" on page 6.

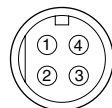
⑨ **4P terminal**

Connect this to the DC 12V power supply.  
(Refer to Fig.1)

⑩ **12P terminal**

This 12-pin connector has following inputs and an output.

- DC 12V input (Do not use DC 12V from 4P terminal simultaneously.)
- External sync. input.
- S-VIDEO (Y/C) output. (Refer to Fig.2)

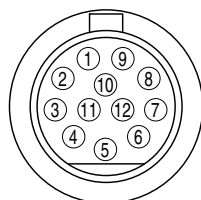


Soldering side

**Connector Pin Assignments**

	Name	Role of Signal
1	12V	DC IN 12V
2	12V	DC IN 12V
3	GND	GND
4	GND	GND

Supplied plug (Fig. 1)  
(HIROSE HR10A-7P-4S)



Soldering side

**Connector Pin Assignments**

	Name	Role of Signal		Name	Role of Signal
1	GND	GND	7	EXT. SYNC	EXT. SYNC IN
2	12V	DC IN 12V	8	GND	GND
3	GND	GND	9	C	C OUT
4	Y	Y OUT	10	GND	GND
5	NC	No connection	11	12V	DC IN 12V
6	NC	No connection	12	GND	GND

Supplied plug  
(HIROSE HR10A-10P-12S)

(Fig. 2)

## HOW TO CONNECT

Before connection, make sure that power of all units to be connected are OFF and cords are unplugged.

1. Mount a lens onto the camera. Refer to "HOW TO USE" on page 4 for usable lens.
2. Connect video terminal of the camera and the video input terminal of a monitor TV, etc. with a 75Ω coaxial cable.
3. Connect the 4P-connector cable for 12VDC power and the 12P-connector, which accommodates 12VDC input, external sync input and Y/C output. (You may procure separately the cable assemblies by using supplied connectors or purchase them from ELMO as an option)

**Caution:** Installation should be made by a qualified service personnel and should conform to all local codes.

Lens, coaxial cable for video signal and power supply are not supplied with a camera.

Don't connect the S-VIDEO terminal and "Y/C OUT" of 12P terminal at the same time.

Do not supply 12VDC from 4P-connector and 12P-connector simultaneously.

## HOW TO USE

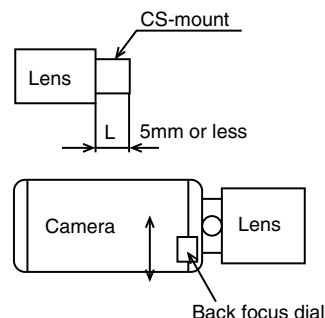
1. Adjust the iris and focus of the lens so that optimum image may be obtained.

\* Usable lenses

CS-mount lenses, whose length "L" (in the illustration) from the bearing surface of the mount is 5mm or less if protruded, should be used.

\* For C-mount lenses or C-mount coupler, use a supplied 5mm ring between the lens and camera.

**Adjust the back-focus only when necessary.**



Note: Adjustment of the lens back-focus.

The camera is set at the factory for standard back focus position. Some zoom lenses may require slight adjustment to the back focus. In those cases, follow these instructions.

Adjust the lens back-focus by turning the back focus dial in either direction as per the illustration, referring to the following instructions.

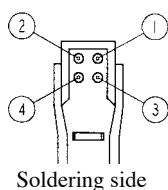
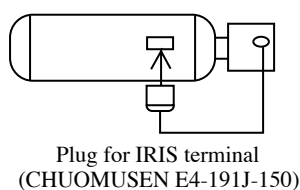
- ① Place an object at any fixed distance and set the focus ring of the zoom lens accordingly.
- ② Set the zoom lens to full TELE position and obtain the best focus position by turning the focus ring on the zoom lens.
- ③ Set the zoom lens to full WIDE position and obtain the best focus position by turning the back focus dial located on the side of the camera.
- ④ Repeat procedures ② and ③ until focus remains constant throughout the zooming range.

Note: When the weight of the lens is more than 1kg (2.2lbs), the camera should be supported by the lens rather than relying on camera mounting screw.

\* Using an auto iris lens

When a DC driven type auto iris lens is used, set the IRIS address (OSD) at DC and connect the plug of the lens to the IRIS terminal at the side of the camera.

When a video feedback type auto iris lens is used, set the IRIS address (OSD) at VIDEO and connect the plug from the lens to the IRIS terminal at the side of the camera. (Refer to the lens manual for the level adjustment.)



### IRIS terminal Pin Assignments

	DC setting (OSD)	VIDEO setting (OSD)
1	Control -	+9V iris power (50mA Max.)
2	Control +	GND
3	Drive +	0.7Vp-p auto iris video signal
4	Drive - (GND)	GND

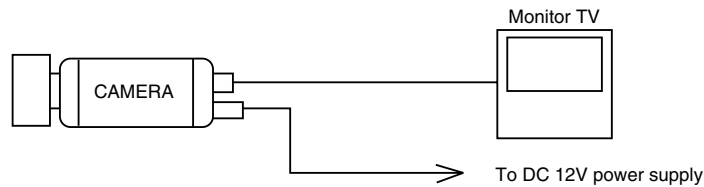
\* When a video feedback type auto iris lens (peak/average selectable type) is used at peak mode, the BLC feature of the camera may not function correctly. In such a case, change the mode to average.

\* When using at auto iris lens, set the shutter mode at OFF (OSD).

\* The shutter mode at AUTO (OSD) may increase smears on monitors, which is caused by characteristics of CCD and that is not fault of the camera.

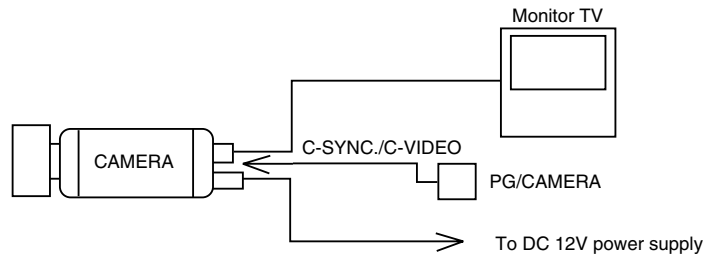
## INT./EXT. SYNCHRONOUS CONTROL

### (a) Internal Synchronous Control



### (b) External Synchronous Control by VBS

The internal sync. mode automatically changes to the external sync. mode when the VBS signal from an external control unit is supplied to 'EXT. SYNC' of 12P terminal on the back of the camera.



#### \*Required signal for the external synchronization

VBS (75Ω unbalanced)

SYNC 0.3Vp-p ± 0.1Vp-p

BURST 0.3Vp-p ± 0.1Vp-p

Limits of frequency deviation

within ± 50ppm against the NTSC standard system.

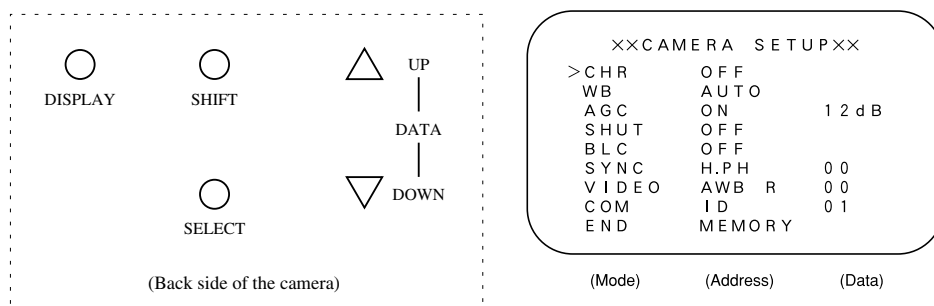
(Horizontal frequency approx. 15.7335kHz ~ 15.7350kHz)

In case of synchronous use of more than two cameras. Horizontal phase and Sub-carrier (SC) phase can be adjusted to match the images from respective cameras, if necessary.

# CAMERA CONTROLS (OSD)

To set up the camera, use the SETUP screen displayed on your monitor TV.

## 1. SETUP OF EACH FUNCTION



1. Press the DISPLAY button on the back side of the camera to display the SETUP screen on your monitor TV.
2. Use the SHIFT button to choose the mode.
3. Use the SELECT button to choose the address.
4. Use the DATA (UP and DOWN) buttons to choose the data.
5. When the setup is completed, move the cursor to END by pressing the SHIFT button. Choosing MEMORY and pressing DISPLAY button stores the latest settings to the memory. Choosing CLEAR and pressing DISPLAY button clears the settings and the camera returns to the factory settings.
6. When you have made changes to the setting, make sure to move the cursor to END and press the DISPLAY button to clear the setup screen. At that point, the settings are stored to the camera. Remember that turning off the unit while the setup screen is displayed will not store the settings and it returns to the previously-stored settings.

## 2. CAMERA CHARACTER (CHR)

(Factory setting is OFF.)

### (1) ON:

You can display up to 7 characters.

The blinking character is the one currently selected. Each time you press the DATA button, the character changes in the order listed in the following table.

Press the DISPLAY button to move the blinking mode to the next character, and you can select it by pressing the DATA buttons.

When the OSD display disappears, characters are displayed in white at the bottom of the screen.

××CAMERA SETUP××		
>CHR	ON	CAM-01
WB	AUTO	
AGC	ON	12dB
SHUT	OFF	
BLC	OFF	
SYNC	H. PH	00
VIDEO	AWB R	00
COM	ID	01
END	MEMORY	

### (2) OFF:

Characters do not appear.

Characters that can be used

0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
W	X	Y	Z	a	b	c	d	e	f	g	h	i	j	k	
l	m	n	o	p	q	r	s	t	u	v	w	x	y	z	
-	+	-	×	÷	/	±	=	~	↑	↓	→	←	↔	?	
¿	!	;	¥	\$	¢	£	%	#	&	°	‘	’	“	”	,
.	·	;	:	[	]	(	)	<	>	[	]	※	@	Å	α
β	λ	μ	φ	Ω	À	È	Ì	Ò	Ù	Á	É	Í	Ó	Ú	Â
Ê	Ô	Æ	Œ	Ã	Õ	Ñ	Ç	Ä	Ï	Ö	Ü				

### 3. WHITE BALANCE (WB)

Allows you to make the white balance adjustment automatically or manually, for a color temperature range 2900K - 8000K. (Factory setting is AUTO.)

(1) AUTO:

Sets the automatic color temperature tracking mode. White balance may not be adjusted if the lighting conditions are bad.

(2) MANU:

Sets the manual adjustment mode. This mode is effective for imaging with low variations in color temperature.

(3) PUSH:

Use when you want to adjust the white balance with one-push operation. This allows you to make more accurate adjustment than the AUTO mode. This mode is effective for imaging with low variations in color temperature. Pressing the UP button after selecting PUSH sets the data.

### 4. AGC (AGC)

When the sensitivity selection switch at the left side of the camera is ON, the following adjustments are enabled: (Factory setting is ON.)

(1) ON:

Allows you to specify the maximum gain for AGC.

Choices include 6dB, 12dB, and 18dB.

(Factory setting is 12dB.)

(2) OFF:

Allows you to adjust the camera gain manually.

4 - (1)

```
XXCAMERA  SETUPXX
CHR        ON          CAM-0 1
WB          AUTO
>AGC        ON          1 2 d B
SHUT        OFF
BLC         OFF
SYNC        H. PH      0 0
VIDEO       AWB R      0 0
COM         ID         0 1
END         MEMORY
```

4 - (2)

```
XXCAMERA  SETUPXX
CHR        ON          CAM-0 1
WB          AUTO      0 0
>AGC        OFF
SHUT        OFF
BLC         OFF
SYNC        H. PH      0 0
VIDEO       AWB R      0 0
COM         ID         0 1
END         MEMORY
```

## 5. SHUTTER (SHUT)

Select either manual or automatic selection of the electronic shutter. (Factory setting is OFF.)

### (1) OFF:

Factory setting (1/60 sec)

### (2) AUTO:

Automatically selects the electronic shutter.

### (3) HS1:

You can select among the 8 shutter speeds.

Choose one from:

1/100 1/125 1/250 1/500 1/1,000 1/2,000

1/4,000 and 1/10,000 sec.

### (4) HS2:

You can specify the shutter speed from 1H to 262H in 1H increments.

(approx. 1/10,000 sec - 1/60 sec)

Choosing the AUTO mode or the high speed shutter mode under the illumination of a fluorescent light may cause flicker or change in the white balance.

In this case, set SHUT to the OFF mode and use the auto iris lens.

5- (3)

```

  ××CAMERA  SETUP××
  CHR      ON      CAM-0 1
  WB       AUTO
  AGC      ON      1 2 dB
  >SHUT    HS 1    1 / 1 0 0
  BLC      OFF
  SYNC     H. PH   0 0
  VIDEO    AWB R   0 0
  COM      ID      0 1
  END      MEMORY
  
```

5- (4)

```

  ××CAMERA  SETUP××
  CHR      ON      CAM-0 1
  WB       AUTO
  AGC      ON      1 2 dB
  >SHUT    HS 2    0 1 H
  BLC      OFF
  SYNC     H. PH   0 0
  VIDEO    AWB R   0 0
  COM      ID      0 1
  END      MEMORY
  
```

### (5) LS1:

In the slower-side shutter, you can specify the speed from 2F (field) - 510F (field) in 2F increments.

NTSC: (2/60 sec - 510/60 sec)

### (6) AUTO2:

Automatically changes the slower-side shutter depending on the quantity of light. You can also choose the upper-limit speed from 2F, 4F, 8F, 16F, 32F and 64F.

\* If you choose 1/100, there will be no flicker even when the object becomes brighter.

\* In case the accumulated time becomes long in the slower-side shutter mode while shooting a fast-moving object, the picture may viewed with after-image.

5- (5)

```

  ××CAMERA  SETUP××
  CHR      ON      CAM-0 1
  WB       AUTO
  AGC      ON      1 2 dB
  >SHUT    LS 1    0 2 F
  BLC      OFF
  SYNC     H. PH   0 0
  VIDEO    AWB R   0 0
  COM      ID      0 1
  END      MEMORY
  
```

5- (6)

```

  ××CAMERA  SETUP××
  CHR      ON      CAM-0 1
  WB       AUTO
  AGC      ON      1 2 dB
  >SHUT    AUTO 2   1 6 F
  BLC      OFF
  SYNC     H. PH   0 0
  VIDEO    AWB R   0 0
  COM      ID      0 1
  END      MEMORY
  
```

## FREEZE PICTURE MODE

You can enter the freeze picture (field) mode by pressing the DOWN button of the data button while the SHUTTER mode is OFF.

To return to the original live picture, press the DOWN button again.

## 6. BACKLIGHT CORRECTION (BLC)

Backlight correction prevents the object from becoming dark when there is a strong light (such as spotlight) in the background. (Factory setting is OFF.)

### (1) OFF:

Factory setting

### (2) AUTO:

Depending on the position of the object in the screen, Area 0, Area 1, or Area 2 will automatically be selected.

### (3) ON:

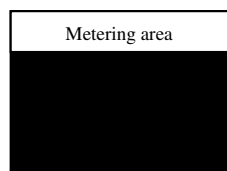
Allows you to manually select from Area 0, Area 1, or Area 2.

6- (2)

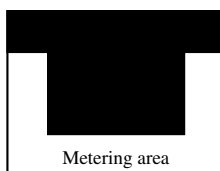
××CAMERA SETUP××		
CHR	ON	CAM-01
WB	AUTO	
AGC	ON	12dB
SHUT	OFF	
>BLC	AUTO	2
SYNC	H. PH	00
VIDEO	AWB R	00
COM	ID	01
END	MEMORY	

6- (3)

××CAMERA SETUP××		
CHR	ON	CAM-01
WB	AUTO	
AGC	ON	12dB
SHUT	OFF	
>BLC	ON	AREA 2
SYNC	H. PH	00
VIDEO	AWB R	00
COM	ID	01
END	MEMORY	



Area 0



Area 1



Area 2

## 7. SYNC (SYNC)

(Factory setting is H.PH)

### (1) H.PH:

Allows you to make horizontal phase adjustment during external sync. Use the dual-trace oscilloscope to observe the waveform of external sync signal and of the picture output signal from the camera and then use the DATA (UP or DOWN) buttons to make an adjustment so that the phases will match.

7- (1)

```
XXCAMERA  SETUPXX
CHR      ON      CAM-0 1
WB       AUTO
AGC      ON      1 2 dB
SHUT     OFF
BLC      OFF
> SYNC   H. PH   0 0
VIDEO    AWB R   0 0
COM      ID      0 1
END      MEMORY
```

### (2) SC.PH:

Allows you to make SC phase adjustment during external sync. Choose either 0, 90, 180 or 270 and make fine-adjustment in the SC-PHASE volume on the back side. Using the vector scope for the phase adjustment enhances the accuracy.

7- (2)

```
XXCAMERA  SETUPXX
CHR      ON      CAM-0 1
WB       AUTO
AGC      ON      1 2 dB
SHUT     OFF
BLC      OFF
> SYNC   SC. PH  0
VIDEO    AWB R   0 0
COM      ID      0 1
END      MEMORY
```

## 8. VIDEO ADJUSTMENT (VIDEO)

(Factory setting is 0.)

When you set the white balance to the AUTO or the PUSH mode, the following functions are enabled:

### (1) AWB R:

Select UP to increase the red in the whole image.

### (2) AWB B:

Select UP to increase the blue in the whole image.

8- (1)

```
XXCAMERA  SETUPXX
CHR      ON      CAM-0 1
WB       AUTO
AGC      ON      1 2 dB
SHUT     OFF
BLC      OFF
> SYNC   H. PH   0 0
VIDEO    AWB R   0 0
COM      ID      0 1
END      MEMORY
```

When you set the white balance to MANU mode, the following functions are enabled:

### (3) MWB R:

Select UP to increase the red in the whole image.

### (4) MWB B:

Select UP to increase the blue in the whole image.

The following functions work regardless of the white balance mode:

- (5) R GAIN:  
Adjusts the depth of red.
- (6) B GAIN:  
Adjusts the depth of blue.
- (7) R.PH:  
Adjusts the tone of red.
- (8) B.PH:  
Adjusts the tone of blue.
- (9) VH.AP:  
Adjusts the aperture level. Select UP to sharpen the picture.
- (10) SET UP:  
Adjusts the pedestal level (black level) of the picture. Select UP to brighten the picture.
- (11) IRIS:  
When using the DC type auto iris lens, set the IRIS address to DC and connect the lens plug to the IRIS terminal on the right side of the camera. When using the video feedback type auto iris lens, set the IRIS address to VIDEO and connect the lens plug to the IRIS terminal on the right side of the camera.
- (12) LEVEL:  
Adjusts brightness of the DC type auto iris lens when the IRIS mode is set to DC. Adjustments in LEVEL are disabled when you set the IRIS address to VIDEO.

8- (10)

XXCAMERA SETUPXX		
CHR	ON	CAM-01
WB	AUTO	
AGC	ON	12dB
SHUT	OFF	
BLC	OFF	
SYNC	H. PH	00
>VIDEO	SETUP	00
COM	ID	01
END	MEMORY	

8- (11)

XXCAMERA SETUPXX		
CHR	ON	CAM-01
WB	AUTO	
AGC	ON	12dB
SHUT	OFF	
BLC	OFF	
SYNC	H. PH	00
>VIDEO	IRIS	DC
COM	ID	01
END	MEMORY	

8- (12)

XXCAMERA SETUPXX		
CHR	ON	CAM-01
WB	AUTO	
AGC	ON	12dB
SHUT	OFF	
BLC	OFF	
SYNC	H. PH	00
>VIDEO	LEVEL	00
COM	ID	01
END	MEMORY	

Note: When using the auto iris lens in the VIDEO mode, the backlight compensation (BLC) may not function properly.

## **9. COMMUNICATION (COM)**

Don't use this function in this camera model.

## **10. END (END)**

To finish the setup operations, press **SHIFT** and enter into the **END** mode.

### **(1) MEMORY:**

Saves the settings and disappears from the setup screen.

### **(2) CLEAR:**

Resets all settings to the factory values and disappears from the setup screen. (You cannot, however, clear the ID number and the terminal resistance status.)

## SPECIFICATIONS

Model	HC7501
Power source	DC12V (DC11V~16V)
Power consumption	Approx.4.2W
Pick-up device	1/2" Color interline-transfer CCD
Effective picture element	768 (H) x 494 (V)
Scanning area	6.45mm (H) x 4.84mm (V)
Scanning system	2:1 interlaced
Scanning frequency	15.734kHz (H), 59.94Hz (V)
Sync. system	Internal/External
Resolution	480 TV lines (Horizontal) 350 TV lines (Vertical)
S/N ratio	More than 50dB
Recommended illumination	120 lx (F1.4 under incandescent lamp)
Minimum illumination	2.0 lx (F1.4 under incandescent lamp, AGC at 18dB) 0.12 lx (F1.4 under incandescent lamp, sens up at 16F)
AGC	Built-in (Factory-set at ON, 12dB)
White balance	AUTO/Manual/Push-set (Factory-set at ON, AUTO)
BLC (Backlight Compensation)	Built-in (Factory-set at OFF)
AES (Automatic Electronic Shutter)	Built-in 1/60 ~ 1/10,000 sec. (Factory-set at OFF)
Electronic shutter	Built-in 1/60 1/100 1/250 1/500 1/1,000 1/2,000 1/4,000 1/10,000 sec.
Frame accumulation	Built-in 64 frame in Auto mode
Menu (On Screen Display)	AGC, White balance, BLC, AES, Electronic shutter, SYNC. Adjust, Video adjust, Character
Video Output	VBS 1.0 V(p-p), 75Ω, NTSC, compatible
Y/C Output	Y: 1.0 V(p-p), 75Ω C: 0.286 V(p-p), 75Ω S-VIDEO terminal or 12P terminal
External sync. Input	VBS 1.0 V(p-p), 75Ω 12P terminal
Auto-iris terminal	4P (DC/Video)
Power terminal	4P terminal or 12P terminal
Lens mount	CS-mount/C-mount with 5mm ring
Ambient temperature	-10°C ~ +50°C (14°F~122°F)
Ambient humidity	30% ~ 90%
Dimensions	60 (W) x 60 (H) x 140 (D)mm (2.4 x 2.4 x 5.5 inches)
Weight	410grm (0.9lbs)

Note: Weight and dimensions are approximate.

Design and specifications are subject to change without prior notice.

## PRECAUTIONS FOR USE AND INSTALLATION

- \* Never aim the camera at the sun.  
Never aim or point the camera at the sun even if you are not shooting.
- \* Do not shoot intense light.  
Strong light such as a spot light on the image plane will cause blooming or smear. When strong light comes into the image plane, vertical stripes may appear on it. However, this does not mean that the camera is defect.
- \* Take precautions when handling a camera.  
Do not drop your camera, or give it a strong shock or vibration. This may cause camera to malfunction.
- \* Do not touch internal parts.  
Be sure not to touch the internal parts. This may cause to electrical shock.
- \* Do not let the camera get wet.  
Install the camera at the place where it will not get wet. Should it gets wet, turn off the power immediately and contact your dealer.
- \* Install your camera where no video noise appears.  
When camera cables have been laid near electric wires or television receivers, a noise may interfere the image. If noise occurs, relocate cables or reinstall equipment.
- \* Check the ambient temperature and humidity.  
Avoid using camera in areas where temperature is consistently hotter or colder than the specified range (See Specifications chart below) or poor image quality or damaged parts may occur. Precautions should also be taken to avoid areas of high humidity.
- \* Should you notice any trouble.  
If any trouble occurs while you are using the camera, turn off the camera and contact your dealer. Failure to do so may cause damage to the camera.
- \* The socket-outlet should be installed near the equipment and should be easily accessible.
- \* Do not place this video product on an unstable cart, stand, tripod, bracket, or table. The video product may fall, causing serious injury to a child or adult, and serious damage to the appliance. Use only with stand, tripod, bracket, or table recommended by the manufacturer, or sold with the video product. Any mounting of the appliance should follow the manufacturer's instructions, and should use a mounting accessory recommended by the manufacturer.
- \* This video product should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supply to your location, consult your appliance dealer or local power company.
- \* Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, screws, and the point where they exit from the appliance.
- \* Do not overload power supply and extension cords, as this can result in a risk of fire or electric shock.
- \* Never push objects of any kind into this video product through openings as they may touch dangerous voltage points or short-out parts that could result in a fire or electrical shock. Never spill liquid of kind on the video product.
- \* When replacement parts are required, be sure the service technician has used replacement parts specified by the manufacturer or that have the same characteristics as the original parts. Unauthorized substitutions may result in fire, electric shock or other hazards.
- \* Upon completion of any service or repairs to this video product ask the service technician to perform safety checks to determine that video product is in proper operating condition.

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