

CCTV Camera Manual

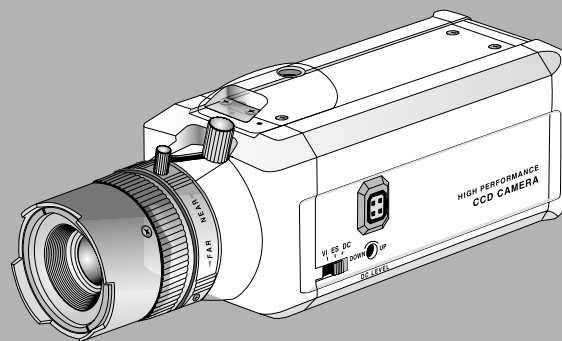


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Please study the manual thoroughly in order to get the best performance from the camera.

Model configuration

Color Camera

STD-Res Series (400 TV Lines, 0.01 Lux/F1.2)

DC12V Only
DC12V~AC24V, Non polarity Dynamic power input
AC230V (AC200~AC240V)

STD-Res EX-view Series (400 TV Lines, 0.001 Lux/F1.2 with EX-view HAD CCD)

DC12V Only
DC12V~AC24V, Non polarity Dynamic power input
AC230V (AC200~AC240V)

Hi-Res Series (500 TV Lines, 0.03 Lux/F1.2)

DC12V Only
DC12V~AC24V, Non polarity Dynamic power input
AC230V (AC200~AC240V)

Hi-Res EX-view Series (500 TV Lines, 0.001 Lux/F1.2 with EX-view HAD CCD)

DC12V Only
DC12V~AC24V, Non polarity Dynamic power input
AC230V (AC200~AC240V)

Option

1. IR Sensitive for Day & Night application : Model nr + IR
2. Flickerless Function : Model nr + FL

B/W Camera

STD-Res Series (420 TV Lines, 0.05 Lux/F1.2)

DC12V Only
DC12V~AC24V, Non polarity Dynamic power input
AC230V (AC200~AC240V)

Hi-Res Series (600 TV Lines, 0.1 Lux/F1.2)

DC12V Only
DC12V~AC24V, Non polarity Dynamic power input
AC230V (AC200~AC240V)

Hi-Res EX-view Series (600 TV Lines, 0.001 Lux/F1.2 with EX-view HAD CCD)

DC12V Only
DC12V~AC24V, Non polarity Dynamic power input
AC230V (AC200~AC240V)

This unit has been tested and proved to comply with the limits of FCC rules and CE regulation.

Warning !

To prevent the risk of fire or shock hazard, do not expose this camera to water.

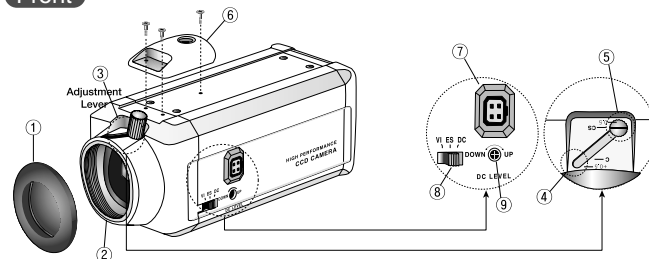
Installation of this unit should be carried out by a qualified personnel and should conform to the local codes.

Precautions

1. Do not drop or shake the carton severely.
The box cannot give perfect protection against heavy shocks.
2. Do not touch the CCD glass by hand, as this may give a blurred picture.
3. Do not expose the camera to water or other liquids.
It can cause fire or electric shock. If water or other liquids contaminate the unit, dry it quickly as it can corrode the electrical components inside.
4. Do not install the camera in the wet area or area of high humidity without adequate protection.
Moisture can corrode the electrical components inside.
5. Do not turn the camera to face strong light.
Direct sunlight or strong reflected light can cause blooming or smearing of the picture.
6. Do not install or use the camera in an environment of extreme temperature.
In temperatures of below -10°C use an external housing with heater built in. In a temperatures of over +60°C, cool the camera with ventilation apparatus.
7. Do not disassemble the camera.
There are no user serviceable parts inside.

Name of each part & Functions

Front



1. CCD Protection Cover

Leave the cover in place when the lens is not installed. Take it off to fit the lens.

2. C&S mount

This holder moves back and forth by sliding the adjustment lever forwards or backwards.

This mechanism is designed for the purpose of using all types of C-Mount or CS-Mount lenses of different manufacturers. Mount the lens on the holder firmly. It is set to CS-Mount position at the factory. Loosen the adjustment lever by turning it counter clockwise a little bit in order to adjust the C&S mount holder. Set the focus and lock the lever.

3. Adjustment Lever

4. Flange back focus alignment area for C-Mount lens

The mount offers 0.5mm of extra tolerance to enable any type of non-standard C-Mount lens to be focused. Loosen the adjustment lever by turning it counter clockwise a little bit for fine tune focus.

5. Flange back focus alignment area for CS-Mount lens

The mount offers 0.5mm of extra tolerance to enable any type of non-standard CS-Mount lens to be focused. Loosen the adjustment lever by turning it counter clockwise a little bit for fine tune focus.

6. Mounting the Bracket Holder

Can be attached either on the top or on the bottom. Assemble it with the screws provided. (3 EA)

7. Auto iris lens connector

Please refer to page 13, 14 of this manual for the wiring specification.

8. Iris mode select switch

ES : Electronic auto iris, VI : Video iris, DC : DC Iris

ES mode is used with manual iris lenses. In ES mode the camera controls the electronic shutter automatically from 1/50 to 1/100,000 sec.(PAL/CCIR) or 1/60 to 1/100,000 sec.(NTSC/EIA).

ES mode with a Manual iris lens is suitable for indoor surveillance. Select the slide SW to the ES position.

For outdoor use, ES mode is not sufficient. In this case an Auto Iris lens of either Video driven type or DC driven type is recommended. Move the slide SW to VI position for the Video iris lens or move it to DC position for the DC Iris lens. When VI or DC mode is selected, the electronic shutter speed is fixed to 1/50sec(PAL/CCIR) or 1/60sec(NTSC/EIA).

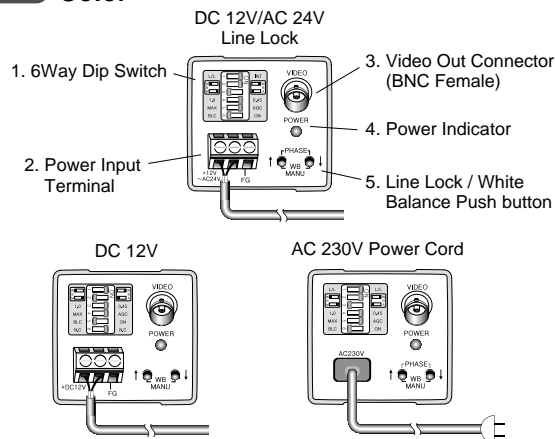
9. DC Level control for DC Iris lens.

It is used for controlling the video output level of the DC driven auto iris lens.

* To make the image brighter, turn the pot clockwise.

* To make the image darker, turn the pot counter clockwise.

Back -Color



1-1. 6 Way DIP Switch

DIP Switch configuration (24V AC LineLock, 230V AC LineLock only)

No.	OFF		ON			
1	(Phase Push SW up/down)Line Lock Mode		Internal Mode			
2	OFF	Manual White Balance (Adjust the Push Button Up/Down)	ON	Auto White Balance (No need to Adjust the Push Button)		
3	ON		OFF			
4	$\gamma=1.0$		$\gamma=0.45$			
5	AGC Max : 26dB		AGC Normal : 20dB			
6	BLC OFF		BLC ON			

DIP Switch configuration (DC 12V only)

No.	OFF		ON		
1	OFF	Manual white Balance (Adjust the Push Button Up/Down)	ON	Auto White Balance	
2	ON		OFF	(No need to Adjust the Push Button)	
3	$\gamma=1.0$		$\gamma=0.45$		
4	AGC Max : 26dB		AGC Normal : 20dB		
5	BLC OFF		BLC ON		
6	N.C		N.C		

* Color 6 Way Dip Switch Functions


Sync Mode Selection(L/L ☐ INT)

* INT(Internal Sync) Mode


This mode is used when the camera is installed outdoor with one camera to one monitor operation.

* L/L(Line Lock) Mode : To work with other cameras using 24VAC and 230VAC power, it is required to synchronize the video signals in order to remove picture fluctuation problems. In the case of one camera with one monitor under fluorescent lighting, the picture is affected by the 24VAC and 230VAC power frequency in INT mode. A flickering picture may result from this condition. Set Dip S/W to L/L mode to remove this problem. It is set to L/L at the factory.

White Balance Control

* WBA (White Balance Auto) mode ()

The camera controls the white balance automatically. It is recommended for most applications. It is set to WBA at the factory.

* WBM (White Balance Manual) Mode ()

White balance is controlled manually under this mode by adjusting the push button up or down. It is not used for normal applications. It may be needed for special conditions or when the camera is used under special lighting. The background of the picture may become red or blue under manual adjustment.

Gamma Correction Select Mode ($\gamma=1.0$ ☐ 0.45)

Select 1.0 when the picture needs to be darker in contrast.

It is set to 0.45 at the factory.

⇔ Option : Flickerless Select Mode (ON ☐ FL OFF)

FL ON(NTSC:1/100 sec, PAL:1/120 sec)

Automatic Gain Control (MAX ☐ AGC)

Use this mode for dark illumination or at night. If the MAX(AGC Max) is selected the camera increases the video signals to maximum so that the picture looks brighter.

At MAX mode, unnecessary noise is increased also and the picture may display noise on the screen. This is normal. It is set to AGC at the factory.

BLC (Back Light Compensation) ON / OFF (BLC ☐ ON)

Under bright lighting conditions from behind the subject, the camera will close the iris automatically. Select BLC mode to counteract this. In normal lighting conditions, select BLC to OFF. It is set to OFF at the factory.

1-2. Power Input Terminal

This terminal provides connections for DC 12V or AC 24V.

It is not polarity sensitive. The unit has a wide power tolerance, within DC 10V~DC 40V or within AC 15V~AC 30V. It is not a special requirement to use a regulated power supply, but using a regulated supply is recommended.

1-3. Video Out Jack (BNC Female)

Connect Coaxial cable from this BNC connector to the monitor. Use a high quality coaxial video cable to ensure good picture quality over long distances.

1-4. Power Indicator

Red power lamp turns on when the power is properly supplied.

1-5. Vertical Phase Adjustment Push Button (Line Lock mode)

White Balance Push button

The up/down push buttons control V phase at L/L mode and control manual white balance at the WBM mode.

At the L/L Mode

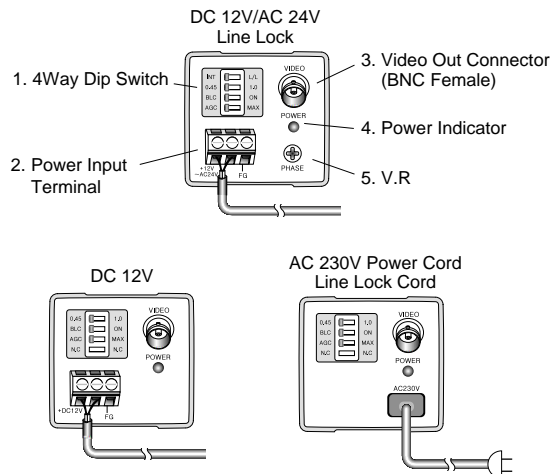
When the unit is used with system equipment and other cameras, it is required to synchronize the Vertical Phase between the cameras when using 24VAC. It is recommended to use a multi-channel oscilloscope for correct adjustment.

Push the buttons once at a time up or down when vertical phase of the unit does not match the other cameras or system equipment.

At the WBM (White Balance Manual) Mode

Adjust the white balance with the push buttons when the camera is used with the special lighting such as sodium lamps. Usually it is not used for security applications.

These two functions cannot be adjusted at the same time. Adjust each mode in turn.



1. 4 Pin DIP Switch

DIP Switch configuration (24V AC LineLock)

No.	OFF	ON
1	INT	L/L
2	$\gamma=0.45$	$\gamma=1.0$
3	BLC OFF	BLC ON
4	AGC Normal : 20dB	AGC Max : 32dB

DIP Switch configuration (DC 12V & 230V AC)

No.	OFF	ON
1	$\gamma=0.45$	$\gamma=1.0$
2	BLC ON	BLC OFF
3	AGC Normal : 20dB	AGC Max : 32dB
4	N.C	N.C

* B/W 4 Way Dip Switch Functions

Sync Mode Selection(L/L ☐ INT)

* INT(Internal Sync) Mode

This mode is used when the camera is installed outdoor with one camera to one monitor operation.

* L/L(Line Lock) Mode : To work with other cameras using 24VAC power, it is required to synchronize the video signals in order to remove picture fluctuation problems. In the case of one camera with one monitor under fluorescent lighting, the picture is affected by the 24VAC power frequency in INT mode. A flickering picture may result from this condition. Set Dip S/W to L/L mode to remove this problem. It is set to L/L at the factory.

Gamma Correction Select Mode ($\gamma=0.45$ ☐ 1.0)

Select 1.0 when the picture needs to be darker in contrast.

It is set to 0.45 at the factory.

Automatic Gain Control (AGC ☐ MAX)

Use this mode for dark illumination or at night. If the MAX(AGC Max) is selected the camera increases the video signals to maximum so that the picture looks brighter.

At MAX mode, unnecessary noise is increased also and the picture may display noise on the screen. This is normal. It is set to AGC at the factory.

BLC (Back Light Compensation) ON / OFF (BLC ☐ OFF)

Under bright lighting conditions from behind the subject, the camera will close the iris automatically. Select BLC mode to counteract this. In normal lighting conditions, select BLC to OFF. It is set to OFF at the factory.

2-2. Power Input Terminal

This terminal provides connections for DC 12V or AC 24V.

It is not polarity sensitive. The unit has a wide power tolerance, within DC 10V–DC 40V or within AC 15V–AC 30V. It is not a special requirement to use a regulated power supply, but using a regulated supply is recommended.

2-3. Video Out Jack (BNC Female)

Connect Coaxial cable from this BNC connector to the monitor. Use a high quality coaxial video cable to ensure good picture quality over long distances.

2-4. Power Indicator

Red power lamp turns on when the power is properly supplied.

2-5. Vertical Phase Adjustment V.R (Line Lock mode)

At the L/L Mode

When the unit is used with system equipment and other cameras, it is required to synchronize the Vertical Phase between the cameras when using 24VAC. It is recommended to use a multi-channel oscilloscope for correct adjustment.

Adjust vertical phase of the unit with V.R to match with other cameras or system equipment.

Connection

1. Lens

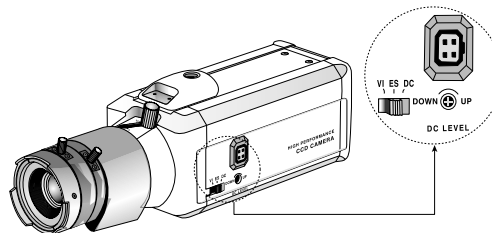
It is recommended to use a good quality lens to improve the picture quality under low light conditions.

The camera is built with a universal mounting mechanism on which any type of lens can be used.

* Lens is not supplied with camera.

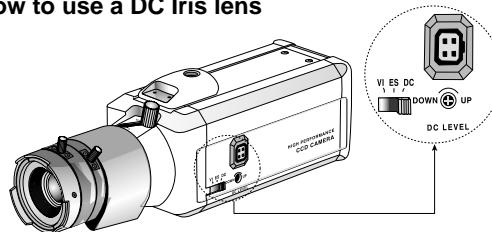
1.1 How to use a Manual Iris lens

* In this set-up the camera does not control the iris. Instead the camera adjusts the picture automatically for light changes. Set the Iris mode select switch to “ES”(Electronic Shutter) position.



* Please make sure to check this before operation. When the S/W is positioned at the VI or DC mode, the electronic shutter will be off and will not control the picture.

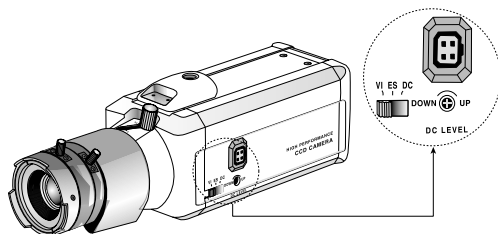
1.2 How to use a DC Iris lens



- * Set the iris mode select switch to "DC"(DC driven automatic iris Control) position.
- * In this mode, the iris is controlled automatically to react to DC signals from the camera.
- * Please make sure to set S/W to DC position before you operate the camera with a DC lens.
- * DC level control is on the side of the camera. Please do not touch the DC Level control when using a fixed or Video iris type of lens.
- * The camera is set to DC at the factory. Adjust the pot up or down only when you need the picture to look brighter or darker depending on the situation. Generally there is no need to adjust the level.

1.3 How to use a Video Iris lens

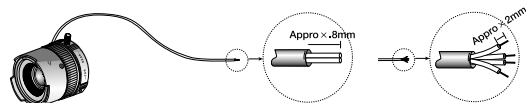
- * Set the iris mode select switch to "VI"(Video signal driven Automatic Iris) position.
- * In this mode the lens controls itself automatically to react to Video signals from the camera.



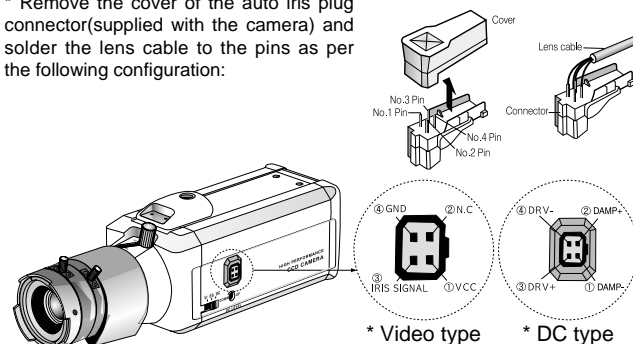
- * Please make sure to set S/W to VI position before you operate the unit with a Video type auto iris lens. Level control is on the side of the lens.

1.4 How to connect an Auto Iris lens (DC / Video)

- * Take off the insulation of the lens cable as shown on the drawing. (approx. 8mm)
- * Take off the insulation of the inner cable as shown on the drawing. (approx. 2mm)



- * Remove the cover of the auto iris plug connector(supplied with the camera) and solder the lens cable to the pins as per the following configuration:



* Video type

- No. 1 Pin --- Red(Power source)
- No. 2 Pin --- N.C
- No. 3 Pin --- Yellow(Video Signal)
- No. 4 Pin --- Black(GND)

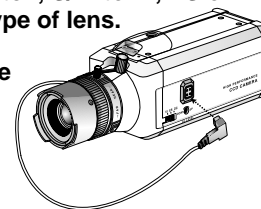
* DC type

- No. 1 Pin --- DAMP -
- No. 2 Pin --- DAMP +
- No. 3 Pin --- Drive +
- No. 4 Pin --- Drive -

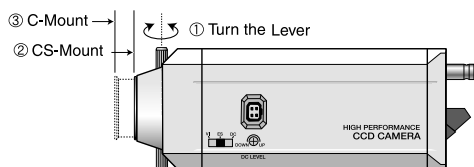
1.5 Remove the Protection Cap and attach the lens to the camera.

1.6 Set the Iris mode select switch, S/W to VI, ES or DC position according to the type of lens.

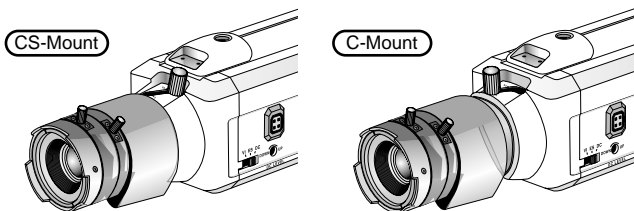
1.7 Connect the lens plug to the auto iris socket located on the left side of the camera.



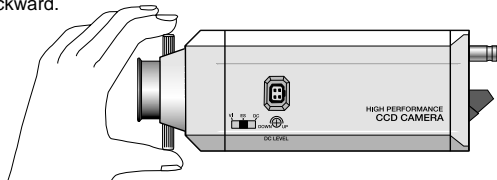
2. How to adjust C&CS Mount



- 2-1. Loosen the lens mount holder by turning the adjustment lever clockwise.
- 2-2. Pull the adjustment lever backward and fix it on the "CS" position.
Turn the lever counter clockwise to tighten.
- 2-3. Push the lever forward and fix it on the "C" position.
Turn the lever clockwise to tighten.



Hold the levers at both side together and move the lens mount holder forward or backward.



Refer to page 4 for any additional information.

3. How to connect power

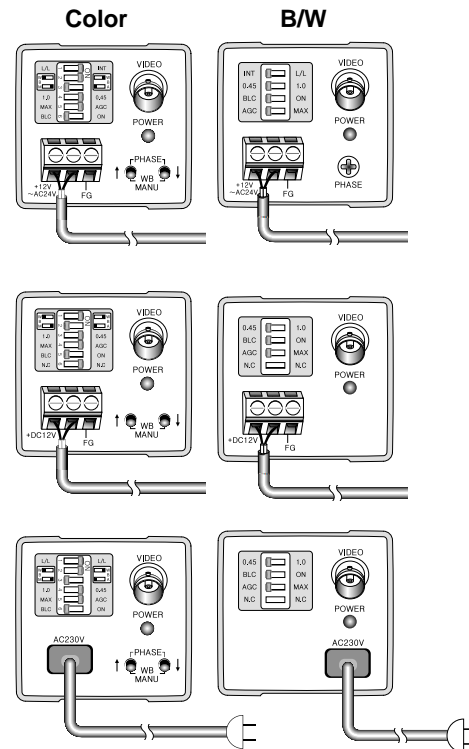
3-1. Please check the model and power specification before connecting the power.

3-2. AC24V power
The camera has a common power input connector for both 12VDC and 24VAC. The power input is non polarized.

3-3. The unit has a wide power tolerance, within DC 10V ~ DC 40V or within AC 15V ~ AC 30V.

3-4. DC 12V power
Use regulated DC 12V power supply ONLY. The power input is non polarized.

3-5. AC 230V power
Use an AC 230V power source. Connect the power plug to the outlet directly.



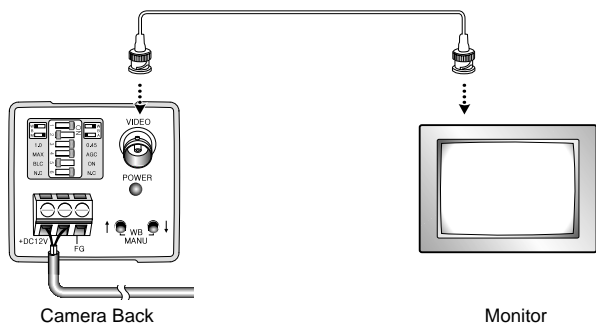
WARNING !

CONNECT POWER ONLY AFTER INSTALLATION IS COMPLETED.

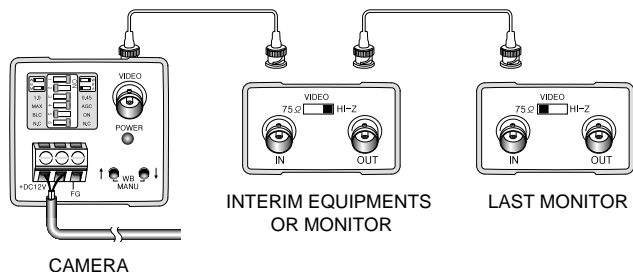
4. How to connect to monitor

4-1. Connect the Video out jack to the Video In jack on the monitor.

- Use good quality shielded coaxial video cable to avoid noise interference.
- Connect the cable with the power turned off.



- When the camera is used with multi-channel equipment or with more than 2 monitors, please set impedance level switch on the interim equipment / monitors to HI-Z position and make sure to set the last monitor to 75 Ω position.



Specification (Color)

MODEL	STD-Res Series			Hi-Res Series		
Image sensor	1/3" SONY HAD IT CCD Option : 1/3" EX-View HAD CCD, SONY					
Effective Pixels	NTSC:512(H)X492(V) PAL:500(H)X582(V)			NTSC:768(H)X494(V) PAL:752(H)X582(V)		
H.Resolution	400 TV Lines			500 TV Lines		
Synchronizing system	Internal	Internal/Line Lock	Line Lock Only	Internal	Internal/Line Lock	Line Lock Only
Scanning system	NTSC 525 Lines PAL 625 Lines			2:1 Interlaced		
Video output	1.0Vp-p Composite, 75 Ohms					
S/N ratio	More than 50 dB (AGC Off)					
Min. Illumination	STD : 0.01 Lux at F1.2	High-Res : 0.03 Lux at F1.2	EX-View : 0.001 Lux at F1.2			
BLC	ON/OFF by Dip Switch					
Shutter Speed	NTSC : 1/60~1/100,000 sec			PAL : 1/50~1/100,000 sec		
Gamma correction	Standard $\gamma=0.45$ Switchable $\gamma=1.0$ by Dip Switch					
White Balance	Standard 2100°K ~ 9100°K Auto Manual setting by Dip S/W & Up/Down by Push BTN					
Gain Control	Standard : 8dB~30dB Auto Maximum by Dip switch					
Smear Effect	0.005%					
MTBF	80,000 hours					
Power source	DC12V	DC12V/AC24V Dynamic	AC230V	DC12V	DC12V/AC24V Dynamic	AC230V
Operating current	130mA	150mA, 110mA	30mA	130mA	150mA, 110mA	30mA
Lens	C-Mount (17.5mm Frange back) - CS-Mount (12.5mm Frange back) & Fine focus ± 1.0 mm					
Iris Control	Video Iris/ESC/DC Iris					
Operating Temperature	14° F~122° F (-10° C~ + 50° C)					
Humidity	Within 90% RH					
Measurement(mm)	50(W) x 50(V) x 115(L)					
Weight(Approx.g)	310	310	410	310	310	410
Optional Features	IR Sensitivity	Yes	Yes	Yes	Yes	Yes
	Audio	Yes	Yes	Yes	Yes	Yes
	Dual Power 12-24	12V DC Only	Yes	x	12V DC Only	Yes
Dip SW Control	Line Lock	x	Yes	Yes	x	Yes
	BLC	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF
	AGC	STD/MAX	STD/MAX	STD/MAX	STD/MAX	STD/MAX
Rear Panel	Gamma	0.45/1.0	0.45/1.0	0.45/1.0	0.45/1.0	0.45/1.0
	WBA / WBM	White Balance Auto/WB Manual adjustment				
	Line Lock	x	ON/OFF	ON	x	ON/OFF
Side Panel	Video Out	BNC	BNC	BNC	BNC	BNC
	Power Indicator	Red LED	Red LED	Red LED	Red LED	Red LED
	Power Input terminal	Screw Joint	Screw Joint	230V AC/DC Code	Screw Joint	230V AC/DC Code
Side Panel	Line phase push BTN	x	Up/Down	Up/Down	x	Up/Down
	WB adjust push BTN	Up/Down	Up/Down	Up/Down	Up/Down	Up/Down
	Dip S/W	6 Way	6 Way	6 Way	6 Way	6 Way
Side Panel	Auto Iris jack	4Pin Jack	4Pin Jack	4Pin Jack	4Pin Jack	4Pin Jack
	Iris Mode Slide S/W	VI ES DC	VI ES DC	VI ES DC	VI ES DC	VI ES DC
	DC Iris Adjust volume	DC Level	DC Level	DC Level	DC Level	DC Level

Specification (B/W)

MODEL	STD-Res Series			Hi-Res Series		
Image sensor	1/3" Interline CCD, SONY			1/3" Interline CCD, SONY Option : EX-View HAD CCD Version		
Effective Pixels	EIA:512(H)X492(V) CCIR:500(H)X582(V)			EIA:768(H)X494(V) CCIR:752(H)X582(V)		
H.Resolution	420 TV Lines			600 TV Lines		
Synchronizing system	Internal	Internal/Line Lock	Internal	Internal	Internal/Line Lock	Internal
Scanning system	EIA 525 Lines CCIR 625 Lines			2:1 Interlaced		
Video output	1.0Vp-p Composite, 75 Ohms					
S/N ratio	More than 50 dB (AGC Off)					
Min. Illumination	0.05 Lux at F1.2			0.1 Lux at F1.2 Option : 0.001 Lux at F1.2 (EX-View HAD CCD version)		
BLC	ON/OFF by Dip Switch					
Shutter Speed	EIA : 1/60~1/100,000 sec			CCIR : 1/50~1/100,000 sec		
Gamma correction	Standard $\gamma = 0.45$			Switchable $\gamma = 1.0$ by Dip Switch		
Gain Control	Standard : 4dB~30dB Auto			Maximum by Dip switch		
Smear Effect	0.005%					
MTBF	80,000 hours					
Power source	DC12V	DC12V(AC24V) $\pm 10\%$	AC230V($\pm 30\%$)	DC12V	DC12V(AC24V) $\pm 10\%$	AC230V($\pm 30\%$)
Operating current	110mA	100mA, 50mA	20mA	110mA	100mA, 50mA	20mA
Lens	C-Mount (17.5mm Flange back) - CS-Mount (12.5mm Flange back) & Fine focus $\pm 1.0\text{mm}$					
Iris Control	Video Iris/ESC/DC Iris					
Operating Temperature	14° F ~ 122° F (-10° C ~ + 50° C)					
Humidity	Within 90% RH					
Measurement(mm)	50(W) x 50(V) x 115(L)					
Weight(Approx.g)	310	310	410	310	410	
Dip SW Control	Line Lock	x	ON/OFF	x	ON/OFF	x
	Gamma	0.45/1.0	0.45/1.0	0.45/1.0	0.45/1.0	0.45/1.0
	BLC	ON/OFF	ON/OFF	ON/OFF	ON/OFF	ON/OFF
	AGC	STD/MAX	STD/MAX	STD/MAX	STD/MAX	STD/MAX
Rear Pannel	Video Out	BNC	BNC	BNC	BNC	BNC
	Power Indicator	Red LED	Red LED	Red LED	Red LED	Red LED
	Power Input terminal	Screw Joint	Screw Joint	230V AC/DC Code	Screw Joint	230V AC/DC Code
	Phase V.R	x	YES	x	YES	x
Side Pannel	Dip SW	4Way Slide	4Way Slide	4Way Slide	4Way Slide	4Way Slide
	Auto Iris jack	4Pin Jack	4Pin Jack	4Pin Jack	4Pin Jack	4Pin Jack
	Iris Mode Slide SW	VI ES DC	VI ES DC	VI ES DC	VI ES DC	VI ES DC
	DC Iris Adjust volume	DC Level	DC Level	DC Level	DC Level	DC Level

Trouble Shooting Guide

If the unit continues to be fault after the following adjustments please consult your dealer.

When the picture is not displayed on the monitor

- Please check if the AC-DC power unit is plugged into the AC power outlet firmly
- Please check if there are any misconnection's in the cabling.
- Please check if the IRIS mode select switch is set to the correct position i.e. to the DC mode for the DC driven auto iris lens or VI mode for the Video driven auto iris lens.

When the picture is blurred

- Please check if the lens is contaminated. Please clean the lens surface (on both sides) gently with a soft cloth or tissue.
- Please check if the lens is focused properly.
- When you use a manual iris lens, the iris select switch should be positioned to the ES mode.
- Please check if the monitor is set to brightly. Adjust the brightness or contrast level on the monitor correctly.

When the color displayed on the monitor is not correct(for Color)

- Please check if the White Balance switch is set to WBM position.
- White balance is controlled automatically under the WBA mode for most situations. When the camera is used under special lighting conditions, please refer to page 7 in this manual.
- Please check if the monitor's color adjustment is set correctly.

When the picture is too dark

- Please check if the monitor's contrast is set too dark.
- Please check if the Gamma select switch is set to 1.0 on the 6th pin of the DIP switch. If it is please move it to the 0.45 position. Gamma 1.0 position is recommended for use with a LCD monitor.
- Please check if the camera is positioned toward a door or window.
Please set BLC ON in these conditions.

When the picture is too bright

- Please check if the monitor's brightness control is get too high.
- Please check if the camera is set to BLC ON under normal lighting conditions.(i.e. when the camera is not pointed towards a brightly lit area)
Please move the BLC select switch to the BLC OFF position.

When there is noise on the picture in dark illumination conditions

- The camera picture becomes noisy under AGC MAX mode in order to increase the video gain in poor lighting conditions. Please move the AGC switch to OFF position if it is not required.

When the picture is not clear on the monitor

- Please check if the monitor is set up correctly.
- Please check if the camera is pointer towards an area where too much light comes in. Adjust the direction of the camera in this case.
- Please check if the back focus of the lens is set correctly.

When the picture is flickering

- Please check if the camera is pointed at fluorescent lighting or bright sunlight. Use a visor or adjust the direction of the camera in this case.
- Please check if the Auto iris lens is selected correctly on the IRIS mode select switch. Please move the Iris mode switch to DC position when you use a DC type auto lens or move it to the VI position when you use a Video type auto iris lens.
- When you don't use an auto iris lens, please move the iris select switch to the ES position

When the picture is distorted

- Please check if the lens is defective and replace the lens in this case.
- Please check if the camera is PAL/CCIR(50Hz) in an NTSC/EIA(60Hz) area or vice versa.

Note