

INSTRUCTION MANUAL

540TV Lines Super High Resolution Day and Night Color Camera

1/3" INTERLINE TRANSFER CCD
HIGH RESOLUTION



Please read this manual thoroughly before use, and keep it handy for future reference.

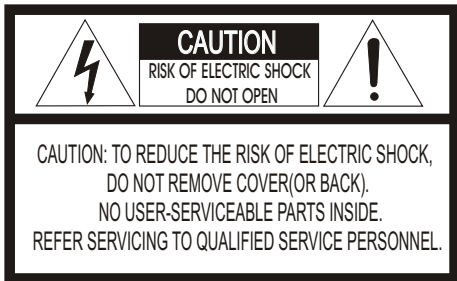
LIMITATION OF LIABILITY

THE INFORMATION IN THIS PUBLICATION IS BELIEVED TO BE ACCURATE IN ALL RESPECTS, HOWEVER, WE CANNOT ASSUME RESPONSIBILITY FOR ANY CONSEQUENCES RESULTING FROM THE USE THEREOF. THE INFORMATION CONTAINED HEREIN IS SUBJECT TO CHANGE WITHOUT NOTICE. REVISIONS OR NEW EDITIONS TO THIS PUBLICATION MAY BE ISSUED TO INCORPORATE SUCH CHANGES.

WARNINGS AND CAUTIONS:

TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS PRODUCT TO RAIN OR MOISTURE. DO NOT INSERT ANY METALLIC OBJECTS THROUGH THE VENTILATION GRILLS OR OTHER OPENINGS ON THE EQUIPMENT.

CAUTION:



EXPLANATION OF GRAPHICAL SYMBOLS



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 product.

PRECAUTIONS

Safety -----

Should any liquid or solid object fall into the cabinet, unplug the unit and have it checked by the qualified personnel before operating it any further.

Unplug the unit from the wall outlet if it is not going to be used for several days or more. To disconnect the cord, pull it out by the plug. Never pull the cord itself.

Allow adequate air circulation to prevent internal heat build-up. Do not place the unit on surfaces (rugs, blankets, etc.) or near materials (curtains, draperies) that may block the ventilation holes.

Height and vertical linearity controls located at the rear panel are for special adjustments by qualified personnel only.

Installation -----

Do not install the unit in an extremely hot or humid place or in a place subject to excessive dust, mechanical vibration.

The unit is not designed to be waterproof. Exposure to rain or water may damage the unit.

Cleaning -----

Clean the unit with a slightly damp soft cloth. Use a mild household detergent. Never use strong solvents such as thinner or benzene as they might damage the finish of the unit.

Retain the original carton and packing materials for safe transport of this unit in the future.

FCC COMPLIANCE STATEMENT

FCC INFORMATION : 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.

CAUTION : CHANGES OR MODIFICATIONS NOT EXPRESSLY APPROVED BY THE PARTY RESPONSIBLE FOR COMPLIANCE COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

THIS CLASS A DIGITAL APPARATUS COMPLIES WITH CANADIAN ICES-003.

CET APPAREIL NUMÉRIQUE DE LA CLASSE A EST CONFORME À LA NORME NMB-003 DU CANADA.

CE COMPLIANCE STATEMENT

WARNING

This is a Class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

IMPORTANT SAFEGUARDS

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 any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that product heat..
9. Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other.
A grounding type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. Only use attachments/accessories specified by the manufacturer.
12. Unplug this apparatus during lightning storms or when unused for long periods of time.
13. Refer all servicing to qualified service 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 fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
14. **CAUTION - THESE SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED SERVICE PERSONNEL ONLY. TO REDUCE THE RISK OF ELECTRIC SHOCK DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN THE OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.**
15. Use Certified/Listed Class 2 power supply transformer only.

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INTRODUCTION

The camera provides high-quality images using SONY CCD technology especially designed for closed-circuit television (CCTV) and security surveillance applications.

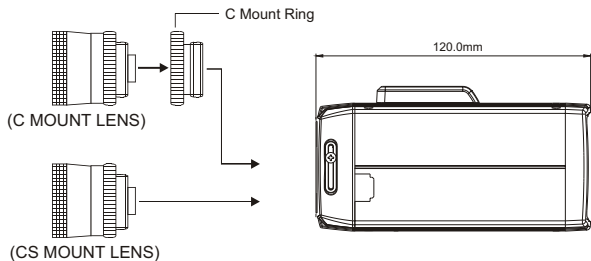
Features:

- High resolution and high performance 1/3" SONY Super HAD CCD technology.
- Excellent picture quality
- 540 lines(Color) of resolution
- 0.3 Lux(Color) @ F1.2 Sensitivity
- C/CS, backfocus cam for easy adjustment.
- Auto electronic shutter [1/60(1/50) ~ 1/120,000] and manual electronic shutter modes.
- OSD (On Screen Display)
- Auto and manual white balance modes .
- BLC (Back Light Compensation)
- Day&Night (Auto / Color / B/W)
- Privacy Zone 4point
- AGC (Auto Gain Control)
- Sens-up (x2 ~ x128)
- MIRROR
- VIDEO OUT(BNC)
- Motion Detection 4point
- Internal / AC line lock
- Compatible with video- or DC-type lenses with OSD select.
- Quick connect for video or DC lens with 4-pin connector.
- Operates in 12VDC or 24VAC
- Use Certified / Listed Class 2 power supply only.

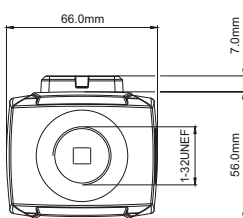


IMPORTANT : The user of this camera is responsible for checking and complying with local, state, and federal laws and statutes concerning the recording and monitoring of audio signals.

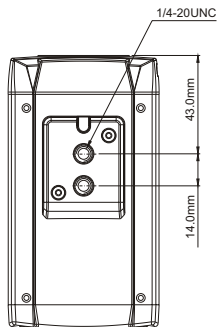
CAMERA OVERVIEW



SIDE VIEW



FRONT VIEW



TOP VIEW

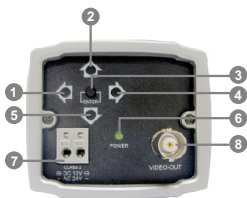
FUNCTION DESCRIPTION

- SIDE VIEW



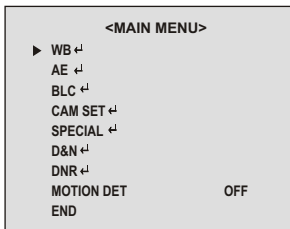
- ① Focus Adjusting Fixing Screw
- ② Auto Iris Lens Connector

- REAR VIEW



- ① Left Button
- ② Up Button
- ③ Enter Button
- ④ Right Button
- ⑤ Down Button
- ⑥ Power Indicator
- ⑦ AC/DC Compatible Input Terminal
- ⑧ Video Out Connector

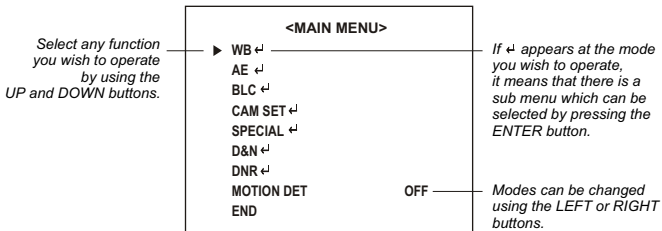
OPERATING CAMERA



<SETTINGS>

Settings can be made using the 5 buttons located on the back of the camera.

- 1) The MAIN MENU is displayed on the monitor when press the ENTER button.
- 2) Please select any function you wish to activate by using the UP and DOWN buttons.
 - The arrow can be moved up or down by using the UP and DOWN buttons. Please position the arrow to point to the function you wish to operate



- 3) Press the LEFT or RIGHT button if you wish to change mode.
 - When the LEFT or RIGHT button is pressed, available values and modes are displayed in order. Please keep pressing the button until you get to the mode you wish to operate.
- 4) To finishing the setting without save, select 'END' and then press the ENTER button. But if you want to keep the setting, enter the CAM SET menu, select 'SAVE' and then press the ENTER button.

NOTE : If ' - - ' appears at the mode item, it means that is no mode available to be selected.

<WB>

Press the MENU button to access the "WB" mode.

WHITE BAL.		
MODEL	ATW / AWC ↵ / MANUAL①
R GAIN	----- ----- 1 ~ 70②
B GAIN	----- ----- 1 ~ 70③
EXIT	④

1) MODE

- **ATW** (Auto Tracking White Balance)

This mode can be used within the color temperature range 1,800°K ~ 10,500°K

- **AWC ↵** (Auto White Balance Control)

Please press the MENU button while the camera is directed at a piece of white paper to obtain the optimum state under current illumination. If the environment including the light source is changed, you have to adjust the white balance again.

- **MANUAL**

The manual adjustment mode enables finer adjustment. You can adjust the RED and BLUE color values while monitoring the color changes on the object at the 'R GAIN' or 'B GAIN' menu. The 'R GAIN' and 'B GAIN' is available only at the MANUAL mode.

NOTE : Under the following conditions the WHITE BALANCE function may not operate properly. In such cases, please select the AWC mode.

- When the object's surroundings have a very high color temperature. (eg. A clear sky and sunset)
- When the object's surroundings are dark
- If the camera directly faces a fluorescent light or is installed in a place where there are considerable changes in illumination, the WHITE BALANCE function may become unstable.

2) **R GAIN**

Adjust the R GAIN by using the LEFT or RIGHT button.

(This is effective only in case of selecting the MANUAL MODE) 0 ~ 100

3) **B GAIN**

Adjust the B GAIN by using the LEFT or RIGHT button.

(This is effective only in case of selecting the MANUAL MODE) 0 ~ 100

4) **END**

RETURN to MAIN MENU.

<AE>

Press the MENU button to access the "AE" mode.

AUTO EXPURE	
MODE①	
-AUTO ↵	
• BRIGHTNESS ----- ----- 1 ~ 70	
• END	
-SHUTTER ↵	
• SHUTTER X128~1/120,000	
• END	
-FLK	
AGC②	
-HIGH ↵	
• BRIGHTNESS ----- ----- 1 ~ 70	
• END	
-MIDDLE ↵	
• BRIGHTNESS ----- ----- 1 ~ 70	
• END	
-LOW ↵	
• BRIGHTNESS ----- ----- 1 ~ 70	
• END	
-OFF	
LENS③	
-MANUAL	
-DC ↵	
• BRIGHTNESS ----- ----- 1 ~ 70	
• END	
-VIDEO	
SENS-UP④	
-OFF	
-AUTO ↵ X2~X128	
• AUTO	
• END	
END⑤	

1) **MODE**

- **AUTO**

Auto control of the shutter speed can be achieved. When AUTO mode is on, the speed is controlled automatically according to the brightness of the screen.

- **BRIGHTNESS** Adjust the "BRIGHTNESS" to the desired LEVEL by using LEFT or RIGHT button.
- **END** RETURN to AE MENU

- **SHUTTER**

The shutter speed can be controlled manually.
X128 ~ 1/120,000

- **FLK**

Please select 'FLK' mode when flickering occurs on the screen, due to an imbalance between illumination and frequency.
NTSC Model : 1/100, PAL Model : 1/120

NOTE :

- *When selecting DC/VIDEO lens, you can choose 'FLK' or '1/60 or 1/50'. The 'FLK' functions FLICKLESS OFF and the '1/60 or 1/50' functions E/OFF.*
- *While using the internal system, if the shutter setting is on 'AUTO' and the camera is directly facing a bright fluorescent light, the image on the screen can be adversely affected. Therefore please choose the installation location with care.*
- *When 'SHUTTER' mode is on, the SENS UP function does not operate.*

2) **AGC** (Auto Gain Control)

Adjust the AGC GAIN to the desired mode by using LEFT or RIGHT button. As the level of gain increases, the screen gets brighter and the level of noise also increases.

- **HIGH / MIDDLE / LOW / OFF**

- **BRIGHTNESS** Adjust the "BRIGHTNESS" to the desired LEVEL by using LEFT or RIGHT button.
1 ~ 70
- **END** RETURN to AE MENU

3) LENS

Automatic control of the brightness level through the intensity of radiation.

- MANUAL

Available by using manual lens.

- DC ↵

- LEVEL Adjust the brightness level by pressing the LEFT or RIGHT button at the DC's submenu. Level setting is available only by using the DC IRIS lens. Then put the A/I LENS selection switch on the side of the camera in the "DC" position.
- END RETURN to the AE MENU

- VIDEO

NOTE :

- *When using an auto iris lens, the setting of the auto iris lens selection switch, located on the back of the camera, must be on DC or VIDEO depending on the type of the lens which is being used.*
- *The brightness of the screen can be adjusted in DC mode. The brightness can be adjusted within the range of 0~70. The optimum level of brightness for the user can be achieved by adjustment.*

※ **When using Auto Iris Lens with Video type**

- 1) Adjust ALC volume on the lens properly. Normally ALC volume should be turned all the way to Av(Average).
- 2) According to the type of the lens used, the lens may not perform properly. In such a case, adjust the volume level on the lens.
- 3) For adjusting the Volume Level, enter the submenu at the 'VIDEO LENS' mode. And then adjust it to the desired state.

* **NOTES**

When the auto iris is mounted, you have to set the DC/Video selection switch on the side of the camera properly according to status of this selection switch.

4) **SENS-UP** (Low illuminance)

SENS UP helps maintain a bright, clear screen image by automatically detecting changes in the level of light in low light level conditions.

- **OFF**

The function does not operate.

- **AUTO**

Low light level auto mode.

X2 ~ X128

NOTE :

- *When SHUTTER is in the manual mode, SENS UP does not operate.*

- *When AGC is turned off. SENS UP does not operate.*

NOTE :

- *The maximum storage magnification in low light level movement situations can be adjusted by pressing the ENTER button in 'AUTO' mode. (x2 ~ x128)*

- *As the magnification increase, the screen gets brighter; however the after image also increases.*

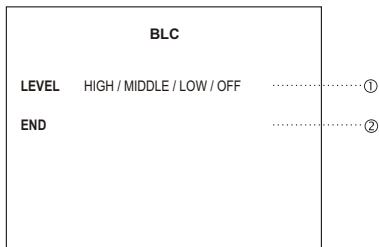
- *If storage magnification is increased while SENS UP is operating, it may cause noise, and spots may appear; however this is normal.*

5) **END**

RETURN to the MAIN MENU.

<BLC>

Press the MENU button to access the "BLC" mode.

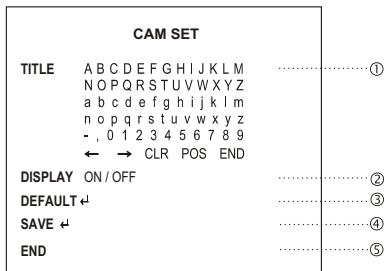


Prevents such a back light effect to secure a clear image under all illumination environments.

- 1) **LEVEL**
HIGH / MIDDLE / LOW / OFF
- 2) **END**
RETURN to MAIN MENU.

<CAM SET>

Press the MENU button to access the "CAM SET" mode.



1) TITLE

Select the camera TITLE that may be composed of letters, numbers, special texts, or a combination of these up to 15 digits.

- ← Move to left
- → Move to right
- **CLR** Erase all character
- **POS** Change the position of the title
(If you want to change the position of the title, press ENTER button at the POS. Find the position you wish to display the title by using the 4 directional buttons, and then press the ENTER button.)
- **END** End

NOTE :

- ***If the wrong name has been input...***

If you press the ENTER button after moving the cursor the CLR, all the letters will be erased. If you want to correct a letter, please move the cursor to the arrow at the bottom left of the screen and press 'ENTER'.

Please position the cursor above the letter you wish to correct, and then move the cursor onto the letter you wish to choose and press the ENTER button.

2) DISPLAY

ON : Display TITLE in the monitor.
OFF : Disappear TITLE in the monitor.

3) DEFAULTS

The factory setting of the Camera is selected.

4) SAVE

The changed Baud Rate is saved.

5) END

RETURN to MAIN MENU.

<SPECIAL>

Press the MENU button to access the "SPECIAL" mode.

SPECIAL	
SHARPNESS	①
-OFF	
-ON ↵	
• LEVEL ----- ----- 0 ~ 31	
• END	
MIRROR OFF / ON	②
SYN	③
-INT	
-L / L ↵	
• PHASE ----- ----- 0 ~ 359	
• END	
PRIVACY	④
-OFF	
-ON ↵	
• AREA SEL AREA1 / AREA2 / AREA3 / AREA4	
• AREA STATE OFF / ON	
• AREA TONE ----- ----- 1 ~ 100	
• TOP ----- ----- 1 ~ 62	
• DOWN ----- ----- 1 ~ 62	
• LEFT ----- ----- 1 ~ 96	
• RIGHT ----- ----- 1 ~ 96	
• END	
END	⑤

1) SHARPNESS

The outline of the video image becomes cleaner and more distinctive as the level of SHARPNESS increases. If the level goes up excessively, however, it may affect the video image and generate noise.

- LEVEL

Adjust the SHARPNESS of the screen by using the LEFT or RIGHT button.

0 ~ 31

- END

RETURN to SPECIAL MENU

2) MIRROR

ON: Sets a horizontal image inversion.

OFF: Cancels the inversion.

3) SYNC

Two SYNCHRONIZATION modes are available INTERNAL and EXTERNAL LINE-LOCK. In LINE-LOCK mode, it synchronizes the video signal between cameras without a synchronous generator. The line-lock synchronization is only used in the areas of 60Hz(NTSC Models) / 50Hz(PAL Models)

- INT

This mode is necessary for using the internal synchronization.

- L/L

This mode is necessary for the operation of multi cameras because it synchronizes the camera phase by using the external signal(AC Signal).

- LEVEL Sync phase is adjustable in line lock mode
0 ~ 359

- END RETURN to SPECIAL MENU

NOTE :

- *When the power frequency is 50Hz, you can not use line-lock mode (NTSC Models).*

- *When the power frequency is 60Hz, you can not use line-lock mode (PAL models).*

- *'Sync' mode is fixed to 'INT' in DC 12V input power.*

4) **PRIVACY**

Conceals the areas you do not wish to appear on the screen.

OFF : Cancels the PRIVACY mode.

ON : Operates the PRIVACY mode. To adjust PRIVACY MASK, press 'ENTER' button.

- **AREA SEL**

Select the AREA you want to adjust.

- **AREA STATE**

Select 'ON' to display the selected AREA, and select 'OFF' to conceal the selected AREA.

- **AREA TONE**

Adjust the tone of the selected AREA.
1 ~ 100

- **TOP**

Adjust the TOP of the selected AREA by using the LEFT or RIGHT button.

- **DOWN**

Adjust the DOWN of the selected AREA by using the LEFT or RIGHT button.

- **LEFT**

Adjust the LEFT of the selected AREA by using the LEFT or RIGHT button.

- **RIGHT**

Adjust the RIGHT of the selected AREA by using the LEFT or RIGHT button.

- **END**

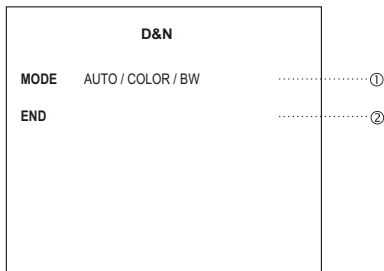
RETURN to SPECIAL MENU.

5) **END**

RETURN to MAIN MENU

<D&N>

Press the MENU button to access the "D&N" mode.



1) **D&N**

- **AUTO**

The COLOR / BW menu turns the IR(infrared) Filter to on or off. In low illumination environments, the BW mode will turn off the IR Filter and the sensitivity will be as high as that of BW cameras. Otherwise, the BW mode will turn on the IR Filter and the sensitivity will return to normal to recover the normal screen.

- **COLOR**

In this mode, the camera outputs the video image only in color.

- **BW**

In this mode, the camera outputs the video image only in black and white.

2) **END**

RETURN to MAIN MENU.

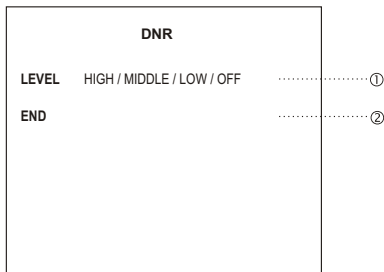
NOTE :

- *When the AGC is turned off. AUTO does not operate.*

- *When an infrared light is used, there may be a problem with focusing.*

<DNR>

Press the MENU button to access the "DNR" mode.



The background noise in the low light level decreases automatically as the level of gain changes.

1) **LEVEL**

- **OFF**

There is no reduction in noise level.

- **LOW**

There is a small reduction in noise level with almost no ghost image.

- **MIDDLE**

The most effective mode. There is a sufficient reduction in noise levels without causing much ghost imaging.

- **HIGH**

The level of noise is reduced greatly, however there is an increase in ghost imaging.

2) **END**

RETURN to MAIN MENU.

NOTE :

- When AGC is turned off. DNR does not operate.

<MOTION DET>

Press the MENU button to access the "MOTION DET" mode.

MOTION DETECTION			
AREA SEL	AREA1 / AREA2 / AREA3 / AREA4		①
AREA STATE	OFF / ON		②
TOP	----- -----	1 ~ 62	③
DOWN	----- -----	1 ~ 62	④
LEFT	----- -----	1 ~ 96	⑤
RIGHT	----- -----	1 ~ 96	⑥
END			⑦

This product has a feature that allows you to observe movements of objects in 4 different areas on the screen, and the words 'MOTION DETECTED' is appeared on the screen when movement is detected; hence a single individual can conduct supervision efficiently. The camera detects an object's movement by sensing disparity of outline, and level of brightness and color.

OFF : MOTION DETECTION mode is cancelled.

ON : Any motion in the selected areas is observed.

1) AREA SEL

Select the AREA you want to adjust.

2) AREA STATE

Select 'ON' to display the selected AREA, and select 'OFF' to conceal the selected AREA.

3) TOP

Adjust the TOP of the selected AREA by using the LEFT or RIGHT button.

4) DOWN

Adjust the DOWN of the selected AREA by using the LEFT or RIGHT button.

5) **LEFT**

Adjust the LEFT of the selected AREA by using the LEFT or RIGHT button.

6) **RIGHT**

Adjust the RIGHT of the selected AREA by using the LEFT or RIGHT button.

7) **END**

RETURN to MAIN MENU.

<END>

Terminate the MAIN MENU without save the changed preset parameter.

CONNECTIONS

1) POWER INPUT TERMINAL



CLASS 2
+ DC 12V -
~ AC 24V ~

- This terminal accepts a DC12V or AC24V power source from a DC12V or AC24V ac +/-10% 60/50Hz +/- 1Hz
- Use Certified / Listed Class 2 power supply only.
- In DC power, use the Adapter mode than DC 12V 500mA Capacity.

2) VIDEO OUT CONNECTOR

- **BNC** : This BNC connector provides a 1.0Vp-p/75 ohms composite video signal.

CONTENTS OF PACKAGE

Installation of the camera must be performed by qualified service personnel in accordance with all local and national electrical and mechanical codes.

Carefully remove the color camera and its accessories from the carton and verify that they were not damaged in shipment.

The contents of the package includes:

1. Color CCD camera
2. Mini-DIN connector (for video-or dc-type auto-iris lens)

MANUAL IRIS LENS ADJUSTMENT

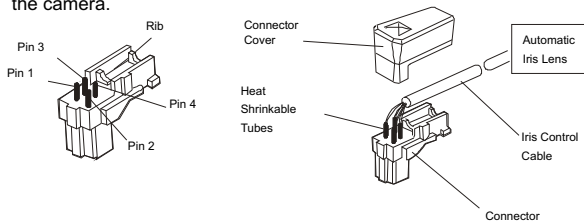
When using a manual iris lens, turn the iris ring on the lens to the OPEN position and adjust the manual iris for the appropriate range. Adjust during the brightest conditions, opening the lens to the minimum f-stop yielding a good picture under the brightest scene conditions. Do not saturate the picture.

The manual iris is used in indoor applications where lighting from windows can considerably affect the light level of the room.

VIDEO AUTO IRIS INSTALLATION & ADJUSTMENT

The camera supports video-type auto iris lenses which adjust to changing light levels. Perform the following steps to install and adjust a video-type auto iris lens.

1. If necessary, solder the lens control wires to the connector supplied with the camera.



PIN	NAME	WIRE COLOR
1	Voltage +	Red
2	Open	—
3	Video	White
4	Ground	Black

2. Attach the video-type auto iris lens to the lens mount on the front of the camera.
3. **IMPORTANT:** Plug the connector from the lens into the auto iris jack on the back of the camera. The connector is polarized and can only be inserted into the jack one way.
4. Apply power to the camera.
5. The OSD AE menu in the lens select should be in the "VIDEO↓".
6. Adjust the focus ring on the lens for an optimum picture. If a picture is not visible, set the lens for proper exposure by adjusting the ALC (Automatic Level Control) and the level on the lens. The ALC setting can range between AVG (average) or PK (peak). A midrange setting is appropriate for most applications.

For ALC adjustments:

AVG To slow the reaction of the lens to changing light, set the range to the AVG setting to average the video level from the camera. Use when there are bright spots in the picture such as lights or glare from the sun.

PK To increase the speed of the lens reaction to the changing light, set the lens adjustment to PK so the lens will adjust to the brightest or peak object in the video. Use this setting if you want to see the brightest object and not the background objects.

For Level adjustments:

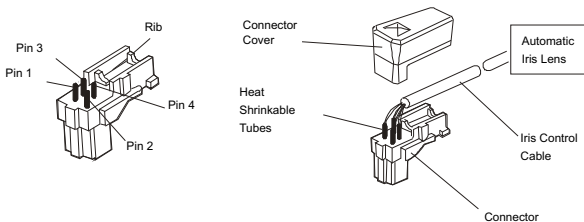
Adjust the level control for the best picture during the day. A night adjustment may not provide the proper setting for controlling the light during the day.

7. Set the back focus of the camera before the final adjustment of the video level.
8. If the auto iris has a gain adjustment and the picture oscillates between open and closed under bright lights, slowly turn the gain adjustment counter clockwise until the oscillating stops. Increase the light getting to the camera by adjusting the level control and re-adjusting the gain control.

DC AUTO IRIS LENS INSTALLATION & ADJUSTMENT

The camera supports DC-type auto iris lenses. Perform the following steps to install and adjust a DC-type auto iris lens.

1. Solder the lens control wires to the connector supplied with the camera.



PIN	NAME	WIRE COLOR
1	Damp Coil -	Blue
2	Damp Coil +	Red
3	Drive Coil +	White
4	Drive Coil -	Green

- Attach the DC-type auto iris lens to the lens mount on the front of the camera.
- Plug the connector into the auto iris jack on the back of the camera. The connector is polarized and can only be inserted into the jack one way.



- Apply power to the camera.
- The OSD AE menu in the lens select should be in the "DC↓".
- Adjust the auto iris lens for an optimum picture using the LEVEL control on the DC↓ of the OSD AE MENU.

BACK FOCUS ADJUSTMENT

For best results, perform back focus adjustments at night or while using a #6 or #8 welder's glass in front of the lens. The focus of the camera will change slightly if the camera iris was adjusted on a light scene, then changes to a dark scene. However, the camera will remain in focus if the iris was focused on a dark scene and the scene lightens.

1. The lens should be mounted on the camera before applying power.
2. If a picture is visible, focus on the picture. If the picture is not visible, open the iris on the lens. Open the lens as wide as possible by placing the welder's glass in front of the lens and forcing the lens to automatically open.
3. When the iris is open to the widest point, re-adjust the focus for clear picture. If a clear picture is not possible, set the focus ring to midrange.
4. Loosen the back focus lock screw.
5. Adjust the back focus ring for a clear picture.
6. Tighten the back focus lock screw.
7. Fine tune the focus with the focus ring on the lens.
8. Remove the welder's glass from in front of the lens.
9. Adjust the iris of the lens for the best picture quality.

ZOOM LENS BACK FOCUS ADJUSTMENT

The objective of back focusing a zoom lens is similar to that of a fixed focal length camera except the back focus is also adjusted to maintain the focus when "zooming" the lens in and out on a scene.

1. Choose an object at the farthest range set for viewing with a zoom lens.
2. Make sure the iris of the lens is wide open. Do this by adjusting the camera at night or use a welders glass in front of the lens.
3. Adjust the focus to the stop on the far range.
4. Adjust the zoom on the lens to obtain the widest picture.
5. Loosen the back focus lock screw.
6. Adjust the back focus ring for the clearest picture.
7. Tighten the back focus lock screw.
8. Adjust the zoom on the lens to the far telephoto position.
9. Adjust the back focus ring for the clearest picture.
10. Adjust the zoom on the lens back to the widest picture.
11. Loosen the back focus screw.
12. Re-adjust the back focus for the clearest picture.
13. Tighten the back focus lock screw.
14. Repeat the previous steps as necessary to maintain a clear picture throughout the entire zoom range.

TROUBLESHOOTING AND MAINTENANCE

TROUBLESHOOTING

If problems occur, verify the installation of the camera with the instructions in this manual and with other operating equipment.

Isolate the problem to the specific piece of equipment in the system and refer to the equipment manual for further information.

PROBLEM	AREA TO CHECK
No video	<ol style="list-style-type: none">1. Verify power is applied to all pieces of the equipment in the system. The camera LED should be ON.2. Verify that the video cables are connected correctly.3. Verify that the lens cap has been removed from the lens and the iris of the lens is open.
Video but no control	Power down the system for one minute then re-apply power.
Dark Video	<ol style="list-style-type: none">1. Adjust iris.2. Check A/I connections.

PREVENTIVE MAINTENANCE

Preventive maintenance allows detection and correction of minor that faults before they become serious and cause equipment failure.

Every three-month, perform the following maintenance.

1. Inspect all connection cables for deterioration or other damage.
2. Clean components with a clean damp cloth.
3. Verify that all the mounting hardware is secure.

SPECIFICATIONS

MODEL		NTSC	PAL	
Power	Power source	DC 12V / AC 24V \pm 10%		
	Power consumption	4.0 Watts		
General	Image sensor	1/3" SONY Super HAD CCD		
	Total pixels	811(H) x 508(V)	795(H) x 596(V)	
	Scanning system	2:1 interlace		
	Scanning frequency	15.734KHz(H) x 59.94Hz(V)	15.625KHz(H) x 50Hz(V)	
	Sync. system	Internal / Line lock		
	Electronic shutter	1/60 ~ 1/120,000 sec.	1/50 ~ 1/120,000 sec.	
	Resolution	540 TV lines (Color)		
	Min. illumination	0.3 Lux (Color), 0.002 Lux (Sens-up)		
	Video output	1.0 Vp-p (75 ohm, composite)		
	S/N ratio	50dB (AGC OFF)		
	F U N C T I O N	White balance	ATW / AWC / Manual	
		Auto exposure	AUTO / MANUAL SHUTTER / FLICKERLESS / AGC	
		AGC	OFF / LOW / MIDDLE / HIGH	
		Auto iris control	MANUAL / DC / VIDEO	
		Sens-up	OFF / AUTO (x2 ~ x128)	
		BLC	OFF / LOW / MIDDLE / HIGH	
		Display title	OFF / ON	
		Sharpness	OFF / ON (0 ~ 31)	
		Mirror	OFF / ON	
		Privacy zone	OFF / ON (4 point)	
Day & Night		AUTO / COLOR / B/W		
DNR		OFF / LOW / MIDDLE / HIGH		
Motion detection		OFF / ON (4 point)		
Preset	DEFAULT / SAVE / END			
Connector & etc.	Power input	2-Pin Terminal block		
	Video output	BNC connector		
	Auto iris output	4-Pin mini din jack (standard connection)		
	Lens mount	C/C.S mount (Selected through back focus)		
	Mounting hole	1/4"-20 UNC (top or bottom)		
	Operating temperature	-10°C ~ +50°C		
	Operating humidity	0 ~ 96% (non-condensing)		
	External dimension	66 (W) x 56 (H) x 120 (D)mm		
Weight	250g			

**540TV Lines Super High Resolution
Day and Night Color Camera**

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