



**Warnings**  
Installation and servicing should be performed only by qualified and experienced personnel to conform to all local codes and to maintain your warranty.

**WARNING!** 12V DC modes require the use of CSA Certified/UL Listed Class 2 power adapters to ensure compliance with electrical safety standards.

**WEEE (Waste Electrical and Electronic Equipment).** Correct disposal of this product (applicable in the European Union and other European countries with separate collection systems). This product should be disposed of at the end of its useful life, as per applicable local laws, regulations, and procedures.

**FCC Compliance Statement**  
Information for the User: 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 camera 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.

**Manufacturer's Declaration of Conformance**  
The manufacturer declares that the equipment supplied with this guide is compliant with the essential protection requirements of the EMC Directive 2004/10/EC and the General Product Safety Directive (GPSD) 2005/18/EC, conforming to the requirements of standards EN 60522 for emissions, EN 50130-4 for immunity, and EN 60950 for Electrical Equipment Safety.

**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.

**3. FEATURES**

**Adaptive IR Technology**  
Adaptive IR technology dramatically eliminates the white-out effect and saturation on close objects, producing a clear and recognizable image regardless of viewing condition or location of objects.

**1/3" High Sensitivity CCD**

**<HD70P/PX>**  
Min Illumination (F1.8, 90 IRE, AGC Max)  
-0.3 Lux (Color: 5W)  
-0 Lux (IR LED ON)

**<HD73P/PX>**  
Min Illumination (F1.4, 90 IRE, AGC Max)  
-0.3 Lux (Color)  
-0 Lux (IR LED ON)

**Use-friendly menu**

- 1/3" High Resolution (800 TVL)
- SBLC (Super Back Light Compensation)
- DNR (Digital Noise Reduction)
- Privacy zone selectable
- Mirror/Flipping
- Flickerless ON/OFF

**Weather vent**

**4. SUPPLIED ACCESSORIES**

• Camera Base Cover  
• Guide Pattern  
• Rubber  
• Dome Base  
• Mounting Screw  
• DC Plug Cable  
• L-Wrench

**5. INSTALLATION**

- Stick the guide pattern on the wall of ceiling and mark the mounting holes.
- Drill four holes according to the guide pattern, then insert anchors into the drilled holes.
- Clear out possible video wires and make the connections.
- Attach the camera base to the ceiling or wall using the supplied four screws.
- Adjust the camera base by turning and moving the 3-axis camera bracket by hand.
- Align the dome cover over the base.
- Secure the dome cover to the base using the supplied L-wrench.

**6. NAME AND FUNCTIONS**

**Fixed Lens Type HD73P/PX Model**

• Tilt rotation: Adjusting the vertical angle.  
• Pan rotation: Adjusting the horizontal angle.  
• Horizontal rotation: Adjusting the horizontal position of the screen.

**MAIN MENU - GENERAL**

Press MENU button to access the SETUP menu. Select sub-menu by using the UP or DOWN button. Press the MENU/ESC button to abort.

**LENS**

Press the MENU button to access the SETUP menu. Select sub-menu by using the UP or DOWN button. Press the MENU/ESC button to abort.

**LENS ESC (HD73P/PX)**

- Select LENS using the UP or DOWN button. You can change between ESC and ESC using the LEFT or RIGHT button.
- Select ESC and press MENU button to display LENS ESC.

**1. BRIGHTNESS** - Select BRIGHTNESS using the UP or DOWN button. You can adjust between 0 to 5 using the LEFT or RIGHT button.

**2. BRIGHTNESS** - Select BRIGHTNESS using the UP or DOWN button. You can adjust between 0 to 5 using the LEFT or RIGHT button.

**LENS DC (HD73P/PX)**

Select DC and press the MENU button to have LENS DC activated.

**1. DC LEVEL** (Adjusts brightness of the image)

- Select DC LEVEL using the UP or DOWN button. You can adjust between 0 to 20 using the LEFT or RIGHT button.

**2. FLICKERLESS**

• Select FLICKERLESS using the UP or DOWN button. You can select between ON/OFF using the LEFT or RIGHT button.

**3. SHUTTER** (Adjusts the shutter speed of the lens)

- IR LED: 1/500, 1/600, 1/800, 1/1000
- COLOR: 1/60, 1/125, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/8000, 1/16000, 1/32000, 1/64000
- Select SHUTTER using the UP or DOWN button. You can adjust from 1/60 to 1/32000 (1/60 is most sensitive/high speed).
- (1) ON - display the MOTION DETECTED area on the screen
- (2) OFF - disable

**WHITE BAL (White Balance)**

Select WHITE BAL using the UP or DOWN button. You can select from ATW, MANUAL, PUSH using the LEFT or RIGHT button.

- ATW:** Color temperature is automatically adjusted for light sources in the 2,000K to 10,000K range.
- MANUAL:** To adjust the white balance manually. Select MANUAL using the UP or DOWN button and press the MENU button to activate W-B MANUAL option.

**1. RED:** To adjust density of RED (R to 100)

**2. BLUE:** To adjust density of BLUE (L to 100)

**3. PUSH:** Push L-wedge mode fixes the white balance based on current lighting. For best results, place a white surface (such as a piece of paper) in the camera's field of adjustment.

**1) AREA:** To specify MOTION DETECTION area.

- Select AREA using the UP or DOWN button. You can select from area 1 to 4 position using the LEFT or RIGHT button.

**2) DISPLAY:** To display MOTION DETECTED area on the video.

• Select DISPLAY using the UP or DOWN button. You can select between ON/OFF using the LEFT or RIGHT button.

(1) ON - display the MOTION DETECTED area on the screen  
(2) OFF - disable

**3) SENSITIVITY:** To set up the motion sensitivity.

- Select SENSITIVITY using the UP or DOWN button. You can adjust the motion sensitivity of a movement from 1 to 24 using the LEFT or RIGHT button.
- (1) 1 - most sensitive (high speed)  
(2) 24 - least sensitive (low speed)

**4) TOP / BOTTOM / LEFT / RIGHT:** Users can specify MOTION DETECTED area.

- Select TOP / BOTTOM / LEFT / RIGHT using the UP / DOWN button. You can adjust the AREA using the LEFT or RIGHT button.
- (1) TOP - extend or reduce the upper area of the MOTION DETECTED area (8 to 128) (R to 140)
- (2) BOTTOM - extend or reduce the bottom area of the MOTION DETECTED area (8 to 128) (L to 140)
- (3) LEFT - extend or reduce the left side of the MOTION DETECTED area (4 to 128) (R to 140)
- (4) RIGHT - extend or reduce the right side of the MOTION DETECTED area (4 to 128) (L to 140)

**5) INITIAL:** To reset to factory default only on the MOTION DETECT mode.

- Select INITIAL using the UP or DOWN button. You can reset the MOTION DETECT mode using the MENU button.

**6) RETURN:** To return to IMAGE ADJ MENU

- Select RETURN using the UP or DOWN button. You can return to IMAGE ADJ MENU using the MENU button.

**6) PRIVACY**

Select PRIVACY using the UP or DOWN button and press the MENU button to activate the PRIVACY option.

**1) AREA:** To specify the PRIVACY area

- Select AREA using the UP or DOWN button. You can select area from 1 to 4 position using the LEFT or RIGHT button.

**2) DISPLAY:** To display the Privacy Zone area.

- Select DISPLAY using the UP or DOWN button. You can select between ON/OFF using the LEFT or RIGHT button.
- (1) ON - display the Privacy Zone area  
(2) OFF - disable

**3) COLOR:** To change the color of the privacy zone

- Select COLOR using the UP or DOWN button. You can select from WHITE, YELLOW, GREEN, BLUE, RED, BLACK, or GRAY using the LEFT or RIGHT button.

**7) COLOR GAIN**

Select COLOR GAIN using the UP or DOWN button and then press the MENU button to activate the COLOR MODE option.

**8) INITIAL:**

- To reset to factory default only on the IMAGE ADJ mode.
- Select INITIAL using the UP or DOWN button and reset the IMAGE ADJ mode using the MENU button.

**9) RETURN:**

- To return to MAIN MENU
- Select RETURN using the UP or DOWN button and return to MENU using the MENU button.

**GENERAL**

Select GENERAL using the UP or DOWN button and press the MENU button to activate the GENERAL mode.

**1. CAM TITLE**

- Select CAM TITLE using the UP or DOWN button. You can adjust ON/OFF using the LEFT or RIGHT button.
- (1) ON - To display the camera title on the screen  
(2) OFF - disable

**2. LANGUAGE** - English, LANGUAGE

**3. VERSION:** Display the firmware version.

**4. INITIAL:** To reset to factory default only on the GENERAL mode.

- Select INITIAL using the UP or DOWN button. You can reset to factory default for GENERAL mode using the MENU button.

**5) RETURN:** To return to MENU

- Select RETURN using the UP or DOWN button. You can return to MENU using the MENU button.

**GENERAL - TO EXIT THE OSD SETUP MENU**

- Select EXIT using the UP or DOWN button and close the OSD setup menu by pressing the MENU button.

**9. SPECIFICATION**

HIGH RESOLUTION		PAL	
Signal System	NTSC	Signal System	NTSC
Resolution	1/3" High Sensitivity CCD	Resolution	1/3" High Sensitivity CCD
Effective Pixels	752(H) x 424(V)	Effective Pixels	752(H) x 424(V)
Video Format	Composite, 1.0V p-p, 75 Ohm	Video Format	Composite, 1.0V p-p, 75 Ohm
Scan System	Interlaced	Scan System	Interlaced
Line Frequency	50 (60) Hz (59.94/60.00)	Line Frequency	50 (60) Hz (59.94/60.00)
Horizontal Resolution	30 (40) Lines (SHARPNESS, AGC OFF)	Horizontal Resolution	30 (40) Lines (SHARPNESS, AGC OFF)
Min Illumination	<HD70P/PX> 0.3 Lux (Color, 5W) / 0 Lux (IR LED ON) <HD73P/PX> V-0.3 / V-100,000	Min Illumination	<HD70P/PX> 0.3 Lux (Color, 5W) / 0 Lux (IR LED ON) <HD73P/PX> V-0.3 / V-100,000
ESR	V-0.1 / V-100,000	ESR	V-0.1 / V-100,000
Manual Shutter	1/60 (1/60), 1/125 (1/125), 1/250 (1/250), 1/500 (1/500), 1/1000 (1/1000), 1/2000 (1/2000), 1/4000 (1/4000), 1/8000 (1/8000), 1/16000 (1/16000), 1/32000 (1/32000)	Manual Shutter	1/60 (1/60), 1/125 (1/125), 1/250 (1/250), 1/500 (1/500), 1/1000 (1/1000), 1/2000 (1/2000), 1/4000 (1/4000), 1/8000 (1/8000), 1/16000 (1/16000), 1/32000 (1/32000)
DNR	OFF, LOW, MIDDLE, HIGH	DNR	OFF, LOW, MIDDLE, HIGH
White Balance	ATW, MANUAL, PUSH	White Balance	ATW, MANUAL, PUSH

**10. TROUBLESHOOTING**

If you have trouble operating your camera, refer to the following guidelines. If the guidelines do not help you to solve the problem, contact our technical support.

**Nothing appears on the screen**

- Check that the power cord and the video cable between the camera and monitor are properly connected.
- Check that you have properly connected the VIDEO cable to the camera VIDEO output jack.

**The image on the screen is dim**

- If the lens is obstructed (for example, with dirt), clean the lens with a soft, clean cloth.
- Set the monitor to proper condition.
- If the camera is exposed to too strong light, change the camera position.
- Adjust the iris to proper position.

**The image on the screen is dark**

- Adjust the contrast feature of the monitor.
- If you look through an intermediate device, set the termination (75 Ohms Hi-Z) properly.

**MEMO**

• Design and specifications are subject to change without notice.

**● USER INFORMATION**

**CAUTION**

• Do not touch the lens or adjust the camera while the camera is powered on. Do not touch the lens or adjust the camera while the camera is powered on.

• The lightning bolt with an exclamation point within an equilateral triangle is intended to alert the user to the presence of an un-insulated "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 instructions in the literature accompanying the appliance.

**● CONTENTS**

Thank you for purchasing this COLOR VIDEO CAMERA.

Before using this camera, please read this operation manual carefully to obtain the best result and keep this manual for future reference.

1. SAFETY INSTRUCTIONS	6
2. PRECAUTIONS	7
3. FEATURES	8
4. SUPPLIED ACCESSORIES	9
5. INSTALLATION	10
6. NAME AND FUNCTIONS	11
7. CONNECTIONS	13
8. OPERATING CAMERA	14
9. SPECIFICATION	32
10. TROUBLESHOOTING	34

**1. SAFETY INSTRUCTIONS**

**Read Instructions**  
Read all of the safety and operating instructions before using the product.

**Retain Instructions**  
Save these instructions for later use.

**Cleaning**  
Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.

**Power source**  
This product should be operated only from a 12V DC power source as indicated on the marking label.

**2. PRECAUTIONS**

- Do not install the camera in extreme temperature conditions. Operate the camera under conditions where temperatures are within 0 to 60°C.
- Do not disassemble the camera.
- Do not drop the camera or subject them to physical shocks.
- Never keep the camera face to strong light directly.

**NOTE** When this camera is installed near wireless communication devices such as mobile phones, a magnetic field, irregularity such as noise on the monitor may appear.

**7. CONNECTIONS**

**1. Connecting to Monitor and Power**

- Connect the video out jack to the video-in jack of monitor.
- Connect the power adapter to the power-in jack on camera.
- Use 12V DC power source.
- Use the power wires (R66, 60A, 12V DC).

Port	Terminal Color	Wiring
1. Power Adapter	Yellow	DC+ (V)
2. Power Cord	Red	DC- (GND)

**Video Output**

1. Connect the video out jack to the video-in jack of monitor.  
2. Connect the power adapter to the power-in jack on camera.  
3. Use 12V DC power source.  
4. Use the power wires (R66, 60A, 12V DC).

**Camera Layout**

- Tilt rotation: Adjusting the vertical angle.
- Pan rotation: Adjusting the horizontal angle.
- Horizontal rotation: Adjusting the horizontal position of the screen.
- Focus handle: Focus (Far or Near)
- Zoom handle: Zoom (Wide or Wide)

**8. OPERATING CAMERA**

LENS	DC	SWITCH	FUNCTION	ON	OFF
WHITE BAL	ATW	MANUAL	PUSH	ATW (Auto White Balance)	MANUAL (Manual White Balance)
	ATW	MANUAL	PUSH	ATW (Auto White Balance)	MANUAL (Manual White Balance)
	ATW	MANUAL	PUSH	ATW (Auto White Balance)	MANUAL (Manual White Balance)
ACC	ON	LEVEL	F-20 (or) BROWN PUSHER	ACC (Auto Color Control)	LEVEL (Manual Color Control)
	ON	LEVEL	F-20 (or) BROWN PUSHER	ACC (Auto Color Control)	LEVEL (Manual Color Control)
DAY/NIGHT	ON	MODE	DAY/NIGHT (or) BROWN PUSHER	DAY/NIGHT (Day/Night Mode)	MODE (Manual Mode)
	ON	MODE	DAY/NIGHT (or) BROWN PUSHER	DAY/NIGHT (Day/Night Mode)	MODE (Manual Mode)
IMAGE ADJ	MOTION (PROGRAM)	AREA	TOP, BOTTOM, LEFT, RIGHT	MOTION (Motion Detection)	AREA (Area Setting)
	MOTION (PROGRAM)	AREA	TOP, BOTTOM, LEFT, RIGHT	MOTION (Motion Detection)	AREA (Area Setting)

IMAGE ADJ	PRIVACY (NTSC/PAL)	GENERAL	
IMAGE ADJ	PRIVACY (NTSC/PAL)	AREA	1-4
		AREA	1-4
IMAGE ADJ	PRIVACY (NTSC/PAL)	DISPLAY	ON, OFF
		DISPLAY	ON, OFF
IMAGE ADJ	PRIVACY (NTSC/PAL)	SHARPNESS	1-20
		SHARPNESS	1-20
IMAGE ADJ	PRIVACY (NTSC/PAL)	WIDE	ON, OFF
		WIDE	ON, OFF
IMAGE ADJ	PRIVACY (NTSC/PAL)	SMART	ON, OFF
		SMART	ON, OFF
IMAGE ADJ	PRIVACY (NTSC/PAL)	IR LED	ON, OFF
		IR LED	ON, OFF
IMAGE ADJ	PRIVACY (NTSC/PAL)	MODE	1-20
		MODE	1-20
IMAGE ADJ	PRIVACY (NTSC/PAL)	LEVEL	0-20
		LEVEL	0-20

**ACC (Automatic Gain Control)**

Select ACC using the UP or DOWN button. You can select between OFF, ON using the LEFT or RIGHT button.

**ACC Level is adjustable in COLOR, BW mode.**

1. ON - Select ON using the LEFT or RIGHT button and press the MENU button to activate the ACC option.

1. LEVEL - You can adjust between 0 to 20 using the LEFT or RIGHT button.

2. OFF - Disable the ACC.

**DAY/NIGHT**

Select DAY/NIGHT using the UP or DOWN button. You can select between RED, COLOR, BW using the LEFT or RIGHT button.

**1. COLOR:** for color mode only (DAY mode)

**2. BW:** for BLACK and WHITE mode only (NIGHT mode)

- Select BW using the LEFT or RIGHT button and press the MENU button to activate COLOR BURST option.

**3. RED:** IR LED control mode

- Select RED using the LEFT or RIGHT button and press the MENU button to activate COLOR BURST option.

Some areas may be over exposed.

SMART - LED control mode to optimized some exposure.

**IMAGE ADJ (Image Adjust)**

Select IMAGE ADJ using the UP or DOWN button and press the MENU button to activate the IMAGE ADJ mode.

**1. SBLC (Super Back Light Compensation):** To lighten a darker part of the image

- Select SBLC using the UP or DOWN button. You can select between OFF, LOW, MIDDLE, HIGH using the LEFT or RIGHT button.
- SBLC turns to OFF automatically at night.

**2. DNR (Digital Noise Reduction):** To reduce the image noise especially during low ambient lighting conditions.

- Select DNR using the UP or DOWN button. You can adjust between OFF, LOW, MIDDLE, HIGH using the LEFT or RIGHT button.

**3. SHARPNESS:** To adjust SHARPNESS of the image.

- Select SHARPNESS using the UP or DOWN button.
- Select W and press the MENU button to activate SHARPNESS option.
- You can adjust the sharpness from 0 to 20 using the LEFT or RIGHT button.

**4. MIRROR:**

- Select MIRROR using the UP or DOWN button.
- You can select from ON/OFF using the LEFT or RIGHT button.
- (1) ON - Horizontal image flip  
(2) OFF - default

**5. MOTION (Motion Detect) (Display/Off/On/Reset)**

- Select MOTION using the UP or DOWN button and press the MENU button to activate the MOTION DETECT option.

**7. COLOR GAIN**

Select COLOR GAIN using the UP or DOWN button and then press the MENU button to activate the COLOR MODE option.

**8. INITIAL:**

- To reset to factory default only on the IMAGE ADJ mode.
- Select INITIAL using the UP or DOWN button and reset the IMAGE ADJ mode using the MENU button.

**9) RETURN:**

- To return to MAIN MENU
- Select RETURN using the UP or DOWN button and return to MENU using the MENU button.

**GENERAL**

Select GENERAL using the UP or DOWN button and press the MENU button to activate the GENERAL mode.

**1. CAM TITLE**

- Select CAM TITLE using the UP or DOWN button. You can adjust ON/OFF using the LEFT or RIGHT button.
- (1) ON - To display the camera title on the screen  
(2) OFF - disable

**2. LANGUAGE** - English, LANGUAGE

**3. VERSION:** Display the firmware version.

**4. INITIAL:** To reset to factory default only on the GENERAL mode.

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