

WDR Super High Resolution Color Camera

**1/3" CMOS (PIXIM DPS)
HIGH RESOLUTION**

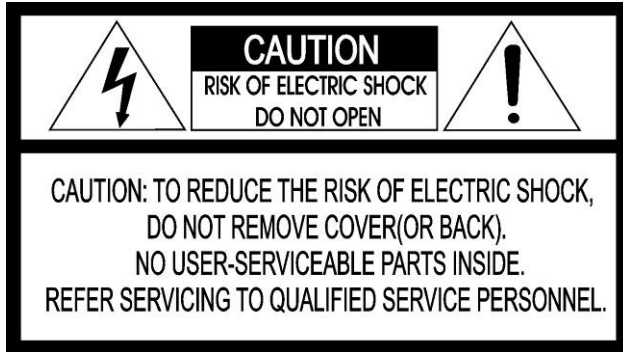


Please read this manual thoroughly before use, and keep it handy for future reference.
Design and specification are subject to change without notice.

WARNING

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 SYMBOL



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of 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 and maintenance (servicing) instructions in the literature accompanying the product.

PRECAUTIONS

Installation

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

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 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 any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce 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. Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. Unplug this apparatus during lightning storms or when unused for long periods of time.
14. 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 moisture, does not operate normally, or has been dropped.
15. **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 QRE QUALIFIED TO DO SO.**
16. **Use satisfy clause 2.5 of IEC60950-1/UL60950-1 or Certified/Listed Class 2 power source only.**

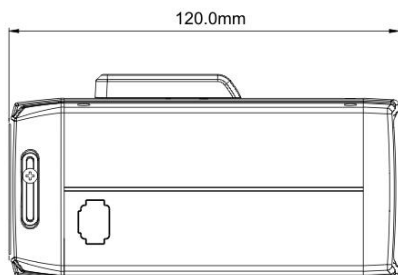


INTRODUCTION

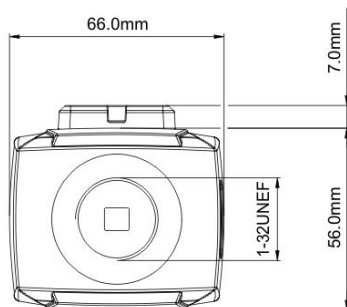
Camera Model Features:

- 1/3" PIXIM CMOS (Seawolf DPS)
- Wide Dynamic Range (WDR)
- Built-in NTSC/PAL video encoder (OSD select)
- 690HTVL-E / 540 HTVL resolution
- 0.1Lux @ F1.2, 50IRE Sensitivity (CMY)
- 1/25 - 1/30720 sec electronic shutter
- OSD (On Screen Display)
- AGC (Auto Gain Control)
- DNR function
- Auto and manual white balance modes
- BLC (Back Light Compensation)
- 12 Privacy Zones (Polygonal Mosaic, White / Black / Red)
- DSS (x2 ~ x32)
- Activity Detection (4 Alarm zones)
- Digital Pan / Tilt / Zoom (1x ~ 4x zoom)
- Internal / AC line lock
- Functions (Flip, Sharpness, Freeze, Focus Detector, Flickerless)
- C/CS, backfocus cam for easy adjustment
- VIDEO OUT(BNC)
- Compatible with video- or DC-type lenses with OSD & Slide Switch select
- Quick connect for video or DC lens with 4-pin connector
- Operates on 12VDC or 24VAC
- Use Certified / Listed Class 2 power source only

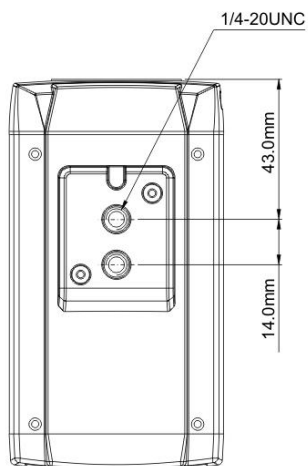
CAMERA OVERVIEW



SIDE VIEW



FRONT VIEW



TOP VIEW



REAR VIEW

- ① Left Button
- ② Up Button
- ③ Enter Button
- ④ Right Button
- ⑤ Down Button
- ⑥ DC or VIDEO Lens Select Switch
- ⑦ Power Indicator
- ⑧ Video Out Connector (BNC)
- ⑨ AC /DC Compatible Input Terminal

CONTENTS OF PACKAGE

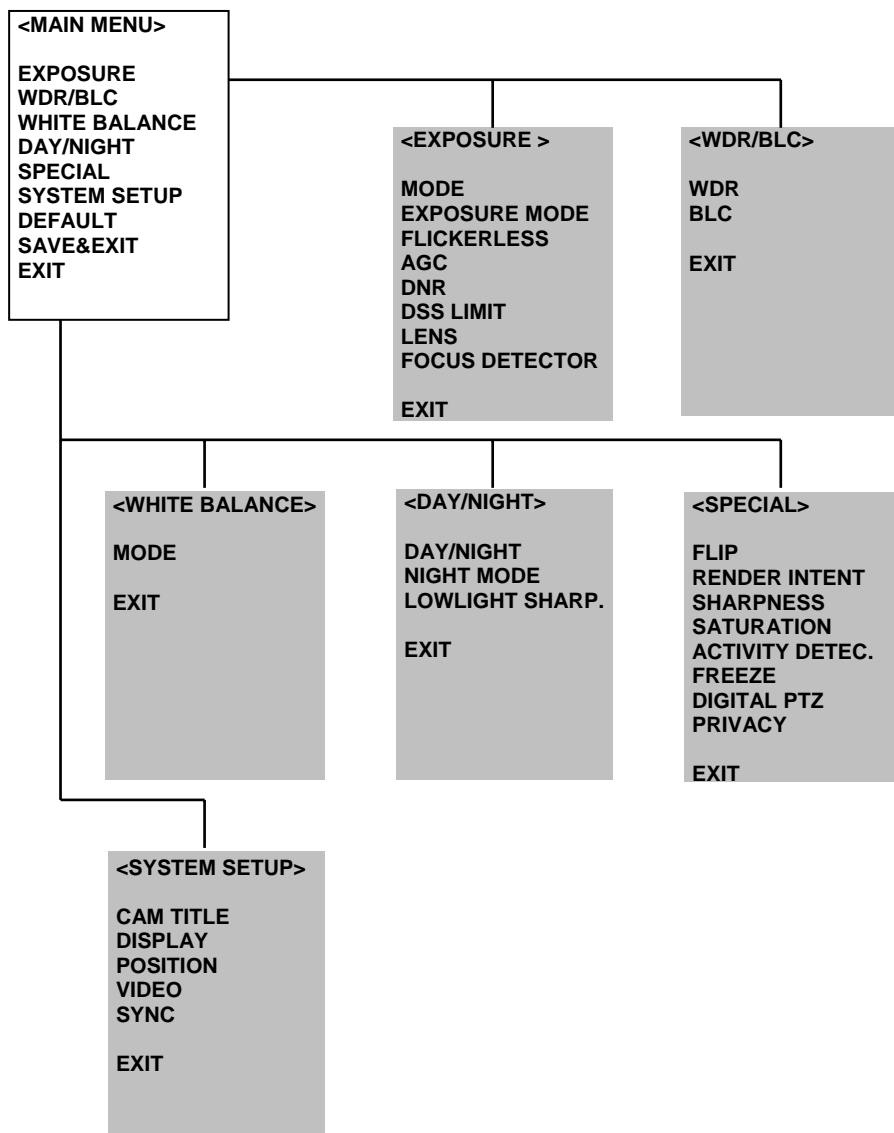
Installation of the camera must be performed by qualified service personnel in accordance with all local and national electrical and mechanical codes.

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 camera
2. Mini-DIN connector (for video- or dc-type auto-iris lens)
3. CS adapter ring for C mounting “C” lenses
4. This manual

CAMERA SET UP – OSD



OSD MAIN SCREEN

All operation is via the tact switch

- [ENTER] Turn OSD menu ON or OFF
- [UP]/[DOWN] UP or DOWN of Cursor
- [LEFT]/[RIGHT] to go into SUB MENU or change setting

<EXPOSURE MENU>

Press the [ENTER] button to access the "EXPOSURE MENU" mode.

- 1) **MODE** DEFAULT, INDOOR, OUTDOOR can be selected.
 - DEFAULT Standard video
 - INDOOR To brighten the video taken indoors
 - OUTDOOR When shooting in a bright area outdoors
- 2) **EXPOSURE MODE** 60i/50i, 30p/25p can be selected.
 - 60i/50i 1/60(1/50)sec capture mode
 - 30p/25p 1/30(1/25)sec capture mode
- 3) **FLICKERLESS** OFF, EFR, FFF can be selected.
(Helps resolve luminance problems related fluorescent flicker(or beating) and fluorescent color roll with camera set up for 50Hz NTSC)
- 4) **AGC** OFF, LOW, MIDDLE, HIGH can be selected.
(As the level of gain increases, the screen gets brighter and the level of noise also increases)
- 5) **DNR** OFF, LOW, MIDDLE, HIGH can be selected.
(Reduces the noise on the screen under low light condition/AGC)
- 6) **DSS LIMIT** OFF, x2, x4, x8, x16, x32 can be selected.
(Helps maintain a bright, clear screen image by automatically detecting change in the level of light)
- 7) **LENS** MANUAL, DC, VIDEO can be selected.
- 8) **FOCUS DETECTOR** FOCUS METER Helps for adjust Lens focus
- 9) **EXIT** Return to MAIN MENU.

<WDR/BLC MENU>

Press the [ENTER] button to access the "WDR/BLC MENU" mode.

- 1) WDR** LOW, NORMAL, MIDDLE, HIGH can be selected.
(Adjust Wide Dynamic Range)
- 2) BLC** OFF or ON can be selected.
(Camera to optimize the scene for highlights or shadows)
 - OFF Set to highlights to provide the best detail in the brighter areas of the scene
 - ON Set to shadows to provide the best detail in the darker areas of the scene
- 3) EXIT** Return to MAIN MENU.

<WHITE BALANCE MENU>

Press the [ENTER] button to access the "WHITE BALANCE MENU" mode.

- 1) MODE** ATW, PUSH AWB, INDOOR, OUTDOOR, MANUAL can be selected.
 - ATW This mode can be used within the color temperature range 2,000°K ~ 10,500°K
 - PUSH AWB One-push automatic white balance control.
Shoot a target white subject and press the [ENTER] button, and the white balance will be adjusted.
 - INDOOR Set the color temperature to 3200°K
 - OUTDOOR Set the color temperature to 6300°K
 - MANUAL Manual mode.
User can change R and B Gain manually.
- 2) EXIT** Return to MAIN MENU.

<DAY/NIGHT MENU>

Press the [ENTER] button to access the "DAY/NIGHT MENU" mode

- | | |
|------------------------------|--|
| 1) DAY/NIGHT | AUTO, COLOR, BW can be selected. |
| - AUTO | This camera has a function which automatically changes to the appropriate mode for day-time or night-time.
When changing from on to off or off to on. (05S~20S) |
| - 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) NIGHT MODE | When set to AUTO, can be selected for night-time.
(BW / BW+BURST) |
| 3) LOWLIGHT SHARPNESS | Adjust Gain Value (-8~+8) |
| 4) EXIT | Return to MAIN MENU. |

<SYSTEM SETUP>

Press the [ENTER] button to access the "SYSTEM SETUP" mode.

- | | |
|---------------------|---|
| 1) CAM TITLE | Camera ID can be selected. |
| 2) DISPLAY | OFF or ON can be selected.
(Level setting is available in both DC & ELC mode). |
| 3) POSITION | UP-LEFT, UP-CENTER, UP-RIGHT, DOWN-LEFT,
DOWN-RIGHT can be selected. |
| 4) VIDEO | Used to switch between the video signal systems
(NTSC/PAL) |
| 5) SYNC | INTERNAL or LINELOCK can be selected.(Adjust V-PHASE) |
| 6) EXIT | Return to MAIN MENU. |

<SPECIAL MENU>

Press the [ENTER] button to access the "SPECIAL MENU" mode.

- 1) **FLIP** OFF, REVERSE, V-FLIP, ROTATION can be selected.
- 2) **RENDER INTENT** For low and dim illumination areas
MOVIE – Less sharpness, still maintains color saturation
INFO – Maintains sharpness, less color saturation
(Similar to 2DNR noise reduction – to suit what you want to achieve at low light level before camera switches to monochrome mode (sharper image or color rendition))
- 3) **SHARPNESS** -8 to +8 can be selected.
- 4) **SATURATION**
 - BIAS: -8 to +8 can be selected.
 - 100 IRE SAT: 100 to 130 can be selected.
 - STC MODE: CLASSIC, SAT can be selected.
(Progress Bezier algorithm or Slope value)
- 5) **ACTIVITY DETECTION**
 - ALARM: OFF or ON can be selected
(Adjust ACTIVITY THR between 0~255 in steps of 5,
0 = highest sensitivity)
 - SETUP ALARM ZONE: Alarm detection zones 1 to 4 can be selected
Pushing ENTER turning the detection box WHITE allows you to move the zone on the screen. Pushing ENTER turning the box GREEN allows you to increase the size of the zone. Pushing ENTER turning the box RED allows you to shrink the size of the zone
Note: Once you are satisfied with size and position of the Alarm zone, push and hold ENTER for approx 2 secs to save this and return to the menu
(Just displayed by " MOTION DETECTED! " on the OSD)
- 6) **FREEZE** OFF or ON can be selected.
- 7) **DIGITAL PTZ** OFF or ON can be selected.
(Adjust Digital Pan, Tilt, Zoom: x1~x4)
- 8) **PRIVACY**
 - PRIVACY MASK: OFF or ON can be selected.
(MASK 1~12, Polygonal Mosaic)
 - MASK COLOR: WHITE, BLACK, RED can be selected.
- 9) **EXIT** Return to MAIN MENU.

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 source only.
- In DC power mode, use an Adapter of 12VDC with 500mA capacity.

2) VIDEO OUT CONNECTOR

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

LENS

The lens is not supplied with this camera. Purchase a lens suitable for your environment. This camera accepts the auto iris lens and both C-and CS-mount lens.

* Notes *

- For using main functions it is recommended to use Auto Iris Lens with DC type.
- If the lens is marked with fingerprints other marks, the image quality might be poor.
- It is recommended to use a high quality lens to improve the image quality under low illumination.

<INSTALLING AUTO IRIS LENS>

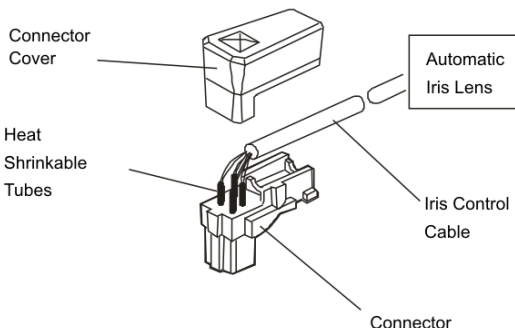
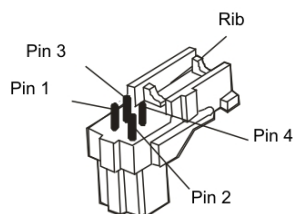
1. Remove the cover from the iris lens plug supplied, and solder the lens cable to the plug as shown below.

• Video type :

- Pin 1 --- Red (Power source)
- Pin 2 --- N.C
- Pin 3 --- White (Video signal)
- Pin 4 --- Black (GND)

• DC type :

- Pin 1 --- Damping-
- Pin 2 --- Damping+
- Pin 3 --- Drive+
- Pin 4 --- Drive-



2. Remove the protective cap, and attach the lens to the camera by turning clockwise.

SPECIFICATIONS

Model		NTSC	PAL
Power	Power Source	AC24V / DC12V \pm 10%	
	Power Consumption	Max 3.0 Watts / 0.25A	
General	Image Sensor	1/3" PIXIM CMOS (Seawolf DPS)	
	Total Pixels	768(H) x 548(V)	
	Scanning Frequency	15.734KHz(H) 59.94Hz(V)	15.625KHz(H) 50Hz(V)
	Electronic Shutter	1/25 ~ 1/30,720 sec	
	Scanning System	2:1 interlace	
	Synchronize System	Internal / Line Lock	
	Resolution	690HTVL-E / 540 HTVL	
	Min. illumination	0.1 Lux @ F1.2, 50IRE, CMY	
	Video Output	1.0 Vp-p (75ohm, Composite)	
	Day & Night System	DDN	
	S/N Ratio	More than 50dB (AGC off)	
	Camera Control	OSD(Tact Switch)	
Function	EXPOSURE	60i(50i) / 30p(25p) (DEFAULT / INDOOR / OUTDOOR)	
	FLICKERLESS	OFF / FFF / EFR (AI THRESH -48 ~ +60)	
	AGC	OFF / LOW / MIDDLE / HIGH	
	DNR	OFF / LOW / MIDDLE / HIGH	
	DSS LIMIT	OFF, x2 ~ x32	
	LENS	MANUAL / DC / VIDEO (DC GAIN, VIDEO GAIN, AI THRESH)	
	FOCUS DETECTOR	FOCUS METER	
	WDR	LOW / NORMAL / MIDDLE / HIGH (Max.120dB)	
	BLC	OFF / ON	
	WHITE BALANCE	ATW/PUSH AWB/INDOOR/OUTDOOR/MANUAL (WB BIAS, RED, BLUE)	
	DAY & NIGHT	AUTO / COLOR / BW (BW or BW+BURST) (DELAY 05 ~ 20s)	
	LOWLIGHT SHARPNESS	-8 ~ +8	

	FLIP	OFF / REVERSE / V-FLIP / ROTATION
	RENDER INTENT	MOVIE / INFO
	SHARPNESS	-8 ~ +8
	SATURATION	BIAS (-8 ~ +8), 100 IRE SAT (100~130), SAT MODE (CLASSIC / SAT)
	ACTIVITY DETECTION	OFF / ON (SET ALARM ZONE, ACTIVITY THR.)
	FREEZE	OFF / ON
	DIGITAL PTZ	ZOOM (X1~X4), PAN(-100~+100), TILT(-100~+100)
	PRIVACY MASK	OFF / ON (12 Point, Polygonal Mosaic) MASK COLOR (WHITE / BLACK / RED)
	CAM TITLE	OFF / ON (EDIT, POSITION)
	VIDEO STANDARD	NTSC / PAL
	V-PHASE (Line Lock)	0 ~ 360
	EXIT	EXIT / SAVE & EXIT
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/CS mount (Selected through back focus)
	Mounting Hole	1/4"-20 UNC (top or bottom)
	Operating Temperature	-10° ~ +50° C [14°F ~ 122°F]
	Operating Humidity	0 ~ 90% (Non-condensing)

WDR Super High Resolution Color Camera

Subject to change without notice

5030xxxxA