

Super High Resolution Color Camera

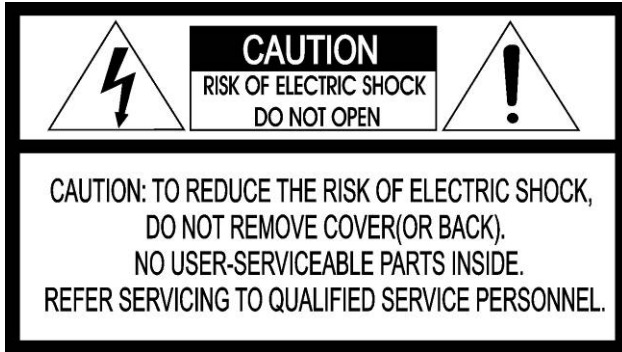


Please read this manual thoroughly before use, and keep it handy for future reference.

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 po wer source only.**

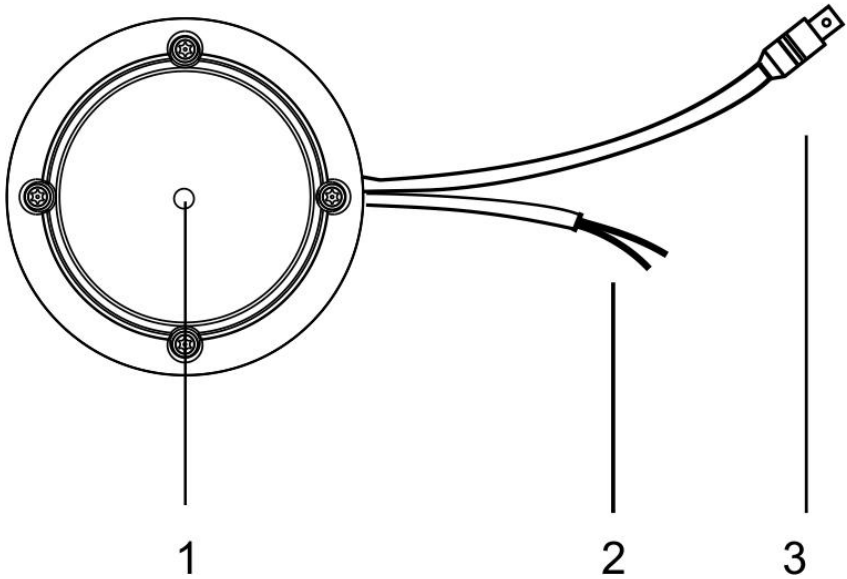


INTRODUCTION

Camera Model Features:

- 1/3" PIXIM CMOS (Seawolf DPS)
- Wide Dynamic Range (WDR)
- Built-in NTSC/PAL video encoder (OSD select)
- 690HTLV-E / 540HTVL 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)
- Day & Night (Auto / Color / BW)
- Activity Detection (4 Alarm zones)
- Digital Pan / Tilt / Zoom (1x ~ 4x zoom)
- Internal / AC line lock
- Functions (Flip, Sharpness, Freeze, Focus Detector, Flickerless)
- 2.8-12mm Day/Night A/I Varifocal Lens F1.2~360
- Test Monitor Output
- Operates on 12VDC or 24VAC
- Use Certified / Listed Class 2 power source only

CAMERA CONNECTIONS



1. Lens : 2.8~12mm lens for wide area monitoring.

2. Power : 24V AC input / 12V DC input

power source from a DC 12V or AC 24V ac +/-10% 60/50Hz +/-1Hz

Use Certified/Listed Class 2 power supply transformer only.

*If using DC 12V power adaptor, use a power supply capable of supplying 6 Watts.

3. Video : BNC connector used to connect the camera to a monitor, switcher, etc



REMINDER:

Never aim the camera directly into the sun.

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.

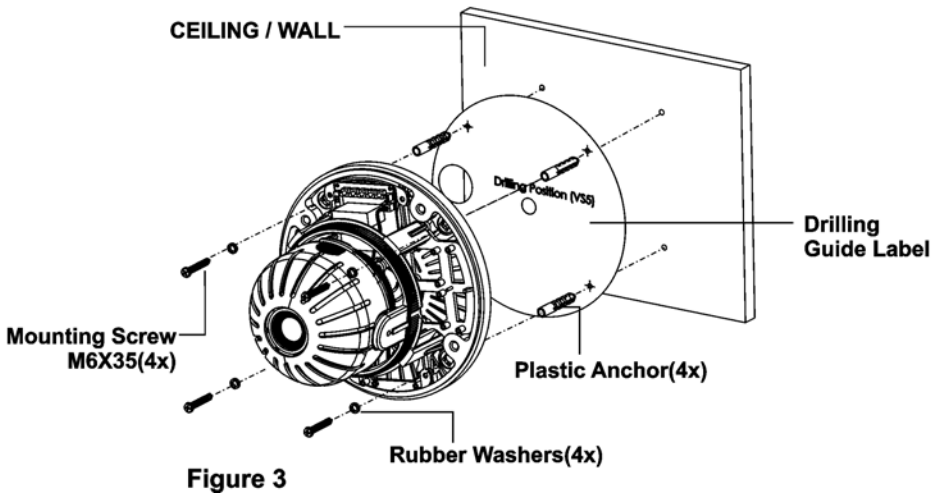
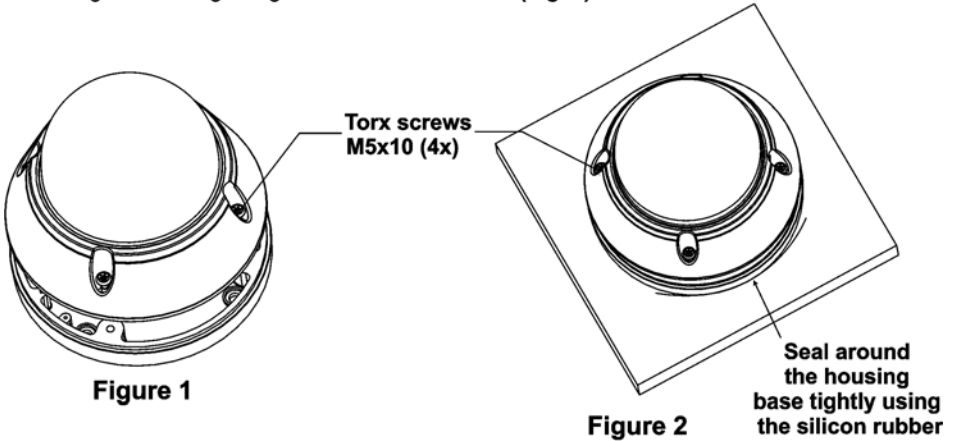
Carefully remove the color camera and its accessories from the carton and verify that they were not damaged in shipment.

The contents of the package includes:

1. Color camera
2. Accessory kit
3. Drilling Guide Label
4. This manual
5. Video Test Cable

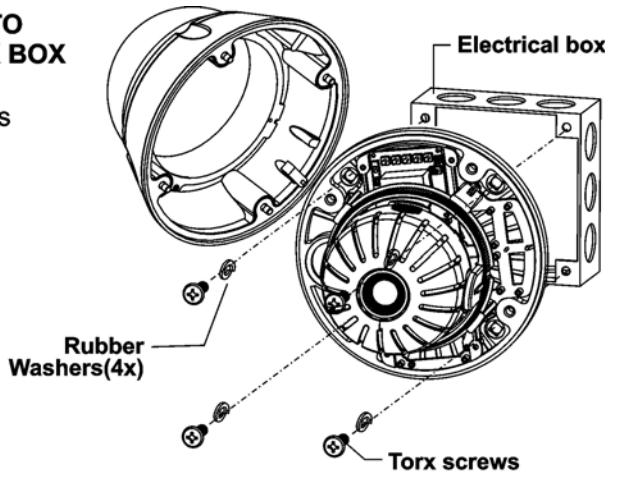
INSTALLATION

1. Loosen the four torx screws located midway up the front of the housing leave the screws intact in the front portion. (Fig. 1)
2. Drill the mounting location using the supplied drill guide label. (Fig. 3)
3. Attach the housing to the ceiling using suitable fasteners, M6x35 tapping screws are supplied only use if they are suitable. (Fig. 3)
4. Closing the housing using the loosen torx screws. (Fig. 2)

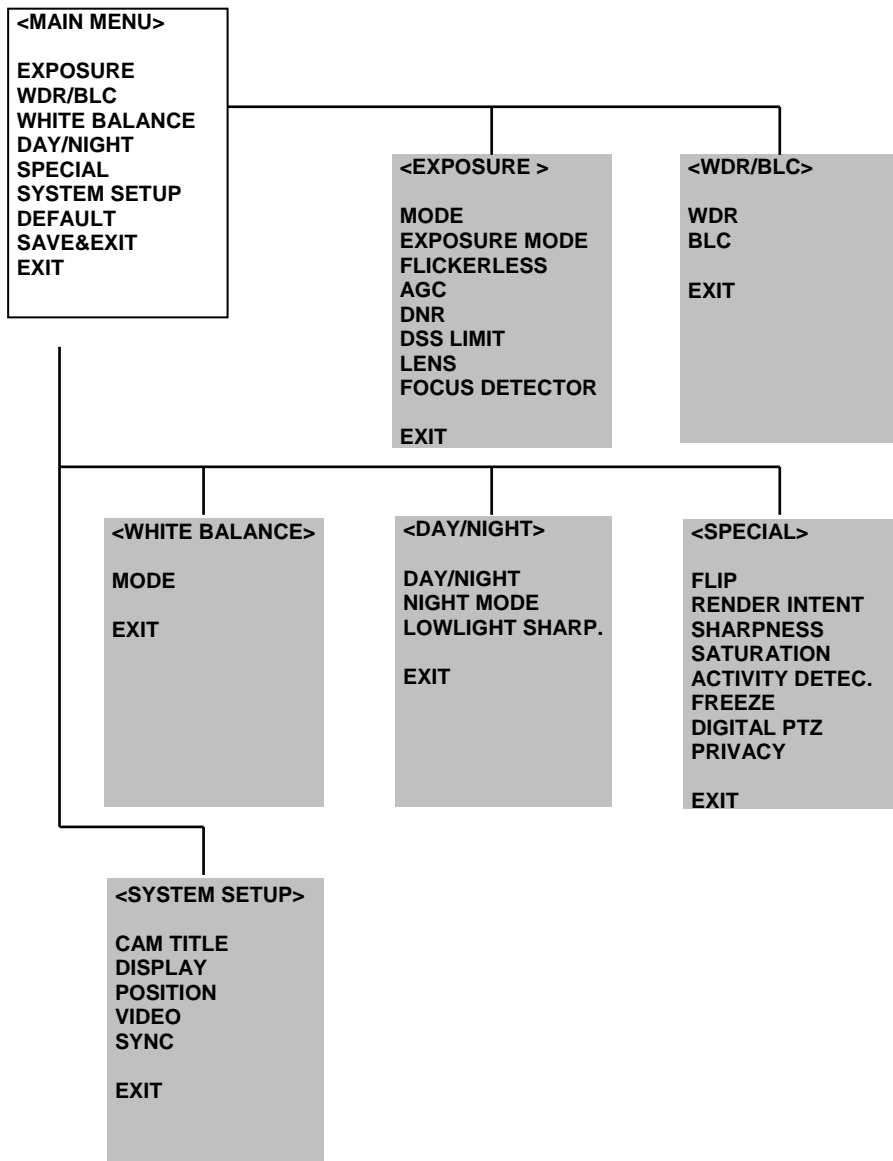


- **MOUNTING HOUSING TO AN ELECTRICAL BACK BOX**

The housing can also be mounted on a 4s or 2s electrical box.



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** DC
- 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.
FILTER DELAY : Adjust the delay time of filter movement
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.

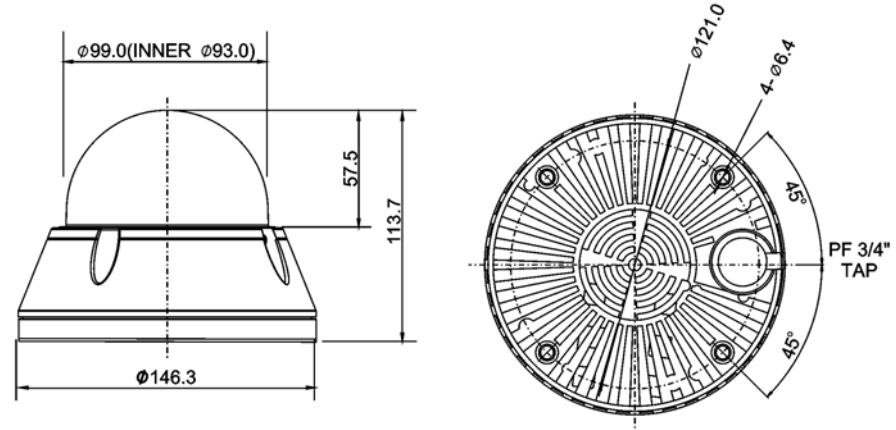
- 1) **FLIP** OFF, REVERSE, V-FLIP, ROTATION can be selected.
- 2) **RENDER INTENT** For low and dim illumination areas
MOVIE – Less sharpness, still maintains color saturation
INFO – Maintains sharpness, less color saturation
(Similar to 2DNR noise reduction – to suit what you want to achieve at low 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.

SPECIFICATIONS

MODEL		NTSC	PAL
Power	Power Source	DC12V / AC24V \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 / 540HTVL	
	Min. illumination	0.1 Lux @ F1.2, 50IRE, CMY	
	Video Output	1.0 Vp-p (75ohm, Composite)	
	Day & Night System	True ICR	
	S/N Ratio	More than 50dB (AGC off)	
	Camera Control	OSD(Joystick 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	DC	
	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) (FILTER 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), STC 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 Wire
	Video Output	BNC Connector
	Lens Mount	Fixed Mount (Φ14)
	Lens	f=2.8~12mm F1.2~360 Varifocal DC auto iris ICR (D&N)
	Operating Temperature	-10° ~ +50° C [14°F ~ 122°F]
	Operating Humidity	0 ~ 90% (Non-condensing)
	Protection Rating	IP66

EXTERNAL DIMENSION

<p>Dimensions</p>  <p style="text-align: right;">Unit: mm</p>	
<p>Window Size</p>	<p>0.1 in. (2.5mm thick), impact-resistant P.C (LEXAN) 3.93 in. (10cm) diameter</p>
<p>Cable Entry</p>	<p>One 1" opening holes</p>
<p>Weight - Unit: Shipping:</p>	<p>1.54 lb. (0.7kg) 2.11 lb. (0.96 kg)</p>

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Subject to change without notice