

WDR Super High Resolution Day & Night Color Camera

1/3" DOUBLE SCAN CCD
HIGH RESOLUTION



LIMITATION OF LIABILITY

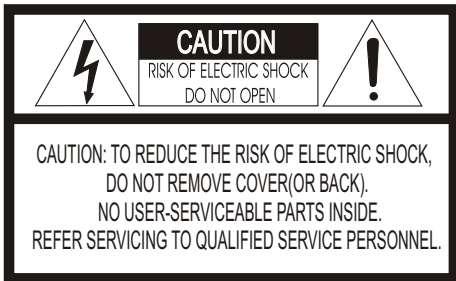
THE INFORMATION IN THIS PUBLICATION IS BELIEVED TO BE ACCURATE IN ALL RESPECTS, HOWEVER, WE CANNOT ASSUME RESPONSIBILITY FOR ANY CONSEQUENCES RESULTING FROM THE USE THEREOF. THE INFORMATION CONTAINED HEREIN IS SUBJECT TO CHANGE WITHOUT NOTICE. REVISIONS OR NEW EDITIONS TO THIS PUBLICATION MAY BE ISSUED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

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 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 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 Certified/Listed Class 2 power source only.**

INTRODUCTION

The camera provides high-quality images using SONY Wide Dynamic 1/3" CCD and digital signal processing LSIs.

Features:

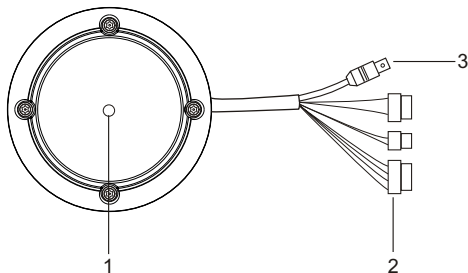
- 1/3" Super HAD Double Scan CCD for an image of high sensitivity
- Wide Dynamic Range(WDR)
- Excellent picture quality
- 580 lines(Color), 700 lines(B/W) of resolution
- 0.5 Lux(Color), 0.04 Lux(B/W), 0.001Lux(Low-shutter)@ F1.2 Sensitivity
- Auto electronic shutter [1/60(1/50) ~ 1/100,000] and manual electronic shutter modes
- OSD (On Screen Display)
- Auto and manual white balance modes
- Selectable BLC Zone
- Day&Night (BNC)
- Privacy Zone 16point, Motion Detection 4 Point
- SHARPNESS, D-ZOOM, NEGA/POSI, MIRROR, V FLIP, ROTATION, FREEZE
- AGC (Auto Gain Control)
- VIDEO OUT(BNC)
- RS485 CONTROL
- Internal/AC line lock
- 2.8~12mm D&N Auto Iris Lens.
- Operates in 12VDC or 24VAC
Use Certified / Listed Class 2 power source 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.

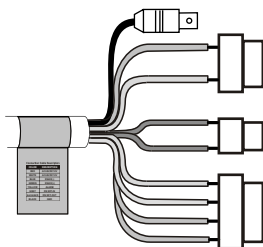
CAUTION: Before plugging in, please check the label to make sure you have the proper rating.

CAMERA CONNECTIONS



1. **Lens** : Allows a wide area to be monitored.

2. **Color Lead Wire & Color Display Label**



Connection Cable Description

COLOR	DESCRIPTION
RED	AC24V/DC12V
WHITE	AC24V/DC12V
BLUE	RS485(-)
GREEN	RS485(+)
YELLOW	ALARM
GRAY	DN EXT-IN
BLACK&WHITE	DN EXT-OUT
BLACK	GND

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



REMINDER: Never aim the camera directly into the sun.

PACKAGE CONTENTS

The package contains the following.

Camera in Housing	1
Instruction Manual (This Document)	1
Accessory Kit for Installing	1
Drilling guide label	1

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. Close the housing using the torx screws. **(Fig. 2)**

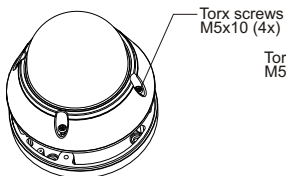


Figure 1

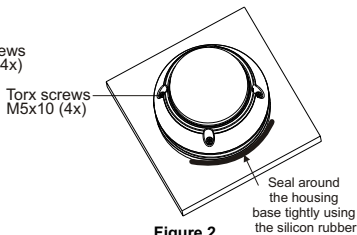
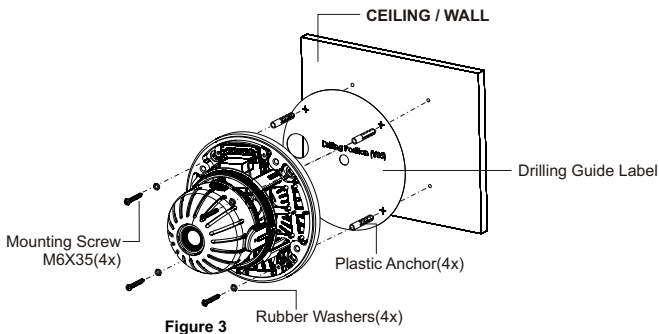
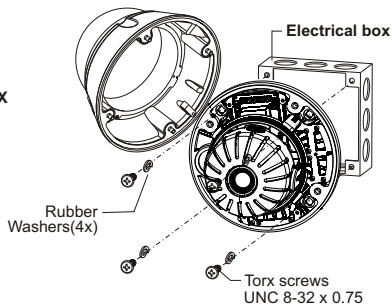


Figure 2

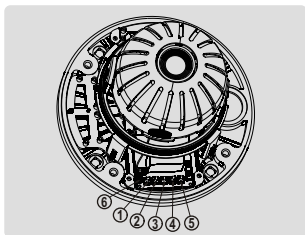


● **MOUNTING HOUSING TO AN ELECTRICAL BACK BOX**

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

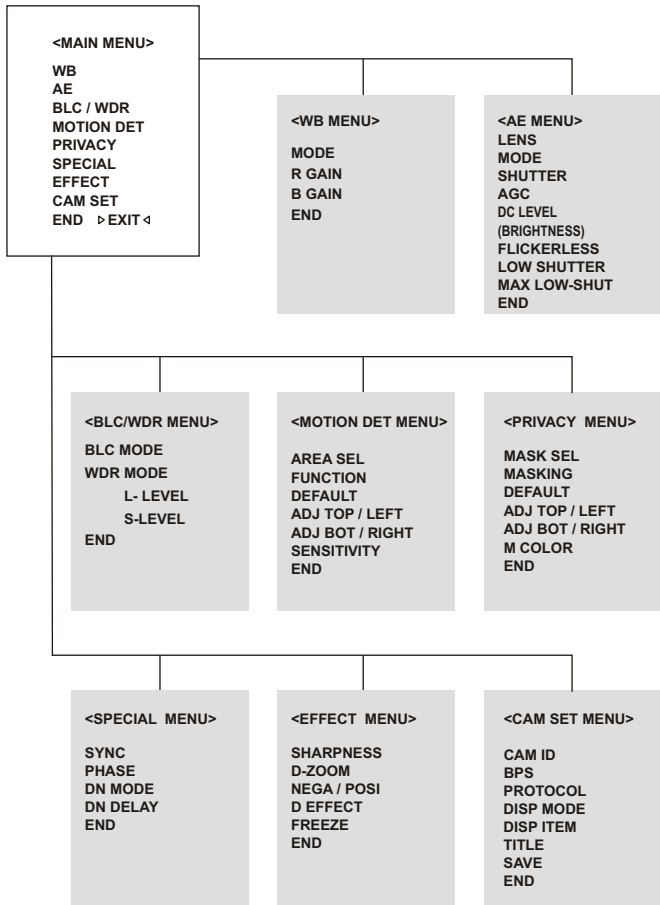


OPERATING CAMERA



- ① Enter Button
- ② Up
- ③ Down
- ④ Left
- ⑤ Right
- ⑥ Spot Video Out

STRUCTURE OF THE SETUP MENU



<WB>

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

1) MODE

- AWB Set the color temperature 2500°K to 9500°K
- WAWB Wide range auto white balance mode.
- 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) R GAIN

Adjust R-GAIN value.(0~255)
Can be adjusted while in manual mode.

3) B GAIN

Adjust B-GAIN value.(0~255)
Can be adjusted while in manual mode.

Cautions :White Balance may not work properly due to conditions below.

If so, please choose temporary revision mode.

1. When the surrounding area of the object is not within the colour temperature range (e.g. Sunset, blue sky)
2. When the surrounding area of an object are dark.
3. Function of white balance may be unstable when camera faces a fluorescent lamp or setting a camera where lighting changes quite often.

<AE>

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

1) LENS

DC, Manual Lens selected.

2) MODE

- AUTO Auto Exposure mode.
- SHUTTER Manual Shutter mode.

3) SHUTTER

Select the shutter mode.(1/60(50) ~ 1/100,000 sec)
Can be changed while in shutter mode.

4) AGC

Auto gain control ON/OFF

5) DC LEVEL / BRIGHTNESS

- DC LEVEL Adjust DC level (0 ~ 255)
Can be adjusted while in dc lens mode.
- BRIGHTNESS Adjust BRIGHTNESS level (0 ~ 255)
Can be adjusted while in manual lens mode.

6) FLICKERLESS

Removes screen flickering caused by discordance of frequency and lighting.

7) LOW SHUTTER

Use under very low light condition for full color surveillance.

8) MAX LOW-SHUT

Select maximum Low-Shutter value. (x2 ~ x256)

<BLC/WDR>

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

1) BLC MODE

Sharpens subjects with backlight.
(OFF / CENTER / TOP / BOTTOM / RIGHT / LEFT)

2) WDR MODE

Wide dynamic range ON/OFF

L- LEVEL

Can be adjust long-time WDR level (0~200)

S- LEVEL

Can be adjust short-time WDR level (0~200)

<MOTION DET>

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

- | | |
|------------------|--|
| 1) AREA SEL | Select MD area number. |
| 2) FUNCTION | Select MD ON/OFF |
| 3) DEFAULT | Set MD area as default. |
| 4) ADJ TOP/LEFT | Adjust the location of the MD area with boundary TOP and LEFT.(MD 1~4) |
| 5) ADJ BOT/RIGHT | Adjust the location of the MD area with boundary BOTTOM and RIGHT.(MD 1~4) |
| 6) SENSITIVITY | Adjust sensitivity of MD area.(1~255) |

<PRIVACY>

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

- | | |
|------------------|--|
| 1) MASK SEL | Select MASK area number. |
| 2) MASKING | Select MASK ON/OFF |
| 3) DEFAULT | Set MASK area as default. |
| 4) ADJ TOP/LEFT | Adjust the location of the MASK area with boundary TOP and LEFT.(MASK 1~16) |
| 5) ADJ BOT/RIGHT | Adjust the location of the MASK area with boundary BOTTOM and RIGHT. (MASK 1~16) |
| 6) M COLOR | Select MASK color. (WHITE/GRAY/BLACK) |

<SPECIAL>

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

- | | |
|-------------|---|
| 1) SYNC | Select Internal or Line Lock mode. |
| -INT | This mode is necessary for using the internal synchronization. |
| -L/L | This mode is necessary for the operation of multi camera because it synchronizes the camera phase by using the external signal (AC Signal). |
| 2) PHASE | Sync phase is adjustable in line lock mode. |
| 3) DN MODE | |
| -AUTO | Filter operates automatically according to brightness. |
| -COLOR | The camera outputs the video image only in color. |
| -BW | The camera outputs the video image only in black and white. |
| -EXT | This menu automatically converts the COLOR Mode into the BW Mode or vice versa depending on illumination with an external sensor. |
| 4) DN DELAY | Adjust the working time of the filter when D&N operated.
(05sec / 10sec / 20sec) |

<EFFECT>

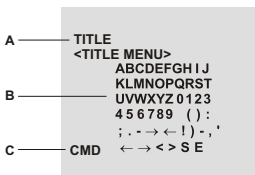
Press the MENU button to access the "EFFECT" mode.

- | | |
|----------------|--|
| 1) SHARPNESS | Can be adjusted SHARPNESS of outlines.(0~15) |
| 2) D-ZOOM | Digital Zoom ON / OFF |
| 3) NEGA / POSI | Select the negative or positive mode. |
| 4) D EFFECT | Reverse the screen in 3 modes selection.
(OFF / MIRROR / V FLIP / ROTATION) |
| 5) FREEZE | Select the real or still mode. |

<CAM SET>

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

- 1) **CAM ID** Select the camera ID. (001 ~ 255)
- 2) **BPS** Select serial communication speed.(2400 / 4800 / 9600 / 19200)
- 3) **PROTOCOL** Select operating protocol.
COMMAND : Camera controlled by RS-232C command.
FASTRAX : Fastrax protocol.
PELCO-D : Pelco-D protocol.
PELCO-P : Pelco-P protocol.
- 4) **DISP MODE** On screen display is ON/OFF
- 5) **DISP ITEM**
 - DISP0 Display title and camera ID.
 - DISP1 Display title, camera ID and DC Level
- 6) **TITLE**



- A. TITLE
 - B. Character Table
 - C. Command Line
- ← : Move to left
→ : Move to right
< : Erase a left character
> : Erase a right character
S : Save title
E : End

- 7) **SAVE** Save preset parameters of CAM SET MENU.

<END>

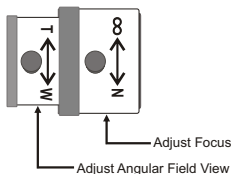
Press the MENU button to access the "END" mode.

- 1) **DEFAULT & EXIT** Set parameters as factory setting and terminate the MAIN MENU.
- 2) **SAVE & EXIT** Save the changed preset parameter and terminate the MAIN MENU.
- 3) **EXIT** Terminate the MAIN MENU without saving parameters.

LENS ADJUSTMENT (OPTIONAL VARIFOCAL LENS)

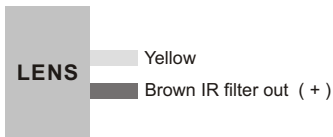
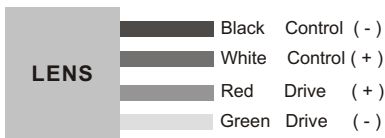
Field of view: Adjust setting from Telephoto (T) to wide (W) field of View.

Focus: Adjust lens focus from near (N) to infinity (∞).



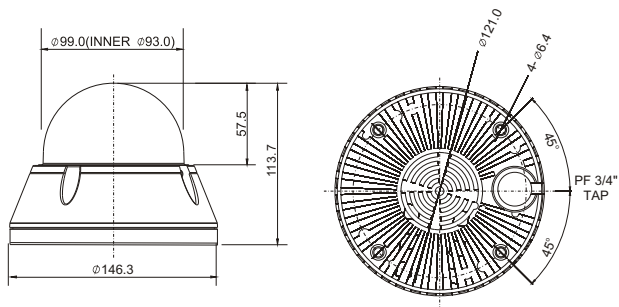
DC AUTO IRIS LENS

	2.8~12mm
Image Size	1/3" CCD
Focal Length	2.8-12mm \pm 5%
Aperture Ratio	1 : 1.4 \pm 5%
Angular Field of View	2.8mm : 119.9° 12mm : 28.8°



EXTERNAL DIMENSION

Dimensions



Unit: mm

Window Size	0.1 in. (2.5mm thick), impact-resistant P.C (LEXAN) 3.93 in. (10cm) diameter
Cable Entry	One 1" opening holes
Weight - Unit: Shipping:	1.54 lb. (0.7kg) 2.11 lb. (0.96 kg)

SPECIFICATIONS

MODEL		NTSC	PAL	
Power	Power source	DC 12V / AC 24V \pm 10%		
	Power consumption	7.0 Watts		
General	Image sensor	1/3" SONY DS 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		
	Resolution	580 TV lines(COLOR), 700 TV lines(BW)		
	Min. illumination	0.5 lux (Color), 0.04 lux (B/W), 0.001 lux (Low-shutter)		
	Video output	1.0 Vp-p (75 ohm, composite)		
	S/N ratio	50dB (AGC OFF)		
	Camera Control	RS485(FastraxII, Pelco D, Pelco P) , Tact switch		
	F U N C T I O N	White balance	AWB / Indoor / Outdoor / Manual / WAWB	
		Auto exposure	Auto / Manual Shutter / Flickerless	
		AGC	Auto	
		Shutter Speed	1/60 ~ 1/100,000 sec.	1/50 ~ 1/100,000 sec.
		BLC	Top / Bottom / Center / Right / Left / Off	
		Title	A ~ Z / 0 ~ 9	
		Display	On / Off (DISP0 / DISP1)	
		CAM ID	001 ~ 255	
		BPS	2400 / 4800 / 9600 / 19200	
		Brightness	0 ~255 steps	
Sharpness		0 ~ 15 steps		
Low Shutter		x2 ~ x256 (13steps)		
Effect		V-Flip, Rotation, Mirror, D&N, D-Zoom, Nega/Posi, B/W, Freeze, Privacy Zone, MD		
WDR	x128			
LENS	Lens mount	Fixed mount		
	Lens	f2.8~12mm, F1.4~3.4, Varifocal DC auto iris ICR		
Connector & etc.	Power input	Terminal block		
	Video output	BNC		
	Operating temperature	-10°C ~ +40°C		
	Operating humidity	0 ~ 96% (non-condensing)		

**WDR Super High Resolution
Day & Night Color Camera**

50302678A