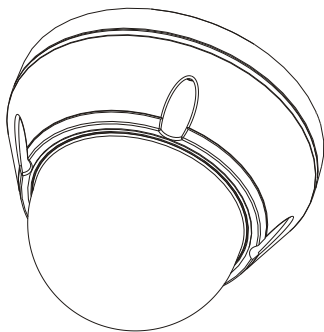


600TV Lines Ultra High Resolution Color Camera

3-AXIS VANDAL RESISTANT
DOME CAMERA

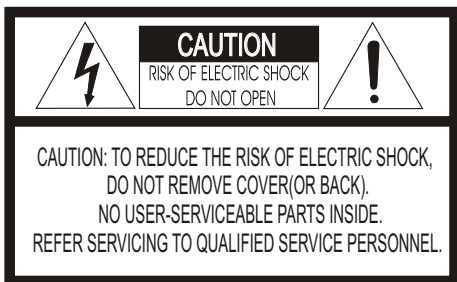


Please read this manual thoroughly before use, and keep it handy for future reference.

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 AND RETAIN INSTRUCTIONS

Read the instruction manual before operating the equipment. Retain the manual for future reference.

2. CLEANING

Turn the unit off and unplug from the power outlet before cleaning. Use a damp cloth for cleaning. Do not use harsh cleansers or aerosol cleaners.

3. ATTACHMENTS

Do not use attachments unless recommended by manufacturer as they may affect the functionality of the unit and result in the risk of fire, electric shock or injury.

4. MOISTURE

Do not use equipment near water or other liquids.

5. ACCESSORIES

Equipment should be installed in a safe, stable location. Any wall or shelf mounting accessory equipment should be installed using the manufacturer's Instructions. Care should be used when moving heavy equipment. Quick stops, excessive force, and uneven surfaces may cause the equipment to fall causing serious injury to persons and objects.

6. VENTILATION

Openings in the equipment, if any, are provided for ventilation to ensure reliable operation of the unit and to protect it from overheating. These openings must not be blocked or covered

7. POWER SOURCES

The equipment should be operated only from the type of power source indicated on the marking label. If you are not sure of the type of power supplied at the installation location, contact your dealer. For equipment designed to operate from battery power, refer to the operating instructions.

8. GROUNDING OR POLARIZATION

Equipment that is powered through a polarized plug (a plug with one blade wider than the other) will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. Do not defeat the safety purpose of the polarized plug.

Alternate Warning: If the equipment is powered through a three-way grounding-type plug, a plug having a third (grounding) pin, the plug will only fit into a grounding-type power outlet. This is a safety feature. Do not defeat the safety purpose of the grounding-type plug. If your outlet does not have the grounding plug receptacle, contact your local electrician.

9. CORD AND CABLE PROTECTION

Route power cords and cables in a manner to protect them from damage by being walked on or pinched by items places upon or against them.

10. LIGHTNING

For protection of the equipment during a lightning storm or when it is left unattended and unused for long periods of time, unplug the unit from the wall outlet. Disconnect any antennas or cable systems

that may be connected to the equipment. This will prevent damage to the equipment due to Lightning or power-line surges.

11. OVERLOADING

Do not overload wall outlets and extension cords as this can result in a risk of fire or electric shock.

12. SERVICING

Do not attempt to service the video monitor or equipment yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

13. DAMAGE REQUIRING SERVICE

Unplug the equipment from the wall outlet and refer servicing to qualified service personnel under the following conditions:

- A. When the power supply cord or the plug has been damaged.
- B. If liquid has spilled or objects have fallen into the Unit.
- C. If the equipment has been exposed to water or other liquids.
- D. If the equipment does not operate normally by following the operating instructions, adjust only those controls that are covered by the operating instructions. Improper adjustment of other controls may result in damage to the unit.
- E. If the equipment has been dropped or the casing Damaged.
- F. When the equipment exhibits a distinct change in performance.

14. REPLACEMENT PARTS

When replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer or that have the same characteristics as the original part. Unauthorized substitutions may result in fire, electric shock, or other hazards.

15. SAFETY CHECK

Upon completion of any service or repairs to the equipment, ask the service technician to perform safety checks to verify that the equipment is in proper operating condition.

16. FIELD INSTALLATION

The installation of equipment should be made by a qualified service person and should conform to all local codes.

17. 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.

17-1 Class 2 power source only.

17-2 Do NOT use power source other than that specified.

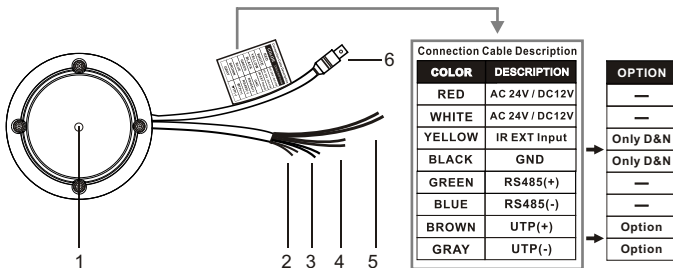
INTRODUCTION

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
- 600 lines(Color) of resolution
- 0.1 lux(Color), 0.04 lux(B/W) @ F1.2 50IRE Sensitivity
(Sense up x 256 - 0.0004 lux(Color), 0.0001 lux(B/W))
- Auto electronic shutter [1/60(1/50) ~ 1/120,000] and manual electronic shutter modes
- OSD (On Screen Display)
- 3D DNR Function
- Eclipse
- DRC (Dynamic Range Control)
- Auto and manual white balance modes
- BLC (Back Light Compensation)
- Day&Night (Auto / DAY / NIGHT / EXT) → (EXT : D&N with ICR model option)
- Private Mask (24 Position, BW, Color, Mosaic)
- AGC (Auto Gain Control)
- Sense-up (x2 ~ x256)
- MIRROR (NORMAL /MIRROR/VERTICAL /ROTATE)
- VIDEO OUT(BNC, UTP(Option))
- Motion Detection
- Internal / AC line lock
- RS485 CONTROL
- 2.8~12mm A/I Varifocal Lens F1.4~3.4(D&N Lens option)
- Operates in 12 VDC or 24 VAC
- Use Certified / Listed Class 2 power supply only.
- Camera Mount : camera mount directly to the wall or ceiling
- Test Monitor Output

CAMERA CONNECTIONS



1. **Lens** : 2.8~12mm A/I Vari-focal lens for wide area monitoring. (D&N with ICR model option)

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. **IR EXT** : Only D&N with ICR model. (Dry contact) → (D&N with ICR model option)

4. **RS485 CONTROL**

5. **UTP : Video out (option)**

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

NOTE :

When D&N EXT mode is used, be careful not to confuse the IR EXT wires with the UTP wires.
An incorrect connection will cause malfunction.



REMINDER:

Never aim the camera directly into the sun.

CONTENTS of PACKAGE

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. Closing the housing using the loosen torx screws. (Fig. 2)

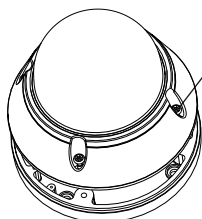


Figure 1

Torx screws
M5x10 (4x)

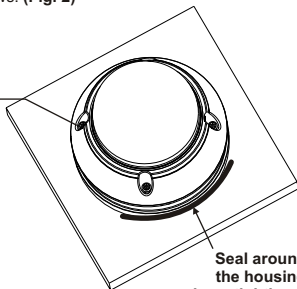


Figure 2

Seal around
the housing
base tightly using
the silicon rubber

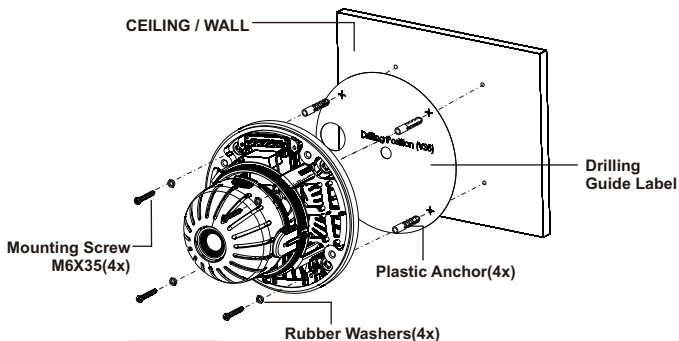
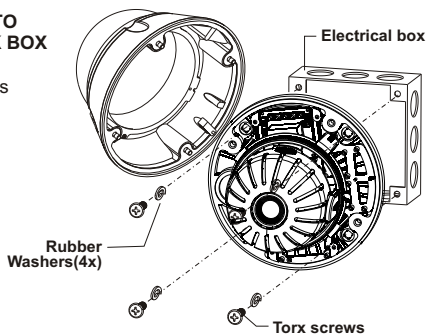


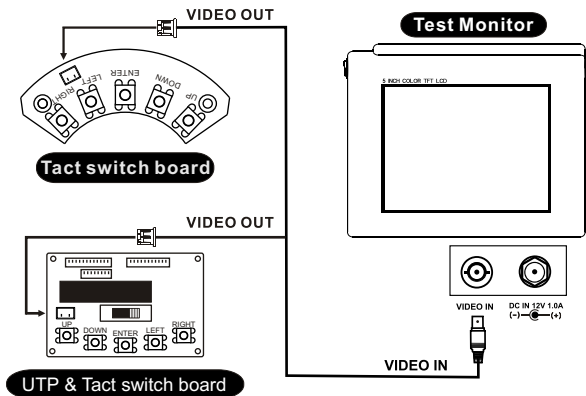
Figure 3

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

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



- Video out check-



CAMERA ADJUSTMENT

OSD MAIN SCREEN

MENU		
► EXPOSURE		+...
WHITE BAL		+...
DAY/NIGHT		+...
MOTION		+...
PRIVACY		+...
OPTION		+...
DISPLAY		+...
SYNC	AUTO	
INITIAL	DEF AU LT	
EXIT		

- [ENTER] ON or OFF of OSD MENU
- [UP] / [DOWN] UP or DOWN of Cursor
- [LEFT] / [RIGHT] SUB MENU ON or Decision

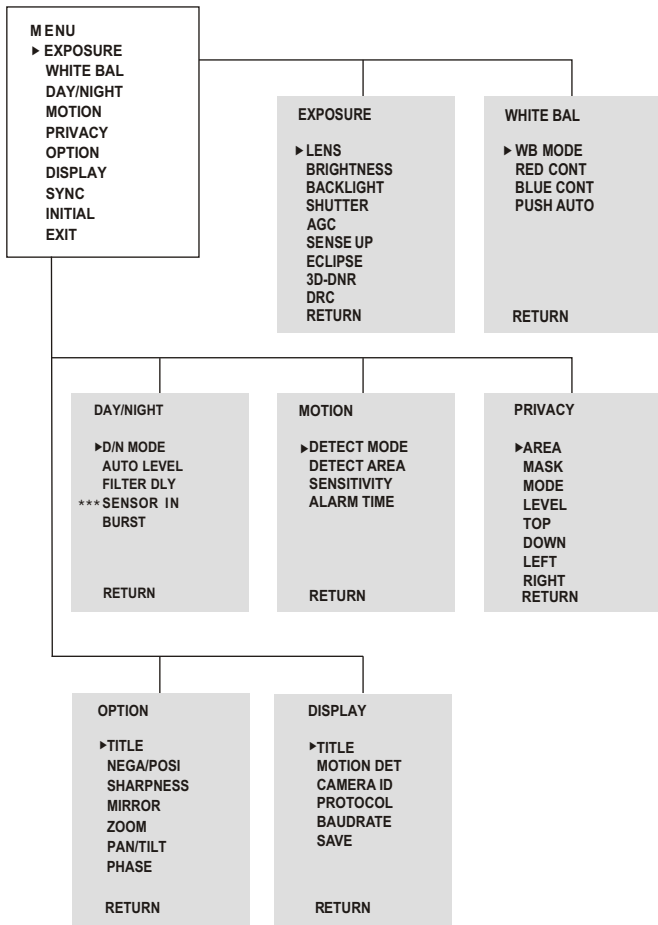
1) EXPOSURE, WHITE BAL, DAY/NIGHT, MOTION, PRIVACY, OPTION and DISPLAY has a SUB MENU. [UP]/[DOWN] of Cursor.

And SUB MENUS is displayed by [LEFT] / [RIGHT].

2) SYNC : AUTO or INT can be selected.

3) When making INITIAL from USER to DEFAULT, all data is initialized.

4) To EXIT the menu use the [LEFT] / [RIGHT] buttons when EXIT is highlighted.



*** SENSOR IN : Only D&N with ICR model (option)

<EXPOSURE>

Press the [LEFT] or [RIGHT] button to access the "EXPOSURE" mode.

- 1) LENS DC, ELC can be selected.
- 2) BRIGHTNESS 0 to 60 can be selected.
* Level setting is available in DC, ELC mode.
- 3) BACKLIGHT ON or OFF can be selected. (BLC level, location)
* Prevents such a back light effect to secure a clear image under all illumination environments.
- 4) SHUTTER 1/60 (1/50), FLC, 1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000
1/30000, 1/60000, 1/120000 sec.
* When LENS is DC, it is possible to select it.
Another becomes NOT USE.
- 5) AGC AGC OFF, LOW, MID, HIGH can be selected.
* As the level of gain increases, the screen gets brighter and the level Of noise also increases.
- 6) SENSE UP OFF, x2, x4, x8, x16, x32, x64, x128, x256 can be selected.
* SENSE UP helps maintain a bright, clear screen image by automatically detecting change in the level of light
- 7) ECLIPSE ON or OFF can be selected.
* The function improves the identification capability of subjects facing a brightly lit situation by filtering out the strength of the light.
- 8) 3D-DNR OFF, LOW, MID, HIGH can be selected.
* Reduces the noise on the screen under low light condition
- 9) DRC ON or OFF can be selected.
* The function to visibly brighten a subject in a dark area
- 10) RETURN Return to MAIN MENU.

<WHITE BALANCE>

Press the [LEFT] or [RIGHT] button to access the "WHITE BALANCE" mode.

1) WB MODE

- ATW This mode can be used within the color temperature range 1.800°K ~ 10.500°K
- AWC Please press the [LEFT] or [RIGHT] button in the PUSH AUTO mode 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 Manual mode. User can change R and B Gain manually.
- INDOOR Set the color temperature to 3200°K
- OUTDOOR Set the color temperature to 6300°K

2) RED CONT

Adjust Red Gain Value (0 ~ 127)
Can be adjust while in manual mode.

3) BLUE CONT

Adjust BLUE Gain Value (0 ~ 127)
Can be adjust while in manual mode.

4) PUSH AUTO

When it is AWC, OFF to PUSH can be selected.

5) RETURN

Return to MAIN MENU.

<DAY/NIGHT>

Press the [LEFT] or [RIGHT] button to access the "DAY/NIGHT" mode.

- 1) **D/N MODE** AUTO, DAY, NIGHT, EXT can be selected.
 - AUTO This camera has a function which automatically changes to the appropriate mode for day-time or night-time.
 - DAY In this mode, the camera outputs the video image only in color.
 - NIGHT In this mode, the camera outputs the video image only in black and white.
 - EXT In this mode, an external signal changes the camera output from the COLOR mode to BW mode and back.
*EXT : Only D&N with ICR Model (Option)
- 2) **AUTO LEVEL** When set to AUTO, the 0 to 3 values can be selected.
* AGC LOW : 0 AGC MID : 0 ~1 AGC HIGH : 0 ~3
- 3) **FILTER DLY** When set to AUTO, 4 to 10 can be selected.
When AGC is OFF, NOT USED.
* Adjust the delay time of filter movement when changing from on to off or off to on.
- 4) **SENSOR IN** When it is EXT, No or NC Can be selected.
*SENSOR IN : Only D&n with ICR Model.(Option)
- 5) **BURST** When it is DAY, Not Use.
Another mode be comes ON or OFF can be selected.
- 6) **RETURN** Return to MAIN MENU.

<MOTION>

Press the [LEFT] or [RIGHT] button to access th "MOTION"mode.

- 1) **DETECT MODE** ON or OFF can be selected.
* Turning on becomes invalid while displaying OSD.
However, it becomes effective only at MOTION AREA.
- 2) **DETECT AREA** MOTION AREA is displayed.
- 3) **SENSITIVITY** 0 to 8 can be selected.
- 4) **ALARM TIME** 1 to 60 sec can be selected.
- 5) **RETURN** Return to MAIN MENU.

<PRIVACY>

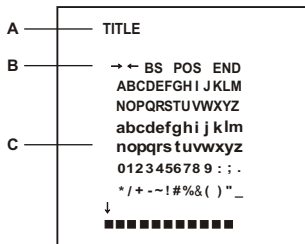
Press the [LEFT] or [RIGHT] button to access the "PRIVACY" mode.

- 1) **AREA** 1 to 24 can be selected.
- 2) **MASK** ON or OFF can be selected.
- 3) **MODE** When MASK is ON, BW, MOSAIC, COLOR can be selected.
- 4) **LEVEL**
 - BW : 0 to 15 can be selected.
 - MOSAIC : SMALL or MIDDLE or LARGE can be selected.
 - COLOR : RED, BLUE, GREEN, YELLOW, CYAN, MAGENTA can be selected.
- 5) **TOP** When MASK is ON, 3 to 124(NTSC) or 6 to 150(PAL) can be selected.
- 6) **DOWN** When MASK is ON, 5 to 126(NTSC) or 8 to 152(PAL) can be selected.
- 7) **LEFT** When MASK is ON, 0 to 187(NTSC) or 0 to 185(PAL) can be selected.
- 8) **RIGHT** When MASK is ON, 2 to 189(NTSC) or 2 to 187(PAL) can be selected.
- 9) **RETURN** Return to MAIN MENU.

<OPTION>

Press the [LEFT] or [RIGHT] button to access the "OPTION" mode.

1) TITLE



A. TITLE

B. Command Line

← : Move to left

→ : Move to right

BS : Erase a left character

POS : Change the position of the title

END : End

C. Character Table

■ : blank

- : space

2) NEGA/POSI

NEGA or POSI can be selected.

3) SHARPNESS

0 to 15 can be selected.

4) MIRROR

- MIRROR

- VERTICAL

- ROTATE

NORMAL, MIRROR, VERTICAL, ROTATE can be selected.

Horizontal image inversion

Vertical image inversion

Horizontal image and Vertical image inversion

5) ZOOM

OFF(x1) and ON1 to ON8(x4) can be selected.
When PAN/TILT is ON, it is NOT USE.

6) PAN/TILT

OFF or ON(x2) can be selected.

* When OSD MENU is OFF and PAN/TILT is ON,
operate by [UP],[DOWN],[LEFT],[RIGHT].

7) PHASE

Sync phase is adjustable in line lock mode (Auto mode)
0 ~ 524 (NTSC) or 0 ~ 624 (PAL).

8) RETURN

Return to MAIN MENU

<DISPLAY>

Press the [LEFT] or [RIGHT] button to access the "DISPLAY" mode.

1) TITLE

ON or OFF can be selected.

2) MOTION DET

ON or OFF can be selected.

3) CAMERA ID

Select the camera ID. (001 ~ 254)

4) PROTOCOL

Select operating protocol
FASTRAX : Fastrax protocol.
PELCO-D : PELCO-D protocol.
PELCO-P : PELCO-P protocol.

5) BAUDRATE

Select serial communication speed. (2400 / 4800 / 9600 / 19200)

6) SAVE

Save the changed parameters of CAMERA ID, PROTOCOL, BAUDRATE.

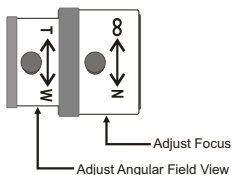
7) RETURN

Return to MAIN MENU.

LENS ADJUSTMENT (OPTIONAL VARIFOCAL LENS)

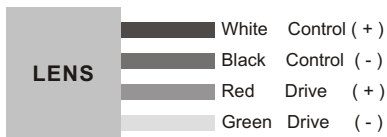
Field of view: Adjust setting from Tele (T) to Wide (W) field of View.

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	DIAGONAL 2.8mm : 119.9° 12mm : 28.80°

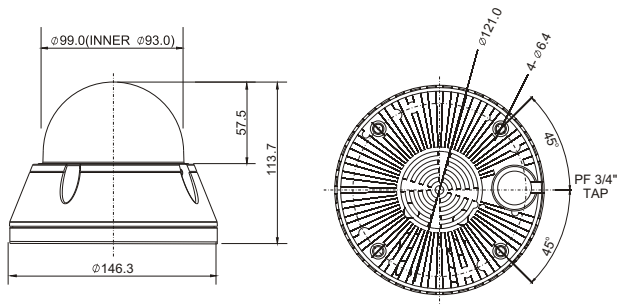


SPECIFICATIONS

MODEL		NTSC	PAL
Power	Power source	DC 12V / AC 24V $\pm$ 10%	
	Power consumption	3.5 Watts	
General	Image sensor	1/3" SONY Super-HAD CCD	
	Total number of 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	600 TV lines (Color)	
	Min. illumination	0.1 lux(Color), 0.04 lux(B/W) @ F1.2 50IRE (Sense up x 256 - 0.0004 lux(Color), 0.0001 lux(B/W))	
	Video output	1.0 Vp-p (75 ohm, composite)	
	S/N ratio	More than 55dB (AGC OFF, Sense up OFF)	
	Camera Control	RS485(Fastrax, Pelco D, Pelco P), Tact switch	
	F U N C T I O N	Auto Exposure	1/60(1/50) / FLICKERLESS / MANUAL SHUTTER (1/250, 1/500, 1/1000, 1/2000, 1/4000, 1/10000, 1/30000, 1/60000, 1/120000)
		Lens	DC / ELC
		Brightness	0 ~ 60
		BLC	ON / OFF (Position, Level)
		AGC	OFF / LOW / MIDDLE / HIGH
		Sense-up	OFF / x2 ~ x256
		Eclipse	OFF / ON
		3D-DNR	OFF / LOW / MIDDLE / HIGH
		DRC	ON / OFF
		White Balance	ATW / AWC / MANUAL / INDOOR / OUTDOOR
		Day & Night	AUTO / DAY / NIGHT / EXT(EXT : D&N with ICR model option)
		Motion detection	OFF / ON (Sensitivity & Alarm time Selective)
		Privacy zone	OFF / ON (24position, Mask BW, Color, Mosaic)
		Display Title	OFF / ON
		Video Picture	POSI / NEGA
		Sharpness	0~15
		Mirror	NORMAL / MIRROR / VERTICAL / ROTATE
		Sync	INT/AUTO
		Camera ID	1 ~254
		Baudrate	2400 / 4800 / 9600 / 19200
		IR EXT IN	NC / NO (Only D&N with ICR model option)
		Zoom	OFF / ON(x4) / PAN&TILT(x2)
		Preset	INITIAL / EXIT(Auto save) / RETURN
Connector & etc.	Power input	2-Pin wire	
	Video output	BNC connector, UTP(option)	
	Lens mount	Fixed mount	
	Lens	f=2.8~12mm F1.4~3.4 Varifocal DC auto iris	f=2.8~12mm F1.4~3.4 Varifocal DC auto iris ICR
		-Day/Night A/I Varifocal 4~9mm Lens is optional	
	Operating Temperature	-10°C ~ +50°C [14°F ~ 122°F]	
	Operating humidity	0 ~ 96% (non-condensing)	

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)

**600TV Lines Ultra High Resolution
Color Camera**