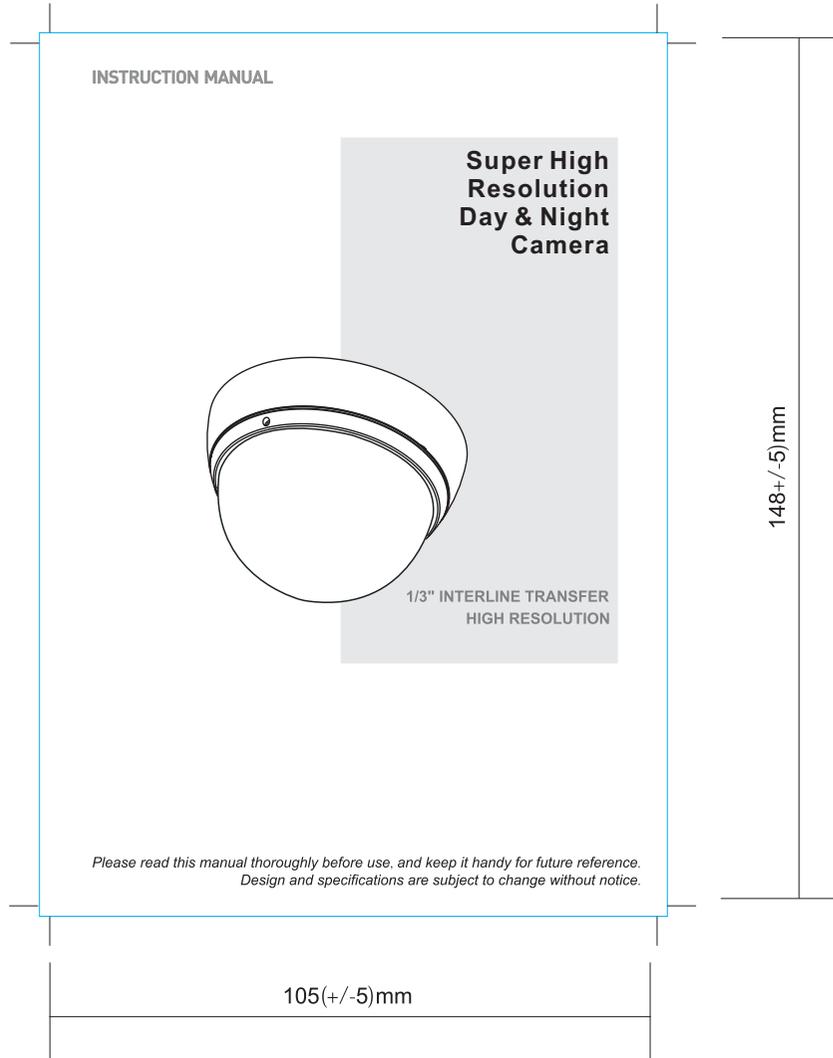


PRODUCTION RELEASE & REVISION						
REV	DESCRIPTN/BUYER	DWG No	PARTS No.	BY	CHK	DATE
A	INITIAL	-----	50303712	J.Y.LIU	M.J.KWON	03-03-M14
B	INITIAL	-----	50303712	J.Y.LIU	M.J.KWON	15-04-22

rev.B-5p: Various Detection Methods 수정



NOTES

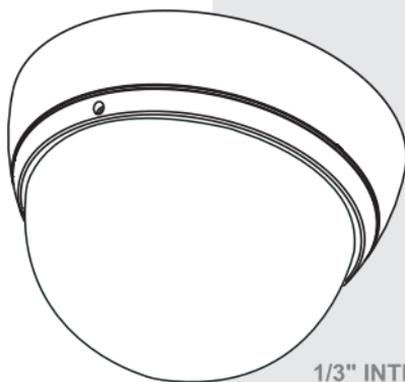
- 1.MODEL: HCG(I)-P7xDxA32/NoBrand(Effio-A)
- 2.MATERIAL: 모조지 100g/m² WHITE
- 3.COLOR: BLACK
- 4.SIZE: 105(+/-5)mm x 148(+/-5)mm
- 5.LABEL: -----
- 6.ANY CHANGE OR ALTERNATION MUST BE APPROVED BY HITRON DESIGN TEAM.

의 한	전자
	장석원
	15-04-22

50303712		ITEM	DESCRIPTION/MATERIAL	QTY
<small>UNLESS OTHERWISE SPECIFIED ALL DIMENSIONS ARE IN MM.</small> <small>TOLERANCE</small> <small>LABEL +/- 3</small> <small>MANUAL +/- 5</small> <small>GUIDE +/- 5</small>		APPROVALS	DATE	HITRON <small>TITLE</small> Manual Instruction
		K.H.JUNG	15-04-22	
MATERIAL	2	CHKED	M.J.KWON	15-04-22
COLOR	3	DRAWN	J.Y.LIU	15-04-22
		<small>SCALE</small> <small>DO NOT SCALE</small>		<small>SIZE</small> A4 <small>REV.</small> B

INSTRUCTION MANUAL

Super High Resolution Day & Night Camera



1/3" INTERLINE TRANSFER
HIGH RESOLUTION

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

FCC COMPLIANCE STATEMENT

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

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.

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 block any ventilation openings. Install in accordance with the manufacturer's instructions.
 6. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
 7. Only use attachments/accessories specified by the manufacturer.
 8. 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.
- 
- 9. 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.**
- 10. Use satisfy clause 2.5 of IEC60950-1/UL 60950-1 or Certified/Listed Class 2 power source only.**
11. Indoor use only.

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.

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

TABLE OF CONTENTS

INTRODUCTION	6
CONNECTION & CONTENTS	6
BASE INSTALLATION	7
MANU MAP	8
SPECIFICATIONS	19
DIMENSION	20

INTRODUCTION

The camera provides a high-quality image using SONY Wide Dynamic 1/3" Super-HADII 960H CCD and digital signal processing LSI chips.

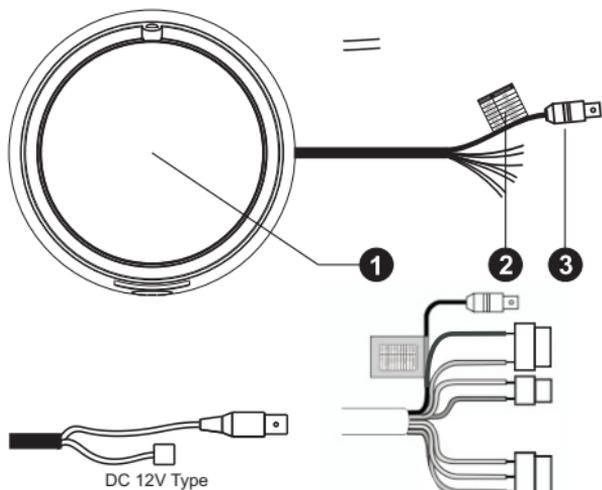
Features:

- 1/3" Super-HADII 960H CCD
- Super high-resolution of 750TV lines
- Digital Wide Dynamic Range-ATR-EX2
- Auto Electronic Shutter [1/50(60) ~ 1/100,000] and manual electronic shutter modes [1/50(60) ~ 1/10,000]
- 0.1 lux(Colour), 0.01 lux(B/W), 0.001 lux(Slow-Shutter) @ F1.4 Sensitivity
- Digital Noise Reduction- 2D,3D
- Day & Night(Auto, Day, Night)
- Sens-Up (~x256)
- Various Detection Methods (zone detection, motion trace)
- Intelligent scene recognition - Provide the best image automatically for every scene
- Mechanical iris auto adjustment
- Privacy Mask or Mosaic (MAX. 15 area /4-point polygonal/transparency)
- E-Zoom
- White pixel detection and compensation
- Digital Effect-FLIP (H/V reverse, inverse)
- Defog(Auto) - Detects foggy condition automatically and provides high contrast picture
- IR Optimizer
- Coaxial communication (Coaxitron by Pelco)
- RS-485 Remote camera control(Pelco-D)-Option
- Support Line-Lock external synchronization (Line lock) -Option
- Operates in 12VDC or 24VAC-Option



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.

CAMERA CONNECTIONS




REMINDER:
 Never aim the camera directly into the sun.

Connect Cable Description

COLOR	DESCRIPTION
RED	AC24V/DC12V
WHITE	AC24V/DC12V
BROWN	RS 485(+)
BLUE	RS 485 (-)
YELLOW	ALARM-OUT
BLACK	GND
GRAY	DN EXT-IN

<Connector Option>

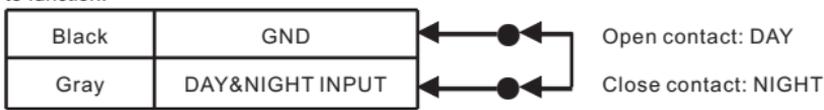
- 1. Lens** : Allows a wide area to be monitored.
- 2. Color Lead Wire & Color Display Label**

2-1. External Day/Night Control(Optional)

Select Day/Night mode using external equipment, by connecting control lines to the appropriate terminals.

• **DAY&NIGHT EXTERNAL INPUT**

Switches the cameras D/N mode to either Day or Night based on the input status. Refer to the diagram below. The cameras CNTL SIGNAL of D/N AUTO mode must be set to EXT2 for this to function.



2-2. Alarm Out -Open Collector (5V/10mA)

- Motion detection signals are output through this port. Active state is Low(GND). Normal : Open Collector, ALARM : Low(GND)

2-3. Power Input Terminal

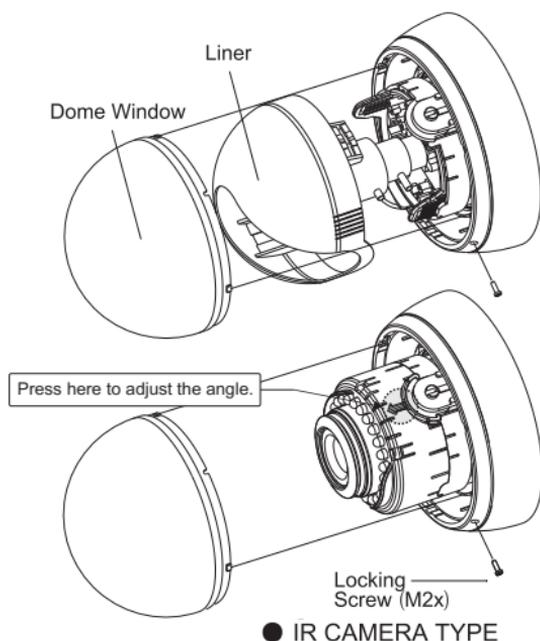
- RED & WHITE** : These terminals accept 24V AC or 12V DC. When using 12V DC it is recommended to use a DC power supply that can support an inrush current of 0.55A

2-4. Camera Control(Optional)

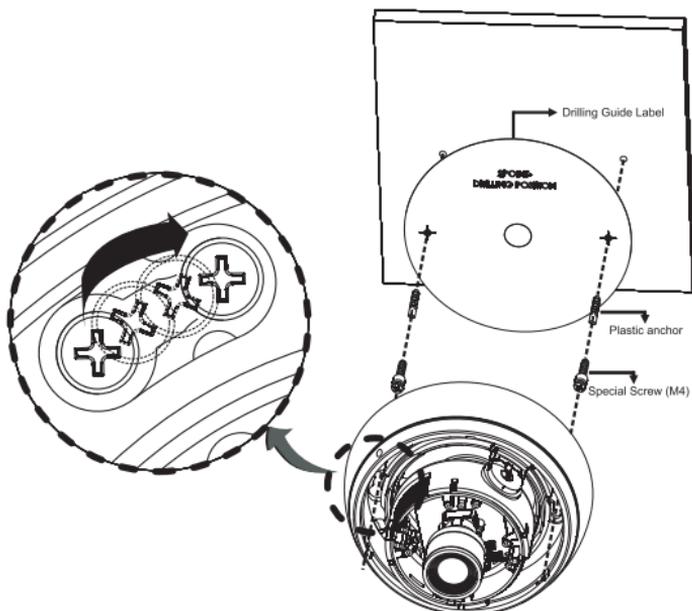
- BROWN** : RS 485+
- BLUE** : RS 485-

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

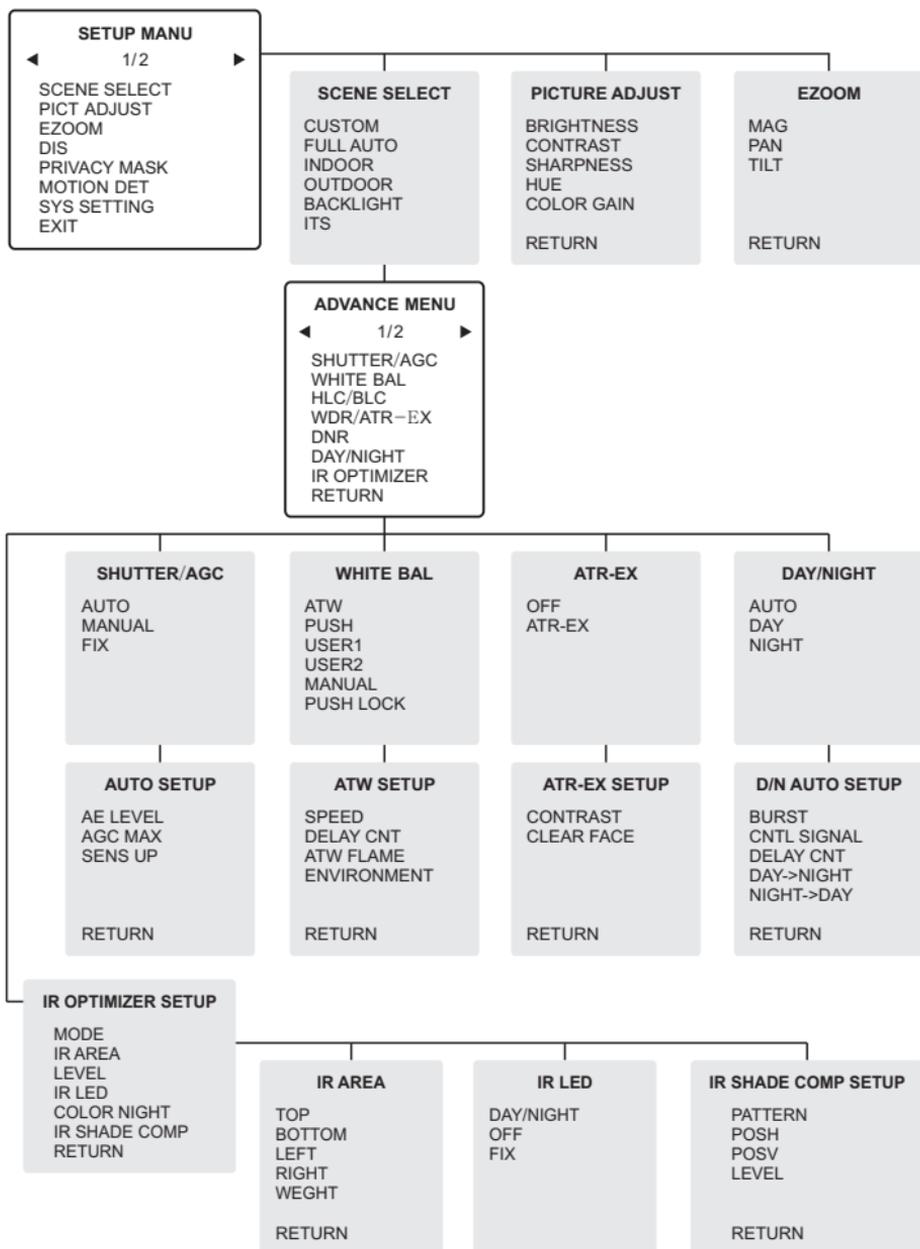
BASE INSTALLATION



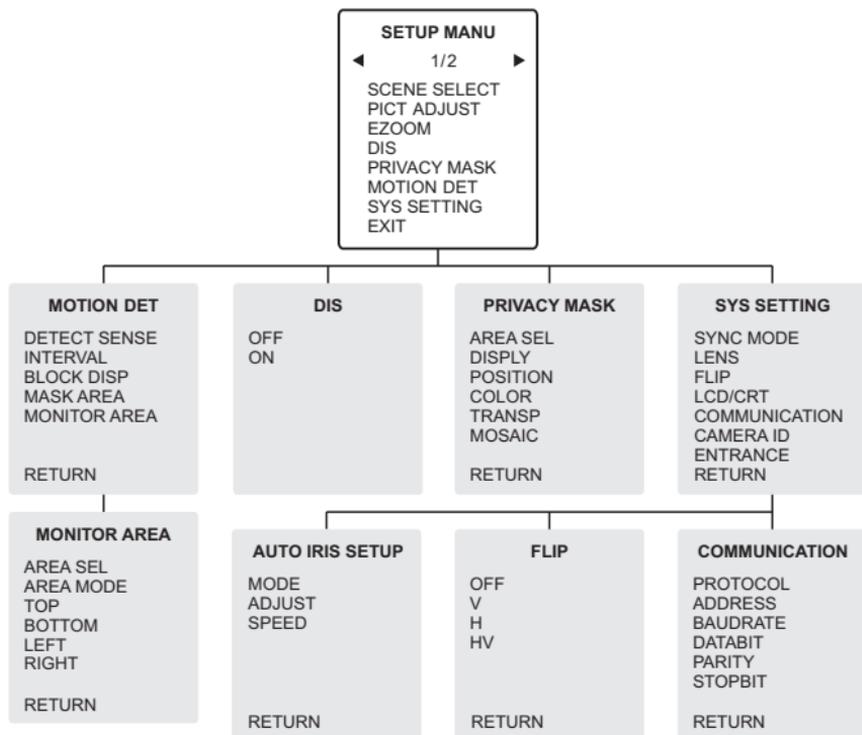
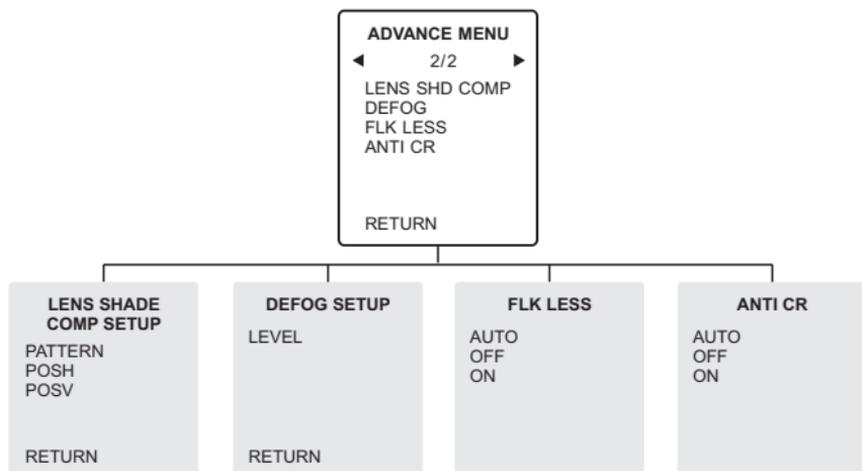
1. Make mounting holes and cable hole in the place (ceiling or wall) to which this dome camera is installed using the Drilling guide label.
2. To remove dome cover, turn the dome body counterclockwise until locators reach and of travel and pull off. Push the liner on the sides where the patterns are put in the teeth of a comb and pull it out.
3. Attach the housing to the ceiling using suitable fasteners, M6x35 tapping screw are supplied only if they are suitable. Turn the housing to right direction about 16 degree to lock in place.
4. The assembly of the dome body and liner is in reverse order of disassembly. Finally, lock dome body with locking screw(M3x5) from the accessory kit.



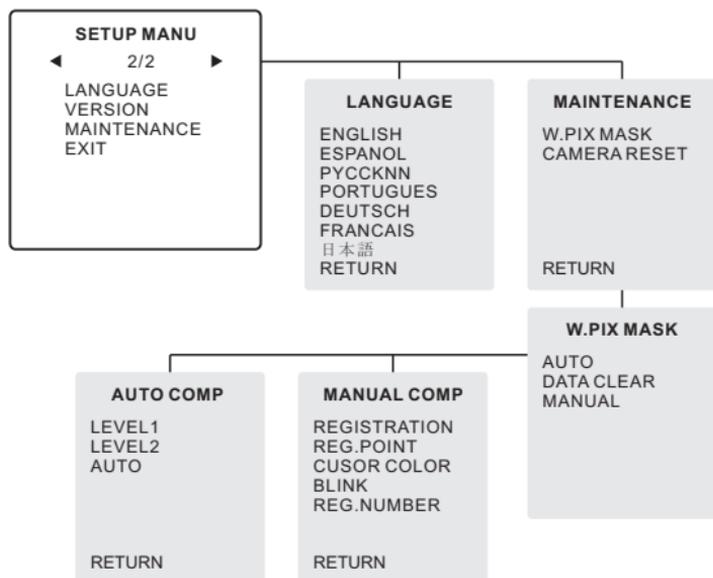
MANU MAP



MANU MAP



MANU MAP



<SETUP MENU>

1. Scene Select function

The six modes can be selected.

CUSTOM /FULL AUTO / INDOOR / OUTDOOR / BACK LIGHT / ITS

CUSTOM

This mode turns off the auto scene recognition. All functions can be set and adjusted manually

FULL AUTO

This mode supports various shooting scenes. It is not specialized to any particular scene, so it allows average shooting in any situation.

INDOOR

This mode is specialized to indoor scenes, such as indoor shop surveillance. It allows natural shooting with high contrast.

OUTDOOR

This mode is specialized to outdoor scenes, such as road surveillance. It features high contrast and resolution, and allows shooting with high visibility even in foggy outdoor conditions.

BACKLIGHT

This mode is specialized to scenes that mix indoor and outdoor conditions, such as entranceway surveillance.

It allows shooting with high visibility and a high dynamic range, even under backlighting conditions.

ITS

This mode is specialized to scenes where moving subjects enter the picture, such as traffic surveillance scenes. It allows high-resolution shooting of moving subjects with low blur.

2. Scene Select function

This Camera system provide functions that enable users to easily adjust the image quality to suit the image output device used.

Brightness - Adjusts the brightness

Contrast - Adjusts the image contrast (light and shade differences).

Sharpness - Adjusts the apparent resolution

Hue - Adjusts the hue

Color Gain - Adjusts the intensity (brilliance) of the colors

3. EZOOM (Electronic Zoom)

EZoom - ON / OFF

MAG - Magnification rate = ZOOM (0~255)

PAN - Horizontal position settings

TILT -Vertical position settings

4. DIS (Digital Image Stabilizer)

Digital Image Stabilizer (DIS) function internally detects shaking of the image due to camera shaking, and performs digital compensation processing inside the DSP to suppress this shaking and stabilize the image output.

5. PRIVACY MASK

The mask function hides one or more areas which the user does not want to be displayed on the screen. This SET is capable of outputting 15 masks to the display. Each of these 15 masks can be set with its own display area, color, darkness and mosaic processing.

AREA SEL - Select mask area (1-15).

DISPLAY - Mask to ON or OFF

POSITION

COLOR - Sets the color blend:

RED/ GREEN/ BLUE/ YELLOW/ CYAN/ MAGENTA/ WHITE/ BLACK

TRANSP - Sets the brightness blend ratio: 0%, /50%/75%/100%

MOSAIC - Sets the mosaic to ON or OFF.

6. MOTION DET (Motion Detection)

By using the motion detection function, it is possible to create surveillance cameras which are capable of detecting moving objects. The motion detection function identifies motion and outputs motion information when the difference in brightness exceeds a specific level between frames(2VD).

DETECT SENSE

Sets the motion detection threshold.

INTERVAL

Sets the MD detection interval. Subjects are detected when an interval exceeding the set number of fields has elapsed from the previous motion detection.

BLOCK DISP

Motion detection result frame display selection

Outputs the results of the motion detected in each block

MASK AREA

MD (Motion Detection) setting menu, for setting the no-detection area.

The active point (MASK AREA 1~96)is displayed. Move the point with 4-arrow keys.

Press[ENTER] key is to finish edit point. (No-detection area)

MONITOR AREA

Sets the position of the monitoring frames in pixel or line increments

7. SYS SETTING

7-1. SYNC MODE (OPTION)

External synchronization is a function with synchronization of the phase between an output video signal and an external reference signal. Use line lock mode to minimize color rolling.

INT

In this mode, synchronization is not implemented with a multiple number of cameras.

LL

In this mode, PLL is used to synchronize the vertical sync signal with the AC power supply with a power line frequency of 60 Hz (for the NTSC format) or 50 Hz (for the PAL format).

PHASE -External synchronization phase adjustment.(LL)

Note: LLC can only be used when AC power is used.

LL of DC power input state, IC operates internally(INT).

7-2. LENS

Set the lens type

AUTO Select the Lens DC Iris type

Manual Select the Lens Manual type

7-2-1. MODE

AUTO This mode controls the iris in accordance with the subject brightness.

OPEN This mode fully opens the iris.

CLOSE This mode fully closes the iris.

7-2-2. ADJUST

When performing the automatic mechanical iris adjustments, the convergence speed which is suitable for the lens installed is calculated, Shoot a high-brightness subject which will make the brightness of the whole screen uniform.

-Check that the shooting conditions are sufficiently bright and stable.

7-2-3. SPEED

Sets the convergence speed.

7-3. FLIP

Select digital Flip / Rotate state

Off / V(Top / bottom reversal) / H(Left / right reversal) / HV(Rotation by 180 degrees)

7-4. LCD / CRT

Select Monitor mode.

7-5. COMMUNICATION (OPTION)

Communication using the RS-485 format.(Option)

Press the Enter button to access the Communication.

Protocol - RS-485 protocol. (PELCO-D)

ADDRESS - Select the camera ID. (001 - 255)

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

Note. Key of Keyboard Controller

MENU Joystick Handle turn clockwise, ZOOM TELE

ENTER Joystick Handle turn clockwise, IRIS CLOSE

OSD Cursor Movement Joystick Up / Down / Left / Right

7-6. CAMERA ID

CAMERA ID SETUP.

Sets the camera ID to ON or OFF. A title of 64

Characters per line can be applied.

Use the joystick to navigate the cursor.

Pushing centrally on the joystick will allow selection of that character.

The arrows at the bottom allow you to move the cursor without changing the character.

CAMERA ID

CAMERA ID

ABCDEFGHIJKLMNOPQRSTUVWXYZ
0123456789'-!@#%&*'()-_ =+<.>.:;'"

← ↑ ↓ → CLR POS

RETURN

CLR

Inserts a space

POS

Allows you adjust the location of the camera ID title display. (if you move too much right side or down, it might lose ID on the screen)

8. EXIT-MENU

SAVE Save the settings (settings are saved)

NOT SAVE Exit
Menu without saving SAVE : Exit menu without saving.

CANCEL Changes (restore settings to those selected when the menu was displayed)

BACK Return to previous menu

RETURN Return to page on the hierarchical level immediately before.

9. LANGUAGE

LANGUAGE select between:

English, Spanish, Russian, Portuguese, German, French, Japanese.

10. VERSION

Camera version information.

11. MAINTENANCE

W.PIX MASK

White pixel compensation menu. The white pixel detection and compensation function can automatically detect and compensate up to 64 white pixels.(Static detection)

AUTO

This mode performs the optimal operation for detecting white pixels, and automatically detects the white pixels of CCD image sensors.

LEVEL1 - Normal Defect

The threshold adjustment of the white pixel detection

LEVEL2 - Large Defect

The threshold adjustment of the very large white pixel detection

AUTO Press Enter button to turn White Pixel Compensation mode Start.

RUN Press Enter button to start White Pixel Compensation start.

RUNNING Process to find white pixel.

SBC SUCCESS Process ended.

MANUAL

- REGISTRATION

Manual white pixel defect information registration

- 1) Press the Enter button to turn White pixel compensation position marker display.
- 2) Use the Arrow buttons align the marker with the position of the white pixel.
- 3) Press the Enter button to exit and Press the EXIT button to save.

Note : In manual detection mode, the detection data is always treated as a very large white pixel. Up to 64 white pixel compensation.

- NEXT REGISTRATION

Continue with manual white pixel compensation settings

- REG.POINT

Selects whether to display the registered White or Black pixels

- CURSOR COLOR

Cursor color during manual defect registration

- BLINK

Cursor display blinking during manual defect registration

- REG.NUMBER

Registered white pixel defect count display

- DATA CLEAR

Initializes the white pixel compensation information

Select erasing white pixel function to press Enter button (YES)

<ADVANCED MENU>

12. SHUTTER / AGC

AEME (Auto Exposure / Manual Exposure) selection, shutter / AGC
This type of control adjusts the exposure amount using the shutter speed.

12-1. AUTO

Exposure control is performed automatically.

AE LEVEL (Auto Exposure Level)

AE performs exposure control so that the OPD output level (evaluation value) is the target brightness level (AE reference level). This control is called AE gain control.

AGC MAX

Maximum gain setting item in shutter priority mode AGC (Auto Gain Control)
This type of control adjusts the exposure amount during CCD signal input by applying AFE gain

SENS UP (Slow Shutter)

Low-brightness sensitivity enhancement menu
Select maximum Slow-Shutter (AUTO and Off)

12-2. MANUAL

Exposure control is performed manually.

12-3. FIX

Exposure control is stopped. AE does not track even if the subject brightness changes.

13. WHITE BAL

Compensates for deviations in the white colour caused by changes in the colour temperature of the light source so that the colours are reproduced correctly.

ATW - ATW mode (1800°K ~10500°K)

Performs indoor / outdoor identification, estimates the light source, and performs WB control automatically.

Push (Full pull-in)

This control is resistant to the effects of deeply colored subjects. The PUSH function performs WB control automatically regardless of the indoor/outdoor and light source conditions. Compensation may be performed incorrectly since this control is easily affected by deeply colored subjects.

USER1

The USER1 functions set the WB gain in accordance with preset values. (3200°K)
WB control does not track even if the subject color temperature changes.
Adjust red or blue gain.

R(R-GAIN):Adjust R-GAIN value (0-255)

B(B-GAIN):Adjust B-GAIN value (0-255)

USER2

The USER2 functions set the WB gain in accordance with preset values. (5800°K)
WB control does not track even if the subject color temperature changes.
Adjust red or blue gain.

R(R-GAIN):Adjust R-GAIN value (0-255)

B(B-GAIN):Adjust B-GAIN value (0-255)

MANUAL

MWB allows WB control to be performed manually following the black body radiation curve. The configurable color temperature setting range is 1500K to 15000K. The setting can be performed in 64 steps.

PUSH LOCK

Holds the all pull-in frame The **PUSH LOCK** function first transfers to PUSH mode and performs pull-in operation, and then transfers to HOLD mode when pull-in is complete.

14. HLC / BLC

HLC (Highlight Compensation)

HLC luminance signal processing is a function that suppresses or masks the luminance signal. It reduces the load on watchers' eyes and enhances visibility impaired by strong light sources or other factors by performing output while suppressing the brightness of high-brightness areas.

CLIP LEVEL HLC mask level

BLC (Backlight Compensation)

The BLC function provides compensation by increasing the brightness of the overall screen so that subjects being shot with a loss of dark detail due to backlight will have just the right brightness level.

15.ATR-EX

CONTRAST(LOW/MID/HIGH) Contrast adjustment gain

CLEAR FACE(OFF/ LOW/MID/HIGH) High-frequency component adjustment gain

ATR-EX(Extended)

The ATR function provides gradation compensation with the aim of improving visibility. It compensates to the optimum gradation on the basis of the luminance information.

This function compresses the dynamic range while storing the contrast component of the subject.

16. DNR

Used to reduce image noise in order to improve the image quality of the camera.

It reduces the noise which is generated under low-light conditions and other high-gain states.

LEVEL Adjusts the NR (3D+2D) strength (0~6)

17. DAY/NIGHT

17-1 AUTO

Camera automatically switches between Day&Night modes according to the D>N & N>D levels.

BURST : Select B/W Burst On/Off

CNTL SIGNAL

Selection of brightness reference for identifying Day/Night Control Signal.

INT ILM levels

EXT1 external sensor inverting.

EXT2 external sensor non-inverting.

Ext : Camera switches between Day & Night modes according to the D/N EXT input.

(ILM level or GPI Cable)

Delay CNT : Adjust the judgment time for the transition between the Day and Night. (0-255).

DAY>NIGHT Level : Select switching level Day to Night (0-255).

NIGHT>DAY Level : Select switching level Night to Day (0-255)

Day : Camera stays in Day mode (Color)

Night : Camera stays in Night mode (B/W)

18. IR OPTIMIZER (OPTION)

If, when the Night operation mode of the Day/Night function is established, the mode is used together with an external infrared LED light source, excessive front lighting may be generated, resulting in overexposure.

18-1. IR OPTIMIZER SETUP

MODE(IR Model only)

IR optimizer photometry mode selection

IR AREA

IR optimizer judgment area setting menu in spot photometry mode

LEVEL

IR optimizer intensity(0~12)

IR LED(IR Model only)

OFF LED light level is LOW

FIX Adjust LED light level (0~255).

DAY/NIGHT LED light level determinate AE reference level

COLOR NIGHT

The Color Night Mode (CNM) function allows images to be taken as color images even with infrared LED floodlighting under low-brightness conditions.

This Camera System feature a function that achieves both improved sensitivity and the ability to reproduce colors under infrared LED floodlighting using signal processing that separates the infrared LED light components from the images taken and extracts the original colors of the subject. This function takes effect during Night operations.

COLOR GAIN LOW/MID/HIGH

IR SHADE COMP (IR Model only)

The IR-SHD function compensates for observable events in which the light passing through the lens is imaged non-uniformly.

Shading function ON/OFF selection

PATTERN

Selects the shape of the ellipse (HIGH/MID/LOW)

POSH / POSV

Use the center coordinate settings to adjust the shading compensation to the center position of the optical axis.

LEVEL

The compensation level can be set to low, medium or high for basic shading compensation data.

19. LENS SHD COMP

The LENS SHD function compensates the lens is imaged non-uniformly.

PATTERN

Selects the shape of the ellipse (HIGH/MID/LOW)

POSH / POSV

Use the center coordinate settings to adjust the shading compensation to the center position of the optical axis.

20. DEFOG

Defogging function ON/OFF selection. The defog function raises the contrast to improve visibility. For example, in foggy conditions, contrast is reduced and visibility drops. In such cases, enabling the defog function prevents a drop in contrast. In addition to compensating for contrast, compensation is also made for the saturation, edges, and 3D-NR moving body identification threshold. The defog compensation strength can be set to three levels (Low, Mid, High) using the Auto function.

21. FLK LESS

Flickerless function ON/OFF selection

MODE

- GAIN CNTL** Selects gain modulation ON.
SHUTTER FIX Selects flickerless shutter fix ON.

22. ANTI CR (Anti color-rolling)

Anti color-rolling mode is valid when the AEME parameter is set to AE. When the parameter is set to HOLD, the status of the previous field is maintained.

Users can select from the following anti color-rolling modes.

- AUTO** Anti color-rolling is automatically detect and compensate
ON Anti color-rolling is always compensate
OFF Anti color-rolling is not compensate

When the Auto anti color-rolling mode is selected, then the auto flickerless mode is turned on at the same time.

*Note Coaxial Communication (32 Bit)

Recommendation Controller can communicate with camera through the BNC port.

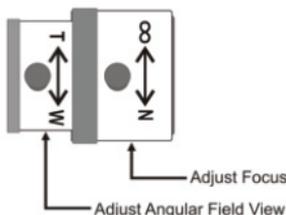
Recommendation controller

- Coaxial Remote Controller : RM-1000

Lens Adjustment

Field of View: Adjust setting from Tel ephoto (T) to wide (W) for Field of View.

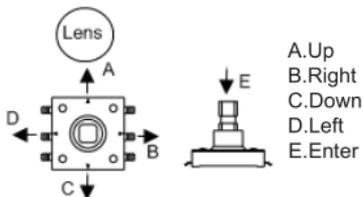
Focus: Adjust lens focus from near (N) to infinity(∞).



DC Autoiris Lens	2.8~12mm
Image Size	1/3" CCD
Focal Length	2.8~12mm 5%
Ape.Ratio	1:1.4 5%
Angular Field of View (Degree)	DIAGONAL 2.8mm : 119.9 12mm : 28.8

Camera Operation

After all cabling is complete, the camera and lens can be setup. The camera/lens is set through an OSD menu system using a joystick control.



Camera Control Joystick

There is a joystick control in the camera base that is used to enter the osd for camera settings. This is used to navigate the osd for camera setup.

SPECIFICATIONS

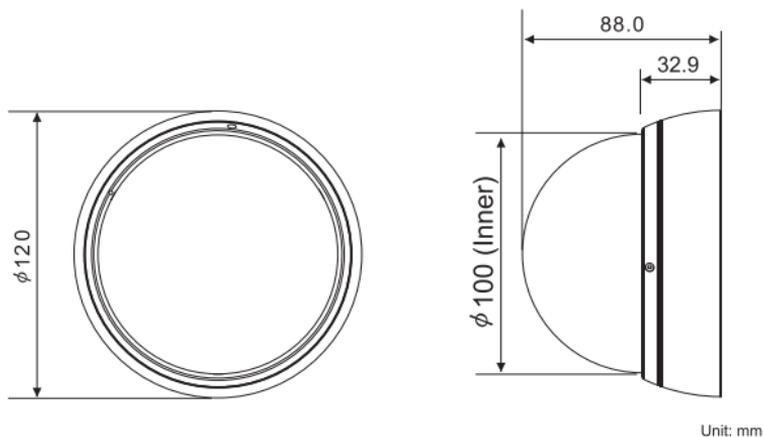
MODEL		NTSC	PAL	
Power	Power source	DC12V/AC24V +/- 10% (Option)		
	Power consumption	AC24V / DC12V - 180mA(2.2W) DC12V - 170mA(2.1W)		
General	Image sensor	1/3" Super-HADII 960H CCD		
	Total pixels	1028(H)x508(V)	1028(H)x596(V)	
	Effective pixels	976(H)x494(V)	976(H)x582(V)	
	Scanning system	2:1 interlace		
	Scanning frequency	15.734KHz(H) x 59.94Hz(V)	15.625KHz(H) x 50Hz(V)	
	Sync. system	Internal / Line Lock (Option)		
	Resolution	750TVL		
	Min. illumination	0.1 Lux(Color), 0.01 Lux(B/W), 0.001 Lux(Slow-shutter)		
	Video Output	1.0 Vp-p (75 ohm, Composite)		
	S/N Ratio	50dB (AGC off)		
	Camera Control	Tact Switch, Coaxial COMM(32BIT), RS485(Pelco D)-Option		
	F U N C T I O N	Lens	DC / MANUAL	
		Scene Select	CUSTOM / FULL AUTO / INDOOR / OUTDOOR / BACKLIGHT / ITS	
		White Balance	ATW/ PUSH/ USER1/ USER2/ MANUAL/ PUSH LOCK	
		AGC	6~44.8DB	
		Shutter Speed	1/60-1/100,000 sec.(Auto)	1/50-1/100,000 sec.(Auto)
		BLC	OFF / HLC / BLC	
		Camera Title	Alpha Numeric	
		DNR	2DNR, 3DNR : Gain Adjust	
		Day & Night	Auto / Day / Night	
IR Optimizer		OFF / ON		
Color Night		OFF / ON		
Privacy zone		Max 15 (Tilt, Colour, Transparency, Mosaic)		
Effect		V-Flip / Mirror / Rotation / Nega&Posi / Freeze / Sharpness		
Sens-up		OFF / AUTO		
Sharpness		0~15 steps		
DWDR		OFF/ATR-EX (LOW/MID/HIGH)		
E-Zoom		OFF / 0 ~ x255(E-Zoom) / PAN/TILT		
Bad Pixel		AUTO/MANUAL/Done (Max 64 point), Detected pixel display		
MOTION		Detect Sense/Interval/Block DISP/Mask Area/Monitor Area		
Auto-color-roling	Auto / ON / OFF			
LANGUAGE	English, Spanish., Russian, Portuguese, German, French, Japanese(OPTION)			
Connector & etc.	Power input	2P WIRE / DC Jack(option)		
	Video output	BNC		
	Lens	f=2.8~12mm F1.4~360 Varifocal, ICR (D&N)		
	Lens Mount	Fixed Mount		
	Operating temp.	14°F ~ 122°F (-10°C ~ +50°C)		
	Operating humidity	0 ~ 96% (non-condensing)		
	External Dimension	66(W) x 63(H) x 120(D) mm		
Weight	400g			

● IR CAMERA TYPE

Power	Power consumption	AC24V / DC12V - 370mA(4.4W) DC12V - 360mA(4.3W)
	Min. illumination	0.1 Lux(Color), 0 Lux(B/W) IR LED ON @ F1.2, 50IRE
General	IR LED / Sensor	IR LED 24EA (850 nm / 76degree), Sensor 1EA
	LED Lighting Distance	25M
Etc.	Weight	415g

EXTERNAL DIMENSION

Dimensions



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: 0.88 lb (0.4kg)
Shipping: 1.41 lb (0.64kg)