

INSTRUCTION MANUAL

GLOBAL SHUTTER FULL HD MEGA PIXEL IP BOX CAMERA

Distributed by

P/N :
PRINTED IN KOREA

- Before attempting to connect or operate this product, please read these instructions carefully and save this manual for future use.
- The design and specifications are subject to be changed without prior notice to improve product's quality.



CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN



CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK
DO NOT REMOVE COVER (OR BACK)
NO USER SERVICEABLE PARTS INSIDE
REFER SERVICING TO QUALIFIED
SERVICE PERSONNEL

REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with an 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.

FCC WARNING - This equipment may generate or use radio frequency energy. Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction

manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

REGULATORY INFORMATION : FCC Part 15

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.

- A suitable conduit entries, knock-outs or glands shall be provided in the cable entries of this product in the end use.

- Holes in metal, through which insulated wires pass, shall have smooth well rounded surfaces or shall be provided with brushings.

WARNING - Do not install this equipment in a confined space such as a bookcase or similar unit.

WARNING - Wiring methods shall be in accordance with the National Electric Code, ANSI/NFPA 70.

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.

WARNING - To reduce a risk of fire or electric shock, do not expose this product to rain or moisture.

CAUTION - This installation should be made by a qualified service personnel and should conform to all local codes.

CAUTION - To avoid electrocution, do not open the cabinet. Refer servicing to qualified personnel only.

CAUTION - The apparatus should not be exposed to water (dripping or splashing) and no objects filled with liquids, such as vases, should be placed on the apparatus.



Disposal of your old appliance


1. When this crossed-out wheeled bin symbol is attached to a product it means the product is covered by the European Directive 2002/96/EC
2. All electrical and electronic products should be disposed of separately from the municipal waste stream via designated collection facilities appointed by the government or the local authorities
3. The correct disposal of your old appliance will help prevent potential negative consequences for the environment and human health
4. For more detailed information about disposal of your old appliance, please contact your city office, waste disposal service or the shop where you purchased the product.

To disconnect power from the mains, pull out the main cord plug. When installing the product, ensure that the plug is easily accessible.

IMPORTANT SAFETY INSTRUCTIONS

- 1. Read these instructions** - All these safety and operating instructions should be read before the product is operated.
- 2. Keep these instructions** - The safety, operating and user instructions should be retained for future reference.
- 3. Heed all warnings** - All warnings on the product and in the operating instructions should be adhered to.
- 4. Follow all instructions** - All operating and user instructions should be followed.
- 5. Do not use this apparatus near water** - For example : near a bath tub, wash bowl, kitchen sink, laundry tub, in a wet basement, near a swimming pool, etc.
- 6. Clean only with dry cloth** - Unplug this product from the wall outlet before cleaning. Do not use liquid cleaners.
- 7. Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.** - Slots and openings in the cabinet are provided for ventilation, to ensure reliable operation of the product, and to protect it from overheating. The openings should never be blocked by placing the product on a bed, sofa, rug or other similar surface. This product should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided and the manufacturer's instructions have been adhered to.
- 8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.**

IMPORTANT SAFETY INSTRUCTIONS

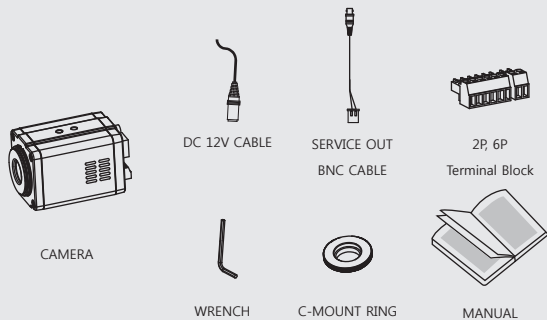
- 9. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.**
- 10. Only use attachments/accessories specified by the manufacturer.**
- 
- 11. Unplug this apparatus during lightning storms or when unused for long periods of time.**
- 12. 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 spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

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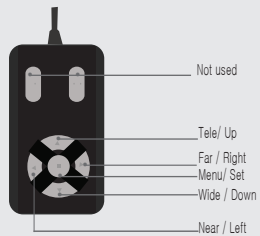
Features

- 1/1.8" Sony Global Shutter CMOS Image Sensor
- Full HD Resolution
1920x1080p / 60fps(50fps), 1920x1080p / 30fps(25fps)
1280x720p / 60fps(50fps), 1280x720p / 30fps(25fps)
- DNR(Digital Noise Reduction, 2D+3D)
- DSS(Digital Slow Shutter)
- Defog Function
- HLC(High Light Compensation)
- Privacy mask Function
- On Screen Display
- Network, HD-SDI, EX-SDI, CVBS video output
- C/CS mount lens & DC Iris lens applicable
- AD Key port for wired remote controller
- Remote control via RS-485
- Supports External trigger input and Strobe output

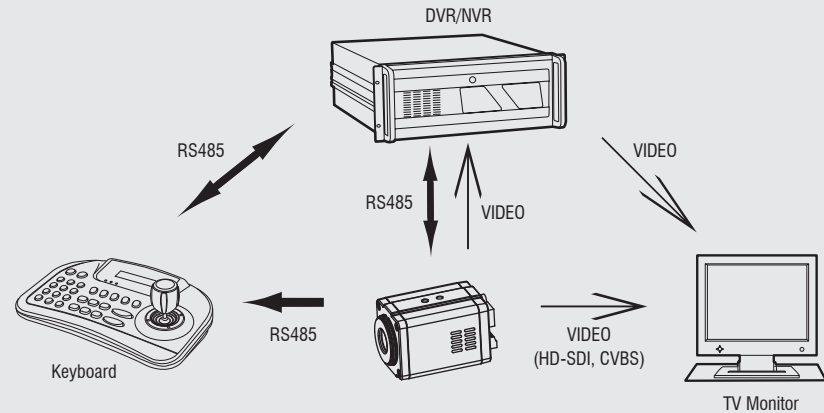
PACKAGE COMPONENTS



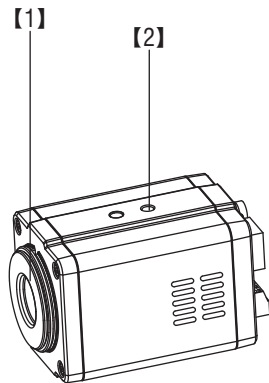
[Optional Remote Controller]



SYSTEM CONFIGURATION



PART NAMES AND FUNCTIONS



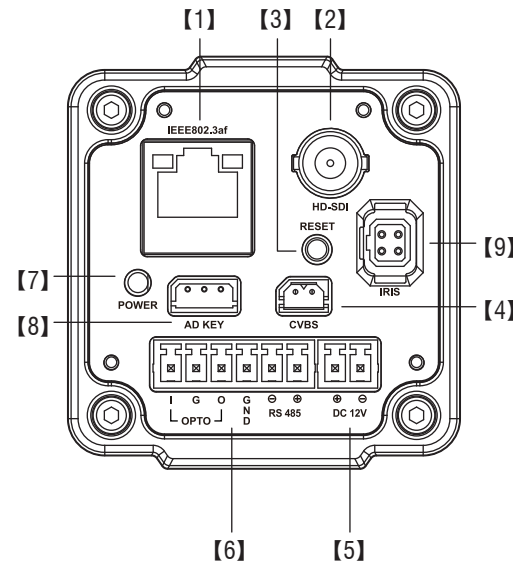
【1】 Lens mount cap

The cap is installed to protect the lens mount section. Remove the lens mount cap before installing a lens. (sold separately)

【2】 Camera installation bracket

The bracket can be fixed at the top or bottom of the camera.

PART NAMES AND FUNCTIONS



【1】 IEEE802.3af PoE/LAN

【2】 HD-SDI Out

【3】 IP RESET

【4】 CVBS Out

【5】 Power : DC12V

【6】 Control Terminal

1. OPTO - I : Trigger Input

2. OPTO - G : Isolated Ground(Trigger/Strobe)

3. OPTO - O : Strobe Out

4. GND : Ground

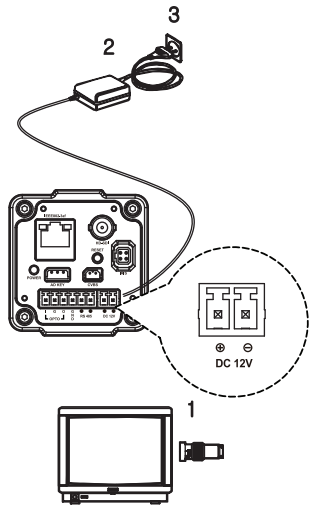
5. RS-485(-)

6. RS-485(+)

【7】 Power LED

【8】 AD Key : OSD Control

【9】 DC Auto IRIS Control



Connect video output(BNC / LAN) to the monitor or PC or NVR.

Basic connection

The peripheral devices (DVR, monitor, lens, etc), DC adaptor and cables are not supplied.

1. Connecting the monitor.

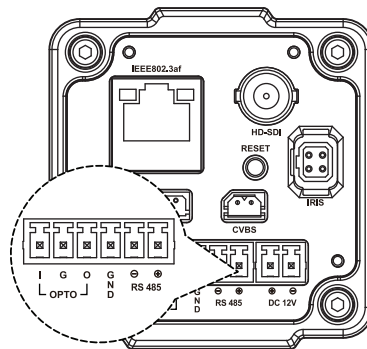
Make the video signal connection between the camera and the monitor or DVR/NVR.

2. Use a commercially available DC12V adaptor.

Connect DC 12V power source to the DC 12V input terminal or using 802.3af PoE power with network connection.

3. Insert the plug of this power cord into a wall outlet.

The POWER indicator will light. Adjust the picture on the monitor using the Brightness and Contrast controls etc.



RS-485 COMMUNICATION

Connect to an external controller of RS-485 format.

Note : Use a relay unit if the voltage or current of the connected device exceeds the ratings.

OPTD : External trigger input and stobe output.

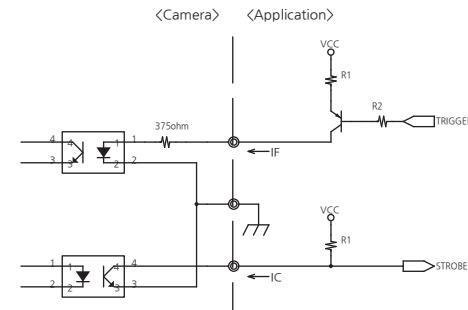
PIN	Signal Name	PIN	Remark
I	Trigger Input	Anode of opto coupler(*)	
G	Trigger/Strobe Return	Cathode of opto coupler Emitter of opto coupler	Isolated ground
O	Strobe Out	Open Collector of opto coupler	

(*) Serial resistors 375Ω inside camera

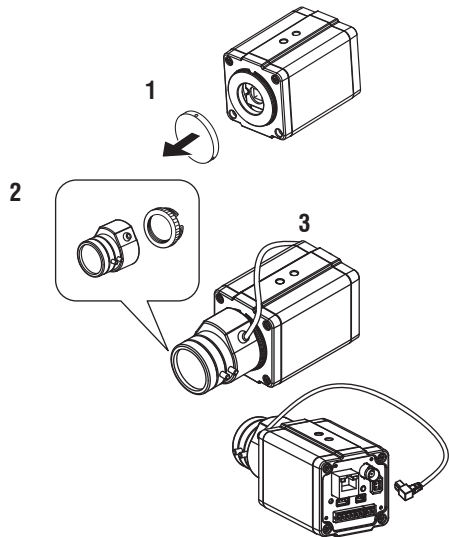
※ The recommended termination circuitry is drawn below

- A current of 2.5mA is recommended for the strobe output.

- For the trigger input a current of 10mA is recommended.



MOUNTING THE LENS



1. Remove the lens mount cap from the camera.

2. Install the auto-iris lens.

CS Mount Lens

Install the CS Mount Lens by attaching the lens straight to the camera lens holder then slowly turn the lens until it is in place.

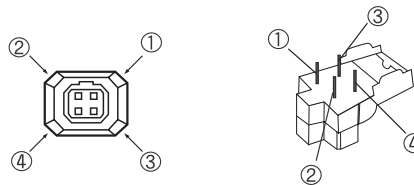
3. Connect the lens plug to the lens iris output connector (LENS) on the rear of the camera.

When using lenses from other makers, the plug shape may not correspond to the terminal on the camera.

In such a case, remove the original plug and using a soldering iron, connect a lens iris plug according to the diagram. (Refer to next page.)

MOUNTING THE LENS

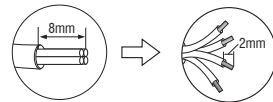
Pin layout for the lens iris output connector



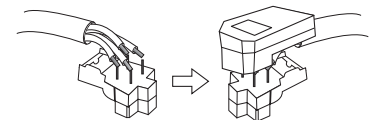
No.	DC type lenses
1	Damping -
2	Damping +
3	Drive +
4	Drive -

Rewire the lens iris plug

1. Cut off the plug of the lens cable, cut off approximately 8mm of the insulation, and then strip approximately 2mm of the ends of the cable sheaths.

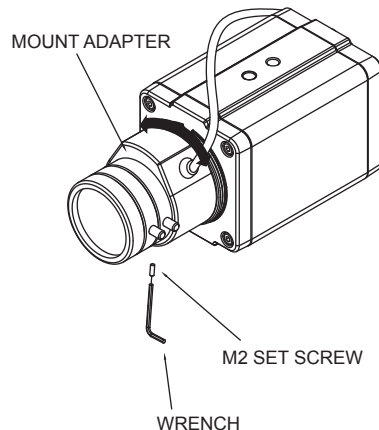


2. Solder the ends of the cable wires to the ends of the pins, and then attach the cover of the lens iris plug.



FLANGE-BACK ADJUSTMENT

The adjustment is required only when a lens without focus-adjusting mechanism is mounted, or when a lens with adjusting mechanism is mounted and focus that is more accurate is needed.



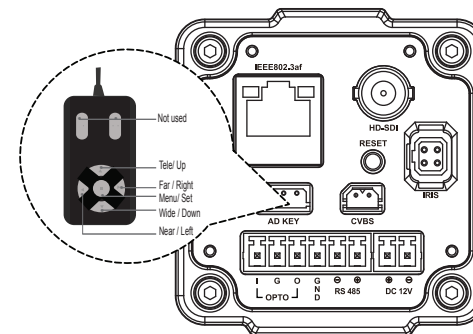
1. With the included Wrench unscrew the Set Screws on the right and bottom of the camera.
2. Adjust the focus while watching the video by adjusting the Mount Adapter.
3. After adjusting to the desired focus level use the included Wrench to fasten the Set Screws.

Note :

The object may be out of focus when using a source of near-infrared light than using the visible light.

MENU OPERATION

This camera utilizes an on-screen user MENU. To set items on the menu, use the remote controller.



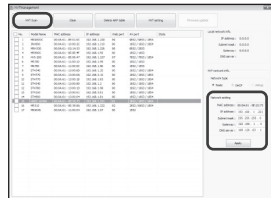
- Tele(Up) button : Zoom in, Tele (Moves the cursor upwards. Use this button to select an item or adjust the parameters.)
- Wide(Down) button : Zoom out, Wide (Moves the cursor downwards. Use this button to select an item or adjust the parameters.)
- Far(Right) button : Adjust focus in Manual Mode (Moves the cursor to the right. Use this button to select or adjust the parameters of the selected item. The parameter changes each time this button is pressed.)
- Near(Left) button : Adjust focus in Manual Mode Moves the cursor to the left. Use this button to select or adjust the parameters of the selected item. The parameter changes each time this button is pressed.)
- Set button : Executes selections and displays a submenu for an item with the mark.

Setting IP address

Using NVTManagement enables to set network settings.

1. Excute NVTManagement. 2. Setting IP address

- Double click NVTManagement.exe
- Click NVT Scan button to find IP cameras than select the camera.
- Input IP address, net mask, gateway and name server address than click Apply button.
- If you have any network information about your network, please ask to your network administrator.



3. Access the camera using web browser.



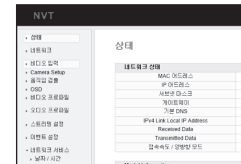
※ Please contact your vendor for the Login IP&Password.

4. Camera setting

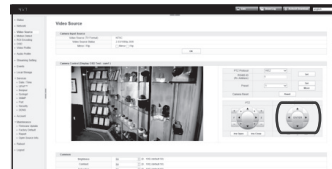
4. 1 Go to setting menu as below.



4. 2 Click Video Source.



4. 3 Go to Camera Control section.



Click Enter button to call OSD menu.

Adjust camera setting using OSD menu.

For more information, please refer the following OSD setting manual.

Camera menu is subject to be changed without prior notice to upgrade and quality increase and we may use slip sheet for the change.
Please check the camera version and the slip sheet if the camera menu and this manual menu is not matched.

MAIN MENU

MENU		
TRIGGER		└
EXPOSURE		└└
WHITE BAL		└└└
IMAGE		└└└└
INTELLIGENCE		└└└└└
SPECIAL FUNC		└└└└└└
DISPLAY		└└└└└└└
[EXIT]	[SAVE]	[DFLT]

Functions can be setup using “Menu Key Command” of Visca protocol.

The menu consists of the “Main Menu” and “Sub Menu”.
The main menu is displayed where 7 camera functions can be selected.

To the push of each main menu selection, the sub-menu is displayed

If you want save the menu, select [SAVE]

If you want not save the menu, select [EXIT]

(After select , Power off → on)

If you want default the menu, select [DFLT]

※ In case of M(Monochrome) model, color related menu items will not be supported.

TRIGGER

MENU			TRIGGER		
TRIGGER		└	Trigger Mode		---
EXPOSURE		└└	TrigIn Polari		---
WHITE BAL		└└└	StrOut Polari		OFF
IMAGE		└└└└	ExtTrig Delay		---
INTELLIGENCE		└└└└└	Strobe Delay		0
SPECIAL FUNC		└└└└└└	Strobe Width		1
DISPLAY		└└└└└└└			
[EXIT]	[SAVE]	[DFLT]	[BACK]	[SAVE]	[DFLT]

※ This ‘TRIGGER’ menu should set the ‘MODE’ of the ‘EXPOSURE’ menu to ‘MANUAL’

◆ Trigger Mode : Select trigger mode ► FreeRun / ExtTrig

▷ FreeRun : Continuous image output mode

▷ ExtTrig : External trigger synchronous image output mode

◆ TrigIn Polari : Trigger Input Polarity ► OFF / ON

◆ StrOut Polari : Strobe Output Polarity ► OFF / ON

◆ ExtTrig Delay : External Trigger Delay ► 0 ~ 255 steps ▷ 1step = 1ms

◆ Strobe Delay : Strobe Output Delay

► 1 ~ 29 steps : FreeRun Mode (@ 30fps) ▷ 1step = 1ms

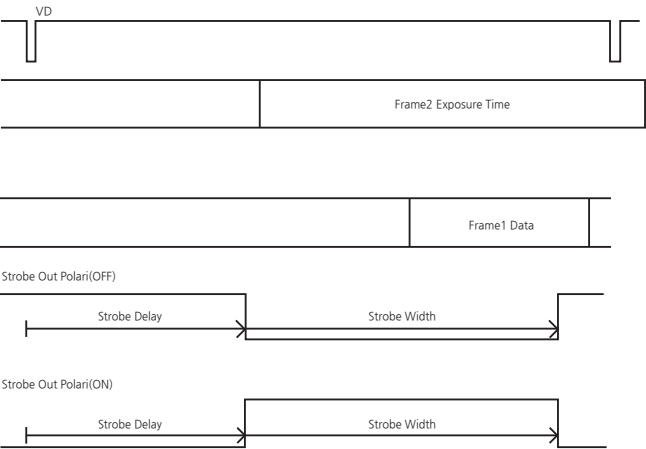
► 0 ~ 255 steps : Trigger Mode ▷ 1step = 1ms

◆ Strobe Width : Strobe Output Width

► 1 ~ 33 steps : FreeRun Mode (@ 30fps) ▷ 1step = 1ms

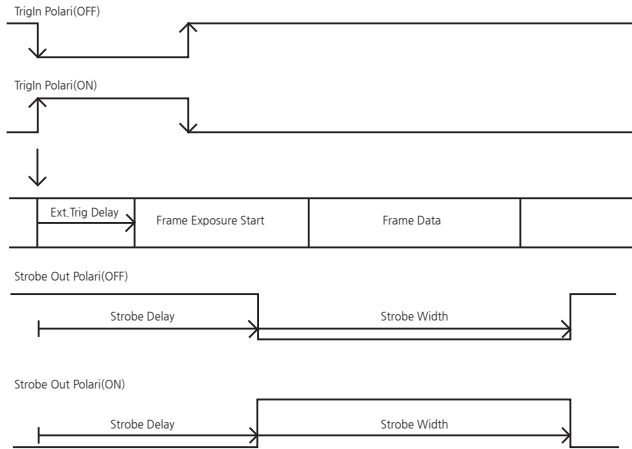
► 1 ~ 255 steps : Trigger Mode ▷ 1step = 1ms

Timing Chart : FreeRun Mode



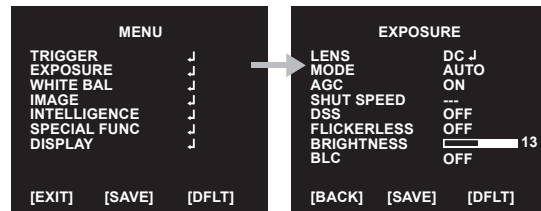
<FreeRun Mode>

Timing Chart : Ext. Trig Mode



<Ext.Trig Mode>

EXPOSURE



- ◆ LENS : Select LENS type
 - ▶ DC / MANUAL
 - ▷ DC lens mode : Include IRIS
 - ▷ Manual lens mode : Except IRIS
- ◆ MODE : Select AE type
 - ▶ AUTO / SHUTTER.PRIORITY / MANUAL
- ◆ AGC : Select Auto Gain Control
 - ▶ OFF / ON
 - ▷ Manual Gain
 - Analog gain : 0dB, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 26, 27dB
 - Digital gain : d3X,5,7,9,11,13,15,17,19,21,23,25,27,29,31,d33X
 - ISP gain : PG 1

- ◆ SHUT SPEED : Can be set in SHUT.P or MANUAL
 - ▶ SHUT.P / MANUAL
 - ▷ Manual Shutter Speed
 - * 30 / 25 fps mode
 - : 1/30(25), 1/60(50), 1/120(100), 1/180(150), 1/240(200), 1/300(250), 1/500, 1/1000, 1/2000, 1/5000, 1/10000 sec
- ◆ DSS : Select maximum DSS(Digital Slow Shutter)
 - * 30 / 25 fps mode
 - ▶ OFF / x2, x3, x4, x5, x6, x7, x8, x9, x10, x12, x15
- ◆ FLICKERLESS : Select Flickerless mode
 - ▶ OFF / ON (remove screen flicker)
- ◆ BRIGHTNESS : Adjust brightness level
 - ▶ 0(dark) ~ 20(bright) steps
- ◆ BLC : Select BLC(Back Light compensation)
 - ▶ BLC,┐
 - ▷ POSITION : Adjust the window position
 - ▷ SIZE : Adjust the window size
 - ※ Can't use MD&PM, HLC and BLC at the same time.
(When MD&PM, HLC On, BLC is Off. And when BLC is On, others is Off)

WHITE BALANCE



◆ AWB : Select WHITE BALANCE mode

▶ AUTO / ONE PUSH ↵ / MANUAL / INDOOR / OUTDOOR

- ▷ AUTO : Automatically adjusts color according to the available lighting.
- ▷ ONE PUSH : It is a fixed white balance mode that may be automatically readjusted only by pressing ONE PUSH
- ▷ MANUAL ↵ : Color can be corrected when the user increases or decreases "RED GAIN" or "BLUE GAIN".
- ▷ INDOOR : Set color temperature to be Indoor light (3700°K)
- ▷ OUTDOOR : Set color temperature to be Outdoor light (5100°K)

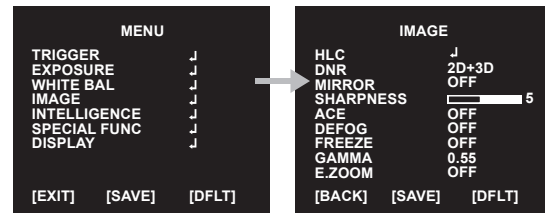
◆ RED GAIN : Adjust R gain value ▶ 0 ~ 20 steps

◆ BLUE GAIN : Adjust B gain value ▶ 0 ~ 20 steps

◆ CHROMA : Adjust CHROMA gain value ▶ 0 ~ 20 steps

◆ HUE : Adjust HUE gain value ▶ 0 ~ 20 steps

IMAGE



◆ HLC : Select High Light Compensation.

When extremely bright light is projected to the camera masking is used on the portion to prevent partial saturation on the monitor.

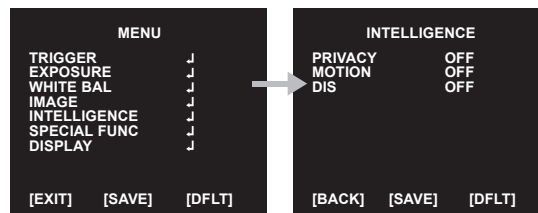
- ▷ MODE : OFF / ON ▷ LEVEL : 0 ~ 20 steps
- ▷ POSITION : Adjust the window position ▷ SIZE : Adjust the window size
- ※ Can't use MD&PM, HLC and BLC at the same time.
(When MD&PM, HLC On, BLC is Off. And when BLC is On, others is Off)

◆ DNR : Select Digital Noise Reduction

- ▶ OFF / 2D / 3D / 2D+3D
- ▷ LEVEL : AUTO / LOW / MIDDLE / HIGH

- ◆ MIRROR : Select a flip mode
 - ▶ OFF / H / V / H&V
 - ▷ H : You can flip the picture horizontally on the screen
 - ▷ V : You can flip the picture vertically on the screen
 - ▷ H&V : You can flip the picture horizontally & vertically on the screen
- ◆ SHARPNESS : Adjust sharpness level
 - ▶ 0 ~ 10 steps
- ◆ ACE : Select Digital WDR (Wide Dynamic Range)
 - ▶ OFF / MANUAL ↵ ▷ LEVEL : 0 ~ 11 steps
- ◆ DEFOG : Carry out defog function
 - ▶ OFF / MANUAL ↵ ▷ LEVEL : 0 ~ 11 steps
- ◆ Freeze : Select real or still mode
 - ▶ OFF / ON
- ◆ GAMMA : Select GAMMA
 - ▶ 0.45 / 0.55 / 0.65 / 0.75
- ◆ E.ZOOM
 - ▶ OFF / ON ↵
 - ▷ LIMIT : Max x1.0 ~ x6.0
 - ▷ POSITION : Select maximum digital zoom magnification.

INTELLIGENCE



- ◆ PRIVACY : Hide an area you want to hide on the screen
 - ▶ OFF / ON ↵
 - ▷ MASK# : Select mask area number (1 ~ 8)
 - ▷ MODE : Mask enable or disable (OFF / ON)
 - ▷ POSITION : Adjust the mask position
 - ▷ SIZE : Adjust the mask size
 - ▷ COLOR : Select mask color (0 ~ 14)

◆ MOTION : When there is movement of the subject in the screen, there will be an motion detection

▶ OFF / ON,↵

- ▷ AREA# : Setting 4 areas(1~4) of motion detection
- ▷ MODE : OFF / ON (Limit and define areas of motion detection)
- ▷ AREA DISPLAY : OFF / ON (Event areas of motion detection)
- ▷ POSITION : Adjust the Area position
- ▷ SIZE : Adjust the Area size
- ▷ MOTION VIEW : Show the detection event
- ▷ SENSITIVITY : Adjust sensitivity of MD (0 ~ 35 steps)
More sensitive to setting to high step with sensitivity
- ▷ INTERVAL TIME : Select the alarm interval time of Motion Detection Out (0 ~ 255sec)
- ▷ DWELL TIME : Select the duration time of Motion Detection Out about changing MD mode (0 ~ 255sec)

◆ DIS : Select Digital Image Stabilizer mode

▶ OFF / ON

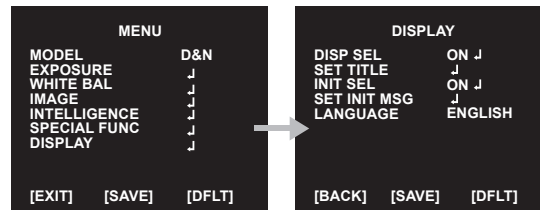
SPECIAL FUNC

MENU		SPECIAL FUNC	
TRIGGER	J	LENS SHADING	OFF
EXPOSURE	J	DEFECT	ON J
WHITE BAL	J	SYSTEM	NTSC
IMAGE	J	HD FORMAT	1080p/30fps
INTELLIGENCE	J	EX-SDI	OFF
SPECIAL FUNC	J	Out Select	IP/SDI
DISPLAY	J	COMM	J
		COMM IP	J
[EXIT] [SAVE] [DFLT]		[BACK] [SAVE] [DFLT]	

- ◆ LENS SHADING : Improve light fall-off observed towards the edges of an images.
- ◆ DEFECT : Compensates for bad pixels that may occur. Occurs when the whole screen is in full black or if there is bad pixelation and it changes the THRS values until the screen is fixed.
- ◆ SYSTEM : Select NTSC(60/30fps) or PAL(50/25fps).
- ◆ HD FORMAT : Select Digital output (1080p 60/50/30/25fps, 720p 60/50/30/25fps)
- ◆ EX-SDI : Select EX-SDI mode.
OFF (HD-SDI) / 270M V1.0 / 135M V2.0
- ◆ Out Select : Select signal output
IP/SDI, IP/CVBS, SDI/IP, SDI/CVBS
- ※ CVBS↔BT.1120 mode change hotkeys are “Left-Left-Left-Right”

- ◆ COMM / COMM IP : Set up the camera ID, baud rate, protocol
 - ▷ ID : Select the camera ID
 - ▶ 1 ~ 255
 - ▷ BAUD RATE : Select serial communication speed
 - ▶ 2400 / 4800 / 9600 / 19200 / 38400 / 57600 / 115200bps
 - ▷ PROTOCOL : Select operating protocol
 - ▶ VISCA / PELCO-D / PELCO-P

DISPLAY



- ◆ DISP SEL : Select display item.
 - ▶ OFF / ON, ↓
 - ▷ ID : OFF / ON ▷ TITLE : OFF / ON
 - ▷ ZOOM RATIO : OFF / ON ▷ SYSTEM MSG : OFF / ON (MD Alarm and Wait message)
- ◆ SET TITLE : Select camera title menu (Text edit– max 40 characters)
- ◆ INIT SEL : Select display initial message.
 - ▶ OFF / ON, ↓
 - ▷ ID : OFF / ON ▷ BAUDRATE : OFF / ON
 - ▷ PROTOCOL : OFF / ON ▷ VERSION : OFF / ON
 - ▷ INIT MSG : OFF / ON

- ◆ SET INIT MSG : modify initial message. (Text edit – max 40 characters)
- ◆ LANGUAGE : Select language.
 - ▶ English / Simplified Chinese / Traditional Chinese / Japanese

※ Character Table of Text edit Mode

A B C D E F G H I J K L M N O P Q R S T
 U V W X Y Z a b c d e f g h i j k l m n
 o p q r s t u v w x y z , . () { } []
 0 1 2 3 4 5 6 7 8 9 * + - / = ~ ! ? " ' "

Image Sensor	1/1.8" Sony Global Shutter CMOS Sensor	
Total Pixels	2,064(H) x 1,554(V) = 3.21M Pixels	
Recording pixels	1,920(H) x 1,080(V) = 2.07M Pixels	
Scanning system	Progressive Scan	
Shutter Mode	Global Shutter	
Resolution	Digital : 1080p/60(50), 1080p/30(25)fps, 720p/60(50)fps, 720p/30(25)fps	
	Analog : 700TVL	
Min. illumination	Color Model	Color(1/30s) : 0.3 lux, Color DSS(1/7.5s) : 0.075 lux
	BW Model	BW (1/30s) : 0.02 lux, BW DSS(1/7.5s) : 0.005lux
Video Output	HD : HD-SDI, EX-SDI / SD : CVBS (optional) / IP : H.265, H.264, MJPEG	
Trigger Input	Polarity / Programed	
Strobe Out	Polarity / Width / Delay	
Lens	DC / Manual	
Lens Mount	C/CS-Mount	
Brightness	0 ~ 20 steps	
Shutter Speed	Auto / Manual (1/30(1/25) ~ 1/10,000 sec)	
Digital Slow Shutter(DSS)	Off / x2/ x3/ x4/ x5 / x6/ x7/ x8/ x9/ x10/ x12/ x15	
Gain Control(AGC)	Off / On	
Flickerless	Off / On	
BLC	Off / On	
Day&Night	Color Model : Day / Mono Model : Night	
White Balance	Auto / One Push / Manual / Indoor / Outdoor	
HLC	Off / On	
DNR	Off / 2D / 3D / 2D+3D (Auto/Low/Middle/High)	
Mirror	Off / H / V / H&V	
Sharpness	0 ~ 20 steps	

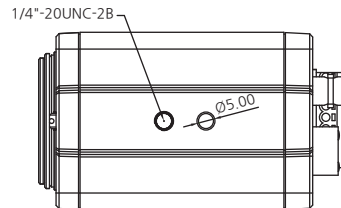
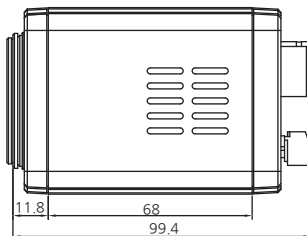
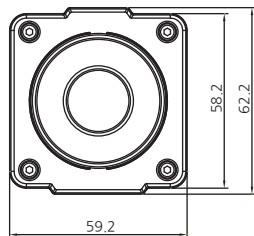
SPECIFICATION

ACE	Off / Manual (0 ~ 11 steps)
Defog	Off / Manual (0 ~ 11 steps)
Freeze	Off / On
Gamma	0.45 / 0.55 / 0.65 / 0.75
E.Zoom	Off / On (x1 ~ x6)
Privacy Mask	Off / On (8 positions)
Motion Detection	Off / On (4 positions)
Defect DET	One push
System	NTSC / PAL
HD Format	1080p/60(50)fps, 1080p/30(25)fps, 720p/60(50)fps, 720p/30(25)fps
Comm	ID : 1 ~ 255
	Baud Rate : 2400 / 4800 / 9600 / 19200 / 38400 / 57600 / 115200
	Protocol : Pelco-P / Pelco-D / VISCA
Disp Sel (Off / On)	ID / Title / Zoom Ratio / System Message
Set Title	Text Edit
Init Sel (Off / On)	ID / Baud Rate / Protocol / Version / Init. Message
Set Init Msg	Text Edit
Language	English / Chinese / Japanese
Power Source	DC12V±10% / 802.3af PoE
Power Consumption	550mA
Power Input	Connector
Video Output	Connector
Operating Temperature	-10℃ ~ +50℃ (Humidity : 0%RH ~ 90%RH)
Storage Temperature	-20℃ ~ +60℃ (Humidity : 0%RH ~ 90%RH)
External Dimension	59.2(W) x 62.2(H) x 99.4(D) mm
Weight	285g

SPECIFICATION

NETWORK	
Ethernet	RJ-45 (10/100BASE-T)
Video Compression Format	H.265, H.264, MJPEG
Resolution	1080p, 720p, 1024x576, 640x360, D1, 4CIF, VGA
Streaming Capability	Triple streaming
IP	IPv4, IPv6
Protocol	TCP, IP, HTTP, DHCP, FTP, DNS, DDNS, NTP, ICMP, SNMP, SMTPE, UPnP,
	RTP, RTSP, ONVIF
ONVIF	Support
Webpage Language	Korean, English

* Design and specifications are subject to change without notice.



If there are problems in operation, please refer to the items below.
If the problem persists, please contact the agent you purchased this product from.

Trouble shooting	
<ul style="list-style-type: none"> • Nothing appears on the screen. 	<ul style="list-style-type: none"> -Please check the power connection. -Please check the video signal line connection.
<ul style="list-style-type: none"> • The video image is not clear. 	<ul style="list-style-type: none"> -Please clean the lens with a clean cloth or brush. -Please adjust that the screen is not exposed directly to a bright light. -Please move the camera if necessary.
<ul style="list-style-type: none"> • The screen is dark. 	<ul style="list-style-type: none"> -Please adjust the contrast feature of the monitor. -If you have an intermediate device, set the 75 Ω /Hi-Z properly, and check the terminals. -Please adjust the brightness level.
<ul style="list-style-type: none"> • The MOTION DETECTION function is not working 	<ul style="list-style-type: none"> -Please check if "MOTION DETECTION" mode is turned on. -Please check if the MD Sensitivity is too high. -Please check the setting of the MD AREA.
<ul style="list-style-type: none"> • The WDR function is not working 	<ul style="list-style-type: none"> -Please check if the WDR Level is too low. -Please check if the AE Mode is set to MANUAL. The WDR doesn't work in MANUAL, Shutter priority Exposure mode.
<ul style="list-style-type: none"> • Colors are not quite right. 	<ul style="list-style-type: none"> -Please check if the camera is facing directly into sunlight or fluorescent light.
<ul style="list-style-type: none"> • The Day&Night function doesn't work. 	<ul style="list-style-type: none"> -Please check if the AGC of EXPOSURE menu is set to OFF. -The Auto Day&Night doesn't work in AGC OFF status.