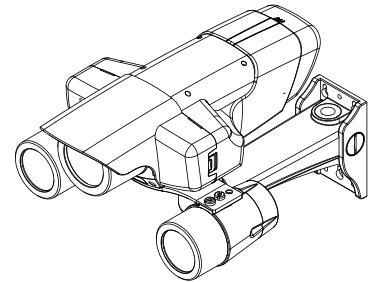


Wide Dynamic **Super Night Vision Outdoor Camera**

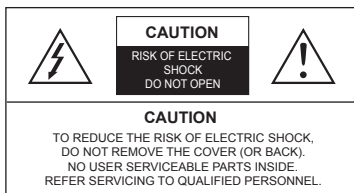
INSTRUCTION MANUAL

Please read this manual carefully before installation and operation of the product.



Dear Customers!

By selecting this product, you have decided to use a professional device that guarantees highest quality and reliability. We would like to thank you very much for your confidence and kindly ask you to read the following instructions carefully before installation and operation in order to take full advantage of all quality features regarding this product.



The lighting 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 appliance.

INFORMATION

This equipment has been tested and found to comply with 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.

WARNING

Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment.

CAUTION – To prevent electric shock and risk of the fire hazards

- Do NOT use power source other than that specified.
- Do NOT expose this appliance to rain or moisture.

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

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OSD Menu	

1. Precautions

- Please read the manual carefully before the installation in order to make use the camera to be set up correctly and to have the best picture quality.
- Please keep the manual in good condition for your future reference and service application.
- Installation and services should only be carried out by an authorized personnel according to local safety regulations.
- If any liquid or solid matter gets into the housing, immediately disconnect the camera from power supply and have it checked by your authorized dealer before reusing.
- Avoid installing the camera at extremely hot or cold places.
- If you are not a certified person, never try to dismantle the camera. To avoid electric shock, never remove the screws or covers. There are no parts inside that need maintenance by the user. All maintenance should be carried by qualified personnel.
- Avoid installing the camera at a place of high humidity.
- Avoid installing the camera at the place exposed to gas or oil.
- Keep the top glass of the lens always clean in order to obtain the best picture quality all the time. Be careful not to be stained by fingerprint.
- Don't face the camera directly toward sunlight or sunlight reflecting area. CCD may go defective at this condition.
- Please give a special attention to keep the unit from dangerous drop or external shock during the process of transportation or handling.
- Never try to touch the camera in wet hand. It may cause an electric shock.
- Do not expose the camera to radioactivity. It causes a serious damage on the CCD.

2. Limitation of liability

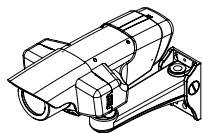
This publication is provided "AS IS" without warranty of any kind, either express or implied, including but not limited to, the implied warranties of merchantability, fitness for any particular purpose, or noninfringement of the third party's right. This publication could include technical inaccuracies or typographical errors. Changes are added to the information herein, at any time, for the improvements of this publication and/or the corresponding product(s).

3. Disclaimer of warranty

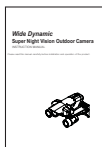
In no event shall seller be liable to any party or any person, except for replacement or reasonable maintenance of the product, for the cases, including but not limited to below :

- (1) Any damage and loss, including without limitation, direct or indirect, special, consequential or exemplary, arising out of or relating to the product;
- (2) Personal injury or any damage caused by inappropriate use or negligent operation of the user;
- (3) unauthorized disassemble, repair or modification of the product by the user;
- (4) Inconvenience or any loss arising when images are not displayed, due to any reason or cause including any failure or problem of the product;
- (5) Any problem, consequential inconvenience, or loss or damage, arising out of the system combined by the devices of third party.
- (6) Any claim or action for damages, brought by any person or organization being photogenic subject, due to violation of privacy with the result of that surveillance—camera's picture, including saved data, for some reason, becomes public or is used for the purpose other than surveillance.

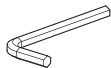
4. Package



Wide Dynamic Super Night Vision Outdoor Camera 1EA



1EA



L-Wrench (Φ5)
1EA



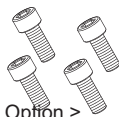
L-Wrench (Φ2.5)
1EA



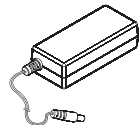
Mounting Screws
4EA



Plastic anchor
4EA



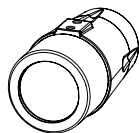
< Option >
Socket Head Screws
4EA



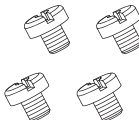
DC24V/1.9A Adaptor
1EA



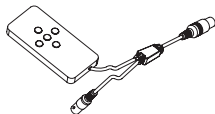
* Different by Country standard
Adaptor Power Plug
1EA



VL60
2EA



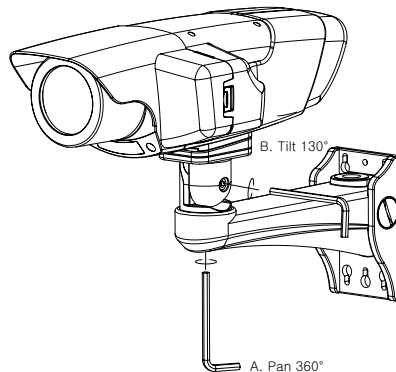
Fixed Screw
4EA



OSD Menu control key
1EA

5. Name and function of each part

5-1. How to adjust double axis mounting



< Picture 1 >

① Panning 360°

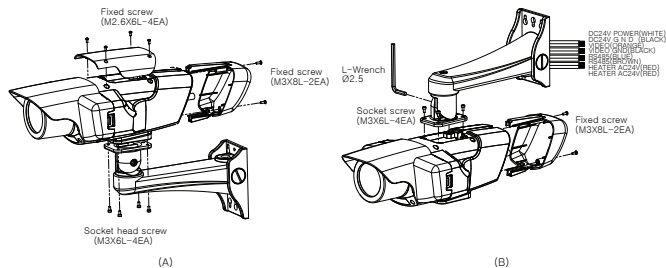
Turn a wrench screw counterclockwise as much as 2 full circles using L-Wrench as (A) in Picture 1 and adjust the bracket to a targeted direction. And then, fasten the wrench screw turning clockwise tightly. 360° angle adjustment is available.

② Tilt 130°

Turn a wrench screw counterclockwise as much as 2 full circles using L-Wrench as (B) in Picture 1 and adjust the bracket to a targeted direction. And then, fasten the wrench screw turning clockwise tightly. 130° angle adjustment is available.

5. Installation

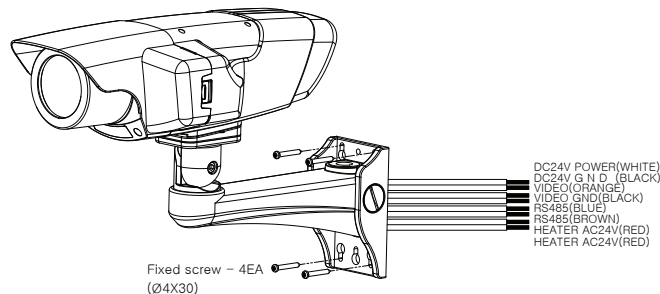
5-2. How to install to Wall



< Picture 2 >

- ① After undoing fixed screws on a REAR CASE on the picture 2(A), separate the REAR CASE.
- ② After undoing fixed screws on an UPPER COVER on the picture 2(A), separate the UPPER COVER.
- ③ After undoing socket head screws on a BRACKET on the picture 2(A), separate the BRACKET.
- ④ As the picture 2(B), fix the BRACKET to upside of the unit using socket head screws.
- ⑤ As the picture 2(B), fix the REAR COVER to the back of the unit using fixed screws.
- ⑥ As the picture 2(B) adjust the angle and the direction of the unit using L-Wrench.

5. Installation



< Picture 3 >

① Cable Configuration

- White : DC24V Camera Power (Non-Polarity)
- Black : DC24V (GND) Camera Power (Non-Polarity)
- Orange : Video
- Black : Video GND
- Blue : RS485 (RX-)
- Brown : RS485 (RX+)
- Red : AC24V (Heater Power)
- Red : AC24V (Heater Power)

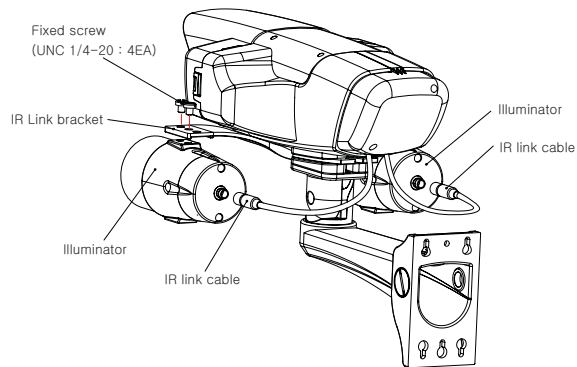
Caution : Connect the cable in accordance with above cable configuration.

Cable

	BNC Female
	Power (24VDC)
	RS485
	Zoom Control Black: TX+ (PTZ_GND) Red: RX-(Tele_Wide) White: RX+ (Near_Far) Yellow: TX-
	Terminal block (Option: Power/Heater)

5. Installation

5-3. How to link IR illuminators



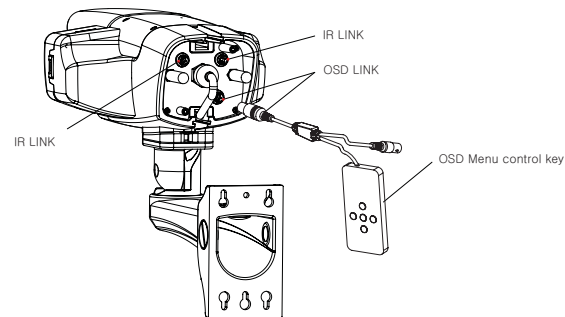
< Picture 4 >

- ① Fix 2pcs of illuminators to IR Link Bracket with Fixed screws as in Picture 4.
- ② Connect 4 PIN DIN Jack to 4 PIN DIN Socket on the back of illuminators as in Picture 4.
- ③ Turn a roulette on the 4 PIN DIN Jack to clockwise tightly.

Caution : Unsuitable connection may cause condensation.

5. Installation

5-4. OSD CONTROL KEY

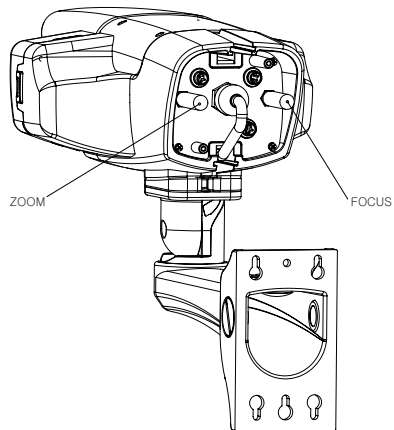


< Picture 5 >

- ① Option IR Link (Illuminators) : IR Beam Distance up to 70M/120M according to the model.
- ② OSD Menu Control key
 - User can adjust the camera function by OSD Menu control key.
 - After connecting Extra video out, user can set the location, focus and OSD function of this unit.

5. Installation

5-5. How to adjust Zoom & Focus



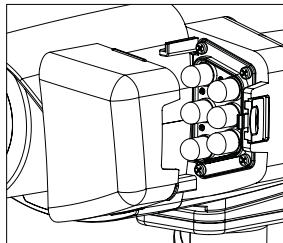
< Picture 5 >

① Zoom & Focus External Adjustment

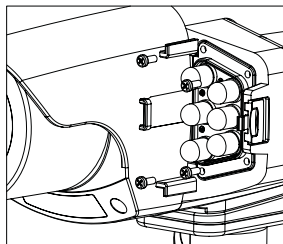
Without dismantling a case completely, user can adjust Zoom & Focus with ease by pulling out the back case only.

5. Installation

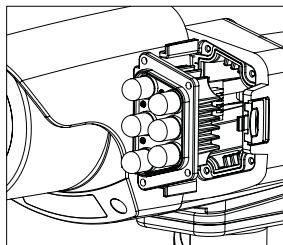
5-6. How to exchange IR LED



① Push the knob backward and take off the LED cover from the unit



② undo 4 fixed screws



③ Pull out the LED package forward

6. Troubleshooting

Before sending the camera out for repair, check the items below. If the problem persists after checking these items, contact your service center.

Problems	Troubleshooting
Nothing appears on the screen.	- Please check the power connection. - Please check the video signal line connection.
The video image is not clear.	- Please check if the lens or the outer glass is clean. - Dirt or fingerprints on the lens can affect the image blooming or reflection. Gently wipe any dirt or fingerprints off the lens or the glass with a soft cloth. - Please check and adjust contrast feature of the monitor. - Please check if the camera is exposed directly toward a bright light, sunlight, or sun light reflecting area. Please move the camera's position in this case.
The screen is dark.	- Please check and adjust contrast feature of the monitor. - If there is any interim equipment, set the Hi-z position properly and check the terminals. - Please check if the power supply is within the specification. - When the cable connection requires a long distance, there may need a higher power supply or an additional power/video amplification.
The camera's surface is too hot and black stripes appear on the screen.	Please check if the power supply is regulated and is within the standard requirement of the product.
The screen is flickering.	Please check if the camera is facing directly toward sunlight or fluorescent light.
IR beam is weak	Check if the distance of the cable installation is too long or if the cable is not UL standard. Using a lower grade cable or long distance cable installation can cause a serious voltage drop. Please check the voltage output level of the cable and change the power source in this case. Make a special care not to supply too much power over the camera as well.

7. Specification

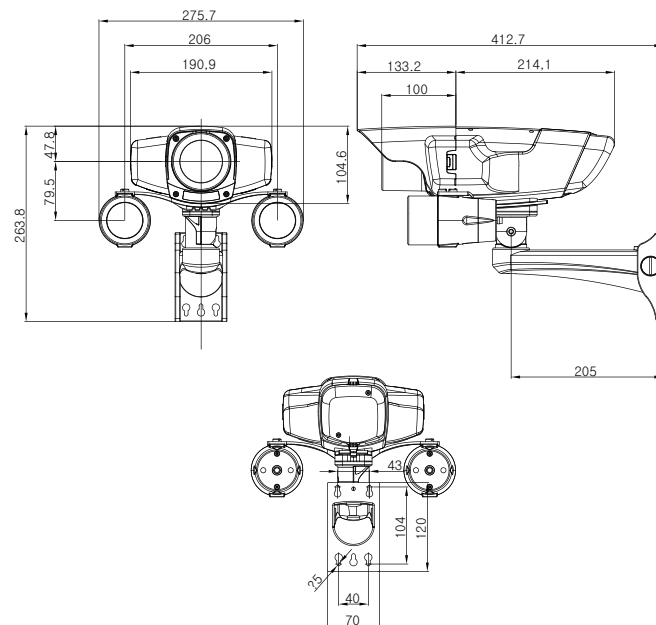
Image sensor	1/4" Sony Double scan CCD
Effective Pixels	NTSC : 768(H) x 494(V) PAL : 752(H) x 582(V)
H. Resolution	550 TV Lines(Color) / 680 TV Lines(BW)
Synchronizing system	Internal
Video output	1.0Vp-p Composite 75 Ohms
S/N ratio	More than 50dB (AGC Off)
Min. Illumination	0Lux
Gamma Correction	Standard $\gamma = 0.45$
White Balance	1,800°K ~ 10,500°K Auto ATW/AWC/Manual/INDOOR/OUTDOOR selectable by OSD
Smear Effect	0.005%
OSD Menu	
OSD Menu	RS485 (Controllable by DVR or controller)
WDR/BLC	WDR / BLC / HLC / OFF
Digital Zoom	Off / On (Limit 12x)
Day & Night	AUTO / COLOR / BW / EXT
Electronic Shutter Speed	AUTO / MANUAL / A.FLK(x256 ~ 120,000)
White Balance	ATW/AWC/MANUAL/INDOOR/OUTDOOR
Gain Control	LOW / MEDIUM / HIGH / MANUAL / OFF
Motion Detection	On/Off
Sens-up	Auto (2x ~ 256x) / Off
SSNR	LOW / MEDIUM / HIGH / OFF
Privacy Function	On/Off (8 Zones)
FLIP	On/Off
Mirror	On/Off
Focus Control	AUTO / MANUAL / ONE-PUSH
IRIS Control	AUTO / MANUAL
DIS	On/Off
Zoom Movement Speed	2.5 Sec(Fast) / 3.1 Sec(Medium) / 5.6 Sec(Slow)
Camera Title	On/Off (20 Characters)
POWER	
Power Source	24VDC
Operating Current	120mA (IR "Off" at Day) 900mA (IR "On" at Night)

7. Specification

LENS	
Lens	Auto Focus Digital Zooms
Zoom Ratio	37x, f=3.5 to 129.5mm(F1.6 to F3.9)
Min. Focus distance	1500mm
Angle of view Lens	Horizontal : Appro. 55.5 °(Wide) to 1.59 °(Tele)
Initialization	Vertical : Appro. 42.5 °(Wide) to 1.19 °(Tele)
Digital Zoom	Off / On (Limit 12x)
Operating	
Operating Temperature	14 °F ~ 122 °F (-10 °C ~ +50 °C)
Humidity	Within 90% RH
Weatherproof rating	IP66
Measurement (mm)	220(W) x 261.7(V) x 412.7(L)
Weight (Approx.g)	5,000
Connection	Cable concealed through Bracket
IR Function	
IR Spectrum	High Power 850nm-Ø8X17°X12ea
Viewable distance	Up to 70M at moonless night
MTBF of IR	20,000 Hours
IR Option	
Addable IR illuminator	VL60
IR Spectrum	High Power 850nm-Ø10X14°X9ea, Ø8X15°X5ea
Viewable distance	Up to 120M at moonless night with VL60X2 sets in addition

*Specifications are sumbect to change without prior noitce for improvement.

8. Dimension(mm)



OSD MENU TREE

1. SYSTEM	CAMERA ID	001	001 ~ 225 Individual ID
	ID DISPLAY	ON	ON / OFF (Camera ID ON/OFF, POSITION)
	CAM NAME	MAIN CAMERA	CAM NAME
	NAME DISPLAY	OFF	ON / OFF (Camera Name ON/OFF, POSITION)
	485 TERM (P-D)	OFF	ON / OFF (RS485 Termination)
	BAUD RATE	9600	9600/4800/2400 bps (BAUD RATE : communication)
	RESET	OFF	camera ID/485 TERM/BAUD RATE : Not activated
	SAVE / EXIT		
	2. ATW	ATW MODE	ATW
USER RED		----	0 ~ 200 (RED - Gain : USER MODE activated)
USER BLUE		----	0 ~ 200 (Blue - Gain : USER MODE activated)
RESET		OFF	
SAVE / EXIT			
3. AE	BRIGHTNESS	050	0 ~ 100 (BRIGHTNESS LEVEL)
	IRIS	AUTO	AUTO / MANUAL
	IRIS MANUAL	----	CLOSE / F1.6 ~ F28
	SHUTTER	ESC	ESC / MANUAL / A.F
	SHUTTER ML	----	1/50 ~ 1/120000 / X2 ~ X256
	AGC	MID	OFF / LOW / MID / HIGH
	3DNR	MID	OFF / LOW / MID / HIGH
	DSS	X8	OFF / X2 ~ X256
	RESET / SAVE / EXIT		
4. BACKLIGHT	BACKLIGHT	OFF	WDR (LOW/MID/HIGH & LEVEL : 0 ~ 100), OFF
	RESET	OFF	HSBLC(LOW/HIGH), USER(LOW/MID/HIGH & SIZE)
	SAVE / EXIT		
5. FOCUS/ZOOM	FOCUS MODE	ZOOM TG	ZOOMTG / MANUAL / AUTO
	ZOOM TRK MODE	ON	ON / OFF
	ZOOM TRK SPD	FAST	SLOW / FAST
	DIGITAL ZOOM	OFF	ON (X2 ~ X12) / OFF
	RESET	X2	
	SAVE / EXIT		
6. DAY / NIGHT	D/N MODE	AUTO	AUTO / COLOR / B/W
	BURST LEVEL	----	0 ~ 100
	D/N LUX	5LUX	1 ~ 9 LUX
	FILTER DLY	01 SEC	1 ~ 60 SEC / OFF
	RESET	OFF	
	SAVE / EXIT		
7. MOTION	MD DEFINE	OFF	OFF / ON
	BOX DISPLAY	ON	OFF / ON
	SENSITIVITY	3	1~5
	DETECT AREA	FULL	FULL / CENTER / LEFT UP / RIGHT UP / LEFT DN / RIGHT DN
	MD RESET	OFF	OFF / ON
	SAVE / EXIT		
8. PRIVACY	AREA NUM	1	1 ~ 8
	AREA DEFINE	OFF	ON / OFF
	TOP/BOTTOM-1	560	TOP/BOTTOM-1 POSITION
	TOP/BOTTOM-2	190	TOP/BOTTOM-2 POSITION
	LEFT/RIGHT-1	710	LEFT/RIGHT-1 POSITION
	LEFT/RIGHT-2	050	LEFT/RIGHT-2 POSITION
	RESET	OFF	
	SAVE / EXIT		
	9. SPECIAL	H-REV	OFF
V-REV		OFF	ON / OFF
DIS		OFF	ON / OFF
SHARPNESS		016	0 ~ 100
COLOR		050	0 ~ 100
RESET		OFF	
SAVE / EXIT			
10. INITIALIZE	INITIALIZE	OFF	ON/OFF (FACTORY RESET)
SAVE / EXIT			
11. SAVE / EXIT			