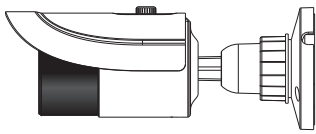
2 Mega Pixel

HD-SDI Water-proof IR Camera

User Manual



Thank you for purchasing our product. This manual is only applicable to SDI water-proof IR cameras. Some models of this series may support internal focal adjustment. If the model you get doesn't support to adjust zoom and focus, please skip the descriptions related to focal adjustment.

There may be several technically incorrect places or printing errors in this manual. The updates will be added into the new version of this manual. We will readily improve or update the products or procedures described in the manual. The content is subject to change without notice.

Safety Instructions

Before using the product , please read this manual carefully to ensure that user can use the product correctly to avoid danger or property loss. Please store this instruction manual in a safe place for future reference.

Warning

Input voltage should meet both the SELV(Safety Extra Low Voltage) and the Limited Power Source with DC 12V. Please refer to technical specifications for detail information.

- If the product does not work properly, please contact your dealer or the nearest service center. Never attempt to disassemble the camera yourself. (We shall not be responsible for any problems caused by unauthorized repair or maintenance.)
- Keep away from liquid while in use.
- In the use of the product, you must be strict compliance with the electrical safety regulations of the nation and region.

When the product is mounted on wall or ceiling, the device shall be firmly fixed.

Cautions

- Make sure the power supply voltage is correct before using the camera.
- Do not drop the camera or subject it to physical shock.
- If cleaning is necessary, please use clean cloth to wipe it gently. If the device will not be used for a long time, please cover the lens cap to protect the device from dirt.
- Do not aim the camera at the sun or extra bright place. A blooming or smear may occur otherwise (which is not a malfunction however), and the endurance of the device will be affected at the same time.
- The device may be burned out by a laser beam, so when any laser equipment is in use, make sure that the surface of the device will not be exposed to the laser beam.
- To avoid heat accumulation, good ventilation is required for operating environment.

- Do not place the camera in extremely hot, cold (the operating temperature shall be -20℃~+60℃), dusty or damp locations, and do not expose it to high electromagnetism radiation.
- While on a delivery, the camera shall be packed in its original packing, or packing of the same texture.
- A few parts of the device shall be replaced regularly according to their average enduring time. Regular checking is recommended for all users.

Content

1 Introduction.....1
1.1 Package Content 1
1.2 Main Features 1
1.3 Overview.....2
2 Installation.....4
3 Menu Setup.....7
3.1 Power On/Off 7
3.2 Basic Operating Instruction 7
3.3 Lens Setup 8
3.4 Exposure 8
3.5 White Balance 11
3.6 Day & Night 12
3.7 Special 13
3.8 Image Adjustment.....14
3.9 Reset 16
4 Specification 16

1 Introduction

This series of the camera adopt the latest 1080P CMOS sensor of Panasonic and support 1080P real-time image capture and transmission with SDI video output port.

1.1 Package Contents

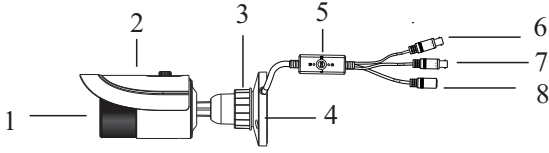
Please verify the package for the following contents and make sure that the device in the package is in good condition and all the assembly parts are included.

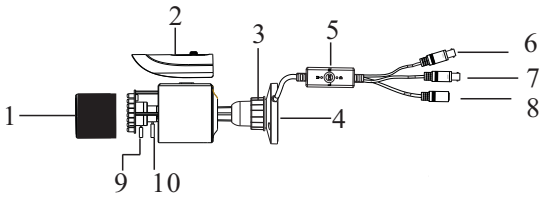
No.	Picture	Name	Amount
1		Camera	1
2		User Manual	1
3		Template	1
4		Screws	1

1.2 Main Features

- Adopt high-performance sensor and with high resolution (up to 1080P) whichbrings high-quality images.
- Support HD-SDI video output.
- Support High Light Control (HLC) which makes you see the image around the glare point more clearly.
- Under low illumination condition, reduce noise from brightness and color signal to save a lot of storage room.
- Support Backlight Compensation which can adjust the iris so that the object in a sensitive area can be properly exposed.
- Support DWDR function which make the image more clearer when the object is shot in the strong light contrast condition.
- Support OSD control function which is convenient for user to adjust camera.
- Support ICR switch.
- Support privacy masking.

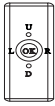
1.3 Overview





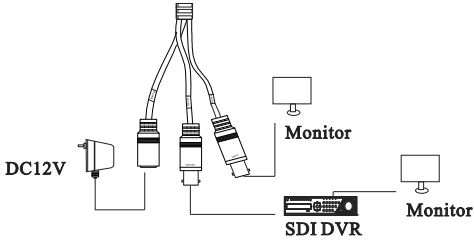
1	Lens Cover	6	CVBS Video Cable
2	Sun Shield	7	HD-SDI Video Cable
3	Fixed Ring	8	Power Cable
4	Mounting Base	9	Focus
5	Direction Key	10	Zoom

Direction Key:



Push the 'OK' button up (hereinafter referred as Push up) to make the cursor move up. Push the 'OK' button down (hereinafter referred as Push down) to make the cursor move down. Push the 'OK' button to the left or right (hereinafter referred as Push left/right) to select the left or right item. Press the 'OK' button to confirm the selection.

Cable Connection:



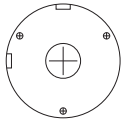
2 Installation

Some models of this series may not support to adjust focus and zoom. If you get such kinds of camera, please skip the steps of focus and zoom adjustment.

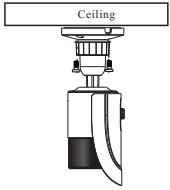
Before start, please make sure that the wall or ceiling is strong enough to withstand 3 times the weight of the camera. The mounting steps are as follows

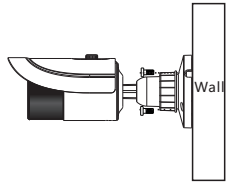
Step 1: Attach the drill template to the place where you want to fix the camera and then drill 3 screw holes and 1 cable hole (if you want to route the cables through the mounting base) according to the drill template.

:

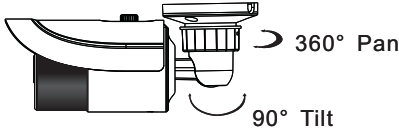


Step 2: Route the cables and connect the power cable and video cable. And then secure the mounting base with camera to the ceiling or wall with screws.





Step 3: Bracket adjustment. Before adjustment, preview the image of the camera on a monitor and then loosen the fixed ring to adjust.

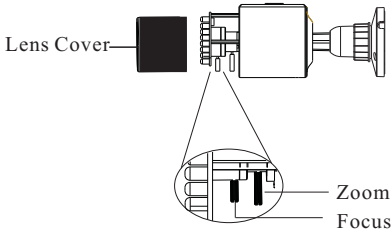


● Loosen the fixed ring to adjust the panning position of the camera. The adjustable range is from 0° to 360°.

● Loosen the fixed ring to adjust the tilting position of the camera. The adjustable range is from 0° to 90°.

After you adjusted, tighten the fixed ring.

Step 4: Focus and zoom adjustment (If the model you get is prime lens, please skip this step). Remove the lens cover and then adjust the focus and zoom screws to get a clear image. Finally, tighten these two screws and the lens cover.



Step 5: Remove the protection film softly to complete the installation.

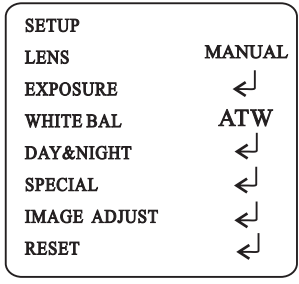
3 Menu Setup

3.1 Power On/Off

Before starting, connect with the power cables and video cables. Please make sure all the connection is good. After that, the system will start. Then press the OK button to pop up the setup menu.

Plug out the power cable and then the system will shut down immediately.

3.2 Basic Operation Instruction



When enterring into the setup menu, user can see the picture as shown above. ↵ means that there are submenus. User can select and confirm the item by pushing the direction button and OK button.

Push up or down to select the item on the left column. Push left or right to select the item on the right column. Press the enter button to confirm the selection and enter into the submenu interface.

3.3 Lens Setup

Support manual IRIS and DC lens. Please setup according to the use of lens.

User can select the lens type by pushing right.

3.4 Exposure

Exposure setup includes: Shutter, AGC, Sens-up, WDR, Defog and Backlight.

Shutter: Options include auto, 1/30, 1/60, FLK, 1/250,1/500, 1/1000, x 2.

AGC: When the light is insufficient, push left/righ to setup

its level. The default level is 6. Please increase or decrease the level as required.

Sens-up: Extend the exposure time of camera. The higher the time is, the lower the frame is. The shadow will be longer under the dark condition. Please select times by pushing right as needed.

WDR: Lighten the dark area and control the highlight area. There are four options: low, middle, high, off.

Defog: In foggy weather, you can setup this function to see the object behind fog clearly. There are four options: low, middle, high, off.

Backlight: You can select OFF, BLC or HSBLC by pushing right.

If OFF is selected, the system will not compensate the image.

If BLC is selected, it will enhance the brightness of image to satisfy the monitor effect.

To enter into the submenu of BLC, press Enter button.

You can setup GAIN, AREA and DEFAUT.

Gain: The higher the level is, the brighter the image is.

When selecting on, the area position and size can be setup.

Push direction button to set the position of BLC area. After

that, press Enter button to setup the area size. Push up or left to reduce the area, but press down or right to enlarge the area.

If parameters of BLC setup are out of order, please select Default and press Enter button to reset settings.

If HSBLC is selected, the high brightness will be restrained and the low brightness will be enhanced at the same time. As a result, the image in a certain area will be exposed properly. (Please use the fixed IRIS Lens). This function can be used to shoot license plate number.

Select HSBLC and press Enter button to go into its submenu.

Select: There are four areas. Please push direction button to select.

Display: Display the HSBLC areas. There are four areas. Push Enter button to setup the position and size.

Level: Push left or right to increase or decrease.

Mode: There are two modes: All Day and night.

Black Mask: Mask the highlight area.

Default: Reset the setup of HSBLC to the default setting.

Select Return and press Enter button to return to the previous interface. Select Return, push right and choose exit to exit Menu.

3. 5 White Balance

Select WHITE BAL and push left or right to choose White balance mode including ATW, AWC → SET, Indoor Outdoor and Manual,

ATW: In this mode, the camera will constantly monitor the color temperature among about 2500~ 9500K of color temp and adjust white balance automatically. This mode is prior to other modes.

AWC → SET: Select it and press Enter button to go into the lock mode of white balance. Now the camera locks the reference value of red and blue under the current color temperature and stops monitoring color temperature.

Indoor: Indoor white balance mode.

Outdoor: Outdoor white balance mode.

Manual: When the camera is used in the environment with a certain unchangeable light source, user can use this mode. Select this mode and press Enter button to setup. User can adjust the level of blue and red by pushing left or right button to reach the reasonable results of white balance.

Return: Select Return and press Enter button to return to the previous interface.

3. 6 Day & Night

Mode: Three options: Auto, Color, B/W, EXT.

The default mode is EXT mode.

Auto: When selecting Auto, the camera will change into color mode in the Daytime or B/W mode at night so that user can get the best and clearest images. Select Auto and press Enter button to enter into the auto setup interface.

- **Delay Control**: Setup Day-Night switching time. The default delay time is 5s. Press Left/Right button to control the delay time.
- **Day→ Night**: Set illumination limits from color to B/W.
- **Night → Day**: Set illumination limits from B/W to color.

Color: Return to the Mode setup interface and press Right button to select this mode.

B/W: Select this mode and press Enter button to setup Burst. If you want to obtain the standard B/W signal, please select off.

EXT: If this mode is selected, light resource and image will be changed synchronously as the change of the external environment.

Smart IR: Select smart IR and press Enter button to set On/ off. When the object with IR light is captured, please enable it and then enter into its submenu for level and area setup.

3.7 Special

Special setup includes language, camera title, motion, privacy and defect setup.

Language: There are three languages: English, CHT and CHS.

Camera title: When selecting "On", the title edition and the position selection of the title is effective.

User can press the direction button to self-define the camera name. After selecting the single letter, number or symbol, please press Enter button to go into the camera title position setup. User can push the direction button to set up.

Mirror: Mirror the current image. There are three kinds of mirror: Rotate, Mirror and Flip.

Motion: Select Motion and press left/right to select On/Off. Select On and press Enter button to set up motion.

- **Select**: There are three areas to set up.
- **Display**: Push right/left to select On/Off. Select on and press Enter button to set its size and position.
- **Sensitivity**: Push right/left to adjust the sensitivity of the detection area.

• **Motion view**: If enabled, there will be some red square appearing when there are something moving.

• **Default**: Reset all settings of Motion to the default value.

• **Return**: Return to the previous interface.

Privacy: If a user wants to mask some areas, please select On and press Enter button to go into the privacy setup interface.

• **Select**: There are 8 areas to select.

• **Display**: Display the area size and position.

• **Color**: There are 16 colors to select for the area.

• **Default**: Reset all settings of Privacy to the default value.

• **Return**: Return to the previous interface.

Defect: Including Live DPC, Level, Static DPC, Start and Level settings.

• **Live DPC**: The default setting is Auto. When selecting it, the system will automatically check the defect point. There is no need for you to set up the level. Push left/right to select On/Off.

• **Level**: Level of live Defect Point Correction.

• **Return**: Return to the previous interface.

3.8 Image Adjustment

Select Image Adjustment and press Enter button to go into Image Adjustment menu.

User can setup 3D NR, sharpness, brightness, Gamma, blue gain, red gain, lens shading and NTSC/PAL.

3D NR: Select it and press Enter button to go into 3D NR interface. Select D NR level and push left/right to increase or decrease the NR level in the daytime. Select N NR level and push left/right to increase or decrease the NR level at night. The higher the level is, the less the noise is.

Sharpness: Select Sharpness to enter into sharpness setup interface. Select N level and push left/right to setup the value of sharpness at night. Select D level and push left/right to setup the value of sharpness in the daytime.

Brightness: Push left/right to setup the value of brightness.

Gamma: Setup the value of GAMMA.

Blue Gain: Push left/right to increase or decrease the value of red.

Lens Shading: Push left/right to select On/Off.

NTSC/PAL: Press left/right to select NTSC or PAL.

Return: Return to the previous interface or exit menu setup.

3.9 Reset

This function is reset all setups to the default status. If parameters of the camera are out of order and the camera cannot display images, you may use this function to reset all setups. Please select Reset and press Enter button to go into its setup interface. Then select Factory and press Enter button to reset all settings to the default factory settings. Additionally, you can also check up the version of the camera here.

Select Return to return to the menu setup interface. Push left/right to select Exit to exit the menu setup interface and return to the live interface. The system will automatically save the settings.

Note: If you shut down your device but don't exit the menu setup interface, all settings set above will not be saved.

4 Specification

Model		HD SDI Water-proof IR Camera
Camera	Sensor	1/3"CMOS
	Pixel	2010(H) x 1092(V)
	Shutter	1/25s or 1/30s~1/67500s
	Min illumination	0 LUX (LED ON)
	Resolution	1000TVLines
	Lens driver	DC driver
	Lens	f = 6mm, 4mm, 8mm, 3.3-12mm, etc
	White balance	ATW, indoor, outdoor, manual, etc
	Day&Night	ICR
	S/N ratio	>50dB
	IR range	20~30m
Advance	3D NR	support
	BLC	BLC/HLC, Area, Level, Off setup
	Image adjust	sharpness, brightness, etc
	WDR	adjustable
	Mirror	rotate, mirror, flip
	Lens shading	support
Video	Size	1080P (1920 x 1080)
	Frame	30fps(60Hz), 25fps(50Hz)
Port	Video out	1-ch SDI(1. 0Vp-P, 75ohm); 1-ch CVBS
Working Environment	Power supply	DC12V
	Temperature	-20°C ~ 60°C
	Humidity	10%-90%
	Dimension	Ø 109*284

450013000145 A0