2 Megapixel HD Analog IR Waterproof Fixed Camera

User's Manual

Version 1.0.0

Table of Contents

Welcome

Thank you for purchasing our analog camera!

This user's manual is designed to be a reference tool for your system.

Please read the following safeguard and warnings carefully before you use this series product!

Please keep this user's manual well for future reference!

Important Safeguards and Warnings

1．Electrical safety

All installation and operation here should conform to your local electrical safety codes.
The power shall conform to the requirement in the SELV (Safety Extra Low Voltage) and the Limited power source is rated 12V DC in the IEC60950-1.
We assume no liability or responsibility for all the fires or electrical shock caused by improper handling or installation.

2．Transportation security

Heavy stress, violent vibration or water splash are not allowed during transportation, storage and installation.

3．Installation

Do not apply power to the camera before completing installation.
Please install the proper power cut-off device during the installation connection.
Always follow the instruction guide the manufacturer recommended.
If this product is installed in the ceiling, please make sure the installation position can sustain the min 50N.

4．Qualified engineers needed

All the examination and repair work should be done by the qualified service engineers.
We are not liable for any problems caused by unauthorized modifications or attempted repair.

5．Environment

This series analog camera should be installed in a cool, dry place away from direct sunlight or strong light, inflammable, explosive substances and etc.
The working temperature ranges from -30℃ to +60℃. Please keep it away from the electromagnetic radiation object and environment.
Please make sure the CMOS component is out of the radiation of the laser beam device. Otherwise it may result in CMOS optical component damage.
Please keep the sound ventilation.
Do not allow the water and other liquid falling into the camera.

6. Accessories
Be sure to use all the accessories recommended by manufacturer.
Before installation, please open the package and check all the components are included.
Contact your local retailer ASAP if something is broken in your package.

7. Daily Maintenance

Please shut down the device and then unplug the power cable before you begin daily maintenance work.

Use the dry soft cloth to clean the device. If there is too much dust, please use the water to dilute the mild detergent first and then use it to clean the device. Finally use the dry cloth to clean the device.

Please put the dustproof cap to protect the CMOS component when you do not use the camera.

1 General Introduction

1.1 Overview

This series megapixel analog HD camera conforms to the HDCVI standard. It supports video signal high-speed long distance transmission without any delay. It can be controlled by the DVR conforming to the HDCVI.

1.2 Features

- High-performance CMOS image sensor, megapixel definition.
- HD video, coaxial cable to transmit the control signal.
- Support 75-3 coaxial cable transmission without any loss. Transmission distance is over 300m.
- Support analog HD and standard definition switch.
- Support 1080P@25, 1080P@30, 720P@25, 720P@30, 720P@50, 720P@60.
- High speed, long distance real-time transmission.
- Support OSD (on-screen display), suitable for user self-defined setup.
- Support privacy mask, image digital zoom.
- Support DC12V power supplying.
- Support 3D noise reduction(denoise),excellent performance in low illumination environment.
- IP66 compliance.
- Support ICR switch to realize surveillance both in the daytime and at night.
- Support intelligent IR function.

1.3 Functions

HDCVI Specification

HDCVI（High Definition Composite Video Interface） is an over-coaxial –cable analog HD video transmission standard. The technology renders two HD video formats by progressive scanning.

OSD

User-friendly on-screen display for you to select the different functions.

ICR

The IR cut removal is to filter the IR light in the daytime and then auto switch to the general fitter at night. This function allows the camera to output the high sensitivity and clear video.

Smart IR technology

The sensor controls the IR light on/off via the combination work of the hardware and software, which realizes the automatically IR light compensation according to the environment illumination.

1.4 Specifications

Please refer to the following sheet for specification.

Model / Parameter	Megapixel HD Analog IR Waterproof Fixed Camera	
	HAC-HFW2200BP/N	**HAC-HFW2200SP/N**
Video Processor	1/3" 2 Megapixel CMOS	
Video Format	PAL/NTSC	
Effective Pixel	1920 (H) *1080 (V)	
Min Illumination	0.05Lux@（F1.2,AGC ON），0 Lux with IR	
Electronic Shutter	Support slow shutter. 1/3s～1/100,000s	
Video Standard	HDCVI/CVBS compliance	
Video Frame Rate	1920×1080@25fps；1920×1080@30fps；1280×720@25 fps；1280×720@30 fps；1280×720@50 fps；1280×720@60 fps	
Lens Port	M12	
Lens Type	2.8/3.6/6/8mm optional	
Day/Night Switch	ICR mechanical auto switch	
Video Output	1-channel BNC analog high definition video output./ CVBS analog standard definition video output (Can switch.)	
Denoise (Noise Reduction)	Support 2D/3D denoise.	
OSD Menu Control	Support	
OSD **EXPOSURE**	Exposure Mode/Exposure Level/Exposure Speed/Anti Flicker/BLC/Return	
WHITE BALANCE	Auto/Manual/Day/Night/Return&Exit	
DAY/NIGHT	Auto/B&W/Color/ Return&Exit	
FUNCTION	2DNR/3DNR/D-zoom/Lens/ Return&Exit	
ADVANCED	Cam Title/Mirror&Flip/Motion Detect/Privacy Mask/Language/COM Setup/System Info/ Return&Exit	
IMAGE	Sharpness/Brightness/Contrastness/Saturation/Sharp Suppress/ Chroma Suppress/Gamma/Video Format/ Return&Exit	
RESET	/	
EXIT	/	
Max IR Distance	30m	20m
Transmission Distance	Over 300m via 75-3 coaxial cable.	
Protection Level	IP66	
Working Temperature /Humidity	-30℃~+60℃. Humidity is less than 95%(no condensation)	
Power	DC 12V±10%	
Power Consumption	6.5W MAX (Input: 12V ⎓ 0.54A)	4.5W MAX (Input: 12V ⎓ 0.38A)

Dimension(mm)	200.2×89.1×80.4	ϕ 65.0×154.7
Weight	450g	380g
Installation Mode	Wall mount	

2 Framework

2.1 Dimensions

2.1.1 HAC-HFW2200BP /N

Please refer to the following figures for the dimension information. The unit is mm. See Figure 2-1.
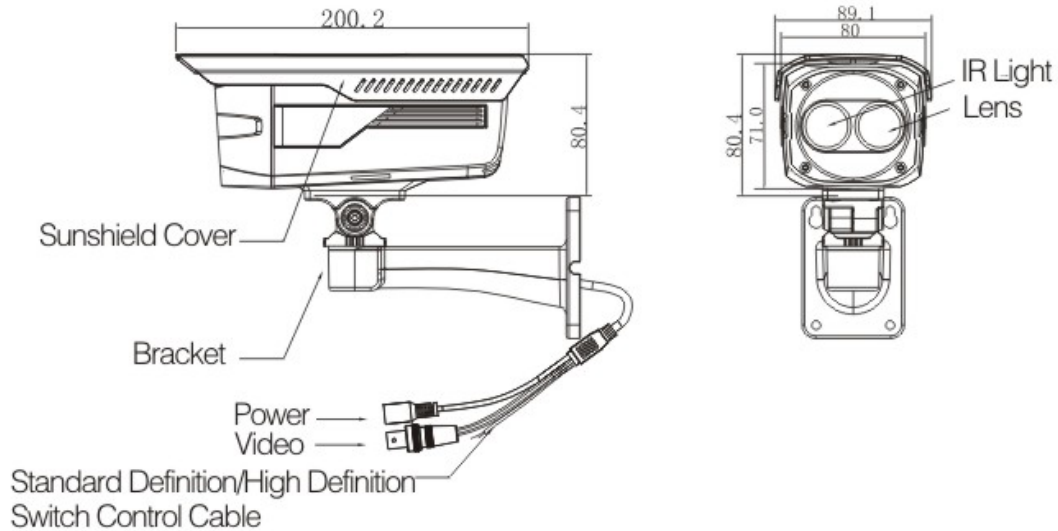

Figure 2-1

2.1.2 HAC-HFW2200SP/N

Please refer to the following figures for the dimension information. The unit is mm. See Figure 2-2.
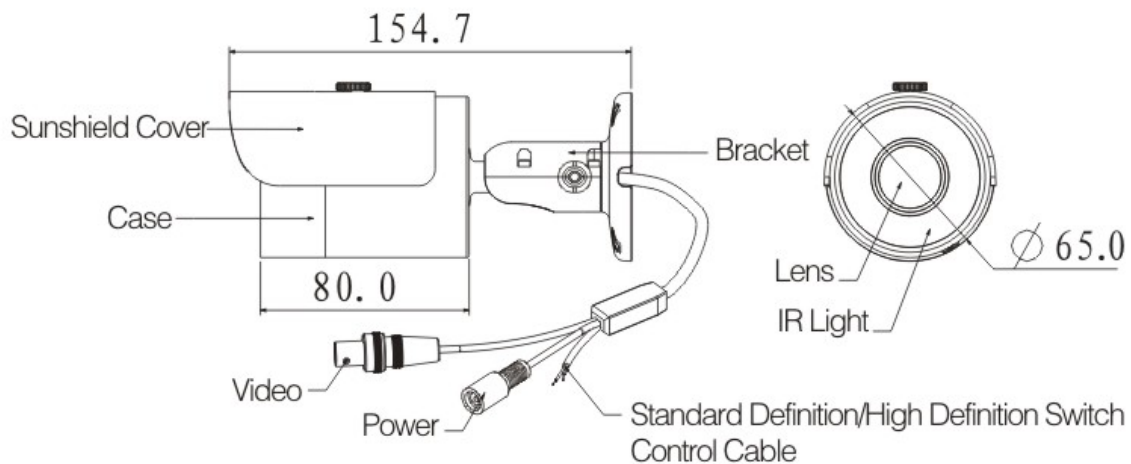

Figure 2-2

When the standard definition/high definition switch control cable is short circuit, system outputs standard definition video. Otherwise, when the circuit is open, system outputs the high definition video.

3 Installation

Important

● **Before the installation, please make sure the installation surface can sustain at least 3X weight of the bracket and the camera.**

3.1 General Fixed Camera Installation

This series product supports wall-mount. Please refer to the steps listed below for installation information.

Step 1

Please dig four installation holes in the installation surface according to the four holes of the bottom of the bracket. Insert four expansion bolts from the accessories bag into the holes and then use four self-tapping screws to secure the bracket on the installation surface. See Figure 3-2.

If you want to install in the wood surface, please skip the first step and then use the self-tapping screws to install the bracket directly.
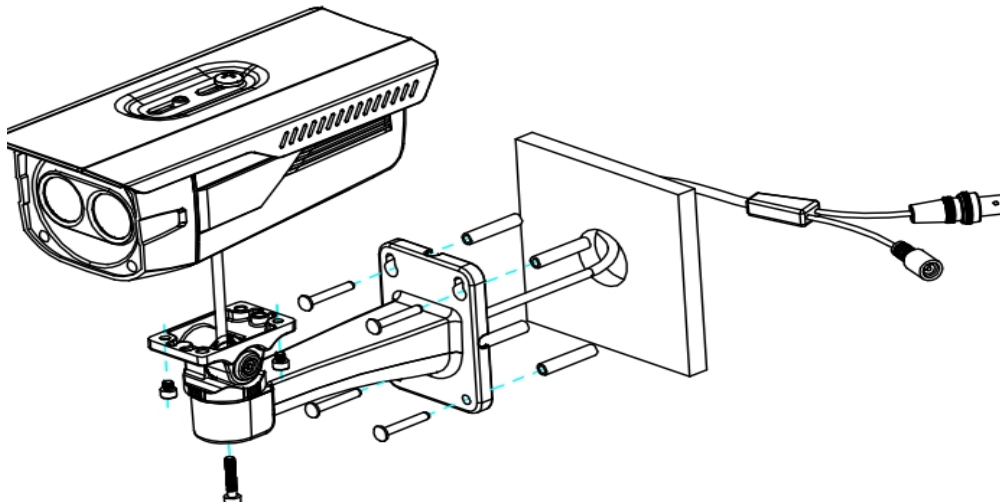

Figure 3-1

Step 2

Use the inner hex wrench from the accessories bag to loosen the side panel of the bracket and two hex knobs at the bottom. Adjust the camera to the proper monitor area and then secure the knobs of the bracket to fasten the camera.

Step 3

Connect the video output port of the device cable to the rear-end encode device such as DVR or NVS. Then connect the power port of the device cable to the corresponding power supplying source.

Now you have completed dome camera installation and cable connection.
You can use the rear-end device to view the monitor video.

3.2 Mini IR Waterproof Fixed Camera Installation

In Figure 3-2, ①Installation surface；②Bracket；③Screws；④Camera.

Step 1

Dig three holes in the installation surface of the wall or the ceiling. Insert three expansion bolts to the three holes and then lock firmly.
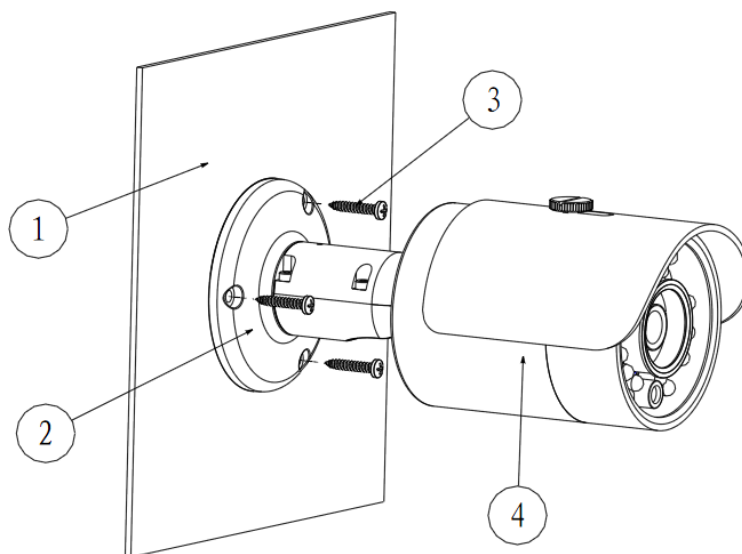

Figure 3-2

Step 2

First prepare the cable according to the cable. Line up the three screw holes at the bottom of the bracket to the three installation holes in the wall or the ceiling, and then insert three screws to the three holes of the chassis of the bracket and fix them firmly. Now secure the bracket on the installation surface of the wall or the ceiling.

Step 3

Adjust the camera to the proper monitor area via the three directions indicated in Figure 3-3 after you fixed the camera.
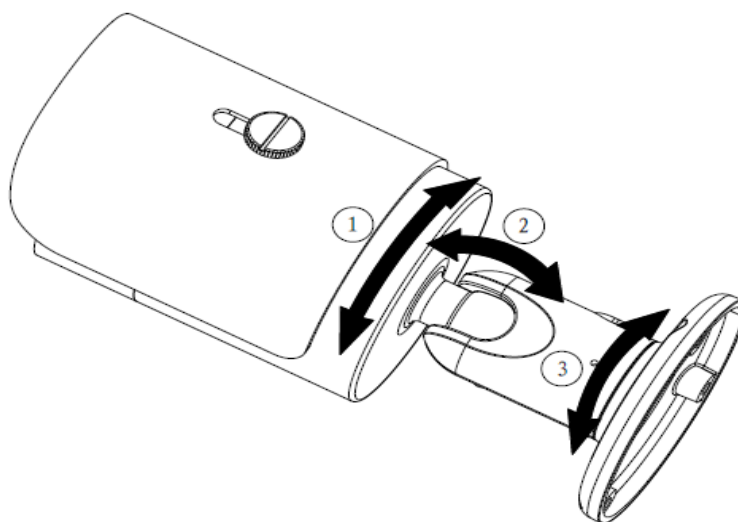

Figure 3-3

Step 4

Connect the device video output port to the terminal devices such as the DVR, NVS and etc. Then connect the power cable to the device.

Now you have completed the device installation and cable connection. You can use the terminal encode devices to view the monitor video.

4 Menu

4.1 Menu List

The 1st		The 2nd		The 3rd	
Exposure	↵	Exposure Mode	Auto		
			Low Noise↵	Gain Max	0～100
				Gain Min	0～100
				Return&Exit	**For the 2nd and the 3rd menu, when you click Exit button to exit, system saves current setup by default.**
			Low Motion Blur↵	Shutter Max	● PAL: 0ms～40ms ● NTSC: 0ms～33ms
				Shutter Min	● PAL: 0ms～40ms ● NTSC: 0ms～33ms
				Return&Exit	
			Manual↵	Shutter	1/100000, 1/10000, 1/4000,1/2000,1/1000,1/500, 1/250,1/120,1/100,1/60,1/50, 1/30,1/25,1/15,1/12,1/10,1/8, 1/6,1/5,1/4,1/3 Customized↵
				Gain Max	0～100
				Gain Min	0～100
				Return&Exit	
		Exp Level	0～14		
		Exp Speed	0～7		
		Anti-flicker	Outoodr/50HZ/60HZ		● 50HZ: 1/50, 1/100, 1/25, 1/10, 1/5, 1/4. ● 60HZ: 1/60, 1/120, 1/30, 1/4, 1/12, 1/6. **The 50HZ and 60HZ mode have different manual exposure mode and there is no low motion blur and low noise exposure mode.**
		BLC	↵	BLC	OFF/ON
				WDR	0～100
				HLC	0～100 **The HLC is valid when auto exposure and outdoor anti-flicker mode are both valid.**
				Return&Exit	
White Balance	Auto				
	Manual ↵	Blue	1～100		
		Red	1～100		
		Return&Exit			
	Day				
	Night				
Day/Night	Auto				
	B/W				
	Color				
Function	↵	2DNR	0～100		
		3DNR	0～100		
		D-Zoom	1～10		
		Lens	Manual/DC		
		Return&Exit			
Advanced	↵	CAM			

The 1st		The 2nd		The 3rd	
		Title↵			
		Mirror/Flip ↵	Mirror	OFF/ON	
			Flip	OFF/ON	
			Return&Exit		
		Motion Detect	OFF		
			ON↵	Area Sel	0～3 There are four motion detect zones ranging from 0 to 3. You need to set parameters for each zone.
				Area State	OFF/ON
				Sensitivity	0～100
				Threshold	0～100
				Area Setup	Position↵
					Size↵ **Use direction buttons to set position and zone size.**
				Default	
				Return&Exit	
		Privacy Mask	OFF		
			ON↵	Area Sel	0～7 There are eight privacy mask zones ranging from 0 to 7. You need to set parameters for each zone.
				Area state	OFF/ON
				Area setup	Position↵
					Size↵ **Use direction buttons to set position and zone size.**
				Default	
				Return&Exit	
		Language	EN		
		COM Setup	↵	Address	1～254
				Apply	
				Return&Exit	
		System Info	↵	Version	XXXXXXXXX
				Return&Exit	
Image	↵	Sharpness	0～100		
		Brightness	0～100		
		Contrastness	0～100		
		Saturation	0～100		
		Sharp Suppress	0～100		
		Chroma suppress	0～100		
		Gamma	0～5		
		Video Format	1080P@25↵/1080P@30↵/720P@25↵/720P@30↵/720P@50↵/720P@60↵	OK/CANCEL	
		Return&Exit			
Reset					
Exit					

4.2 Note

Parameter	Function
Brightness	It is to adjust monitor window bright. The value ranges from 0 to 100. The default value is 50.
	The larger the number is, the bright the video is. When you input the value here, the bright section and the dark section of the video will be adjusted accordingly. You can use this function when the whole video is too dark or too bright. Please note the video may become hazy if the value is too high. The recommended value ranges from 40 to 60.
Contrast	It is to adjust monitor window contrast. The value ranges from 0 to 100. The default value is 50.
	The larger the number is, the higher the contrast is. You can use this function when the whole video bright is OK but the contrast is not proper. Please note the video may become hazy if the value is too low. If this value is too high, the dark section may lack brightness while the bright section may over exposure .The recommended value ranges from 40 to 60.
Saturation	It is to adjust monitor window saturation. The value ranges from 0 to 100. The default value is 50.
	The larger the number, the strong the color is. This value has no effect on the general brightness of the whole video. The video color may become too strong if the value is too high. For the grey part of the video, the distortion may occur if the white balance is not accurate. Please note the video may not be attractive if the value is too low. The recommended value ranges from 40 to 60.
Sharpness	The value here is to adjust the edge of the video. The value ranges from 0 to 100. The larger the value is, the clear the edge is and vice versa. Please note there is noise if the value here is too high. The default value is 50 and the recommended value ranges from 40 to 60.
3DNR	It is to reduce video noise. The larger the number is, the lower the noise is. The details of the video may disappear if the value here is too large.
Anti-flicker	● Outdoor: In this mode, you can switch exposure mode to get the effect under the corresponding exposure mode. ● 50Hz: When the current is 50Hz, system can auto adjust the exposure according to the environment brightness in case there is any strip. ● 60Hz: When the current is 60Hz, system can auto adjust the exposure according to the environment brightness in case there is any strip.

Appendix Toxic or Hazardous Materials or Elements

Component Name	Toxic or Hazardous Materials or Elements					
	Pb	Hg	Cd	Cr VI	PBB	PBDE
Circuit Board Component	○	○	○	○	○	○
Device Construction Material	○	○	○	○	○	○
Wire and Cable	○	○	○	○	○	○
Packing Components	○	○	○	○	○	○
Accessories	○	○	○	○	○	○

O: Indicates that the concentration of the hazardous substance in all homogeneous materials in the parts is below the relevant threshold of the SJ/T11363-2006 standard.

X: Indicates that the concentration of the hazardous substance of at least one of all homogeneous materials in the parts is above the relevant threshold of the SJ/T11363-2006 standard. During the environmental-friendly use period (EFUP) period, the toxic or hazardous substance or elements contained in products will not leak or mutate so that the use of these (substances or elements) will not result in any severe environmental pollution, any bodily injury or damage to any assets. The consumer is not authorized to process such kind of substances or elements, please return to the corresponding local authorities to process according to your local government statutes.

Note
- **This manual is for reference only. Slight difference may be found in the user interface.**
- **All the designs and software here are subject to change without prior written notice.**
- **All trademarks and registered trademarks mentioned are the properties of their respective owners.**
- **If there is any uncertainty or controversy, please refer to the final explanation of us.**
- **Please visit our website or contact your local service engineer for more information.**