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**Full Manual
1/3" Camera, Day&Night, 900TVL,
Infrared, 12VDC**

**VKC-900IR36
VKC-900IR2812**

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Notes on safety

Please also pay attention to the enclosed safety instructions, and carefully read through this instruction guide before initial operation.



Important points of advice are marked with a caution symbol.

Overview

Introduction

The product is a 900 TVL infrared bullet camera that uses a SONY 1/3"Exmor CMOS image sensor which can capture high-quality and high-resolution images.

Functions and Features

- High sensitivity: The camera uses a SONY 1/3"Exmor CMOS image sensor and has an illumination as low as 0.01 Lux. When infrared-ray (IR) LEDs are on, the illumination can reach 0 Lux.
- On-screen display (OSD) menus: The camera provides OSD menus that support six languages, facilitating commissioning and setting camera parameters.
- Digital noise reduction (DNR): The camera uses 3D DNR technology that significantly optimizes images in low-illumination environments by improving signal to noise ratio (SNR).
- High resolution: The horizontal resolution is up to 900 TVL, which makes the image clear and fine.
- Privacy masking: The camera allows you to define a maximum of 8 quadrilateral mask areas, which meets privacy requirements.
- Built-in mobile optical filter (optional)
- Intelligent IR technology: The intelligent IR technology enables the camera to adjust shutter, aperture, and gain depending on image brightness in black and white mode, optimizing the infrared effect and preventing center overexposure.
- Built-in efficient IR-emitting tubes: With the built-in tubes, the camera can capture quality images even in total darkness and the nighttime.

Hardware Connection

Power and Video Cables

Figure 2-1 shows the power and video cables.

Power and video cables

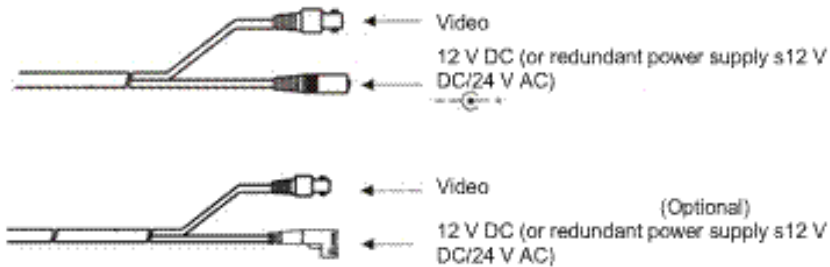


Figure 2-1

Connect the BNC connector of the power or video cable to a video signal cable and connect the other connector to a low-voltage power cable (12 V DC). After installing the camera, directly connect the video cable and power cable.

The BNC video output interface is used to emit composite video signals. Monitors with a resolution of higher than 800 TVL are recommended.

Function Keys

A user can call OSD main menus through multi function switch control keys, and check and set camera parameters.

Figure 2-2 shows the camera function keys.

OSD menu control key: It is used to enter OSD menus or select menu items when you press this key in the middle of the multi function switch.

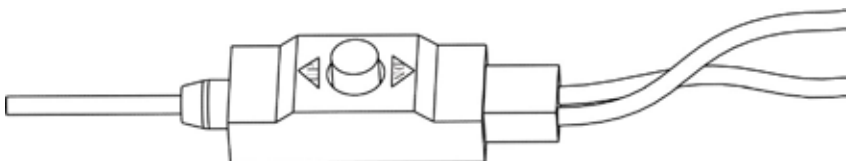


Figure 2-2

UP/DOWN keys: The UP and DOWN keys are used to select menu items upwards and downwards by prodding the multi function switch upwards and downwards.

LEFT/RIGHT keys: The LEFT and RIGHT keys are used to select menu items horizontally or modify parameters by prodding the multi function switch towards the left or the right.

When you prod the multi function switch upwards and downwards, the menu items rapidly roll upwards and downwards accordingly; and when you prod the multi function switch towards the left or the right, the parameter values will rapidly decrease or increase.

Device Dimensions

Figure 3-1 shows the camera dimensions.

Dimensions (unit: mm)

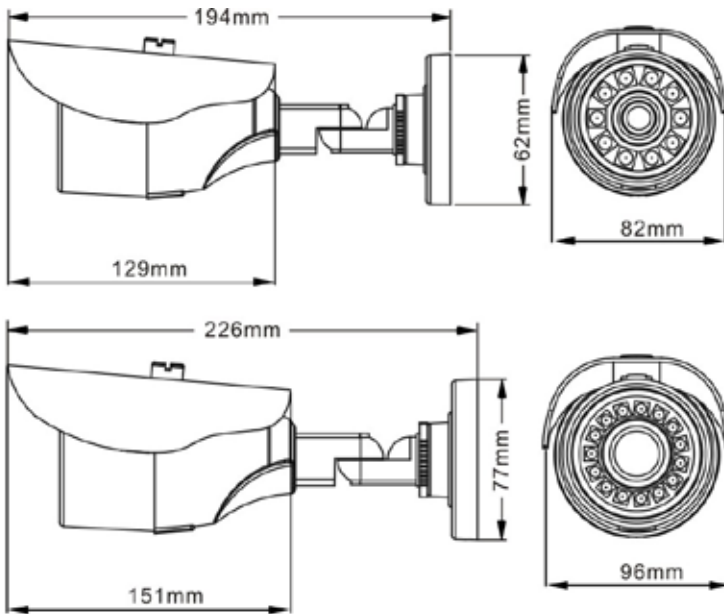


Figure 3-1

Components and Functional Description

Figure 4-1 shows the components of the camera.

Camera components

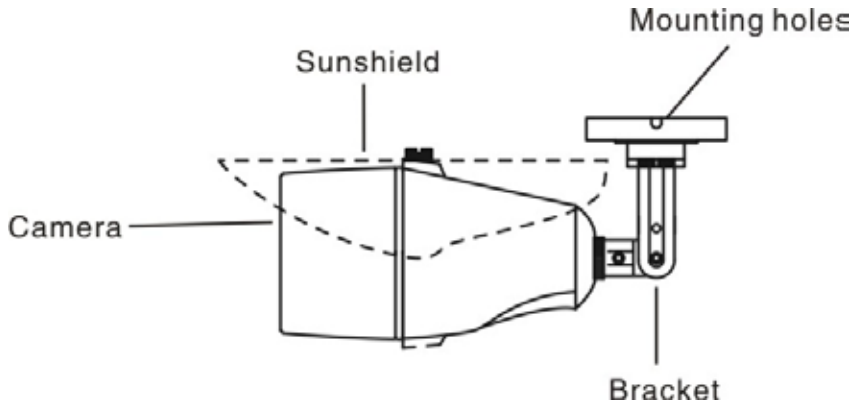


Figure 4-1

Device Installation

1. Open a package, take out the camera, and unscrew the camera shell, as show in Figure 5-1. Unscrew the camera shell

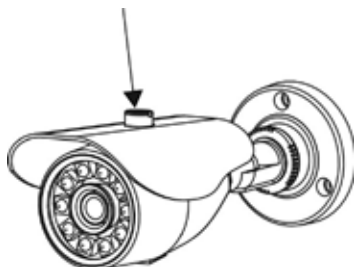


Figure 5-1

2. Take out the positioning label delivered with the camera and drill three holes with diameter of 5.5mm on the ceiling or wall based on the marks on the positioning label, nail swell plastic buttons into drilled holes, as shown in Figure 5-2. Stick the positioning label

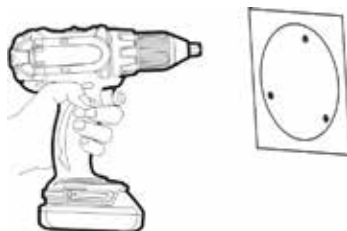


Figure 5-2

3. Connect the multi-connector cable and fix the camera to the ceiling(or wall) by use of self-tapping screws.
4. Loosen the direction focusing screw, position left-right up/down to adjust the angle of the camera that the camera faces the monitored area, then fix the direction focusing screw, as shown in Figure 5-3. Adjust the camera direction.

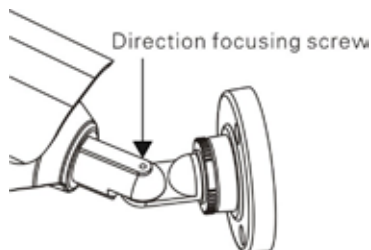


Figure 5-3

5. Adjust view angle and focal length by using an adjusting tool, as shown in Figure 5-4.

View angle and focal length adjustment

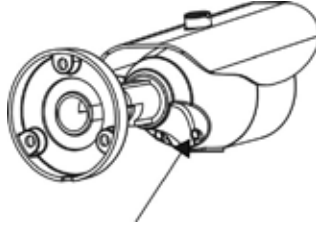


Figure 5-4

6. Fix the camera shell, as shown in Figure 5-5.

Fix the camera shell

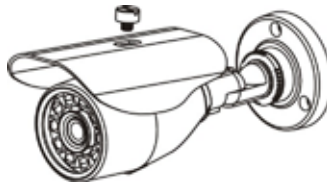


Figure 5-5

Function Menus

OSD Main Menu

When you press the multi function switch control key downward, the OSD main menu **MAIN MENU** appears, as shown in Figure 6-1. The OSD main menu provides function options such as **LANGUAGE**, **VIDEO SYSTEM**, **PICTURE ADJUST**, **ADVANCE SETUP**, **RESET CAMERA**, **VERSION NO.**, **SAVE &EXIT**, and **EXIT**.

OSD main menu



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The table describes the function options on the OSD main menu.

Function options on the OSD main menu

Function Option	Description
LANGUAGE	Used to select a menu display language. Available language options are CHINESE, ENGLISH, POLISH, FRANCAIS, ESPAÑOL, and ITALIAN .
VIDEO SYSTEM	Used to select a video system. Available video systems are PAL and NTSC.
PICTURE ADJUST	Used to set the image effect.
ADVANCE SETUP	Used to set system parameters for the camera.
RESET CAMERA	Used to initialize the setting of the OSD main menu for the camera.
VERSION NO.	Used to display the camera version number.
SAVE &EXIT	Used to save or exit the OSD main menu.
EXIT	Used to return to the first page of the OSD main menu.

Image Setting Menu

When you select **PICTURE ADJUST** on the OSD main menu and press the multi function switch control key downward, the **IMAGE** menu appears, as shown in Figure 6-2.

Image setting menu



The table describes the function options on the image setting menu.

Function options on the image setting menu

Function Option	Description
D-WDR	Used to enable or disable the digital wide dynamic range function. Available options are ON and OFF .
WHITE BALANCE	Used to select a white balance mode. Available options are AWB-PRO , AWB-TEMP , AWB-AI , AWB-GW , and AWB-CCT .
BRIGHTNESS	Used to set the image brightness level. The level ranges from 0 to 250.
SHARPNESS	Used to set the image sharpness level. The level ranges from 0 to 15.
CONTRAST	Used to set the image contrast level. The level ranges from 0 to 255.
SATURATION	Used to set the image saturation level. The level ranges from 0 to 15.

Advanced Setup Menu

When you select **ADVANCE SETUP** on the OSD main menu, press the multi function switch control key downward, the **ADVANCE SETUP** menu appears, as shown in Figure 6-3.

Advanced setup menu



The table describes the function options on the advanced setup menu.

Function options on the advanced setup menu

Function Option	Description
AE MODE	Used to select an exposure mode. Available options are SMART AE, GLOBAL, CENTER, CENTER WEIG, BLACK LIGHT, FRONT LIGHT, and LOWER 1/3.
IRIS	Used to set auto iris in OPEN, CLOSE and AUTO modes, and set SHUTTER SPPED to be AUTO, 1/50, 1/120, 1/250, 1/500, 1/1000, 1/2000 and 1/4000.
AUTO GAIN	Used to enhance night vision effect automatically. Automatic gain value ranges from 1-16.
3D-NR	Used to enable or disable the noise reduction mode. Available options are ON and OFF.
MIRROR	Used to select a mirror image mode. Available options are OFF, HORIZONTAL, VERTICAL, and HORZ&VERT.
DAY&NIGHT	Available options are EXTERNAL, COLOR, B&W, and AUTO.
ZONE MASKING	Available color options of masking zones are GREEN, MAGENTA, RED, BLUE, BLACK, MOSAIC, WHITE, YELLOW, and CYAN. You can set a maximum of 8 masking zones.
MOTION DETECTION	Used to enable or disable the triggering alarming function. Available sensitivity levels are HIGH, MIDIMUM, LOW, and WEAK.

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Technical Specifications

The table lists the technical specifications of the camera.

Technical specifications

Specifications	Description	
	VKC-900IR36	VKC-900IR2812
Image sensor	SONY 1/3"Exmor CMOS	
Effective pixels	PAL: 1280(H)×960(V) NTSC: 1212(H)×909(V)	
Horizontal resolution	900 TVL	
Signal to noise ratio	≥50 dB (weighting)	
Minimum illumination	0.01 Lux(AGC ON; IR OFF) 0 Lux (IR ON)	
D-WDR	Support	
Electronic shutter	1/50~1/50k sec	
Automatic gain	1~16	
BLC	Off/BLC	
White balance	AWB-PRO/AWB-TEP/AWB-AI/AWB-GW/AWB-CCT	
Day/night mode	AUTO, COLOR, B&W, and EXTERNAL.	
Mobile optical filter	ICR infrared filter	
Digital noise reduction	Off/3DNR	
Motion detection	HIGH, MEDIUM, LOW, and WEAK (a maximum of four motion areas can be set)	
Privacy mask	OFF/ON (a maximum of 8 mask areas can be set)	
Sens-up (slow shutter)	×2 (MAX)	
Other functions	Saturation, sharpness, brightness, mirror, and anti-shake	
OSD language	ENGLISH, CHINESE, POLISH, FRANCAIS, ESPAÑOL, and ITALIAN.	
Synchronization mode	Internal synchronization	
Signal system	PAL/NTSC	
Video output	1.0 Vp-p composite video output (75Ω/BNC)	
Lens focal distance	3.6mm	2.8-12 mm
Infrared illuminating distance	3.6mm: 15~20m 2.8~12mm: 25~35m	
Lens interface	M12	φ14
Auto Iris	DC drive	
IR-LED wavelength	850 nm	
IR-LED number	10pcs SMD LED	15pcs SMD LED
IR-LED control	Ambient light sampling ON: 1-3 Lux; OFF: 5-8 Lux	
Power supply	DC12V	

Specifications	Description	
		VKC-900IR36
Power	1.2W(IR OFF)+2.9W (IR ON)	1.2W(IR OFF)+4W (IR ON)
Operating temperature	-10°C - +50°C	
Operating humidity	Rh90% MAX (no condensation)	
Protection level	IP66	
Storage environment	-30°C - +80°C	
Weight	350g	400g
Dimensions(Length × Wide × Height)	194 mm×82mm×72 mm	226 mm×96 mm×86 mm



Further information

The manual, and other software tools are available on the eneo website at www.eneo-security.com or on the included CD.



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