

ES288 Active IR Illuminator

In the Night-vision Monitoring System, it is visible light the common illuminant for camera. But with the shortcoming of unhide, disturb the resident and easy exposure the monitor target, infrared videography technology, a hidden and scientific method which is a invisible light source to camera, replace to visible light at the present time. There are Passive Infrared videography technology and active Infrared videography technology. The former use the theory, any substance radiate infrared ray above absolute zero (-273°C), the higher temperature they has, the more infrared ray they radiate. The application of this theory is the thermal infrared imager. But he cost of this kind of infrared camera is very expensive, they only use for military or some special occasion.

And the active infrared camera technology use infrared light radiating to illuminance (Main infrared ray) and achieve night-vision monitoring. Work with the common low light intensity black and white camera, Day & night camera or infrared low light intensity color camera to sense surrounded scenery and the infrared light reflected back. With mature technology, economy, stable, active infrared camera technology becomes the main stream of night-vision monitoring.

ES288 Series WisdomEye™ Intelligent Infrared Technology

·This IR illuminator is the first intelligent infrared illuminator in the world. Adopt WisdomEye™ Intelligent Infrared Technology, using the photocell to dim infrared light, disperse and focus the light automatically. There is no blind area at less background light or over exposure of foreground at indoor or outdoor environment.

·It can deliver a constant level of brightness of IR light, intelligent control the performance of infrared light when the camera switch to different distance.

·It has the advantages of small size, safe and inconspicuous.

·It can enhance and improve the performance of the night-time image of the camera.

·Also a regulated low power input circuit which allows the illuminator to be powered directly by a 12VDC/24VAC electric source.

· Using the weatherproof Aluminum Die Casting housing and variable angle “U” bracket can reduce the installation cost and easy and quick mounting.

·These illuminators are recommended for military surveillance, perimeter surveillance, airports and prisons, ports and harbours, as well as residential, commercial and public centre surveillance.



There is a photocell of brightness of infrared light and unique intelligent control circuit in ES-288 IR Illuminator. When the camera is watching at short distance with ES-288 and the reflected infrared light is very strong which makes exposure in the picture of screen, the photocell will intelligently decrease the power of the illuminator. In this case the infrared light becomes soft and uniform irradiation and no exposure of the screen at all. When the camera is watching at long distance, the reflected infrared light is weak, the intelligent circuit will enhance the power of illuminator automatically improving the brightness of infrared light to stronger and longer. The screen is clearer than before. So there is no blind area at less background light or over exposure of foreground at indoor or outdoor environment.

Indoor environment



Over exposure by normal infrared lamp without WisdomEye™ Intelligent Infrared Technology



Infrared lamp with WisdomEye™ Intelligent Infrared Technology

Basic Function

- It is the first intelligent infrared lamp. Adopt WisdomEye™ Intelligent Infrared Technology; dimmable light; there is no blind area with less background light or over exposure of foreground.
- High quality, high effect LED increases white light emission efficiency. The operating temperature rises only 60% to the normal LED, which prolongs the lifetime of the lamp to average 50000hours.
- Elaborate design of the internal structure.
- High light transmittance toughened and hidden light glass
- Aluminum Die-casting Housing, great heat dissipation ability, elegant appearance and low weight.
- It takes weatherproof and dustproof, which is suitable for all kind of bad environment.
- Improve the performance of the weak light camera, thereby enhancing the picture effects at night.
- The function of video analysis at night
- Reduce signal noise and other image distortion.
 - Reduce network bandwidth requirements

Product Certification



Technical Specifications

LED	Excellent LED chip, High brightness, Long life
Numbers of LED	288pcs
Wavelength	850nm/940nm
Beam Angle	30°/45°/60°/90°/135°
Beam Distance	15--200m
Working Voltage	DC12V and AC24V
Power Max	38W
Day and night functionality	Automatic Wire 12VDC/24VAC:120cm
Type Plug	National standards
Mounting Bracket	Wall mounting
Ambient Temperature	-50°C-+50°C (-58°F-+122°F)
Grade of Protection	IP66
Color	Normal Black (White is optional)
Shield	Aluminum Die Casting Housing
Panel	High light transmittance toughened glass
Veneer	Black Color
N.W	1.4KG
G.W	1.9KG
Dimension	19*16*6cm
Packing Dimension	29*27*11cm

Models for Selection

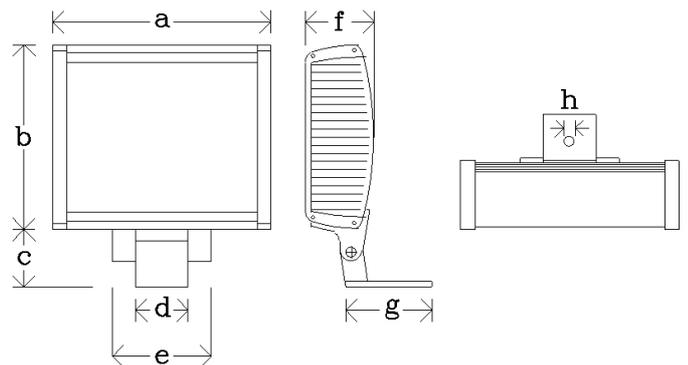
Model	Bean Angle	Wavelength	Max distance
ES288-30-8	30°	850nm	200m
ES288-45-8	45°	850nm	170m

ES288-60-8	60°	850nm	140m
ES288-90-8	90°	850nm	100m
ES288-135-8	135°	850nm	40m

Model	Bean Angle	Wavelength	Max distance
ES288-30-9	30°	940nm	60m
ES288-45-9	45°	940nm	50m
ES288-60-9	60°	940nm	35m
ES288-90-9	90°	940nm	20m
ES288-135-9	135°	940nm	15m

Max distance is tested by 1/3" SONY CCD B/W high sensitive cameras for night-vision

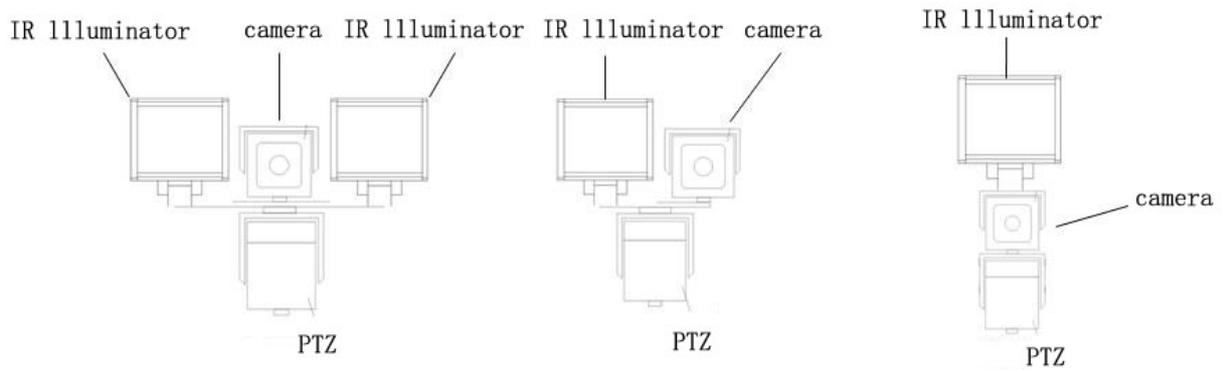
Dimension



a:190mm(7.5inch)	b:160mm(6.3inch)
c:55mm(2.17inch)	d:47mm(1.86inch)
e:86mm(3.39inch)	f:60mm(2.36inch)
g:75mm(2.96inch)	h:10mm(0.394inch)

Instruction for use

1.Installation diagram:



1.Example of application:



With IR Illuminator



Without IR Illuminator

A. Selection of camera:

The camera should have day and night,color-BW or IR-Cut function,which should be sensitive to 850nm and 940nm infrared(IR) light .The dimension of chipset should be up to 1/3" and below 0.01Lux.If there is a normal color camera,the IR filter should be replaced to the one penetrability of 850nm and 940nm IR light.If only take down the IR filter without replace,metachromatism will come up.

B. Relations between IR Illuminator and lens of camera

The reason of the lens of camera in relation to the IR Illuminator including the followings:

1. Luminous flux of lens(lumen)
2. Angle of the lens and IR illuminator
3. Dimension of the chipset

Solution:

1. Luminous flux of lens

To choose the lens with less F-Ratio this has biggish luminous flux.

2. How to choose the angle of lens to work well with IR Illuminator

If work with a fixed lens:

- a. To measure the distance between IR Camera and object.
- b. To select the lens with right focus according to the diagram.
- c. Be sure the angle of lens.
- d. To choose the IR Illuminator.

If work with a zoom lens:

- a. To measure the nearest and furthest point of measurand from camera.
- b. To select the focus of lens.
- c. Be sure the angle range of lens.
- d. To choose the IR Illuminator which can

cover the whole range.

C. Computing formula of focus of lens and display ratio of measurand.

To select the dimension of chipset

1/3" or bigger

Focus of lens for 1/3" chipset

$$F=4.8*L/W$$

$$F=3.6*L/H$$

Focus of lens for 1/2" chipset:

$$F=6.4*L/W$$

$$F=4.8*L/H$$

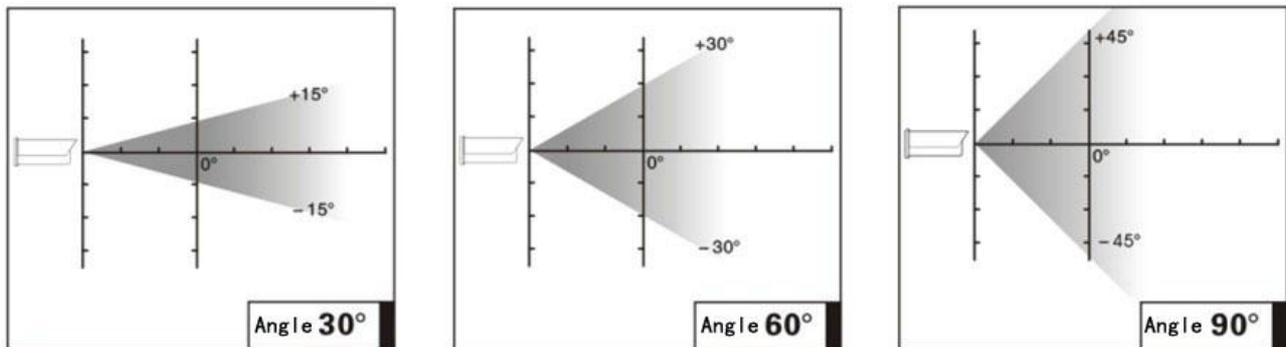
For example: 15m far from the camera there is a man ,1.7m tall, which occupied 1/4 height on the screen.

$$F = 3.6 * 15m / 1.7m * 1/4 = 8mm$$

- a. $F =$ Focus; $L =$ distance between lens and measurand; $H =$ height of measurand; $W =$ weight of measurand
- b. The computing formula is based on the measurandrange filled with the whole screen. If only show on 1/4 screen, should multiply the focus by 1/4.
- c. According to the reasonable price and cost, the angle range of one IR illuminator could not cover the detected range of zoom camera.

The edge of screen will gloomy.The solution is combine IR Illuminators with small angle or different illuminate distance together with technical means.

Schematic plot of the angle of IR Illuminator



Optimum distance in relation to the focus and angle of the lens of camera which be based on the person (1.7metre tall) occupied 1/4 height on the screen

Focus (mm)	Relative Aperture	Close-up Distance (m)	Dimension of Chipset	Horizontal Viewing Angle	Optimum Distance (m)
75~80	F/1.8	0.2	1/3"	4°	150m
60~75	F/1.8	0.2	1/3"	4° ~ 5°	120m
50~55	F/1.8	0.2	1/3"	5°	100m
40~45	F/1.8	0.2	1/3"	6°	80m
35~40	F/1.7	0.2	1/3"	7°	70m
30~35	F/1.7	0.2	1/3"	8° ~ 9°	60m
25~30	F/1.4	0.2	1/3"	12°	50m
20~25	F/1.4	0.2	1/3"	14°	40m
16~20	F/1.4	0.2	1/3"	17°	30m
12	F/1.4	0.2	1/3"	22°	20m
8	F/1.2	0.2	1/3"	34°	15m
6	F/1.2	0.2	1/3"	51°	10m
4	F/1.2	0.2	1/3"	76°	8m

- ※ *The Angle of IR illuminator in equal to or greater than the camera angle.*
- ※ *We strive to the accuracy of the information , but cannot cover the tests of all application area .If any error or omission ,pls kindly correct.*
- ※ *All technology specifications,design and characteristics show on this catalogue are subject to change without prior notice.*