How does night vision camera work?

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Most security cameras today are capable of recording at night.At that time, the camera could see everything clearly even when it was pitch black.But how does the night vision camera work?We will explore the principle of night vision cameras in this article.

Let's assume you don't care much about this type of camera, but maybe you have many times to watch night scenes from TV shows, especially in horror movies or in horror chapters. submit to the animal world.These are green, black and black black movies that are so familiar in movies and television.Many cameras today also incorporate night vision technology.This technology allows the camera to record even when it is dark and the amount of light is very little or almost nonexistent.

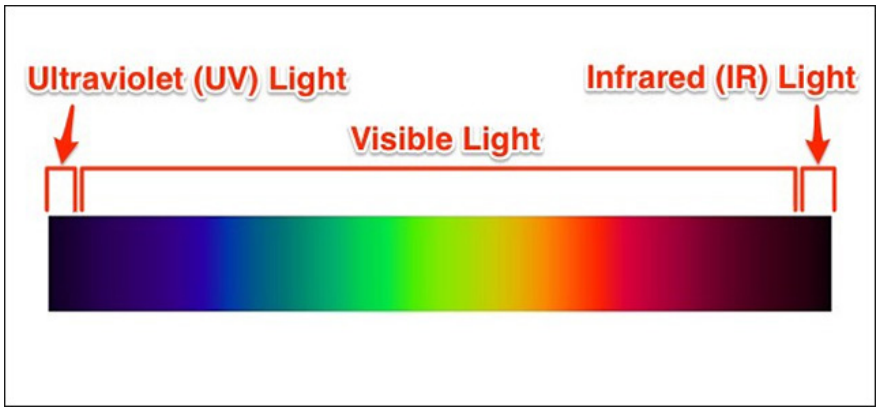
The night vision camera sees areas that the naked eye cannot see

In fact, there are two types of night vision technology each other.One type is used in night vision cameras, and the other is used on night vision goggles.In it, the most common type used on most surveillance cameras is infrared (IR) technology at night, operating based on infrared light.If you've ever looked at the front of a security camera,you may have noticed that the camera surrounds the camera's lens as a circle of small red LEDs.This is the source of infrared light, and when it is dark, these LED lights will be turned on, providing light and expanding the camera's view.

This means that infrared light is completely invisible to the naked eye.So, you will think that it is not like other normal light that can brighten up a space, but it can do that, just the camera can see and your eyes do not.

Moreover, night scenes from security cameras are always displayed in black and white because the human eye can distinguish between black and white better than other colors, such as red or blue.Therefore, most night-

vision cameras use a monochrome filter to turn black and white, making it easier to see images.



Most security cameras today are equipped with night vision, and IR filters.This feature automatically detects daylight and applies filters to block infrared light during the day to keep colors looking accurate.When night comes, the auto filter is disabled, requiring the camera to have more light to observe, and that's when infrared light works.

Enhance absorption tube and light amplification

In addition, there is another device commonly found in night vision goggles called 'booster tubes'.Basically, it includes a camera sensor that is extremely sensitive to light, which adjusts the intensity of light entering the glass.In more technical terms, the available light entering the night vision glass (including photons) is turned into electrons, which then convert light into electronic signals.Next, electrons are multiplied by using a photomultiplier and then passing through a phosphorus screen,producing light rays that lead to brighter images.All light entering the glass is turned green by going through the phosphorus screen, thereby providing images in the form of familiar green.Human eyes are more sensitive to green than most other colors.

The reason night vision goggles can work because in fact no environment is completely dark.It may be very dark, but there is absolutely no light present.In fact, it is difficult to block all light unless you really try to do so.Night vision goggles can absorb even the smallest sources of light emitted from anywhere and amplify it many times.

A regular camera can do the same thing.For example, you go into a dark room or go out at night and use the exposure photography feature with a camera or phone.The result is a much brighter image than what you actually see, because the camera is absorbing all the available light in the environment and amplifying it many times.If there is absolutely no light at all, the camera will not be able to capture any details, even if you use the exposure feature.

In summary, this type of night-vision technology is often found in night-vision goggles, and most security cameras come with night-vision capabilities based on infrared light.

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