

THROWING SOME LIGHT ON 24 HOUR SURVEILLANCE

Recent developments in the CCTV sector have been firmly aimed at achieving around-the-clock surveillance. Whilst it is fair to say that low light performance can be enhanced by the use of day/night cameras, wide dynamic range, sens-up, turbo boost gain and noise reduction, the reality is that to achieve usable CCTV images in darkness requires something else - light! Raytec is a new name to the CCTV illumination sector, but it claims its products can resolve many of the traditional problems associated with IR illumination.



Traditionally, CCTV users faced something of a choice when it came to CCTV illumination.

Where financially viable and unlikely to cause offence to neighbours, users tended to prefer the use of white light, simply because it allows for colour information to be captured by the cameras. It is worth remembering that colour information is actually a very important part of visual recognition. By way of an example, it would be infinitely easier to find an individual wearing a red shirt in a public street scene than an individual wearing a red or blue or green or orange or purple shirt, or indeed a shirt of any other colour that appears as grey when monochrome cameras are being employed.

Colour is instinctively recognisable, and as such the preferred mode in security surveillance applications is colour operation. However, without white light, colour information is lost. In such cases switching to monochrome operation is preferable because the cameras offer higher resolutions and – more importantly – higher levels of sensitivity. The result is that this allows some sites to make use of ambient lighting for CCTV use.

There will be applications where white light is not practical or financially viable (or cannot be used due to recent changes in legislation regarding light

pollution), and where the ambient lighting level is too low, or the user requires better quality images than those that can be achieved with ambient lighting. In such cases, the answer is infrared illumination.

Infrared lighting is a CCTV tool that some installers prefer to avoid. In the past it has been tricky to set up correctly and requires a fairly intensive level of maintenance. However, these issues are no longer relevant according to Raytec, and the company claims that its Raymax range of infrared illuminators moves things forward significantly for those seeking CCTV illumination.

Product design

The Raymax range is available in a number of different configurations. The Raymax 200 offers coverage of up



■ **The connections are straightforward, and setting up the Raymax is also a very simple task.**

to 200 metres, the Raymax 100 delivers a range of up to 60 metres, the Raymax 50 has a range of up to 40 metres and the Raymax 25 has a range of up to 15 metres. All of the units except the Raymax 25 have what Raytec call adaptive illumination, in that the angle of illumination can be adapted on site. Our unit was the Raymax 50-AI-30. This is an 850nm unit with an adaptive illumination angle of 30°–60°. Models are available with differing angles and a 950nm version is available as well. This offers covert operation (the red LEDs are visible on the 850nm models), but unless that is an absolute condition of use, most installers will prefer the 850nm version as it works better with most IR corrected lenses.

The unit uses LEDs which are controlled by a cool running thermal management system designed to enhance longevity, and the unit has a low power consumption (20W) which makes it cost-effective when compared to bulb-based IR illuminators. The LEDs also have a claimed effective life of 10 years, which represents a serious reduction in maintenance requirements.

The illuminator is supplied with an easy-to-use bracket that allows the mounting angle and light angle to be adjusted. A PSU is included, and this additionally features a photocell for automated

operation. This is factory set with a switch-on setting of approximately 35 lux, and a switch off setting of approximately 70 lux. The unit also features a potentiometer to allow adjustment of these levels. Alternatively, a telemetry input can be used for external switching. Finally, another potentiometer adjusts the power output to the illuminator heads.

Adjusting the angle of light is a simple task. The installer simply needs to loosen a locking bolt, manually align the illuminators until the required angle is achieved, and then refasten the bolt. Obviously, this necessitates use of a test monitor, or makes alignment a two-man job.

Performance

The Raymax 50 does exactly what you expect an infrared illuminator to do. The range specification is achievable, and can even be slightly exceeded, but where evidential video is required it's best to stick to the specification. Even at the widest angle of 60°, illumination remains even and there is little that can be said negatively about it in that respect.

When used correctly, there are no flaws in the illumination coverage. With a range of IR-sensitive cameras and IR corrected lenses, the final images showed little in the way of white-out, and adjusting the light pattern both via the adaptive bracketry and power control made the unit very flexible.

The photocell feature works well, and is a benefit where telemetry control isn't being used. However, for many, the main reason for selecting a Raymax will be the low cost of ownership coupled with the field-variable angle of view. An infrared illuminator with an even light coverage is always going to either work or not work, so it's difficult to set one unit above others. However, when coupled with the good performance on offer, these additional features make the Raymax more attractive and enhance its level of installer-friendliness.

In summary

The Raymax 50 is a well engineered and effective CCTV tool, and it offers a good level of flexibility in a very easy to install package. That, coupled with low cost of ownership, will be enough for most installers seeking good quality IR illumination.

SPECIFICATION

Supplier: Raytec
Model: Raymax 50-AI-30
Type: IR illuminator
Range: 40 metres
Angle: 30°-60°
Switching: Integral photocell; external
Power Consumption: 20W
LED Life: 10 years (expected)
Warranty: 5 years

For further information, please visit www.psimagazine.co.uk.

PSI RATINGS

Product Design	■■■■■■■■■□□	Instructions	■■■■■■■■■□□□
Build Quality	■■■■■■■■■□□	Installer Friendliness	■■■■■■■■■□□
Ruggedness	■■■■■■■■■□□□	Functionality	■■■■■■■■■□□
Ease of Installation	■■■■■■■■■□□	Coverage	■■■■■■■■■□□
Ease of Set-up	■■■■■■■■■□□	Overall Performance	■■■■■■■■■□□

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