Raytec Network Illuminators Identify Intruders for Las Vegas Country Club

Raytec VARIO IP PoE LED Network Illuminators have revolutionised security system design and installation for a large estate in a Las Vegas country club community - unlocking system intelligence and proactively deterring crime. With multiple residences having experienced break-ins at night that resulted in extensive losses, the owner of the estate turned to the latest IP Video technology for protection; with Raytec network lighting at the very centre of the solution.

Project Challenge

Axiom Design, Inc., a technology consulting firm specialising in the design of Security, Communication, Entertainment and Integrated Environmental controls, was responsible for the system design and technology integration for the project. Axiom Design was faced with a situation that required a broad security solution to help successfully detect, identify and alert the client and an off-site central video monitoring station. The system was also required to be easy for the client to operate efficiently and quickly in order to confirm activity on the premises and alert the authorities. The city of Las Vegas has a 'No Response' policy which states that without verification, no emergency responders will be dispatched as the level of false alarms is far too high.

Integrated IP Lighting Solution

Following a thorough risk assessment, Axiom recommended a solution with the highest level of protection for the client. A fully integrated and multifaceted IP security system was custom designed to the clients' needs, with information centrally managed and seamlessly relayed between all devices by two software platforms: a Crestron integrated home automation control system and a Mobotix video software (VMS) platform, to deploy the best security response in the exact place needed on site.

Given that most crime happens during the hours of darkness, Axiom recognised that responsive IP White-Light LED technology was a crucial element for tying all parts of this project together and achieving not only the CCTV image verification needed for a police response, but also to deter crime from occurring in the first instance; Axiom did not hesitate to recommend Raytec.

"Having worked with Raytec high performance LED products before, and knowing the integral requirement for identifying a perpetrator, we knew that their White-Light network illuminators would provide the powerful solution we were looking for", comments Robert Kranson of Axiom Design, who was in charge of managing the project.

"We could also fully integrate the IP lighting into the managed network solution and configure the detection and identification process based upon multiple triggers from various security devices, providing different light outputs centered around the nature and severity of the alert and threat."

The final hardware system consists of an early detection laser, Mobotix M15 thermal and S15 optical cameras, and Raytec's 'VARIO IPPoE' White-Light Network LED Illuminators.

Fully integrated into the Crestron home automation system with a range of other access control devices, the laser detector raises an alarm into the Crestron system on identification of an intruder on site. This in turn raises an alarm into the Mobotix VMS to activate the thermal camera in the exact area that the intruder has been detected.

Based on heat detection, the thermal video analytics identifies the subject and recognises the proximity of the intruder to the home, in complete darkness. The VMS solution then sends HTTP commands directly to the whole group of Raytec network illuminators and triggers them into a specific

deterrent flashing mode, providing a noticeable White-Light warning to the intruder that they are being watched and recorded. But the illuminator located in the exact area of concern, is configured to produce a solid-on White-Light output to allow the 5MP Mobotix optical camera in that area to generate a detailed night time colour image of the intruder for identification; displayed both on-site and streamed live off-site to the central video monitoring station.
The high quality images provide sufficient verification of the intruder, and qualify the site for dispatch of an emergency police response.

User Benefits

Robert Kranson was eager to confirm that *"the Raytec IP lights enable the camera system to provide enough lighting to deliver exceptionally clear and detailed images for identification purposes during the night. This process ensures improved police response time and allows potential false alarms to be significantly reduced".*

The project also presented hurdles when it came to specifying the lighting, but thankfully the VARIO IP PoE network illuminators from Raytec helped Axiom to easily overcome them, and delivered huge performance, operational and installation benefits. During the security retrofit, the site also underwent a significant upgrade to its landscape lighting to improve the quality of light. The new LED landscape lighting radically improved the aesthetics over the previous halogen low voltage lighting, but was not able to provide enough supplemental light to allow the cameras to deliver a good colour image. But with the addition of the Raytec LED Network Illuminators, this provided a dedicated layer of security lighting to not only allow the cameras to generate clear colour CCTV images for precise subject identification, but also to capture every detail in the entire scene, evenly illuminating all targets at different depths.

This is thanks to Raytec's holographic lens technology and elliptical beam patterns with Hot-spot Reduction Technology. The holographic lensing spreads and controls the light for an outstandingly even light output across the full width and depth of the scene with no dark or bright areas in the image. The highly targeted elliptical beam pattern focuses the light where it is needed most, reducing light spill both upward and in the foreground, eliminating potential hotspots caused by over exposure at close range.

In addition, where the White-Light was used in a flashing mode, it provided an extremely effective visual deterrent to stop crime occurring in the first place. Using lighting on demand in this way, triggered only when needed, also significantly reduces electrical consumption.

Furthermore, the site had extremely high temperatures, often reaching up to 50°C (122°F) in Las Vegas. But all Raytec illuminators can operate comfortably and faultlessly in temperatures ranging from -50°C to +50°C with a lifetime of ten years plus whilst requiring zero maintenance – eliminating ongoing bulb replacement costs associated with older style lighting technology. Also, due to the Raytec lighting being PoE powered, it was extremely cost effective when it came to the installation. They could be controlled, managed and easily added to the newly deployed high performance fibre

optic network infrastructure, and connected at local PoE switches at each camera point, further leveraging the LAN.

Outstanding Support

"Raytec's support was second to none", further comments Robert Kranson. "*Their engineers were extremely helpful with product selection and software support for configuring and controlling the IP lighting. Their ability to provide an accurate 3D lighting design and system plan for the entire site was also integral for the coordinated and integrated design approach that was required for this project."*

The Raytec lighting design team is more than willing to tackle any challenge thrown their way and is happy to create tailored lighting design plans to support bespoke customer requirements.

Siming Li, Raytec Lighting Designer comments, *"It has been a pleasure to work so closely with Axiom Design and support this project from start to finish. We were able to produce lighting designs to give the client a visual representation of what the final lighting solution would actually look like. We created fully illuminated 3D models of the client's site, showing detailed light level calculations at each individual camera location. This confirmed that we could deliver sufficient lighting for the cameras to generate extremely high quality and detailed night time images. We even provided dedicated glare factor calculations for the deterrent lighting, so that we knew how effective the flashing warning lighting would be".*

The entire installation has been a huge success and the client is extremely happy with the results. Both Axiom and Raytec are pleased to boast that with their collaborative and smart application of flexible and high performance IP lighting, even the most complex system design and environmental obstacles can be easily overcome.

For more information on Raytec Network Illuminators, or if you are working on a project that requires lighting, contact Raytec Global at **sales@rayteccctv.com** and Raytec Americas at **ussales@rayteccctv.com** or visit **www.rayteccctv.com**