

Application Focus: Data Centers



Executive Summary

As data centers continue to grow in size and strategic significance, physical security has become a critical concern.

Protecting these high-value environments requires more than cameras and fencing, it demands lighting solutions that enhance visibility, strengthen surveillance, and deter threats.

Raytec's industry-leading LED lighting solutions, including White-Light (WL), Infra-Red (IR), and Hybrid units, provide intelligent, efficient, and adaptable options for securing data center perimeters.

This Application Focus explores how Raytec's lighting technologies support security integrators and consultants in delivering best-in-class perimeter protection.

The Evolving Security Landscape of Data Centers

Data centers serve as the backbone of modern digital infrastructure, supporting everything from cloud services to AI development and financial transactions.

As these facilities become more essential, they are increasingly targeted by malicious actors. Physical breaches can lead to devastating consequences, including service outages, data loss, and reputational damage.

Effective perimeter security is foundational, and lighting plays a central role in ensuring total situational awareness, rapid threat detection, and response.

Lighting as a Critical Security Layer

Lighting is often an overlooked component of perimeter security, despite playing a vital role in enhancing surveillance, guiding first responders, and deterring intrusions.

High-performance lighting improves camera image quality, especially at long distances in low-light conditions, enabling faster, more accurate threat assessments.

Raytec's WL and IR solutions are already protecting data centers around the world, providing clear visibility and reinforcing other security technologies through integrated video management systems.

Hybrid LED Solutions: Adaptive, Intelligent, Discreet

Traditional White-Light offers high visibility but can compromise discretion, especially in sensitive areas. Infra-Red lighting provides covert surveillance but lacks deterrence. Raytec's Hybrid lighting systems offer the best of both worlds.

Using real-time triggers from integrated VMS platforms, hybrid units automatically switch between IR for covert monitoring and WL for active deterrence. This results in maintaining complete awareness without unnecessarily lighting up a site. When a threat is detected, the system responds instantly, delivering high-intensity White-Light to aid response without manual intervention.

For data centers where privacy and security must coexist, hybrid lighting provides a smart, future-proof solution.



VAR2-HY16-1



VAR2-IPPOE-HY8-1

Energy-Smart Security for Power-Hungry Environments

Data centers are energy-intensive by nature, often consuming as much electricity as a small city. Adding security infrastructure must be done with energy efficiency top of mind.

Raytec's highly efficient LED lighting helps minimize additional power consumption without compromising on performance.

Our products are purpose-designed for long life, minimal maintenance, aligning with most data centers' green IT goals and offering a more sustainable approach to perimeter security.

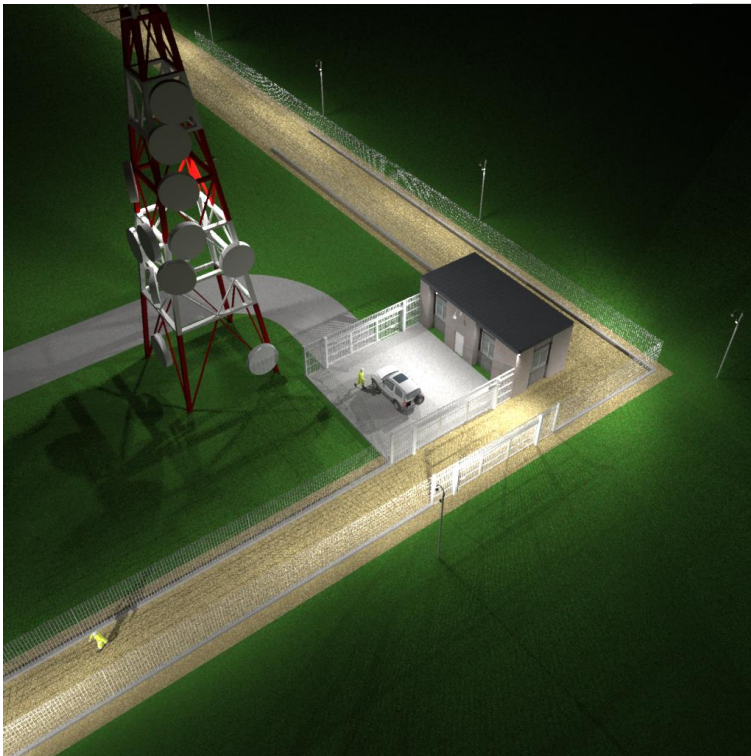
Lighting Design Turns Digital Plans to Physical Reality

Lighting design should never be guesswork. That's why Raytec offers a free lighting design service backed by in-house experts and integrated tools like System Surveyor. Our 3D lighting plans simulate how lighting will appear on the site, helping to identify blind spots and optimize coverage before a single fixture is installed.

What is seen in the design is what will be seen in real life. From fixture placement to shadow mapping and lux levels, every element is carefully calculated for flawless execution.

Raytec has also delivered perimeter lighting solutions for sensitive sites where protecting nearby wildlife was a key priority. By using precision optics, specialty amber or cyan lighting, and Infra-Red options, we've minimized light spill and disturbance to natural habitats while maintaining reliable security performance.

With Raytec, you can move forward with confidence, knowing the lighting plan will deliver exactly as expected. No surprises, no compromises.



Real digital lighting design



Real perimeter lighting mapping

Quality of Light Versus Quantity of Light

Our focus is on the quality of light, not just the quantity. Our lighting solutions are engineered to deliver light precisely where it's needed, along the perimeter - without spilling onto nearby roads, residential areas, or green spaces.

By controlling beam patterns and optimizing placement, we ensure effective illumination that supports security objectives while minimizing light pollution and energy waste. It's powerful light, thoughtfully applied.



Modular and Network Ready

Raytec's VARIO2 platform is designed with flexibility and scalability in mind. Whether protecting a small facility or a multi-site deployment, our solutions adapt to your needs.

- Customizable lens optics and power outputs
- Full integration with certain video management systems (VMS)
- IP/PoE options for remote access, diagnostics, and control

With VARIO2, you're not just buying lights, you're investing in a dynamic system that grows with your security requirements.



Your Strategic Partner in Perimeter Protection

As data centers face increasing threats and rising energy demands, lighting must evolve to meet new challenges. Raytec delivers intelligent, efficient, and effective lighting solutions that integrate seamlessly into modern security ecosystems.

For integrators and installers, our technology means fewer headaches, more control, and total confidence in performance.

Whether you're planning your next project or upgrading an existing system, Raytec is your partner in delivering perimeter security that's smarter, stronger, and built to last.

Reach out to learn more, request a custom lighting design, or specify Raytec in your next security solution.

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