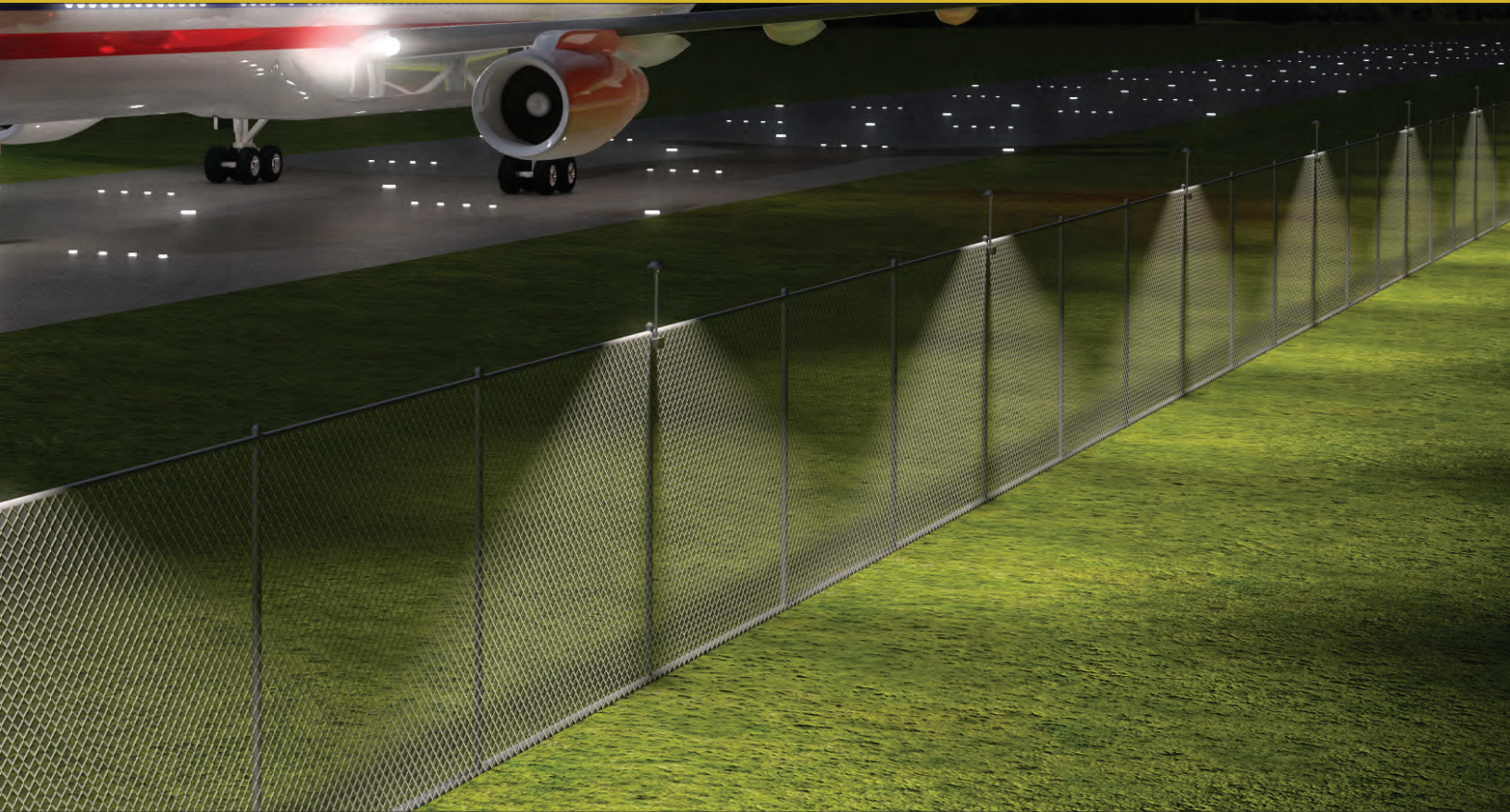


“Most Innovative Product of the Year”
– LightFair 2012

CAST Lighting for Security

LED Perimeter Lighting



Solve Your Security Problems for Pennies a Day

Benefits

- Low Cost
- Simple Installation
- Safe Low-Voltage
- Energy-Efficient
- Dark-Sky Compliant

Solutions

- Commercial, Municipal, Residential Properties
- Airports, Military Installations, Power Plants
- Aid & Relief Stations, Temporary Housing
- Secure Military and Police Deployment
- Temporary Fence Providers, Construction

The Industry's Most Durable LED's

Changing the way the world lights for security™



Old world craftsmanship. . .today's technology®

LED Perimeter Lighting



The CAST LED Perimeter Lighting System™

New Approach to Perimeter Security



CPL1

“The combination of low-wattage LED’s and extremely wide voltage range allow lighting runs up to 500 ft. per low-voltage wire.”

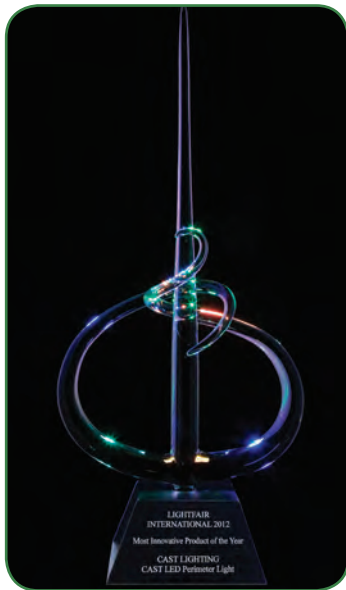
Description:

A low-voltage security lighting system comprised of rugged LED luminaires and a reliable power supply. Mounted on fence posts, these lights are simple and quick to install and consume a fraction of the energy of traditional security lighting. Can also be used in any lighting application where long wire runs are required (such as wooded paths and piers). These luminaires have numerous applications for a variety of end-users in both permanent and temporary installations.

Perimeter Light Features:

- ▶ 24-volt system allows for fast, safe installation with considerable cost savings (for labor, materials, and energy) compared to 120-volt installation.
- ▶ Provides no-glare lighting of appropriate illuminance for security cameras and guards.
- ▶ Each luminaire post-mounted with 2-bolt saddle-clamp designed to illuminate a 20 to 30-ft. section of fence (dependant on mounting height and required illuminance).
- ▶ Neutral White Cree LED’s with a predicted life of 54,400 hours (10 years).
- ▶ All components protected from dust and moisture - impervious to environmental damage.
- ▶ Cast aluminum alloy and galvanized steel construction durable enough to withstand physical abuse.
- ▶ Extremely wide input voltage range (from 12 to 24 volts) allowing long wire runs with acceptable voltage loss.
- ▶ A single 24v wire powers up to 17 lights to illuminate 500 ft. of fence for less than \$100 per year energy cost (based on 11 hrs./day).
- ▶ Dark-sky compliant - full-cutoff fixtures do not contribute to light pollution and light trespass.

Most Innovative Product of the Year



From the Judges:

“Never has so little light done so much work. We found this to be a simple, clean, efficient, energy-effective solution which could be used on nearly every property. It leverages the best benefits of LED – low voltage operation, optical efficiency, small size and long life for a truly robust security lighting solution.”

- Lightfair 2012 Judges

Call 973-423-2303 for more info on the CAST Perimeter Lighting System.

LED Perimeter Lighting Applications

General Strategy:

The CAST LED Perimeter Lighting System addresses a need that other lighting systems do not - an inexpensive, energy-efficient way to enhance visual security for extensive or remote property boundaries. It also fills the need for a portable lighting system for the military, temporary fence companies, event providers, and consumers.

Commercial and Municipal Properties:

Currently, commercial and municipal property perimeters are illuminated by general area lighting or security lighting - usually by high-pole-mounted or bracket-mounted luminaires. This approach works fairly well when perimeter fences are within areas adjacent to buildings or illuminated parking lots. It is, however, often the case that property perimeters extend beyond areas that require general area illumination. The CAST LED Perimeter Lighting System provides a highly energy-efficient and inexpensive way to illuminate these long fenced perimeters - applying illumination sufficient for security cameras and guards to detect the presence of intruders.



Typical perimeter lighting application.

Cost savings realized on several fronts:

- ▶ **Design:** One luminaire mounted on every 2nd or 3rd fence post - no need for extensive lighting plans.
- ▶ **Installation:** The run from the transformer to the fence can be buried without conduit at a depth of 6 inches (instead of 18 inches for higher voltages). At the fence wire can be attached directly to fence, or run through conduit.
- ▶ **Operation:** Because highly efficient LED illumination is focused only where it's needed (along the perimeter), energy costs are greatly reduced compared to general area lighting.
- ▶ **Maintenance:** Using Cree XPE LED's (L70 54,400 hours), expected life exceeds 10 years. The LED driver also has extended life features (including surge and spike protection) to ensure continuous operation throughout the life of the LED. During this period, the only maintenance required would be occasional cleaning of the hardened-glass LED enclosure.

Special Commercial and Municipal Applications

- ▶ **Airports:** System illuminates long perimeter fences, enhancing security and aeronautical safety.
- ▶ **Energy Providers** (Power plants and Substations): System provides security for long perimeter fences in remote locations.
- ▶ **Public Parks, Residential Areas, Observatories:** Provides dark-sky compliant perimeter and path lighting in LZ-0 zones.

Military Portable Units and Temporary Fence Providers:

The CAST LED Perimeter Lighting Portable Kit (CPL1PKIT10) is housed in a military-grade transport case and contains (10) luminaires, (1) transformer, and sufficient wire (with quick-connects) to illuminate a 300-foot length of fence.

- ▶ The construction of these luminaires enables them to survive an unlimited number of installations and breakdowns.
- ▶ Temporary installations require no trenching.
- ▶ All connections are plug-type and wires can be affixed to fence with removable cable ties.
- ▶ Can be powered by a small generator, storage battery, or solar-powered energy supply.

The ability to visually secure a perimeter so quickly with such a safe, robust, and reliable system is unique in the lighting industry.

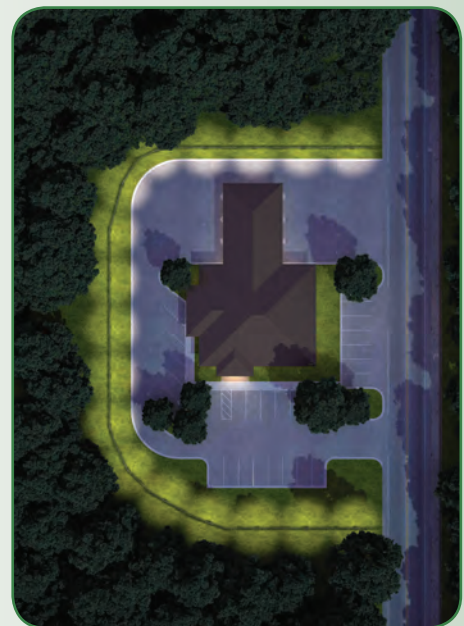
Other Applications for Temporary Lighting:

There are many other potential users of this system for temporary lighting, including:

- ▶ **Construction Companies:** For temporary lighting on site.
- ▶ **Law Enforcement:** To secure crime and accident scenes.
- ▶ **Aid and Relief Stations:** For area lighting in temporary outdoor facilities.
- ▶ **Event Providers:** To provide security and crowd lighting for outdoor events.

Residential

Many residential properties require enhanced security around perimeters. The low-level no-glare lighting from this luminaire provides sufficient illumination for security cameras and acts as a deterrent to intruders.



Aerial view of typical commercial application.

The CAST LED Perimeter Lighting System™

Luminaire Specifications - Model # CPL1



Construction: The luminaire has 4 primary components: hat, body, stem, and base.

- ▶ **Hat:** Sand-cast aluminum alloy with highly reflective white epoxy-coated underside.
- ▶ **Body:** Sand-cast aluminum alloy with LED array inset under waterproof borosilicate glass dome.
- ▶ **Stem:** Galvanized steel pipe secured with set screw at top and threads at bottom.
- ▶ **Base:** Sand-cast aluminum alloy junction box with removable cover and knockout at bottom. Junction box houses LED driver. Base also attached to stamped aluminum saddle clamp.
- ▶ **Hardware:** All hardware (including screws, nuts, and washers) are zinc-plated steel.

Mounting Options: Unit equipped with saddle-clamp for fence posts - other options available.

- ▶ **Pipe Mount:** Bottom knock-out can be used to secure pipe for connection to junction box.
- ▶ **Stake Mount:** Trident or standard stake can be secured to bottom knock-out for ground mount.

Electrical: The LED driver is a proprietary circuit designed specifically for this luminaire.

- ▶ **Input Voltage:** 12 volts to 24 volts AC or DC (polarity independent)
- ▶ **Input Current & Power:** 0.41 amps (+/- 10%); 6.2 watts (+/- 18%) (over 12-24v range)
- ▶ **Power Factor:** 0.88 (+/- 0.1) (over 12-24v range)
- ▶ **Surge and Spike Suppression:** TVS transient voltage suppressor (up to 40 volts)
- ▶ **EMI Filtering:** Inductors and capacitors for filtering to comply with FCC Class B Conducted and Radiated
- ▶ **Components:** All driver components selected for extended operation at high temperatures - no electrolytic capacitors.

Thermal

- ▶ **Ambient Temperature Range:** -40°C to 55°C
- ▶ **LED Array:** Mounted on aluminum core board, secured to cast-aluminum alloy body with thermal grease backing. Thermal pathway includes body, hat, stem, and base.
- ▶ **LED Driver:** Fully encapsulated in thermally conductive epoxy

Light Source

- ▶ **LED Array:** (3) Cree XPEHEW Neutral White chips
- ▶ **Lumen Depreciation (L70):** 54,400 hours (according to Cree LM-80 report)
- ▶ **Color Temperature (CCT):** 4,550°K
- ▶ **Color Rendering (CRI):** 73 (Note: Higher CRI not required for this application since illumination is primarily for security)
- ▶ **Light Output:** Lamp Lumens: 512; Luminaire Lumens: 265 (at 24v)
- ▶ **Efficiency:** Luminous Efficiency: 52%; Total Luminaire Efficiency: 37.9 lumens/watt (Note: Use of a diffuse reflector rather than a more efficient direct source was selected to reduce glare from these low-mounted luminaires.)
- ▶ **IESNA Cutoff Classification:** Full Cutoff

Certifications and Standards

- ▶ UL listing pending (expected date 9/12), FCC Class B Conducted and Radiated, RoHS

Sustainability and Replaceability

- ▶ Cast-metal components are sand-cast in CAST Lighting's own foundry in Colombia, South America. Trimmings and defective castings are re-incorporated into new product.
- ▶ All parts of the CAST LED Perimeter Light are replaceable. Should the LED array or driver fail, then the body or base can be replaced or repaired in the field without special tools or training. Returned parts are recycled in our foundry.

Control and Security Options

- ▶ The 24-volt (300VA or 600VA) CAST Perimeter Lighting Transformers (CPT300, CPT600, E1CPT300 and E1CPT600) have built-in manual timers that can be combined with optional photocells (CTPC) or external control units to tie into existing control system.
- ▶ Optional vandal-proof hardware and hard-wired security line through conduit can deter theft of luminaires and alert owners via security system.

Photometrics

- ▶ **Beam Angle:** 120°
- ▶ **Cutoff Designation:** Full Cutoff (0% above Nadir)
- ▶ **Spacing Criterion:** 20 ft. at 8 ft. mounting height to achieve minimum 5 lux to comply with suggested horizontal illuminance for unoccupied spaces (IESNA G-1-03). Many applications do not require this level of illuminance, and fixtures may be spaced at up to 30 ft.
- ▶ **Lumen and Efficiency Data:** Previous Page
- ▶ **LM-79-08 Report and IES files:** Conducted and generated by Independent Testing Laboratories, Inc. - available on request.

