CAST Lighting for Security
LED Perimeter Lighting

Changing the way the world lights for security®

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
LED Perimeter Lighting

The CAST LED Perimeter Lighting System™

New Approach to Perimeter Security

“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 illumination 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 illumination).
- Neutral White Cree LED’s with a predicted life of 36,300 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 10 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.

Call 973-423-2303 for more info on the CAST Perimeter Lighting System.
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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. In such cases, perimeters are typically left unlit, or they require long expensively-installed 120-volt lines and the use of floodlighting that is neither energy-efficient nor efficacious.
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.

Cost savings realized on several fronts:
- **Design:** One luminaire mounted on every 2nd or 3rd fence post - no need for extensive lighting plans.
- **Installation:** Because 24-volt systems comply with less-restrictive low-voltage lighting codes, the run from the transformer to the fence can be buried to a shallow depth of 6 inches (instead of 18 inches for 120 volts) and can be directly buried without conduit. Along the fence, the wire can be run through above-ground pvc or metal conduit attached to fence (no trenching). Low-voltage current presents zero risk for electrical shock injury.
- **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 36,300 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 hard-ened-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 rugged cast-metal and galvanized pipe construction of these luminaires enable them to survive an unlimited number of installations and breakdowns. 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.
Temporary installations require no trenching, all connections are plug-type, and wires can be affixed to fence with removable cable ties. The ability to visually secure a perimeter so quickly with such a safe, robust, and reliable system is unique in the lighting industry. Because of the low energy requirements, if needed, the system can be powered by a small generator, storage battery, or solar-powered energy supply.
Other Applications for Temporary Lighting:

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

- **Construction Companies**: For temporary security lighting along perimeters and within construction sites.
- **Law Enforcement**: To secure crime and accident scenes.
- **Aid and Relief Stations**: To provide area lighting in temporary tented and outdoor facilities.
- **Event Providers**: To provide security and crowd lighting for outdoor events.
- **Camping and Backyard Lighting**: For consumers who need portable, no-glare area lighting.

**Residential**

While this is certainly not a decorative luminaire, 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.

**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 sand-cast aluminum alloy 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**: 10 volts to 24 volts AC or DC (polarity independent)
- **Input Current & Power**: 0.38 amps (+/- 10%); 7.0 watts (+/- 10%)
- **Power Factor**: 0.82 (+/- 0.1)
- **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)**: 36,300 hours (according to Cree LM-80 report)
- **Color Temperature (CCT)**: 4,550K

Luminaire body cast in aluminum alloy contains encapsulated LED driver and wiring junction space. Sturdy saddle-clamp with stainless steel hardware secures luminaire to post. Clamp can be removed and unit mounted to pipe or stake secured to bottom knock-out.
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*Luminaire Specifications (cont.)*

- **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
- **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 repaired or recycled in our foundry.

**Control and Security Options**
- The 24-volt (200VA) CAST Perimeter Lighting Transformer (CPT200) has a built-in manual timer that can be combined with optional photocell (CTPC) or external control unit 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:** 120º
- **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.

CAST aluminum alloy exhibits extremely high tensile strength - will not bend or break. Hardened glass dome prevents water damage. Body (with LED array) & Base (with driver) can be replaced or repaired.

Isolux/Isofootcandle plot for typical application (Luminaires mounted on fence at 8 ft. height with 20-ft. spacing)

**About CAST Lighting**

Founded in 2001 by David Beausoleil, recognized outdoor lighting authority and Rutgers University instructor, CAST Lighting’s mission is to manufacture the Industry’s most durable and best-performing outdoor low voltage lighting products. All CAST Lighting luminaires are sand-cast in the company’s own foundry in Colombia, South America. The CAST Lighting line of outdoor LED luminaires are designed to withstand the most aggressive environmental conditions and provide professional lighting designers with robust and flexible tools that are simple to install and easy to service. CAST Lighting also provides extensive in-person and online training and maintains an extensive online knowledge base.