carmanah®

Carmanah EverGEN™
Off-Grid Solar LED Lighting

beta LED™

we put solar to work™

Where Solar Makes Sense

There are many applications where solar can provide immediate cost savings including:

New Sites Where:

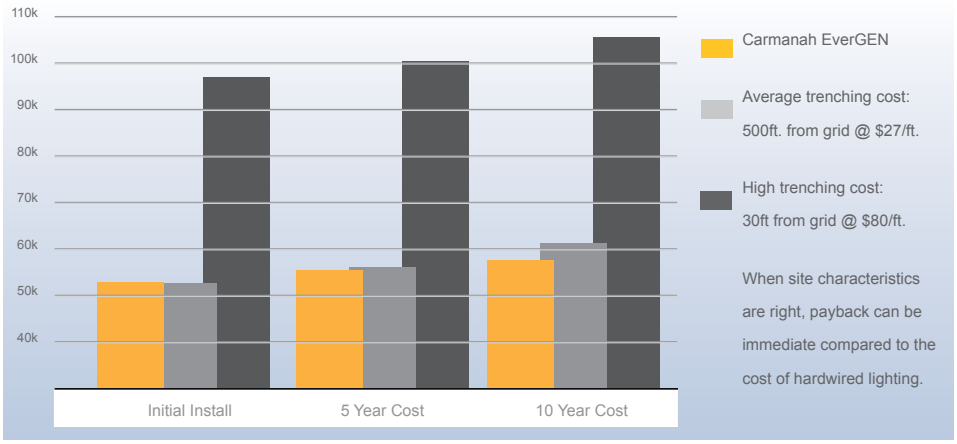
- the electrical grid is difficult or impossible to access
- trenching costs are high
- underground checks are time consuming and/or costly
- location of utilities is unknown
- copper theft is an ongoing concern
- there is a desire to show a move towards renewable technology
- government funding is a factor

Existing Sites Where:

- lighting is not already installed
- the cost of disruption to normal traffic flow is high
- the cost of environmental disruption is high
- existing lighting is insufficient
- underground wiring is nearing end-of-life
- there is a desire to show a move towards renewable technology
- government funding is a factor

Solar vs. Hardwired Lighting - Cost Comparison

When compared to hardwired lighting, solar LED technology can offer both immediate and long-term cost benefits:

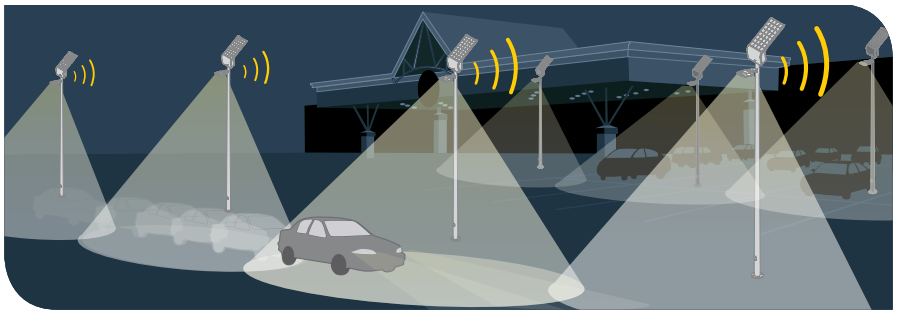


Comparison based on 10 EverGEN 1710 units.

Advanced Occupancy Sensing*

Carmanah is leading the way in wireless, off-grid adaptive lighting with the new advanced occupancy sensing capabilities available in the EverGEN 1700 series. Utilizing mesh networking and occupancy sensors, advanced occupancy sensing allows a network of 1700 solar LED lights to provide synchronized low-high activation when one of the lights within the network senses motion.

Advanced occupancy sensing improves the range and functionality of occupancy sensors alone and is ideal for parking lots, pathways and any area where lighting is an integral safety feature.



Advanced occupancy sensing can activate all the lights within the site when motion is detected by one light or can be programmed to provide a security bubble of light that follows motion through the site.

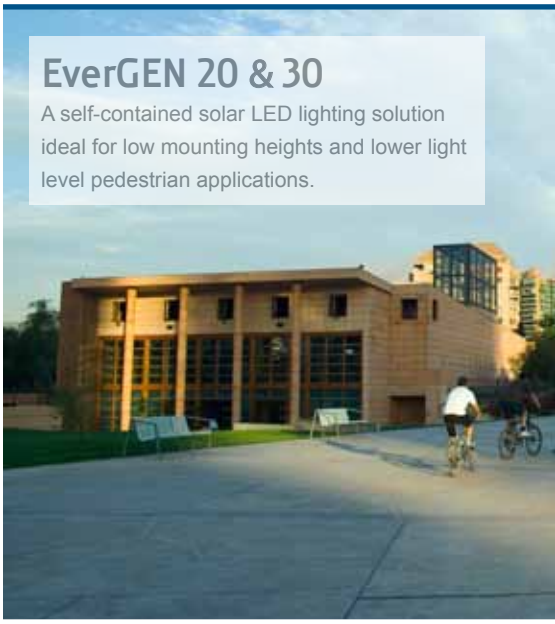
* patent pending technology

EverGEN 1700

A self-contained solar LED lighting solution with advanced occupancy sensing capabilities. Engineered for installation in less than 30 minutes. Ideal for parking lot, street and site lighting applications.

EverGEN 1500

A distributed solar LED lighting solution ideal for parking lot, street and site lighting applications.



EverGEN 20 & 30

A self-contained solar LED lighting solution ideal for low mounting heights and lower light level pedestrian applications.

Carmanah EverGEN 1700 Series

Solar LED Lighting Installation in Less Than 30 Minutes

Product: Carmanah EverGEN™ 1700 solar LED lighting

Benefits: Lifting straps and self-contained design allowed for unit to be staged on the ground and hoisted into place. Installation complete in less than 30 minutes.

Stage and Test

Lift into place

Orient and adjust

Installation complete

Carmanah EverGEN 1500 Series

Case Study: New Site Solar LED Lighting Install

Spokane Parking Lot – Spokane, WA, USA

Project Scope: Parking lot lighting systems for a major city parking lot located next to the INB Performing Arts Center, a brand new events centre in downtown Spokane.

Product: Carmanah EverGEN™ 1530

Benefits: Significant showcase of city's continued commitment to green practices, portability that will allow the city to move the lights as site requirements change.

Project Specifications:

- 17 systems (8 Type IV distribution – 3820 lumens, 9 Type V distribution – 4110 lumens)
- Coverage area: 400ft x 300ft
- Mounting height: 24 ft.
- Minimum: 0.2 fc
- Avg/min ratio: 2.4

Operating Profile: Light comes on at dusk at full intensity for five hours, dims to 25% of full intensity, the light returns to full intensity two hours before dawn.

Carmanah EverGEN 30 Series

Case Study: Existing Site Solar LED Lighting Install

Juan Pablo II Park – Santiago, Chile

Project Scope: Pathway lighting throughout Juan Pablo II Park, an environmental green space centrally located in the municipality of Las Condes in Santiago, Chile.

Product: Carmanah EverGEN™ 30

Benefits: The first public park in Chile to use solar LED lighting technology: a display of the municipality's desire to incorporate renewable technologies into infrastructure improvements.
An ecologically friendly lighting solution that allowed light to be placed only where needed, reducing light pollution and preserving the night sky.

Project Specifications:

- 37 systems
- Type II Distribution – 537 lumens
- Mounting height of 13 feet (4 meters)

Operating Profile: The light comes on at dusk for six hours and then turns off for the remainder of the night.

The Carmanah Difference

Specified for You

Carmanah uses sophisticated modeling tools to simulate the environmental conditions and product performance for your exact installation and application. Our modeling doesn't just look at how the solar panel functions in your region of the world, it simulates how the entire system interacts and performs under the conditions in your exact location through all four seasons. This means the system you receive is designed to provide you with maximum light output, maximum autonomy and maximum reliability based on exactly where and how you will be using the light.

The EverGEN 1700 installs in less than 30 minutes.

Energy Management System

The Energy Management System (EMS) is a critical part of the EverGEN system providing bright, reliable light output, reduced project cost and healthy, high-functioning lighting systems over the long-term.

The EMS puts our sophisticated modeling tools to work by monitoring and adjusting the energy collection, transfer and storage within the system based on location and application conditions. By efficiently integrating the electrical components of the system into a single unit the EMS allows for smaller, brighter solar LED systems that provide superior light output and optimal pole spacing resulting in reduced project cost. The EMS also provides advanced sensing and operating profile capabilities that allow the user to optimize when light is applied. 'Enhanced autonomy' is also provided via the EMS and ensures that the system will continue to provide useful light when unusual site or operating conditions exist (i.e. excessive shading or unusually long periods of bad weather) without compromising battery health.

Urban Smart Detection

Carmanah EverGENs can tell the difference between light from a manmade fixture and sunlight. This prevents the EverGEN systems from being confused by surrounding illumination and ensures reliable operation even in urban settings.

Five Year Warranty

Carmanah offers a five year warranty on all of its EverGEN solar LED lighting systems.

Recyclable Battery Technology

Carmanah uses completely recyclable Absorbed Glass Mat (AGM) batteries to ensure robust system performance even in harsh climates and conditions.

An Eco-Friendly Lifetime

All components of the Carmanah EverGEN are completely recyclable and RoHS compliant, adding eco-friendly end-of-life to the other green benefits of solar LED lighting technology.

Carmanah Technologies Corp.

carmanah®

Since 1996 Carmanah has been engineering some of the most advanced solar LED lighting on the market. With over 300,000 installations worldwide, Carmanah technology has been put to the test in virtually every environment on Earth.

Featuring a patented energy management system that provides enhanced autonomy and system performance, reliable off-grid lighting is something Carmanah is known for.

Carmanah experts are able to provide unbiased information on the viability of solar for any application or environment. Nothing is more important to us than specifying lighting that provides confidence in the durability, reliability and performance of solar LED lighting in a manner that meets budget requirements.

Carmanah is backed by a worldwide network of lighting professionals. To find a representative in your region, please visit us at **www.carmanah.com**

BetaLED™: LEDway™ & THE EDGE™ Luminaires

BetaLED fixtures by Beta Lighting bring continuous LED innovation to every Carmanah EverGEN solar lighting system. Backed by third-party testing, certified photometric reports and supported by IESNA test data, BetaLED fixtures offer measurable performance data that backs manufacturer claims.

BetaLED fixtures also allow the EverGEN to provide significant savings in overall project cost when compared to other solar solutions by offering superior uniformity and performance. This allows the EverGEN to illuminate a given area with fewer total systems than other solar lights on the market.

BetaLED fixtures are also Dark-Sky friendly: contributing to a healthier environment by helping to reduce light pollution.

ISO 9001

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