“We always pursue key competitive advantages that make us different”
Lighting is a fundamental element for any environment

We bet on the efficient ways in the use of resources, using the technology that makes possible to maximize the energy savings, increasing the quality and improving results.
Commitment

We dedicate all our resources to manufacture the most efficient LED Solar Streetlights.

We believe that the products make a company big. We know that people make a product great.

A brand doesn’t generate the success of a product. We believe that a great product makes a brand known and it generates trust as a result of its achievements.
Smart Eleven is the name of the solar-powered LED streetlight more efficient in the market.

Functionality is the key to product success and this LED solar streetlight is the most functional you can find out.

Thanks to this solar off-grid system you can save money, improve the public safety and be sure that it will pay for itself.

Smart Eleven is a worthwhile LED solar streetlight
The CRM Lighting products are:

- Designed to last more.
- Thought to produce better light.
- Developed to deliver more lumens per watt (LPW).
- Designed to be the best alternative to traditional lighting.
- Manufactured to integrate the most advanced and efficient LED technology on the market.
Manufacturing location.

9,000 square-meters manufacturing facility in Spain.

Location: Cazalegas (Toledo)
The CRM Lighting LED Solar streetlight incorporates many advantages

What are the Key features of it?
The most advanced LED technology (up to 192 lm/W)
Reliable alternative to traditional lighting systems
Lamp → LED Module
Estimated Lifetime (L70) 100,000 hours
Battery technology
Ni-MH and Pb-SiO$_2$
Battery Lifetime
7-16 years
Luminaire fixture Lifetime
50 years
Luminaire efficiency
Up to 180 lm/W
Proper thermal management
An efficient and high quality light emission (CRI>75)
IP Protection
IP66
IK8 Impact resistance
Anti-vandal system
Aerodynamic Design
Supports winds up to 240Km/h
Completely integrated system
All the components are included in one piece
Certified as an entire unit
It’s not a Kit with separate parts
Intelligent Electronic Control System

Intelligent load regulation system with temperature compensation
Operates in an exceptional range of temperatures

It withstand temperatures up to 85ºC
Easy installation

Prepare a 900 x 900 x 1000 concrete pit with the anchor bolts

Place the pole and level it with nuts

Attach the luminaire into the top of the pole and fix the Stainless Steel M16 drive rivet

The system activates automatically
No electricity supply needed
Reduces light pollution
Made with recyclable materials
Savings on time and installation costs
Maintenance-free
Warranty*

*The warranty period is based on a burning behavior of 4,200 hours per year.

<table>
<thead>
<tr>
<th>COMPONENTS</th>
<th>WARRANTY PERIOD</th>
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<tbody>
<tr>
<td>PHOTOVOLTAIC SOLAR PANEL</td>
<td>25 YEARS, 10 YEARS AT 90% AND 15 YEARS AT 80%</td>
</tr>
<tr>
<td>LUMINAIRE FRAME</td>
<td>20 YEARS</td>
</tr>
<tr>
<td>LED MODULE</td>
<td>10 YEARS</td>
</tr>
<tr>
<td>BATTERY</td>
<td>2 YEARS</td>
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</tbody>
</table>
The most efficient way to light up the world.

Areas where the Smart Eleven solar streetlight gets the maximum output.
The Optical System enables the LED lights to be focused on the points of your interest.

Where there is no existing lighting infrastructure it is more cost-effective and the payback is faster.
What makes CRM Lighting LED Solar streetlight different from other solar streetlights?
You won’t see a LED Solar Streetlight like this

All components are placed in the Luminaire fixture

Completely integrated system. It has a minor visual impact regarding other solar streetlight models.
• At nightfall, the control system uses the stored energy to automatically turn the LED module on and light up

• At dawn, the LED module automatically switches off, thereby starting a new cycle

• It has an autonomy for 20 cloudy days even have checked that some solar streetlights had more than 30 days backup.

• Doesn’t require an inspection hatch because it doesn’t house any copper wires in its interior.
CRM Lighting LED Module

- Cree LEDs
- Optics; High quality LED lens to direct the light beam effectively
- Fulfill lighting requirements
- Lifetime: 10 years
- Warranty: 10 years
Batteries

Where are they located?

Buried? on the ground? On a pole?

All these options are provided by other brands.

_Problems?_ Yes, a lot of them.

Exposed to high and low temperatures, problematic maintenance, waterproof and dust problems, replacements, Deep depth of discharge, lower lifetime, etc.
CRM Lighting Battery

- Number of units needed: 1 pcs
- Ni-MH technology
- PbSiO₂ technology
- Maximum depth of discharge: 100%
- 4,000 discharge cycles
- Lifetime: 7-16 years

Temperature range
Photovoltaic panel

- Monocrystalline Silicon technology
- Lifetime: 25 years
- Warranty: 25 years

Controller

- Automatic dusk/dawn switch
- Phase CRM programmable intelligent control with 5 levels of light flow control
- CRM LED Driver with PWM power control
- Warranty: 10 years
Pole

The poles that are used on other streetlights (eg. Kits) have not been designed to withstand the weight of a heavy solar panel, even more a battery box and other fittings.

However the pole of CRM Lighting system has been certified to withstand the complete luminaire fixture that includes the solar panel. Its high mechanical strength and high corrosion resistance added to its lightweight fixture make the streetlight more reliable and safer.

Available in AISI 304, AISI 316, DUPLEX Stainless steel and Galvanised lacquered steel.
LED Solar Streetlights makes sense

CRM Lighting LED Solar streetlight is a State-of-the-art product that makes sense. It is an innovative, reliable and safe alternative that works.

- Do an exhaustive comparative with any of the brands
- Life span is a fundamental aspect when you calculate the ROI.
- Take into account the relamps and replacements of batteries needed.

A “cheaper” solar streetlight will be more expensive when calculate all the costs
Quality Advantages

Why is the most advanced solar streetlight?

- 100% Off-grid
- Latest in LED technology
- Ni-MH Battery
- Compact Fixture
- High mechanical strength
- High corrosion resistance
- Designed for marine environments
- Avoids problems arising from dust, water, and possible bumps to the unit
- Withstand extreme conditions and aggressive environments (e.g. sandstorms)
Advantages of top quality light

The LED Solar Streetlight created to work

- Best materials to guarantee the highest performance
- Improved efficiency
- Reduced CO₂
- Lifetime increased
- Color temperature:
  - Warm: 2700K-3900K
  - Neutral: 3900K-5000K
  - Cold: 5000K-8300K
The unique Anti vandal solar streetlight

Applications:

- Streets
- Roads
- Minor roads
- Cycle lanes
- Rural roads
- Parking lots
- Pedestrian crossings
- Bus stops
- University outdoors
- Transportation areas
- Service stations
- Beaches
- Camp sites
- Farms
- Harzardous areas
- Golf course paths

A unique lighting system for a wide range of applications
Compliance with Standards:

- EN 62031:2008
- EN 62471:2008
- UNE-EN 40-5:2003
Economical Advantages

*Savings on time and installation costs*

There are **several costs** associated with the installation of **conventional outdoor lighting**:

- Excavation requirements to open trenches,
- Control units,
- Copper wires,
- Junction box
- Transformers,
- Licenses,
- Contracts with electric company,
- Electric meters,
- And more...
Example of light distribution
Certifications

**Quality & Environment**

- UL-recognized components.
- 100% recyclable materials.
- Compliance with EU WEEE.
- Compliance with RoHS Directives and UNE 150301:2003 standards.
- Integrated Management System (IMS) to ensure proper waste management.
Light is an essential element for any environment. Efficient Lighting is the goal.
The infrastructure deficiencies and the impossibility of construction work and electrical supply contribute the Solar Streetlight lighting solution. The lighting installation had a great impact among the citizens because their needs have been satisfied in the areas where they did not have light before.

The lack of qualified personnel was not a problem, since the streetlight installation is very fast and easy. No sophisticated equipment or tools are needed. It is a very favorable solution for an area with not many means.

*The money saved on electricity can be used for other government services.*
More maintenance works and batteries replacements are needed with other solar streetlights

-Example-
Other Batteries need to be replaced in 1 year
Lower Lifetime $\rightarrow$ More costs
Accumulated savings $\rightarrow$ Payback period
After check the advantages of CRM Lighting system it seems easy to reach a conclusion.
Thank you for your attention.