We Turn Your Dark Into Light Courtesy Of Our Brilliant Sun®
We are a world class leader in solar lighting and solar powered solutions and the only company specializing in both LED and outdoor solar lighting. Solar Street Lights USA takes pride in offering a customized solution for every project with our exclusive engineering software which assures an optimized system design. Designed by our exemplary engineering team with over 50 years combined solar experience, our products are top rated for efficiency, reliability and longevity. Always on the cutting edge of protecting the environment, we have unsurpassed customer satisfaction and competitive pricing making all our product an excellent value.

Solar Street Lights USA manufactures and markets to private, commercial and government clients. We supply a wide variety of lighting and power solutions as well as protecting endangered animals with our certified solar sea turtle lights. Our mission is to be innovative and current with the fast paced lighting industry while maintaining superb quality, reliability and design.

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- GridFree™ Battery Based Solar Powered Street Light (Patented)
- GridSmart™ Induction or LED Solar Street Lights with Grid Feed Back (Patented)
- 360 LED Solar Light
- PathLight™
- WattMaker™
- Wildlife Certified Solar Turtle Lights
- Bollard Solar Pathway Lights

Solar Street Lights USA™
**Advantages**

- Fully engineered solutions
- Lowest total cost of ownership
- Long-lasting, reliable performance
- Limited lifetime warranty
- Integrated technical expertise
- Comprehensive service and support
- Training and certification program

**Engineering Support**

Bringing a customer-centered approach to every job, we provide you with the support and tools required to complete your solar lighting projects.

**Design Consultation**

Our lighting designers specialize in producing detailed light layouts and can suggest luminaries that are optimized to meet your precise requirements. We can make recommendations on carbon management strategies.

**Install, Maintain, and Upgrade**

To ensure you have a lasting and cost effective experience with Solar Street Lights USA project, installation is available by our certified contractors. In addition, we offer Solar Street Lights Training and Certification Programs to guarantee our products are installed and maintained correctly. We make sure that your project is on time and on budget from start to finish.
Why Choose an Off-Grid Solution?

The sun is a direct and free source of energy. Leveraging renewable energy technologies, can convert that solar energy into electricity.

Benefits of Solar Powered Lighting

- No trenching, no metering, no wiring, no transformers, saving time.
- No vandalism of cables.
- Cost savings from day one due to ease of installation.
- People feel safer when areas are illuminated.
- Can be installed in the most remote locations.
- No cost for daily operation.
- Free energy once installed – no electric bills.
- Will turn on even after cloudy days.
- Reach beyond commercial power lines.
- Immune to black outs.
- Not connected to grid power – will work even when electric power is out.
- High efficiency.

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Applications of our Products

- Roadway: collector, arterial and highway lighting
- Parking lots: open and covered parking lot lighting
- Pathways/trails: emergency phones and lights
- Tennis courts and running track lighting
- Perimeter fence lighting
- Portable Emergency lighting and power
- Brown Out/Black Out Backup Lighting
- Remote operations including SCADA and water treatment
- Security lighting and surveillance cameras in construction sites and high-risk or dark areas
- DOT Bridges with antiquated or damaged electrical wires
- Hazard warning lights at stop signs, cross-walks and on met-towers
- Remote bathrooms and rest stops
- Permanent and Temporary - Government and Military Applications
Don’t get fooled by cheap lights!
Is it worth spending money on inferior lighting that will need to be replaced?
Poor Product Design = More Lights!

Very poor efficiency. Very localized light like a single spot on the road
Efficient Solutions

System sizing is based on worst case scenario:

- Typically December 21 in the northern hemisphere.
- Desired system output (light level or power).
- Location – determines insolation, temperature, and hours of operation (dusk-to-dawn mode).
- Days of autonomy (number of cloudy days in a row).
- Data from current NASA database.

Sizing the Array:

- Array-to-Load ratios are looked at year round.
- ALR is a safety factor – allows for efficiency loss from dust, flaws and degradation.
- ALR also considers array tilt angle.

Sizing the Batteries:

- Depth of Discharge (DoD) and Autonomy are looked at year round.
- The level of DoD and frequency determines battery life.
- We design for battery life of at least 10 years in moderate climate zones.

One size does not fit all!
Advantages of LED vs. HPS

1. Best in class light distribution: superior optic for an excellent uniformity
2. Extra long life: 100,000 hours
3. Exceptional efficiency
4. CRI Color Rendering Index: > 75 vs. HPS of 22
5. Easy to install and to maintain
6. Better visual acuity and better security
7. Extremely solid and resistant in tough environment
8. Compact size
The LED Advantage

Our LED-based roadway lighting products offer a number of key advantages over traditional lighting technologies. In terms of luminous efficacy, product life cycle, field maintenance requirements, color, and environmental considerations, the technology employed in our product range is vastly superior to high-pressure sodium or metal halide. Our Solid State LED-based products are designed to provide long life through the design of the light source, power supply, optics and mechanical housing. Our products are also free of lead and mercury and are RoHS compliant.
Key Components

**Solar Power Array** Poly-crystalline

- Highest Output Solar even at low light
- Made in USA
- 20-25 year warranty

**Long Life Batteries**

- 6V and 12V – 400Ah – 7 to 10 years life
- IEC 896-2, DIN 43534
- Maintenance free
- 5000 cycle – 5 years

**MPPT Controller - CPU**

- 12vdc and 24vdc reconfigured
- Factory mounted in battery box
- 5 years warranty
- NEW hand held programmer reads system performance data

**Quality Battery Box**

- Top or bottom pole mounted
- Heavy Duty 1/8" Aluminum
- NEMA 3R Construction
- Lockable front door with gaskets
- Louvered air flow vents to dissipate heat
- Also available underground enclosure
- 10 year warranty

**Brilliant Sun™ system Capturing the sun**

- Rotates 360 degrees on it’s axis and 180 degrees on the azimuth for easy and optimum orientation.
- 10 years warranty

**Plug & Play Wire Harnesses**

- Easy to connect “quick connect”
- 10 years warranty
Let us Help You Find A Solution That Fits Your Needs

**GridFree™ and GridFree UE™**
Off utility grid, battery based solar light systems for parking lots and roadways. Comes with a 40 watt to 100 watt Cobra Head or Shoebox fixture. LED lights with battery enclosures mounted on the pole or underground (UE). GridFree™ is perfect where it is impractical or too expensive to tie into the utility grid.

**WattMaker™**
Pole mounted solar-electric power system for operating customer equipment. Comes in 12c 24c 48 VDC or 120 VAC output.

**PLS™**
This is a fully self-contained solar light. It is durable and designed to operate even in very cloudy environments. It provides excellent low level, point-to-point lighting using the most sophisticated energy management system available in the world. Cost effective alternative to AC counterparts.
FEATURES

• Turn-key - Complete system, mounts on our 5"x5" or 6"x6" square galvanized steel pole or can be adapted to mount on wood, fiberglass, concrete or other steel poles.
• Designed for fixture mounting heights from 18 feet to 34 feet.
• Cobra Head and Shoe Box style fixtures with Type II to Type IV distribution; lumen output ranges from 3350 to 9000 lumens; standard CRT is 5000K and the CRI is 80 plus.
• Lamp wattages are 40 Watts, 70 Watts, 100 Watts; Step-Dim dual wattage lamps are 35/70 Watts and 50/100 Watts.
• Choice of Full Cutoff (Dark Sky Compliant) or Semi-Cutoff fixtures.
• Brilliant Sun™ (Patent No. D610.536), architectural mount withstands 170mph gusts.
• Locking NEMA 3R battery and electronics enclosure made with heavy aluminum and stainless steel hardware; includes neoprene gasket around the door and a neoprene pad to insulate the battery from the enclosure floor. Mounts at the top or bottom of the pole.
• Long life, deep cycle sealed batteries.
• Temperature compensating battery charger and light controller.
• UL approved components, designed to meet IESNA recommended practices.
• Simple installation - Prewired with connector ends clearly labeled, holes are predrilled and checked for fit, a pull string allows for quick wiring, the installation package includes a manual, extra fuses, extra hardware and a compass. GridFree Solar Light™ takes less than an hour to mount on a Solar Street Lights USA pole.
• 10 year system warranty.
GridSmart Solar Light™

FEATURES

• Turn-key - GridSmart Solar Light™ takes less than an hour to mount on a pole
• Can be used for retrofit applications
• Standard light wattages range from 70 to 250 watts
• Designed to operate dusk-to-dawn at maximum intensity
• UL approved components, designed to meet IESNA standards
• UL 1741 compliant DC to AC conversion unit
• Adjustable operating light profiles
• Single phase, multi-voltage from 240VAC to 208VAC
• Instant on-off motion sensor option
• Architectural mount withstands 170mph gusts
• LED or Induction fixtures available in various wattages
• Cobra head or Shoebox style
• Maintenance free system
• Mounts on steel and wood poles
• Remote monitor tracks performance, KwH credits, and Carbon Emissions avoided
• Carbon credit eligibility
• Can be colorized to any PMS color
• Loads of options for structural, performance and cosmetic enhancements
PLS™ - PathLight and Lawn Bollard

FEATURES

• Low installed costs and site impacts with no trenching, cabling or wiring
• Minimal ongoing costs with no electricity bills or bulbs to change
• Immune from power outages
• Provide a visibly green statement with no ongoing carbon emissions

Energy Management System (EMS)

• High efficiency Maximum Power Point Tracking (MPPT) charge controller
• Micro-controller based technology
• Includes high-efficiency LED driver
• Integrated into bollard housing
• Designed to automatically manage lighting performance based on environmental conditions and lighting requirements

Mechanical Construction

• Cast, low copper aluminum housing
• Extruded, low copper aluminum post
• Stainless fasteners with security fastener option
• High strength, steel mounting plate
• Architectural grade, super durable, TGIC powder coat with Alodine undercoat
• Four standard colors with custom colors available
FEATURES

• Choose a standard configuration or create a custom configuration based on your specific requirements
• Standard systems range from 20-480 Watts
• 12, 24, 48 VDC output with AC option
• PV arrays meet JPL block V durability criteria
• Temperature compensating, MPPT controller, low voltage disconnect
• Pre-assembled control panel to minimize field installation and costly errors
• NEMA 3R enclosure or choose an alternate such as stainless steel
• Sealed spill proof, maintenance free, deep cycle gel cell batteries
• Mounts on steel and wood poles
• Configured to allow inclusion of ancillary equipment such as transmitters
• Withstands a wide range of climates and temperature extremes
• Easy-to-follow installation manual and system schematics
• 5 day Quick Ship available on most standard configurations
• Loads of options for structural, performance and cosmetic enhancements
Brilliant Sun™ – Top-of-Pole Mount

The Brilliant Sun™ (Patent No. 610-536) is a top-of-pole mount for the photovoltaic array. It is a structurally efficient and architecturally pleasing design patented by Solar Street Lights USA. Brilliant Sun can support up to 740 Watts of PV modules and withstand high wind loads. Brilliant Sun is made from heavy gauge galvanized steel and uses stainless steel hardware for corrosion resistance. It is designed to tilt from 0 to 180 degrees and rotates 360 degrees for easy and proper array orientation. Brilliant Sun only weighs 71 pounds making it easy and fast for installers to mount on a standard tenon.

Features

- Used with GridFree™ and GridSmart™.
- Heavy-duty design withstands large arrays up to 900 watts and high wind loads to 150 mph.
- Architecturally pleasing design.
- Made from heavy gauge steel and full-weldments; all hardware is stainless steel.
- Rotates 360 degrees on its axis and 180 degrees on the azimuth for easy and optimum orientation.
- Only weighs 71 pounds and easily installs on a 4-inch round tenon.
- Wires from the array junction box feed through and into the mount’s cavity for added protection.
- Utilizes Unirac horizontal trusses which are robust yet simplifies panel installation.
- Machined then galvanized, optional powder coat or baked urethane for enhanced look or protection.
Why our Batteries are Better

Our Deep Cycle AGM type battery has the highest possible reserve capacity, longest cycle life and low internal resistance, while achieving superior cranking performance. Deep Cycle batteries are designed to be deeply discharged and recharged hundreds of times. They are designed and built differently than automotive starting batteries. They use more lead, heavier plates and other proprietary materials that enable them to deliver more power and capacity over many life cycles.

Premium Quality Batteries

- We use the highest quality batteries and the most robust design principles to maximize battery life which minimizes maintenance costs and provides you with the best return on your investment.
- Maximum battery life means superior reliability, minimum maintenance, and reduced life cycle costs.
- Our systems come with a standard minimum five days of autonomy, but enhanced autonomy is available depending on your performance needs.

<table>
<thead>
<tr>
<th>Battery Profile</th>
<th>Solar Street Lights</th>
<th>Competitor</th>
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<tr>
<td>Daily Depth of Discharge (DOD)</td>
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<td>Rated Cycles at Daily DOD</td>
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<td>Maximum DOD</td>
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<tr>
<td>Days of Autonomy</td>
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</table>
Electrical Integrity
Engineered to maximize performance and life for each specific application.

We analyze each month of use to ensure the array-to-load ratios exceed 1.2.

Our high quality sealed batteries are rated at a minimum of 4500 cycles at a daily 15% depth of discharge. Batteries are sized based on electrical loads and temperature. The expected life ranges between 7 and 10 years.

Lights will operate even with 3 to 5 days of zero sunlight.

Wiring is high quality 12 gauge UV resistant duplex.

Wire feeds into pole through the mount to prevent exposure to wind, water, sand, and pests.
Installation and Aesthetics

Agile and Flexible Design

LED fixtures may be substituted for induction fixtures.
Pole, mount, arm and enclosure can be coated in any PMS color for visual enhancement.
Custom designs available.
Mounting adapters for customer specified poles.
Emergency builds available with quick turn-times.

Ease of Installation, Fit and Finished

Units per-assembled in the factory then disassembled prior to shipment to ensure fit.
Completely pre-wired, connectors are color coded and labeled.
Array mount azimuth orientation is preset at the factory.
Comes with manual and compass for true south orientation.
Installs in approximately an hour.
Our Warranty Exceeds Industry Standards

- Solar panel: 20 years
- LED & Luminaire: 10 years
- Cables: 10 years
- Controller: 5 years
- Batteries: 5 years

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