



Solar Solution

Providing steadfast performance and maximum power tracking

PHILIPS
LUMEC



Solar Solution



Powered by the Sun / Our solar-powered solution can be installed anywhere, requiring no wires, no trenches or no additional transformers. The installation is easy and quick, with virtually no site disruption. It is ideal for temporary installations, remote locations, locations with failing/overloaded power infrastructure, LEED buildings or environmentally sensitive areas. Coupled with our LED luminaires, available in a wide array of styles, you can expect steadfast performance each and every day, anywhere and anytime.





Steadfast performance

Maximum power tracking

With our Solar Powered luminaires, you get the most out of your PV array by using MPT (Maximum Power Tracking). The SO-Bright® micro-processor tracks the power production of the solar module and adjusts it to meet the needs of the battery. The net result is up to 30% more energy collection for a given module.

Easy to service

High maintenance costs can easily swallow up the cost savings of a solar lighting system. That's why we make sure that your system is both highly reliable as well as easy to service. Systems include AGM Sealed Lead Acid maintenance free batteries that are selected for their high cycle life, suitability for nightly cycling and their ability to operate through extreme temperatures. If you do have a problem, and we hope you never do, you can query the microprocessor for diagnostic reports and system status without the need for lifts, ladders or tools.

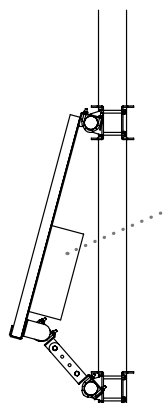
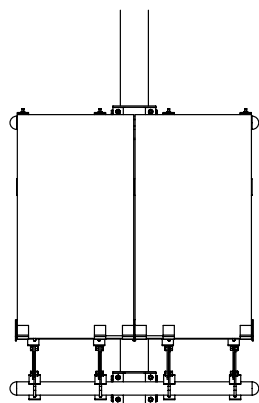
Unparalleled reliability

A flexible solution you can count on

The Solar Solution comes already configured and optimized for your geographic location, able to withstand the harshest conditions. And with the push of a button on your remote control, you can adjust lighting profiles for unforeseen shading conditions, provide lighting for special events, accommodate new preferences or adjust your lighting profile for a new location.

Field tested and dependable

We start by configuring your system to your specific needs based on location, weather conditions and lighting requirements. Using this information and NASA's Surface Meteorology and Climate Database, we plan for winter days that will dip below historical averages and for extended periods of cloudy weather so that you will never be left in the dark. Your solar package is built to withstand punishing environments where grid connected lighting is costly or difficult to install. For added reliability, we've included Snow and Sand Coverage Protection which will override photo-control logic when the panel is covered, protecting your stored energy during the day and resuming normal operation during the night. For extra battery life, we offer multiple battery storage options.



\\ SO-Bright® MPT Controller

With RTE, Remote Control Diagnostics and Profiles and Snow/Sand Coverage. Circuit Breakers and Constant Current Drivers.

\\ AGM Battery Bank

Rated for X,000 cycles or more – 210Am-pHr – 460AmPHr total based on location and performance requirements.

\\ NEMA 3R Battery Enclosure

2 Battery capacity or 4 Battery Capacity.

Benefits

→ A bold statement for any city or organization going green

→ Reduced ecological footprint

→ Easy installation with minimum site disruption

→ Designed for extreme weather conditions

→ Low electrical bills and maintenance costs

→ Self-sufficient, autonomous, and grid-independent

→ Highly reliable, even in low-sun environments

Options

- > Battery enclosure location: near pole base, mid-pole, near pole top
- > Side of pole mounting
- > In-ground enclosure kit

Solar lighting planning guide

First define your lighting needs. Every watt counts so observe best sustainable lighting practices. If you are not certain, your representative will provide guidance based on your application.

Consider lighting profile options that can save you money and/or reduce the size of your solar package. Systems can be configured to provide all night lighting at peak, dual level lighting, lighting for specific night-time segments and/or with motion sensing brightening or activation.

Identify the project location, any shading concerns and special conditions.

Select preferences for battery enclosure and panel mounting

Share your objectives for the project. Are you ...telegraphing your commitment to renewable energy to the community? ...trying to save money? ...avoiding potential underground hazards? ...need to meet a target budget?

Contact your Philips Lumec representative



Comparing Systems

Solar Powered Lighting Systems vary widely in terms of assumptions, system intelligence, sizing practices, and component selection. Here are some things to think about:

Assumptions: You may see strikingly different performance claims for similar components. This is because the reported performance is based on assumptions of how many KWH/m² can be collected in your area, how much allowance is made for less than average conditions is included, time of year (winter versus average) and how much temperature will affect your system. In the worst case, no location specific information is used and performance is reported in terms such as “up to” a given number of hours of lighting or days of storage. Performance estimates from Lumec are based on information from NASA’s Surface Meteorology and Climate Database.

Array Size and MPT: An identical solar panel rating for example 100W does not necessarily mean you’ll collect the same amount of energy from one system to the next. MPT (Maximum Power Tracking) is a feature that will allow your system to collect up to 30% more energy with a given panel. So a 100W panel without MPT may only provide 70% of the energy of a 100W panel with MPT.

Lighting Profile: How long will the lights be on? How many hours at peak level? How many hours at dim? What is the dim level?

Batteries:

Sealed Lead Acid batteries are optimized for a wide range of applications ranging from starting (surge of energy to start an engine), to stand-by (one or two cycles per month as for emergency back-up) and PV Deep Cycle for daily cycling. Be sure that the battery recommended is designed for this application. Philips Lumec recommends AGM Batteries for long service life and superior performance in extreme temperatures.

Days of Storage (number of days the system can operate with no sun): Impacts your system in three important ways: Battery Life, Reliability and Cost. Insufficient battery storage accelerates battery deterioration resulting in high replacement costs that will quickly consume any savings on the initial system.

Controller: Solar Powered Lighting controllers range from simple single stage battery charging devices to what is essentially a small on-board computer managing and recording critical lighting and power functions. Specifics are needed on these functions in order to make a fair comparison.

Energy Management: Energy Management can take many forms. It may be a system that adjusts the light level to compensate for an undersized power package or a safety net that accommodates for unexpected circumstances that provide less than worst case average conditions. It's important to clearly understand when and to what extent the energy management system will make adjustment to your lighting levels.

Flexibility and Control: We've learned that even the best plans change. The ability to easily change lighting profiles or energy management choices (without tools, ladders or lifts) is a useful feature of a solar lighting system. Changes may be necessary if lights are relocated, conditions change, preferences change or if lighting is needed for a special event.

Maintenance and Diagnostics: To what extent and how easily can you check system status (Battery Voltage and Solar Charging), complete system diagnostics and query error codes? Does this require tools and/or special equipment?

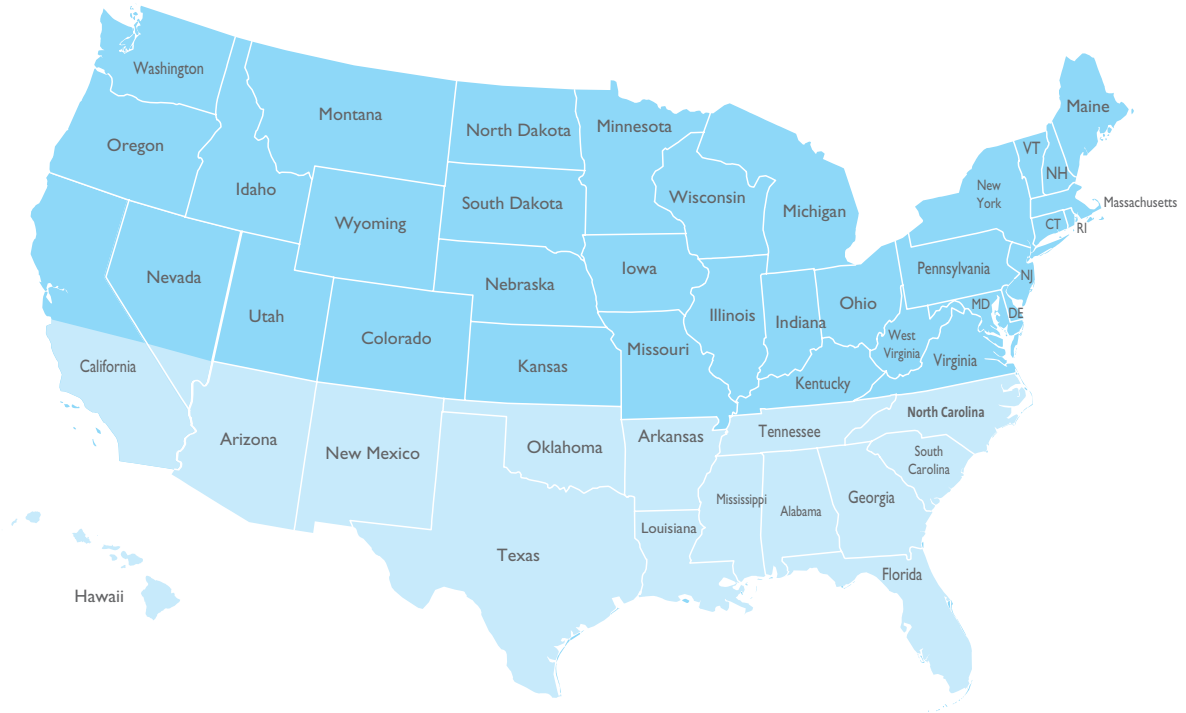
Canada



| | Description | Philips Lumec | Philips Lumec Kit Specifications | SolarOne Kit Specifications | | Lighting Profile Ranges (hrs) ² | | | SolarOne |
|---------------------|-----------------------------------|---------------------------------|----------------------------------|-----------------------------|-----------|--|------------------------|--------------|--|
| | | Lamp and solar Panel Kit Number | Lamp Wattage | Solar Panel | Batteries | Peak 100% of light | Dimmed to 30% of light | Days storage | Complete Kit Number |
| Zone 1 North | Economy Energy (Light) Kit 40W | 40W30LED4K/40W49LED4K-SP85D | 40W | 2x85 | 2 | 0 to 6 | 16 to 0 ¹ | 7 | SID-(LL40)-5MCD-MPT15-12V-2P85-(BA2)-2B111CA-EX4 |
| | High Energy (Optimum) Kit 40W | 40W30LED4K/40W49LED4K-SP135D | 40W | 2x135 | 4 | 2 to 7 | 14 to 9 | 8 | SID-(LL40)-5MCD-MPT15-24V-2P135(BA2)-4B111CA-EX4 |
| Zone 2 South | Economy Energy (Light) Kit 40W | 40W30LED4K/40W49LED4K-SP85D | 40W | 2x85 | 2 | 3 to 9 | 14 to 0 ¹ | 6 | SID-(LL40)-5MCD-MPT15-12V-2P85-(BA2)-2B111CA-EX4 |
| | High Energy (Optimum) Kit 40W | 40W30LED4K/40W49LED4K-SP135D | 40W | 2x135 | 4 | 11 to 14 | 4 to 1 | 6 | SID-(LL40)-5MCD-MPT15-24V-2P135(BA2)-4B111CA-EX4 |
| | High Energy (Optimum) Kit 60W/65W | 60W30LED4K/65W49LED4K-SP135D | 60W/65W | 2x135 | 4 | 1 to 7 | 14 to 0 ¹ | 8 | SID-(LL60)-5MCD-MPT15-24V-2P135(BA2)-4B111CA-EX4 |

1 Refers to zero hours left at dim level if the peak is set to maximum hours listed
 2. Best expected result at worst case location in terms of Isolation (solar energy)

United States



| | Description | Philips Lumec | Philips Lumec Kit Specifications | SolarOne Kit Specifications | | Lighting Profile Ranges (hrs) ² | | | SolarOne |
|---------------------|------------------------------------|---------------------------------|----------------------------------|-----------------------------|-----------|--|------------------------|----------------|--|
| | | Lamp and solar Panel Kit Number | Lamp Wattage | Solar Panel | Batteries | Peak 100% of light | Dimmed to 30% of light | Days storage | Complete Kit Number |
| Zone 3 North | Economy Energy (Light) Kit 40W | 40W30LED4K/40W49LED4K-SP85D | 40W | 2x85 | 2 | 1 to 6 | 15 to 0 ¹ | 8 | S1D-(LL40)-5MCD-MPT15-12V-2P85-(BA2)-2B111CA-EX4 |
| | High Energy (Optimum) Kit 40W | 40W30LED4K/40W49LED4K-SP135D | 40W | 2x135 | 4 | 2 to 7 | 13 to 7 | 9 | S1D-(LL40)-5MCD-MPT15-24V-2P135(BA2)-4B111CA-EX4 |
| | Economy Energy (Light) Kit 60W/65W | 60W30LED4K/65W49LED4K-SP85D | 60W/65W | 2x85 | 2 | 0 to 4 ³ | 9 to 0 ^{1,3} | 7 ¹ | S1D-(LL60)-5MCD-MPT15-12V-2P85-(BA2)-4B111CA-EX4 |
| | High Energy (Optimum) Kit 60W/65W | 60W30LED4K/65W49LED4K-SP135D | 60W/65W | 2x135 | 4 | 1 to 7 | 14 to 0 ¹ | 8 | S1D-(LL60)-5MCD-MPT15-24V-2P135(BA2)-4B111CA-EX4 |
| Zone 4 South | Economy Energy (Light) Kit 40W | 40W30LED4K/40W49LED4K-SP85D | 40W | 2x85 | 2 | 3 to 11 | 6 to 3 | 6 | S1D-(LL40)-5MCD-MPT15-12V-2P85-(BA2)-2B111CA-EX4 |
| | High Energy (Optimum) Kit 40W | 40W30LED4K/40W49LED4K-SP135D | 40W | 2x135 | 4 | 13-14 | 1 to 0 | 6 | S1D-(LL40)-5MCD-MPT15-24V-2P135(BA2)-4B111CA-EX4 |
| | Economy Energy (Light) Kit 60W/65W | 60W30LED4K/65W49LED4K-SP85D | 60W/65W | 2x85 | 2 | 0 to 6 ² | 8 to 0 ^{1,3} | 5 ¹ | S1D-(LL60)-5MCD-MPT15-12V-2P85-(BA2)-4B111CA-EX4 |
| | High Energy (Optimum) Kit 60W/65W | 60W30LED4K/65W49LED4K-SP135D | 60W/65W | 2x135 | 4 | 6 to 10 | 4 to 8 | 7 | S1D-(LL60)-5MCD-MPT15-24V-2P135(BA2)-4B111CA-EX4 |

1 Refers to zero hours left at dim level if the peak is set to maximum hours listed
 2 Best expected result at worst case location in terms of Isolation (solar energy)
 3 Refers to system really limited by battery capacity more than solar

Note that black out regions such as Seattle and Alaska still apply.

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