360 Solar

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Frequently Asked Questions

1. What are the key features of 360 Solar lighting and connectivity systems?

360 Solar is 100% off grid, solar-powered system featuring monocrystalline PV cells and long life, high capacity Lithium batteries. Its proprietary, on-board edge computing capabilities optimize energy collection and discharge. The cylindrical solar panels further enhance efficiencies through self-cleaning properties, ensuring optimal performance even in challenging conditions.

360 Solar is built to support a range of uses in addition to lighting, including smart-city connectivity (e.g., WiFi, sensors), and security cameras.

2. What are the main applications for 360 Solar?

360 Solar supports a wide range of lighting and connected technology applications, including walkways and bicycle paths in residential areas, campuses, harbors, remote locations including parks, and ecologically sensitive areas.

3. What are the key benefits of 360 Solar?

360 Solar features highly efficient, monocrystalline PV cells operating at over 24% efficiency. The system's cylindrical solar modules have a rating of 110 Watts Peak (Wp). These modules are paired with the latest in Lithium-NMC temperature-stable battery chemistry to work just about anywhere. 4G/LTE connectivity regularly uploads status and performance statistics, accessible via an optional online dashboard. 360 Solar is designed for year-round autonomy.

4. How does 360 Solar perform in inclement weather, wintertime and northern climates?

360 Solar continues to operate even during the darkest days of winter or extended periods of cloudy weather, capable of providing illumination for up to 30 days without sunlight. 360 Solar features high efficiency solar panels, high energy density batteries with excellent efficiency at low temperatures, edge computing capabilities running advanced algorithms (Heliosync™) responding to in the moment, seasonal and historical weather data. Optimizing energy collection and managing energy discharge expands the range of conditions 360 Solar can operate in.

5. What is the battery chemistry used in 360 Solar?

360 Solar uses Li-NMC (Lithium Nickel Manganese Cobalt) batteries, which offer high energy density, 5000 charge cycles, and superior performance in extreme temperatures. The batteries are designed for long-term reliability and minimal maintenance.

6. What is Heliosync™ and how does it work?

Heliosync Algorithmic dimming is an advanced feature of 360 Solar, optimizing energy consumption based on real-time data. It uses integrated machine learning algorithms to analyze seasonal information, (sunrise, sunset and expected solar yield) as well as historical weather data based on the system location to determine ideal operating levels. This ensures efficient energy use and maximizes the duration of light output, even during seasonal periods of low sunlight. Heliosync™ will adjust autonomously based on available energy, ensuring efficiency, reliability, and optimal performance, with a customizable schedule to suit your needs.

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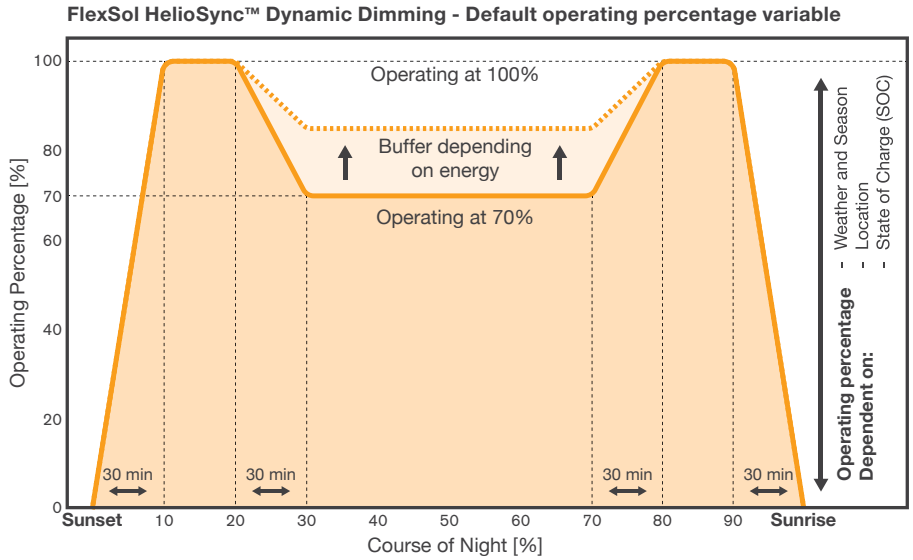

7. What Data Plans are available?

Each system shipped includes 5 years of access by default, with options to extend to 10 years, available at time of original purchase or any time after.

Data Plan	5 Years	10 Years
Over the air (OTA) updates	✓	✓
Logging interval	1 / hour	Up to 4 / hour
Data retention	1 year	Up to 10 years
Error analysis	✓	✓
API access*	✓	✓
Error notification		✓
Price	Included	Contact Factory
Web portal	Contact Factory	Contact Factory

***Available late 2025**

8. What optional features are available with 360 Solar?

The 360 Solar web portal includes a dashboard to see critical system details – state of operation, battery charge and voltage levels and system temperature. The system supports over-the-air updates and integration with TerraGo's smart city asset management platform. API support is also available, for integration into existing Building Management Systems (available late 2025). Please contact factory for pricing options.

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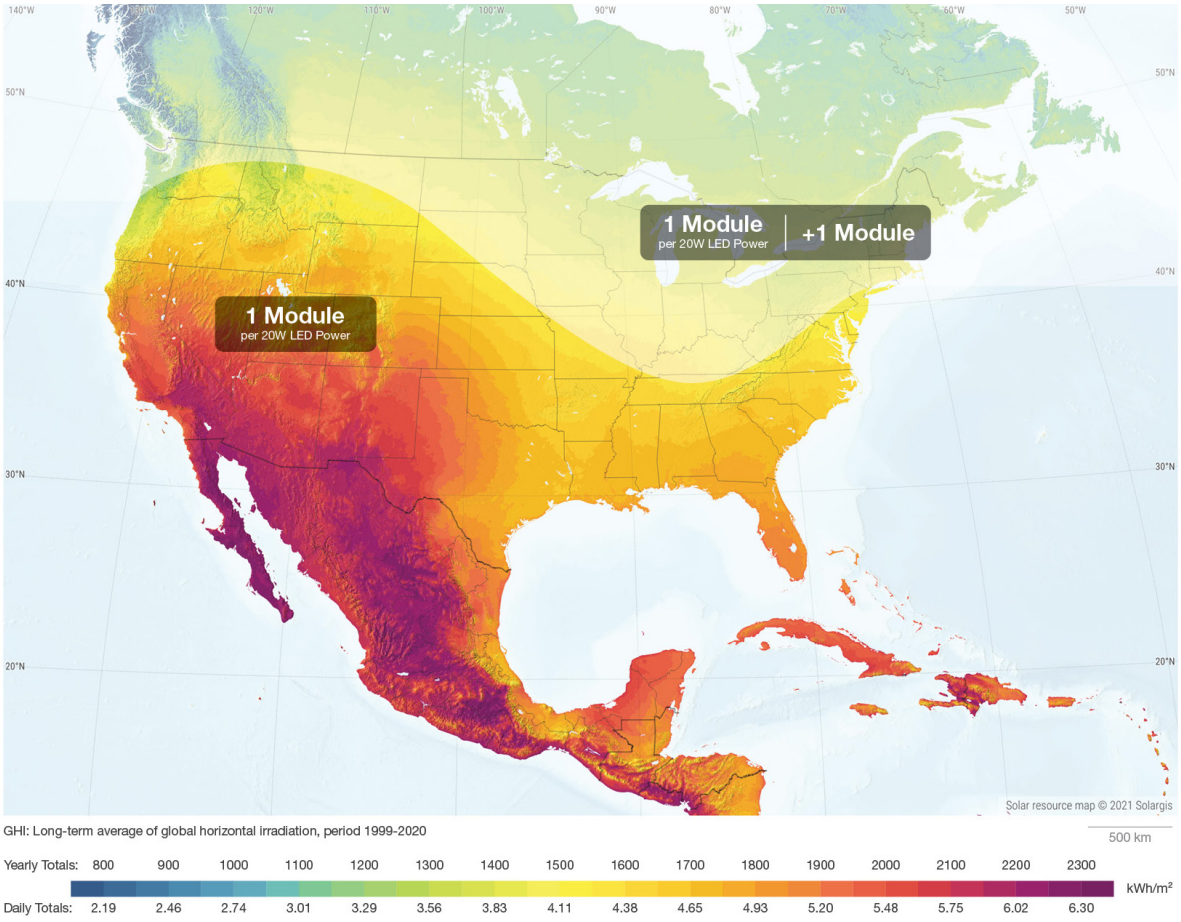
9. What considerations are required when designing a site with 360 Solar?

- **Solar Irradiance:** Available solar irradiance is key to a successful 360 solar project. Solar irradiance is the amount of solar energy received per unit area and is typically measured in kilowatt-hours per square meter per day (kWh/m²/day). Higher solar irradiance means more energy can be generated by solar panels. Refer our irradiance map that includes configuration recommendations.



Global Horizontal Irradiation - North America

This chart provides guidance on the recommended number of solar modules required to support 20W increments of rated LED power (Watts).
This provides a baseline for reliable performance based on latitude. Further site-specific considerations may be required. Refer to FAQ document for additional information or contact factory.

- **Shading:** Ensure that placement of 360 Solar has minimal shading from trees, buildings, or other obstructions. Shading can significantly reduce the efficiency of solar panels. to identify any potential obstacles that might block sunlight during different times of the day and year.

- **Clear southerly aspect:** In the Northern Hemisphere, 360 Solar requires a clear southerly aspect. The vertical and cylindrical design of the 360 Solar collector is optimized for maximum solar capture throughout the year.

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- **Weather Conditions:** Consider the local weather conditions, including the frequency of cloudy or rainy days. While solar panels can still generate electricity on cloudy days, their efficiency will be lower compared to sunny days. 360 Solar Heliosync™ technology is designed to manage energy discharge and operate efficiently even during extended periods of cloudy weather.

- **Maintaining illumination:** The Heliosync™ dimming technology contained within 360 Solar self manages light delivery, ensuring illumination is provided continuously, and maintained at the prescribed levels for as long as possible. If conditions are such that available energy is less than required to maintain minimums, Heliosync self-manages to lower levels to avoid cutting off altogether.

- **Luminaire Power:** Energy requirements have a direct correlation to 360 Solar equipment requirements. Each luminaire available as part of the 360 Solar collection uses a newly developed, high-efficiency light engine that operates at up to 190lm/W. These high efficiency LEDs consume the least amount of system power possible.

- **Location of 360 Solar:** Make sure 360 Solar is placed on a location with as much sunlight as possible. 360 Solar performs best in an open environment, obstacles such as trees and buildings can create shading on the solar panels and dramatically decrease the generated amount of energy by the solar panels. In mountainous regions, careful planning is essential to avoid shadowing from surrounding terrain, as one side of a mountain may receive ample sunlight while the other remains shaded, reducing solar energy yield.

Locate 360 Solar with clear, southerly aspect | Avoid Trees | Avoid Buildings | Avoid Mountains

10. How do I design and specify a 360 Solar system?

There are 4 main components to the system – the luminaire, solar modules, battery/control unit and pole.

- **Luminaire:** Each of the four available luminaire models use the same high efficacy LED/optic combinations. The power (W) of the light engine is one of the key inputs determining required number of solar modules and recommended battery capacity.

- **Solar Modules:** In sunbelt areas, 1 module for every 20W of light engine power is recommended. In more northern locations, 1 module for every 20W, plus 1 module is recommended. Please refer the solar irradiance map for latitude-specific recommendations.

- **Battery/ Control Unit:** If your luminaire light engine is ≤ 20W and the site is in a sunbelt area and there are no site specific challenges (shade, incomplete solar aspect) specify an 850Wh battery. For all other conditions, specify the 1275 Wh battery.

- **Pole:** Available pole height will be determined based on number of modules required. The standard selection of options has been developed with a 6.5’ minimum height above grade for the lowest collector. Most are higher than this. Please contact factory for all other configurations.

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11. What maintenance is recommended for 360 Solar?

360 Solar requires minimal maintenance due to its self-cleaning cylindrical solar panels and durable components. Periodic inspections are recommended. Maintenance tasks may include cleaning the solar panels if necessary, and inspecting the system for any signs of damage.

12. What is the warranty for 360 Solar?

360 Solar is protected by a comprehensive 3 year warranty on system components (modules, control unit, cables, modules, etc). Luminaires are warranted for 6 years. For complete details, refer Landscape Forms' standard warranty terms, found **here**.

13. What are some key considerations for installing 360 Solar?

360 Solar is a modular, plug and play design, including solar modules, control units, cables, mounting rings, and a pole. The pole requires a traditional footing (anchor bolts and templates are available to ship ahead). Once the footing is complete, the installation process is straightforward and can be completed within approximately 60 minutes. Refer installation guide for complete details.

14. What is required for startup and commissioning of 360 Solar?

Nothing. Startup and commissioning of 360 Solar is autonomous. Once the system detects the connection of the control unit breakout cable, it will start a 5-day system setup, processing GPS location and sunpath data, battery levels and available energy from the solar panels. During this time the system may not operate as expected, including being in an off state. After that 5-day startup period, it will commence standard operation.

15. What precautions should be taken during the installation?

Always use proper personal protective equipment, handle the solar modules with care as they are made of glass, and ensure all components remain dry and clean during installation. Avoid applying external force or torque to the solar modules.