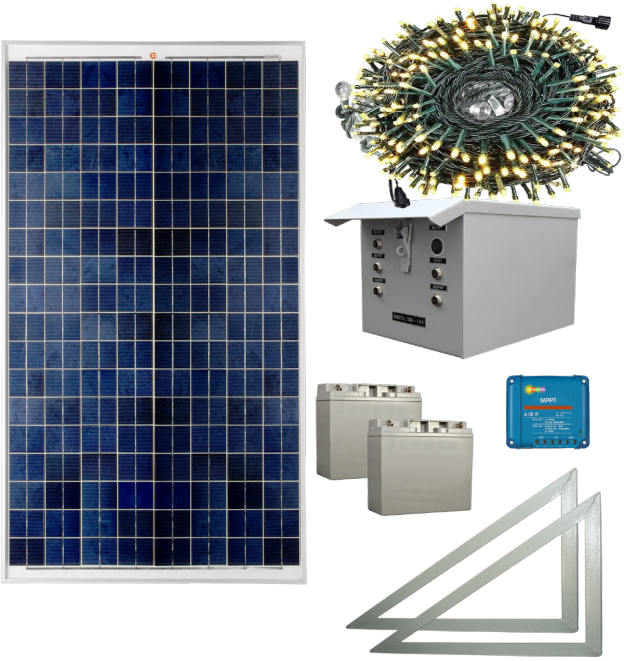
XP08

Solar LED String Light System
(Christmas / Fairy / Decorative Light String)

Professsional, commercial-grade, solar LED string light system designed, engineered, manufactured and supplied by Solar Illuminations. It's the only bespoke lighting system of its kind in the world.



Supplied as a complete system, this solar LED string light system is designed and built to order. Ideally for commercial applications or where a high-end, a professional solar powered lighting system is required. It's available with a choice of LED lights, colour temperature, string length and nightly illumination time. Choose from automatic dusk to dawn (e.g 16.5 hours in UK mid-winter), or a single timed mode (on at dusk for x hours then off, or a dual timed mode (on at dusk for x hours, turn off, then turn back on again for x hours before dawn. Ideal for temporary, semi-permanent, or permanent applications.

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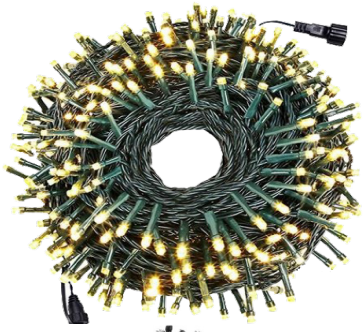
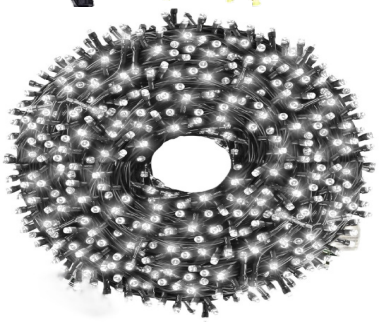
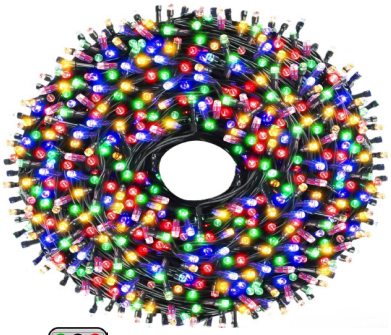
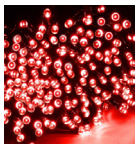
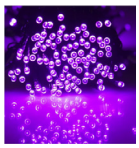


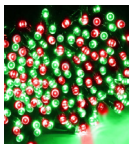




REMOTE
CONTROL
INCLUDED







All red, all purple, all green & red combo, and other coloured LEDs are available by special order.

LED Light String

- The string is approximately 50m long (170').
- Two strings can be connected together to create one.
- Up to 8 No. individual strings can be connected to one system.
- Each string contains 500 LEDs. 24V DC, 1W.
- A remote control is included to allow the user or installer to select the desired colour, operating mode, dimming option, etc.
- Select warm white (3,000k) or multi-colour (RGB) LEDs.
- Select 100% output or dim (75%, 50% or 25%).
- Select from 11 different operating modes (4 steady-on options and 7 flashing/pulsing/twinkling options).
- As standard, approximately 5M (18') of pre-plugged cable is included before the first LED begins.
- Safe, low-voltage, weatherproof and IP55 rated.
- Easy to install, plug & play format.
- Up to 100,000 hours with no bulb changes required.
- Other colours and length options available by special order.
- Double-up or triple-up to reduce the length, where necessary.

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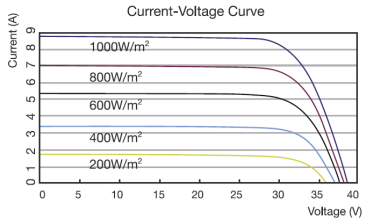
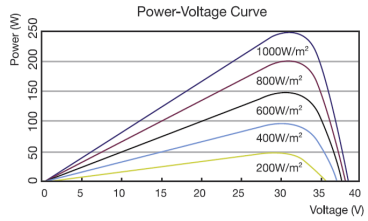
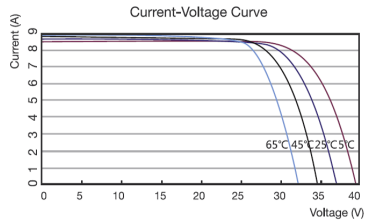
Solar Panel

Systems are supplied with high quality monocrystalline or polycrystalline solar panels with the highest performance and efficiency. They are designed to endure the harshest environments, and are guaranteed to provide power for well over 20 years. Typically manufactured in the USA, Canada, or Germany. The solar panel power is subject to total LED power, the installation location, and the required nightly illumination time. Please consult with our engineers for specific solar power recommendations.

MC4 Connector







Photovoltaic Module

- Highly efficient monocrystalline or polycrystalline solar panel with aluminium frame, anti-aging, and encapsulated membrane.
- Anti-reflective and anti-soiling surface that reduces power losses from dirt and dust.
- Certified to withstand high wind loads (340PSI) and snow loads (780PSI); and resistance to high salt and ammonia.
- Manufactured to international standards, verified and certified by independent testing laboratories. (UL, ETL, IEC, MCS, & TUV)
- Assembled to strict quality control standards; international standards ISO 9001 and ISO 14001.
- Range of solar panel power avalible from 45W to +500W.
- The solar panel power is subject to LED consumption, installation location, and illumination period. Please consult our engineers for specific solar power requirements.
- Solar panels can be supplied in a single or dual format (2 x 70W = 140W, 2 x 100W = 200W etc.)
- Typical solar panel life is over 30 years, subject to environmental factors.

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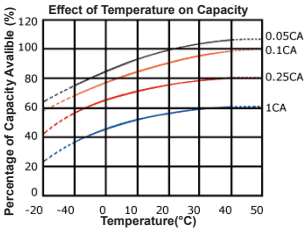
"We supply batteries that are engineered and tested to provide reliable, long-lasting power for Photovoltaic (PV) and renewable energy applications where frequent deep cycles are required and minimum maintenance is

Battery

- 24V DC system Two 12V deep cycle AGM batteries are included.
- Brand names such as Lucas, Yuasa, Powersonic, Leoch, Xplorer, etc.
- GEL and lithium batteries are available as an option.
- Battery capacity ranges from 18AH up to 250 AH (at 20 HR Rate) subject to model selected and customer operation requirements.
- Typical maximum daily DOD designed around 30%.
- Non-spillable (defined by DOT, ICAO and IATA), valve regulated, NonHAZMAT.
- Conforms to ISO9001, ISO/TS 16949, and ISO14001 standards.
- Typical battery life is approximately 5 years, subject to environmental factors.

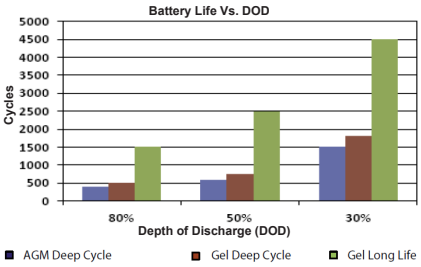


VRLA Technology

VRLA batteries are maintenance free for life. VRLA stands for Valve Regulated Lead Acid, which means the batteries are sealed. Gas will only escape through the safety valves in the case of overcharging or cell failure.

AGM and Gel batteries have exceptional discharge recovery, even after deep or prolonged discharge. However, it should be noted that repetitive deep discharge and prolonged deep discharge have a negative influence on the service life of all lead acid batteries.

Gel batteries in general have a longer service life and better cycle capacity than AGM batteries.



Please Note: The rated capacity of our AGM or gel deep cycle batteries refer to 20 hour discharge rate (i.e. 0.05CA). Most products actually operate near, or at a 100 hour discharge rate (i.e. 0.01CA) and thus actual available battery capacity is slightly higher than the advertised rate.

The total available battery power is measured in watt-hour (Wh) or V*Ah. When comparing our total battery capacity with competitor's, please note that the battery capacity from a 12V system is not interchangeable with the battery capacity of a 24V system. However, the total battery power (i.e. watt-hours) is always comparable provided the correct system voltage is considered during calculation.

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IEC 62109 UL 62109-1

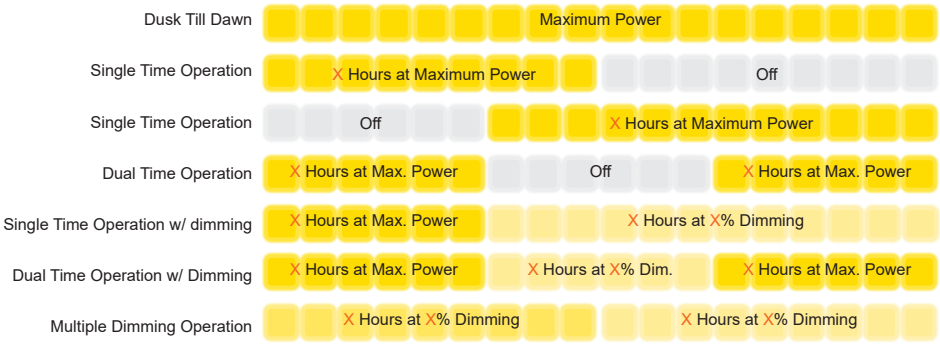
Maximum Power Point Tracking

Supplied standard with the most advanced and sophisticated MPPT charge controller technology. Allowing for full system programmability and light control; including active dimming and intelligent battery management. MPPT technology increases power generation by up to 30% during inclement periods, and intelligent battery management provides extended battery life and extra protection against excessive discharge.

MPPT Control Module

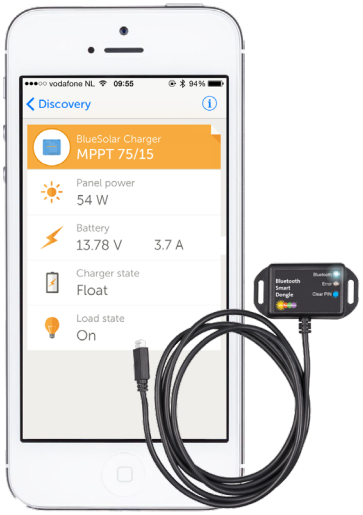
- The MPPT controller will improve energy harvest by up to 30% compared to PWM charge controllers. Especially in the case of cold cloudy winter weather, when light intensity is changing continuously.
- Offers full programmability of load output: dusk to dawn, multi-timed mode, and integrated diming (all standard features).
- Intelligent battery management software is used to protect the battery from being excessively discharged. The controller will monitor the state of charge on the battery, and if needed, day by day slightly increase the load disconnect level (i. e. disconnect the load earlier) until the harvested solar energy is sufficient to recharge the battery to nearly the full 100% at least once a week. Allowing for the longest life possible from the batteries.
- Controller size and ratings are subject to solar panel and battery specifications.
- *Supports real time data monitoring, 30 day performance history, and user programmability from Apple or Android smartphones, tablets, etc. Use of this feature requires the optional MPPT Bluetooth Dongle.

The comprehensive light control system allows for extensive configuration, including dynamic activation and optional dimming. Lighting activation is controlled by the charge controller and solar panel. Dimming of the luminaire is adjusted by percentage, i.e 100% is equal to full power, 50% is equal to half power, etc.



*The lighting control options are variable, and not all options are listed. If you require a specific control operation not listed, please contact one of our engineers to verify feasibility.

**A midnight feature is available as a timed operation parameter. Midnight is determined by calculating the middle of the night and does not necessarily mean 12AM (although it will be close). It also can be adjusted earlier or later by X number of hours.



*Real time data monitoring, 30 day performance history, and user programmability from Apple or Android smartphones.

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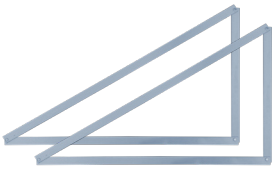
Performance

Operating voltage is 24V DC.
Power consumption is 3W per LED light string.
Operating temperature -40 deg. C ~ +80 deg. C (-40 deg. F ~ 175 deg. F).
Intelligent battery management software to prevent over-charging and over-discharging.
Includes a minimum of three to five days of autonomy (battery back-up).
Several successive cloudy or alternating overcast days typically should not affect the illumination time.
Supplied solar panel power is based on installation location and system requirements.
The nightly Illumination time can be pre-programmed for the hours or times required.

NEMA 3R



Hardware & Pole

Battery Enclosure

- Galvanized steel lockable battery enclosure will accommodate the rechargeable batteries and charge controller (padlock not included.)
- Designed to conform to NEMA 3R and IP22 rating standards for Outdoor Enclosures. Offering protection against rain, snow, and sleet. Meets the requirements of UL 508 “Rainproof enclosures”.
- The battery enclosure can be mounted onto most solid surface either vertically or horizontally.
- As an option, the battery enclosure can attach to a round or square post or pole. Hardware is available to accomdate this option.
- The battery box has pre-drilled holes to enable secure installation.
- Battery Enclosures: galvanized/painted steel (Standard); aluminum (Special Order), or stainless steel (Special Order).

Hardware

- Standard triangular solar panel mounting hardware (surface mount) is supplied, typically one pair per panel.
- Optional pole mount solar panel hardware is available, if required.
- Power cables, solar panel cables, and battery connections are included.
- As an option, this system supports real time data monitoring, 30 day performance history, and user programmability from Apple or Android smartphones, tablets, etc. Use of this feature requires the optional MPPT Bluetooth Dongle or a smart controller.

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