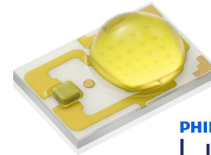


# BL31 / BL32 / BL33 / BL34

Solar Flood Light System  
With 1-4 Fixtures - Complete System



PHILIPS  
LUXEON  
Rebel

Philips Luxeon® Rebel ES  
Over 150 lm/W efficiency.

## PHILIPS LUXEON LED TECHNOLOGY

The pinnacle of innovation and performance; Philips LEDs are capable of producing greater than 150lm/W. With this high lumen per watt (lm/w) ratio, these floodlight fixtures are brighter while consuming less power. These fixtures are ideal for general area or multi-purpose floodlighting applications as well as illuminating structures, signage, sculptures, landscaping, and architecture, etc. LED power options are 10W, 15W, 20W, 25W, 30W, or 35W (from 1,500 lumens to 5,250 lumens).

## TIR OPTIC TECHNOLOGY

Using the latest in TIR optical technology, a highly engineered optical lens designed to concentrate all of the light produced from each LED evenly onto an area. TIR Technology ensures complete and uniform illumination of an open area, an object or a structure, reducing hot spots and dark spots. The LEDs and special optics make this the best and most efficient solar powered floodlight fixture available on the market today.

## LIFE & GUARANTEE

With registration, our systems are backed with a 20 year warranty on the solar panel, and a 10 year warranty on most other components. Expected life on the LEDs is over 100,000 hours, or up to 30 years. These custom systems are designed and engineered to meet all your requirements. Pre-programmed for either automatic dusk to dawn illumination, year round, or programmed with a single or dual timed mode.



**Lowest Price\***  
Guarantee ✓

**Worldwide\***  
Shipping ✓

**10 Year\***  
System Warranty ✓

**20 Year\***  
Panel Warranty ✓

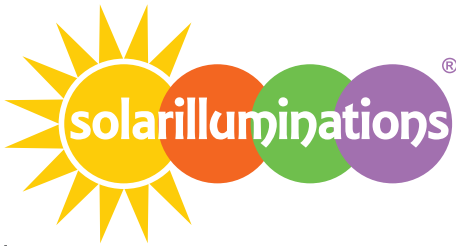
**Lifetime\***  
Tech Support ✓

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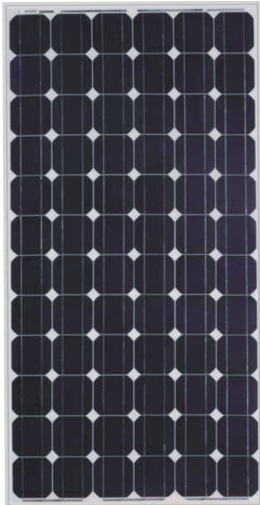
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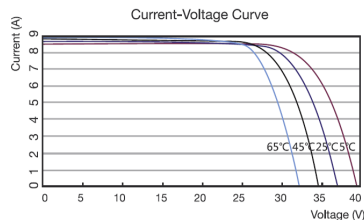
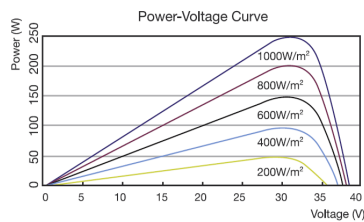
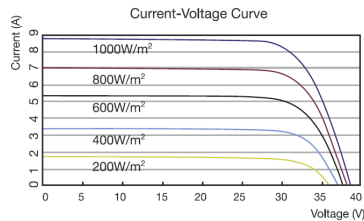
**20**  
YEAR  
GUARANTEE

## SOLAR PANEL

Our systems are supplied with high quality solar panels that produce the highest performance and efficiency. Designed to endure the harshest of environments and are guaranteed to power for well over 25 years. These solar panels will withstand the test of time. Typically manufactured in the USA, Canada, or Germany. \*Solar panel size and wattage required depends greatly on the installation location and customer's requirements. Please consult our engineers for specific solar power recommendations.

## PHOTOVOLTAIC MODULE

- Highly efficient monocrystalline or polycrystalline solar panel with aluminum frame, anti-aging, and encapsulated membrane.
- Anti-reflective and anti-soiling surface 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.
- Typical solar power configurations for applications with 8-9 hours of operation (2.5-3 PSH Winter):
- One fixture system is supplied with up to 400 Watts of solar panel.
- Two fixture system is supplied with up to 750 Watts of solar panel.
- Three fixture system is supplied with up to 1,000 Watts of solar panel.
- Four fixture system is supplied with up to 1,500 Watts of solar panel.
- Solar panels can be supplied in a single or multi-format array (2 x 280W = 560W, 3 x 420W = 1,260W etc.)
- The solar panel size and power required depends greatly on the installation location and customer's requirements, please consult our engineers for specific solar power requirements.



**Lowest Price**  
Guarantee



**Worldwide**  
Shipping



**10 Year**  
System Warranty



**20 Year**  
Panel Warranty



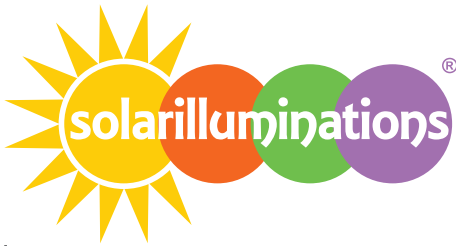
**Lifetime**  
Tech Support



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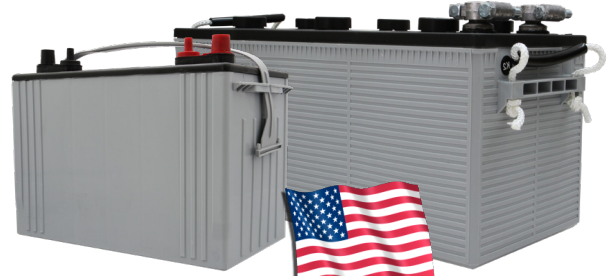
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Solar Flood Light System  
With 1-4 Fixtures - Complete System



Made in the USA



"EastPenn batteries 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 desirable."



## BATTERY

- Manufactured by: East Penn Manufacturing Co. Inc.
- 100 % made in the USA.
- Supplied standard with two 12 Volt AGM VRLA deep cycle batteries.
- GEL batteries are available as an option.
- Battery capacity ranges from 55 AH up to 245 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 to 7 years, subject to battery type and environmental factors.

## VRLA TECHNOLOGY

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

## SEALED (VRLA) AGM BATTERIES

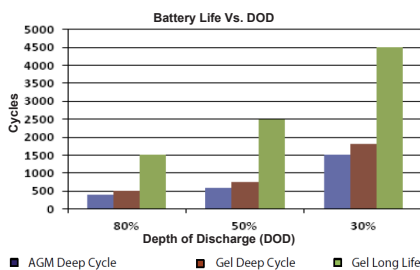
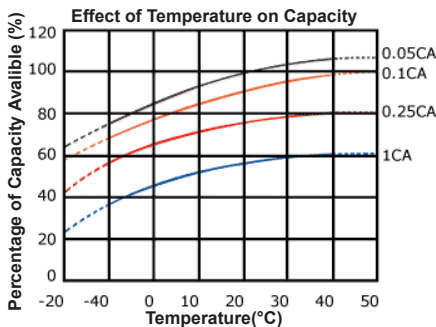
AGM stands for Absorbent Glass Mat. In these batteries the electrolyte is absorbed into a glass-fiber mat between the plates using capillary action.

## SEALED (VRLA) GEL BATTERIES

Electrolyte immobilized as gel, Gel batteries in general have a longer service life and better cycle capacity than AGM batteries.

Our 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.

The rated capacity of our AGM and Gel Deep Cycle batteries refers to 20 hour discharge. (i.e. a discharge current of 0.05 C).



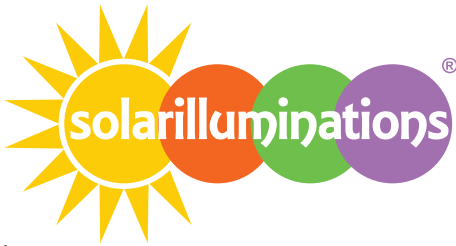
Lowest Price Guarantee Worldwide Shipping 10 Year System Warranty 20 Year Panel Warranty Lifetime Tech Support

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## 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

- An 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.
- Our MPPT controller offers full programmability of load output, with dusk to dawn, multi-timed mode, and integrated dimming; 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 of 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 from Apple or Android smartphones, tablets, and other devices. Additional components maybe required.

## LOAD ACTIVATION

Our comprehensive control system allows extensive configuration, including dynamic activation and dimming of some of our lighting. All load activation for sunset applications is controlled with the MPPT charge controller and solar panel. If applicable dimming of the lighting is done by percentage, i.e 100% is equal to full power, 50% is equal to half power, and so forth.

## LOAD CONTROL OPTIONS\*:

- Low Voltage Disconnection – Intelligent battery management algorithm to prolong battery life and system redundancy.
- Dusk to Dawn – On from sunset until sunrise.
- Dusk to Midnight\*\* – On from sunset until midnight, off remaining.
- Dusk to Midnight\*\*, X (hr:mm) to Dawn – On from sunset until midnight, off, and back on select hours and minutes before sunrise.
- Dusk to X(hr:mm) – On from sunset until selected hours and minutes, off remaining.
- Dusk to X(hr:mm), X (hr:mm) to Dawn – On from sunset until selected hours and minutes off, and back on select hours and minutes before sunrise.

\*Our load control options are very configurable and not all options are listed. If you require a specific control operation not listed please contact one of our engineers to see if it's possible.

\*\*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 X amount of hours.

## BATTERY LIFE: INTELLIGENT BATTERY MANAGEMENT

When a solar charge controller is not able to recharge the battery to its full capacity within one day, the result is often that the battery will be continually be cycled between a "partially charged" state and the "end of discharge" state. This mode of operation (no regular full recharge) will destroy a lead-acid battery within weeks or months.

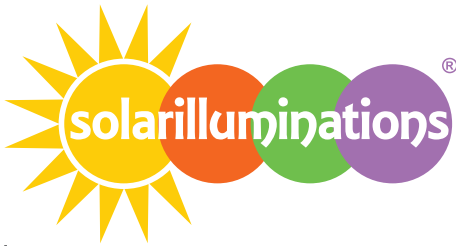
The BatteryLife algorithm will monitor the state of charge of the battery and, if needed, day by day slightly increase the load disconnect level (i. e. disconnect the load earlier) until the harvested solar energy is sufficient to recharge the battery to nearly the full 100%. From that point onwards the load disconnect level will be modulated so that a nearly 100% recharge is achieved about once every week.

**Lowest Price\*** **Worldwide\*** **Shipping** **10 Year\*** **System Warranty** **20 Year\*** **Panel Warranty** **Lifetime\*** **Tech Support**

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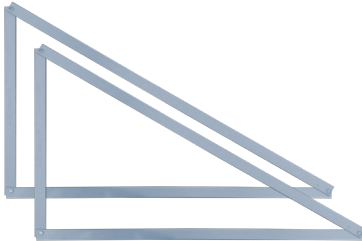
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## GENERAL

Sold as a complete, professional, commercial grade, solar powered floodlighting system.

- Multi-purpose use. Ideal for illuminating general areas, objects, or opens spaces, internally or externally.
- Illumination time can be designed subject to project requirements (dusk to dawn all year round, single timed mode, dual timed mode, etc.).
- Choice of floodlight fixture 5W, 10W, 20W or 30W LED power. Higher LED power by special order.
- Choice of LED color temperature (warm white, daylight white, or cool white).
- Optional pole or pole mount hardware available.
- The light fixture can be permanently dimmed to any wattage between 1 and 30 Watts.
- The Solar panel (size) wattage and battery size (capacity) is calculated based on the total LED power (wattage), the geographic location of the installation site, and the total illumination time.

## PERFORMANCE

System operating voltage is 24 Volts DC.

Operating temperature -40°C - +80°C (-40°F - +175°F).

Intelligent battery management software to prevent over-charging and over-discharging.

Includes a minimum of 3~5 days of autonomy (battery back-up).

## HARDWARE & BATTERY ENCLOSURE

Supplied as a complete lighting systems including all essential components required for a typical installation.

A variety of solar panel mounting hardware is available. Standard hardware allows for easy installation to a horizontal or vertical surface.

Optional hardware available for side of pole or top of pole mounting.

Solar panel angle and direction can be adjusted for installation location.

Pole mounted or surface mounted, lockable, metal battery enclosure.

Standard enclosure is galvanized/painted steel; aluminum and stainless steel enclosures are available as an option.

Cords and connectors for fixtures, solar panel, and batteries included.

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