



Solar Street Lights

Sollatek DC Lighting Systems

Range of outdoor solar lighting solutions featuring SOX, PL and LED bulkheads



Why choose Sollatek?

A global player in photovoltaic products, Sollatek designs, manufactures and supports a wide variety of solar related products and systems.

With over 20 years experience in the solar industry, Sollatek's products are used in thousands of systems around the world.

Their design, durability and reliability make them the first choice for installations in harsh environments and remote locations. Sollatek UK has been approved by Lloyd's Register Quality Assurance to the ISO9001:2008 Quality Management Systems Standard.

Advantages:

- Bespoke system design
- Automated system reports
- Many systems successfully installed around the world
- Experience in many countries including: Libya, South Africa, UK, Iraq, Egypt, and Liberia
- A wide network increases availability
- Constant development of new products
- A team of engineers dedicated to research and development
- 2 year worldwide warranty on all systems
- 25 year guarantee on solar modules





Street lighting systems

The Sollatek range of street lighting systems are completely self contained, requiring no electricity line extensions and are maintenance-free, making them ideal for locations where utility power is unavailable or uneconomic. Sollatek manufactures complete outdoor lighting systems inclusive of various lights, bulk heads, solar modules, solar charge controllers, batteries and poles.

Applications:

- Lighting of streets
- Highway and motorways
- Markets
- Squares
- Car parks
- Bus stops
- Rural roads
- Roundabouts
- Crossings
- Footpaths
- Camp sites
- Beaches
- Service stations

Features:

- No utility line extensions
- No utility bills
- Fast and simple installation
- Location flexible
- Maintenance-free
- Automatic operation
- High reliability
- Long lifetime
- 2 year warranty

System design

Sollatek abides by professional and rigorous system design standards. Our dedicated and experienced engineers meticulously plan and research each project to ensure maximum client satisfaction and quality of service.

In adherence to Quality Assurance ISO9001, Sollatek has implemented set procedures enabling better relationships between system designers and the client, thereby offering a bespoke service that suits their individual needs.

- Bespoke system design
- Specialised system software
- System performance reports
- Dedicated research & development team
- Experienced engineers



Street lighting

High power LED lighting

(Light Emitting Diodes)

Sollatek designs and manufactures LED lights primarily intended for solar power applications that can also be used for AC grid power sites.

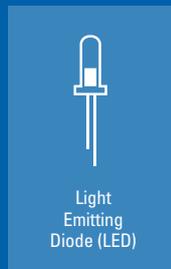


Benefits of an LED street light

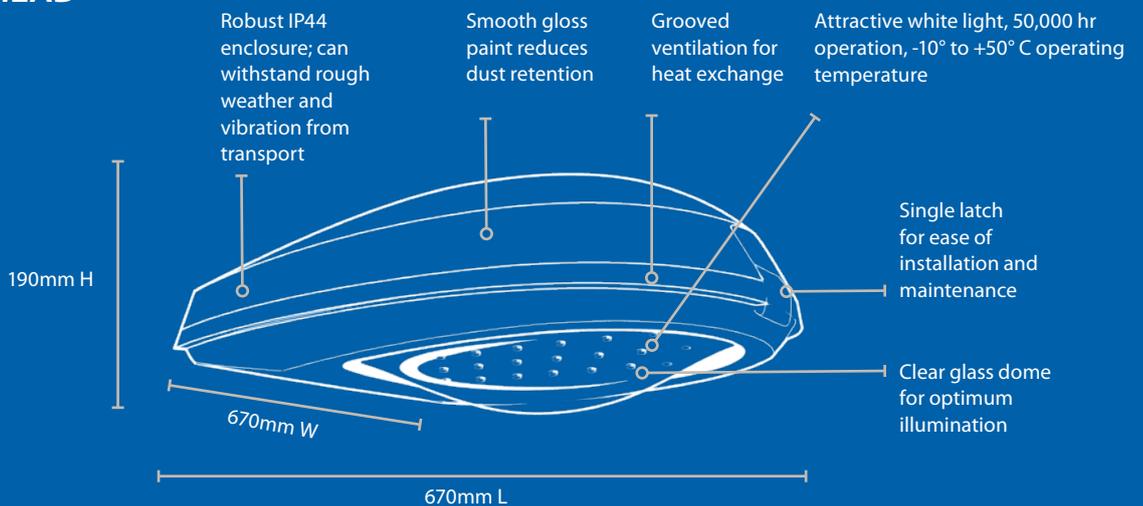
- Long life; an estimated 50,000+ hours operation (more than 11 years at 12 hours a day).
- Reduced maintenance cost due to long life (comparable with the need to change a SOX lamp every 2 to 3 years).
- Robust; can withstand vibration from transport and rough weather.
- Attractive cool white light.
- Good efficiency; comparable with a fluorescent lamp.
- Small compared with other lamps of same output.
- Instant start (no warming up period).



LED BULKHEAD



Light Emitting Diode (LED)





Efficient PL lighting

High power compact fluorescent lamps suitable for both indoor and outdoor lighting. Sollatek's PL based lighting have a bright white ambient with over 1200 lumens.



Benefits of a PL street light

- Low cost
- Low power consumption
- Attractive cool white light
- Higher light output at lower temperature

Economic SOX lighting

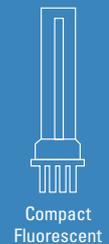
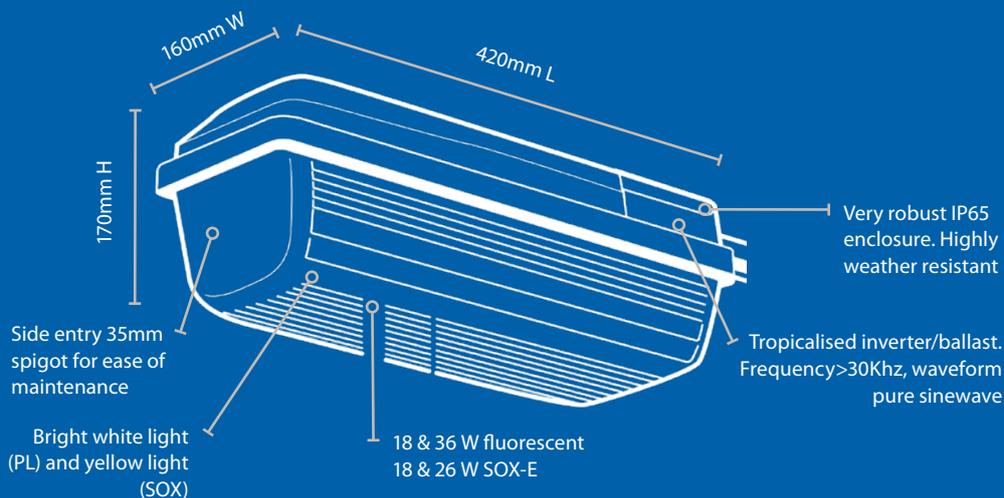
SOX lamps are a common form of lighting employed in street lighting applications due to their high efficiency. This means that they deliver more lumens of light for each watt of power than any other type of lamp. SOX installations therefore have the lowest energy consumption costs which are of crucial importance when thousands of miles of roads must be lit. SOX lamps generate an orange/ yellow light.



Benefits of an SOX street light

- More light output for the energy (wattage)
- Contains zero mercury, therefore can be replaced easily
- Ideal for outdoor, effective in rain, fog and snow
- Low operating temperature
- Low cost

PL and SOX BULKHEAD





Other components

Solar modules

Sollatek's high efficiency solar modules are constructed from 36 or 72 crystalline cells that are connected in series to raise system voltage to 12V or 24V. The cells are individually tested and matched for optimum performance before being built into the protective module structure. A Tedlar® base is used and an ethylene vinyl acetate is used as an encapsulant.

High transmission tempered glass protects the cells from the front and a high strength polymer sheet at the rear. A reinforced aluminium frame completes the laminate structure which is fully sealed against moisture and protected from environmental and mechanical damage.

Sollatek supplies two PV technologies:

- **Multicrystalline** (also called Polycrystalline)
Made from cells cut from several silicon crystals
- **Monocrystalline**
Made from cells cut from single silicon crystals



Monocrystalline



Multicrystalline



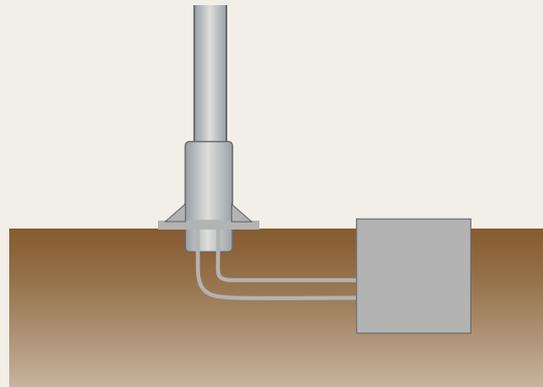
Batteries

Solar systems are the most demanding applications for the battery and the correct choice of battery is fundamental to the integrity of the entire system. Batteries are subjected to high and low temperatures, unpredictable charging, daily cycling as well as potentially partial states of discharges. Therefore it is of utmost importance to correctly choose the right battery for the right application in order to maximise battery life.

Sollatek not only offers the most complete range of Solar batteries available in the market but also provides expert advice on which choice of battery to suit your particular application. Many solar street lights are in remote areas where access is difficult and maintenance is at a premium. Here Sollatek adopts the Valve Regulated Lead Acid (VRLA) battery range with gel and flat positive plates (often referred to as maintenance-free batteries).

Features:

- Capacity range (C100) 20Ah - 265Ah
- Maintenance free
- Gel type VRLA
- Operating temperature range -20 to +60°C



Sollatek recommends burying batteries wherever possible to enhance the life of the battery against temperature fluctuations and for better security. Refer to page 10 for more information on battery mounting.





Other components

Solar charge controllers

The charge controller is at the heart of every solar system, and is required to monitor and control the power going into and coming out of the battery. It must also manage the power generated by the solar module to ensure it does not overcharge the battery. The charge controller must also ensure that the connected loads don't over-discharge the battery, thereby damaging it. Sollatek charge controllers are state of the art microprocessor controlled for both 12V and 24V systems.

The charge controller also manages the system operation time, enabling change in illumination levels throughout the course of the night. This can be provided at its brightest level during peak times of pedestrian activity, and then dimmed to accommodate times of reduced usage, thereby allowing for maximum energy efficiency. See operation time options opposite.



Features:

- 12 & 24 volt field selectable
- Microprocessor controlled
- Field adjustable voltage threshold
- In-built street lighting timer
- Reverse polarity protected
- Lightning protection
- Overload protection
- Low power consumption
- Status indication by 5 LEDs
- Remote battery sense
- Remote temperature compensation
- Test/reset/LVD break switch
- Timer

Applications:

- Street lighting
- Small/medium sized applications
- Rural electrification
- Home lighting systems
- Beacons
- Remote telemetry



power rating	current consumption	IP rating	lighting protection	timer function



Operation time options

Sollatek's charge controllers have the added advantage of intelligent operation time that allows for a change in illumination levels throughout the course of a night. Illumination can be provided at its brightest level during peak times of pedestrian activity, and then dimmed to accommodate times of reduced usage. Allowing for maximum energy efficiency, Sollatek offers four intelligent operation times designed to provide all-night illumination while meeting the needs of individual applications:

Dusk till dawn - designed to provide a consistent level of illumination throughout the night, the dusk till dawn option turns the fixture on at dusk and off at dawn.

Split night - designed to provide alternating levels of illumination, a split-night profile turns the fixture on at full intensity for a set number of hours after dusk, and then reduces intensity down by a set percentage for the remainder of the night. For example, a standard setup would be from 6pm to 12am at full illumination intensity, and then 12am to 6am at low intensity; thereby reducing power strain from the batteries.

Fixed night - designed for a steady level of illumination, a fixed-night option turns the fixture on for a preset number of hours and then shuts it off.

Partial or full PIR - Passive Infrared (PIR) option enables the usage of motion detection to turn the streetlight on when pedestrians cross underneath the pole. The system can be setup to enable partial reliability on the PIR throughout the night i.e. lights on dusk till certain time (e.g. 6pm to 12am) then the PIR will be operational the rest of the night. Full PIR option enables the charge controller to fully relay on the motion detector to turn the light on for a preset time. Refer to page 11 for more information on PIR sensor option.



Dusk till dawn



Split night



Fixed night



Partial or full PIR

System options

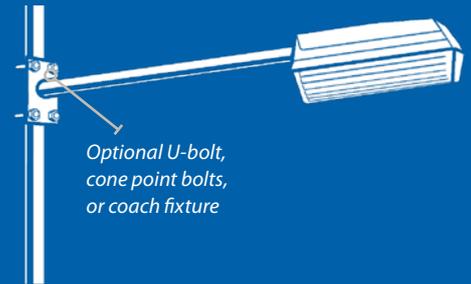
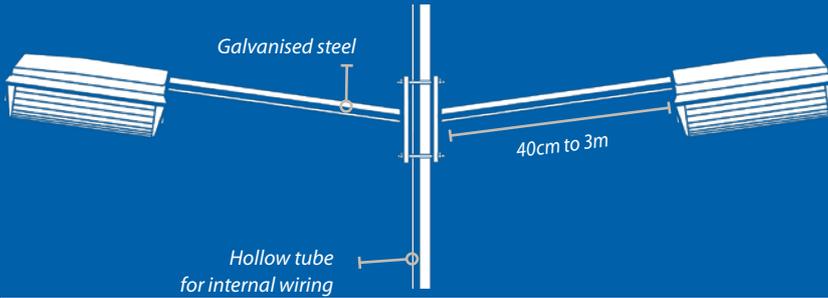


Lantern brackets

Available in both single and dual fixture with range of 40cm to 3m

DUAL ARM

SINGLE ARM

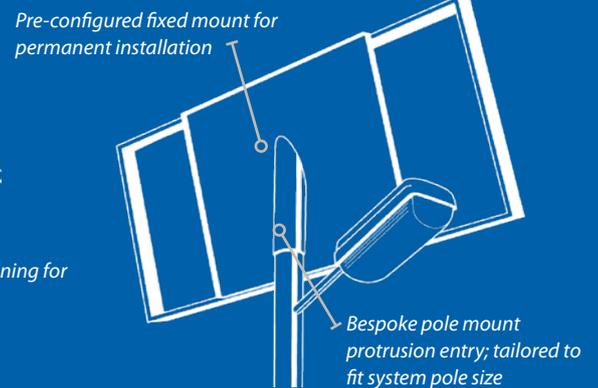
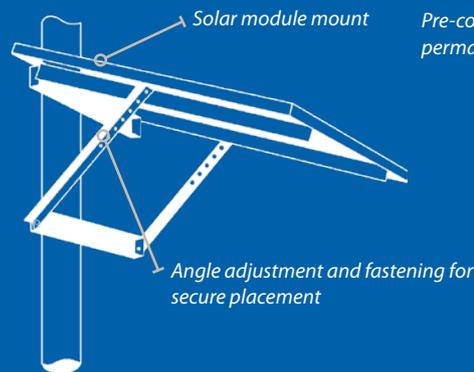


Module mounting

Optional adjustable or fixed tilt angle module brackets. Configured between zero and 60° for optimal sun exposure. A simple pole-top or clamped mounting configuration allows for easy installation.

ADJUSTABLE TILT

FIXED TILT



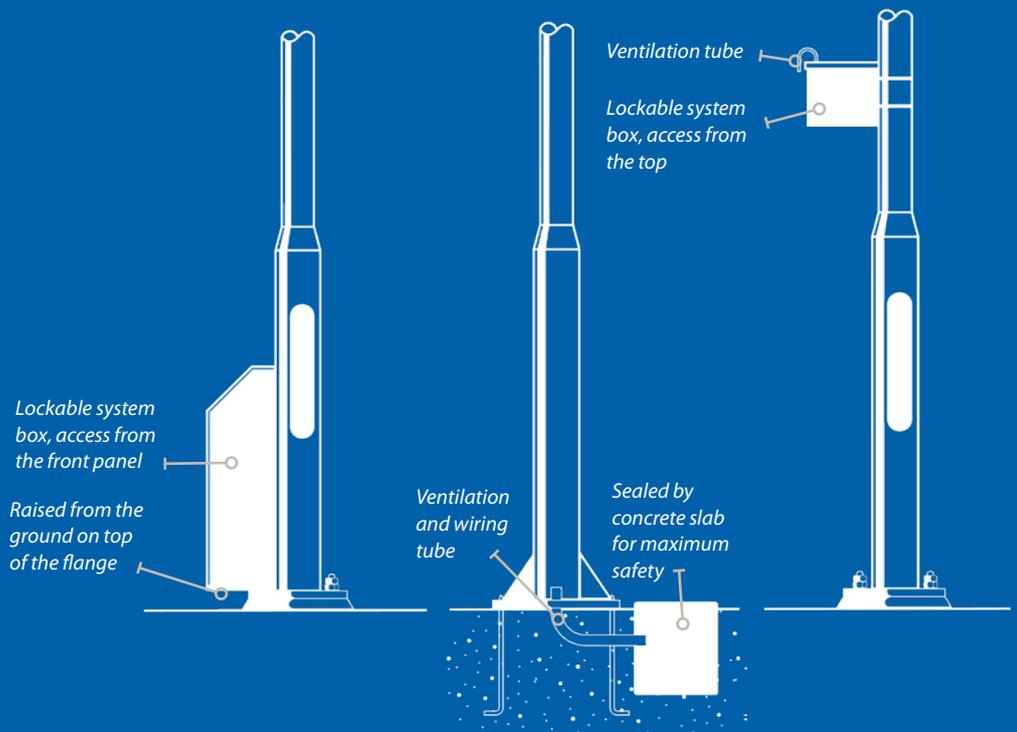
Battery and system controller mounting

Three available options of base mounted, buried or column mounted. Column mounting enables greater system efficiency as closer to the solar module. Buried option, provides better security and less temperature variations. Base mounted provides ease of access to the system.

BASE MOUNTED

BURIED

COLUMN MOUNTED



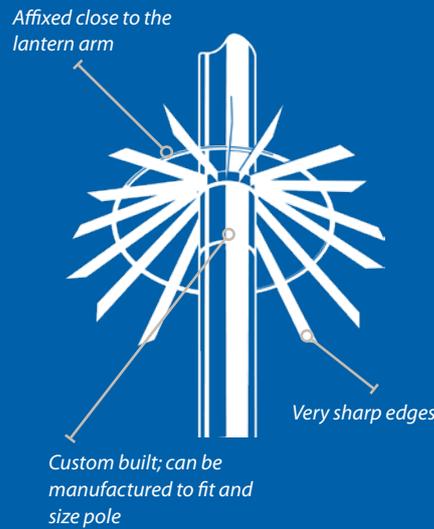
Anti vandal collar- spikes

Spiked anti climb collars are also often referred to as; anti climb brackets, spiked collars, pole collars, etc, and offer a simple yet practical solution to protecting poles (and pole mounted equipment) against vandals, thieves and general troublemakers. For maximum security anti climb brackets and spiked collars can be used in conjunction with other anti climb products such as anti climb paint (anti intruder paint)

Anti-climb paint

A thick, non-drying anti-climb paint which acts as deterrent by discouraging or helping to prevent intruders, burglars and vandals from gaining access to the streetlight components.

SPIKES



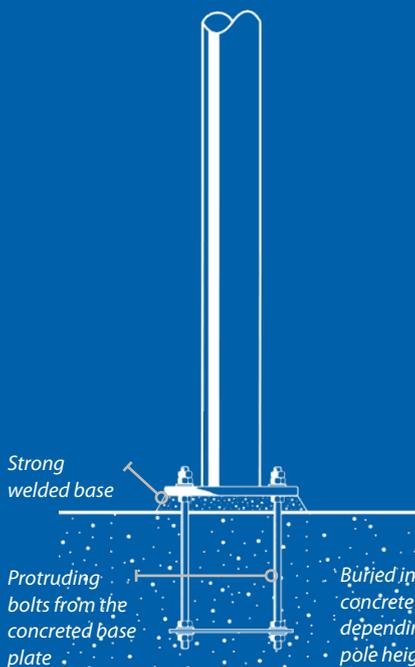
ANTI-CLIMB PAINT



Column installation

Flange mounting features a concrete base with erected flange that allows bolting of the column, suitable for shorter poles. Rooted column are buried and topped with concrete for greater strength, suitable for longer poles.

FLANGE MOUNTED



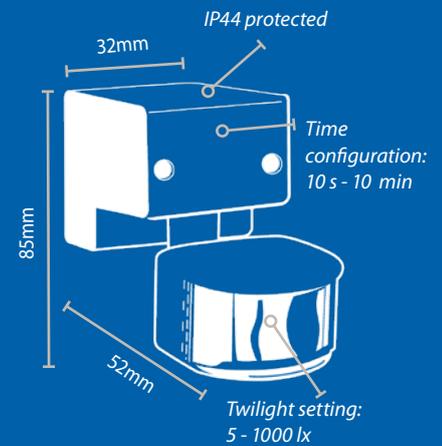
ROOT MOUNTED



Passive Infrared (PIR sensor)

Automatically switches the streetlight on when someone enters the detection zone. The angle of detection of 120° and 10m as the optimum exposure range. The adjustable twilight switch allows the sensor to be operated during the day, twilight hours and night.

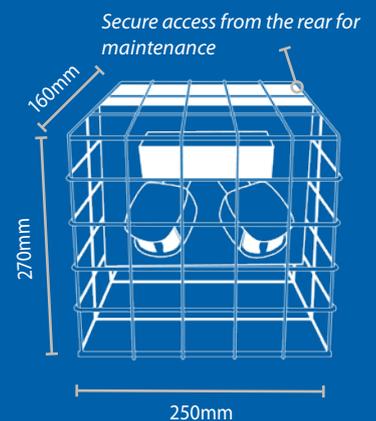
PIR SENSOR



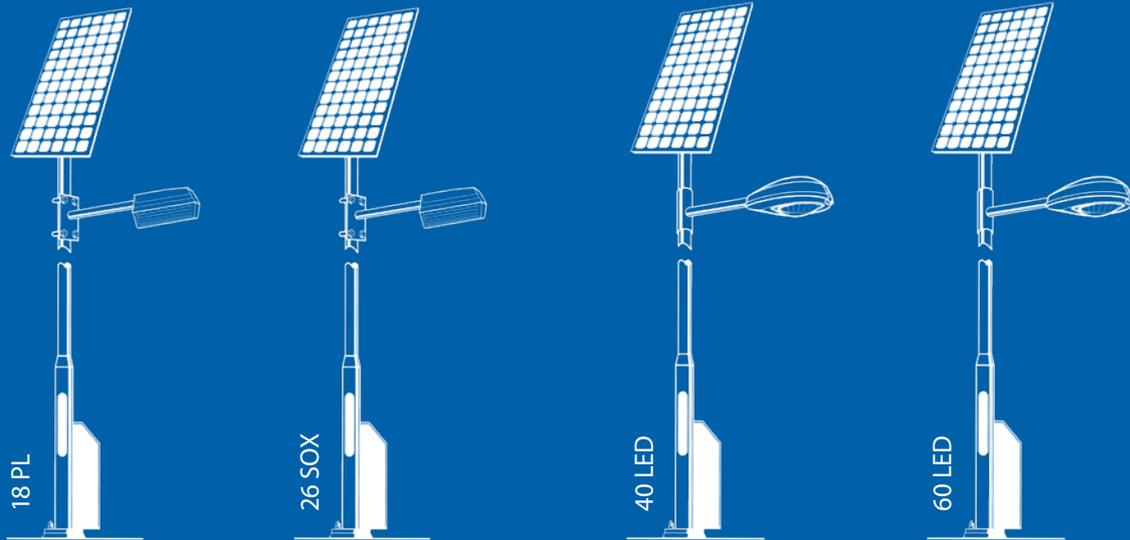
PIR cage

Protective cage in coated steel mesh designed to offer robust protection for PIR sensors.

PIR CAGE



Example of street light systems



Example of systems around the world - dusk till dawn (Hr)

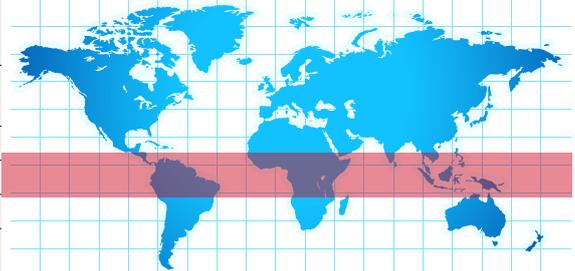
Northern Africa, Middle East, South Asia

Model	Lamp power	Solar modules	System Batteries	Lumens	Light Colour	PIR movement sensor	Pole height
18 PL	18W	1 x 140	90 - 12V	1200	White	Optional	4m
26 SOX	26W	2 x 100	120 - 12V	3700	Yellow	No	4m
40 LED	40W	2 x 150	96 - 24V	4000	Cool white	Optional	≥6m
60 LED	60W	2 x 220	145 v 24V	6000	Cool white	Optional	≥6m



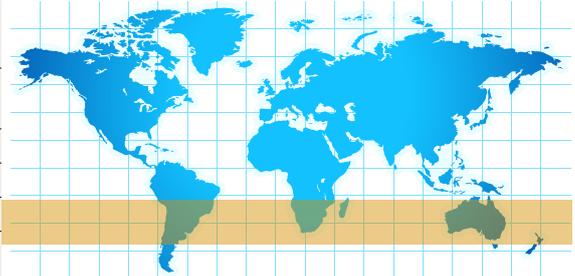
Equator (Central Africa, South East Asia)

Model	Lamp power	Solar modules	System Batteries	Lumens	Light Colour	PIR movement sensor	Pole height
18 PL	18W	1 x 120	75 - 12V	1200	White	Optional	4m
26 SOX	26W	2 x 85	110 - 12V	3700	Yellow	No	4m
40 LED	40W	2 x 130	160 - 12V	4000	Cool white	Optional	≥6m
60 LED	60W	2 x 175	130 - 24V	6000	Cool white	Optional	≥6m



Southern Africa, Southern South America, Australia

Model	Lamp power	Solar modules	System Batteries	Lumens	Light Colour	PIR movement sensor	Pole height
18 PL	18W	1 x 90	83 - 12V	1200	White	Optional	4m
26 SOX	26W	1 x 135	117 - 12V	3700	Yellow	No	4m
40 LED	40W	2 x 100	184 - 12V	4000	Cool white	Optional	≥6m
60 LED	60W	2 x 150	138 - 24V	6000	Cool white	Optional	≥6m



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