

INVO Solar Sleeve 30

VERTICAL SOLAR STREET LIGHT

INVO Solar Sleeve is the latest vertical mounted Solar street light. With the easiest installation on the market, cutting-edge LIFEPO4 battery technology, and a dust-resistant design that requires no cleaning, INVO Solar Sleeve is the perfect solution for hassle-free lighting. Its vertical panel design ensures an unobstructed sky view and seamless integration into architectural surroundings.

The huge advantage of the INVO Solar Sleeve, is that it can be used either with our column and luminaire as detailed, or you can use the sleeve on its own to support your current mains powered LED luminaire (speak to us to find out how we can make this happen for you).



LIGHTING

Nominal flux	5,880 Lumens
Nominal Power	30 Watts
Efficiency	196 Lumens / Watts
Chips LED	Philips Luxeon 30-30 / 2300K to 6500K
LED Lifetime	Over 50,000 hours LM80
Optics & CCT	TII-S / T3-M / T5
Light Height	4.9m

BATTERY

Technology	Lithium Fer Phosphate LIFEPO4 - 26650
Capacity	553 Wh
Autonomy	Over 36 hours - 7 rainy days back up
Charging Time	5-6 hours
Lifespan	Over 4000 Cycles @ 80% DOD (over 10 years)
Working Temp	-10°C to 70°C (Optional -40°C to 70°C)

ENERGY

Solar Panel	149 Watts
Cells Type	Shingled Monocrystalline Panel Grade A 25 years
Certificates	IEC 61215 - IEC 61730 I and II - IEC 60904

ELECTRONIC

Controller	MPPT SMART CONTROLLER
Sensor	Microwave 360° sensor
Cabling	Waterproof Connector, Plug and Play
Protection	Battery Management System (BMS)

MECHANICAL

Wind Speed	180KM/H
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DIMENSIONS

Carton Size	PV 420x390x1400 / HEAD 670x210x200
Weight	31.3 kg



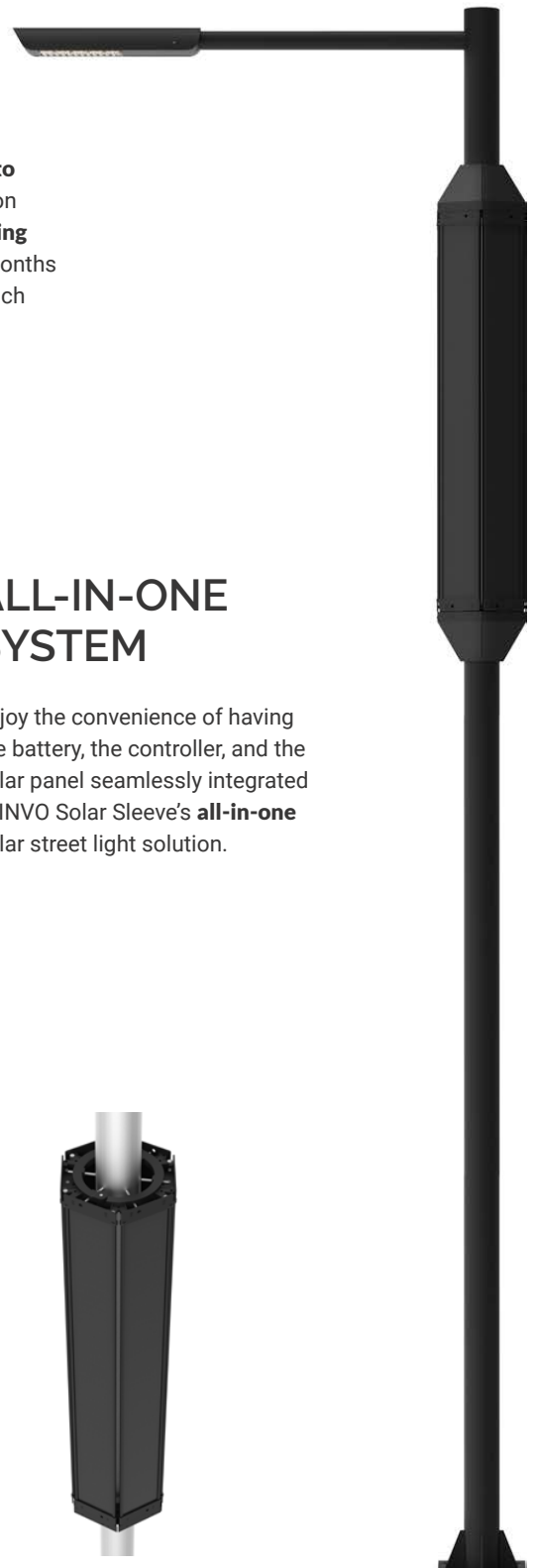
CERTIFICATIONS

IEC / TUV / EMC / LM-79- 08 and LM-80 test standards / IK8 / IP65 / CE / ULOR

*Procure Direct offers a 5 Year Limited Warranty for the Post Top-Series luminaire shall be free from defects in material and workmanship for up to five (5) years from date of shipment. This limited warranty covers all components when installed and operated according to PD instructions. Fixture suitable for ambient temperature from -10° to 50°. PV Panels: 20 year performance warranty. Controller & Batteries: 5 years

CONCEPT

While creating the INVO Solar Sleeve we wanted a solar street light that was **easy to install, requiring no maintenance or cleaning**. Our aim was also to create a solution that could bring **retrofitting** to the next level with **turning existing energy consuming and inefficient light point to sustainable solar powered at a realistic cost**. After months of hard work, our team of experts developed the INVO Solar Sleeve street light, which not only meets all of these criteria, but also boasts a sleek and modern design.



ALL-IN-ONE SYSTEM

Enjoy the convenience of having the battery, the controller, and the solar panel seamlessly integrated in INVO Solar Sleeve's **all-in-one** solar street light solution.



SUPPORT



WRAP IT



CLOSE IT



LOCK IT

With the patented collar fixation system, the INVO Solar Sleeve is incredibly easy to install by a single person on both new and existing erected poles, making it the perfect solution for your new project or for upgrading your traditional street lighting to a sustainable option.

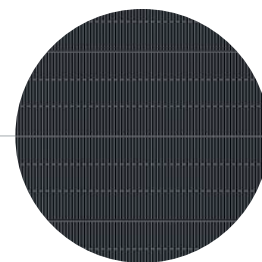
SELF-CLEANING DISCREET SOLAR PANELS

149 WATTS

For high performance and a sleek design, the INVO Solar Sleeve lights are equipped with SHINGLED PERC photovoltaic technology, providing very high efficiency, as well as improved performance in low irradiation. It allows maximizing the installed power in a limited space. Vertically mounted, they don't accumulate dust ultimately reducing the need for complex and expensive cleaning programs.

SHINGLED PERC ADVANTAGES

POWER LOSS DUE TO SHADING



Solar cells **GRADE A**



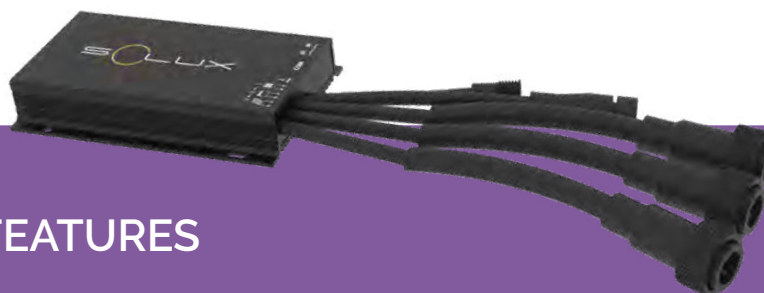
SHINGLED SOLAR PANEL TECHNOLOGY

CONTROLLER MPPT

In search for performance and reliability, INVO Solar Sleeve and all our products are equipped with **MPPT** technology controller. It provides the best charging efficiency on the market up to **98%**

+
AVAILABLE IN HYBRID FOR **RETROFITTING**

Transform your existing street light into a solar-powered one seamlessly.



FEATURES

Minimal stand-by power consumption

Current consumption $\leq 10\text{mA}$

Intelligent battery management

- 3 phases of charging :
- Charge MPPT
 - Constant voltage
 - Floating voltage

Intelligent LED driver

Auto detecting of dusk and dawn for automatic operation, 7 lighting programs configuration.

Anti black-out

Load adjust according to battery capacity assuring all night long lighting in any weather conditions.

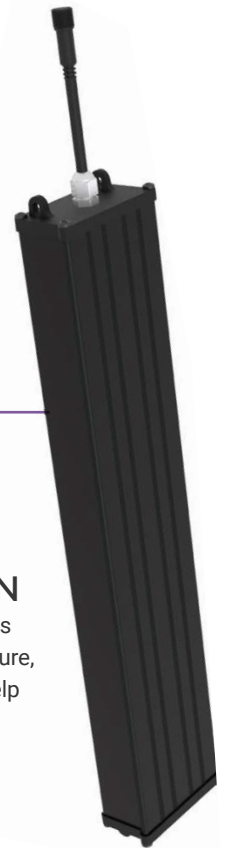
The controller also acts against:

- Overload
- Overcurrent
- Overtemperature
- Overvoltage / Overload
- Overdischarge

BATTERY LIFEPO4

+ OVER 10 YEARS LIFETIME

The INVO Solar Sleeve is equipped with an Iron Phosphate Lithium LiFePo4 battery. This technology is proven to be **the best technology for solar applications on the market**. With a cycle life of over 3000 cycles @ 80% DOD, **the battery has over 10 years lifetime**.



EXTREME TEMPERATURE

-10°C TO 70°C (-40°C OPTIONAL)



Most suppliers offer a standard Lithium LiFePo4 batteries with a working temperature range from -10°C TO 70°C. However, upon request we can offer a new Special LIFEPO4 battery, with working range of -40°C. to 70°C.

EASY MAINTENANCE & ANTI-THEFT SCREWS

Easy and direct access to the battery casing for maintenance. The fixations are made with anti-theft screws, which request special tooling to unscrew.

ALUMINIUM BOX AND NATURAL VENTILATION

High temperatures significantly impact the lifespan of batteries. To address this issue, our batteries are housed in a sealed extruded aluminium enclosure, which is renowned for its excellent heat dissipation properties. With the help of the INVO Solar Sleeve structure, natural airflow effectively regulates the temperatures of the components.

BMS ELECTRONIC PROTECTION BATTERY MANAGEMENT SYSTEM

Our batteries are equipped with **electronic circuit boards for a higher protection**, ensuring battery function optimisation no matter what the situation.



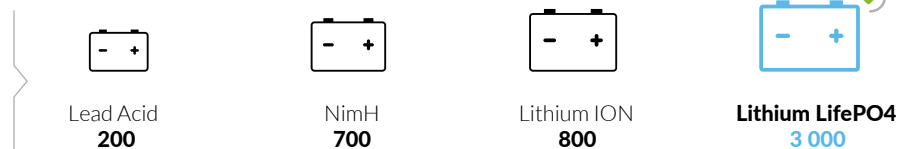
The BMS Protects against :

- OVER/UNDER CURRENT
- OVERLOAD
- OVER/UNDER VOLTAGE
- OVER/UNDER CHARGE
- TEMPERATURE MANAGEMENT

COMPARISONS OF DIFFERENT BATTERY TECHNOLOGIES

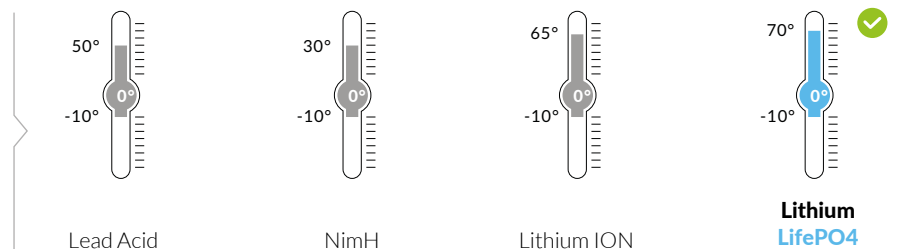
LIFETIME & CYCLES AT 80% DOD*

Comparisons of different battery technologies



CHARGING TEMPERATURE RANGE WITHOUT CAPACITY LOSS

Minimum & Maximum temperature range for Optimal charging during the day



LUMINAIRE & LEDS

30 WATTS - 5880 LUMENS

Our luminaire boasts an anodised aluminium casing, offering exceptional protection with an **IP66 rating** and superior heat dissipation. Equipped with **PHILIPS LUXEON HE PLUS** high-efficiency chips, it delivers an impressive **196 lumens per watt efficacy**. Furthermore, the luminaire adheres to DARK SKY requirements for light pollution, ensuring minimal upward lighting at just 0.31%



LED 3030	LED QTY (PCS) 48	OPTICS (PCS) 4	CRI > 70
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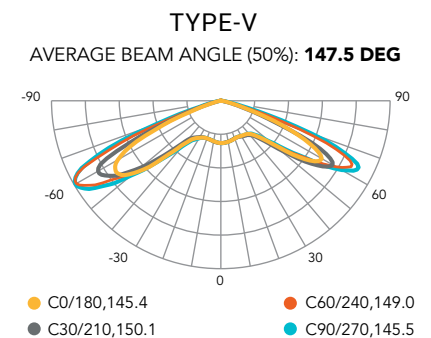
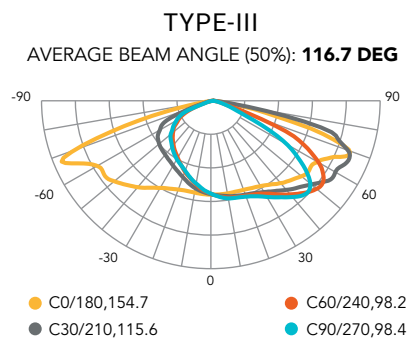
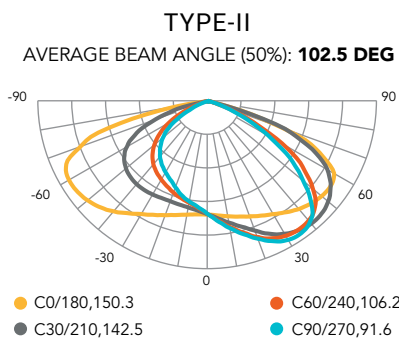
DIFFERENT OPTICS*

Our different optics will allow you to optimize the lighting results of your projects



*Please contact us for more optics.

LIGHT DISTRIBUTION CURVES

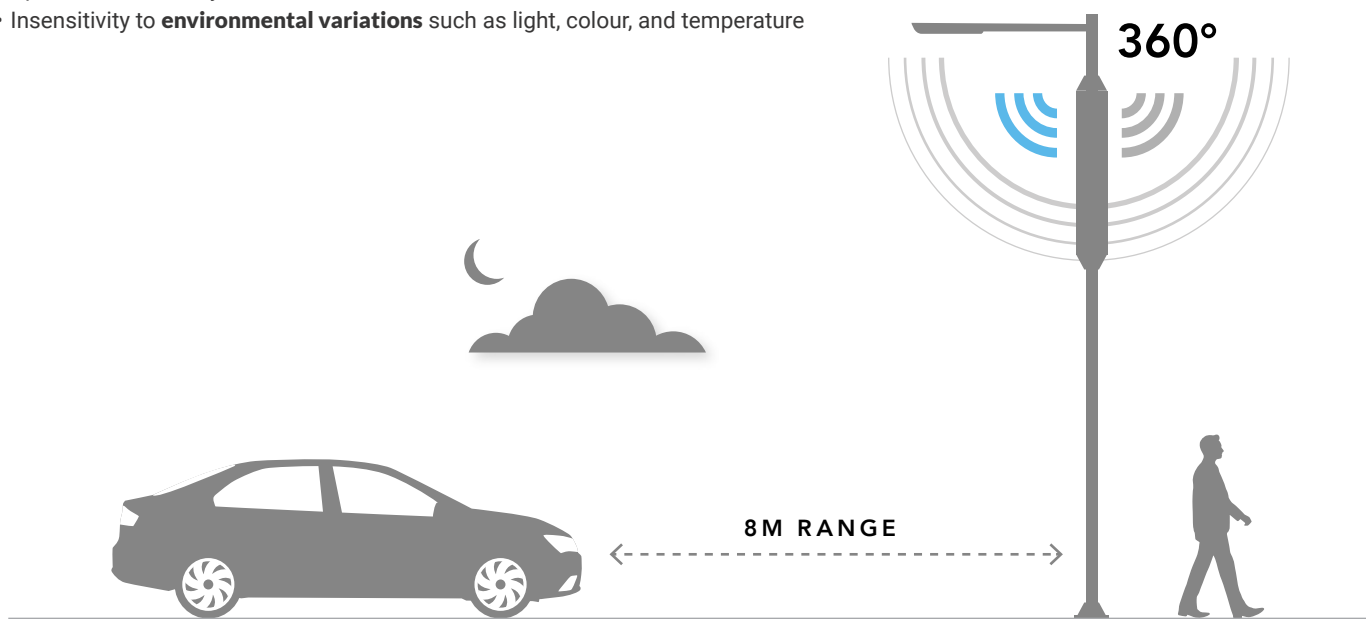


MOTION SENSOR

MICROWAVE

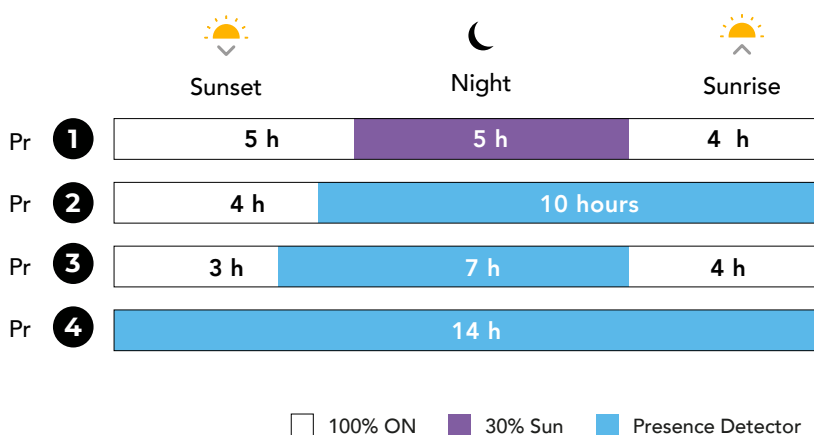
INVO Solar Sleeve luminaires are equipped with microwave detectors that use the **Doppler effect**, similar to car radars, to detect nearby objects and measure their distance. The sensor emits high frequency waves which reflect off objects in the vicinity and are then analysed. Since microwaves only detect specific objects, **their detection reliability increases, offering several advantages:**

- Significantly better reliability compared to infrared detectors
- Up to **360°** directivity
- Insensitivity to **environmental variations** such as light, colour, and temperature



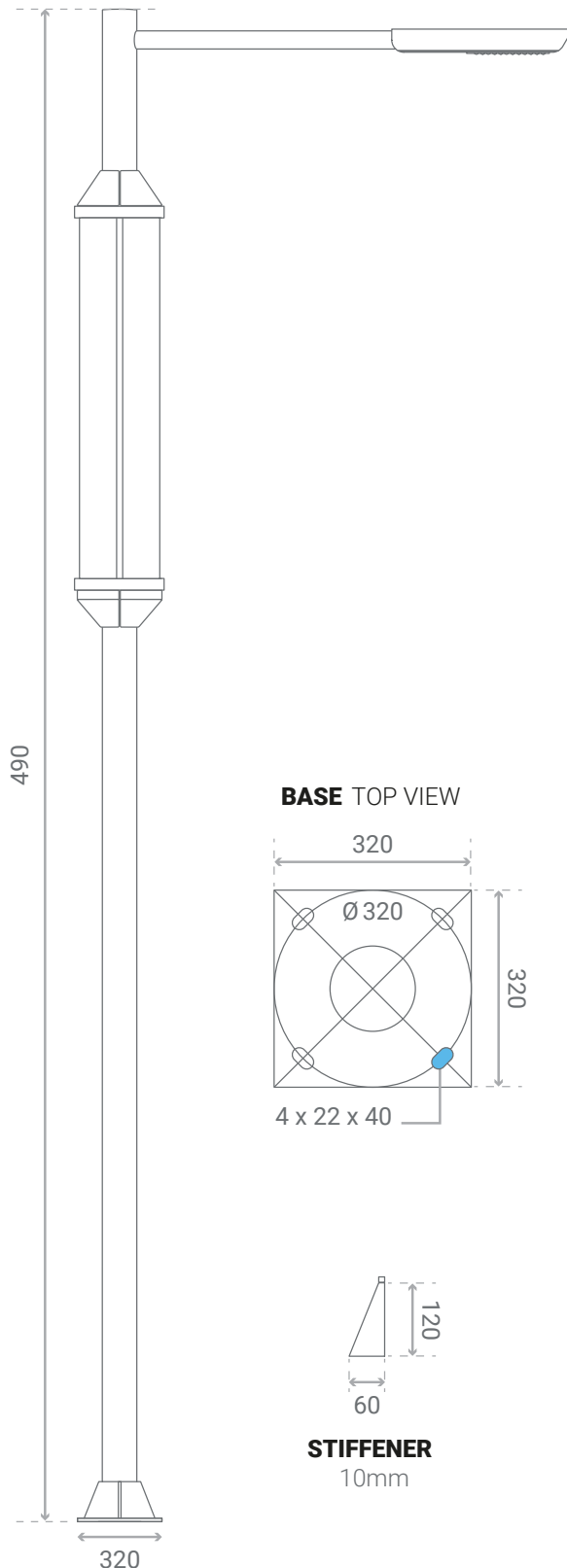
OPERATION MODE & LIGHTING SCHEDULE

In addition to automatic switching on and switching off, you can choose among **different modular operating modes** according to the needs of the project.



DIMENSIONS

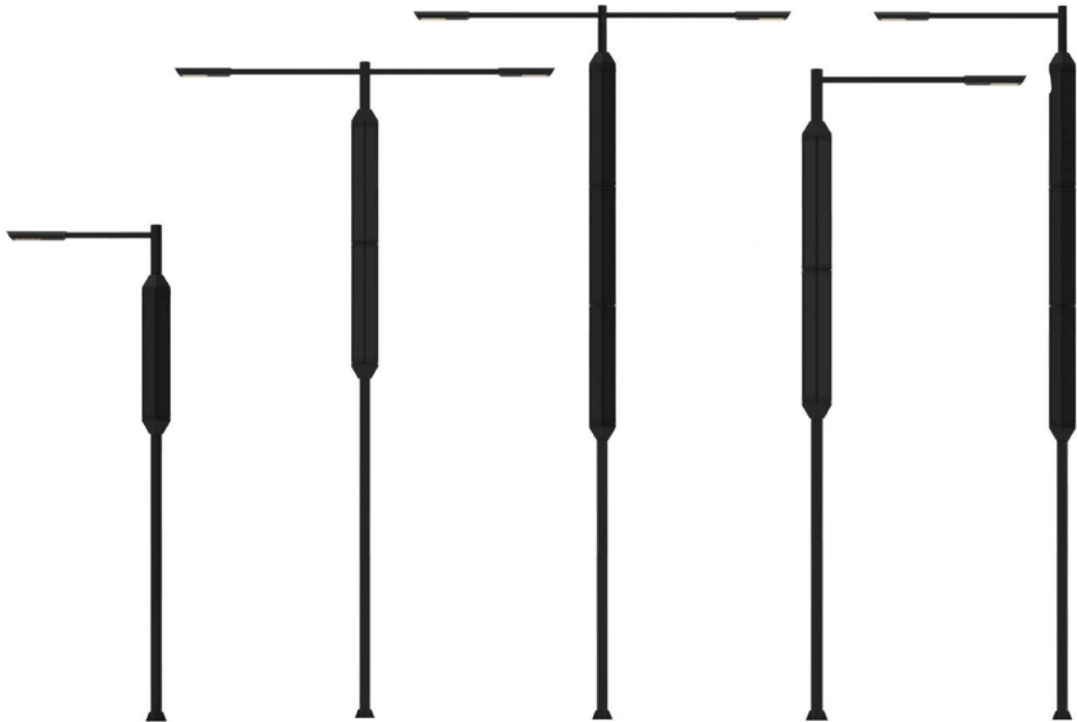
SOLAR PANEL & BASE



HASSLE FREE MAINTENANCE

The INVO Solar Sleeve makes maintenance a breeze with its swing-out solar panel design, offering direct access to all components. Whether it's the battery or the controller, all components can be easily accessed for hassle-free maintenance.

OPTIONS



Specification	30 Watt Single Head	30 Watt Dual Head	45 Watt Dual Head	60 Watt Single Head	90 Watt Single Head
Lighting Efficiency	196 Lumens				
Lighting Flux	5,880 Lumens	2x 5,880 Lumens	2x 8,820 Lumens	11,760 Lumens	17,640 Lumens
IP Rating	IP66				
LED Lifetime	Over 50,000 hours LM80				
Battery Technology	Lithium Fer Phosphate LIFEP04 - 26650				
Battery Capacity	553Wh	1105Wh	1659Wh	1105Wh	1659Wh
Charging Time	5-6 hours				
Working Temperature	-40°C to 70°C				
Head Dimensions	670x210x200				
Gross Weight	31.1kg	60.3kg	85.5kg	56.6kg	81.1kg
Light Height	4.9m	6.7m	8.2m	6.7m	8.2m

For more information, or to book your FREE audit,
 call us on 01522 538212, email info@procuredirect.co.uk
 or visit us at www.procuredirect.co.uk