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SOLAR LED
STREET LIGHT

S5



Based on the latest technology of the perspective of energy management, and structural, optical, electrical, thermal, aesthetic, communication, intelligent control, design innovations, SensLights makes innovated solar lighting product, which models are including S5A all-in-one, S5H all-in-two and S5F separate.



Design

The creative team consists of professional industrial designers graduated from the art academy. The core creative staff has been focusing on the design of LED lighting for more than 10 years. Focus on the original idea of human-machine integration with aesthetics.



Electricity

The electrical team is responsible for the advanced and reliable design of safety and electrical hardware. It consists of controller hardware engineers, lithium battery system engineers, and photovoltaic engineers. All of them focus on the areas they are responsible for and work for many years, pursuing the ultimate energy generation and utilization efficiency.



Thermal

The thermal team consists of mechanical engineers and electrical engineers, using FloEFD thermal simulation software for thermal optimization, and active temperature control through electronic technology. Good at using heat transfer and radiation for heat optimization. Promote passive natural cooling technology.



Communication

The communication team focuses on the latest IoT technology application, conduct research on the application of system networking on reliability of NB-IOT \ LORA-WAN networks, base station development and erection, signal strength and interference, distance, access volume and speed etc.



Structure

The core personnel of the structural team are composed of structural or mechanical engineers with well-known enterprises or design institutes. They are experienced and have rich experience in stress analysis, structural mechanics, earthquake resistance, waterproofing, anti-corrosion, etc.



Optical

The secondary optics team all come from professional optical design companies, graduated from physical optics major. Independently developed lens, and has rich experience in outdoor road lighting. They are good at light spot treatment and illuminance, brightness and uniformity.



Verification

Project engineers and test engineers are not responsible for the product and are only responsible for the standards and input requirements. Tested for stress, water, heat, vibration, salt spray, electrical reliability, safety, EMC, packaging, etc.



Software

The software team consists of embedded software engineers, algorithm engineers, WEB front-end engineers, database engineers and other professional front-end and back-end engineers, focusing on various developments and applications of the BS architecture.



Bumblebee

S5A all-in-one solar street light



Ironhide

S5H all-in-two solar street light



Optimus

S5F separate solar street light

Best material to excellent product



Solar Panel



Battery



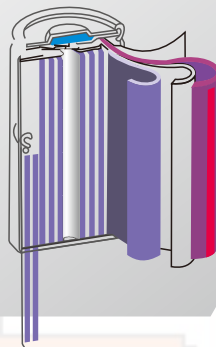
Housing



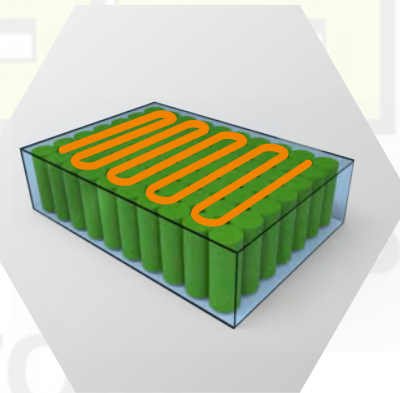
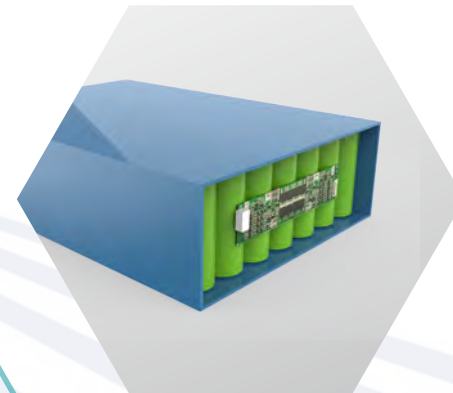
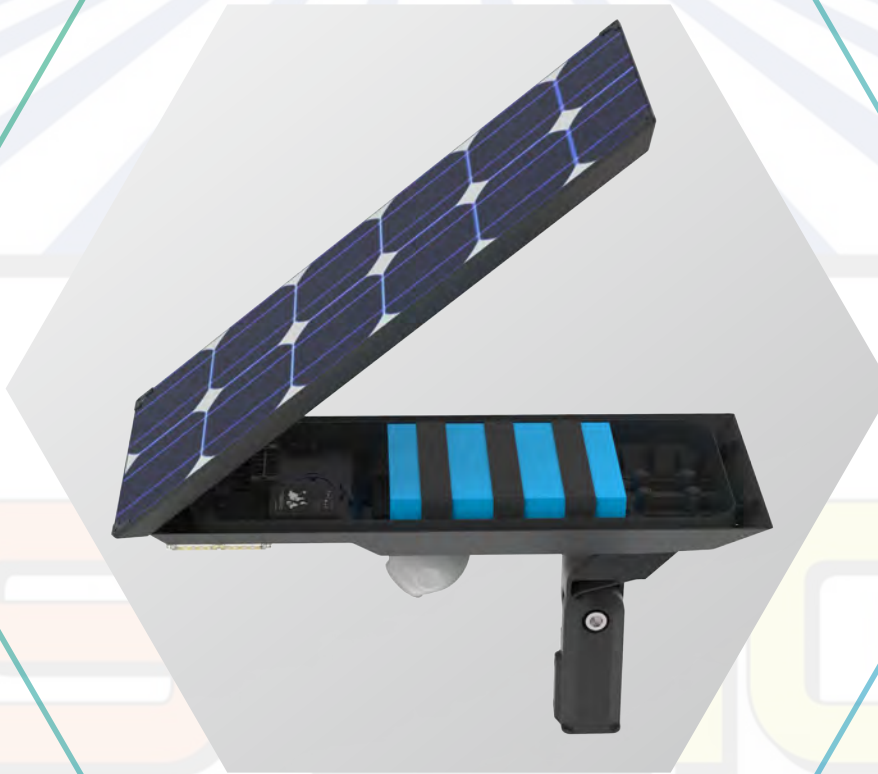
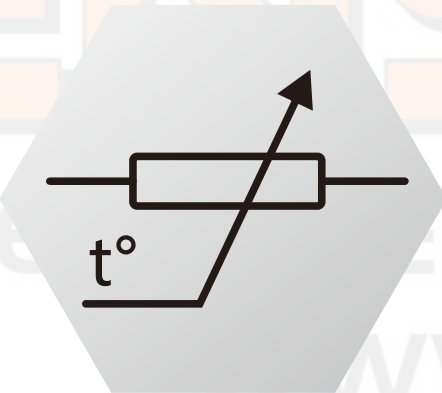
TPS Temperature Protection System
Never worry about high temperature

Self-design controller detects temperature in real time, controls the overall temperature of the lamp, adjusts the charging and discharging current to protect the lamp.

Battery is equipped with safety valve. When the internal pressure is greater than a certain pressure, the safety valve is opened and the electrical connection is disconnected to ensure that the short-circuited and the high-temperature that won't cause an accident.



Battery with PTC (Positive Temperature Coefficient) protection device, increase resistance and reduce current when overheating to protect battery.



Temperature protection circuit of battery pack, control over overheat (65°C), over current, short circuit, etc. to avoid potential hazards.

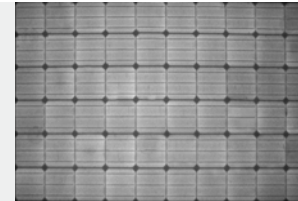
To maximize battery away from solar panel and LED module. Physical isolation reduces the impact of heat on the battery.

Low temperature protection: The sunlight is sufficient when the product is in low temperature environment. The battery is firstly to be heated up automatically to protect itself, and then to be charged. (Optional)

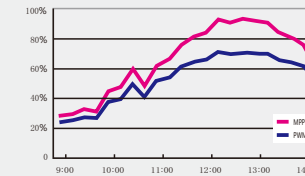




EMS Energy Manager System
Efficient charging, get more from solar



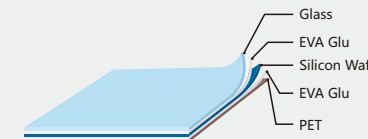
Each solar panel is subjected to two times of EL (Electroluminescent) tests for semi-finished and finished products before shipment, in order to prevent the crack and black core defects on the solar panel from affecting its output power and lifespan, to ensure its perfectionism.



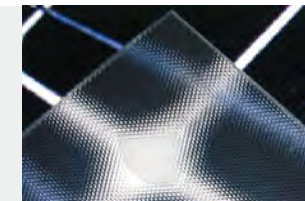
MPPT technology (MPPT- Maximum Power Point Tracking) help the system capture the power generated by the solar panel more efficiently and dynamically, which make the conversion efficiency 15%-20% higher than the PWM controller.



The surface of the solar panel use etch-treated and anti-reflective coating process to enhance the absorption of light and increase the output power of the cell. The conversion efficiency is $\geq 20\%$.



The solar panel uses high-quality EVA adhesive to be not aged and turning yellow in long-term outdoor working, to ensure high light transmittance and long lifespan.



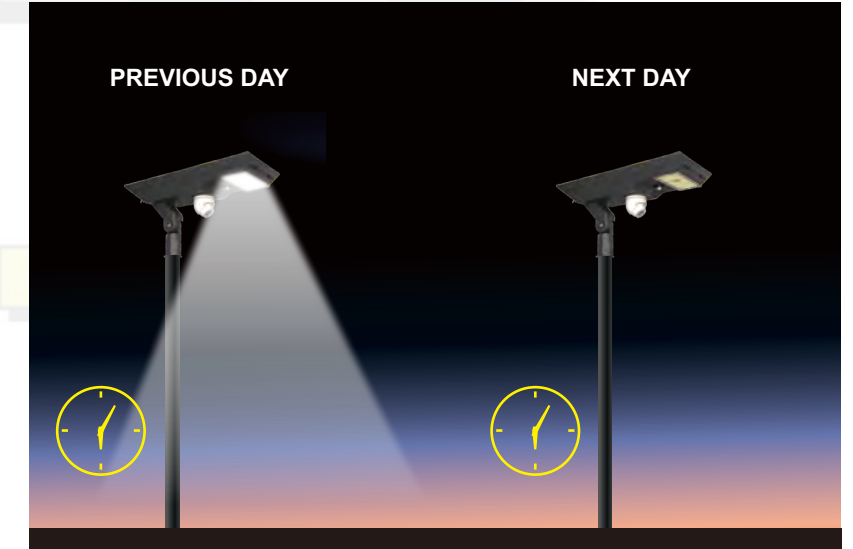
The solar panel uses 3.2mm ultra-white cloth tempered glass, which perfectly protects the solar panel from wind and snow and hail impact. The light transmittance is $>91\%$, achieving perfect balance in preventing dust adsorption and light transmittance.



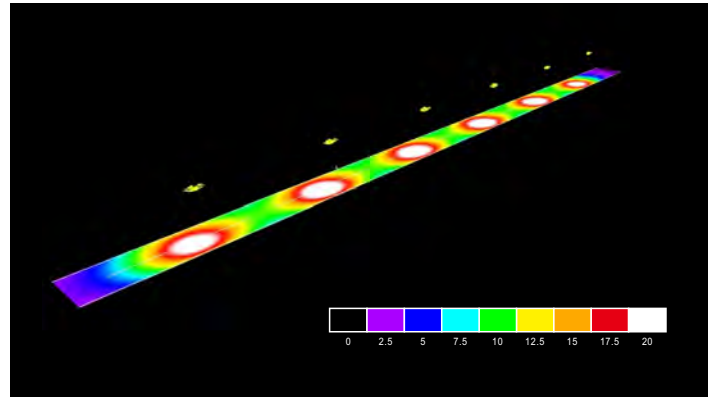
The motion sensor intelligent mode can remotely set the duration of 5 periods and the ratio of brightness with motion and without motion.



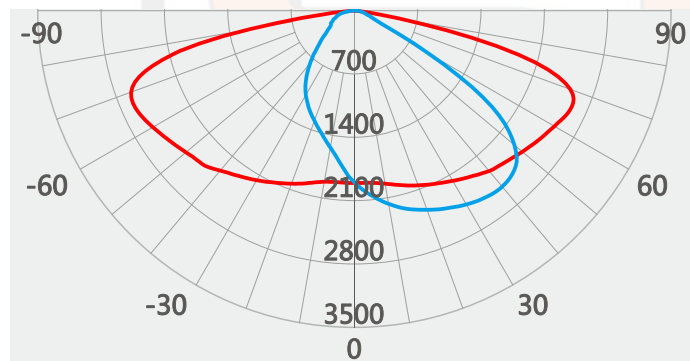
Intelligent lighting management system, adjust the lighting brightness according to the dynamic capacity of the battery, and extend the lighting time.



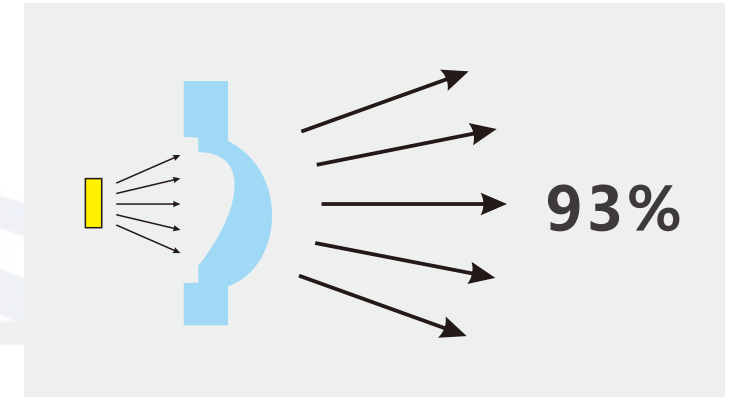
Morning lighting function can study the dawn time in the previous day to light up before dawn in the next day, which would be convenient for people who wake up early.



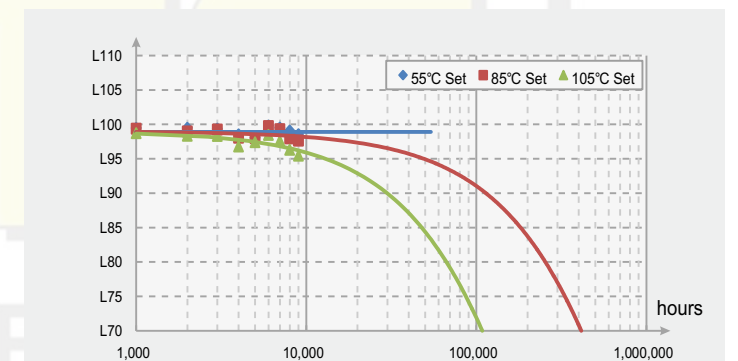
Based on 12 years' experience in road lighting, keeping the balances of average illumination, brightness and uniformity to improve the efficiency of light utilization.



Strictly control the light dispersion and reduction caused by secondary optics, reduce the unevenness of blue light and yellow light, and ensure the accuracy and consistency of secondary



The lens uses outdoor special PC material, light transmittance >93% and better UV resistance.



Using famous brand LED chip, lower light decay, higher brightness, less color temperature drift and blue light hazard.

SLCS

Solar street light control system
easy to handle 10,000 pcs lamps



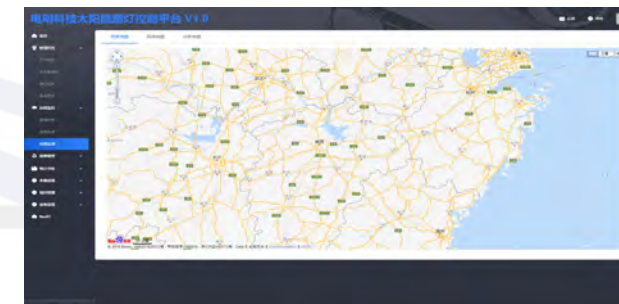
Smart management software is developed based on the BS architecture and can be controlled on any terminal that browses the webpage without installing software.



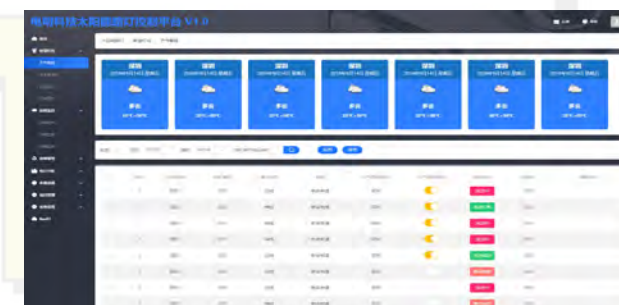
Holiday lighting mode: 7 days energy storage mode to ensure the lighting effect on the day of holiday.



AI deep learning: Sensors collect sensor big data for statistical analysis. According to the situation of people passing under the lamps each day, the lamps constantly self-optimize and control themselves.



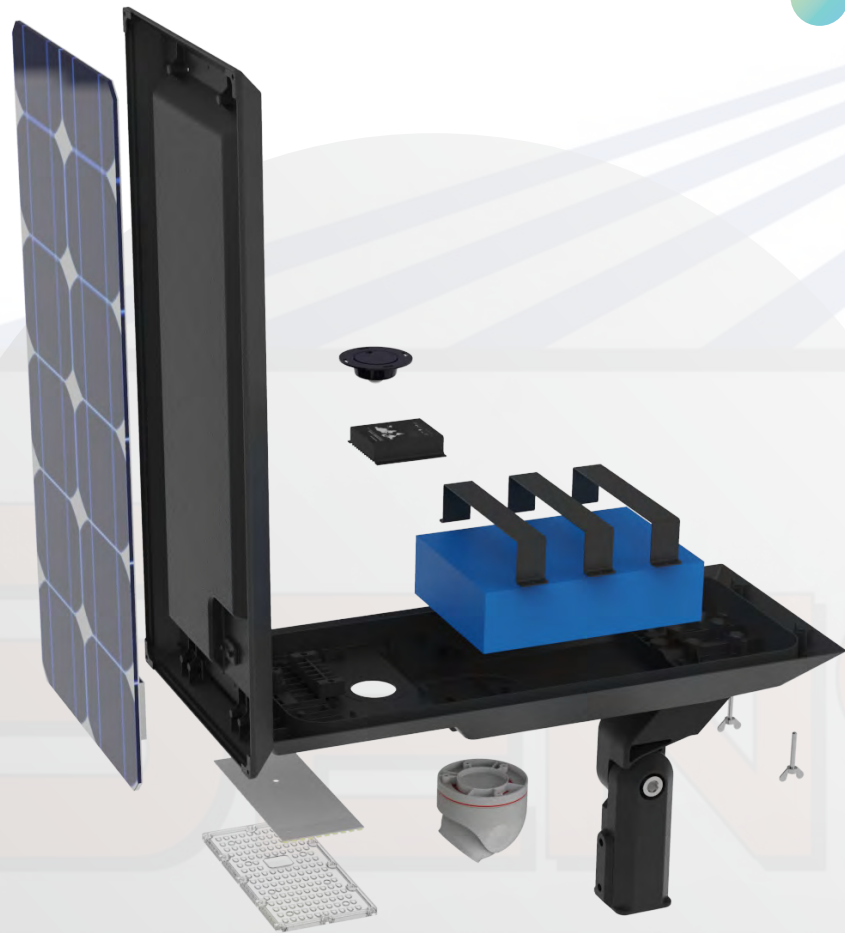
The map can be visually located, energy-saving statistics, fault alarms, etc. Detects operating states, such as power generation intensity, battery energy, illumination, and fault feedback.



Weather intelligent control: According to the local weather forecast for the next 7 days, the core algorithm is well used to intelligently manage the daily lighting duration and brightness.



Reliability 5 year warranty

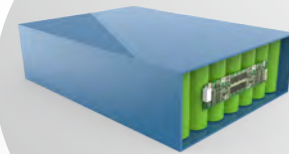


Controller



- Adopting self-developed controller and remote controller, MPPT control, the core components are all international first-class brand products, such as ST, A0, IR, etc.
- Passed test of -40 ° C to 80 ° C environment, impact and salt spray test in long time, lifespan design more than 10 years.
- Battery reverse connection protection, LED short circuit / open circuit protection, overheat protection, low temperature charge protection, over charge protection, over discharge protection and other functions.
- 65 ° C control + BMS (battery manager system) management, real-time detection

Battery



- High-quality cathode, anode materials and electrolytes. Capacity is still $\geq 80\%$ after 2000 cycles of full charge and full discharge. Theoretical design lifespan of battery is $2000 \times 3 / 365 = 16.4$ years.
- Fully automatic forming nickel sheet welding process with accurate and reliable welding.
- The six sides of the battery pack are fixed by epoxy resin board, which is not easy to cause leakage of electricity due to collision, and it is glued

Easy maintenance Fix them by hands



- No tool open design: No need to use any tools to open the lamp, All-in-two model is equipped with a car-type pneumatic support rod, which is easy to install and maintain. (Anti-theft screws optional)
- Support high-altitude maintenance: Modular design of all components that easy to be replaced by simple tools for saving time of maintenance.



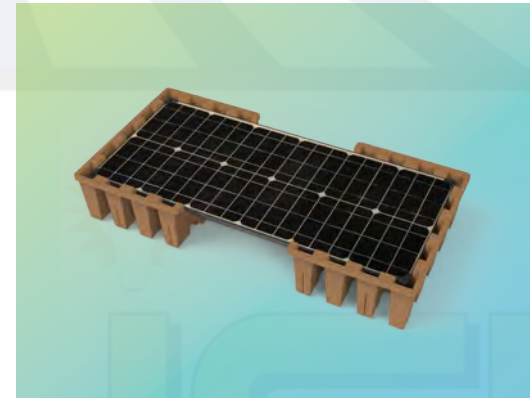
Adopting all-aluminum integrated die-casting design, the surface treatment of the lamps adopts the double-thickening spray high-temperature outdoor powder process to strengthen salt spray resistance, and the whole system is equipped with stainless steel screws.



Support integrated, semi-separated and full-split models. Installation angle -15° - $+105^{\circ}$ adjustable. Support horizontal, Vertical, wall mounted installation (Optional). Installation screws arranged in a triangular for more stable to fix pole. And use machine screw to prevent shock and slip.



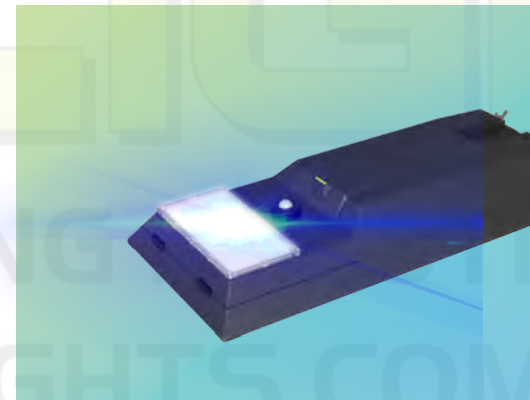
Based on wind resistance concept, the net area of the photovoltaic panel is infinitely close to the projected area of the whole lamp, and the wind resistance is stronger; the structural strength can withstand 4 times of its own weight.



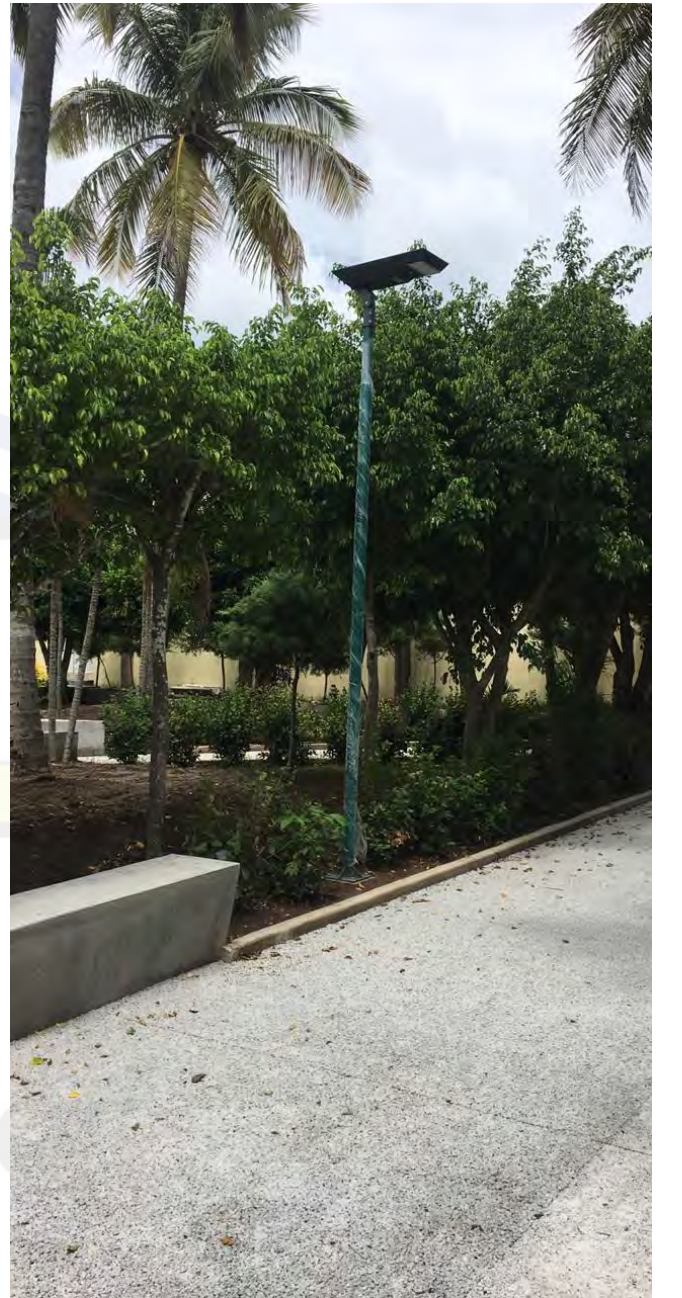
The package uses a customizable recyclable paper tray that fits perfectly into the luminaire's exterior for the better protection.



Adopts the excellent sealing process of foamed silica gel with excellent weather resistance. The overall structure process is waterproof, without any glue treatment or uncontrollable process protection. IP66 protection level. The controller, battery and other electronic devices are fully sealed or glued to prevent oxidation caused by air humidity.



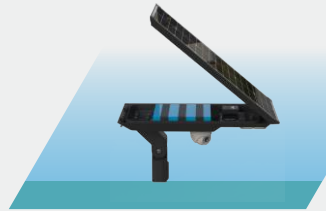
The whole production process has 4 times quality control and 100% inspection. 100% 8-hour high temperature aging test and 100% waterproof test.







S5 SOLAR LED STREET LIGHT



EOEM

Easy Open, Easy Maintenance

Open housing without tool
IP66 protection for whole lamp



SLCS

Smart Control System

Easy to supervise 10,000 pcs lamps by computer or mobile phone



TCS

Temperature Control System

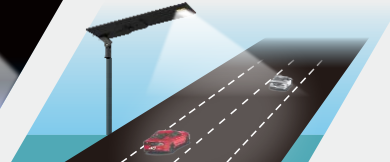
Thermal switch to protect the battery pack from high temperature damage.
Lamps function well under 65°C.



EMS

Energy Management System

When meet long rainy or cloudy days, EMS system will give max efficient output to prolong the light time to reach 7 days.



EOD

Excellent Optical Design

Bat wing light distribution, suitable for 3-15m road width
Illuminating area enlarge 40%
Uniformity improve up to 200 %

FCC

CE



IP66

IK10





Bumblebee

S5A all-in-one solar street light



Ironhide

S5H all-in-two solar street light



Optimus

S5F separate solar street light



7 DAY LIGHTING



MPPT CONTROLLER



INFRARED MOTION SENSOR



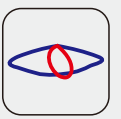
LORA CONTROL SYSTEM



TOOL FREE OPEN



IP66



T2M T3M



CAMERA



AC INPUT

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