BRIGHTWAY LED Lighting

SOLARA™

Integrated Solar Street Light



SYNTHESIS OF SLEEK SIMPLICITY
TIMELESS ELEGANCE & LONGEVITY

A perfect fusion of minimalist elegance, sleek design, and exceptional durability. Engineered as an integrated solar solution, it combines clean aesthetics with robust construction for long-term outdoor performance. Reliable, efficient, and timeless, Solara brings together simplicity, grace, and lasting strength to illuminate urban and rural spaces with consistent quality.

With superior materials and solid structure, Solara delivers reliable performance year after year, balancing refined visual appeal with industrial-grade robustness for any public or private lighting project.



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KEY FEATURES

- Premium-grade Integrated All-in-one Design, Easy to Install and Maintain.
- Environment Friendly & Electric Bill Free - 100% Powered by the Sun.
- No Trenching or Cabling Work Needed.
- Light On/off and Dimming Programmable Smart Lighting.
- High Luminous Efficiency of 200~210lm/W to Maximize Battery Performance.
- Pivoting LED Modules Deliver the Best Lighting Control.
- IP66 Luminaire Ensures Long Lasting and Consistent High Performance.
- Five Years Warranty.
- High Accuracy Battery Reading Via the BPMM
- Built-in GPS Tracking for Product Security
- AI Enabled Pole/Light Tilt Alarm

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APPLICATIONS

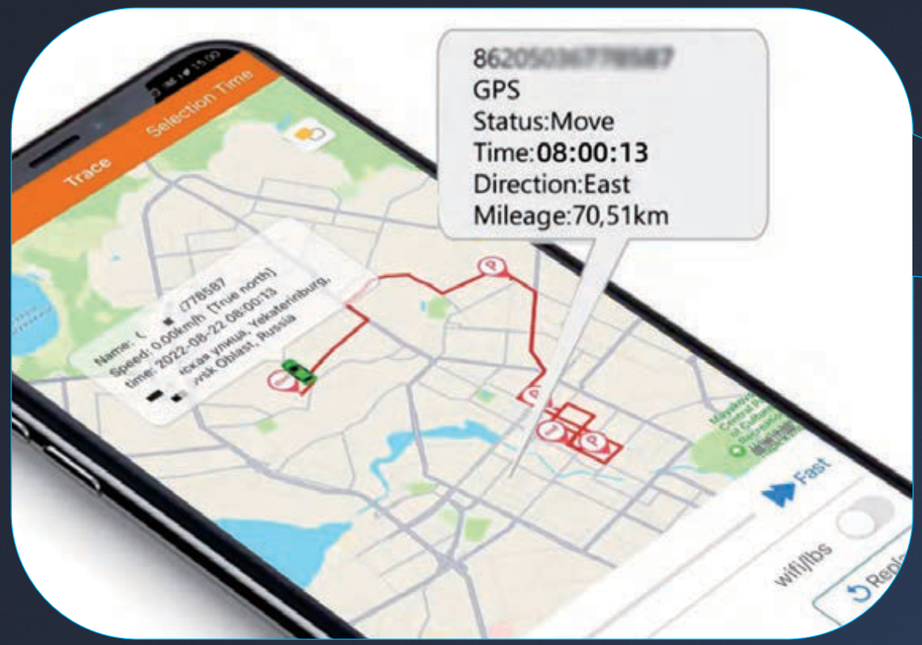
- Street Lighting
- Roadway Lighting
- Pathway Lighting
- Ramp Lighting
- Sidewalk Lighting
- Private Road Lighting
- Farm Lighting
- Wildlife Area Lighting
- Perimeter Security
- Lighting
- Park Lighting
- Railway Yard Lighting
- Fence Lighting
- Campus Lighting
- Ship Dock Lighting
- Remote Area Lighting
- Military Base Lighting
- Gate Lighting
- Jogging Path Lighting






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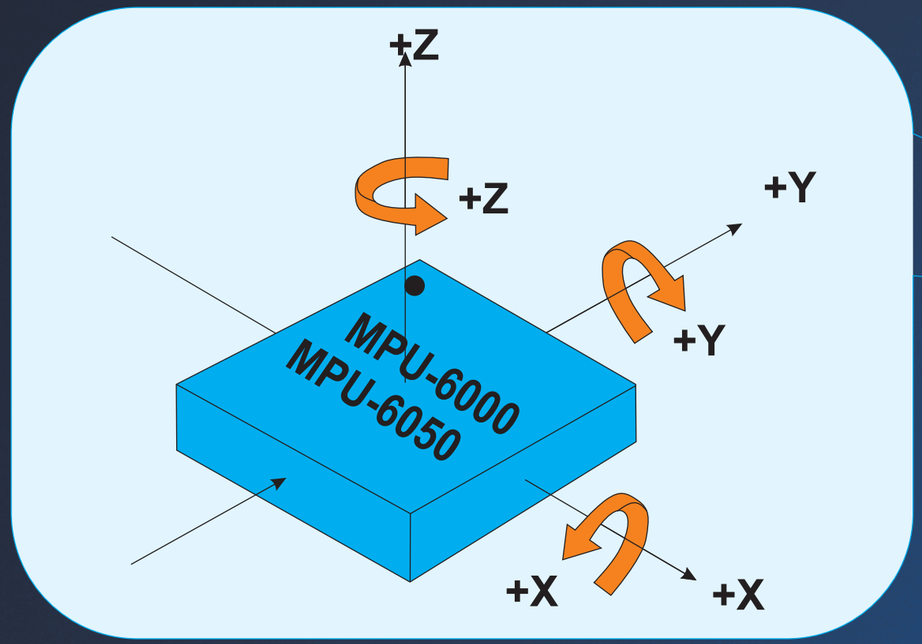




SMART ANTI THEFT DESIGN

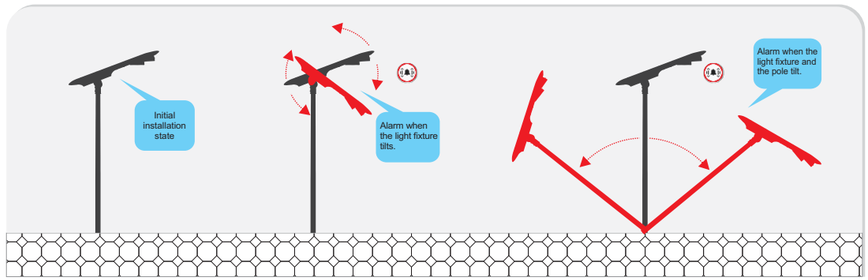
Real-Time Geo Tracking

The real-time mini Geo anti theft tracking device is fitted in an un-accessible location of the solar street light fixture, which is permanently powered to enable security recovery teams to track and locate the solar lights anywhere via the live app to recover the product and arrest the thieves as long as the the solar light battery has power.



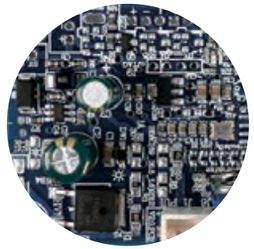
AI Enabled Pole/Light Tilt Alarm

When the solar lights go on wireless IoT smart management system, sophisticated AI algorithm based on gyroscope and accelerometer data intelligently locks the lights' angle upon installation, any unauthorized attempt at theft or tampering will be detected, alarms will be activated at the Operation Center and alert text message will be instantly sent from Central Management Platform to the security teams.



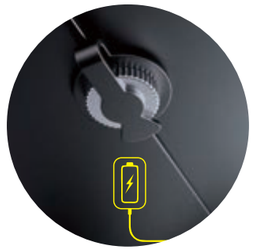
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PRECISE BATTERY STATUS MONITORING



The solar light features a high-precision coulometer, also known as a coulomb meter, which provides accurate readings on battery performance by measuring its current. It can detect and display, in real-time, the battery's voltage, current, power, actual capacity, remaining time, and other key parameters, ensuring you have an accurate understanding of the battery's status at all times.

STAY POWERFUL THE DC CHARGE PORT



A DC charge port is offered as an option to be integrated into Talos: , ensuring the battery remains charged even during extended periods in the warehouse. No more worrying about flat batteries when you need them the most. Embrace the continuous and dependable lighting with our state-of-the-art Talos: solar street light.

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DEPENDABLE PERFORMANCE

Only top-grade monocrystalline silicon solar panels are employed, delivering an outstanding efficiency of 23–24% and a reliable service life of up to 25 years.

Powered by premium lithium batteries featuring 100% Grade A+ battery cells (our worldwide commitment), the system efficiently stores energy, fulfills immediate power demands, and ensures reliable multi-day backup performance during prolonged tough days.

Built with high-lumen output LEDs for maximum luminous efficacy and a long lifespan of over 120,000 hours. A dedicated low-voltage solar controller with adjustable dimming technology is integrated to realize smart and reliable power conservation.

Microprocessor-driven intelligent algorithms autonomously identify sunrise and sunset. Our proprietary E-Lite IoT control system, fully developed in-house, blends seamlessly with the solar solution to realize a complete IoT ecosystem across solar street light web portals.

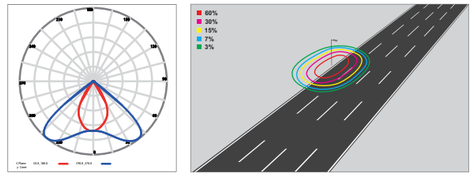
Designed for effortless installation without additional cables or rectifiers, the fixture can be directly mounted on the pole with a 0°~90° adjustable spigot. The LED bar offers a 0°~30° adjustment range, ensuring full compliance with international Dark Sky standards.



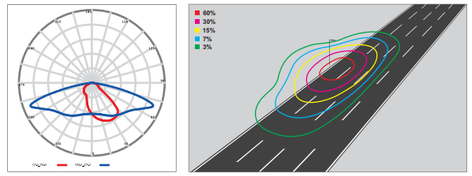
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PHOTOMETRICS

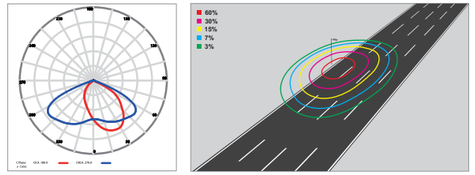
60×100°（TYPE Ⅰ-VS）



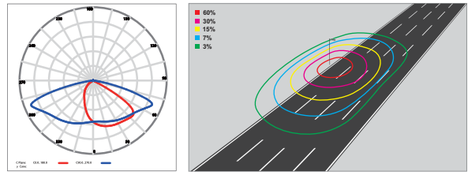
65×155°（Type-M）



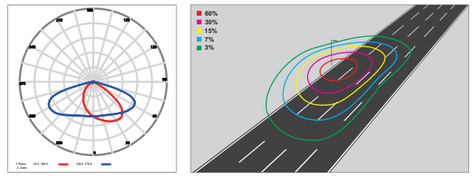
70×135°（TYPE Ⅱ-S）



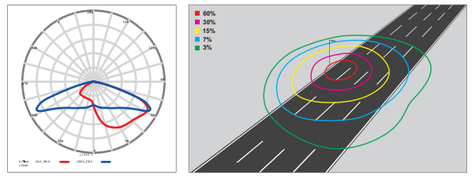
75×150°（TYPE Ⅲ-M）



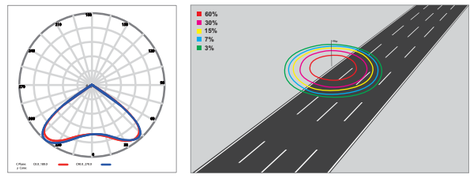
80×150°（TYPE Ⅲ-S）



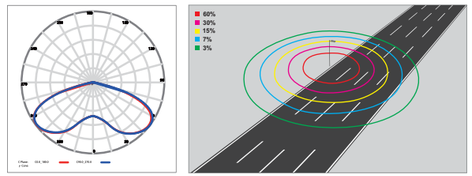
65×145°（TypeⅣ-S）



110°（TYPE Ⅴ-VS）



150°（TYPE Ⅴ-VS）



Default setting: 6m high Installation, 100% brightness.

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PERFORMANCE

	20W~90W
	210~220lm/W
LEDS	Philips Lumileds
DIM	Microwave & Timer Dimming
Control	MPPT / PWM Controller
CCT	5000K (2500~6500K optional)
IES	60×100°/ 65×155° / 70×135° / 75×150° / 80×150° / 110° / 150°
	IP66
IK	IK08
	Monocrystalline silicon photovoltaic panels
	LiFeP04 battery
	Slip fitter
	Operating Temperature:-20°C to + 60°C /-4°F to 140°F (Charge:0°C to 60°C / 32°F to 140°F & Discharge:-20°C to 60°C / -4°F to 140°F) Storing Temperature:-20°C to +60°C/-4°F to 140°F

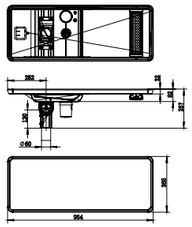
CE RoHS

SPECIFICATIONS

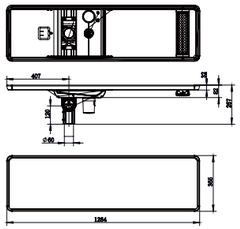
Part#	Power	Modules	LED Efficacy	Solar Panel	Battery	N.W	Product Dimensions
EL-SOST-20	20W	1	220lm/W	55W/18V	3.2V/105AH	11.8kg	954×365×256mm
EL-SOST-30	30W		217lm/W	55W/18V	3.2V/105AH	11.8kg	954×365×256mm
EL-SOST-40	40W		213lm/W	55W/18V	3.2V/168AH	12.8kg	954×365×256mm
EL-SOST-50	50W		210lm/W	75W/18V	3.2V/168AH	14kg	1264×365×256mm
EL-SOST-60	60W	2	217lm/W	75W/18V	3.2V/168AH	14.5kg	1264×365×256mm
EL-SOST-80	80W		213lm/W	140W/36V	25.6V/24AH	23.1kg	1164×624×256mm
EL-SOST-90	90W		212lm/W	140W/36V	25.6V/30AH	24.2kg	1164×624×256mm

The solar panel and battery configuration is based on 6 hours charging time.

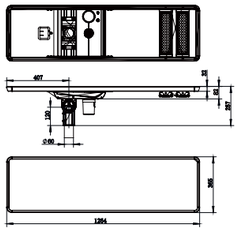
20W~40W



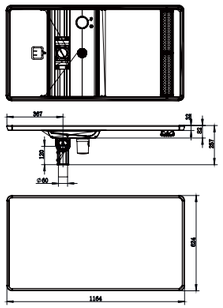
50W



60W



80W~90W



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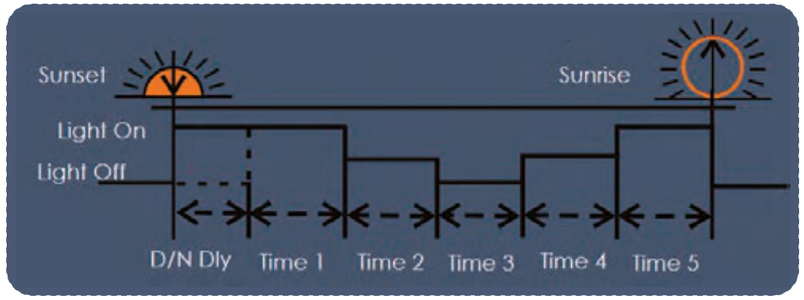


SOLAR CONTROLLER - B

Regular MPPT Controller

Five-Stage Mode

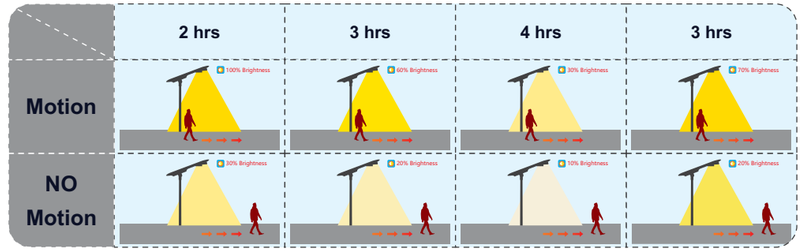
Thelampslightingdivideinto5stage,eachstagetimeanddimcanbesetting accordingtodemands.Withdimingsetting,itisanefficientwaytosaveenergy, andkeepthelampworkinginbestpowerandtime.



Motion Sensor Mode

Motion:2hrs-100%;3hrs-60%;4hrs-30%;3hrs-70%;

WithoutMotion:2hrs-30%;3hrs-20%;4hrs-10%;3hrs-20%;



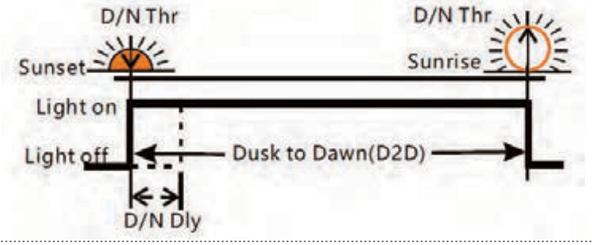
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SOLAR CONTROLLER - C

Hybrid MPPT Controller

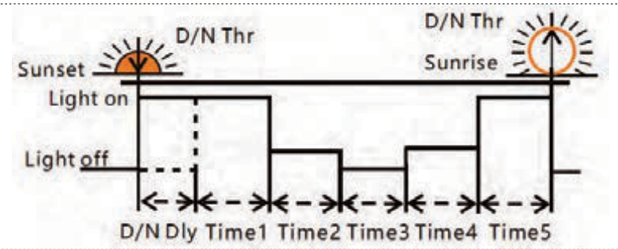
Dusk to Dawn (D2D)

WhenfixtureissettoD2D,itworksindusktodawnmode.Thefixturewillturnon whilethesunisdown,asdeterminedbythesolarpanelvoltage.



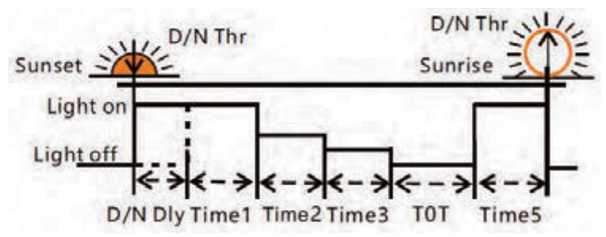
Five-stage Night Mode

Thelampslightingdivideinto5stage,eachstagetimeanddimcanbesetting accordingtodemands.Withdimingsetting,itisanefficientwaytosaveenergy, andkeepthelampworkinginbestpowerandtime.

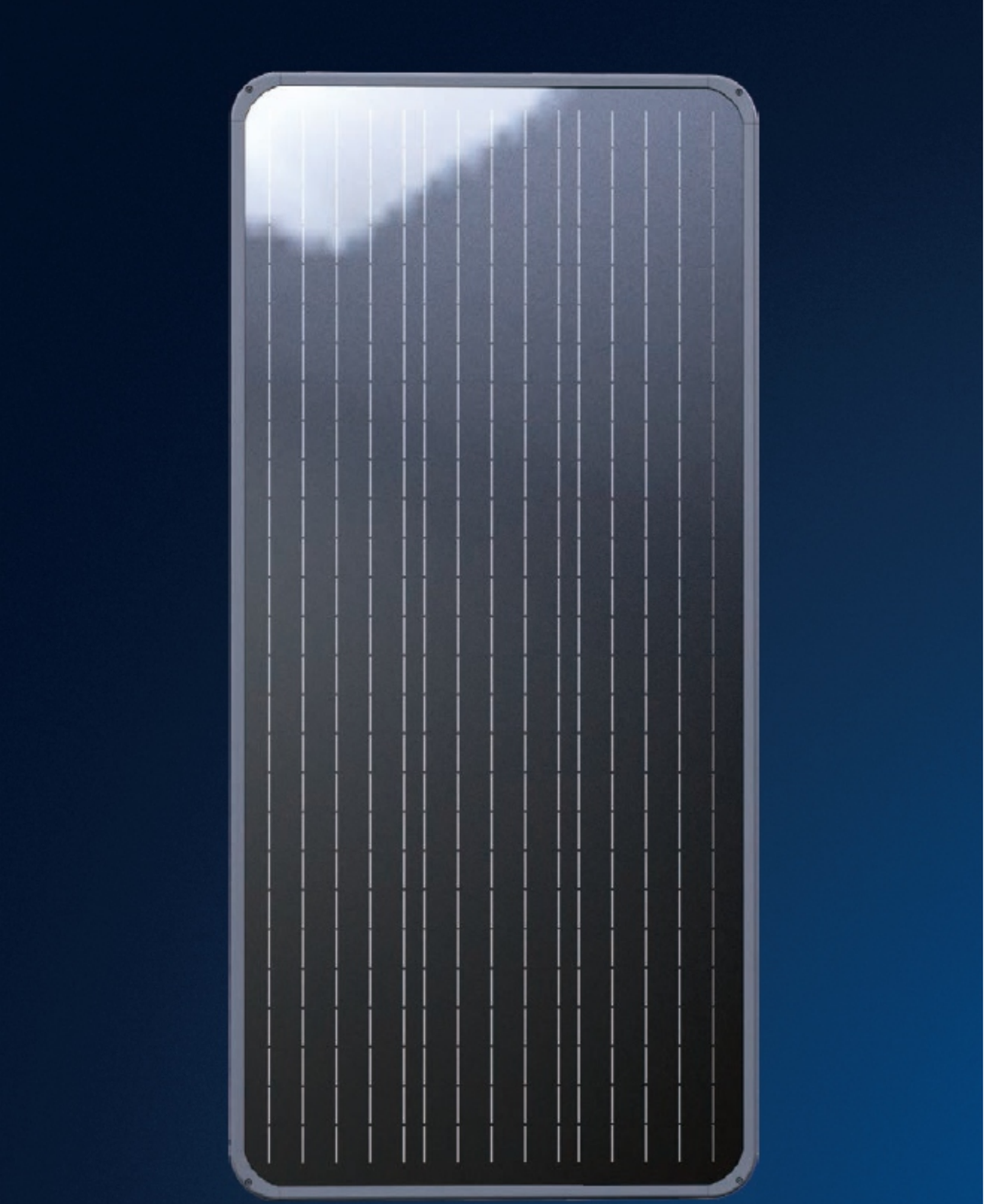


TOT Mode (Cansettheloadontimebeforemorningcoming.)

WhenfixtureissettoT0Tthenitwilldetermine Time4basedonTime5and previousdataonthetimeofsunrise.







MONO SOLAR PANEL

Higher Durability

The multi-busbar design can decrease the risk of the cell micro- cracks and fingers broken.

High Power Density

High conversion efficiency 23% and more power output persquare meter, by lower series resistance and improved light harvesting.

PID Resistant

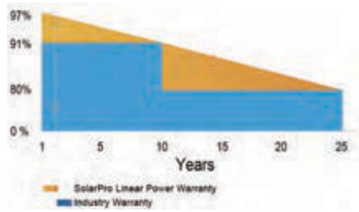
Tested in accordance to the standard IEC 62804, our PV modules have demonstrated resistancea gainst PID (Potential Induced Degradation), which translates to security for your investment.

Bigger Cells with better performance

A slight increase of the size of our cells, Boosts the performance of the newest modules by six percent on average.

First-class Quality Assurance

·10-year warranty for material and technology.
·25-year linear power output warranty.



Specifications

Maximum Power (Pmax/W)	55	75	140
Open Circuit Voltage(Voc/V)	22.8		43.2
Short Circuit Current(Isc/A)	3.25	4.31	4.15
Maximun Power Voltage(Vmp/V)	18V		36V
Maximum Power Current(Imp/A)	3.1	4.2	3.9
Module Efficiency(%)	24		
Output Tolerance(%)	±3		
Operating Temperature	40°C~+85°C		
Wind Load/Snow Load	2400pa/5400pa		
NOCT	45±2°C		
Temp Coefficient of Isc	+0.046%/°C		
Temp Coefficient of Voc	-0.275%/°C		
Temp Coefficient of Pmax	-0.350%/°C		

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HIGH PERFORMANCE BATTERY PACK GRADE A+ CELL

LiFePo4 batteries have a higher energy density they can store more energy in a smaller and lighter package.
This makes them ideal for applications where weight and space are a concern.

Advantage of LiFePO4

- A Long Lifespan
- No Active Maintenance
- Lightweight Champion
- High Efficiency
- Safety
- High Discharge Rates
- Extreme Temperatures
- Rechargeable Multiple Times

Specifications

Capacity	105Ah	168Ah	24Ah	30Ah
Nominal Voltage	3.2V		25.6V	
Charging Voltage	3.65V		29.2V	
Load Voltage	13V		124V	
Standard charging method	10A (CC) charging to 3.65V; After CV (DC 3.65V) Charge until charging current≤0.02C		5A (CC charging to 29.2V; After CV DC(29.2V Charge until charging current≤0.02C	
Max charging current	≤25A		≤20A	
Max discharge current	≤25A		≤20A	
Over current	≤25A		≤20A	
Cut o?? discharge Voltage	2.5V		20V	
Operating temperature range	Standard LiFePO4?Charge:0°C to 60°C / 32°F to 140°F & Discharge:-20°C to 60°C / -4°F to 140°F) Advanced LiFePO4?Charge:-20°C to 60°C / -4°F to 140°F & Discharge:-20°C to 60°C / -4°F to 140°F)			
Storage	-20℃~60℃			
Battery category	LiFePO4			
Cycle life	≥4000			

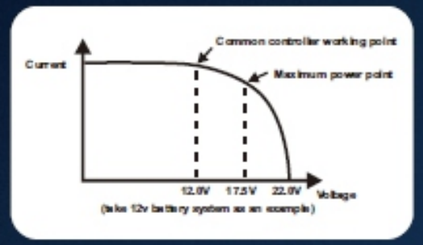


MPPT CHARGE CONTROLLER



Features

- Innovative Max Power Point Tracking(MPPT) technology,tracking efficiency >99.9%
- Full digital technology, high charge conversion efficiency up to 97.5%,discharge conversion efficiency up to 96.5%
- Can output constant current (output current can be set)
- 5 stages time and dimming can be adjusted
- Can read parameters and running status
- If battery voltage is low, it can be set to dimming
- Dimming start voltage and percentage can be set
- Day/Night threshold can adjust automatically
- AGM, Liquid, GEL and Lithium battery for selection
- 0℃ Charging Protection(Lithium)
- When BMS power off because of LVD, it can activate the system automatically
- Four stages charge way: MPPT, boost, equalization, float
- IP67, Strong and durable aluminum caseFull automatic electronic protect function



Indicator Functions

LED	Status	Function
Green LED	On	Solar panel is correctly connected,but not charged
	Fast flash(0.1s/0.1s)	Charging
	Flash(0.5s/0.5s)	Equal or Boost Charging
	Slow flash(0.5s/2s)	Float Charging, Lithium constant voltage charge
Yellow LED	Off	Over voltage protection
	On	Battery is normal
	Slow flash(0.5s/2s)	Battery voltage is low
	Fast flash(0.1s/0.1s)	Low voltage protection
Red LED	Off	Work normal (Standard version)
	On	The output power is 0
	Super slow(0.2s/5s)	Open circuit protection
	Flash(0.5s/0.5s)	Over temperature
	Fast flash(0.1s/0.1s)	Short circuit or Over current protection

Specifications

Battery Parameters	System Voltage	12V	12V/24V	12V/24V	12V/24V
	Max Charging Current	8A	10A	15A	20A
	Battery Type	Lithium			
	Charging Volt. Target	10.0~17.0V (Programmable, default:12.6V)	10.0~32.0V(Programmable, default: 12.6V)		
	Charging Volt. Recovery	9.2~16.8V (Programmable, default:12.4V)	9.2~31.8V(Programmable, default: 12.4V)		
	Low voltage disconnect	9.0~15.0V (Programmable, default:9.0V)	9.0~30.0V(Programmable, default: 9.0V)		
	Low voltage reconnect	9.6~16.0V (Programmable, default:9.8V)	9.6~31.0V (Programmable, default: 9.8V)		
	0℃ Charging protection	Yes, Slow, No(Programmable)			
Panel Parameters	Max volt on PV terminal	60V		55V	55V
	Max input power	100W~120W	130W/260W	200W/400W	260W/520W
	Dusk/Dawn detect volt.	3.0~8.0V Programmable	3.0~20.0V Programmable		
	Day/Night delay time	0~30min Programmable	0~30min Programmable		
	MPPT tracking range	Battery Voltage +1.0V ~Voc×0.9			
Load Parameters	Output Power	1~60W	10~60W/20~120W	10~90W/20~180W	
	Output Voltage	20 ~ 55V	15~60V/35~60V	20~55V/30~55V	
	Current setting range	0.15~3.0A Programmable	0.15~4.0A Programmable	0.15~6.0A Programmable	
	Min current	100mA Dimming			
	Current precision	±2%			
	Dimming	0~100% Programmable			
	Voltage of start dimming	10.0~17.0V(Lithium)	10.0~32.0V(Lithium)		
	Dimming percentage	1~20% Programmable			
System Parameters	Max tracking efficiency	>99.9%			
	Max charge conversion	97.50%			
	Max LED driver efficiency	96%			
	Communication mode	Infrared/2.4G/RS485			
	Induction mode	Infrared Human Sensing/Microwave Sensing			
	Self consumption	6~25mA			
	Ambient temperature	-35~+60℃			
	Ambient humidity	0~100%RH			
	Protection degree	IP67			
	Max Altitude	4000m			

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INSTALLATION NOTES

1. Due to variations in longitude and latitude at the installation site, the angle at which the sun's rays illuminate differs. During installation, it is crucial for the solar panel to be oriented towards the sun precisely at 12:00 noon. However, often due to factors like road direction and light poles, achieving this alignment becomes challenging. The solar panel must still maintain a horizontal position even if it can't be ideally oriented towards the sun at noon due to road lighting requirements.

Several conditions can lead to suboptimal functioning of standard lamps. Prior to making a purchase, it's important to communicate these factors to the salesperson and consider increasing the solar panel's power capacity:

a. Any deviation below the horizontal plane of the solar panel, relative to the solar irradiation angle, will result in a significant decline in the solar panel's power generation efficiency.

b. When installing solar lamps and lanterns, it's essential to avoid any obstacles that might block sunlight, such as trees or buildings.

c. Natural elements like rain, ice, snow, dust, clouds, and bird droppings can reduce the solar panel's power generation efficiency.

Ensuring that the solar panel remains unobstructed by barriers like trees and buildings, and accounting for factors such as the solar panel's angle and external elements, are vital for optimal performance.

2. Install lamps at a considerable distance from areas prone to strong electromagnetic interference, such as high-voltage cables and high-power wireless transmission towers. These sources could potentially disrupt the lamp control system, leading to malfunctions and improper operation.

3. When the temperature drops below 0℃, the efficiency of lithium iron phosphate batteries for charge and discharge decreases. To prevent damage and the battery protection triggered by overdischarge, it's advisable to explain this to the sales staff and consider increasing battery capacity before making a purchase.

4. Any environmental impact can result in a decline in the efficiency of solar panel power generation. Repeated discharge of the lithium iron phosphate battery might easily activate the protection mechanism, causing the lamps to stop functioning normally. Most lithium batteries can be restored to operation by disconnecting and reconnecting the battery-light source connection and the solar panel connection.

5. Once the battery protection has been deactivated and reactivated, our focus should be on identifying and resolving any natural environmental factors that compromise the efficiency of solar panel power generation, as well as minimizing the power consumption of the light source.

6. Install the lamps on days abundant with sunshine. The lamps are initially set to 30% power upon leaving the factory. Prior to installation and usage, ensure that the lamps can receive effective sunlight charging for at least 4 hours after activation. Failure to do so may trigger battery startup stress protection due to excessive discharge, leading to abnormal lamp operation.

7. The self-discharge and stress protection features of the lithium iron phosphate battery necessitate that if the lamp remains unused and uninstalled for a period of 60 to 90 days from the factory departure, it must undergo a 4-hour effective sun charging upon activation.

Instances where lamp functionality is compromised due to the aforementioned circumstances are not included in the warranty coverage. However, we are committed to assisting customers in identifying and analyzing the underlying causes, and devising plans for enhancements. It's important to note that lamps unable to activate after battery protection will not be covered by the warranty.



iNET SMART CONTROL SYSTEM

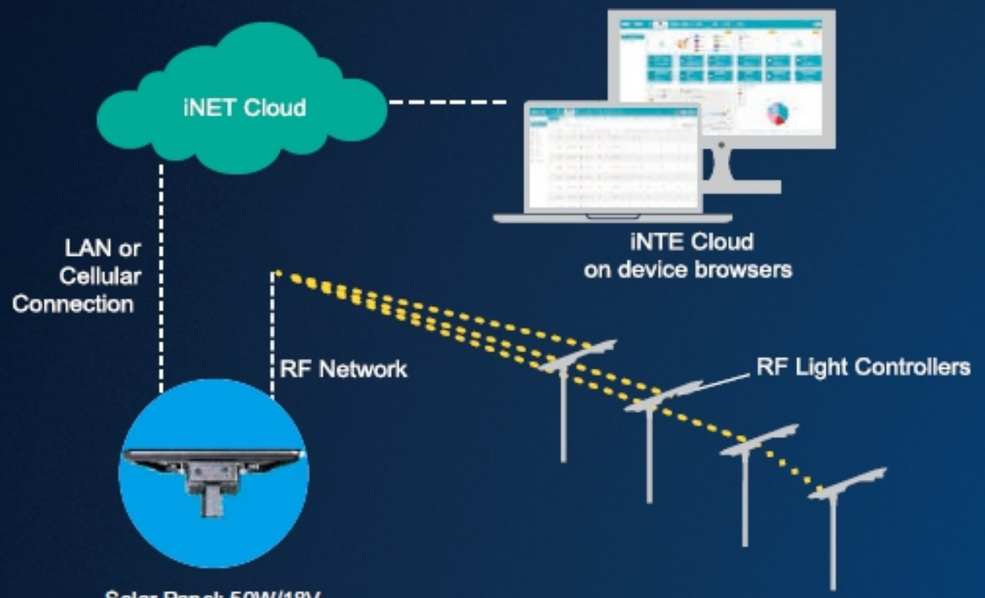


Smart City

Smart controlling perfectly combines the solar street lighting fixture, internet of things with wireless communication technology, achieve monitoring and management of remote background data, real-time understand the normal working status of each component of solar energy (street lights, photovoltaic panels, batteries, controllers), allow you to know the product usage on the client terminal that is thousands of miles away without leaving home or to manage the opening and closing of street lights and the adjustment of bright.

• The solar street light management system can pre-set one or more lighting modes according to the different time of day and traffic flow, automatically turn on or off any light, and adjust the switching time and illumination according to environmental requirements to achieve the purpose of energy-saving and consumption reducing.

• The integrated system is mainly composed of a street light component a centralized controller, a single light controller, and a smart cloud platform. The centralized controller and the single light controller aggregate the data collected by the single light via the RF wireless communication network. The centralized controller uploads data to the system cloud planform through GPRS data flow, providing data dependence for mobile phone and computer terminal access.



System & Hardwares



Automatic Light On/Off & Dimming Control
- By time setting
- On/off or dimming with motion sensor detection
- On/off or dimming with photocell detection

Accurate Operation & Fault Monitor
- Real-time monitor on each light working status
- Accurate report on fault dectected
- Provide location of fault, no patrol required
- Collect each light operation data, such as voltage, current, power consumption

Extra I/O Ports for Sensor Expandability
- Environment Monitor
- Traffic Monitor
- Security Surveillance
- Seismic Activities Monitor

Reliable Mesh Network
- Self proprietary wireless control node
- Reliable node to node, gateway to node communication
- Up to 1000 nodes per network
- Max. network diameter 2000m

Easy-to-use Platform
- Easy monitor on each and all lights status
- Support lighting policy remote set-up
- Cloud server accessible from computer or hand held device

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