

SOLARA™ I

Integrated

Solar

Street Light & Smart Surveillance

E-LITE semicon



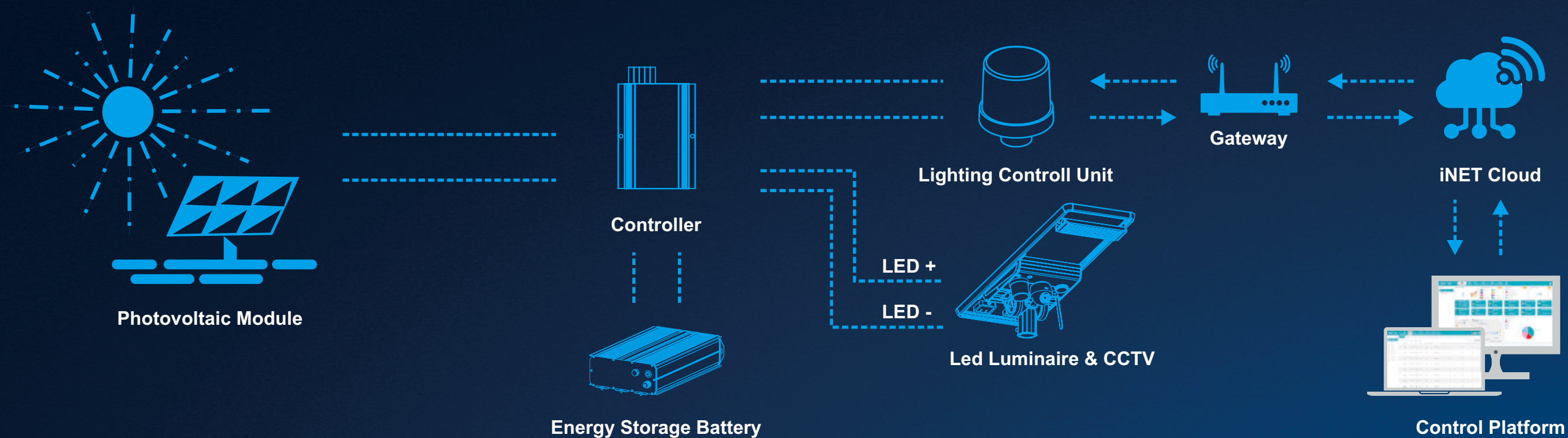
The Next Generation of Off-Grid Smart Infrastructure

Solar Lighting & Smart Surveillance in One

E-Lite eliminates the complexity of maintaining separate lighting and security systems. Our integrated solar CCTV solution consolidates power generation, storage, and HD surveillance into a single, streamlined unit. Engineered for rapid deployment in off-grid or remote sites, it removes dependence on grid power and expensive infrastructure.

With intelligent 4G connectivity and durable LiFePO4 storage, E-Lite provides a "plug-and-play" security hub suited to any setting—from residential compounds to industrial parks—ensuring maximum return on investment and minimal upkeep.





OUR FIXTURE CAN DO



The entire lighting system is guaranteed for 5 years and the 10 years guaranteed for battery maintenance



Premium-grade Integrated All-in-one Design, Easy to Install and Maintain.



Light On/off and Dimming Programmable Smart Lighting.



Zero carbon emission



No Trenching or Cabling Work Needed.



Using Grade A+ battery cell, the battery cycle life more than 4000 times



High Luminous Efficiency of 210~220lm/W to Maximize Battery Performance.



Pivoting LED Modules Deliver the Best Lighting Control.



IP66 Luminaire Ensures Long Lasting and Consistent High Performance.

OUR SYSTEM CAN DO



7*24 battery life monitoring, battery life cycle reminder, work report



Built-in GPS Tracking for Product Security



Remote Real-time Monitoring and Management



Powerful Data Collection and Analysis Functions



Integrated HD CCTV Surveillance & On board Edge Processing



Precise Battery Monitoring



AI Enabled Pole/Light Tilt Alarm



Flexible and Adjustable Work Mode



Seamless Integration of Charge Controllers with IoT System

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



E-LITE semicon / Hello@elitesemicon.com / www.elitesemicon.com





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.

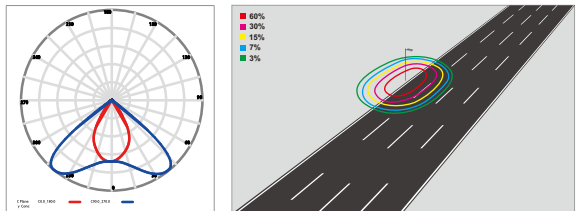


Designed for effortless installation without additional cables or rectifiers, the fixture can be directly mounted on the pole with a 0°~90° adjustable spigot. The LED bar offers a 0°~30° adjustment range, ensuring full compliance with international Dark Sky standards.

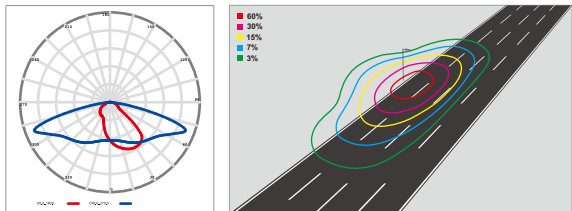


PHOTOMETRICS

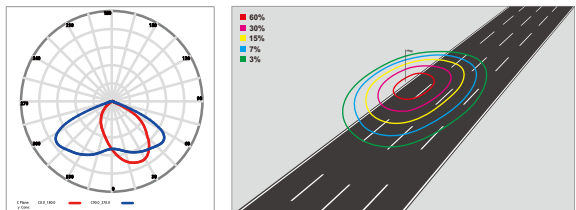
60×100° (TYPE I -VS)



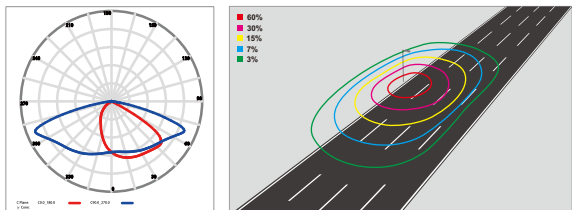
65×155° (Type II -M)



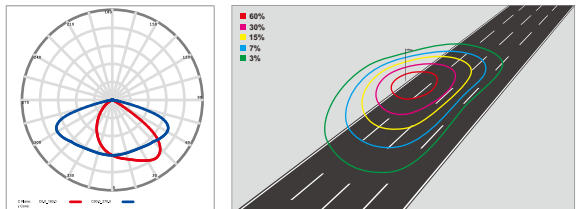
70×135° (TYPE II -S)



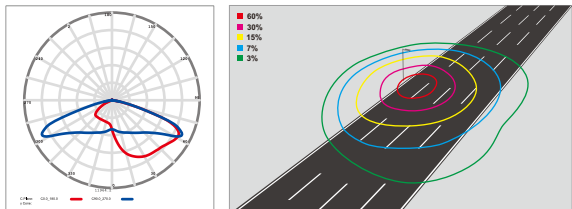
75×150° (TYPE III -M)



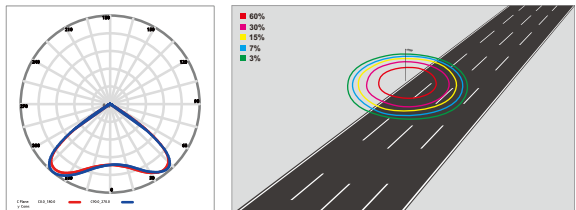
80×150° (TYPE III -S)



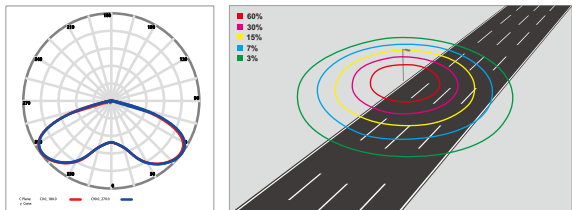
65×145° (Type IV -S)



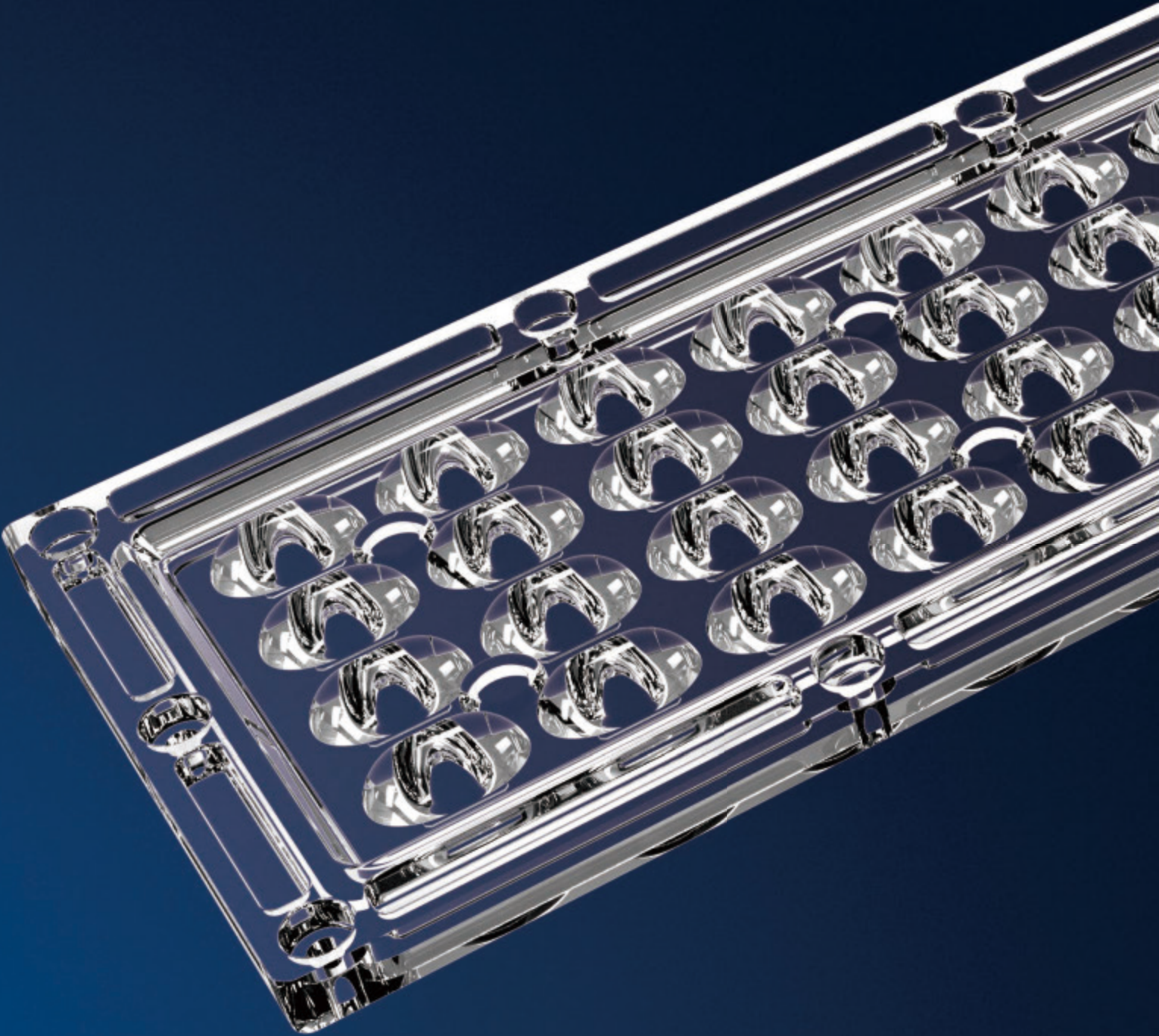
110° (TYPE V -VS)



150° (TYPE V -VS)



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



PERFORMANCE



20W~90W



210~220lm/W



Philips Lumileds



Microwave & Timer Dimming



MPPT / PWM Controller



5000K (2500~6500K optional)



60×100°/ 65×145°/ 65×155° / 70×135° / 75×150° / 80×150° / 110° / 150°



IP66



IK08



Monocrystalline silicon photovoltaic panels



LiFeP04 battery



Slip fitter



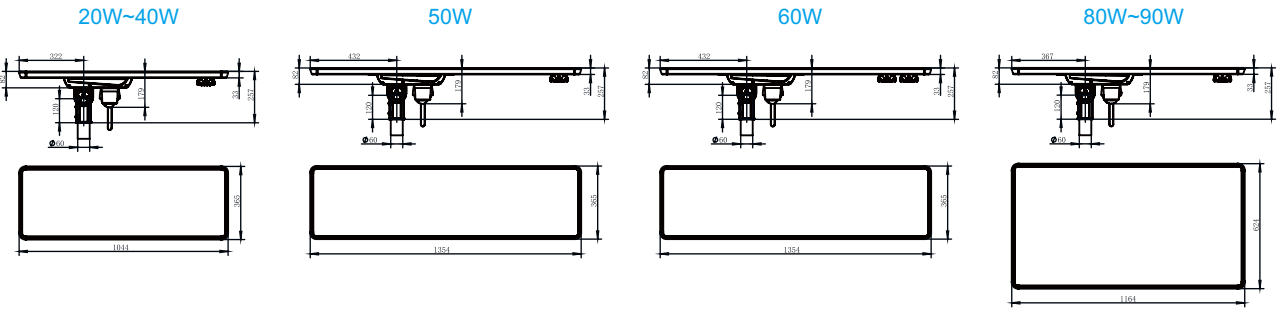
Operating Temperature:-20°C to + 60°C /-4°F to 140°F (Charge:0°C to 60°C / 32°F to 140°F & Discharge:-20°C to 60°C / -4°F to 140°F)
Storing Temperature:-20°C to +60°C/-4°F to 140°F



SPECIFICATIONS

Part#	Power	Modules	LED Efficacy	Solar Panel		Battery	N.W	Product Dimensions
				Light Fixture	Camera			
EL-SOST I -20	20W	1	220lm/W	55W/18V	10W/5V	3.2V/105AH	13.3kg	1044×365×257mm
EL-SOST I -30	30W		217lm/W	55W/18V	10W/5V	3.2V/105AH	13.3kg	1044×365×257mm
EL-SOST I -40	40W		213lm/W	55W/18V	10W/5V	3.2V/168AH	14.3kg	1044×365×257mm
EL-SOST I -50	50W		210lm/W	75W/18V	10W/5V	3.2V/168AH	15.5kg	1354×365×257mm
EL-SOST I -60	60W	2	217lm/W	75W/18V	10W/5V	3.2V/168AH	16.0kg	1354×365×257mm
EL-SOST I -80	80W		213lm/W	130W/18V	10W/5V	25.6V/24AH	24.1kg	1164×624×257mm
EL-SOST I -90	90W		212lm/W	130W/18V	10W/5V	25.6V/30AH	25.2kg	1164×624×257mm

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

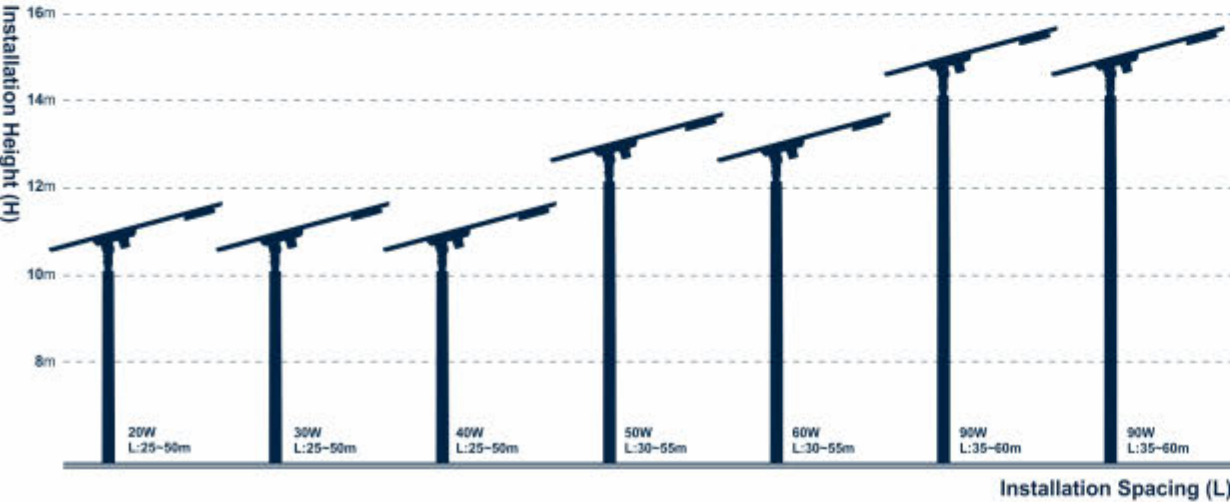


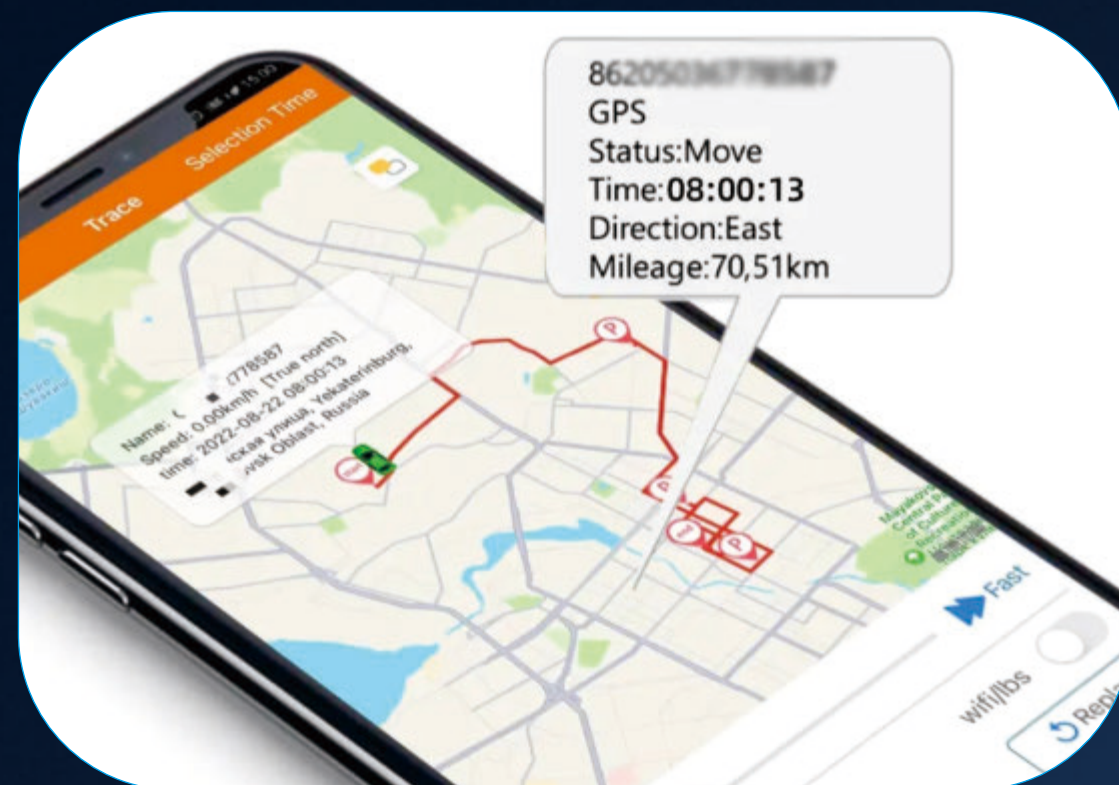
EPA VALUE

Part#	Power	Horizontal Angle Solar Panel (°)	EPA (ft²)
EL-SOST I -20 EL-SOST I -30 EL-SOST I -40	20W 30W 40W	0	0.13
		5	0.36
		10	0.71
		15	1.07
		20	1.41
		25	1.74
		30	2.06
EL-SOST I -50 EL-SOST I -60	50W 60W	0	0.13
		5	0.47
		10	0.93
		15	1.38
		20	1.83
		25	2.26
		30	2.67
EL-SOST I -80 EL-SOST I -90	80W 90W	0	0.22
		5	0.68
		10	1.36
		15	2.03
		20	2.68
		25	3.32
		30	3.92



INSTALLATION REFERENCE

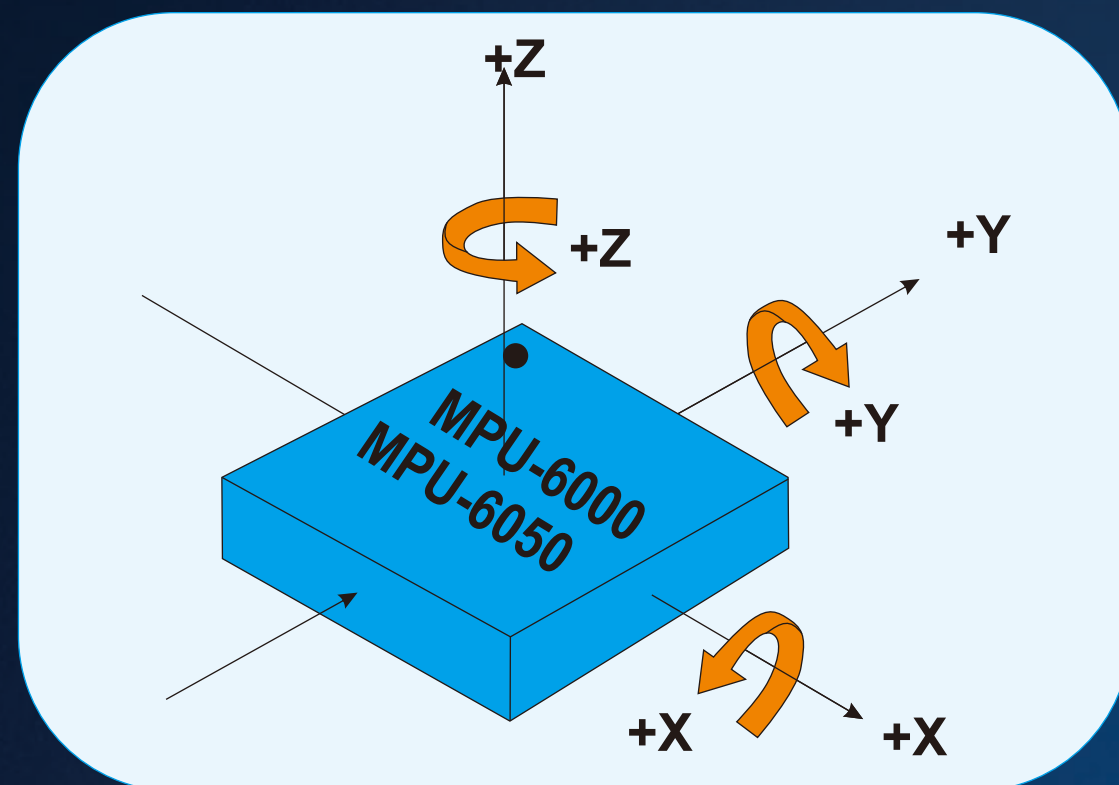




SMART ANTI THEFT DESIGN

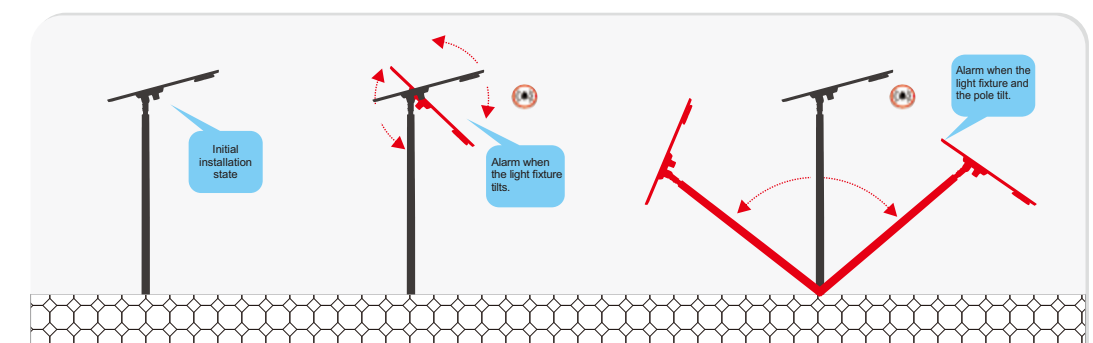
Real-Time Geo Tracking

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 solar light battery has power.

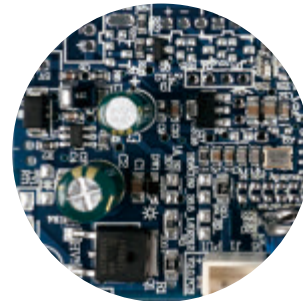


AI Enabled Pole/Light Tilt Alarm

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.



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 I, 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 I solar street light.



Smart 4K 4G PT Battery Camera

Video & Audio	
Image Sensor	1/2.7" CMOS Sensor
Video Resolution	3840 x 2160 (8 Megapixel)@15fps
Video Compression	H.265
Field of View	Fixed Lens, Horizontal: 90°, Vertical: 47° , Diagonal: 110°
Infrared Night Vision	Up to 10 Meters (33ft) (LED: 2pcs/1.2W/ 850nm)
Color Night Vision	Spotlight: 2pcs/2.4W/6500K
Audio	Two-Way Audio
Alarm	
Smart Alarm	PIR/person/vehicle/animal detection
PIR Detecting Distance	Adjustable up to 10m (33 ft)
PIR Detecting Angle	120° Horizontal
Audio Alert	Customized Audio Alerts
Recording	Motion-Triggered Recording
Other Alerts	Instant Email Alerts and Push Notifications
Pan & Tilt	
Pan &Tilt	355° Pan, 140° Tilt
Preset Points	Supports 1 guard position & up to 32 preset positions
3G/4G Bandwidth	
Frequency Bands	•Europe Version:LTE FDD: B1/B3/B7/B8/B20/B28A WCDMA: B1/B8 •USA Version:LTE FDD: B2/B4/B5/B12/B13/B14/B66/B71 •Australia Version: LTE FDD: B1/B3/B5/B7/B8/B28 WCDMA: B1/B5/B8
Power	
Battery	21.6Wh Rechargeable Battery (Battery life varies based on settings, usage & temperature)
Solar	Reolink Solar Panel 2
DC Power	USB Type-C port
Storage	
Local Storage	MicroSD Card (32GB included, max. 128GB)
Cloud Storage	Reolink Cloud (only available in some countries)
Software Features	
OS Supported	PC: Windows, Mac OS; Smartphone: iOS, Android
Protocols & Standards	SSL, TCP/IP, UDP, UPNP, SMTP, NTP, P2P
Max. User Access	Max. 12 simultaneous streams (2 main & 10 sub streams)
Smart Home	
Smart Home	Google Assistant
Working Environment	
Operating Temperature	-10 to 55° C (14° to 131° F)
Weather Resistance	IP64
Size & Weight	
Size	Φ98 x 122mm
Weight (Battery included)	496g
Warranty	
Limited Warranty	2-year limited warranty. For support, visit https://support.reolink.com/hc/en-us/



- 1.Speaker
- 2.IR LEDs
- 3.Spotlights
- 4.Daylight Sensor
- 5.Lens
- 6.Status LED
- 7.PIR Motion Sensor
- 8.Built-in Microphone



- 1.Antenna
- 2.Battery LED
- 3.USB-C Port
- 4.Power Switch
- 5.Reset Hole
- 6.Nano SIM Card Slot
- 7.microSD Card Slot



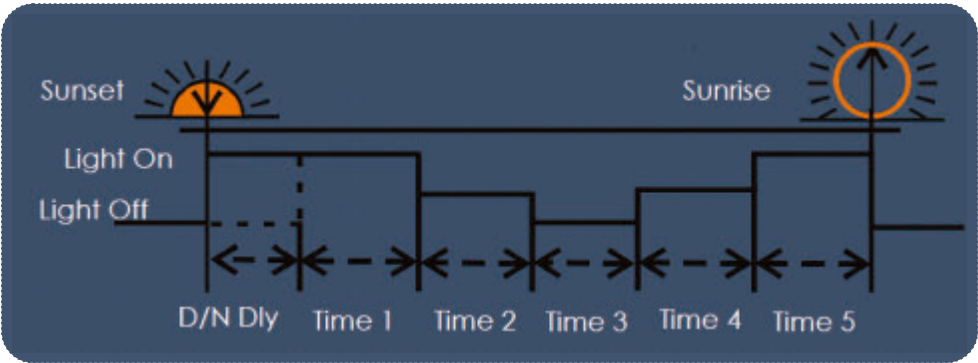
SOLAR CONTROLLER - B

Regular MPPT Controller



Five-Stage Mode

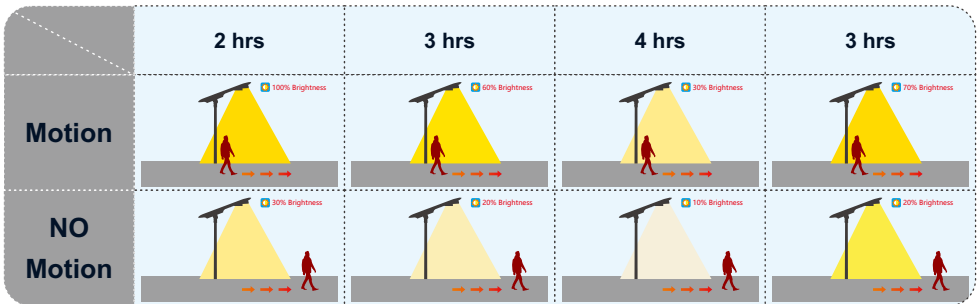
The lamps lighting divide into 5 stage, each stage time and dim can be setting according to demands. With diming setting, it is an efficient way to save energy, and keep the lamp working in best power and time.



Motion Sensor Mode

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

Without Motion: 2 hrs-30%; 3 hrs-20%; 4 hrs-10%; 3 hrs-20%;



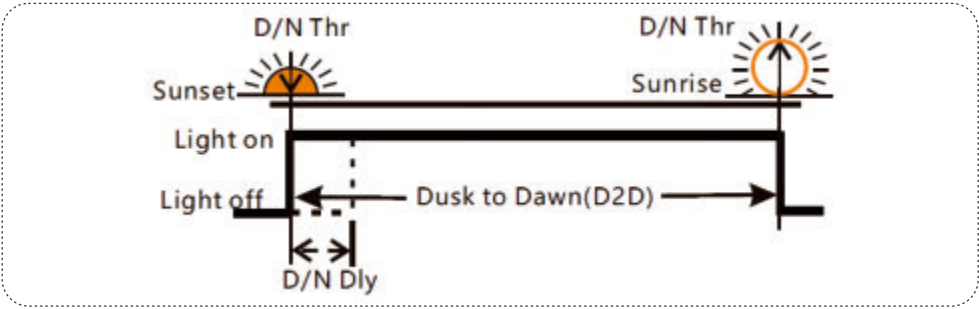
SOLAR CONTROLLER - C

Hybrid MPPT Controller



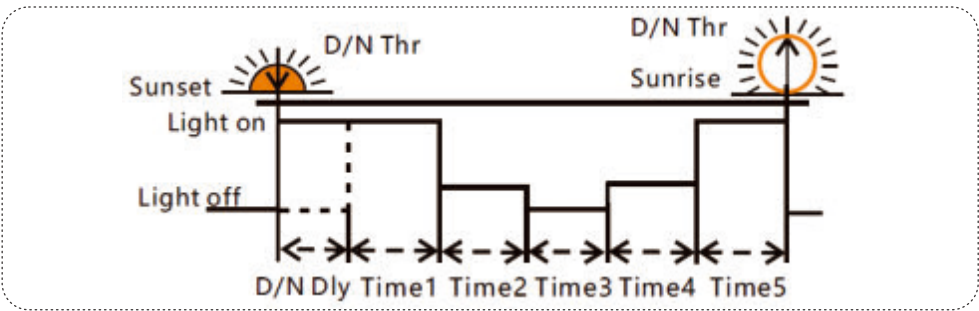
Dusk to Dawn (D2D)

When fixture is set to D2D, it works in dusk to dawn mode. The fixture will turn on while the sun is down, as determined by the solar panel voltage.



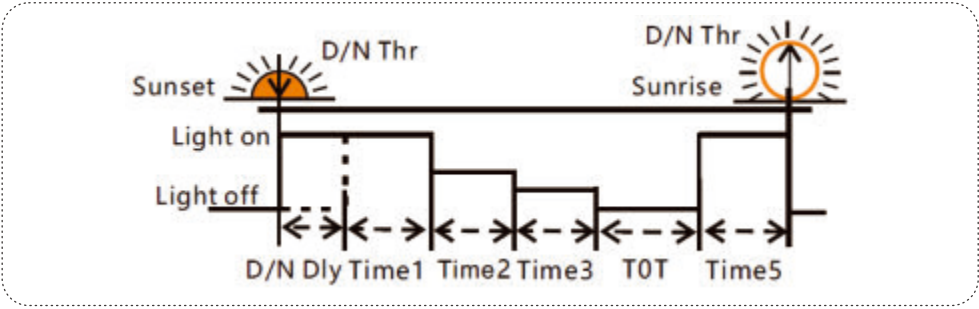
Five-stage Night Mode

The lamps lighting divide into 5 stage, each stage time and dim can be setting according to demands. With diming setting, it is an efficient way to save energy, and keep the lamp working in best power and time.



TOT Mode (Can set the load on time before morning coming.)

When fixture is set to TOT then it will determine Time4 based on Time5 and previous data on the time of sunrise.





MONO SOLAR PANEL



Higher Durability

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



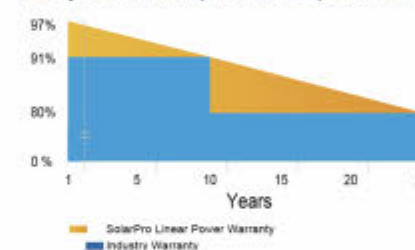
PID Resistant

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



First-class Quality Assurance

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



High Power Density

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



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.

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		

HIGH PERFORMANCE BATTERY PACK GRADE A+ CELL

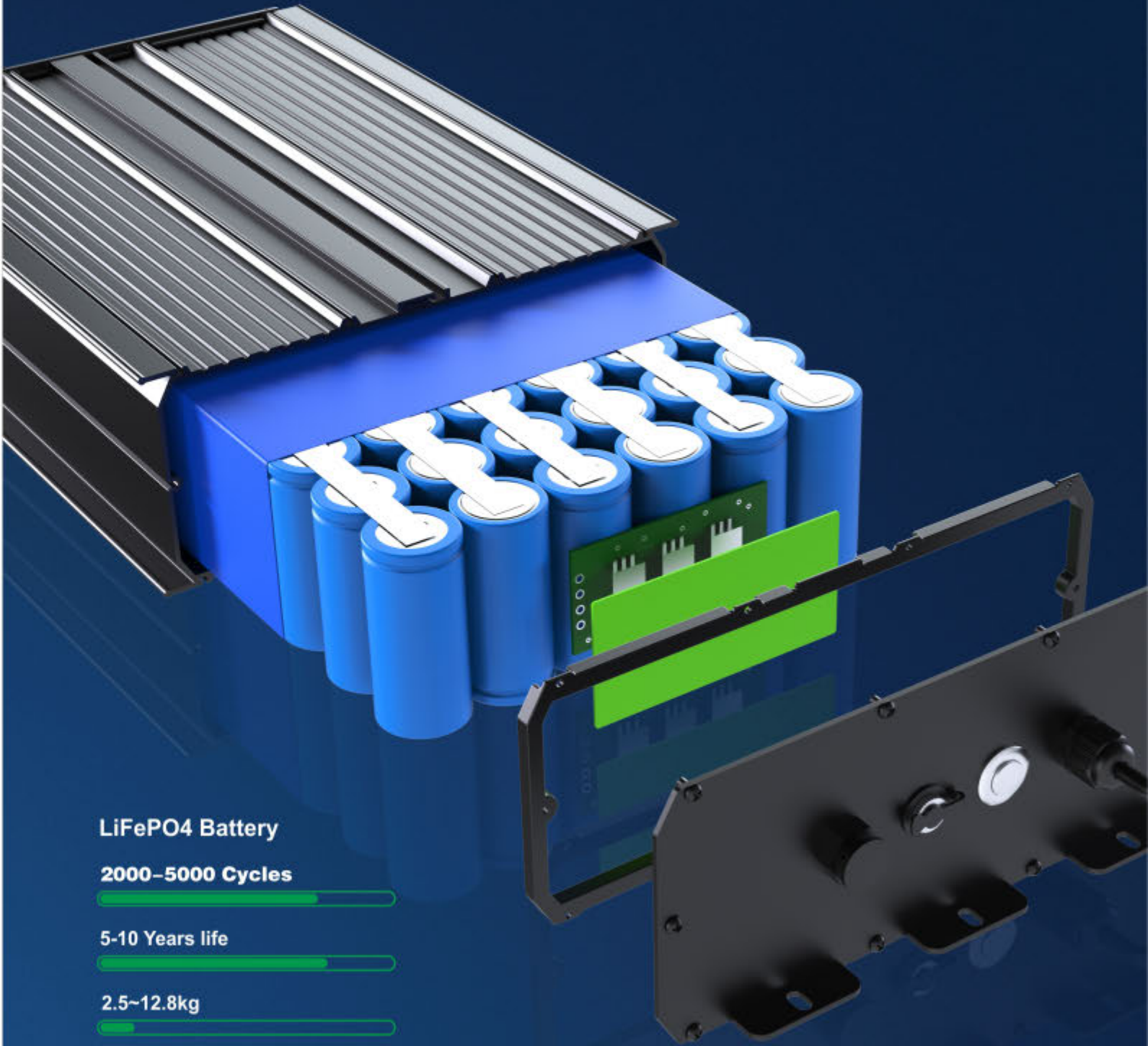
LiFePO4 batteries have a higher energy density they can store more energy in a smaller and lighter package.
This makes them ideal for applications where weight and space are a concern.

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	≥3V		≥24V	
Standard charging method	10A (CC) charging to 3.65V; After CV (DC 3.65V) Charge until charging currents0.02C		5A (CC) charging to 29.2V; After CV (DC 29.2V) Charge until charging currents0.02C	
Max charging current	≤25A		≤20A	
Max discharge current	≤25A		≤20A	
Over current	≤25A		≤20A	
Cut off 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			



LiFePO4 Battery

2000-5000 Cycles

5-10 Years life

2.5~12.8kg

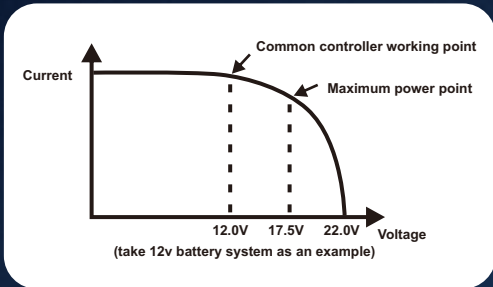
Environmentally friendly

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			

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°C, the efficiency of lithium iron phosphate batteries for charge and discharge decreases. To prevent damage and the battery protection triggered by over-discharge, 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.



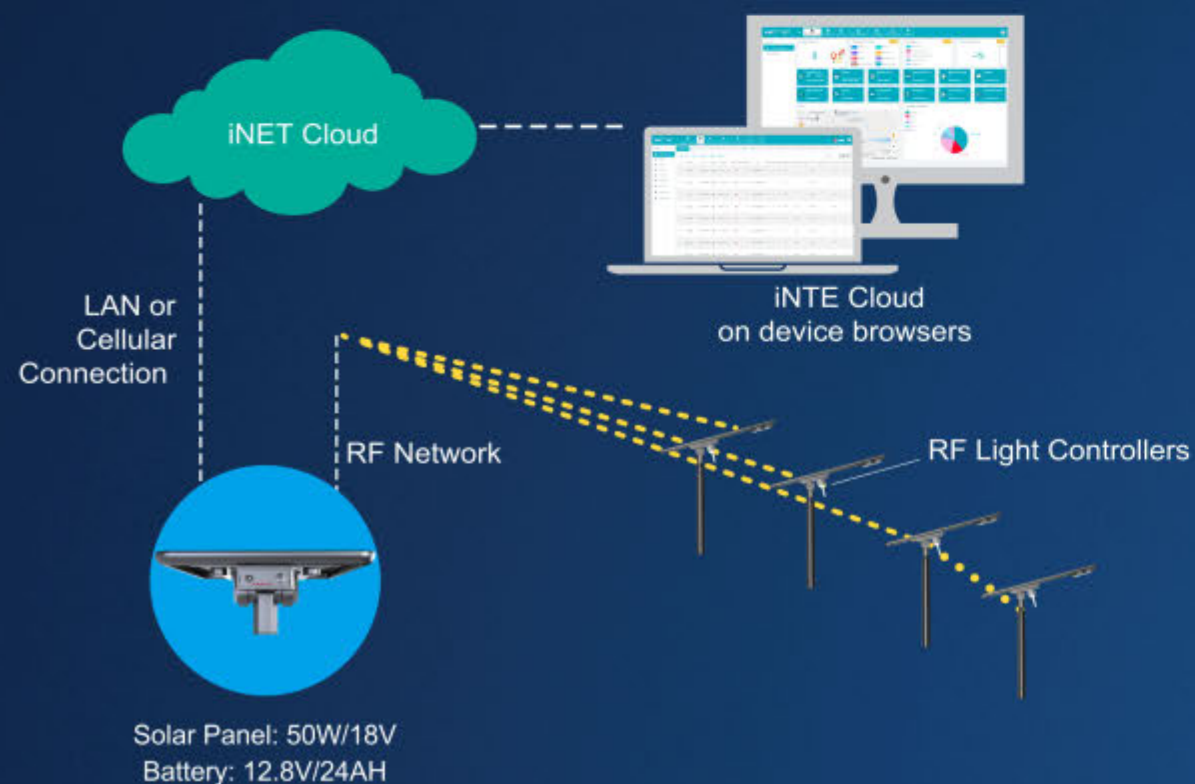
iNET SMART CONTROL SYSTEM



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 platform 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 detected
- 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

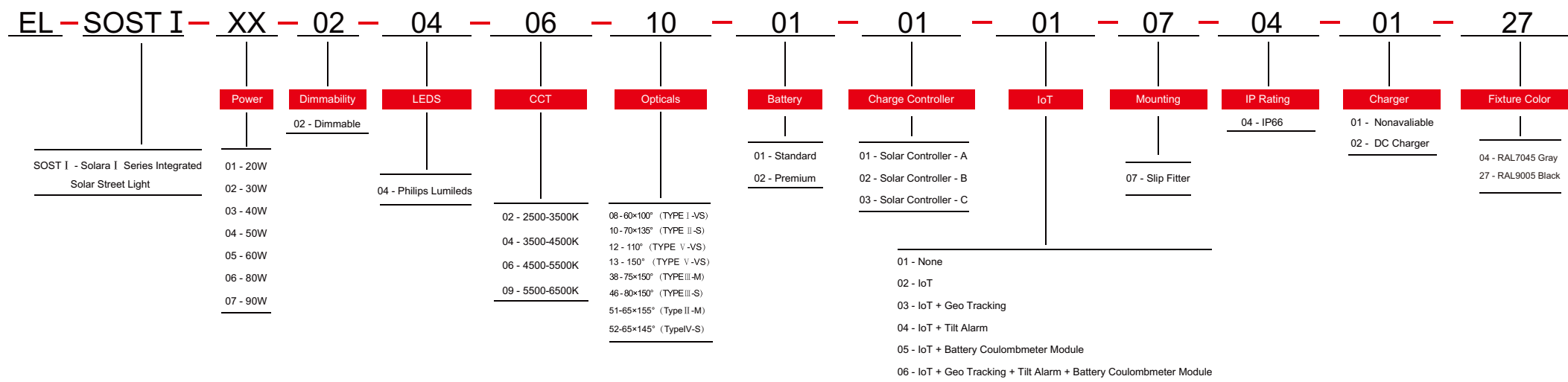


Easy-to-use Platform

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

ORDERING INFORMATION

E-LITE semicon



E-Lite Semiconductor Co., Ltd.
Headquarter & Factory
Website: <http://www.elitesemicon.com>