KAISTAR®

Soltech II
Integrated Street Light
Off-Grid & Hybrid
(Hybrid Optional)

KAISTAR®

KAISTAR®

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 190LM/W~210 LM/W to Maximize Battery Performance.

Pivoting LED Modules Deliver the Best Lighting Control.

Ip66 Luminaire Ensures Long Lasting and Consistent High Performance.

High Accuracy Battery Reading Via Coulombmeter.

Built-in GPS Tracking for Product Security.

AI Enabled Pole/Light Tilt Alarm.

Five Years Warranty.

Extendable Solar Panel

With foldable solar panel extension, Soltech II offers more choices for higher wattage with the same structure for more demanding applications, be it long operation hours high power output or for harsh environment where high performance required in short sunny hours.

The Innovation of the Originality

Originally designed to provide the real and continuous high brightness output for long operation hours, Soltech II is highly engineered all-in-one solar street light incorporating large battery capacity and extremely high efficacy LED than ever.

Elegant Yet Rock-Soltech II

With the highest grade corrosion resistant aluminum alloy cage, 316 stainless steel components, ultra strong slip fitter, IP66 and Ik08 rated, Soltech II stand and handle whatever comes your way and are twice as durable as others, be it the strongest rains, snows or storms.

KAISTAR®
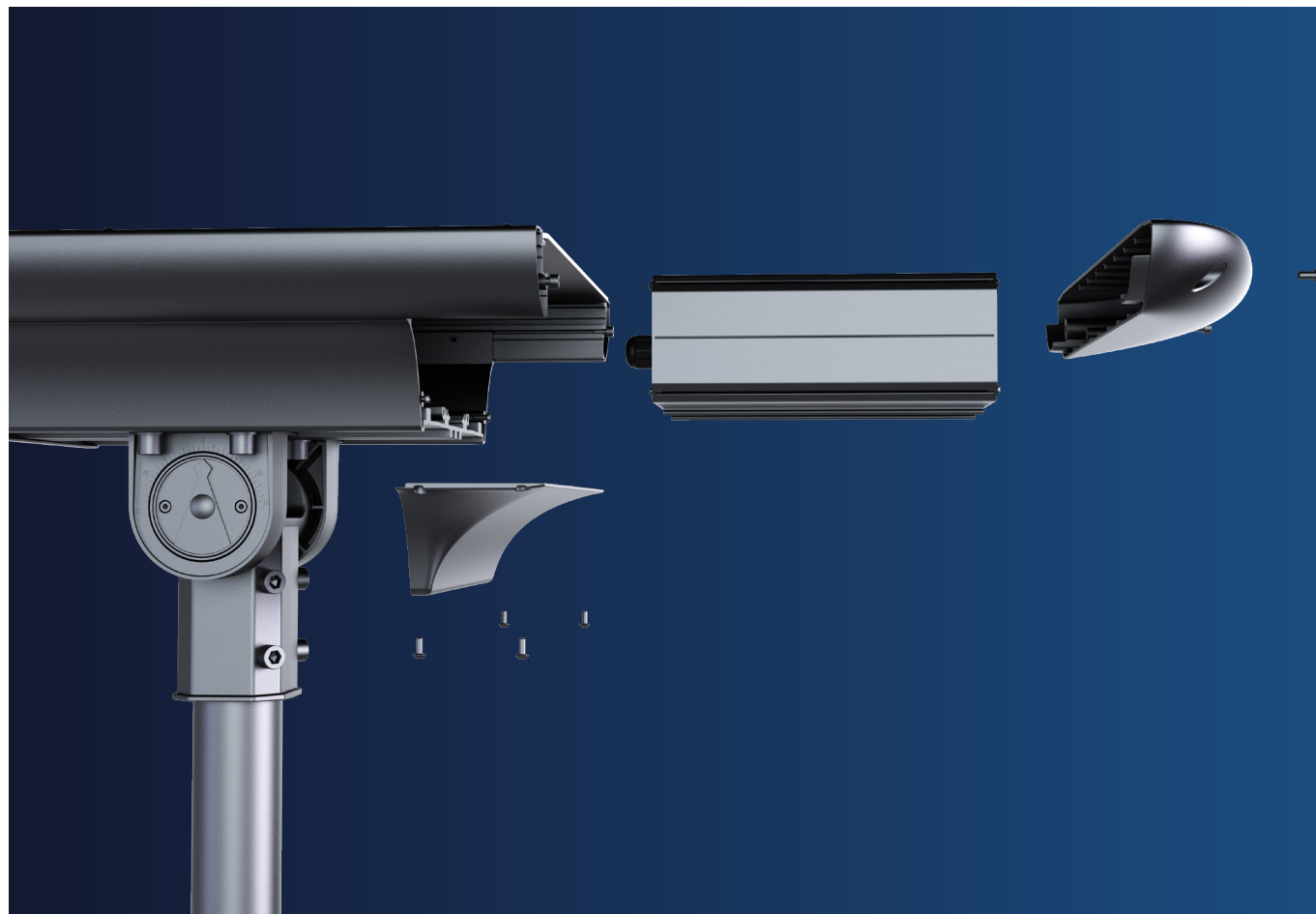
Applications

- 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

Reliability Unexpected Value

Only top quality mono - crystalline silicon solar panels with high efficiency and long lifetime are used.

Quality lithium batteries are used to store the energy, provide energy for immediate requirements, and enable a back-up for days when there is little or no sun.

High Lumen LED for maximum efficacy. Dedicated designed low-voltage solar controller technology with dimming capabilities for power-save management.
Lifetime > 100,000 hrs and CRI nominal 70.

Microprocessor managed algorithms autonomously determine sunrise and sunset.

Easy to install without buying cables and rectifiers, directly on pole with an adjustable spigot 0°~90°.

±30°

±90°

Stay Powerful the Dc Charge Port

A DC charge port is offered as an option to be integrated into Soltech II, 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 Soltech II solar street light.

How Grid Power Works in the Hybrid System

Grid Connection and Backup

The grid connection serves as a backup power source. When the solar energy and battery storage are insufficient to meet the load demand, the grid connection provides the necessary power to ensure uninterrupted supply.

Power Flow and Stability

The system uses power electronic devices and control algorithms to manage the flow of power between the solar panels, the grid, and the load. This ensures that the system remains stable and efficient, even during periods of high demand or fluctuating solar generation.

Power Switching and Management

It initially uses the stored DC power from the batteries to illuminate the street light at night. If the battery charge depletes or additional power is required, the controller seamlessly switches to AC supply.

By integrating soltech power and grid power in this way, an AC/DC hybrid solar system can provide a reliable and sustainable energy solution, reducing dependence on the grid and maximizing the use of renewable energy.

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)

110° (TYPE Ⅴ-VS)

150° (TYPE Ⅴ-VS)
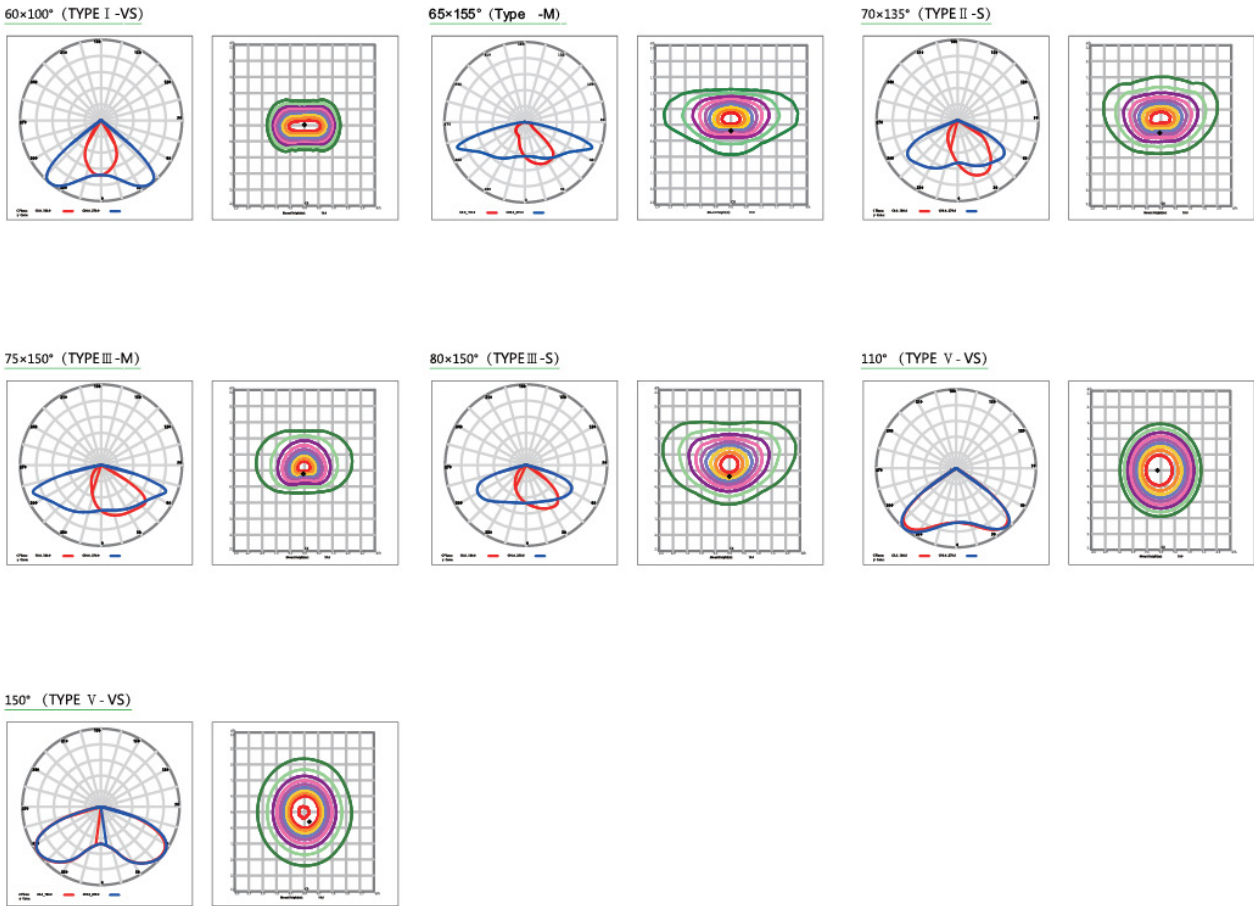
PERFORMANCE

190LM/W - 210 LM/W
SMD 5050
PIR & 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
LiFePO4 battery
Slip fitter
（Standard LiFePO4 :Charge:0℃ to 60℃ / 32°F to 140°F & Discharge:-20℃ to 60℃ / -4°F to 140°F） (Advanced LiFePO4:Charge:-20℃ to 60℃ / -4°F to 140°F & Discharge:-20℃ to 60℃ / -4°F to 140°F) Storing Temperature:-20℃ to +60℃/-4°F to 140°F

CE RoHS

Specifications *(Off-Grid)

Part#	Power	Modules	Efficacy S Series	System Lumen	Solar Panel	Battery	Product Dimensions
KS-STLS-II-30	30W	1	210 LM/W	6,300 LM	55W/18V	12.8V/18AH 12.8V/24AH 12.8V/30AH	1123×406×293mm
KS-STLS-II-40	40W		210 LM/W	8,400 LM	55W/18V	12.8V/18AH 12.8V/24AH 12.8V/30AH	
KS-STLS-II-50	50W		210 LM/W	10,500 LM	65W/18V	12.8V/24AH 12.8V/30AH 12.8V/36AH	1233×406×293mm
KS-STLS-II-60	60W		210 LM/W	12,600 LM	75W/18V	12.8V/24AH 12.8V/30AH 12.8V/36AH	1433×406×293mm
KS-STLS-II-80	80W	2	210 LM/W	16,800 LM	95W/36V	25.6V/18AH 25.6V/24AH 25.6V/36AH 25.6V/42AH	1813×406×293mm
KS-STLS-II-90	90W		210 LM/W	18,900 LM	105W/36V	25.6V/18AH 25.6V/24AH 25.6V/36AH 25.6V/42AH	1953×406×293mm

*All specifications & parameters @25C° & subject to change without notice. All data tolerance +/- 5%
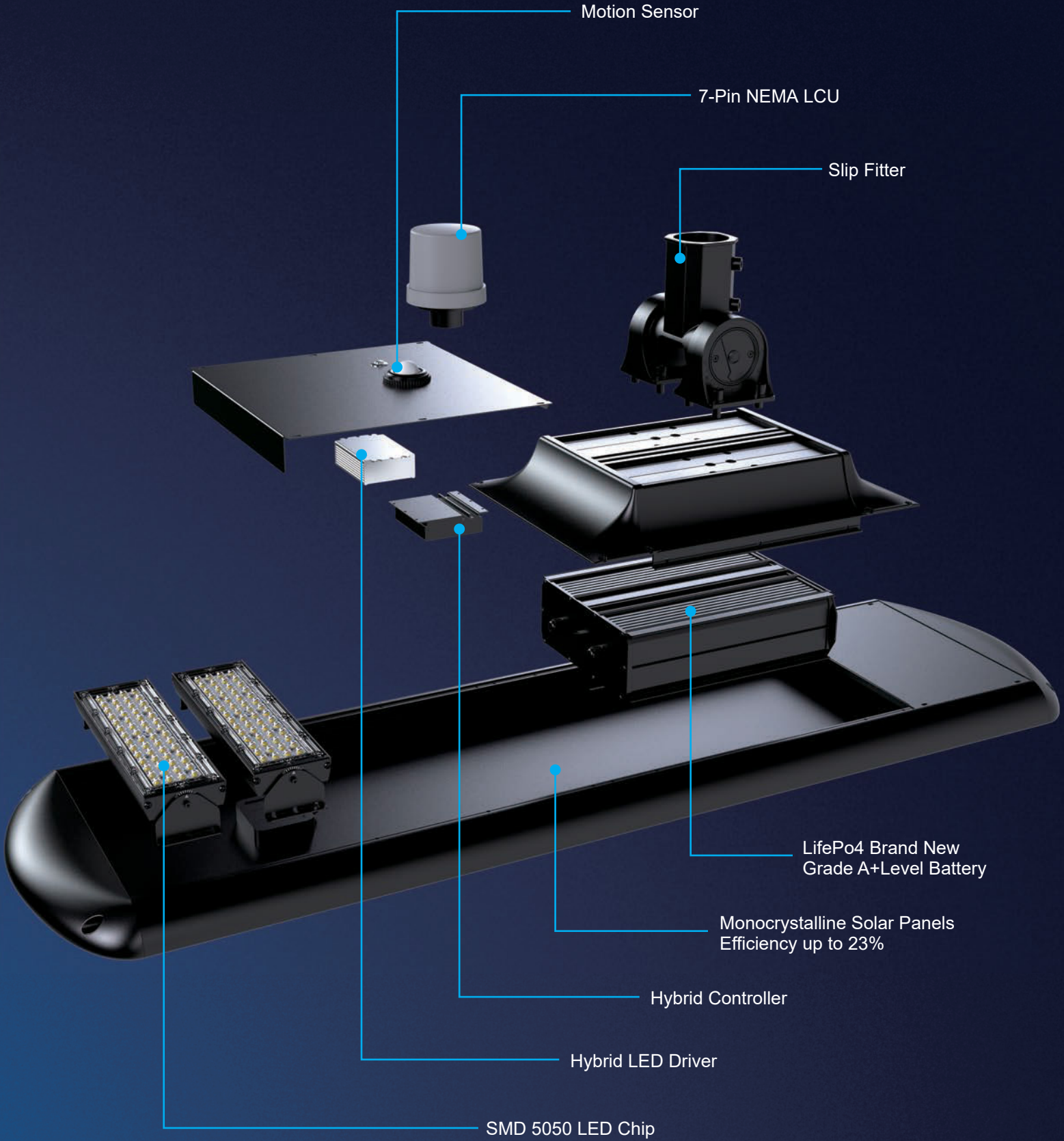
Specifications *(HYBRID)

Part#	Power	Modules	Efficacy S Series	System Lumen	Solar Panel	Battery	Product Dimensions
KS-STLS-II-30H	30W	1	190 LM/W	5,700 LM	55W/18V	12.8V/18AH 12.8V/24AH 12.8V/30AH	1123×406×293mm
KS-STLS-II-40H	40W		190 LM/W	7,600 LM	55W/18V	12.8V/18AH 12.8V/24AH 12.8V/30AH	
KS-STLS-II-50H	50W		190 LM/W	9,500 LM	65W/18V	12.8V/24AH 12.8V/30AH 12.8V/36AH	1233×406×293mm
KS-STLS-II-60H	60W		190 LM/W	11,400 LM	75W/18V	12.8V/24AH 12.8V/30AH 12.8V/36AH	1433×406×293mm
KS-STLS-II-80H	80W	2	190 LM/W	15,200 LM	95W/36V	12.8V/18AH 12.8V/24AH 25.6V/36AH 12.8V/42AH	1813×406×293mm
KS-STLS-II-90H	90W		190 LM/W	17,100 LM	105W/36V	25.6V/18AH 25.6V/24AH 25.6V/36AH 25.6V/42AH	1953×406×293mm

*All specifications & parameters @25C° & subject to change without notice. All data tolerance +/- 5%

Motion Sensor

7-Pin NEMA LCU

Slip Fitter

LifePo4 Brand New Grade A+Level Battery

Monocrystalline Solar Panels Efficiency up to 23%

Hybrid Controller

Hybrid LED Driver

SMD 5050 LED Chip

Key Components of the Hybrid Syste

Monocrystalline Solar Panel

· High power density reach to 23% conversion efficiency.

· Multi-busbar design makes the solar panel with higher durability.

· PV modules have demonstrated resistance against
  PID (Potential induced degradation).

· Bigger cells with better performance.

Hybrid Control Unit

· High tracking efficiency >99.9%.

· If battery voltage is low, it can be set to dimming or directly use
  the grid power to light up.

· Dimming start voltage and percentage can be set.

· Day/Night threshold can adjust automatically.

Hybrid Control Unit

· Grade A+ battery cells used.

· High efficiency with light weight.

· Safety and a long lifespan.

· No active maintenance.

· High discharge rates.

· Suitable for extreme temperatures.
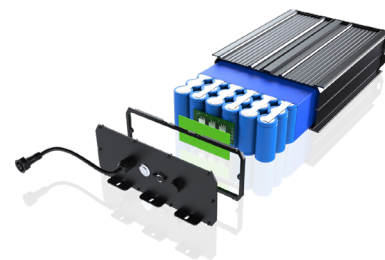
Hybrid AC Driver

· High efficiency (up to 92%).

· Constant voltage output.

· No-Load power < 0.5 W.

· Input surge protection: DM 4KV, CM 6KV.

· All-around protection: OCP, OVP, SCP, OTP.
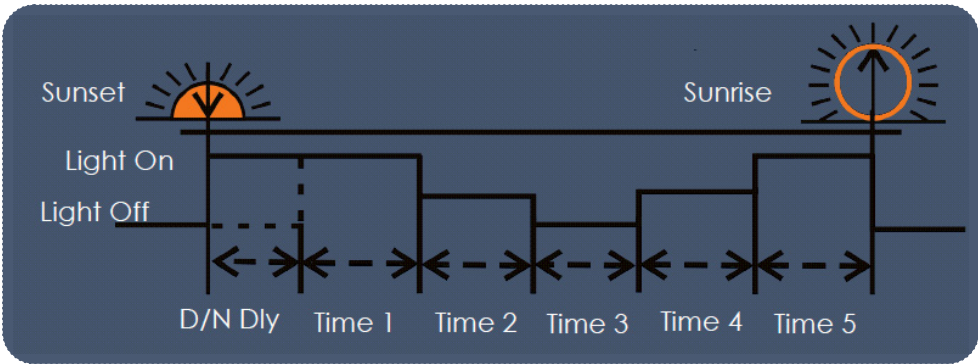
· IP67

· SELV output.

SOLTECH II 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%;

SOLTECH II 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
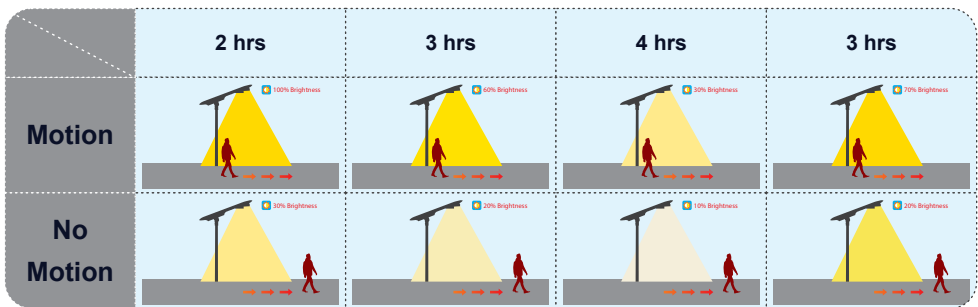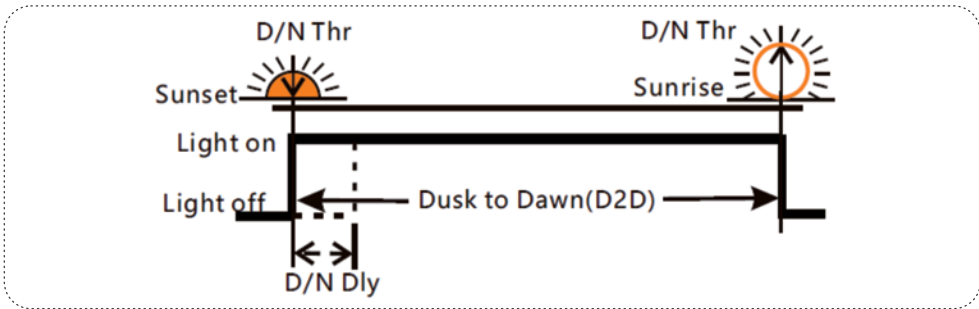
The lamps lighting divide into 5 stage, each stage time and dim can be setting according to demands. With diming setting, it is an efficient way to save energy, and keep the lamp working in best power and time.
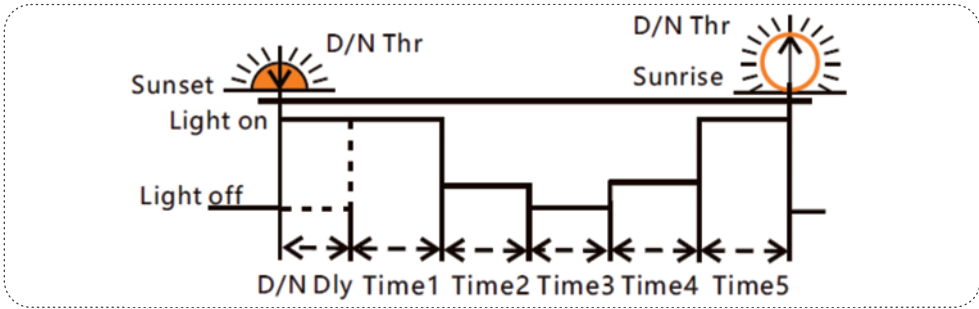
TOT Mode (Can set the load on time before morning coming.)

When fixture is set to T0T then it will determine Time4 based on Time5 and previous data on the time of sunrise.

Installation Notes

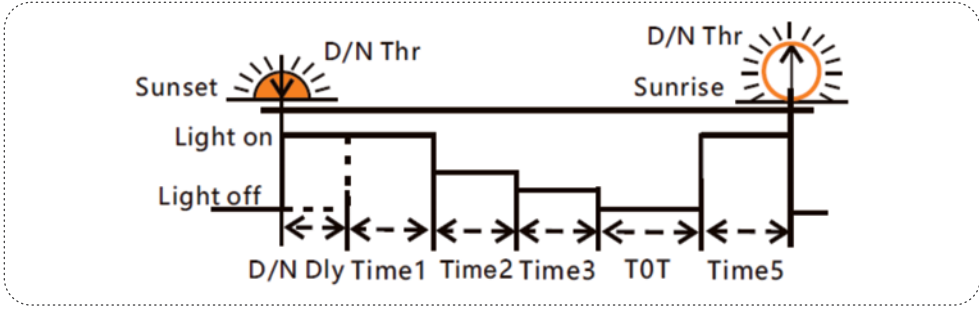1. Due to variations in longitude and latitude at the installation site, the angle at which the sun's rays illuminate differs. During installation, it is crucial for the solar panel to be oriented towards the sun precisely at 12:00 noon. However, often due to factors like road direction and light poles, 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 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.

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.
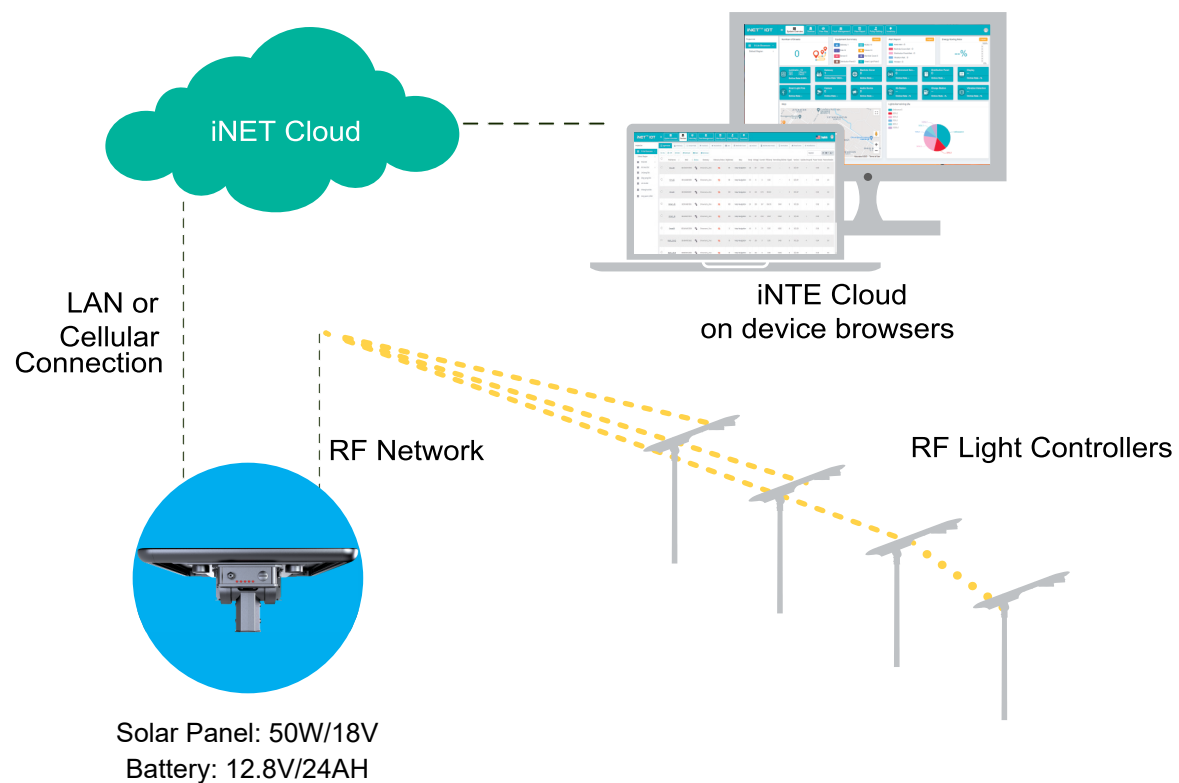
KAISTAR®

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.

iNET Cloud

iNTE Cloud
on device browsers

LAN or
Cellular
Connection

RF Network

RF Light Controllers

Solar Panel: 50W/18V
Battery: 12.8V/24AH

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 dlameter 2000m

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