



ISE02 SOLAR STREET LIGHT
60W/80W/100W

OVER 10 YEARS  EXPERIENCE
www.aokledlight.com

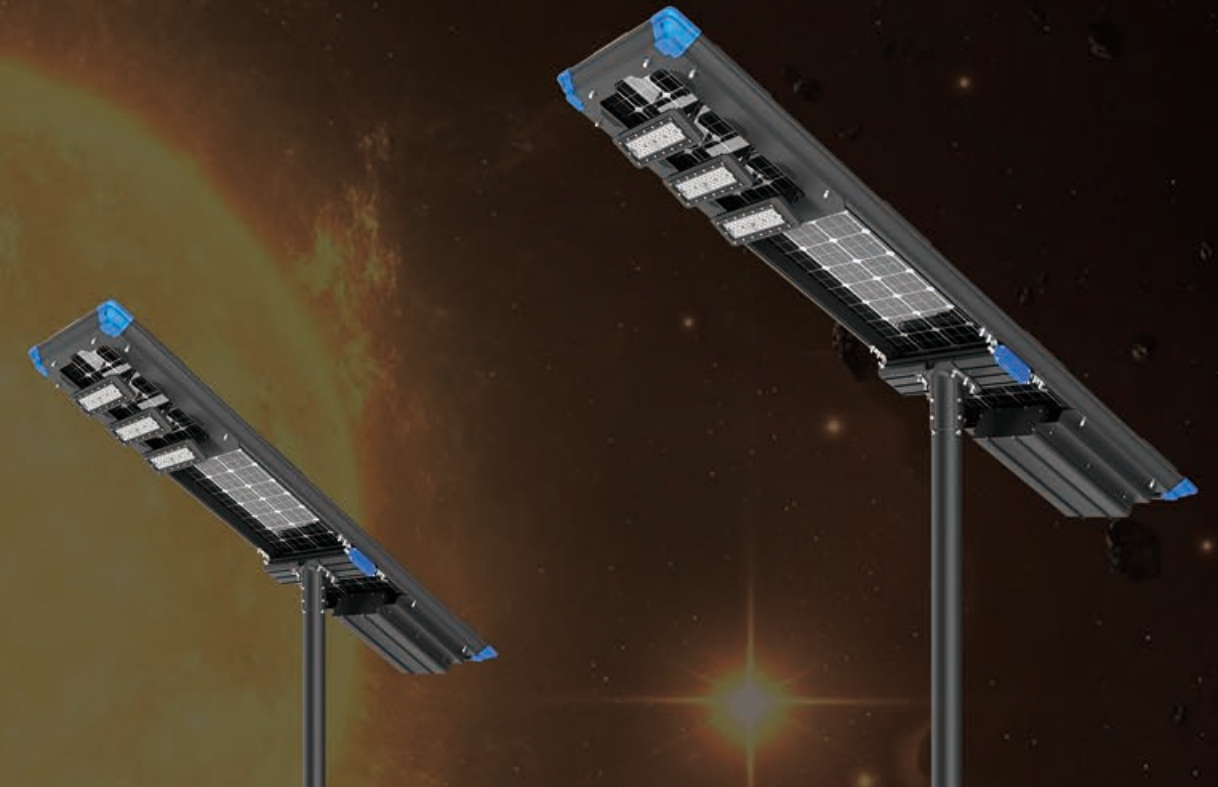
> Features of SE02 Series

Outdoor solar lighting systems use solar cells which convert sunlight into electricity. Electricity is stored in batteries for use at night.

SE series solar lights are easy to install and virtually maintenance free. Using them won't increase your electric bill.

- SE02 Solar LED Street Light features all in one design function, low profile design, with photocell sensor, timing, dimming, intelligent power saving, morning light, microwave sensor available.
- Bifacial Solar Panel design. Suitable for remote region, no-electric supply zone.
- Deep cycle battery, charge and discharge over 2000 times.
- Continuously work 2-3 rainy days in intelligent mode.
- Die-casting aluminium housing, anti-corrosion coating.
- Easy battery replacement design, can be renewed for every 7 years.
- Ultra-high light efficiency, 10 watts equivalent to 20 watts of others at least.
- Bilateral solar panels, the overall conversion efficiency is increased by 30%.
- Rotatable LED module, worry-free installation, best solar panel angle adapt to the sun.
- Accurate optical road lighting designs, adapt to various conditions with no waste of light.

UP TO 180 lm/W	CRI 70/80/90	• 3000K • 4000K • 5000K • 5700K • 6500K	L90B10 >52000hrs @ 25°C	IP65
BIFACIAL SOLAR PANEL	ROTATABLE LED MODULE	DIM	GPRS NB-IoT	Smart Sensor



Integral Monocrystalline Silicon Solar Panel	Conversion Rate up to 30%	25 Years Lifespan	

	>2000 times Lifespan Cycle High quality LI-ion battery Intelligent temperature control
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3 *****	5 *****	WARRANTY 3 Year Limited Warranty, 5 Year Preferred Warranty. Please consult with our sales for detailed agreement.
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> Photometrics Design

Lumen efficiency >180lm/W
achieve higher illumination



High Efficiency Long Lifespan Less Calorific Value Low Light Decay



Seoul 5050 LED chip creates a first-class light source. By choosing it, single lumen efficacy >180lm/W, with the aluminum lamp base and sealed lens, with its excellent heat dissipation, it is as if the LED chip has been placed in a sealed unit. Thus it maintains high brightness levels with very little fading. The sealed lenses are made of strong UV-protected PC and are aging and shock-resistant; The well-optimized light distribution makes for a more uniform and wider lighting area.

Distribution

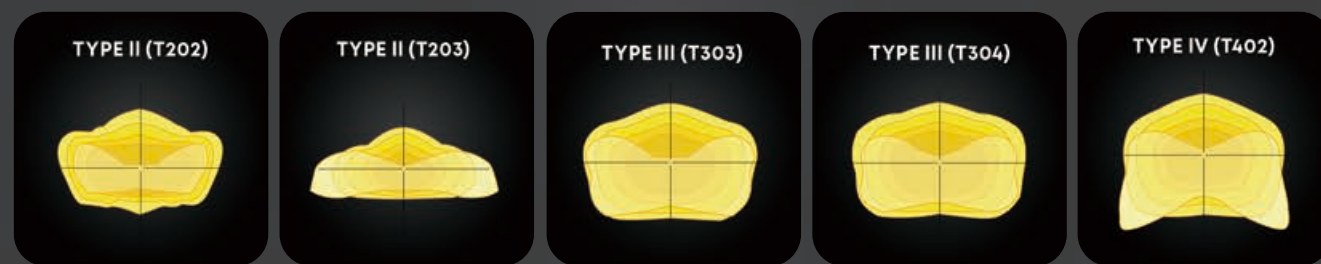
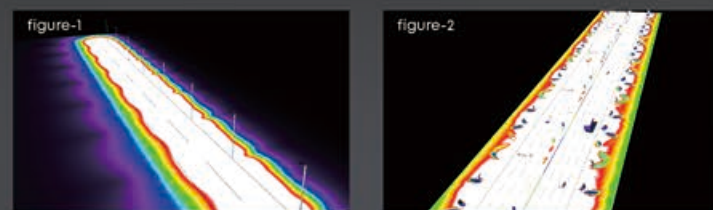
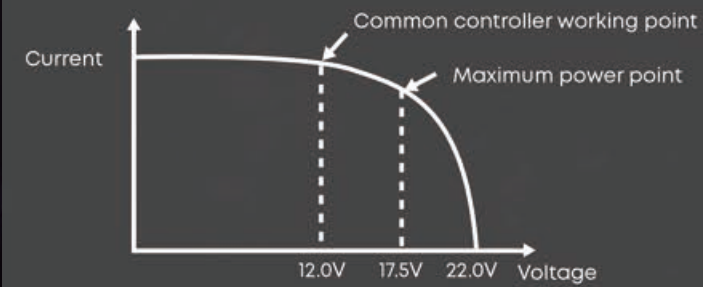


Figure-1: Example of rural branch road
Figure-2: Example of main road or avenue



Planning and analysis of street lights can be done by using lighting simulation & design software, which allows the lighting effect a more intuitive display. It uses rendering, the process of generating an image from a model, by means of computer programs resulting in different tools for measuring the simulated light levels.

Advantages of controller

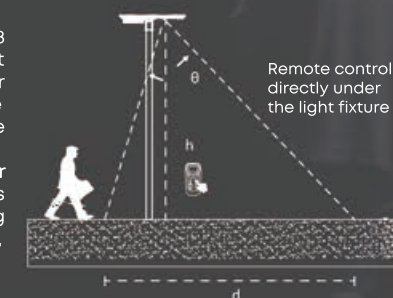


(take 12V battery system as an example)

- 1) Moving Track MPPT maximum power tracking technology is adopted to improve the tracking efficiency and speed by more than 20%;
- 2) UltraGreen power control technology with extremely low static power consumption and sleep current;
- 3) 10 time-periods programmable load power/time control;
- 4) Multiple intelligent power modes can be selected, and the load power can be automatically adjusted according to the battery power;
- 5) Multiple protection functions such as battery /PV reverse connection protection, LED short circuit/open circuit/power limit protection;
- 6) Aluminum metal housing, IP67 waterproof rating, can be used in a variety of harsh environments
- 7) Extensible IoT remote communication monitoring function;

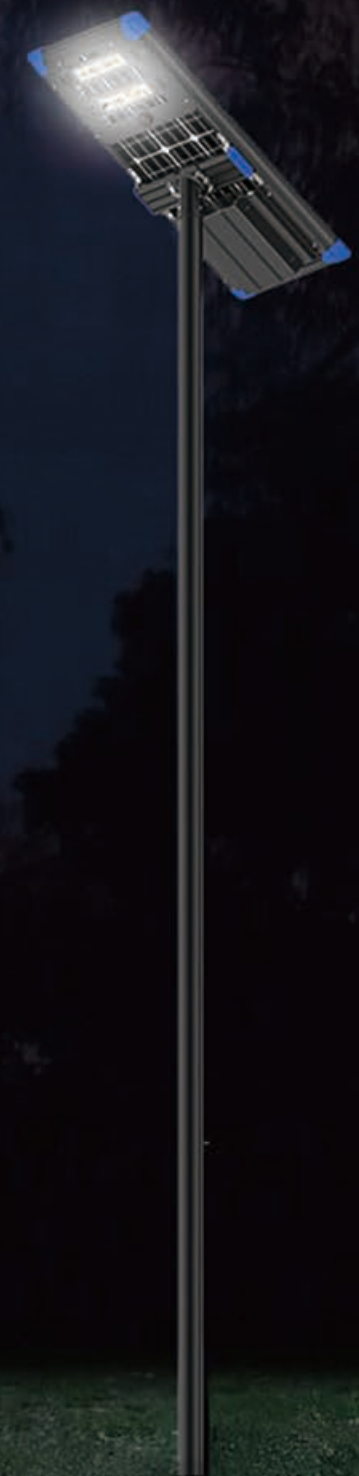
Detection distance

Remote control distance 5-8 meters, installation height and environment and other factors will affect the controller sensitivity, please refer to the actual field.
Note: Please do not place 2 or more lights within 12 meters at the same time while using the remote controller, receiving or sending may fail.



Inductive Type	θ (Angle)	h (Height of lamp rod)	d (Inductive width)
IR (Infrared)	60°	6-8m	6-10m
WB (Microwave)	65°	6-10m	7-10m

*Remote control is optional



> Bifacial Solar Panel

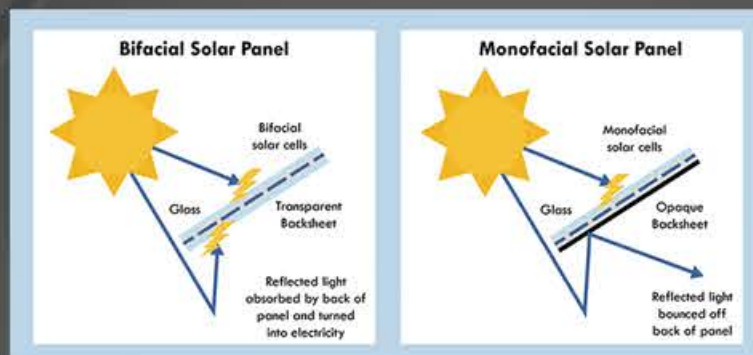
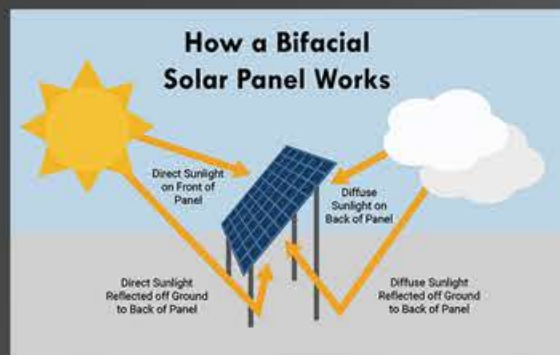


Cost-effectiveness

Cost is one of the biggest factors a big factor – particularly in the case of monofacial modules. The cost of bifacial modules has fallen precipitously over the last two decades. Notably, as costs have decreased, so too has the cost gap between mono- and bifacial modules.

High Conversion Efficiency

There is no doubt bifacial modules will increase power production. Results and studies have shown that bifacial modules can produce additional power between 10–20% over monofacial panels. If conditions are optimized and single-axis trackers adopted, the additional power can be as high as 30–40%.



Other Benefits

• Site Selection:

The site selection of the bifacial panels can be optimized. For places where land is less expensive, monofacial panels should be laid in the right direction to ensure maximum energy collection. However, bifacial modules can have optimal spacing and therefore higher yields. Also, bifacial yields are greater where the diffuse light energy is greater, which means at higher latitudes the bifacial yield will be greater than at lower latitudes.

• High Albedo:

The environment has a high albedo that is great for bifacial panels compared with monofacial panels. Desert sand is even a better option. The best option is white concrete or highly reflective roof foil. Snow and ice also have a very high albedo.

• Tilt:

More flexible than monofacial panel. Bifacial panels can receive light even at sunset. This will vary from site to site, but generally, 2~15 degrees more than the monofacial tilt has been shown to be effective.

> Application Reference

- Road lighting
- Area lighting
- Perimeter lighting

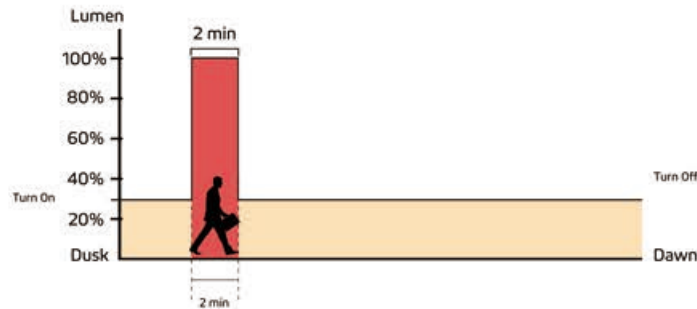


> Smart City Starts with Smart Lighting

AUTONOMY CONTROL REFERENCE

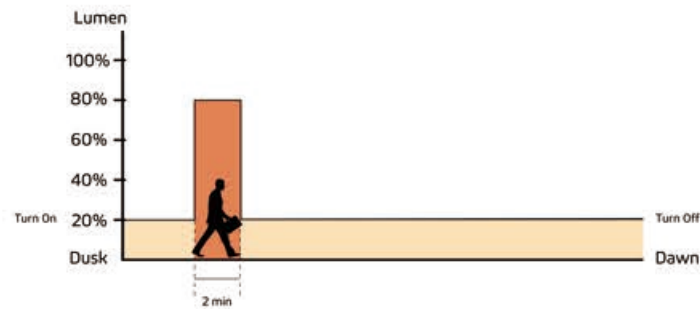
30%~100% MOTION SENSOR MODE

Constant 30% brightness (turns on at dusk, turns off at dawn);
100% brightness turns on for 2 minutes when motion is



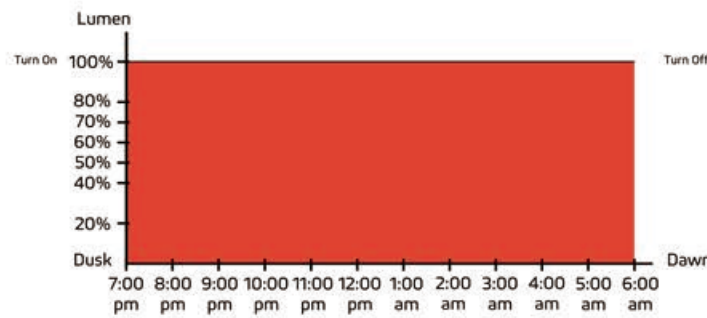
20%~80% MOTION SENSOR MODE

Constant 20% brightness (turns on at dusk, turns off at dawn);
80% brightness turns on for 2 minutes when motion is



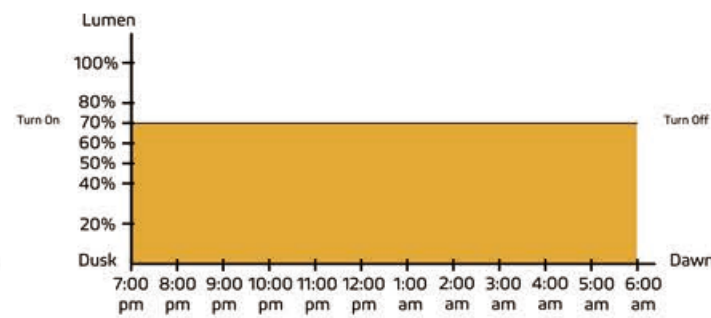
100% CONSTANT MODE

100% brightness from dusk to dawn.



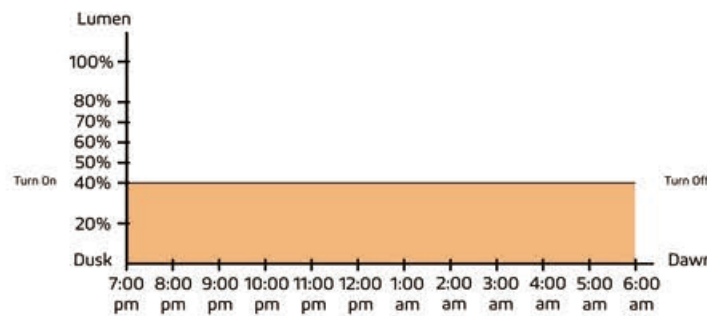
70% CONSTANT MODE

70% brightness from dusk to dawn.



40% CONSTANT MODE

40% brightness from dusk to dawn.



SMART LIGHTING CONTROL SYSTEM

FN	Signal status	Update time	street lamp brightness	Battery voltage(V)	Battery power(W)	Solar panel power(W)	Street Lamp Power(W)	F info	Operation
GA0200032797	🟢	2020-08-05 09:55:57	70	23.8	0	0	17	0.01	History Parameter
GA0200148789	🟢	2020-08-05 09:56:00	70	23.8	0	0	17	0.01	History Parameter
GA02000153079	🟢	2020-08-05 09:56:27	70	23.8	0	0	17	0.01	History Parameter
GA02000777420	🟢	2020-08-05 09:54:23	70	23.8	0	0	17	0.01	History Parameter
GA0200150064	🟢	2020-08-05 09:55:35	70	23.9	0	0	17	0.01	History Parameter
GA02000346577	🟢	2020-08-05 09:54:23	70	23.7	0	0	17	0.01	History Parameter
GA02000619581	🟢	2020-08-05 09:55:34	70	23.7	0	0	17	0.01	History Parameter


DATA & PROJECT MANAGEMENT

Number	Status	Brightness	Alarm
1	🟢	0%	70
2	🟢	0%	70
3	🟢	0%	70
4	🟢	0%	70
5	🟢	0%	70
6	🟢	0%	70
7	🟢	0%	70
8	🟢	0%	70
9	🟢	0%	70
10	🟢	0%	70

The Internet of Things 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 reduction.


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 GPRS/NB-IoT 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.

APP CONTROL




Remote monitoring real time monitoring

With wireless communication function, through the intelligent management system of solar street light and wireless module, have remote monitoring and real-time monitoring.




Automatic fault alarm

Real-time monitoring of solar panel voltage, current, power, battery charging and discharging current, voltage, load working state data, and fault automatic alarm.




Remote control

Support remote switch on/off dimmer and battery, load parameter modification.




Fault tracking and precise positioning

Multi peak PWM technology, suitable for partial shading or damage of photovoltaic cells, and the tracking efficiency is more than 99%.



Map location

Using GPS maps, with geographic display capabilities.



*Note :APP is only available in 4G scheme

> Application of Typical Networking of Smart Street Light(optional)

Strategy Control

By installing the node of the street light controller on the ambient light sensor, electric energy metering unit to collect to the street light power (voltage, current, power), and the ambient light conditions, according to the administrator deployment strategy to mobilize installed on the street light controller of the automatic control system to control the street light switch, adjust brightness, color temperature adjustment, etc.;

Gateway Control

The Lora Light wireless system with strong anti-interference ability is adopted in the wireless transmission unit of the street light controller to realize the communication between nodes and gateways. The data of various sensors on the node street lamp controller is sent back to the gateway, and the control command of the gateway is also sent to the node street light controller.

Cloud Platform

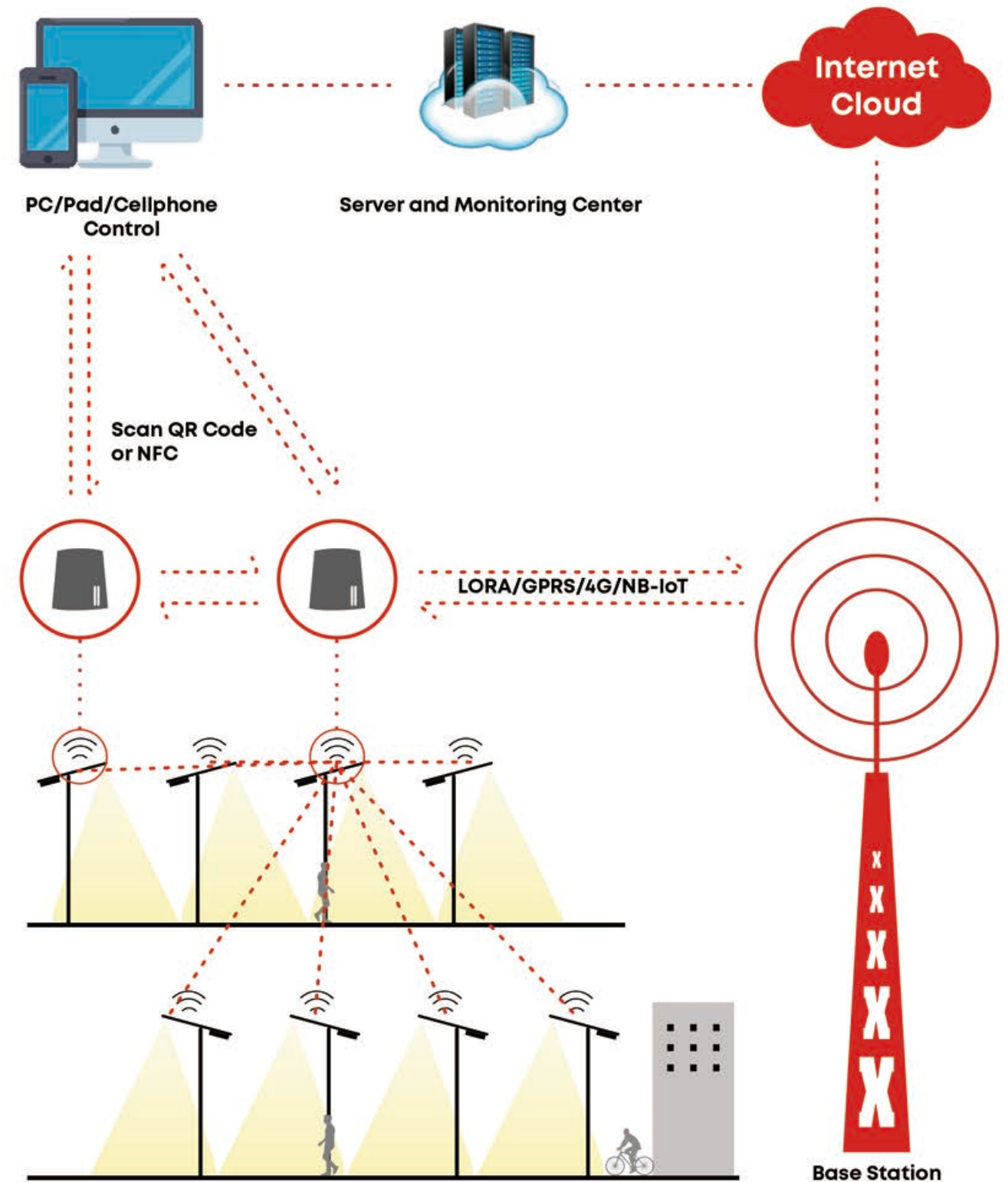
The gateway controller transmits the street light control information of all nodes under the gateway to the cloud platform through GPRS/3G/4G/NB-IOT (optional) wireless mode, and at the same time sends the instructions of the cloud platform to the street light controller of each node.

Controller GPRS/NB-IoT Inside



- Built-in IoT module (GPRS/ NB-IOT)
- Adopt Moving Track MPPT maximum power tracking technology, with higher tracking efficiency and faster speed;
- Lead-acid battery and lithium battery are universal. Operating parameters can be set by remote controller;
- Ultra green power control technology with extremely low static power consumption and dormant current;
- Lead acid battery multi-stage temperature compensated constant voltage charging;
- 10 Programmable load power/time control setting;
- Battery charging and discharging high and low temperature protection function, working temperature can be set;
- A variety of intelligent modes can be selected, automatically adjust the load power according to the battery power;
- High precision digital booster constant-current control algorithm, high efficiency and high constant-current precision;
- 2.4G wireless communication, can set read parameters, read status, etc;
- Battery/PV reverse connection protection, LED short circuit/open circuit/limited power protection and other multiple protection functions.

APPLICATION OF TYPICAL IOT NETWORKING



Parameter Table

Electrical Data

Model	AOK-60WsE02	AOK-80WsE02	AOK-100WsE02
Power	60W	80W	100W
Control Option	Photocell sensor, timing, dimming, intelligent power saving, microwave sensor. LoRa, NB-IoT Smart Lighting Control		
Operating temperature	-40°C to 50°C (-40 °F to 122 °F)		
Driver brand	Meanwell		
Surge Protection	4kV optional		

Photometric Data

LED Manufacturer	SOUEL		
LED model	SOUEL 5050		
Lens	Polycarbonate		
Efficacy(lm/W)	180lm/W	180lm/W	180lm/W
Luminous flux(lm)	10800lm	14400lm	18000lm
ULOR	= 0%, @ Luminaire inclination 0°		
CCT	3000K, 4000K, 5000K, 5700K, 6500K		
CRI	70Ra, 80Ra, 90Ra optional		
Beam angle	Type II/ Type III/ Type IV		

Mechanical Data

IP Rating	IP65, according to standard EN 60529		
SCx	Front: 0.71 m ² ; Front-side: 0.07 m ² ; Side: 0.12 m ² ;	Front: 0.95 m ² ; Front-side: 0.07 m ² ; Side: 0.15 m ² ;	Front: 1.12 m ² ; Front-side: 0.07 m ² ; Side: 0.16 m ² ;
Housing	Heavy-duty die-cast aluminum (EN AC-46100)		
Surface treatment	Anti-UV thermosetting polyester / 80 micron epoxy primer + Anti-UV thermosetting polyester (for extremely corrosive environments).		
Painting	Black, Custom request		
Mounting	Post top		

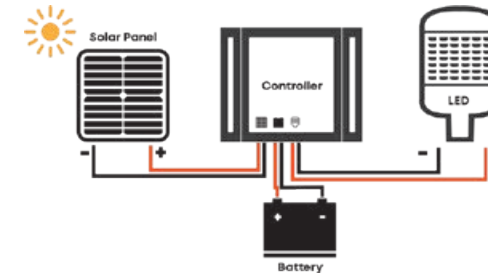
Solar Panel Data

Photovoltaic panel	Double crystal photovoltaic panel		
Solar Panel	18V/100W	36V/130W	36V/160W
Li-on Battery	538WH	768WH	922WH
	12.8V 42AH	25.6V 30AH	25.6V 36AH
Charing Time	6hrs	6hrs	6hrs
Battery lifespan	>2000 times cycle		
Run Time(@full power)	8hrs		
Working Temperature	-10°C to 50°C (14°F to 122°F)		
Storage Temperature	-20°C to 45°C (-4°F to 113°F)		
Charing Temperature	-0°C to 45°C (32°F to 113°F)		
Control system	MPPT intelligent controller		
Maximum Autonomy	Operate under 2-3 rainy days		

Others

Lifespan	L90B10 - 52 000 h, @Ta 25°C		
Warranty	3 years (Warranty extension up to 5 years on request)		
Certification	UL/ CUL FCC SAA RCM CE RoHS, For other certificates please request		
Product Size	1152*522*225mm	1532*522*225mm	1812*522*225mm
Net Weigh	24kg	31kg	37kg
Carton Size	1429*600*195mm	1789*600*195mm	2089*600*195mm
Gross Weight	26kg	33kg	39kg
Recommend installation	8-9M(26-29ft)	10-11M(32-36ft)	12-13M(39-42ft)
Application field	Urban and rural street		

Working Way



The solar panel receives solar radiation energy and converts it into electricity, which is stored in the battery by the photovoltaic controller. At night, when the illumination gradually decreases to about 10LUX and the solar panel voltage is 5V, the charge and discharge controller detects this voltage value, and controls the battery to discharge for the LEDs to complete the process of daytime charging and evening discharge.

Ordering Information

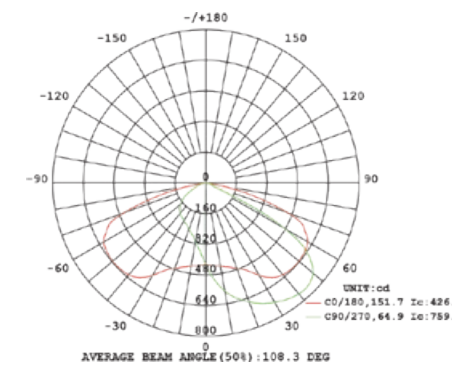
AOK-	WATTS	VOLTAGE	LED CHIPS	TYPE OF SENSOR	CCT&CRI	DISTRIBUTION	MOUNT	COLOR
60WSE02		NV1=12.8V DC	L3=LUMILED 3030	00=Without Sensor	3070=3000K 70CRI	T2=TYPE II	A=Post Top	BK=Black
80WSE02		NV2=25.6V DC	L5=LUMILED 5050	SN=Motion Sensor	4070=4000K 70CRI	T3=TYPE III		
100WSE02			S5=SOUEL 5050	PH=Photocell DV=Dimmable	5070=5000K 70CRI 5770=5700K 70CRI 6570=6500K 70CRI 3080=3000K 80CRI 4080=4000K 80CRI 5080=5000K 80CRI 5780=5700K 80CRI 6580=6500K 80CRI	T4=TYPE IV		

Accessories

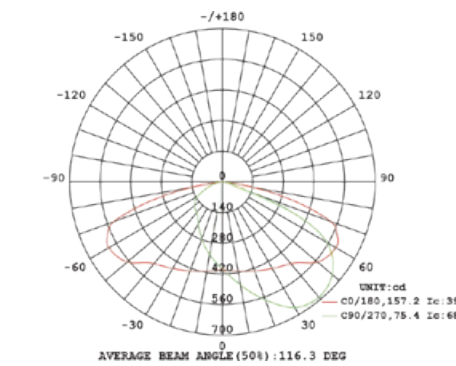
- 4KV SPD
- Intelligent APP control
- IOT Management

Photometry

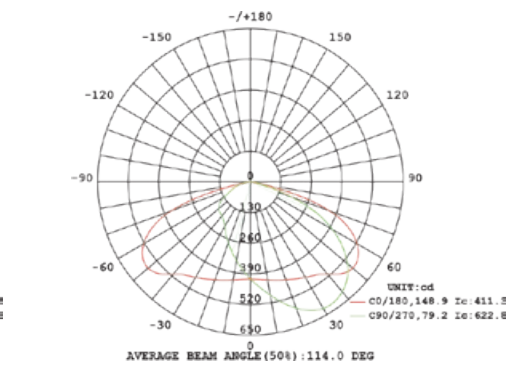
Type II



Type III

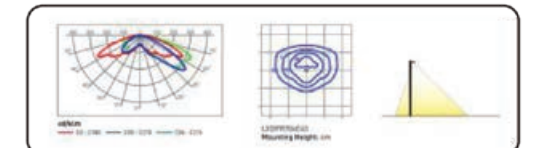
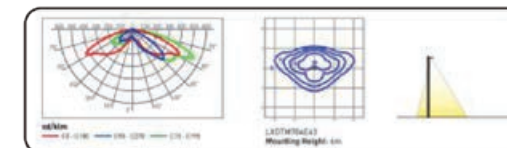


Type IV



Type 2 for street lighting, cycle paths and footpaths

Type 3 for street light and car parks



SE02 Series Specification Sheet

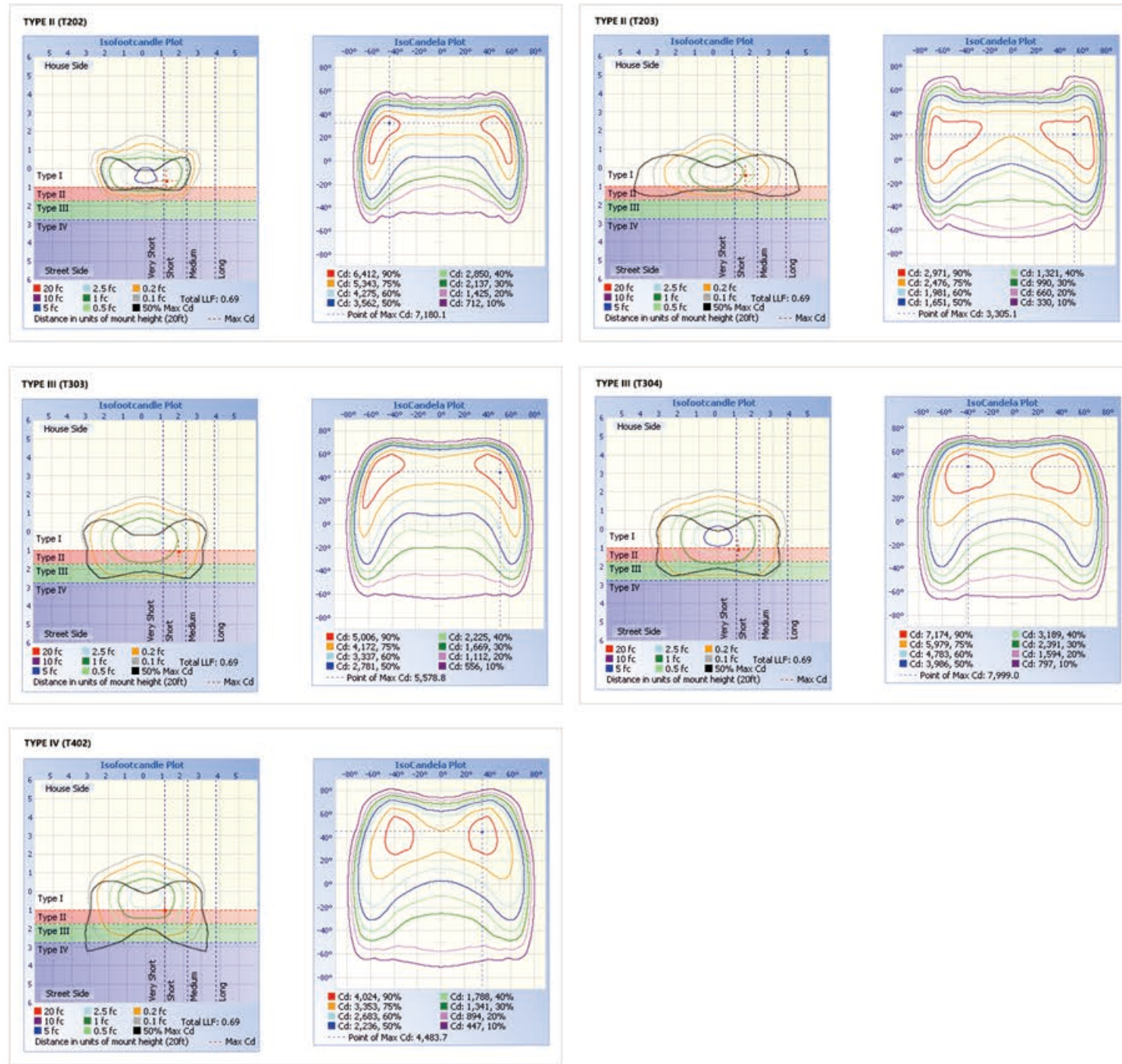
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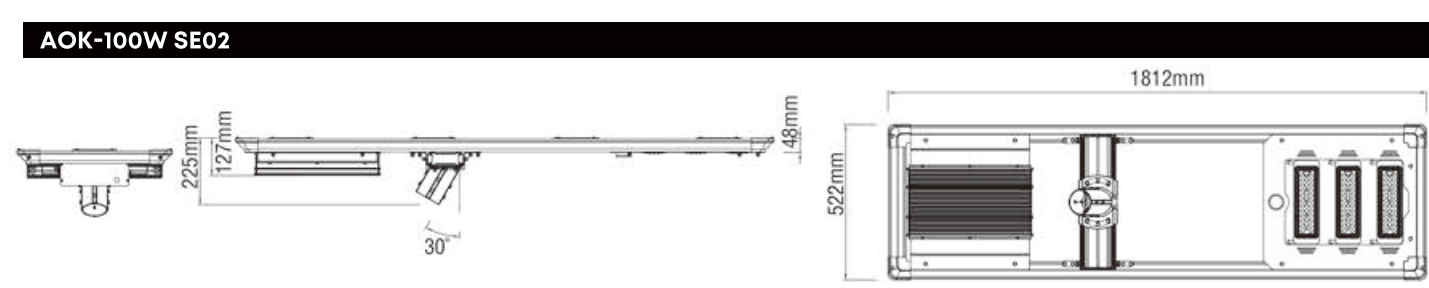
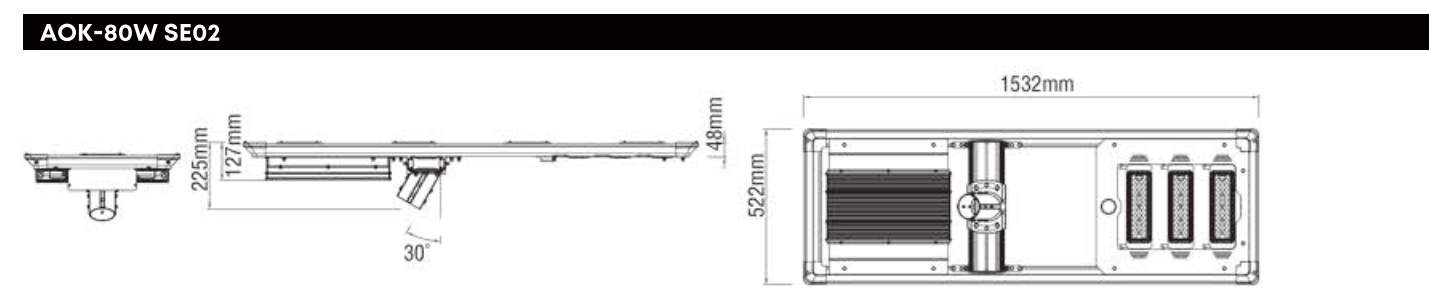
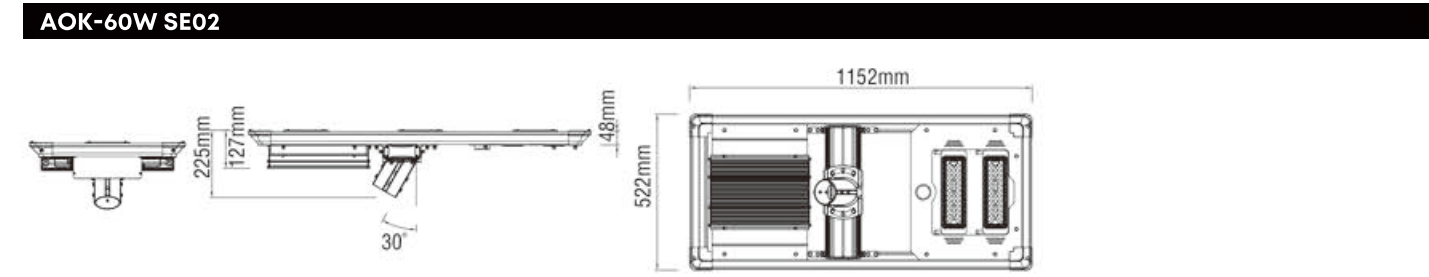
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Illuminance Diagram



Dimensions



Accessories



*As the products are upgraded, the accessories may differ from those described in the pictures. Please consult with our sales team for updated details and order separately.



SE02 Series Specification Sheet

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Illuminate Your Future



3 Year Limited Warranty,
5 Year Preferred Warranty.
Please consult with our sales for detailed agreement.

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