



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

**Better Performance
Starts From Better Lighting**
www.aokledlight.com


> Features of SE02 Series

Solar cells in outdoor lighting systems harness sunlight and transform it into electricity, which is then stored in batteries to power the lights during nighttime hours. The SE series solar lights are straightforward to set up and demand minimal maintenance. The utilization doesn't contribute to higher electricity costs.

- The SE02 Solar LED Street Light boasts an all-in-one design with functions such as a discreet profile, integrated photocell sensor, timing capabilities, dimming options, intelligent power conservation, morning light activation, and the availability of a microwave sensor.
- 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.



KEY ADVANTAGES

- 
• Monocrystalline Silicon Solar Panel
 25 years lifespan ensures durability
- 
• Bifacial Solar Panel Optional
 Conversion rate up to 21%
- 
• High Lumen Output
 High-performance LEDs efficacy >180lm/W
- 
• Rotatable LED Modules
 Enhanced precision in adjusting the illumination angle
- 
• Long Lifespan Li-ion Battery & MPPT
 Intelligent temperature control guarantees prolonged operation and safeguards battery lifespan
- 
• Grid Hybrid Solution Optional
 Grid Hybrid Power optional, increased adaptability to fulfill project demands
- 
• Intelligent Lighting Control
 Smart time-based lighting control, aligning with lighting requirements flexibly.

> Photometrics Design

Lumen efficiency >180lm/W achieve higher illumination

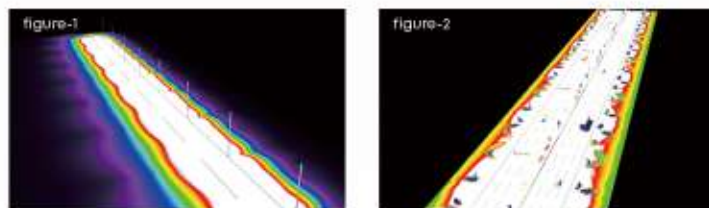


Seoul 5050 LED chip creates a first-class light source. By choosing it, single lumen efficacy >180lm/W, with the aluminum lamp base and sealed lens, with its excellent heat dissipation, it is as if the LED chip has been placed in a sealed unit. Thus it maintains high brightness levels with very little 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

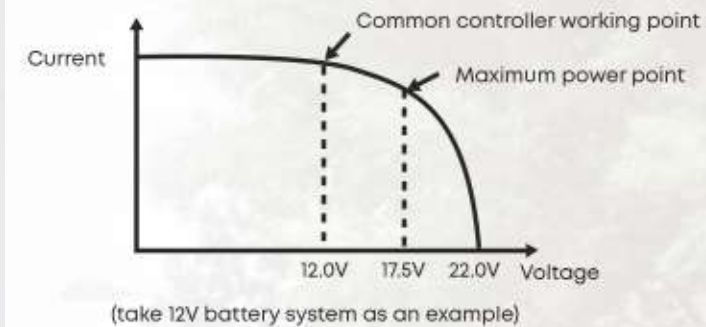


Figure-1: Example of rural branch road
Figure-2: Example of main road or avenue



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.

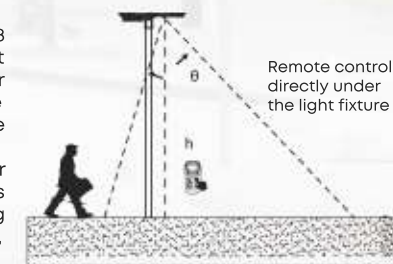
Advantages of controller



- 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 (alternative)	θ-Angle (X-axis rotation: 360°)	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

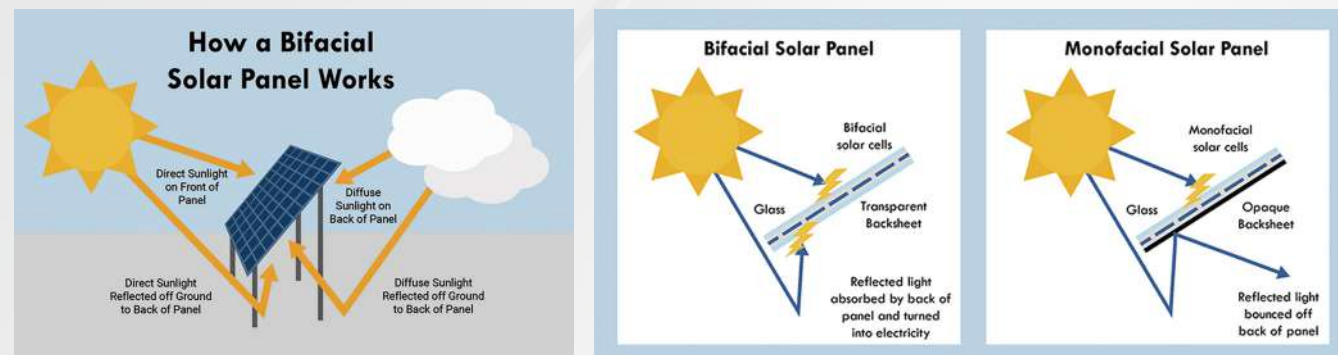


Cost-effectiveness

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 & street lighting
- Residential area lighting
- Garden, parks & perimeter lighting
- Parking lot lighting
- Industrial and commercial park lighting
- Railway & station side lighting
- Riverside & jogging track lighting

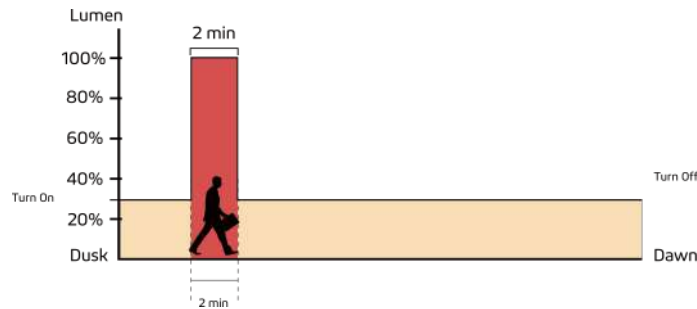


> Smart City Starts with Smart Lighting

AUTONOMY CONTROL REFERENCE

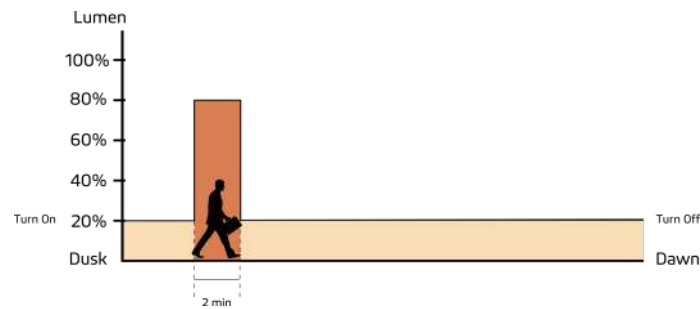
30%~100% MOTION SENSOR MODE

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



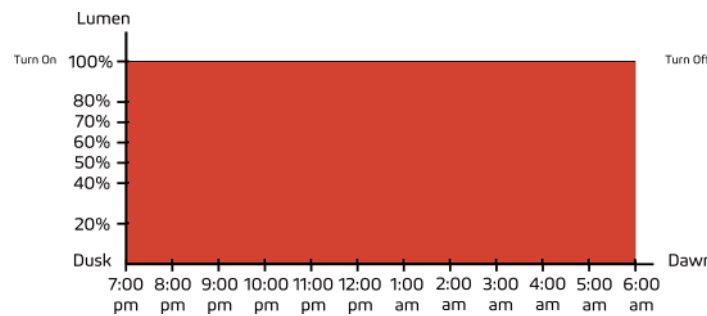
20%~80% MOTION SENSOR MODE

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



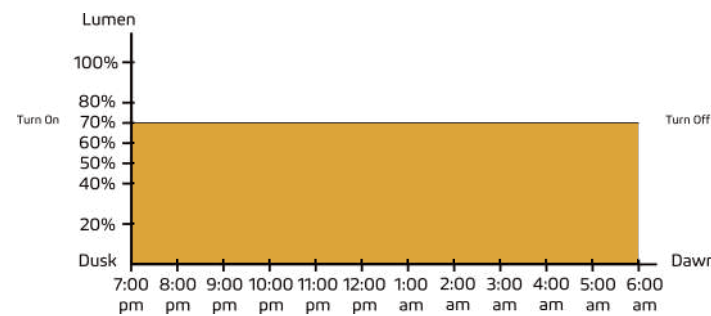
100% CONSTANT MODE

100% brightness from dusk to dawn.



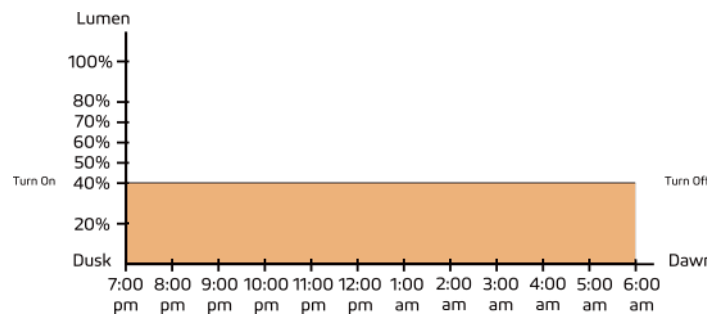
70% CONSTANT MODE

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
GA52020357797	🟢	2020-08-05 09:06:57	70	23.8	0	0	17		Edit History Parameter
GA520201497699	🟢	2020-08-05 09:06:59	70	23.8	0	0	17		Edit History Parameter
GA520201753578	🟢	2020-08-05 09:06:27	70	23.8	0	0	17		Edit History Parameter
GA520200777420	🟢	2020-08-05 09:04:23	70	23.8	0	0	17		Edit History Parameter
GA520201932064	🟢	2020-08-05 09:06:35	70	23.9	0	0	17		Edit History Parameter
GA52020346677	🟢	2020-08-05 09:04:23	70	23.7	0	0	17		Edit History Parameter
GA520200619501	🟢	2020-08-05 09:06:34	70	23.7	0	0	17		Edit History Parameter


DATA & PROJECT MANAGEMENT

Number	Lamp number	Lamp status	Network status	Update time	Brightness(%)	Wireless module address	Lamp power(W)	Charging stage
1	100001	🟢	🟢	2020-08-05 09:06:57	70%	80000000	17.0	There is no charge
2	100002	🟢	🟢	2020-08-05 09:06:59	70%	80000000	17.0	There is no charge
3	100003	🟢	🟢	2020-08-05 09:06:27	70%	80000000	17.0	There is no charge

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, controller 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)



Single lamp control

Control street light switch, brightness adjustment, current acquisition. Voltage acquisition, power calculation and power factor functions.



Wireless network

From the device to the cloud, NB-IoT, GPRS, LTE and other cellular networks are used, without cabling.



Fault management

The street light can automatically report fault information, troubleshoot faults through the platform, and query historical faults.



Energy management

Supports online monitoring and storage of energy consumption and configuring energy saving policies.



Intelligent monitoring

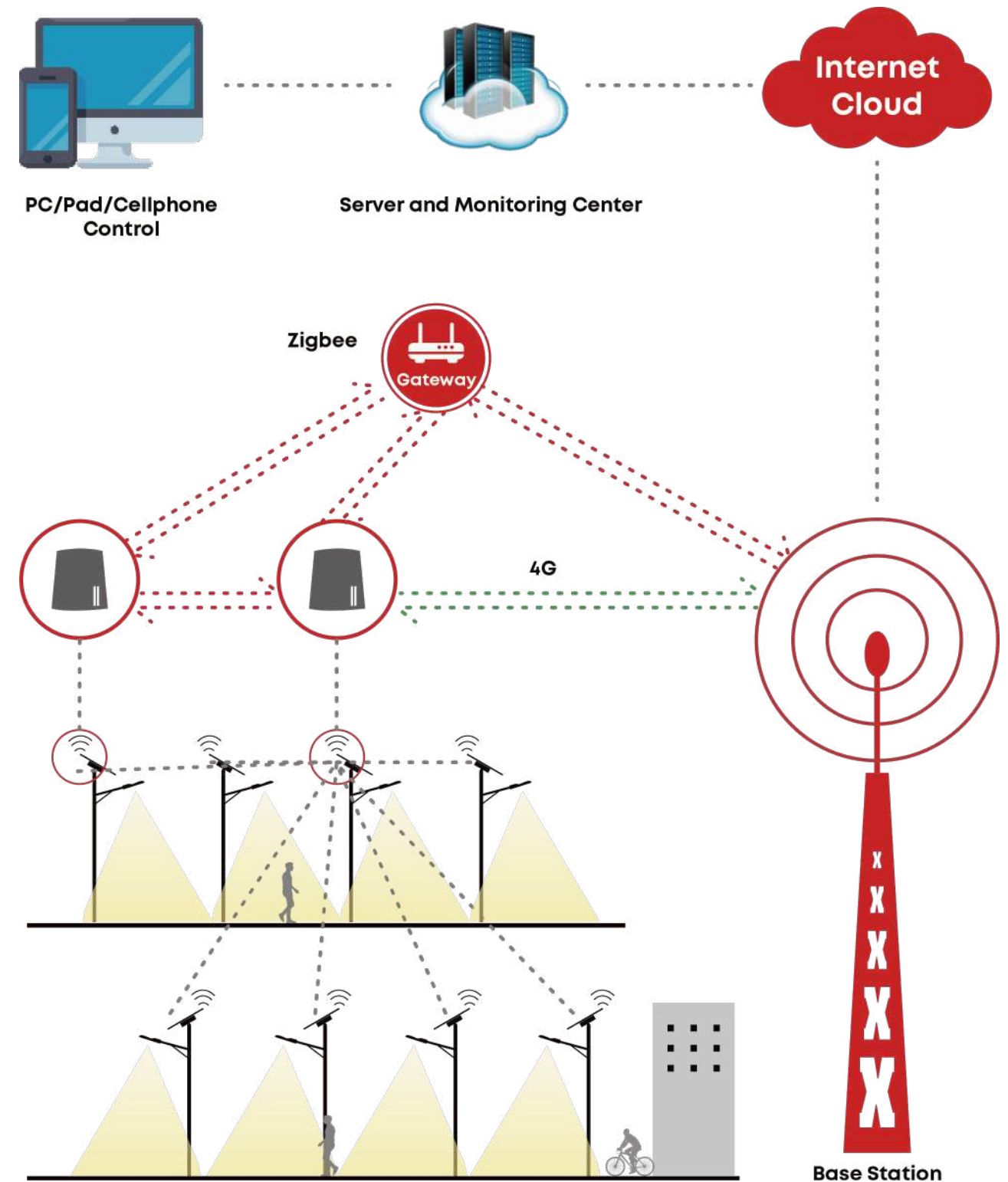
Support remote monitoring and remote control through PC web and mobile APP.



Big data analysis

Based on the massive data of the platform, street light fault analysis and energy consumption analysis can be carried out to provide a basis for the maintenance of street light equipment to save energy and reduce consumption.

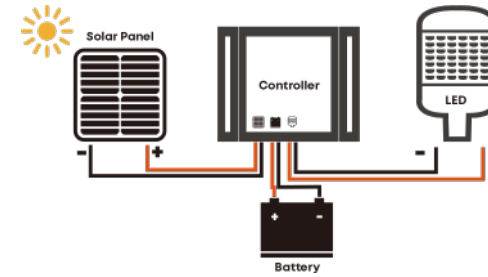
APPLICATION OF TYPICAL IOT NETWORKING



Parameter Table

Electrical Data			
Model	AOK-60WsE02	AOK-80WsE02	AOK-100WsE02
Power	60W	80W	100W
Input voltage	12-24V DC		
THD	<20%		
PF	>0.95		
Control Option	Photocell sensor, timing, dimming, intelligent power saving, microwave sensor. Controller IoT-4G/Zigbee		
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,Std. Dev. ±5%)	180lm/W	180lm/W	180lm/W
Luminous flux(lm,Std. Dev. ±5%)	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 m²; Front-side: 0.07 m²; Side: 0.12 m²;	Front: 0.95 m²; Front-side: 0.07 m²; Side: 0.15 m²;	Front: 1.12 m²; Front-side: 0.07 m²; Side: 0.16 m²;
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, Customized color		
Mounting	Post top		
Configuration 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		
Ambient 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 - 100000 hrs, @Tq 25°C		
Warranty	3 years in standard, 5 years optional		
Certification	FCC CE RoHS,For other certificates please request		
Product Size	1152*522*225 mm / 45.4*20.6*8.9 inches	1532*522*225mm / 60.3*20.6*8.9 inches	1812*522*225mm / 71.3*20.6*8.9 inches
Net Weight	24kg / 52.91 lbs	31kg / 38.34 lbs	37kg / 81.57 lbs
Carton Size	1429*600*195mm / 56.3*23.6*7.7 inches	1789*600*195mm / 70.4*23.6*7.7 inches	2089*600*195mm / 82.2*23.6*7.7 inches
Gross Weight	26kg / 57.32 lbs	33kg / 72.75 lbs	39kg / 85.98 lbs
Recommend installation height	8-9M(26-29ft)	10-11M(32-36ft)	12-13M(39-42ft)
Recommend installation distance	28-32M(92-104ft)	30M-44M(98-144ft)	33-50M(108-164ft)
Application field	Road & street, residential area, garden, parks, parking lot, industrial and commercial parks, railway & station side, riverside & jogging track		
Important note!	The provided information is solely for reference; the official measurement report holds higher authority.		

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.

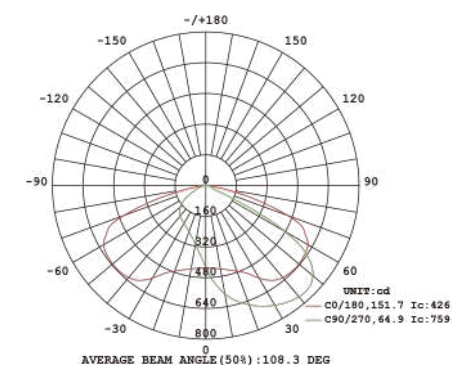
Ordering Information

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

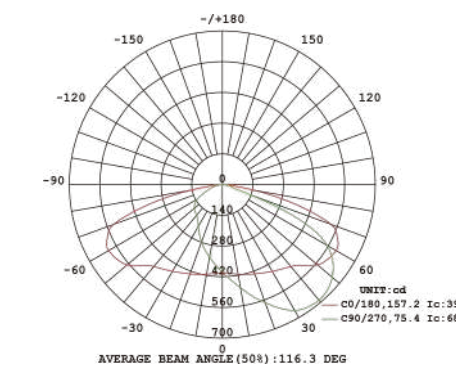
Accessories
Intelligent APP control
IOT Management

Photometry

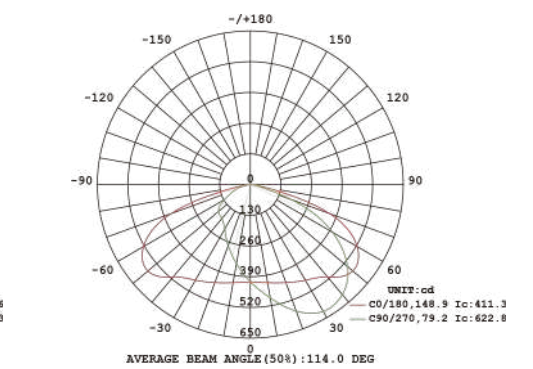
Type II



Type III

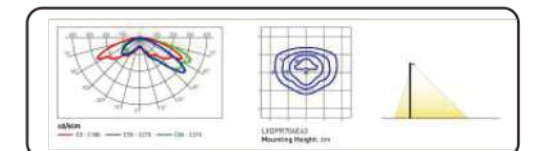
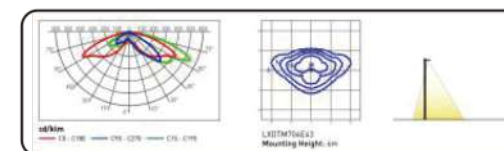


Type IV



Type 2 for street lighting, cycle paths and footpaths

Type 3 for street light and car parks



SE02 Series Specification Sheet

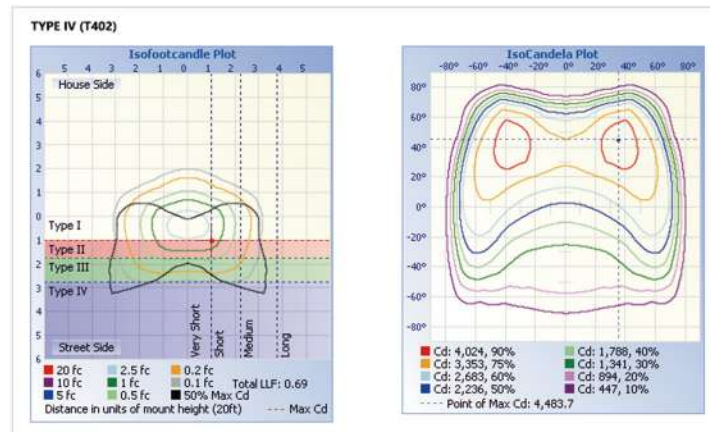
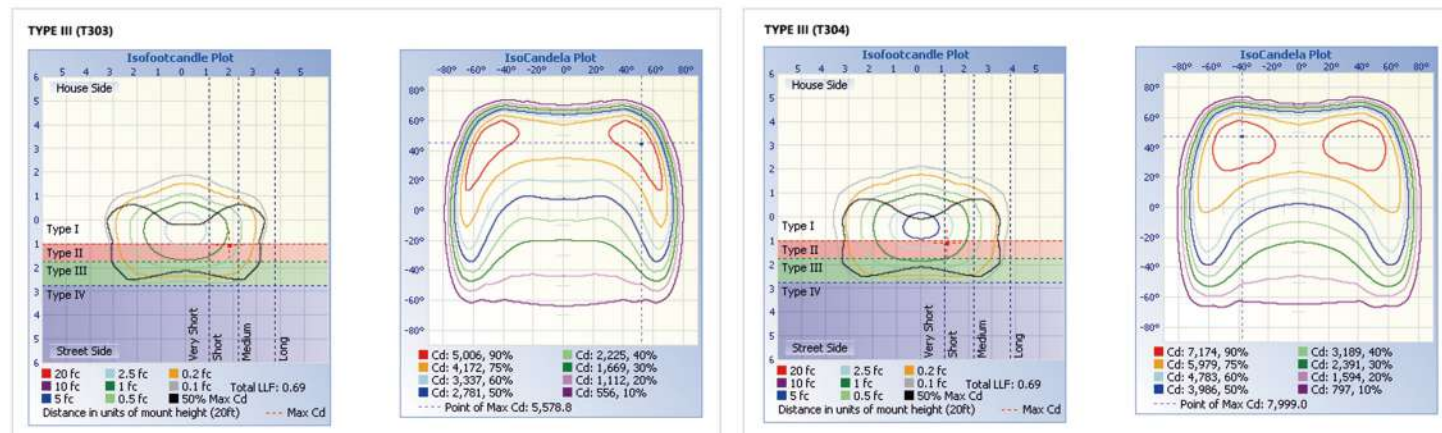
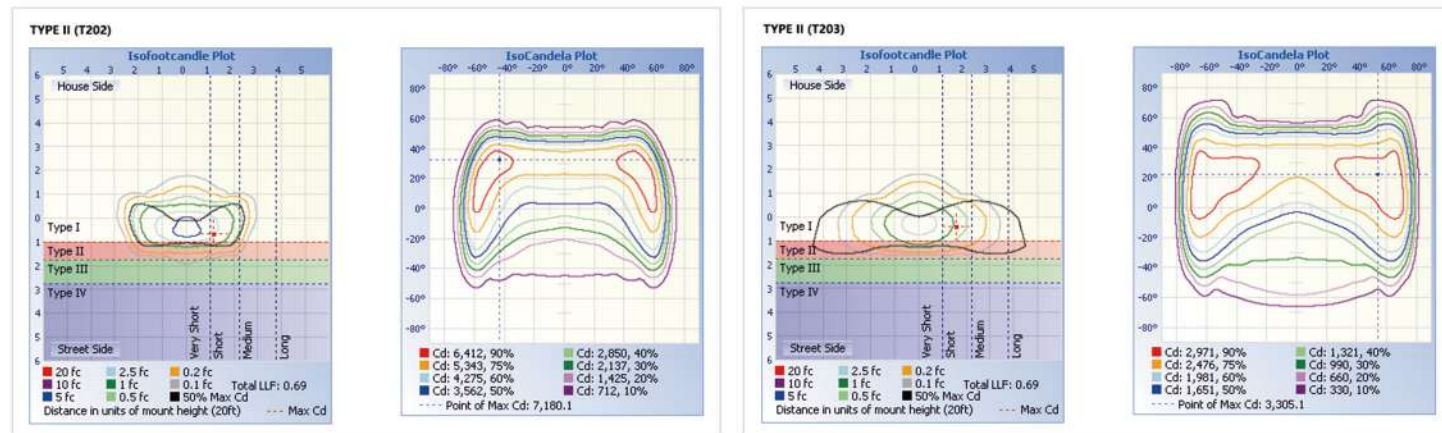
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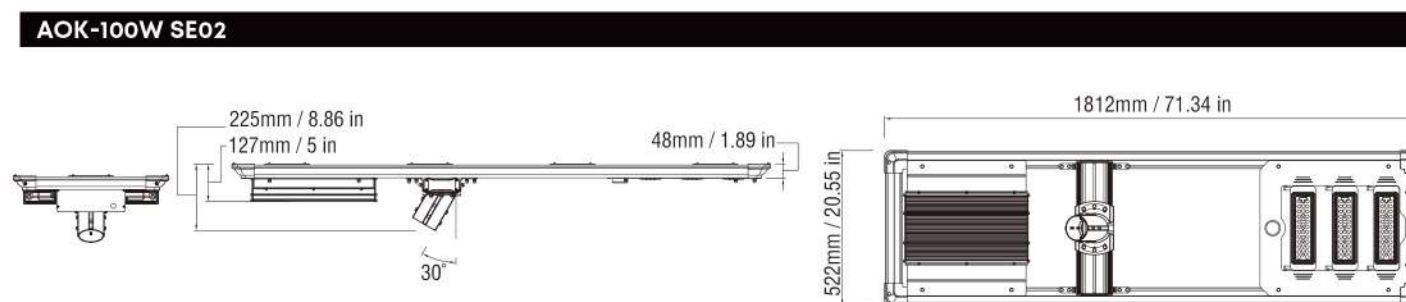
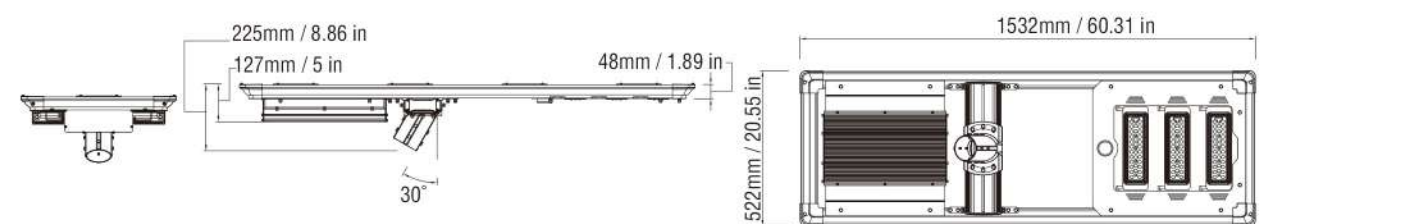
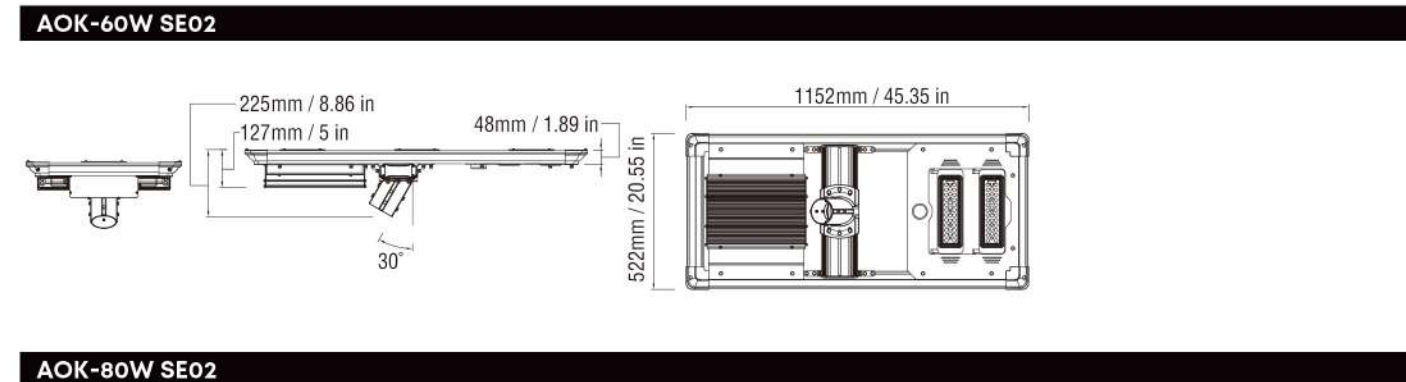
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Illuminance Diagram



Dimensions



Accessories



PIR/microwave Motion Sensor



MPPT 4G/Zigbee-IoT

Caution:
Accessories need to be ordered separately. 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 **5** **WARRANTY**
3 Year Limited Warranty,
5 Year Preferred Warranty.
Please consult with our sales for detailed agreement.

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