



# PV18150 Series

The all-in-one solar powered LED street light

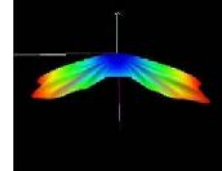
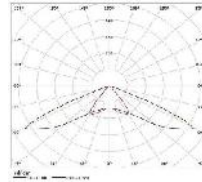


## General Characteristic

Body structure	PV18150 is an all-in-one solar LED street light. It integrates all lighting components with the photovoltaic panel into a unique self-powered DC driven luminaire. The LED modules, controllers, lithium ion battery pack and other accessories are integrally assembled on the reverse side of the PV frameworks.
Mounting assembly	Slot pole type mounting assembly is fixed to the reverse side of the PV panel with specific tracking angle.
Thermal management	Framework of the PV panel is made of high-grade aluminum alloy that provides adequate surface for LED modules heat dissipation.
Surface treatment	The framework of PV panel is anodized in light-grey color
Wind resistant	Beaufort scale #8
Rated life span	≥50000 hours (L70 @IEC LM80)
Ingress protection	IP67
Certification	EMC, LVD compliant

## Light Characteristic

Light source	CREE 3030 or equivalent
LED module	Modular unit
Color temperature	3000K (K3); 4000K(K4); 5000K(K5)
Color rendering index	Ra ≥75
Luminous efficacy	≥110 lumen per watt
Secondary lens	Asymmetrical lens (see pattern below)



Typical asymmetrical lens pattern (140 imax / 70 imax)

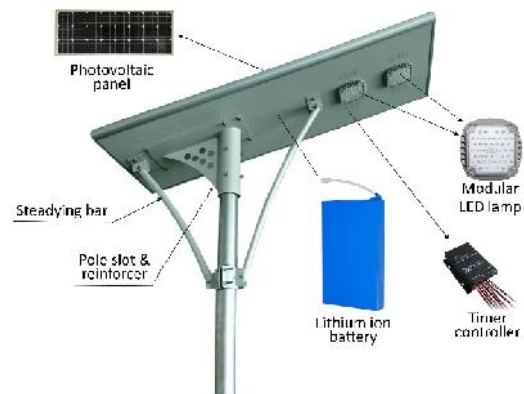
Glaring index	UGR ≤25
Module safety	IEC 62031 compliant
Photo biological safety	IEC 62471 compliant
Operation temperature	-20° ~+60°C (max)

Free  
-20° ~+60°

## The System Composition

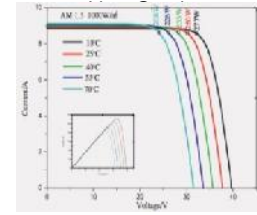
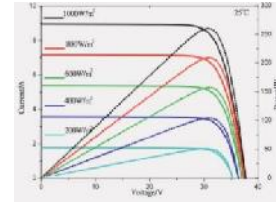
The diagram on right exhibits the system composition and the mounting mechanism of PV18150 all-in-one solar street light. All components and mounting structure are uniquely assembled on the reverse-side of the photovoltaic panel framework, which include modular LED lamps, sunray convertor, lithium ion battery, timer controller and pole slot with reinforcement parts, etc. Supply of lamp pole is excluded.

The mounting structure are integrally secured behind the framework of PV panel. A triangle reinforcer is welded to the pole slot with specific directional angle for optimal absorption the sunlight to converting into electricity. Two pieces of steadying bar are respectively mounted behind the framework of PV panel on one side. The other end of the steadying bars is fastened to the lamp pole for prevention of the directional angle of PV panel being revolved caused by wind blow.



### Photovoltaic Generator

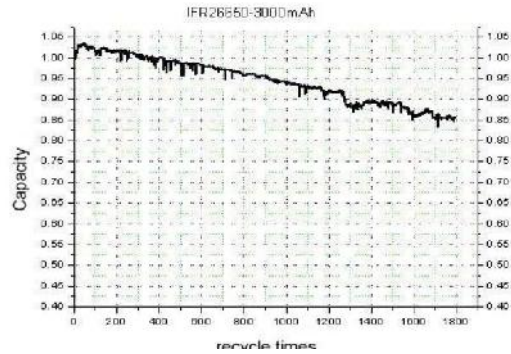
Photovoltaic type	Monocrystalline silicon
Mounting of PV panel	Non-tracking
Assembly package	3 x 8 solar cells
Sunlight conversion rate	>18%
Open voltage	21.24V
Maximum voltage ( $V_{MPP}$ )	18.00V
Normal power ( $P_{MAX}$ )	150W
Module efficiency	>17%
Module irradiance (STC)	1000W/m <sup>2</sup> (solar spectrum AM1.5)
Output tolerance	±3%
Fill factor (FF)	74.4%
Sunlight shining time	Approximately 6 hours
Working temperature	-40°C ~ +85°C
Life span	25 years



I-MPP Graph

### Lithium Ion Phosphate Battery (LiFePo4)

Battery type	12V 108Ah LiFePo4 lithium ion
Battery model #	3S21OLF32650E5000
PV convertor	12V 15A MPPT charger
Charging time	4-5 peak sun hours
Charging current	Constant voltage 14.6V @0~45°C
Discharge current	0.5°C constant current 8.0V
Charge ending	14.6V
Discharge ending	11.0V
Standard charging time	2-3 hours
Rapid charging time	1.0-1.5 hours
Power supply capacity	4 x 12 hours per day
IP rating of battery box	IP65
Operating temperature	-20° ~ +60°C



The above graph shows that battery capacity still remains 85% after the recycle time reach 1800s.

### Product Specification

Assembly type A  
Single LED module  
(low-pole street light)



Assembly type B  
Twin LED module  
(high-pole street light)



Model #	Product Code	Assembly Type	Rated Power	Luminous Efficacy	PV Type	Battery Type	Mounting Height
PV18050-C30018W020	SAR-L020	A	20W	2400lm	18V 50W	Li-ion 18Ah	4~5M
PV18050-C30021W025	SAR-L025	A	25W	3000lm	18V 50W	Li-ion 21Ah	5~6M
PV18060-C30021W030	SAR-L030	A	30W	3600lm	18V 60W	Li-ion 21Ah	5~6M
PV18060-C30024W040	SAR-L040	A	40W	4800lm	18V 60W	Li-ion 24Ah	6~7M
PV18090-C30036W050	SAR-L050	B	50W	6000lm	18V 90W	Li-ion 36Ah	6~7M
PV18090-C30042W060	SAR-L060	B	60W	7200lm	18V 90W	Li-ion 42Ah	7~8M
PV18130-C30048W070	SAR-L070	B	70W	8400lm	18V 130W	Li-ion 48Ah	7~8M
PV18130-C30054W080	SAR-L080	B	80W	9600lm	18V 130W	Li-ion 54Ah	8~9M
PV18150-C30078W100	SAR-L100	B	100W	11000lm	18V 150W	Li-ion 78Ah	9~10M