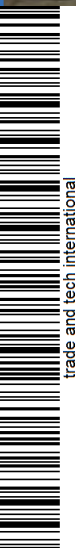




# TRADE & TECH INTERNATIONAL



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*Make life full of hope*

# LiFePO4 BATTERY SYSTEM

## LPBT series 24200~48200

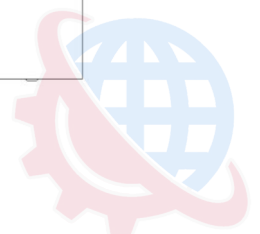
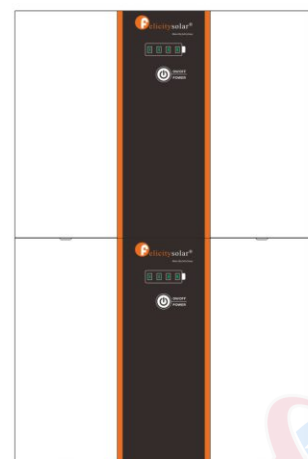


### Product Description

eStrong series is designed for residential and commercial Energy Storage applications, with LiFePo4 chemistry battery which has been widely recognized as one of the safest battery technologies.

### Product Advantages

- 3000 times deep cycle charge and discharge .
- Iron phosphate-lithium power battery .
- Higher energy density, smaller volume for household.
- Support connected in parallel mode for expansion.
- Photovoltaic system: This battery pack is designed for household photovoltaic systems.
- Battery management system (BMS): The battery packs built-in BMS monitors its operation and prevents the battery from operating outside design limitations.

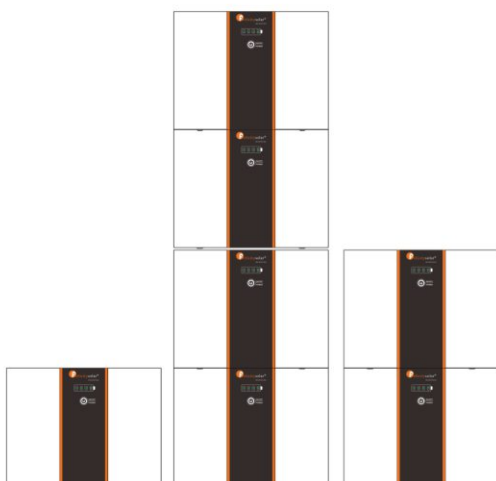


## PRODUCT PARAMETERS

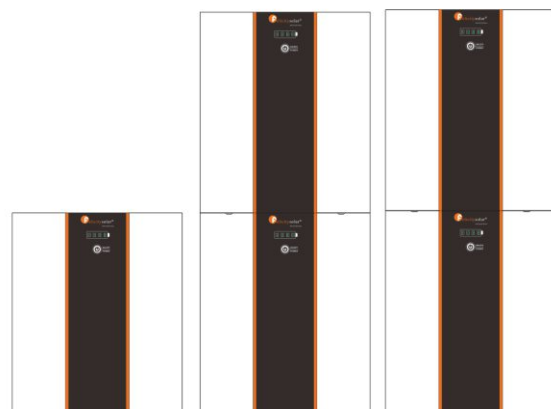
Model	LPBT24200	LPBT48200
Capacity	200AH	200AH
Voltage	24V	48V
Rated Voltage	25.6V	51.2V
Charge Voltage	28.8V	57.6V
Discharge Voltage Range	24-28.8 V	48-57.6V
MAX. Charge & Discharge Current	120A	
DOD	0.9	
Modules Connection	1~6 in parallel	
Communication	CAN & RS485	
Ingress Protection	IP21	
Cycle Life	>3000,@25°C	
Working Temperature Range	-10~50°C	
Net weight(kg)	37.3KG	68KG
Gross weight(kg)	39.8KG	77.4KG
Dimension(MM)	485*370*240MM	485*573*240MM

### Introduction to Parallel Connection

One group of LPBT24200 can be stacked up to 4 layers, and up to 6 in parallel connection  
 One group of LPBT48200 can be stacked up to 2 layers, and up to 6 in parallel connection.



LPBT24200 Over view



LPBT48200 Over view



# SOLAR INVERTER

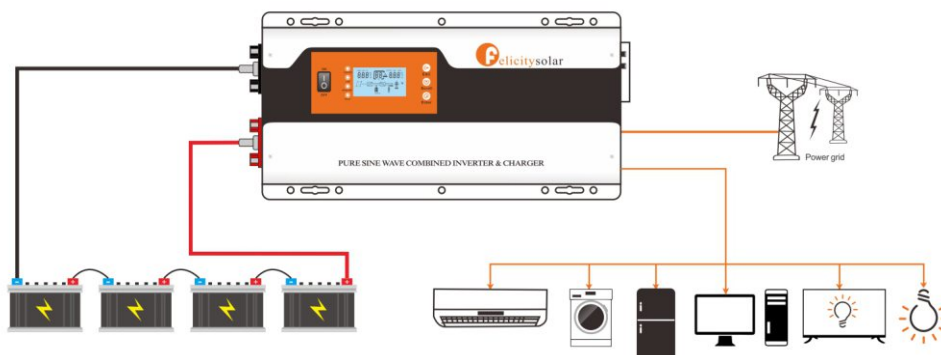
## IVPL Series 2.5~7.5KVA

Upgrade system, Stronger protection



### Product Advantages

- Bypass charging function, AC charge available When the unit off.
- 90-280V AC Widely input voltage.
- Grid electricity and battery power priority is optional.
- Higher charge current and adjustable
- Communicate with our MPPT charge controller.
- Intelligent protection, higher class of security.



## PRODUCT PARAMETERS

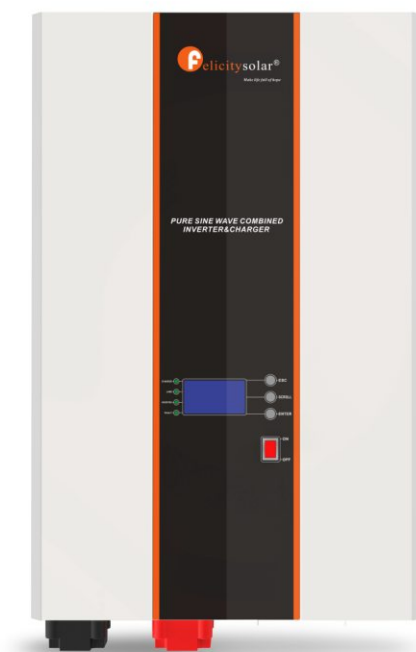
Model	FL-IVPL2512-2500VA	FL-IVPL3524-3500VA	FL-IVPL3548-3500VA	FL-IVPL5048-5000VA	FL-IVPL7548-7500VA
Rated Output Power(W)	2500VA / 2000W	3500VA / 3000W	3500VA / 3000W	5000VA / 4000W	7500VA / 6000W
Nominal DC Input Voltage	12V	24V	48V	48V	48V
<b>Charge &amp; Line Mode Specifications</b>					
Nominal Input Voltage	220Vac				
Low Line Disconnect	90Vac±7Vac				
Low Line Re-connect AC Input Range	100Vac±7Vac				
High Line Disconnect	280Vac±7Vac				
High Line Re-connect	270Vac±7Vac				
Output Voltage Waveform	as same as input waveform				
Over-Load Protection(SMPS load)	AC 30A				AC 40A
Output Short Circuit Protection	AC 30A				AC 40A
Efficiency(Line mode)	≥95% (Rated R load, and battery is full charged)				
Transfer Time (AC to DC)	15ms(typical)				
Transfer Time (DC to AC)	15ms(typical) / 30s(special)				
Pass Through Without Battery	Yes				
Input Overload Current	AC 30A				AC 40A
Nominal Output Voltage	dependent on battery type				
MAX Charge Current	DC 40A		DC50A	DC60A	
Charge Current Regulation	charge current adjustable : 0A,10A,20A,30A,40A			0 - 50A	0 - 60A
Breaker Size	dependent on battery type or Self-defined				
Over Charge Protection	Yes				
Algorithm	AGM				
	Flooded				
	Self Defined				
<b>Invert Mode Specifications</b>					
Output Voltage Waveform	pure sine wave				
Nominal Output Voltage	220Vac ±5%				
Nominal Output Frequency(Hz)	50±0.3Hz/60±0.3Hz ( adjustable )				
Over-load Protection (SMPS)	60s@≥150% load; 120s@105%-150% load				
Surge rating	2* rated power for 5 seconds				
Capable of starting electric	Yes				
Output Short Circuit Protection	Yes				
Output overload current	AC 30A				AC 40A
Nominal DC Input Voltage	12Vdc	24Vdc	48Vdc	48Vdc	48Vdc
Low Battery Alarm	11.5V / 23V / 46Vdc@ load < 50%; 11V / 22V / 44Vdc@ load >= 50%;				
Low Battery Recovery	11.75V / 23.5V / 47Vdc@ load < 50%; 11.5V / 23V / 46Vdc@ load >= 50%;				
Low DC Input Shut-down	10.75V / 21.5V / 43Vdc@ load < 50%;10.5V / 21V / 42Vdc@ load >= 50%;				
High DC input Alarm & Fault	15.75Vdc±0.4V / 31.5Vdc±0.4V / 63Vdc±0.4V				
High DC input Recovery	15.5Vdc±0.4V / 31.0Vdc±0.4V / 62Vdc±0.4V				
Operating Temperature	0°C to 40°C				
Range Storage temperature	-15°C-60°C				
Dimension ( mm)	426*224*188mm			598*224*188mm	



# SOLAR INVERTER

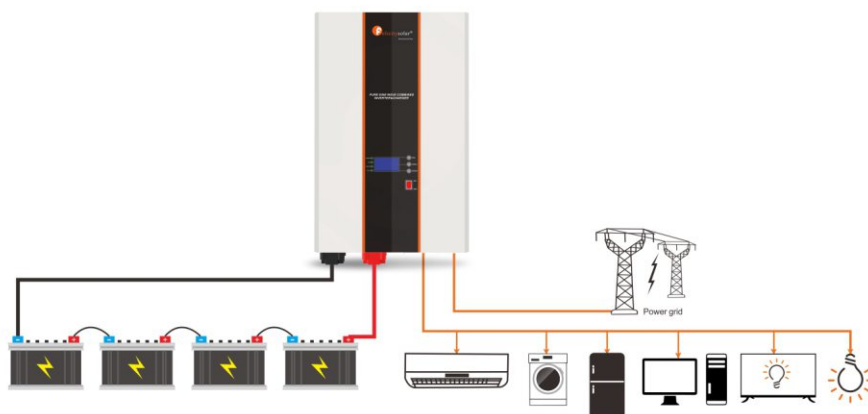
## IVPL Series 10KVA

Upgrade system, Stronger protection



### Product Advantages

- Bypass charging function, AC charge available When the unit off.
- 90-280V AC Widely input voltage .
- Grid electricity and battery power priority is optional.
- Higher charge current and adjustable
- Communicate with our MPPT charge controller.
- Intelligent protection, higher class of security.



## PRODUCT PARAMETERS

Model	IVPL10048
DC Input voltage	48V
Rated output power(VA)	10000VA
Rated output power(W)	8000W
Input voltage waveform	Sine (public facility or generator)
Rated input voltage	220Vac
Grid low voltage	90Vac±7Vac
Grid low voltage recovery voltage	100Vac±7Vac
Grid high voltage	280Vac±7Vac
Grid high voltage recovery voltage	270Vac±7Vac
Max input voltage	280Vrms
Efficiency (grid)	≥95%
Switching time(AC TO DC)	15ms Typical value
Switching time(DC TO AC)	15ms Typical value /30ms Special value
Grid max bypass current	60A
<b>Charging parameter</b>	
Rated input voltage	220Vac
Input voltage range	90-280Vac
Rated voltage output	Depending on battery type
Max charging current	80A
Adjustable charging current range	0-80A
<b>MPPT Charging &amp; Grid Charging (MPPT built-in controller is optional)</b>	
Max PV open circuit voltage	145V
PV voltage working range	60-115VDC
Max solar charging current	80A
Max input power	3200W
Max mains charging current	70A
Max charging current (mains + solar energy)	150A
<b>Charging way</b>	
Output voltage waveform	Pure sine wave
Rated output voltage	220Vac±5%
Rated output frequency	50±0.3Hz/60±0.3Hz □adjustable □
Output voltage range	±5%rms
Maximum efficiency	90%
Overload protection (SMPS)	60s @ ≥150% load;120s @ 105%-150% load
Instantaneous power	2 times rated overload power 5S
Starter motor	yes
Output short circuit protection	yes
Inverter circuit breaker	60A
Rated DC input voltage	48V
Minimum DC turn-on voltage	46V
Battery low alarm	46Vdc@ load < 50%; 44Vdc@ load ≥ 50%;
Battery low recovery	47Vdc@ load < 50%; 46Vdc@ load ≥ 50%;
DC low voltage shutdown	43Vdc@ load < 50%;42Vdc@ load ≥ 50%;
DC high voltage alarm and fault	63Vdc±0.4V
DC high voltage recovery	62Vdc±0.4V
<b>Inverter specifications</b>	
Operating temperature	0-40 °C
Storage temperature	-15-60 °C
Weight	
Size	



# HYBRID INVERTER IVCP / IVCM Series 3~5KVA

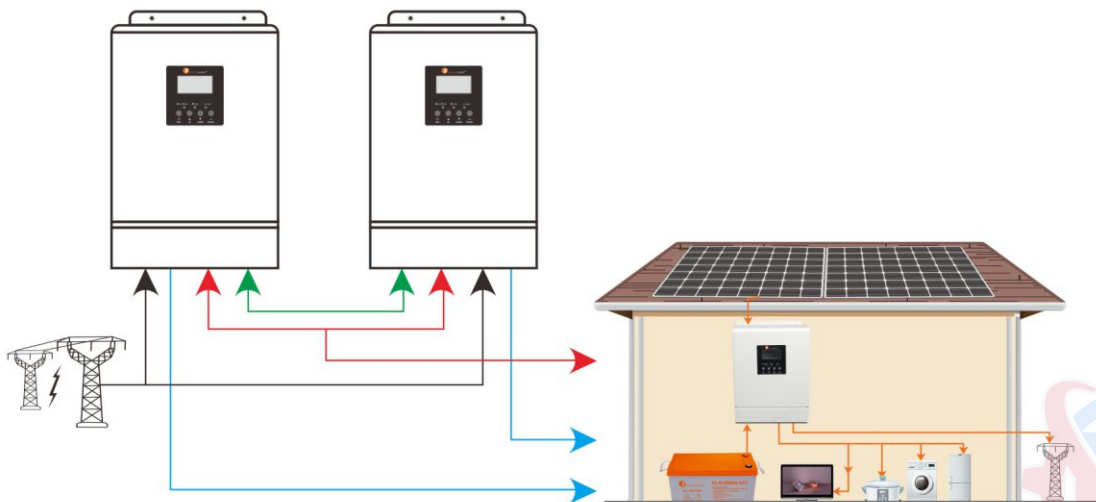
Built-in PWM/MPPT Controller

Upgrade system, Stronger protection



## Product Advantages

- Pure sine wave build-in mppt charge controller inverter
- Auto restart while AC is recovering
- 90-280V AC Widely input voltage.
- Compatible to mains voltage or generator power
- Parallel operation with up to 6units only available for 4KVA/5KVA





## PRODUCT PARAMETERS ( Built-in PWM Solar controller )

Model	FL-IVCP-1012	FL-IVCP-2024	FL-IVCP-3024	FL-IVCP-4048	FL-IVCP-5048
Rated Power	1KVA/800W	2KVA/1600W	3KVA/2400W	4KVA/3200W	5KVA/4000W
<b>INPUT</b>					
Voltage	230 VAC				
Selectable Voltage Range	170-280 VAC ( UPS ) 90-280 VAC ( Appliances )				
Frequency Range	50 Hz/60 Hz (Auto sensing)				
Battery Voltage	12VDC	24VDC		48VDC	
<b>OUTPUT</b>					
AC Voltage Regulation (Batt. Mode)	230VAC $\pm$ 5%				
Efficiency (Peak)	93%				
Transfer Time	10 ms ( UPS ) ; 20 ms ( Appliances )				
Waveform	Pure sine wave				
<b>SOLAR CHARGER &amp; AC CHARGER</b>					
Maximum Solar Charge Current	50A	50A		50A	
Maximum AC Charge Current	20A	30A		60A	
Maximum Charge Current	50A	50A		110A	
Max. PV Array Open Circuit Voltage	15~18V dc	30~32V dc		60~72V dc	
PV Array PWM Voltage Range	50V dc	60V dc		105V dc	
<b>OPERATING ENVIRONMENT</b>					
Storage Temperature	0°C - 55°C				
Humidity	-15°C - 60°C				
<b>PHYSICAL</b>					
Dimension, (mm)	95 x 240 x 316	100 x 272 x 355		120 x 295 x 468	
Net Weight (kgs)	5.0	6.4	6.9	9.8	

## PRODUCT PARAMETERS ( Built-in MPPT Solar controller )

Model	FL-IVCM2024-25	FL-IVCM3024-25	FL-IVCM2024	FL-IVCM3024	FL-IVCM4048	FL-IVCM5048
Rated Power	2KVA/ 1600W	3KVA/ 2400W	2KVA/ 1600W	3KVA/ 2400W	4KVA/ 3200W	5KVA/ 4000W
<b>INPUT</b>						
Voltage	230 VAC					
Selectable Voltage Range	170-280 VAC ( UPS ) 90-280 VAC ( Appliances )					
Frequency Range	50 Hz/60 Hz (Auto sensing)					
Battery Voltage	24VDC	24VDC	24VDC	24VDC	48VDC	48VDC
<b>OUTPUT</b>						
AC Voltage Regulation (Batt. Mode)	230VAC $\pm$ 5%					
Efficiency (Peak)	>95% ( Rated R load, battery full charged )					
Transfer Time	10ms typical (UPS); 20ms typical (Appliances)					
Waveform	Pure sine wave					
<b>SOLAR CHARGER &amp; AC CHARGER</b>						
Maximum Solar Charge Current	25A		60A		60A	
Maximum AC Charge Current	30A		60A		60A	
Maximum Charge Current	30A		120A		120A	
Rated Power	600W		1500W		3000W	
Max. PV Array Open Circuit Voltage	75Vdc max		145Vdc max		145Vdc max	
PV Array MPPT Voltage Range	30~66Vdc		30-115V dc		60~115Vdc	
Min Battery Voltage for PV Charge	17Vdc		17Vdc		34Vdc	
<b>OPERATING ENVIRONMENT</b>						
Storage Temperature	0°C - 55°C					
Humidity	-15°C - 60°C					
<b>PHYSICAL</b>						
Dimension, (mm)	100 x 272 x 355		136X295X420		120 x 295 x 468	
Net Weight (kgs)	7.0	7.4	11			



# MPPT CHARGE CONTROLLER

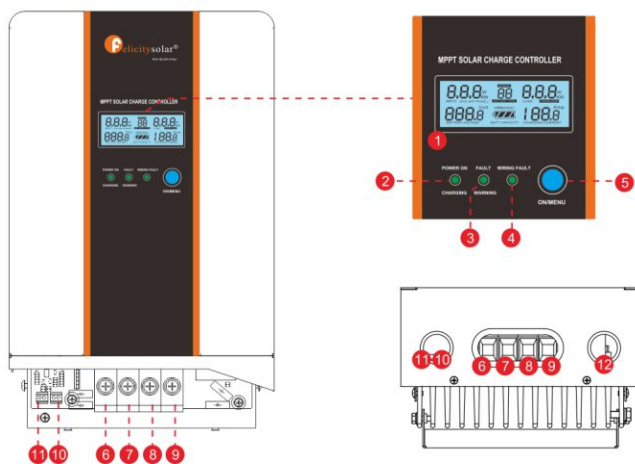
## eSmile series 45~120A

Intelligent system, Faster charging



### Product Advantages

- Intelligent Maximum Power Point Tracking technology increases efficiency 25%~30%
- Three-stage charging optimizes battery performance
- Maximum charging current up to 45A/60A/80A/100A/120A
- Maximum efficiency up to 98%



1. LCD display
2. Power On/Charging indicator
3. Fault and warning indicator
4. Wiring fault indicator
5. Operation button
6. PV Positive +
7. PV Negative -
8. Battery Negative -
9. Battery Positive +
10. Battery voltage sense terminal
11. Remote temperature sensor terminal
12. Communication Port



## PRODUCT PARAMETERS

Model	SCCM4548	SCCM6048	SCCM8048	SCCM10048	SCCM12048
Maximum Solar input Voltage	145V			190V	
Nominal System Voltage	12,24,48VDC(Auto detection)				
Maximum Battery Current	45A	60A	80A	100A	120A
DC Array MPPT Voltage Range	12VDC/24VDC/48VDC				
PV Array MPPT Voltage Range	15-115VDC/30-115VDC-60-115VDC			15-190VDC/30-190VDC-60-190VDC	
Maximum input Power	12Volt-625Watts	12Volt-825Watts	12Volt-1100Watts	12Volt-1375Watts	12Volt-1650Watts
	24Volt-1250Watts	24Volt-1650Watts	24Volt-2200Watts	24Volt-2750Watts	24Volt-3300Watts
	48Volt-2500Watts	48Volt-3300Watts	48Volt-4400Watts	48Volt-5500Watts	48Volt-6600Watts
<b>Charging information</b>					
Charging Curve	<p>The graph illustrates the charging process for a battery. The left y-axis represents Battery Voltage per cell, and the right y-axis represents Charging Current as a percentage. The x-axis represents Time. The charging process is divided into three stages: Bulk (Constant Current), Absorption (Constant Voltage), and Maintenance (Floating). The Bulk stage is labeled T0, and the Absorption stage is labeled T1. The Maintenance stage is labeled 'Current'.</p>				
Charging Algorithm	3-Step				
Charging stages	Bulk,Absorption,FloatBulk,Absorption,Float				
Temperature compensation coefficient	-5mV/°C/cell(25°Cref.)-5mV/°C/cell(25°Cref.)				
Temperature compensation range	0°C to +50°C0°C to +50°C				
Temperature compensated set points	Absorption,FloatAbsorption,Float				
Charging Set points	Absorption StageAbsorption StageFloat Stage				
Flooded Battery	14.6V/29.2V/58.4V14.6V/29.2V/58.4V13.5V/27V/54V				
ARG/Gel Battery ( Default)	14.1V/28.2V/56.4V14.1V/28.2V/56.4V13.5V/27V/54V				
Overcharge voltage	15V/30V/60V15V/30V/60V				
Overcharge restart voltage	14.5V/29V/58V14.5V/29V/58V				
Battery discharge voltage	8.5V/17V/34V8.5V/17V/34V				
Battery overdischarge voltage	9V/18V/36V9V/18V/36V				
<b>Mechanical &amp; Environment</b>					
Product size(H*W*D,mm)	283*160*105mm		283*180*105mm	333*215*105mm	
Product weight(Kg)	4.0kg		5.1kg	5.1kg	
Ambient Temperature Range	0°C to +55°C				
Storage Temperature	-40°C to 75°C				
Humidity	0%-90%RH(No condensing)				
Enclosure	IP31(indoor&vented)				



# SOLAR POWER SYSTEM 2.5KVA~10KVA



## ► Solar Panel Advantages

1. Efficient polycrystalline modules are suitable for residential, public application areas, and can be widely used in the roof and ground electric power station projects.
2. Applying the most advanced module manufacturing technology with high output power. The maximum conversion rate is up to 16.39%.
3. Using anti-reflection glass, not only increases the absorption of light, but also strengthens its self-cleaning function when the modules are in the water environment, which can effectively reduce the power loss caused by dust.
4. Excellent low-light electricity generation performance.
5. Modules with strong compression capability, able to withstand 2400 Pa wind pressure and 5400 Pa snow load.

## ► Solar MPPT Charge Controller Advantages

1. Intelligent Maximum Power Point Tracking technology increases efficiency 25%~30%
2. Compatible for PV systems in 12V, 24V or 48V
3. Three-stage charging optimizes battery performance
4. Maximum efficiency up to 98%
5. Battery temperature sensor (BTS) automatically provides temperature compensation
6. Automatic battery voltage detection
7. Integrated intelligent slot compatible with SNMP/MODBUS communication

## ► Solar GEL Battery Advantages

1. Solve electrolyte stratification, sulfuric acid evenly distributed.
2. The silica gel electrolyte lead-acid batteries can be so deep discharge, thus greatly extending the cycle life of the battery.
3. The battery float current is small (about 1/3 AGM battery), the floating charge lower energy consumption, less warming, reduce battery thermal runaway risk.
4. low self-discharge rate of the battery.

## ► Solar Inverter Advantages

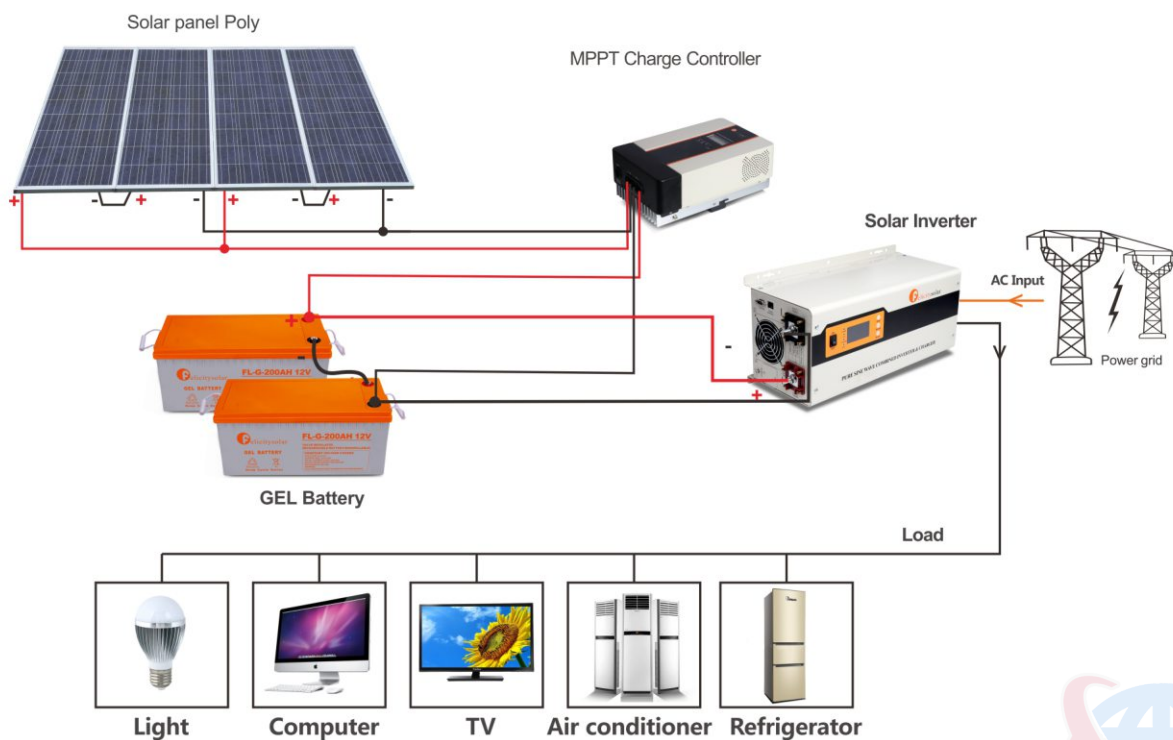
1. Bypass charging function: when the unit turn off, it can be activated with bypass output (on or off) and can charge the battery.
2. High charging current max charging current can be set to 40A(50A for 5kva, 60A for 7.5kva). Easy and clear to set 0A, 10A, 20A, 30A, 40A(50A for 5kva, 60A for 7.5kva).
3. Wide range of AC input voltage: the range of AC input voltage is 90-280V. It can be better compatible with generator working. It is rare to have wide range input voltage for the power frequency inverter.
4. Electricity and battery priority is optional: customer can choose Electricity or battery priority according to their needs.
5. Battery self-defined: customer can set the overcharge voltage and float voltage, and over-discharge voltage.
6. It can communicate with our MPPT. And the electricity charging and solar charging can be managed comprehensively and scientifically.



## PRODUCT PARAMETERS

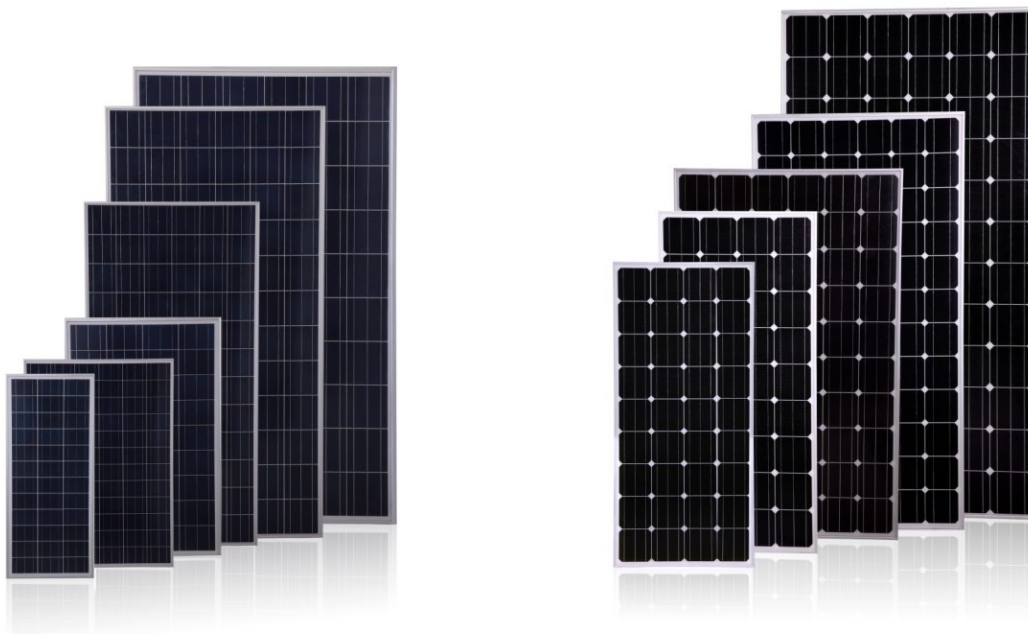
Model		2500VA 12V	3500VA 24V	3500VA 48V	5000VA 48V	7500VA 48V	10000VA 48V
Solar Panel	Specifications	Poly160W/18.2V	Poly260W/30.6V	Poly260W/30.6V	Poly260W/30.6V	Poly260W/30.6V	Poly260W/30.6V
	QTY	4PCS	4PCS	9PCS	18PCS	24PCS	30PCS
Battery	Specifications	GEL 200AH 12V	GEL 200AH 12V	GEL 200AH 12V	GEL 200AH 12V	GEL 200AH 12V	GEL 200AH 12V
	QTY	1PC	2PCS	4PCS	8PCS	12PCS	16PCS
Inverter	Specifications	2500VA / 12V 220V 50/60Hz	3500VA / 24V 220V 50/60Hz	3500VA / 48V 220V 50/60Hz	5000VA / 48V 220V 50/60Hz	7500VA / 48V 220V 50/60Hz	10000VA / 48V 220V 50/60Hz
	QTY	1PC	1PC	1PC	1PC	1PC	1PC
Controller	Specifications	PWM 40A 12V	MPPT 60A 24V	MPPT 60A 48V	MPPT 60A 48V	MPPT 60A 48V	MPPT 80A 48V
	QTY	1PC	2PCS	4PCS	2PCS	2PCS	2PCS
Accessories		Cable	Battery box* 1PC & Cable	Battery box* 1PC & Cable	Battery box* 2PCS & Cable	Battery box* 3PCS & Cable	Battery box* 4PCS & Cable

## Connection Diagram



# SOLAR PANEL

## POLY / MONO Series 100W~320W

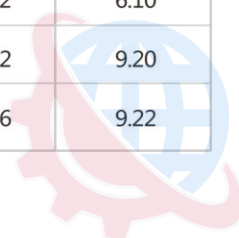


### PRODUCT PARAMETERS

Type	Model	Standard Output Power(Watts)	Dimensions [mm]	Weight [Kg]	Maximum Power Voltage [Vmp]	Maximum Power Current [Imp]	Open-Circuit Voltage [Voc]	Short-Circuit Current [Isc]
POLY	FL-P-100W	100	1000*680*30	7.4	18V	5.56	21.6	5.89
POLY	FL-P-160W	160	1480*680*30	10.8	18.2V	8.80	21.84	9.33
POLY	FL-P-210W	210	1320*992*35	15.5	36.6V	5.74	43.92	6.10
POLY	FL-P-260W	260	1640*992*40	18.7	30.6V	8.50	36.72	9.01
POLY	FL-P-310W	310	1955*992*40	22.0	36.8V	8.43	44.16	8.93

### PRODUCT PARAMETERS

Type	Model	Standard Output Power(Watts)	Dimensions [mm]	Weight [Kg]	Maximum Power Voltage [Vmp]	Maximum Power Current [Imp]	Open-Circuit Voltage [Voc]	Short-Circuit Current [Isc]
MONO	FL-M-100W	100	1195*540*30	7.14	18V	5.56	21.6	5.89
MONO	FL-M-165W	165	1480*680*30	10.8	18.2V	8.90	21.84	9.45
MONO	FL-M-210W	210	1580*808*35	15.5	36.6V	5.74	43.92	6.10
MONO	FL-M-265W	265	1640*992*40	18.7	30.6V	8.66	36.72	9.20
MONO	FL-M-320W	320	1955*992*40	22.0	36.8V	8.70	44.16	9.22



# SOLAR GEL BATTERY

## GEL Series 70Ah~250Ah



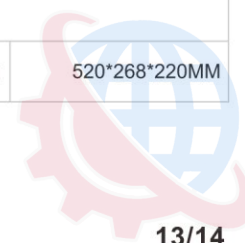
### PRODUCT ADVANTAGE

1. Solve electrolyte stratification, sulfuric acid evenly distributed.
2. The silica gel electrolyte lead-acid batteries can be so deep discharge, thus greatly extending the cycle life of the battery.
3. The battery float current is small (about 1/3 AGM battery), the floating charge lower energy consumption, less warming, reduce battery thermal runaway risk.
4. low self-discharge rate of the battery.



### PRODUCT PARAMETERS

Model	FL-G-70AH 12V	FL-G-100AH 12V	FL-G-150AH 12V	FL-G-200AH 12V	FL-G-250AH 12V
Cells Per Unit	6				
Voltage Per Unit	12				
Capacity	70Ah@10hr-rate to 1.80V per cell @25°C	100Ah@10hr-rate to 1.80V per cell @25°C	150Ah@10hr-rate to 1.80V per cell @25°C	200Ah@10hr-rate to 1.80V per cell @25°C	250Ah@10hr-rate to 1.80V per cell @25°C
Weight	21.5KG	32.8KG	44KG	61.5KG	72.5KG
Max. Discharge Current	700A(5 sec)	1000A(5 sec)	1500A(5 sec)	2000A(5 sec)	2500A(5 sec)
Internal Resistance	Approx. 5.8mΩ	Approx. 5 mΩ	Approx. 4.2 mΩ	Approx. 4 mΩ	Approx. 3.8 mΩ
Recommended Maximum Charging	21A	30A	45A	60A	75A
Operating Temperature Range	Discharge: -20°C ~ 60°C Charge: 0°C ~ 50°C Storage: -20°C ~ 60°C				
Normal Operating Temperature Range	25°C ± 5°C				
Float charging Voltage	13.6 to 13.8V DC/unit Average at 25°C				
Equalization and Cycle Service	14.4to 14.6V DC/unit Average at 25°C				
Self Discharge	GEL batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using.				
Size	260*169*210MM	330*171*218MM	484*241*170MM	522*219*240MM	520*268*220MM



# SOLAR BATTERY

## Front terminal Series 100Ah~200Ah 12V



### PRODUCT ADVANTAGE

1. Solve electrolyte stratification, sulfuric acid evenly distributed.
2. The silica gel electrolyte lead-acid batteries can be so deep discharge, thus greatly extending the cycle life of the battery.
3. The battery float current is small (about 1/3 AGM battery), the floating charge lower energy consumption, less warming, reduce battery thermal runaway risk.
4. low self-discharge rate of the battery.



### PRODUCT PARAMETERS

Model	FL-GE-100AH 12V	FL-GE-150AH 12V	FL-GE-200AH 12V
Cells Per Unit	6		
Voltage Per Unit	12		
Capacity	100Ah@10hr-rate to 1.80V per cell @25°C	150Ah@10hr-rate to 1.80V per cell @25°C	200Ah@10hr-rate to 1.80V per cell @25°C
Weight	31.0KG	43.5KG	56.0KG
Max. Discharge Current	1000A(5 sec)	1500A(5 sec)	2000A(5 sec)
Internal Resistance	Approx. 5.5m Ω	Approx. 5.0 m Ω	Approx. 3.8 m Ω
Recommended Maximum Charging	30A	45A	60A
Operating Temperature Range	Discharge: -20°C ~ 60°C Charge: 0°C ~ 50°C Storage: -20°C ~ 60°C		
Normal Operating Temperature Range	25°C ± 5 °C		
Float charging Voltage	13.6 to 13.8V DC/unit Average at 25°C		
Equalization and Cycle Service	14.4to 14.6V DC/unit Average at 25°C		
Self Discharge	Front terminal batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using.		
Size	410x109x293MM	550x110x290MM	561x125x317MM





# SOLAR GEL BATTERY

## OPzV Series 200Ah ~2500Ah 2V



### PRODUCT ADVANTAGE

1. Traditional tubular gel technology
2. Excellent deep cycle and recovery performance
3. Reliable seal performance, and high recombination efficiency
4. Remarkable high rate discharge performance
5. Initial capacities exceed the DIN standard value
6. Imported case and lid comply to DIN 40742 standard.
7. Flexible and convenient installation, and slinky outside looking
8. Flame retardant ABS case (UL94 V-0, optional)
9. Low self-discharge rate
10. Comply with IEC, IEEE, UL, EN, CE standards, etc.
11. Design life at 25°C (77°F): 18 years



### PRODUCT PARAMETERS

Model	FL-OPzV-200AH 2V	FL-OPzV-500AH 2V	FL-OPzV-1000AH 2V	FL-OPzV-2500AH 2V
Nominal Voltage	2V			
Rated Capacity	200Ah (10hour rate) to 1.80V/cell @25	500Ah (10hour rate) to 1.80V/cell @25	1000Ah (10hour rate) to 1.80V/cell @25	2500Ah (10hour rate) to 1.80V/cell @25
Typical Weight	20KG	41KG	80KG	192KG
Internal Resistance	Approx 0.615mΩ	Approx 0.495mΩ	Approx 0.238mΩ	Approx 0.142mΩ
Charge Current	50A	125A	500A	625A
Operating Temperature Range	Operation(maximum) : -40°C to 55°C( - 40 °F to 131 °F )			
	Operation(recommended) : 15°C to 25°C( - 59 °F to 77 °F )			
	Storage : -20°C to 40°C( - 4 °F to 104 °F )			
Float Voltage	2.23V/cell@25°C( 77 °F )			
Equalize and Cycle Service	2.35V~2.40V/cell@25°C( 77 °F )			
Self Discharge	The residual capacity is above 94% after 90 days storage(25°C / 77 °F )			
Terminal	M8 Female Large Size Copper Post			
Terminal Hardware Torque	15 ± 1.0Nm			
Container Material	ABS (V0 optional)			
Size	103×206×356MM	166×206×473MM	233×210×646MM	487×212×770MM



# All in one solar street light 40W



## Product Parameter

Model	P1-40W
Solar panel(MONO)	55W
High capacity lithium battery (Built-in)	200WH
luminous flux (All light pattern)	5200lm
Mounting Height	4 - 6M
Solar panel charge time (with strong sunlight)	6 hours by bright sunlight
Rainy Days Support	3-5 days with full charging
Working Time (per day)	≥ 12 hours
Color temperature	3000-7000K (optional)
Light pole diameter	76MM
Storage temperature	0-55℃
Operating humidity	90RH%≤
Waterproof level	Ip65
Dimensions	960*360*43.3mm



# All in one solar street light 60W

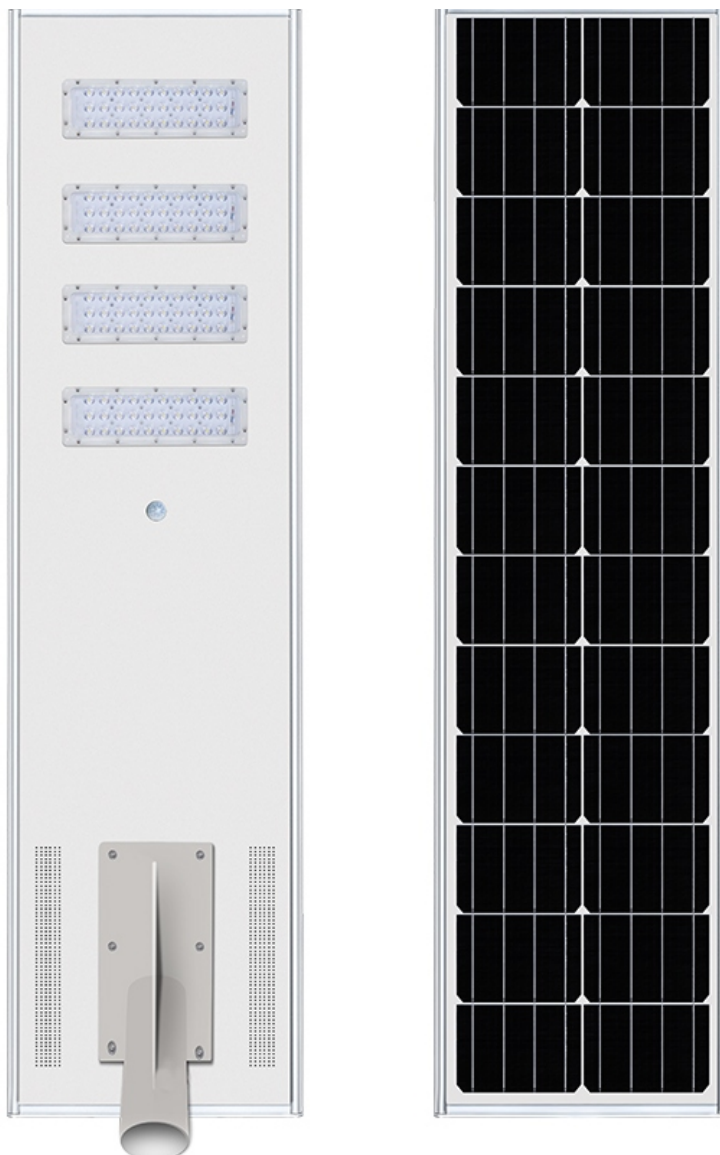


## Product Parameter

Model	P1-60W
Solar panel(MONO)	60W
High capacity lithium battery (Built-in)	250WH
luminous flux (All light pattern)	7800lm
Mounting Height	6 - 7M
Solar panel charge time (with strong sunlight)	6 hours by bright sunlight
Rainy Days Support	3-5 days with full charging
Working Time (per day)	≥ 12 hours
Color temperature	3000-7000K (optional)
Light pole diameter	76MM
Storage temperature	0-55°C
Operating humidity	90RH%≤
Waterproof level	Ip65
Dimensions	1080*360*43.3mm



# All in one solar street light 80W



## Product Parameter

Model	P1-80W
Solar panel(MONO)	80W
High capacity lithium battery (Built-in)	320WH
luminous flux (All light pattern)	10400lm
Mounting Height	6 - 7M
Solar panel charge time (with strong sunlight)	6 hours by bright sunlight
Rainy Days Support	3-5 days with full charging
Working Time (per day)	≥ 12 hours
Color temperature	3000-7000K (optional)
Light pole diameter	76MM
Storage temperature	0-55℃
Operating humidity	90RH%≤
Waterproof level	Ip65
Dimensions	1380*360*43.3mm



# All in one solar street light 80W



## Product Parameter

Model	P2-80W
Solar panel(MONO)	80W
High capacity lithium battery (Built-in)	320WH
luminous flux (All light pattern)	10400lm
Mounting Height	6 - 7M
Solar panel charge time (with strong sunlight)	6 hours by bright sunlight
Rainy Days Support	3-5 days with full charging
Working Time (per day)	≥ 12 hours
Color temperature	3000-7000K (optional)
Light pole diameter	76MM
Storage temperature	0-55°C
Operating humidity	90RH%≤
Waterproof level	Ip65
Dimensions	1380*360*43.3mm





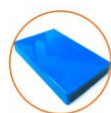
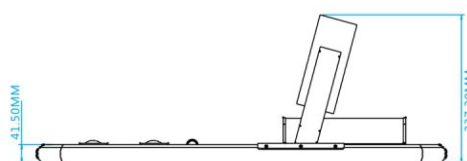
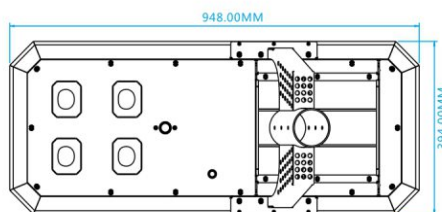
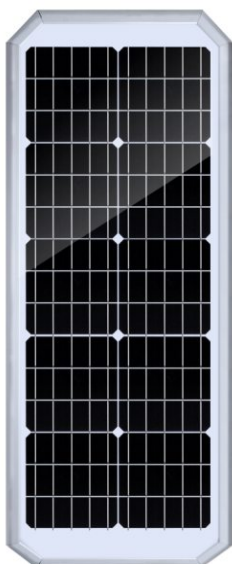
## PRODUCT DESCRIPTION

1. Integrated design and source, high capacity LiFePO4 lithium battery, high energy, and long life, light weights, green and environmental protection, do not produce any harmful substances.
2. Philips LED chip with high light efficiency which can reach 180LM/W, and whole lamp light efficiency can reach 160LM/W at least
3. All series use MPPT controller which can increase 15%-30% charge efficiency
4. Design with high efficiency solar cell (>22%)
5. Convenient installation and maintenance, no need of cable installation or special light pole, functional components modular design, installation and maintenance, convenient and quick replacement.



# ALL IN ONE SOLAR STREET LIGHT D1 SERIES

**30W**



Life Po4 Battery



Philips LED Chip



Efficient MPPT  
Controller 98%

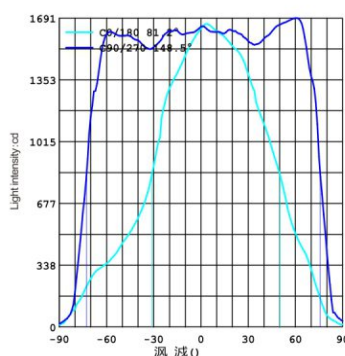
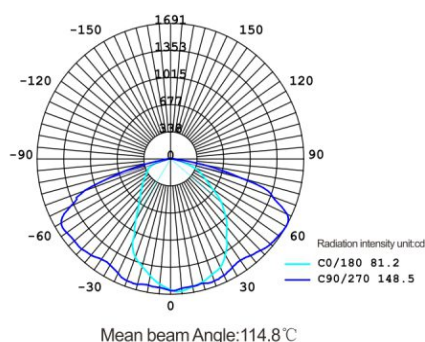


High Efficient  
solar cell (>22%)

## Product Parameter

Model	FL-D1-30W
Solar panel(MONO)	55W
High capacity lithium battery (Built-in)	260WH
luminous flux (All light pattern)	4800lm
Mounting Height	4 - 5M
Solar panel charge time (with strong sunlight)	8 hours by bright sunlight
Rainy Days Support	3-5 days with full charging
Working Time (per day)	≥ 12 hours
Color temperature	3000-7000K (optional)
Light pole diameter	70-114MM
Storage temperature	0-55℃
Operating humidity	90RH% ≤
Waterproof level	Ip65
Package dimensions	965*412*230mm

## Light distribution curve





MPPT



Ip65

## PRODUCT DESCRIPTION

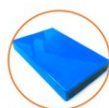
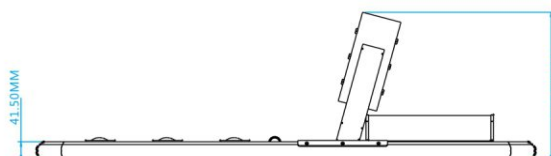
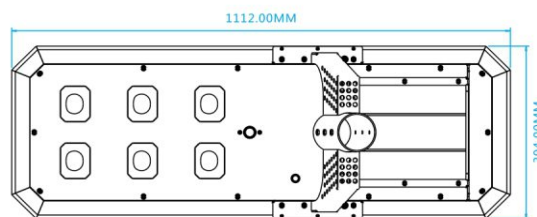
1. Integrated design and source, high capacity LiFePO4 lithium battery, high energy, and long life, light weights, green and environmental protection, do not produce any harmful substances.
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3. All series use MPPT controller which can increase 15%-30% charge efficiency
4. Design with high efficiency solar cell (>22%)
5. Convenient installation and maintenance, no need of cable installation or special light pole, functional components modular design, installation and maintenance, convenient and quick replacement.





# ALL IN ONE SOLAR STREET LIGHT D1 SERIES

**40W**



Life Po4 Battery



Philips LED Chip



Efficient MPPT  
Controller 98%

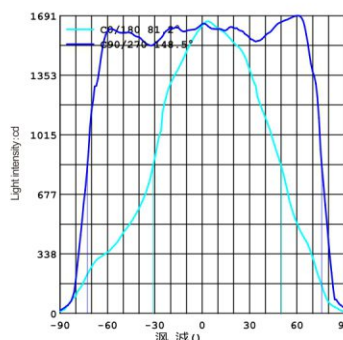
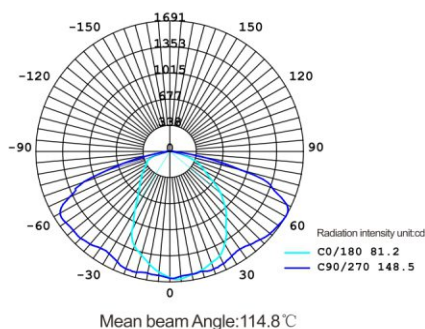


High Efficient  
solar cell (>22%)

## Product Parameter

Model	FL-D1-40W
Solar panel(MONO)	65W
High capacity lithium battery (Built-in)	350WH
luminous flux (All light pattern)	6400lm
Mounting Height	4 - 5M
Solar panel charge time (with strong sunlight)	8 hours by bright sunlight
Rainy Days Support	3-5 days with full charging
Working Time (per day)	≥ 12 hours
Color temperature	3000-7000K (optional)
Light pole diameter	70-114MM
Storage temperature	0-55℃
Operating humidity	90RH%≤
Waterproof level	Ip65
Package dimensions	1130*412*230mm

## Light distribution curve





MPPT

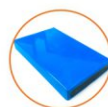
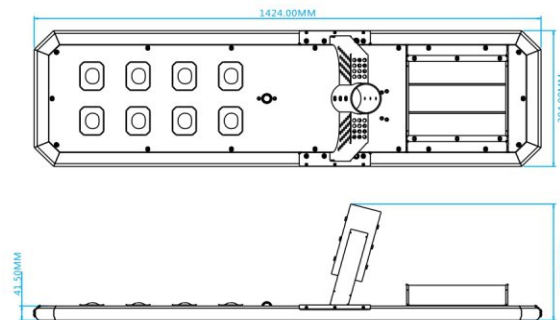


Ip65

## PRODUCT DESCRIPTION

1. Integrated design and source, high capacity LiFePO4 lithium battery, high energy, and long life, light weights, green and environmental protection, do not produce any harmful substances.
2. Philips LED chip with high light efficiency which can reach 180LMW, and whole lamp light efficiency can reach 160LMW at least
3. All series use MPPT controller which can increase 15%-30% charge efficiency
4. Design with high efficiency solar cell (>22%)
5. Convenient installation and maintenance, no need of cable installation or special light pole, functional components modular design, installation and maintenance, convenient and quick replacement.

# ALL IN ONE SOLAR STREET LIGHT D1 SERIES



Life Po4 Battery



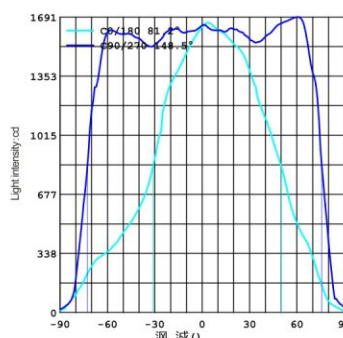
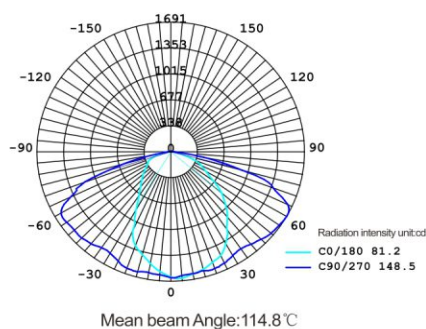
Philips LED Chip

Efficient MPPT  
Controller 98%High Efficient  
solar cell (>22%)

## Product Parameter

Model	FL-D1-60W
Solar panel(MONO)	90W
High capacity lithium battery (Built-in)	532WH
luminous flux (All light pattern)	9600lm
Mounting Height	5 - 6M
Solar panel charge time (with strong sunlight)	8 hours by bright sunlight
Rainy Days Support	3-5 days with full charging
Working Time (per day)	≥ 12 hours
Color temperature	3000-7000K (optional)
Light pole diameter	70-114MM
Storage temperature	0-55℃
Operating humidity	90RH%≤
Waterproof level	Ip65
Package dimensions	1441*412*230mm

## Light distribution curve





MPPT

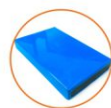
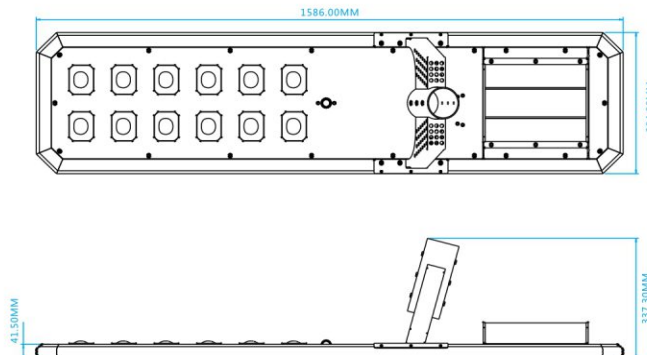
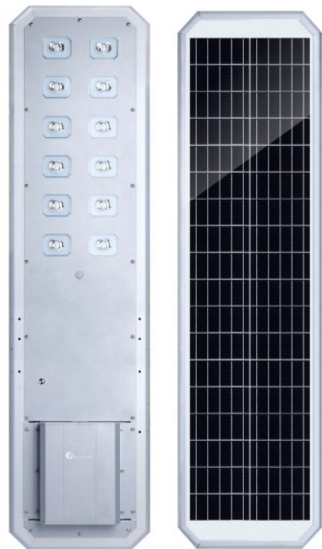


Ip65



# ALL IN ONE SOLAR STREET LIGHT D1 SERIES

**80W**



Life Po4 Battery



Philips LED Chip



Efficient MPPT  
Controller 98%

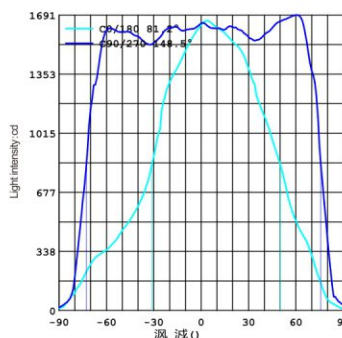
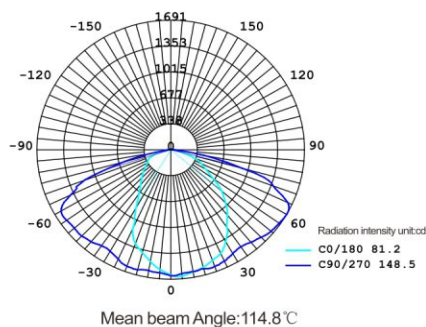


High Efficient  
solar cell (>22%)

## Product Parameter

Model	FL-D1-80W
Solar panel(MONO)	105W
High capacity lithium battery (Built-in)	650WH
luminous flux (All light pattern)	12800lm
Mounting Height	6 - 8M
Solar panel charge time (with strong sunlight)	8 hours by bright sunlight
Rainy Days Support	3-5 days with full charging
Working Time (per day)	≥ 12 hours
Color temperature	3000-7000K (optional)
Light pole diameter	70-114MM
Storage temperature	0-55℃
Operating humidity	90RH%≤
Waterproof level	Ip65
Package dimensions	1603*420*230mm

## Light distribution curve





MPPT



Ip65

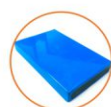
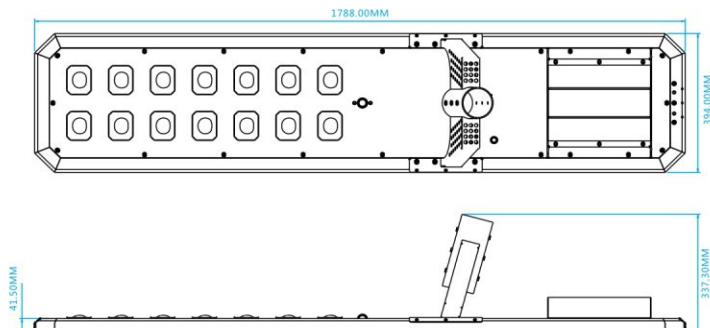


## PRODUCT DESCRIPTION

1. Integrated design and source, high capacity LiFePO4 lithium battery, high energy, and long life, light weights, green and environmental protection, do not produce any harmful substances.
2. Philips LED chip with high light efficiency which can reach 180LM/W. and whole lamp light efficiency can reach 160LM/W at least
3. All series use MPPT controller which can increase 15%-30% charge efficiency
4. Design with high efficiency solar cell (>22%)
5. Convenient installation and maintenance, no need of cable installation or special light pole, functional components modular design, installation and maintenance, convenient and quick replacement.

# ALL IN ONE SOLAR STREET LIGHT D1 SERIES

100W



Life Po4 Battery



Philips LED Chip



Efficient MPPT  
Controller 98%

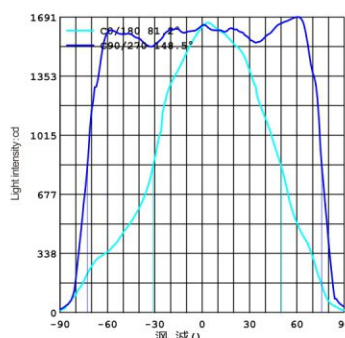
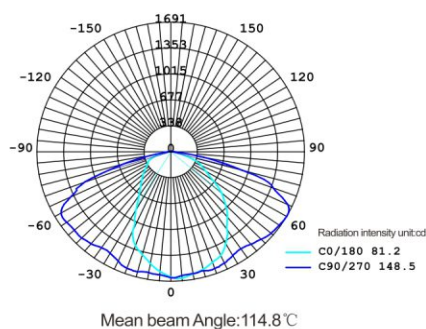


High Efficient  
solar cell (>22%)

## Product Parameter

Model	FL-D1-100W
Solar panel(MONO)	120W
High capacity lithium battery (Built-in)	888WH
luminous flux (All light pattern)	16000lm
Mounting Height	6 - 8M
Solar panel charge time (with strong sunlight)	8 hours by bright sunlight
Rainy Days Support	3-5 days with full charging
Working Time (per day)	≥ 12 hours
Color temperature	3000-7000K (optional)
Light pole diameter	70-114MM
Storage temperature	0-55℃
Operating humidity	90RH% ≤
Waterproof level	Ip65
Package dimensions	1805*412*230mm

## Light distribution curve





MPPT



Ip65



## PRODUCT DESCRIPTION

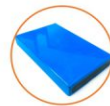
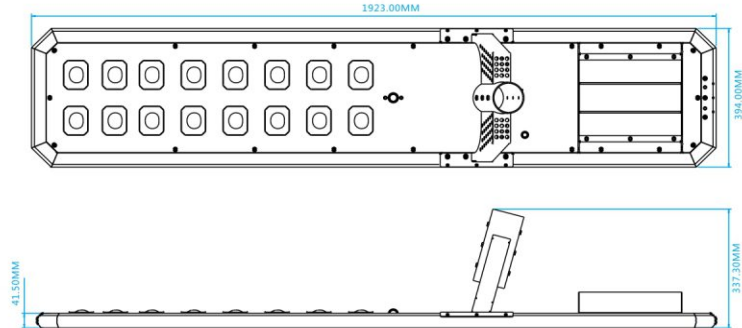
1. Integrated design and source, high capacity LiFePO4 lithium battery, high energy, and long life, light weights, green and environmental protection, do not produce any harmful substances.
2. Philips LED chip with high light efficiency which can reach 180LMW, and whole lamp light efficiency can reach 160LMW at least
3. All series use MPPT controller which can increase 15%-30% charge efficiency
4. Design with high efficiency solar cell (>22%)
5. Convenient installation and maintenance, no need of cable installation or special light pole, functional components modular design, installation and maintenance, convenient and quick replacement.





# ALL IN ONE SOLAR STREET LIGHT D1 SERIES

**120W**



Life Po4 Battery



Philips LED Chip



Efficient MPPT  
Controller 98%

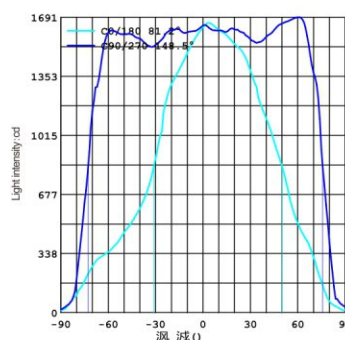
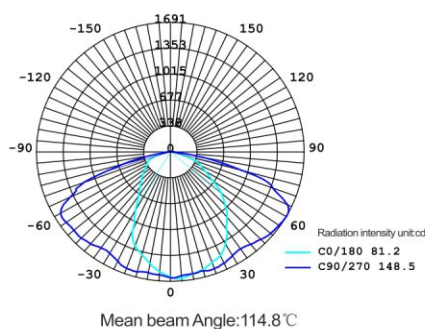


High Efficient  
solar cell (>22%)

## Product Parameter

Model	FL-D1-120W
Solar panel(MONO)	140W
High capacity lithium battery (Built-in)	999WH
luminous flux (All light pattern)	19200lm
Mounting Height	6 - 8M
Solar panel charge time (with strong sunlight)	8 hours by bright sunlight
Rainy Days Support	3-5 days with full charging
Working Time (per day)	≥ 12 hours
Color temperature	3000-7000K (optional)
Light pole diameter	70-114MM
Storage temperature	0-55℃
Operating humidity	90RH%≤
Waterproof level	Ip65
Package dimensions	1940*412*230mm

## Light distribution curve





MPPT



Ip65



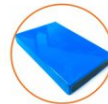
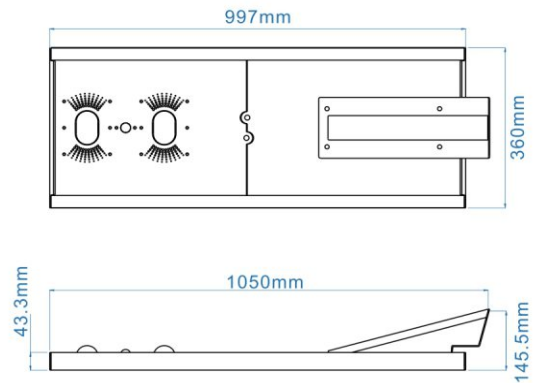
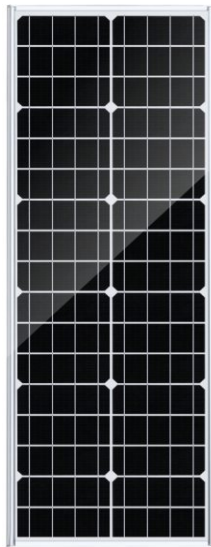
## PRODUCT DESCRIPTION

1. Integrated design and source, high capacity LiFePO4 lithium battery, high energy, and long life, light weights, green and environmental protection, do not produce any harmful substances.
2. Philips LED chip with high light efficiency which can reach 180LMW, and whole lamp light efficiency can reach 160LMW at least
3. All series use MPPT controller which can increase 15%-30% charge efficiency
4. Design with high efficiency solar cell (>22%)
5. Convenient installation and maintenance, no need of cable installation or special light pole, functional components modular design, installation and maintenance, convenient and quick replacement.



# ALL IN ONE SOLAR STREET LIGHT A2 SERIES

**30W**



Life Po4 Battery



Philips LED Chip



Efficient MPPT  
Controller 98%

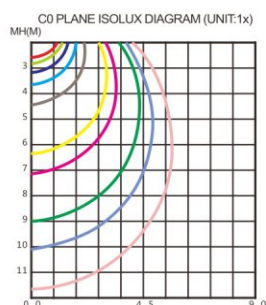
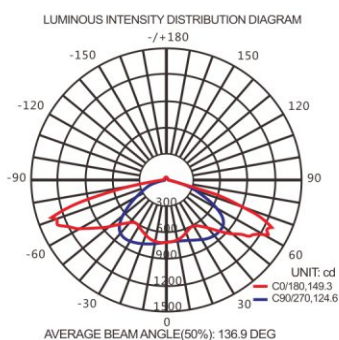


High Efficient  
solar cell (>22%)

## Product Parameter

Model	FL-A2-30W
Solar panel(MONO)	55W
High capacity lithium battery (Built-in)	260WH
luminous flux (All light pattern)	4800lm
Mounting Height	4 - 5M
Solar panel charge time (with strong sunlight)	8 hours by bright sunlight
Rainy Days Support	3-5 days with full charging
Working Time (per day)	≥ 12 hours
Color temperature	3000-7000K (optional)
Light pole diameter	70-114MM
Storage temperature	0-55℃
Operating humidity	90RH%≤
Waterproof level	Ip65
Package dimensions	1015*375*155mm

## Light distribution curve





MPPT

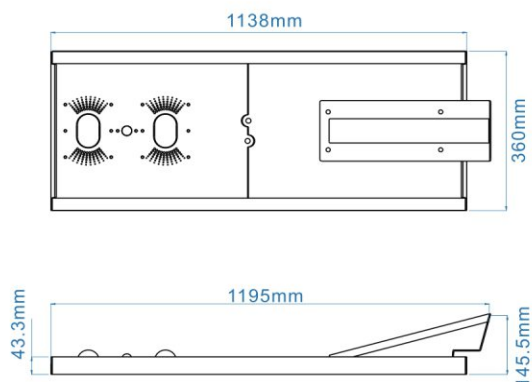


Ip65



# ALL IN ONE SOLAR STREET LIGHT A2 SERIES

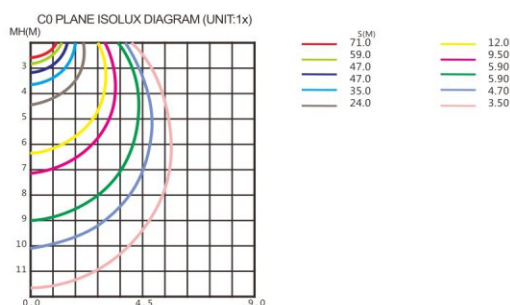
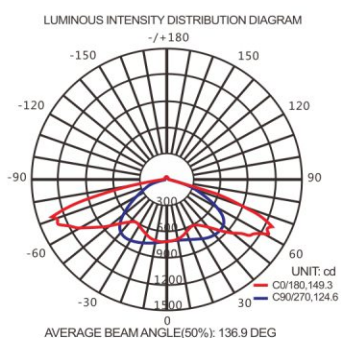
**40W**



## Product Parameter

Model	FL-A2-40W
Solar panel(MONO)	65W
High capacity lithium battery (Built-in)	350WH
luminous flux (All light pattern)	6400lm
Mounting Height	4 - 5M
Solar panel charge time (with strong sunlight)	8 hours by bright sunlight
Rainy Days Support	3-5 days with full charging
Working Time (per day)	≥ 12 hours
Color temperature	3000-7000K (optional)
Light pole diameter	70-114MM
Storage temperature	0-55℃
Operating humidity	90RH%≤
Waterproof level	Ip65
Package dimensions	1155*385*155mm

## Light distribution curve





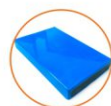
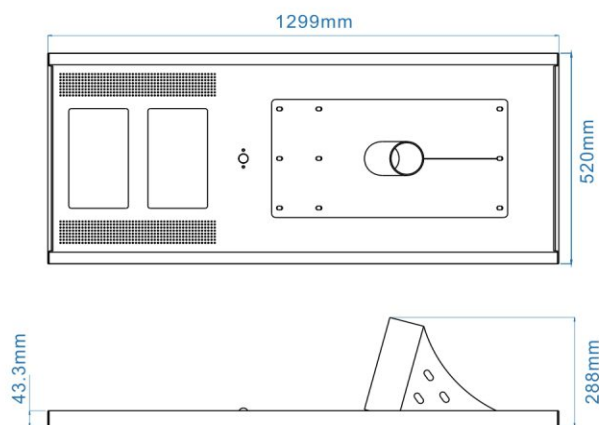
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2. Philips LED chip with high light efficiency which can reach 180LMW, and whole lamp light efficiency can reach 160LMW at least
3. All series use MPPT controller which can increase 15%-30% charge efficiency
4. Design with high efficiency solar cell (>22%)
5. Convenient installation and maintenance, no need of cable installation or special light pole, functional components modular design, installation and maintenance, convenient and quick replacement.



# ALL IN ONE SOLAR STREET LIGHT A2 SERIES

**60W**



Life Po4 Battery



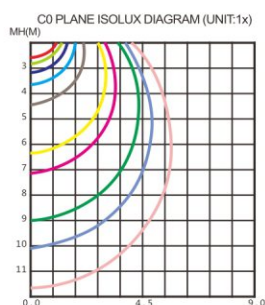
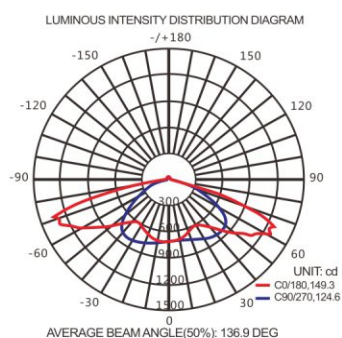
Philips LED Chip

Efficient MPPT  
Controller 98%High Efficient  
solar cell (>22%)

## Product Parameter

Model	FL-A2-60W
Solar panel(MONO)	105W
High capacity lithium battery (Built-in)	532WH
luminous flux (All light pattern)	9600lm
Mounting Height	5 - 6M
Solar panel charge time (with strong sunlight)	8 hours by bright sunlight
Rainy Days Support	3-5 days with full charging
Working Time (per day)	≥ 12 hours
Color temperature	3000-7000K (optional)
Light pole diameter	70-114MM
Storage temperature	0-55℃
Operating humidity	90RH% ≤
Waterproof level	Ip65
Package dimensions	1315*535*145mm

## Light distribution curve





MPPT



Ip65

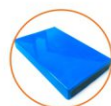
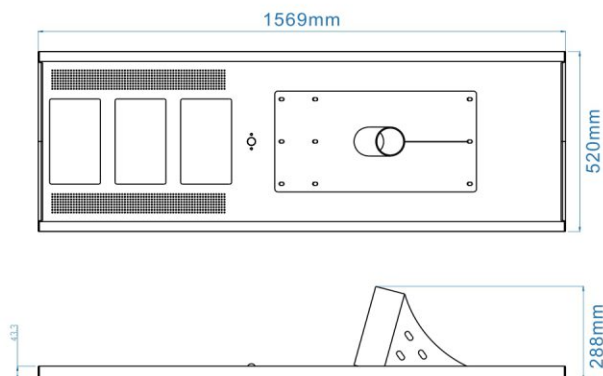
## PRODUCT DESCRIPTION

1. Integrated design and source, high capacity LiFePO4 lithium battery, high energy, and long life, light weights, green and environmental protection, do not produce any harmful substances.
2. Philips LED chip with high light efficiency which can reach 180LMW, and whole lamp light efficiency can reach 160LMW at least
3. All series use MPPT controller which can increase 15%-30% charge efficiency
4. Design with high efficiency solar cell (>22%)
5. Convenient installation and maintenance, no need of cable installation or special light pole, functional components modular design, installation and maintenance, convenient and quick replacement.



# ALL IN ONE SOLAR STREET LIGHT A2 SERIES

**100W**



Life Po4 Battery



Philips LED Chip



Efficient MPPT  
Controller 98%

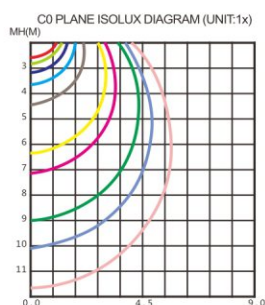
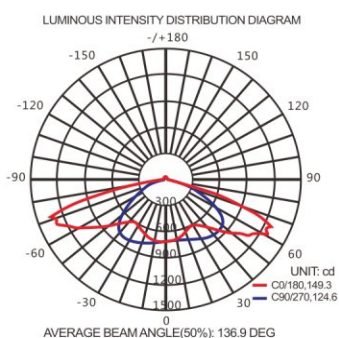


High Efficient  
solar cell (>22%)

## Product Parameter

Model	FL-A2-80W	FL-A2-100W
Solar panel(MONO)	140W	145W
High capacity lithium battery (Built-in)	710WH	888WH
luminous flux (All light pattern)	12800lm	16000lm
Mounting Height	6 - 8M	
Solar panel charge time (with strong sunlight)	8 hours by bright sunlight	
Rainy Days Support	3-5 days with full charging	
Working Time (per day)	≥ 12 hours	
Color temperature	3000-7000K (optional)	
Light pole diameter	70-114MM	
Storage temperature	0-55℃	
Operating humidity	90RH% ≤	
Waterproof level	Ip65	
Package dimensions	1585*535*150mm	

## Light distribution curve





## PRODUCT DESCRIPTION

1. LED light is Super brightness, high power, high efficiency.
2. Solar street lights are independent of the utility grid.  
Hence, the operation costs are minimized.
3. Solar street lights require much less maintenance and easy installation compared to conventional street lights.
4. Since external wires are eliminated, risk of accidents is minimized.
5. This is a non polluting source of electricity. Long lifespan, energy saving.
6. Separate parts of solar LED street light can be easily carried to the remote areas.



# SOLAR STREET LIGHT

FL-U2-30W / 40W / 50W / 60W / 80W / 100W / 120W



## Product Feature

- LED light is Super brightness, high power, high efficiency.
- Solar street lights are independent of the utility grid. Hence, the operation costs are minimized.
- Solar street lights require much less maintenance and easy installation compared to conventional street lights.
- Since external wires are eliminated, risk of accidents is minimized.
- This is a non polluting source of electricity. Long lifespan, energy saving.
- Separate parts of solar LED street light can be easily carried to the remote areas.

## Parameter

Model	LED Street Lamp	Solar Panel	Battery	Solar Charge Controller	Pole	Accessories
20-30W	1	130W 18V*1PC	100AH/120AH 12V*1PC	20A 12/24V*1PC	5/6 Meter*1PC	Battery box & Wire 1 Set
30-40W	1	80W 18V*2PCS	150AH 12V*1PC	20A 12/24V *1PC	5/6 Meter*1PC	Battery box & Wire 1 Set
40-60W	1	130W 18V*2PCS	200AH 12V*1PC	20A 12/24V*1PC	6/8 Meter *1PC	Battery box & Wire 1 Set
80-100W	1	250W 30V*2PCS	150AH/ 200AH 12V*2PCS	25A 12/24V PWM *1PC	8/10 Meter *1PC	Battery box & Wire 1 Set
120W	1	300W 36V*2PCS	150AH/ 200AH 12V* 2PCS	25A 12/24V PWM*1PC	8/10/12 Meter * 1PC	Battery box & Wire 1 Set

**Note: light control settings, automatic dusk turn on ,dawn turn off, 11-12 hours working time per day .Full charging working 2-3 raindays .**





## PRODUCT DESCRIPTION

- **Innovative Design**

Subverting the previous mechanical design, more sleek lines, more outstanding and upmarket shape.

- **IP66 Waterproof**

Dustproof with good leakproofness, and can withstand the impact of strong rainstorm.

- **Lighting modes**

3-hours lighting, 5-hours lighting, 8-hours lighting, Automatic mode

- **Lithium Battery**

Adopting battery to replace traditional gel battery, long life-span.

- **Modular Design**

All components are modular design and standardized.

- **Emergency switch design**

Turn on or off the light manually when the remote control is out of power or cannot be found temporarily



# SOLAR FLOOD LIGHT

HPFL05003 / HPFL10003 / HPFL15003



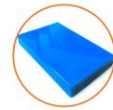
HPFL15003



HPFL10003

## Product Feature

- High-efficiency monocrystalline solar panel with fast charging and long life-span.
- Long-term environmental Batteries with overcharge and over discharge protection, more safe and reliable.
- Built-in battery indicator light to check the battery capacity
- High-efficiency LED chip for working over than 20000hours lighting.
- Flexible adjustment of light direction.
- Multiple operating modes, normal mode can work  $\geq 24$  hours.



Life Po4 Battery



Philips LED Chip



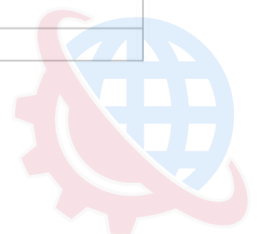
Remove Controller



High Efficient solar cell (>22%)

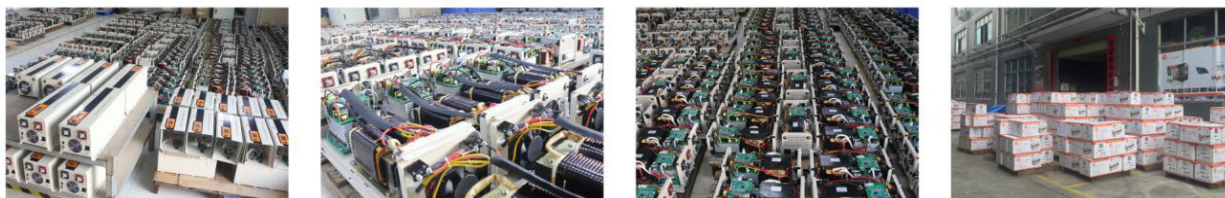
## Parameter

Model	HPFL05003	HPFL10003	HPFL15003
Power	50W	100W	150W
Solar panel	25W	35W	45W
Battery	74Wh LiFePO4 Battery	111Wh LiFePO4 Battery	134Wh LiFePO4 Battery
LED Qty	100Pcs	192Pcs	308Pcs
Lumens	100Lm~120Lm/w		
Chip	Jingyuan / bridgelux		
Working mode	Switch / remote control / light control		
Color Temp.	6000k-6500k		
CRI	Ra $\geq$ 75		
Light control Voltage	1V		
Remote control distance	5-8m, Line length three meters		
Charge time (full sunlight)	6-8h		
Working temp.	-30°C-60°C		
Lifetime	$\geq$ 3 years		
Certificate	CE, ROHS		



# PRODUCTION LINE

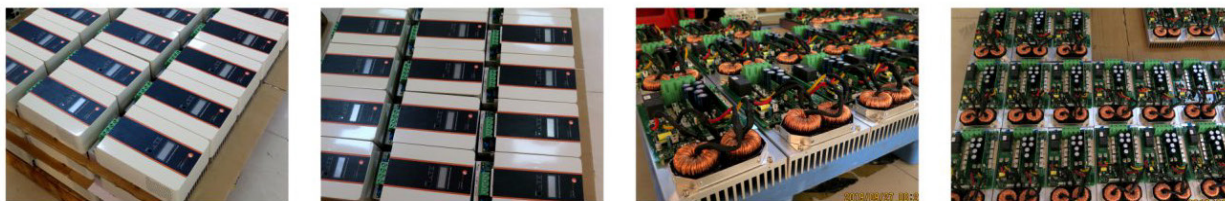
## ▶ Inverter production line



## ▶ Hybrid inverter production line



## ▶ MPPT Charge controller production line



## ▶ All in one solar street light production line



## ▶ Solar flood light production line



## ▶ GEL Battery production line





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