

# FAM-E□□S

## 系列高效节能LED马路灯(太阳能)

Series High Efficiency Energy-saving LED Street Lamps(solar energy)

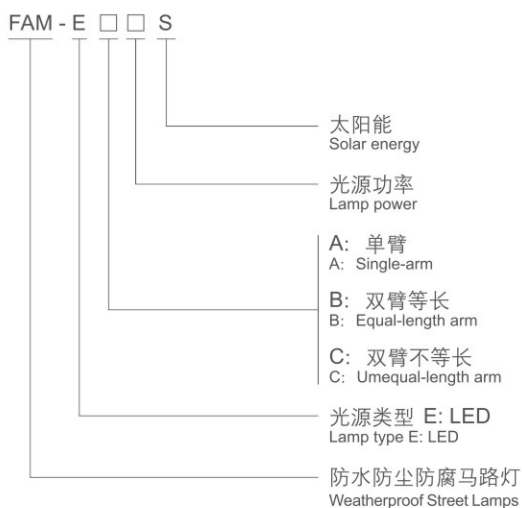


马路、广场照明灯具系列  
Street Lamps and Plaza Light Fittings



GB IEC EN

### ◆ 型号规格含义/Catalogue number logic



### ◆ 订货须知/Ordering Information

- ◇ 注明执行标准形式，如中国标准、国际标准、欧盟标准、北美标准；
- ◇ 按照产品型号规格说明逐条选择，例如：FAM-EA100S表示为100W单臂太阳能高效节能LED马路灯；
- ◇ 本灯具出厂时已配光源；
- ◇ 灯杆形式分为单臂(A型)、等长双臂(B型)、双臂不等长(C型)等形式供现场需要选用，也可根据要求定制；
- ◇ 灯杆高度有多种规格，亦可订制，无特殊注明时按照标准配置灯杆。
- ◇ Specify the executive standard form, such as Chinese National standard, International standard, European standards and American standards.
- ◇ Follow the product catalogue number logic for selection. For example: FAM-E100A S means 100W single-arm solar energy high efficiency energy-saving LED street lamp.
- ◇ The light fittings are supplied with light source.
- ◇ Lamp pole includes single-arm (type A), and equal-length arm (type B), unequal-length arm (type C), for options on site, and supplied upon request.
- ◇ The height of the light pole has various specifications, can also be customized, follow the standard configuration of light pole if there is no special notes.

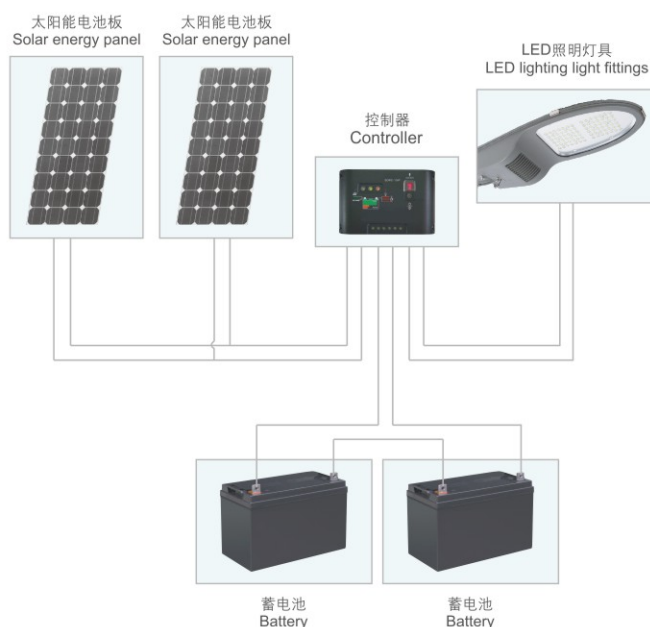
## ◆ 产品特点/Product features

- ◇ 太阳能光伏照明系列产品，可根据现场的不同需求和实际情况，对应提供多种设计方案；
- ◇ 电池板选用效率为16%~17%的单晶硅太阳能电池片，使组件更有效的进行光电转换，使用寿命25年；
- ◇ 配置性价比比较高的阀控免维护的铅酸蓄电池；
- ◇ 特制的控制器具有恒流模式、负载短路保护、反向放电保护、极性反接保护、雷电保护、充放电保护。
- ◇ Solar photovoltaic lighting series products, can provide multiply design programs according to different on-site requirements and practical conditions.
- ◇ Battery panel select single crystal silicon solar panel with power of 16%~17%, which can let module has more efficient photovoltaic conversion, service life is 25 years.
- ◇ Equipped with highly cost effective lead-acid battery with maintenance-free valve control.
- ◇ Special-made controller has constant current pattern, overloads short circuit protection, back discharge protection, reverse polarity protection, lightning protection and charging and discharging protection.

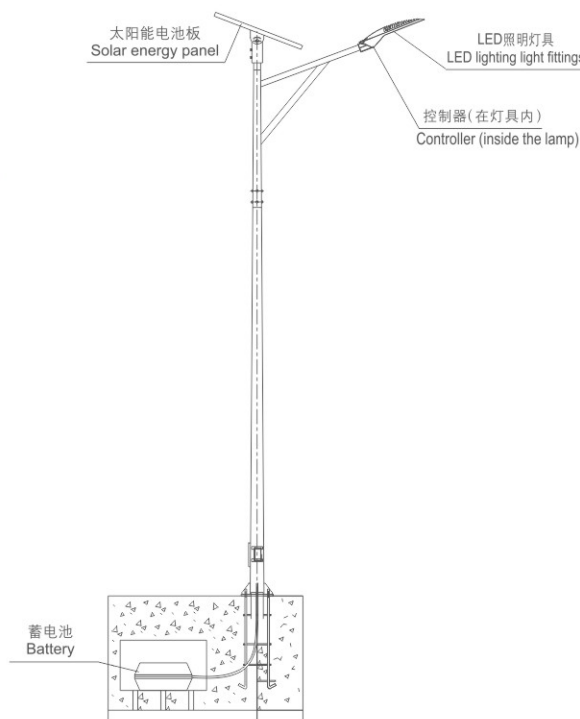
## ◆ 工作原理/Working principle

- ◇ 太阳能照明系统以太阳能为能源，白天充电晚上用，无需外接电源，安全可靠，绿色节能，充电及开、关灯过程由微电脑智能控制；天黑自动开灯，天亮自动关灯，无需人工操作，使用寿命长；
- ◇ 太阳能照明系统是一个全自动的工作系统，只要设定该系统的工作模式就能自动工作。控制模式一般分为光控方式和计时控制方式，一般采用光控或者光控与计时组合作方式。灯在光照强度低于设定值时控制器启动灯点亮，同时开始计时。当计时到设定时间时光源关闭。
- ◇ Solar energy lighting system sets solar energy as energy source, charging in the daytime and using at night, without external power supply, which is safety and reliable, green and energy saving, the process of charging and turning on/off light is controlled by microcomputer for intelligent control; turning on light at night and turning off in the day automatically, without manual operation, long service life.
- ◇ Solar energy lighting system is a fully automatic working system, it can work automatically only if setting the working pattern of the system. Control mode is usually divided into light-control method and time-control method, and usually takes light-control or light-control and timing combined working ways. The lamp of controller will light on when the illumination intensity is lower than set value, at the same time, start timing. When reaching the setting time, lamp will turn off.

## ◆ 太阳能路灯系统图/Catalogue number logic



## ◆ 安装示意图/Installation Diagram



马路、广场照明灯具系列  
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Waterproof



Dustproof



Corrosionproof

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### ◆ 产品规格/Product Specifications

灯具功率 Lamp power	60W	80W	100W	120W	定制/Customizing
阴雨连续工作天数 Continuous working days under rainy days	3天 3 days	3天 3 days	3天 3 days	3天 3 days	1-5天 1-5 days
灯具每日工作时间 Everyday working time of light fittings	10小时 10 hours	10小时 10 hours	10小时 10 hours	10小时 10 hours	6-10小时 6-10 hours
灯杆高度 Height of lamp pole	6米 6m	7米 7m	8米 8m	10米 10m	4-12米 4-12m
太阳能电池板 Solar energy panel	单晶硅180W single crystal silicon 180W	单晶硅240W single crystal silicon 240W	单晶硅360W single crystal silicon 360W	单晶硅360W single crystal silicon 360W	根据定制配置 Arrange according to customizing
电池容量 Battery capacity	DC24V/60AH	DC24V/80AH	DC24V/120AH	DC24V/150AH	根据定制配置 Arrange according to customizing
控制器 Controller	DC24V/10A	DC24V/15A	DC24V/20A	DC24V/20A	根据定制配置 Arrange according to customizing
系统特色 System features	1. 根据用户不同时段自动调节灯具亮度; 2. 具有反接保护、过充保护、过放保护等功能; 3. 具有短路保护, 开路保护, 过压保护; 4. 常规为铅酸蓄电池, 可选锂电池。 1. Automatically adjust lamp brightness according to different time period of user; 2. With reverse protection, overcharge protection, over discharge protection, etc. functions; 3. With short circuit protection, open circuit protection, overvoltage protection; 4. The convention is lead-acid battery, lithium battery is optional.				

### ◆ 能量计算简易公式/Simple formula of energy calculation

$$\begin{aligned}
 &\text{太阳能电池组件功率=} \frac{\text{用电器功率} \times \text{用电时间}}{\text{当地峰值日照时间}} \times \text{损耗系数}(1.6-2.0) \\
 &\text{Power of solar panel} = \frac{\text{Electric apparatus power} \times \text{Electricity time}}{\text{Local peak sunshine time}} \times \text{Loss factor} \\
 \\
 &\text{蓄电池容量=} \frac{\text{用电器功率} \times \text{用电时间}}{\text{系统电压}} \times \text{阴雨天数} \times \text{系统安全损耗系数}(1.6-2.0) \\
 &\text{Accumulator capacity} = \frac{\text{Electric apparatus power} \times \text{Electricity time}}{\text{System voltage}} \times \text{Rainy days} \times \text{System safety loss factor}(1.6-2.0)
 \end{aligned}$$

## ◆ 日照参数表/Sunshine parameters



Waterproof



Dustproof



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### 总辐射量与平均峰值日照时间的对应关系

Corresponding relation between total radiation and average peak sunshine time

年总辐射kJ/cm年 Annual total radiation	420	460	500	400	620	660	700	740
日平均峰值 Average peak value each day	3.19	3.50	3.82	4.14	4.78	5.10	5.42	5.75

### 我国主要30个城市平均日照及最佳安装倾角

Average sunshine and optimum tilt angle in 30 cities in china

城市 City	纬度(N) Latitude(N)	最佳倾角 Optimum tilt angle	平均日照小时 Average sunshine hour	城市 City	纬度(N) Latitude(N)	最佳倾角 Optimum tilt angle	平均日照小时 Average sunshine hour
北京 Beijing	39.80	N + 4	5	杭州 Hangzhou	30.23	N - 3	3.43
天津 Tianjin	39.10	N + 5	4.65	南昌 Nanchang	28.67	N - 2	3.80
哈尔滨 Haerbin	45.68	N + 3	4.39	福州 Fuzhou	26.08	N - 4	3.45
沈阳 Shenyang	41.77	N + 1	4.60	济南 Jinan	36.68	N - 6	4.44
长春 Changchun	43.90	N + 1	4.75	郑州 Zhengzhou	34.72	N - 7	4.04
呼和浩特 Huhehaote	40.78	N + 3	5.75	武汉 Wuhan	30.63	N - 7	3.80
太原 Taiyuan	37.78	N + 5	4.83	广州 Guangzhou	23.13	N - 7	3.52
乌鲁木齐 Wulumuqi	43.78	N + 12	4.60	长沙 Changsha	28.20	N - 6	3.21
西宁 Xining	36.75	N + 1	5.45	香港 Hongkong	22.00	N - 7	5.32
兰州 Langzhou	36.05	N + 8	4.40	海口 Haikou	22.03	N + 12	3.84
西安 Xian	34.30	N + 14	3.59	南宁 Nanning	22.82	N - 5	3.53
上海 Shanghai	31.17	N + 3	3.80	成都 Chengdu	30.67	N + 2	2.88
南京 Nanjing	32.00	N + 5	3.94	贵阳 Guiyang	26.58	N - 8	2.86
合肥 Hefei	31.85	N - 9	3.69	昆明 Kunming	25.02	N - 8	4.25
拉萨 Lasai	29.70	N - 8	6.70	银川 Yinchuan	38.48	N - 2	5.45