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)

Waterproof

Dustproof

Corrosionproof

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

◆型号规格含义/Catalogue number logic

FAM - E □ □ S

- S — 太阳能 Solar energy
- □ — 光源功率 Lamp power
  - A: 单臂 A: Single-arm
  - B: 双臂等长 B: Equal-length arm
  - C: 双臂不等长 C: Unequal-length arm
- □ — 光源类型 E: LED Lamp type E: LED
- FAM — 防水防尘防腐马路灯 Weatherproof Street Lamps

◆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6米灯杆供货。

◇ 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.

◇ Various pole height specifications, which also can be customized, if no special requirements, 6-meter light poles shall be supplied.

◆产品特色/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。

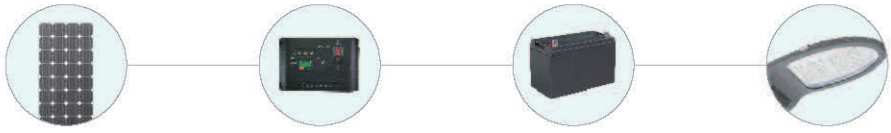
◇ Solar photovoltaic lighting series products,can provide multiply design programs according to different on-site requirements and practical conditions.
◇ Battery panel select single crystal silicon solar panel with power of 16%~17%, which can let module has more efficient photovoltaic conversion, service 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工作方式。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.

◆太阳能光伏照明系统组成部分/Components of solar energy photovoltaic lighting system



太阳能电池板
Solar energy panel

控制器
Control

蓄电池
Battery

LED照明灯具
LED lighting light fittings

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◆产品规格/Product Specifications

灯具工作电压 Working voltage of light fittings	DC12V		DC24V		
额定功率 Rated voltage	50W	70W	100W	120W	150W
阴雨连续工作天数: 3-8天 Coutinuous working days under rainy days: 3-8 days 灯具每日工作时间: 6-12小时 Everyday working time of light fittings: 6-12 hours 灯杆高度: 4-12米 Height of lamp pole: 4-12m 太阳能电池板: 单晶硅17V/60W-17V/600W Soler energy panel: single crystal silicon 17V/60W-17V/600W					
电池容量 Battery capacity	DC12V/80AH–DC12V/150AH		DC24V/100AH–DC24V/400AH		
控制器: 光控、时控、过压、欠压、短路、雷击保护，分时恒流功能 Controller: light-control, time-control, over-voltage, lack of voltage, short circuit, lightning protection, time sharing, Constant current function					

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

$$\text{太阳能电池组件功率=}\ \text{Power of solar panel} = \frac{\text{用电器功率}\times\text{用电时间}\ \text{Electric apparatus power}\times\text{Electricity time}}{\text{当地峰值日照时间}\ \text{Local peak sunshine time}} \times \text{损耗系数(1.6–2.0)}\ \text{Loss factor}$$

$$\text{蓄电池容量=}\ \text{Accumulator capacity} = \frac{\text{用电器功率}\times\text{用电时间}\ \text{Electric apparatus power}\times\text{Electricity time}}{\text{系统电压}\ \text{System voltage}} \times \text{阴雨天数}\times\text{系统安全损耗系数(1.6–2.0)}\ \times\text{Rainy days}\times\text{System safety loss factor(1.6–2.0)}$$

◆ 日照参数表/Sunshine parameters

总辐射量与平均峰值日照时间的对应关系
Corrtesponding 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 sunshime and optimum tilt angle in 30 cities in china

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