



DS-231 Series



一体式智慧太阳能路灯
All-in-One Integrated
Smart Solar Street Lighting



- 铝压铸灯体外壳，高透明钢化玻璃
 - 高透光PC透镜，具有高视觉舒适性和均匀配光透镜，供多种不同配光选择
 - 高性能LED芯片
 - 有侧装和竖装2种安装方式，角度可调，安装管径有Ø76/Ø60mm
 - 无生物蓝光危害风险，符合EN62471: 2008标准
 - 采用通常用于电动客车的LiFePO₄电池
 - 防紫外线聚氨酯塑粉喷涂表面，耐腐蚀可以达1000小时以上
 - 一体化包装，运输方便
 - 所有外部螺钉均为304不锈钢材质
-
- Die-casting aluminium body,super white tempered glass.
 - Optics with PC lens with high visual comfortable and uniform lighting distribution, multiple light distribution options.
 - High quality LED chips.
 - Top and side fixing, angle can be adjustable, installation tube diameter Ø76/Ø60mm.
 - No photo-biological risk,(no risk linked to infrared,blue light and UV radiation) in accordance with EN 62471:2008.
 - With LiFePO₄ battery which usually apply for electric bus.
 - Surface anti-ultraviolet pure polyester powder painting, Corrosion resistance can be more than 1000 hours.
 - Integrated package, convenient transportation.
 - All external screws are made of 304 stainless steel.



远程控制系统和智能系统可选 Remote control system & Smart intelligent system available upon request



节能控制系统
Energy saving with
remote control system



物联网智能系统
Network for smart
intelligent system

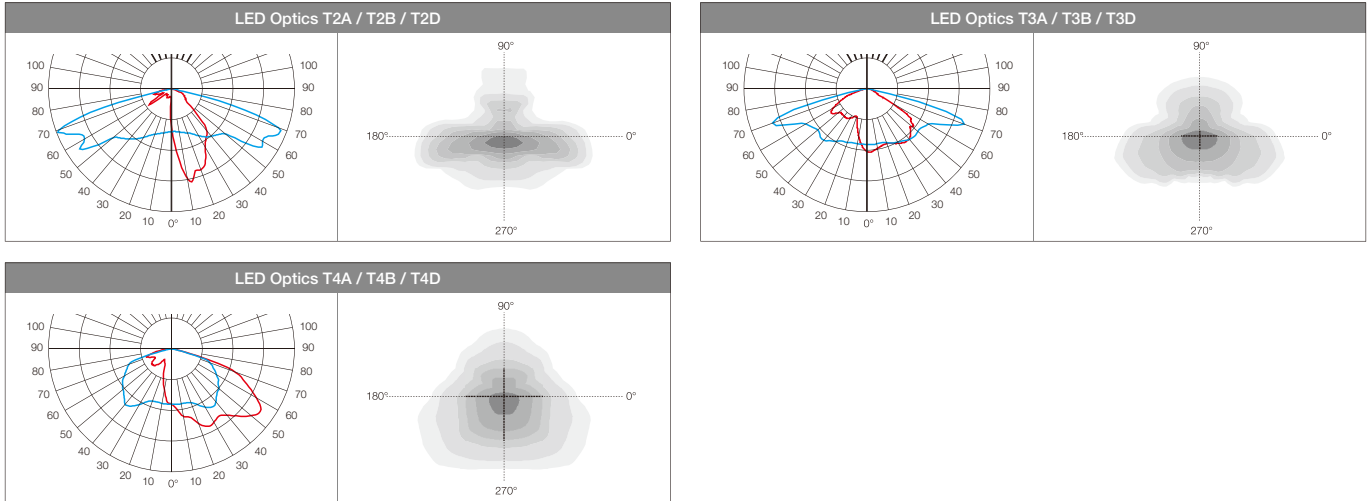


遥控器
Remote control



人体感应
Motion sensor

应用透镜 Optics application



DS-231 Series

All-in-One Integrated Smart Solar Street Lighting

Technical Data

SOLAR-BASIC

Autonomy Information : 1 days(OR 2 DAYS WITH SENSOR)
Working mode : 3hrs - 100%, 2hrs - 60%, 7hrs - 40%

Model 灯具型号	Power 功率	Solar PV 太阳能板	LiFePO ₄ , Battery 电池	Luminous 光通量	LED Chips LED灯珠
DS-231MLED30-126B	30W	18V/45W	230WH/12.8V 18AH	5400 lm	3030*126pcs
DS-231LLED50-168B	50W	18V/75W	384WH/12.8V 30AH	9000 lm	3030*168pcs

SOLAR-GENERAL

Autonomy Information : 2 days
Working mode : 2hrs - 100%, 2hrs - 60%, 7hrs - 40%

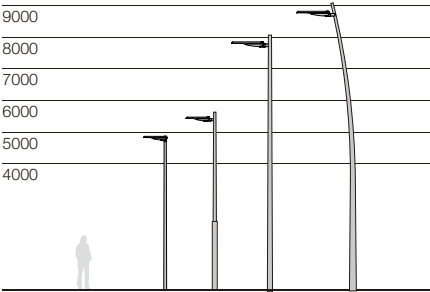
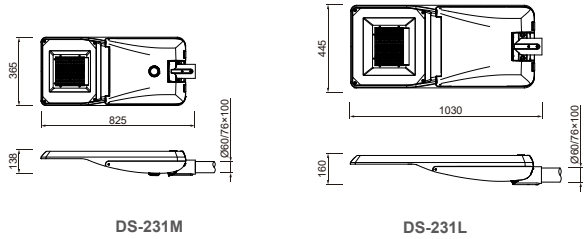
Model 灯具型号	Power 功率	Solar PV 太阳能板	LiFePO ₄ , Battery 电池	Luminous 光通量	LED Chips LED灯珠
DS-231MLED30-126B	30W	18V/45W	461WH/12.8V 36AH	5400 lm	3030*126pcs
DS-231LLED50-168B	50W	18V/75W	692WH/12.8V 54AH	9000 lm	3030*168pcs

SOLAR-Advance

Autonomy Information : 3 days
Working mode : 2hrs - 100%, 2hrs - 60%, 7hrs - 40%

Model 灯具型号	Power 功率	Solar PV 太阳能板	LiFePO ₄ , Battery 电池	Luminous 光通量	LED Chips LED灯珠
DS-231MLED30-126B	30W	18V/45W	538WH/12.8V 42AH	5400 lm	3030*126pcs
DS-231LLED50-168B	50W	18V/75W	922WH/12.8V 72AH	9000 lm	3030*168pcs

产品尺寸 Product dimensions



颜色可选 Color optional



Ral9022



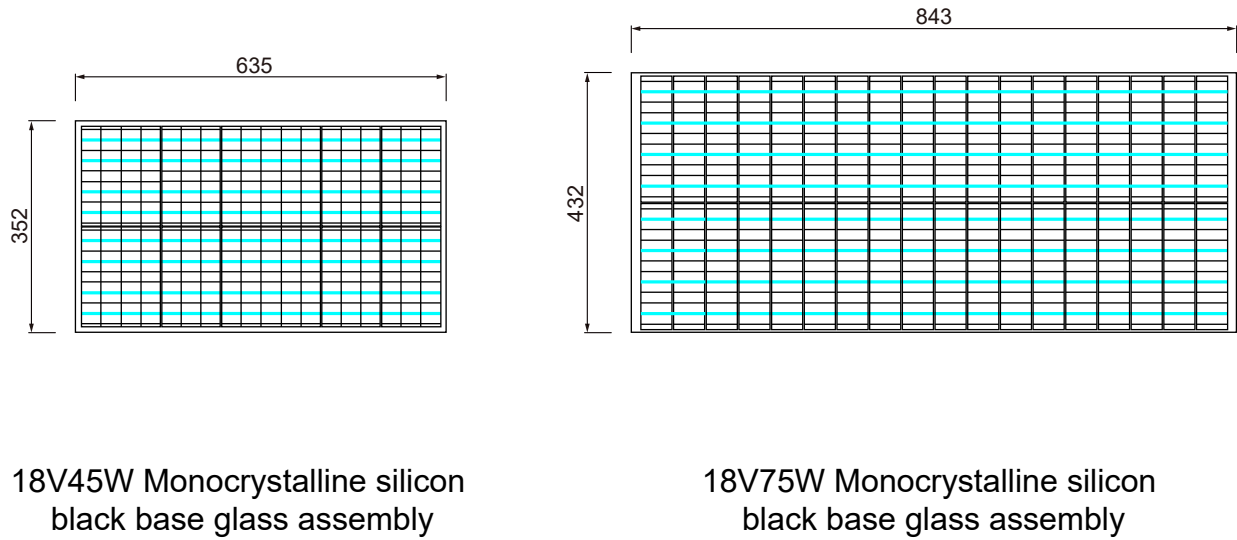
Ral7016

太阳能板参数 Solar panel parameters

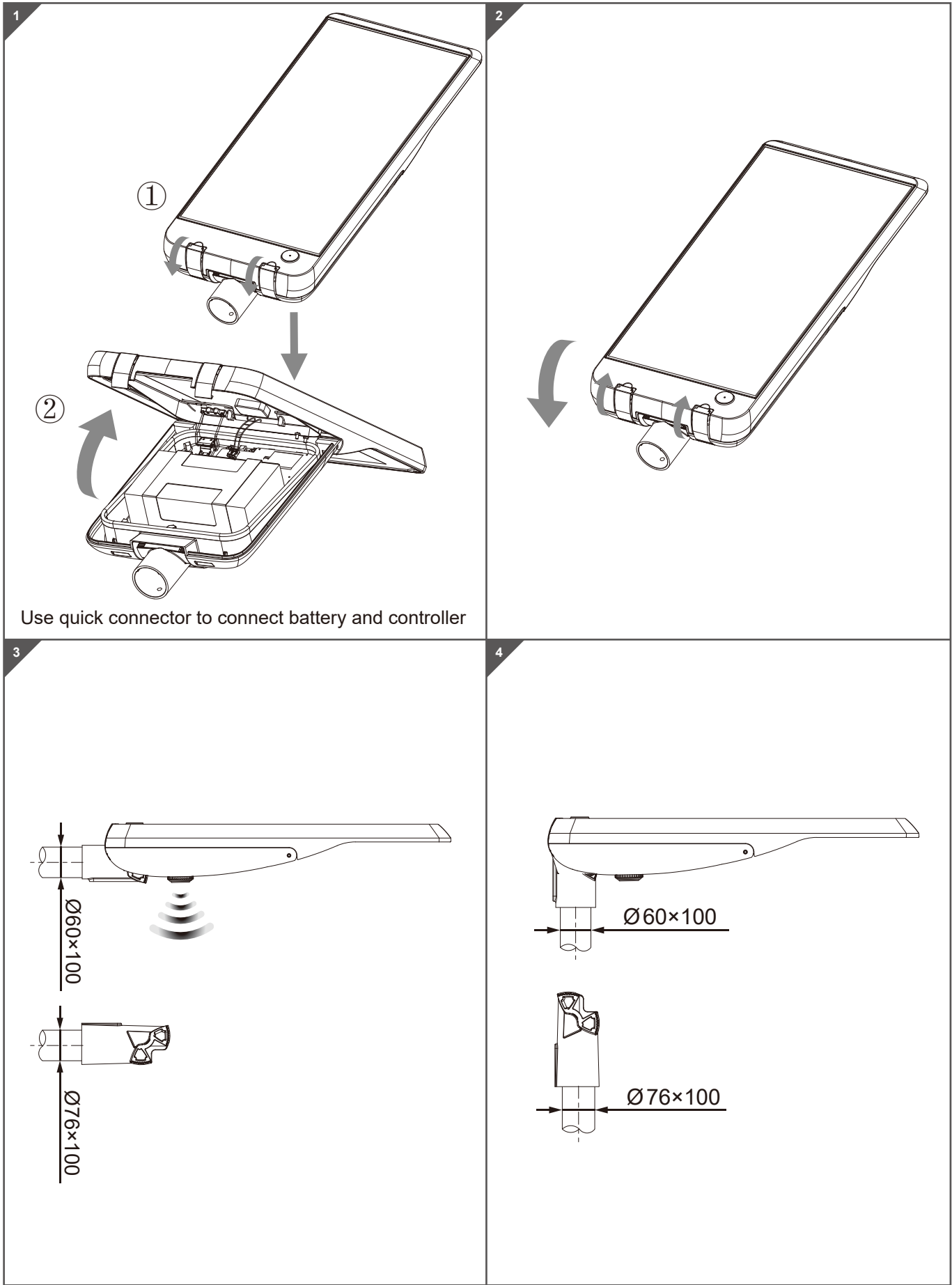


名称 Name	18V/45W Solar panel	18V/75W Solar panel
最大峰值功率 Maximum Peak Power	45W(±5%)	75W(±5%)
开路电压 Open-circuit voltage	≥ 21.24V	≥ 22V
最大工作电压 Maximum Power Voltage	≥ 18V	≥ 18V
最大工作电流 Working current	≥ 2.45A	≥ 4.1A
短路电流 Short-circuit current	≥ 2.69A	≥ 5.1A
太阳能电池片效率 Solar cell efficiency	21.8~22.8%	21.8~22.8%
电池片种类 Type of battery	单晶硅 monocrystalline silicon	单晶硅 monocrystalline silicon
尺寸 (mm) Dimension	635*352*4.5	843*432.5*4.5
工作温度 Operating temp	-40℃~60℃	-40℃~60℃
工作环境湿度 Working ambient humidity	20%~98%(RH)	20%~98%(RH)
寿命 Lifetime	25 years	25 years
质保 Warranty	5 years	5 years

太阳能板尺寸 Solar panel size



安装说明 Installation instructions



遥控器 Remote control unit

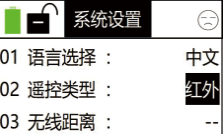


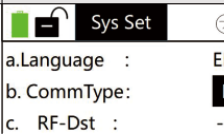
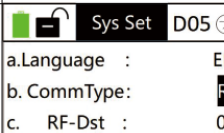
按键名称 Key name	执行功能 Short press		长按键功能 Long press	
UP	A、菜单上翻页 B、设置数据增加	A. Page up the menu B. Increase the setting data	A、菜单连续上翻页 B、调节数据按步长连续增加 C、与 DOWN 键同时按-进入【终端密码】界面	A. Page up the menu continuously B. Increase the data to be adjusted by increment continuously C. Press with the DOWN key simultaneously: enter into the [Term Key] interface
DOWN	A、菜单下翻页 B、设置数据减小	A. Page down the menu B. Decrease the setting data	A、菜单连续下翻页 B、调节数据按步长连续减小 C、与 UP 键同时按-进入【终端密码】界面	A. Page down the menu continuously B. Decrease the data to be adjusted by increment continuously C. Press with the UP key simultaneously: enter into the [Term Key] interface
OK	确认选择	Confirm your choices	—	
SEND	遥控器向控制器发送【负载参数】、【高级参数】界面中的所有值	The remote control sends all the values in the [Adv Para] and [Load	—	
READ	遥控器向控制器读取相应的参数/状态; 如果当前主菜单为如下:【高级参数】或【负载参数】【实时状态】、【历史数据】, 则读取控制器的相对应的内容。在【负载参数】或【高级参数】下读取的为【负载参数】和【高级参数】的所有内容)	The remote control reads the corresponding parameters/states to the controller; if the following parameters are displayed in the main menu: [Adv Para], [Load Set], [RunState], and [HistDate], the corresponding contents of the controller are read. (When the [Adv Para] or [Load Set] is displayed, all contents of the [Adv Para] and [Load Set] are read)	长按3S, 遥控器将以每3S一次的间隔读取控制器数据。再次单击“READ”键即可取消连续读取	When it is pressed down for 3S, the remote control will read the controller data at an interval of every 3S. When the "READ" key is clicked again, the continuous reading will be cancelled
TEST	遥控器向控制器发送负载测试命令 :100%、70%、50%、30%、0%	The remote control sends load test commands to the controller:100%, 70%, 50%, 30%, and 0%.	—	
ON	遥控器向控制器发送休眠唤醒命令。(对于某些控制器, 即使该命令发送成功, 遥控器也会显示发送失败)	The remote control sends the sleep wake-up command to the controller.(For some controllers, even if the command is sent successfully, the remote control will show that it failed to send.)	—	
OFF	遥控器向控制器发送休眠命令。(对于某些控制器, 即使该命令发送成功, 遥控器也会显示发送失败)	The remote control sends the sleep command to the controller.(For some controllers, even if the command is sent successfully, the remote control will show that it failed to send.)	—	
RETURN	返回到主菜单/上一级菜单	Back to the main menu/previous menu	—	

遥控器类型选择 Selection of remote control type

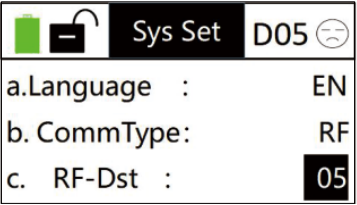
遥控类型选项位于【系统设置】界面，02项”遥控类型“，可切换无线/红外两种遥控方式。

The remote control type options are located in the item 02 "Remote Control Type" on the [Sys Set] interface, which can be switched between two remote control modes (wireless/infrared).

遥控方式	界面显示	遥控指示灯颜色
红外遥控		红色
2.4G 无线遥控		蓝色

Remote control type	Interface display	Color of remote control indicator
Infrared remote control		Red
2.4G wireless remote control		Blue

无线遥控距离调节 Wireless emote control distance adjustment



无线可以从00~10总共11个档位可以选择。

A total of 11 levels (from 00 to 10) are optional for the distance of wireless remote control.

00: 大概距离 0.3米

00: The operating distance is approx. 0.3m

10: 大概距离 30米

10: The operating distance is approx. 30m

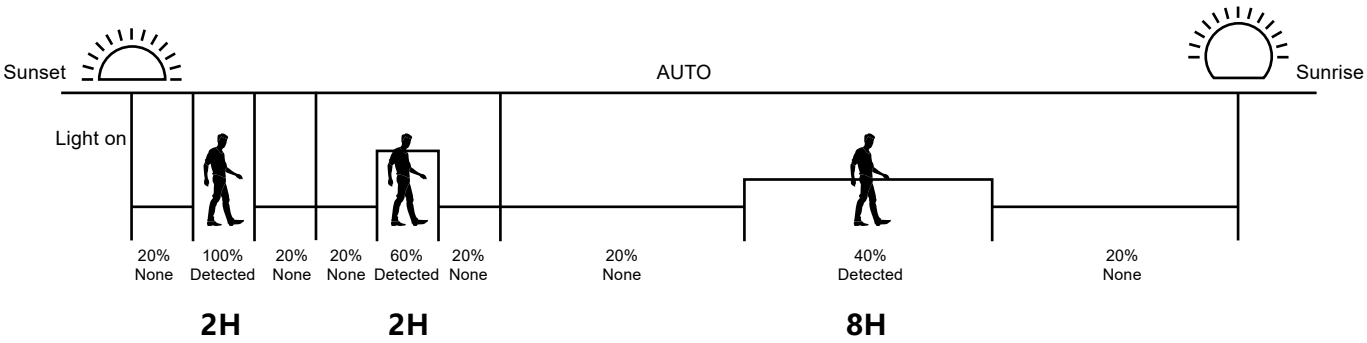
可以根据实际应用环境选择无线距离大小。

The wireless distance can be selected according to the actual application environment.

 注意: 遥控类型为红外时, 无线距离不可调

 Note: When the remote control type is set to infrared, the wireless distance cannot be adjusted

夜间基础模式 Night base mode



用户可以根据灯具配置和亮灯需求调整模式

Users can adjust the mode according to the lamp configuration and lighting needs

防水型MPPT控制恒流一体机(带感应) Waterproof MPPT control constant current integrated machine(With sensor)

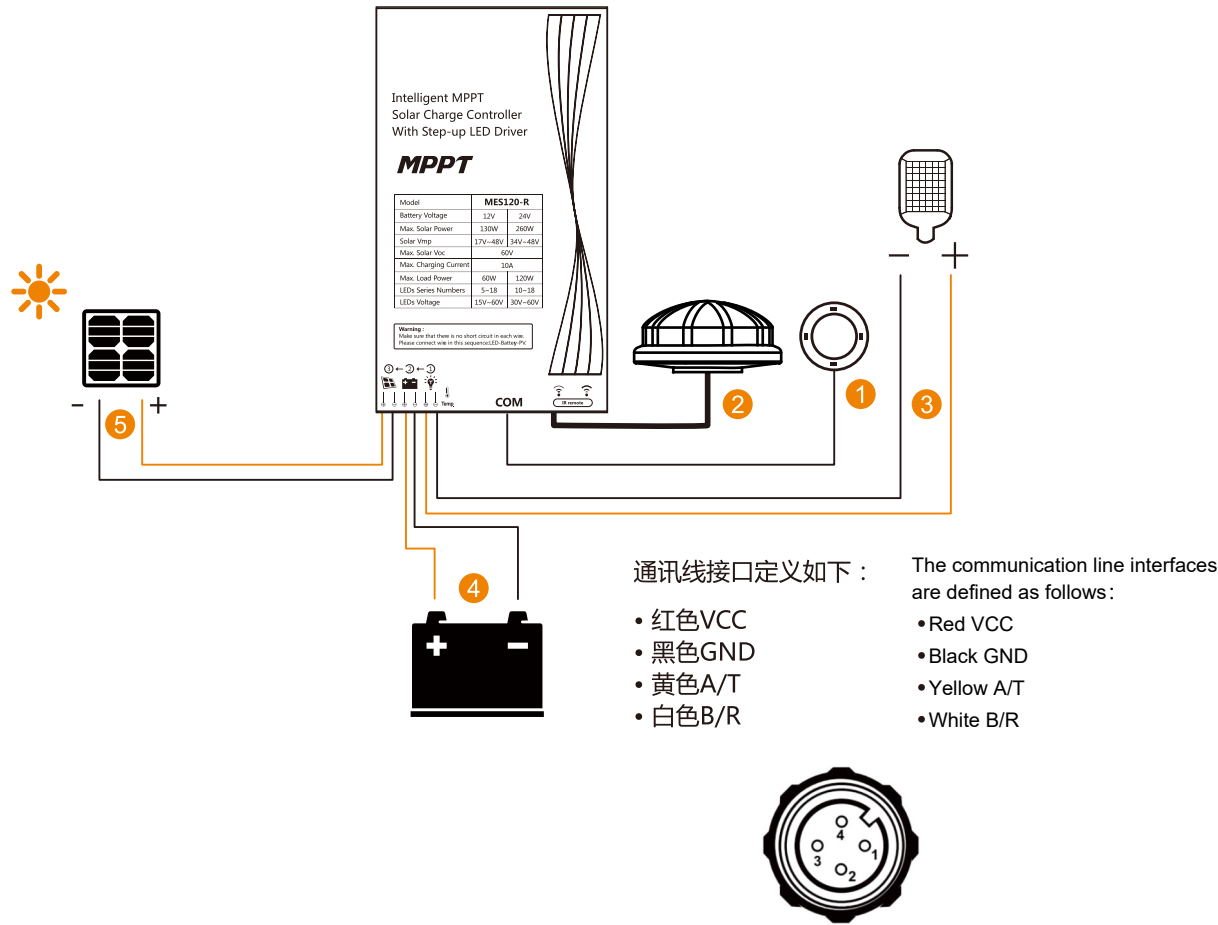
- 采用MovingTrack MPPT最大功率追踪技术，追踪效率更高，速度更快
- 人体红外/微波感应功能，感应延迟时间可设置
- 具有极低的静态功耗和休眠电流，方便长途运输和存储



- MovingTrack MPPT maximum power tracking technology, tracking efficiency is higher, faster.
- PIR/microwave sensing function, induction delay time can be set.
- It has very low static power consumption and hibernation current, which is convenient for long-distance transportation and storage.

参数名称 Item	参数值 Parameter value	参数可调 Adjustable
型号 Mode	MES60	
控制器类型 Controller Type	-R: 红外遥控; -W: 2.4G无线遥控; -C: 带485通讯接口 -R: Infrared remote control; -W: 2.4G remote control; -C: With 485 communication interface	
系统电压 System Voltage	12V	
静态功耗 Static power consumption	-R: ≤5mA -W: ≤20mA	
休眠功耗 Sleep power consumption	≤1mA	
负载电流 Load current	50mA ~ 3000mA	√
负载电压 Load voltage	15V ~ 50V	
负载最大功率 Maximum load power	60W/12V	
负载转换效率 Load conversion efficiency	85%-96% (典型效率95%) /85%-96% (Typical efficiency 95%)	
负载电流精度 Load current accuracy	≤3%±30mA	
太阳能最大输入功率 Maximum solar input power	130W/12V	
最大充电电流 Maximum charging current	10A	
太阳能最大输入电压 Maximum solar input voltage	≤50V	
MPPT追踪效率 MPPT tracking efficiency	> 99%	
充电转换效率 Charge conversion efficiency	85%-98% (典型效率97%) /85%-98% (Typical efficiency 97%)	
超压电压 overvoltage	PB-16.0V; LI-Overcharge voltage+2V; x2,24V System	
充电限制电压 Charge limiting voltage	PB-15.5V; LI-Overcharge voltage+1V; x2,24V System	
过放电压 Overdischarge voltage	8.5V~17.0V; x2,24V System	√
过放返回电压 Overplay the return voltage	8.5V~17.0V; x2,24V System	√
光控电压 Light control voltage	3V~11V; x2,24V System	√
光控延时 Light control delay	0s~60s/2min~60min	√
工作温度 Operating temperature	-35℃~+65℃	
防护等级 Protection degree	IP67	
重量 weight	260g	
尺寸(mm) dimension	80*82*22.6	

MPPT连接图 MPPT connection diagram



感应探头 Induction probe



防水型MPPT控制恒流一体机(无感应) Waterproof MPPT control constant current integrated machine(Without sensor)

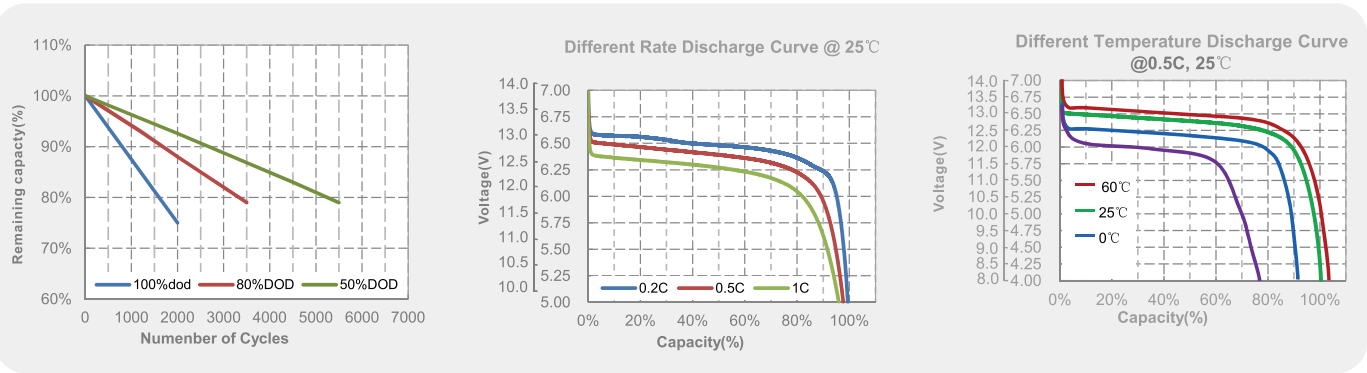
- 采用MovingTrack MPPT最大功率追踪技术，追踪效率更高，速度更快
 - 铅酸电池、锂电池通用，运行参数可通过遥控器设置
 - 采用ultraGreen功耗控制技术，具有极低的静态功耗和休眠电流
- MovingTrack MPPT maximum power tracking technology, tracking efficiency is higher, faster
 - Lead-acid battery, lithium battery universal, operating parameters can be set by remote control
 - ultraGreen power control technology with extremely low static power consumption and hibernation current



参数名称 Item	参数值 Parameter value	参数可调 Adjustable
型号 Mode	MES60	
控制器类型 Controller Type	-R: 红外遥控; -W: 2.4G无线遥控; -C: 带485通讯接口 -R: Infrared remote control; -W: 2.4G remote control; -C: With 485 communication interface	
系统电压 System Voltage	12V	
静态功耗 Static power consumption	-R: ≤5mA -W: ≤20mA	
休眠功耗 Sleep power consumption	≤1mA	
负载电流 Load current	50mA ~ 3000mA	√
负载电压 Load voltage	15V ~ 50V	
负载最大功率 Maximum load power	60W/12V	
负载转换效率 Load conversion efficiency	85%-96% (典型效率95%) /85%-96% (Typical efficiency 95%)	
负载电流精度 Load current accuracy	≤3%±30mA	
太阳能最大输入功率 Maximum solar input power	130W/12V	
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过放电压 Overdischarge voltage	8.5V~17.0V; x2,24V System	√
过放返回电压 Overplay the return voltage	8.5V~17.0V; x2,24V System	√
光控电压 Light control voltage	3V~11V; x2,24V System	√
光控延时 Light control delay	0s~60s/2min~60min	√
工作温度 Operating temperature	-35℃~+65℃	
防护等级 Protection degree	IP67	
重量 weight	260g	
尺寸(mm) dimension	80*82*22.6	

长寿命耐用电池 Durable & Long Lifetime Battery

- 磷酸铁锂电池
 - 最安全的锂化学，高能量密度
 - 内置自动保护，可防止过充电，电流过大和温度过高
 - 高效&持久，可达 4000多个循环 DOD 80%
 - > 2000 个循环@0.2C，充电/放电在100% DOD
 - 宽温度范围:-20℃~60℃
 - 安装后免维护
- Lithium Iron Phosphate (LiFePO4) Battery
 - Safest lithium chemistry with high energy density
 - Built-in automatic protection for over-charge, over dijxcharge, over
 - Efficient&long-lasting up to 4000+cycles DOD 50%
 - >2000 cycles @0.2C，Charge/Discharge at 100% DOD
 - Wide temperature range:-20 ℃~60 ℃
 - Maintenance free after installation



参数名称 Item	参数值 Parameter value					
电池容量 Battery capacity	230WH/12.8V 18AH	384WH/12.8V 30AH	461WH/12.8V 36AH	692WH/12.8V 54AH	538WH/12.8V 42AH	922WH/12.8V 72AH
电池类型 Battery Type	LiFePO4 Battery Pack					
循环寿命 Lifetime in cycles	2000 cycles					
单元类型 Cell Type	32700 3.2V/6000mAH					
电池单元的数量 Quantity of battery cell	3P4S	5P4S	6P4S	9P4S	7P4S	12P4S
充电模式 Charging mode	Constant Current Constant Voltage					
充电电压 Charge voltage	14.6V					
放电截止电压 Discharge Cut-off Voltage	≥8.0V					
最大连续充电电流 (0℃~65℃) Max. Continuous Charging Current	7.0A	6.0A	6.0A	7.0A	7.0A	10.0A
存储温度 Storage Temperature	-10℃~45℃					
工作温度 operating temperature	-20℃~70℃					