

太阳能路灯FAQ_中英双语

国太阳能路灯销售 FAQ（中英双语）

Solar Street Light Sales FAQ (Bilingual)

一、基础认知类 / I. Basic Knowledge

Q: 太阳能路灯由哪些核心部件组成?

Q: What are the core components of a solar street light?

A: 核心部件包括光伏板（太阳能电池板）、锂电池（储能）、LED 光源、控制器、灯杆及基础配件。

各部件功能分工明确：光伏板负责收集太阳能并转化为电能；控制器管理充放电过程，避免电池过充过放；锂电池储存电能供夜间照明使用；LED 光源提供稳定照明；整套系统无需依赖市电，可独立运行。

A: The core components include: photovoltaic panel (solar panel), lithium battery (energy storage), LED light source, controller, light pole, and foundation accessories.

Each component has a clear function: the PV panel collects solar energy and converts it into electricity; the controller manages the charging/discharging process to prevent overcharging or over-discharging; the lithium battery stores electricity for nighttime illumination; the LED light source provides stable lighting. The entire system operates independently without relying on grid power.

Q: 太阳能路灯和普通市电路灯相比，优势是什么？

Q: What are the advantages of solar street lights compared to conventional grid-powered street lights?

A: 核心优势有三点：

1. **零电费成本：** 依赖太阳能供电，后期无持续用电支出，长期使用可大幅节省费用；
2. **安装便捷高效：** 无需开挖路面铺设电缆，尤其适合偏远地区、景区、乡村道路等市电覆盖困难场景，能大幅降低施工成本和缩短工期；
3. **绿色环保且稳定：** 无碳排放，符合绿色能源发展需求；核心部件寿命长，维护成本低；可规避市电线路老化、停电导致的照明中断问题，供电稳定性更强。

A: Three core advantages:

1. **Zero electricity cost:** Powered by solar energy with no ongoing electricity expenses, resulting in significant long-term savings;
 2. **Easy and efficient installation:** No need for trenching or cable laying — especially suitable for remote areas, scenic spots, rural roads, and other locations where grid coverage is difficult, greatly reducing construction costs and timelines;
 3. **Green, eco-friendly, and stable:** Zero carbon emissions, aligned with green energy development needs; long core component lifespan with low maintenance costs; avoids lighting interruptions caused by aging grid lines or power outages, offering greater power supply stability.
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Q: 阴雨天太阳能路灯能正常工作吗?

Q: Can solar street lights operate normally during rainy/cloudy days?

A: 可以正常工作。我们的产品默认配置”单晶硅光伏板 + 高容量锂电池”，常规配置下可支持连续 2-3 个阴雨天正常照明（具体时长可根据定制配置调整）；部分高端型号可定制支持 5-7 天以上阴雨天续航。同时，控制器会智能调节放电策略，优先保障核心照明时段（如晚 7 点至凌晨 6 点）的亮度需求，确保关键时段照明效果。

A: Yes, they can operate normally. Our products come with a default configuration of “monocrystalline silicon PV panel + high-capacity lithium battery,” supporting 2-3 consecutive rainy/cloudy days of normal illumination under standard configuration (duration can be adjusted based on custom configurations). Some high-end models can be customized to support 5-7+ days of backup during rainy weather. Additionally, the controller intelligently adjusts the discharge strategy, prioritizing brightness during core lighting hours (e.g., 7 PM to 6 AM) to ensure lighting performance during critical periods.

二、性能参数类 / II. Performance Parameters

Q: 太阳能路灯的光照时长和亮度可以调节吗?

Q: Can the lighting duration and brightness of solar street lights be adjusted?

A: 均可灵活调节，适配不同使用场景：

1. 光照时长： 可根据需求预设固定时长（如 6 小时、8 小时、12 小时），也可设置”时控 + 微波感应”双模式（有人经过时全功率亮灯，无人时切换节能照明模式）；
2. 亮度调节： 支持分时段调节，例如前 4 小时高亮（满足主干道等强光需求场景），后 4 小时半亮（满足次干道、庭院等节能需求场景），兼顾照明效果与续航能力。

A: Both can be flexibly adjusted to suit different usage scenarios:

1. **Lighting duration:** Can be preset to a fixed duration (e.g., 6 hours, 8 hours, 12 hours), or set to “time-control + microwave sensor” dual mode (full brightness when people pass by, energy-saving mode when no one is present);
 2. **Brightness adjustment:** Supports time-segmented adjustment, e.g., high brightness for the first 4 hours (for main roads requiring strong illumination) and half brightness for the next 4 hours (for secondary roads, courtyards requiring energy saving), balancing lighting effect with battery endurance.
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Q: 核心部件的使用寿命有多久?

Q: What is the service life of the core components?

A: 各核心部件均经过严格品控，使用寿命如下：

1. 光伏板：单晶硅材质，寿命 10-25 年，衰减缓慢，10 年后转化效率仍可保持初始值的 80% 以上；
2. 锂电池：磷酸铁锂电池，循环充放电次数 ≥ 2000 次，使用寿命 3-8 年；
3. LED 光源：亮度衰减率低，使用寿命 5-10 年；
4. 控制器：采用 IP67 防水防尘设计，使用寿命 5-8 年。

整体系统可稳定运行 5 年以上，且核心部件支持单独更换，能有效延长整体使用周期。

A: All core components undergo strict quality control with the following service lives:

1. **PV Panel:** Monocrystalline silicon, lifespan 10-25 years, slow degradation — conversion efficiency remains above 80% of initial value after 10 years;
2. **Lithium Battery:** LiFePO₄ battery, charge/discharge cycles ≥ 2000 , service life 3-8 years;
3. **LED Light Source:** Low brightness degradation rate, service life 5-10 years;
4. **Controller:** IP67 waterproof and dustproof design, service life 5-8 years.

The entire system can operate stably for over 5 years, and individual core components can be replaced separately, effectively extending the overall service cycle.

Q: 如何选择适合自己场景的功率和配置?

Q: How to choose the appropriate power and configuration for your scenario?

A: 需结合使用场景、当地日照时长及阴雨天频率匹配配置，常规推荐如下（可提供定制化方案）：

1. 高速公路、快速路：建议 80W-150W LED 光源，搭配 100W-300W 光伏板、12.8V (45Ah-200Ah) 锂电池，保障高亮度和大覆盖面积；
2. 主干道、乡村主干道：建议 30W-60W LED 光源，搭配 80W-150W 光伏板、12.8V (30Ah-90Ah) 锂电池，兼顾高亮覆盖与长续航；
3. 次干道、小区道路：建议 20W-30W LED 光源，搭配 50W-80W 光伏板、3.2V (50Ah-100Ah) 锂电池；
4. 庭院、景区步道：建议 10W-20W LED 光源，搭配 50W-80W 光伏板、3.2V (30Ah-70Ah) 锂电池。

A: Configuration should be matched based on usage scenario, local sunshine duration, and frequency of rainy days. Standard recommendations (custom solutions available):

1. **Highways, expressways:** Recommend 80W-150W LED source with 100W-300W PV panel, 12.8V (45Ah-200Ah) lithium battery for high brightness and wide coverage;
 2. **Main roads, rural arterial roads:** Recommend 30W-60W LED source with 80W-150W PV panel, 12.8V (30Ah-90Ah) lithium battery for balanced high-brightness coverage and long endurance;
 3. **Secondary roads, residential roads:** Recommend 20W-30W LED source with 50W-80W PV panel, 3.2V (50Ah-100Ah) lithium battery;
 4. **Courtyards, scenic walkways:** Recommend 10W-20W LED source with 50W-80W PV panel, 3.2V (30Ah-70Ah) lithium battery.
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Q: 低温、高温环境会影响产品性能吗?

Q: Do low-temperature or high-temperature environments affect product performance?

A: 影响较小，产品已做极端环境适配设计：

1. 低温环境：锂电池常规工作温度范围为 -20℃ 至 60℃，-20℃ 时容量保持初始值的 70% 以上；针对北方寒冷地区，可定制低温专用锂电池（支持 -40℃ 启动），确保低温下正常运行；

2. 高温环境：控制器具备过热保护功能，可避免部件因高温损坏，适配南方炎热地区使用。

A: Minimal impact — the product is designed for extreme environments:

1. **Low-temperature environments:** Lithium battery's normal operating temperature range is -20°C to 60°C, capacity remains above 70% of initial value at -20°C. For northern cold regions, custom low-temperature lithium batteries (supporting -40°C startup) can be provided to ensure normal operation in low temperatures;
2. **High-temperature environments:** The controller features overheat protection to prevent component damage from high temperatures, suitable for hot southern regions.

三、安装维护类 / III. Installation & Maintenance

Q: 太阳能路灯安装复杂吗？需要专业团队吗？

Q: Is solar street light installation complicated? Does it require a professional team?

A: 安装简单便捷，无需专业电工团队，普通施工人员经指导即可操作。整套产品为一体化设计，安装仅需三步：1) 按提供的基础图纸完成灯杆基础浇筑；2) 进行灯杆吊装；3) 固定相关部件。全程无需铺设电缆，无复杂接线流程。我们会提供安装视频和纸质说明书，同时支持远程指导。

A: Installation is simple and convenient — no professional electrician team required; ordinary construction workers can operate after guidance. The complete product is an integrated design requiring only three steps: 1) Complete the pole foundation pouring according to the provided foundation drawings; 2) Hoist the light pole; 3) Secure related components. No cable laying or complex wiring is needed throughout the process. We provide installation videos, printed manuals, and remote guidance support.

Q: 日常维护需要做哪些工作？维护成本高吗？

Q: What daily maintenance is needed? Is the maintenance cost high?

A: 维护流程简单，成本极低：

1. **日常维护：** 每 3-6 个月清洁一次光伏板表面的灰尘、落叶（避免遮挡影响发电效率，大部分情况雨水会冲刷太阳能板），检查灯杆是否稳固、线路接口是否松动即可；
2. **维护成本：** 核心部件寿命长，无需频繁更换，年均维护成本不足 10 元/盏，远低于市电路灯的线路检修成本及电费支出。

A: Maintenance is simple and the cost is extremely low:

1. **Routine maintenance:** Clean the PV panel surface of dust and fallen leaves every 3-6 months (to avoid shading that affects power generation efficiency — rain will wash the panels in most cases), check that the pole is stable and wiring connections are not loose;
 2. **Maintenance cost:** Core components have long lifespans and do not require frequent replacement. Average annual maintenance cost is less than RMB 10 per unit, far lower than the line inspection costs and electricity expenses of grid-powered street lights.
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Q: 安装后如果出现故障，如何处理？

Q: How to handle faults after installation?

A: 可按“先自查后售后”的流程处理：

1. **先自查：** 通过《国惠照明太阳能路灯故障排除及解决方案》进行简单排查，明确判断故障类型；
2. **售后保障：** 产品享受质保服务（具体质保期见售后条款），质保期内非人为故障免费提供配件更换和维修服务，可安排远程指导排查或技术人员上门；质保期外提供成本价配件及终身技术支持。

A: Follow the “self-check first, then after-sales” process:

1. **Self-check first:** Use the *GUOHUI LIGHTING Solar Street Light Troubleshooting and Solutions Guide* for basic diagnosis to identify the fault type;

2. **After-sales support:** The product comes with warranty service (see after-sales terms for specific warranty period). During the warranty period, free parts replacement and repair services are provided for non-human-caused faults, with remote troubleshooting guidance or on-site technician visits available. Outside the warranty period, cost-price parts and lifetime technical support are provided.

Q: 灯杆和整灯的抗风、抗震能力如何?

Q: What is the wind resistance and seismic resistance of the pole and complete light?

A: 灯杆采用优质钢材，经热镀锌工艺处理，防锈耐腐蚀性能优异：

1. **常规配置：** 整灯抗风等级为 10 级（对应风速 24.5-28.4m/s，可稳定抵御 25m/s 风速），抗震等级为 7 级，适合大部分地区户外使用；
2. **定制配置：** 针对沿海等台风多发地区，可定制 12 级抗风灯杆，通过加厚管壁、优化基础设计，保障使用安全。

A: The pole is made of high-quality steel with hot-dip galvanizing treatment, offering excellent rust and corrosion resistance:

1. **Standard configuration:** Wind resistance rating of Class 10 (corresponding to wind speeds of 24.5-28.4 m/s, stably resisting 25 m/s winds), seismic rating of Class 7, suitable for outdoor use in most areas;
 2. **Custom configuration:** For typhoon-prone coastal areas, custom Class 12 wind-resistant poles can be provided with thickened pipe walls and optimized foundation design for enhanced safety.
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四、成本收益类 / IV. Cost & Benefit

Q: 太阳能路灯初始采购成本比市电路灯高，划算吗？

Q: Solar street lights have a higher initial purchase cost than grid-powered lights — is it worth it?

A: 长期使用性价比更高，回本周期短。虽然太阳能路灯初始采购价略高，但无后续电费、电缆铺设费及线路维护费：以 30W 太阳能路灯为例，替代同亮度市电路灯，年均可节省电费 300-500 元，叠加施工和维护成本差异，一般 2 年即可收回初始差价；后续长期零成本运行，整体生命周期（5-10 年）成本仅为市电路灯的 1/5。

A: Long-term cost-effectiveness is higher with a short payback period. Although the initial purchase price of solar street lights is slightly higher, there are no ongoing electricity costs, cable laying costs, or line maintenance costs. Taking a 30W solar street light as an example to replace a grid-powered light of the same brightness: average annual electricity savings of RMB 300-500, combined with differences in construction and maintenance costs, the initial price difference can typically be recovered within 2 years. After that, long-term zero-cost operation means total lifecycle (5-10 years) cost is only 1/5 that of grid-powered street lights.

Q: 是否有相关补贴政策可以申请？

Q: Are there any relevant subsidy policies that can be applied for?

A: 部分地区有专项补贴，需结合当地政策申请。目前部分国家及地方针对光伏发展、绿色能源、户外照明改造等项目提供每盏几百至上千元的补贴支持。我们可提供产品资质文件（检测报告、合格证等）。

A: Some regions offer special subsidies, subject to local policies. Currently, some national and local governments provide subsidies ranging from several hundred to over a thousand RMB per unit for PV development, green energy, and outdoor lighting renovation projects. We can provide product qualification documents (test reports, certificates, etc.).

Q: 批量采购有优惠吗? 交货周期多久?

Q: Are there discounts for bulk purchases? What is the delivery timeline?

A:

1. 批量采购优惠: 支持阶梯优惠政策, 采购量越大, 单价折扣越高, 同时可赠送部分备用配件;
2. 交货周期: 常规配置产品, 批量采购 (500 盏以内) 15 个工作日发货; 定制化配置 (如特殊功率、抗风等级) 20-30 个工作日发货, 确保按期交付。

A:

1. **Bulk purchase discounts:** Tiered pricing policy is supported — the larger the order quantity, the higher the unit price discount, with additional spare parts provided as complimentary items;
 2. **Delivery timeline:** For standard configuration products, bulk orders (within 500 units) ship within 15 working days; customized configurations (e.g., special power ratings, wind resistance levels) ship within 20-30 working days, ensuring on-time delivery.
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五、售后保障类 / V. After-Sales Warranty

Q: 产品的质保期是多久? 质保范围包括哪些?

Q: What is the warranty period? What does the warranty cover?

A:

- 质保期限: 整灯质保 3-5 年 (具体以售后条款为准);
- 质保范围: 覆盖非人为故障导致的部件损坏、性能衰减; 人为损坏 (如撞击、恶意破坏) 不在质保范围内, 可提供有偿售后。

A:

- **Warranty period:** Complete light warranty of 3-5 years (subject to specific after-sales terms);

- **Warranty coverage:** Covers component damage and performance degradation caused by non-human faults. Human-caused damage (e.g., impact, vandalism) is not covered under warranty but paid after-sales service is available.
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Q: 产品是否有相关检测认证?

Q: Does the product have relevant testing certifications?

A: 有。全套产品通过国家及行业权威检测认证，包括 CE、ROHS 认证、盐雾测试报告、抗风测试、IP65 及以上防水防尘等级检测报告，符合国家绿色能源产品标准，可放心用于政府项目、商业场景、乡村改造等各类正规工程。

A: Yes. The complete product line has passed national and industry authoritative testing certifications, including CE, ROHS certification, salt spray test reports, wind resistance tests, IP65 and above waterproof/dustproof rating test reports, complying with national green energy product standards. They can be confidently used in government projects, commercial applications, rural renovation, and various formal engineering projects.

Q: 如果使用过程中需要更换配件，能及时供应吗?

Q: If replacement parts are needed during use, can they be supplied in a timely manner?

A: 可以。我们拥有完善的配件供应链，核心配件（光伏板、锂电池、控制器、LED 光源）均有常备库存：

- 质保期内：因质量问题免费更换配件；
- 质保期外：可按当时成本价提供配件；
- 适配保障：提供配件通用适配方案，确保旧款产品也能匹配到合适配件，保障后续使用。

A: Yes. We have a comprehensive spare parts supply chain with standing inventory of core parts (PV panels, lithium batteries, controllers, LED light sources):

- **During warranty period:** Free replacement of parts due to quality issues;
 - **Outside warranty period:** Parts available at current cost price;
 - **Compatibility guarantee:** Universal adapter solutions ensure older product models can also be matched with suitable parts, ensuring continued usability.
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