



FTMRS SOLAR

Solar street lights are matched with batteries according to wattage





Overview

When choosing solar street lights, we should not blindly pursue high wattage, but match a balanced scheme of "light source wattage + solar panel power + battery capacity" according to the needs of the lighting scene, so as to achieve efficient and stable lighting. How much battery does a solar street light need?

Example: If a solar street light requires 300Wh per night and uses a 12V battery, the battery capacity needed is: $300\text{Wh}/12\text{v}=25\text{Ah}$ LiFePO4 (Lithium Iron Phosphate) batteries: Longer lifespan, high efficiency, and deep cycle capabilities. Lithium-ion batteries: Cost-effective but may degrade faster.

How much solar power does a street light use?

For a street light that consumes 900WH, after calculation, the battery panel power required by the former $=900*1.333/6.2=193.5\text{ Wp}$, and the battery panel power required by the latter $=900*1.333/4.6=260.8\text{ Wp}$. From this we can conclude that the more sunlight there is, the smaller the solar panels you need and vice versa.

How to choose a solar-powered street lighting system?

Understanding the power consumption of a solar-powered street lighting system is the first step in determining the appropriate specifications. The total energy consumption depends on the wattage of the LED fixture and its operating hours per night. Higher-wattage lights require larger battery storage and solar panel capacity. 2.

What are the key parameters of solar street lighting systems?

This article aims to introduce the key parameters of the solar street lighting systems, including the power of the street light, the wattage of the solar panel, the capacity of battery, the solar charge and discharge controller and the street light controller.



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