

# Simple solar street light





## Overview

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What is a solar street light?

A solar street light is a raised lighting system powered by a photovoltaic (PV) module charging a battery that runs an LED luminaire at night. Modern systems are off-grid, smart-controlled, and designed to operate through low-sun periods. Pole/brackets & wiring, optional sensors/remote monitoring.

How to design a solar street light?

1. Solar Street Lighting Demand Design Formula:  $P_{LED} = E \times A / (\eta \times U \times K)$   
Example: Road width 6m, distance between lights 25m, target illuminance 20 lx →  $P_{LED} = 20 \times (6 \times 25) / (0.85 \times 0.5 \times 0.75) = 20 \times 150 / 0.32 \approx 94W$  → Choose a 100W LED module (Luminous flux 15,000 lm) 2. Solar Street Light Photovoltaic System Capacity Calculation Steps: 3.

Can we make a small Solar street light circuit?

In some places, there is no AC mains power available, right. So, in such cases, we cannot use AC mains based street light circuits. That's where a solar-powered automatic LED street light system becomes a smart solution, right. So now the 3rd circuit design below shows how we can make a small solar street light circuit using very few parts.

How does a solar street light system work?

Now this automatic solar street light system, that is basically a system that checks surrounding light condition and then switches ON or OFF an attached lamp all by itself, depending on how much light is there around, right.



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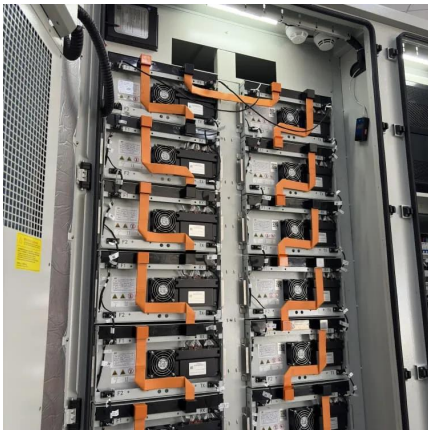
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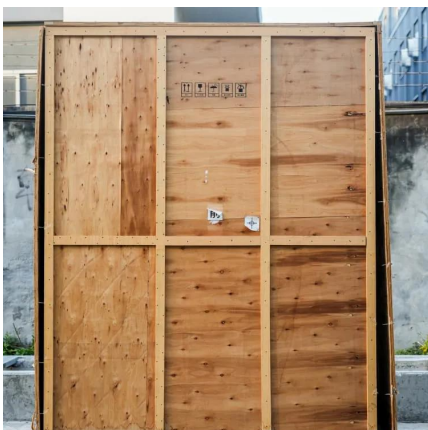
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