

CCTV Solar Power Supply System

Model: ICL-200W100AHSOLARSET(V2)



Overview

ICL-200W100AHSOLARSET(V2) | 200W100Ah 1280Wh Solar Power System

The ICL-200W100AHSOLARSET(V2) 200W Solar Power System is equipped with a 100Ah (1280Wh) LiFePO_4 battery and an integrated IP65-rated outdoor enclosure, providing reliable and stable off-grid power for outdoor surveillance and remote monitoring applications.

The weatherproof distribution box houses the MPPT solar charge controller and LiFePO_4 battery system, ensuring safe operation, efficient solar charging, and long-term durability in harsh outdoor environments.

Designed for easy installation and dependable performance, the system is ideal for powering CCTV cameras, 4G routers, wireless communication devices, and other off-grid equipment in areas without utility power access.

Features

1. Solar-Powered & Plug-and-Play – No external power required; install anywhere with stable, reliable output.
2. MPPT Solar Controller – Advanced MPPT technology for maximum solar charging efficiency
3. Smart Energy Management – Automatically optimizes power generation and storage for maximum efficiency.
4. Durable & Safe Design – Anti-microcrack, low internal loss, high safety, and low-temperature performance.
5. IP65 Battery Protection – Fully weatherproof for outdoor installation.
6. Flexible & Easy Installation – U-shaped clamps; compatible with various poles; no drilling required.
7. High-Quality Materials – Corrosion-resistant frame, stainless steel screws, and waterproof connection cables.
8. Remote Monitoring Support – RS485 communication for easy system management.
9. Anti-Vibration Structure – Reduces impact on optical instruments and video image quality in pole/tower setups.

Specification

Model	ICL-200W100AHSOLARSET(V2) (100Ah12.8V 1280Wh)
Solar System	
Batteries	Class A LiFePO4 batteries 100Ah12.8V 1280Wh
Solar Controller	40A MPPT 12V Controller
Solar Panel	1pcs* 200W Mono Solar Panel
DC Output	3pcs* DC12V Output; 3pcs* DC24V Output
Solar Panel Spec	
STC peak power	200W (single piece)
Material	High-efficiency mono-crystalline silicon cell, high-strength aluminum alloy frame
Panel materials	Super white toughened glass
Life	25years
Maximum power (Pm)	200W
Photoelectric Conversion Efficiency (%)	≥20.4%
Voltage at Pmax (Vmp)	18V
Current at Pmax (Imp)	10.96A
Open circuit voltage - VOC (V)	22.0V
Short circuit current - ISC (A)	11.62A
Module dimensions (L×W×H)	1480*670*30mm
Module weight (KG)	11 Kg
Frame material and dimensions (mm)	Anodized aluminum alloy 1.2mm
Module packaging	Tempered glass/EVA/cell/EVA backsheet
Solar Controller Spec	
Max. Charging Current	40A
System Voltage	12/24V Auto Recognition
MPPT Charging Voltage	<14.5V/29V @25°C
Boost Charging Voltage	14.0–14.8V / 28.0–29.6V @ 25°C (Default: 14.5V / 29V)
Equalization Charging Voltage	14.0–15.0V / 28.0–30.0V @ 25°C (Default: 14.8V / 29.6V) (Liquid, AGM)
Float Charging Voltage	13.0–14.5V / 26.0–29.0V @ 25°C (Default: 13.7V / 27.4V)
Battery Low-Voltage Protection	10.8–11.8V / 21.6–23.6V (Default: 11.2V / 22.4V)
Low-Voltage Protection Recovery	11.4–12.8V / 22.8–25.6V (Default: 12.0V / 24.0V)
Battery High-Voltage Protection	15.8V / 31.3V
Max. Allowable Battery Terminal Voltage	35V
Temperature Compensation Coefficient	-4.17mV/K per cell (Boost/Equalization); -3.33mV/K per cell (Float)
Over-Voltage Protection	10.0–32.0V (Lithium Battery, Default: 14.4V)
Over-Voltage Recovery	9.2–31.8V (Lithium Battery, Default: 14.0V)
Battery Low-Voltage Protection	9.0–30.0V (Lithium Battery, Default: 10.6V)

Low-Voltage Protection Recovery	9.6–31.0V (Lithium Battery, Default: 12.0V)
Battery Type	Gel, AGM, Liquid, Lithium (Default: Gel)
Max. PV Open-Circuit Voltage	100V (-20°C), 90V (25°C) *1
Max. PV Input Power	520W / 1040W
Night/Dusk Recognition Voltage	3.0–10.0V / 6.0–20.0V (Default: 8.0V / 16.0V)
MPPT Tracking Range	(Battery Voltage + 2.0V) ~ Voc × 0.9 *2
Load Output Current	30A
Operating Modes	General Controller (Default), Streetlight Mode, User Manual Mode
Max. MPPT Tracking Efficiency	>99.9%
Max. Charging Conversion Efficiency	98.00%
Dimensions	196.5 × 136.4 × 67.1 mm
Net Weight	1.3kg
Self-Consumption	≤14mA
Communication	RS485 (RJ11 Port)
Grounding Type	Negative Grounding
Wiring Terminal	6 AWG (16mm ²)
Operating Temperature	-20 to +45°C
Operating Humidity	≤95% RH, Non-condensing
Storage Temperature	-25 to +70°C
Protection Rating	IP32

*1 This value represents the maximum allowable open-circuit voltage of the PV input at the minimum ambient temperature.

*2 Voc refers to the open-circuit voltage of the solar panel.

*3 The values before and after the slash apply to 12V and 24V systems, respectively.

Battery Spec	
Battery Capacity	12.8V/100AH (1280WH) LiFePO4 battery
Rated Capacity	100Ah
Rated Voltage	12.8V
Maximum Charging Voltage	14.6 ± 0.2V
Discharge Cut-off Voltage	10 ± 0.2V
Standard Charging Current	10A
Standard Discharging Current	10A
Maximum Continuous Charging Current	20A
Maximum Continuous Discharging Current	20A
Maximum Peak Discharging Current	60A
Cycle Life	>2000 cycles
Weight	≤ 9.125kg
Operating Temperature	Charging: 0°C ~ 55°C; Discharging: -10°C ~ 60°C

Outdoor Cabinet Spec (IB543)	
Dimensions (length x width x height)	500*450*300mm
Weight (kg)	16.5
Material	Cold-Rolled Steel with Electrostatic Powder Coating
Thickness	1.2mm
IP Level	IP65
Color	White + Gray
Door	1
FAN	(Optional)
IP Camera/AP/CPE Mounting Plate	4PCS
Key	1PCS
Grounding Connector	1PCS
All-in-One Package	
Size and Weight	Battery Cabinet Size: 460*310*535MM; 26.90KG Solar Panel Size: 1520*710*65MM; 11.00KG Solar Bracket (SPB300): 600*550*205MM; 13.00KG C-Channel Bracket: 1015*50*50MM; 4KG
Weight (Include brackets and accessories)	54.9KG
Content	1* Solar Panel 1* Cabinet (Inside with battery) with DC output connectors (with 2 * Battery Cabinet Pole mount kit, 1* Screws pack, 1* QIG) 1* Solar Panel Bracket 1* C-Channel Bracket
Certificate	CE, MSDS, UN38.3, DGM, Sea Transportation Certificate

Widely Used Applications

The Solar Power Supply system is widely used in various outdoor surveillance and communication applications, including:

1. CCTV surveillance systems
 2. Solar-powered security and monitoring systems
 3. 4G/5G wireless routers and communication devices
 4. Remote and off-grid monitoring stations
 5. Road and traffic surveillance projects
 6. Construction site security systems
 7. Farms, plantations, and agricultural monitoring
 8. Industrial and perimeter security applications
- Smart city and infrastructure projects