

SOLARX-Lithium™

Rechargeable Solar Lithium Iron Batteries



Product Overview

Order code | Part Number:
SXLC12V4A5

Safe LiFePO₄ Lithium-iron Chemistry

with integrated Battery Management System -BMS

Superior Performance



- More Energy
- Faster and Powerful
- Superior and Longer Cycle Life
- Wider Temperature Range Operation
- Very Low Self-Discharge
- Very Light
- Modular Design

Superior Safety



- Maintenance Free
- Sealed. IP56 (Optional)
- Multi-position
- BMS- Battery Management System Integrated
- Full Protections Integrated
- Environment Friendly



Thanks to their orthorhombic crystalline structure, which creates a rigid framework with channels that allow highly stable and oxygen-resistant reversible Li⁺ intercalation, combined with proprietary formulations, XUNZEL SOLARX-Lithium™ iron phosphate batteries deliver outstanding advantages over other lithium technologies. These include longer lifespan, zero maintenance, excellent cycle and mechanical stability (no volume change), enhanced safety, lightweight design, and superior charge/discharge efficiency, among others.

XUNZEL SOLARX-Lithium™ batteries are high-performance rechargeable Lithium Iron Phosphate (LiFePO₄) battery packs, specially designed for photovoltaic solar off-grid and back-up applications, and equipped with an integrated Battery Management System (BMS).

Their long service life and maintenance-free operation significantly reduce replacement needs and overall costs, making them the best long-term investment.

After years of research and development, XUNZEL offers several specialized formulations to suit different applications:

- **High-Capacity SOLARX-Lithium™ Series** – optimized for applications requiring greater energy density.
- **Low-Temperature SOLARX-Lithium™ Series** – engineered for reliable performance in very cold environments.
- **High-Temperature SOLARX-Lithium™ Graphene Series** – developed for demanding solar off-grid and back-up applications in hot climates.
- **High-Performance SOLARX-Lithium™ Series** – designed for applications requiring high power density or high current capability.

Our proprietary formulations can be applied to any cell or battery pack design. Contact us to find the most suitable solution for your application.

XUNZEL ENERGY

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SOLARX-Lithium™ Advantages

Long lifespan

Up to **8,000 cycles** with no performance loss, ensuring exceptional durability and long-term reliability.

Maintenance-free

No active maintenance required to extend service life.

No memory effect and **ultra-low self-discharge** allow for long storage periods without capacity loss.

Lightweight & compact

High power density makes SOLARX-Lithium™ batteries **smaller and lighter**—at least **50% less weight** compared to other technologies, while delivering excellent energy density.

High efficiency

•100% available capacity

•Fast charge and discharge capability → reduced downtime and higher productivity

•High discharge pulse currents → powerful bursts of energy on demand

Enhanced safety

Lithium iron phosphate is the **safest lithium technology**. Combined with our advanced **Battery Management System (BMS)**, SOLARX-Lithium™ ensures maximum safety and reliability.

Wide temperature tolerance

Engineered to perform under **extreme hot or cold conditions**, making them ideal for demanding solar, backup, and off-grid applications.

Greater depth of discharge

With **100% depth of discharge (DoD)**, SOLARX-Lithium™ offers more usable capacity than other battery technologies.



All our batteries are carefully designed and manufactured to achieve the best results in the field. We have a laboratory and state-of-the-art equipment to carry out all kinds of additional and specific tests. XUNZEL ENERGY reserves the right to change limits, test conditions and dimensions.

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Rechargeable Solar Lithium Iron Battery

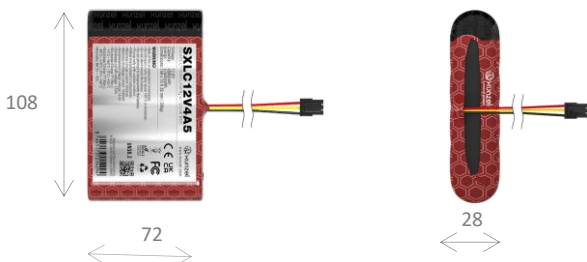


Battery Specifications

Model	SXLC12V4A5 -- LFP Battery 4500mAh 12.8V with BMS
Order code Part Number	SXLC12V4A5
Chemistry	Lithium Iron Phosphate [LiFePO ₄]
Battery Type	Rechargeable - Secondary – with No Memory Effect with BMS integrated
Rated Capacity	57600 mWh (at 0.2C, 25°C) at 1C ≥95% at 2C ≥90% at 3C ≥85% // at 55°C ≥ 100% at 0°C ≥ 89% at -10°C ≥ 84%
Nominal Voltage	12.8V
Cycle Life (at DoD%)	8000 cycles (at 30%) >6000 cycles (at 50%) >4000 cycles (at 80%) >2000 cycles (at 100%)
Charge Input Voltage	14.60V Overcharge protection: 3.80 ±0.1V per cell delay: 500-2000ms Release: 3.65 ±0.1V
Discharge Cut-off Voltage	10.00V Overdischarge protection: 2.30 ±0.1V per cell delay: 10-190ms Release: 2.60 ±0.1V
Maximum Charge Current	2000mA (25 ±3°C)
Maximum Discharge Current	5000mA (25 ±3°C)
Internal Resistance	≤ 20mΩ
Dimensions Net Weight	108 x 72 x 28 mm ±2mm ~ 390 gr
Cables and Terminals	100+10mm 22AWG/0.34mm ² type 436450308 (3 PIN) with NTC Cable output [Customized upon request]
Temperature Range	Operating temperature: -25°C to +70°C Recommended Charge Temperature (min/max): 0° to +65°C Maximum Charge Temperature Design: +70°C Recommended Discharge Temperature (min/max): -25° to +60°C Maximum Discharge Temperature Design: +70°C Minimum Discharge Temperature: -40°C
Conditions for Storage	1 month: -20°C ~ +50°C 3 months: -20°C ~ +45°C 1 year: -10°C ~ +25°C 5% ~ 85%RH
Safety Tests Protections	BULLET-PROOF Design. Over charge, Over discharge, Over current, Short-circuit and Temperature protections. Over-charge: No fire, No explosion (Recovery: Disconnect the load) Over-discharge: No fire, No explosion, No leakage Short-circuit: No fire, No explosion, Maximum temperature <130°C (Recovery: Disconnect the load) Crush: No fire, No explosion, Maximum temperature <130°C Hot oven (130°C) Test: No fire, No explosion Thermal cycling properties: No leakage \ No fire \ No explosion Seawater immersion: No fire, No explosion Drop: No leakage \ No fire \ No explosion Depression: No leakage \ No fire \ No explosion
Compliance Shipping Class	FCC CE UKCA RoHS3 REACH WEEE Compliant UN3480, Class 9, UN38.3

*Please do not hesitate to ask us for any additional technical information you may require

DIMENSIONS (±1mm)



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