

Outdoor Security, Redefined: IRLAB SPK Series Solar-Powered Kits

As businesses increasingly prioritize eco-friendly and efficient security solutions, traditional power-dependent outdoor monitoring systems struggle to meet the needs of remote or unmanned locations. The SPK Series Solar Security System addresses these challenges, providing a robust monitoring experience that operates seamlessly without power or network connections, designed for harsh environments.



Product Overview

The SPK Series is a modular, solar-powered outdoor security system engineered for versatile deployment in off-grid and remote environments. This kit includes the following standard components:

- High-efficiency monocrystalline solar panels (120W/200W/400W)
- Durable LiFePO4 battery (50Ah/100Ah/200Ah@DC12.8V) for reliable energy storage
- MPPT solar charge controller
- Battery Management System (BMS)
- Mounting brackets for panel installation

The following components are available as optional accessories:

- Waterproof solar box
- Wireless bridges for enhanced connectivity
- RS485 to RJ45 converter for data transmission
- PoE switch
- Adaptable voltage booster for seamless integration with various cameras, compatible with virtually all industry-standard connectors.

Key Advantages of the SPK Series

- **Highest efficiency Power Management:** Our self-developed MPPT (Maximum Power Point Tracking) controller ensures optimal power output with up to 97.5% charging

efficiency. The high-efficiency monocrystalline solar panels feature a photovoltaic conversion efficiency of up to 23%, enabling reliable and efficient performance in various environments.

- **Advanced Battery Management System (BMS):** Our self-developed BMS balances charge and discharge cycles to extend battery life and prevent cell imbalance over time, ensuring safe operation and long life span.
- **Reliable & Long-Lasting Power:** Equipped with high-durability monocrystalline solar panels with a lifespan of over 25 years and a LiFePO4 battery that retains more than 80% capacity even after over 4000 deep cycles, it provides reliable, long-lasting power, even under low-light conditions.
- **Remote Monitoring & Easy Management:** Our self-developed remote battery monitoring software enables convenient battery status checks from your PC, providing real-time insights into battery performance. Battery data supports secondary development and can be integrated into third-party platforms, making it easy for your system to access and manage data.
- **Customizable & Compatible:** Offers tailored solar panel and battery capacity configurations for specific environments, with third-party integration capabilities for scalability and upgrades.

Application Scenarios

The SPK Series is ideal for expansive outdoor settings like construction sites, traffic zones, border areas, parking lot, farm and forests. Its self-sustaining power, environmental adaptability, and smart management make it a reliable choice for locations lacking power or network connections.

About IRLAB

With over 30 years of experience in the security industry, IRLAB is dedicated to providing high-quality, low-maintenance security solutions with excellent cost-efficiency. Our R&D team of over 30 engineers who have more than 5 years of design experience, ensures that our products are built to last, with industry-leading durability and performance. By investing 8% of our annual sales revenue into research and development, we continually optimize our products to reduce maintenance needs and improve reliability, making them a smart choice for cost-conscious customers. For more details or to schedule a demo, please contact our sales team at sales@irlab.net.