



OASIS L261

All-in-One

125kW/261kWh Storage System

Product Specification

Preface

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1. Introduction

1.1 Overview

OASIS L261 All-in-One is a high-safety, high-reliability, and standardized product developed for commercial and industrial energy storage applications. Featuring a modular system configuration, it flexibly adapts to diverse scenarios and supports on-grid、 off-grid and on-off grid applications. With parallel scalability, this system allows for power capacity expansion. This energy storage solution is ideal for applications requiring continuous grid stability, including peak load shifting, emergency backup, etc.

Products include battery PACK, control box, energy storage converter (PCS), battery management system, fire protection system, etc. The product supports the optional STS module.

1.2 Application Scenarios

Primarily used in commercial and industrial energy storage settings, including but not limited to: Industrial parks\ Financial institutions\ Educational facilities\ Commercial buildings\ Gas stations\ Residential complexes.

2. Product Overview

2.1 Specification

This product adopts the integrated cabinet design, composed of PACK, PCS, fire protection, liquid cooling unit and other components. The nominal capacity of this energy storage integrated cabinet is 125kW/261kWh. The battery connection mode of a single PACK is 1P52S, 5 packs are connected in series, and 314Ah lithium iron phosphate battery is used. A PACK capacity of 52.2496kWh, PCS rated power is 125kW, the whole machine can support parallel expansion.



Figure 2.1.1 Product Rendering Diagram

Note: The external side of the cabinet is equipped with STS module, which can be optionally configured as needed.

2.2 Technical Parameter

Product Series	OASIS L261 All-in-One
Product Model	CIESS-L-261/CIESS-L-261S
Battery Side Parameter	
Cell Type	LFP
Cell Specification	3.2V 314Ah
PACK Capacity	52.2496kWh
Nominal Capacity	261.248kWh
Nominal Voltage	832V
AC Side Parameter(On grid)	
Rated Output Power	125kW
THDi	<3% (at rated power)
Nominal Voltage	400V (±15%)
Nominal Frequency	50/60Hz (±5Hz)
AC Side Parameter(Off-grid, Optional STS Module)	
Rated Output Power (kW)	125kW
Wiring Method	3L+N
Rated Output Voltage (V)	400V
Rated Output Frequency (Hz)	50/60Hz
THDu	<3% (Linear load)
System Parameter	
Communication Interface	RS485、CAN
Display	Touchscreen, Cloud Platform
Protection Rating	IP55
Cooling Method	Liquid cooling
Installation Type	Outdoor
Corrosion Resistance	C3
Ambient Temperature	-25°C ~ 55°C (>45°C derating)
Humidity	5% ~ 95% (non-condensing)
Noise	<75dB
Altitude	2000m
Size (W×D×H)	980*1390*2350mm
Weight	2400kg

3. Product Specification

3.1 Battery Cell

The LiFePO₄ (lithium iron phosphate) prismatic aluminum-shell cell (3.2V/314Ah) features a rigid casing to resist mechanical impacts and human misuse, ensuring intrinsic safety. Each cell integrates a pressure relief vent to safely release internal pressure during overcharging, over-discharging, short circuits, or thermal runaway, preventing explosions and minimizing hazards.

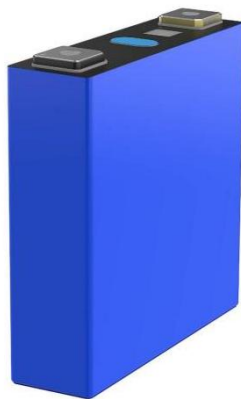


Figure 3.1.1 Schematic of 3.2V 314Ah LiFePO₄ Cell

Single Cell Specification

No.	Parameter	Specification
1	Cell Chemistry	LiFePO ₄
2	Nominal Capacity	314Ah
3	Nominal Voltage	3.2V
4	Nominal Energy	1004.8Wh
5	Operating Voltage Range	2.5~3.65V
6	Nominal Charge/Discharge Rate	0.5C
7	Max. Charge/Discharge Rate	0.5C
8	Storage Temperature	-40°C~60°C
9	Charging Temperature	0°C~60°C
10	Discharging Temperature	-30°C~60°C
11	Size (W×D×H)	174*72*207mm(Including pole)
12	Weight	5.6kg
13	Energy Density	179.4Wh/kg
14	Calendar life	9000 cycles (25°C, 0.5C/0.5C, 70% EOL)

3.2 Battery PACK

The modular battery PACK is designed for rapid installation, maintenance, and safety:

- (1) Modular Design: Enables quick deployment and servicing.
- (2) Terminal Identification: Clear "+/-" markings on terminals for easy connection and inspection.
- (3) Laser Welding: Low-impedance, high-strength connections ensure reliability.
- (4) BMS Passive Balancing: Cost-effective solution with proven field performance.
- (5) Safety: Dedicated expansion space above pressure relief vents to prevent explosive pressure buildup during thermal runaway.
- (6) Thermal Management: It adopts liquid cooling heat dissipation mode to ensure its heat dissipation effect.

PACK Parameter

Configuration	1P52S
Nominal Voltage	166.4V
Nominal Energy	52.2496kWh
Nominal Charge/Discharge Current	157A
Max. Charge/Discharge Current	157A
Voltage Range	130~189.8V
Storage Temperature	-40°C~60°C
Charging Temperature	5°C~55°C
Discharging Temperature	-20°C~55°C
Cooling Method	Liquid cooling
Size (W×D×H)	810*1160*245mm
Weight	345±5kg



Figure 3.2.1 Battery PACK Schematic Diagram

3.3 Battery Cluster

The system contains 1 battery cluster composed of 5 PACK in series, delivering a total energy capacity of 261.248 kWh.

Cluster Features:

- (1) Single-cluster series configuration supports high-voltage output and eliminates circulating current risks.
- (2) The cabinet adopts a frame structure, and the battery packs are connected by high-voltage power copper rows and low-voltage communication harnesses which meet the electrical isolation requirements.
- (3) The structure is safe and reliable, and the mechanical strength is sufficient to ensure that there is no shaking or deformation of the equipment after installation.
- (4) The electrical clearance and creepage distance are designed with full consideration of the system operating voltage, overvoltage category, pollution level and insulation materials.

Cluster Parameter

No.	Parameter	Specification
1	Configuration	5 PACK in series
2	Series-Parallel Topology	1P260S
3	Nominal Charge/Discharge	0.5C
4	Max. Charge/Discharge	0.5C
5	Nominal Energy	261.248 kWh
6	Nominal Voltage	832V
7	Operating Voltage Range	702~936V
8	Communication Protocol	CAN、RS485
9	Balancing Method	Passive Balancing

3.4 Battery Management System

The product adopts a two-tier architecture, which consists of a Battery Management Unit (ESBMU),

a Battery Cluster Management Unit (BCMU).

Each battery insertion box is equipped with a set of ESBMU, each ESBMU is responsible for collecting the single cell voltage and temperature of each battery box, and has the function of equalization. the ESBMU communicates with the BCMU using CAN bus, and the BCMU collects the data of the ESBMU in polling mode.

Each battery cluster is equipped with 1 set of BCMU, which is installed in the high-voltage control box, summarizes the data detected by ESBMU through CAN protocol, analyzes the total voltage and current of the battery cluster, and then interacts with the higher-level equipment based on CAN communication.

The battery management system is capable of realizing functions such as battery status monitoring, operation status control, insulation monitoring, equalization management, protection alarm and communication, etc. Through real-time supervision of the battery system, it ensures normal, stable and safe operation of the system. Battery management system includes:

First-level management (ESBMU): with the function of monitoring the voltage and temperature of single cell within the battery module. BMM is the smallest component management unit of the battery management system (BMS), and provides the internal information of the battery module to the battery cluster management system (BCMU) through the communication interface.

Second-level management (BCMU): It is a real-time monitoring and management system composed of electronic circuit equipment, which can effectively manage the charging and discharging process of the battery pack in a safe manner, and provide alarm and emergency protection against possible failures, so as to ensure the safe, reliable and stable operation of the battery.

3.5 Control Box

The Control box serves as the power control unit for the battery cluster, integrating critical components such as: BCMU (Battery Cluster Manager Unit), relays and contactors, fuses, hall current sensors, circuit breakers. It ensures circuit protection (on/off control) and is essential for the safe and functional operation of the battery cluster.

Control Box Parameter

Rated Voltage	1000Vdc
Maximum Current	350A
Communication Interfaces	CAN、RS485、LAN
Protection Rating	IP20
Size (W×D×H)	600*1023*180mm
Weight	40kg



Figure 3.5.1 Schematic Diagram of Control Box

3.6 Energy storage converter (PCS)

The energy storage converter (PCS) is a device that realizes the bidirectional conversion of AC and DC power. It is suitable for all kinds of energy storage batteries to exchange energy with the power grid in the form of charging and discharging, for the control and management of energy storage components. Under the control of the management system of the energy storage power station, it can realize the "peaking and valley filling" of the grid load and fast secondary frequency modulation. When combined with intermittent distributed energy (wind power, photovoltaic), it can smooth the volatility of intermittent energy, so that the load characteristics of intermittent energy tend to be controllable "grid-friendly load".

Table 3.6.1 PCS specification parameter table

Item	Specification Parameter	
DC Side	Operating Voltage Range	650V~950V
	Full Power Voltage Range	680~950V
	Input Path Number	1
	Max. Current	203A

AC Side (On-grid)	Rated Voltage	400V
	Voltage Deviation	-15%~+15%
	AC Output Type	3W+N
	Rated Output Power	125kW
	Max. Output Power	137.5kW
	Max. Current	200 A
	Rated Frequency	50/60Hz
	Power Factor	0.99
	Power Factor Range	-1 (Leading) ~1(Lagging)
	THDi	<3% (Rated Power)
	Overload Capacity	1.1Pn, Continuing
	Max. Efficiency	98.5%
DC Side (Off-grid)	Rated Output Voltage	400V
	THDu	<3% (Linear Load)
	Rated Frequency	50 Hz
	Rated Output Power	125kW
System Parameter	Size (W*D*H)	520mm×785mm×232mm
	Weight	66.5 kg
	Altitude	4000m (>2000m derating)
	Temperature	-30℃~55℃ (>45℃ derating)
	Humidness	0~95%RH, Non-condensing
	Cooling Mode	Intelligent Air Cooling
	Ingress Protection	IP20
	Communication Interface	CAN/RS485

3.7 STS Module (Optional)

STS static transfer switch, rated at 250kW, is specially designed for energy storage systems and used with PCS to realize fully automatic and seamless switching on and off the grid. Customers can choose STS module according to project requirements to realize fast and automatic switching of energy storage cabinets on and off the grid, providing backup power for critical uninterruptible loads and coping with sudden power outages. The parameters of STS module are as follows.

NO.	Item	Specification
1	Power (Grid Side)	250kW
2	Power (Load Side)	250kW
3	Max. Power of Important Load	125kW
4	Rated Voltage	400V
5	Rated Current (Grid Side)	361A
6	Rated Frequency	50/60Hz
7	On-off grid switching time	$\leq 20\text{ms}$
8	Ambient Temperature	$-25\sim 55^{\circ}\text{C}$ ($>45^{\circ}\text{C}$ derating)
9	Humidity	0~95% (non-condensing)
10	Altitude	4000m ($>2000\text{m}$ derating)
11	Protection Rating	IP20
12	Size (W*D*H)	440*520*130mm
13	Weight	22kg

Note: Important load power + PCS side power $\leq$ product maximum power

3.8 Management System (EMS)

LCU local control unit serves as the control center of the whole microgrid system, with a variety of communication interfaces, including serial port and network port. It collects energy storage status information, realizes operational data collection, monitoring and storage of field equipment, carries out energy control and management of the whole system, and realizes communication with systems at all levels.

- (1) Platform overview: display the current operation overview of the energy storage system, including: energy storage charging and discharging amount, real-time power, SOC, etc.
- (2) Equipment management: view all kinds of equipment by equipment, including PCS, BMS, meter and other real-time operation data, and support equipment regulation.
- (3) Failure alarms: summarize the failures and alarms of various types of equipment, and query them by equipment type, time, and so on.
- (4) Statistical analysis: query the historical operation data of equipment and related reports, and

support data export.

(5) Energy management: the core function of EMS, configure energy storage energy scheduling strategy, realize peak shaving and valley filling, emergency power backup and so on.

3.9 Fire Protection System

3.9.1 Temperature Sensor + Smoke Sensor + Flood Sensor

Built-in temperature sensor, smoke sensor and flood sensor, when the detected temperature, smoke and humidity reach a certain threshold, trigger the system alarm.

3.9.2 Aerosol Fire Protection

Cabinet fire-fighting, aerosol fire extinguishing device is installed in the cabinet, using gas thermal runaway detector for detection, electric + thermal dual-start mode, rapid response and fast action.

3.9.3 Explosion-proof Valve + Water Fire Fighting Interface

In order to guarantee the reliability of fire fighting, our company is equipped with explosion-proof valve and water fire fighting interface. When the cabinet is overcharged, over-discharged, short-circuited, thermal runaway and other explosions, the explosion-proof valve can be the first time to respond to maintain the balance of pressure within the cabinet at the same time to avoid an explosion, but also through the cabinet door fire fighting interface to inject cold water, the shortest possible time to control the system temperature of the cabinet, to avoid the accident from further expanding.

3.10 Temperature Control System

Liquid cooling solution is adopted, including liquid cooling unit, liquid cooling pipe network and liquid cooling plate. Battery PACK integrated cold plate type, liquid cooling unit integrates high efficiency inverter water pump, water tank, heat exchanger, leakage detection components, etc., with high reliability.

The supply voltage of the liquid-cooled unit is AC 220V, which is provided by the utility power; the main communication method is RS485, and this signal is output to the control box to communicate with the system.

Liquid-cooled Unit Parameter

Item	Parameter	Note
Power Supply	220V $\pm$ 15%, 50/60Hz	
Maximum Running Current	19.2A	
Cooling Power	5000W	
Heating Power	2000W	
Communication Port	RS485/CAN	
Refrigerant	50% ethylene glycol +50% pure water	

3.11 Outdoor Cabinet

3.11.1 Basic Overview

Battery clusters, liquid-cooled unit, fire fighting and other equipment are integrated into the cabinet with independent self-power supply system, temperature control system, fire fighting system and other automatic control and safety guarantee devices to ensure that the system is always in a good temperature and optimal performance operating state.

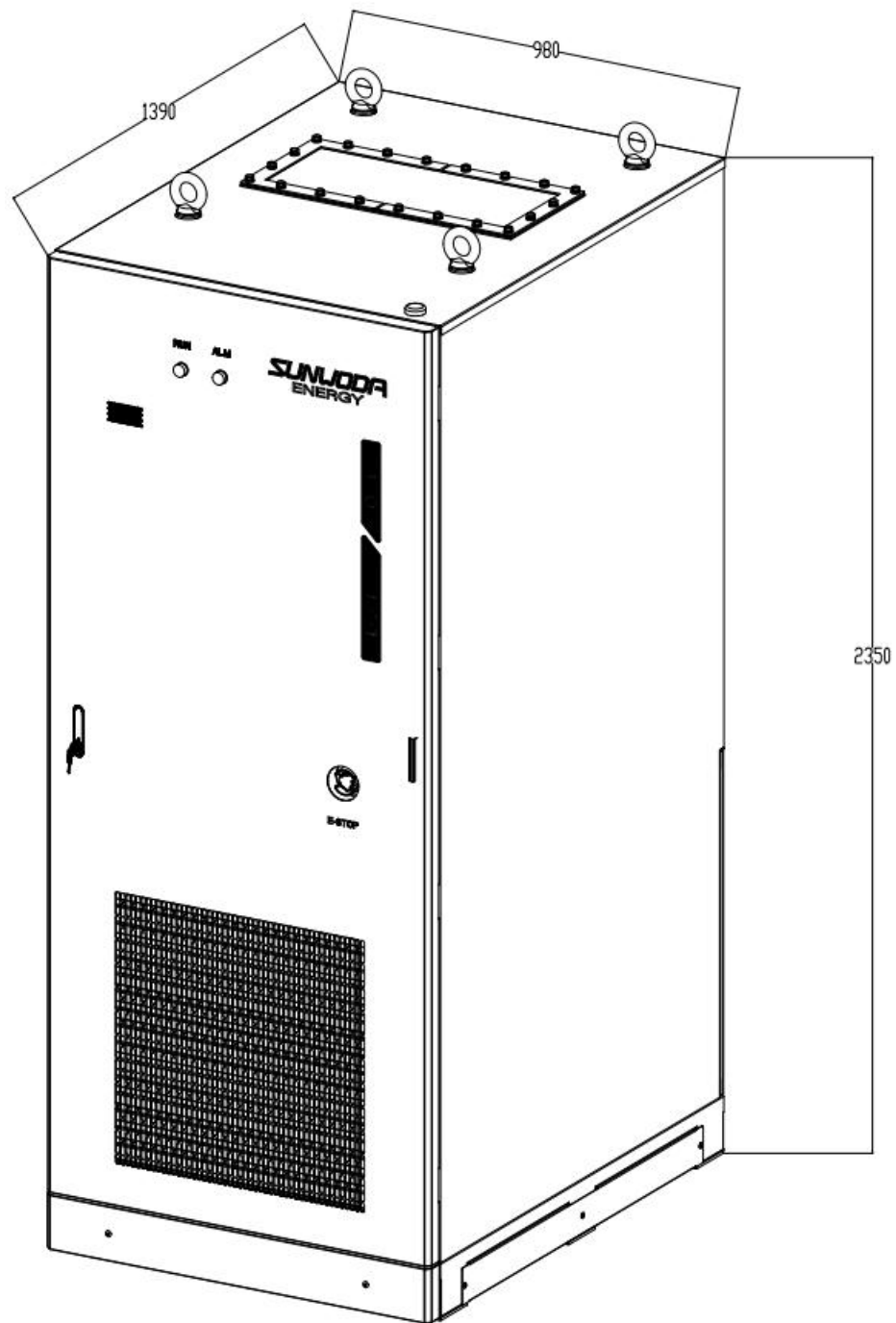
3.11.2 Cabinet Design

In order to ensure sufficient strength and design life requirements, SGCC plate thickness of the cabinet is made into 1.5mm, and the double-layer design of zinc-rich primer powder coating and top powder coating is designed to make the shell have good anticorrosion and weathering performance. Outdoor cabinet shell tape in the range of 200°C will not produce residual glue.

Outdoor cabinet has excellent fireproof performance, cabinet protection grade IP55, with the ability to prevent sand, water, moisture, salt spray, etc.; seismic performance to meet the requirements of transportation standards.

The power and non-main power cables inside the cabinet have good insulation and high flame retardant performance.

3.11.3 Diagram of External Dimension





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