

Perfecting the Power
Ranking the Life

三和电力
SANHE POWER TECH

ESS
PRODUCTS BROCHURE

Perfecting the Power, Ranking the Life.

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Sanhe Power Tech (Shenzhen) Co.,Ltd.

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Company Profile

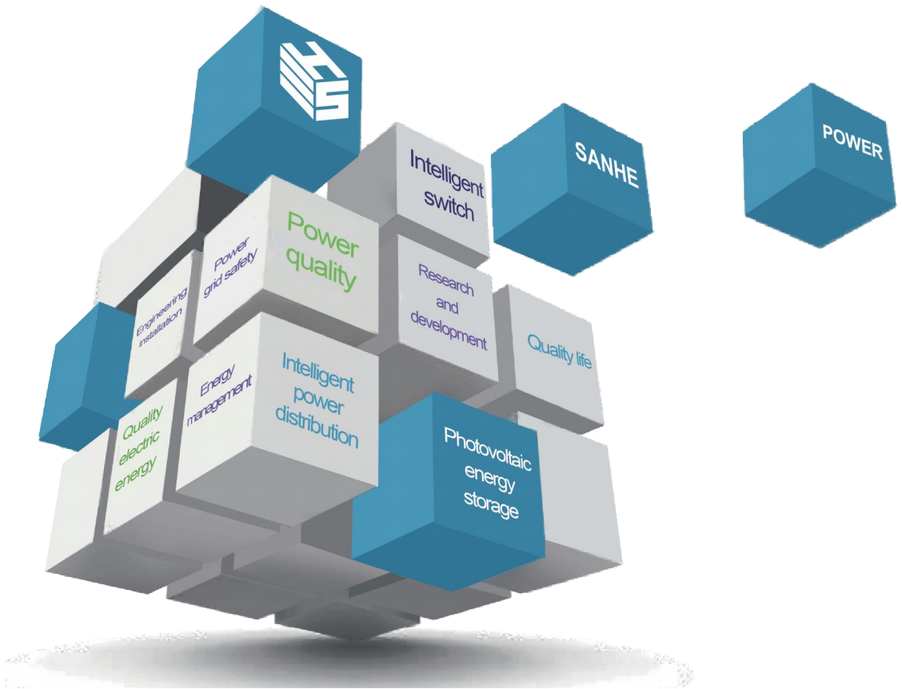
Sanhe Power Tech (Shenzhen)Co.,Ltd. is a national high-tech enterprise and a national "Little Giant" enterprise specializing in niche markets. With power electronics technology at its core, it focuses on the research and development of power quality products and system solution services, and has been deeply involved in the industry for over 20 years. Driven by technological innovation and based on the foundation of power quality, the company has expanded into smart microgrids and various new types of power system applications. It has accumulated technical scenarios in distributed energy fields such as energy storage systems, photovoltaic power, green electricity hydrogen production, and electric vehicle energy replenishment.

In line with the national "dual carbon" strategy, the company actively lays out the "new quality productivity" of the new power system. Its subsidiary, Wuxi Lifeng Energy Storage Co., LTD., focuses on energy storage research and development, while Wuxi Lifeng Electric Co., Ltd. is responsible for the research and dvelopment and production of key equipment, jointly promoting industrial upgrading.

The company's main business includes
A full range of products and complete solutions for power quality detection and control.
Distributed new energy system products and advanced solutions.
Strong and weak current engineering based on "dual carbon" and energy efficiency management.

In the past more than 20 years, adhering to the values of "Care Profoundly, Carry out Persistently", the company has accumulated a large number of clients in industries related to national economy and people's livelihood, including large central enterprises such as China National Petroleum Corporation and China Petroleum & Chemical Corporation, infrastructure enterprises Shenzhen Water And Enviroment Group, and high-end manufacturing enterprises such as BYD and Inovance Technology.

Based on years of accumulation in power quality technology and experience, Sanhe Power Tech will combine new power electronics and advanced intelligent software and hardware technologies. While continuously providing upgrade solutions for traditional power systems, it will closely participate in the construction and optimization of new power systems, contributing to industrial upgrading, industry progress, and even the sustainable development of the coun**try.**





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Smart energy management platform

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Certification & Honor

Since its establishment, Sanhe Power Tech (Shenzhen) Co.,Ltd. has been constantly enhancing its own strength and undertaking social responsibilities, accumulating rich honors and qualifications.

National High-tech Enterprise

National-level "Little Giant" enterprises specializing in niche markets

AAA Credit rating

A council member of the China Electrical Equipment Industry Association

The software development system has passed the CMMI assessment of SEI in the United States

Obtained the second-level qualification for general contracting of power and the fourth-level construction permit for power installation, renovation and testing

ISO9001 Quality Management System

ISO14001 Environmental Management System

ISO18001 Occupational Health and Safety Management System Certification

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The company's multiple technologies lead the industry's development. It holds over 30 patents and more than 20 software Copyrights. As a major writing unit, it has participated in the formulation of over 40 international and domestic standards.





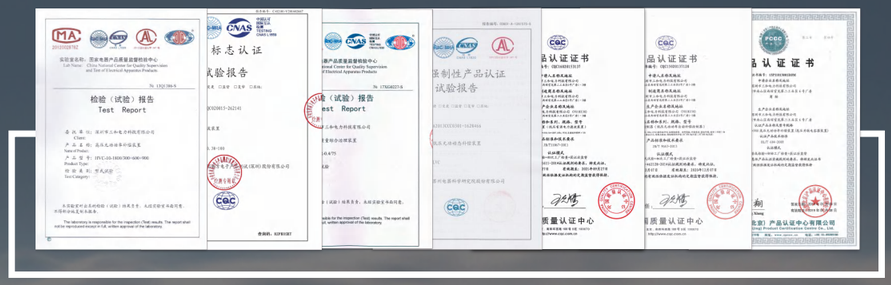








Product Qualifications



Product Standards



Invention Patent



Software Copyright



Research And Development Strength

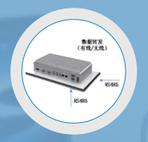
- Over 20 years of dedication to the power technology sector
- The annual R&D investment exceeds 10% of the total sales
- R&d personnel account for 38% of the total number of employees in the company
- Equipped with a product testing platform and full-process testing capabilities, it ensures outstanding product quality and performance.
- More than 20 software Copyrights
- More than 30 invention patents
- More than 40 national and industry standards
- Jointly developed with research institutions such as Tsinghua University, Xi 'an Jiaotong University, and the Chinese Academy of Sciences
- Introduce IPD and adhere to the product development model of IPD integrated product development +CMMI software capability maturity model
- Constantly upgraded and updated solutions and products







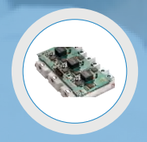
5 CoreTechnologies



EMS



BMS



PCS



CloudPlatform



Integrated Production Systems

3 Major Product Lines



Integrated Commercial & Industrial Energy Storage Cabinet



Containerized Energy Storage System



Residential Energy Storage System

Premium Clients

ABB

SAMSUNG E&A

bp

BASF
We create chemistry

TBEA

JinKO Solar

Linde

HEIDELBERGCEMENT GROUP

BYD

JA SOLAR

LONGi

SUNGROW

CanadianSolar

BAOSTEEL

KONKA

REPT BATTERO

SINOPEC

CNPC

GCL

CNBM | sinoma

CSSC
中国船舶集团有限公司
CHINA STATE SHIPBUILDING CORPORATION LIMITED

中国海油 CNOOC

国家管网 PipeChina

MCC 中冶集团

华润 China Resources

中国国电 CHINA GUODIAN

神华集团 SHENHUA GROUP

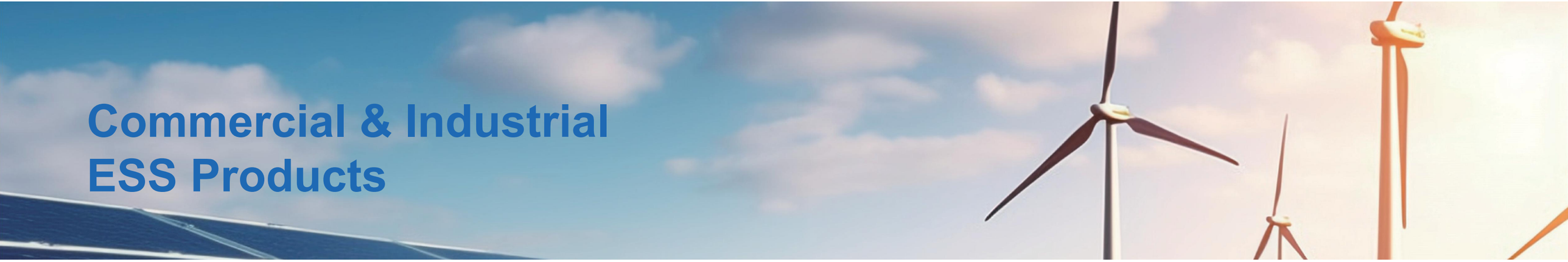
国投 SDIC

中国铁建

天津金鹏集团 Tianjin Jinpeng Group

双汇 Shineway

赛科 SECCO



Commercial & Industrial ESS Products

Outdoor Cabinet Series



LFEI-125-261

125kW/261kWh

Liquid cooling/energy storage integrated cabinet



LFEI-215-418

215kW/418kWh

Liquid cooling/energy storage integrated cabinet



LFEM-50-100

50kW/100kWh

Air-cooled/photovoltaic and energy storage microgrid cabinet



LFEM-125-261

125kW/261kWh

Air-cooled/photovoltaic and energy storage microgrid cabinet

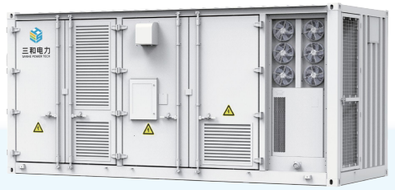
prefabricated cabinet series



LFEM-250-783

250kW/783kWh

10-foot micro-grid prefabricated cabin



LFEM-500-1566

500kW/1566kWh

20-foot micro-grid prefabricated cabin



LFEC-1000-2080

1000kW/2080kWh

20-foot AC/DC integrated cabin



LFEC-5000DC

5MWh

20-foot DC cabin



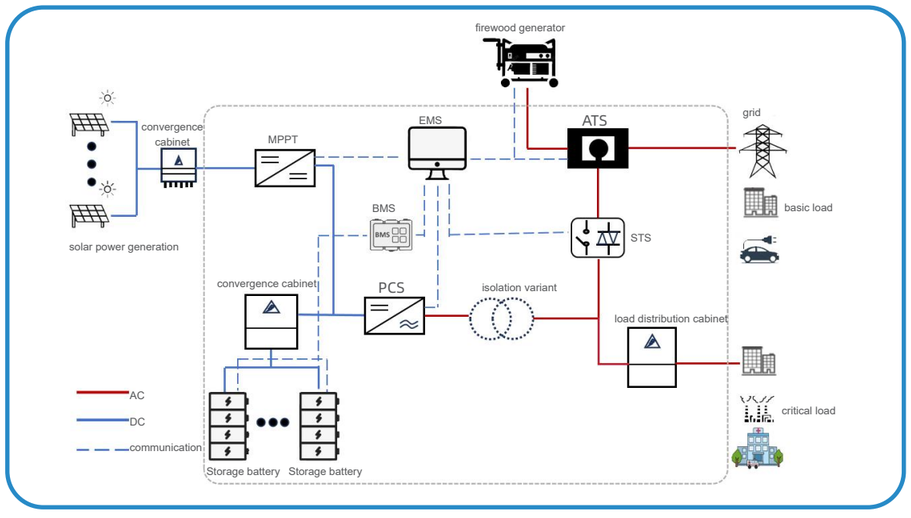
Commercial & Industrial ESS

C&I ESS Pofile

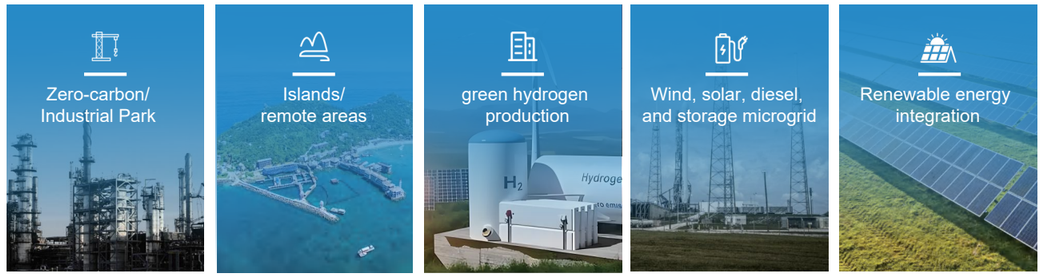
Sanhe Power Tech industrial and commercial energy storage is an integrated energy storage solution tailored for user-side industrial and commercial scenarios. It is primarily utilized in scenarios such as peak shaving, dynamic capacity augmentation, renewable energy integration, and grid-connected/off-grid/grid-forming operations. This solution addresses electricity demand, enhances power quality, reduces electricity costs, improves power supply reliability, and increases the utilization rate of clean energy, thereby contributing to the achievement of the "dual carbon" goals.

- Adopting an All-in-One integrated architecture and prefabricated integration, it achieves plug-and-play functionality, rapid deployment, and efficient operation and maintenance;
- Adopting a modular design, it supports parallel expansion of multiple machines and flexibly adapts to various application scenarios;
- Supporting multi-scenario intelligent operation strategies, we manage every kilowatt-hour with precision, thereby enhancing the overall return on investment;
- The energy management platform achieves real-time monitoring of data across the entire process, presents a comprehensive view of information, and ensures transparent and visible decision-making.

C&I Microgrid ESS



Application Scenarios



Business Models

Peak-valley Arbitrage

Enables users to charge during low electricity price pe-riods and dischar-ge during high pri-ce periods, gener-ating profits from price differen-tials to reduce power costs.

Backup Power Supply

Serves as emergen-cy power source for industrial parks and enterpris-es during power rationing/out-ages, preventing pr-oduc-tion shutdown losses.

Demand Response

Reduces users' peak power demand and maximum capacity requirements, lowering capaci-ty-based electricity charges.

Dynamic Capacity Expansion

Reduces transform-er upgrade costs by deploying energy st-orage when existing distribution grid cap-acity is insuffi-cient.

Power Trading

Maximizes revenue through short-term electricity trading on power market platforms with inte-grated load foreca-sting.

Liquid cooling/energy storage integrated cabinet

LFEI-125-261



intelligent management

- Cloud-edge collaborative control, enhanced by AI intelligent algorithms
- Remote monitoring and management, OTA upgrades, intelligent operation and maintenance
- Automatic optimization strategy, maximizing economic benefits

Ultimate performance

- Intelligent temperature control, lower energy consumption, and higher consistency
- Full lifecycle management, with a significant increase in lifespan (20%)
- High-precision acquisition, high-precision SOX, high conversion efficiency

Multi-dimensional security

- First-tier A-grade battery cells, with core-level safety guarantee
- Active/passive fire protection design, ensuring safe and reliable operation
- Early warning of cell-level faults and proactive handling of potential safety hazards

Rapid commissioning

- All-in-one design, fast installation and deployment
- Modular design, integration/maintenance is more efficient
- Multi-cabinet parallel operation, flexible capacity expansion, and MW-scale scalability

Technical Specification

Product Model	LFEI-125-261
DC side parameters	
Battery specification (Ah)	LFP314
Battery system configuration	1P260S
Rated voltage (V)	832
Voltage range (V)	728-923
Rated energy (kWh)	261
Charge-discharge rate (P)	0.5
cooling method	Intelligent Liquid Cooling
AC side parameters	
Rated charging and discharging power (kWN)	125
Maximum charging and discharging power (kW)	138
Rated charging and discharging current (A)	182
Rated grid voltage (W)	400
wiring method	three-phase four-wire
Power grid frequency range (Hz)	50
Total harmonic distortion rate of current	＜3%（rated power）
Power factor	＞0.99
Total distortion rate of voltage harmonics	＜3%@linear load
System specifications	
Maximum efficiency of the system	90%
number of cycles	6000 @ 25℃ 0.5C/0.5C,90%DOD，70%EOL
R inch (W*D*H) (mm)	1100*1350*2395
Weight (t)	2.4
Operating temperature (°C)	-20-55
Operating humidity (RH)	0%-95%
Altitude (m)	2000
Protection level	IP54
Fire protection configuration	PACK-level fire protection + cabin-level water fire protection
communication interface	RS485、Ethernet
communication protocol	Modbus RTU/TCP

Liquid cooling/energy storage integrated cabinet

LFEI-215-418



intelligent management

- Cloud-edge collaborative control, enhanced by AI intelligent algorithms
- Remote monitoring and management, OTA upgrades, intelligent operation and maintenance
- Automatic optimization strategy, maximizing economic benefits

Ultimate performance

- Intelligent temperature control, lower energy consumption, and higher consistency
- Full lifecycle management, with a significant increase in lifespan (20%)
- High-precision acquisition, high-precision SOX, high conversion efficiency

Multi-dimensional security

- First-tier A-grade battery cells, with core-level safety guarantee
- Active/passive fire protection design, ensuring safe and reliable operation
- Early warning of cell-level faults and proactive handling of potential safety hazards

Rapid commissioning

- All-in-one design, fast installation and deployment
- Modular design, integration/maintenance is more efficient
- Multi-cabinet parallel operation, flexible capacity expansion, and MW-scale scalability

Technical Specification

Product Model	LFEI-215-418
DC side parameters	
Battery specification (Ah)	LFP314
Battery system configuration	1P416S
Rated voltage (V)	1331.2
Rated energy (kwh)	418
Charge-discharge rate (P)	0.5
cooling method	Intelligent Liquid Cooling
AC side parameters	
Rated charging and discharging power (kVA)	209
wiring method	three-phase three-wire
Rated grid voltage (Vac)	400/690
Grid frequency range (Hz)	50/60
Total harmonic distortion rate of current	＜3%（rated power）
power factor	＞0.99
Total distortion rate of voltage harmonics	＜3%@linear load
System specifications	
Maximum system efficiency	91%
Size (W*D*H) (mm)	1400*1300*2450
Weight (t)	4
Operating temperature (℃)	-20-55
Operating humidity (RH)	0%-95%
Altitude (m)	2000
Protection level	IP54
Fire protection configuration	PACK-level fire protection + cabin-level water fire protection
communication interface	RS485、Ethernet
communication protocol	Modbus RTU/TCP

Air-cooled/photovoltaic and energy storage microgrid cabinet LFEM-50-100



intelligent management

- Cloud-edge collaborative control, enhanced by AI intelligent algorithms
- Remote monitoring and management, OTA upgrades, intelligent operation and maintenance
- Automatic optimization strategy, maximization of economic benefits

Microgrid architecture

- Photovoltaic and energy storage DC coupling architecture, highly integrated
- Support multi-source access and compatibility with wind, solar, diesel, storage, and charging scenarios
- Support independent off-grid operation and off-grid mS-level switching

Multi-dimensional Security

- First-tier A-grade battery cells, with core-level safety guarantee
- Active/passive fire protection design, safe and reliable operation
- Early warning of cell-level faults and proactive elimination of potential safety hazards

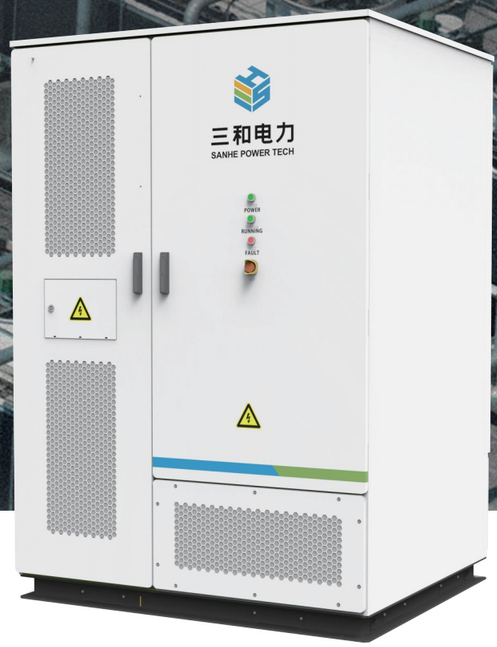
quick commissioning

- All-in-one design, fast installation and deployment
- Modular design, integration/maintenance are mo re efficient
- Multiple cabinets operating in parallel, flexible capacity expansion, and MW-scale scalability

Technical Specification

Product Model	LFEM-50-100
Photovoltaic parameters	
Maximum photovoltaic input voltage (V)	550
Maximum photovoltaic power (kW)	50
MPPT operating voltage range (V)	250~500
Number of MPPT modules	1
battery parameters	
Battery specification (Ah)	LFP120
Battery cluster specification	1P264S
Rated voltage (V)	844.8
Voltage range (V)	739.2~950.4
Rated energy (kWh)	100
Charge-discharge rate (P)	0.5
cooling method	Smart Air Cooling
Communication parameters	
Rated AC power (kW)	50
Rated AC current (A)	72
Rated AC voltage (V)	400
wiring method	three-phase four-wire
Rated AC frequency (Hz)	50/60
Total distortion rate of current harmonics	< 3%@rated power
power factor	-1 ahead …+1 behind
Total distortion rate of voltage harmonics	< 3%@linear load
system parameters	
Protection level	IP55
Isolation method	transformer
Environmental humidity (RH)	0%~95%(No condensation)
Operating temperature (°C)	-25~60（Derating above 45）
Altitude (m)	2000
Noise (dB)	<75
communication interface	RS485、Ethernet
communication protocol	Modbus RTU/TCP
Dimensions (W*D*H) (mm)	1300*1000*2100
Weight (t)	2

Air-cooled/photovoltaic and energy storage microgrid cabinet LFEM-125-261



intelligent management

- Cloud-edge collaborative control, enhanced by AI intelligent algorithms
- Remote monitoring and management, OTA upgrades, intelligent operation and maintenance
- Automatic optimization strategy, maximization of economic benefits

Microgrid architecture

- Photovoltaic and energy storage DC coupling architecture, highly integrated
- Support multi-source access and compatibility with wind, solar, diesel, storage, and charging scenarios
- Support independent off-grid operation and off-grid mS-level switching

Multi-dimensional Security

- First-tier A-grade battery cells, with core-level safety guarantee
- Active/passive fire protection design, safe and reliable operation
- Early warning of cell-level faults and proactive elimination of potential safety hazards

quick commissioning

- All-in-one design, fast installation and deployment
- Modular design, integration/maintenance are mo re efficient
- Multiple cabinets operating in parallel, flexible capacity expansion, and MW-scale scalability

Technical Specification

Product Model	LFEM-125-261
Photovoltaic parameters	
Maximum photovoltaic input voltage (V)	550
Maximum photovoltaic power (kW)	50*3
MPPT operating voltage range (V)	250~500
Number of MPPT modules	3
battery parameters	
Battery specification (Ah)	LFP314
Battery cluster specification	1P260S
Rated voltage (V)	832
Voltage range (V)	650~936
Rated energy (kWh)	261
Charge-discharge rate (P)	0.5
cooling method	Intelligent Liquid Cooling
Communication parameters	
Rated AC power (kW)	125
Rated AC current (A)	180
Rated AC voltage (V)	400
wiring method	three-phase four-wire
Rated AC frequency (Hz)	50/60
Total distortion rate of current harmonics	< 3%@rated power
power factor	-1 ahead …+1 behind
Total distortion rate of voltage harmonics	< 3%@linear load
system parameters	
Protection level	IP55
cycle life	6000 @ 25℃ 0.5C/0.5C,90%DOD，70%EOL
Isolation method	transformer
Environmental humidity (RH)	0%~95%
Operating temperature (°C)	-25~60（Derating above 45）
Altitude (m)	2000
Noise (dB)	<75
communication interface	RS485、Ethernet
communication protocol	Modbus RTU/TCP
Dimensions (W*D*H) (mm)	1600*1350*2300
Weight (t)	3.33

10-foot micro-grid prefabricated cabin LFEM-250-783



intelligent management

- Cloud-edge collaborative control, enhanced by AI intelligent algorithms
- Remote monitoring and management, OTA upgrade, intelligent operation and maintenance
- Automatic optimization strategy, maximization of economic benefits

new architecture

- Brand-new DC coupling architecture, achieving optimal energy efficiency
- Support multi-source access and be compatible with wind, solar, diesel, storage, and charging scenarios
- Support network formation, on/off-grid operation, and mS-level switching between on-grid and off-grid operations

Multi-dimensional Security

- First-line A-grade battery cells, with core-level safety guarantee
- Multi-dimensional safety design and AI early warning from battery cell to system
- Partition isolation, multiple sensing, and multi-level fire linkage

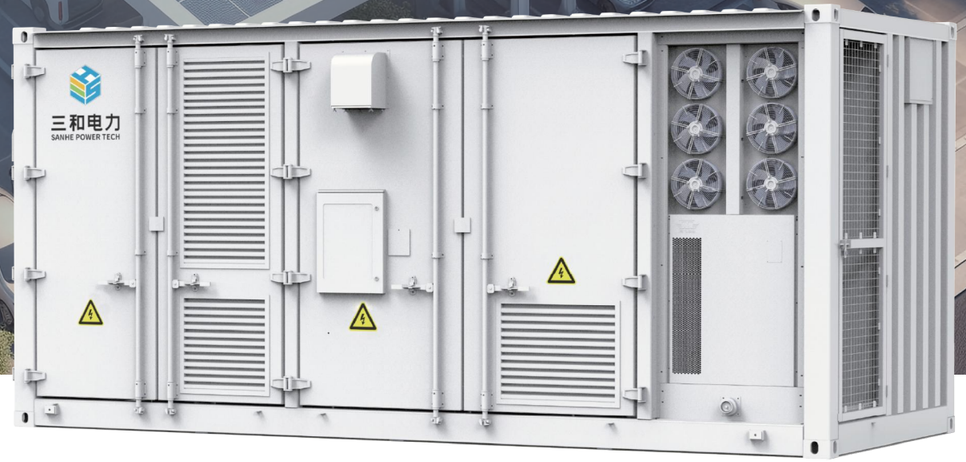
high integration

- Prefabricated cabin is highly integrated, plug-and-play, and can be quickly deployed
- Modular design inside the cabin, flexible configuration of PCS and PACK
- Multiple prefabricated cabinets for parallel operation, flexible capacity expansion, and MW-scale expansion

Technical Specification

Product Model	LFEM-250-783
Photovoltaic parameters	
Maximum photovoltaic input voltage (V)	1000
Maximum photovoltaic power (kW)	378
MPPT operating voltage range (V)	200-900
Number of MPPT modules	6
Battery side parameters	
Battery specification (Ah)	LFP314
Battery cluster specification	1P260S
Number of battery system clusters (clusters)	3
Rated voltage (V)	832
Voltage range (V)	728-923
Rated energy (kWh)	783
Charge-discharge rate (P)	0.5
cooling method	Intelligent Liquid Cooling
Communication side parameters	
Rated charging and discharging power (kw)	250
Maximum charging and discharging power (kw)	275
Rated charge and discharge current (A)	361
Rated grid voltage (V)	400
wiring method	three-phase four-wire
Power grid frequency range (Hz)	50
Total harmonic distortion rate of current	＜3%（rated power）
power factor	＞0.99
System specifications	
Maximum efficiency of the system	＞90%
number of cycles	6000 @ 25℃ 0.5C/0.5C,90%DOD，70%EOL
Size (W*D*H) (mm)	2438*2991*2591
Weight (t)	11
Isolation method	output isolation
STS quick switching module	possess
ATS module	optional
Operating temperature (°C)	-20-55
Operating humidity (RH)	0%-95%
Altitude (m)	2000
Protection level	IP55
Fire protection configuration	PACK-level fire protection + cabinet-level fire protection
communication interface	RS485、Ethernet
communication protocol	Modbus RTU/TCP

20-foot micro-grid prefabricated cabin LFEM-500-1566



intelligent management

- Cloud-edge collaborative control, enhanced by AI intelligent algorithms
- Remote monitoring and management, OTA upgrade, intelligent operation and maintenance
- Automatic optimization strategy, maximization of economic benefits

new architecture

- Brand-new DC coupling architecture, achieving optimal energy efficiency
- Support multi-source access and be compatible with wind, solar, diesel, storage, and charging scenarios
- Support network formation, on/off-grid operation, and mS-level switching between on-grid and off-grid operations

Multi-dimensional Security

- First-line A-grade battery cells, with core-level safety guarantee
- Multi-dimensional safety design and AI early warning from battery cell to system
- Partition isolation, multiple sensing, and multi-level fire linkage

high integration

- Prefabricated cabin is highly integrated, plug-and-play, and can be quickly deployed
- Modular design inside the cabin, flexible configuration of PCS and PACK
- Multiple prefabricated cabinets for parallel operation, flexible capacity expansion, and MW-scale expansion

Technical Specification

Product Model	LFEM-500-1566
Photovoltaic parameters	
Maximum photovoltaic input voltage (V)	1000
Maximum photovoltaic power (kW)	600
MPPT operating voltage range (V)	250-1000
Number of MPPT modules	8
Battery side parameters	
Battery specification (Ah)	LFP314
Battery cluster specification	1P260S
Number of battery system clusters (clusters)	6
Rated voltage (V)	832
Voltage range (V)	728-923
Rated energy (kWh)	1566
Charge-discharge rate (P)	0.5
cooling method	Intelligent Liquid Cooling
Communication side parameters	
Rated charging and discharging power (kw)	500
Maximum charging and discharging power (kw)	550
Rated charge and discharge current (A)	722
Rated grid voltage (V)	400
wiring method	three-phase four-wire
Power grid frequency range (Hz)	50
Total harmonic distortion rate of current	< 3% （rated power）
power factor	> 0.99
System specifications	
Maximum efficiency of the system	> 90%
number of cycles	6000 @ 25℃ 0.5C/0.5C,90%DOD，70%EOL
Size (W*D*H) (mm)	2438*6058*2591
Weight (t)	22
Isolation method	output isolation
STS quick switching module	possess
ATS module	optional
Operating temperature (°C)	-20-55
Operating humidity (RH)	0%-95%
Altitude (m)	2000
Protection level	IP55
Fire protection configuration	Pack-level fire protection + compartment-level water fire protection
communication interface	RS485、Ethernet
communication protocol	Modbus RTU/TCP

20-foot AC/DC integrated cabin
LFEC-1000-2080



intelligent management

- Cloud-edge collaborative control, enhanced by AI intelligent algorithms
- Remote monitoring and management, OTA upgrades, intelligent operation and maintenance
- Automatic optimization strategy, maximization of economic benefits

ultimate performance

- Intelligent temperature control, lower energy consumption, and higher consistency
- Full lifecycle management, with a significant increase in lifespan (20%)
- High-precision acquisition, high-precision SOX, high conversion efficiency

Multi-dimensional Security

- First-line A-grade battery cells, with core-level safety guarantee
- Multi-dimensional safety design and AI early warning from battery cell to system
- Partition isolation, multiple sensing, and multi-level fire linkage

high integration

- Prefabricated cabin is highly integrated, plug-and-play, and rapidly deployable
- Integrated AC and DC, minimalist operation and maintenance installation
- Multiple prefabricated cabinets for parallel operation, flexible capacity expansion, and MW-scale expansion

Technical Specification

Product Model	LFEC-1000-2080
DC side parameters	
Battery specification (Ah)	LFP314
Battery cluster specification	1P260S
Number of clusters in battery system (clusters)	8
Rated voltage (V)	832
Voltage range (V)	728-923
Rated energy (kwh)	2088
Charge-discharge rate (P)	0.5
cooling method	Intelligent Liquid Cooling
AC side parameters	
Rated charging and discharging power (kw)	1000
Maximum charging and discharging power (kw)	1100
Rated charge and discharge current (A)	1444
Rated grid voltage (V)	400
wiring method	three-phase four-wire
Power grid frequency range (Hz)	50
Total harmonic distortion rate of current	< 3% （rated power）
power factor	> 0.99
System specifications	
Maximum efficiency of the system	> 90%
number of cycles	6000 @ 25℃ 0.5C/0.5C,90%DOD，70%EOL
Dimensions (W*D*H) (mm)	2438*6058*2591
Weight (t)	29
Isolation method	output isolation
Operating Temperature	-20-55℃
Operating humidity (RH)	0%-95%
Altitude (m)	2000
Protection level	IP55
Fire protection configuration	Pack-level fire protection + cabin-level water fire protection
communication interface	RS485、Ethernet
communication protocol	Modbus RTU/TCP

20-foot DC cabin
LFEC-5000DC



intelligent management

- Cloud-edge collaborative control, enhanced by AI intelligent algorithms
- Remote monitoring and management, OTA upgrades, intelligent operation and maintenance
- Automatic optimization strategy, maximization of economic benefits

ultimate performance

- Intelligent temperature control, lower energy consumption, and higher consistency
- Full lifecycle management, with a significant increase in lifespan (20%)
- High-precision acquisition, high-precision SOX, high conversion efficiency

Multi-dimensional Security

- First-line A-grade battery cells, with core-level safety guarantee
- Multi-dimensional safety design and AI early warning from battery cell to system
- Partition isolation, multiple sensing, and multi-level fire linkage

high integration

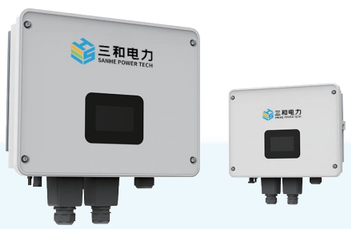
- Prefabricated cabin is highly integrated, plug-and-play, and rapidly deployable
- ISplit design: 5MWh DC cabin + 2.5MW inverter and booster cabin
- Multiple prefabricated cabinets for parallel operation, flexible capacity expansion, and MW-scale scalability

Technical Specification

Product Model	LFEC-5000DC
DC side parameters	
Battery type (Ah)	LFP314
Battery family specification	1P416S
Number of battery system clusters	12
Rated electricity (kwh)	5015.96
Rated voltage of battery (V)	1331.2
Battery voltage range (V)	1164.8-1500.0
Weight (t)	43
Dimensions (W*D*H) (mm)	6058*2438*2896
Maximum system efficiency	94%
Charge and discharge rate (P)	0.5
number of cycles	> 6000@25℃ 0.5C/0.5C,90%DOD，70%EOL
cooling method	Intelligent Liquid Cooling
Altitude (m)	2000
Operating temperature (°C)	-20 - 55
Relative humidity (RH)	0%-95%
Protection level	IP55
communication interface	Ethernet/RS485/CAN/4G
communication protocol	Modbus TCP/Modbus RTU/CAN 2.0
Fire protection configuration	Pack-level fire protection + cabin-level water fire protection

Residential ESS Products

Residential ESS Product Portfolio



Single-phase Off-grid Inverter

LFOI-5-SL

LFOI-6-SL



Integrated Low-Voltage Battery Pack

10kWh: LFBLM-10-B

16kWh: LFBLM-16-B



Single-phase Grid-tied Inverter

LFSI-3-SL

LFSI-3.68-SL

LFSI-4-SL

LFSI-5-SL

LFSI-6-SL



Low-voltage Stacked Battery Pack

5kWh: LFBL-5

10kWh: LFBL-10

15kWh: LFBL-15

20kWh: LFBL-20



Three-phase Grid-tied Inverter

LFSI-5-TH

LFSI-6-TH

LFSI-8-TH

LFSI-10-TH

LFSI-12-TH



High-voltage Stacked Battery Pack

10kWh: LFBH-10

12.5kWh: LFBH-12.5

15kWh: LFBH-15

17.5kWh: LFBH-17.5

20kWh: LFBH-20

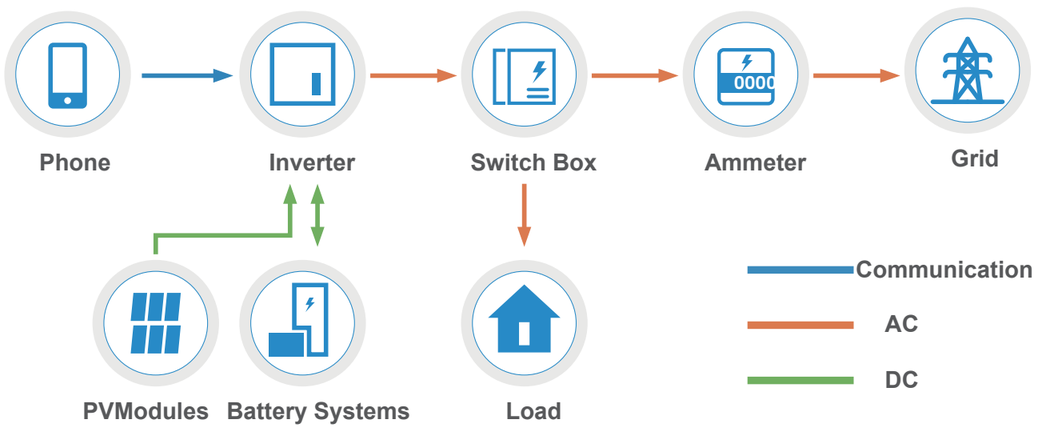


Residential ESS

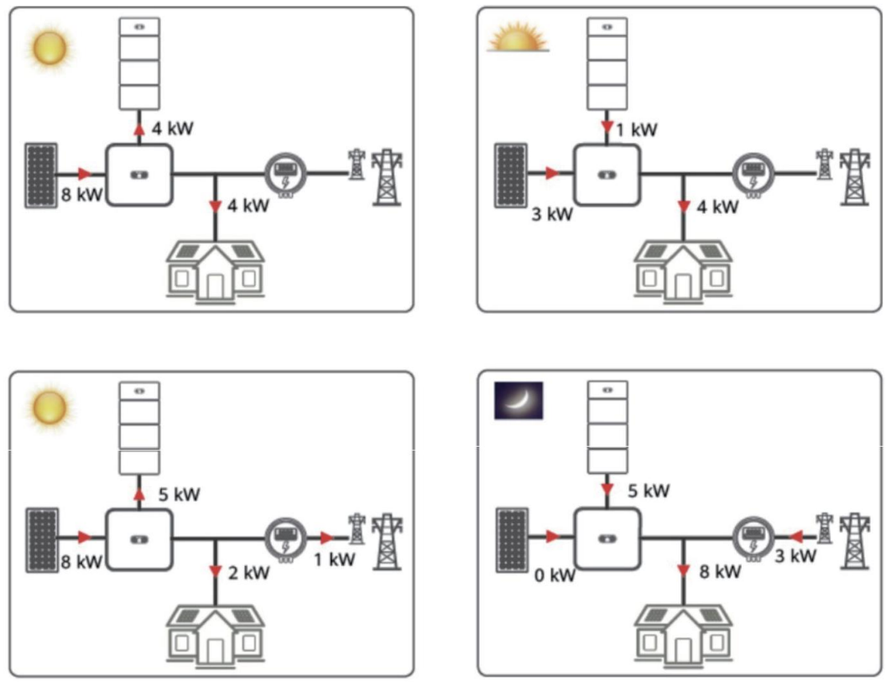
Residential ESS Pofile

ESS utilizes DC coupling technology to seamlessly integrate PV generation with energy storage. It effectively stores surplus electricity from solar systems, significantly increasing self-consumption rates while substantially reducing grid dependence.

The solar-plus-storage system capitalizes on peak/off-peak electricity price differentials to conduct arbitrage—selling power during peak pricing periods while storing energy during valley periods to maximize economic returns. Furthermore, it allows users to support grid load balancing while benefiting from policy subsidies for grid-support activities, achieving an optimal equilibrium between energy conservation and financial gains.



Operation Mode Diagram





Residential ESS Application Scenarios

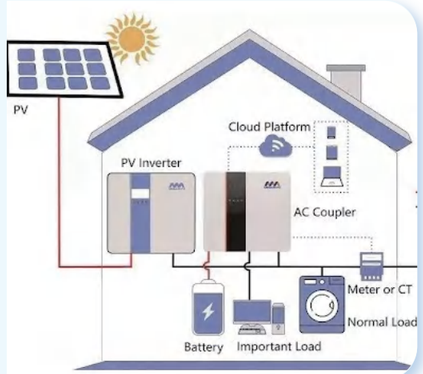
01 High Electricity Price Areas

During periods of sufficient sunlight, the PV system powers household loads while storing excess energy in the storage unit. When solar generation is inadequate, the battery discharges to supply power—reducing grid dependence and lowering electricity costs.



02 Peak-Valley Arbitrage

In regions with significant time-of-use rate differentials, the energy storage system charges during off-peak periods and discharges during peak-rate hours for household consumption or grid feed-in, leveraging electricity price variations to reduce costs and increase revenue.



03 Power-deficient areas

Remote locations without reliable grid access utilize solar-storage systems to meet daily electricity demands.



04 EV Charging Support

Residential power distribution systems utilize battery storage to overcome capacity limitation sfor fast charging requirements.



05 Agricultural Farm Facilities

Overseas farm operations with high-power equipment utilize solar-storage systems to meet substantial electricity demands.





Specification Sheet

Designation	Single-phase Low-voltage	Three-phase High-voltage
Inverter Power1	3kW	5kW
Inverter Model1	LFSI-3-SL	LFSI-5-TH
Inverter Power2	3.68kW	6kW
Inverter Model2	LFSI-3.68-SL	LFSI-6-TH
Inverter Power3	4kW	8kW
Inverter Model3	LFSI-4-SL	LFSI-8-TH
Inverter Power4	5kW	10kW
Inverter Model4	LFSI-5-SL	LFSI-10-TH
Inverter Power5	6kW	12kW
Inverter Model5	LFSI-6-SL	LFSI-12-TH

Designation	Battery Pack Capacity	Battery Pack Capacity		
		Base Model	Controller Model	Battery Module Model*Qty
Low-voltage Battery Pack	5kWh	LFBL-5		
		LFBL-AB	–	LFBL-AM5*1
	10kWh	LFBL-10		
		LFBL-AB	–	LFBL-AM5*2
	15kWh	LFBL-15		
		LFBL-AB	–	LFBL-AM5*3
	20kWh	LFBL-20		
		LFBL-AB	–	LFBL-AM5*4
High-voltage Battery Pack	10kWh	LFBH-10		
		–	LFBH-AC	LFBH-AM2.5*4
	12.5kWh	LFBH-12.5		
		–	LFBH-AC	LFBH-AM2.5*5
	15kWh	LFBH-15		
		–	LFBH-AC	LFBH-AM2.5*6
	17.5kWh	LFBH-17.5		
		–	LFBH-AC	LFBH-AM2.5*7
	20kWh	LFBH-20		
		–	LFBH-AC	LFBH-AM2.5*8



Single-Phase Energy Storage Inverter

	LFSI-3-SL	LFSI-3.68-SL	LFSI-4-SL	LFSI-5-SL	LFSI-6-SL
PV Input					
Max. DC Input Voltage (V)	550	550	550	550	550
Rated DC Input Voltage (V)	380	380	380	380	380
MPPT Voltage Range (V)	100~530	100~530	100~530	100~530	100~530
No. of MPP Trackers	2	2	2	2	2
Max. Input Current (A)	16/16	16/16	16/16	16/16	16/16
Max. Short-circuit Current (A)	20/20	20/20	20/20	20/20	20/20
Battery					
Battery communication mode	CAN / RS485	CAN / RS485	CAN / RS485	CAN / RS485	CAN / RS485
Battery voltage range (V)	40-58.6	40-58.6	40-58.6	40-58.6	40-58.6
Maximum charging(discharge)current (A)	100	100	100	100	100
Output (Grid)					
Rated Output Power (kW)	3	3.68	4	5	6
Rated Output Voltage (V)	L/N/PE，220/230/240	L/N/PE，220/230/240	L/N/PE，220/230/240	L/N/PE，220/230/240	L/N/PE，220/230/240
Rated AC Frequency (Hz)	50/60	50/60	50/60	50/60	50/60
AC output rated current (A)	13.1	16	17.4	21.7	26.1
Power Factor	0.8leading …0.8 lagging	0.8 leading …0.8 lagging	0.8 leading …0.8 agging	0.8 leading …0.8 lagging	0.8leading …0.8 agging
Max. total harmonic distortion	<3% @Rated Output Power	<3% @Rated Output Power	<3% @Rated Output Power	<3% @Rated Output Power	<3% @Output Power
Effeiciency					
Max. Efficiency	97.6%	97.6%	97.6%	97.6%	97.6%
European Efficiency	97.0%	97.0%	97.0%	97.0%	97.0%
General Data					
Ingress Protection	IP66	IP66	IP66	IP66	IP66
Operating Temperature Range (℃)	-25~60	-25~60	-25~60	-25~60	-25~60
Relative Humidity (%)	0~95	0~95	0~95	0~95	0~95
Operating Altitude (m)	3000	3000	3000	3000	3000
Cooling	Natural Convection	]Natural Convection	Natural Convection	Natural Convection	Natural Convection



Three-Phase Energy Storage Inverter

	LFSI-5-TH	LFSI-6-TH	LFSI-8-TH	LFSI-10-TH	LFSI-12-TH
PV Input					
Max. DC Input Voltage (V)	1100	1100	1100	1100	1100
Rated DC Input Voltage (V)	630	630	630	630	630
MPPT Voltage Range (V)	150~950	150~950	200~950	200~950	200~950
No. of MPP Trackers	2	2	2	2	2
Max. Input Current (A)	20/20	20/20	20/20	20/20	20/20
Max. Short-circuit Current (A)	30/30	30/30	30/30	30/30	30/30
Battery					
Battery communication mode	CAN	CAN	CAN	CAN	CAN
Battery voltage range (V)	120-600	120-600	120-600	120-600	120-600
Maximum charging(discharge)current (A)	30	30	30	30	30
Output (Grid)					
Rated Output Power (kW)	5	6	8	10	12
Rated Output Voltage (V)	3/N/PE，220/380V，230/400V，240/415V	3/N/PE，220/380V，230/400V，240/415V	3/N/PE，220/380V，230/400V，240/415V	3/N/PE，220/380V，230/400V，240/415V	3/N/PE，220/380V，230/400V，240/415V
Rated AC Frequency (Hz)	50/60	50/60	50/60	50/60	50/60
AC output rated current (A)	7.3	8.7	11.6	14.5	17.4
Power Factor	0.8 leading …0.8 lagging	0.8 leading …0.8 lagging	0.8 leading …0.8 lagging	0.8 leading …0.8 lagging	0.8 leading …0.8lagging
Max. total harmonic distortion	<3% @Rated Output Power	<3% @Rated Output Power	<3% @Rated Output Power	<3% @Rated Output Power	<3% @Rated Output Power
Effeiciency					
Max. Efficiency	98.4%	98.4%	98.4%	98.4%	98.4%
European Efficiency	97.9%	97.9%	97.9%	97.9%	97.9%
General Data					
Ingress Protection	IP66	IP66	IP66	IP66	IP66
Operating Temperature Range (°C)	-25~60	-25~60	-25~60	-25~60	-25~60
Relative Humidity (%)	0~100	0~100	0~100	0~100	0~100
Operating Altitude (m)	3000	3000	3000	3000	3000
Cooling	Natural air cooling	Natural air cooling	Natural air cooling	Natural air cooling	Natural air cooling



Low-voltageBattery Pack

Model	LFBL-5	LFBL-10	LFBL-15	LFBL-20
System Data				
Number of modules	1	2	3	4
Rated electric quantit (kWh)	5.12	10.24	15.36	20.48
Maximum charging（discharge） current (A)	100	200	210	210
Battery communication mode	CAN			
Battery voltage range (V)	40-58.4			
Cell type	LiFePO4			
Rated capacity of battery cell (Ah)	100			
Rated battery voltage (V)	51.2			
General Data				
Module size (width/depth/height) (mm)	630*185*320	630*185*640	630*185*960	630*185*1280
Total weight (kg)	48.6	94.6	140.6	186.6
Ingress Protection	IP66			
Operating temperature range (°C)	Charge：-8~58			
	Discharge：-18~58			
Relative humidity (%)	0~95			
Operating altitude (m)	3000			
Installation position	Indoor (Outdoor)			
Installation method	Floor type			
Storage temperature range (°C)	-20~60			
Number of cycles	6000			
Cycle efficiency	≥95%			
Certification and Standards	TUV/IEC 62619/IEC 62040/IEC 61000/UN38.3			
Cooling	Natural Convection			



High-voltageBattery Pack

Model	LFBH-10	LFBH-12.5	LFBH-15	LFBH-17.5	LFBH-20
System Data					
Number of modules	4	5	6	7	8
Rated electric quantit (kWh)	10.24	12.8	15.36	17.92	20.48
Maximum charging（discharge） current (A)	25	25	25	25	25
Battery voltage range (V)	160~233.6	200~292	240~350.4	280~408.8	320~467.2
Rated battery voltage (V)	204.8	256	307.2	358.4	409.6
Cell type	LiFePO4				
Rated capacity of battery cell (Ah)	50				
Battery communication mode	CAN				
General Data					
Module size (width/depth/height) (mm)	540*390*730	540*390*860	540*390*990	540*390*1120	540*390*1250
Total weight (kg)	137	167.5	198	228.5	30.5
Ingress Protection	IP65				
Operating temperature range (°C)	Charge：0~50				
	Discharge：-20~50				
Relative humidity (%)	0~95				
Operating altitude (m)	3000				
Installation position	Indoor (Outdoor)				
Installation method	Floor type				
Storage temperature range (°C)	-20~45				
Number of cycles	6000				
Cycle efficiency	≥95%				
Certification and Standards	IEC 62619 / EN 61000 & IEC 62040 / UN38.3				
Cooling	Natural Convection				





Off-grid Energy Storage Inverter

Model	LFOI-5-SL	LFOI-6-SL
PV Input		
Max. DC Input Voltage (V)	500	500
MPPT Voltage Range (V)	100~490	100~490
No. of MPP Trackers	1	1
Max. Input Current (A)	32	32
Max. Short-circuit Current (A)	37	37
Battery		
Battery communication mode	CAN / RS485	CAN / RS485
Battery voltage range (V)	40~58	40~58
Maximum charging(discharge)current (A)	100	120
Output (Grid)		
Rated Output Power (kW)	5	6
Rated Output Voltage (V)	230	230
Rated AC Frequency (Hz)	50/60	50/60
AC output rated current (A)	21.7	26
Power Factor	0.8 leading …0.8 lagging	0.8 leading …0.8 lagging
Max. total harmonic distortion	<3% @Rated Output Power	<3% @Rated Output Power
GEN Input		
Max. Intput Power (kW)	5	6
Max. Intput Current (A)	21.7	26
General Data		
Ingress Protection	IP65	IP65
Operating Temperature Range (°C)	-25~60	-25~60
Relative Humidity (%)	0~95	0~95
Operating Altitude (m)	2000	2000
Cooling	Natural Convection	Natural Convection

Integrated Low-Voltage Battery Pack

Model	LFBLM-10-B	LFBLM-16-B
System Data		
Rated electric quantit (kWh)	10.24	16.08
Maximum charging current (A)	100	160
Maximum discharge current(A)	100	160
Rated capacity of battery cell (Ah)	200	314
Battery communication mode	R5485/CAN	
Battery voltage range (V)	40~58.4	
Cell type	LiFePO4	
Rated battery voltage (V)	51.2	
General Data		
Module size (width/depth/height) (mm)	780 / 180 / 550	413 / 233 / 826
Total weight (kg)	88	130
Ingress Protection	IP54	
Operating temperature range (°C)	Charge:0~50	
	Discharge:-20~60	
Installation position	Indoors	
Installation method	floor	
Number of cycles	6000	
Certification and Standards	UN38.3	
Cooling	Natural Convection	

Smart energy management platform

The new generation of energy storage cloud platform empowers the digital transformation of energy

One-stop integration of the entire process from "device sensing to intelligent regulation and control, and finally to business operation" enables energy storage to evolve from a cost center to a profit engine



Core Scenario · Ultimate Empowerment

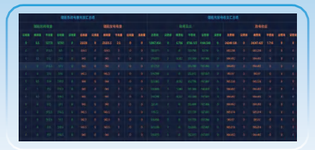
Relying on years of experience in digital operation and maintenance, Sanhe Power tech has redefined the management approach of energy storage systems through advanced digital technology means such as the Internet of Things, cloud computing, big data, artificial intelligence, and mobile internet. Driven by data, powered by AI, and centered on intelligence, it has developed a cloud platform for energy storage systems with independent intellectual property rights, providing digital empowerment and intelligent services for energy storage power stations, integrating holographic state sensing, precise fault diagnosis, intelligent equipment inspection, operation and maintenance decision optimization, and real-time effect evaluation.

Full-dimensional visualization · Clear at a glance

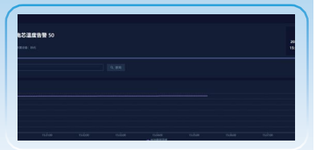
Digital Twin Mirror



Multi-dimensional data pivot

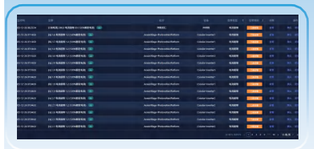


Warning panoramic navigation



Intelligent prediction · Foresight

Safety risk pre-assessment



Earnings simulation and forecasting



Deduction of life trend

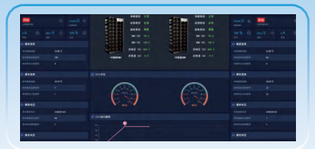


Dynamic optimization · Benefit first

AI adaptive strategy

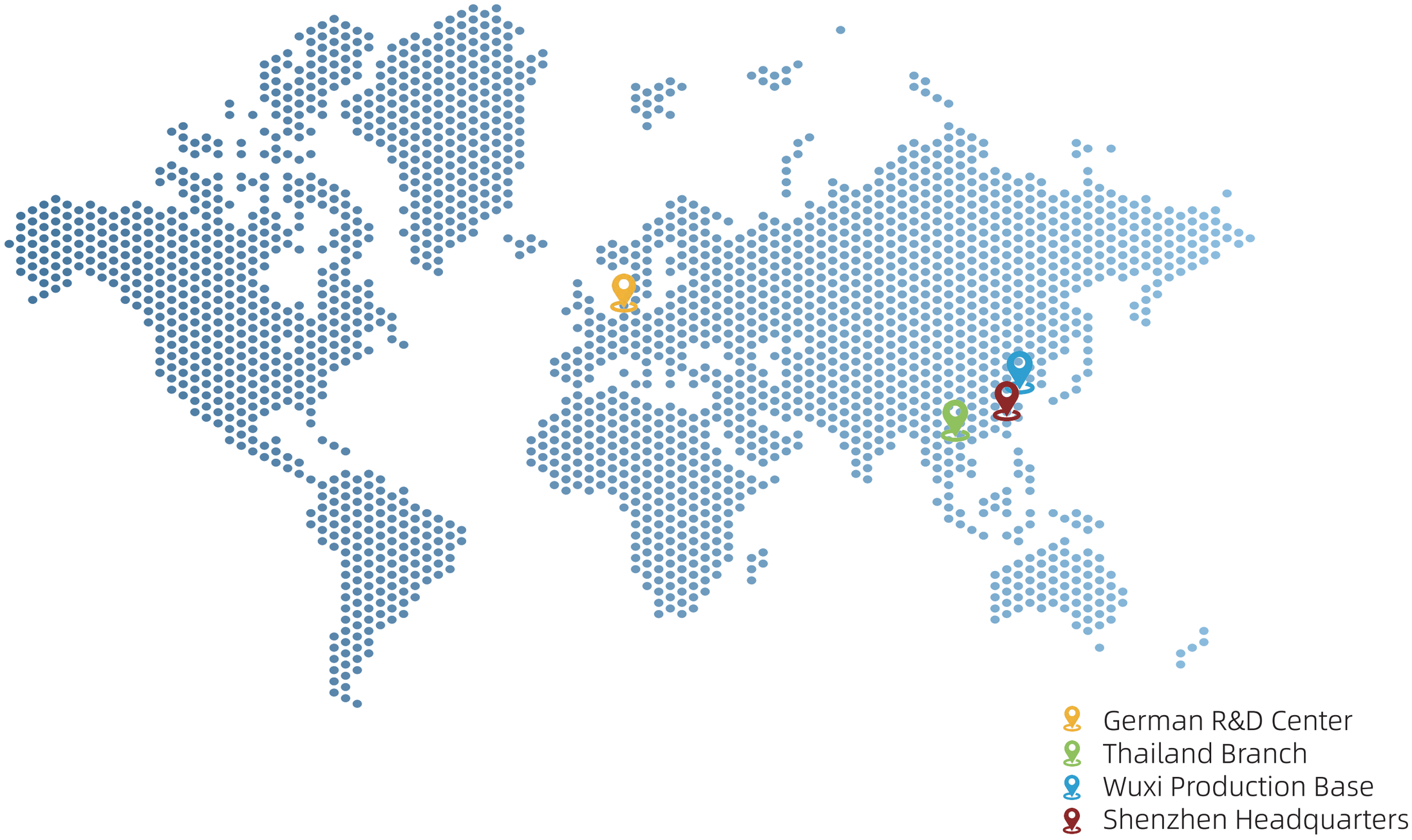


Deep mining of energy efficiency



Collaboration of auxiliary services




German R&D Center
Thailand Branch
Wuxi Production Base
Shenzhen Headquarters