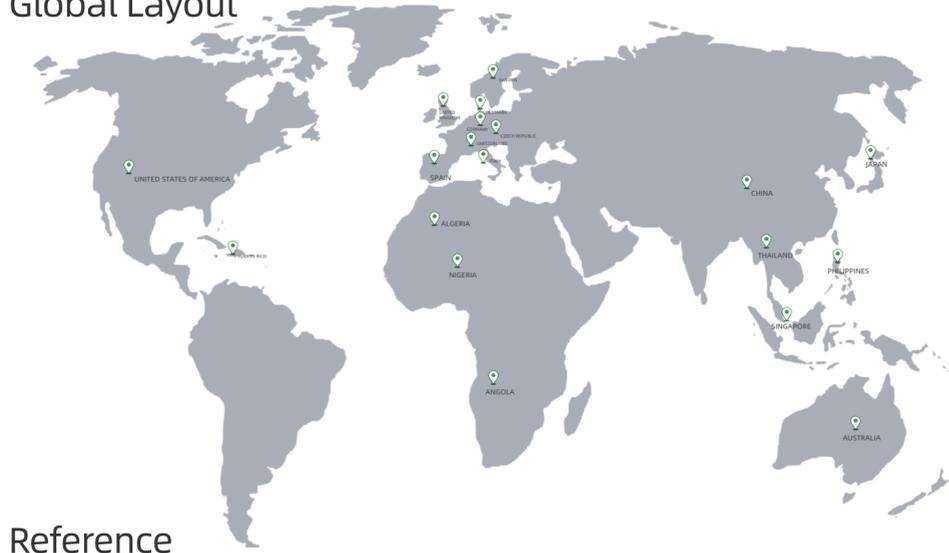


Global Layout



Reference



Switzerland Baden 2MW/2.17MWh Lithium Battery Energy Storage System



Antarctic Research Station 100kW/160kWh Microgrid Project



Africa 5kW/35kWh Wind/PV/Diesel Energy Storage Microgrid Project



Angola Police Station 1kW/2.4kWh Solar Storage System Project



Angola Backup PV Energy Storage System Project



Africa 2MW PV Microgrid Project



Hebei Xinhe 12MW/24MWh Agriculture-Solar Hybrid Power Generation Project



Shanxi 30MW/30MWh Solar Storage Project



"Smart Microgrid Demonstration Project" of National Programs for Key Technology Research and Development



Key Technology Research and Demonstration Project of Power Distribution System with Multi-user Interaction in Guangzhou Power Supply Bureau Industrial Park



10MW Lithium Battery Energy Storage System Key Technology and Demonstration Project of Shanxi Science Institution



GAC New Energy Industrial Park 2MW/1MWh Charging Pile Energy Storage Project

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Top 10 global battery companies



26 years
Focus on new energy industry for 26 years



216 GWh
Total production capacity



42000+
42000+ staff worldwide

Founded in 1997, Sunwoda Electronic Co., Ltd. is a high-tech enterprise with the R&D, design, production and sale of lithium-ion battery cell and module as its main business. It was listed on the Growth Enterprise Market of Shenzhen Stock Exchange in 2011. After more than 20 years of development, it has become Top 10 in lithium-ion battery industry. It has six businesses including 3C batteries, smart hardware, EV batteries, energy service, intelligent manufacturing and industrial Internet, and testing service. Also, Sunwoda is committed to provide environment-friendly, fast and efficient new energy integration solution services.



NoahX

Sunwoda Liquid Cooling Battery Container System

Sunwoda LBCS (Liquid -cooling Battery Container System) is a versatile industrial battery system with liquid cooling shipped in a 20-foot container. The standard unit is prefabricated with modular battery cluster, fire suppression system, water cooling unit and local monitoring. LBCS is a ready-to-connect solution for energy storage application such as peak shifting and frequency regulation. Sunwoda battery cluster modular unit consists of standard rack-based battery module (battery pack) and a comprehensive multi-level battery management system (BMS). The team behind LBCS is ready to help you with professional integration support in term of new or existing solar power, wind power, thermal power and more.



Features

- Higher energy density, 20 ft container with energy over 4MWh.
- Innovative liquid cooling technology, with battery life extended more than 20%.
- Local / remote monitoring and maintenance support through mobile phones (APP).
- The total weight of standard 20 ft container is no more than 35,000 kg to ensure smooth shipping.
- Extraordinary safety, five level safety design, dual fire protection, with combustible gas emission and explosion venting design.
- Support plug-and-play combination of two containers, flexibly suitable for the application of large energy storage power stations.
- Rack level control solution solves the problem of loop current between racks, improves the availability of batteries by 7%, and supports the mixing of old and new batteries and phased deployment, and reduces LCOS by 20% during its lifetime.



Technical parameters	NoahX-1500/2752	NoahX-1500/4170
Cell		
Chemistry	LFP	LFP
Specifications	3.2V/280Ah	3.2V/314Ah
Rated C-rate	0.5CP	0.5CP
Max C-rate	1CP	0.5CP
Cycle Life	10000 cycles @25°C,0.5CP/0.5CP	10000 cycles @25°C,0.5CP/0.5CP

Battery Pack		
Configuration	1P48S	1P104S
Rated Voltage	153.6V	332.8V
Operating Voltage	134.4 ~172.8V	291.2~374.4V
Nominal Energy	43kWh	104.499kWh
Rated C-rate	0.5CP	0.5CP
Max C-rate	1CP	0.5CP

Battery Rack		
Rated voltage	1228.8V	1331.2V
Operating Voltage	1075.2 ~ 1382.4V	1164.8 ~1497.6V
Nominal Energy	344kWh	417kWh
Rated C-rate	0.5CP	0.5CP

Battery Container System		
Nominal Energy	2752kWh	4170kWh
DC Round Trip Efficiency (0.5CP)	> 93%	> 93%
Rated Voltage	1228.8V	1331.2V
Operating Voltage	1075.2 ~ 1382.4V	1164.8~1497.6V
Rated C-rate	0.5CP	
Operating Temperature	-30°C~ 60°C	
Working Relative Humidity	0~100%	
Altitude	Maximum 3000m (Derating over 3000m)	
Cooling Method	Liquid cooling	
Fire Suppression	Water FSS/Aerosol (Optional)	
Auxiliary Power Input	3-phase 400VAC/50Hz, 480VAC/60Hz	
Battery Management System (BMS)	3 levels +Passive balance 200mA (Active balance 2A optional)	
Communication Interface	CAN/RS485/Ethernet	
Communication Protocol	Modbus-RTU/Modbus-TCP/IEC 61850	
Standards & Compliance	NFPA68/69,NFPA855,GB36276,IEC62619,IEC62933,UN38.3 ,UN3536,UL1973,UL9540A	
IP Rating	IP55/NEMA 3R	
Dimensions (W*D*H)	6058*2438*2591mm (20ft×8ft×8.5ft)	
Weight	28,000kg	43,000kg

NoahX

Liquid cooling solution Outdoor Liquid Cooling Cabinet

Based on intelligent liquid cooling technology, Sunwoda Outdoor Liquid Cooling Cabinet is a compact energy storage system with modular fully integrated. It is designed for easy deployment and configuration to meet various application requirements, including flexible peak shaving, renewable energy integration, frequency/voltage regulation, arbitrage, T&D enhancement, micro-grid function, backup power, etc. To ensure the system run safely, the system adopts LFP (lithium iron phosphate) battery with 4 to 8 battery packs, liquid cooling system, fire suppression system, monitoring system and auxiliary system to provide flexible usage in 500~1500V DC voltage connection. Both IEC and UL standards are applicable to this system. The all-in-one designed outdoor cabinet could be applied in commercial, industrial, and utility scale projects, including centralized or distributed power plants, industrial and commercial parks, intelligent buildings, communities, PV & storage & charging stations, and other scenarios.



Features

- Easily configurable and scalable
All-in-one design with liquid cooled battery rack pre-installed and a plug and play interface for auxiliary power supply, communication, and DC connection, which can be installed as a single system or as a system of multiple paralleled cabinets.
- High energy density
Modular design with high energy density, compatible with 500V~1500V system. Back-to-back or left and right installation saving a footprint above 50%.
- Long service life
Innovation individual rack based liquid cooling technology with cell temperature difference controlled within 2°C and prolonged life cycle above 20% with minimum service interventions during the life span.
- High system safety
High safety LFP battery is selected with UL9540A test. Fire detection and pack level fire suppression system with combustible gas linkage ventilation and explosion panel design on the roof. Multiple electrical protection and highly strength structure design to meet seismic, wind and other load requirement with high protection level and anti-corrosion level.
- Less LCOS within life span
Smart battery management system enhancing the cell consistency, supporting mix usage of old battery and new battery and deployment and augmentation in batches. LCOS decreased up to 20% for the entire life.
- Smart management
Supports remote and local monitoring and O&M
- Shorter deployment time
Fully tested before delivery, easy to transport and less on-site installation.

Technical parameters NoahX-L344

Cell Parameter		Module Parameter	
Chemistry	LFP	Configuration	1P48S
Specifications	3.2V/280Ah	Rated Capacity	280Ah
Rated C-rate	0.5CP	Rated Voltage	153.6V
Max C-rate	1CP	Operating Voltage	134.4 ~172.8V
Cycle Life	10000 cycles @25°C, 0.5CP/0.5CP	Rated Energy	43kWh
Dimensions (W*D*H)	174.3*71.5*206.8mm	Rated C-Rate	0.5CP
		Max. C-Rate	1CP
		Cooling Method	Liquid cooling (water and glycol mix)
		Dimensions (W*D*H)	980*864*260mm
		Weight	326 kg

System Parameter	
Rated Energy	344kWh
No. of Modules	8pcs
DC Round Trip Efficiency (0.5CP)	>93%
Rated Voltage	1228.8V
Operating Voltage	1075.2 ~1382.4V
Rated C-rate	0.5CP
Max. C-rate	1CP
Operating Temperature	-30°C ~ 60°C
Working Relative Humidity	0 ~ 100%
Altitude	Maximum 3000m (derating above 3000m)
Cooling Method	Liquid cooling (water and glycol mix)
Fire Suppression	Water FSS/Aerosol (Optional)
Auxiliary Power Input	220VAC/50Hz ;110VAC/60Hz (Optional)
Communication Interface	CAN/RS485/Ethernet
Communication Protocol	Modbus/IEC 61850
Standards & Compliance	NFPA68/69,NFPA855,GB36276,IEC62619, IEC62933,UN38.3,UN3536,UL1973,UL9540A
IP Rating	IP55
Dimensions (W*D*H)	1570*1350*2380mm
Weight	3, 500kg