

100Ah 12V LiFePO4 Deep Cycle Battery

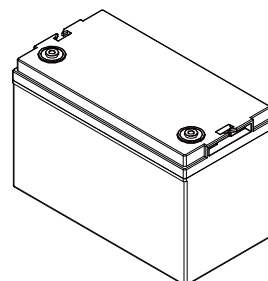
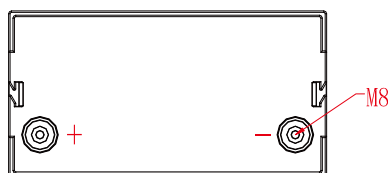
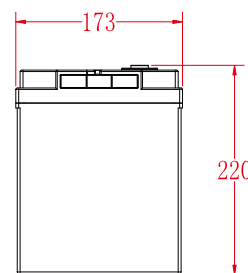
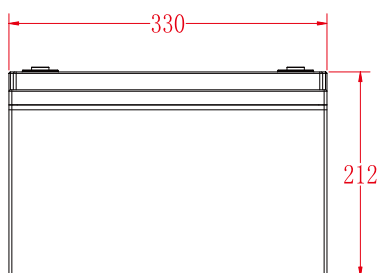
Defender X100

Lithium Iron Phosphate (LiFePO₄) batteries have risen in popularity and have proven to outperform all of the different lead-acid models in deep cycle battery markets worldwide, all the while remaining completely safe and nontoxic to landfills.

UNOWIX 12V 100A deep cycle LiFePO₄ battery offers 2 to 3 times the power in the same physical space as a lead-acid. The stable chemical composition and built-in battery management system in our batteries provides you with safe and reliable power.



Product dimension



Unit: mm
Red Positive +, Black Negative -
M8 Terminal

Battery Specification(@ 68-86°F/20-30°C)

Items		Characteristics
Nominal capacity		100Ah
Min. capacity		98Ah
Nominal energy		1280Wh
Combination structure of battery		23140160-4S2P
Nominal voltage		12.8V
End of discharge voltage		10.8V
Standard charge voltage		14.6±0.2V
Float charge voltage		13.8V
Standard charge current		20A
Recommended charge current		≤100A
Allowed Max. charge current		100A
Standard discharge current		50A
Recommended discharge current		≤ 100A
Allowed Max. discharge current		100A
Peak current		250A,10Sec
Internal Resistance		≤ 40mΩ
Weight		Approx.12.5kg±5%
Ex-factory capacity		Approx.50% SOC
Operation temperature	Discharge Charge	-4~140°F/-20~60°C 32°F~122°F/0~50°C
Storage environment	≤1Month ≤6Month Recommend environment	-4~140°F/-20~60°C, 5~75%RH 14~113°F/-10~45°C, 5~75%RH 59~95°F/15~35°C, 5~75%RH

Electrical Characteristics & Test Condition

Testing Conditions: Ambient Temperature: 68-86°F/20-30°C ; Humidity:45%~75%.

Normal charge: Charge battery under CC(0.2C)/CV(14.4V) mode until the charge current reduce to 0.02C, and then rest for 1h.

Items	Standard	Test condition
Nominal capacity	≥100Ah	After Normal charge, discharge @0.2C current, to the end of discharge voltage.
Internal Impedance	≤40mΩ	@50% SOC @1kHz AC internal resistance test Instrument.
Short-circuit protection	Auto cutoff load when short-circuit	Connect the positive and negative of this battery pack through a lead with 0.1Ω resistance.
Discharge temperature Characteristic	Adopting 77°F/25°C as reference, calculating the percentage of discharge rate at other temperatures. -4°F/-20°C ≥45% 14°F/-10°C ≥70% 32°F/0°C ≥85% 77°F/25°C ≥100% 131°F/55°C ≥95%	Battery shall be charged according to standard charge, discharged at 0.5C to 10.8 V. Battery shall be stored for 4 hours at the test temperature prior to discharging and then shall be discharged at the test temperature, The percentage shall be calculated using discharging capacity compared to the minimum capacity.
Discharge performance in normal temperature	Discharge capacity 0.2C ≥100% 1C ≥95%	When the battery is in the environment of 73.4~80.6°F , after standard charging, rest for 10min, and then discharge to 10.8v with 0.2C, 1C. Calculate the ratio of discharge capacity to nominal capacity at each multiple.
Capacity retention rate	Capacity retention ≥90% Capacity recovery ≥95%	Measure the initial state and capacity of the battery, after standard charge, then rest for 28 days, measure the final state of the battery; discharge at 0.2C to 10.8V, measure the remaining capacity of the battery. After standard charging, the battery is discharged at 0.2C to 10.8 V to measure its recovery capacity. It can be cycled three times.
Cycle life@DOD100%	≥2000 cycles	After Normal charge, discharge @0.5C current to the end of discharge voltage. Repeat above process until discharge capacity reduce to 70% of initial value.

Circuit Protection

The batteries are supplied with a LiFePO4 Battery Management System (PCB) that can monitor and optimized each single prismatic cell during charge & discharge, to protect the battery pack overcharge, over discharge, short circuit. Overall, the BMS helps to ensure safe and accurate running.

Item	Content	Parameter
Over charge	Over-charge protection for each cell	3.65±0.05V
	Over-charge protection for battery	14.6±0.20V
	Over-charge protection delay time	0.5-2S
	Over-charge release method	Cell voltage ≤3.50±0.05V and battery voltage ≤14.0±0.20V or discharge current ≥2A
Over charge current	Charge over current protection 1	Charge current >130±20A
	Charge over current protection delay time	300~800mS
	Charge over current release	Cut load, Auto Recovery or discharge current >2A
Over discharge	Over-discharge protection for each cell	2.3V±0.10V
	Over-discharge protection for battery	10.8±0.30V
	Over-discharge protection delay time	0.5-1.5S
	Over-discharge release method	Cell voltage ≥2.70±0.05V and battery voltage ≥11.2±0.20V or charge current >2A
Over discharge current	Discharge over current protection	Discharge current >325±30A
	Discharge over current protection delay time	50~150mS
	Discharge over current release	Cut load, Auto Recovery or charge current >2A

Temperature	Charging high temperature protection	104~140°F/40~60°C
	Charge Over-temperature release method	104~113°F/40~45°C
	Charging low temperature protection	23~41°F/-5~5°C
	Discharge over temperature protection	149~167°F/65~75°C
	Discharge Over-temperature release method	122~140°F/50~60°C
	Discharge low temperature protection	-13~5°F/-25~-15°C
	PCB temperature protection	185~203°F/85~95°C
	PCB Over-temperature release method	185~203°F/85~95°C
	Temperature protection delay time	<10S
Cell balance	Balance Start Voltage	3.525±0.025V
	Balance current	36±10mA
Short circuit protection	Short Circuit Protection Current	1300A
	Protection condition	Load short circuit
	Protection delay	450~800uS
	Short circuit protection release	Cut load, Auto Recovery

Battery usage specification

- When the battery is used alone, it can be used directly.
- When the battery needs to be used in parallel or in series, each battery shall be fully charged according to the standard charging method before parallel or in series.
- The maximum series number of batteries shall not exceed two, and the parallel number shall not exceed four.

Transport & Store

When long-time storage, the battery SOC is 30% ~ 50% , if high-SOC storage will accelerate the battery capacity degradation.

The battery need to be charged every 6 months if out of use
No fall down, no pile up over 10 layers, and keep face up.

Warning

- Battery must be far away from heat source, high voltage, and no exposed in sunshine for long time.
- Never throw the battery into water or fire;
- Never reverse two electrodes when use the battery;
- Never connect the positive and negative of battery with metal;
- Never knock, throw or trample the battery;
- Never disassemble the battery without manufacturer's permission and guidance.
- Never use mixed with other type of battery;

Attention

- Keep the battery against high temperature. Otherwise it will cause battery heat, get into fire or lose some function and reduce the life.
- When battery run out of power, please charge your battery timely (≤ 15 day).
- Please use the matched or suggested charger for this battery.
- If battery emit peculiar smell, heating, distortion or appear any abnormality, please stop using.
- If the battery leaks and get into the eyes or skin, do not wipe, instead, rinse it with clean water and see doctor immediately.
- Please far away from children or pets.