

LiFePO₄ Battery (Bluetooth) Specification

Model: JARO-BT125.12
(service and starter battery)



Jarocells B.V.

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1. General Information

This specification defines the performance specifications of the rechargeable LiFePO₄ battery pack **JARO-BT125.12**. Through installation of the Jarocells App on smartphone or tablet (available for Android (from version 4.3) and Apple (from iOS version 7.2) devices) the user can read the battery pack system information.

2. Specification

NO	Items	Description	
Normal Specification			
1	Nominal Voltage	12.8V	
2	Normal Capacity	125Ah, 1.6kWh	
3	Internal Resistance	≤20mΩ	
Standard Charge			
4	Battery operation temperature range @charging	0~45°C	
5	Normal charge voltage	14.5±0.2V	
6	Recommended float charge voltage (for standby use)	13.5 - 13.8 V	
7	Allowed maximum charge current	100A@Battery initial Temp 25±5°C	
8	Recommended charge current	≤50A	
Standard Discharge			
9	Battery operation temperature range @discharging	-20~50°C	
10	Output Voltage Range	11.0~14.6V	
11	Allowed discharge current	100A withstand 30min @Battery initial Temp 25±5°C	
12	Pulse discharge current	500A withstand 5s (start function)	
13	Discharge Cut-off voltage	10.0V	
Mechanical Characteristics			
14	Dimension	Length 318±2mm	
		Width 165±2mm	
		Height 215±2mm	
15	Weight	Approx. 15,4kg	
Storage			
16	Storage Temperature & Humidity Range	Short: within one month	-20~35°C, 45~75%RH
		Long term: above one month	-10~30°C, 45~75%RH
17	Self-discharge rate	Residual capacity	≤3% per month; ≤15% per year

3. Electrical Characteristics & Test Condition

Testing Conditions: Ambient Temperature: $25\pm 5^{\circ}\text{C}$; Humidity: 45%~75%.

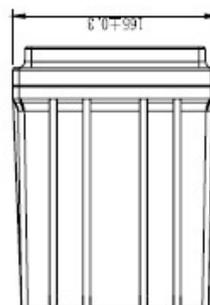
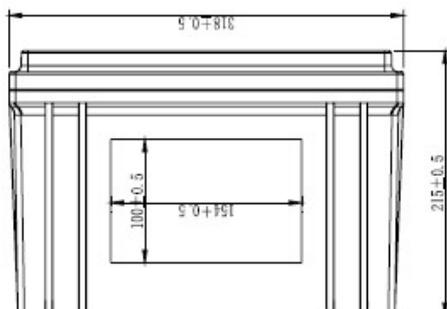
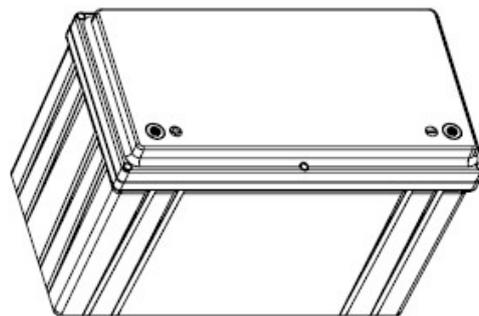
NO	Items	Criterion	Condition	
1	Internal Impedance	$\leq 20\text{m}\Omega$	Test the internal resistance of 50% SOC battery pack with 1 kHz AC internal resistance test instrument.	
2	Capacity	$\geq 124\text{Ah}$	Rest for 1 hour after fully charged, then discharge with 0.33C current until the battery reaches the discharge cutoff voltage. Repeat above process for three times, if the discharge time is not less than 180 minutes, you can stop and define the Discharging current*time value (Ah) as battery capacity.	
3	Maximum charge current	100A	Charging with this current for more than 0.5h and the added temperature of battery pack less than 20°C .	
4	Maximum continuous discharge current	100A	Discharging with this current for more than 0.5h and the added temperature of battery pack less than 35°C .	
5	Cycle life (DOD%100)	$\geq 2000\text{cycle}$	Discharge with the current of 0.5C until it can't discharge, and then rest it for 1h. Charge the battery following CC(0.33C)/CV(14.6V) mode to full capacity, and then rest it for 1h. Repeat above process until full charged capacity is no more than 80% of normal value. Accumulated times is defined as cycle life.	
6	Discharge Temperature Characteristics	-20°C	$\geq 70\%$	At $25\pm 5^{\circ}\text{C}$ discharge the battery with the current of 0.33C to the cut-off voltage. Store the battery at various temperatures for 2h and discharge the battery with 0.33C to the cut-off voltage. Record the ratio between discharging & charging capacity.
		0°C	$\geq 80\%$	
		25°C	100%	
		55°C	$\geq 95\%$	
7	Charge Retention ability	remain capacity $\geq 90\%$	Charge the battery to full capacity and store it for 28 days, and then discharge it with 0.33C to the cut-off voltage.	

4. Circuit Protection

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

Test item	Content	Criterion
Over charge	Over-charge protection for each cell	3.75±0.03V
	Over-charge release for each cell	3.65±0.05V
	Over-charge release method	Under the release voltage
Over discharge	Over-discharge protection for each cell	2.50±0.05V
	Over-discharge release for each cell	2.60±0.05V
	Over-discharge release method	Over the release voltage, charge
Over current	Discharge over current protection (1)	100A~120A 20s – 30s
	Discharge over current protection (2)	480A~520A 4s – 6s
	Over current release method	Recovers after 8s or charge
Over Temperature	Battery over temperature, charge and discharge	Protection @65±5°C
		Release @60±5°C
Over Temperature	Battery lower temperature	Protection @-10±5°C
		Release @0±5°C
Short circuit	Do not short cut	Designed for 2000 – 2500A 250μs

5. Dimensional Drawing



6. Storage & Transportation

- * Based on the character of cell, proper environment for transportation of LiFePO₄ battery pack need to be created to protect the battery.
- * Battery should be stayed in the ware house -20°C~35°C where it's dry, clean, shade, and well-ventilated.
- * The battery should be stored in 50% SOC during transportation (13.2V)
- * The battery needs to be charged every 6 months if out of use
- * Keep the battery against dropping, turning over and serious stacking during loading.

7. Warning & Tips

Please read and follow the specification and caution remarks on battery surface before use the battery. Improper use may cause heat, fire, rupture, damage or capacity deterioration of the battery.

Warning!

- * The battery must be far away from heat source, high voltage, and avoid to be exposed in sunshine for longtime.
- * Never throw the battery into water.
- * Never connect the positive and negative of battery with metal.
- * Never ship or store battery together with metal.
- * Never reverse two electrodes when use the battery.
- * Never disassemble the battery without manufacturer's permission and guidance.
- * Never knock, throw or trample the battery.

Tips!

- * 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 during working or storage, please stop using and take it out from device.
- * 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.
- * Do not put scrap battery into a fire or water.
- * If user needs to parallel several battery packs, please charge them to full capacity with same type of matched charger, and set it aside for 8 hours, professionals only. This battery pack supports application no more than 8 group parallel. If user needs to apply this product to more groups parallel, please reconfirm details with us.
- * It's possible to put batteries in series to create 24V or 36V. However, it is required to consult Jarocells first because of special requirements needed. Professionals only.
- * The SOC (State of Charge) meter in the app is based on the Coulomb principle. This means that the reading is accurate but needs to be calibrated before use after a period of more than 14 days not using the battery. This because the reading will slowly loose it's precision. For the battery pack this is not important because it's only a calculation. So, after a longer stand still, charge the battery until the charger stops. The app will calibrate on 100% on this point and will be accurate again for the next 14 days.