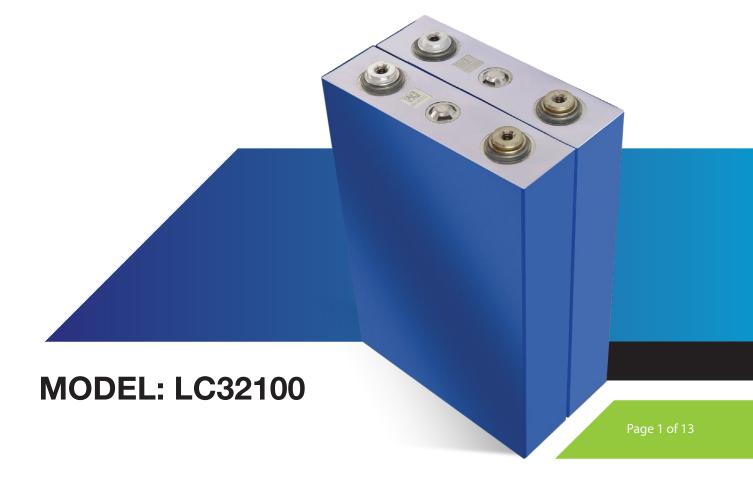


3.2V 100Ah LiFeP04 PRISMATIC CELL SPECIFICATION





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1. Scope

This specifications sheet applies to the indicated cells manufactured by ExpertPower only. The product is in compliance with the directives ROHS.

2. Product Type and Model

- 2.1 Product type 3.2V 100Ah LiFePO4 Prismatic Cell
- 2.2 Product model LC32100

3. Main Technical Parameter

1 Rated Capacity Minimum 100Ah Standard charg	harge (0.5C) after ge, end-off voltage: 2.5V
Minimum 100Ah	-
2 Nominal Voltage 3.2V Operation	
	n Voltage 2.5V
3 Discharge end-off Voltage 2.5V Discharge e	end-off Voltage
4 Charging Voltage 3.65V Charge upp	er-limit Voltage
5 Internal Impedance <0.55mO	nce measured with R @50% SOC
Constant Current 0.5C	
6 Standard charge Constant Voltage 3.65V Charge til	me: <150min
0.02C A cut-off	



NO.	ITEM	GENERAL PARAMETER	R REMARK
7	Standard discharge	Constant discharge current 0.5C, end-off voltage 2.5V	
8	Maximum Continuous Charge Current	50A	77°F Charge time: Approx 130min
9	Maximum Continuous Discharge Current	100A	Discharge Capacity: >90% @77°F
10	0.5C / 0.5C cycle life, 100% DOD	2000 times@77°F Ambient	Cycle life will be over 2000 times @77°F, 0.5C / 0.5C,100%DOD
11	Recommend Operation Temperature Range	Charge: 50~113°F Discharge: -4~131°F	60±25% R.H.
12	Recommend Storage Temperature Range	Less than 6 months: 68~86°F 60±25% R.H. shipment state	
13	Cell Dimension		
14	Cell Weight	4.37±0.11lbs	



4. Dimensions and Appearance

4.1 Dimensions

Please refer to the diagram in page 13.

 Width:
 $130.0\pm1 \text{mm} / 5.12\pm0.04 \text{inch}$

 Thickness:
 $36.5\pm1 \text{mm} / 1.44\pm0.04 \text{inch}$

 Total height:
 $201.0\pm1 \text{mm} / 7.91\pm0.04 \text{inch}$

 Case height:
 $194.0\pm1 \text{mm} / 7.64\pm0.04 \text{inch}$

 Distance between terminals:
 $80.0\pm1.0 \text{mm} / 3.15\pm0.04 \text{inch}$

4.2 Appearance

The battery surface should be clean and free from electrolyte leakage, obvious scratches, mechanical damage, deformation, and any other appearance defects that may affect the battery value.

5. Battery Performance and Test Conditions

5.1 Standard Test Conditions

The battery used for testing must be a new battery manufactured by our company within one month, and should not have undergone more than five charge-discharge cycles. Unless there are specific requirements, the test conditions are: temperature 77±35.6°F, relative humidity 45%-75%. The test results will not be significantly affected by temperatures ranging from 64.4°F to 86°F or relative humidity ranging from 25% to 85% RH.

5.2 Measuring Instrument

- 5.2.1 Dimension Measurement Tool The accuracy of the instrument used to measure dimensions should be greater than or equal to 0.01mm / 0.0004inch.
- 5.2.2 Multimeter: When measuring the battery voltage, the internal resistance of the multimeter should be greater than $10M\Omega$.
- 5.2.3 Internal Resistance Tester The principle used for measuring internal resistance should be AC impedance method (1kHz ACR).
- 5.2.4 Ammeter The total external resistance, including the ammeter and wires, should be less than 0.01Ω .



5.3 Standard Charge / Discharge

- 5.3.1 Standard Charge
 The battery is first charged at a constant current of 0.5C to 3.65V. When the charging current gradually decreases, it is then charged at a constant voltage of 3.65V until the current drops to 0.02C. The charging time is approximately 2.5 hours. Charging the battery between 32°F and 129.2°F will not cause permanent damage.
- 5.3.2 Standard Discharge
 The battery is discharged at a constant current of 0.5C to 2.5V at 77°F.

5.4 Unless otherwise specified, the rest time between charging and discharging is 30 minutes.

5.5 Initial Performance Test

ITEM	TEST METHOD AND CONDITION	REQUIREMENTS
Open-Circuit Voltage	Measure the voltage across the battery terminals without any load connected, within 24 hours after a standard charge, with the battery at a stable temperature.	The open-circuit voltage must be greater than or equal to 3.29V.
Internal impedance	Measure the impedance of the battery at AC 1KHz, when the battery is at a 50% state of charge and has stabilized at a specified temperature.	The internal resistance of the battery must be less than or equal to $0.5 \text{m}\Omega$.
Minimal Rated Capacity	Charge the battery using a standard charging method and then allow it to rest for 30 minutes. After the rest period, discharge the battery to a cut-off voltage of 2.5V using a constant current of 0.5 times the rated capacity.	The discharge capacity of the battery must be greater than or equal to 100Ah.



5.6 Electrical Performance

• 5.6.1 Discharge performance at low and high temperature and cycle life Table 4

ITEM	TEST METHOD AND CONDITION	REQUIREMENTS
Low-temperature performance	After the battery is charged with 0.5C current, it is placed in a low-temperature chamber at -68±35.6°F for 20 hours, and then discharged with a 0.5C current to a cut-off voltage of 2.0V. After the experiment, the battery is taken out and left at 77±35.6°F for 4 hours to observe its appearance.	 The discharge capacity cannot be less than 60%; No distortion, no rupture
High-temperature performance	After the battery is charged with 0.5C current, it is placed in a high-temperature chamber at 131±35.6°F for 4 hours, and then discharged with a 0.5C current to 2.5V. After the experiment, the battery is taken out and left at 77±35.6°F for 4 hours to observe its appearance.	 The discharge capacity cannot be less than 95%; No distortion, no rupture



• 5.6.2 Capacity retention Table 5

ITEM			
	A1	The battery is charged and discharged at a current of 0.5C A, with a discharge capacity of C1. After being stored at a temperature of 77±35.6°F for 30 days at full charge, it is discharged at a current of 0.5A, with a capacity of C2.	Capacity maintaining rate C2 / C1≥95%
Storage	A2	The battery is charged at 0.5C A and discharged at 0.5C A, cycled 3 times, and the recovery capacity (maximum discharge capacity C3 for 3 weeks of cycling) is tested.	Capacity recovery rate C3 / C1≥97%
Characteristics	В1	The battery is charged at a current of 0.5C A and discharged at 0.5C A, with a discharge capacity of C4. After being stored for 7 days at a temperature of 140±35.6°F at full charge, it is discharged at a current of 0.5C A, and the discharge capacity C5 is tested.	Capacity maintaining rate C5 / C4≥90%
	B2	The battery is charged at 0.5C and discharged at 0.5C, cycled 3 times, and the recovery capacity (maximum discharge capacity C6 for 3 weeks of cycling) is tested.	Capacity recovery rate C6 / C4≥95%



5.7 Environmental Adaptability

No.	Items	Test Method and Condition	Criteria
1	Vibration Test	Secure the fully charged battery onto a vibration table and subject it to 45 minutes of vibration along two perpendicular axes. The vibration amplitude should be 0.06inch, and the frequency should range from 10Hz to 55Hz, with a gradual change in frequency of 1Hz per minute.	No leakage No fire No explosion
2	Compression Test Place the battery between two flat plates and apply pressure with a hydraulic cylinder with a diameter of Φ1.3inch until the pressure reaches 17.2Mpa. The applied pressure should be 13KN. Once the target pressure is reached, the pressure should be released. Place the battery in a vacuum chamber and gradually decrease the air pressure to a level less than or equal to 11.6KPa, and maintain this pressure for a duration of 6 hours.		No fire No explosion
3			No leakage No fire No explosion



5.8 Safety Performance

IT	ЕМ	BATTERY CONDITION	TEST METHOD	CRITERIA
	hort rcuit	Fully charged new cell	Using copper wires with a maximum internal resistance of 0.1Ω , connect the positive and negative terminals of the battery successively under the ambient temperature of 77°F and 140°F.	No explosion, No fire The Temperature of the surface of the Cells should be lower than 302°F
•)ver charge	Fully charged new cell	Discharge the battery at a current of 0.5C for 5 hours.	No explosion, No fire
•	Over Fully charged charge new cell		Charge the battery at a current of 3C up to 10V.	No explosion, No fire
lm	pact	Fully charged new cell	Place a circular rod with a diameter of 0.62inch in the center of the battery and drop a 20.1lbs weight vertically from a height of 24inch onto the center of the battery	No explosion, No fire



6. Cell Usage Guide

To ensure proper use of the cell, it is important to carefully review this manual. The following guidelines should be followed when using the cell:

- 6.1 Do not put the cell in an environment above 212°F or expose to fire.
- 6.2 Do not connect the cell to a charger or equipment with incompatible terminals.
- 6.3 Avoid short-circuiting the cell.
- 6.4 Avoid subjecting the cell to excessive physical shock or vibration.
- 6.5 Do not disassemble or deform the cell.
- 6.6 Do not submerge the cell in water.
- 6.7 Do not mix the cell with different types or chemistries of cells.
- 6.8 Keep the cell out of reach of children.
- 6.9 Charging and discharging:
 - 6.9.1 Charging:
 - Ensure that the charging current does not exceed the maximum specified in the manual.
 - Ensure that the charging voltage does not exceed the highest voltage specified in the manual.
 - Charge the battery at a temperature within the range specified in the manual.
 - 6.9.2 Discharging:
 - Ensure that the discharging current does not exceed the maximum specified in the manual.
 - Ensure that the lowest voltage is not below the specification in the manual. Discharge the battery at a temperature within the range specified in the manual.
 - 6.9.3 Discharge temperature:
 - The cell should be discharged within the ambient temperature range specified in the manual.



6.10 Disposal

Dispose of the cell in accordance with the local regulations.

6.11 Cell storage

Store the cells in a cool, dry, and well-ventilated area, as specified. If the storage time exceeds six months, it is recommended to recharge the cell.

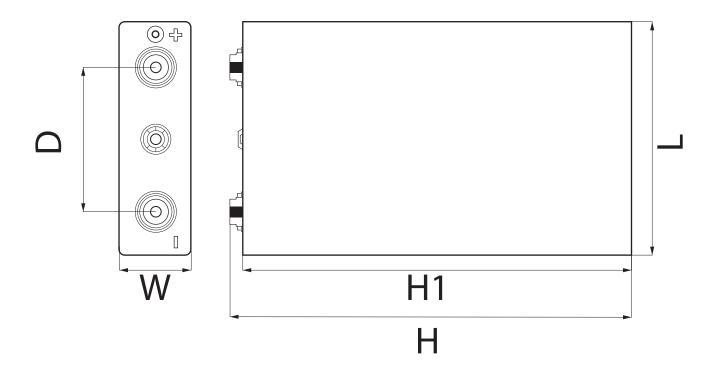
- 6.12 It is strictly forbidden to charge, force discharge, squeeze, and pierce Lithium cells.
- 6.13 Do not solder directly on the surface of the cell, and must be with pre-installed solder feet or leads.
- 6.14 Do not mix new and used batteries, or batteries from different manufacturers.
- 6.15 It is strictly forbidden to short circuit or reverse between the positive and negative of the cell. And do not disassemble and tear down the cell.
- 6.16 Do not place batteries scattered together to avoid accidental short circuits.
- 6.17 Do not take out the cell from the original packaging before use, and store it in compliance.
- 6.18 Do not place the cell without any protection or install it in a humid or corrosive environment.
- 6.19 When Lithium cell needs to be combined in series or parallel, please consult our customer service staff in advance.
- 6.20 Do not transport or manipulate batteries by throwing, dropping, or tossing them.

7. Warranty Period

The warranty period for this product is one year from the date of shipment. ExpertPower guarantees the replacement of the cell due to quality problems of the cell, not caused by customer abuse or misuse.



8. Initial Dimension



ITEM	DESCRIPTION	DIMENSION
L	Length	5.12 ± 0.04 inch
W	Width	1.44 ± 0.04 inch
Н	Height (total)	7.91 ± 0.04 inch
H1	Height (shell)	7.64 ± 0.04 inch
D	Distance between terminals	3.15 ± 0.04 inch

The positive pole of the cell features an aluminum structure, while the negative pole consists of copper. The poles are threaded with an M6 internal thread and have a torsion resistance of 8Nm. When in use, the torsion force should not exceed 8Nm, and the effective depth of the threaded hole is 0.24inch.