Product Specification

Product Name: LiFePO4 Battery

Model: HDCF 32700-6000mAh-3.2V

Make By: Zhao Xu

Checked By: Kong Yongle

Approved By:

Contents

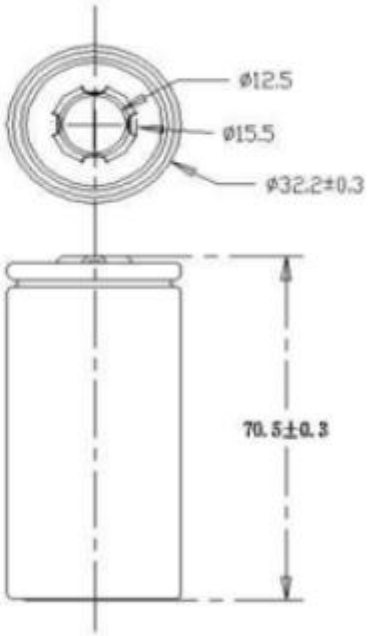
1. Application Scope

This product specification describes product performance indicators of Lifepo4 battery produced by Haidi Energy Technology Co.,Ltd.

2. Model

HDCF32700-6000mAh-3.2V

3. Dimension



Item	Dimension (mm)
Diameter（Φ）	32.2±0.3
Height（H）	70.5±0.3

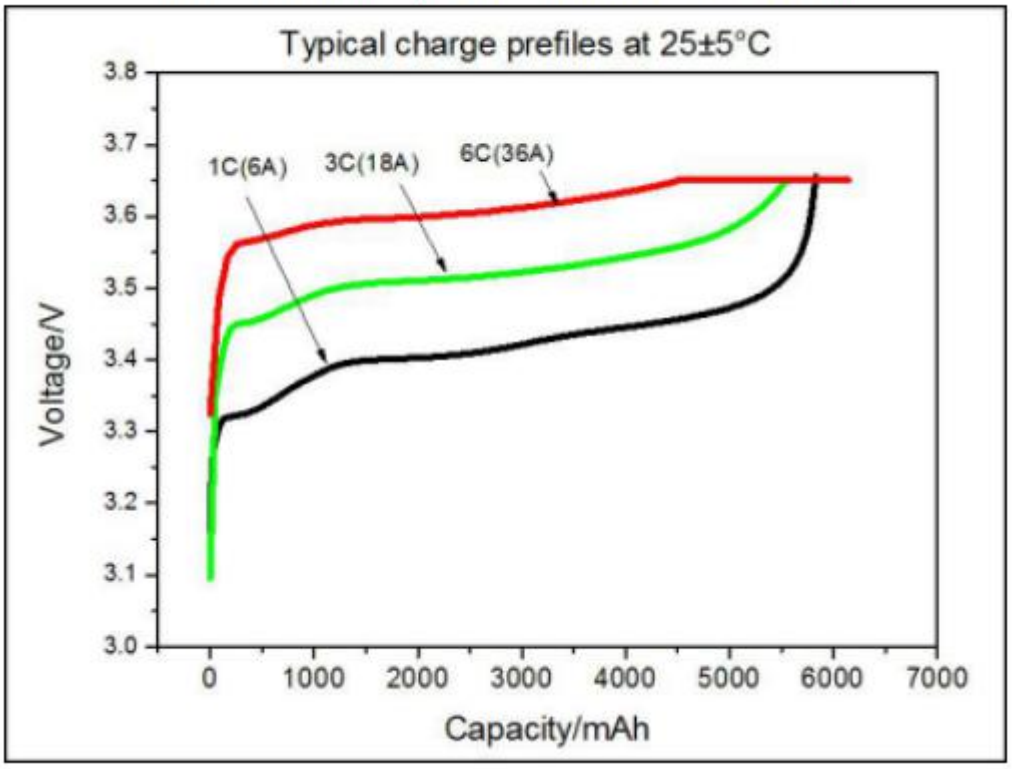
4. Major Technical Parameters

No.	Item	Standard	Note
1	Standard Capacity	6.0Ah	$0.2C_5A$
2	Capacity Range	6Ah±0.5Ah	Standard capacity（$0.2C_5A$）, Minimum Capacity（$1C_5A$）
3	Standard Voltage	3.2V	
4	Alternating Internal Resistance	≤12mΩ	

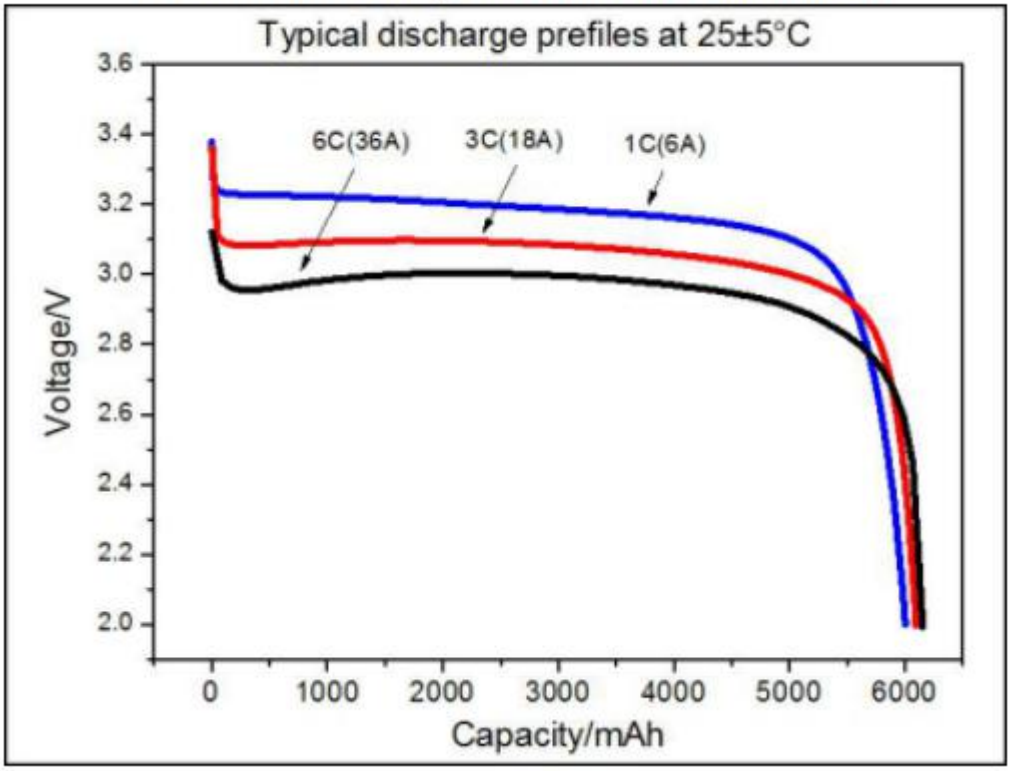
5	Charge Conditions	Cut-off Voltage	3.65V	3.65VCut-off 0.05C Cut-off
		Cut-off Current	0.05C	
6	Discharge Voltage	Cut-off	2.5V	
7	Cycle Characteristic		2000 times	After0.2C_5standardcharged ,discharge with 0.2C_3A to 2.5V.rest for10min , cycles for 2000 times.
8	Max. Continuous Discharge Current		5.5A	1C_5A
9	Max discharge current		15A	3C_5A（2mintues）
10	Peak discharge current		25A	5C_3A（10s）10s
11	Storage Temperature		-20°C ~ 45°C	
12	Battery Weight		About 145g	

5. Characteristics Curves

Different rate charge curve of 6.0Ah $LiFePO_4$ Cell



Different rate discharge curve of 6.0Ah $LiFePO_4$ cell



6. Safety Characteristics

NO.	Item	Test Method	Standard
1	Over-charge performance	After standard charged ， Battery status should be ensure the normal (the same below),charge with 3C_5A to 10.0V, then change to charge with constant voltage and stop charge until the current is 0.05C_5A, check the temperature and appearance of the battery.	No exploding, No fire The highest temperature <150℃
2	Over-discharge performance	After standard charged， discharge with 0.2C_5A to 2.5V， then connect the positive and negative with 10Ω resistor， rest for 60min.	No exploding, No fire
3	Short-circuit performance in normal temperature	After standard charged，keep the battery pack in explosion-proof box and connect positive and negative to short-circuit(the total impedance should not be over than 50mΩ)，stop the testing when the temperature of the battery reduces 10 ℃ compare with the top one 。check the temperature and appearance of the battery.	No exploding, No fire The highest temperature <150℃

4	Acupuncture performance	After standard charged. Put the adminiculum, and connect with thermocouple. Then use the nails 3mm in diameter from the high position of battery to middle to puncture the battery completely. Check the temperature and appearance of the battery.	.No exploding, No fire The highest temperature <150℃
5	Thermal Shock safe performance	After standard charged. put the battery to hot-box, and connect with thermocouple, the temperature from （5 ℃±2 ℃）/min to 150 ℃±2 ℃. And keep warm 30 Min.check the temperature and appearance of the battery.	No exploding, No fire

7. Environmental Adaptability

NO	Item	Test Method	Standard
1	Temperature Cycle	After standard charged， keep the battery for 48hrs under 60±2℃, then rest for 6hrs under -10 ℃±2℃，then rest for 24h under normal temperature, discharge with 0.2C_5A to 2.5V 。 with 0.2C/0.2C charge and discharge cycle for 3 times。	No smoking ,exploding, No fire
2	invariableness moist heat performance	After standard charged ， keep in constant temperature and humidity case for 48hs under 40±5℃，relative humidity 95%，then rest for 2h，discharge with 0.2C_5A to 2.5V。	Discharge capacity / standard capacity×100%>60% No exploding, No fire
3	Vibration	After standard charged，build battery in the vibration table-board，according to vibration frequency and relative moving to adjust the test equipment, from X、Y、Z three aspects, every aspect with 10Hz～55Hz vibrate for 30min，the speed is1oct/min： (A)Vibration frequency：10Hz～30Hz Moving：0.38mm (B) Vibration frequency：30Hz～55Hz Moving：0.19mm。 After test,0.2C_5/0.2C $_5$test the remain capacity	Remain capacity ≥original capacity*95% Voltage reducing rate≤3mV Impedance increasing rate ±3 mΩ No exploding, No fire
4	Discharge performance in different temperature	After standard charged，constant temperature rest for 3hrs in 60±2℃、discharge with 1C_5A to 2.5V，standard charge in normal temperature，separated rest for 20hrs in order 0±2 ℃/-10±2 ℃，test the last capacity with 0.2C_5A，Then rest 2h in the normal temperature.	Discharge capacity /Rated capacity ×100% (A)60 ℃≥95%; (B)0 ℃ ≥85%; (C)-10 ℃ ≥60% No exploding, No fire

8. Standard Test Environment

Unless especially specified, all tests stated in this Product Specification are conducted at below condition:

Temperature: 25±5℃

Humidity: 45%～80% RH

9. Storage and Others

9.1 Long Time Storage

If the battery is stored for a long time (more than three months),the battery should be stored in dry and cool place. The battery should be charged and discharged every there months. The batteries' storage voltage should be 3.2~3.4V and the battery should be stored in a condition as NO.8.

9.2 Others

Any matters that this specification does not cover should be consulted between the customer and HAIDI.

10. Notice in Using Battery

In order to prevent the battery leaking, getting hot and exploding, please pay attention to preventing measure as following:

.

- Never throw the battery into water, keep it under dry, shady and cool circumstance when not use.
- Never keep the battery beside high temperature source examples: fire, heating machine and etc.
- Please use the stated charger when charging.
- Never cut through the battery with nail or other edge tool.
- Never cut the battery in socket directly
- Never throw the battery into fire or heating machine.
- Never connect the positive and negative of battery with metal.
- Never ship or store the battery together with metal
- Never knock, throw or trample the battery.
- Never upside down the positive and negative.

Note

The definitions of some nomenclatures of this specification:

(1) Please encase the pole with isolative paper when you want to abandon the battery to prevent expolding and getting into fire.
(2)Never use the battery under strong static and strong magnetic field, otherwise it will destroy the protecting device
(3)If battery leaked, the electrolyte get into eyes, please don't knead, please wash eyes by water and send to hospital. Otherwise it will hurt eyes
(4)If battery emit peculiar smell, heating, distortion or appear any unconventionality during using, storage or charging process, please take it out from device or charge and stop using.
(5)If the pole was duty, please clear it before using.
(6)Never use or keep the battery under the high temperature. Otherwise it will cause battery heat, get into fire or lose some function and reduce the life.