



### 1. Scope

This specification is applied to the reference battery in this Specification .

### 2. Production

Product Name : Lifepo4 Battery Pack

Specification: LFP200-48      48V 200Ah (10KWH)

### 3. Product Specification

Table 1

Package	No.	Item	General Parameter		Remark
	1	Combination method	15S		
	2	Rated Capacity	Typical	200Ah	Standard discharge after Standard charge (package)
			Minimum	200Ah	
	3	Factory Voltage	49.5-50.5V		Mean Operation Voltage
	4	Voltage at end of Discharge	40-42.5V		Discharge Cut-off Voltage
	5	Charging Voltage	53.2-54V		
	6	Internal Impedance	≤50mΩ		Internal resistance measured at AC 1KHz after 50% charge  The measure must uses the new batteries that within one week after shipment and cycles less than 5 times
	7	Standard charge	Constant Current 20A Constant Voltage see No.5 0.01CA cut-off		Charge time : Approx 11h
	8	Standard discharge	Constant current: 20A end voltage see NO.4		
9	Maximum Continuous Charge Current	100A			

Continuous the table 1 (续 表 1)

	No.	Item	General Parameter	Remark
Package	10	Maximum Continuous Discharge Current	100A	
	11	Operation Temperature Range	Charge: 0~45℃	60±25%R.H. Bare Cell
			Discharge: -20~55℃	
	12	Storage Temperature Range	Less than 12 months : -10~35℃	60±25%R.H. at the shipment state
			less than 3 months: -10~45℃	
			Less than 7 day : -20~65℃	
	13	Cycle life	≥6000cycle	
	14	Dimensions	480*650*242 mm	Include case
	15	Weight	88kg	Include case
	16	Volumetric specific energy	127WH/L	Include case
17	Gravimetric specific energy	109WH/KG	Include case	

## 4. Battery Management System

### 4.1 BMS Specification

1. The BMS is designed for 15/16 series lithium battery.
2. The BMS have all functions which are :
  - overcharge detection function
  - over discharge detection function
  - over current detection function
  - short detection function
  - Temperature detection function
  - balance function
  - communicate function
  - Alarm function

4.2 BMS Protect parameter

48V 15S Typical value specifications

Items	Details	Standard
Cell overcharge protection	Overcharge detection voltage	3.70±0.025V
	Overcharge detection delay time	Typical:1.0s
	Overcharge release voltage	3.45±0.02V
Cell over-discharge protection	Over-discharge detection voltage	2.75±0.02V
	Over-discharge detection delay time	Typical:1.0s
	Over-discharge release voltage	3.05±0.02V or charge release
Over-current protection	discharge Over-current protection current1	120±10A
	discharge Over-current detection delay time 1	1S
	discharge Over-current protection current2	150±10A
	discharge Over-current detection delay time2	≤100ms
	Charge OC protection current	120±10A
Short protection	Short protection current	350±10A
	Protection condition	Load short
	Detection delay time	≤800us
	Protection release condition	Charging release
Temperature(T) protection	Charge high T protection	65±2℃
	Charge high T recover	60±5℃
	Discharge high T protection	65±2℃
	Discharge high T recover	60±5℃
	Charge low T protection	-5±2℃
	Charge low T recover	0±2℃
	Discharge low T protection	-20±5℃
	Discharge low T recover	-15±5℃
Balance	Balance threshold voltage	3.45V
Communication	It has RS232 and RS485 standard communication interface, it can real-time monitoring the capacity of battery bank, the voltage, current, environment temperature, and charging/discharging current.	
Alarm	It has over-temperature, over charge, under-voltage, over-current, short circuit alarm function.	

## 5. Case Structure of Battery Pack



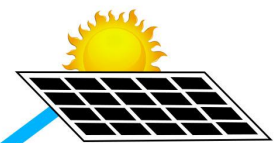
## 6. Application

Off-grid Energy System All In One Solution, House (Villa) Powerwall ESS

Lithium Battery Pack



Off-grid Inverter



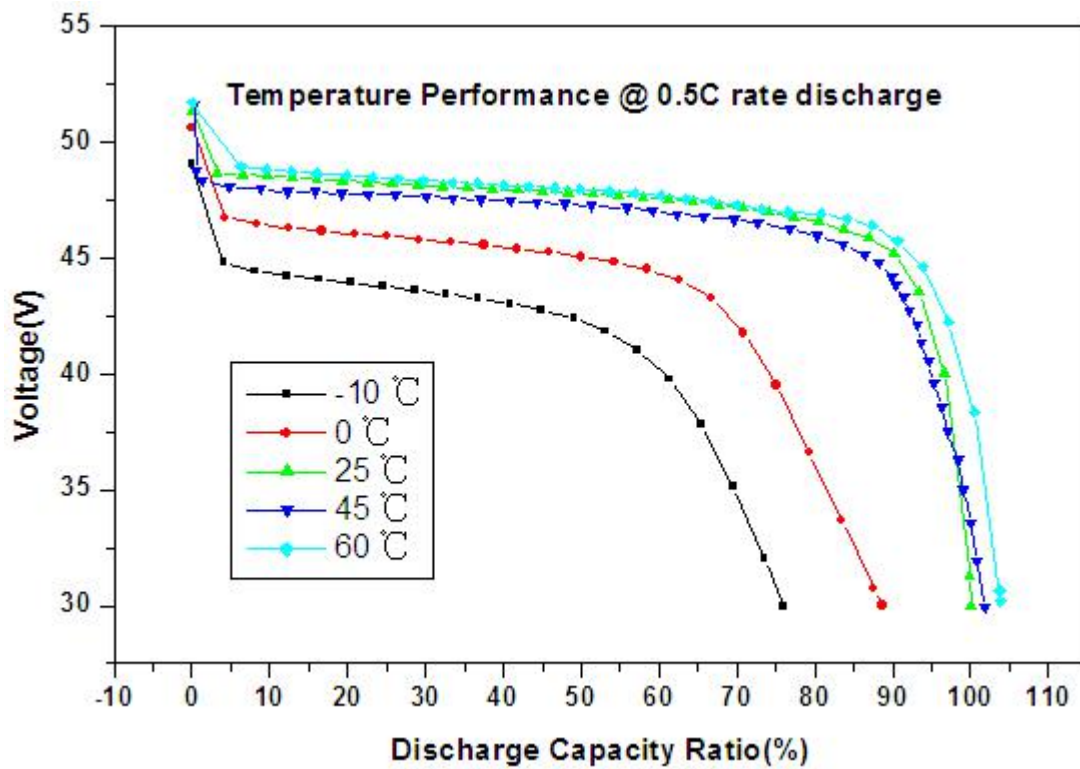
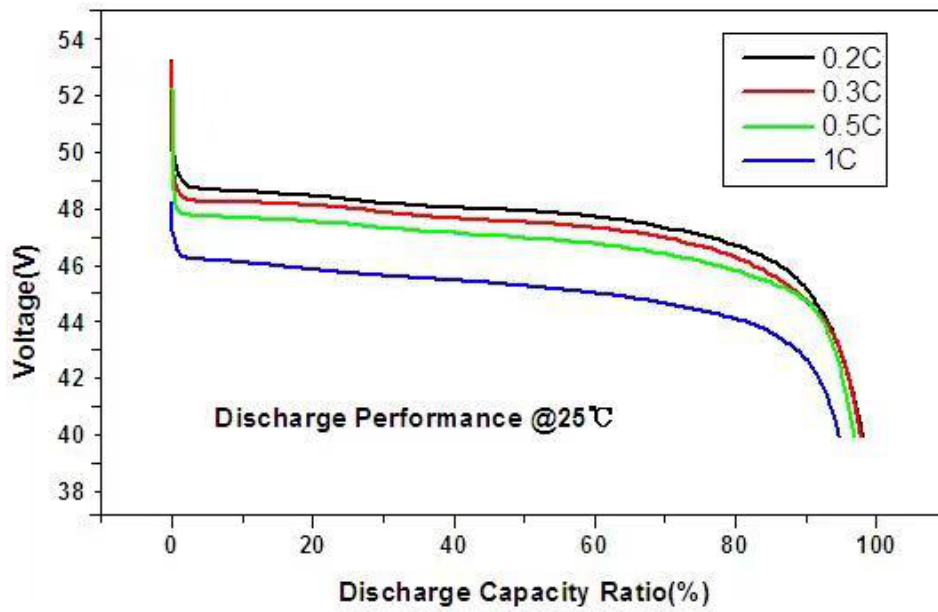
Solar Panels

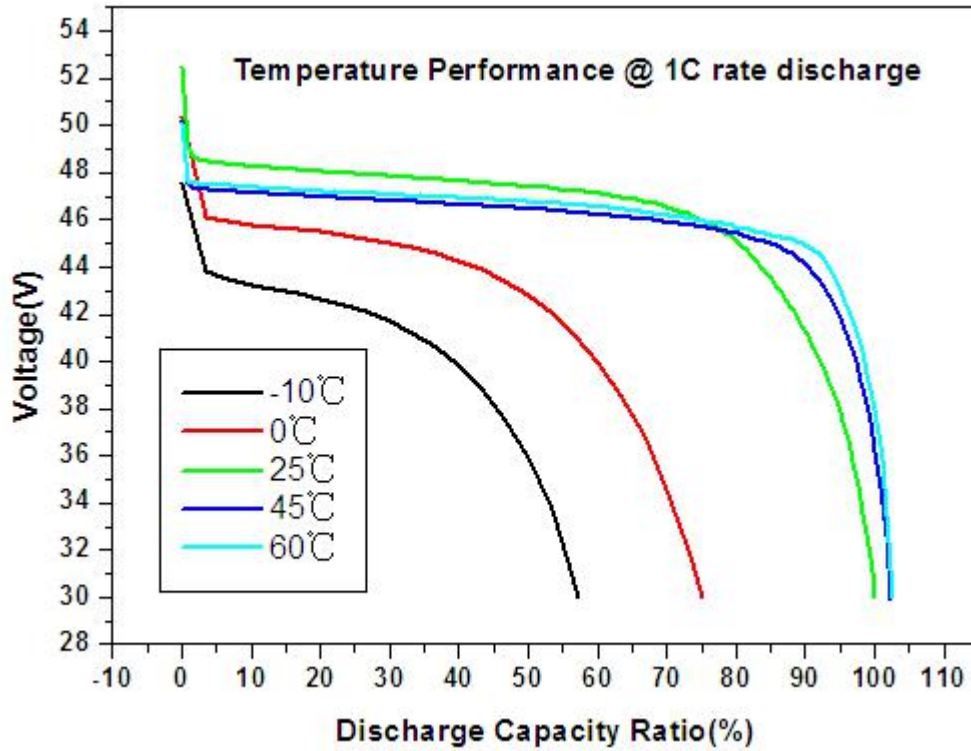


Home Load

7. Appendix

Discharge curve





Charge curve

