Specification Sheet

12.8V 160Ah

Lithium Iron Phosphate (LiFePO4) Battery

Model BL12160

€820 Including VAT @23%

General Parameter

Battery Parameter		
Item	Parameter	
Rated power	12.8V (4S) 160Ah	
Energy	2048Wh	
Standard charge voltage	14.6V	
Charge method	CC-CV	
Recommended charge current	30A	
Max charge current	100A	
Cut-off voltage	10V	
Continuous discharge current	200A	
Peak discharge current	400A @5S	
Total weight	About 20kg	
Impedance (Max, at 1000Hz.)	≤30mΩ	
Operation temperature range	Charge	0~60℃
	Discharge	-20~60℃
Storage environment	Temperature	10~45℃
	Humidity	≤75%RH
Cycle life	1C@DOD100%	≥2500 cycles
	0.2C@DOD100%	≥4000 cycles
Self-discharge rate	≤3%/Month	
Battery dimension	L=483±5mm	
	W=170±5mm	
	H=240±5mm	

BMS Parameter		
Item	Test Items	Technical Parameter
Single Cell over-charge protection	Single Cell over-charge protection voltage	3.75±0.025V
	Single Cell over-charge protection delay	2±0.5S
	Single Cell over-charge protection release voltage	3.6±0.025V
Single Cell over-discharge protection	Single Cell over-discharge protection voltage	2.5±0.025V
	Single Cell over-discharge protection delay	1±0.5S
	Single Cell over-discharge protection release voltage	3.0±0.025V
Charge/discharge over-current protection	Discharge over-current level 1 protection current	205±5A
	Discharge over-current level 1 protection delay	60±5S
	Discharge over-current level 2 protection current	350±5A
	Discharge over-current level 2 protection delay	6±2S
	Discharge over-current level 3 protection current	650±5A
	Discharge over-current level 3 protection delay	50±50mS
	Discharge over-current release condition	Recover after a delay of about 30S
	Charge over-current level 1 protection current	200±5A
	Charge over-current level 1 protection delay	20±5S
	Charge over-current level 2 protection current	250±5A
	Charge over-current level 2 protection delay	100±50mS
	Charge over-current release condition	Recover after a delay of about 10S
Temperature protection	Charge over temperature protection	Protect@55±5℃; Release@45±5℃
	Charge under temperature protection	Protect@0±5℃; Release@5±5℃
	Discharge over temperature protection	Protect@65±5℃; Release@55±5℃
	Discharge under temperature protection	Protect@-20±5℃; Release@-15±5℃

Battery Appearance & Dimension

Connector definition:

Item	Specification
Positive and negative binding posts	M8 binding posts

Dimension:

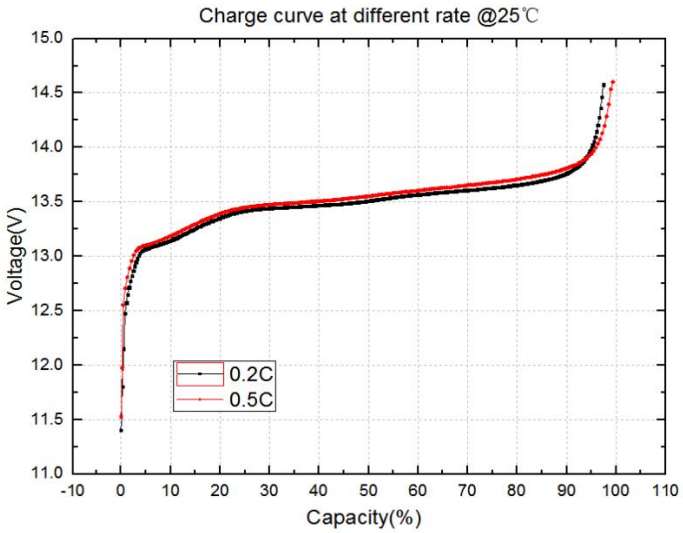
Item	Dimension
Length	483mm
Width	170mm
Height	240mm

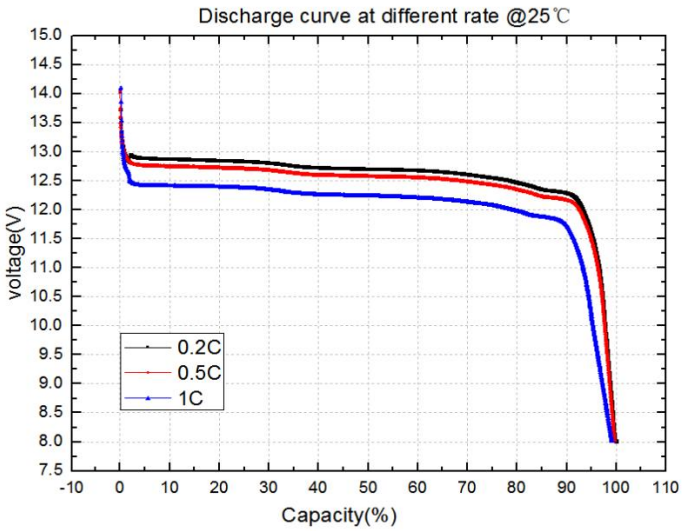
Performance & Test Condition

Project	Standard		Testing Method
Rated capacity	160Ah		After standard charge, discharge @0.5C current to the end of discharge voltage, cycles for three times. One cycle capacity arrive standard, that's to say it is qualified.(The below as the same).
Capacity retention rate	Remain capacity ≥ standard capacity*97%		After standard charging, store at 25℃±5℃ for 1 month, and then discharge capacity @0.2C current to the end of discharge voltage, then measure the capacity of cell.
Cycle life	Capacity ≥ Standard capacity *80%		After standard charge, discharge @0.2C current to the end of discharge voltage. Rest for 1h, cycles for 4000 times.
Internal Impedance	≤30mΩ		@50% SOC @1kHz AC internal resistance test instrument.
Discharge temperature characteristic @0.2C	-20℃ (6h)	≥70%	Capacity @specified temperature/Capacity @25℃.
	0℃ (6h)	≥90%	
	25℃ (4h)	≥100%	
	55℃ (4h)	≥97%	

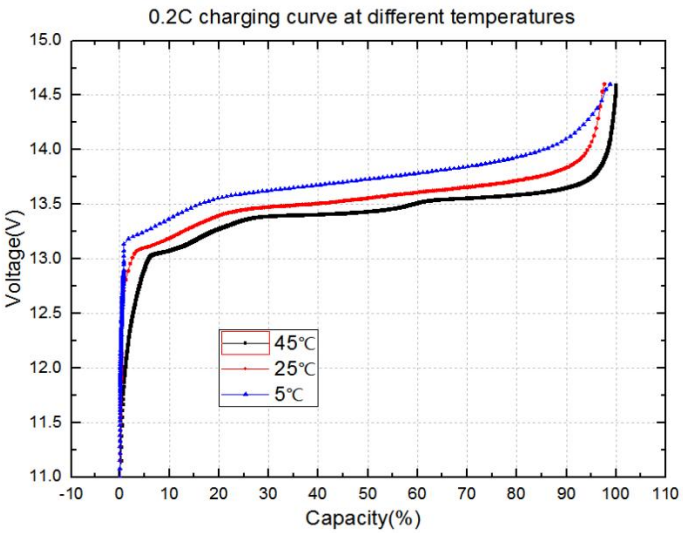
LiFePO4 Battery Normal Curve

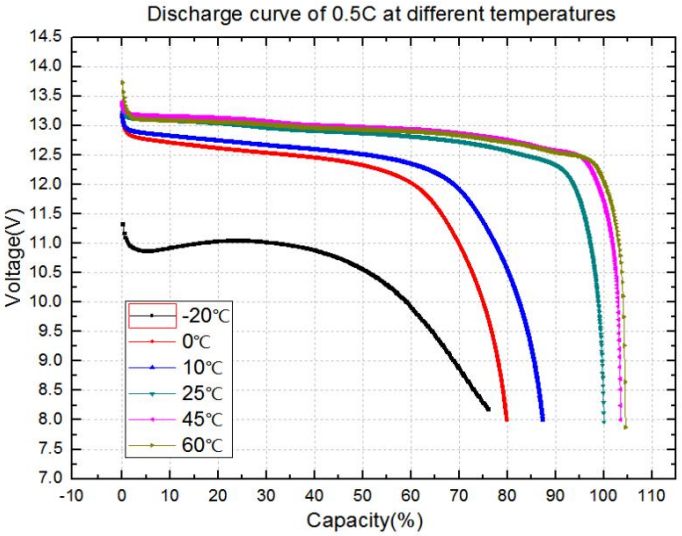
Rate Curve



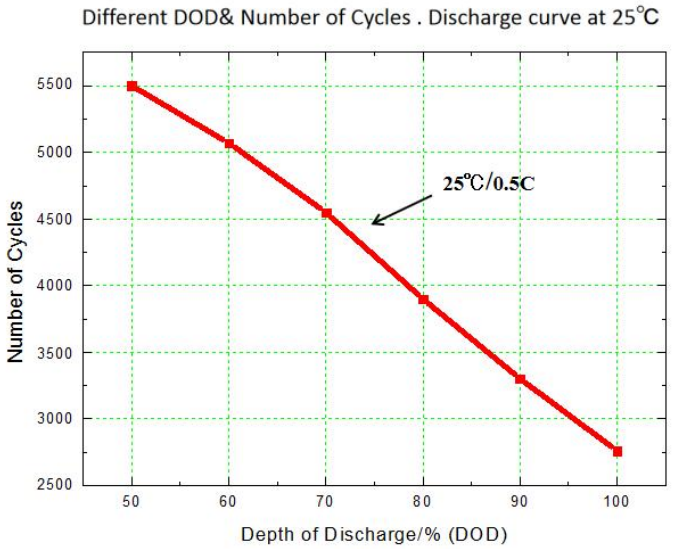


Temperature Curve





Cycles Curve



Storage & Transportation

- Based on the character of cell, proper environment for transportation of LiFePO4 battery pack need to be created to protect the battery.
- During transportation, 30%-50% SOC must be kept; Avoid short circuit, prevent the liquid from entering the battery pack or immersing in the liquid (such as water, oil, etc).
- Battery should be kept at 0℃~45℃ in warehouse where it's dry, clean and well-ventilated.
- During loading of battery, attention must be paid against dropping, turning over and serious stacking.

Warnings & Tips

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

WARNING !

- Never throw the battery into water, keep it under dry, shady and cool circumstance when not use.
- Never upside down the positive and negative.
- 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 cut through the battery with nail or other edge tool.

NOTICE !

- 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. The proposed temperature for long-term storage is 0-45℃.
- Never throw the battery into fire or heating machine to avoid fire, explosion and environment pollution; scrap battery should be returned to the supplier and handled by the recycle station.
- Never use the battery under strong static and strong magnetic field, otherwise it will destroy the protecting device.
- 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.
- 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.
- Never cut the battery in socket directly; please use the stated charger when charging.
- Check the voltage of battery and relevant connectors before using the battery. It can't be used until everything turns out to be normal.
- Prior to charging, fully check the insulation, physical condition and ageing status, since breakage and ageing are never allowed; the pack voltage must not be less than 10V,if not, it's abnormal and that battery

needs to be labeled. The user should contact our Customer Service Dept and It can't be charged until repaired by our staff.

- The battery should be stored in half SOC. It needs to be charged once if out of use for as long as half a year.
- Clean the dirty electrode, if any, with a clean dry cloth, or poor contact or operation failure may occur.
- If the battery pack is used in series or in parallel, it must be ensured that the battery pack has the same charge and the pressure difference is within 50mV.

*Any other items which are not covered in this specification shall be agreed by both parties.

POLINOVEL

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