 <b>GLOBAL ACE SOLAR</b> <small>Solar, Alternative Free Energy, Keeping Our Planet Green</small>	<h2>Global Ace Solar</h2>	Version: 1
	Tel: (775) 391-0778 E-Mail: JT@globalacesolar.com	

### 1. Scope


This specification describes the property indexes and technical requirements of the 12V 102Ah rechargeable Lifepo4 lithium ion battery.

### 2. Product

- 2.1 Product Name: LiFePO4 Battery Pack
- 2.2 Cell specification : LiFePO4-32700- 6.0Ah, 4S17P.
- 2.3 Model: BL12100-GA

### 3. Product Parameters

No.	Item	Parameters	Remark
3.1	Rated Capacity	102Ah	Standard discharge after standard charge
3.2	Nominal Voltage	12.8V	Operating voltage
3.3	Charge Method	CC/CV	Constant current, constant voltage
3.4	Charge Voltage	14.6V	
3.5	Discharge Cut-off Voltage	10.0V	Voltage at end of discharge
3.6	Recommended Charge Current	20A - 30A	
3.7	Max Continuous Discharge Current	100A	
3.8	Pulse Discharge Current	200A	<5S
3.9	Weight (approx.)	27.56 Lbs (12.5 kg)	
3.10	Battery Dimension (L×W×H)	12.99" x 6.77" x 8.43" (330*172*214mm)	
3.11	Operation Temperature Range		
		Charge 32F~113F (0~45°C)	
		Discharge -4F~140F (-20~60°C)	

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### 3.12 Storage Temperature Range

One Month -20~60°C

3 Months -20~45°C

6 Months -20~25°C

Atmospheric Pressure 86~106kPa

Relative Humidity 25%~85%RH

## 4. Test Conditions

### 4.1 Standard Test Conditions

All the tests mentioned in this specification should be conducted under standard temperature of 23±3°C and relative humidity of 45~85% and atmospheric pressure 86~106kpa.

### 4.2 Measuring Instrument or Apparatus

All of the measuring instruments and facilities (include the equipment which monitor the test parameters) should be verified and calibrated qualified by relevant Chinese Calibration Regulation or certain standards within the valid date. All the test instruments and equipment should have the properties of adequate precision and stability, and the precision should be an order higher than the tested indicators or the tolerance should be less than one third of the tested parameters.

### 4.3 Standard Charging


Charging shall consist of charging at a 0.2C5A constant current rate until the battery reaches 14.6V. The battery shall then be charged at constant voltage of 14.6 volts while tapering the charge current. Charging shall be terminated when the charging current has tapered to 0.01 C. Charge time: Approx 5.5h, The battery shall demonstrate no permanent degradation when charged between 0 °C and 45 °C.

### 4.4 Standard Discharging

The battery should be discharged at a constant current of 0.2C5A to 10.0 volts @ 23° ± 3C


### 4.5 Others

If no otherwise specified, the rest time between Charge and Discharge amount to 30min.

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5. Battery picture



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## 6. Transportation

The battery should be packed in boxes for delivery, and be delivered under the state of half charged. The battery should be prevented from vibration, shock, extrusion, sun-scorched and rain-drenched. It could be delivered by car, train, boat, airplane, etc.

## 7. Storage

The battery should be stored (more than 1 month) in clear, dry and ventilated room under ambient temperature of  $-20^{\circ}\text{C}\sim 45^{\circ}\text{C}$ , and it should be kept away from caustic material, combustion source and heat source. Charging and discharging the battery every six months, and make sure the storage voltage should be  $12.8 \sim 13.4\text{V}$ .

## 8. Battery Operation Instruction

### 7.1 Charging

#### 7.1.1 Charging Current

The charging current should not be higher than the maximum current indicated in this specification.

#### 7.1.2 Charging Voltage

The charging voltage should not be higher than the maximum voltage indicated in this specification.

#### 7.1.3 Charging Temperature

The battery should be charged under the ambient temperature range of  $0^{\circ}\text{C}\sim 45^{\circ}\text{C}$ .


#### 7.1.4 Reverse Charging is Forbidden

Properly assemble the cathode and anode of the batteries. Charge the battery in constant current and constant voltage way. Reverse charge is forbidden which will cause damage to the battery.

### 7.2 Discharging

#### 7.2.1 Discharging Current

The discharging current should not be higher than the maximum current indicated in this specification. Over high discharge current may incur the problem of intensely drooping of the capacity and over fever.

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### 7.2.2 Discharging Temperature

The battery should be discharged under the ambient temperature range of -20°C~60°C.

### 7.2.3 Over Discharging Is Forbidden

In the course of normal use, the battery management system should be applied to avoid over discharging. If the battery is over discharged, it may be damaged or safety problem may be occurred.

Please pay attention that the battery can be in the state of over discharged because of self-discharge during the process of storage of the batteries which haven't be used for a long time. To avoid this, the battery should be charged according to a fixed schedule, and the voltage should be maintained above 12.8V.

## 9. Cautions in Use

8.1 Please read the instruction carefully and pay attention to the marks on the surface of battery before using it.

8.2 Please use the battery under normal indoor environment, temperature: -20°C~55°C; humidity: (65±20)%.

8.3 In the procedure of using the battery, please isolate it from heat source, fire source, and keep the children away from play with it, never beat, drop or shock it.

8.4 This battery only can be used with configured charger.


8.5 Short circuit is forbidden at any time, which may leads to the damage of battery, or even incur danger.

8.6 If you do not use it for a long time, please make sure it is well stored, keep it on the state of being half charged, do not fully charge or discharge it.

8.7 Discarded battery should be well disposed, do not throw it in the fire or under the water.

## 10. Warnings

- Do not immerse the battery under water, store it in the cool and dry environment when not use it.
- Keep it away from heat source like fire, heater when use or store it.
- Please use lithium-ion special charger when charging it.

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- Please make sure the polarity is not reversed during the usage.
- Do not dispose battery into the fire or heater
- Do not connect the cathode with the anode directly by metals which could cause short circuit.
- Do not transport or store the battery with metals like hairpin, necklace.
- Do not strike, throw, tread or bend the battery
- Do not solder directly to the battery or penetrate it by using nails or other edge tools.
- Do not use or place the battery where has high temperature(under the hot sun) , otherwise the phenomenon of overheat, improper function, the shorten life span may occur.
- Do not use the battery in the high electrostatic field and high magnetic one, otherwise it leads to the damage of the safety device which causes u
  - If the leakage of electrolyte happens, and the electrolyte enters into eyes, instead of rubbing your eyes, you should rinse it out with clear water, and get a treatment in the hospital immediately, or it may hurt the eyes
- If the battery gives out peculiar smell, has a fever, changes color and becomes deformed, or any abnormal phenomenon occurs during the usage, storage, charging process, you should stop and remove it immediately from the device or charger.

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

## **Global Ace Solar**

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