

磷酸铁锂电池技术规格书

Specification of Lithium Ion Battery

GBS-LFP200Ah-B

(V3.0)



Li-ion



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本规格书规定了由浙江佳贝思绿色能源有限公司生产的磷酸铁锂电池（以下简称电池）的相关技术指标及注意事项。

This specification describes the technical requirements, test procedure and precaution notes of LiFePO₄ type Lithium Ion Battery supplied by Zhejiang GBS Energy Co., Ltd.

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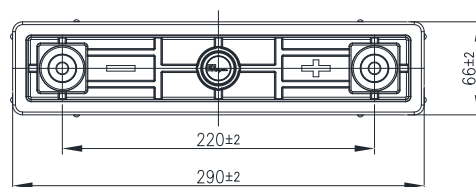
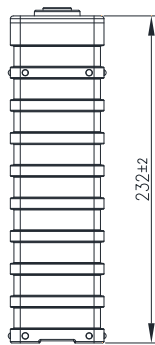
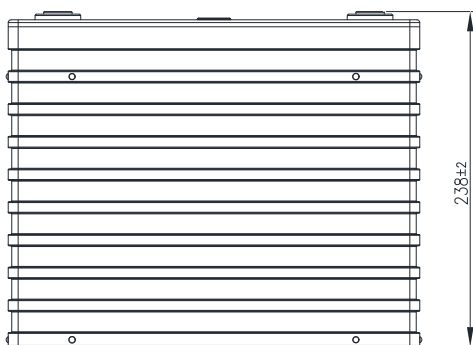
1. 产品外观 / Appearance



长度 / Length : 290mm

宽度 / Width : 66mm

高度 / Height : 238mm



2. 命名方式 / Designation

- (1) 产品名称：磷酸铁锂电池
- (2) 产品型号：GBS-LFP200Ah-B
- (3) 命名方法：GBS - LFP 200Ah - B

① ② ③ ④

- ① 表示蓄电池生产厂家,"GBS" 表示蓄电池生产厂家为浙江佳贝思绿色能源有限公司。
- ② 表示蓄电池的材料。
- ③ 表示蓄电池的容量。
- ④ 表示蓄电池的款型, "B" 表示相同容量电池中的 B 款电池。

- i. Product : Lithium Ion Battery.
- ii. Model : GBS-LFP200Ah-B
- iii. Designation : GBS - LFP 200Ah - B

① ② ③ ④

- ① Indicates manufacturer.
- ② Indicates material of battery.
- ③ Indicates capacity of battery.
- ④ Indicates type of battery.

3. 技术指标 / Specification

项目 / Item	参数 / Specification
产品型号 / Model	GBS-LFP200Ah-B
极柱螺丝孔 / Terminal screw hole	单孔 / single hole
标称容量 / Rated capacity	200Ah
标称电压 / Nominal voltage	3.2V
交流内阻 / Internal impedance	$\leq 0.35\text{m}\Omega$
标准充电 / Standard charge current	50A
快速充电 / Fast charge current	200A
充电截止 / End of charge voltage	3.55V
标准放电 / Standard discharge current	100A
最大持续放电 / Max discharge current	600A
瞬间放电 / Instantaneous discharge current	2000A (10s)
放电截止 / End of discharge voltage	2.5V
工作温度 / Working temperature	-20 ~ 65°C
循环寿命 / Cycle life	3000 cycles (0.5C)
产品重量 / Weight	6.7±0.2kg
外形尺寸 / Dimension	290×66×238±2mm
壳体材质 / Shell	塑壳 / PP

4. 产品特点 / Basic Performance

- (1) 高倍率输出：瞬间脉冲放电（10s）可达 10C。
 - (2) 高温性能良好：可以在外部环境温度 65℃下工作，而且电池结构保持完好。
 - (3) 低温性能良好：外部环境温度-20℃时 1C 放电容量不低于额定容量的 90%，0.33c 放电容量不低于额定容量的 70%。
 - (4) 安全性能好：蓄电池装有独特双重保护功能的单向安全阀，当蓄电池内部气压超过第一限压值，将通过安全阀释放出气体和热量，从而保证蓄电池正常使用；当蓄电池内部气压超过第二限压值，安全阀将瞬间弹出，从而保证蓄电池不会燃烧、爆炸。
 - (5) 循环寿命高：蓄电池经 3000 次循环充放电（80%DOD）后，其放电容量仍大于额定容量的 80%。
 - (6) 可快速充电：0.5 小时可充至额定容量的 80%，1 小时可充满。
 - (7) 生产成本：成本低。
 - (8) 绿色环保：生产和使用对环境无污染。
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- i. Output with high rate. Instantaneous impulse discharge current can reach 10C for 10 seconds.
 - ii. Good performance at high temperature. It can work at 65℃ with safe and good battery structure.
 - iii. Good performance at low temperature. Discharge capacity is no less than 90% of rated capacity when discharging with 1C at -20℃ ; no less than 70% of rated capacity with 0.33C.
 - iv. Good safety performance. When the pressure inside the battery is too large, the one-way safety valve will release gas and heat to make sure battery works well. When

the internal pressure reaches a certain level, the valve will be open immediately which can protect the battery from burning and explosion.

- v. Good cycle life. The discharge capacity is still over 80% after 3000 cycles of charge and discharge (80%DOD) .
- vi. Fast charging. It can be charged to 80% within 0.5h and charged full with 1h.
- vii. Low cost.
- viii. Environmentally friendly. No pollution during production and usage.

5. 使用注意事项 / Matters needing attention



警告：请在使用前完整阅读并了解安全指南及说明。如果不这样做极可能因操作不当引起火灾、个人伤害或财产毁损。因操作不当而引起的相应责任由买方自己承担，GBS 概不负责。

- (1) 锂离子电池必须配合电池管理系统（BMS）使用。每一个电池必须由电池管理系统监测和自动保护以预防过度充电和放电情况的发生。过度充电和放电将对电池及电池组造成永久损害，并产生不安全的操作隐患，比如火灾。
- (2) 坚决使用 BMS 系统和安全设施，例如保险丝和触电器，以便在过压，欠压，过流，电池短路，高温，低温温度过低等不安全的情况发生时，及时中断充电和放电路径。
- (3) 如果使用的 BMS 不是由 GBS 提供，买方必须在安装前将 BMS 的规格发送给 GBS，经同意后方可使用。
- (4) 如果使用的充电器不是由 GBS 提供，买方必须在使用前将充电器的规格发送给 GBS，经同意后方可使用。
- (5) 在使用或充电前阅读 GBS 锂离子电池的说明书。依据单个电池的电压和温度，在指定的参数范围内充放电。
- (6) 电池、电池管理系统、充电器和其他电子控制设备必须安装并安置在干燥地区，避免接触到水，比如雨点打湿、潮湿等情况。
- (7) 电池组及控制系统必须安全安装。当电池、连接线、接线、电子设备正在运行时，避免任何移动。
- (8) 避免电池或电池组短路。短路状况将会对电池和电池组的造成永久性损害，或产生不安全的操作隐患，比如火灾。在安装导电条、电缆和电池极柱的 BMS 组件时要注意谨慎。螺丝刀和扳手等工具应该采用额定的、绝缘的。
- (9) 确保电池极柱和导电条的表面干净干燥。电池使用前所有电池极柱上的螺丝都必须拧紧。螺丝

不拧紧将会造成高接触电阻，发热及火灾隐患。

(10) 确保导电条和电缆尺寸合适，能够处理最大充放电电流。而尺寸不合适的导电条和电缆将引起过热和火灾隐患。坚决使用电流限制设备，例如保险丝和断路器。

(11) 当使用锂电池组时会有触电的风险，因此应按照相关标准坚持穿戴个人防护装备。

(12) GBS 电池是由铝夹板和拉条打包而成。这些装置可以压紧电池组，防止可能产生的鼓胀。如若卸去可能造成电池在使用时发生鼓胀，最终导致电池加速老化，使用寿命减短。



Attention: Please read and understand the safety Guidelines and Instructions before using or changing GBS Lithium ion battery. Failure to do so may result in fire, personal injury, or property damage if it is used improperly. GBS assumes no liability or warranty claim for failure to comply with the Guidelines and Instructions.

- i. Lithium ion battery cell must be used with battery management system(BMS). Every Lithium ion battery cell must be monitored and automatically protected by BMS against over charging and over discharging. They will cause permanent damage to battery cells and packs, and possibly lead to unsafe operating conditons, such as fire.
- ii. Always implement safety devices such as fuses and contractors together with BMS to disrupt charging and discharging circuits when unsafe conditions occur, such as over voltage, under voltage, over current, short circuit, over temperature, under temperature, etc.
- iii. If a non-GBS provided BMS is desired, buyer must send BMS specification to GBS for review and approval prior to installation.
- iv. If a non-GBS provided charger is desired, buyer must submit the charger specification

- to GBS for review and approval prior to use.
- v. Read the specifications of GBS Lithium ion battery before use and charging. Always charge and discharge Lithium ion battery within the specified parameter ranges based on individual cell voltages and temperatures.
 - vi. Battery, BMS, charger and other control delectronics must be installed or kept in a dry area. Avoid exposure to water, such as rain, splashes and moisture condensation.
 - vii. Battery packs and control systems must be securely installed. Avoid any movment of battery, connections, wiring and electronics during use.
 - viii. Avoid short circuiting battery cells or packs. A short circuit condition will cause permanent damage to battery cells and packs, and possibly lead to unsafe operating conditions, such as fire. Attention shall be paid when installing bus bars, cables and BMS components on the cell terminals. Tools, such as screw drivers and wrenches should be of a properly rated, electrically insulated type.
 - ix. Make sure that the surfaces of battery terminals and bus bars are clean and dry. All screws must be tightened properly on the battery terminals before battery is used. Loose connections will result in high contract resistance, heat generation, and can potentially be a fire hazard.
 - x. Make sure bus bar stacks, terminal connectors and cables are adequately sized to handle the maximum charge and discharge current. Inadequately sized bus bar stocks, connectors and cables will cause over heating and result in a potential fire hazard. Always use current limiting devices such as fuses or circuit breakers.
 - xi. There is a risk of electric shock when working on a Lithium ion battery pack. Always

- wear personal protective equipment(PPE) when working on a battery pack as per relevant standard.
- xii. GBS batteries are strapped with Aluminum plates and steel bars. The strapping hardware provides compression to the pack and prevents possible swelling. Removing this strapping hardware may result in cells swelling during use, which will result in accelerated aging and shorter lifetime.

6. 温馨提醒 / Requirement for safety assurance

尊敬的客户，为了您能更好的使用我们的产品,如您遇到电池箱体设计、电池管理系统方案设计等其它方面的问题,请与我们一起进行探讨，我们将竭诚为您服务。

For the sake of safety, please discuss with us if you have any question about battery system design, BMS etc. We will serve you as always. Thank you!