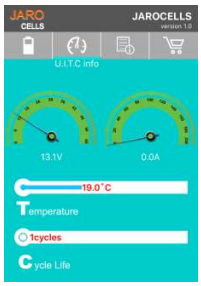
# LiFePO4 Battery（Bluetooth）
# Specification

## Model: JARO BT12.12



Jarocells B.V.
Address:：Waldorpstraat 345, 2521 CJ ‘s-Gravenhage, The Netherlands

| | | | |
|---|---|---|---|
| Registered | B. ten Berge | Customer | |
| Checked | R. Hurkmans | Customer Model | |
| Approved | J. Vermeulen | | |
| Issued Date | 01-09-2016 | | |
| Issued Version | V01 | | |

## 1. General Information

This specification defines the performance specifications of the rechargeable LiFePO4 battery pack **JARO BT12.12.** Through installation of the Jarocells App on smartphone or tablet (android 4.3 or higher, Iphone 4S and higher or iPad 2 and higher) the user can read the battery pack system information.

## 2. Specification

| NO | Items | | Description |
|---|---|---|---|
| **Normal Specification** | | | |
| **1** | Nominal Voltage | | 12,8V |
| **2** | Normal Capacity | | 12Ah |
| **3** | Internal Resistance | | ≤50mΩ |
| **Standard Charge** | | | |
| **4** | Battery operation temperature range @charging | | 0~45℃ |
| **5** | Normal charge voltage | | 14,5±0,2V |
| **6** | Recommended float charge voltage (for Standby use) | | 13,5 – 13,8 V |
| **7** | Allowed MAX charge current | | 12A@Battery initial Temp 25±5℃ |
| **8** | Recommended charge current | | ≤6A |
| **Standard Discharge** | | | |
| **9** | Battery operation temperature range @discharging | | -20~50℃ |
| **10** | Output Voltage Range | | 11,0~14,6V |
| **11** | Allowed discharge current<br>Recommended discharge current | | 30A withstand 15min @Battery initial Temp 25±5℃/<br>12A withstand 30min @Battery initial Temp 25±5℃/ |
| **12** | Pulse discharge current | | 55A withstand 3s |
| **13** | Discharge Cut-off voltage | | 8,0V |
| **Mechanical Characteristics** | | | |
| **14** | Dimension | | Length 151±2mm |
| | | | Width 98,5±2mm |
| | | | Height 95±2mm |
| **15** | Weight | | Approx. 1,6Kg |
| **Storage** | | | |
| **16** | Storage Temperature & Humidity Range | Short: within one month | -20~35℃,45~75%RH |
| | | Long term: above one month | -10~30℃,45~75%RH |
| **17** | Self-discharge rate | Residual capacity | ≤3% per month; ≤15% per year |
| | | | |

## 3. Electrical Characteristics & Test Condition

Testing Conditions: Ambient Temperature: 25±5℃; Huminity:45%~75%.

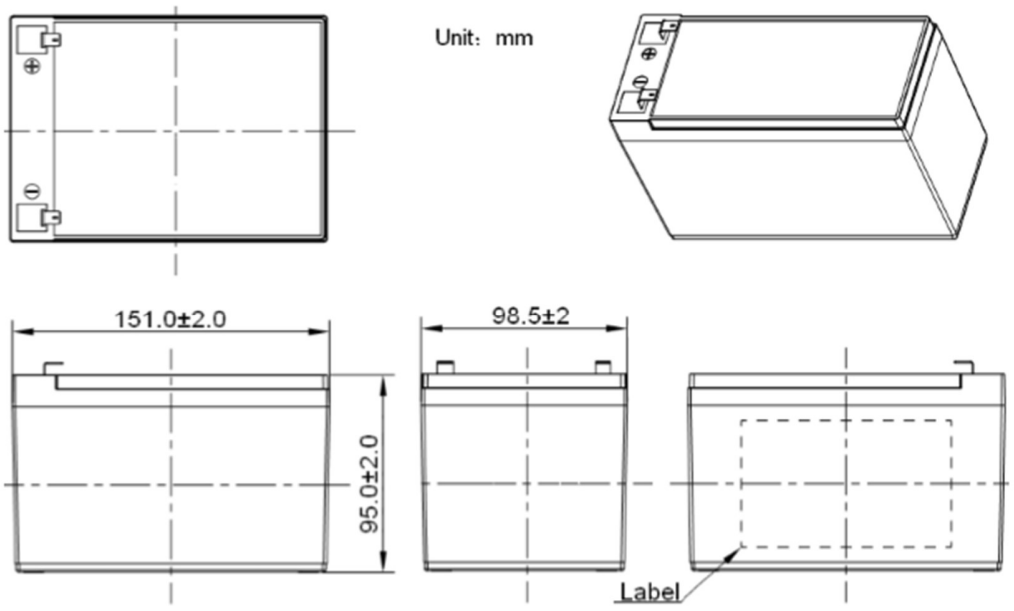
| NO | Items | Criterion | | Condition |
|---|---|---|---|---|
| **1** | Internal Impedance | ≤50mΩ | | Test the internal resistance of 50% SOC battery pack with 1 kHz AC internal resistance test instrument. |
| **2** | Capacity | ≥11, 4Ah | | Rest for 1 hour after fully charged, then discharge with 0.33C current until the battery reaches the discharge cutoff voltage. Repeat above process for three times, if the discharge time is not less than 180 minutes, you can stop and define the Discharging current*time value (Ah) as battery capacity. |
| 3 | Short circuit protection | Automatically cutoff discharging when short circuit, and release after remove the lead | | Connect the positive and negative of the battery pack through a lead with a resistance of less than 5 mΩ. |
| **3** | MAX chargeCurrent | 12A | | Charging with this current for more than 0.5h and the added temperature of battery pack less than 20℃. |
| **4** | Recommended discharge Current | 12A | | Discharging with this current for more than 0.5h and the added temperature of battery pack less than 35℃. |
| **5** | Cycle life (DOD%100) | ≥2000cycle | | Discharge with the current of 0.5C until it can't discharge, and then rest it for 1h. Charge the battery following CC(0.33C)/CV(14.6V) mode to full capacity, and then rest it for 1h. Repeat above process until full charged capacity is no more than 80% of normal value. Accumulated times is defined as cycle life. |
| **6** | Discharge Temperature Characteristics | -20℃ | ≥70% | At 25±5℃ discharge the battery with the current of 0.33C to the cut-off voltage. Store the battery at various temperatures for 2h and discharge the battery with 0.33C to the cut-off voltage. Record the ratio between discharging & charging capacity. |
| | | 0℃ | ≥80% | |
| | | 25℃ | 100% | |
| | | 55℃ | ≥95% | |
| **7** | Charge Retention ability | remain capacity≥90% | | Charge the battery to full capacity and store it for 28 days, and then discharge it with 0.33C to the cut-off voltage. |

## 4. Circuit Protection

The batteries are supplied with a LiFePO4 Battery Management System (BMS) that can monitor and optimized each single prismatic cell during charge & discharge, to protect the battery pack overcharge and over discharge. Overall, the BMS helps to ensure safe and accurate running.

| Test item | Content | Criterion |
|---|---|---|
| Over charge | Over-charge protection for each cell | 3.80±0.03V |
| | Over-charge release for each cell | 3.60±0.05V |
| | Over-charge release method | Under the release voltage |
| Over discharge | Over-discharge protection for each cell | 2.00±0.05V |
| | Over-discharge release for each cell | 2.30±0.05V |
| | Over-discharge release method | Over the release voltage |
| Over current | Discharge over current protection | ~60A |
| | Protection delay time | 100~200ms |
| | Over current release method | Release after cutoff the loads. |
| Over Temperature | Battery over temperature | Protection @65±5℃ |
| | | Release @60±5℃ |
| Over Temperature | Battery lower temperature | Protection@-10±5℃ |
| | | Release @0±5℃ |
| Short circuit | Connection impedance | Removal short circuit |

## 5. Dimensional Drawing



## 6. Storage & Transportation

* Based on the character of cell, proper environment for transportation of LiFePO4 battery pack need to be created to protect the battery.
* Battery should be stayed in the ware house -20℃～35℃ where it's dry, clean, shade, and well-ventilated.
* The battery should be stored in 50% SOC during transportation.
* The battery need to be charged every 6 months if out of use
* Keep the battery against dropping, turning over and serious stacking during loading.

## 7. Warning & Tips

Please read and follow the specification and caution remarks on battery surface before use the battery. Improper use may cause heat, fire, rupture, damage or capacity deterioration of the battery.

**Warning!**

* The battery must be far away from heat source, high voltage, and avoid to be exposed in sunshine for longtime.
* Never throw the battery into water.
* Never connect the positive and negative of battery with metal.
* Never ship or store battery together with metal.
* Never reverse two electrodes when use the battery.
* Never disassemble the battery without manufacturer's permission and guidance.
* Never knock, throw or trample the battery.

**Tips!**

* Keep the battery against high temperature. Otherwise it will cause battery heat, get into fire or lose some function and reduce the life.
* When battery run out of power, please charge your battery timely (≤15day).
* Please use the matched or suggested charger for this battery.
* If battery emit peculiar smell, heating, distortion or appear any abnormity during working or storage, please stop using and take it out from device.
* If the battery leaks and get into the eyes or skin, do not wipe, instead, rinse it with clean water and see doctor immediately.
* Please far away from children or pets.
* Do not put scrap battery into a fire or water.
* If user needs to parallel several battery packs, please charge them to full capacity with same type of matched charger, and set it aside for 8 hours, professionals only. This battery pack supports application no more than 8 group parallel. If user needs to apply this product to more groups parallel, please reconfirm details with us.
* It is strictly prohibited any series between the battery packs without consulting Jarocells because of special requirements needed.