## Data Sheet

**BP2607 - 12v 7Ah LiFePO4 Battery Pack**

<table>
<thead>
<tr>
<th>Product Name</th>
<th>LiFePO4 Battery Pack</th>
</tr>
</thead>
<tbody>
<tr>
<td>Battery Model Spec</td>
<td>LiFePO4 - 6077100 4S2P 12.8V 7Ah</td>
</tr>
<tr>
<td>File Revision</td>
<td>A1</td>
</tr>
</tbody>
</table>

### Amendment Records

<table>
<thead>
<tr>
<th>Revision</th>
<th>Description</th>
<th>Issued Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>A0</td>
<td>First Revision</td>
<td>2015-08-20</td>
</tr>
<tr>
<td>A1</td>
<td>Amended weights</td>
<td>2018-04-17</td>
</tr>
</tbody>
</table>
1 Scope
This document describes the performance characteristics and testing methods for LiFePO₄ batteries produced by Tracer Power, a division of Deben Group Industries Ltd.

2 Product type and model number
2.1 Product type
LiFePO₄ Battery Pack

2.2 Model number
LiFePO₄ - 6077100 4S2P 12.8V 7Ah (BP2607)

3 Rated performance

<table>
<thead>
<tr>
<th>#</th>
<th>Item</th>
<th>Rated performance</th>
<th>Remark</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nominal capacity</td>
<td>7Ah±5%</td>
<td>Standard discharge after standard charge</td>
</tr>
<tr>
<td>2</td>
<td>Nominal voltage</td>
<td>12.8V</td>
<td>Mean operation voltage during standard discharge after standard charge</td>
</tr>
<tr>
<td>3</td>
<td>Equivalent Lithium Content (ELC)</td>
<td>8.4g</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Voltage at end of discharge</td>
<td>10.0V</td>
<td>Discharge cut-off voltage</td>
</tr>
<tr>
<td>5</td>
<td>Charging voltage</td>
<td>13.8~14.6V</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Impedance</td>
<td>&lt; 40mΩ</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Standard charge</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constant current: 0.2C5A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constant voltage: 13.8V</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cut-off current: ≤ 0.02C5A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Standard discharge</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constant current: 0.2C5A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>End voltage: 10.0V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Maximum charge</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constant current: 0.5C5A</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Constant voltage: 13.8V</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cut-off current: ≤ 0.02C5A</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Maximum continuous discharge current</td>
<td>10A</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Peak discharge current</td>
<td>30A</td>
<td>For 10ms</td>
</tr>
<tr>
<td>12</td>
<td>Operation temperature range</td>
<td></td>
<td>60±25% R.H</td>
</tr>
<tr>
<td></td>
<td>Charge: 0~40°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Discharge: -10~60°C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Cycle life</td>
<td>&gt; 1400 cycles</td>
<td>Charging/discharging in the below condition:</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Charge: standard charge</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Discharge: standard discharge</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Rest time between charge/discharge: 30min</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Until the discharge capacity &lt; 60% of NC</td>
</tr>
<tr>
<td>14</td>
<td>Storage temperature</td>
<td>≤1 month: -20~45°C</td>
<td>60±25% R.H</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤3 months: -20~35°C</td>
<td>Best: 10~25°C for long-time storage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>≤1 year: 0~25°C</td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>Weight</td>
<td>Approx: 985g</td>
<td>To widest points</td>
</tr>
<tr>
<td>16</td>
<td>Case Dimensions</td>
<td>Thickness: 90mm</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Width: 145mm</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Length: 65mm</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4 Supplied items
- Tracer 12V 7Ah LiFePO₄ Battery Pack
- Mains 4A Charger fitted with DC charge connector (TR8205)
- Carry Case
- Mini T-bar to 12V Cigar Socket (TR8175)
5 Battery case features
- Mini T-bar socket rated to 10A.
- DC charge socket rated to 5A.
- Built-in Fuel Gauge - 5 colour LED fuel gauge to show charge level.
- ABS case waterproof to IP64 standard.
- Non-slip rubber textured grip.

6 Electrical performances

<table>
<thead>
<tr>
<th>#</th>
<th>Items</th>
<th>Test procedure</th>
<th>Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Nominal voltage</td>
<td>The average value of the working voltage during the whole discharge process.</td>
<td>12.8V</td>
</tr>
<tr>
<td>2</td>
<td>Discharge performance</td>
<td>The discharge capacity of the battery, measured with 0.2C_5A down to 10.0V within 1 hour after a standard charge at 25±5°C</td>
<td>Discharge ≥ Minimum capacity</td>
</tr>
<tr>
<td>3</td>
<td>Capacity retention</td>
<td>After 28 days storage at 25±5°C, after having been standard charged and discharged at 0.2C_5A to 10.0V (the residual capacity is above 90% of nominal capacity)</td>
<td>Discharge time ≥ 4.5h</td>
</tr>
<tr>
<td>4</td>
<td>Cycle life</td>
<td>Charging/discharging in the below condition: Charge: standard charge at 25±5°C Discharge: 0.2C_5A to 10.0V Rest time between charge/dischARGE: 30min Until the discharge capacity &lt; 60% of nominal capacity</td>
<td>&gt; 1400 cycles</td>
</tr>
<tr>
<td>5</td>
<td>Storage</td>
<td>(Within 3 months after manufactured) The battery is charged with 0.2C_5A to 40-50% capacity and stored at ambient temperature 25±5°C, 65±20% RH for 12 months. After the 12 months storage period, the cell is fully charged and discharged to 10.0V with 0.2C_5A</td>
<td>Discharge time ≥ 4h</td>
</tr>
</tbody>
</table>

7 Fuel gauge specifications
Built-in Fuel Gauge - 5 colour LED fuel gauge mounted externally to show charge level.

LED Status:
- 3 green & 2 red: Battery fully charged 13.2V
- 2 green & 2 red: Over 50% capacity 13.0V
- 1 green & 2 red: Over 20% capacity 12.9V
- 2 red: Less than 20% capacity 12.4V
- 1 red: Less than 10% capacity 12.0V
- No lights: Battery empty 10.0V

8 Standard test conditions
Any tests are to be conducted with new batteries that have not been cycled more than five times before the test. Unless otherwise defined, test and measurements done under a temperature of 20±5°C and relative humidity of 45~85%. If it is judged that the test results are not affected by such conditions, the tests may be conducted at temperature 15~30°C and humidity 25~85% RH.

9 Cautions in use
To ensure proper use of the battery please read the manual carefully before using it.

9.1 Handling
- Do not expose to, or dispose of the battery in fire.
- Do not put the battery in a charger or equipment with wrong terminals connected.
- Avoid short-circuiting the battery.
- Avoid excessive physical shock or vibration.
- Do not disassemble or deform the battery.
- Do not immerse in water.
- Do not use the battery mixed with other different make, type, or model batteries.
- Keep out of the reach of children.
9.2 Charge and discharge
Battery must be charged in appropriate charger only. Never use a modified or damaged charger. Do not leave the battery in a discharged state for over 24 hours.

9.3 Storage
Store the battery in a cool, dry and well-ventilated area.

9.4 Disposal
Regulations vary for different countries, dispose of in accordance with local regulations. Dispose of responsibly by contacting your local refuse centre.

10 Battery operation instruction

10.1 Charging
Charging current: Must not surpass the highest charging current which is specified within Table 1.
Charging voltage: Must be regulated to the charging voltage specified within Table 1.
Charging temperature: The battery must be charged in the ambient temperature scope in Table 1.
Use constant electric current and constant voltage to charge.
Do not reverse charge.
The battery electrode and the cathodes must not meet as this can damage the battery.

10.2 Discharging current
The discharge current must not surpass the highest discharge current specified in Table 1.
An oversized discharge current can cause the battery’s nominal capacity to reduce and the battery to overheat.

10.3 Electric discharge temperature
The battery must be discharged in the ambient temperature scope specified in Table 1.

10.4 Over-discharge
When excessively discharged the battery should always be charged immediately after use to ensure the battery maintains nominal capacity and does not deteriorate.

10.5 Storing the batteries
The battery should always be stored in conditions as specified in Table 1.
If the battery is left unused for a period longer than 6 months it should be placed on charge.

11 Period of warranty
Tracer LiFePO4 batteries are covered by a two year limited warranty. The warranty covers premature failure due to defects in materials and/or workmanship. Any breakage caused by accidental damage or as a result of abuse or misuse is not covered. The warranty is limited to the original purchaser and is not transferable.
The warranty is void if the serial number is removed from the product or if the battery has been modified in any way. Please charge your battery directly after each use. Leaving your battery in discharged state will seriously and permanently damage its performance. Please note we cannot uphold warranty claims in these circumstances. Your battery will degrade over time and with use, such degradation is not covered by warranty.

12 Other - Chemical reaction
Because batteries utilise a chemical reaction, battery performance will deteriorate over time even if stored for a long period of time without being used. In addition, if the various usage conditions such as charge, discharge, ambient temperature, etc. are not maintained within the specified ranges, the life expectancy of the battery may be shortened or the device in which the battery is used may be damaged by electrolyte leakage. If the batteries cannot maintain a charge for long periods of time, even when they are charged correctly, this may indicate it is time to change the battery.

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