**LP SERIES-General Purpose**

**LP12-7.0 (12V7.0AH)**

### Specification

<table>
<thead>
<tr>
<th>Nominal Voltage</th>
<th>12V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Capacity (20HR)</td>
<td>7.0AH</td>
</tr>
</tbody>
</table>

**Dimensions**

<table>
<thead>
<tr>
<th>Length</th>
<th>151 ± 2mm (5.95 inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>65 ± 1mm (2.54 inches)</td>
</tr>
<tr>
<td>Container Height</td>
<td>93.5 ± 1mm (3.68 inches)</td>
</tr>
<tr>
<td>Total Height (with Terminal)</td>
<td>99 ± 1mm (3.90 inches)</td>
</tr>
</tbody>
</table>

**Approx Weight**

Approx. 2.16 kg (4.81lbs)

**Terminal**

T1

**Container Material**

ABS

**Rated Capacity**

- 7.00 AH/0.350A (20hr, 1.80V/cell, 25°C/77°F)
- 6.53 AH/0.653A (10hr, 1.80V/cell, 25°C/77°F)
- 5.80 AH/1.16A (5hr, 1.75V/cell, 25°C/77°F)
- 5.13 AH/1.71A (3hr, 1.75V/cell, 25°C/77°F)
- 4.26 AH/4.25A (1hr, 1.60V/cell, 25°C/77°F)

**Max. Discharge Current**

105A (5s)

**Internal Resistance**

Approx. 23mΩ

**Operating Temp. Range**

- Discharge: -15°C to 50°C (5°C to 122°F)
- Charge: 0°C to 40°C (32°F to 104°F)
- Storage: -25°C to 50°C (31°F to 122°F)

**Nominal Operating Temp. Range**

25 ± 3°C (77 ± 5°F)

**Cycle Use**

Initial Charging Current less than 2.1A Voltage

14.4V ± 15.0V at 25°C (77°F) Temp. Coefficient -30mV/°C

**Standby Use**

No limit on Initial Charging Current Voltage

13.5V ± 13.8V at 25°C (77°F) Temp. Coefficient -20mV/°C

**Capacity affected by Temperature**

- 40°C (104°F): 103%
- 25°C (77°F): 100%
- 0°C (32°F): 86%

**Self Discharge**

LP series batteries may be stored for up to 6 months at 25°C (77°F) and then a freshening charge is required. For higher temperatures the time interval will be shorter.

### Applications

- All purpose
- Uninterruptable Power Supply (UPS)
- Electric Power System (EPS)
- Emergency backup power supply
- Emergency light
- Railway signal
- Aircraft signal
- Alarm and security system
- Electronic apparatus and equipment
- Communication power supply
- DC power supply
- Auto control system

### Constant Current Discharge (Amperes) at 25°C (77°F)

<table>
<thead>
<tr>
<th>F.V/Time</th>
<th>5min</th>
<th>10min</th>
<th>15min</th>
<th>20min</th>
<th>30min</th>
<th>45min</th>
<th>1h</th>
<th>2h</th>
<th>3h</th>
<th>4h</th>
<th>5h</th>
<th>6h</th>
<th>8h</th>
<th>10h</th>
<th>20h</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.85V/cell</td>
<td>16.0</td>
<td>11.7</td>
<td>9.97</td>
<td>8.46</td>
<td>6.17</td>
<td>4.52</td>
<td>3.60</td>
<td>2.14</td>
<td>1.60</td>
<td>1.30</td>
<td>1.10</td>
<td>0.95</td>
<td>0.756</td>
<td>0.626</td>
<td>0.343</td>
</tr>
<tr>
<td>1.80V/cell</td>
<td>19.2</td>
<td>13.7</td>
<td>11.3</td>
<td>9.20</td>
<td>6.65</td>
<td>4.80</td>
<td>3.83</td>
<td>2.24</td>
<td>1.66</td>
<td>1.35</td>
<td>1.14</td>
<td>0.99</td>
<td>0.783</td>
<td>0.653</td>
<td>0.350</td>
</tr>
<tr>
<td>1.75V/cell</td>
<td>21.5</td>
<td>14.9</td>
<td>12.0</td>
<td>9.70</td>
<td>6.92</td>
<td>4.99</td>
<td>3.98</td>
<td>2.31</td>
<td>1.71</td>
<td>1.38</td>
<td>1.16</td>
<td>1.01</td>
<td>0.795</td>
<td>0.663</td>
<td>0.357</td>
</tr>
<tr>
<td>1.70V/cell</td>
<td>23.4</td>
<td>15.9</td>
<td>12.8</td>
<td>10.2</td>
<td>7.18</td>
<td>5.12</td>
<td>4.05</td>
<td>2.36</td>
<td>1.75</td>
<td>1.41</td>
<td>1.19</td>
<td>1.03</td>
<td>0.812</td>
<td>0.672</td>
<td>0.361</td>
</tr>
<tr>
<td>1.65V/cell</td>
<td>25.5</td>
<td>16.8</td>
<td>13.4</td>
<td>13.0</td>
<td>7.43</td>
<td>5.28</td>
<td>4.17</td>
<td>2.40</td>
<td>1.77</td>
<td>1.43</td>
<td>1.21</td>
<td>1.04</td>
<td>0.823</td>
<td>0.680</td>
<td>0.365</td>
</tr>
<tr>
<td>1.60V/cell</td>
<td>26.8</td>
<td>17.6</td>
<td>13.8</td>
<td>10.9</td>
<td>7.64</td>
<td>5.42</td>
<td>4.26</td>
<td>2.46</td>
<td>1.81</td>
<td>1.46</td>
<td>1.23</td>
<td>1.06</td>
<td>0.837</td>
<td>0.690</td>
<td>0.371</td>
</tr>
</tbody>
</table>

### Constant Power Discharge (Watts/cell) at 25°C (77°F)

<table>
<thead>
<tr>
<th>F.V/Time</th>
<th>5min</th>
<th>10min</th>
<th>15min</th>
<th>20min</th>
<th>30min</th>
<th>45min</th>
<th>1h</th>
<th>2h</th>
<th>3h</th>
<th>4h</th>
<th>5h</th>
<th>6h</th>
<th>8h</th>
<th>10h</th>
<th>20h</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.85V/cell</td>
<td>30.3</td>
<td>22.3</td>
<td>19.2</td>
<td>16.4</td>
<td>12.0</td>
<td>8.86</td>
<td>7.09</td>
<td>4.23</td>
<td>3.17</td>
<td>2.59</td>
<td>2.20</td>
<td>1.91</td>
<td>1.52</td>
<td>1.26</td>
<td>0.694</td>
</tr>
<tr>
<td>1.80V/cell</td>
<td>35.9</td>
<td>25.8</td>
<td>21.5</td>
<td>17.7</td>
<td>12.9</td>
<td>9.37</td>
<td>7.52</td>
<td>4.42</td>
<td>3.30</td>
<td>2.69</td>
<td>2.27</td>
<td>1.97</td>
<td>1.57</td>
<td>1.31</td>
<td>0.704</td>
</tr>
<tr>
<td>1.75V/cell</td>
<td>39.8</td>
<td>28.0</td>
<td>22.8</td>
<td>18.6</td>
<td>13.4</td>
<td>9.72</td>
<td>7.79</td>
<td>4.55</td>
<td>3.37</td>
<td>2.74</td>
<td>2.31</td>
<td>2.00</td>
<td>1.59</td>
<td>1.33</td>
<td>0.716</td>
</tr>
<tr>
<td>1.70V/cell</td>
<td>42.8</td>
<td>29.5</td>
<td>24.0</td>
<td>19.3</td>
<td>13.8</td>
<td>9.89</td>
<td>7.88</td>
<td>4.61</td>
<td>3.42</td>
<td>2.78</td>
<td>2.34</td>
<td>2.03</td>
<td>1.61</td>
<td>1.33</td>
<td>0.718</td>
</tr>
<tr>
<td>1.65V/cell</td>
<td>45.7</td>
<td>30.7</td>
<td>24.8</td>
<td>19.8</td>
<td>14.1</td>
<td>10.1</td>
<td>8.02</td>
<td>4.65</td>
<td>3.45</td>
<td>2.80</td>
<td>2.36</td>
<td>2.05</td>
<td>1.62</td>
<td>1.34</td>
<td>0.720</td>
</tr>
<tr>
<td>1.60V/cell</td>
<td>47.0</td>
<td>31.5</td>
<td>25.1</td>
<td>20.1</td>
<td>14.3</td>
<td>10.3</td>
<td>8.13</td>
<td>4.73</td>
<td>3.50</td>
<td>2.83</td>
<td>2.39</td>
<td>2.07</td>
<td>1.63</td>
<td>1.35</td>
<td>0.728</td>
</tr>
</tbody>
</table>

Specifications subject to change without notice.
**Dimensions**

- **T1 Terminal**
  - Unit: mm [inches]
  - 3.2 [0.126]
  - 6.35 [0.25]
  - 0.5 [0.020]
  - 4.75 [0.187]

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**Discharge Characteristics**

- **Temperature:** 25°C (77°F)
- **Terminal Voltage (V)** and **Discharge Time (min)**

**Float Charging Characteristics**

- **Charge Voltage (V)** and **Charging Current (CA)**
- **Charging Volume**

**Temperature Effects in Relation to Battery Capacity**

- **Capacity (%)** vs **Temperature (°C)**

**Effect of Temperature on Long Term Float Life**

- **Unserviceable (year)** vs **Battery temperature**

**Cycle Life in Relation to Depth of Discharge**

- **Testing condition**
  - Discharging current: 0.17C (FV 1.7V/cell)
  - Charging current: 0.25C max, voltage 2.45V/cell
  - Charging volume: 125% of discharged capacity

**Self Discharge Characteristics**

- **Remaining Capacity (%)** vs **Storage Time (Months)**

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- **No supplementary charge required**
  - (Carry out supplementary charge before use if 100% capacity is required.)

- **Supplementary charge required before use**
  - Optional charging way as below:
    1. Charged for more than 3 days at limited current 0.25CA and constant voltage 2.25V/cell.
    2. Charged for more than 20 hours at limited current 0.25CA and constant voltage 2.45V/cell.
    3. Charged for 8~10 hours at limited current 0.05CA.

- **Supplementary charge may often fail to recover the capacity**.
  - The battery should never be left standing until this is reached.