# LP SERIES-General Purpose

**LP12-4.0L (12V4.0AH)**

**Specification**

<table>
<thead>
<tr>
<th>Nominal Voltage</th>
<th>12V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal Capacity (20HR)</td>
<td>4.0AH</td>
</tr>
</tbody>
</table>

**Dimensions**

<table>
<thead>
<tr>
<th>Length</th>
<th>195±2mm (7.68 inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Width</td>
<td>47±1mm (1.85 inches)</td>
</tr>
<tr>
<td>Container Height</td>
<td>70±1mm (2.76 inches)</td>
</tr>
<tr>
<td>Total Height (with Terminal)</td>
<td>76±1mm (2.99 inches)</td>
</tr>
</tbody>
</table>

**Approx Weight**

| Approx. Weight | 1.60 kg (3.53lbs) |

**Terminal**

| Container Material | ABS |

**Rated Capacity**

<table>
<thead>
<tr>
<th>4.00 AH/0.200A</th>
<th>(20hr, 1.80V/cell, 25°C/77°F)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.72 AH/0.372A</td>
<td>(10hr, 1.80V/cell, 25°C/77°F)</td>
</tr>
<tr>
<td>3.36 AH/0.672A</td>
<td>(5hr, 1.75V/cell, 25°C/77°F)</td>
</tr>
<tr>
<td>2.94 AH/0.979A</td>
<td>(3hr, 1.75V/cell, 25°C/77°F)</td>
</tr>
<tr>
<td>2.43 AH/2.43A</td>
<td>(1hr, 1.60V/cell, 25°C/77°F)</td>
</tr>
</tbody>
</table>

**Max. Discharge Current**

| 60A (5s) |

**Internal Resistance**

| Approx 45mΩ |

**Operating Temp.Range**

<table>
<thead>
<tr>
<th>Nominal Operating Temp. Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 ±3°C (77 ±5°F)</td>
</tr>
</tbody>
</table>

**Cycle Use**

<table>
<thead>
<tr>
<th>Initial Charging Current less than 1.2A. Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>14.4V ±15.0V at 25°C (77°F) Temp. Coefficient -30mV/°C</td>
</tr>
</tbody>
</table>

**Standby Use**

<table>
<thead>
<tr>
<th>No limit on Initial Charging Current Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>13.5V ±13.8V at 25°C (77°F) Temp. Coefficient -20mV/°C</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Capacity affected by Temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>40°C (104°F)</td>
</tr>
<tr>
<td>25°C (77°F)</td>
</tr>
<tr>
<td>0°C (32°F)</td>
</tr>
</tbody>
</table>

**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. |

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**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

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**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>7.68</td>
<td>5.35</td>
<td>4.42</td>
<td>3.83</td>
<td>3.07</td>
<td>2.36</td>
<td>1.99</td>
<td>1.18</td>
<td>0.899</td>
<td>0.739</td>
<td>0.627</td>
<td>0.543</td>
<td>0.432</td>
<td>0.359</td>
<td>0.198</td>
</tr>
<tr>
<td>1.80V/cell</td>
<td>9.44</td>
<td>6.39</td>
<td>5.12</td>
<td>4.33</td>
<td>3.40</td>
<td>2.58</td>
<td>2.06</td>
<td>1.25</td>
<td>0.945</td>
<td>0.777</td>
<td>0.654</td>
<td>0.567</td>
<td>0.448</td>
<td>0.372</td>
<td>0.200</td>
</tr>
<tr>
<td>1.75V/cell</td>
<td>11.2</td>
<td>7.22</td>
<td>5.65</td>
<td>4.72</td>
<td>3.63</td>
<td>2.74</td>
<td>2.19</td>
<td>1.31</td>
<td>0.979</td>
<td>0.801</td>
<td>0.672</td>
<td>0.581</td>
<td>0.460</td>
<td>0.379</td>
<td>0.202</td>
</tr>
<tr>
<td>1.70V/cell</td>
<td>12.7</td>
<td>7.97</td>
<td>6.11</td>
<td>5.06</td>
<td>3.82</td>
<td>2.84</td>
<td>2.28</td>
<td>1.36</td>
<td>1.01</td>
<td>0.821</td>
<td>0.689</td>
<td>0.595</td>
<td>0.467</td>
<td>0.386</td>
<td>0.206</td>
</tr>
<tr>
<td>1.65V/cell</td>
<td>14.0</td>
<td>8.57</td>
<td>6.46</td>
<td>5.48</td>
<td>3.98</td>
<td>2.95</td>
<td>2.38</td>
<td>1.40</td>
<td>1.04</td>
<td>0.838</td>
<td>0.704</td>
<td>0.607</td>
<td>0.475</td>
<td>0.391</td>
<td>0.208</td>
</tr>
<tr>
<td>1.60V/cell</td>
<td>14.7</td>
<td>8.93</td>
<td>6.74</td>
<td>5.48</td>
<td>4.09</td>
<td>3.02</td>
<td>2.43</td>
<td>1.45</td>
<td>1.06</td>
<td>0.859</td>
<td>0.718</td>
<td>0.619</td>
<td>0.485</td>
<td>0.398</td>
<td>0.210</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>14.5</td>
<td>10.2</td>
<td>8.49</td>
<td>7.42</td>
<td>5.99</td>
<td>4.63</td>
<td>3.81</td>
<td>2.34</td>
<td>1.79</td>
<td>1.47</td>
<td>1.26</td>
<td>1.09</td>
<td>0.869</td>
<td>0.724</td>
<td>0.400</td>
</tr>
<tr>
<td>1.80V/cell</td>
<td>17.6</td>
<td>12.0</td>
<td>9.76</td>
<td>8.33</td>
<td>6.59</td>
<td>5.02</td>
<td>4.07</td>
<td>2.47</td>
<td>1.87</td>
<td>1.54</td>
<td>1.30</td>
<td>1.13</td>
<td>0.896</td>
<td>0.745</td>
<td>0.402</td>
</tr>
<tr>
<td>1.75V/cell</td>
<td>20.6</td>
<td>13.5</td>
<td>10.7</td>
<td>9.00</td>
<td>6.99</td>
<td>5.30</td>
<td>4.26</td>
<td>2.56</td>
<td>1.92</td>
<td>1.58</td>
<td>1.33</td>
<td>1.15</td>
<td>0.914</td>
<td>0.755</td>
<td>0.403</td>
</tr>
<tr>
<td>1.70V/cell</td>
<td>23.1</td>
<td>14.7</td>
<td>11.4</td>
<td>9.59</td>
<td>7.29</td>
<td>5.47</td>
<td>4.42</td>
<td>2.65</td>
<td>1.97</td>
<td>1.61</td>
<td>1.35</td>
<td>1.17</td>
<td>0.922</td>
<td>0.763</td>
<td>0.408</td>
</tr>
<tr>
<td>1.65V/cell</td>
<td>25.1</td>
<td>15.6</td>
<td>12.0</td>
<td>9.96</td>
<td>7.53</td>
<td>5.65</td>
<td>4.57</td>
<td>2.71</td>
<td>2.01</td>
<td>1.63</td>
<td>1.38</td>
<td>1.19</td>
<td>0.933</td>
<td>0.770</td>
<td>0.412</td>
</tr>
<tr>
<td>1.60V/cell</td>
<td>26.0</td>
<td>16.1</td>
<td>12.3</td>
<td>10.2</td>
<td>7.67</td>
<td>5.72</td>
<td>4.64</td>
<td>2.78</td>
<td>2.05</td>
<td>1.66</td>
<td>1.40</td>
<td>1.21</td>
<td>0.947</td>
<td>0.779</td>
<td>0.412</td>
</tr>
</tbody>
</table>

Specifications subject to change without notice.
### Dimensions

- **T1 Terminal**
  - Unit: mm [inches]

### Discharge Characteristics

- **Temperature: 25°C (77°F)**

### Float Charging Characteristics

- **Charge Voltage: 0.1CA-2.25V/cell**
- **Temperature: 25°C (77°F)**

### Temperature Effects in Relation to Battery Capacity

### Effect of Temperature on Long Term Float Life

### Cycle Life in Relation to Depth of Discharge

### Self Discharge Characteristics

- **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 above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.
  2. Charged for above 20hours at limited current 0.25CA and constant voltage 2.45V/cell.
  3. Charged for 8-15hours at limited current 0.05CA.
- **Supplementary charge may often fail to recover the capacity.**
- **The battery should never be left standing till this is reached.**