The rechargeable batteries are lead-lead dioxide systems. The dilute sulfuric acid electrolyte is absorbed by separators and plates and thus immobilized. Should the battery be accidentally overcharged producing hydrogen and oxygen, special one-way valves allow the gases to escape thus avoiding excessive pressure build-up. Otherwise, the battery is completely sealed and is, therefore, maintenance-free, leak proof and usable in any position.

**Battery Construction**

<table>
<thead>
<tr>
<th>Component</th>
<th>Positive plate</th>
<th>Negative plate</th>
<th>Container</th>
<th>Cover</th>
<th>Safety valve</th>
<th>Terminal</th>
<th>Separator</th>
<th>Electrolyte</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw material</td>
<td>Lead dioxide</td>
<td>Lead</td>
<td>ABS</td>
<td>ABS</td>
<td>Rubber</td>
<td>Copper</td>
<td>Fiberglass</td>
<td>Sulfuric acid</td>
</tr>
</tbody>
</table>

**General Features**

- Absorbent Glass Mat (AGM) technology for efficient gas recombination of up to 99% and freedom from electrolyte maintenance or water adding.
- Not restricted for air transport-complies with IATA/ICAO Special Provision A67.
- UL-recognized component.
- Can be mounted in any orientation.
- Computer designed lead, calcium tin alloy grid for high power density.
- Long service life, float or cyclic applications.
- Maintenance-free operation.
- Low self discharge.

**Performance Characteristics**

- Nominal Voltage: 12V
- Number of cell: 6
- Design Life: 10 years
- Nominal Capacity: 77°F (25°C)
  - 20 hour rate (0.5A, 10.5V): 10Ah
  - 10 hour rate (0.9A, 10.5V): 9Ah
  - 5 hour rate (1.6A, 10.5V): 8Ah
  - 1 hour rate (6.61A, 9.6V): 6.61Ah
- Internal Resistance:
  - Fully Charged battery 77°F (25°C): 22mOhms
- Self-Discharge:
  - 3% of capacity declined per month at 20°C (average)
- Operating Temperature Range:
  - Discharge: -20~60°C
  - Charge: -10~60°C
  - Storage: -20~60°C
  - Max. Discharge Current: 77°F (25°C)
    - 150A (5s)
- Short Circuit Current: 500A
- Charge Methods: Constant Voltage Charge 77°F (25°C)
  - Maximum charging current: 4A
  - Temperature compensation: -30mV/°C
- Standby use:
  - Temperature compensation: 2.23-2.27VPC

**Dimensions and Weight**

- Length (mm / inch): 151 / 5.94
- Width (mm / inch): 65 / 2.56
- Height (mm / inch): 94 / 3.70
- Total Height (mm / inch): 100 / 3.94
- Approx. Weight (Kg / lbs): 2.8 / 6.17

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

<table>
<thead>
<tr>
<th>End Point</th>
<th>Volts/Cell</th>
<th>5min</th>
<th>10min</th>
<th>15min</th>
<th>30min</th>
<th>1h</th>
<th>3h</th>
<th>5h</th>
<th>10h</th>
<th>20h</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.60V</td>
<td>36.6</td>
<td>25.2</td>
<td>19.8</td>
<td>11.00</td>
<td>6.61</td>
<td>2.76</td>
<td>1.74</td>
<td>0.95</td>
<td>0.51</td>
<td></td>
</tr>
<tr>
<td>1.65V</td>
<td>34.5</td>
<td>24.0</td>
<td>18.8</td>
<td>10.60</td>
<td>6.32</td>
<td>2.62</td>
<td>1.70</td>
<td>0.95</td>
<td>0.51</td>
<td></td>
</tr>
<tr>
<td>1.70V</td>
<td>32.1</td>
<td>23.3</td>
<td>17.9</td>
<td>10.10</td>
<td>6.06</td>
<td>2.48</td>
<td>1.65</td>
<td>0.94</td>
<td>0.51</td>
<td></td>
</tr>
<tr>
<td>1.75V</td>
<td>30.7</td>
<td>22.7</td>
<td>16.9</td>
<td>9.61</td>
<td>5.80</td>
<td>2.34</td>
<td>1.60</td>
<td>0.90</td>
<td>0.50</td>
<td></td>
</tr>
<tr>
<td>1.80V</td>
<td>29.7</td>
<td>21.3</td>
<td>15.8</td>
<td>9.11</td>
<td>5.50</td>
<td>2.20</td>
<td>1.56</td>
<td>0.90</td>
<td>0.49</td>
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</tr>
</tbody>
</table>

**Discharge Constant Power (Watts at 77°F 25°C)**

<table>
<thead>
<tr>
<th>End Point</th>
<th>Volts/Cell</th>
<th>5min</th>
<th>10min</th>
<th>15min</th>
<th>30min</th>
<th>45min</th>
<th>1h</th>
<th>2h</th>
<th>3h</th>
<th>5h</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.60V</td>
<td>71.7</td>
<td>44.8</td>
<td>33.6</td>
<td>19.6</td>
<td>14.5</td>
<td>11.5</td>
<td>6.30</td>
<td>4.34</td>
<td>3.10</td>
<td></td>
</tr>
<tr>
<td>1.65V</td>
<td>68.3</td>
<td>44.3</td>
<td>33.1</td>
<td>19.1</td>
<td>14.2</td>
<td>11.2</td>
<td>6.23</td>
<td>4.29</td>
<td>3.04</td>
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</tr>
<tr>
<td>1.70V</td>
<td>64.8</td>
<td>42.9</td>
<td>31.1</td>
<td>18.5</td>
<td>13.7</td>
<td>11</td>
<td>6.08</td>
<td>4.20</td>
<td>2.98</td>
<td></td>
</tr>
<tr>
<td>1.75V</td>
<td>61.4</td>
<td>41.1</td>
<td>30.2</td>
<td>17.6</td>
<td>12.9</td>
<td>10.7</td>
<td>5.94</td>
<td>4.08</td>
<td>2.92</td>
<td></td>
</tr>
<tr>
<td>1.80V</td>
<td>58.0</td>
<td>39.2</td>
<td>28.4</td>
<td>16.6</td>
<td>12.2</td>
<td>10.4</td>
<td>5.77</td>
<td>3.92</td>
<td>2.85</td>
<td></td>
</tr>
</tbody>
</table>

(Note) The above characteristics data are average values obtained within three charge/discharge cycles not the minimum values.
Discharge characteristic (25°C)

Relationship between charging voltage and temperature

Life characteristics of Standby use

Temperature effects on float life

Temperature effects on capacity

Constant voltage charging characteristic (0.25CA, 25°C)

Self-discharge characteristic

Cycle service life in relation to depth of discharge

Testing conditions: floating voltage 2.27 to 2.30V Cell
ambient temperature: 25°C (77°F)

Charging time (hours)

Charged Volume (%)

Constant voltage charging characteristic (0.25CA, 25°C)

Charging Current

Charging Voltage

Charge Voltage

Charged Volume

Capacity (%)

Cycle Use

by Use

Testing conditions: floating voltage 2.27 to 2.30V Cell
ambient temperature: 25°C (77°F)

Cycle Use

by Use

Testing conditions: floating voltage 2.27 to 2.30V Cell
ambient temperature: 25°C (77°F)

Cycle Use

by Use

Testing conditions: floating voltage 2.27 to 2.30V Cell
ambient temperature: 25°C (77°F)

Cycle Use

by Use

Testing conditions: floating voltage 2.27 to 2.30V Cell
ambient temperature: 25°C (77°F)

Cycle Use

by Use

Testing conditions: floating voltage 2.27 to 2.30V Cell
ambient temperature: 25°C (77°F)

Cycle Use

by Use

Testing conditions: floating voltage 2.27 to 2.30V Cell
ambient temperature: 25°C (77°F)