**EV12033**

### Specification

- **Cells Per Unit**: 6
- **Voltage Per Unit**: 12V
- **Capacity**: 33Ah@10hr-rate to 1.80V per cell @25°C
- **Weight**: Approx. 10.2 Kg (Tolerance ± 3.0%)
- **Internal Resistance**: Approx. 0.6 mΩ
- **Maxi. Discharge Current**: 330A (5 sec)
- **Cold Cranking Amperes (CCA)**: 230A
- **Maxi. Charging Current**: 9.9A

#### Reference Capacity

- C3: 25.6Ahr
- C5: 28.8Ahr
- C10: 33.0Ahr
- C20: 35.0Ahr

#### Float Charging Voltage

- 13.6 V±13.8 V @ 25°C
- Temperature Compensation: -3mV/C/Cell

#### Cycle Use Voltage

- 14.6 V±14.8 V @ 25°C
- Temperature Compensation: -4mV/C/Cell

#### Operating Temperature Range

- Discharge: -20°C to 60°C
- Charge: 0°C to 50°C
- Storage: -20°C to 60°C

#### Normal Operating Temperature Range

- 25°C ± 5°C

#### Self Discharge

- Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C, and then recharging is recommended. Monthly Self-Discharge ratio is less than 3% at 25°C. Please charged batteries before using.

#### Container Material

- A.B.S. UL94-HB, UL94 V0 Optional.

### Dimensions

![Dimensions Diagram](image)

#### Constant Current Discharge Characteristics : A(25°C)

<table>
<thead>
<tr>
<th>F.V./Time</th>
<th>5MIN</th>
<th>10MIN</th>
<th>15MIN</th>
<th>30MIN</th>
<th>1HR</th>
<th>2HR</th>
<th>3HR</th>
<th>4HR</th>
<th>5HR</th>
<th>8HR</th>
<th>10HR</th>
<th>20HR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.60V</td>
<td>111.0</td>
<td>83.76</td>
<td>63.02</td>
<td>36.86</td>
<td>20.36</td>
<td>12.02</td>
<td>9.32</td>
<td>7.32</td>
<td>6.23</td>
<td>4.19</td>
<td>3.48</td>
<td>1.82</td>
</tr>
<tr>
<td>1.65V</td>
<td>107.0</td>
<td>79.15</td>
<td>60.25</td>
<td>35.39</td>
<td>19.67</td>
<td>11.64</td>
<td>9.03</td>
<td>7.12</td>
<td>6.07</td>
<td>4.14</td>
<td>3.44</td>
<td>1.79</td>
</tr>
<tr>
<td>1.70V</td>
<td>101.8</td>
<td>72.87</td>
<td>56.43</td>
<td>33.82</td>
<td>19.03</td>
<td>11.26</td>
<td>8.78</td>
<td>6.93</td>
<td>5.91</td>
<td>4.08</td>
<td>3.39</td>
<td>1.77</td>
</tr>
<tr>
<td>1.75V</td>
<td>95.1</td>
<td>66.70</td>
<td>52.51</td>
<td>32.33</td>
<td>18.33</td>
<td>10.86</td>
<td>8.52</td>
<td>6.75</td>
<td>5.76</td>
<td>4.02</td>
<td>3.34</td>
<td>1.75</td>
</tr>
<tr>
<td>1.80V</td>
<td>86.62</td>
<td>60.38</td>
<td>48.49</td>
<td>30.90</td>
<td>17.63</td>
<td>10.48</td>
<td>8.26</td>
<td>6.56</td>
<td>5.62</td>
<td>3.95</td>
<td>3.30</td>
<td>1.73</td>
</tr>
<tr>
<td>1.85V</td>
<td>76.23</td>
<td>49.35</td>
<td>40.24</td>
<td>26.61</td>
<td>15.81</td>
<td>9.60</td>
<td>7.63</td>
<td>6.10</td>
<td>5.24</td>
<td>3.71</td>
<td>3.11</td>
<td>1.64</td>
</tr>
</tbody>
</table>

#### Constant Power Discharge Characteristics : WPC(25°C)

<table>
<thead>
<tr>
<th>F.V./Time</th>
<th>5MIN</th>
<th>10MIN</th>
<th>15MIN</th>
<th>30MIN</th>
<th>1HR</th>
<th>2HR</th>
<th>3HR</th>
<th>4HR</th>
<th>5HR</th>
<th>8HR</th>
<th>10HR</th>
<th>20HR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.60V</td>
<td>191.1</td>
<td>142.4</td>
<td>110.2</td>
<td>67.0</td>
<td>38.3</td>
<td>22.8</td>
<td>17.8</td>
<td>14.1</td>
<td>12.0</td>
<td>8.18</td>
<td>6.84</td>
<td>3.59</td>
</tr>
<tr>
<td>1.65V</td>
<td>189.0</td>
<td>137.1</td>
<td>106.9</td>
<td>64.9</td>
<td>37.2</td>
<td>22.2</td>
<td>17.3</td>
<td>13.7</td>
<td>11.7</td>
<td>8.10</td>
<td>6.77</td>
<td>3.53</td>
</tr>
<tr>
<td>1.70V</td>
<td>181.8</td>
<td>128.6</td>
<td>101.6</td>
<td>62.7</td>
<td>36.2</td>
<td>21.6</td>
<td>16.9</td>
<td>13.4</td>
<td>11.5</td>
<td>8.00</td>
<td>6.68</td>
<td>3.50</td>
</tr>
<tr>
<td>1.75V</td>
<td>172.9</td>
<td>119.8</td>
<td>95.9</td>
<td>60.5</td>
<td>35.1</td>
<td>20.9</td>
<td>16.5</td>
<td>13.1</td>
<td>11.2</td>
<td>7.90</td>
<td>6.60</td>
<td>3.46</td>
</tr>
<tr>
<td>1.80V</td>
<td>160.3</td>
<td>110.3</td>
<td>89.8</td>
<td>58.5</td>
<td>33.9</td>
<td>20.3</td>
<td>16.0</td>
<td>12.8</td>
<td>11.0</td>
<td>7.79</td>
<td>6.52</td>
<td>3.43</td>
</tr>
<tr>
<td>1.85V</td>
<td>143.6</td>
<td>91.8</td>
<td>75.6</td>
<td>50.8</td>
<td>30.6</td>
<td>18.7</td>
<td>14.9</td>
<td>11.9</td>
<td>10.3</td>
<td>7.33</td>
<td>6.15</td>
<td>3.26</td>
</tr>
</tbody>
</table>

(Note): The above characteristics data are average values obtained within three charge/discharge cycle not the minimum values.
The battery must be fully charged before the capacity test. The C3 should reach 95% after the first cycle and 100% after the third cycle.

[Image of battery and ISO certifications]

**ISO 9001**  **ISO 14001**  **OHSAS 18001**
Charge Characteristic Curve for Cycle Use (ILUU)

Temperature: 25°C (77°F)

Charge Current (A/C)

Charging Time (h)

Charge Voltage (VPC)

Cycle Life in Relation to Depth of Discharge

Capacity (%)

Number of Cycles

Storage Characteristics

Capacity (%)

Storage Time (months)

Discharge Characteristics Curve

Terminal Voltage (V)

Discharge Time (in)

Relationship Between Charging Voltage and Temperature

Charge Voltage (VPC)

Temperature (°C)

Relationship of OCV And State of Charge (20°C)

Battery Voltage (V)

State Of Capacity (%)

Temperature Effects on Capacity

Capacity (%)

Temperature (°C)