The advantages of the ZG-LFP cells

- professionally produced LiFePO4 cells
- stability during high current discharge – support up to 3C continually, 10C peak discharge
- the discharge with long flat discharge area (3.30V to 3.10V)
- metal case for protecting the cell
- minimal overheating or heat release during operation
- nuts for connecting included

<table>
<thead>
<tr>
<th>Item</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nominal voltage (V)</td>
<td>3.2 V</td>
</tr>
<tr>
<td>Nominal capacity (Ah)</td>
<td>20 Ah</td>
</tr>
<tr>
<td>Max voltage per cell (V)</td>
<td>3.8 V</td>
</tr>
<tr>
<td>Minimal voltage per cell (V)</td>
<td>2.6 V</td>
</tr>
<tr>
<td>Operating voltage (V)</td>
<td>2.8 V to 3.7 V</td>
</tr>
<tr>
<td>Optimal discharge current 0.5C (Amp)</td>
<td>&lt; 10 A</td>
</tr>
<tr>
<td>Maximal discharge current 3C (Amp)</td>
<td>60 A</td>
</tr>
<tr>
<td>Max peak discharge current 10 C, &lt; 15 seconds (Amp)</td>
<td>&lt; 200 A</td>
</tr>
<tr>
<td>Optimal charge current 0.5C (Amp)</td>
<td>&lt; 13 A</td>
</tr>
<tr>
<td>Maximal charge current 1C (Amp)</td>
<td>20 A</td>
</tr>
<tr>
<td>Internal resistance (mOhm)</td>
<td>&lt; 2 mOhm</td>
</tr>
<tr>
<td>Cycle life (80% DOD at 20°C)</td>
<td>&gt; 2000 cycles at 0.5C &gt; 1500 cycles at 1 C</td>
</tr>
<tr>
<td>Self discharge rate (% per month)</td>
<td>&lt; 3%</td>
</tr>
<tr>
<td>Operating temperature (charging)</td>
<td>0 to 45 °C</td>
</tr>
<tr>
<td>Operating temperature (discharging)</td>
<td>-25 to 55 °C</td>
</tr>
<tr>
<td>Dimensions width x length x height (mm)</td>
<td>71 x 178 x 28</td>
</tr>
<tr>
<td>Weight (tolerance +/- 50g)</td>
<td>0.65 kg</td>
</tr>
</tbody>
</table>
Normal operation test data

- Discharge of 4 cells at constant current to 2.5V at lowest cell.
- Discharge time to 2.8V - 34:50 (2090 s). Calculated capacity 23.20 Ah
- 50% discharge voltage under load: 3.13V
The discharge diagram for 3C (60A)

- Discharge of 4 cells at constant current to 2.5V at lowest cell.
- Discharge time to 2.8V - 20:50 (1250 s). Calculated capacity 20.83 Ah
- Discharge time to 2.5V - 21:20 (1280 s). Calculated capacity 21.34 Ah
- 50% discharge voltage under load: 3.10V
The discharge diagram for 5.7C (115A) *1)

Note: 1) This test is beyond the specification of the cell. The max continuous discharge is 3C (60A).

- Discharge of 4 cells at constant current to 2.5V at lowest cell.
- Discharge time to 2.6V - 11:00 (660 s). Calculated capacity 21.08 Ah
- 50% discharge voltage under load: 2.92V
- Regular charge with 20A (1C)
- Charge to 3.8V per cell
Extreme operation test data

The discharge diagram for various C-rates

- The tests for 5C and 8C are only for demonstration, not supported by standard specifications
The discharge diagrams for various temperatures – 0.33C (6A)

- Discharge to 2.0V (for low temperature operation)
- Discharge to 2.8V (for regular temperature operation)
The cycle life of the ZG-LFP cells is 2000+ cycles

- Cycle at 0.5C (charge and discharge), 2h rest time between charge and discharge
- Depth of discharge 80% (from 3.30V to 2.80V)
- Temperature +20°C
Real test photos of the ZG-LFP020AH
Compliance with CE norms

VERIFICATION OF EMC COMPLIANCE

No.: SHEM110900128401BAC
Applicant: SUIZHONG ZHENGGUO NEW ENERGY TECHNOLOGY CO., LTD
25, 144 TENGDA ROAD, BINHAI ECONOMIC DEVELOPMENT ZONE,
SUIZHONG
Manufacturer: SUIZHONG ZHENGGUO NEW ENERGY TECHNOLOGY CO., LTD
25, 144 TENGDA ROAD, BINHAI ECONOMIC DEVELOPMENT ZONE,
SUIZHONG
Product Description: Lithium iron phosphate battery
Model No.: (20AH)ZGFL2770165A, (8AH)ZGFL1765130A, (10AH)ZGFL1885130A,
(20AH)ZGFL30130165A, (100AH)ZGFL30230135A
Technical Data: DC 3.3V
Sufficient samples of the product have been tested and found to be in conformity with
Test Standard: EN 61000-6-1: 2007
EN 61000-6-3: 2007
as shown in the
Test Report Number(s): SHEM110900128401

This verification of EMC Compliance has been granted to the applicant based on the results of the tests, performed by laboratory of
SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. on the sample of the above-mentioned product in accordance with the
provisions of the relevant specific standards and Directive 2004/108/EC. The affixing of the CE marking presumes in addition that the
conditions in annexes III and V of the Directive are fulfilled.

Tony Wu
EAE Section Manager
SGS-CSTC (Shanghai) Co., Ltd.

October 13, 2011

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Member of SGS Group (Société Générale de Surveillance)
Note: You may contact us to validate this document by email address: ee.shanghai@sgs.com
Dimensions

ZG-LFP020AH

- Height: 178 mm
- Width: 168 mm
- Depth: 39 mm
- Thickness: 28 mm
- Thickness of the battery: 6 mm