

## 6-EVF-52.

## 12V 52Ah<sub>(3hr)</sub> VRLA GEL BATTERY



Chilwee DZM Series VRLA Gel Battery is specially designed for motive power applications, i.e. electric bikes/scooters, electric tricycles, electric motorcycles and other device require DC power source. The DZM Series adopts international leading technologies to ensure the batteries with features of long cycle life, large current discharge capability, high reliability and safety, and environmental-friendly.

### FEATURES & BENEFITS

**Non-Cadmium Design, Environment-friendly:** Chilwee Battery has adopted internationally leading technology - Non-Cadmium container formation Production Process technology, which is in the leading position in the industry. It helps to save energy 28.5%, save water 90%, and non-discharge of waste water.

**Super Long Mileage:** Special active additives have been added in the positive plate to improve the consistency of the formed active material after formation. This has been obviously improved the battery's charge/discharge efficiency, and more power can be released during discharging. The mileage of each discharge is improved significantly.

**Strong Motive Power:** Super thin plate design is adopted to increase the area of electrochemical reaction, which enables the battery has excellent large current discharge ability. Adopting cast-welding process to reduce the battery's internal resistance, so the battery's charge/discharge efficiency is improved to enable battery with large power discharge capability.

**Long Service Life:** The Chilwee battery has excellent cycle life which can reach 600 cycles @ 80% DOD. The batteries are well grouped to improve the battery bank's consistency in order to improve the battery bank's service life.

**Non-Spillable and High Safety:** The battery container and lid are made of Enhanced ABS material and they are sealed by epoxy resin, so the battery is well sealed without any acid leakage issue. High accuracy safety valve has been applied to prevent battery bulging, and safety valve and acid filter are used for preventing sparks splashed into battery to ensure the safety use of battery.

**High Reliability:** Improved negative material prescription and increased micropoles structure at negative helps to improve a lot on charge/discharge performance at extreme temperature condition. Low water loss rate, high temperature resistance, and battery deformation resistance.

### SPECIFICATION

|   |                          |  |
|---|--------------------------|--|
| Nominal Voltage (V)                     |                          | 12V  |
| Open Circuit Voltage (V/Block)          |                          | 13.1V - 13.45V                               |
| Number of Cells (Per Block)             |                          | 6 Cells                                      |
| Rated Capacity (Ah, 25°C)               | 2h rate (to 1.75V/Cell)  | 45Ah   |
|   | 3h rate (to 1.75V/Cell)  | 52Ah   |
|   | 5h rate (to 1.80V/Cell)  | 54Ah   |
|   | 10h rate (to 1.80V/Cell) | 58Ah   |
|   | 20h rate (to 1.85V/Cell) | 62Ah   |
| Nominal Weight (Kgs)                    |                          | Approx. 14.Kg                                |
| Dimension (L X W X H, Total Height. mm) |                          | (226mm±2) X (135mm±2) X (175mm±2), (175mm±2) |
| Container Material                      |                          | Enhanced ABS                                 |
| Charge Voltage                          | Float (V/Block)          | 13.50V - 13.80V                              |
|   | Cycle (V/Block)          | 14.60V - 14.80V                              |
| Maximum Discharge Current (A)           |                          | 310A (5s)                                    |
| Maximum Charge Current (A)              |                          | 5A   |



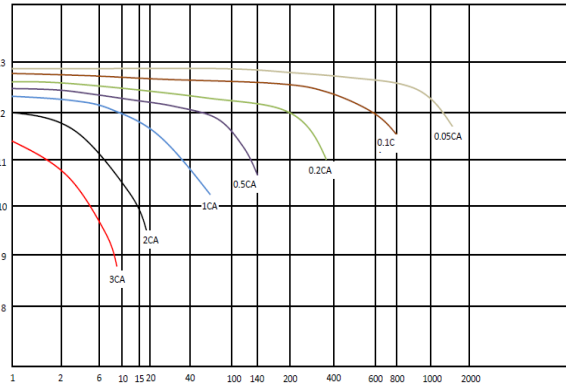
## *A Reliable Power Solution Provider*

|                         |                          |               |
|-------------------------|--------------------------|---------------|
| Working Temperature(°C) | Operation (maximum):     | -20°C to 50°C |
|                         | Operation (recommended): | 20°C to 30°C  |
| Storage Temperature(°C) |                          | -20°C to 50°C |

## 6-EVF-52.

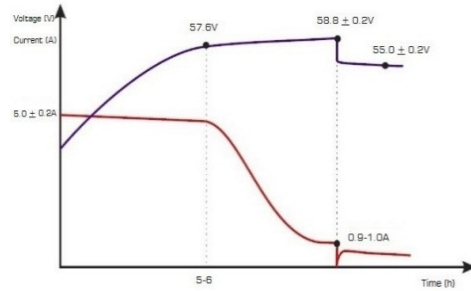
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**Discharge Curves at Different Discharge Rate (25°C)**  
Voltage (V)



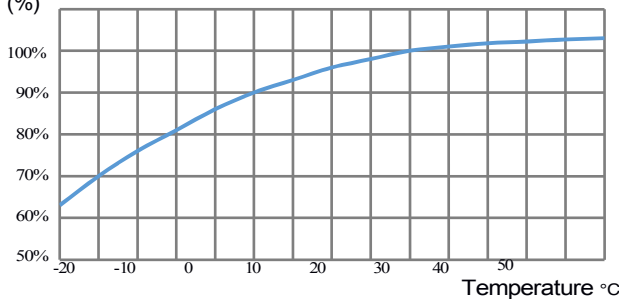
Discharge Time

**Charge Curve for 6-EVF-51 (4 Blocks/String)**

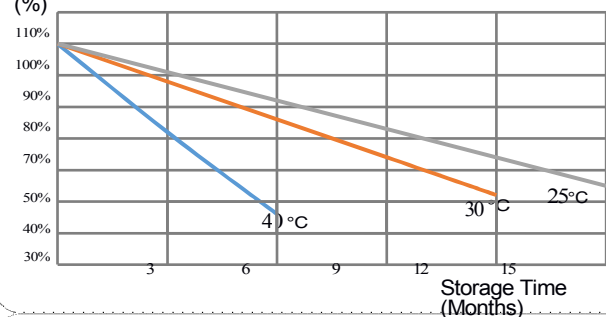


**Phase 1:** The Max. charge current is 5A, and the charge voltage is gradually risen up to 57.6V;  
**Phase 2:** The charge voltage is gradually risen up to 58.8V±0.2V. When the charge current has dropped to 0.9A-1.0A, shifting to float charge.

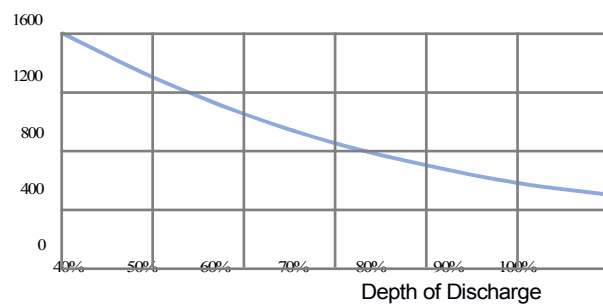
**Capacity Effect of Temperature on Capacity**



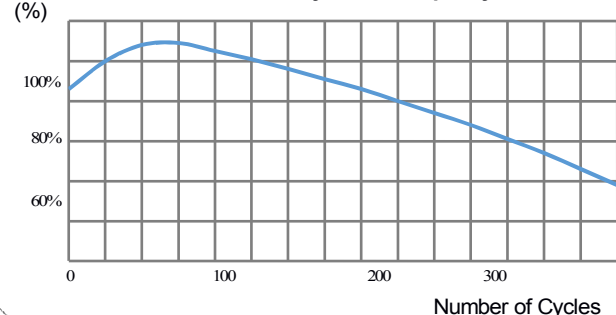
**Capacity Retention Characteristics**



**Cycle Life (Cycles) Cycle Life vs. Depth of Discharge**



**Number of Cycles vs. Capacity**



## RECOMMENDED SETTING PARAMETERS

| Item                   | 48V Battery Bank                                  | 60V Battery Bank  | 72V Battery Bank  |                   |
|------------------------|---|-------------------|-------------------|-------------------|
| Charger Parameters     | Max. Charge Voltage (V)                           | 58.6V-59.0V       | 73.3V-73.7V       | 88.0V-88.2V       |
|                        | Float Charge Voltage (V)                          | 54.8V-55.2V       | 68.6V-69.0V       | 82.3V-82.7V       |
|                        | Max. Charge Current (A)                           | 4.5A-5.0A         | 4.5A-5.0A         | 4.5A-5.0A         |
|                        | Shifting Current (A)                              | 0.9A-1.0A         | 0.9A-1.0A         | 0.9A-1.0A         |
|                        | Temperature Compensation Coefficient (mV/°C/Cell) | 2.5~4.0mV/°C/Cell | 2.5~4.0mV/°C/Cell | 2.5~4.0mV/°C/Cell |
| Controller Parameters  | Low-voltage Protection (V)                        | 42V±0.5V          | 52.5V±0.5V        | 63V±0.5V          |
|                        | Limited Current (A)                               | ≤40A              | ≤40A              | ≤40A              |
|                        | Turn-on Lock Current (A)                          | ≤0.3A             | ≤0.3A             | ≤0.3A             |
| Electric Motor Setting | Average Current (A)                               | ≤22A              | ≤20A              | ≤20A              |
|                        | Electric Motor Power (W)                          | ≤600W             | ≤700W             | ≤800W             |

\* All the data and technical curves are for customer's reference only. This information is subject to change without any prior notice.

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