



Chilwee BG (BLACK GOLD) Series high energy VRLA Battery is specially designed based on Graphene Technology, which has obviously improve the battery's capacity, output power, cycle life and high/low temperature performance. The Chilwee BG (BLACK GOLD) Series provides longer range, larger power and extremely long life for motive power applications, i.e. electric bicycles, electric tricycles, electric motorcycles and other device require DC power source.

FEATURES & BENEFITS

- * Designed based on Graphene Technology enables the BG (BLACK GOLD) series Battery with the the features of excellent long range, larger power and extremely long life.
- * Unique structure of battery container and lid to ensure excellent gas recommendation efficiency, less gas released so that water loss rate is reduced.
- * Sepcial grid alloy material and special lead paste prescription have been utilized to resist corrosion on plates, prolong the life of the battery.
- * Increased positive active material to improve the battery's initial capacity and service life.
- * Redesigned battery container and terminal, more attractive appearance and easy for installation.

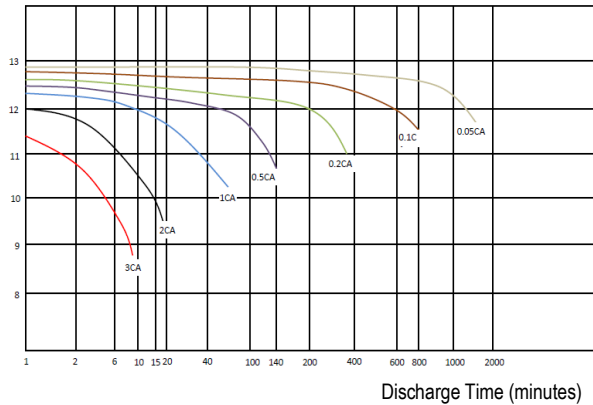
COMPARISON BETWEEN BG SERIES AND STANDARD BATTERY

| TESTING ITEM | STANDARD BATTERY | BLACK GOLD SERIES | COMPARISON |
|--|------------------|-------------------|----------------------|
| INITIAL CAPACITY, FOR THE FIRST 3 CYCLES | 20.2AH | 22AH | 10% IMPROVED |
| CAPACITY , AFTER 69 CYCLES | 21AH | 24.5AH | 16% IMPROVED |
| DISCHARGE TIME @ END-VOLTAGE : 12V | 65 MINUTES | 90 MINUTES | 34% IMPROVED |
| WATER LOSS RATE | 0.1 GRAM / CYCLE | 0.06 GRAM/ CYCLE | 40% DECREASED |
| DISCHARGE TIME @ -15 °C | 94 MINUTES | 112 MINUTES | 18% IMPROVED |
| CYCLE LIFE @ 100% DOD | 400 CYCLES | 610 CYCLES | 52% IMPROVED |

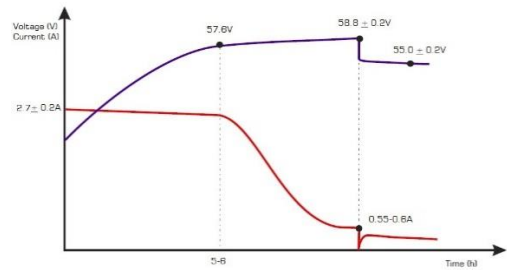
SPECIFICATION

| | | |
|---|--------------------------|---|
| 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) | 22Ah |
| | 3h rate (to 1.75V/Cell) | 24Ah |
| | 5h rate (to 1.80V/Cell) | 26Ah |
| | 10h rate (to 1.80V/Cell) | 28Ah |
| | 20h rate (to 1.85V/Cell) | 30Ah |
| Nominal Weight (Kgs) | | Approx. 6.5±0.2 Kgs |
| Dimension (L X W X H, Total Height. mm) | | (181mm±0.5) X (78mm±0.5) X (172mm±0.5), (172mm±0.5) |
| Container Material | | Enhanced ABS |
| Charge Voltage | Float (V/Block) | 13.50V - 13.80V |
| | Cycle (V/Block) | 14.60V - 14.80V |
| Maximum Discharge Current (A) | | 150A (5s) |
| Maximum Charge Current (A) | | 2.9 A |
| 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 |

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

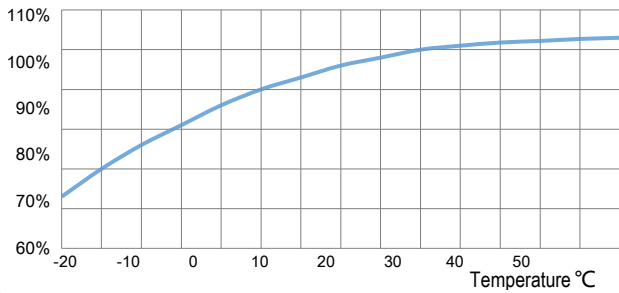


Charge Curve for 6-DZF-22.2 (4 Blocks/String)

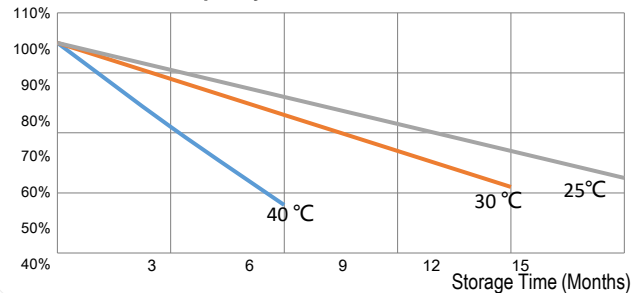


Phase 1: The Max. charge current is 2.7A, and the charge voltage is gradually risen up to 57.6V;
Phase 2: The charge voltage is gradually risen up to 58.8V ± 0.2V. When the charge current has dropped to 0.55A-0.6A, shifting to float charge.

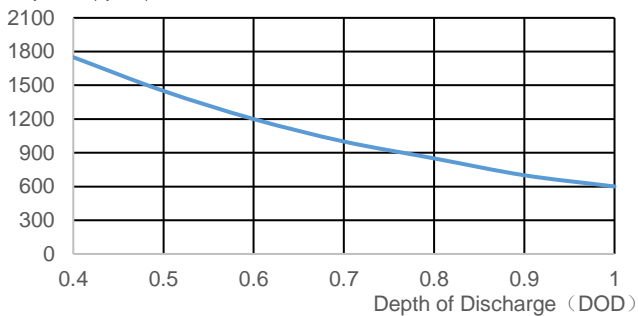
Effect of Temperature on Capacity



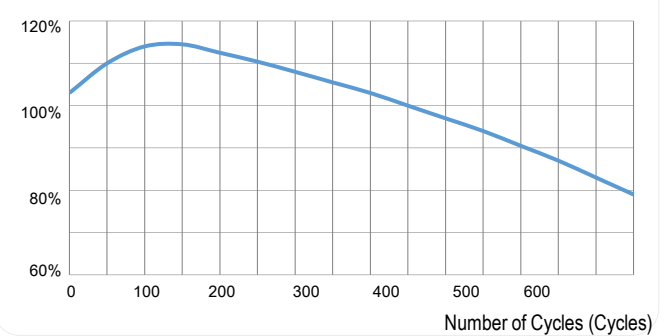
Capacity Retention Characteristics



Cycle life vs DOD



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-59V | 73.3V-73.7V | 88.0V-88.4V |
| | Float Charge Voltage (V) | 54.8V-55.2V | 68.6V-69.0V | 82.3V-82.7V |
| | Max. Charge Current (A) | 2.7A-2.9A | 2.7A-2.9A | 2.7A-2.9A |
| | Shifting Current (A) | 0.55A-0.6A | 0.55A-0.6A | 0.55A-0.6A |
| | Temperature Compensation Coefficient (mV/°C/Cell) | 2.5~4.0 mV/°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) | ≤25A | ≤25A | ≤25A |
| | Turn-on Lock Current (A) | ≤0.15A | ≤0.15A | ≤0.15A |
| Electric Motor Setting | Average Current (A) | ≤10A | ≤10A | ≤10A |
| | Electric Motor Power (W) | ≤450W | ≤600W | ≤650W |

* 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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