

# BLUE BATTERY

## BL12-12 12V12Ah

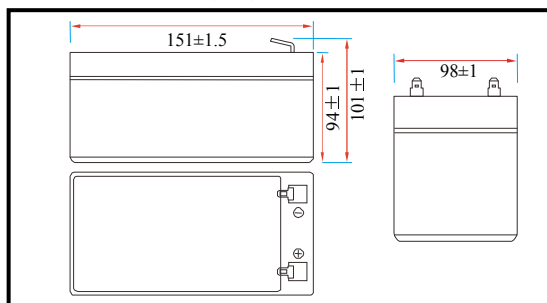
### Valve Regulated Lead Acid Battery



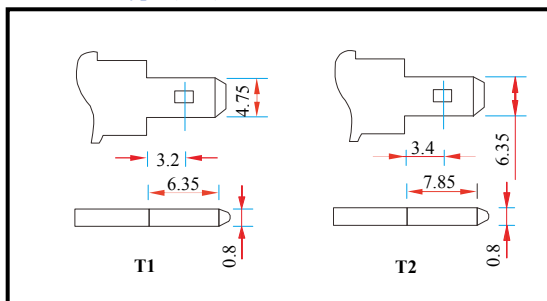
#### ● Specifications

|                       |                        |                      |
|-----------------------|------------------------|----------------------|
| Nominal voltage       | 12V (6 cells per unit) |                      |
| Rated capacity (20HR) | 12Ah/10.5V             |                      |
| Dimensions            | Length                 | 151±1.5mm (5.94inch) |
|                       | Width                  | 98±1mm (3.86inch)    |
|                       | Height                 | 95±1mm (3.74inch)    |
|                       | Total height           | 101±1mm (3.98inch)   |
| Approx. weight        | 3.40kg (7.51lbs)±4%    |                      |

#### ● Outer dimensions (mm)



#### ● Terminal type (mm)



#### ● Characteristics

|   |   |  |
|---|---|--|
| Capacity (25°C)                           | 20HR (10.5V)                                    | 12Ah   |
|   | 10HR (10.5V)                                    | 11Ah   |
|   | 1HR (9.60V)                                     | 7.2Ah  |
| Terminal type                             |   | T1/T2  |
| Internal resistance (Fully charged, 25°C) |   | Approx. 19mΩ   |
| Capacity affected by temperature (10HR)   | 40°C  | 102%   |
|   | 25°C  | 100%   |
|   | 0°C   | 85%  |
|   | -15°C   | 65%  |
| Self-discharge (25°C)                     | 3 months  | Remaining capacity: 91%                                  |
|   | 6 months  | Remaining capacity: 82%                                  |
|   | 12 months                                       | Remaining capacity: 65%                                  |
| Nominal operating temperature             |   | 25°C±3°C (77°F±5°F)                                      |
| Operating temperature range               | Discharge                                       | -15°C~50°C (5°F~122°F)                                   |
|   | Charge  | -10°C~50°C (14°F~122°F)                                  |
|   | Storage   | -20°C~50°C (-4°F~122°F)                                  |
| Float charging voltage (25°C)             |   | 13.60 to 13.80V Temperature compensation: -18mV/°C/Block |
| Cyclic charging voltage (25°C)            |   | 14.50 to 15.00V Temperature compensation: -30mV/°C/Block |
| Maximum charging current                  |   | 3.6A   |
| Maximum discharge current                 |   | 180A (5 sec.)  |
| Design life                               | 5 years for floating (25°C)                     |  |
|   | Eurobat (20°C): 3-5 years, standard commercial. |  |

#### ● Construction

| Component    | Positive plate | Negative plate | Container | Cover | Separator | Electrolyte   | Safety valve | Terminal |
|--------------|----------------|----------------|-----------|-------|-----------|---------------|--------------|----------|
| Raw material | Lead dioxide   | Lead           | ABS       | ABS   | AGM       | Sulfuric acid | Rubber       | Copper   |

#### ● Constant current discharge characteristics unit: Ampere/Block (at 25°C, 77°F)

| F.V/Time | 5min | 10min | 15min | 30min | 60min | 2h   | 3h   | 4h   | 5h   | 10h  | 20h  |
|----------|------|-------|-------|-------|-------|------|------|------|------|------|------|
| 9.60V    | 45.8 | 29.0  | 22.7  | 12.8  | 7.86  | 4.30 | 2.97 | 2.46 | 2.09 | 1.14 | 0.61 |
| 9.90V    | 44.5 | 28.2  | 22.1  | 12.5  | 7.74  | 4.27 | 2.96 | 2.45 | 2.08 | 1.13 | 0.61 |
| 10.2V    | 42.6 | 27.0  | 21.3  | 12.1  | 7.55  | 4.24 | 2.94 | 2.43 | 2.07 | 1.13 | 0.60 |
| 10.5V    | 40.8 | 25.8  | 20.6  | 11.8  | 7.40  | 4.17 | 2.92 | 2.41 | 2.05 | 1.12 | 0.60 |
| 10.8V    | 38.5 | 24.4  | 19.5  | 11.4  | 7.17  | 4.07 | 2.83 | 2.34 | 1.99 | 1.10 | 0.59 |

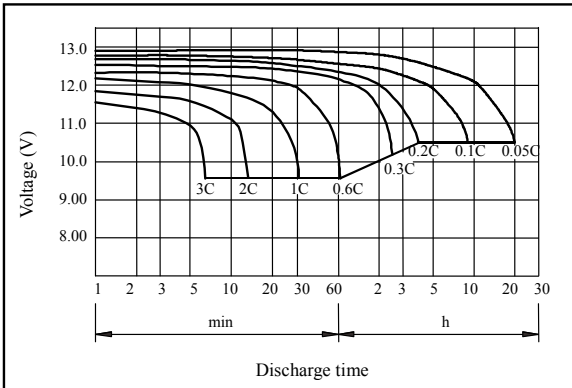
#### ● Constant power discharge characteristics unit: Watt/Block (at 25°C, 77°F)

| F.V/Time | 5min | 10min | 15min | 30min | 60min | 2h   | 3h   | 4h   | 5h   | 10h  | 20h  |
|----------|------|-------|-------|-------|-------|------|------|------|------|------|------|
| 9.60V    | 512  | 328   | 259   | 146   | 91.0  | 50.3 | 35.3 | 29.3 | 25.0 | 13.6 | 7.31 |
| 9.90V    | 496  | 318   | 252   | 144   | 89.7  | 50.0 | 35.1 | 29.1 | 24.8 | 13.6 | 7.28 |
| 10.2V    | 476  | 305   | 243   | 139   | 87.4  | 49.6 | 34.9 | 28.9 | 24.7 | 13.5 | 7.24 |
| 10.5V    | 455  | 292   | 235   | 136   | 85.6  | 48.8 | 34.6 | 28.7 | 24.5 | 13.4 | 7.20 |
| 10.8V    | 430  | 275   | 222   | 131   | 83.0  | 47.6 | 33.6 | 27.9 | 23.8 | 13.2 | 7.06 |

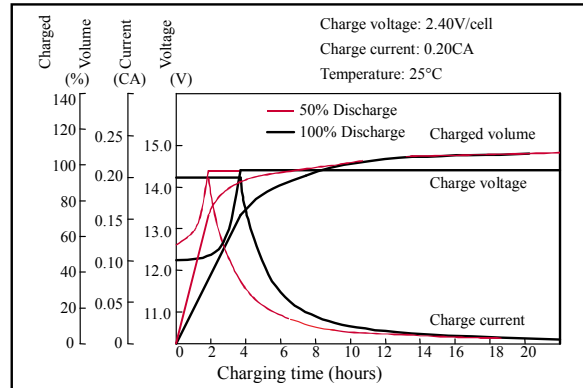
Note 1: Above characteristics data can be obtained within three charge and discharge cycles.

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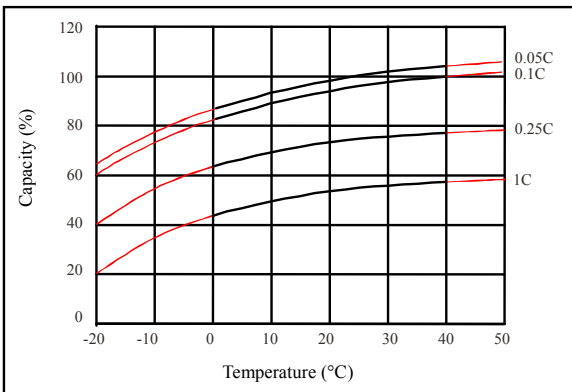
## ● Discharge characteristics (25°C)



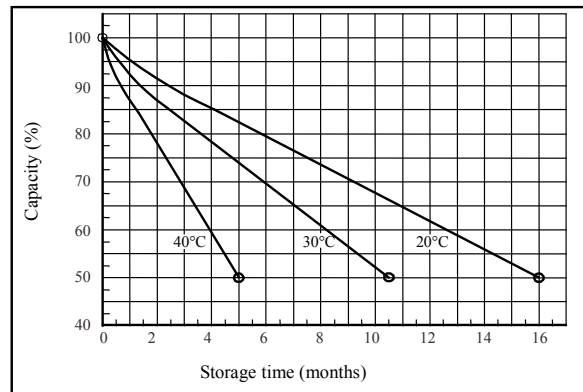
## ● Charging characteristics (25°C)



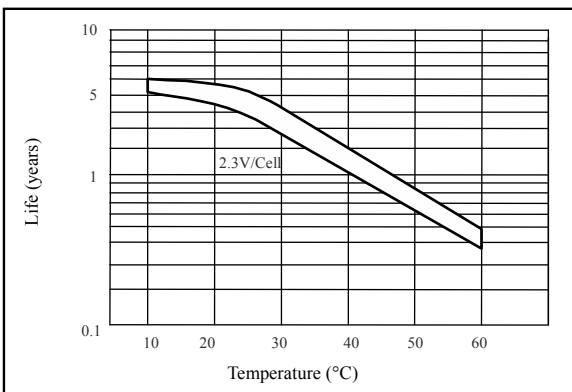
## ● Temperature effects on capacity



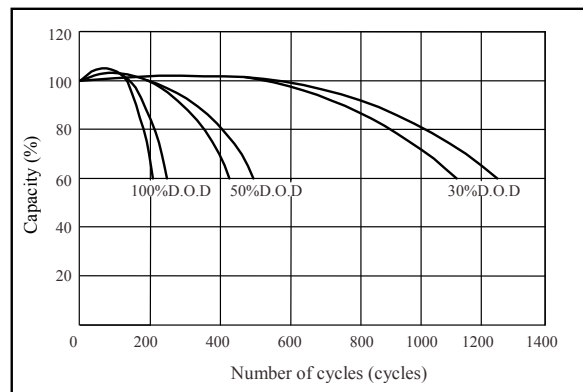
## ● Self-discharge characteristics



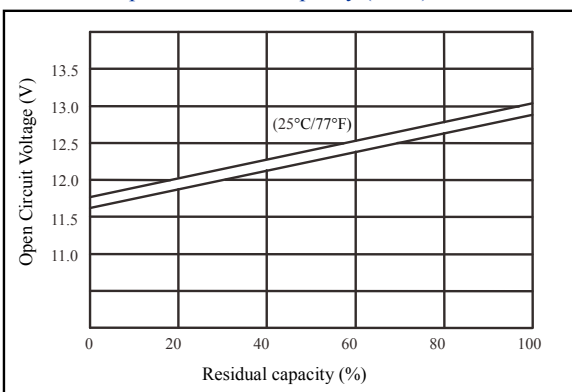
## ● Floating life on temperature



## ● Cycle life on D.O.D (25°C)



## ● Relationship for OCV and capacity (25°C)



## ● Relationship for charging voltage and temperature

