

## DC Series 9.0AH 12V VRLA - Deep Cycle Battery

### Specification

|                                  |   |                               |
|----------------------------------|---|-------------------------------|
| Nominal Voltage                  | 12V   |                               |
| Nominal Capacity(20HR)           | 9.0AH   |                               |
| Dimension                        | Length  | 151±1mm (5.95 inches)         |
|                                  | Width   | 65±1mm (2.56 inches)          |
|                                  | Container Height  | 94.5±1mm (3.72 inches)        |
|                                  | Total Height (with Terminal)  | 100±1mm (3.94 inches)         |
| Approx Weight                    | Approx 2.35 kg (5.1811lbs)  |                               |
| Terminal                         | T1 / T2   |                               |
| Container Material               | ABS   |                               |
| Rated Capacity                   | 9.00 AH/0.450A  | (20hr, 1.80V/cell, 25°C/77°F) |
|                                  | 8.37 AH/0.837A  | (10hr, 1.80V/cell, 25°C/77°F) |
|                                  | 7.64 AH/1.528A  | (5hr, 1.75V/cell, 25°C/77°F)  |
|                                  | 6.88 AH/2.29A   | (3hr, 1.75V/cell, 25°C/77°F)  |
|                                  | 5.65 AH/5.65A   | (1hr, 1.60V/cell, 25°C/77°F)  |
| Max. Discharge Current           | 140A (5s)   |                               |
| Internal Resistance              | Approx 19mΩ   |                               |
| Operating Temp. Range            | Discharge   | -15~50°C (5~122°F)            |
|                                  | Charge  | 0~40°C (32~104°F)             |
|                                  | Storage   | -15~40°C (5~104°F)            |
| Nominal Operating Temp. Range    | 25±3°C (77±5°F)   |                               |
| Cycle Use                        | Initial Charging Current less than 2.7A.  | Voltage                       |
|                                  | 14.4V~15.0V at 25°C(77°F)Temp. Coefficient -30mV/°C   |                               |
| Standby Use                      | No limit on Initial Charging Current Voltage  |                               |
|                                  | 13.5V~13.8V at 25°C(77°F)Temp. Coefficient -20mV/°C   |                               |
| Capacity affected by Temperature | 40°C (104°F)  | 103%                          |
|                                  | 25°C (77°F)   | 100%                          |
|                                  | 0°C (32°F)  | 86%                           |
| Self Discharge                   | CERTO DC series batteries may be stored for up to 6 months at 25°C(77°F) and then a freshening charge is required. For higher temperatures the time interval will be shorter. |                               |

### Applications

- ◆ All purpose
- ◆ Uninterruptable Power Supply (UPS)
- ◆ Electric Power System (EPS)
- ◆ Emergency backup power supply
- ◆ Emergency light
- ◆ Railway signal
- ◆ Aircraft signal
- ◆ Alarm and security system Electronic apparatus and equipment
- ◆ Communication power supply
- ◆ DC power supply

|          |           |             |            |
|----------|-----------|-------------|------------|
| ISO 9001 | ISO 14001 | OHSAS 18001 | TLC        |
| CE       | RoHS      | UL          | PV Battery |

### Constant Current Discharge (Amperes) at 25 °C (77°F)

| F.V/Time   | 5min | 10min | 15min | 20min | 30min | 45min | 1h  | 2h   | 3h   | 4h   | 5h   | 6h   | 8h   | 10h   | 20h   |
|------------|------|-------|-------|-------|-------|-------|-----|------|------|------|------|------|------|-------|-------|
| 1.85V/cell | 32.3 | 22.6  | 16.9  | 13.7  | 10.6  | 7.5   | 6.0 | 3.23 | 2.3  | 1.81 | 1.51 | 1.32 | 1.03 | 0.851 | 0.468 |
| 1.80V/cell | 36.1 | 24.4  | 18.8  | 14.5  | 11.0  | 7.7   | 6.1 | 3.28 | 2.34 | 1.85 | 1.54 | 1.35 | 1.05 | 0.873 | 0.472 |
| 1.75V/cell | 39.8 | 26.1  | 18.9  | 15.2  | 10.9  | 8.0   | 6.2 | 3.40 | 2.39 | 1.89 | 1.59 | 1.37 | 1.08 | 0.885 | 0.478 |
| 1.70V/cell | 43.8 | 27.6  | 19.5  | 15.7  | 12.0  | 8.2   | 6.3 | 3.46 | 2.44 | 1.92 | 1.62 | 1.40 | 1.10 | 0.901 | 0.486 |
| 1.65V/cell | 46.1 | 28.8  | 20.3  | 16.3  | 11.8  | 8.4   | 6.4 | 3.52 | 2.48 | 1.96 | 1.65 | 1.43 | 1.11 | 0.918 | 0.492 |
| 1.60V/cell | 49.4 | 29.9  | 21.2  | 17.1  | 12.2  | 8.5   | 6.5 | 3.57 | 2.52 | 2.01 | 1.68 | 1.46 | 1.13 | 0.931 | 0.496 |

### Constant Power Discharge (Watts) at 25 °C (77°F)

| F.V/Time   | 5min | 10min | 15min | 20min | 30min | 45min | 1h   | 2h   | 3h   | 4h   | 5h   | 6h   | 8h   | 10h  | 20h   |
|------------|------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|-------|
| 1.85V/cell | 60.4 | 42.3  | 31.7  | 25.9  | 20.1  | 14.6  | 11.5 | 6.35 | 4.48 | 3.53 | 2.97 | 2.57 | 2.02 | 1.69 | 0.927 |
| 1.80V/cell | 65.1 | 44.7  | 33.1  | 27.3  | 20.8  | 14.8  | 11.6 | 6.44 | 4.54 | 3.59 | 3.01 | 2.63 | 2.08 | 1.72 | 0.935 |
| 1.75V/cell | 71.2 | 47.2  | 34.6  | 28.3  | 21.2  | 15.1  | 11.8 | 6.53 | 4.61 | 3.66 | 3.07 | 2.67 | 2.11 | 1.74 | 0.943 |
| 1.70V/cell | 77.3 | 49.5  | 35.4  | 29.1  | 21.7  | 15.3  | 12.1 | 6.64 | 4.69 | 3.73 | 3.13 | 2.72 | 2.15 | 1.77 | 0.959 |
| 1.65V/cell | 80.2 | 50.7  | 36.5  | 29.9  | 22.1  | 15.6  | 12.2 | 6.72 | 4.77 | 3.71 | 3.19 | 2.77 | 2.18 | 1.81 | 0.971 |
| 1.60V/cell | 84.3 | 52.1  | 37.4  | 30.6  | 22.4  | 15.7  | 12.3 | 6.78 | 4.82 | 3.84 | 3.25 | 2.83 | 2.22 | 1.83 | 0.975 |

**Note** The above data are average values, and can be obtained with 3 charge/discharge cycles. These are not minimum values.

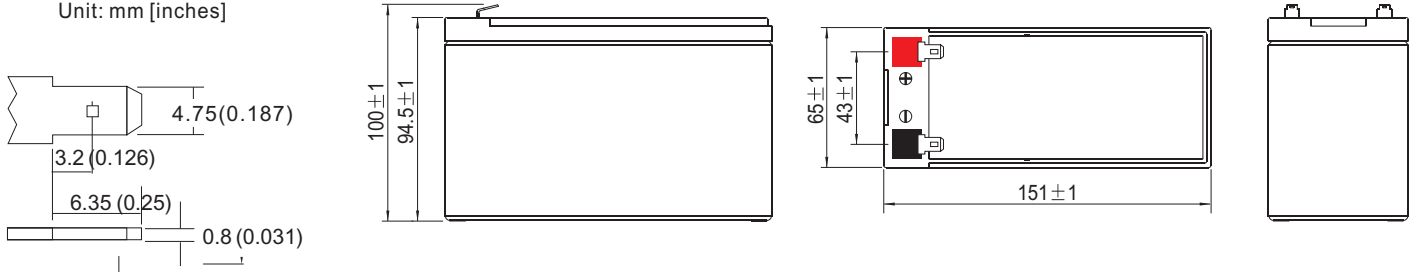
## DC 9.0AH 12V

### DC SERIES-Deep Cycle Battery

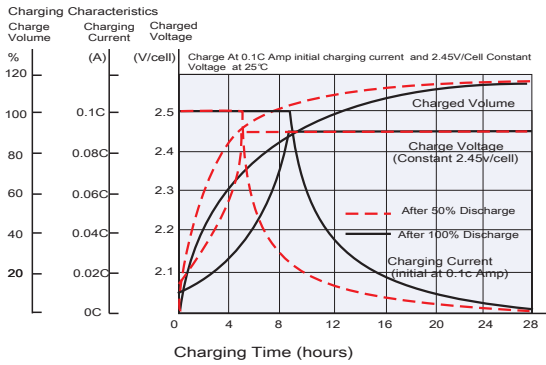
#### Dimensions

##### T1 Terminal

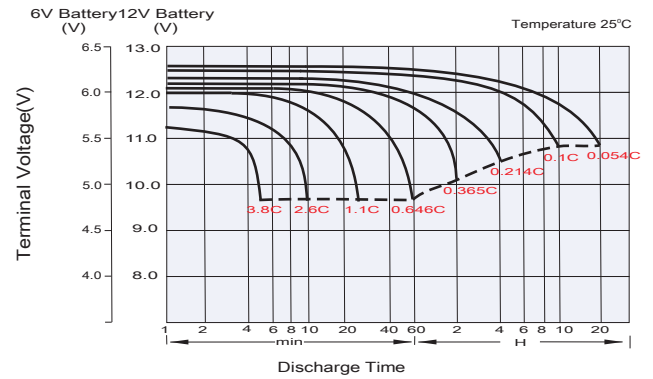
Unit: mm [inches]



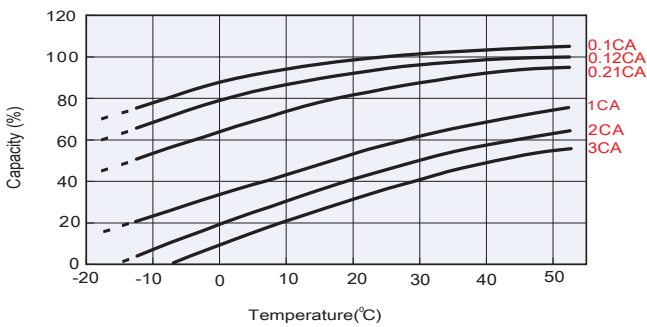
#### Charging Characteristics (cycle use)



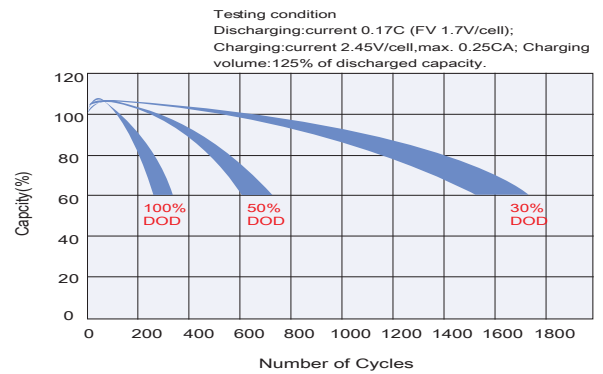
#### Discharge Characteristics



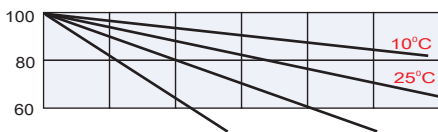
#### Temperature Effects in Relation to Battery Capacity



#### Cycle Life in Relation to Depth of Discharge



#### Self Discharge Characteristics



No supplementary charge required  
(Carry out supplementary charge before use if 100% capacity is required.)  
Supplementary charge required before use. Optional charging way as below:

#### CERTO DC BATTERIES

This information is generally descriptive only and is not intended to make or imply any representation, guarantee or warranty with respect to any cells and batteries. Cell and battery designs/specification are subject to modification without notice.