SORENA

# VRLA AGM Battery

**12V9AH [36W/cell/15min]**


## General Features

- Designed floating charging service life: 8 years (25ºC)
- Sealed and maintenance free operation
- Safety valve installation for explosion proof
- Low self-discharge characteristic
- Wide operating temperature range from 0ºC~40ºC
- Lead Aluminum calcium Tin alloy high energy, prevent corrosion

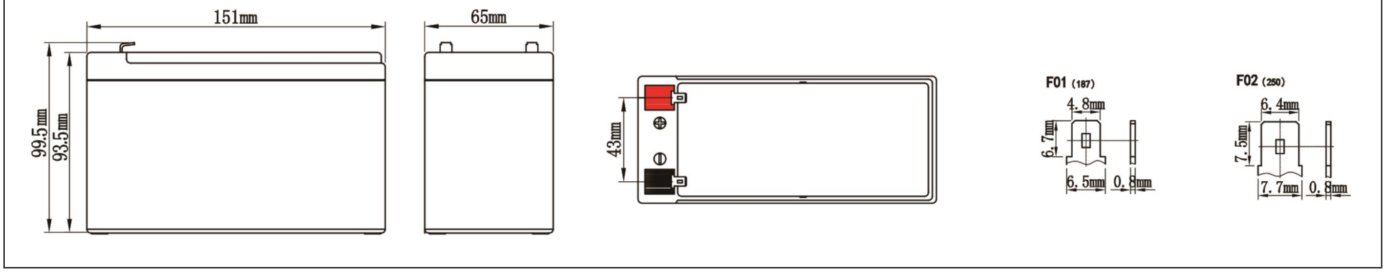
## Application

- DC power supply
- Medical equipments
- UPS/EPS power supply
- Emergency lighting systems
- Alarm and security systems

## Physical Specifications

| Nominal Voltage | Nominal Capacity (20HR) | Dimension | | | | Weight ±2% | Internal Resistance (In full charge status) | Standard Terminals |
|---|---|---|---|---|---|---|---|---|
| | | L | W | H | TH | | | |
| 12V | 9.0AH | 151±2mm | 65±2mm | 93.5±2mm | 99.5±2mm | Approx2.48kg (5.67lbs) | ≈19 mΩ | F01/F02 (standard) |

## Dimensions




## Constant-Voltage Charge

| Rated Capacity | |
|---|---|
| 20 hour rate (0.45A) | 9.00AH |
| 10 hour rate (0.90A) | 8.30AH |
| 5 hour rate (1.53A) | 7.55AH |
| 27 minute rate( 9.0A) | 4.50AH |
| 7 minute rate (27.0A) | 3.60AH |
| **Capacity affected by Temperature** | |
| 40ºC(104ºF) | 103% |
| 25ºC(77ºF) | 100% |
| 0ºC(32ºF) | 86% |

| Cycle Application |
|---|
| 1. Limit initial current less than2.25A. |
| 2. Charge until battery voltage (under charge) reaches 14.1V to 14.4V at 25ºC(77ºF). |
| 3. Hold at 14.1V to 14.4V until current drop to under 0.054A for at least 3 hours. |
| 4. Temperature compensation coefficient of charging voltage is -30mV/ºC. |
| **Standby Service** |
| 1. Hold battery across constant voltage source of 13.6to 13.8 volts with current limit2.25A continuously .When held at this voltage , the battery will seek its own current level and maintain itself in a fully charge status. |
| 2. Temperature compensation coefficient of charging voltage is -18mV/ºC. |

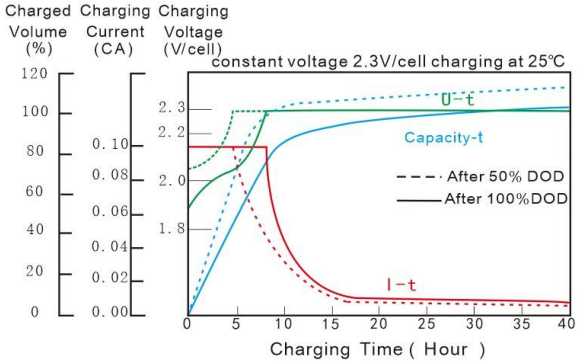
⚠ NOTE : The battery should be charged within 6 months of storage, Otherwise, permanent loss of capacity might occur as a result of sulfation

# Battery Discharge Table

| End Voltage (V) | Minute (M) | | | | Hour (H) | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 10 | 15 | 30 | 45 | 1 | 1.5 | 2 | 3 | 5 | 8 | 10 | 20 |
| Constant Current Discharge Data Sheet (@25°C) Unit: A | | | | | | | | | | | | |
| 9.6V | 23.9 | 18.7 | 9.61 | 6.74 | 5.67 | 4.53 | 3.37 | 2.54 | 1.63 | 1.08 | 0.870 | 0.459 |
| 9.9V | 22.8 | 17.9 | 9.16 | 6.51 | 5.54 | 4.42 | 3.29 | 2.48 | 1.59 | 1.06 | 0.862 | 0.455 |
| 10.2V | 21.7 | 17.0 | 8.72 | 6.29 | 5.40 | 4.31 | 3.21 | 2.42 | 1.55 | 1.04 | 0.853 | 0.453 |
| 10.5V | 21.5 | 16.8 | 8.59 | 6.22 | 5.37 | 4.23 | 3.08 | 2.34 | 1.51 | 1.03 | 0.844 | 0.450 |
| 10.8V | 21.3 | 16.7 | 8.51 | 6.15 | 5.32 | 4.14 | 2.96 | 2.25 | 1.49 | 1.02 | 0.830 | 0.447 |
| Constant Power Discharge Data Sheet (@25°C) Unit: W | | | | | | | | | | | | |
| 9.6V | 288 | 233 | 132 | 93.2 | 69.5 | 53.3 | 40.1 | 28.6 | 18.9 | 13.2 | 10.4 | 5.62 |
| 9.9V | 274 | 222 | 125 | 90.0 | 67.8 | 52.0 | 39.1 | 27.9 | 18.4 | 12.9 | 10.3 | 5.57 |
| 10.2V | 261 | 211 | 119 | 87.0 | 66.2 | 50.8 | 38.2 | 27.3 | 18.0 | 12.7 | 10.2 | 5.51 |
| 10.5V | 252 | 205 | 117 | 85.0 | 65.1 | 50.0 | 37.6 | 26.6 | 17.8 | 12.6 | 10.1 | 5.43 |
| 10.8V | 243 | 198 | 114 | 82.8 | 64.0 | 49.3 | 37.1 | 26.2 | 17.6 | 12.4 | 9.91 | 5.36 |

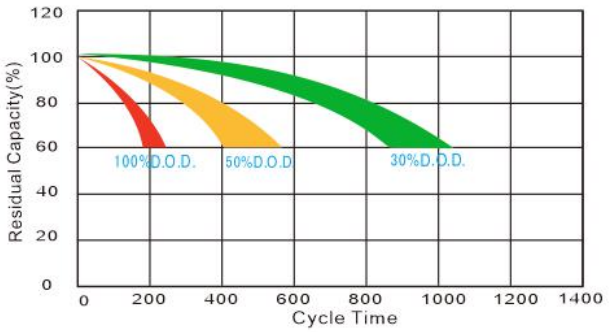
# Performance Characteristics

## Charge Characteristics (25°C/77°F)

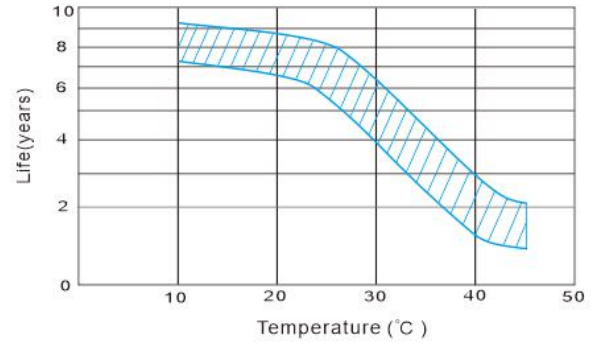



## Discharge Characteristic (25°C/77°F)

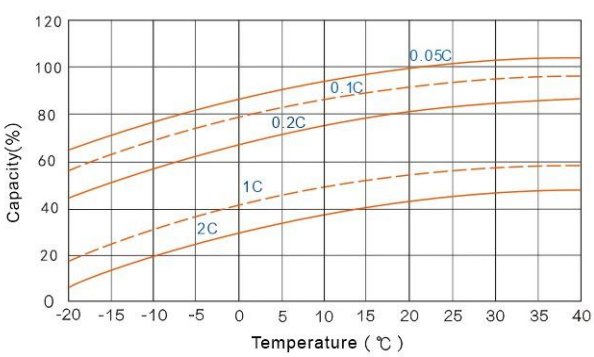

## Cycle Life in Relation to Depth of Discharge




## Temperature vs Float Life




## Capacity Curve At Different Temperature




## Self Discharge Characteristics