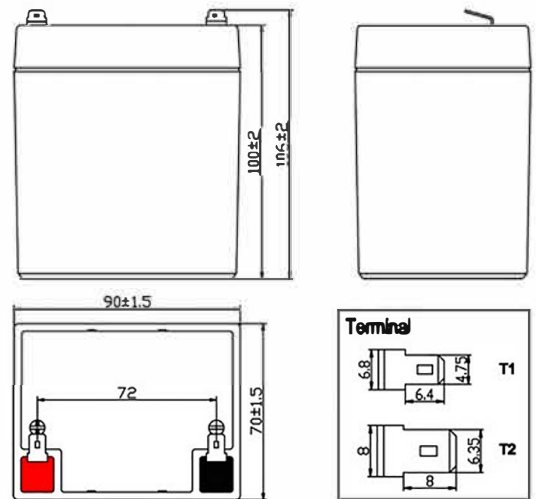




## Specification

Nominal Voltage (V)	12V (6 cells in series)	
Rated Capacity	4.5Ah	(C <sub>20</sub> , 1.75V/cell)
Dimensions(mm)	Length	90 ± 1.5 mm
	Width	70 ± 1.5 mm
	Height	100 ± 2 mm
	Total Height	106 ± 2 mm
Nominal Capacity @25°C (Ah)	20 Hour rate (0.227A to 10.5 volts)	4.54Ah
	10 Hour rate (0.434A to 10.5 volts)	4.34Ah
	5 Hour rate (0.776A to 10.5 volts)	3.88Ah
	1 Hour rate (2.750A to 9.6 volts)	2.75Ah
	15 min rate (8.143A to 9.6 volts)	2.03Ah
Approx. Weight	1.36 kg	
Terminal	T1/T2	
Max.Discharge Current	67.5A @25°C (5s)	
Internal Resistance	51mΩ @25°C (Full Charged Battery)	
Floating Design Life	5 years @25°C	
Ambient Temperature	Charge:	-15°C~50°C
	Discharge:	-20°C~60°C
	Storage:	-20°C~50°C
Container Material	A.B.S , UL94-HB , UL94-V0 , Optional	
Self Discharge	VRLA batteries can be stored for more than 6 months at 25°C. Self-Discharge ratio less than 3% per month at 25°C. Please charge batteries before using.	



## Certification



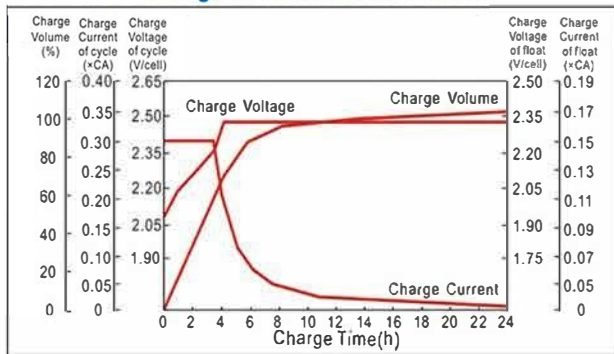
## Constant Current Discharge Characteristics (A), (25°C)

F.V/TIME	5min	10min	15min	30min	60min	2H	3H	5H	8H	10H	20H
1.60V/cell	16.69	10.93	8.143	4.336	2.750	1.549	1.177	0.794	0.526	0.450	0.241
1.70V/cell	15.14	10.13	7.677	4.209	2.688	1.525	1.148	0.782	0.518	0.439	0.232
1.75V/cell	13.60	9.496	7.254	4.082	2.654	1.512	1.136	0.776	0.513	0.434	0.227
1.80V/cell	12.20	8.883	6.831	3.955	2.616	1.500	1.123	0.767	0.506	0.428	0.218

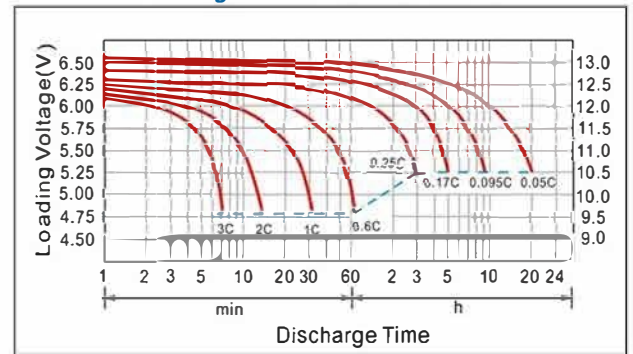
## Constant Wattage Discharge Characteristics (Watt), (25°C)

F.V/TIME	5min	10min	15min	30min	60min	2H	3H	5H	8H	10H	20H
1.60V/cell	30.18	19.96	15.00	8.274	5.453	3.072	2.346	1.584	1.049	0.899	0.482
1.70V/cell	27.89	18.83	14.40	8.102	5.354	3.037	2.291	1.562	1.033	0.878	0.465
1.75V/cell	25.39	17.96	13.72	7.926	5.291	3.014	2.271	1.551	1.025	0.869	0.456
1.80V/cell	22.98	16.95	13.04	7.745	5.219	2.992	2.246	1.535	1.013	0.856	0.438

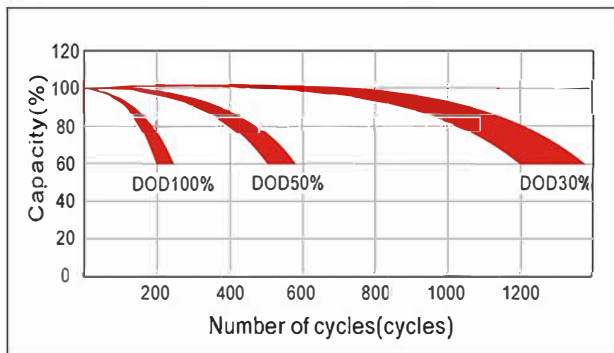
## Charge Characteristics Curve



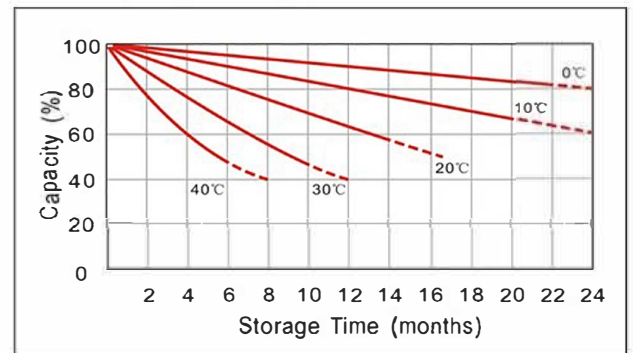
## Discharge Characteristics Curve



## Cycle service life in relation to depth of discharge



## Capacity Storage Characteristics



## Capacity Factors with Different Temperature

Battery type		-20°C	-10°C	0°C	5°C	10°C	20°C	25°C	30°C	40°C	45°C
GEL Battery	6V&12V	50%	70%	83%	85%	90%	98%	100%	102%	104%	105%
	2V	60%	75%	85%	88%	92%	99%	100%	103%	105%	106%
AGM Battery	6V&12V	46%	66%	76%	83%	90%	98%	100%	103%	107%	109%
	2V	55%	70%	80%	85%	92%	99%	100%	104%	108%	110%

## Maintenance & Cautions

### Charging Procedure:

Application	Charging method	Charge voltage at 25°C	Temperature compensation coefficient of charging voltage	Max.charging current	Temperature
For standby power source	Constant voltage charging (With current restriction)	2.25~2.30 V/cell	-3mV/°C/cell	0.2CA	-15~50°C
For cycle service		2.45~2.50 V/cell	-4mV/°C/cell	0.3CA	

- Every month, recommend inspection every battery voltage.
- Every three months, recommend equalization charge for one time. **Equalization charge method:**  
 Step 1: Discharge: 100% rate capacity discharge.  
 Step 2: Charge: Max. Current 0.3CA, constant voltage 2.45~2.50V/Cell charge 24h.
- Length of service life will be directly affected by the number of discharge cycles, depth of discharge, Ambient temperature and charging voltage.
- Charge the batteries at least once every six months, if they are stored at 25°C. **Charging Method:**  
 Constant Voltage :  $-0.2C \times 2h + 2.4 \sim 2.45V/cell \times 24h$  , Max. Current 0.25CA  
 Constant Current :  $-0.2C \times 2h + 0.1C \times 12h$   
 Fast :  $-0.2C \times 2h + 0.3C \times 4h$

### Terminal of torque:

Bolt	M5	M6	M8
Terminal	T3、T10	T4、T7、T11、T12、T13	T5、T6、T8、T9、T14
Torque	6~7N.m	8~10N.m	10~12N.m