



valve regulated  
sealed lead acid type  
rechargeable battery

**+****-** sunbattery®

# SB12-2.0NP (12V2.0AH)

## Specification

Nominal Voltage	12V	
Nominal Capacity(20HR)	2.0AH	
Dimension	Length	151 ± 1mm (5.94 inches)
	Width	20 ± 1mm (0.79 inches)
	Container Height	89 ± 1mm (3.50 inches)
	Total Height (with Terminal)	89 ± 1mm (3.50 inches)
Approx Weight	Approx 0.68 kg (1.50lbs)	
Terminal	/	
Container Material	ABS	
Rated Capacity	2.00 AH/0.10A	(20hr, 1.80V/cell, 25°C/77°F)
	1.86 AH/0.186A	(10hr, 1.80V/cell, 25°C/77°F)
	1.70 AH/0.34A	(5hr, 1.75V/cell, 25°C/77°F)
	1.53 AH/0.51A	(3hr, 1.75V/cell, 25°C/77°F)
	1.26 AH/1.26A	(1hr, 1.60V/cell, 25°C/77°F)
Max. Discharge Current	30A (5s)	
Internal Resistance	Approx 75mΩ	
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 2.1A. 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%
Life expectancy	3~5 years at 25°C with charge voltage of 2.25V/cell	
Self Discharge	SB 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
- ◆ Auto control system

	Intertek ETL SEMKO	UL MH45680
ISO14001	ISO9001	

### 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	3.81	2.92	2.42	2.09	1.62	1.19	1.01	0.59	0.47	0.38	0.309	0.268	0.216	0.180	0.099
1.80V/cell	5.11	3.74	2.93	2.48	1.91	1.39	1.13	0.65	0.50	0.40	0.331	0.287	0.229	0.186	0.100
1.75V/cell	5.76	4.11	3.20	2.66	1.98	1.44	1.18	0.67	0.51	0.41	0.340	0.295	0.233	0.191	0.101
1.70V/cell	6.35	4.48	3.41	2.80	2.07	1.50	1.22	0.69	0.52	0.42	0.349	0.301	0.236	0.195	0.103
1.65V/cell	7.00	4.83	3.63	2.97	2.18	1.54	1.24	0.70	0.55	0.44	0.358	0.308	0.240	0.199	0.104
1.60V/cell	7.72	5.24	3.88	3.17	2.30	1.60	1.26	0.73	0.56	0.45	0.370	0.314	0.242	0.201	0.105

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

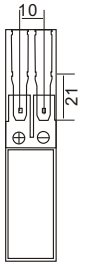
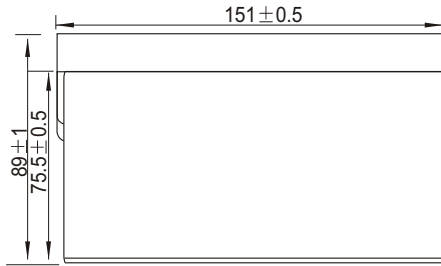
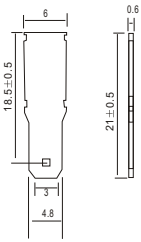
F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	6.96	5.40	4.52	3.95	3.09	2.29	1.94	1.16	0.91	0.74	0.61	0.53	0.426	0.357	0.196
1.80V/cell	9.25	6.82	5.39	4.60	3.59	2.65	2.16	1.25	0.97	0.79	0.65	0.56	0.451	0.368	0.198
1.75V/cell	10.20	7.38	5.81	4.90	3.69	2.72	2.25	1.29	0.98	0.80	0.66	0.58	0.458	0.377	0.200
1.70V/cell	10.93	7.86	6.12	5.11	3.82	2.82	2.31	1.32	1.01	0.82	0.68	0.59	0.464	0.384	0.203
1.65V/cell	11.88	8.40	6.46	5.39	4.00	2.86	2.35	1.33	1.05	0.85	0.69	0.60	0.470	0.391	0.205
1.60V/cell	12.80	8.91	6.79	5.68	4.19	2.97	2.36	1.39	1.08	0.87	0.71	0.61	0.473	0.395	0.206



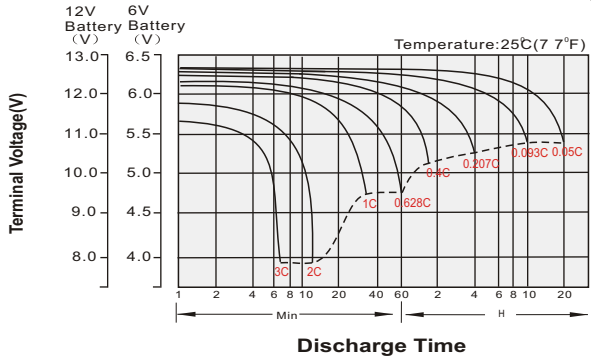
# Dimensions

## Terminal

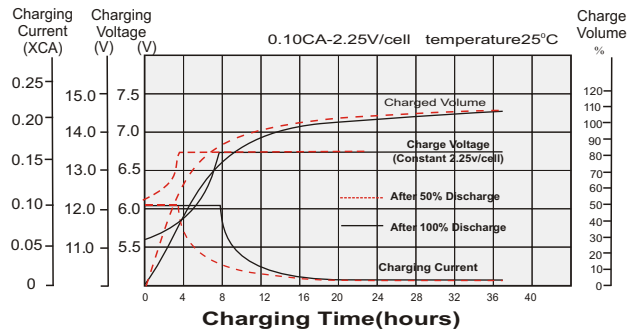
Unit: mm [inches]



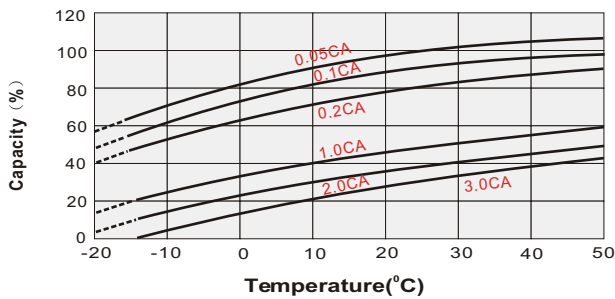
## Discharge Characteristics



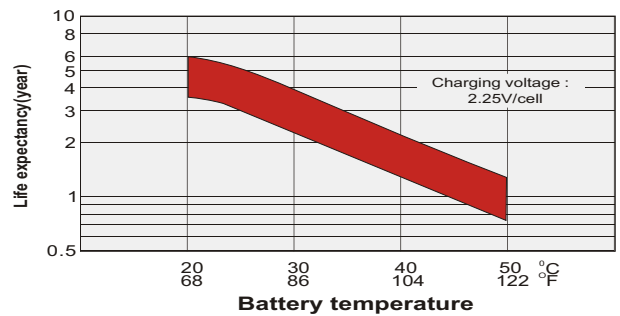
## Float Charging Characteristics



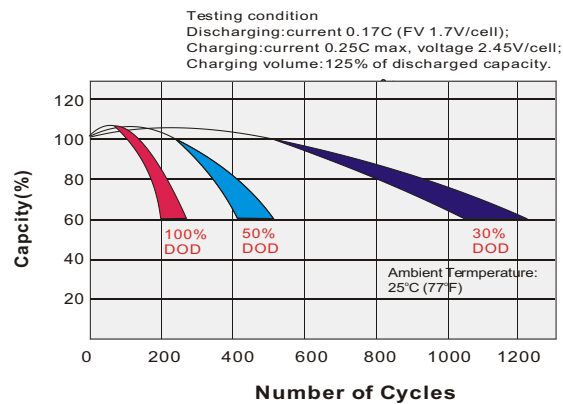
## Temperature Effects in Relation to Batter Capacity



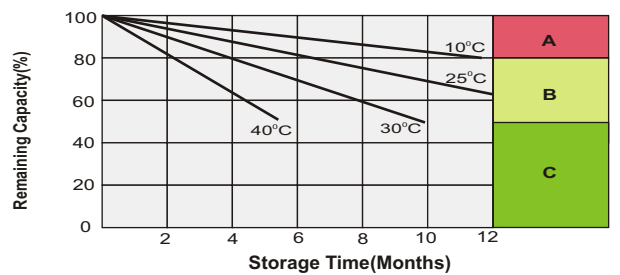
## Effect of Temperature on Long Term Float Life



## Cycle Life in Relation to Depth of Discharge



## Self Discharge Characteristics



- A** No supplementary charge required (Carry out supplementary charge before use if 100% capacity is required.)
- B** Supplementary charge required before use. Optional charging way as below:  
1. Charged for above 3 days at limited current 0.25CA and constant voltage 2.25V/cell.  
2. Charged for above 20 hours at limited current 0.25CA and constant voltage 2.45V/cell.  
3. Charged for 8-10 hours at limited current 0.05CA.
- C** Supplementary charge may often fail to recover the capacity. The battery should never be left standing till this is reached.