



valve regulated  
sealed lead acid type  
rechargeable battery

⊕⊖ **sunbattery**<sup>®</sup>

# SB12-45(12V45AH) (SB12-45V0)








## Specification

Nominal Voltage	12V	
Nominal Capacity(20HR)	45.0AH	
Dimension	Length	197±2mm (7.76 inches)
	Width	165±2mm (6.50 inches)
	Container Height	170±2mm (6.69 inches)
	Total Height (with Terminal)	170±2mm (6.69 inches)
Approx Weight	Approx 14.5 Kg (32.0 lbs)	
Terminal	T6	
Container Material	ABS	
Rated Capacity	45.0AH/2.25A	(20hr, 1.80V/cell, 25°C/77°F)
	42.0AH/4.20A	(10hr, 1.80V/cell, 25°C/77°F)
	36.6AH/7.31A	(5hr, 1.75V/cell, 25°C/77°F)
	32.7AH/10.9A	(3hr, 1.75V/cell, 25°C/77°F)
	26.0AH/26.0A	(1hr, 1.60V/cell, 25°C/77°F)
Max. Discharge Current	540A (5s)	
Internal Resistance	Approx 9.0mΩ	
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 13.5A. Voltage 14.4V~15.0V at 25°C(77°F)Temp. Coefficient -30mV/°C	
	Standby Use	
Capacity affected by Temperature	No limit on Initial Charging Current Voltage	
	13.5V~13.8V at 25°C(77°F)Temp. Coefficient -20mV/°C	
	40°C (104°F)	103%
Self Discharge	25°C (77°F)	100%
	0°C (32°F)	86%
	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.	
Life expectancy	8-12 years at 25°C with charge voltage 2.25V/cell.	

## Applications

- ◆ UPS and EPS
- ◆ Emergency light
- ◆ Railway signal and aircraft signal system
- ◆ Marine and power stations Alarm and security system
- ◆ Electronic apparatus and equipment
- ◆ Communication power supply, DC power supply

 MH45680	 ETL SEMKO	
 ISO14001	 ISO9001	 G112060

Comform to:  
IEC60896-21&22 and/or IEC61427

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

F.V/Time	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	49.1	41.3	36.7	30.4	23.5	20.1	13.0	9.77	8.01	6.74	5.90	4.73	4.07	2.17
1.80V/cell	56.2	46.4	40.5	33.0	25.3	21.2	14.0	10.5	8.51	7.14	6.25	4.98	4.20	2.25
1.75V/cell	63.9	52.3	44.8	35.9	27.6	23.1	14.5	10.9	8.80	7.31	6.45	5.15	4.31	2.30
1.70V/cell	72.1	58.0	49.5	39.2	29.7	24.4	15.3	11.5	9.20	7.73	6.76	5.37	4.48	2.36
1.65V/cell	77.5	62.1	52.6	41.4	31.5	25.3	15.9	12.0	9.56	7.97	6.99	5.55	4.60	2.44
1.60V/cell	85.2	68.1	57.1	44.1	32.7	26.0	16.3	12.3	9.77	8.17	7.14	5.64	4.70	2.48

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

F.V/Time	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	91.8	77.9	69.8	58.6	45.6	39.1	25.5	19.2	15.8	13.3	11.7	9.44	8.14	4.34
1.80V/cell	103.8	86.4	76.1	62.6	48.8	41.1	27.2	20.6	16.7	14.1	12.4	9.91	8.38	4.49
1.75V/cell	116.0	96.2	83.3	67.5	52.7	44.6	28.2	21.3	17.2	14.4	12.7	10.2	8.60	4.60
1.70V/cell	128.1	105.2	91.3	73.3	56.6	47.0	29.7	22.4	18.0	15.2	13.3	10.6	8.92	4.71
1.65V/cell	136.3	111.8	96.4	76.7	59.3	48.3	30.6	23.2	18.6	15.6	13.7	11.0	9.16	4.85
1.60V/cell	146.5	120.4	103.6	81.3	61.3	49.5	31.2	23.7	19.0	15.9	14.0	11.1	9.33	4.92

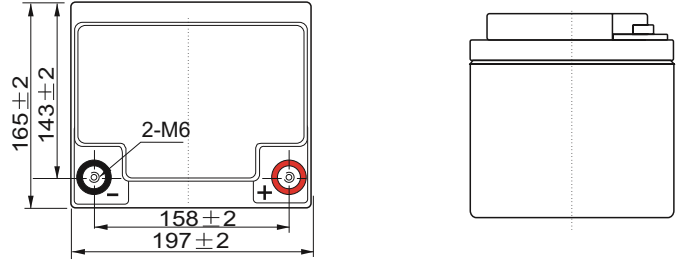
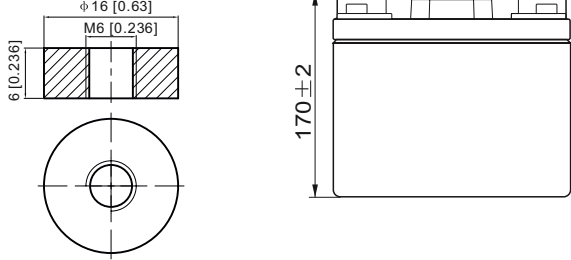


Specifications subject to change without notice.

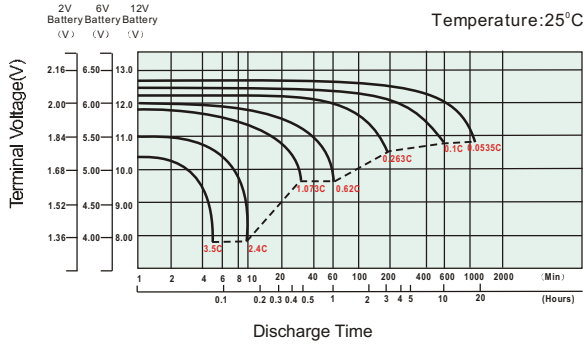
## Dimensions

### T6 Terminal

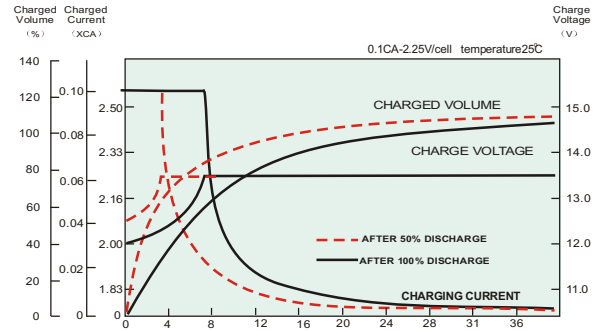
Unit: mm [inches]



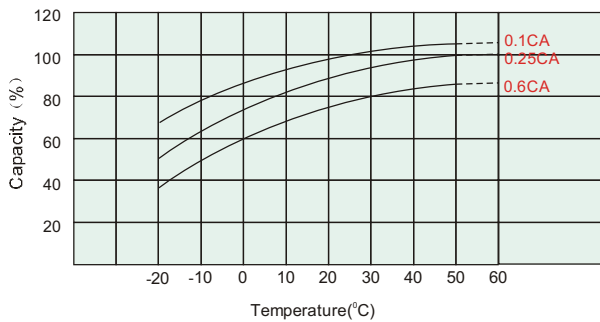
## Discharge Characteristics



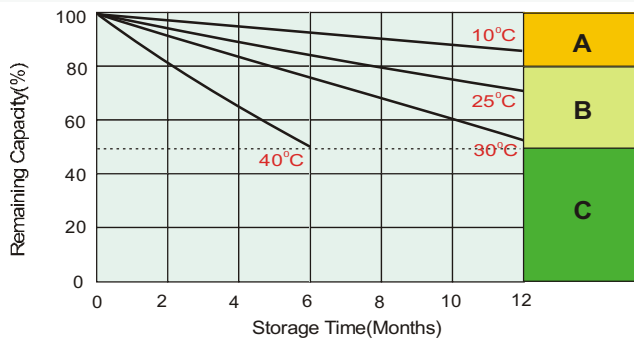
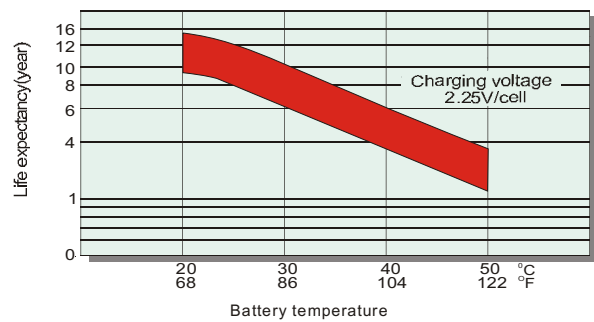
## Float Charging Characteristics



## Temperature Effects in Relation to Battery Capacity



## Effect of Temperature on Long Term Float Life



## 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.