

# SM Solar

## SM12-45HT



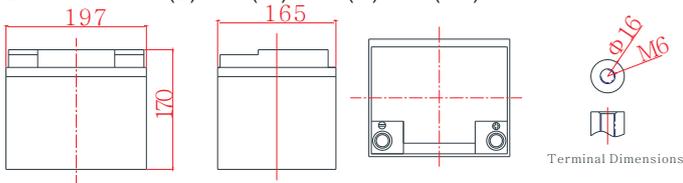
## Deep cycle GEL Battery (12v 45AH)

### General Features

- › Nanosilica colloidal electrolyte and high tin positive plate alloy design to enhance battery performance
- › Relatively rich electrolyte, high temperature and low temperature performance is superior
- › Long cycle life, excellent deep cycle discharge ability
- › Excellent charge acceptance ability
- › Precision sealing technology
- › Long life



Dimension: 197(L)×165(W)×170(H)×170(TH) Unit: mm



### Applications

- › Solar / wind energy and other new energy storage
- › UPS/EPS
- › Power systems
- › Telecommunications system
- › Emergency lighting、Auto control system
- › Other general purpose

### Specification

Nominal Voltage	12V
Nominal Capacity	45Ah
Design life	12 years
Terminal	M6
Approx. Weight	Approx 13.2kg
Container Material	ABS
Rated Capacity	45.0Ah → 10Hour Rate (4.50A to 10.8V)
	35.4Ah → 3Hour Rate (11.8A to 10.8V)
	28.9Ah → 1Hour Rate (28.9A to 10.5V)
Internal resistance	Full charged at 25°C: 12.0 mΩ
Max. Discharge Current	540A(5S)
Operating Temperature	Discharge: -40 ~60°C(-40~ 140°F)
	Charge: -20 ~50°C(-4~ 122°F)
	Storage: -20 ~50°C(-4~ 122°F)
Charge current:	Max. 11.3A ; Recom.4.5A
Charge Method (25 °C)	Float Charge:13.5-13.8V,recom.13.5V(-18mV/ °C)
	Equalize charge:13.8-14.1V,recom.14.1V(-24mV/ °C)
	Cycle charge:14.4-15.0V,recom.14.4V(-30mV/ °C)
Self discharge	3% of capacity declined per month at 25°C

### Constant Current Discharge Characteristics Unit: A (25°C, 77°F)

FV/Time	15min	30min	1h	2h	3h	5h	8h	10h	20h
1.60V	82.6	50.3	29.7	17.0	12.4	8.30	5.45	4.66	2.45
1.65V	80.1	49.4	29.5	16.9	12.2	8.21	5.40	4.61	2.44
1.70V	78.4	48.6	29.3	16.8	12.1	8.12	5.36	4.57	2.43
1.75V	75.8	48.1	28.9	16.6	11.9	8.04	5.32	4.52	2.42
1.80V	70.7	46.0	28.1	16.2	11.8	7.82	5.27	4.50	2.40
1.85V	63.1	42.0	26.1	15.4	11.2	7.43	5.05	4.34	2.36

### Constant Power Discharge Characteristics Unit: W/cell (25°C, 77°F)

FV/Time	15min	30min	1h	2h	3h	5h	8h	10h	20h
1.60V	146	90.9	56.1	32.2	23.5	15.7	10.6	8.96	4.85
1.65V	143	90.1	55.7	32.1	23.2	15.6	10.5	8.87	4.83
1.70V	141	90.1	55.3	32.0	23.1	15.5	10.5	8.78	4.81
1.75V	140	89.7	54.8	31.8	22.9	15.4	10.4	8.69	4.78
1.80V	133	87.5	54.4	31.7	22.9	15.3	10.3	8.60	4.76
1.85V	119	80.2	50.5	30.3	21.7	14.6	9.9	8.46	4.72

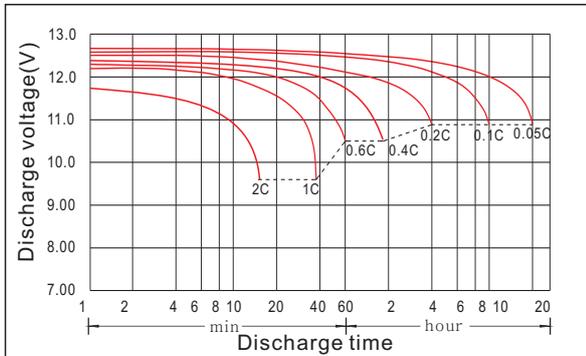
Disclaimer: Manufacturers have the right to self-modify the parameters of the product updates, please keep in touch with manufacturers to obtain the latest information.

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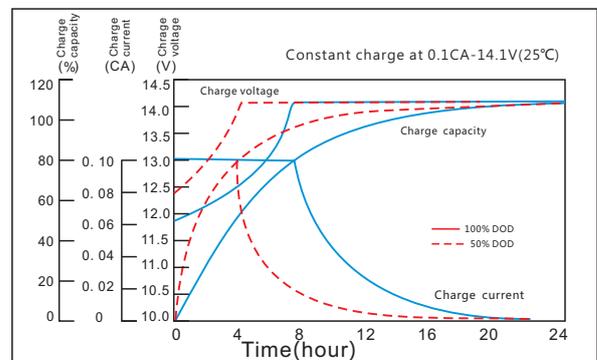
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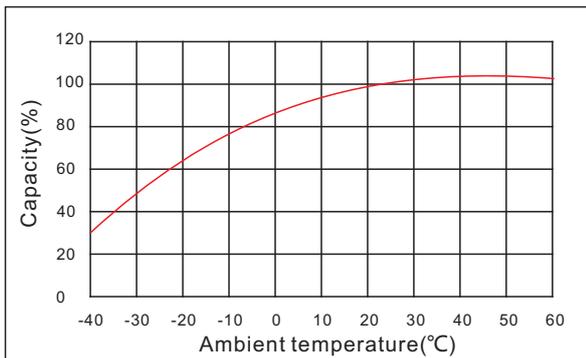
Discharge characteristic



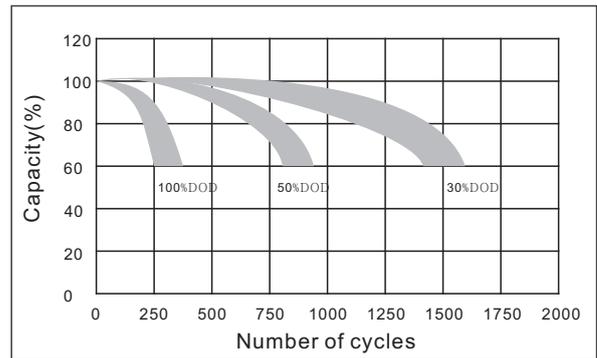
Charging characteristic



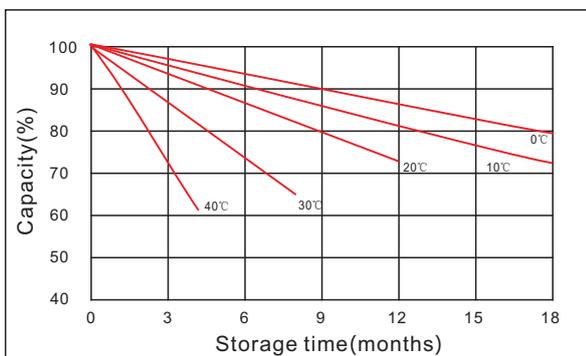
The effect of temperature on capacity



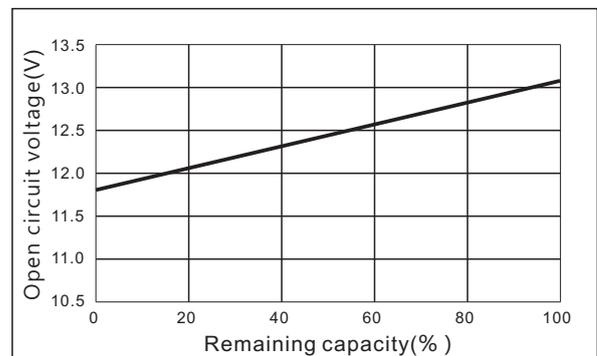
The effect of discharge depth on cycle life



Curves of self-discharge



Curves of open circuit voltage vs. capacity



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