SM Solar® SM50-12

12V50Ah

SM50-12 is a general purpose battery up to 10 years in standby service or more than 260 cycles at 100% discharge in cycle service. As with all SM batteries, all are rechargeable, highly efficient, leak proof and maintenance free.

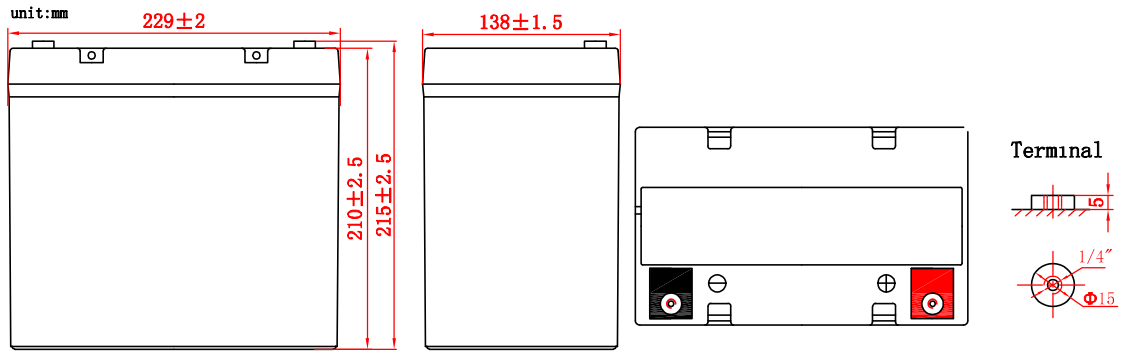
▶ Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	50Ah @ 10hr-rate to 1.8V per cell @25°C (77°F)
Weight	Approx. 15.5kg
Maximum Discharge Current	500A(5sec)
Internal Resistance	Approx. 8.5mΩ
Operating Temperature Range	Discharge: -15°C~50°C (5°F~122°F) Charge: -15°C~40°C(5°F~104°F) Storage:-15°C~40°C (5°F~104°F)
Nominal Operating Temperature Range	25°C±3°C (77°F±5°F)
Float Charging Voltage	13.5 to 13.8 VDC/unit Average at 25°C (77°F)
Recommended Maximum Charging Current Limit	15A
Equalization and Cycle Service	14.4 to 15.0 VDC/unit Average at 25°C (77°F)
Self Discharge	SM Batteries can be stored for more than 6 months at 25°C(77°F). Please charge batteries before using. For higher temperatures the time interval will be shorter.
Terminal	L terminal to accept M6 nut & bolt
Container Material	ABS(UL 94-HB) & Flammability resistance of (UL 94-V0) can be available upon request.

▶ Dimensions :

Unit: mm

Overall Height (H)	Container height (h)	Length (L)	Width (W)
215±2.5	210±2.5	229±2	138±1.5



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

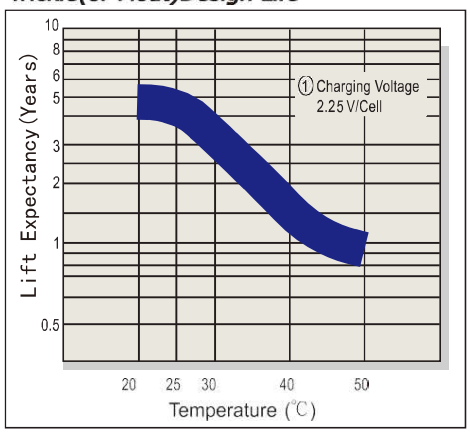
F.V/Time	5min	15min	30min	1h	3h	5h	10h	20h
1.60V	185	99	54.3	32.3	14.8	9.68	5.21	2.74
1.67V	175	97	53.3	31.9	14.6	9.54	5.18	2.73
1.7V	165	95	52.0	31.3	14.3	9.33	5.15	2.71
1.75V	153	91	50.3	30.4	13.8	9.03	5.11	2.68
1.8V	138	85	48.1	29.1	13.1	8.65	5.00	2.64
1.85V	120	75	45.1	27.0	12.0	7.97	4.79	2.55

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

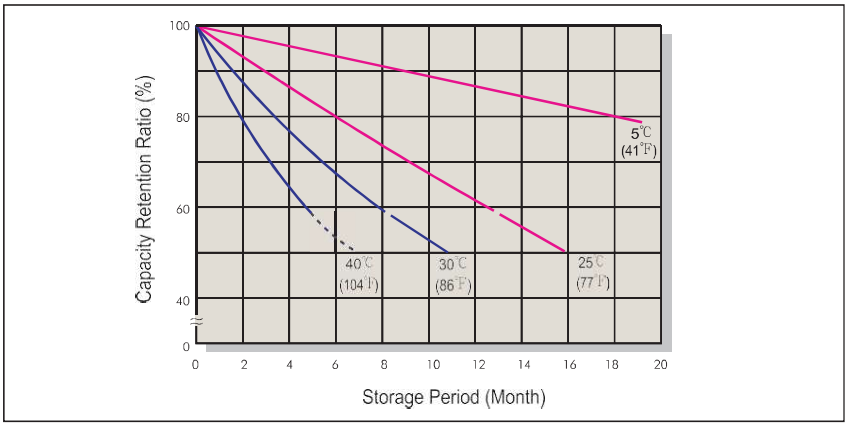
F.V/Time	5min	15min	30min	1h	3h	5h	10h	20h
1.60V	288	183	104.9	61.4	29.2	18.9	10.25	5.43
1.67V	275	174	103.0	60.7	28.7	18.7	10.20	5.42
1.7V	256	162	100.9	59.7	28.1	18.3	10.13	5.39
1.75V	232	149	97.9	58.5	27.2	17.8	10.01	5.33
1.8V	199	131	93.7	56.9	25.8	17.0	9.80	5.24
1.85V	155	110	87.9	53.6	23.9	15.9	9.47	5.09

MK50-12 12V50Ah

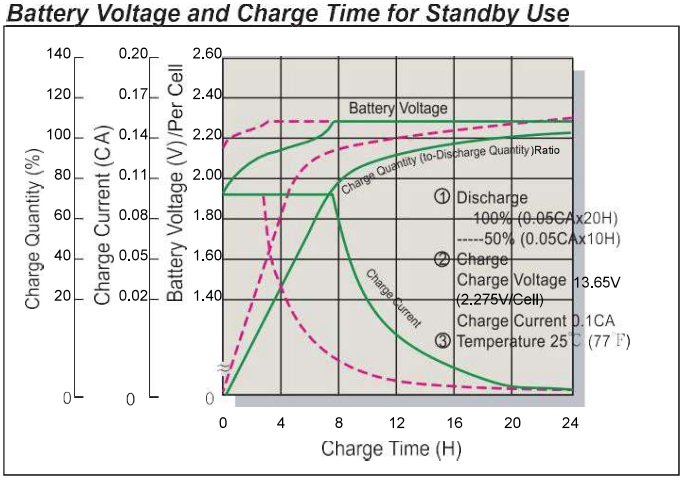
Trickle(or Float)Design Life



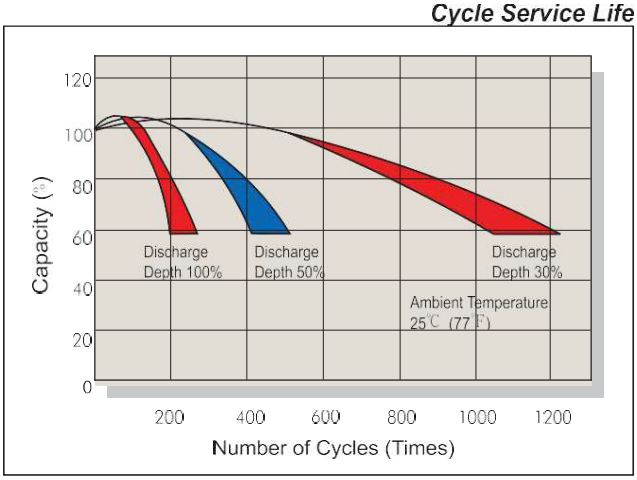
Capacity Retention Characteristic



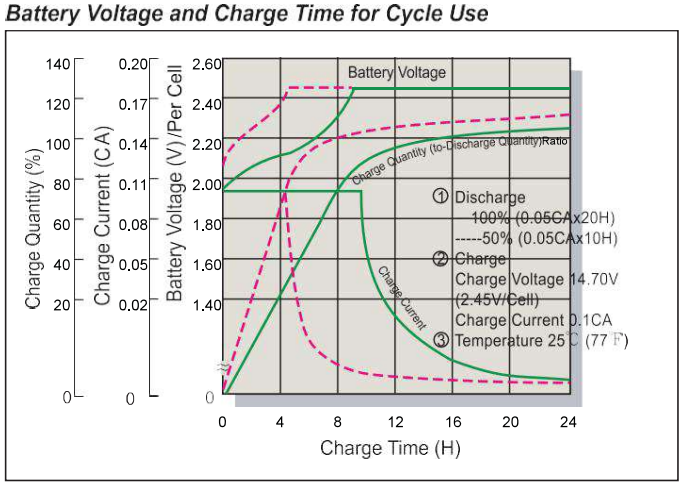
Battery Voltage and Charge Time for Standby Use



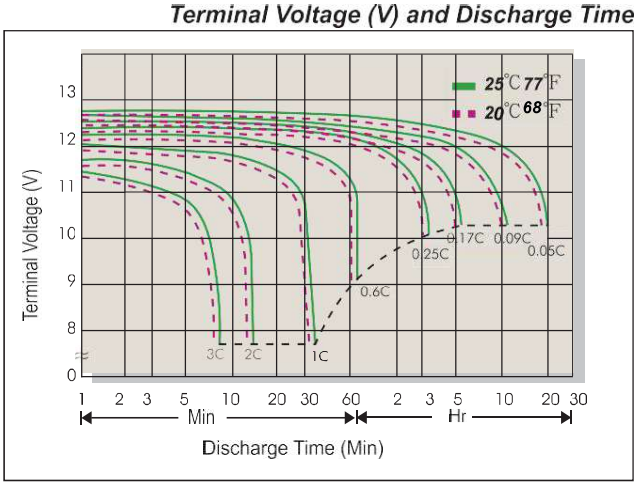
Cycle Service Life



Battery Voltage and Charge Time for Cycle Use



Terminal Voltage (V) and Discharge Time



Charging Procedures

Application	Charge Voltage(V/Cell)			Max.Charge Current
	Temperature	Set Point	Allowable Range	
Cycle Use	25℃(77℉)	2.45	2.40~2.50	0.3C
Standby	25℃(77℉)	2.275	2.25~2.30	

Discharge Current VS. Discharge Voltage

Final Discharge Voltage V/Cell	1.75	1.70	1.65	1.60
Discharge Current(A)	0.2C>(A)	0.2C<(A)<0.5C	0.5C<(A)<1.0C	(A)>1.0C

Effect of temperature on capacity (20HR)

Temperature	Dependency of Capacity (20HR)
40℃	102%
25℃	100%
0℃	85%
-15℃	65%

Self-discharge Characteristics

Charge Voltage(V/Cell)	Charge Voltage(V/Cell)
3 Months	91%
6 Months	82%
12 Months	64%