

SL12-21 Deep Cycle battery provides superior high integrity and reliability. It is specially designed for frequent cycling charge and discharge. By using strong grids, thick plate and special active material are designed for repeated deep-discharge applications. It is designed for up to 5 years in standby service at 25 degree celcius or more than 260 cycles at 100% discharge in cycle service.



Battery case: Flame-retardant



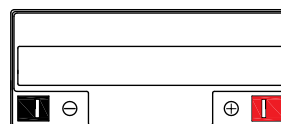
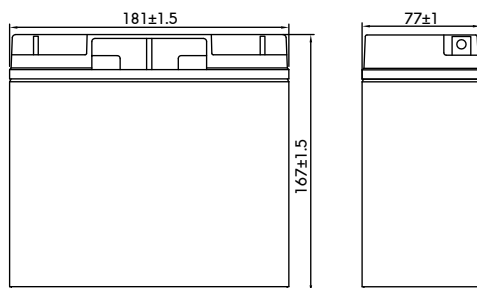
Specification

Cells Per Unit	6
Voltage Per Unit	12
Capacity	21Ah @20hr-rate to 1.75V per cell @25°C
Weight	Approx. 5.95 kg
Max. Discharge Current	300A (5sec)
Internal Resistance	Approx. 10.5mΩ
Operating Temperature Range	Discharge: -15°C~50°C Charge: -15°C~40°C Storage: -15°C~40°C
Nominal Operating Temperature Range	25°C±3°C
Float Charging Voltage	13.5 to 13.8VDC per unit @25°C
Recommended Max. Charging Current Limit	6.6A
Equalization and Cycle Service	14.4 to 15VDC per unit @25°C
Self Discharge	Battery can be stored for more than 6 months at 25°C, self-discharge rate less than 3% per month. Charging before use is recommended. For higher temperature, the time interval will be shorter.
Terminal	L Terminal to accept M5 nut & bolt
Container Material	Flammability resistance of UL94-V0

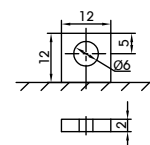
Dimension

Dimension: 181 (L) x 76.5 (W) x 167 (H) x 167 (TH)

Unit: mm



Terminal



Constant Current Discharge Characteristics : A (25°C)

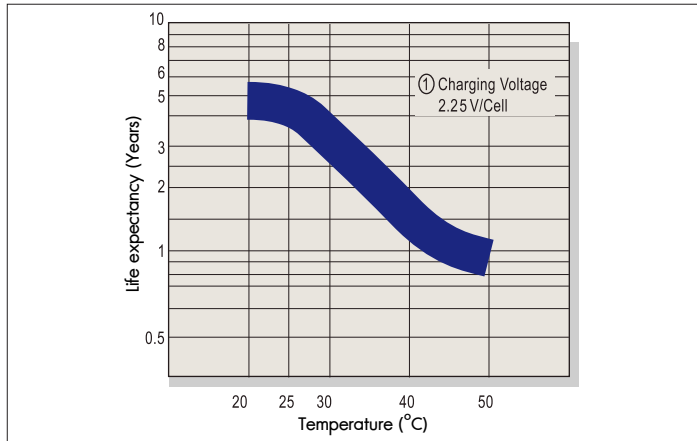
F.V/Time	5min	15min	30min	1h	3h	5h	10h	20h
1.60V	72.4	40.6	23.34	12.90	5.55	3.74	2.093	1.122
1.67V	71.0	39.9	23.20	12.79	5.53	3.72	2.085	1.118
1.70V	68.9	38.7	22.90	12.60	5.50	3.67	2.075	1.111
1.75V	65.2	37.0	22.39	12.28	5.43	3.60	2.057	1.100
1.80V	58.5	34.1	21.47	11.68	5.25	3.47	1.996	1.076
1.85V	45.5	28.8	19.85	10.70	4.86	3.24	1.892	1.034

Constant Current Discharge Characteristics : W/Cell (25°C)

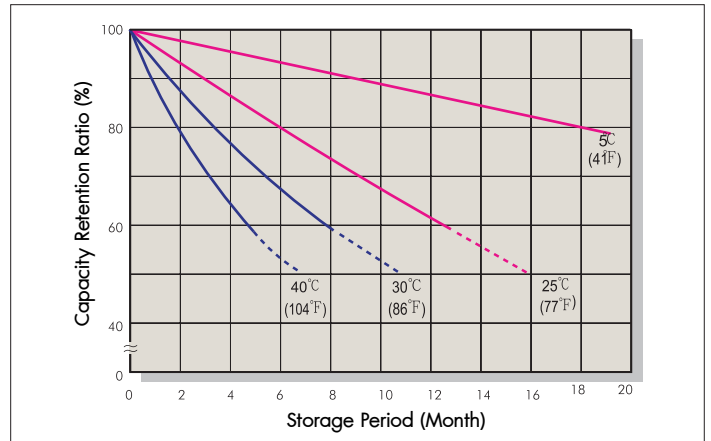
F.V/Time	5min	15min	30min	1h	3h	5h	10h	20h
1.60V	122.7	78.1	45.10	24.53	10.95	7.29	4.12	2.226
1.67V	117.0	74.1	44.88	24.34	10.90	7.28	4.11	2.223
1.70V	109.3	69.2	44.43	24.05	10.82	7.21	4.08	2.210
1.75V	98.8	63.3	43.55	23.61	10.69	7.08	4.03	2.184
1.80V	84.6	56.0	41.81	22.84	10.34	6.83	3.91	2.138
1.85V	65.9	47.1	38.65	21.27	9.68	6.44	3.74	2.062

All mentioned values are average values

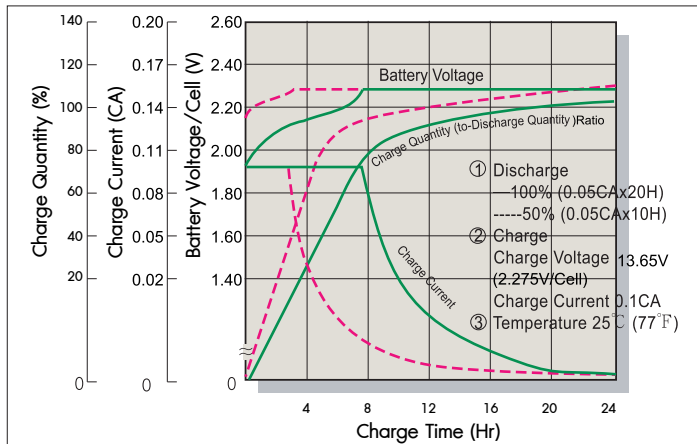
Trickle (or Float) Design Life



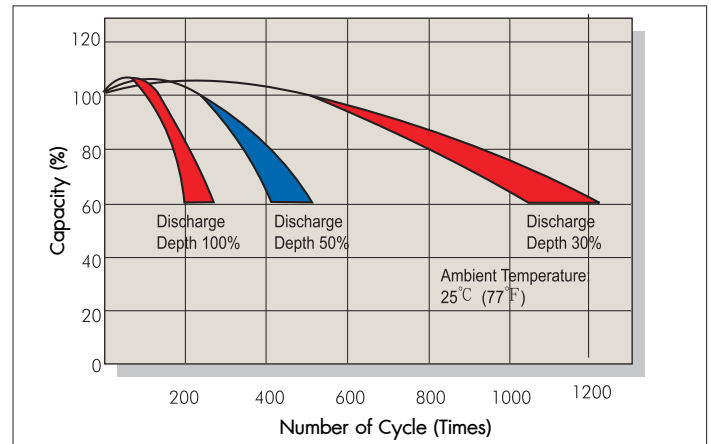
Capacity Retention Characteristic



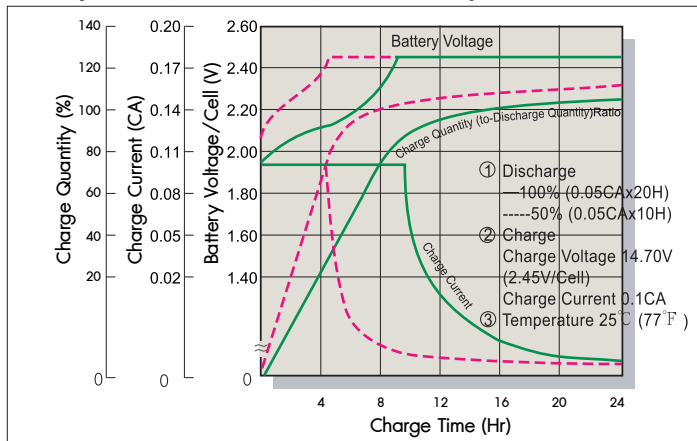
Battery Voltage and Charge Time for Standby Use



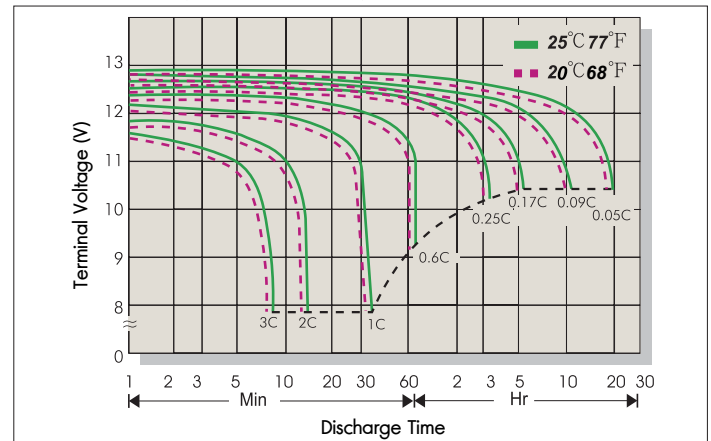
Cycle Service Life



Battery Voltage and Charge Time for Cycle Use



Terminal Voltage and Discharge Time



Charging Procedures

Application	Charge Voltage (V/cell)			Max. Charge Current
	Temperature	Set Point	Allowable Range	
Cycle Use	25°C	25°C	2.40~2.50	0.3C
Standby Use	25°C	25°C	2.25~2.30	

Discharge Current VS Discharge Voltage

Final Discharge Voltage (V/cell)	1.75	1.7	1.65	1.6
Discharge Current (A)	0.2C>1A	0.2C<1A<0.5C	0.2C<1A<1C	(A)>1C

Effect of Temperature on Capacity (20HR)

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

Self-discharge Characteristics

Charge Voltage (V/cell)	Preservation Rate
3 months	91%
6 months	82%
9 months	64%