

# LP SERIES-General Purpose

## LP12-5.4 (12V5.4AH)

### Specification

Nominal Voltage	12V
Nominal Capacity(20HR)	5.4AH
Dimensions	Length 90 ± 1mm (3.54 inches)
	Width 70 ± 1mm (2.76 inches)
	Container Height 101 ± 2mm (3.98 inches)
	Total Height (with Terminal) 107 ± 2mm (4.21 inches)
Approx Weight	Approx 1.68 kg (3.70lbs)
Terminal	T1/T2
Container Material	ABS
Rated Capacity	5.40 AH/0.27A (20hr, 1.80V/cell, 25°C/77°F)
	5.02 AH/0.502A (10hr, 1.80V/cell, 25°C/77°F)
	4.54 AH/0.907A (5hr, 1.75V/cell, 25°C/77°F)
	3.96 AH/1.32A (3hr, 1.75V/cell, 25°C/77°F)
	3.28 AH/3.28A (1hr, 1.60V/cell, 25°C/77°F)
Max. Discharge Current	81A (5s)
Internal Resistance	Approx 30mΩ
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 1.62A. Voltage 14.4V~15.0V at 25°C (77°F) Temp. Coefficient -30mV/°C
	No limit on Initial Charging Current Voltage 13.5V~13.8V at 25°C (77°F) Temp. Coefficient -20mV/°C
Standby Use	40°C (104°F) 103%
	25°C (77°F) 100%
	0°C (32°F) 86%
Capacity affected by Temperature	Leoch LP 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.
Self Discharge	



### 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



### 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	10.4	7.23	5.96	5.17	4.15	3.19	2.61	1.59	1.21	0.998	0.847	0.734	0.583	0.485	0.267
1.80V/cell	12.7	8.62	6.91	5.85	4.59	3.48	2.81	1.69	1.28	1.05	0.883	0.766	0.605	0.502	0.270
1.75V/cell	15.1	9.75	7.62	6.37	4.90	3.69	2.95	1.77	1.32	1.08	0.907	0.785	0.621	0.512	0.273
1.70V/cell	17.1	10.8	8.25	6.84	5.15	3.84	3.08	1.84	1.36	1.11	0.930	0.804	0.630	0.521	0.278
1.65V/cell	18.9	11.6	8.73	7.18	5.37	3.99	3.21	1.89	1.40	1.13	0.950	0.819	0.641	0.528	0.281
1.60V/cell	19.8	12.1	9.09	7.40	5.52	4.08	3.28	1.95	1.43	1.16	0.970	0.835	0.654	0.537	0.283

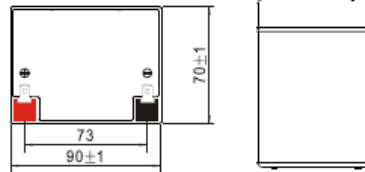
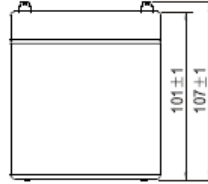
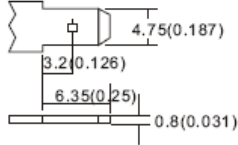
### Constant Power Discharge (Watts/cell) at 25 °C (77°F)

F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	19.6	13.8	11.5	10.0	8.09	6.25	5.44	3.15	2.41	1.99	1.69	1.47	1.17	0.978	0.540
1.80V/cell	23.8	16.3	13.2	11.2	8.89	6.77	5.50	3.33	2.52	2.08	1.76	1.53	1.21	1.01	0.543
1.75V/cell	27.8	18.2	14.4	12.1	9.43	7.16	5.76	3.46	2.59	2.13	1.79	1.55	1.23	1.02	0.544
1.70V/cell	31.2	19.9	15.4	12.9	9.84	7.39	5.97	3.58	2.67	2.17	1.83	1.58	1.25	1.03	0.551
1.65V/cell	33.9	21.1	16.1	13.5	10.2	7.63	6.17	3.66	2.72	2.21	1.86	1.61	1.26	1.04	0.556
1.60V/cell	35.1	21.7	16.6	13.7	10.3	7.72	6.26	3.75	2.77	2.25	1.89	1.63	1.28	1.05	0.556

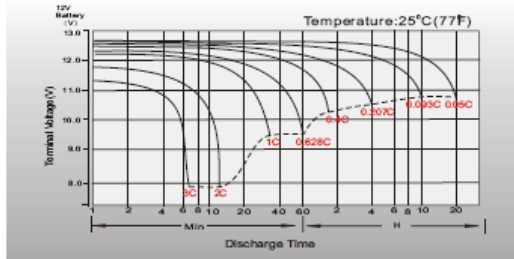
## Dimensions

### T1 Terminal

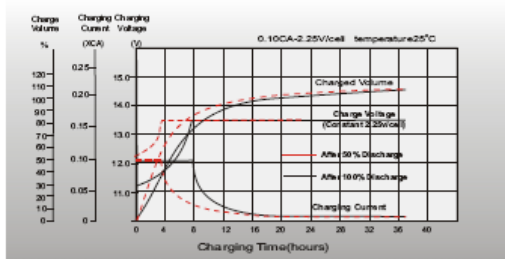
Unit: mm [inches]



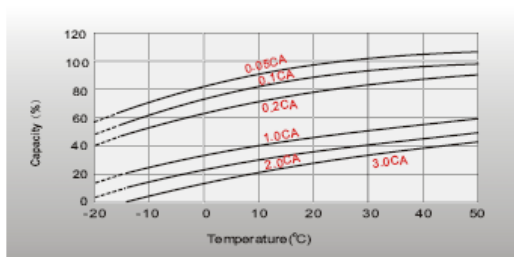
## Discharge Characteristics



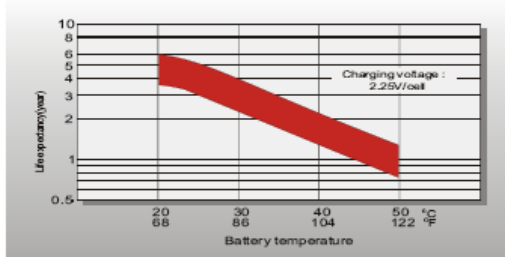
## Float Charging Characteristics



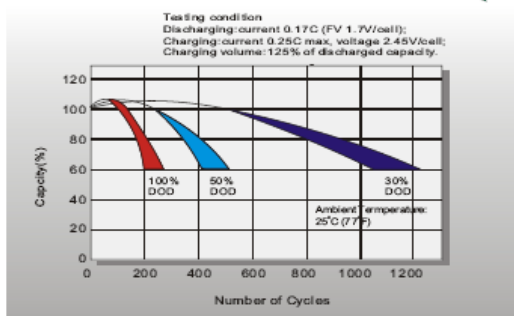
## Temperature Effects in Relation to Battery Capacity



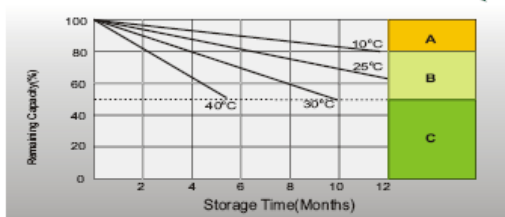
## Effect of Temperature on Long Term Float Life



## 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 30 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.