

# LP SERIES-General Purpose

## LP12-2.9 (12V2.9AH)

### Specification

Nominal Voltage	12V	
Nominal Capacity(20HR)	2.9AH	
Dimensions	Length	79±1mm (3.11 inches)
	Width	56±1mm (2.20 inches)
	Container Height	99±1mm (3.90 inches)
	Total Height (with Terminal)	105±2mm (4.13 inches)
Approx Weight	Approx 1.1 kg (2.43lbs)	
Terminal	T1	
Container Material	ABS	
Rated Capacity	2.90 AH/0.145A	(20hr, 1.80V/cell, 25°C/77°F)
	2.70 AH/0.270A	(10hr, 1.80V/cell, 25°C/77°F)
	2.44 AH/0.487A	(5hr, 1.75V/cell, 25°C/77°F)
	2.13 AH/0.710A	(3hr, 1.75V/cell, 25°C/77°F)
	1.76 AH/1.76A	(1hr, 1.60V/cell, 25°C/77°F)
Max. Discharge Current	43.5A (5s)	
Internal Resistance	Approx 55mΩ	
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 0.87A. Voltage	
	14.4V~15.0V at 25°C(77°F)Temp. Coefficient -30mV/°C	
Standby Use	No limit on Initial Charging Current Voltage	
	13.5V~13.8V at 25°C(77°F)Temp. Coefficient -20mV/°C	
Capacity affected by Temperature	40°C (104°F)	103%
	25°C (77°F)	100%
	0°C (32°F)	86%
Self Discharge	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.	



### 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	5.57	3.88	3.20	2.78	2.23	1.71	1.40	0.856	0.652	0.536	0.455	0.394	0.313	0.260	0.144
1.80V/cell	6.85	4.63	3.71	3.14	2.47	1.87	1.51	0.909	0.685	0.563	0.474	0.411	0.325	0.270	0.145
1.75V/cell	8.11	5.24	4.09	3.42	2.63	1.98	1.59	0.948	0.710	0.581	0.487	0.421	0.334	0.275	0.146
1.70V/cell	9.20	5.78	4.43	3.67	2.77	2.06	1.65	0.987	0.733	0.595	0.499	0.432	0.339	0.280	0.149
1.65V/cell	10.1	6.21	4.69	3.85	2.88	2.14	1.72	1.02	0.751	0.608	0.510	0.440	0.344	0.283	0.151
1.60V/cell	10.6	6.47	4.88	3.98	2.96	2.19	1.76	1.05	0.769	0.623	0.521	0.449	0.351	0.288	0.152

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

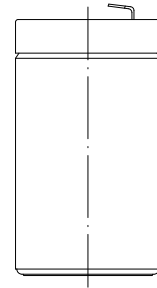
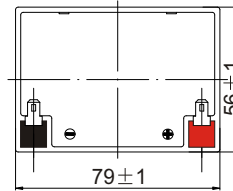
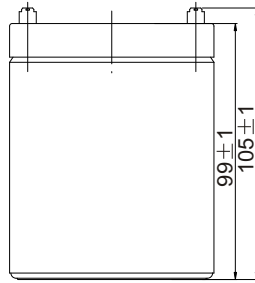
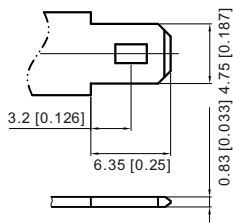
F.V/Time	5min	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.85V/cell	10.5	7.39	6.16	5.38	4.35	3.36	2.76	1.69	1.30	1.07	0.910	0.790	0.630	0.525	0.290
1.80V/cell	12.8	8.74	7.07	6.04	4.77	3.64	2.95	1.79	1.35	1.12	0.943	0.820	0.649	0.540	0.291
1.75V/cell	14.9	9.78	7.73	6.52	5.07	3.84	3.09	1.86	1.39	1.14	0.963	0.835	0.663	0.547	0.292
1.70V/cell	16.8	10.7	8.29	6.95	5.29	3.97	3.20	1.92	1.43	1.17	0.981	0.850	0.669	0.553	0.296
1.65V/cell	18.2	11.3	8.67	7.22	5.46	4.10	3.32	1.97	1.46	1.19	0.998	0.863	0.676	0.558	0.298
1.60V/cell	18.8	11.7	8.93	7.37	5.56	4.15	3.36	2.01	1.49	1.21	1.01	0.875	0.687	0.565	0.299



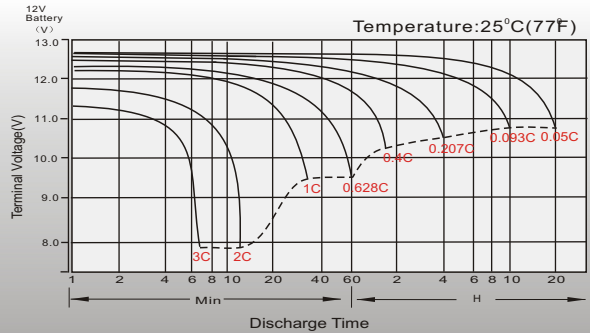
## Dimensions

### T1 Terminal

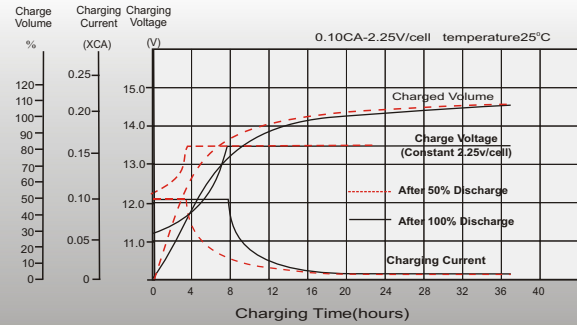
Unit: mm [inches]



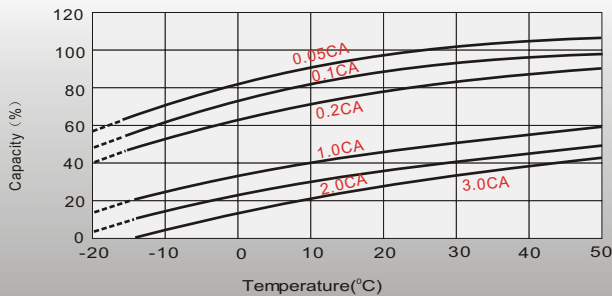
## Discharge Characteristics



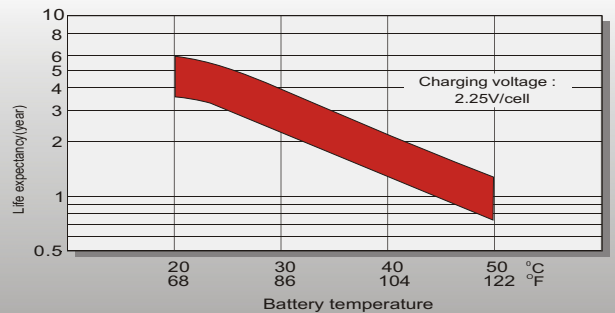
## Float Charging Characteristics



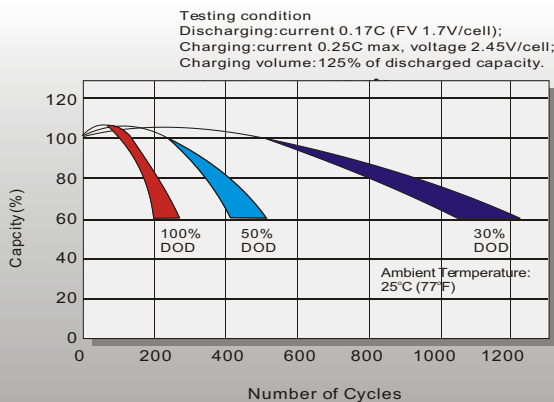
## Temperature Effects in Relation to Battery Capacity



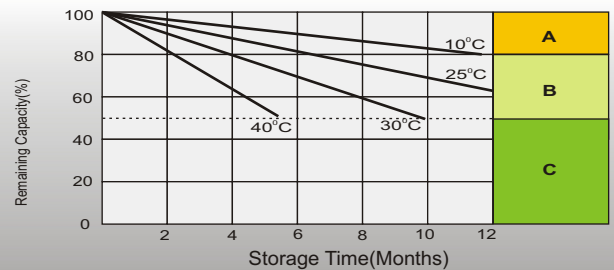
## Effect of Temperature on Long Term Float Life



## 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 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.

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