# LOP SERIES-Outside Plant Purpose

## LOP12-38FR (12V, 36AH)

## Specification

| | |
|---|---|
| Nominal Voltage | 12V |
| Nominal Capacity(8HR) | 36.0AH |
| Dimensions | Length 197±2mm (7.76 inches)<br>Width 165±2mm (6.50 inches)<br>Container Height 170±2mm (6.69 inches)<br>Total Height (with Terminal) 170±2mm (6.69 inches) |
| Approx Weight | Approx 13.3 Kg (29.33lbs) |
| Terminal | T6 with M6 bolt insert standard: Optional T12 with M5 insert or T10-1 flag terminal. |
| Container Material | ABS Flame Retardant Jars to UL94 V-0 Standard |
| Rated Capacity | 40.0 AH/2.00A (20hr ,1.80V/cell,25°C/77°F)<br>37.5 AH/3.75A (10hr,1.80V/cell,25°C/77°F)<br>35.7 AH/4.46A (8hr,1.75V/cell,25°C/77°F)<br>29.6 AH/9.88A (3hr,1.75V/cell,25°C/77°F)<br>23.6 AH/23.6A (1hr,1.60V/cell,25°C/77°F) |
| Max. Discharge Current | 456A (5s) |
| Internal Resistance | Approx 10.0mΩ |
| Operating Temp.Range | Discharge : -15～50°C (5～122°F)<br>Charge : 0～40°C (32～104°F )<br>Storage : -15～40°C (5～104°F) |
| Nominal Operating Temp. Range | 25±3°C (77±5°F ) |
| Standby (Float) Use | No limit on Initial Charging Current.<br>13.5V~13.8V at 25°C(77°F)Temp. Coefficient -20mV/°C |
| Cycle Use | Initial Charging Current less than11.4A.<br>14.4V~15.0V at 25°C(77°F)Temp. Coefficient -30mV/°C |
| Capacity affected by Temperature | 40°C (104°F) 103%<br>25°C ( 77°F) 100%<br>0°C ( 32°F) 86% |
| Self Discharge | Leoch LOP 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. |

NEBS Level III Certified

## Applications

- *Telecommunication Power supply, DC power supply*
- *Emergency light*
- *Railway signal and aircraft signal system back-up.*
- *Marine and power stations*
- *Alarm and security system*
- *Electronic apparatus and equipment*
- *UPS and EPS*

## Constant Current Discharge (Amperes) at 25 °C (77°F )

| F.V/Time | 10min | 15min | 20min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.85V/cell | 44.5 | 37.4 | 33.2 | 27.5 | 21.2 | 18.2 | 11.8 | 8.84 | 7.24 | 6.09 | 5.34 | 4.17 | 3.55 | 1.94 |
| 1.80V/cell | 50.9 | 42.0 | 36.7 | 29.9 | 22.9 | 19.2 | 12.6 | 9.50 | 7.70 | 6.46 | 5.66 | 4.41 | 3.75 | 2.00 |
| 1.75V/cell | 57.8 | 47.3 | 40.5 | 32.5 | 25.0 | 20.9 | 13.1 | 9.88 | 7.97 | 6.61 | 5.83 | 4.46 | 3.81 | 2.01 |
| 1.70V/cell | 65.3 | 52.5 | 44.7 | 35.5 | 26.9 | 22.1 | 13.9 | 10.4 | 8.32 | 6.99 | 6.11 | 4.52 | 3.86 | 2.02 |
| 1.65V/cell | 70.1 | 56.2 | 47.6 | 37.4 | 28.5 | 22.9 | 14.4 | 10.8 | 8.65 | 7.21 | 6.33 | 4.63 | 3.92 | 2.04 |
| 1.60V/cell | 77.1 | 61.6 | 51.7 | 39.9 | 29.6 | 23.6 | 14.7 | 11.1 | 8.84 | 7.39 | 6.46 | 5.69 | 3.98 | 2.05 |

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

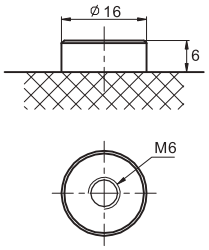
| F.V/Time | 10min | 15min | 20min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.85V/cell | 83.0 | 70.5 | 63.2 | 53.0 | 41.2 | 35.4 | 23.1 | 17.4 | 14.3 | 12.1 | 10.6 | 8.44 | 7.28 | 3.89 |
| 1.80V/cell | 93.9 | 78.1 | 68.9 | 56.7 | 44.1 | 37.2 | 24.6 | 18.6 | 15.1 | 12.7 | 11.2 | 8.85 | 7.49 | 4.02 |
| 1.75V/cell | 104.9 | 87.0 | 75.4 | 61.1 | 47.7 | 40.3 | 25.5 | 19.3 | 15.6 | 13.0 | 11.5 | 9.14 | 7.69 | 4.11 |
| 1.70V/cell | 115.9 | 95.2 | 82.6 | 66.3 | 51.2 | 42.5 | 26.8 | 20.2 | 16.3 | 13.7 | 12.0 | 9.49 | 7.97 | 4.20 |
| 1.65V/cell | 123.3 | 101.1 | 87.2 | 69.4 | 53.7 | 43.7 | 27.7 | 21.0 | 16.8 | 14.1 | 12.4 | 9.80 | 8.20 | 4.33 |
| 1.60V/cell | 132.6 | 109.0 | 93.7 | 73.6 | 55.5 | 44.8 | 28.2 | 21.4 | 17.2 | 14.4 | 12.6 | 9.97 | 8.35 | 4.40 |

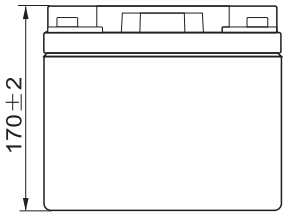
Specifications subject to change without notice.

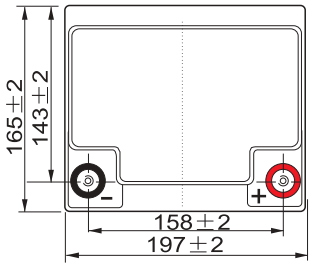
## Dimensions

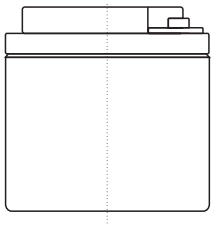
### T6 Terminal

Unit: mm

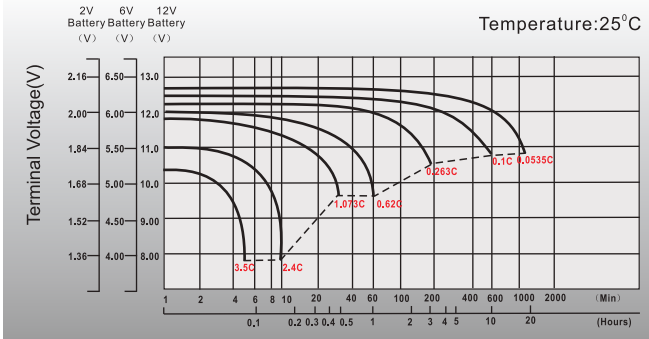


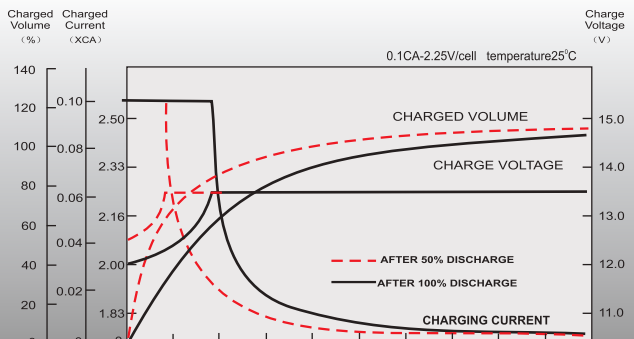



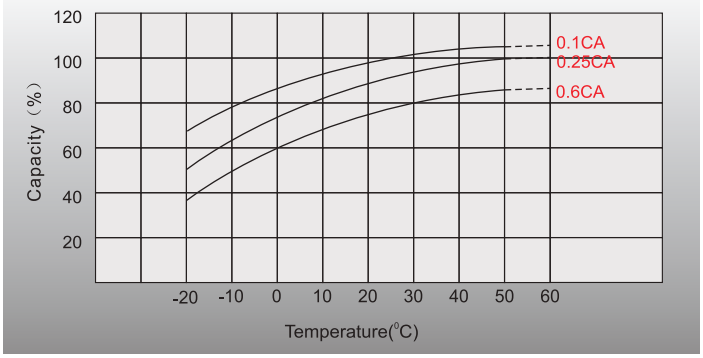
## Discharge Characteristics



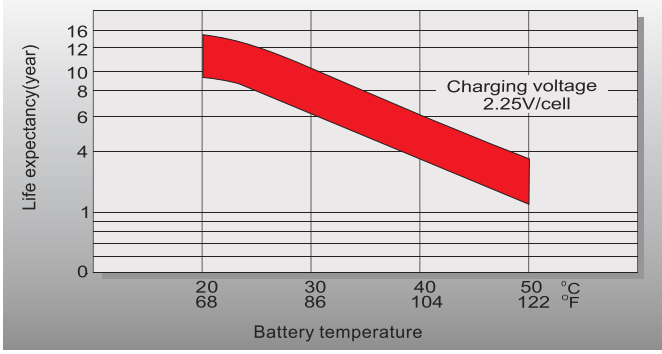

## Float Charging Characteristics

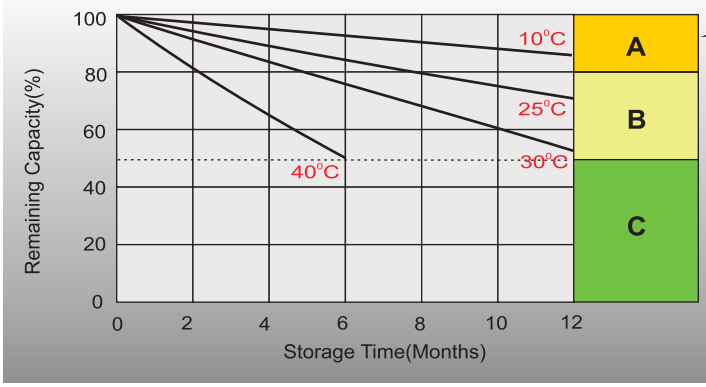



## Temperature Effects in Relation to Battery Capacity




## Effect of Temperature on Long Term Float Life




## 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 limted current 0.25CA and constant volatge 2.25V/cell.
2.Charged for above 20hours at limted current 0.25CA and constant volatge 2.45V/cell.
3.Charged for 8~10hours at limted current 0.05CA.

**C** Supplementary charge may often fail to recover the capacity.
The battery should never be left standing till this is reached.

## Sales Office


**China sales office:**
5th Floor,Xinbaohui Bldg.,Nanhai Blvd.,
Nanshan,Shenzhen, China. 518052
Tel: +86-755-86036060 (100 lines)
Fax: +86-755-26067269
E-mail:export@leoch.com
Http://www.leoch.com

**North America sales office:**
19751 Descartes, Unit A,
Foothill Ranch, CA 92610, USA
Tel: 949-588-5853
Fax: 949-588-5966
E-mail: sales@leoch.us
Http://www.leoch.us

**Europe sales office:**
9B Wheatstone Court. Waterwells
Business Park, Gloucester, GL2-2AQ,
UK United Kingdom
Tel: +44(0) 1452 729428 / 1452 729696
Fax: +44 (0)1452-690125
E-mail: Sales.Europe@leoch.com

**HongKong sales office:**
Workshop C, 33/F, TML Tower,
No. 3 Hoi Shing Road, Tsuen Wan,
New Territories, Hong Kong
Tel: +852 35786666
Fax: +852 21170016
E-mail: sales.hk@leoch.com

**Singapore sales office:**
No. 1 Tech Park Crescent,
Singapore 638131
Tel: +65 68636078
Fax: +65 68636079
Email sales.sg@Leoch.com
Http://www.leoch.com


Publication No.:LB-LOP-01-19