

# LOP SERIES-Outside Plant Purpose

## LOP12-90FT-FR (12V, 90.4AH)

### Specification

|                                  |  |                               |
|----------------------------------|--|-------------------------------|
| Nominal Voltage                  | 12V  |                               |
| Nominal Capacity(8HR, 25°C)      | 90.4 AH  |                               |
| Dimensions                       | Length   | 394±2mm (15.51 inches)        |
|                                  | Width  | 110±2mm ( 4.33 inches)        |
|                                  | Container Height   | 286±2mm (11.26 inches)        |
|                                  | Total Height (with Terminal)   | 286±2mm (11.26 inches)        |
| Approx Weight                    | Approx 32.0 kg (70.55 lbs)   |                               |
| Terminal                         | Front Terminal Adapter with M6 insert Bolt.  |                               |
| Container Material               | ABS Flame retardant jars to UL94V-0 Standard   |                               |
| Rated Capacity                   | 99.0AH/4.95A   | (20hr , 1.80V/cell,25°C/77°F) |
|                                  | 94.3 AH/9.43A  | (10hr, 1.80V/cell,25°C/77°F)  |
|                                  | 90.4AH/11.3A   | (8hr, 1.75V/cell,25°C/77°F)   |
|                                  | 73.5AH/24.5A   | (3hr, 1.75V/cell,25°C/77°F)   |
|                                  | 58.2 AH/58.2A  | (1hr, 1.67V/cell,25°C/77°F)   |
| Max. Discharge Current           | 800A (5s)  |                               |
| Internal Resistance              | Approx 8mΩ   |                               |
| Operating Temp.Range             | -20~55°C (-4~131°F)  |                               |
| Standby (Float) Use              | No limit on Initial Charging Current.  |                               |
|                                  | 2.25V~2.30V at 25°C(77°F)Temp. Coefficient -20mV/°C  |                               |
| Cycle Use                        | Initial Charging Current less than 25A.  |                               |
|                                  | 2.40V~2.50V at 25°C(77°F)Temp. Coefficient -30mV/°C  |                               |
| Capacity affected by Temperature | 40°C (104°F)   | 103%                          |
|                                  | 25°C ( 77°F)   | 100%                          |
|                                  | 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

- ◆ *Tele-communication central station (wired line or wireless)*
- ◆ *Power system communication, military communication, etc.*
- ◆ *Network communication including: data transmission, television signal transmission, etc.*
- ◆ *Uninterruptible Power System (Long duration UPS for Telecom & Utility)*



### 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  |
|-------------------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|
| <b>1.85V/cell</b> | 141.2 | 117.6 | 98.9  | 76.0  | 56.7  | 47.9 | 29.3 | 22.1 | 17.6 | 14.7 | 12.8 | 10.4 | 8.84 | 4.74 |
| <b>1.80V/cell</b> | 166.6 | 136.8 | 113.9 | 85.9  | 63.4  | 53.0 | 31.9 | 23.9 | 19.0 | 15.8 | 13.7 | 11.1 | 9.43 | 4.95 |
| <b>1.75V/cell</b> | 178.6 | 144.7 | 119.5 | 89.8  | 66.0  | 55.0 | 32.8 | 24.5 | 19.4 | 16.2 | 14.0 | 11.3 | 9.58 | 5.02 |
| <b>1.70V/cell</b> | 190.5 | 152.9 | 125.8 | 93.7  | 68.5  | 57.0 | 33.9 | 25.3 | 19.9 | 16.6 | 14.3 | 11.5 | 9.73 | 5.08 |
| <b>1.67V/cell</b> | 197.4 | 157.8 | 129.3 | 96.1  | 70.0  | 58.2 | 34.5 | 25.6 | 20.2 | 16.8 | 14.5 | 11.6 | 9.82 | 5.15 |
| <b>1.60V/cell</b> | 213.6 | 169.1 | 137.7 | 101.5 | 73.6  | 61.0 | 35.9 | 26.6 | 20.9 | 17.3 | 14.9 | 11.9 | 10.0 | 5.26 |

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

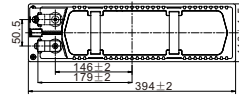
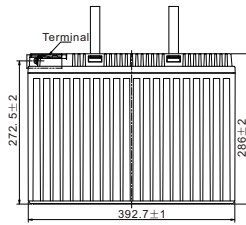
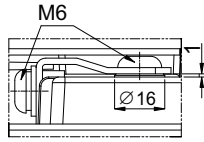
| F.V/Time          | 10min | 15min | 20min | 30min | 45min | 1h    | 2h   | 3h   | 4h   | 5h   | 6h   | 8h   | 10h  | 20h  |
|-------------------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|
| <b>1.85V/cell</b> | 270.4 | 226.0 | 190.5 | 146.9 | 109.9 | 93.1  | 57.2 | 43.3 | 34.6 | 29.0 | 25.2 | 20.5 | 17.5 | 9.42 |
| <b>1.80V/cell</b> | 315.0 | 260.1 | 217.4 | 164.6 | 122.0 | 102.3 | 62.0 | 46.7 | 37.2 | 31.1 | 26.9 | 21.9 | 18.6 | 9.93 |
| <b>1.75V/cell</b> | 333.6 | 272.3 | 225.9 | 170.6 | 126.0 | 105.4 | 63.5 | 47.7 | 37.9 | 31.7 | 27.4 | 22.3 | 18.9 | 10.1 |
| <b>1.70V/cell</b> | 351.2 | 284.5 | 235.3 | 176.5 | 129.8 | 108.5 | 65.2 | 48.9 | 38.8 | 32.3 | 27.9 | 22.6 | 19.2 | 10.2 |
| <b>1.67V/cell</b> | 361.2 | 294.2 | 240.5 | 180.0 | 132.0 | 110.2 | 66.1 | 49.5 | 39.2 | 32.7 | 28.2 | 22.8 | 19.3 | 10.2 |
| <b>1.60V/cell</b> | 382.9 | 307.0 | 252.0 | 187.7 | 137.4 | 114.5 | 68.3 | 51.0 | 40.3 | 33.5 | 28.9 | 23.3 | 19.7 | 10.4 |

Specifications subject to change without notice.

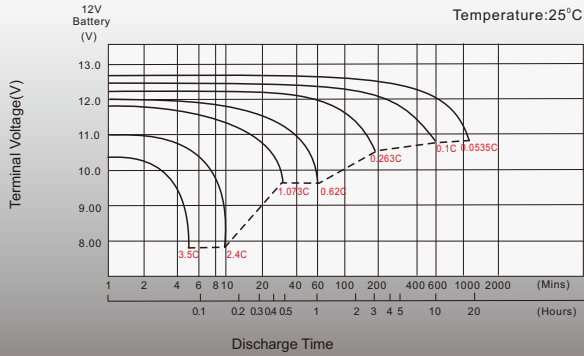
# Dimensions

## M6 Front Terminal

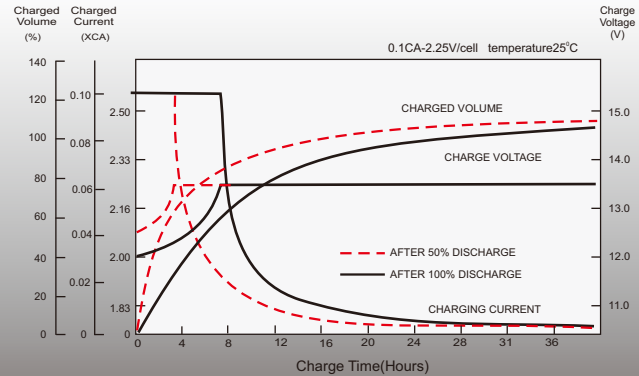
Unit: mm [inches]



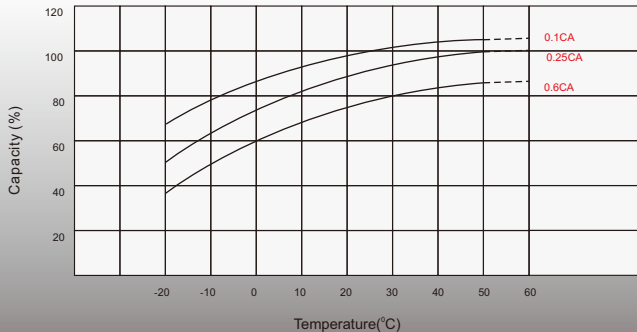
## Discharge Characteristics



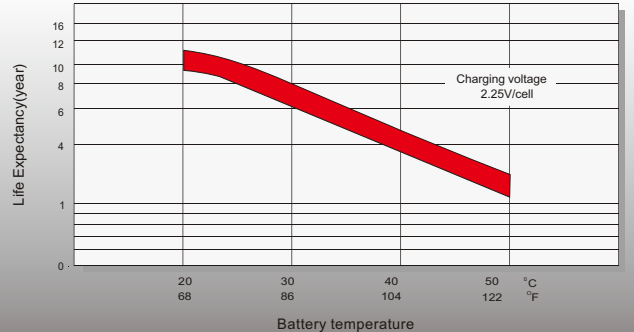
## Float Charging Characteristics



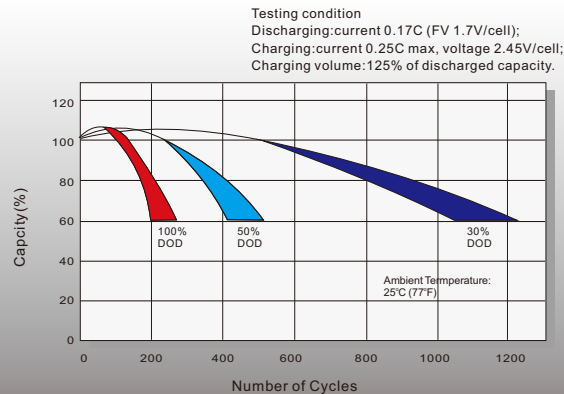
## Temperature Effects in Relation to Battery Capacity



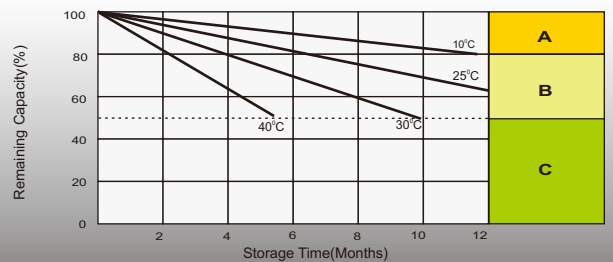
## Effect of Temperature on Long Term Float Life



## 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.

## Sales Office

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