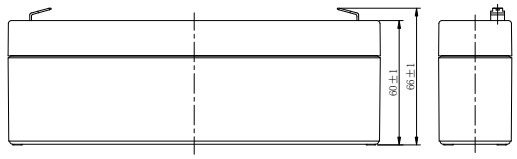
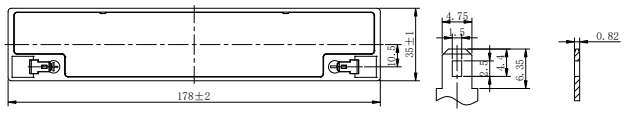
# LP SERIES-GENERAL PURPOSE

LP12-1.9 (12V1.9Ah)

LEOCH BATTERY




T1

## CHARACTERISTICS

| Item | | Specifications |
|---|---|---|
| Rated Voltage | | 12V |
| Nominal Capacity (25℃) | $C_{20}$,1.75V/cell | 1.9Ah |
| Dimension | Length | 178mm (7.01inches) |
| | Width | 35mm (1.38inches) |
| | Container Height | 60mm (2.36inches) |
| | Total Height | 66mm (2.60inches) |
| Approx Weight | | 0.85kg (1.87lbs) |
| Terminal | | T1 |
| Container Material | | ABS (UL94 HB or V-0 optional) |
| Short-circuit current | | 53.2A |
| Internal Resistance (25℃) | | Approx 110 mΩ (Fully charged) |
| Operating Temp. Range | Discharge | -15~50℃ (5~122°F) |
| | Charge | -20~40℃ (-4~104°F) |
| | Storage | -15~40℃ (5~104°F) |
| Nominal Operating Temp. Range | | 25±3℃ (77±5°F) |
| Max.Charging Current (25℃) | | 0.3C |
| Charge voltage (25℃) | Standby Use | Cycle Use |
| | 2.25-2.30V/cell | 2.35-2.45V/cell |
| Temp. Coeffcient | -3mV/cell/℃ | -5mV/cell/℃ |
| Effect of temp. to Capacity | 40℃ (104°F) | 103% |
| | 25℃ (77°F) | 100% |
| | 0℃ (32°F) | 86% |
| Self Discharge | ≤3% per month at 25°C (77°F).<br>LP series batteries may be stored up to 6 months at 25°C (77°F) and then a freshening charge is required.<br>For higher temperatures the time interval will be shorter. | |

## DISCHARGE TABLE

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

| F.V/Time | 5min | 10min | 15min | 20min | 30min | 45min | 1h | 1.5h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.85V/cell | 5.30 | 3.31 | 2.71 | 2.18 | 1.62 | 1.21 | 1.10 | 0.813 | 0.648 | 0.474 | 0.383 | 0.326 | 0.279 | 0.220 | 0.194 | 0.103 |
| 1.80V/cell | 5.70 | 3.51 | 2.84 | 2.26 | 1.67 | 1.24 | 1.13 | 0.830 | 0.660 | 0.482 | 0.389 | 0.331 | 0.284 | 0.223 | 0.197 | 0.104 |
| 1.75V/cell | 6.01 | 3.65 | 2.94 | 2.33 | 1.71 | 1.27 | 1.15 | 0.846 | 0.672 | 0.490 | 0.394 | 0.335 | 0.287 | 0.226 | 0.199 | 0.105 |
| 1.70V/cell | 6.29 | 3.80 | 3.04 | 2.39 | 1.75 | 1.30 | 1.17 | 0.860 | 0.682 | 0.497 | 0.400 | 0.340 | 0.290 | 0.228 | 0.201 | 0.106 |
| 1.67V/cell | 6.51 | 3.91 | 3.11 | 2.44 | 1.78 | 1.32 | 1.19 | 0.871 | 0.690 | 0.502 | 0.403 | 0.343 | 0.293 | 0.230 | 0.202 | 0.107 |
| 1.60V/cell | 6.91 | 4.07 | 3.22 | 2.51 | 1.83 | 1.35 | 1.22 | 0.890 | 0.704 | 0.511 | 0.411 | 0.348 | 0.297 | 0.233 | 0.204 | 0.108 |

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

| F.V/Time | 5min | 10min | 15min | 20min | 30min | 45min | 1h | 1.5h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.85V/cell | 10.0 | 6.31 | 5.19 | 4.19 | 3.12 | 2.34 | 2.15 | 1.59 | 1.27 | 0.932 | 0.755 | 0.644 | 0.553 | 0.436 | 0.386 | 0.206 |
| 1.80V/cell | 10.7 | 6.64 | 5.41 | 4.33 | 3.21 | 2.40 | 2.19 | 1.62 | 1.29 | 0.946 | 0.765 | 0.653 | 0.561 | 0.442 | 0.390 | 0.208 |
| 1.75V/cell | 11.1 | 6.86 | 5.56 | 4.43 | 3.27 | 2.44 | 2.23 | 1.64 | 1.31 | 0.958 | 0.774 | 0.660 | 0.566 | 0.447 | 0.393 | 0.210 |
| 1.70V/cell | 11.5 | 7.08 | 5.71 | 4.53 | 3.34 | 2.49 | 2.26 | 1.67 | 1.33 | 0.971 | 0.783 | 0.668 | 0.572 | 0.451 | 0.398 | 0.212 |
| 1.67V/cell | 11.8 | 7.24 | 5.83 | 4.62 | 3.39 | 2.52 | 2.29 | 1.68 | 1.34 | 0.979 | 0.790 | 0.673 | 0.577 | 0.454 | 0.400 | 0.213 |
| 1.60V/cell | 12.3 | 7.45 | 5.99 | 4.73 | 3.47 | 2.57 | 2.33 | 1.71 | 1.36 | 0.994 | 0.802 | 0.682 | 0.584 | 0.460 | 0.406 | 0.214 |

# LP SERIES-GENERAL PURPOSE

LP12-1.9 (12V1.9Ah)

LEOCH BATTERY

## APPLICATIONS

- Uninterruptable Power Supply (UPS)
- Electric Power System (EPS)
- Emergency backup power supply
- Alarm and security system
- Communication power supply
- DC power supply
- Auto control system

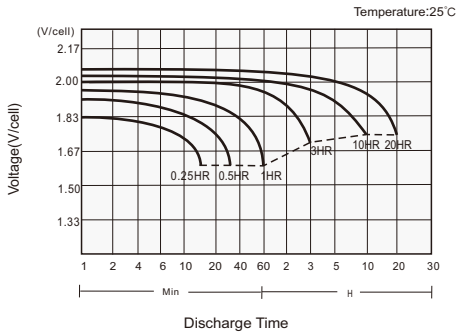
## GENERAL FEATURES

- 5 years design life (25℃)
- Lead calcium alloy, sealed design, no watering required
- Puncture resistant micro-porous glass mat separators extend life
- Unique technology optimizes power capacity, cell consistency, and long-term reliability
- Designed for a wide range of applications

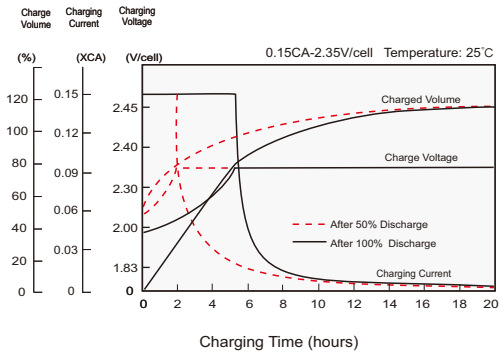
## STANDARDS

- Compliance with IEC 60896 standards, EU Battery Directive
- UL,CE Approved
- Manufactured in Leoch®IATF 16949, ISO 45001, ISO 9001 and ISO 14001 certified production facilities

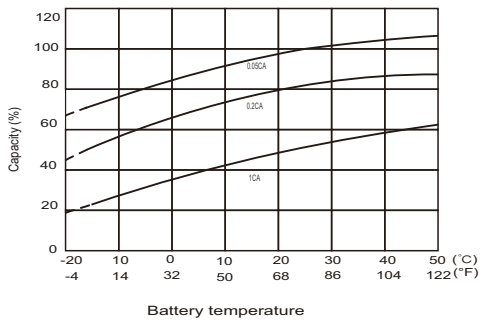
## Discharge Characteristics



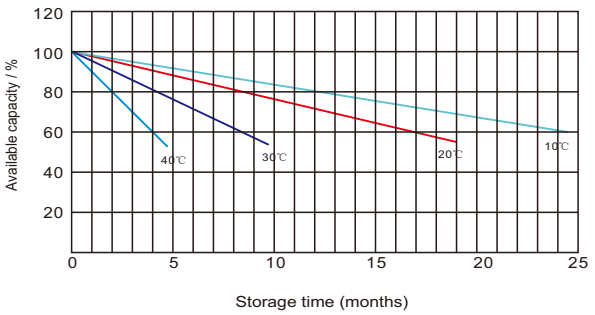

## Charging Characteristics




## Effects of Temperature on Capacity




## Self Discharge Characteristics





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