



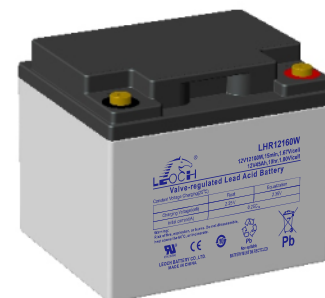
LHR Series-High Rate

LHR12160W(12V160W)

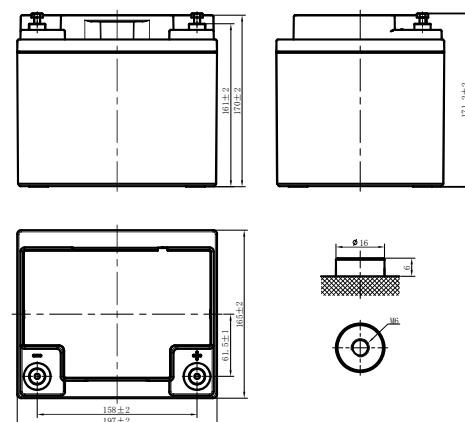


Specifications

| | | | |
|--|----------------------|---------------------------|------------------|
| Rated Voltage | 12V | | |
| Nominal Rate ($W_{15}, 1.67V/cell$) | 160W | | |
| Nominal Capacity($C_{10}, 1.80V/cell$) | 45Ah | | |
| Dimension | Length | 197±2mm (7.76 inches) | |
| | Width | 165±2mm (6.50 inches) | |
| | Container Height | 170±2mm (6.69 inches) | |
| | Total Height | 170±2mm (6.69 inches) | |
| Approx. Weight | 14.2 Kg (31.3 lbs) | | |
| Terminal | M6 | | |
| Container Material | ABS: UL 94 HB or V-0 | | |
| Rated Capacity (25°C) | 45.0 Ah | (10hr, 4.50A, 1.80V/cell) | |
| | 41.8 Ah | (8hr, 5.23A, 1.80V/cell) | |
| | 39.6 Ah | (5hr, 7.92A, 1.75V/cell) | |
| | 36.0 Ah | (3hr, 12.0A, 1.75V/cell) | |
| | 29.0 Ah | (1hr, 29.0A, 1.67V/cell) | |
| Max. Discharge Current | 540A | | |
| Internal Resistance (25°C) | Approx. 9.0mΩ | | |
| Operating Temp. Range | Discharge | -20 ~ 55°C (-4 ~ 131°F) | |
| | Charge | -20~ 40°C (-4 ~ 104°F) | |
| | Storage | -15 - 50°C (5 ~ 122°F) | |
| Nominal Operating Temp. Range | 25±3°C (77±5°F) | | |
| Max. Charging Current(25°C) | 11.25A | | |
| Charge voltage(25°C) | Charge voltage | Temp. Coefficient | |
| | Float | 2.25 ~2.30V/cell | -3mV/cell/°C |
| Effect of temp. to Capacity | Equalization | 2.30~2.40V/cell | -4mV/cell/°C |
| | | 40°C (104°F) | 106% |
| | | 25°C (77°F) | 100% |
| Self Discharge | | 0°C (32°F) | 86% |
| | | | ≤3%/month @ 25°C |



Layout



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 | 8h | 10h |
|------------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|
| 1.85V/cell | 95.7 | 76.4 | 66.3 | 52.1 | 36.8 | 31.8 | 24.9 | 18.5 | 14.9 | 11.1 | 8.76 | 7.41 | 5.12 | 4.38 |
| 1.80V/cell | 108.8 | 86.7 | 75.1 | 58.9 | 41.5 | 33.7 | 26.5 | 19.6 | 15.7 | 11.6 | 9.08 | 7.70 | 5.23 | 4.50 |
| 1.75V/cell | 118.2 | 94.1 | 81.3 | 63.6 | 44.6 | 35.0 | 27.6 | 20.4 | 16.3 | 12.0 | 9.38 | 7.92 | 5.28 | 4.52 |
| 1.70V/cell | 126.4 | 100.3 | 86.3 | 67.4 | 47.3 | 36.1 | 28.3 | 20.9 | 16.7 | 12.2 | 9.61 | 8.10 | 5.36 | 4.55 |
| 1.67V/cell | 130.8 | 103.5 | 88.8 | 69.3 | 48.4 | 37.1 | 29.0 | 21.5 | 17.1 | 12.5 | 9.74 | 8.21 | 5.42 | 4.62 |
| 1.60V/cell | 135.4 | 107.0 | 91.6 | 71.0 | 49.6 | 37.8 | 29.5 | 21.9 | 17.5 | 12.8 | 10.0 | 8.37 | 5.45 | 4.64 |

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 | 8h | 10h |
|------------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|
| 1.85V/cell | 178.8 | 143.8 | 125.4 | 99.1 | 70.2 | 61.1 | 48.2 | 35.8 | 28.9 | 21.6 | 17.2 | 14.6 | 10.2 | 8.70 |
| 1.80V/cell | 200.0 | 160.8 | 140.3 | 110.9 | 78.6 | 64.3 | 51.0 | 37.9 | 30.5 | 22.5 | 17.8 | 15.1 | 10.3 | 8.94 |
| 1.75V/cell | 213.4 | 171.6 | 149.8 | 118.3 | 83.9 | 66.5 | 52.8 | 39.2 | 31.5 | 23.3 | 18.3 | 15.5 | 10.4 | 8.96 |
| 1.70V/cell | 224.4 | 180.4 | 157.4 | 124.4 | 88.2 | 68.1 | 53.8 | 40.0 | 32.1 | 23.7 | 18.6 | 15.8 | 10.6 | 9.02 |
| 1.67V/cell | 228.0 | 183.4 | 160.0 | 126.4 | 89.6 | 69.6 | 55.0 | 40.8 | 32.8 | 24.1 | 18.8 | 15.9 | 10.7 | 9.14 |
| 1.60V/cell | 231.2 | 185.9 | 162.2 | 128.2 | 90.9 | 70.1 | 55.6 | 41.3 | 33.2 | 24.5 | 19.2 | 16.2 | 10.7 | 9.18 |



LHR Series-High Rate

LHR12160W(12V160W)



Applications

- UPS
- Hospitals & Testing Laboratories
- Emergency Power Supply
- Industrial Process Control Facilities
- Banks & Financial Markets
- Data & Network Operation Centers

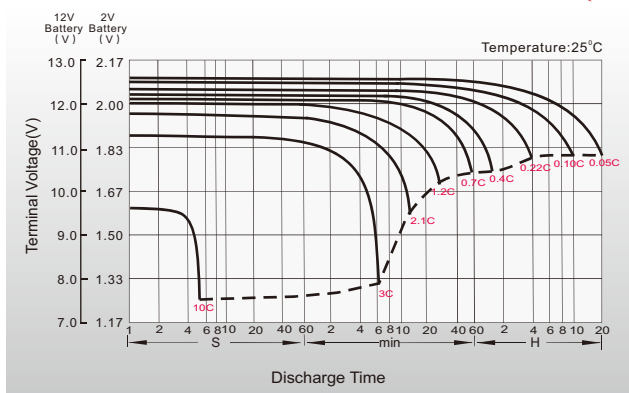
General Features

- High quality AGM separator: extend cycle life and prevent micro short circuit
- PbCaSn alloy for plate grids: less gassing, less self-discharging
- Unique vent valve design: reduce water losing and prevent air/spark going inside

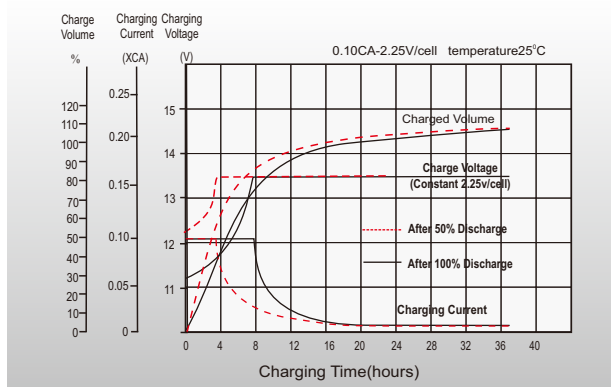
Standards

- Compliance with IEC 60896 standards
- Classified as "Long Life" according to Eurobat
- CE, UL, IEC Certified
- Manufactured in Leoch@IATF16949, ISO 45001, ISO 9001 and ISO 14001 certified production facilities

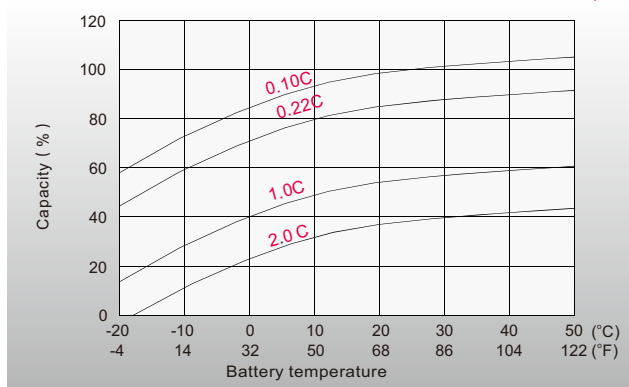
Discharge Characteristics



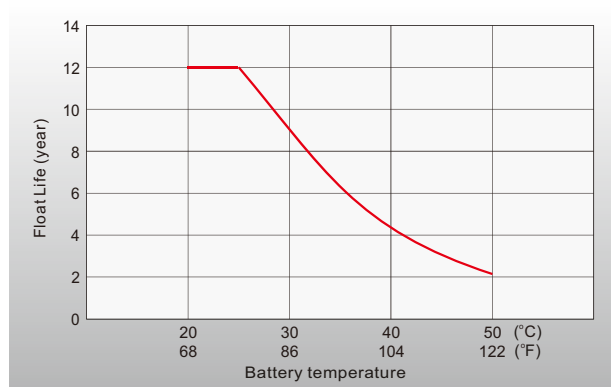
Float Charging Characteristics



Temperature Effects in Relation to Battery Capacity



Effect of Temperature on Long Term Float Life



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