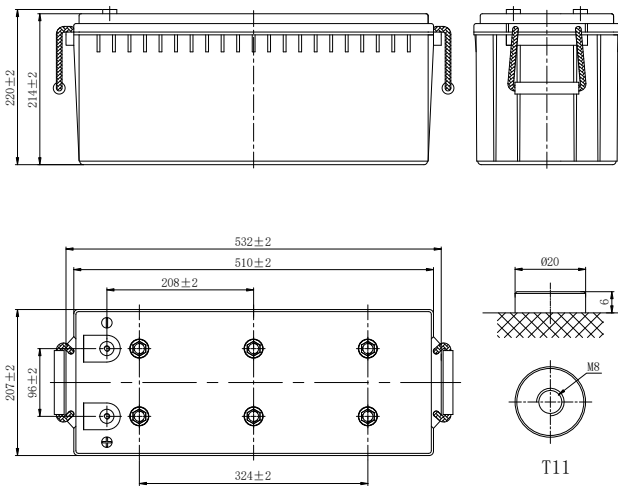


# LPGS SERIES-HYBRID GEL BATTERY

## LPGS12-180 (12V180Ah)



### CHARACTERISTICS

| Item                          | Specifications   |                     |
|-------------------------------|--|---------------------|
| Rated Voltage                 | 12V  |                     |
| Nominal Capacity (25°C)       | C <sub>10</sub> : 1.80V/cell   | 180Ah               |
| Dimension                     | Length   | 532mm (20.9inches)  |
|                               | Width  | 207mm (8.15inches)  |
|                               | Container Height   | 214mm (8.43inches)  |
|                               | Total Height   | 220mm (8.66inches)  |
| Approx Weight                 | 54.0kg (119.0lbs)  |                     |
| Terminal                      | T11(M8)  |                     |
| Container Material            | ABS (UL94 HB or V-0 optional)  |                     |
| Short-circuit current         | 3600A  |                     |
| Internal Resistance (25°C)    | Approx 3.2 mΩ (Fully charged)  |                     |
| Operating Temp. Range         | Discharge  | -20~55°C (-4~131°F) |
|                               | Charge   | -20~40°C (-4~104°F) |
|                               | Storage  | -20~50°C (-4~122°F) |
| Nominal Operating Temp. Range | 25±3°C (77±5°F)  |                     |
| Max.Charging Current (25°C)   | 0.25C  |                     |
| Charge voltage (25°C)         | Standby Use  | Cycle Use           |
|                               | 2.25-2.30V/cell  | 2.35-2.40V/cell     |
| Temp. Coefficient             | -3mV/cell/°C   | -5mV/cell/°C        |
|                               | 40°C (104°F)   | 103%                |
| Effect of temp. to Capacity   | 25°C (77°F)  | 100%                |
|                               | 0°C (32°F)   | 86%                 |
|                               | ≤3% per month at 25°C (77°F).<br>LPGS series batteries can 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. |                     |
| Self Discharge                |  |                     |

### DISCHARGE TABLE

| Constant Current Discharge (Amperes) at 25°C (77°F)  |       |       |       |       |       |       |      |      |      |      |      |      |      |
|--|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| F.V/Time   | 15min | 20min | 30min | 45min | 1h    | 2h    | 3h   | 4h   | 5h   | 6h   | 8h   | 10h  | 20h  |
| 1.85V/cell   | 194.0 | 162.3 | 128.2 | 97.4  | 80.6  | 51.2  | 39.8 | 32.7 | 27.8 | 24.2 | 19.7 | 16.7 | 9.00 |
| 1.80V/cell   | 231.0 | 189.0 | 147.6 | 110.5 | 89.6  | 55.7  | 42.8 | 34.8 | 29.9 | 26.0 | 21.0 | 18.0 | 9.27 |
| 1.75V/cell   | 257.5 | 207.5 | 157.3 | 116.9 | 94.8  | 58.4  | 44.3 | 36.0 | 30.6 | 26.7 | 21.4 | 18.2 | 9.36 |
| 1.70V/cell   | 278.2 | 220.7 | 166.0 | 122.8 | 99.0  | 61.2  | 45.8 | 37.1 | 31.4 | 27.3 | 21.7 | 18.3 | 9.54 |
| 1.67V/cell   | 292.9 | 232.2 | 173.8 | 126.4 | 102.5 | 62.9  | 47.5 | 38.2 | 32.1 | 27.9 | 22.0 | 18.5 | 9.63 |
| 1.60V/cell   | 315.8 | 249.3 | 184.7 | 133.7 | 107.5 | 65.2  | 49.2 | 39.1 | 32.8 | 28.5 | 22.3 | 18.8 | 9.72 |
| Constant Power Discharge (Watts/cell) at 25°C (77°F) |       |       |       |       |       |       |      |      |      |      |      |      |      |
| F.V/Time   | 15min | 20min | 30min | 45min | 1h    | 2h    | 3h   | 4h   | 5h   | 6h   | 8h   | 10h  | 20h  |
| 1.85V/cell   | 364.8 | 308.2 | 245.7 | 188.1 | 156.2 | 99.8  | 77.8 | 64.2 | 54.7 | 47.8 | 39.1 | 33.2 | 17.9 |
| 1.80V/cell   | 428.9 | 354.1 | 279.3 | 211.8 | 172.8 | 107.9 | 83.2 | 68.0 | 58.5 | 51.1 | 41.5 | 35.7 | 18.4 |
| 1.75V/cell   | 471.9 | 384.7 | 295.2 | 222.1 | 181.9 | 112.7 | 85.9 | 70.1 | 59.8 | 52.3 | 42.2 | 36.0 | 18.6 |
| 1.70V/cell   | 501.8 | 405.4 | 309.2 | 231.9 | 189.1 | 117.8 | 88.6 | 72.0 | 61.2 | 53.4 | 42.7 | 36.2 | 18.9 |
| 1.67V/cell   | 523.3 | 422.5 | 320.8 | 237.0 | 194.5 | 120.3 | 91.6 | 73.9 | 62.4 | 54.4 | 43.2 | 36.5 | 19.1 |
| 1.60V/cell   | 554.9 | 448.7 | 338.1 | 249.0 | 202.8 | 124.2 | 94.4 | 75.3 | 63.4 | 55.4 | 43.7 | 37.0 | 19.2 |

# LPGS SERIES-HYBRID GEL BATTERY

## LPGS12-180 (12V180Ah)



### APPLICATIONS

- Communication power supply
- Engine starting
- Pump systems
- Alarm installations
- Marine and power stations

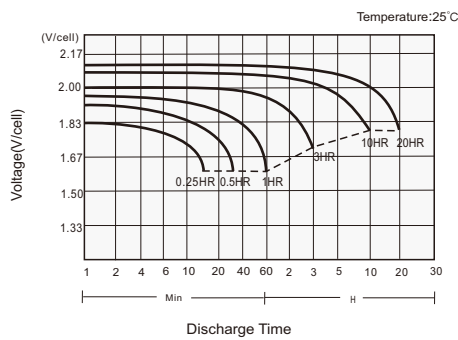
### GENERAL FEATURES

- 12 years design life (25°C)
- Proven AGM-GEL technology
- Excellent deep discharge recovery and cyclability
- Very low maintenance: no water addition
- Low self-discharge rate

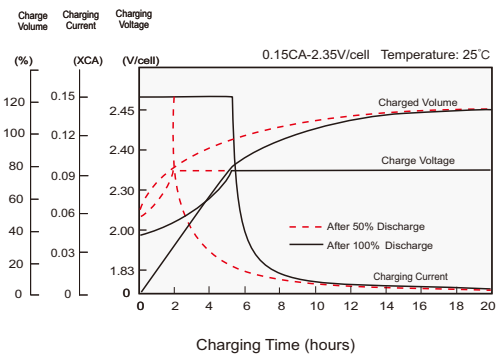
### STANDARDS

- IEC60896 Certified
- Classified as "Long Life" according to Eurobat
- UL, CE Approved
- Manufactured in Leoch@IATF 16949, ISO 45001, ISO 9001 and ISO 14001 certified production facilities

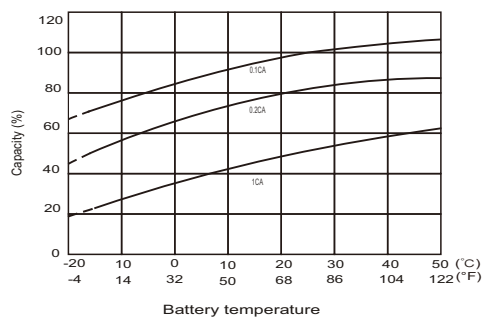
#### Discharge Characteristics



#### Charging Characteristics



#### Effects of Temperature on Capacity



#### Self Discharge Characteristics

