

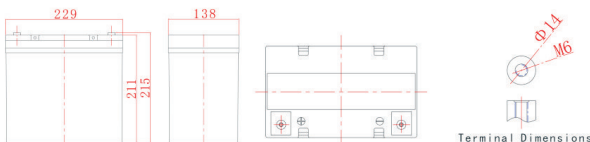
DEEP CYCLE GEL BATTERY

MG55-12



Application

- › General purpose
- › Uninterruptable Power Supply
- › Electric Power System (EPS) Emergency
- › Backup power supply
- › Auto control system
- › Emergency light
- › Railway signal
- › Aircraft signal
- › Alarm and security system Electronic
- › Medical equipments



Specification

| | |
|------------------------|---|
| Nominal Voltage | 12V |
| Nominal Capacity | 55Ah |
| Design life | 10 years |
| Terminal | T12 |
| Approx. Weight | Approx 17Kg (37.47lbs) |
| Container Material | ABS |
| Rated Capacity | 57.2Ah 20Hour Rate (2.86A to 10.8V) |
| | 55.0Ah 10Hour Rate (5.50A to 10.8V) |
| | 42.9Ah 3Hour Rate (14.3A to 10.5V) |
| Internal resistance | Full charged at 25°C: 7.5 Ohm |
| Max. Discharge Current | 660A(5S) |
| Operating Temperature | Discharge: -15 ~50°C (5~ 122 °F) |
| | Charge: 0~40°C (32~104 °F) |
| | Storage: -15~40°C (5~104 °F) |
| Charge Method (25 °C) | Max. charge Current: 22A |
| | Cycle use: 14.4-15.0V(-30mV/ °C) |
| | Float use : 13.5-13.8V(-20mV/ °C) |
| Self discharge | 3% of capacity declined per month at 20°C |
| Unit: mm | Dimension: 229(L)×138(W) ×210(H)×235(TH) |

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

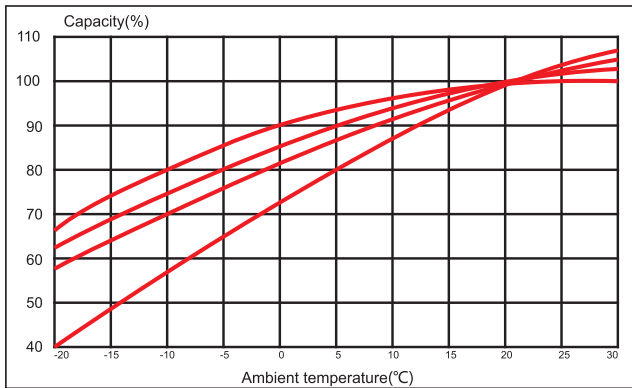
| F.V/Time | 5min | 10min | 15min | 20min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|------------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|
| 1.85V/cell | 94.1 | 74.0 | 62.9 | 52.6 | 41.8 | 31.7 | 25.9 | 16.5 | 13.1 | 10.7 | 8.60 | 7.49 | 6.08 | 5.19 | 2.83 |
| 1.80V/cell | 126.4 | 94.6 | 76.0 | 62.2 | 49.4 | 36.8 | 29.0 | 18.0 | 14.1 | 11.4 | 9.23 | 8.03 | 6.45 | 5.50 | 2.86 |
| 1.75V/cell | 142.5 | 103.9 | 83.1 | 66.9 | 51.3 | 38.2 | 30.4 | 18.7 | 14.3 | 11.6 | 9.46 | 8.25 | 6.56 | 5.56 | 2.89 |
| 1.70V/cell | 156.9 | 113.3 | 88.7 | 70.4 | 53.3 | 39.7 | 31.3 | 19.4 | 14.7 | 11.9 | 9.71 | 8.42 | 6.65 | 5.61 | 2.94 |
| 1.65V/cell | 173.0 | 122.2 | 94.3 | 74.7 | 56.3 | 40.7 | 32.4 | 20.0 | 15.3 | 12.4 | 9.98 | 8.61 | 6.75 | 5.73 | 2.98 |
| 1.60V/cell | 190.8 | 132.7 | 100.8 | 79.6 | 59.4 | 42.5 | 33.6 | 20.7 | 15.8 | 12.7 | 10.3 | 8.79 | 6.82 | 5.79 | 3.00 |

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

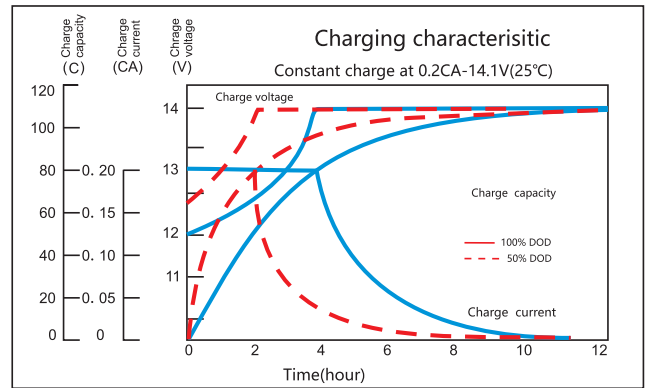
| F.V/Time | 5min | 10min | 15min | 20min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 20h |
|------------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|
| 1.85V/cell | 172.1 | 136.7 | 117.4 | 99.2 | 79.7 | 60.9 | 50.0 | 32.1 | 25.5 | 20.9 | 16.9 | 14.7 | 12.0 | 10.3 | 5.61 |
| 1.80V/cell | 228.6 | 172.6 | 140.0 | 115.6 | 92.7 | 70.2 | 55.7 | 34.8 | 27.2 | 22.2 | 18.0 | 15.7 | 12.7 | 10.9 | 5.66 |
| 1.75V/cell | 252.2 | 186.6 | 151.0 | 123.1 | 95.4 | 72.2 | 58.0 | 35.9 | 27.6 | 22.6 | 18.4 | 16.1 | 12.9 | 11.0 | 5.70 |
| 1.70V/cell | 270.0 | 198.8 | 159.0 | 128.4 | 98.7 | 74.8 | 59.7 | 37.3 | 28.4 | 23.1 | 18.9 | 16.4 | 13.0 | 11.1 | 5.81 |
| 1.65V/cell | 293.6 | 212.6 | 167.8 | 135.4 | 103.3 | 76.0 | 61.2 | 38.1 | 29.4 | 23.8 | 19.3 | 16.7 | 13.2 | 11.3 | 5.88 |
| 1.60V/cell | 316.3 | 225.5 | 176.5 | 142.7 | 108.3 | 78.8 | 63.1 | 39.2 | 30.2 | 24.5 | 19.9 | 17.0 | 13.3 | 11.4 | 5.90 |

Model Performance Diagrams

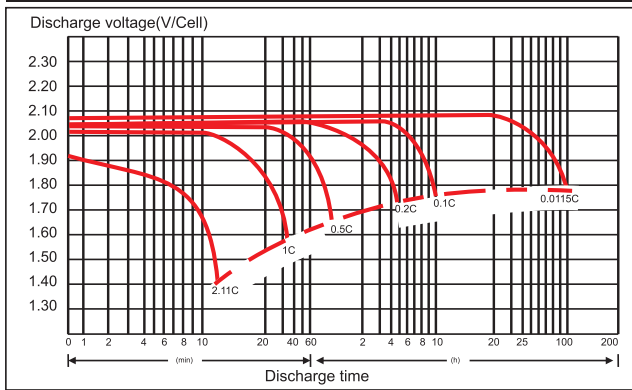
Curves of discharge capacity and ambient temperature



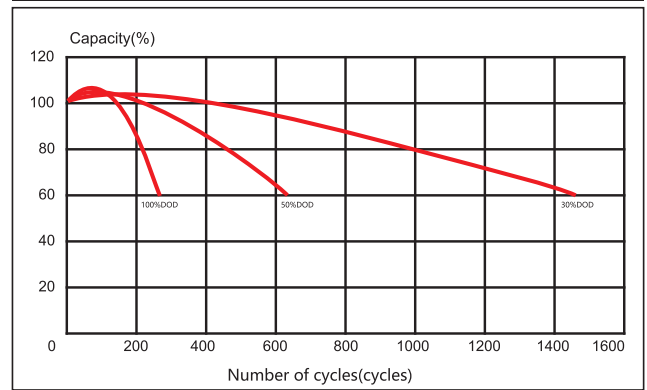
Curves of charging characteristics



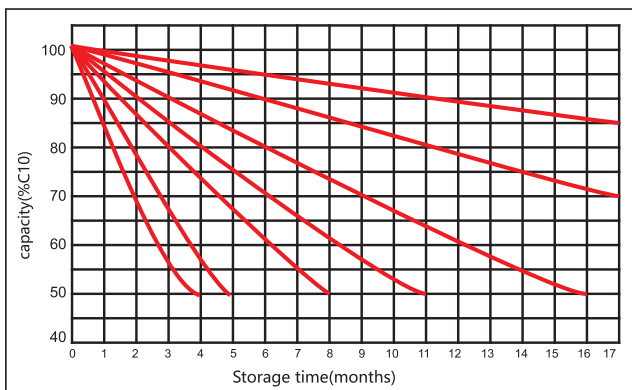
Discharge characteristics at different discharge rate(20°C)



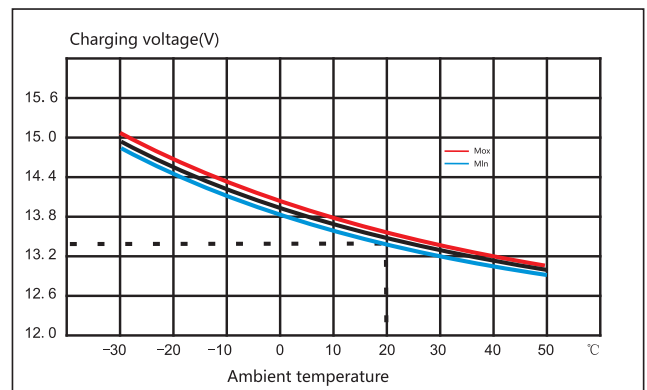
Curves of cycle life



Curves of self-discharge and storage time



Curves of float voltage and ambient temperature



Charging procedures

| Application type | Charge Voltage(V) | | | Max charge current (A) |
|------------------|-------------------|-----------|--------------------------|------------------------|
| | Temp (°C) | Set point | Temperature compensation | |
| Cycle use | 25 | 14.4 | -5mV/°C/cell | 0.4C |
| Float use | 25 | 13.65 | -3mV/°C/cell | |

The relationship between discharge current and voltage

| Discharge rate | 1hr | 3hr | 8hr | 10hr |
|-----------------------|-------|-------|-------|------|
| End voltage (V) | 10.5 | 10.8 | 10.8 | 10.8 |
| Discharge current (A) | 0.55C | 0.25C | 0.12C | 0.1C |