

stored energy solutions for a demanding world

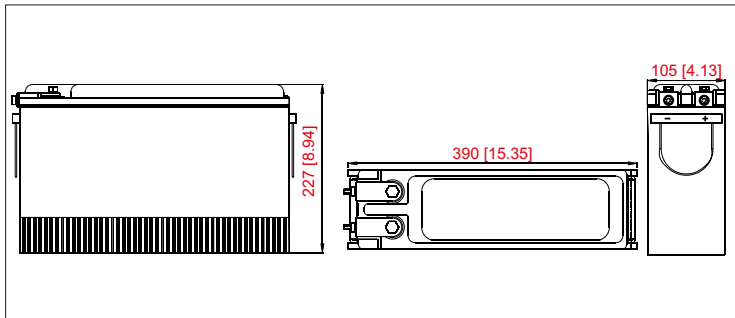


Model: **MPG12V50F**

MPG series

The MPG range VRLA batteries adopt flat plates with gel electrolyte and are designed with front terminal structure. The perfect design ensures MPG series battery the high reliability and makes the installation quite simple and safe when placed on a standard relay rack tray or in a closed cabinet. MPG range VRLA battery is designed with high energy density and suitable for 19", 23" rack or cabinet, and also offers options of top connection and side of monoblocs connection. MPG range battery can be equipped with central gas collection system according to the requirement of customer.

Dimensions-mm[inch]



Specifications

| Battery Model | MPG12V50F |
|--|---|
| Nominal Voltage | 12V |
| Rated Capacity | 50Ah (10hour rate) to 1.80V/cell @25°C(77°F) |
| Typical Weight | 20.7kg |
| Internal Resistance | Approx 8.39mΩ |
| Operating Temperature Range | Operation (maximum): -40°C to 50°C(-40°F to 122°F) |
| | Operation (recommended): 15°C to 25°C(59°F to 77°F) |
| | Storage: -20°C to 40°C(-4°F to 104°F) |
| Float Voltage | 2.25V/cell@25°C(77°F) |
| Recommended Maximum Charging Current Limit | 12.5A |
| Equalize and Cycle Service | 2.35V~2.40V/cell@25°C(77°F) |
| Self Discharge | The residual capacity is above 90% after 90 days storage(25°C/77°F) |
| Terminal | M6 Female |
| Terminal Hardware Torque | 8 ± 1.0Nm |
| Container Material | ABS (V0 optional) |

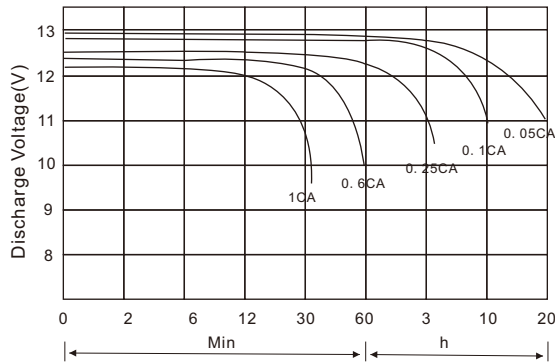
Constant Current Discharge Characteristics Units: Amperes (25°C, 77°F)

| End voltage per cell | 5min | 15min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 12h | 20h | 24h |
|----------------------|------|-------|-------|-------|------|------|------|------|-----|-----|-----|-----|------|------|------|
| 1.60V | 164 | 88 | 53 | 39 | 31.2 | 17.9 | 14.0 | 10.8 | 9.6 | 8.1 | 6.3 | 5.2 | 4.40 | 2.73 | 2.28 |
| 1.67V | 154 | 85 | 52 | 38 | 31.0 | 17.8 | 13.8 | 10.7 | 9.5 | 8.1 | 6.2 | 5.1 | 4.35 | 2.71 | 2.26 |
| 1.70V | 152 | 83 | 52 | 38 | 30.8 | 17.7 | 13.7 | 10.7 | 9.4 | 8.1 | 6.2 | 5.1 | 4.31 | 2.70 | 2.26 |
| 1.75V | 140 | 81 | 51 | 38 | 30.4 | 17.2 | 13.5 | 10.6 | 9.3 | 8.0 | 6.2 | 5.1 | 4.31 | 2.69 | 2.26 |
| 1.80V | 126 | 75 | 49 | 36 | 29.6 | 17.1 | 13.5 | 10.5 | 9.1 | 7.8 | 6.1 | 5.0 | 4.28 | 2.67 | 2.25 |
| 1.83V | 120 | 69 | 48 | 35 | 28.3 | 16.8 | 13.0 | 10.0 | 8.8 | 7.6 | 6.0 | 4.8 | 4.10 | 2.66 | 2.22 |
| 1.85V | 112 | 67 | 45 | 34 | 27.4 | 16.2 | 12.7 | 9.9 | 8.6 | 7.4 | 5.8 | 4.8 | 4.08 | 2.61 | 2.20 |

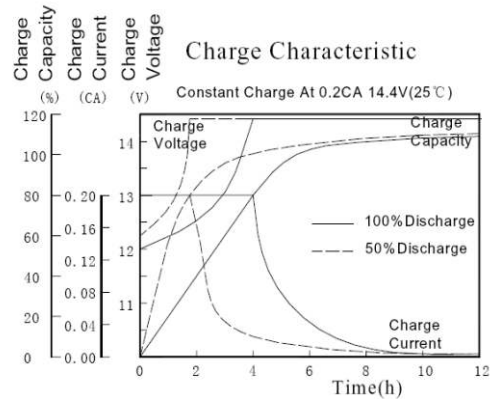
Discharge Data with Constant Power Units: Watts per cell (25°C, 77°F)

| End voltage per cell | 5min | 15min | 30min | 45min | 1h | 2h | 3h | 4h | 5h | 6h | 8h | 10h | 12h | 20h | 24h |
|----------------------|------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|------|
| 1.60V | 274 | 154 | 96 | 73 | 58.8 | 33.8 | 26.6 | 20.6 | 18.5 | 15.6 | 12.3 | 10.0 | 8.51 | 5.41 | 4.53 |
| 1.67V | 264 | 152 | 96 | 72 | 58.5 | 33.7 | 26.2 | 20.6 | 18.4 | 15.6 | 12.1 | 9.9 | 8.45 | 5.40 | 4.53 |
| 1.70V | 262 | 150 | 96 | 72 | 58.3 | 33.5 | 26.2 | 20.5 | 18.2 | 15.6 | 12.1 | 9.9 | 8.37 | 5.38 | 4.52 |
| 1.75V | 245 | 149 | 95 | 72 | 57.5 | 33.4 | 26.0 | 20.5 | 18.1 | 15.5 | 12.0 | 9.9 | 8.36 | 5.37 | 4.52 |
| 1.80V | 229 | 141 | 93 | 70 | 57.3 | 33.3 | 25.9 | 20.4 | 17.7 | 15.4 | 12.0 | 9.8 | 8.34 | 5.37 | 4.51 |
| 1.83V | 221 | 129 | 92 | 68 | 54.9 | 32.9 | 25.3 | 19.7 | 17.4 | 14.9 | 11.9 | 9.6 | 8.17 | 5.36 | 4.48 |
| 1.85V | 209 | 126 | 85 | 65 | 53.2 | 31.8 | 24.6 | 19.4 | 16.9 | 14.6 | 11.5 | 9.5 | 8.12 | 5.26 | 4.44 |

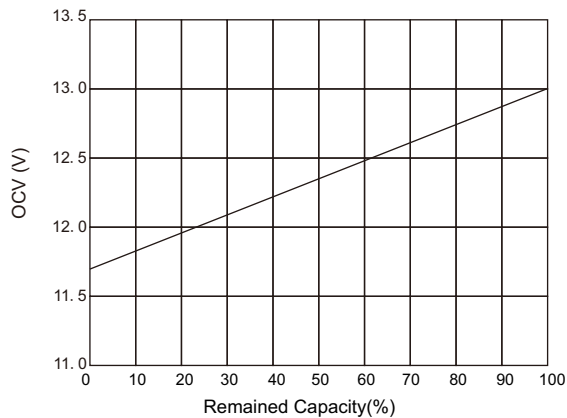
Terminal Voltage(V) Vs. Discharge Time (25°C, 77°F)



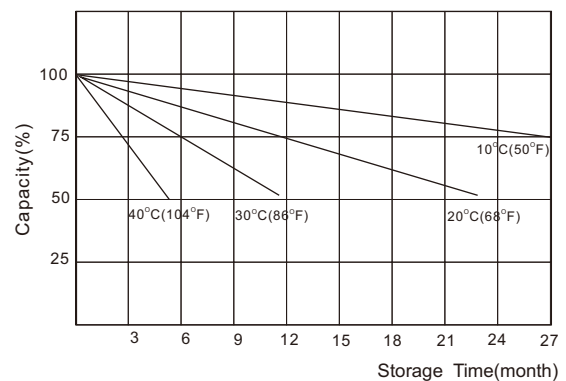
Battery Voltage Vs. Charge Time



Relationship of OCV Vs. State of Charge



Capacity Retention Characteristic



Charging Procedures

| Application | Charge Voltage (V/Cell) | | | Max. Charge Current |
|-------------|-------------------------|-----------|-----------------|---------------------|
| | Temperature | Set Point | Allowable Range | |
| Cycle | 25°C | 2.40 | 2.35~2.45 | 0.25C |
| Standby | 25°C | 2.25 | 2.23~2.27 | |

Discharge Current VS. Discharge Voltage

| Final Discharge Voltage V/Cell | 1.80 | 1.70 | 1.55 | 1.30 |
|--------------------------------|------------|-------------------|-------------------|------------|
| Discharge Current (A) | 0.2C ≥ (A) | 0.2C < (A) < 0.5C | 0.5C < (A) < 1.0C | (A) > 1.0C |