

LEAD ACID (AGM) BATTERY

MR7-12

Specification

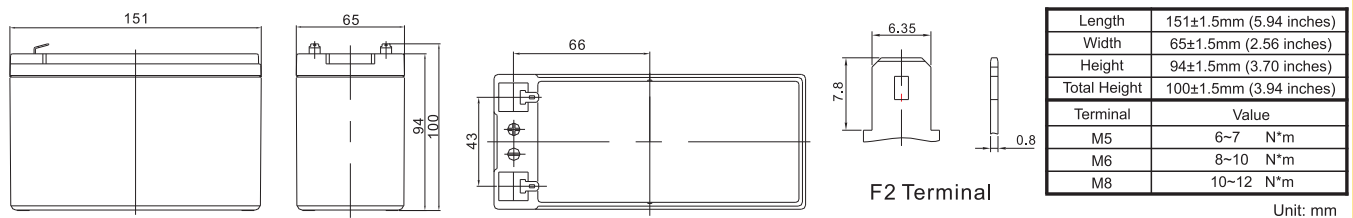


MR series is a general purpose battery with 6~8 years design life in float service. It meets with IEC, JIS, BS, GB/T and YD/T standards. With advanced AGM valve regulated technology and high purity raw material, the MR series battery maintains high consistency for better performance and reliable standby service life. It is suitable for UPS/EPS, medical equipment, emergency light and security system applications.



| | |
|------------------------------------|--|
| Cells Per Unit | 6 |
| Voltage Per Unit | 12V |
| Nominal Capacity | 7Ah@20hour-rate to 1.75V per cell @25°C |
| Weight | Approx. 1.95 Kg (Tolerance ±5.0%) |
| Internal Resistance | ≤32 mΩ (Full Charge Condition @25°C) |
| Terminal | Default F2,F1 Optional |
| Max. Discharge Current | 70A (5 sec) |
| Short Circuit Current | 350A |
| Design Life | 6~8 years |
| Max. Charging Current | 2.1 A |
| Reference Capacity | C ₃ 5.25Ah C ₅ 5.95Ah C ₁₀ 6.54Ah C ₂₀ 7.00Ah |
| Standby Use Voltage | 13.7 V~13.9 V @ 25°C Temperature Compensation: -3mV/°C/Cell |
| Cycle Use Voltage | 14.6 V~14.8 V @ 25°C Temperature Compensation: -4mV/°C/Cell |
| Operating Temperature Range | Discharge: -20°C~60°C Charge: 0°C~50°C Storage: -20°C~60°C |
| Normal Operating Temperature Range | 25°C ±5°C |
| Self Discharge | Marvel Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C. Please charge batteries before using. |
| Container Material | A.B.S. UL94-HB, UL94-V0 Optional. |

Dimensions



Constant Current Discharge Characteristics : A (25°C)

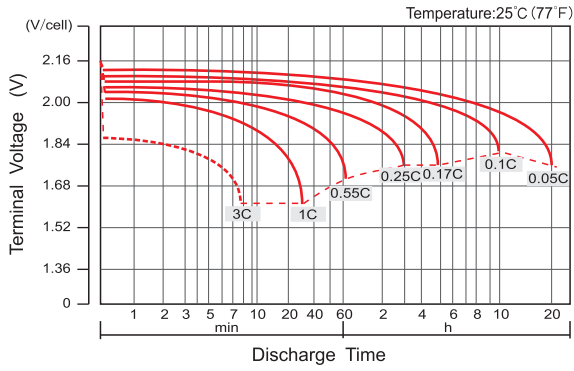
| F.V./Time | 5MIN | 10MIN | 15MIN | 30MIN | 1HR | 2HR | 3HR | 4HR | 5HR | 8HR | 10HR | 20HR |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.60V | 26.56 | 18.77 | 13.57 | 7.793 | 4.277 | 2.626 | 1.974 | 1.594 | 1.320 | 0.850 | 0.690 | 0.364 |
| 1.65V | 24.70 | 17.74 | 12.97 | 7.482 | 4.130 | 2.542 | 1.913 | 1.551 | 1.286 | 0.840 | 0.682 | 0.359 |
| 1.70V | 22.28 | 16.33 | 12.15 | 7.151 | 3.996 | 2.458 | 1.861 | 1.508 | 1.253 | 0.827 | 0.672 | 0.354 |
| 1.75V | 19.96 | 14.95 | 11.31 | 6.835 | 3.850 | 2.372 | 1.806 | 1.470 | 1.221 | 0.816 | 0.663 | 0.350 |
| 1.80V | 17.53 | 13.53 | 10.44 | 6.533 | 3.703 | 2.288 | 1.750 | 1.428 | 1.190 | 0.802 | 0.654 | 0.347 |
| 1.85V | 13.91 | 11.06 | 8.663 | 5.627 | 3.321 | 2.096 | 1.618 | 1.327 | 1.109 | 0.753 | 0.616 | 0.329 |

Constant Power Discharge Characteristics : W/Cell (25°C)

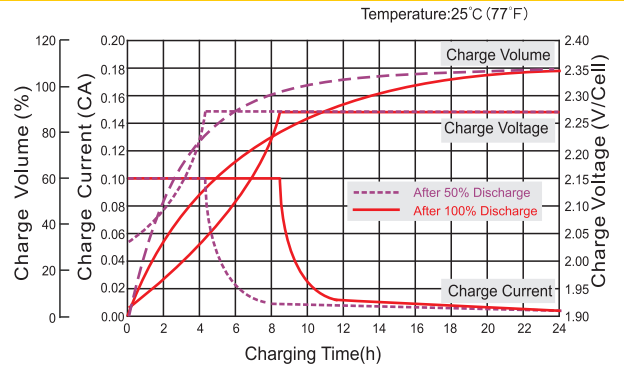
| F.V./Time | 5MIN | 10MIN | 15MIN | 30MIN | 1HR | 2HR | 3HR | 4HR | 5HR | 8HR | 10HR | 20HR |
|-----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1.60V | 44.03 | 31.91 | 23.72 | 14.15 | 8.037 | 4.977 | 3.770 | 3.060 | 2.545 | 1.660 | 1.357 | 0.718 |
| 1.65V | 41.42 | 30.73 | 23.01 | 13.73 | 7.806 | 4.841 | 3.669 | 2.988 | 2.489 | 1.645 | 1.342 | 0.707 |
| 1.70V | 38.22 | 28.81 | 21.88 | 13.26 | 7.599 | 4.708 | 3.585 | 2.918 | 2.432 | 1.623 | 1.324 | 0.700 |
| 1.75V | 35.00 | 26.85 | 20.65 | 12.80 | 7.366 | 4.564 | 3.493 | 2.854 | 2.379 | 1.604 | 1.308 | 0.692 |
| 1.80V | 31.39 | 24.73 | 19.34 | 12.36 | 7.125 | 4.423 | 3.398 | 2.782 | 2.326 | 1.580 | 1.293 | 0.686 |
| 1.85V | 25.44 | 20.57 | 16.28 | 10.75 | 6.430 | 4.075 | 3.156 | 2.595 | 2.176 | 1.487 | 1.219 | 0.652 |

(Note) The above characteristics data are average values obtained within three charge/discharge cycle not the minimum values. The battery must be fully charged before the capacity test. The C₂₀ should reach 95% after the first cycle and 100% after the third cycle.

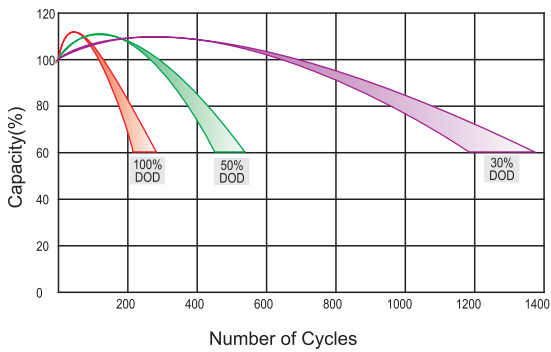
Discharge Characteristics Curve



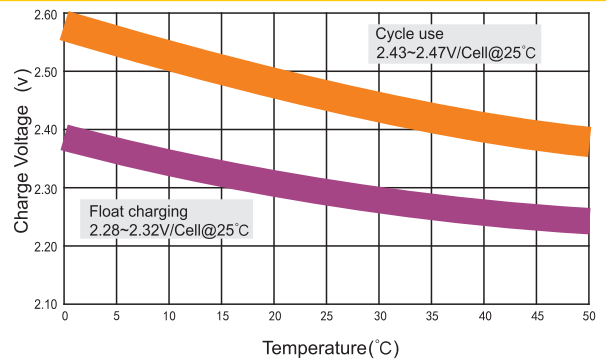
Charge Characteristic Curve For Standby Use(IU)



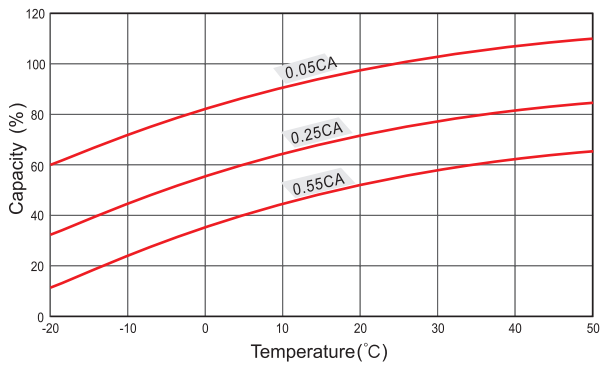
Cycle Life In Relation To Depth Of Discharge



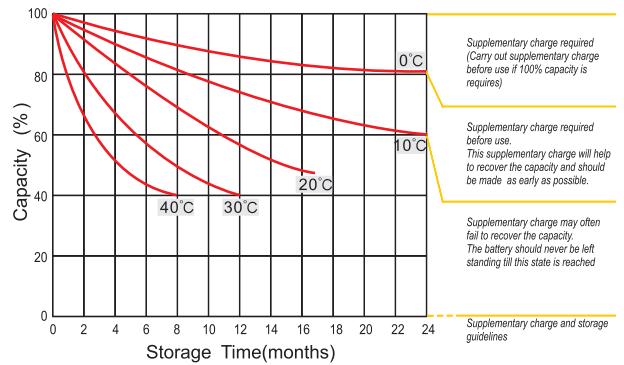
Relationship Between Charging Voltage And Temperature



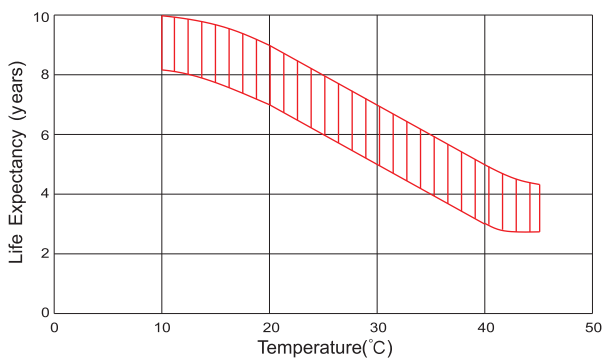
Temperature Effects On Capacity



Storage Characteristics



Effect Of Temperature On Long Term Life



Life Characteristics Of Standby Use

