



# RA12-40G (12V40Ah)

RA12-40G is GEL Standby battery with 10 + years floating design life time .The solid Gel protects no way to suffer electrolyte stratification and ensure mild corrosion, **its** special separator eradicates infection between plates to prevent short circuit. it offers extra-durable performance under extreme temperature.



## Specification

|  |   |
|--|---|
| Cells Per Unit                             | 6   |
| Voltage Per Unit                           | 12  |
| Capacity                                   | 40Ah@20hr-rate to 1.75V per cell @25°C  |
| Weight                                     | Approx. 13.5 Kg   |
| Max. Discharge Current                     | 400 A (5 sec)   |
| Internal Resistance                        | Approx. 8 mΩ  |
| Operating Temperature Range                | Discharge: -40°C~60°C<br>Charge: -20°C~50°C<br>Storage: -40°C~60°C  |
| Normal Operating Temperature Range         | 25°C±5°C  |
| Float charging Voltage                     | 13.6 to 13.8 VDC/unit Average at 25°C   |
| Recommended Maximum Charging Current Limit | 8 A   |
| Equalization and Cycle Service             | 14.2 to 14.4 VDC/unit Average at 25°C   |
| Self Discharge                             | RITAR Valve Regulated Lead Acid (VRLA) batteries can be stored for more than 6 months at 25°C. Self-discharge ratio less than 3% per month at 25°C. Please charge batteries before using. |
| Terminal                                   | Terminal F4/F11   |
| Container Material                         | A.B.S. (UL94-HB), Flammability resistance of UL94-V1 can be available upon request.   |



MH28539



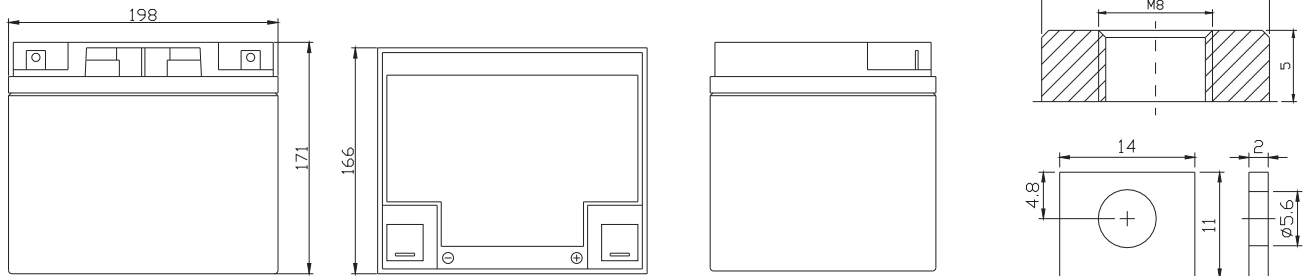
G4M20206-0910-E-16



ISO9001:2000 Certificate

## Dimensions

Unit: mm Dimension: 198(L)×166(W)×171(H)



## Constant Current Discharge Characteristics: A (25°C)

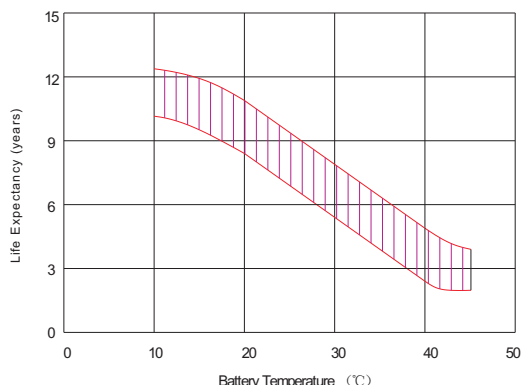
| F.V/Time | 5MIN  | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V    | 104.8 | 78.04 | 61.07 | 40.16 | 23.54 | 14.08 | 9.720 | 8.052 | 6.779 | 4.630 | 3.841 | 2.049 |
| 10.0V    | 101.8 | 74.26 | 59.82 | 39.49 | 23.43 | 13.97 | 9.683 | 8.014 | 6.739 | 4.593 | 3.804 | 2.012 |
| 10.2V    | 98.74 | 71.64 | 58.88 | 39.15 | 23.21 | 13.86 | 9.608 | 7.977 | 6.699 | 4.555 | 3.767 | 1.975 |
| 10.5V    | 89.71 | 66.89 | 56.72 | 39.23 | 22.99 | 13.76 | 9.571 | 7.902 | 6.619 | 4.517 | 3.730 | 1.938 |
| 10.8V    | 81.92 | 61.71 | 52.89 | 38.93 | 22.45 | 13.51 | 9.310 | 7.716 | 6.500 | 4.442 | 3.693 | 1.900 |
| 11.1V    | 70.75 | 55.80 | 47.99 | 36.80 | 21.33 | 12.91 | 8.900 | 7.343 | 6.220 | 4.254 | 3.582 | 1.788 |

## Constant Power Discharge Characteristics: W (25°C)

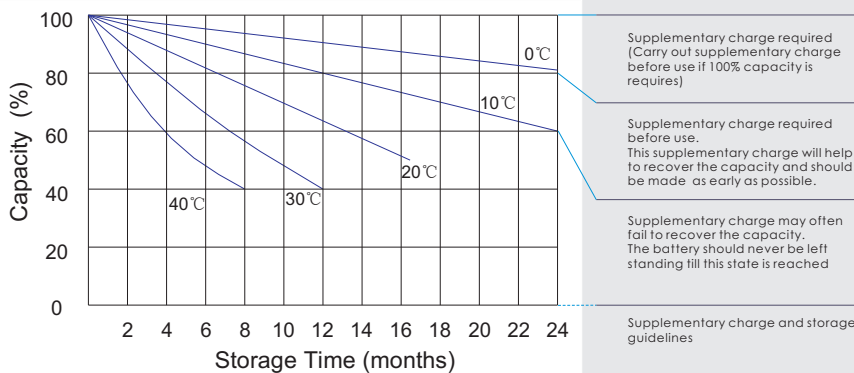
| F.V/Time | 5MIN  | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR   | 4HR   | 5HR   | 8HR   | 10HR  | 20HR  |
|----------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 9.60V    | 1106  | 831.2 | 665.8 | 450.6 | 272.0 | 165.9 | 115.7 | 95.97 | 80.87 | 55.29 | 45.90 | 24.57 |
| 10.0V    | 1084  | 805.7 | 655.1 | 445.5 | 271.3 | 165.0 | 115.7 | 95.85 | 80.66 | 55.02 | 45.61 | 24.14 |
| 10.2V    | 1071  | 784.4 | 647.7 | 446.6 | 269.2 | 164.0 | 115.2 | 95.64 | 80.39 | 54.66 | 45.20 | 23.70 |
| 10.5V    | 986.8 | 739.1 | 625.1 | 447.9 | 266.8 | 162.8 | 114.8 | 94.75 | 79.43 | 54.21 | 44.76 | 23.25 |
| 10.8V    | 909.3 | 689.3 | 584.5 | 445.0 | 261.9 | 160.8 | 111.6 | 92.59 | 78.00 | 53.31 | 44.31 | 22.80 |
| 11.1V    | 807.8 | 630.5 | 532.2 | 423.1 | 250.7 | 154.8 | 106.8 | 88.12 | 74.65 | 51.05 | 42.99 | 21.46 |

All mentioned values are average values.

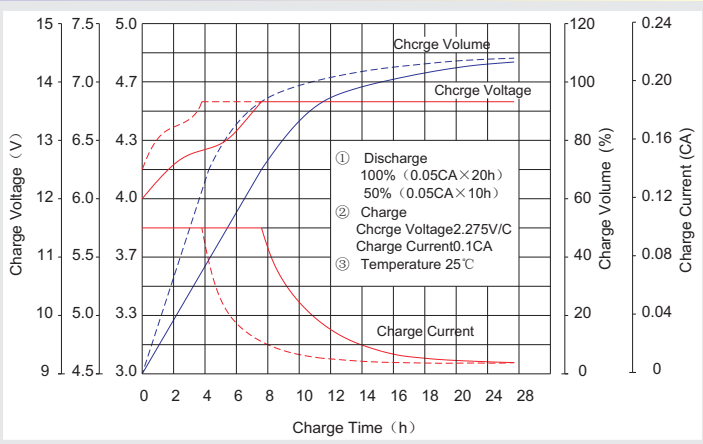
### Effect of temperature on long term float life



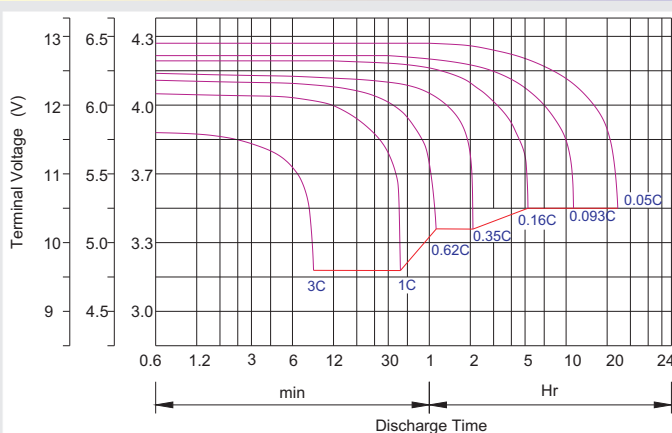
### Storage characteristic



### Charge characteristic Curve for standby use



### Discharge characteristic Curve



### Capacity Factors With Different Temperature

| Battery Type |        | -20°C | -10°C | 0°C | 5°C | 10°C | 20°C | 25°C | 30°C | 40°C | 45°C |
|--------------|--------|-------|-------|-----|-----|------|------|------|------|------|------|
| GEL Battery  | 6V&12V | 50%   | 70%   | 83% | 85% | 90%  | 98%  | 100% | 102% | 104% | 105% |
|              | 2V     | 60%   | 75%   | 85% | 88% | 92%  | 99%  | 100% | 103% | 105% | 106% |
| AGM Battery  | 6V&12V | 46%   | 66%   | 76% | 83% | 90%  | 98%  | 100% | 103% | 107% | 109% |
|              | 2V     | 55%   | 70%   | 80% | 85% | 92%  | 99%  | 100% | 104% | 108% | 110% |

### Discharge Current VS. Discharge Voltage

| Final Discharge Voltage V/cell | 1.75V      | 1.70V             | 1.60V      |
|--------------------------------|------------|-------------------|------------|
| Discharge Current (A)          | (A) ≤ 0.2C | 0.2C < (A) < 1.0C | (A) ≥ 1.0C |

**Charge the batteries at least once every six months, if they are stored at 25°C.**

Charging Method:

|                  |   |
|------------------|---|
| Constant Voltage | -0.2Cx2h+2.35-2.4V/cellx24h, Max. Current 0.2CA |
| Constant Current | -0.2Cx2h+0.1CAx12h                              |
| Fast             | -0.2Cx2h+0.3CAx4.0h                             |

### Maintenance & Cautions

|   |
|---|
| <b>Float Service:</b>   |
| ※ Every month, recommend inspection every battery voltage.  |
| ※ Every three months, recommend equalization charge for one time.   |
| Equalization charge method:   |
| Discharge: 100% rate capacity discharge.  |
| Charge: Max. current 0.2CA, constant voltage 2.35-2.4V/Cell charge 24h.   |
| ※ Effect of temperature on float charge voltage: -3mV/°C/Cell.  |
| ※ Length of service life will be directly affected by the number of discharge cycles, depth of discharge, ambient temperature and charging voltage. |