

## UP-GEL SERIES

# UP-GV600-6RE



ISO 9001



ISO 14001



OHSAS 18001



MH 28539 G4M20206-0910-E-16

## DEEP CYCLE GEL



## GENERAL FEATURES

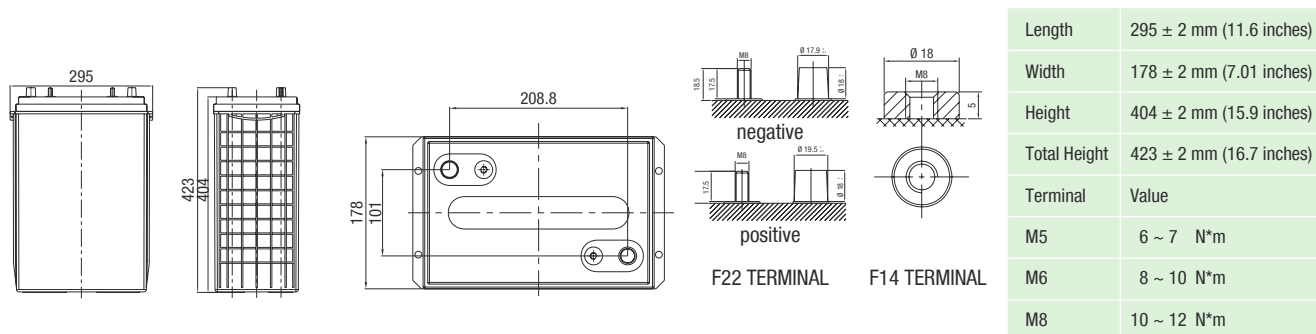
UP-GV series is hybrid GEL, especially designed for frequent discharge deep cycle application. By using the specially designed, active material, strong grids and thick plate construction, the UP-GV GEL series battery offers reliable performance in higher load situation and could provide competitive cycles performance by patented GEL technology. It is suitable for Electric Vehicle and Golf cart, Floor Machines, Forklifts, Aerial lifts, Robotics, Marine, RV, Mobility and Medical Equipment, Solar Energy System and most outdoor application.

## SPECIFICATION

|                                    |   |
|------------------------------------|---|
| Cells Per Unit                     | 3   |
| Voltage Per Unit                   | 6   |
| Capacity                           | 424 Ah @ 10hr-rate to 1.80 V per cell @ 25°C  |
| Weight                             | Approx. 57.0 Kg (Tolerance ± 3%)  |
| Internal Resistance                | Approx. 1.1 mΩ  |
| Terminal                           | F14 (M8) / F22 (M8)   |
| Maximum Discharge Current          | 4000 A (5 sec)  |
| Cold Cranking Ampere (CCA)         | 800 A   |
| Maximum Charging Current           | 120 A   |
| Reference Capacity                 | C3 309.9 Ah<br>C5 349.5 Ah<br>C10 424.0 Ah<br>C100 600.0 Ah   |
| Standby Use Voltage                | 6.8 V ~ 6.9 V @ 25°C Temperature Compensation: -3 mV / °C / Cell  |
| Cycle Use Voltage                  | 7.3 V ~ 7.4 V @ 25°C Temperature Compensation: -4 mV / °C / Cell  |
| Operating Temperature Range        | Discharge: -20°C ~ 60°C<br>Charge: 0°C ~ 50°C<br>Storage: -20°C ~ 60°C  |
| Normal Operating Temperature Range | 25°C ± 5°C  |
| Self Discharge                     | UPOWER 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 charged batteries before using. |
| Container Material                 | A.B.S. UL94-HB, UL94-V0 Optional.   |



## DIMENSIONS



## CONSTANT CURRENT DISCHARGE CHARACTERISTICS: A (25°C)

| F.V / Time | 30 Min | 1 Hr  | 2 Hr  | 3 Hr  | 4 Hr | 5 Hr | 8 Hr | 10 Hr | 20 Hr |
|------------|--------|-------|-------|-------|------|------|------|-------|-------|
| 1.60 V     | 424.5  | 246.8 | 145.8 | 112.9 | 88.8 | 75.5 | 50.8 | 42.2  | 22.1  |
| 1.65 V     | 407.5  | 238.4 | 141.1 | 109.4 | 86.4 | 73.6 | 50.2 | 41.7  | 21.7  |
| 1.70 V     | 389.5  | 230.6 | 136.5 | 106.5 | 84.0 | 71.7 | 49.4 | 41.1  | 21.5  |
| 1.75 V     | 372.3  | 222.2 | 131.7 | 103.3 | 81.9 | 69.9 | 48.7 | 40.5  | 21.2  |
| 1.80 V     | 355.8  | 213.7 | 127.0 | 100.1 | 79.5 | 68.1 | 47.9 | 40.0  | 21.0  |
| 1.85 V     | 306.5  | 191.7 | 116.3 | 92.5  | 73.9 | 63.5 | 45.0 | 37.7  | 19.9  |

## CONSTANT POWER DISCHARGE CHARACTERISTICS: WPC (25°C)

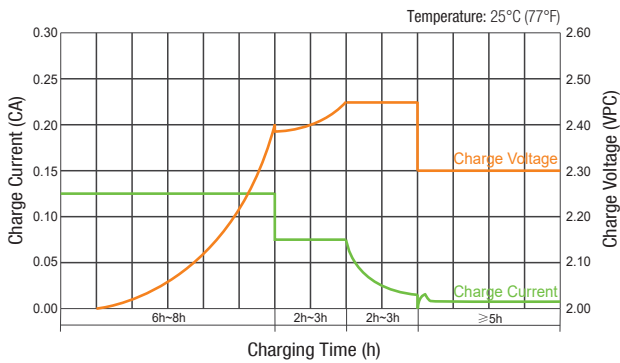
| F.V / Time | 30 Min | 1 Hr  | 2 Hr  | 3 Hr  | 4 Hr  | 5 Hr  | 8 Hr | 10 Hr | 20 Hr |
|------------|--------|-------|-------|-------|-------|-------|------|-------|-------|
| 1.60 V     | 770.9  | 463.9 | 276.2 | 215.7 | 170.4 | 145.6 | 99.1 | 83.0  | 43.5  |
| 1.65 V     | 747.9  | 450.5 | 268.7 | 209.9 | 166.4 | 142.4 | 98.2 | 82.1  | 42.8  |
| 1.70 V     | 722.0  | 438.6 | 261.3 | 205.1 | 162.5 | 139.1 | 96.9 | 80.9  | 42.4  |
| 1.75 V     | 697.2  | 425.1 | 253.4 | 199.8 | 158.9 | 136.1 | 95.8 | 80.0  | 41.9  |
| 1.80 V     | 673.1  | 411.2 | 245.5 | 194.4 | 154.9 | 133.1 | 94.4 | 79.0  | 41.5  |
| 1.85 V     | 585.5  | 371.1 | 226.2 | 180.5 | 144.6 | 124.5 | 88.8 | 74.5  | 39.5  |

Note: The above characteristics data are average values obtained within three charge/discharge cycle not the minimum values.

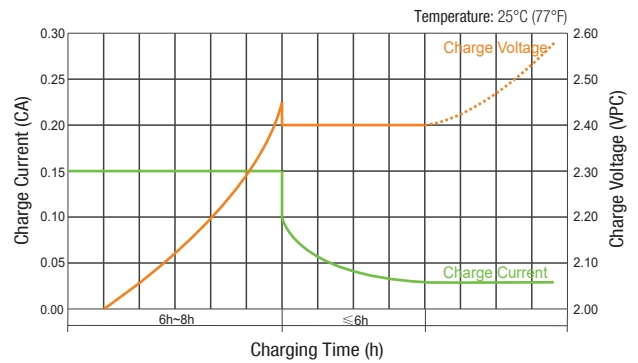
The battery must be fully charged before the capacity test. The C10 should reach 95% after the first cycle and 100% after the third cycle.



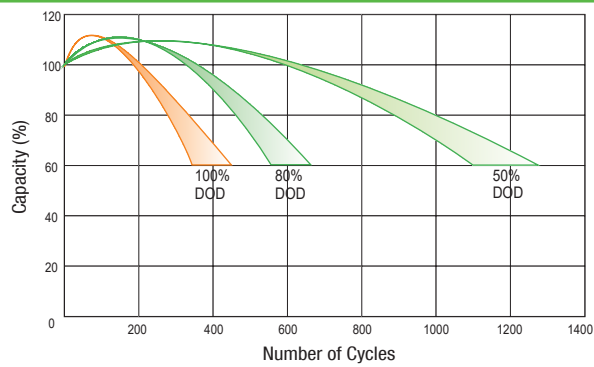
### CHARGE CHARACTERISTIC CURVE FOR CYCLE USE (IIUU)



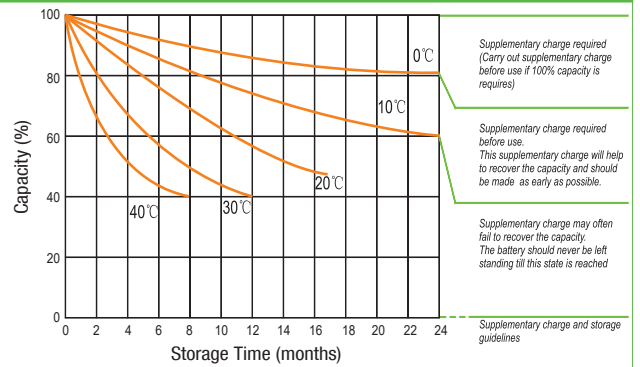
### CHARGE CHARACTERISTIC CURVE FOR CYCLE USE (IUI)



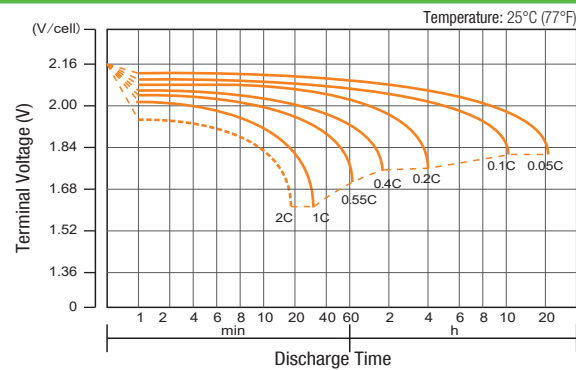
### CYCLE LIFE IN RELATION TO DEPTH OF DISCHARGE



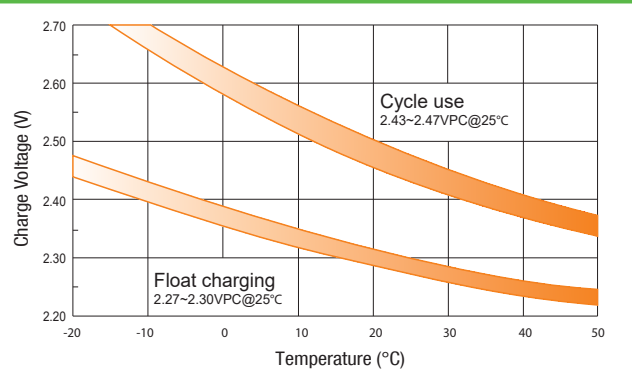
### STORAGE CHARACTERISTICS



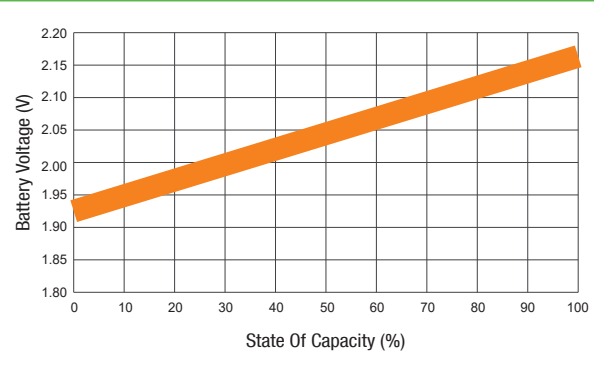
### DISCHARGE CHARACTERISTICS CURVE



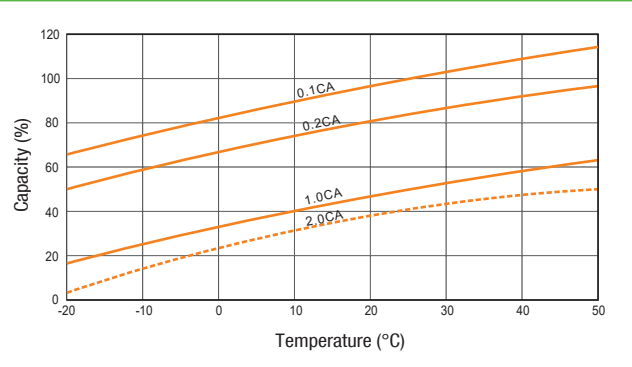
### RELATIONSHIP BETWEEN CHARGING VOLTAGE AND TEMPERATURE



### RELATIONSHIP OF OCV AND STATE OF CHARGE (20°C)



### TEMPERATURE EFFECTS ON CAPACITY



Note: All above information shall be changed without prior notice, Master Battery reserves the right to explain and update the latest information.

