

# STARMAX

The world's leading battery brand



## DEEP CYCLE GEL BATTERIES

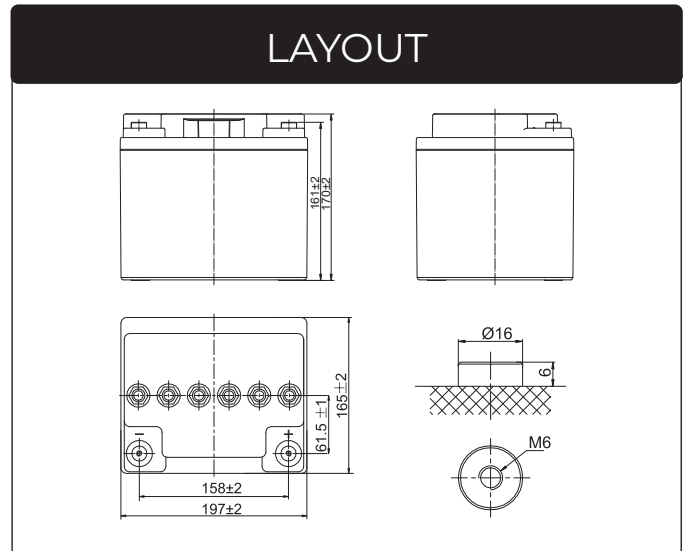
STG12-38 (12V 38Ah)



[www.starmaxbatteries.com](http://www.starmaxbatteries.com)

# STG SERIES-GEL BATTERIES

## STG12-38



## General Features

- ✓ Battery design life up to 12 years
- ✓ Special plate design guarantees battery floating life more than 4000 times
- ✓ High thermal capacity reduce the risk of thermal out of control and drying hard, and the battery can be used in bad environment
- ✓ Little water losing, and no electrolyte stratification phenomenon

## Applications

- ✓ Telecommunications
- ✓ Solar system
- ✓ Wind power system
- ✓ Engine starting
- ✓ Wheelchair, Floor cleaning machines, Golf trolley, Boats

## Standards

- ✓ IEC 60896 Certified
- ✓ Classified as "Long Life" according to Eurobat
- ✓ UL Certified
- ✓ Manufactured at Starmax® IATF16949, ISO 9001, ISO 14001 and ISO 45001 certified production facilities



# SPECIFICATIONS

|                               |  |                       |
|-------------------------------|--|-----------------------|
| Rated Voltage                 | 12V  |                       |
| Nominal Capacity              | (C <sub>20</sub> ,1.80V/cell)  | 38Ah                  |
| Dimensions                    | Length   | 197±2mm (7.76 inches) |
|                               | Width  | 165±2mm (6.50 inches) |
|                               | Container height   | 170±2mm (6.69 inches) |
|                               | Total height   | 170±2mm (6.69 inches) |
| Approx. weight                | 12.8kg (28.2 lbs)  |                       |
| Terminal                      | M6   |                       |
| Container material            | ABS  |                       |
| Rated capacity (25°C)         | 38.0 Ah  | C20(1.90A,1.80V/cell) |
|                               | 35.0 Ah  | C10(3.50A,1.80V/cell) |
|                               | 31.0 Ah  | C5(6.20A,1.75V/cell)  |
|                               | 27.7 Ah  | C3(9.22A,1.75V/cell)  |
|                               | 22.2 Ah  | C1(22.2A,1.60V/cell)  |
| Max. discharge current        | 380A (5s)  |                       |
| Internal resistance (25°C)    | Approx 13.3mΩ  |                       |
| Operating temp. range         | Discharge  | -20~55°C (-4~131°F)   |
|                               | Charge   | -20~40°C (-4~104°F)   |
|                               | Storage  | -15~50°C (5~122°F)    |
| Nominal operating temp. range | 25±3°C (77±5°F)  |                       |
| Standby Use                   | Initial Charging Current less than 9.5A. Voltage 2.23V~2.27V at 25°C (77°F)Temp. Coefficient -3mV/°C   |                       |
| Equalization Use              | Initial Charging Current less than 9.5A. Voltage 2.30V~2.37V at 25°C (77°F)Temp. Coefficient -4mV/°C   |                       |
| Cycle Use                     | Initial Charging Current less than 9.5A. Voltage 2.40V~2.50V at 25°C (77°F)Temp. Coefficient -5mV/°C   |                       |
| Effect of temp. to Capacity   | 40°C (104°F)   | 103%                  |
|                               | 25°C (77°F)  | 100%                  |
|                               | 0°C (32°F)   | 86%                   |
| Self discharge                | STG series batteries may be stored for up to 6 months at 25°C(77°F) and then a freshening charge is required. For higher temperatures the time interval will be shorter. |                       |

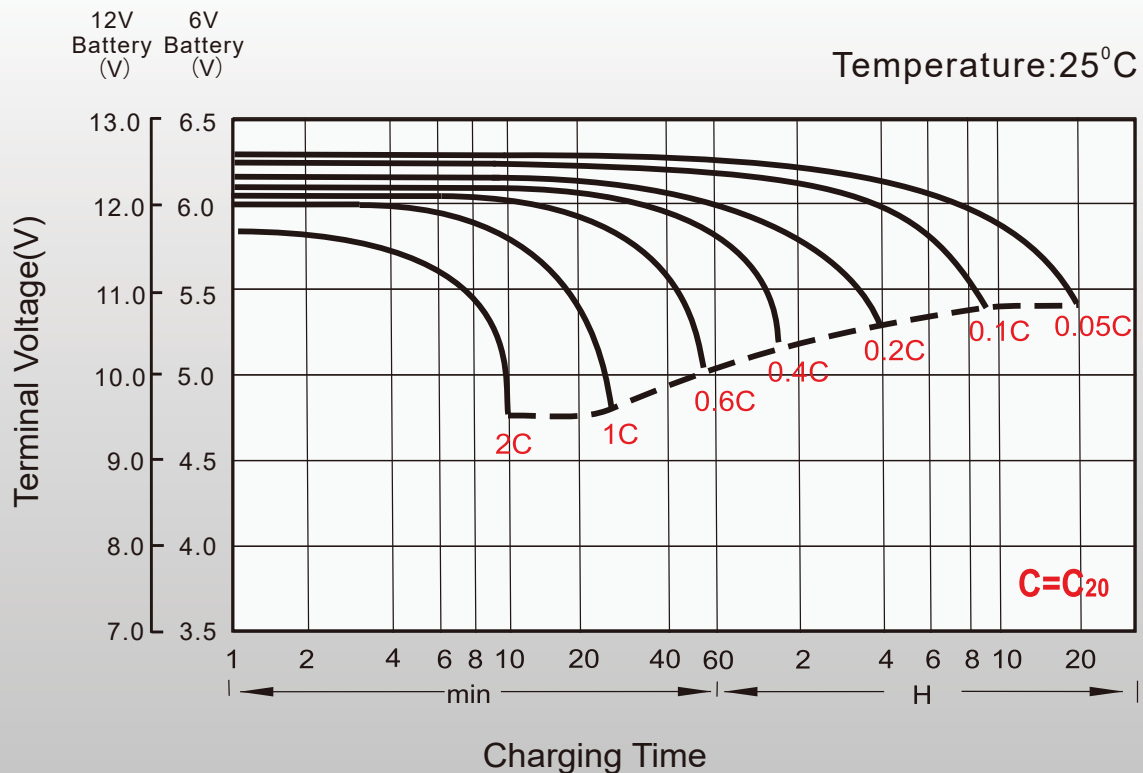
### Constant Current Discharge (Amperes) at 25°C (77°F)

| F.V/Time   | 10min | 15min | 20min | 30min | 45min | 1h   | 1.5h | 2h   | 3h   | 4h   | 5h   | 6h   | 8h   | 10h  | 20h  |
|------------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|
| 1.85V/cell | 46.1  | 39.9  | 31.4  | 28.4  | 20.8  | 16.5 | 12.8 | 10.2 | 8.08 | 6.56 | 5.73 | 4.99 | 4.05 | 3.43 | 1.77 |
| 1.80V/cell | 52.3  | 45.3  | 35.5  | 30.9  | 22.0  | 18.2 | 13.5 | 11.2 | 8.87 | 7.13 | 6.01 | 5.28 | 4.22 | 3.50 | 1.90 |
| 1.75V/cell | 56.7  | 49.0  | 38.3  | 31.6  | 22.8  | 20.4 | 14.8 | 12.0 | 9.22 | 7.35 | 6.20 | 5.45 | 4.29 | 3.61 | 1.91 |
| 1.70V/cell | 59.3  | 51.5  | 40.4  | 31.8  | 23.2  | 21.1 | 15.2 | 12.3 | 9.38 | 7.36 | 6.27 | 5.46 | 4.33 | 3.61 | 1.93 |
| 1.67V/cell | 62.4  | 53.6  | 41.8  | 32.7  | 23.6  | 21.5 | 15.5 | 12.5 | 9.51 | 7.48 | 6.37 | 5.54 | 4.36 | 3.64 | 1.95 |
| 1.60V/cell | 64.5  | 55.2  | 42.8  | 33.1  | 23.9  | 22.2 | 15.9 | 12.8 | 9.63 | 7.61 | 6.51 | 5.63 | 4.40 | 3.68 | 1.98 |

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

| F.V/Time   | 10min | 15min | 20min | 30min | 45min | 1h   | 1.5h | 2h   | 3h   | 4h   | 5h   | 6h   | 8h   | 10h  | 20h  |
|------------|-------|-------|-------|-------|-------|------|------|------|------|------|------|------|------|------|------|
| 1.85V/cell | 86.7  | 75.6  | 59.7  | 54.3  | 39.9  | 32.0 | 24.8 | 19.9 | 15.8 | 12.9 | 11.3 | 9.85 | 8.00 | 6.79 | 3.52 |
| 1.80V/cell | 96.9  | 84.6  | 66.8  | 58.6  | 42.0  | 35.1 | 26.2 | 21.8 | 17.3 | 14.0 | 11.8 | 10.4 | 8.32 | 6.92 | 3.77 |
| 1.75V/cell | 103.5 | 90.3  | 71.3  | 59.4  | 43.3  | 39.1 | 28.5 | 23.2 | 17.9 | 14.3 | 12.1 | 10.7 | 8.44 | 7.11 | 3.79 |
| 1.70V/cell | 106.3 | 93.5  | 74.1  | 59.2  | 43.7  | 40.0 | 29.1 | 23.6 | 18.2 | 14.3 | 12.2 | 10.7 | 8.51 | 7.10 | 3.84 |
| 1.67V/cell | 110.5 | 96.4  | 76.2  | 60.5  | 44.3  | 40.7 | 29.6 | 24.0 | 18.4 | 14.5 | 12.4 | 10.8 | 8.56 | 7.16 | 3.87 |
| 1.60V/cell | 112.1 | 97.8  | 77.3  | 60.7  | 44.5  | 41.6 | 30.1 | 24.3 | 18.5 | 14.7 | 12.6 | 10.9 | 8.60 | 7.21 | 3.92 |

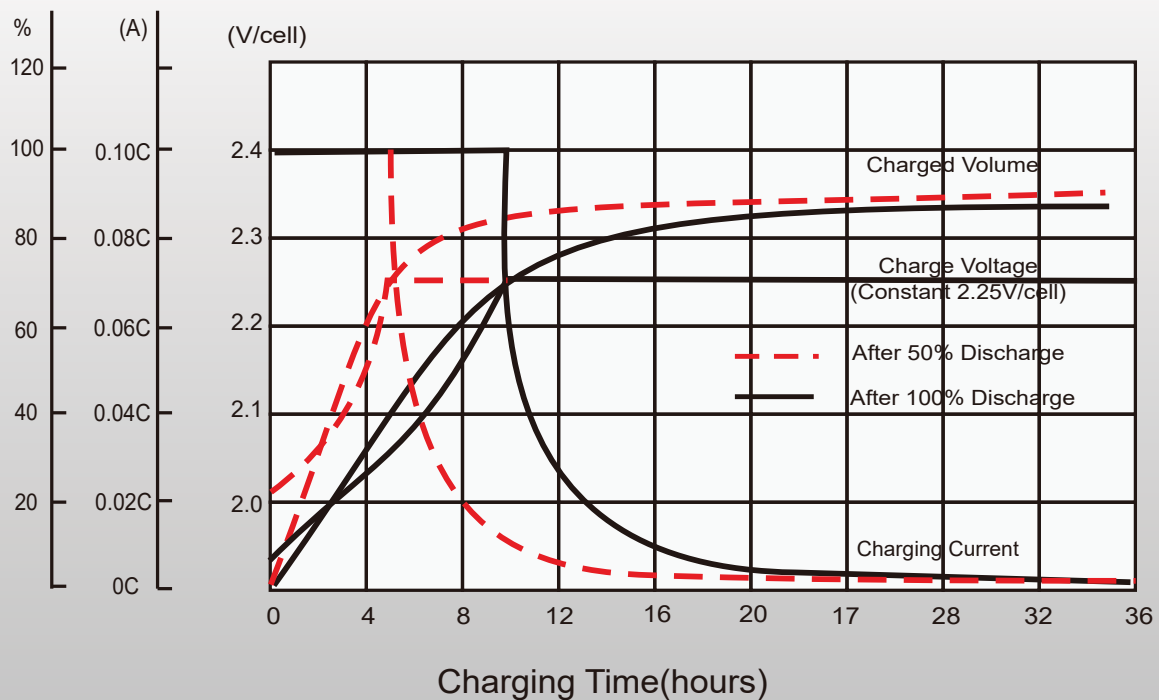
## Discharge Characteristics



# Float Charging Characteristics

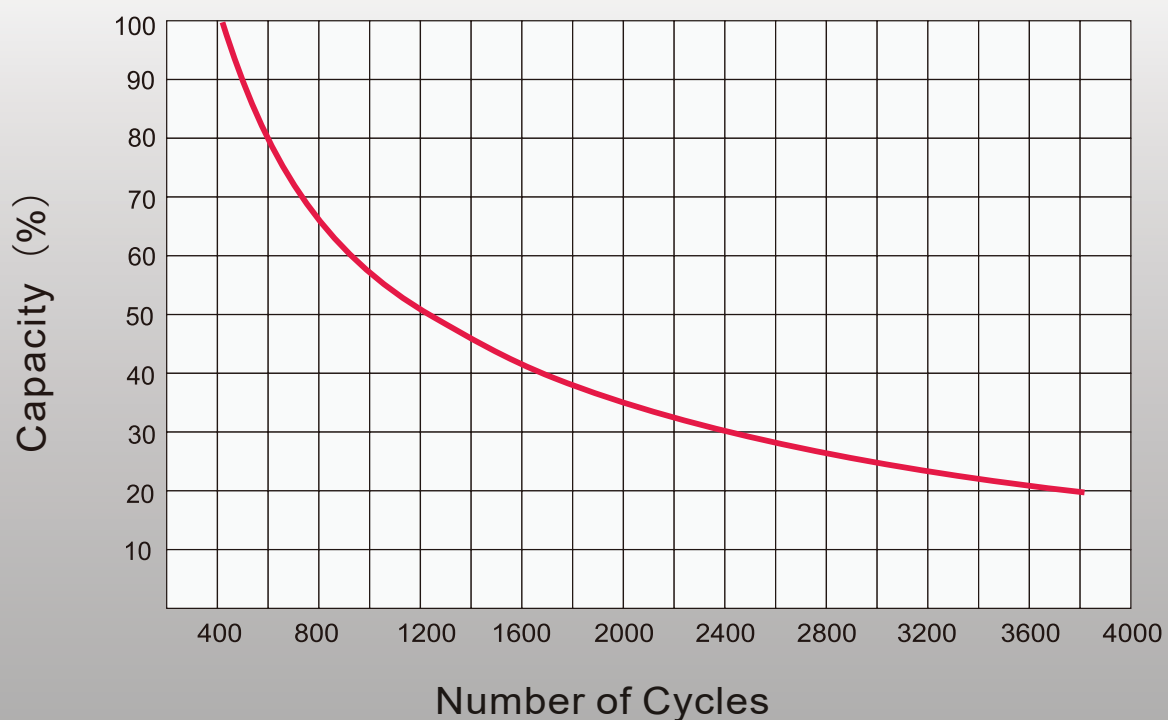
Charge Volume  
Charging Current  
Charging Voltage

0.1CA-2.25V/cell Temperature: 25°C

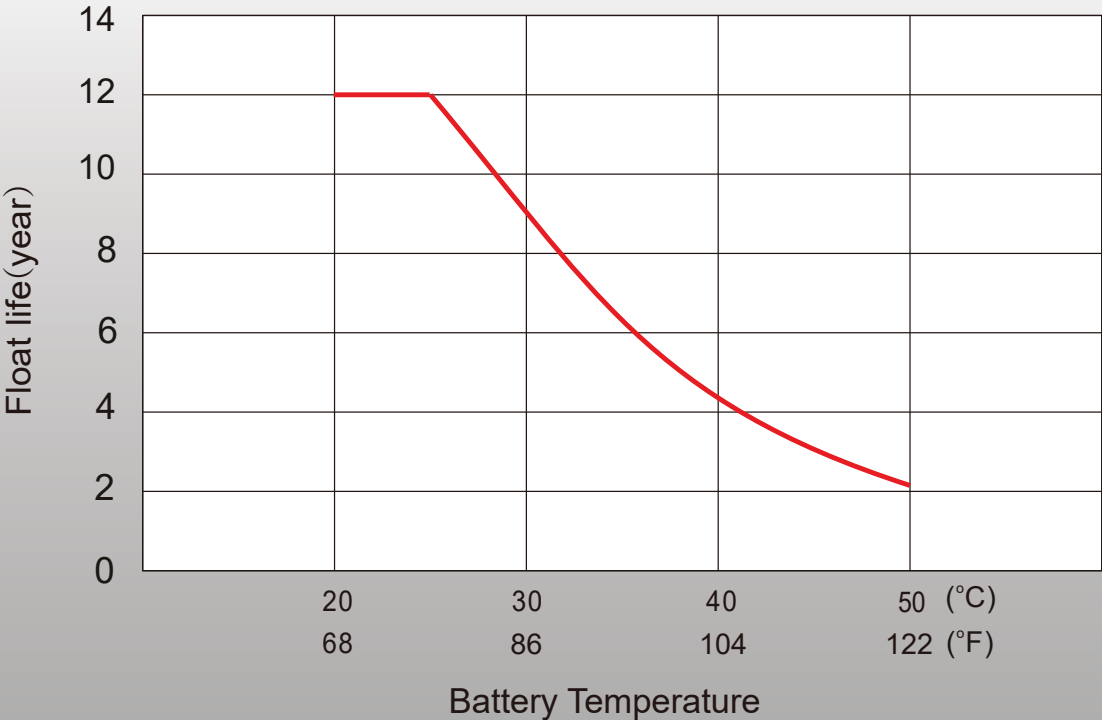


# Cycle Life in Relation to Depth of Discharge

Acc.to IEC 896-2 (25 °C / 77 °F)



# Effect of Temperature on Long Term Float Life





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