

# HG12-18 EV (12V18Ah)

## Specification

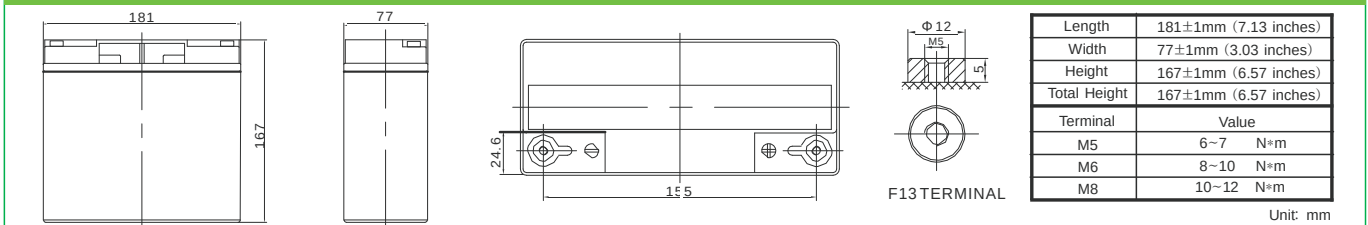
|                                    |                                                                                                                                                                                                                      |
|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cells Per Unit                     | 6                                                                                                                                                                                                                    |
| Voltage Per Unit                   | 12                                                                                                                                                                                                                   |
| Capacity                           | 18Ah@20hr-rate to 1.75V per cell @25°C                                                                                                                                                                               |
| Weight                             | Approx. 5.9 Kg (Tolerance $\pm 3\%$ )                                                                                                                                                                                |
| Internal Resistance                | Approx. 14.0 m $\Omega$                                                                                                                                                                                              |
| Terminal                           | F13(M8)/F3(M5)                                                                                                                                                                                                       |
| Max. Discharge Current             | 234A (5 sec)                                                                                                                                                                                                         |
| Cold Cranking Ampere(CCA)          | 180A                                                                                                                                                                                                                 |
| Maximum Charging Current           | 5.4A                                                                                                                                                                                                                 |
| Reference Capacity                 | C3 13.2AH<br>C5 11.0AH<br>C10 15.5AH<br>C20 18.0AH                                                                                                                                                                   |
| Float Charging Voltage             | 13.6 V~13.8 V @ 25°C<br>Temperature Compensation: -3mV/°C/Cell                                                                                                                                                       |
| Cycle Use Voltage                  | 14.6 V~14.8 V @ 25°C<br>Temperature Compensation: -4mV/°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 $\pm$ 5°C                                                                                                                                                                                                       |
| Self Discharge                     | 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.                                                                                                                                                                                    |

HG-EV series is specially designed for frequent discharge deep cycle application. By using the specially designed active material, strong grids and thick plate construction, the EV series battery offers reliable performance in high load situations and could provide competitive cycle performance.

Suitable for Electric Vehicle and Golf cart; Industrial equipment, Floor Machines, Forklifts, Aerial lifts, and Robotics; Marine, RV, and no-idle solutions; Mobility and Medical Equipment; and most outdoor application.



## 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    | 75.26 | 49.34 | 36.75 | 21.13 | 12.40 | 7.07 | 5.00 | 3.91 | 3.26 | 2.20 | 1.82 | 0.936 |
| 1.65V    | 72.47 | 47.70 | 35.65 | 20.68 | 12.17 | 6.95 | 4.92 | 3.85 | 3.22 | 2.18 | 1.80 | 0.928 |
| 1.70V    | 68.85 | 45.55 | 34.20 | 20.10 | 11.86 | 6.79 | 4.82 | 3.78 | 3.17 | 2.15 | 1.78 | 0.916 |
| 1.75V    | 64.03 | 42.68 | 32.26 | 19.30 | 11.43 | 6.58 | 4.68 | 3.68 | 3.09 | 2.10 | 1.75 | 0.901 |
| 1.80V    | 57.63 | 38.84 | 29.65 | 18.20 | 10.85 | 6.27 | 4.49 | 3.55 | 2.99 | 2.04 | 1.70 | 0.879 |
| 1.85V    | 48.98 | 33.60 | 26.05 | 16.66 | 10.02 | 5.84 | 4.21 | 3.35 | 2.84 | 1.95 | 1.63 | 0.846 |

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

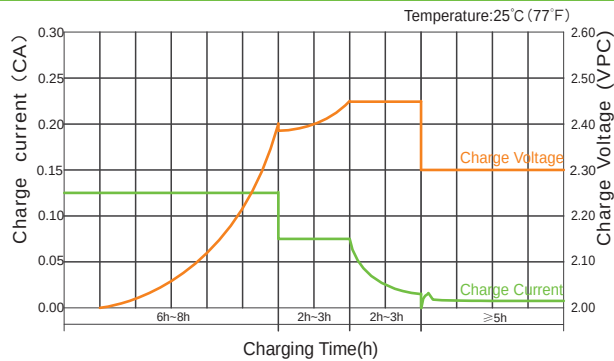
| F.V/Time | 5MIN  | 10MIN | 15MIN | 30MIN | 1HR   | 2HR   | 3HR  | 4HR  | 5HR  | 8HR  | 10HR | 20HR |
|----------|-------|-------|-------|-------|-------|-------|------|------|------|------|------|------|
| 1.60V    | 127.6 | 83.87 | 64.25 | 38.37 | 23.19 | 13.41 | 9.54 | 7.50 | 6.29 | 4.30 | 3.58 | 1.84 |
| 1.65V    | 126.2 | 83.22 | 63.63 | 38.13 | 22.99 | 13.28 | 9.46 | 7.44 | 6.24 | 4.27 | 3.55 | 1.83 |
| 1.70V    | 121.2 | 80.37 | 61.59 | 37.25 | 22.48 | 13.01 | 9.28 | 7.31 | 6.15 | 4.21 | 3.51 | 1.81 |
| 1.75V    | 114.7 | 76.66 | 58.94 | 36.14 | 21.79 | 12.65 | 9.05 | 7.15 | 6.02 | 4.13 | 3.45 | 1.78 |
| 1.80V    | 105.1 | 70.98 | 54.93 | 34.44 | 20.77 | 12.13 | 8.71 | 6.91 | 5.84 | 4.01 | 3.36 | 1.74 |
| 1.85V    | 90.89 | 62.49 | 48.94 | 31.82 | 19.32 | 11.36 | 8.21 | 6.55 | 5.57 | 3.84 | 3.22 | 1.68 |

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

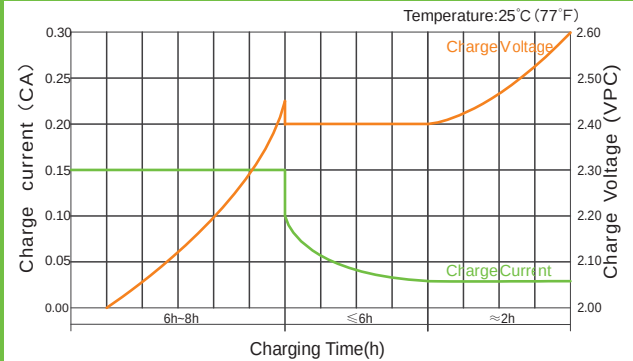
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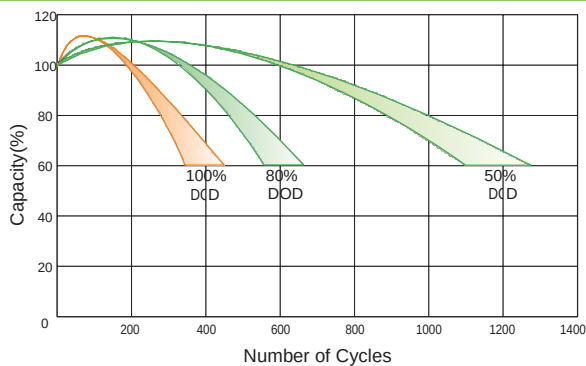
Charge Characteristic Curve for Cycle Use(IUUU)



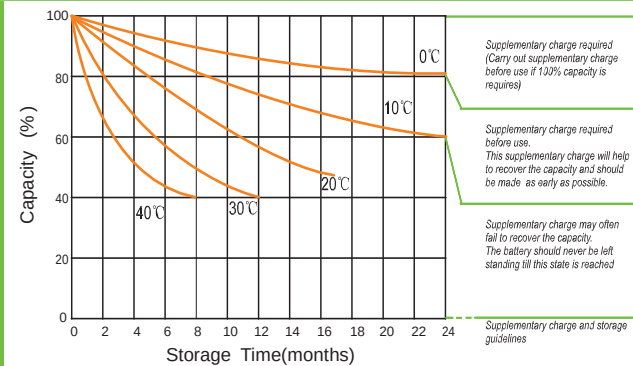
Charge Characteristic Curve For Cycle Use(IUI)



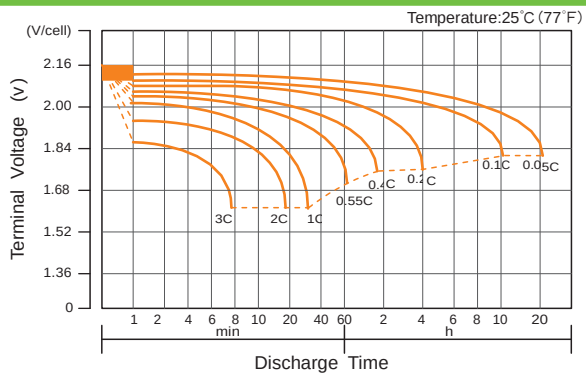
Cycle Life in Relation to Depth of Discharge



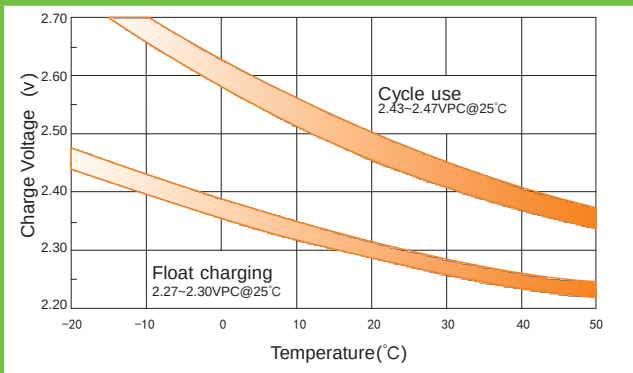
Storage Characteristics



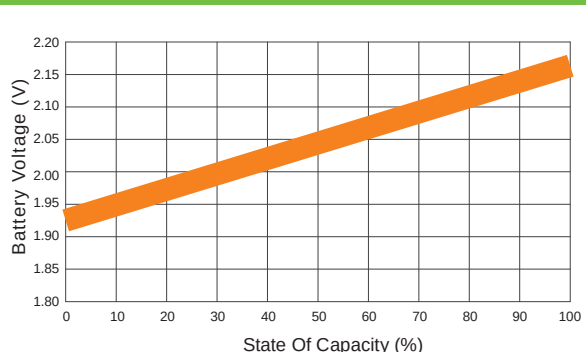
Discharge Characteristics Curve



Relationship Between Charging Voltage and Temperature



Relationship of OCV And State of Charge(20°C)



Temperature Effects on Capacity

