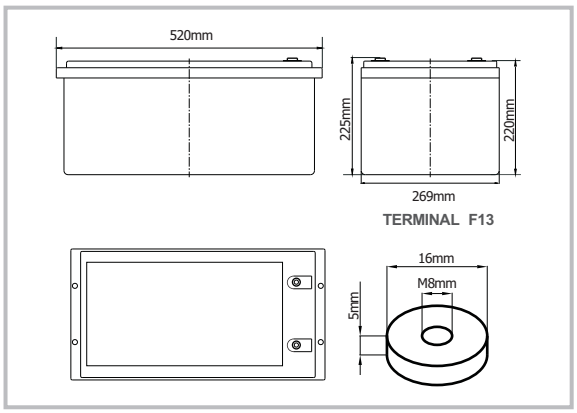
# Voltacon AGM LED Acid Solar Battery HXG12-250 (12V250Ah)

VOLTACON® ENERGY SYSTEMS

## HXG DEEP CYCLE GEL VRLA BATTERY

HXG Series, with its proprietary grid alloy and paste formulation, provides superior performance in both high cycling and floating applications. By combining the newly developed Nano Gel electrolyte with high density paste, the HXG series offers high recharge efficiency at very low charge current. The acid stratification is highly reduced by adding Nano Gel. It is suitable for off-grid photovoltaic, wind or hydro power application.


## BATTERY DIMENSIONS





## TECHNICAL SPECIFICATIONS

| | |
|---|---|
| Nominal Voltage (V) | 12 (6 cells per unit) |
| Designed Floating Life (20°C) | 12 Years |
| Nominal Capacity (20°C) | 250 Ah @ 10HR-rate (to 1.80Vpc) |
| Dimension (mm) | L520mm x W269mm x H225mm |
| Approx. Weight | 71.0 kg (156.6 lbs) |
| Terminal Type | Female Copper Insert M8 (torque:10~12N.m) |
| Internal Resistance | Approx. 0.0026 Ohm (fully charged @ 20°C) |
| Max. Charge Current | 62.5 A |
| Max. Discharge Current (5S) | 1000 A |
| Short Circuit Current | 4600 A |
| Self Discharge | Approx. 3% per month @ 20°C |
| Ambient Temperature | Discharge: -15~50°C<br>Charge: -15~40°C<br>Storage: -15~40°C |
| Float Charge Voltage (20~25°C) | 13.6-13.8V (-3mV/ cell/ °C) |
| Equalize and cycle Use Charge Voltage (20~25°C) | 14.4-14.8V (-5mV/ cell / °C) |
| Container Material | ABS (UL94-V0 optional) |

ISO9001 ISO14001

**Complied standards**
- IEC 60896-21/22
- UL1989
- JIS C8704
- GB/T19639

## BATTERY DISCHARGE TABLE

**Constant Current Discharge Characteristics: Amps (25°C)**

| F.V/Time | 5min | 10min | 15min | 30min | 1h | 2h | 3h | 4h | 5h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.60V | 713 | 531 | 443 | 276 | 167 | 98.1 | 70.8 | 56.5 | 47.1 | 32.1 | 26.5 | 14.3 |
| 1.67V | 636 | 490 | 418 | 264 | 163 | 96.4 | 70.0 | 55.7 | 46.4 | 31.7 | 26.2 | 14.0 |
| 1.70V | 567 | 445 | 395 | 254 | 159 | 95.2 | 69.2 | 55.2 | 46.0 | 31.3 | 25.9 | 13.6 |
| 1.75V | 493 | 413 | 366 | 245 | 156 | 93.5 | 68.1 | 54.6 | 45.4 | 30.9 | 25.5 | 13.4 |
| 1.80V | 436 | 376 | 342 | 234 | 151 | 91.5 | 66.8 | 53.3 | 44.4 | 30.2 | 25.0 | 13.1 |
| 1.85V | 373 | 338 | 311 | 221 | 144 | 88.0 | 64.6 | 51.8 | 43.3 | 29.5 | 24.4 | 12.8 |

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

| F.V/Time | 5min | 10min | 15min | 30min | 1h | 2h | 3h | 4h | 5h | 8h | 10h | 20h |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.60V | 1255 | 955 | 809 | 510 | 312 | 184 | 134 | 107 | 89.6 | 61.7 | 51.2 | 27.7 |
| 1.67V | 1134 | 889 | 767 | 490 | 305 | 182 | 133 | 106 | 89.1 | 61.3 | 50.9 | 27.3 |
| 1.70V | 1024 | 816 | 732 | 475 | 300 | 181 | 132 | 105 | 88.9 | 61.0 | 50.6 | 26.9 |
| 1.75V | 902 | 767 | 687 | 463 | 297 | 180 | 131 | 104 | 88.5 | 60.6 | 50.3 | 26.5 |
| 1.80V | 808 | 705 | 646 | 446 | 289 | 177 | 130 | 102 | 87.1 | 59.7 | 49.7 | 26.2 |
| 1.85V | 703 | 643 | 595 | 425 | 280 | 172 | 127 | 100 | 85.7 | 58.8 | 48.7 | 25.8 |

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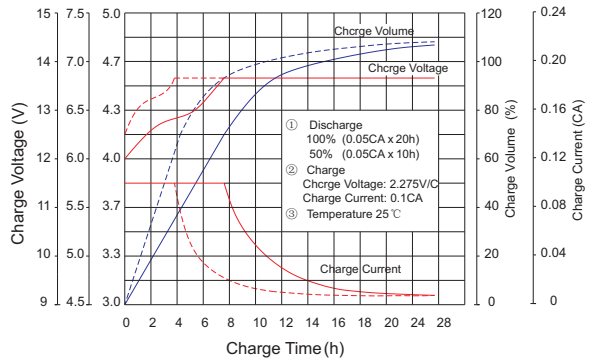
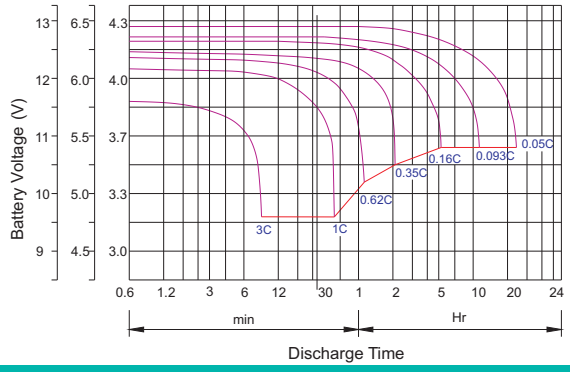
## CHARACTERISTICS

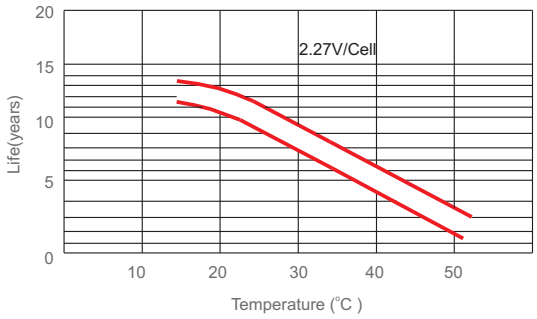
### Charge Characteristic



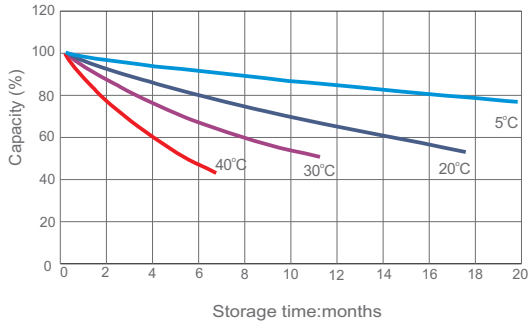

### Discharge Characteristic (25°C)



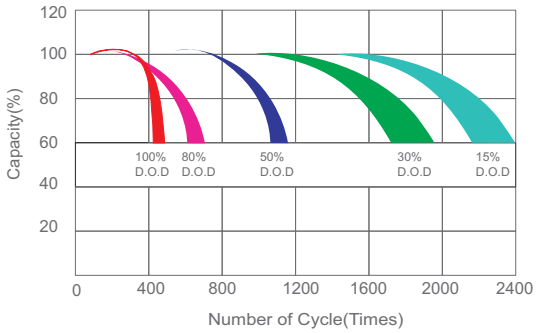

### Temperature vs Float Life



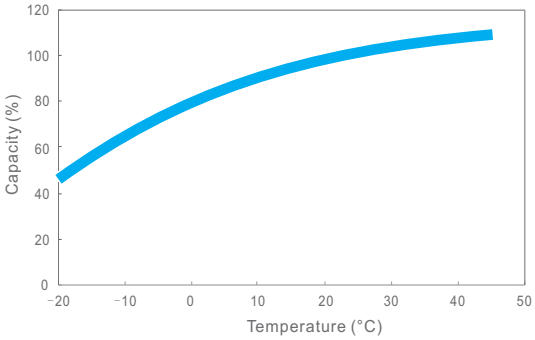

### Self discharge characteristics




### Life Characteristic of cyclic use




### Capacity vs Temperature




## Discharge Current VS. Discharge Voltage

| | | | | |
|---|---|---|---|---|
| Final Discharge Voltage V/cell | 1.80V | 1.75V | 1.70V | 1.60V |
| Discharge Current I /A | I<0.2C | 0.2C≤I<0.6C | 0.6C≤I<1.0C | I≥1.0C |

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

**Charging Method:**

| | |
|---|---|
| Constant Voltage | 0.2Cx2h+2.4~2.45V/Cellx24h, Max. Current 0.25CA |
| Constant Current | 0.2Cx2h+0.1CAx12h |
| Fast | 0.2Cx2h+0.3CAx4.0h |

## Maintenance & Cautions

| **Cycle service** |
|---|
| ※ Avoid battery over discharge, especially battery sereis connection use. |
| ※ Charged with recommend voltage, ensure battery can be full recharged. |
| In general, recharge capacity should be 1.1-1.15 times discharge capacity. |
| ※ Effect of temperature on cycle charge voltage: -5mV/ ℃/Cell. |
| ※ There are a number of factors that will affect the length of cyclic service. |
| The most significant are depth of discharge, ambient temperature, |
| discharge rate, and the battery recharge mode. |
| Generally specking, the most important factors is depth of discharge. |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