LIVEN BATTERY

# 12V 48W

# LVH12-48W

**AGM High Rate Battery**


## LIVEN LVH Series

AGM (Absorbent Glass Material) technology with gas recombination. The LVH series Valve Regulated Lead Acid (VRLA) battery is designed for heavy load discharge applications with 8 years design life in float service.

By using strong grids and specially designed active material is with lower I.R, lower self discharge rate, high power, and longer service life performance.

Generally the LVH series offers 30% more power output than the standard range.

## Applications:

- High Power
- UPS
- Datacenters
- Emergency backup PW
- Security system
- Communication power supply
- DC power supply
- Electric Tools

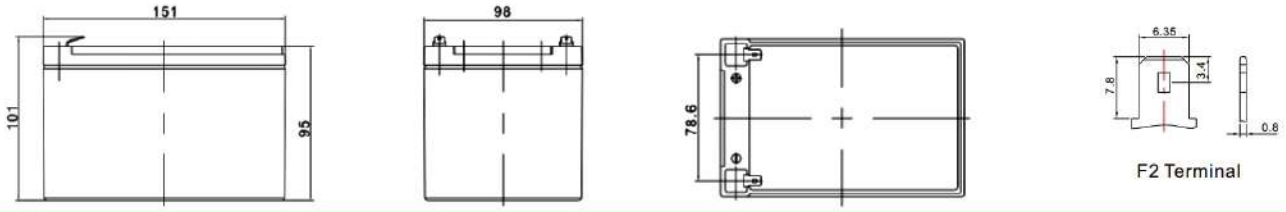
## Dimensions:

| | |
|---|---|
| Length | 151±1mm (5.94in) |
| Width | 98±1mm (3.86in) |
| Height | 95±1mm (3.74in) |
| Total Height | 101±1mm (3.98in) |

## Specifications:

| | |
|---|---|
| **Cells Per Unit** | 6 |
| **Voltage Per Unit** | 12V |
| **Nominal Capacity** | 48W @15min-rate to 1.67V per cell @25°C |
| **Weight** | Approx. 3.20Kg ±2% (7.05lbs) |
| **Internal Resistance** | Approx. 14mΩ |
| **Terminal** | F2 |
| **Max. Discharge Current** | 120A (5sec) |
| **Design Life** | 8 years floating<br>Eurobat (20°C): 6-9 years General Purpose |
| **Recommended Maximum Charging Current** | 3.6A |
| **Reference Capacity** | C20 12Ah |
| **Standby Use Voltage** | 13.7V~13.9V @ 25°C<br>Temperature Compensation: -3mV/°C/Cell |
| **Cycle Use Voltage** | 14.6V~14.8V @ 25°C<br>Temperature Compensation: -4mV/°C/Cell |
| **Operating Temperature Range** | Discharge: -15°C~50°C<br>Charge: -10°C~45°C<br>Storage: -15°C~50°C |
| **Normal Operating Temperature Range** | 25°C±5°C |
| **Self Discharge** | LIVEN 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 charge batteries before using. |
| **Container Material** | A.B.S. UL94-HB, UL94-V0 Optional. |

## Technical Drawings:




## Constant Current Discharge (CC, Unit: A) at 25ºC (77ºF)

| F.V./ Time | 3min | 5min | 8min | 10min | 15min | 20min | 30min | 60min | 90min |
|---|---|---|---|---|---|---|---|---|---|
| **1.60V** | 62.59 | 55.02 | 43.96 | 37.68 | 27.80 | 21.85 | 15.57 | 8.731 | 6.189 |
| **1.67V** | 56.80 | 49.93 | 40.20 | 34.74 | 26.00 | 20.63 | 14.75 | 8.322 | 5.924 |
| **1.70V** | 54.35 | 47.77 | 38.60 | 33.47 | 25.20 | 20.07 | 14.39 | 8.140 | 5.814 |
| **1.75V** | 50.34 | 44.25 | 35.96 | 31.37 | 23.80 | 19.07 | 13.79 | 7.867 | 5.637 |
| **1.80V** | 46.11 | 40.53 | 33.24 | 29.26 | 22.60 | 18.17 | 13.18 | 7.571 | 5.438 |
| **1.85V** | 39.42 | 34.65 | 28.32 | 24.84 | 19.38 | 15.79 | 11.66 | 6.844 | 4.974 |

## Constant Power Discharge (CP, Unit: W/Battery) at 25ºC (77ºF)

| F.V./ Time | 3min | 5min | 8min | 10min | 15min | 20min | 30min | 60min | 90min |
|---|---|---|---|---|---|---|---|---|---|
| **1.60V** | 675.0 | 593.2 | 475.7 | 409.3 | 304.8 | 241.4 | 172.6 | 98.2 | 70.3 |
| **1.67V** | 619.8 | 545.1 | 440.9 | 382.7 | 288.0 | 230.3 | 166.2 | 94.6 | 67.9 |
| **1.70V** | 598.7 | 526.3 | 426.7 | 371.3 | 282.0 | 225.4 | 162.4 | 93.1 | 66.8 |
| **1.75V** | 560.0 | 492.2 | 402.0 | 352.4 | 268.8 | 216.9 | 157.2 | 90.4 | 65.1 |
| **1.80V** | 519.8 | 457.0 | 376.1 | 332.2 | 256.8 | 208.3 | 152.0 | 87.8 | 63.4 |
| **1.85V** | 451.7 | 397.1 | 325.0 | 285.5 | 223.2 | 182.6 | 135.3 | 79.9 | 58.2 |

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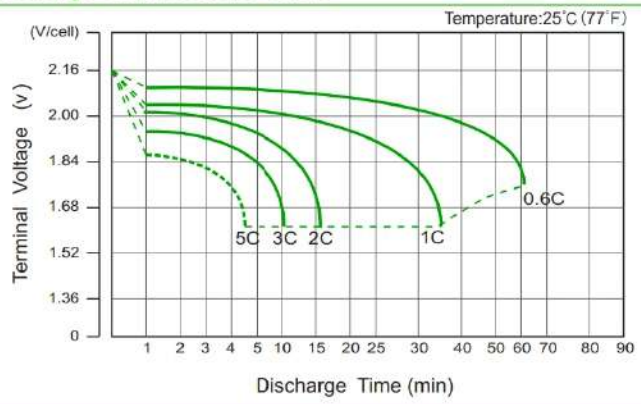
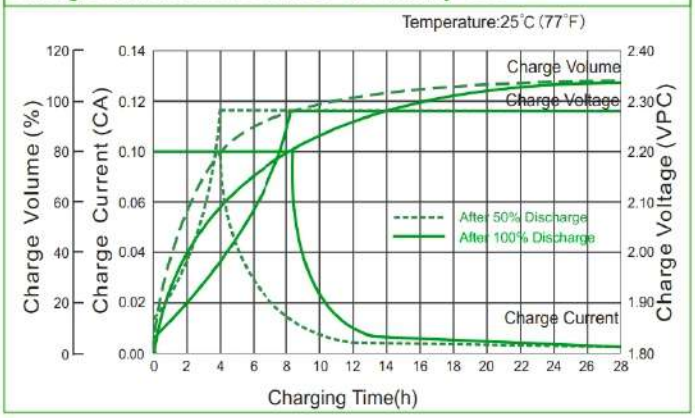
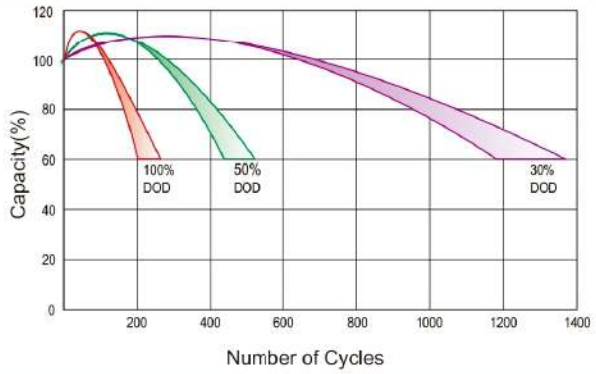
## Discharge Characteristics Curve



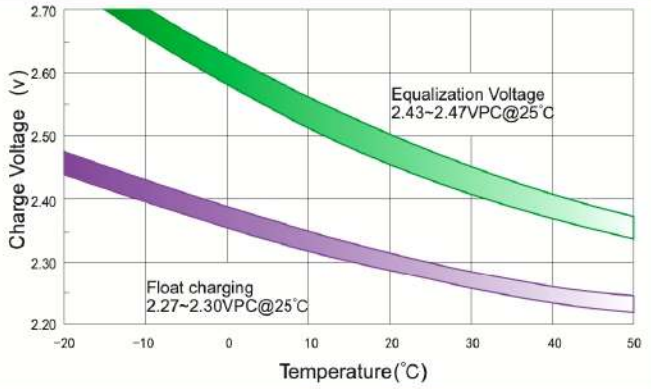

## Charge Characteristic Curve For Standby Use



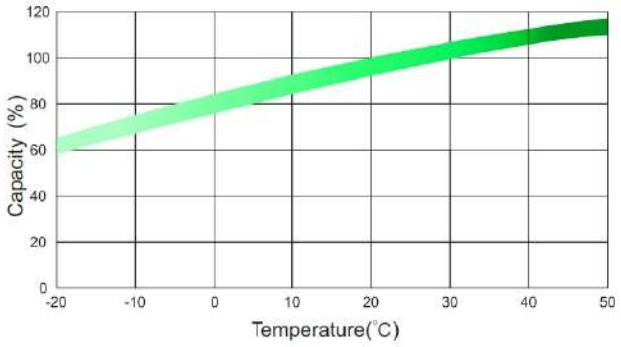

## Cycle Life In Relation To Depth Of Discharge



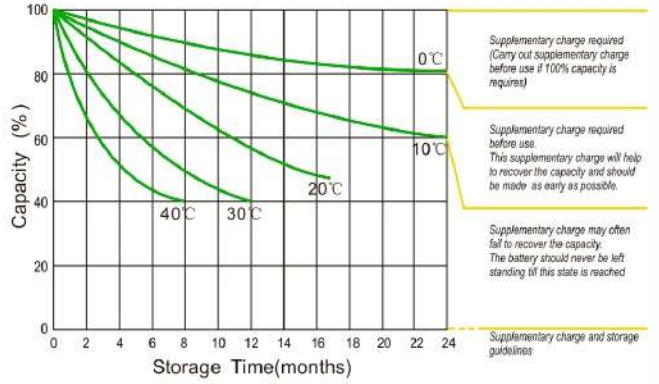

## Relationship Between Charging Voltage And Temperature



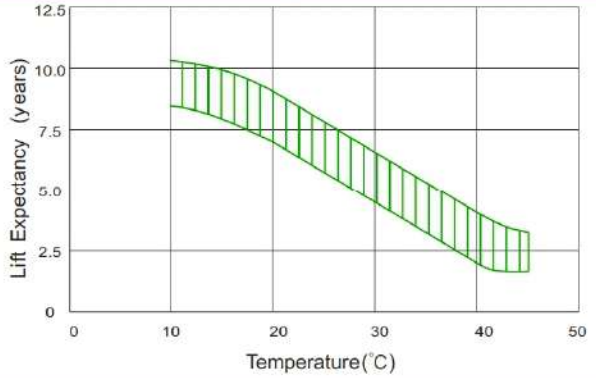

## Temperature Effects On Capacity



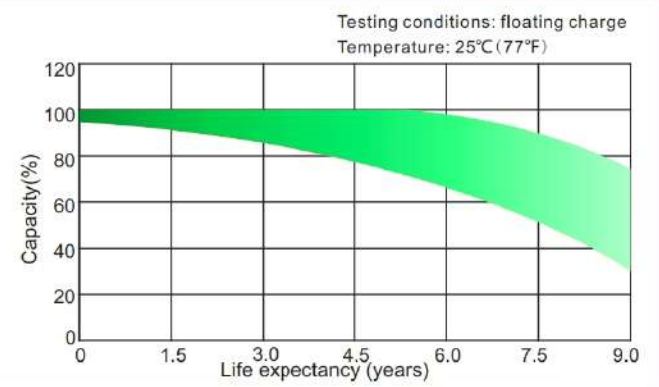

## Storage Characteristics




## Effect Of Temperature On Long Term Life




## Life Characteristics Of Standby Use




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