



LIVEN LVJ Series

LVJ Hybrid Gel series are manufactured with AGM separator (Absorbent Glass Material) and patented Gel electrolyte. The LVJ series Valve Regulated Lead Acid (VRLA) is Hybrid Gel battery with 12 years floating design life. This battery is ideal for standby or frequent cyclic discharge applications.

The number of deep discharge cycles is increase much compared with normal AGM, 400 cycles at 100% DOD.

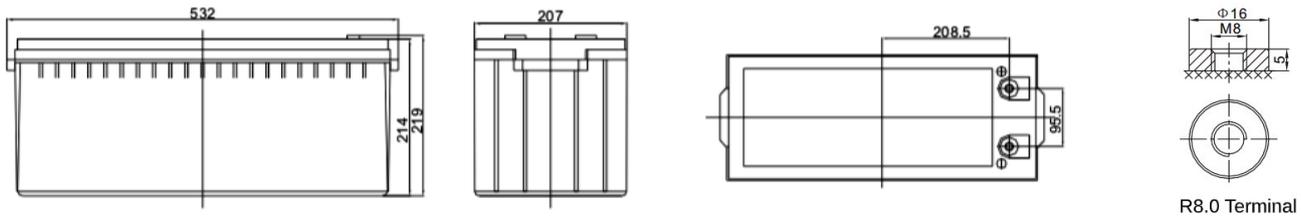
Applications:

- Telecommunications
- Uninterrupted Power Supplies
- Medical equipments
- Solar System
- Wind Power System
- Auto Control System

Dimensions:

| | |
|--------------|--------------------|
| Length | 532±1.5mm (20.9in) |
| Width | 207±1.5mm (8.15in) |
| Height | 214±1.5mm (8.43in) |
| Total Height | 219±1.5mm (8.62in) |

Technical Drawings:



Constant Current Discharge (CC, Unit: A) at 25°C (77°F)

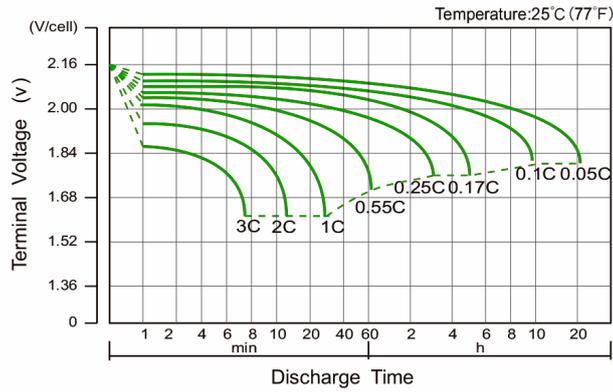
| F.V. / Time | 10min | 15min | 30min | 1h | 2h | 3h | 4h | 5h | 8h | 10h | 20h |
|-------------|-------|-------|-------|-------|------|------|------|------|------|------|------|
| 1.60V | 357.0 | 281.4 | 163.1 | 102.4 | 63.3 | 47.1 | 37.7 | 31.7 | 21.7 | 18.4 | 9.35 |
| 1.65V | 345.1 | 273.0 | 159.7 | 100.5 | 62.2 | 46.4 | 37.1 | 31.3 | 21.4 | 18.2 | 9.27 |
| 1.70V | 329.6 | 261.9 | 155.2 | 97.9 | 60.7 | 45.5 | 36.5 | 30.8 | 21.1 | 17.9 | 9.16 |
| 1.75V | 308.8 | 247.1 | 149.0 | 94.4 | 58.8 | 44.1 | 35.5 | 30.1 | 20.7 | 17.6 | 9.00 |
| 1.80V | 281.0 | 227.0 | 140.6 | 89.6 | 56.1 | 42.3 | 34.2 | 29.1 | 20.0 | 17.1 | 8.78 |
| 1.85V | 243.1 | 199.5 | 128.6 | 82.8 | 52.2 | 39.7 | 32.3 | 27.6 | 19.1 | 16.4 | 8.46 |

Constant Power Discharge (CP, Unit: W/Battery) at 25°C (77°F)

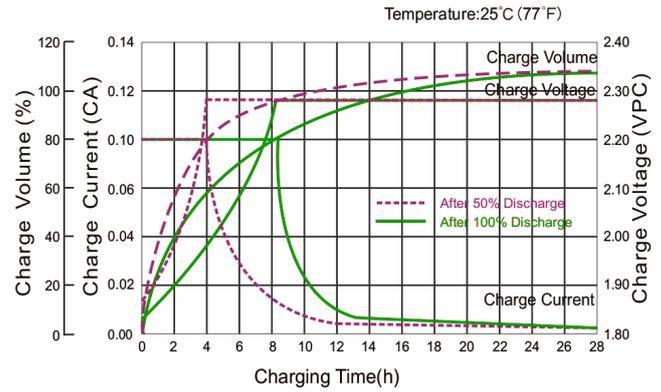
| F.V. / Time | 10min | 15min | 30min | 1h | 2h | 3h | 4h | 5h | 8h | 10h | 20h |
|-------------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|
| 1.60V | 3834.0 | 3108.0 | 1872.0 | 1212.0 | 756.0 | 568.8 | 456.6 | 386.4 | 267.0 | 228.0 | 116.4 |
| 1.65V | 3804.0 | 3078.0 | 1860.0 | 1200.0 | 750.0 | 563.4 | 453.0 | 383.4 | 265.2 | 226.2 | 115.2 |
| 1.70V | 3672.0 | 2976.0 | 1818.0 | 1170.0 | 732.0 | 553.2 | 445.2 | 378.0 | 261.6 | 223.2 | 114.0 |
| 1.75V | 3504.0 | 2850.0 | 1764.0 | 1134.0 | 714.0 | 539.4 | 435.6 | 370.2 | 256.2 | 219.0 | 112.2 |
| 1.80V | 3246.0 | 2658.0 | 1680.0 | 1086.0 | 684.0 | 519.0 | 420.6 | 359.4 | 249.0 | 213.6 | 109.8 |
| 1.85V | 2856.0 | 2364.0 | 1554.0 | 1008.0 | 642.0 | 489.0 | 399.0 | 342.6 | 238.8 | 205.2 | 105.6 |

| Specifications: | |
|------------------------------------|---|
| Cells Per Unit | 6 |
| Voltage Per Unit | 12V |
| Nominal Capacity | 180Ah @20hour-rate to 1.75V per cell @25°C |
| Weight | Approx. 53.0Kg ±2% (116.87lbs) |
| Internal Resistance | Approx. 4.0mΩ |
| Terminal | R8.0 |
| Max. Discharge Current | 1800A (5sec) |
| Design Life | 12 years floating Eurobat (20°C): 10-12 years Long Life |
| Recommended Max. Charging Current | 54.0A |
| Standby Use Voltage | 13.6V~13.8V @ 25°C Temperature Compensation: -3mV/°C/Cell |
| Cycle Use Voltage | 14.6V~14.8V @ 25°C Temperature Compensation: -4mV/°C/Cell |
| Operating Temperature Range | Discharge: -20°C~60°C Charge: 0°C~50°C Storage: -20°C~60°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. |

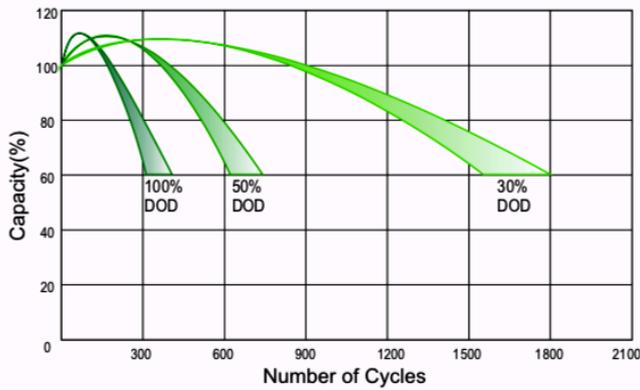
Discharge Characteristics Curve



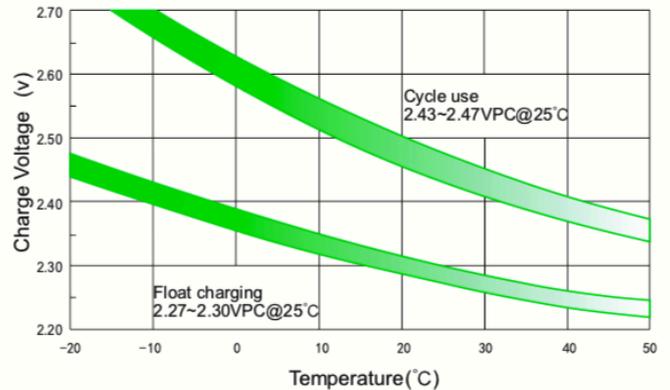
Charge Characteristic Curve For Standby Use



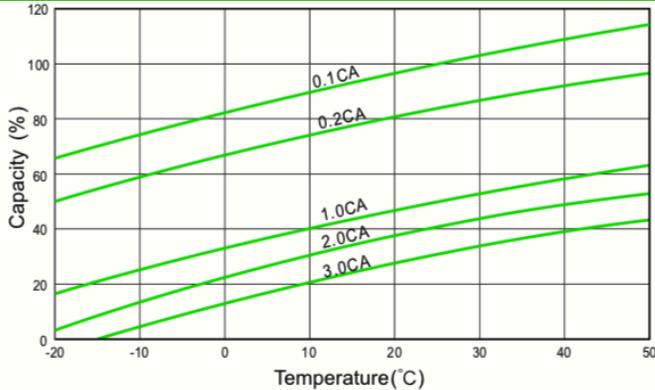
Cycle Life In Relation To Depth Of Discharge



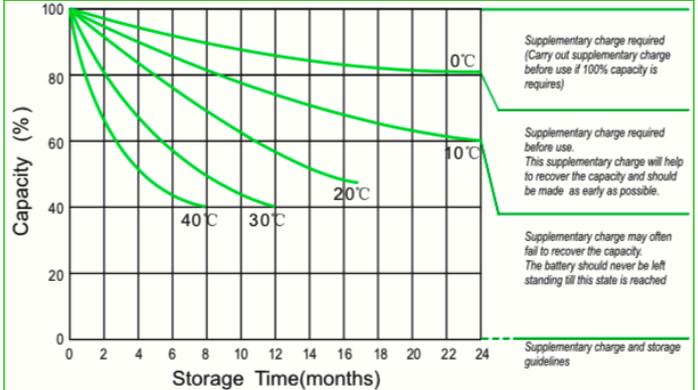
Relationship Between Charging Voltage And Temperature



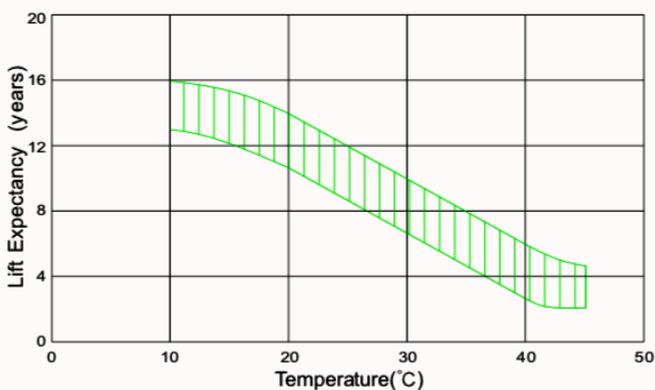
Temperature Effects On Capacity



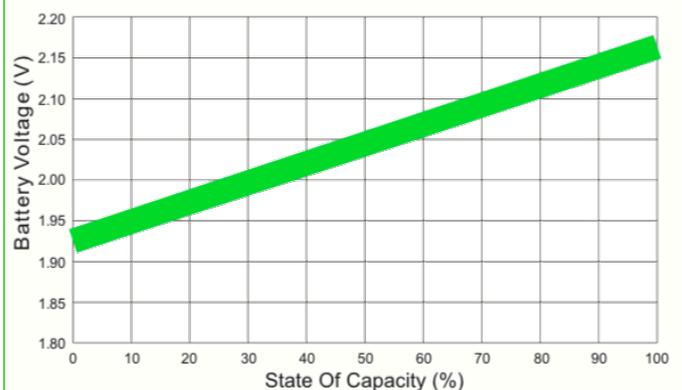
Storage Characteristics



Effect Of Temperature On Long Term Life



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



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