



LIVEN LEV Series

AGM (Absorbent Glass Material) technology with gas recombination. VRLA (Valve Regulated Lead Acid Battery). LEV (Liven Electric Vehicle) series is specially designed for frequent discharge deep cycle application. Maintenance-Free Sealed Lead Acid Battery.

Cycle use 1: Up to 260 cycles at 100% DOD.

Cycle use 2: Up to 500 cycles at 50% DOD.

Application:

- Electric Vehicle
- Golf cart
- Industrial equipment
- Floor machines
- Forklifts
- Aerial lifts and Robotics
- Marine
- RV
- No-idle solutions
- Mobility
- Medical equipment
- Outdoor application

Dimensions:

Length	328±2mm (12.9 inches)
Width	172±2mm (6.77 inches)
Height	215±2mm (8.46 inches)
Total Height	220±2mm (8.66 inches)

Specification:

Cells Per Unit	6
Voltage Per Unit	12
Nominal Capacity	116Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 30.5 Kg ±2%
Internal Resistance	Approx. 5.5 mΩ
Terminal	R8.0
Max. Discharge Current	1100 A (5 sec)
Cold Cranking Ampere (CCA)	700A
Recommended Maximum Charging Current	33.0A
Standby Use Voltage	13.6 V~13.8 V @ 25°C Temperature Compensation: -3mV/°C/Cell
Cycle Use Voltage	14.6 V~14.8 V @ 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

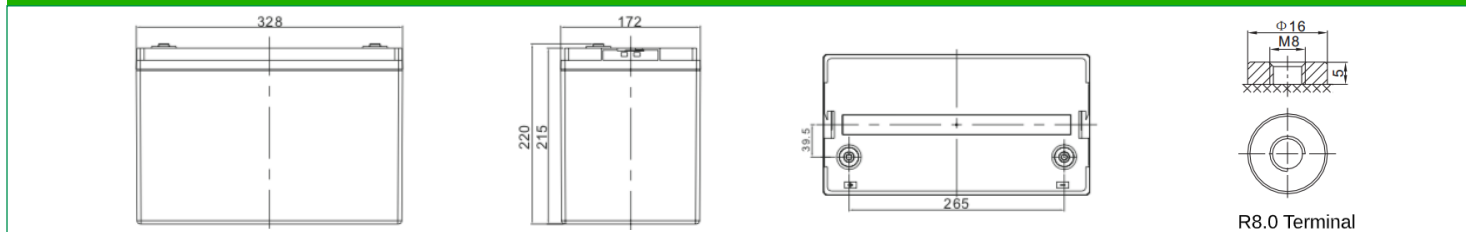
LIVEN Valve Regulated Lead Acid (VRLA) batteries can be stored for up to 6 months at 25°C and then recharging is recommended. Monthly Self-discharge ratio is less than 3% at 25°C. Please charge batteries before using.

Container Material

A.B.S. UL94-HB, UL94-V0 Optional.



Drawing:



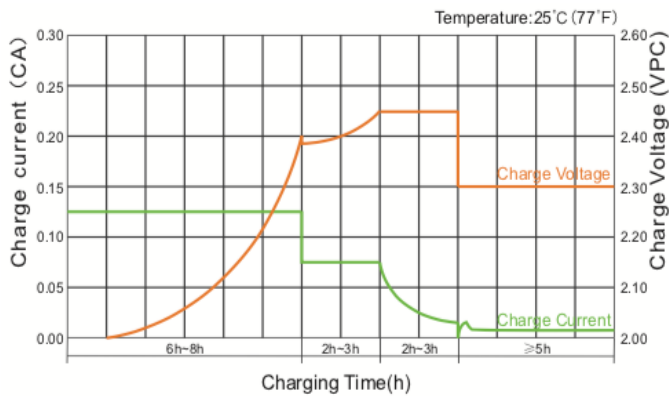
Constant Current Discharge (CC, Unit: A) at 25°C (77°F)

F.V/Time	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	265.3	206.5	122.9	67.9	40.1	31.1	24.4	20.8	14.0	11.6	6.07
1.65V	250.6	197.4	118.0	65.6	38.8	30.1	23.7	20.2	13.8	11.5	5.97
1.70V	230.8	184.9	112.7	63.4	37.5	29.3	23.1	19.7	13.6	11.3	5.90
1.75V	211.2	172.1	107.8	61.1	36.2	28.4	22.5	19.2	13.4	11.1	5.83
1.80V	191.2	158.9	103.0	58.8	34.9	27.5	21.9	18.7	13.2	11.0	5.77
1.85V	156.3	131.8	88.7	52.7	32.0	25.4	20.3	17.5	12.4	10.4	5.48

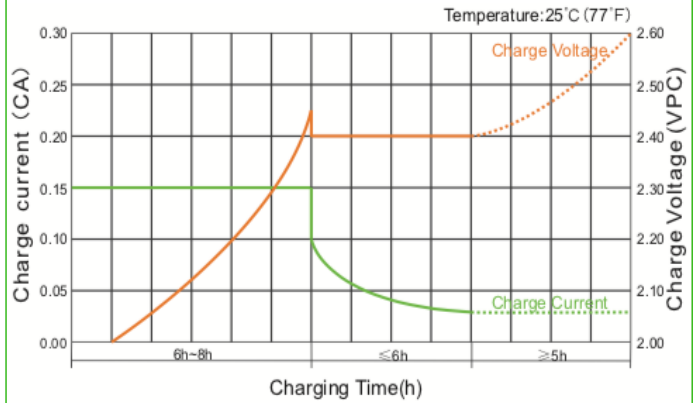
Constant Power Discharge (CP, Unit: W/Battery) at 25°C (77°F)

F.V/Time	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	2705.4	2166.0	1339.2	765.6	456.0	355.8	281.4	240.0	163.8	136.8	72.0
1.65V	2605.8	2101.2	1299.0	743.4	443.4	346.2	274.8	234.6	162.0	135.6	70.8
1.70V	2442.6	1997.4	1254.0	723.6	431.4	338.4	268.2	229.8	160.2	133.8	70.2
1.75V	2276.4	1885.8	1210.8	701.4	418.2	330.0	262.2	224.4	157.8	132.0	69.0
1.80V	2096.4	1765.8	1169.4	678.6	405.0	321.0	255.6	219.6	156.0	130.2	68.4
1.85V	1743.6	1486.2	1017.0	612.6	373.2	297.6	238.8	205.2	146.4	123.0	65.4

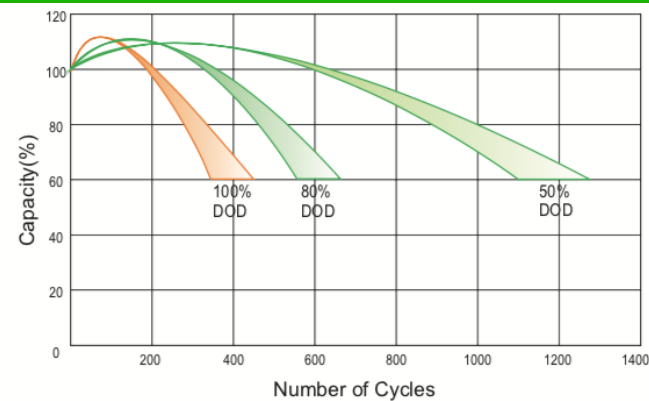
Charge Characteristic Curve For Cycle Use (IIUU)



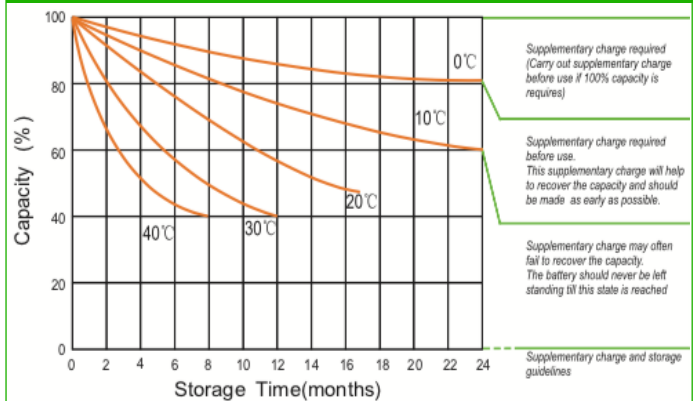
Charge Characteristic Curve For Cycle Use (IUI)



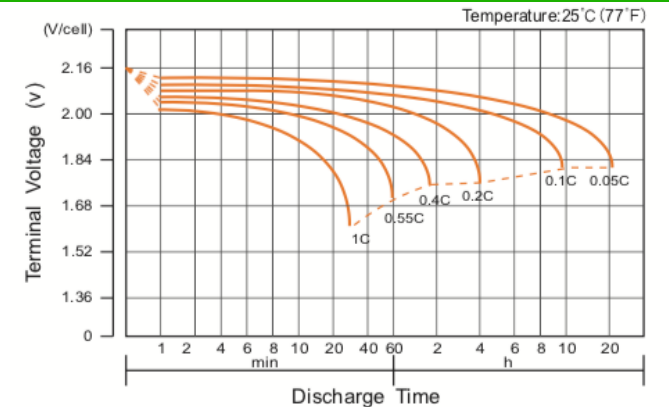
Cycle Life In Relation To Depth Of Discharge



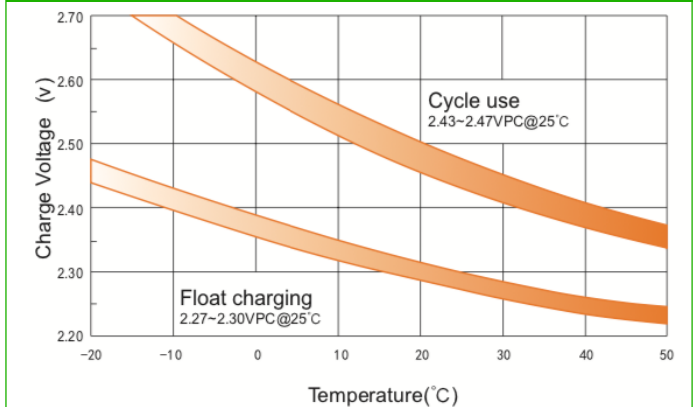
Storage Characteristics



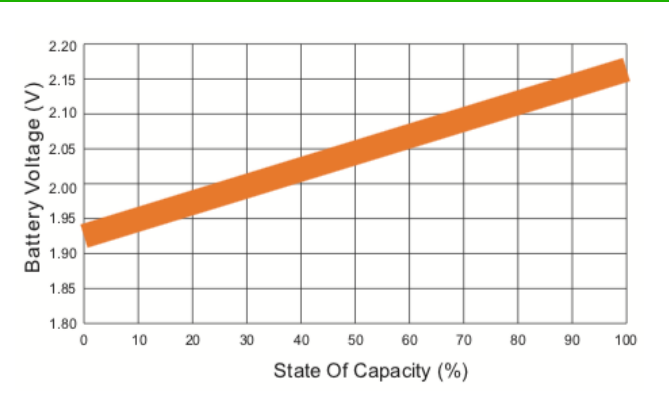
Discharge Characteristics Curve



Relationship Between Charging Voltage And Temperature



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



Temperature Effects On Capacity

