

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.

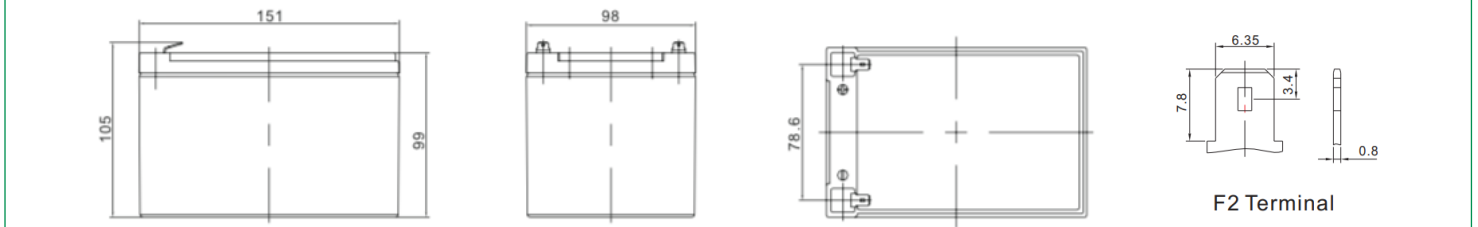
Application:

- 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	151±2mm (5.94 inches)
Width	98±2mm (3.86 inches)
Height	99±2mm (3.90 inches)
Total Height	105±2mm (4.13 inches)

Drawing:



Specification:

Cells Per Unit	6
Voltage Per Unit	12
Nominal Capacity	14Ah@20hr-rate to 1.75V per cell @25°C
Weight	Approx. 4.50 Kg ±2%
Internal Resistance	Approx. 12.0 mΩ
Terminal	F1/F2
Max. Discharge Current	210 A (5 sec)
Cold Cranking Ampere (CCA)	140A
Recommended Maximum Charging Current	4.2A
Standby Use Voltage	13.7 V~13.9 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.



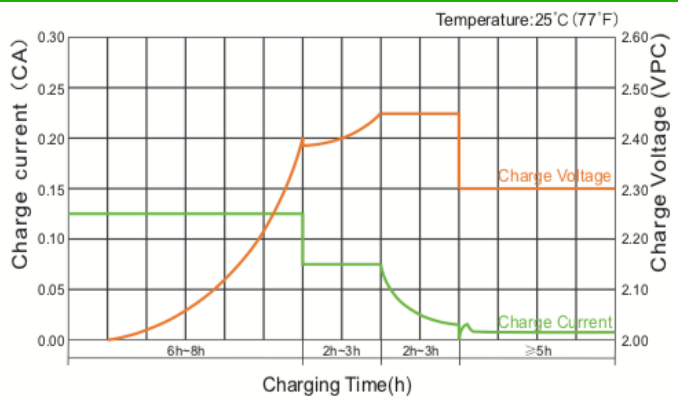
Constant Current Discharge (CC, Unit: A) at 25°C (77°F)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	58.53	38.37	28.58	16.43	9.64	5.503	3.886	3.039	2.536	1.714	1.418	0.728
1.65V	56.37	37.10	27.73	16.09	9.46	5.409	3.827	2.997	2.505	1.695	1.403	0.721
1.70V	53.55	35.43	26.60	15.63	9.22	5.285	3.748	2.941	2.463	1.669	1.384	0.713
1.75V	49.80	33.20	25.09	15.01	8.89	5.115	3.639	2.865	2.405	1.634	1.358	0.700
1.80V	44.82	30.21	23.06	14.16	8.44	4.880	3.489	2.758	2.325	1.585	1.321	0.683
1.85V	38.10	26.13	20.26	12.95	7.79	4.544	3.273	2.604	2.208	1.513	1.267	0.658

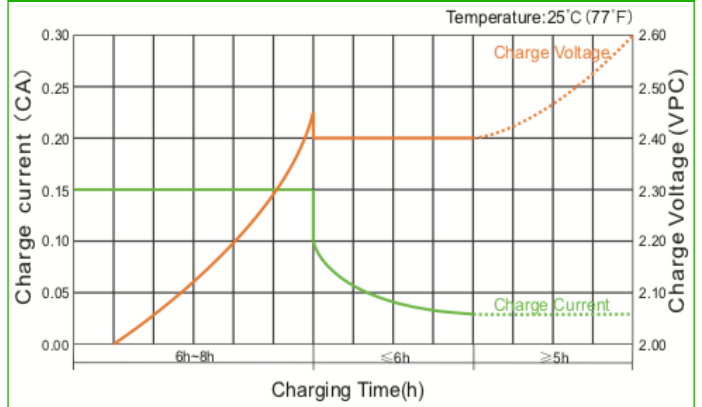
Constant Power Discharge (CP, Unit: W/Battery) at 25°C (77°F)

F.V/Time	5MIN	10MIN	15MIN	30MIN	1HR	2HR	3HR	4HR	5HR	8HR	10HR	20HR
1.60V	595.6	391.4	299.8	179.0	108.2	62.6	44.5	35.0	29.3	20.1	16.7	8.6
1.65V	588.7	388.4	296.9	177.9	107.3	62.0	44.1	34.7	29.1	19.9	16.6	8.5
1.70V	565.6	375.1	287.4	173.9	104.9	60.7	43.3	34.1	28.7	19.6	16.4	8.5
1.75V	535.4	357.8	275.0	168.7	101.6	59.0	42.2	33.4	28.1	19.3	16.1	8.3
1.80V	490.3	331.3	256.3	160.7	97.0	56.6	40.7	32.2	27.3	18.7	15.7	8.1
1.85V	424.1	291.6	228.4	148.5	90.2	53.0	38.3	30.5	26.0	17.9	15.1	7.8

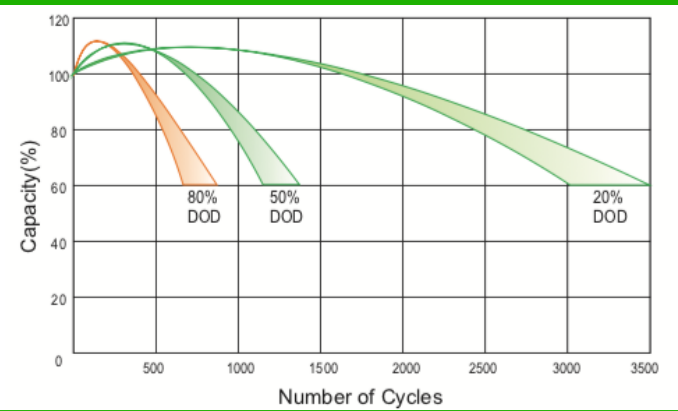
Charge Characteristic Curve For Cycle Use (IIUU)



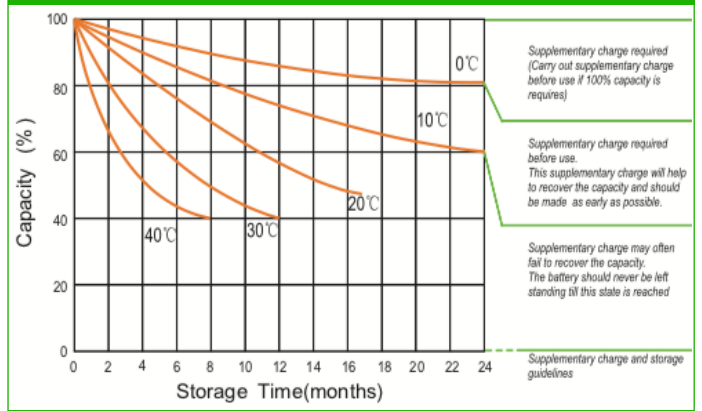
Charge Characteristic Curve For Cycle Use (UI)



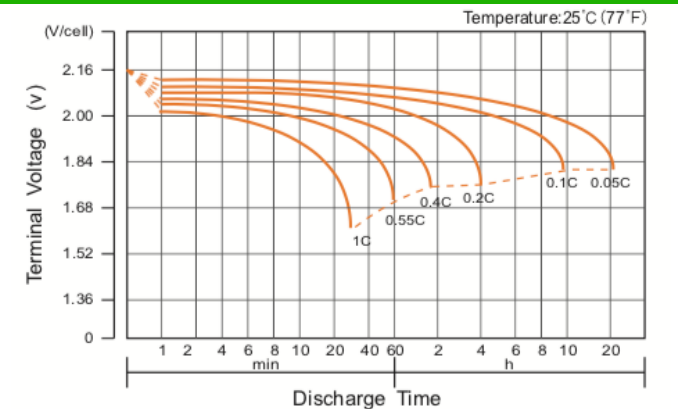
Cycle Life In Relation To Depth Of Discharge



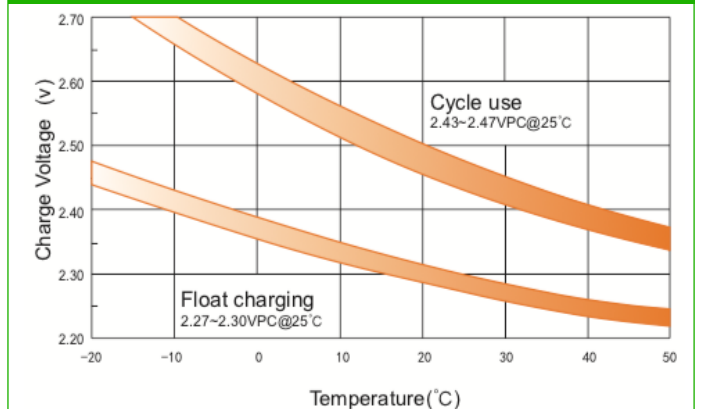
Storage Characteristics



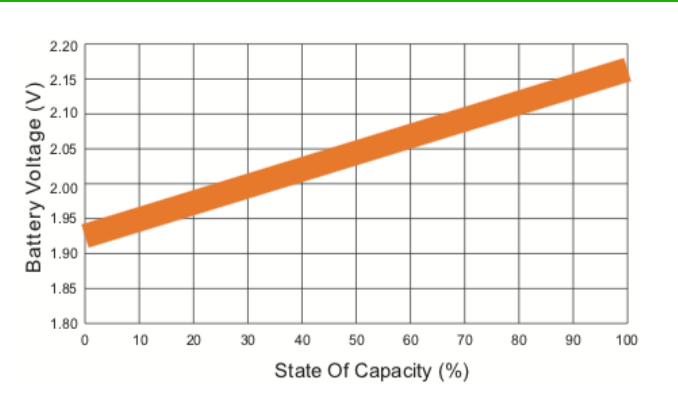
Discharge Characteristics Curve



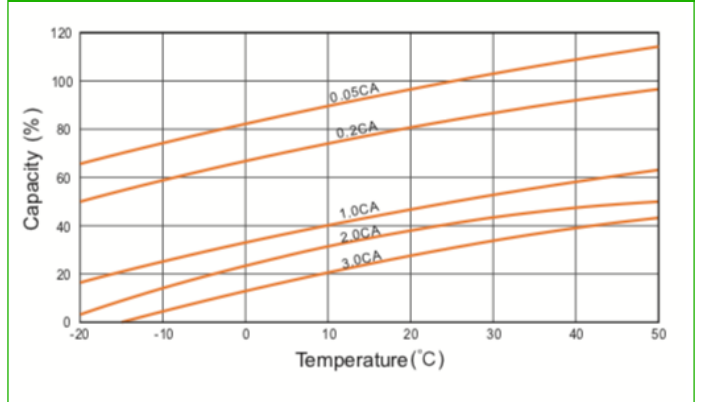
Relationship Between Charging Voltage And Temperature



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



Temperature Effects On Capacity



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