

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 600 cycles at 80% DOD.

Cycle use 2: Up to 1200 cycles at 50% DOD.

Applications:

- Electric Vehicle
- Industrial equipment
- Floor machines
- Forklifts
- Golf cart
- Mobility
- Aerial lifts and Robotics
- No-idle solutions

Dimensions:

Length	151±1.5mm (5.94in)
Width	98±1.5mm (3.86in)
Height	99±1.5mm (3.90in)
Total Height	105±1.5mm (4.13in)

Specifications:

Cells Per Unit	6
Voltage Per Unit	12V
Nominal Capacity	14.0Ah @20hour-rate to 1.75V per cell @25°C
Weight	Approx. 4.50Kg ±2% (9.92lbs)
Internal Resistance	Approx. 13.0mΩ
Terminal	F2
Max. Discharge Current	180A (5sec)
Cold Cranking Ampere (CCA)	140A
Recommended Max. Charging Current	4.20A
Standby Use Voltage	13.7V~13.9V @ 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: -15°C~50°C Charge: -10°C~45°C Storage: -15°C~50°C
Normal Operating Temperature Range	25°C±5°C

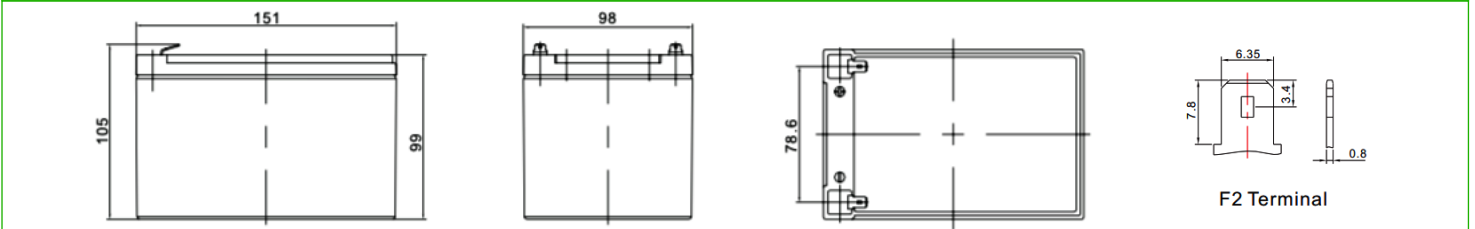
Self Discharge

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:



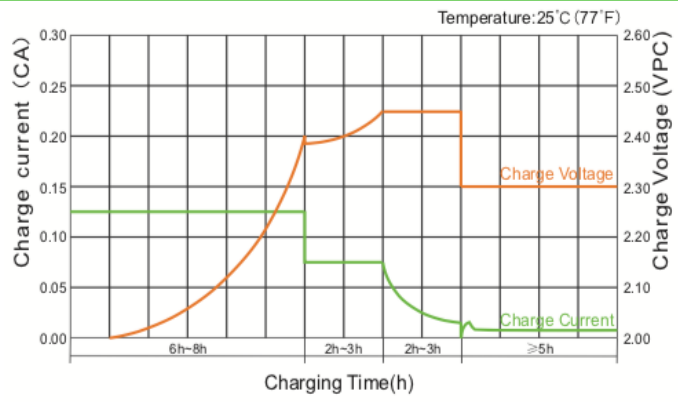
Constant Current Discharge (CC, Unit: A) at 25°C (77°F)

F.V. / Time	5min	10min	15min	30min	1h	2h	3h	4h	5h	8h	10h	20h
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

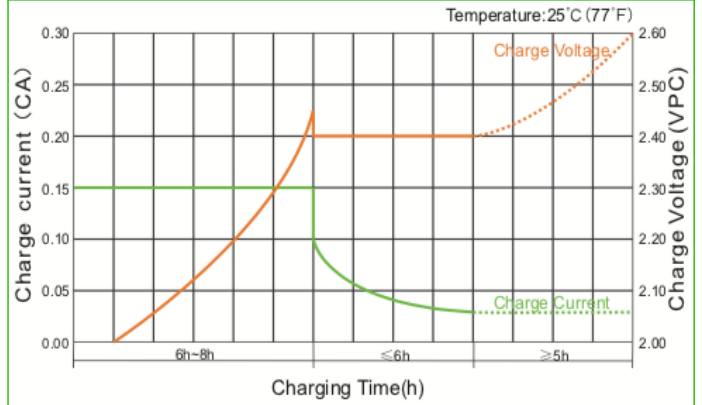
Constant Power Discharge (CP, Unit: W/Battery) at 25°C (77°F)

F.V. / Time	5min	10min	15min	30min	1h	2h	3h	4h	5h	8h	10h	20h
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

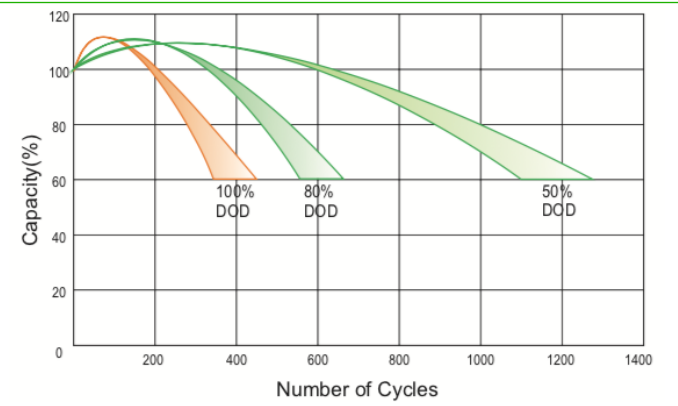
Charge Characteristic Curve For Cycle Use (IIUU)



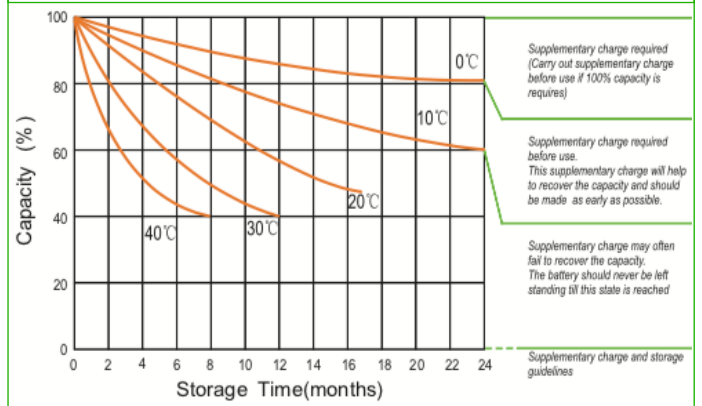
Charge Characteristic Curve For Cycle Use (IUI)



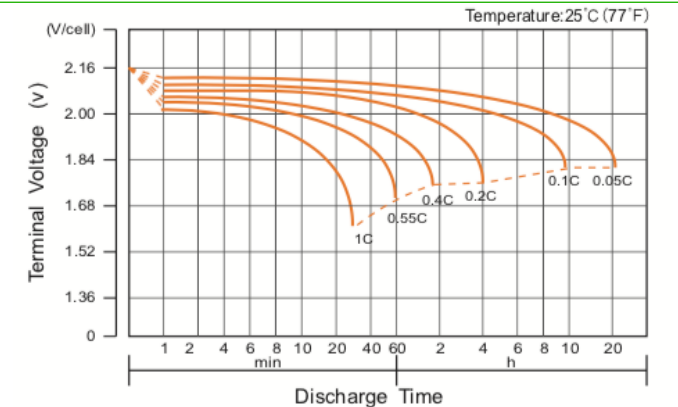
Cycle Life In Relation To Depth Of Discharge



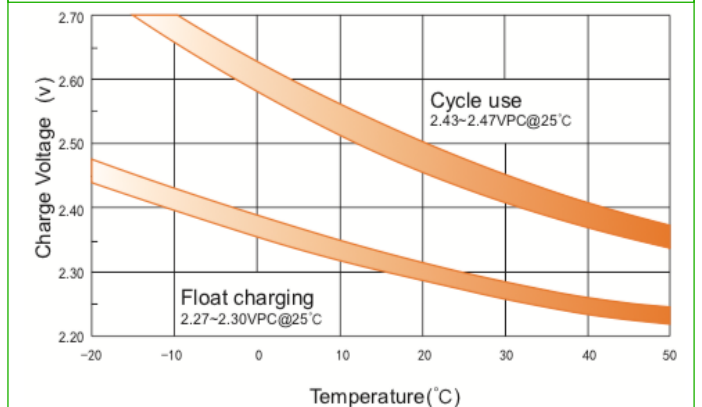
Storage Characteristics



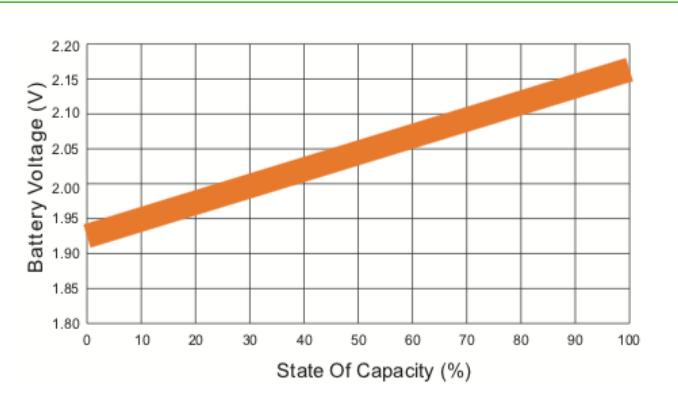
Discharge Characteristics Curve



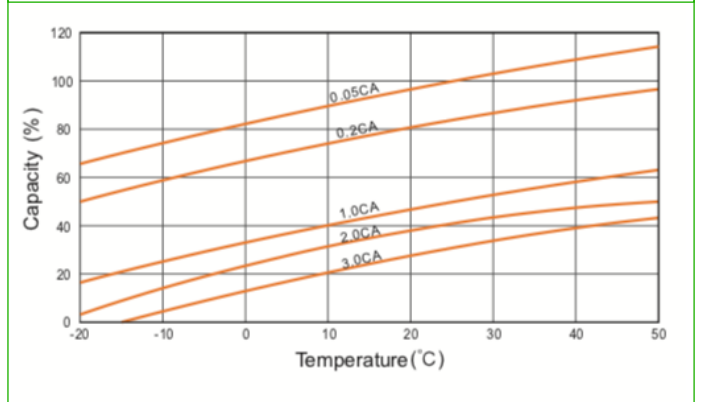
Relationship Between Charging Voltage And Temperature



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



Temperature Effects On Capacity



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