



LIVEN LVL Series

AGM (Absorbent Glass Material) technology with gas recombination. VRLA (Valve Regulated Lead Acid Battery). Maintenance-Free Sealed Lead Acid Battery. Battery with 12 years design life in float service.

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

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

Applications:

- Telecommunications
- Uninterrupted Power Supplies
- Medical equipments
- Emergency backup power supply
- Alarm and security system
- Communication power supply
- DC power supply

Dimensions:

Length	181±1.5mm (7.13in)
Width	77±1.5mm (3.03in)
Height	167±1.5mm (6.57in)
Total Height	167±1.5mm (6.57in)

Specifications:

Cells Per Unit	6
Voltage Per Unit	12V
Nominal Capacity	18.0Ah @20hour-rate to 1.75V per cell @25°C
Weight	Approx. 5.70Kg ±2% (12.57lbs)
Internal Resistance	Approx. 16.0mΩ
Terminal	R5.0
Max. Discharge Current	270A (5sec)
Design Life	12 years (Float charging) Eurobat (20°C): 10-12 years Long Life
Recommended Maximum Charging Current	5.40A
Standby Use Voltage	13.5V~13.8V @ 25°C Temperature Compensation: -3mV/°C/Cell
Cycle Use Voltage	14.4V~15.0V @ 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

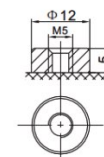
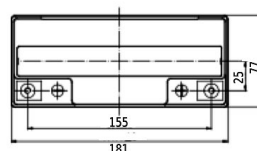
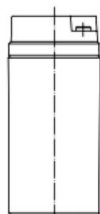
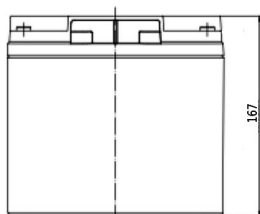
Self Discharge

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:



R5.0 Terminal

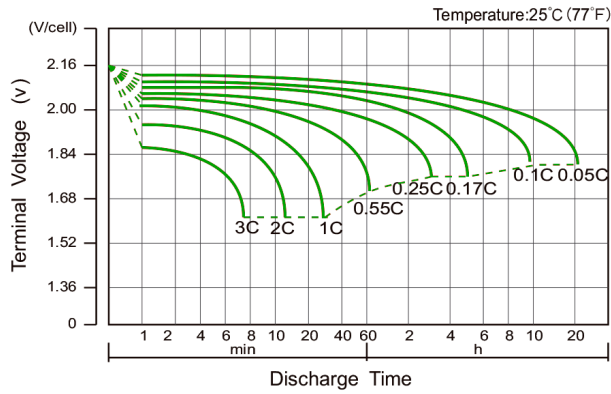
Constant Current Discharge (CC, Unit: A) at 25°C (77°F)

F.V./ Time	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.60V	45.2	34.5	28.1	20.5	14.9	12.1	6.93	5.05	3.97	3.29	2.81	2.20	1.770	0.928
1.65V	42.6	33.0	27.0	19.9	14.5	11.8	6.80	4.95	3.89	3.23	2.76	2.17	1.740	0.915
1.70V	41.5	32.3	26.6	19.6	14.4	11.7	6.73	4.91	3.86	3.21	2.74	2.15	1.730	0.910
1.75V	39.6	31.2	25.8	19.2	14.1	11.5	6.63	4.84	3.81	3.16	2.70	2.12	1.710	0.900
1.80V	37.8	30.1	25.1	18.7	13.8	11.3	6.53	4.77	3.76	3.12	2.67	2.10	1.690	0.891
1.85V	36.0	29.0	24.3	18.3	13.6	11.1	6.43	4.70	3.70	3.08	2.64	2.07	1.670	0.882

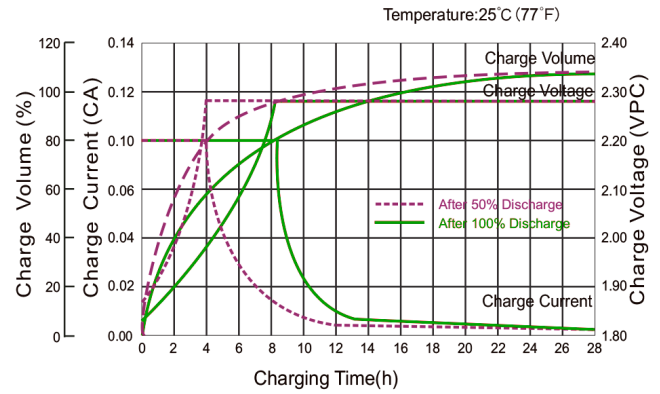
Constant Power Discharge (CP, Unit: W/Battery) at 25°C (77°F)

F.V./ Time	10min	15min	20min	30min	45min	1h	2h	3h	4h	5h	6h	8h	10h	20h
1.60V	504.6	387.0	316.8	232.8	170.4	138.6	80.4	58.9	46.4	38.6	33.1	26.0	21.00	11.16
1.65V	479.4	373.2	307.2	226.8	166.8	136.2	79.2	58.0	45.7	38.0	32.6	25.7	20.70	10.98
1.70V	468.6	366.6	302.4	224.4	165.6	135.0	78.6	57.5	45.4	37.8	32.4	25.5	20.58	10.92
1.75V	450.0	355.8	295.2	220.2	163.2	133.2	77.4	56.8	44.9	37.4	32.0	25.2	20.34	10.80
1.80V	431.4	345.0	288.0	216.0	160.2	131.4	76.2	56.1	44.3	37.0	31.7	25.0	20.10	10.68
1.85V	412.8	333.6	280.8	211.8	157.8	129.6	75.6	55.4	43.8	36.5	31.3	24.7	19.86	10.56

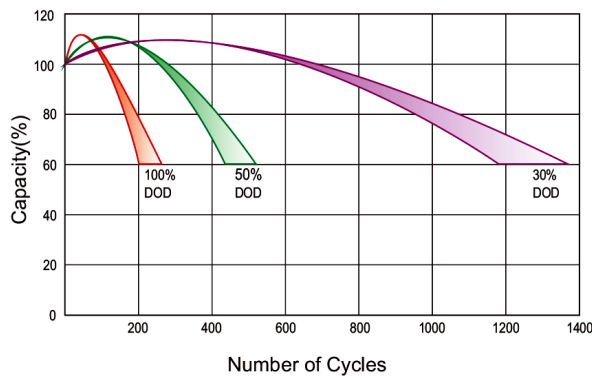
Discharge Characteristics Curve



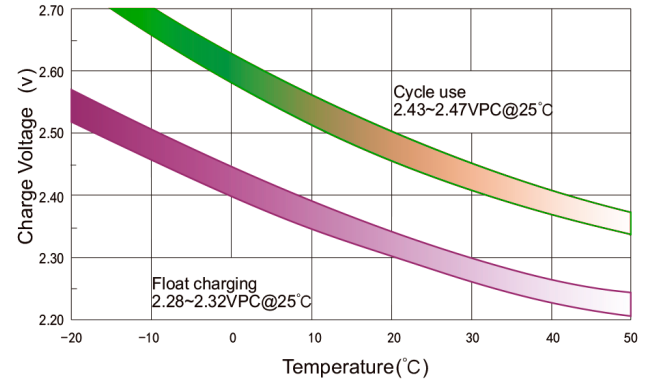
Charge Characteristic Curve For Standby Use



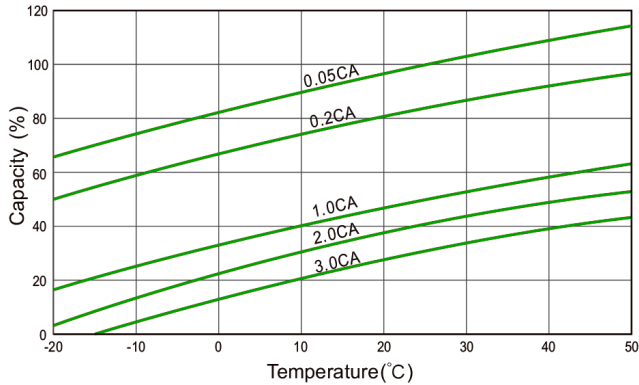
Cycle Life In Relation To Depth Of Discharge



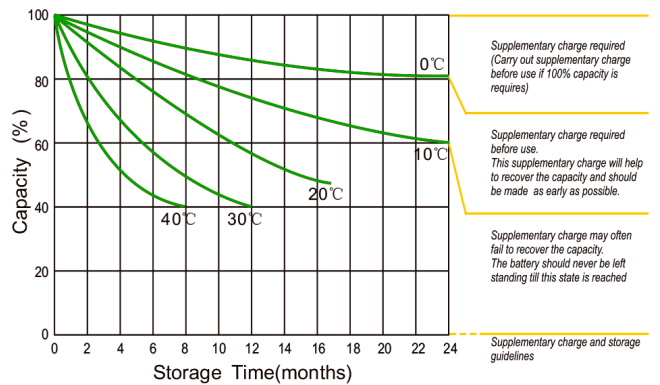
Relationship Between Charging Voltage And Temperature



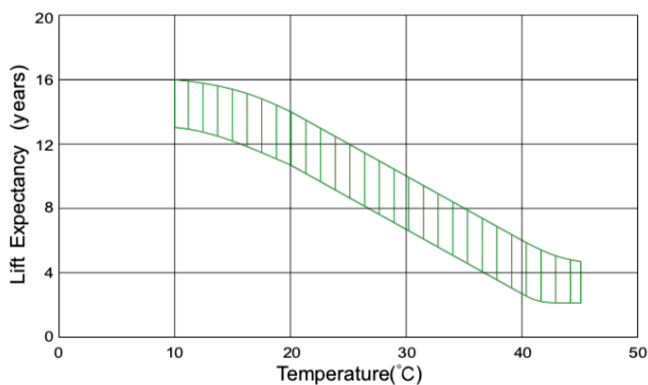
Temperature Effects On Capacity



Storage Characteristics



Effect Of Temperature On Long Term Life



Life Characteristics Of Standby Use

