



LIVEN LVHR Series

AGM (Absorbent Glass Material) technology with gas recombination. The LVHR series Valve Regulated Lead Acid (VRLA) battery is designed for heavy load discharge applications with 10~12 years design life in float service. By using strong grids and specially designed active material is with lower I.R, lower self discharge rate, high power, and longer service life performance. Generally the LVHR series offers 30% more power output than the standard range.

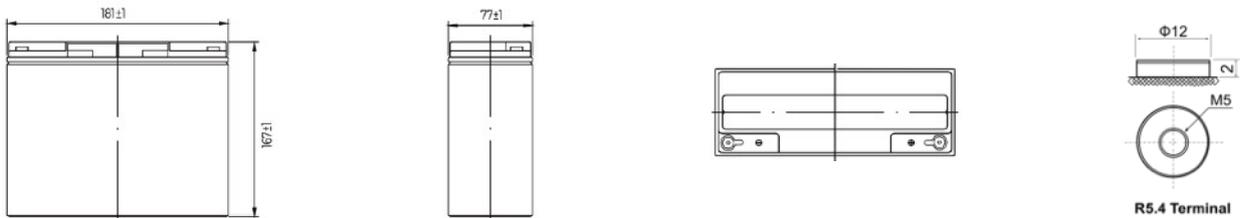
Applications:

- High Power
- UPS
- Datacenters
- Emergency backup PW
- Security system
- Communication power supply
- DC power supply

Dimensions:

Length	181±1mm (7.13in)
Width	77±1mm (3.03in)
Height	167±1mm (6.57in)
Total Height	167±1mm (6.57in)

Technical Drawings:



Specifications:

Cells Per Unit	6
Voltage Per Unit	12V
Nominal Capacity	456W @15min-rate to 10.02V per battery @25°C
Weight	Approx. 5.80Kg ±2% (12.79lbs)
Internal Resistance	Approx. 12mΩ
Terminal	R5.4
Max. Discharge Current	270A (5sec)
Design Life	Up to 10 years in Standby use (25°C) Eurobat (20°C): 10~12 years Long Life
Recommended Max. Charging Current	6.08A
Reference Capacity	C20 18Ah
Standby Use Voltage	13.6V~13.8V @ 25°C Temperature Compensation: -18mV/°C/Cell
Cycle Use Voltage	14.5V~15.0V @ 25°C Temperature Compensation: -30mV/°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.

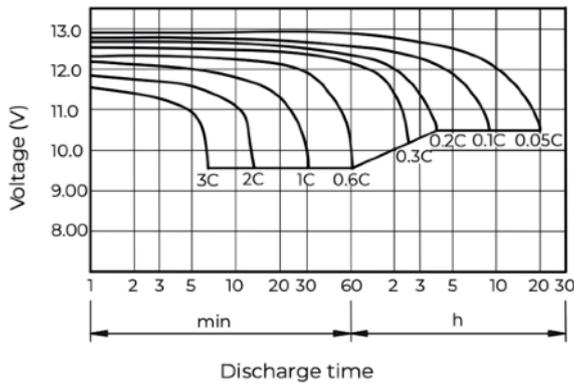
Constant Current Discharge (CC, Unit: A) at 25°C (77°F)

F.V./ Time	5min	10min	15min	20min	30min	45min	60min	2h	3h	4h	5h
1.60V	86.73	53.45	40.00	31.60	21.40	15.90	13.00	7.35	5.22	4.20	3.61
1.67V	82.85	51.03	38.60	30.40	20.70	15.40	12.70	7.28	5.18	4.17	3.58
1.70V	80.64	49.67	37.60	29.70	20.40	15.10	12.50	7.24	5.16	4.15	3.56
1.75V	77.18	47.57	36.30	28.70	19.90	14.70	12.20	7.13	5.12	4.12	3.54
1.80V	72.87	44.84	34.40	27.20	19.10	14.20	11.80	6.95	4.97	4.00	3.43

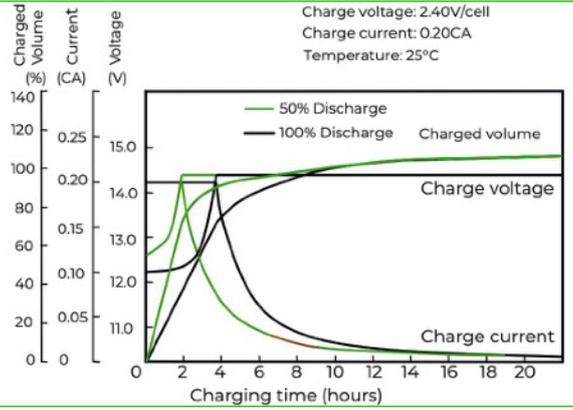
Constant Power Discharge (CP, Unit: W/Battery) at 25°C (77°F)

F.V./ Time	5min	10min	15min	20min	30min	45min	60min	2h	3h	4h	5h
1.60V	977.9	592.2	474.6	375.6	254.4	188.4	154.2	87.6	63.0	50.7	43.6
1.67V	928.7	565.8	458.4	360.6	246.6	182.4	150.6	87.0	62.4	50.2	43.1
1.70V	910.2	550.8	446.4	353.4	241.8	178.8	148.2	86.4	62.4	50.0	43.0
1.75V	867.2	527.4	430.8	340.8	235.8	174.6	145.2	85.2	61.8	49.7	42.7
1.80V	818.0	497.4	408.6	322.8	227.4	168.0	140.4	82.8	59.9	48.2	41.4

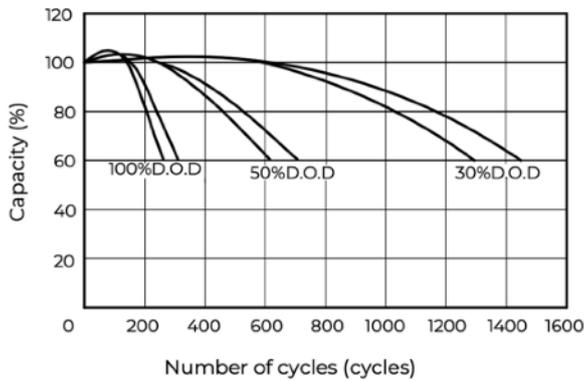
Discharge Characteristics Curve



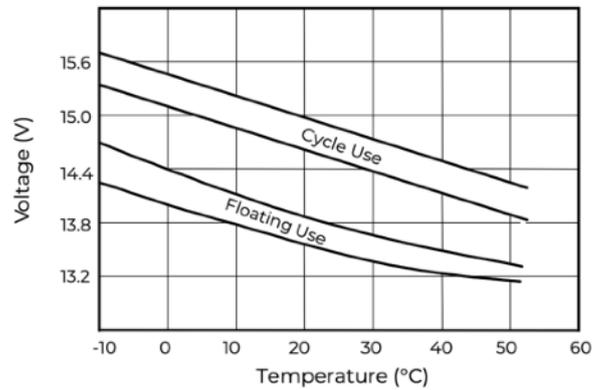
Charging Characteristics



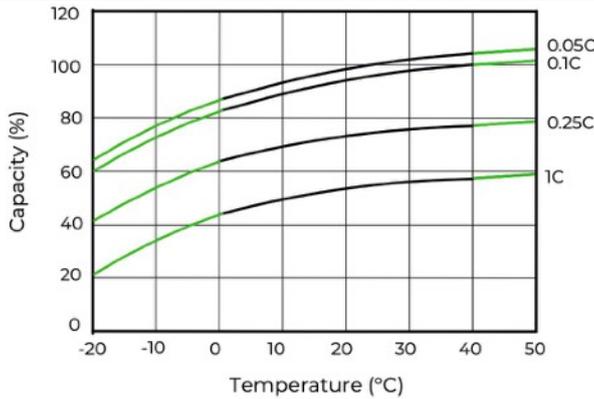
Cycle Life In Relation To Depth Of Discharge



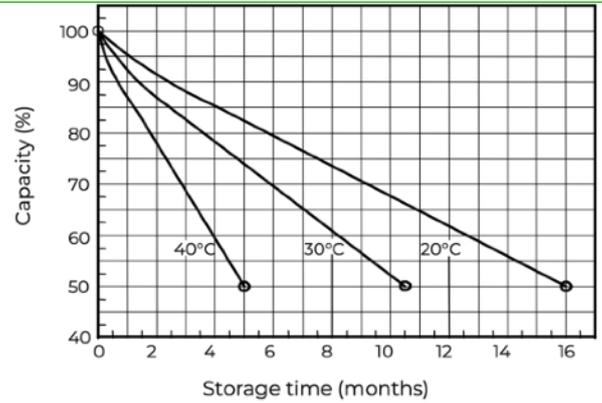
Relationship Between Charging Voltage And Temperature



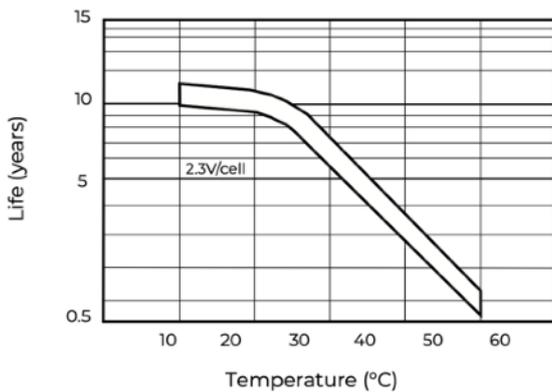
Temperature Effects On Capacity



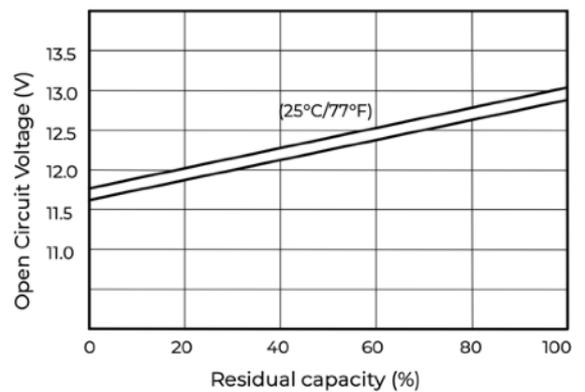
Storage Characteristics



Effect Of Temperature On Long Term Life



Relationship For OCV And Capacity



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