



### 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.

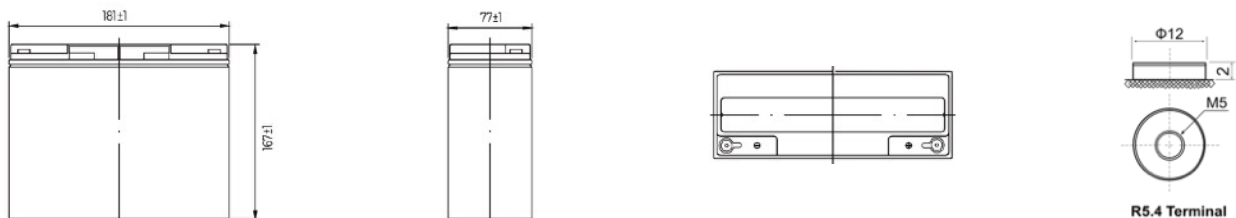
### Applications:

- 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:



### 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

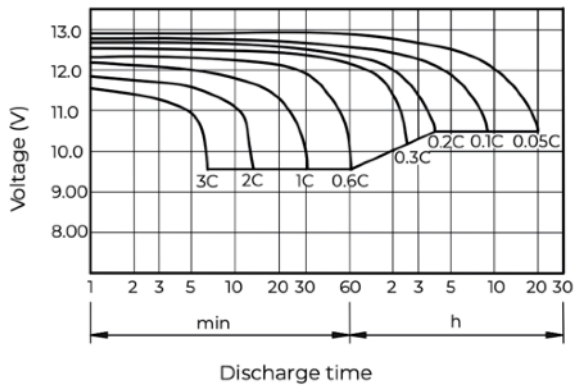
### Constant Power Discharge (CP, Unit: W/Battery) at 25°C (77°F)

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

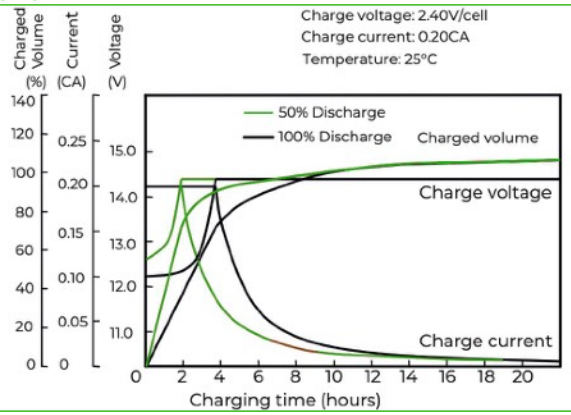
### Specifications:

<b>Cells Per Unit</b>	6
<b>Voltage Per Unit</b>	12V
<b>Nominal Capacity</b>	456W @15min-rate to 10.02V per battery @25°C
<b>Weight</b>	Approx. 5.80Kg ±2% (12.79lbs)
<b>Internal Resistance</b>	Approx. 12mΩ
<b>Terminal</b>	R5.4
<b>Max. Discharge Current</b>	270A (5sec)
<b>Design Life</b>	Up to 10 years in Standby use (25°C) Eurobat (20°C): 10~12 years Long Life
<b>Recommended Max. Charging Current</b>	6.08A
<b>Reference Capacity</b>	C20 18Ah
<b>Standby Use Voltage</b>	13.6V~13.8V @ 25°C Temperature Compensation: -18mV/°C/Cell
<b>Cycle Use Voltage</b>	14.5V~15.0V @ 25°C Temperature Compensation: -30mV/°C/Cell
<b>Operating Temperature Range</b>	Discharge: -15°C~50°C Charge: -10°C~45°C Storage: -15°C~50°C
<b>Normal Operating Temperature Range</b>	25°C±5°C
<b>Self Discharge</b>	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.
<b>Container Material</b>	A.B.S. UL94-HB, UL94-V0 Optional.

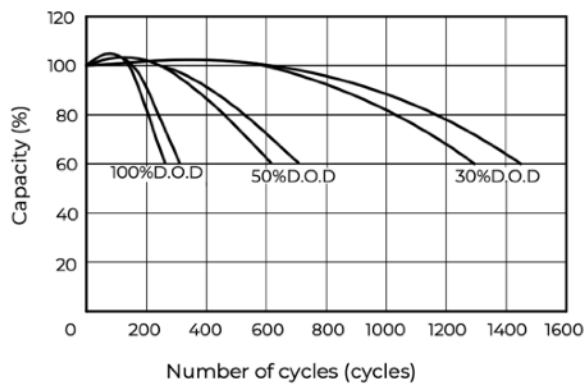
**Discharge Characteristics Curve**



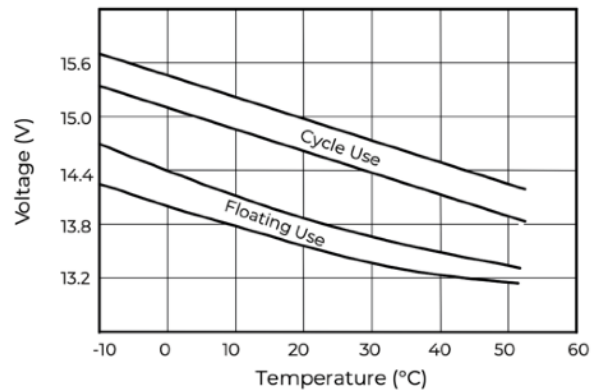
**Charging Characteristics**



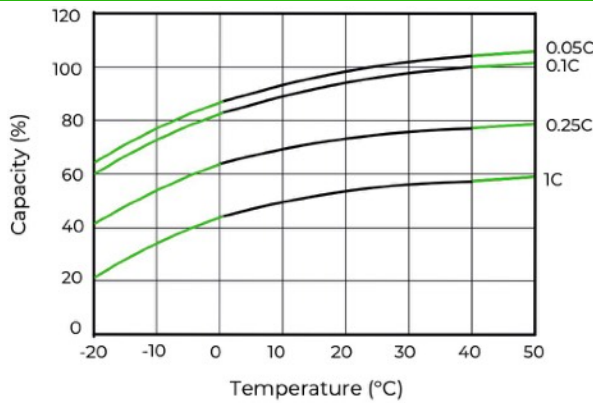
**Cycle Life In Relation To Depth Of Discharge**



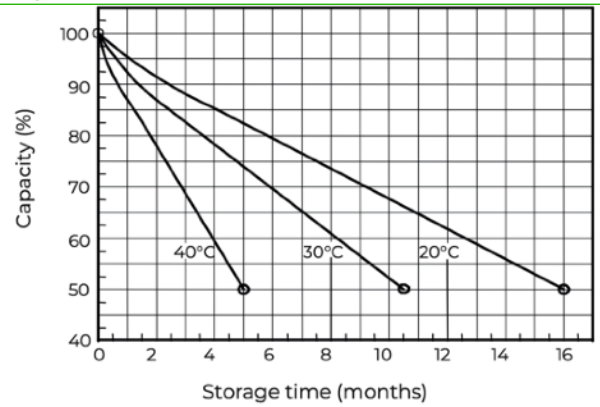
**Relationship Between Charging Voltage And Temperature**



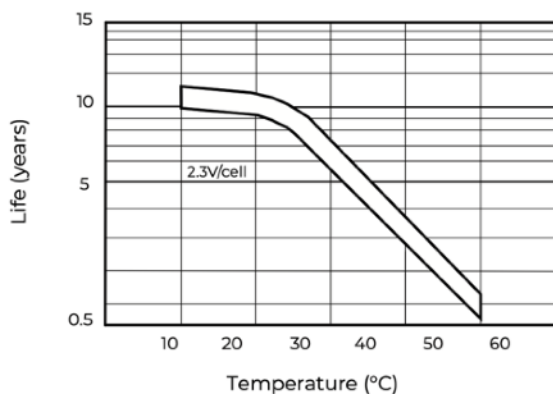
**Temperature Effects On Capacity**



**Storage Characteristics**



**Effect Of Temperature On Long Term Life**



**Relationship For OCV And Capacity**

