



**BATTERY**

**SPECIFICATION**

**VLRV5120A**



## Overview

RV series battery products are designed with ABS shell, can be used 24/7, which has outstanding advantages such as waterproof, impact resistance, good insulation performance, easy installation and maintenance-free. Some products also have special functions such as Bluetooth and low-temperature heating, which can meet the application needs of RVs, solar street lights, small medical equipment, toys and some small energy storage application.



## Battery Module Features



### Simple

Easily installation and capacity expansion,  
Maintenance-free (15Y design life).



### Intelligent

Real-time monitoring & control, Passive balance,  
Bluetooth display, Low-temp heating.



### Safe

LFP cell & system safety design.



### Performance

High energy density, Excellent service life & Wide  
operation temperature range.

## Battery Module Specification

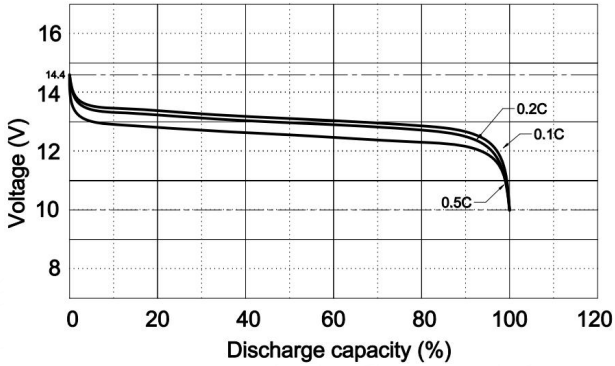
Model	VLRV5120A
Basic Parameter	
Rated Voltage [V]	12.8
Rated Capacity [Ah]	400
Rated Energy [Wh]	5120
Operation Parameter	
Voltage Range [V]	10.0~14.4
Cut-off Voltage [V]	10.0
Charge Voltage [V]	Recommended: 14.0    Max: 14.4
Recommended Charge Current [A]	120
Max Charge Current [A]	200
Max Discharge Current [A]	250
Internal Resistance [mΩ]	3.04
Physical Parameter	
Dimension: W*D*H [mm]	460*320*247
Weight [kg]	43±0.5
Display Method	Bluetooth/LED
Ingress Protection Level	IP67
Environment Parameter	
Humidity [%]	5-95% RH
Charge Temperature Range [°C]	-20 ~ 45 (<0°C, start heating)
Discharge Temperature Range [°C]	-20 ~ 55
Storage Temperature Range [°C]	-20 ~ 45
Service Life	
Cycle Life	> 6000 (0.5C@ 25°C, 80% DOD)
Design Life [Year]	15
Certification	
Transportation / Battery	UN38.3, IEC 62619, UL1973

## BMS Parameters

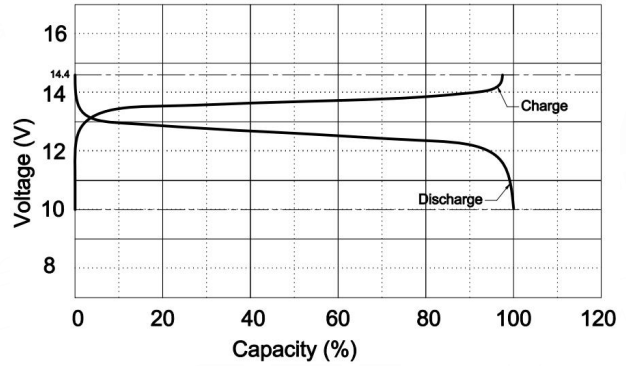
Item	VLRV5120A	Remark
<b>Charge</b>		
Cell Over-voltage protection [V]	3.8	Recovery @ 3.45V
Module Over-voltage protection [V]	15.2	Recovery @ 13.8V
Over-current protection 1 [A]	>210	Delay 2s
Over-temperature protection [°C]	>70	Recovery @ <60
Under-temperature protection [°C]	<-5	Recovery @ >0
<b>Discharge</b>		
Cell low-voltage protection [V]	2.3	Recovery @ 3.0V
Module low-voltage protection [V]	10.0	Recovery @ 12.0V
Over-discharging current 1 [A]	>260	Delay 30s, Recovery in 60s
Over-discharging current 2 [A]	>500	Delay 1.28s, Recovery in 60s
Short circuit [A]	>1000	400us
Over-temperature protection [°C]	>75	Recovery@ <65
Under-temperature protection [°C]	<-20	Recovery@ >-10
<b>Other Function</b>		
PCB Temp protection [°C]	>90	Recovery @ <70
Cell balance [mA]	130mA	Passive balance
Temperature accuracy [%]	3%	Measuring range -30~150°C
SOC accuracy [%]	5%	Integral calculation
Power consumption	≤300uA	Sleep mode
	≤20mA	Operating mode
Communication interfaces	CAN, RS485, Bluetooth	Can be customized to match the devices

## Battery Performance Curve

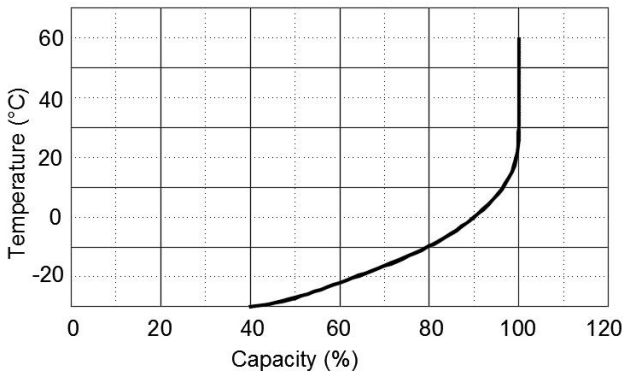
Discharge performance with different rate @ 25°C



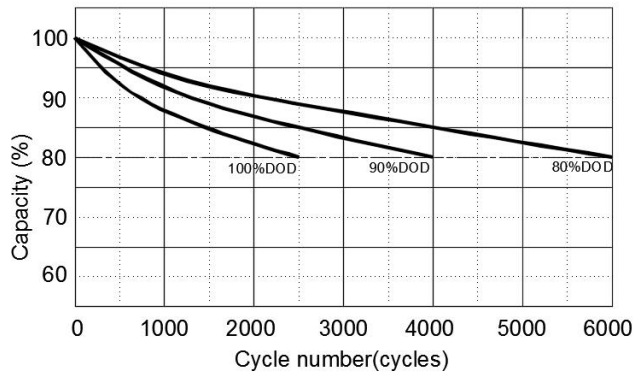
Charge & Discharge curve with 0.5C @ 25°C



Discharge capacity with different temperature @ 0.5C



Cycle life with DOD @ 0.5C, 25°C



Self-discharge @ different temperature

