

Integrated Lithium-ion Battery

VHR ES12V LFP

ES-LFP Series Lithium-ion Battery is an ideal replacement for traditional lead acid battery utilizing advanced LiFePO₄ technology and integrated BMS with the benefits of long cycle life, light in weight, safety and excellent high and low temperature performance. ES-LFP Series Lithium-ion Battery is widely used in energy storage, UPS, golf cart and other lead acid battery replacement.

FEATURES AND BENEFITS

- Super Long Service Life
- High Safety Ensured by Smart BMS
- Fast Charge and High Rate Discharge Power
- Low Total Cost of Ownership (TCO)
- High Energy Density by Adopting LFP Cells
- High Cycle Round Trip Efficiency (RTE)
- Wide Working Temperature Range
- Maintenance Free



GENERAL SPECIFICATIONS

Electrical Characteristics	VHR ES1207LFP	VHR ES1209LFP	VHR ES1278LFP	VHR ES12100LFP	VHR ES12120LFP
Nominal voltage	12.8V	12.8V	12.8V	12.8V	12.8V
Nominal capacity @0.2C	7Ah	9Ah	78Ah	102Ah	120Ah
Energy	90Wh	115Wh	998Wh	1280Wh	1536Wh
Internal Resistance	≤ 90 Ω	≤ 80 Ω	≤ 50 Ω	≤ 45 Ω	≤ 45 Ω
Cycle Life	≥ 3000 Cycles	≥ 3000 Cycles	≥ 3000 Cycles	≥ 3000 Cycles	≥ 3000 Cycles
Months Self Discharge	≤ 3.5% per month at 25°C	≤ 3.5% per month at 25°C	≤ 3.5% per month at 25°C	≤ 3.5% per month at 25°C	≤ 3.5% per month at 25°C
Mechanical					
Cell & Method	IFR26650 N35, 4S2P	IFR26650 N30, 4S3P	IFR32700 N60, 4S13P	IFR32700 N60, 4S17P	IFR32700 N60, 15S20P
Plastic Case	ABS	ABS	ABS	ABS	ABS
Dimension (L × W × H × TH)	151 x 65 x 94 x 100mm	151 x 65 x 94 x 100mm	260 x 169 x 213 x 218mm	328 x 172 x 215 x 220mm	409 x 177 x 224 x 224mm
Weight	Approx. 1.06Kg	Approx. 1.34Kg	Approx. 9.6Kg	Approx. 13.1Kg	Approx. 14.6Kg
Terminal	F2	F2	M8	M8	M8
Standard Charge					
Charge Voltage	14.6 ± 0.2V	14.6 ± 0.2V	14.6 ± 0.2V	14.6 ± 0.2V	14.6 ± 0.2V
Charge Mode(CC/CV)	At 0°C~45°C temperature, charged to 14.6V at a constant current of 0.2C, and then charged continuously with constant voltage of 14.6V until the current was not more than 0.02C.	At 0°C~45°C temperature, charged to 14.6V at a constant current of 0.2C, and then charged continuously with constant voltage of 14.6V until the current was not more than 0.02C.	At 0°C~45°C temperature, charged to 14.6V at a constant current of 0.2C, and then charged continuously with constant voltage of 14.6V until the current was not more than 0.02C.	At 0°C~45°C temperature, charged to 14.6V at a constant current of 0.2C, and then charged continuously with constant voltage of 14.6V until the current was not more than 0.02C.	At 0°C~45°C temperature, charged to 14.6V at a constant current of 0.2C, and then charged continuously with constant voltage of 14.6V until the current was not more than 0.02C.
Charge Current	1.4A	1.8A	15.6A	20A	24A
Max. Charge Current	3.5A	4.5A	39A	50A	60A

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Standard Discharge					
Max. Continuous Current	7.0A	9.0A	60A	100A	100A
Max. Pulse Current	20A(<3S)	20A(<3S)	120A(<3S)	200A(<3S)	200A(<3S)
Discharge Cut-off Voltage	10.0V	10.0V	10.0V	10.0V	10.0V
Operating Environment					
Charge Temperature	0°C to 45°C @60±25% Relative Humidity	0°C to 45°C @60±25% Relative Humidity	0°C to 45°C @60±25% Relative Humidity	0°C to 45°C @60±25% Relative Humidity	0°C to 45°C @60±25% Relative Humidity
Discharge Temperature	-20°C to 60°C @60°C±25% Relative Humidity	-20°C to 60°C @60°C±25% Relative Humidity	-20°C to 60°C @60°C±25% Relative Humidity	-20°C to 60°C @60°C±25% Relative Humidity	-20°C to 60°C @60°C±25% Relative Humidity
Storage Temperature	0°C to 45°C @60±25% Relative Humidity	0°C to 45°C @60±25% Relative Humidity	0°C to 45°C @60±25% Relative Humidity	0°C to 45°C @60±25% Relative Humidity	0°C to 45°C @60±25% Relative Humidity
Water Dust Resistance	IP55	IP55	IP55	IP55	IP55
Protection Parameter					
Over-current Protection Current	40A	40A	150A	300A	300A
Over-charge Protection Voltage	15.2V	15.2V	15.2V	15.2V	15.2V
Over-discharge Protection Voltage	9.2V	9.2V	9.2V	9.2V	9.2V
High Temperature Protection	65°C	65°C	65°C	65°C	65°C