

— Lithium battery · LFP

Mirakal lithium battery

Lithium iron phosphate (LFP) battery packs with a built-in BMS, from 25.6 V to 256 V.

25.6–256 V · 100–400 Ah

LFP cells

RS-485 communication



25.6–256 V

battery voltage range

100–400 Ah

capacity range

≥3000

cycle life

0–55 °C

working temperature (larger packs)

— Overview

Why lithium

Mirakal packs use lithium iron phosphate cells with a battery management system that guards against overcharging, overheating and short circuits. They store more energy in less space, and need no servicing.

High energy density

More energy storage in a compact, lightweight design: ideal for space-constrained and high-performance applications.

Low self-discharge

Retains its charge for long periods when not in use, so it is ready even after months of storage.

Longer lifespan

Many more charge–discharge cycles than lead-acid, which reduces replacement frequency and maintenance costs.

Maintenance-free

No regular servicing. A sealed design gives reliable performance with zero upkeep and lower running costs.

Fast charging

Efficient charge acceptance cuts the downtime between uses, ideal for time-sensitive applications.

Safe with BMS

The BMS monitors and protects against overcharging, overheating and short circuits throughout the battery's life.

Lightweight and compact

High power in a smaller footprint, suited to portable and space-limited applications.

Environmentally friendly

A longer life and recyclable cells reduce waste, with no harmful emissions in operation.

	25.6 V / 100 Ah	51.2 V / 100 Ah	96 V / 100 Ah	124 V / 100 Ah	124 V / 200 Ah	240 V / 100 Ah	256 V / 314 Ah	256 V / 400 Ah
Pack								
Battery voltage	25.6 V	51.2 V	96 V	124 V	124 V	240 V	256 V	256 V
Capacity	100 Ah	100 Ah	100 Ah	100 Ah	200 Ah	100 Ah	314 Ah	400 Ah
Cells in series	8S	16S	30S	39S	39S	75S	80S	80S
Cells in parallel	1P	1P	1P	1P	2P	1P	1P	2P
Cell type and chemistry	Li-ion, LFP							
Cell voltage and Ah	3.2 V / 100 Ah				3.2 V / 314 Ah			
Cycle life	≥3000							
Voltages								
Maximum cut-off voltage	28.8 V	57.6 V	105 V	136 V	136 V	270 V	288 V	288 V
Minimum cut-off voltage	22.4 V	44.8 V	87 V	113 V	113 V	210 V	224 V	224 V
Charging voltage	27.8 V	55.2 V	104 V	135 V	135 V	As per charging profile		
Currents								
Recommended charging	40 A		60 A		40 A	80 A	100 A	
Max. continuous charging	50 A			70 A	100 A	80 A	157 A	200 A
Max. continuous discharging	100 A			70 A	100 A	80 A	157 A	200 A
Cell protection (BMS)								
Cell over-voltage protection	3.6 V							
Cell over-voltage release	3.5 V							
Cell under-voltage protection	2.8 V							
Cell under-voltage release	2.9 V							
Cell under- and over-voltage protection	Available							
Over-current protection	Available							
Short-circuit protection	Available							
Temperature protection	Available, max. 60 °C							
General								
Working temperature	0–45 °C				0–55 °C			
Storage	As per cell OEM recommendation							
Communication	RS-485							

Warnings

- **Service restriction:** installation or removal of the battery pack must be done by authorised personnel only.
- **Water exposure:** do not immerse the battery pack in water or dispose of it in water.
- **Cleaning:** do not clean the battery pack with a pressure washer.
- **Shock hazard:** do not drop the battery pack; impact may cause damage or malfunction.
- **Water ingress:** if water gets in through misuse, return the pack to the manufacturer at once for inspection and a safety check.
- **Monthly charging:** charge the battery at least once a month to maintain its health and performance.