



Energy Storage



# FREEN-BLL



Low voltage LiFePO<sub>4</sub> battery systems.

The FREEN-BLL series is a versatile low-voltage rechargeable energy storage solution built with advanced LiFePO<sub>4</sub> cells for exceptional safety, long life, and high efficiency. Freen lithium batteries offer flexible configurations and seamless compatibility with leading low-voltage inverter systems.



your wind  your power  your way



### Scalable and Modular

Easily build systems from 15 kWh using stackable low-voltage battery modules.



### High Usable Energy Output

Deliver up to 90 kWh of usable energy per system, engineered for maximum efficiency and compatibility.



### Reliable All-Weather Performance

Designed to operate from -40°C to +60°C, the system performs reliably in both extreme cold and high heat.



### Manufacturer-Direct Customization

Get tailor-made configurations directly from Freen, optimized for your specific voltage, capacity, or climate needs.



### Built for Long-Term Use

With over 10 0000 charge cycles, the system is designed for even 20 years of operation under standard daily-use conditions.



### Smart Monitoring and Integration

Equipped with Bluetooth communication for easy monitoring and seamless integration with leading low-voltage inverters.performance monitoring.

Designed for residential, agricultural, and commercial use, these low-voltage modules (51.2V) can be connected in parallel or series, scaling up to 90 kWh and beyond.

# FREEN-BLL Specifications



BATTERY MODULE	FREEN-BLL-15LV	FREEN-BLL-30LV	FREEN-BLL-45LV	FREEN-BLL-60LV	FREEN-BLL-75LV	FREEN-BLL-90LV
Cell type	LiFePO4	LiFePO4	LiFePO4	LiFePO4	LiFePO4	LiFePO4
Module quantity	1	2	3	4	5	6
Rated capacity	300 Ah	600 Ah	900 Ah	1200 Ah	1500 Ah	1800 Ah
Nominal energy	15 kWh	30 kWh	45 kWh	60 kWh	75 kWh	90 kWh
Usable energy	15 kWh	30 kWh	45 kWh	60 kWh	75 kWh	90 kWh
Nominal voltage	51.2 V	51.2 V	51.2 V	51.2 V	51.2 V	51.2 V
Operating voltage	49-53 V	49-53 V	49-53 V	49-53 V	49-53 V	49-53 V
Max. charging current	150 A	300 A	450 A	600 A	750 A	900 A
Max. discharging current	150 A	300 A	450 A	600 A	750 A	900 A
Rated charge / discharge power	7.5 kW	15 kW	22.5 kW	30 kW	37.5 kW	45 kW
Max.charging power	7.5 kW	15 kW	22.5 kW	30 kW	37.5 kW	45 kW
Max.discharging power	7.5 kW	15 kW	22.5 kW	30 kW	37.5 kW	45 kW
Dimensions, mm (W / D / H)	952 × 208 × 745	2 x 952×208×745	3 x 952×208×745	4 x 952×208×745	5 x 952×208×745	6 x 952×208×745
Battery module weight	123 kg	246 kg	369 kg	492 kg	615 kg	738 kg
Mounting method	Floor moutend	Floor moutend	Floor moutend	Floor moutend	Floor moutend	Floor moutend
Installation location	Indoor	Indoor	Indoor	Indoor	Indoor	Indoor
Storage temperature range	-10 – +35 C°	-10 – +35 C°	-10 – +35 C°	-10 – +35 C°	-10 – +35 C°	-10 – +35 C°
Operating temperature range	Charge -10 – +55 C° Discharge -40 – +60 C°	Charge -10 – +55 C° Discharge -40 – +60 C°	Charge -10 – +55 C° Discharge -40 – +60 C°	Charge -10 – +55 C° Discharge -40 – +60 C°	Charge -10 – +55 C° Discharge -40 – +60 C°	Charge -10 – +55 C° Discharge -40 – +60 C°
Degree of protection	IP65	IP65	IP65	IP65	IP65	IP65
Cooling concept	built-in fan	built-in fan	built-in fan	built-in fan	built-in fan	built-in fan
Communication	Bluetooth	Bluetooth	Bluetooth	Bluetooth	Bluetooth	Bluetooth
Relative humidity	<70%	<70%	<70%	<70%	<70%	<70%
Round-trip efficiency	>97%	>97%	>97%	>97%	>97%	>97%
Life cycle	>10 000 times	>10 000 times	>10 000 times	>10 000 times	>10 000 times	>10 000 times

\* parallel modules connection



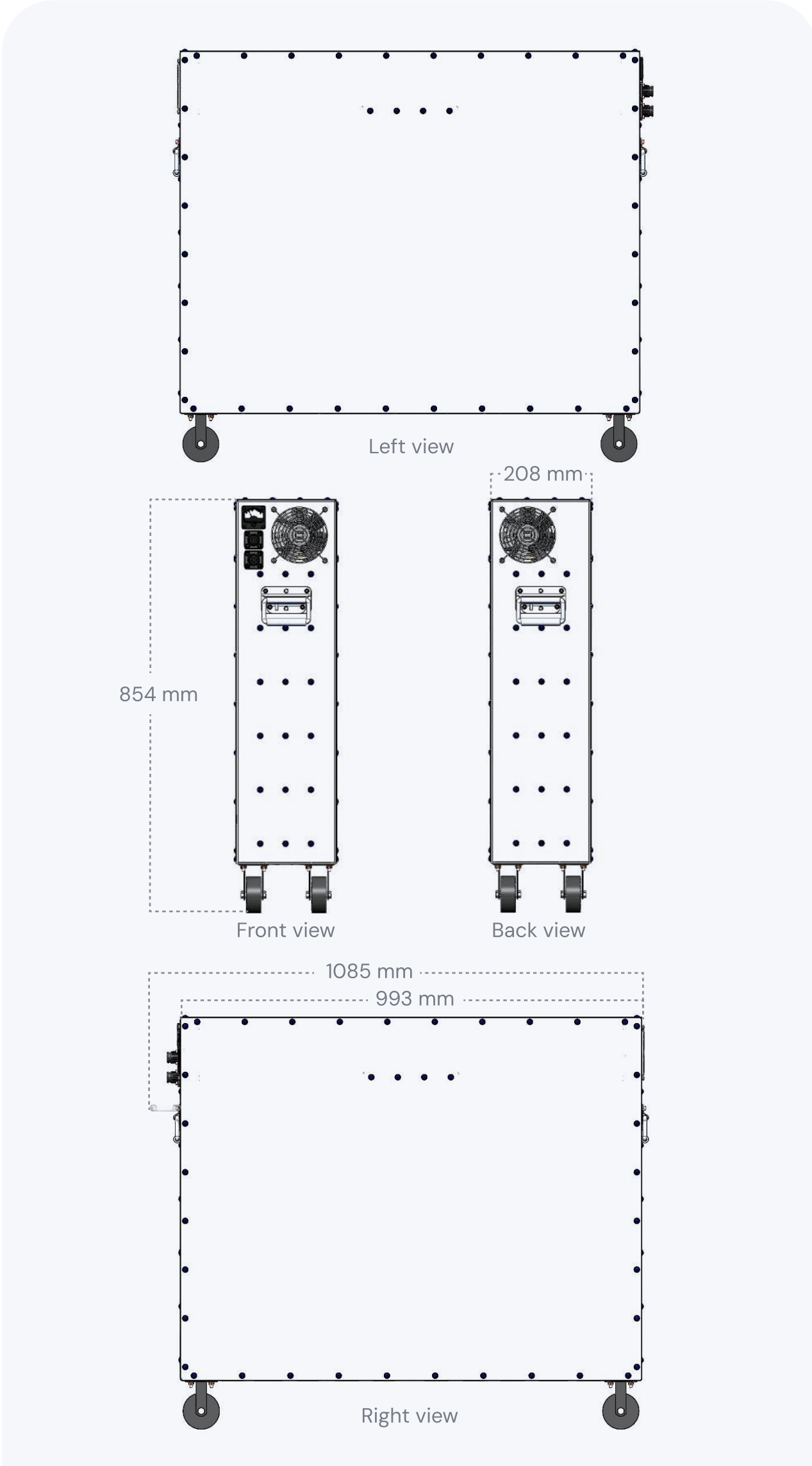
# Custom Configuration Example

freen

## FREEN-BLL-90HV (series modules connection)

BATTERY MODULE	FREEN-BLL
Cell type	LiFePO4
Module quantity	6
Rated capacity	300 Ah
Nominal energy	90 kWh
Usable energy	90 kWh
Nominal voltage	307.2 V
Operating voltage	294-318 V
Max. charging current	150 A
Max. discharging current	150 A
Rated charge / discharge power	45 kW
Max.charging power	45 kW
Max.discharging power	45 kW
Dimensions, mm (W / D / H)	952 × 1248 × 745
Battery module weight	738 kg

## Drawings



## Engineered Safety

Freen-BLL storage solutions are engineered with safety as a top priority.


To mitigate the risk of internal short circuits, fires, and explosions, we implement a strategy of partial capacity utilization, keeping the battery consistently undercharged and underdischarged. This approach significantly reduces the chance of thermal runaway, even under high load conditions.

Our modules are designed to resist mechanical damage that might allow moisture or oxygen to enter the cell, preventing exothermic reactions that could otherwise lead to overheating or ignition.

## Contact Us



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