



# PowerRack

Modular Lithium-Ion Energy Storage System




## PowerRack system is a powerful and scalable solution for a wide variety of applications.

Applications : stationnary, residential, commercial, industry, UPS, telecommunications, weak grid, off-grid and self-sufficiency systems.

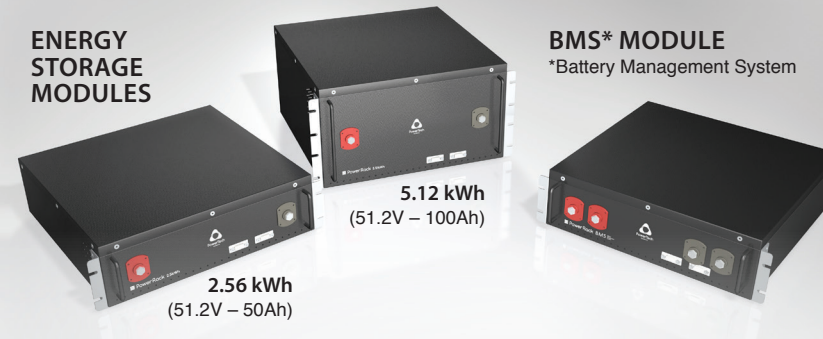
PowerTech Systems has rigorously selected and tested best-in-class Lithium Iron Phosphate cells that are assembled in this product, in order to provide high lifespan and performance.

Lithium Iron Phosphate (LFP) is currently the best solution for storing energy, because of its durability, its high security and its technical superiority compared to other technologies on the market.

## The key points of PowerRack system :

- **Very high energy density**
- **Very safe and reliable** Lithium-Ion technology
- **Easy configuration** of high scale power systems
- **High lifespan, robustness and durability**
- **Ease of deployment and scalability** (19 inches standard)
- **Centralized monitoring** for system control
- **Designed and made in France** 

## PowerRack system composition :



## BMS (Battery Management System) : Embeds core intelligence of PowerRack system

The main task of our Battery Management System (BMS) is to control each vital element of battery: voltage and cell temperature, power supplied by the system, load control, etc.

BMS embeds some smart balancing algorithm that controls that all cells in the system are constantly at the same voltage level. State of Charge (SoC) and State of Health (SoH) are precisely measured by powerful algorithms.

BMS is also equipped with a built-in multi-protocol communication module (CAN, CAN open, RS232, ModBus) to back up all operating information for external monitoring, or for integration with other systems.

Modularity and scalability of PowerRack system offer a wide range of configurations :

- PowerRack supports from one single module, up to 500 modules.
- Stored energy can vary from 2.5kWh to 1.250 MWh.
- Nominal voltage range from 51.2V to 1024V.



Further information at : [www.powertechsystems.eu](http://www.powertechsystems.eu)  
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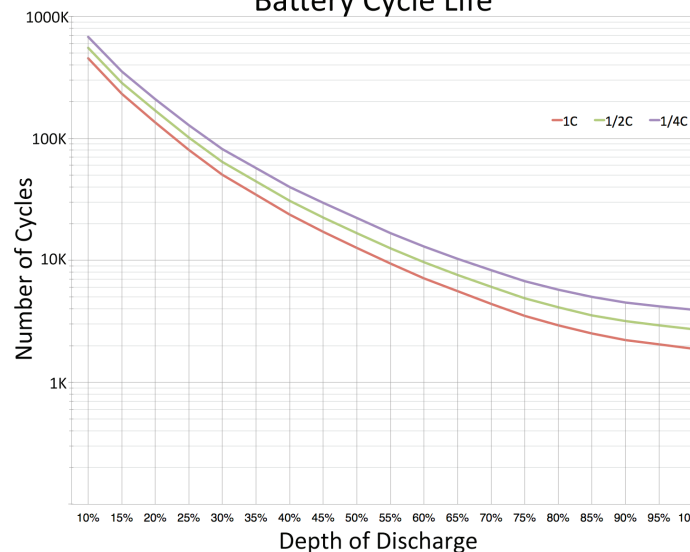


## TECHNICAL SPECIFICATIONS

ALLOWED CONFIGURATIONS :			Minimal Set-up	Maximal Set-up
Nominal voltage	Min. voltage	Max. voltage	Stored Energy (Number of Module - Number of 19" U)	
51,2V	44 V	58,4 V	2.56 kWh (1 - 3U)	1280 kWh (500 - 1500U)
102,4 V	88 V	116,8 V	5.12 kWh (2 - 6U)	1280 kWh (500 - 1500U)
153,6 V	132 V	175,2 V	7.68 kWh (3 - 9U)	1152 kWh (450 - 1350U)
204,8 V	176 V	233,6 V	10.24 kWh (4 - 12U)	1280 kWh (500 - 1500U)
256 V	220 V	292 V	12.8 kWh (5 - 15U)	1280 kWh (500 - 1500U)
307,2 V	264 V	350,4 V	15.36 kWh (6 - 18U)	1152 kWh (450 - 1350U)
358,4 V	308 V	408,8 V	17.92 kWh (7 - 21U)	896 kWh (350 - 1050U)
409,6 V	352 V	467,2 V	20.48 kWh (8 - 24U)	1024 kWh (400 - 1200U)
460,8 V	396 V	525,6 V	23.04 kWh (9 - 27U)	1152 kWh (450 - 1350U)
512 V	440 V	584 V	25.6 kWh (10 - 30U)	1280 kWh (500 - 1500U)
563,2 V	484 V	642,4 V	28.16 kWh (11 - 33U)	704 kWh (275 - 825U)
614,4 V	528 V	700,8 V	30.72 kWh (12 - 36U)	768 kWh (300 - 900U)
665,6 V	572 V	759,2 V	33.28 kWh (13 - 39U)	832 kWh (325 - 975U)
716,8 V	616 V	817,6 V	35.84 kWh (14 - 42U)	896 kWh (350 - 1050U)
768 V	660 V	876 V	38.4 kWh (15 - 45U)	960 kWh (375 - 1125U)
819,2 V	704 V	934,4 V	40.96 kWh (16 - 48U)	1024 kWh (400 - 1200U)
870,4 V	748 V	992,8 V	43.52 kWh (17 - 51U)	1088 kWh (425 - 1275U)
921,6 V	792 V	1051,2 V	46.08 kWh (18 - 54U)	1152 kWh (450 - 1350U)
972,8 V	836 V	1109,6 V	48.64 kWh (19 - 57U)	1216 kWh (475 - 1425U)
1024 V	880 V	1168 V	51.2 kWh (20 - 60U)	1280 kWh (500 - 1500U)

TECHNICAL SPECIFICATIONS	PowerRack 2.56 kWh	PowerRack 5.12 kWh
<b>GENERAL</b>		
Voltage min. / nom. / max.	44.0 V / 51.2 V / 58.4 V	
Stored Energy	2.56 kWh / 50 Ah	5.12 kWh / 100 Ah
Maximum continuous power at 25°C	2.56 kW	5.12 kW
Maximum charge power at 25°C	1.28 kW	2.56 kW
Number of cells	16	
Lithium-ion technology	Lithium Ferro Phosphate (LiFePo4 – LFP)	
Serial set-up	Up to 20 modules in serial	
Parallel set-up	Up to 25 modules in parallel	
Operational discharge temperature	-20 °C à +50 °C (nominal : 25 °C)	
Self discharge temperature	<5% per month	
<b>MECHANICAL</b>		
Width	48.2 cm (19 inches standard)	
Depth	43 cm (excluding front handles)	
Height	13.5 cm (3U)	27 cm (6U)
Connector	M10	M10
Weight	28 kg	56 kg

Battery Cycle Life



PowerTech  
systems

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