



# PowerBrick+

## 12v Lithium-Ion battery pack



### 12V battery pack - Lithium Iron-Phosphate (LiFePO<sub>4</sub>) - 20Ah

- **High Service Life** : 3000 cycles and more (see chart)
- **Deep discharge** allowed up to 100 %
- Ultra safe **Lithium Iron Phosphate** chemistry (no thermal run-away, no fire or explosion risks)
- **Embedded BMS** (Battery Management System) : **improve lifespan AND secure the battery**
- No **Lead**, no **rare earths**, no **acid**, no **degassing**
- Calendar life > **10 years**
- Excellent **temperature** robustness (-20 °C up to +60 °C)
- **Flexible** deployment : up to 16 packs in parallel and 4 in series
- **Constant power** during discharge (very low internal resistance)
- **Very low Peukert's losses** (energy efficiency >98 %)
- **Very low self discharge** (<3 % per month)
- **No memory effect**
- About **50 % lighter** and **40% smaller** than equivalent Lead-AGM battery with same usable energy
- **Certification** : CE, RoHS, UN 38.3

### Technical Specifications

Electric	Nominal voltage	12.8V
	Nominal capacity	20 Ah
	Stored energy	256 Wh
	Internal resistance	≤ 50mΩ
	Cycles	>3000 cycles (see chart)
	Self discharge	< 3% per month
	Energy efficiency	> 96%
	Standard Charge	Charge voltage
Charge mode		CC/CV : Constant Current / Constant Voltage
Continuous charge current / Maximum charge current		10 A / 20 A
BMS charge cut-off voltage		14.8V ± 0.1V
Standard Discharge	Instant peak discharge current	180±30 A (max 100ms)
	Continuous discharge current	40 A (512 W)
	Maximum discharge current (< 30s)	60 A (768 W)
	BMS discharge cut-off voltage	10 V
Environment	Charge temperature range	0°C o +60°C
	Discharge temperature range	-20°C to +60°C
	Storage temperature	0°C to +50°C @60±25% relative humidity
	IP protection level	IP 65
Mechanical	Type of cells	Cylindrical
	Casing material	ABS
	Dimensions	L : 180mm x P : 76mm x H : 168 mm
	Weight	2.80 kg
	Terminal	M5 bolt



### APPLICATIONS

- **Electrical vehicles and utilities**
- **Robotics and AGVs**
- **Solar and wind energy storage**
- **Marine**
- **Street lightning**
- **CCTV and security camera**
- **UPS, electric back-up**
- **Telecom**
- **Medical equipments**



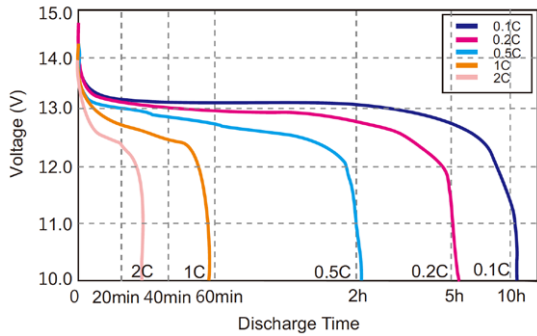
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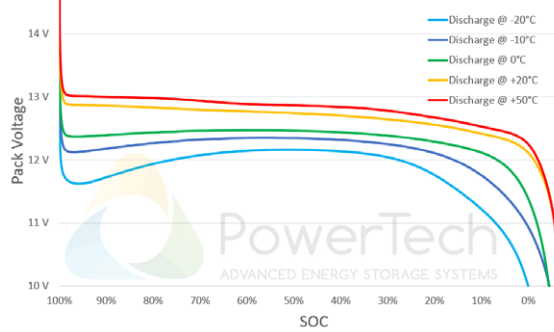


## Charts and curves

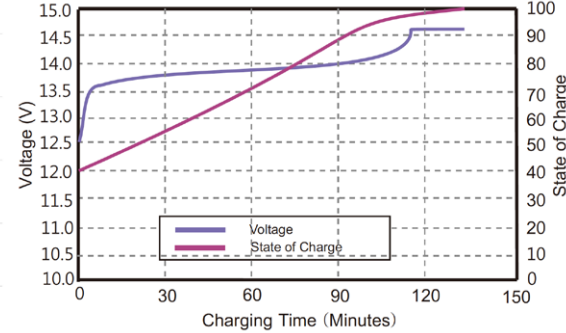
Different Rate Discharge Curve @25°C



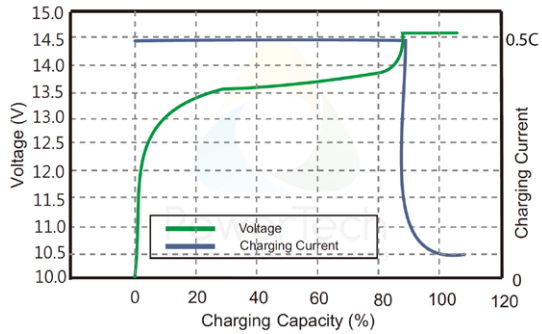
Discharge Curves (0.5C) at different Temperatures



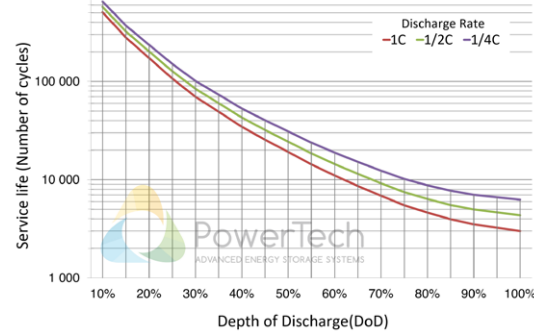
State of Charge Curve @0.5C 25°C



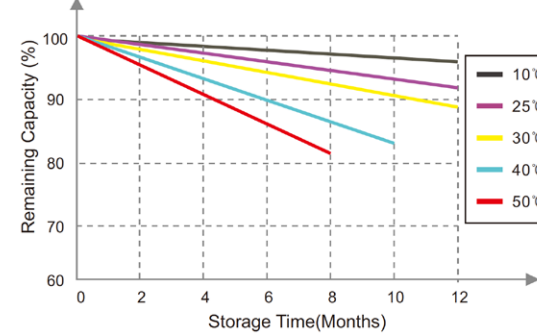
Charging Characteristics @0.5C 25°C



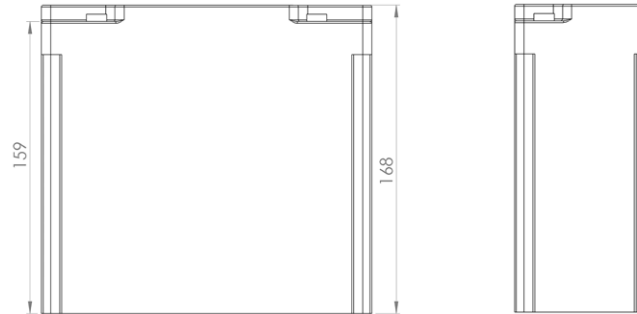
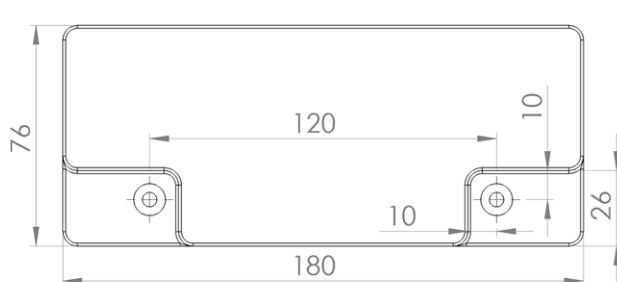
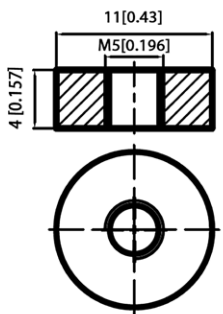
Number of cycles vs. Depth of discharge (DoD)



Different Temperature Self Discharge Curve



## Dimensions



PowerTech  
systems

V1.4

PowerTech Systems SAS  
ZA Charles Renard - Batiment A1  
6 Bld Georges Guynemer  
78210 ST CYR L'ÉCOLE - France

SAS au capital de 800 000 Euros  
SIREN : 793926577 - TVA : FR33793926577

[www.powertechsystems.eu](http://www.powertechsystems.eu)  
+33 185 400 970  
[contact@powertechsystems.eu](mailto:contact@powertechsystems.eu)