

## PSL-12450 12.8 Volt 45.0 AH

Lithium Iron Phosphate (LiFePO<sub>4</sub>)  
Rechargeable Battery

**Power-Sonic Batteries Engineered With Vision. Built With Care.**



Power-Sonic Corporation has been a leading force since 1970 in the supply of high quality cost effective batteries.

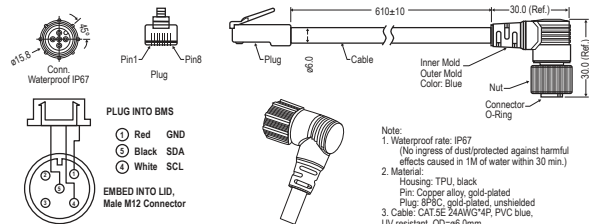
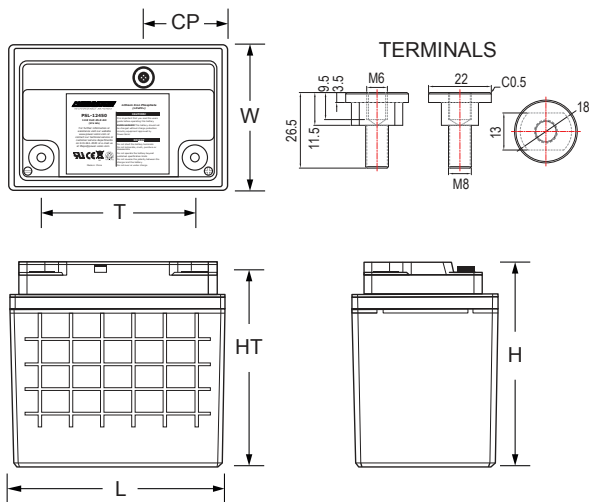
We market an extensive range of rechargeable batteries worldwide. These batteries envelop a broad spectrum of electronic and industrial applications, either as the prime or standby power source.

Power-Sonic is dedicated to continual product development to improve the performance and reliability of our product range. New batteries are constantly being introduced to meet the ever evolving needs of industry.

We are a 100% US owned private company. The corporation has an enviable record of growth and financial stability.

Providing our customers with reliable, yet economical, products is the corner stone of the Power-Sonic mission.

### Physical Dimensions: in (mm)



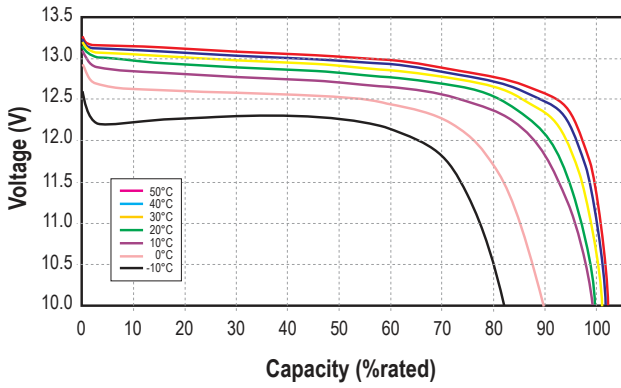
L: 7.70 (195) W: 5.20 (130) H: 7.20 (183) HT: 7.20 (183)  
T: 5.35 (136) CP: 2.91 (73.96)

### About Lithium Iron Phosphate (LiFePO<sub>4</sub>) Batteries

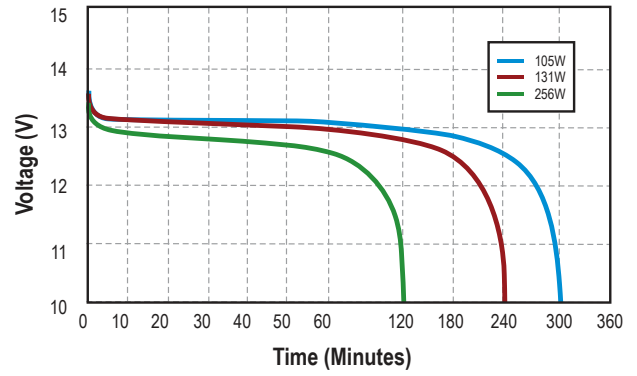
- Compact and only 40% of the weight of comparable capacity SLA batteries. Making it much easier to handle and transport.
- Extraordinary cycle life ~ 2,500 cycles.
- 2 ½ hours recharge time with 20A current charge.
- 45 AH capacity, allowing for a 12.5% longer runtime than an equivalent 40 AH LiFePO<sub>4</sub> battery.
- Same size as U1 SLA battery
- Integrated battery management system (BMS) controls the parameters of the battery to provide optimum safety and performance. Among other functions, the BMS balances the battery cells and protects against overcharging or overdischarging.
- Safe and stable chemistry. The use of lithium iron phosphate greatly reduces the risk of combustion or explosion due to high impact, overcharging or short circuit situations.
- The battery will communicate with most smart charging (power module) systems.
- The SMBus provides access to a battery history log.
- Rugged plastic case and cover, flame retardant (FR) to UL94 V-0.
- The battery cells are manufactured with internationally patented lithium iron phosphate powder from Phostech, Canada.
- UN 38.3, UL1642, UL2054, IEC62133, FCC and CE approved. Certified compliant with EU Battery Directive 2006/66/EC.

Performance Specifications	General Parameters	Comments
<b>Nominal Voltage</b>	12.8 volts	
<b>Rated Capacity (77°F/25°C)</b>	45 AH	Standard discharge 9A after standard charge 9A
<b>Minimum Capacity (77°F/25°C)</b>	42 AH	
<b>Dimensions (in./mm)</b>		
<b>Length</b>	7.70 / 195	
<b>Width</b>	5.20 / 130	
<b>Height</b>	7.20 / 183	
<b>Battery Life</b>	Residual capacity is more than 80% of rated capacity	CC charge at 9A to 14.6V then CV until current taper to 1A, rest 30 minutes, discharge at 9A to 10V. Temperature 60±9 °F (20±5 °C). Carry out 2500 cycles.
<b>Approximate Weight lbs./kg.</b>	12.8/5.8	
<b>Internal Resistance at 50% SOC</b>	<25 mΩ	(77°F/25°C)
<b>Discharge Cut-Off Voltage</b>	8.8V = 2.2 volts per cell	
<b>Charging Cut-Off Voltage</b>	14.6V = 3.65 volts per cell	
<b>Terminals</b>	M6 button (female-threaded)	
<b>Standard Charge</b>	9A constant current (CC) charge to 14.6V, then constant voltage (CV) 14.6V charge until charge current declines to 1A	
<b>Standard Discharge</b>	Constant Current 0.2 C, Cut-off Voltage 10.0V	
<b>Cell Assembly</b>	18650EC-1.5AH	4S30P
<b>Maximum Continuous Charge Current</b>	20A @ 68°F (20°C)	
<b>Maximum Continuous Discharge Current</b>	20A @ 68°F (20°C)	Over current 40A (2S)
<b>Operating Temperature Range Charge</b>	32°F - 122°F (-0°C - 50°C)	60±25% Relative Humidity at Shipment Date
<b>Operating Temperature Range Discharge</b>	14°F - 122°F (-10°C - 50°C)	
<b>Storage Temperature Range</b>	40°F - 122°F (4°C - 50°C)	<3 months: 23°F-95°F (-5°C-35°C) >3 months-1 year: 32°F-77°F (0°C-25°C)
<b>Specific Energy</b>	50.0 Wh/lb (99Wh/kg)	
<b>Specific Density</b>	124 Wh/L	
<b>Protocol</b>	SMBus	With male M12 connector
<b>Over Temperature Protection</b>	158°F (70°C)	
<b>Short Circuit Protection</b>	2 <sup>nd</sup> level protection 45A fuse	

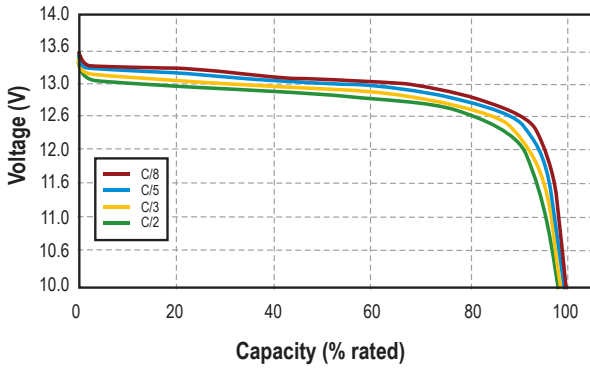
**Discharge Voltage Profiles @ 20A Discharge Rate**  
Various Ambient Temperatures



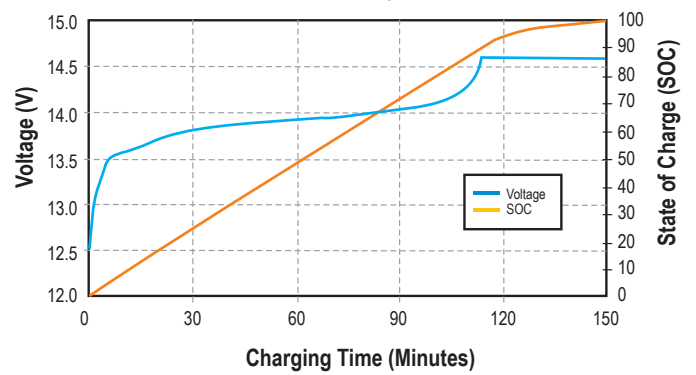
**Constant Power Discharge Characteristic**  
@ 23°C Ambient Temperatures



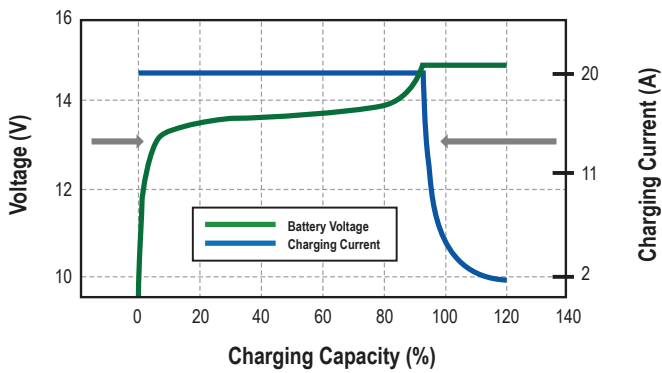
**Discharge Voltage Profiles @ Various Discharge Rates**  
23°C Ambient Temperatures



**Typical Voltage Profiles & SOC Profiles @ 20A Charging**  
23°C Ambient Temperatures

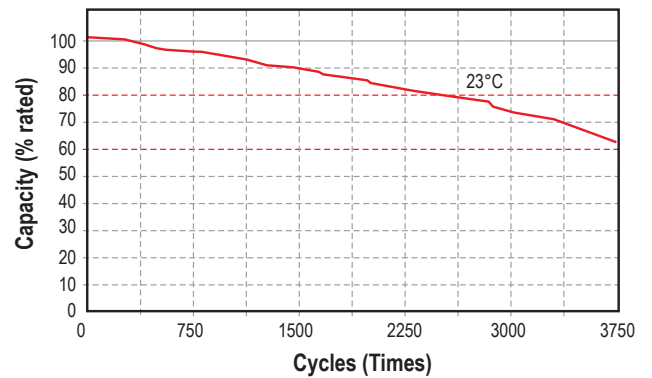


**Charging Characteristics (0.5C @ 25°C)**



**Discharge Capacity Performance**

Charged: 0.5C to 14.6V, CV@14.6 to 1A  
Discharged: 0.5C to 10.5V



**Contact Information**

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