POWERPSSONIC
TRUSTED BATTERY SOLUTIONS

PSL-SC SERIES

Medical | Solar | Wind | Mobility | Data Center | Transport | Sport & Recreation | Utility

PSL-SC-12350-GU1 12.8V 35.0AH

Rechargeable Lithium Battery
PSL SC – Serial Connection Capable Series

BATTERY FEATURES

- Super safe lithium iron phosphate (LiFePO4) chemistry reducing the risk of explosion or combustion due to high impact, over-charging or short circuit situation
- Battery Management System (BMS) controls the parameters of the battery to provide optimum safety by protecting against over-charging and over-discharging
- BMS enhanced design balances the battery cells, optimizing battery performance
- Higher capacity or voltage capability through parallel or serial connections
- Delivers twice the power of lead acid batteries, even at high discharge rates, while maintaining constant power
- Faster charging and lower self-discharge
- Up to 10 times more cycles than lead acid batteries
- Compact and only 40% of the weight of comparable lead acid batteries
- Rugged impact resistant ABS case

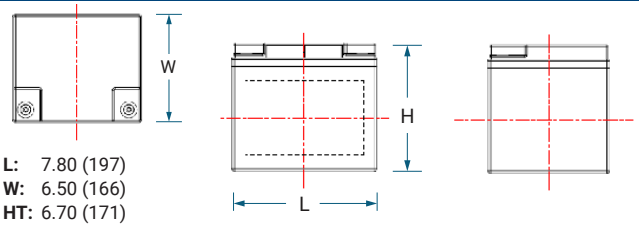
APPROVALS

- UL 1642 cell certificate
- IEC 62133 cell certificate
- UN 38.3 certified
- ISO9001:2015 - Quality management systems

UN38.3 PASSED Transport Safety Certified

bsi. ISO 9001 Quality Management

DIMENSIONS: inch (mm)



L: 7.80 (197)
W: 6.50 (166)
HT: 6.70 (171)

INTELLIGENT BATTERY MANAGEMENT SYSTEM

The PSL-SC Series comes with an intelligent battery management system which monitors current and voltages during charge and discharge. This protects the battery from over-charge and over-discharge.

The BMS embeds smart balancing algorithms that control all cell voltages in the battery, making sure they are constantly at the same voltage level, optimizing battery capacity.

SERIAL CONNECTION CAPABLE

The SC series allows for up to 4 batteries connected in series or 4 in parallel, but not concurrently. The batteries must all be matched at voltage levels, capacity, state of charge, date of manufacturing, and chemistry.

APPLICATIONS

- Medical
- Solar
- Wind
- Mobility
- Data Center
- Transport
- Sports & Recreation
- Utility

PERFORMANCE SPECIFICATIONS

Nominal Voltage	12.8 V
Rated Capacity	35 AH at a Constant Current of 0.2C to 10V
Stored Energy	448 Wh
Cycle Life (@DOD100%)	2000 Cycles
Approximate Weight	9.7 lbs (4.4 kg)
Internal Resistance	≤60.0 mΩ
Max Charge Current	35 A
Max Discharge Current	35 A
Charging Voltage	14.6 V
Recommended Discharge Cut-Off Voltage	11 V
Series & Parallel Connection	**4 in series or 4 in parallel**
Operating Temperature Range Charge Discharge Recommended	 32°F (0°C) to 113°F (45°C) -4°F (-20°C) to 140°F (60°C) 59°F (15°C) to 95°F (35°C)
Self-Discharge Rate	≤3%/month
Long Term Storage	Charge every 6 months or as soon as OCV is 12.8V
Power Sonic Chargers	Contact us for information on a suitable charge
Life Expectancy (years)	5 years at one cycle per day
Short Circuit Protection	Automatically recover after removal of short
Dimensional Tolerances	+/- 0.04 in. (+/- 1mm) for length and width +/- 0.08 in. (+/- 2mm) for height dimensions
Terminal Type	T11

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Rev4: 10/19

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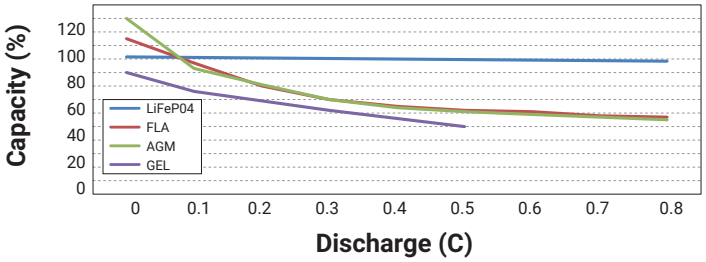
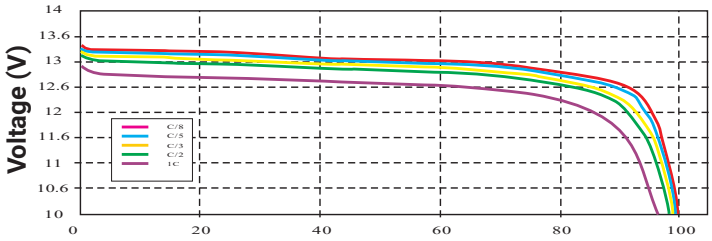
PSL-SC SERIES

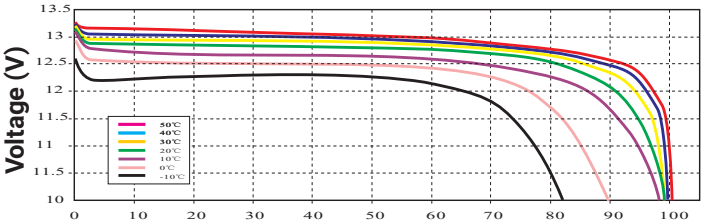
CAPACITY OF LiFePO4 vs. LEAD ACID AT VARIOUS CURRENTS OF DISCHARGE



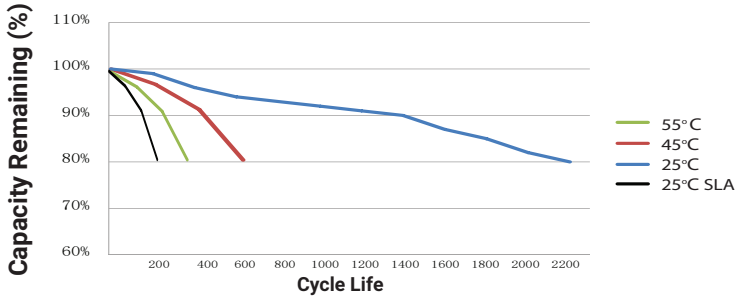
DISCHARGE VOLTAGE PROFILES AT VARIOUS RATES 25°C AMBIENT TEMPERATURE



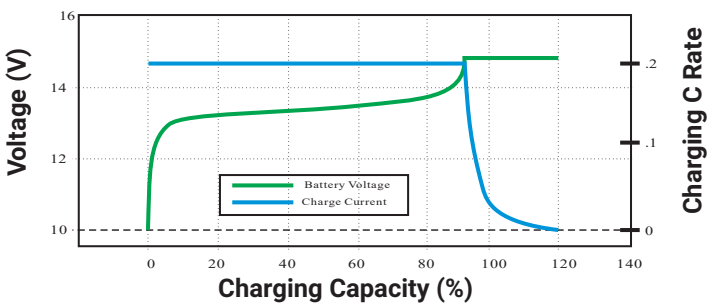
DISCHARGE VOLTAGE PROFILES AT 0.5C DISCHARGE RATE VARIOUS AMBIENT TEMPERATURES



CYCLE LIFE vs. VARIOUS TEMPERATURE 0.2C CHARGE/0.5C DISCHARGE @ 100% DOD



CHARGING CHARACTERISTICS (0.2C AMP @ 25°C)



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BENEFITS OF LITHIUM

Lithium offers several performance benefits versus it's sealed lead acid (SLA) equivalent. A lithium battery's capacity is independent from the discharge rate and provides constant power throughout it's discharge. The degradation of a lithium battery at a high temperature is significantly reduced in comparison to SLA.

Lithium has ten times the cycle life as SLA at room temperature. Even at an elevated temperature, lithium still has increased cycle life over SLA at room temperature.

Lastly, Lithium charging follows a similar charging profile as SLA, Constant Current Constant Voltage (CC/CV). However, lithium can be charged faster, without the need for a maintenance float charge.

BMS TECHNICAL SPECIFICATIONS

Over Charge	
Over-charge protection for each cell	3.90 V
Over-charge release for each cell	3.60 V
Over-charge release method	Protection releases when all cell voltages drop below the over-charge release voltage
Over Discharge	
Over-discharge protection for each cell	2.00 V
Over-discharge release for each cell	2.50 V
Over-discharge release method	Protection releases when all cell voltages rise above the over-discharge release voltage
Over current	
Discharge over-current protection	100-110 A
Protection delay time	31 ms
Over-current release method	Remove load for the over-current protection to release
Battery Temperature	
Over-temperature protection	65° C
Release temperature	55° C
Short circuit protection	
Function condition	External short circuit
Short circuit delay time	250-500 ms
Release condition	Remove load for the short circuit protection to release

FURTHER INFORMATION

Please refer to our website **www.power-sonic.com** or email us at **technical-support@power-sonic.com** for a complete range of useful downloads, such as product catalogs, material safety data sheets (MSDS), ISO certification, etc.

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