

# U27-24V88XP

## Group 27, 24 Volt Lithium Ion Battery Module

Lithion Battery provides safe, reliable and mobile energy solutions for energy storage and transportation. The U27-24V88XP is a high-performance, 24 volt battery, built on a Lithium Iron Phosphate chemistry platform. Customers now have a choice of a 24 volt battery in a Group 27 size case providing over 2.25 kWh.

The U27-24V88XP is ideal for material handling, stationary energy storage, and commercial EV or marine applications. The module's inherent safety, long cycle life, and zero maintenance offers end-users another alternative to lead acid by replacing with our reliable lithium ion solution. All XP batteries must be connected to an U-BMS when used in application.

Part Number: 91000006



### Electrical Specifications

Voltage (nominal)	25.6 V	Discharge Temperature	-10 °C to 50 °C
Capacity @ C/5, 25 °C (typical)	88 Ah	Charge Temperature	0 °C to 45 °C
Energy	2.25 kWh	Self Discharge @ 25 °C	< 2% per month
Recommended Charge Voltage	29.2 V	Specific Energy	112 wh/Kg
Discharge Cutoff Voltage	20 V	Energy Density	190 wh/L
Charge Float Voltage Range	27.6 - 29.2 V		
Cont. Current/Peak (30 sec)	144 A / 264 A		
Recommended Charge CCCV	≤ 44A to 29.2 V		

\*Preliminary data, subject to change without notice.

### Mechanical Specifications

Height (excluding bolts)	225 mm	8.86"	Terminal Hardware	M8 x 1.25
Width	172 mm	6.77"	Terminal Torque	16 Nm   141 in-lbs
Length	306 mm	12.0"	Plastic Case	Flame Retardant
Weight	20.1 kg	44.4 lbs	IP Rating	IP56
Cell Configuration	8IFR27/66-22			

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### Features

- Up to 4000 cycles at 80% DOD
- Create systems 24 - 1000 V
- Series and/or parallel operation
- Cell balancing when connected to U-BMS
- Temperature monitoring of cells
- Rugged mechanical design
- Dual lug contacts
- Thread locking feature
- Footprint of Group 27 lead acid case
- Maintenance-free
- No hydrogen generation or gassing

### Benefits of Lithium (LiFePO<sub>4</sub>)

#### Efficient & Fast Charging

High charge efficiency of >90%. Increases productivity, reduces energy costs and eliminates the need for investments in battery change out systems.

#### High, Uniform Discharge Voltage

Delivers stable voltage during discharge. Increases equipment performance and reduces motor heat.

#### Longer Life

Provides > 10 times the life of lead acid batteries.

#### Robust Safety

Multiple levels of protection prevent operation outside of current, voltage, and temperature limits.

- No thermal runaway
- No corrosive acid leaks
- No explosive gassing

#### Space and Weight Efficiency

Systems provide >3 times the energy per weight of lead acid.

#### Environmentally Safe

Does not contain toxic metals such as cobalt, lead, cadmium, nor any corrosive acids or alkalis.

### Contact Us

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## BATTERY MANAGEMENT SYSTEM

The Battery Management System integrates seamlessly with U27-24V88XP applications. The battery system manages all battery module parameters in real-time and system information can be monitored via CANbus.



Event	Default Warning (Adj)	Fault
High Temperature	55 °C	65 °C
Low Temperature	-5 °C	-15 °C
High Voltage	3.9 V	any cell 4.2 V
Low Voltage	2.8 V	any cell 2.0 V
Over Current	time + current	> 264 A for 30 sec
Low SOC	20%	

### Protection

Over/Under Voltage  
Over/Under Temperature  
Over Current  
Pre-Charge Control

### Software

Firmware  
Real Time Diagnostics  
Data Download Data  
Analysis

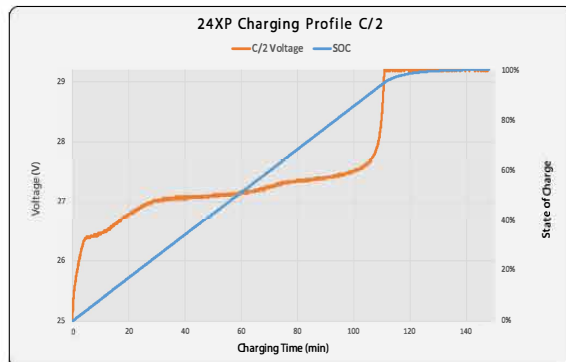
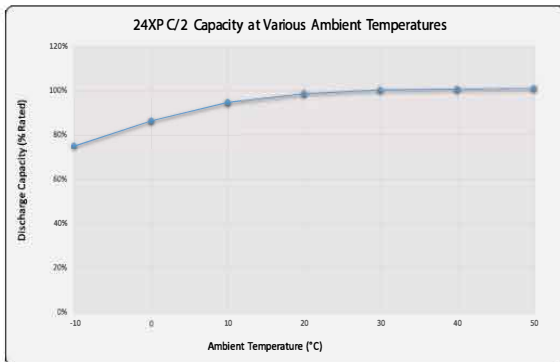
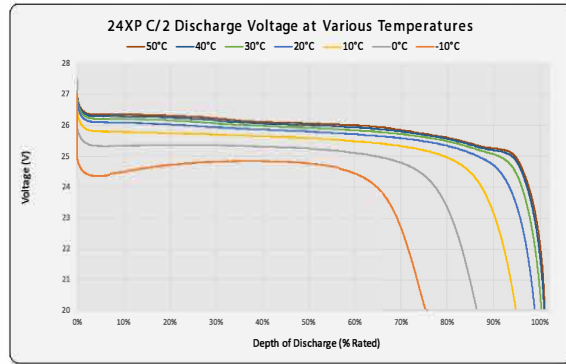
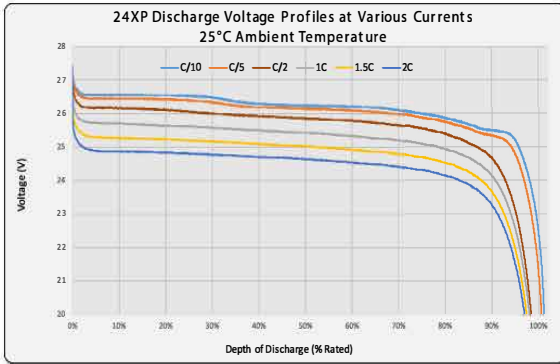
### Data Logging w/External Device

Faults/Warnings  
1/V/T History  
State of Charge

### Communication

Cable to USB  
CAN2.0B

## PERFORMANCE



## CERTIFICATIONS

- UL 1642 (cells)
- FCC Class B, CE
- UN 38.3

## SHIPPING CLASSIFICATIONS

UN 3480  
Class 9

All specifications are subject to change without notice. All information provided herein is believed, but not guaranteed, to be current and accurate. Torque values apply to modules manufactured Wk 38 2025 onwards, for older modules please contact Lithion.

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