

U27-24XP

Part Number 1008685

Group 27, 24 Volt Lithium Ion Battery Module

Lithion Battery provides safe, reliable and mobile energy solutions for energy storage and transportation. The U27-24XP is a high-performance, 24 volt battery, built on a patented Lithium Iron Phosphate chemistry platform. Customers now have a choice of a 24 volt battery in a Group 27 size case providing over 1.8 kWh.

The U27-24XP 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.



Mechanical Specifications

Height (excluding bolts)	225 mm	8.86"
Width	172 mm	6.77"
Length	306 mm	12.0"
Weight	19.2 ± 0.1 kg	42.25 lbs
Cell Configuration	81FR27/66-22	

Terminal Hardware	M8 x 1.25	
Terminal Torque	25 Nm	222 in-lbs
Plastic Case	Flame Retardant	
IP Rating	IP56	

Electrical Specifications

Voltage (nominal)	25.6 V
Capacity @ C/5, 25 °C (typical)	72 Ah
Energy	1.84 kWh
Recommended Charge Voltage	29.2 V
Discharge Cutoff Voltage	20 V
Charge Float Voltage Range	27.6 - 29.2 V
Cont. Current/Peak (30 sec)	144 A / 216 A
Recommended Charge CCCV	≤ 36*A to 29.2 V

Discharge Temperature	-10 °C to 50 °C
Charge Temperature	0 °C to 45 °C
Self Discharge @ 25 °C	< 2% per month
Specific Energy	96 wh/Kg
Energy Density	155 wh/L

*Higher charge rates may be possible. Please consult with our sales personnel about application.

May 2021



Features

- >4000 cycles at 80% DOD
- Create systems 24 - 1000 V
- Series and/or parallel operation
- Automatic cell monitoring & balancing
- 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
- DNV-GL Type approved

Benefits of Lithium (LiFePO₄)

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

lithionbattery.com/contact-us/

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Battery Management System

The U-Charge Battery Management System (U-BMS) integrates seamlessly with U27-24XP 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	> 216 A for 30 sec
Low SOC	20%	

Protection

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

Data Logging

w/External Device

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

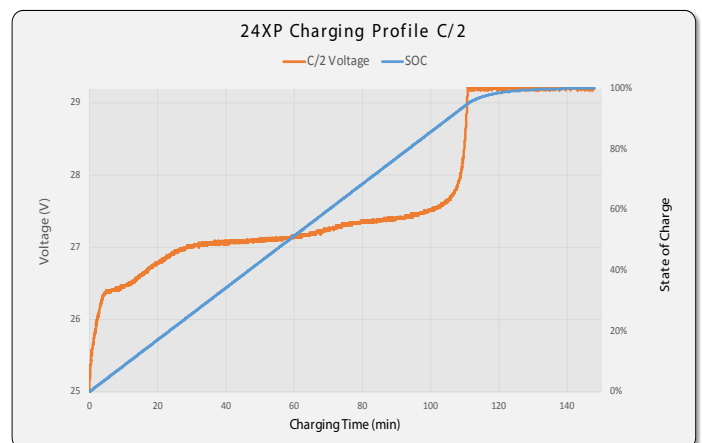
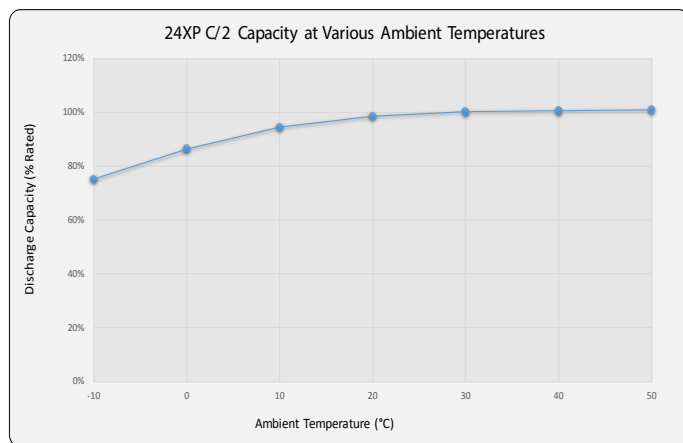
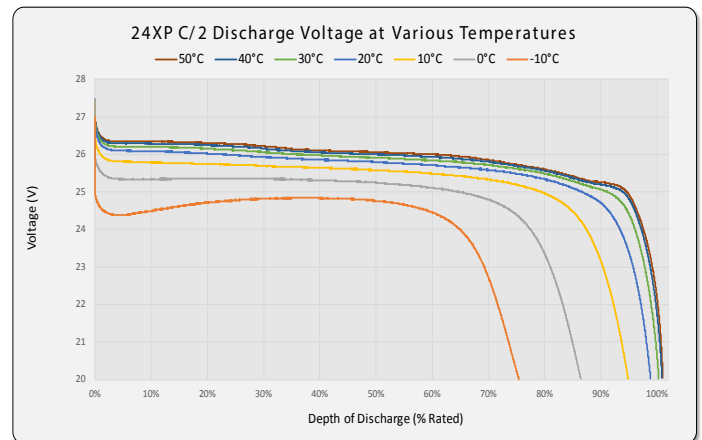
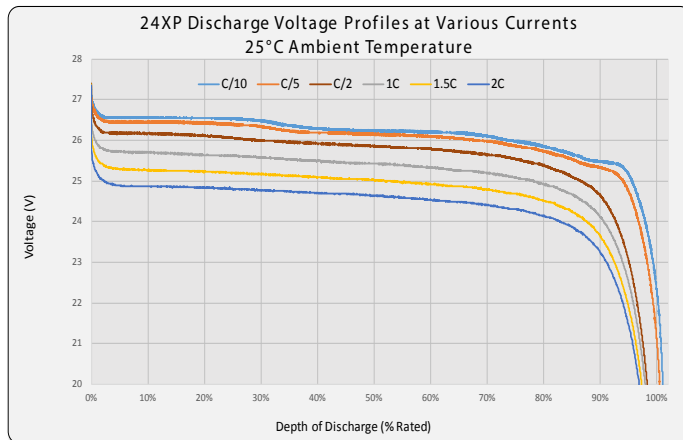
Software

Firmware
Real Time Diagnostics
Data Download
Data Analysis

Communication

Cable to USB
CAN2.0B

Performance



Certifications

- UL 2580
- UL 1642 (cells)
- IEC 62619
- FCC Class B, CE
- DNVGL/NMA
- 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.
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