

# U27-12XP

Part Number 1008773

## Group 27, 12 Volt, 144 Ah Lithium Ion Battery Module

Lithion Battery provides safe, reliable and mobile energy solutions for energy storage and transportation. The U27-12XP is a high-performance, 12 volt battery, built on a patented Lithium Iron Phosphate chemistry platform providing over 1.8 kWh.

The U27-12XP 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 other battery chemistries and diesel powered solutions by replacing with our reliable lithium ion solution.



### Electrical Specifications

Voltage (nominal)	12.8 V
Capacity @ C/5, 25 °C (typical)	144 Ah
Energy	1.84 kWh
Discharge Cont./Peak (30 sec)	150 A / 300 A
Discharge Cutoff Voltage	10 V
Recommended Charge Voltage	14.6 V
Charge Float Voltage Range	13.8 - 14.6 V
Cont. Current/Peak (30sec)	288 A / 432 A
Recommended Charge CCCV	≤ 72 A to 14.6 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

### 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	42.2 lbs
Cell Configuration	4lFpR27/66-44	

Terminal Hardware	M8 x 1.25	
Terminal Torque	16 Nm	141 in-lbs
Plastic Case	Flame Retardant	
IP Rating	IP56	



### Features

- >4000 cycles at 80% DOD
- Create systems 12 - 1000 V
- Series and/or parallel operation
- Automatic cell monitoring & balancing
- Temperature monitoring of cells
- Rugged mechanical design
- 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 and increases equipment performance.

#### 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/](http://lithionbattery.com/contact-us/)

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# Battery Management System

The U-Charge Battery Management System (U-BMS) integrates seamlessly with U27-12XP applications. The battery system manages all battery module parameters in real-time and system information can be monitored via CANbus.



## 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

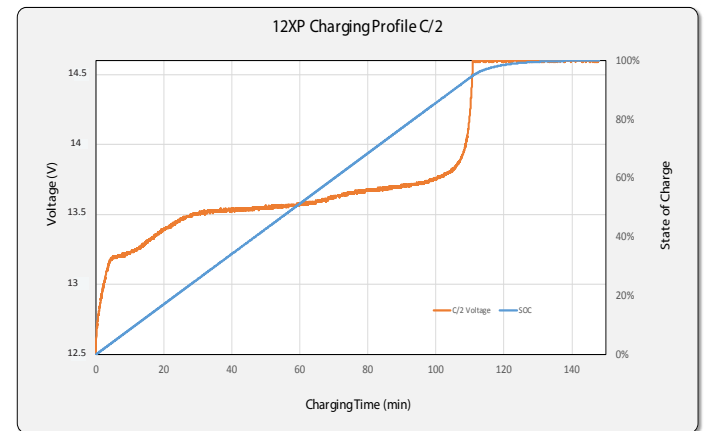
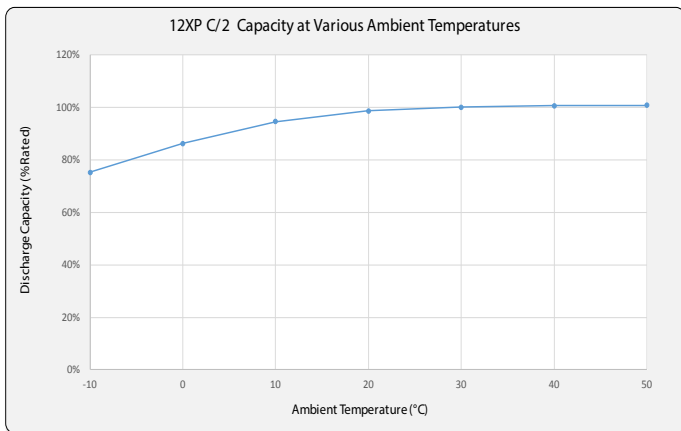
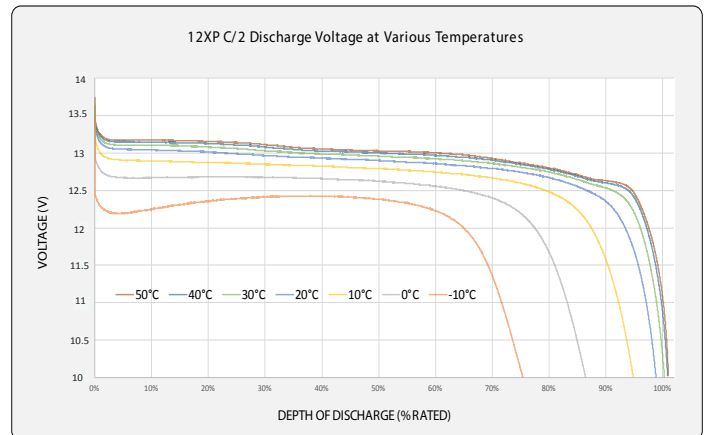
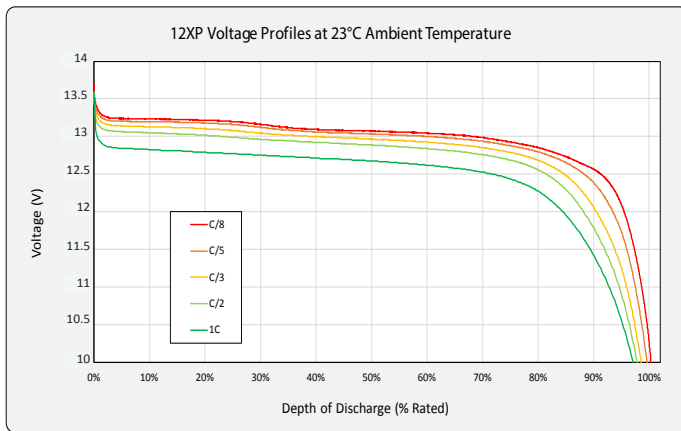
Firmware  
Real Time Diagnostics  
Data Download  
Data Analysis

## Communication

Cable to USB  
CAN2.0B

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	
Low SOC	20%	

# Performance



# Certifications

- UL 2580 (pending)
- UL 1642 (cells)
- IEC 62619 (pending)
- 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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