



U-Charge® XP Series

Lithium Ion Battery Modules

U-Charge® XP is a range of 12, 18, 24 & 36 volt Lithium Iron Phosphate battery modules, offering intrinsic safety with twice the run-time and 70% the weight of similarly sized sealed lead-acid batteries.

Overview

U-Charge® XP modules are designed to be assembled in series and parallel to reach your application's voltage and capacity requirements. Modularity reduces project development time and non-recurring engineering (NRE) expenses.

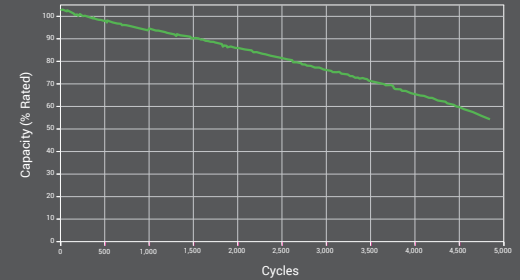
Hundreds of thousands U-Charge® systems have been deployed in a range of equipment since 2006. They have been successfully used in commercial vehicles such as EV buses, delivery trucks, port tractors, and marine vessels. XP modules are now being considered for new markets such as material handling, mining equipment and energy storage systems.

Features & Benefits

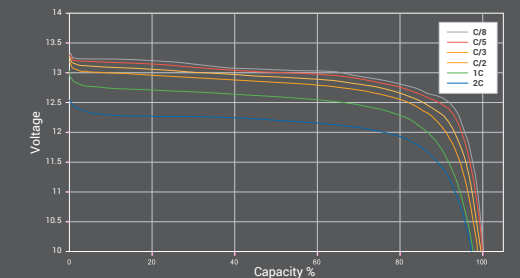
- > 4000 cycles (80% DOD)
- Exceptional voltage stability
- Configuration voltage range from 12V - 1000V
- Maintenance free
- Automatic inter-module balancing
- Rugged mechanical design
- LED battery status indicator
- Manufactured in standard BCI sizes for drop in replacement capability
- Module electronics monitors cell voltage, temperature, current & SOC
- Communication of monitored data via Battery Management System (BMS)
- BMS offers CANBus output
- Diagnostic and monitoring software included
- Stock available for quick delivery in US & Europe

U-Charge® XP Battery Module Data

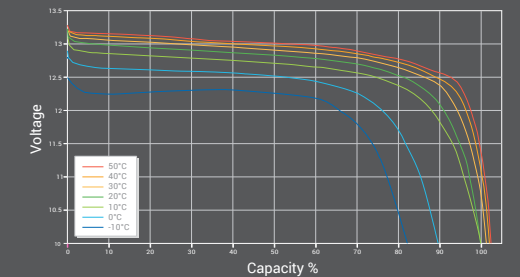
U1-12XP Discharge Capacity Performance at 23°C
C/2 cycling (100%DOD); Cycled 42 Months



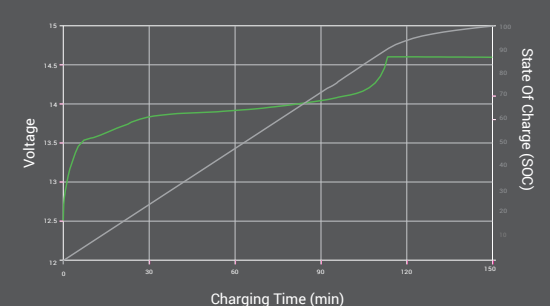
12V U-Charge® Voltage Profiles at Various Rates 23°C
Ambient Temperature



12V U-Charge® Discharge Voltage Profiles at C/2 Discharge
Rate, Various Ambient Temperatures



Typical 12V U-Charge® C/2 Charging Voltage and SOC
Profiles 23°C Ambient Temperature



Common Specifications

Discharge temperature	-10°C to 50°C
Charge temperature	0°C to 45°C
Storage temperature	-40°C to 50°C
Operating humidity	5% to 95%, non-condensing
Water/dust resistance	IP56
Shock and vibration	IEC62133 (U1 only)
Certifications	FCC Class B, CE, IEC 62133 (cells and U1) UL1642 (cells only)
Shipping Classification	UN 3480, Class 9



Accessories

All packs made with XP Modules require a Battery Management System. If insulation measurements are required, select the appropriate model based on the system voltage. If not, the U-BMS-LV, which operates off the 12V supply, is recommended.

- U-BMS-LV operates from 10V - 150V
- U-BMS-HV operates from 100V - 450V
- U-BMS-SHV operates from 350V – 700V
- CANBus Monitoring Kit
- Diagnostic Kit

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ALithiumWerksCompany

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Specifications		U1-12XP	U24-12XP	U27-12XP	UEV-18XP	U24-24XP	U27-24XP	U27-36XP
Nominal Module Voltage		12.8 V	12.8 V	12.8 V	19.2 V	25.6 V	25.6 V	38.4 V
Nominal Capacity (C/5, 23°C)		40 Ah	110 Ah	138 Ah	69 Ah	59 Ah	72 Ah	46 Ah
Weight (approximate) kg		6.5 kg	15.8 kg	19.5 kg	14.9 kg	15.8 kg	18.6 kg	19.6 kg
Weight (approximate) lbs		14.3 lbs	34.8 lbs	42.9 lbs	32.8 lbs	34.8 lbs	42.9 lbs	43.1 lbs
Dimension incl. Terminals LxWxH (mm)		197 x 131 x 182	260 x 172 x 225	306 x 172 x 225	269 x 148 x 245	260 x 172 x 225	306 x 172 x 225	306 x 172 x 225
Dimension incl. Terminals LxWxH (inches)		7.8 x 5.1 x 7.2	10.2 x 6.8 x 8.9	12.0 x 6.8 x 8.9	10.6 x 5.8 x 9.7	10.2 x 6.8 x 8.9	12.0 x 6.8 x 8.9	12.0 x 6.8 x 8.9
BCI Group Number		U1R	Group 24	Group 27	N/A	Group 24	Group 27	Group 27
Terminals, Female-Threaded		M6 x 1.0	M8 x 1.25	M8 x 1.25	M8 x 1.25	M8 x 1.25	M8 x 1.25	M8 x 1.25
Specific Energy		79 Wh/kg	89 Wh/kg	91 Wh/kg	89 Wh/kg	91 Wh/Kg	95 Wh/kg	91 Wh/kg
Energy Density		110 Wh/l	139 Wh/l	148 Wh/l	136 Wh/l	142 Wh/l	148 Wh/l	148 Wh/l
Standard Discharging @ 25°C	Max. Cont. Load Current	80 A	150 A	150 A	120 A	118 A	144 A	90 A
	Peak Load Current (30 sec)	120 A	300 A	300 A	200 A	177 A	216 A	135 A
	Cut-off Voltage	10 V	10 V	10 V	15 V	20 V	20 V	30 V
Standard Charging	Charge Voltage	14.6 V	14.6 V	14.6 V	21.9 V	29.2 V	29.2 V	43.8 V
	Recommended Current C/2	20A	55A	70A	35A	28 A	35A	23A
	Charge Time C/2 *	2.5 hrs	2.5 hrs	2.5 hrs	2.5 hrs	2.5 hrs	2.5 hrs	2.5 hrs
DC internal resistance (max)		15 mΩ	6 mΩ	5 mΩ	10 mΩ	18 mΩ	15 mΩ	25 mΩ
Part Number		1004434	1004425	1004428	1004431	1008555	1008556	1005199

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Performance may vary depending on, but not limited to battery usage and application. If battery is used outside specifications, performance will diminish. 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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