

# BluePack™

## Critical Power Battery

Safe, Reliable, High-Power on Demand

### 48VDC Building Block

- Breakthrough sodium-ion cells based on Prussian blue electrodes
- UL9540A 'Champion' rated nonflammable cells with no thermal runaway under any condition
- UL1973 Recognized
- Can recharge in less than 14 minutes
- No thermal settling or waiting required after recharge
- No active cooling necessary
- >50,000 discharge cycles
- Wide temperature operating range
- Round-trip efficiency >97%
- No conflict materials
- Designed for critical power applications



#### Features



##### **Rapid Cycle-Rate**

100-0-100% SOC repeatedly with no wait, settling, or rest periods



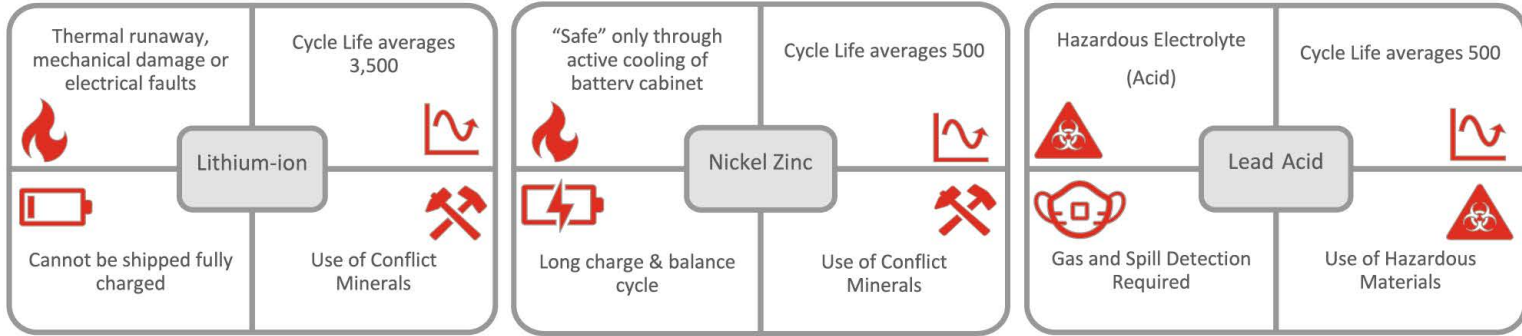
##### **Industry leading power capacity & performance**



##### **Nonflammable Chemistry & Construction**

Industry leading system-level availability

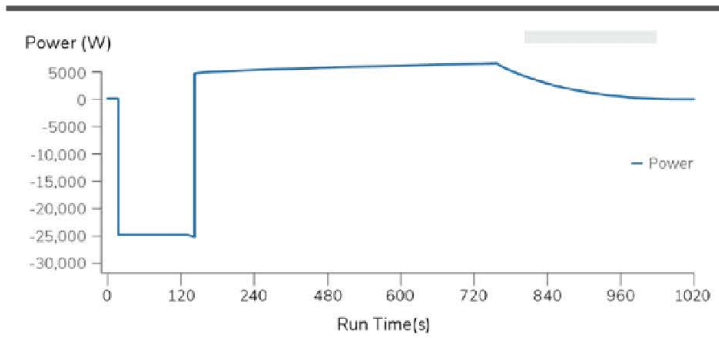
# Introducing the Industry's Highest Power, Highest Cycle Life, Safest Battery\*



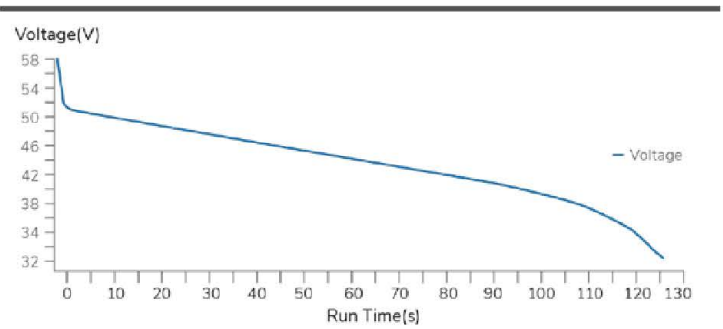
## High Power

Over 25 kW sustained discharge

Power vs. Run Time



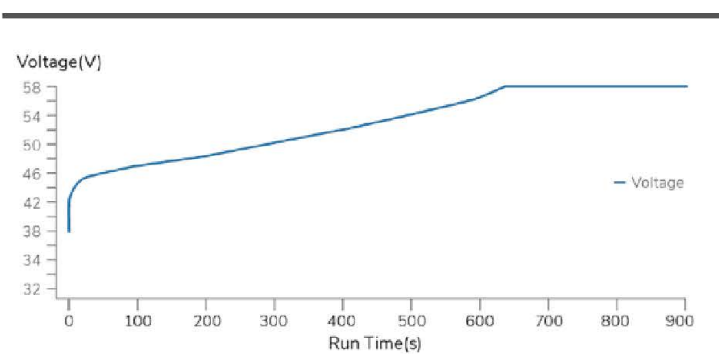
## Discharge Performance



## Fast Recharge

Full 0 to >99% recharge in just 15 minutes

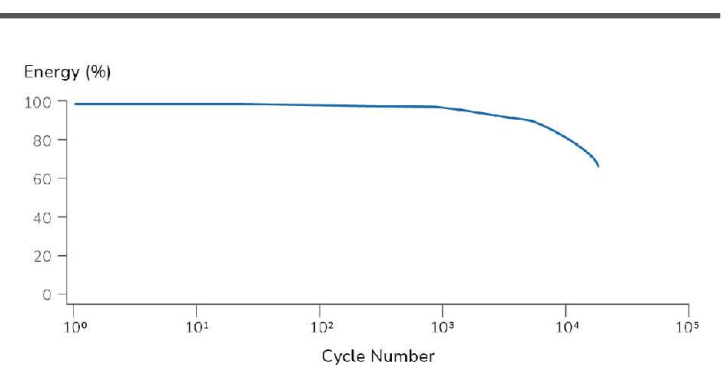
Fast Charge Performance (16C, CC - CV)



## Long Life Cycle

Best-in-class cycle life: over 10 k cycles at >90% energy utilization

Cycle Life >90% Energy Utilization



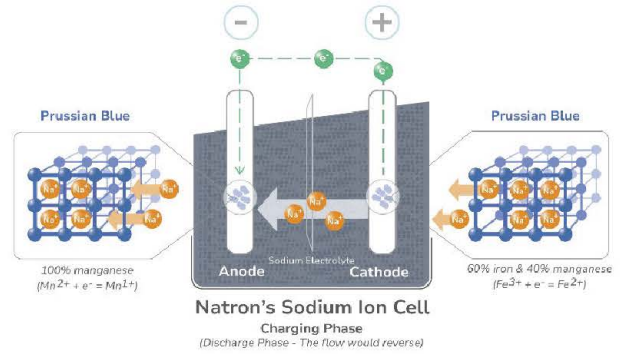
Preliminary specification subject to final product release.

\* Battle Hardened – Battery Packs and Cells survive ballistic penetration test with no fire, acid, or dangerous chemical exposure



# Our Sodium-ion Chemistry Is Inherently Safe and Fault Tolerant

- Nonflammable during and after nail penetration or flame test.
- No damage or loss in performance from short circuit or overcharge to 35% overvoltage.



## 250 kW Cabinet – 10 BluePacks™ in Series



**Cabinet Size:** 1980mm x 630mm x 1080mm  
78" H x 24.9" W x 42.4" D

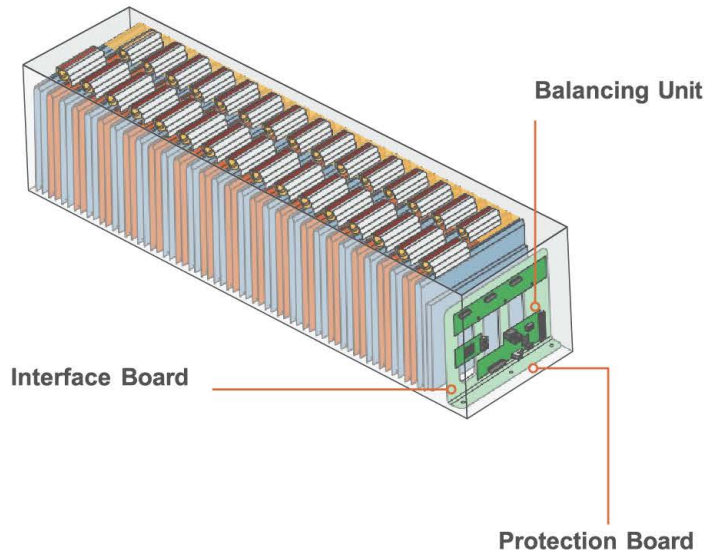
### BluePack™ Spec

48V, 25kW, 2 Minutes

Voltage Rating Swing	58V to 38V
Maximum Current Rating	750 A
Size	37.4" L x 9.7" H x 10.6" W
Weight Approximately	165 lbs

### Communication

External	MODBUS TCP/IP
Internal Communication	CAN Bus 2.0B 1 MBS



## Specifications

### Performance (from 25°C)

Run Time, Load	1 min	41 kW
	2 min	25 kW
	3 min	19.3 kW
	4 min	14.1 kW
	5 min	12.8 kW
0-99% Recharge Time	<14 min	
Energy, 1 hour (1C rate)	12.4 kWh	
Energy Efficiency (1C-1C)	>95%	
Coulombic Efficiency (1C-1C)	>97%	
Cycle Life (90% Energy Utilization)	>50,000	

### Thermal

Operating Temperature Range	-20° to +45° C	
Maximum Current Operating Range	-20° to +40° C	
Optimal (Consult factory for rating/duration)	+20° to +30° C	

### Mechanical

Exterior Dimensions (H x W x D)	246 x 269 x 951 mm	
	9.7 x 10.6 x 37.4 in	
Mass	75 kg / 165 lbs	
Connections	Front terminal lugs	
Orientation	Horizontal	

### Electrical

Nominal Voltage	48 Vdc
Recommended Float Voltage	58 to 59 Vdc
Operating Range	38 to 59 Vdc
Nominal Discharge Current	550 Amps
Maximum Discharge Current	750 Amps
Maximum Charge Current	750 Amps
Module to Module Communication	CAN

### Monitoring and Communications

Parameters:	Voltage, Charge, Power, Temperature
Supported communication protocols	CAN
	Contact factory for other protocols

### Applications


Uninterruptable Power Supply	Data Centers, Mission Critical Facilities
Telecom	Backup power on and off-grid sites
EV Fast Charging	
Fuel Cell	Bridging, power ramping, load balancing

## Additional Information


[natron.energy/product](https://natron.energy/product)



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