



Motive Power Lithium Batteries

Overview

Efficient material handling starts with reliable power. Our state of the art Lithium-Ion battery, **designed specifically for Material Handling Equipment**, offers a performance upgrade that minimizes downtime and maximizes safety. With user-friendly access to wearable parts, improved safety features, and LFP technology for extended battery life, we deliver a **low total cost of ownership and a smarter, seamless service experience**.

Safety & Protection

- Higher safety Lithium Iron Phosphate chemistry cells utilized in the battery systems
- Voltage, Current, and Temperatures are continuously monitored by Green Cubes Technology's custom Battery Management System (BMS) which controls the internal safety contactors and disconnect fuse

Benefits: Low Total Cost of Ownership

- High cycle life
- True fast charge/ Opportunity Charge
- Low Maintenance
- Drop in Lead Acid replacement
- No watering
- No equalization charging
- No battery watering or washing

Features

Improved Robustness, Reliability and Serviceability

- **State of Charge Measurement:** Enhanced design for stable tracking
- **Improved Isolation:** CAN and USB communication interfaces
- **Diagnostic Tools:** Advanced technician software and Diagnostic trouble codes (DTC)
- **Design for MHE:** Battery Control Module (BCM), easily accessible for improved serviceability
- **Common Building Blocks:** Improved serviceability and reduction in spare inventory
- **Power Distribution Board:** Elimination of I/O harness and inline components

Flexible Design for Optimized Truck Applications

- Green Cubes custom Battery Management System (BMS) can be adjusted for different performance based upon the application
- High current trucks with accessories
- Extreme low temperature cold storage operations
- Fast Opportunity Charging without effecting cycle life
- Fully ballasted battery for heavy counterbalance trucks or non-ballasted batteries for light application

Energy Savings

- Recharge efficiency of 98% or higher helps save electricity and also reduce damaging effects of heating the batteries
- Improvements in runtime capacity efficiency of 10% or higher

Specifications

SAFEFlex MHE

Voltage class	24V	36V	48V	72V	80V
Nominal Capacity	105 - 945 Ah	210 - 1050 Ah	210 - 1050 Ah	420 - 1050 Ah	210 - 1050 Ah
	2 - 24 kWh	8 - 40 kWh	10 - 53 kWh	32 - 80 kWh	17 - 87 kWh
Nominal Voltage	25.6 V	38.4 V	51.2 V	76.8 V	83.2 V
Operating Voltage	24 - 28.4 V	36 - 42.6 V	48 - 56.8 V	72 - 85.2 V	78 - 92.3 V
Operating Temperature	-4°F - 122°F				
Charge Current continuous (max)	100 - 320 A	200 - 320 A			
Discharge Current continuous (max)	100 - 320 A	200 - 320 A			
Discharge Current peak	1C/30s, 2C/7s				
Protections	Over and Under Voltage Protection (software, hardware)				
	Over and Under Temperature Protection				
	Over Current Protection				
Communication	CANBus				
	USB				
	Wi-Fi				
Storage Temperature	-4°F - 113°F (One Month)				
	32°F - 95°F (One Year)				
Storage Humidity	≤ 70% RH				
Ingress Protection	IP 2X				
Battery Modes	Active Charge/Discharge				
	Sleep (low current)				
	Ship/Storage (no current)				
Chemistry	Lithium Iron Phosphate (LiFePO4)				

ABOUT GREEN CUBES TECHNOLOGY

Green Cubes Technology develops and manufactures a complete portfolio of lithium power systems that enable our OEM and enterprise customers to transition from Lead Acid and Internal Combustion Engine (ICE) power to Lithium-ion battery power. We utilize proven hardware and software platforms to build the most reliable lithium battery systems in our industries. With over 300 employees across six countries, Green Cubes has been producing reliable, high performance and high quality products for over 30 years.

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