



eGSE Lithium Batteries

Overview

Lithium SAFEFlex GSE is a comprehensive product line of battery solutions designed to meet the cost, performance, efficiency, and durability, requirements of the rugged airport environment. It includes application-specific cell chemistry and intelligent battery management electronics. Lithium SAFEFlex GSE series battery systems are high cycle life maintenance free solutions for industrial vehicles with fully customizable features to fulfill the most demanding requirements. The drop in replacement batteries make upgrading from Lead Acid to Lithium simple. The batteries are sized to fit the standard motive power lead acid battery, along with meeting the equipment battery weight requirements. From 5kWh to 80kWh, Green Cubes Technologies has batteries ready for the application.

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 or disconnect fuse.
- Constructed from UL approved components

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
- Weekly Equalization charges are not required

Features

Ease of Use

- Charge ports or single point battery connection replicates today's lead acid without special equipment or charger modifications
- Configurable dot matrix battery discharge indicator provide critical battery information along with errors or other important runtime data
- Low Maintenance
 - No Watering
 - No Equalization Charging
 - No Battery Washing Needed

Flexible Design for Optimized Applications

- Green Cubes Custom Battery Management System (BMS) can be adjusted for different performance based upon the application
- High Current Equipment with Accessories
- Extreme Low Temperature Storage Operations
- High Cycle Opportunity Charging
- Fully ballasted battery for heavy counterbalance equipment or non-ballasted batteries for light application

Benefits

- High Cycle Life
- True Fast Charge/ Opportunity Charge
- Low Maintenance
- Drop In Lead Acid Replacement

GSE Applications

Pushbacks (Conventional and Towbarless) ■ Baggage Tractors ■
Cargo Loaders ■ Belt Loaders ■ Transporters ■ Lav and Water Vehicles

Flexible Battery Pack (FBP) Series GSE Lithium Batteries Popular Models

Voltage Class	60 V	80 V
Nominal Capacity	525 Ah	210-840 Ah
	33.5 kWh	17-70 kWh
Nominal Voltage	64 V	83.2 V
Operating Voltage	60-71 V	78-92.3 V
Operating Temperature	-4°F - 122°F	
Charge Current Continuous (max)	320 A	200-320 A
Discharge Current Continuous (max)	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 Integrated heaters	
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 54	
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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