



## QUANTUM CORE UPS and Energy Storage Series

**Backup UPS, Industrial Battery Replacements, and Battery Energy Storage Systems providing resiliency solutions for Backup Power**

**5 kW-hr to greater than 120 kW-hr**

The BlackStarTech® QuantumCore UPS and Energy Storage Series of industrial battery replacements, uninterruptible power supply (UPS) solutions, and large-scale battery energy storage systems provide customizable backup energy storage solutions that come in a variety of output voltages, including 110 VAC, 240 VAC, or 3-Phase Power. The QuantumCore Series provides instantaneous protection from power interruptions and resiliency solutions for your critical infrastructure.

BlackStarTech QuantumCore delivers innovative energy storage solutions for data centers, hospital ICUs, banks, telecommunications, utilities, power generation, 911 call centers, industrial sites, schools, universities, research facilities, and anywhere you need secure and long-term backup power. Furthermore, QuantumCore provides state of the art battery replacements solutions for your expensive high life cycle cost industrial batteries.

Unlike competitive offerings, using outdated, maintenance intensive lead acid batteries, the QuantumCore UPS and Energy Storage Series utilizes state of the art Lithium Iron Phosphate (LiFePO<sub>4</sub>) batteries. These batteries are safe, reliable, environmentally friendly, over 50% lighter, significantly higher energy density, and have a 3x longer life expectancy. The QuantumCore Series UPS and energy storage solutions can achieve greater battery capacity in a much smaller footprint, while eliminating extensive maintenance costs required from current batteries in the typical UPS systems. Furthermore, Quantum Core batteries offer an optional integrated battery health diagnostic system that provides a remote means of monitoring and trending battery health and automates battery surveillance activities.

When there is a loss of AC power, it's important to keep your systems up and running. With the QuantumCore Series, you can keep your critical systems operating without interruption. The battery system is designed to automatically supply critical loads when there is a loss of normal power, allowing your team to have minimal disruption as the UPS starts providing power immediately.

### Applications

Schools, Universities and  
Research Facilities

Hospitals, Medical  
and Healthcare

Nuclear Power  
Generation Facilities

Utilities

Telecommunications  
and Data Centers

Industrial and Chemical  
Processing Facilities

Law Enforcement

Fire Protection and Security

Military Services

Government  
Emergency Management

## QuantumCore UPS and Energy Storage Series Features and Benefits

Features	Benefits
Uninterruptible Power Source	Immediately activates when the AC power goes down, providing emergency power to essential loads
Lithium Iron Phosphate (LiFePO <sub>4</sub> ) batteries	Secure, dependable, and more environmentally friendly than Lead Acid batteries and optional automated surveillance protocol monitoring health and life of your battery system
Battery Management System	Reliable protection that always maintains batteries within critical parameters or shuts down the battery
Various Sizes: 5 kW-hr to greater than 120 kW-hr	Scalability and flexibility
Smaller footprint per kW-hr	More battery runtime with less space utilized
Longevity and Lifecycle Cost Effectiveness	QuantumCore batteries provide much longer service life, have flatter discharge curves, and last 3 times longer than typical lead acid batteries
Resiliency and Flexibility	Quantum Core UPS and battery energy storage systems have integral capabilities to be charged and maintained with Backup BlackStarTech generator solutions providing long term options in a loss of power event.

### Cost Savings

The QuantumCore UPS and Energy Storage Series provides long-term cost savings across the product lifecycle due to longevity of LiFePO<sub>4</sub> batteries as well as the optional automated surveillance capability limiting what typically was labor intensive and hazardous battery surveillance to assess battery health. The optional automated surveillance can integrate within Wi-Fi, Bluetooth, or LTE systems to facilitate communication and status.



For a given footprint, the QuantumCore Series has three times the capability of a typical battery UPS system. Ultimately, with the QuantumCore you can potentially save tens of thousands of dollars or more per year as it reduces maintenance while increasing reliability within your facility.

## LiFePO<sub>4</sub>: Superior and Safer Than Your Current Battery

LiFePO<sub>4</sub> batteries are safe, reliable, and more environmentally friendly than lead acid batteries. While the battery management system performs advanced self-diagnostics to protect the battery, the chemical make-up allows the battery to maintain a longer expected lifecycle of 15 years. This means fewer battery replacements, less downtime, and increased reliability.

Lead acid batteries offered by typical competitors need replacing every 3 to 5 years and they require weekly and monthly validation checks, experience frequent failures, and incur repetitive repairs. The LiFePO<sub>4</sub> batteries that QuantumCore employs can save your facility not only on costs, but they are more compact and take up less room than an average UPS system that relies on nickel-cadmium or lead acid batteries.

## Battery Management System

The internal battery management system optimizes functionality and safety of the QuantumCore UPS products. The system monitors critical battery parameters including individual cell voltage, maximum charge and discharge current, overvoltage, overcurrent, temperature, cell balancing, short circuit, and more.

The Battery Management System (BMS) takes internally designed actions to optimize essential battery parameters and if necessary will override protection by automatically shutting down the battery. The BMS will provide notification alarms through data communications or by protective safety actions to automatically shut down the battery. As a safety redundancy, the solid metal encased battery architecture and temperature-sensing self-diagnostics eliminate the possibility of dangerous temperature ranges for the battery eliminating thermal runaway type events.







## Keep the Power Running with QuantumCore UPS and Energy Storage Series

BlackStarTech's extensive experience in providing rapidly deployable emergency power systems in various industries has enabled our team to design, manufacture, and replace facility UPS systems with QuantumCore products which incorporate:

- State of the art LiFePO<sub>4</sub> batteries
- Long Lasting Life Expectancy — 15 years or more
- Reduction of extensive maintenance and surveillance through automated preventative battery health and self-diagnostic testing – saving cost, time, and resources
- Packaged in less than half the footprint with three times the capacity compared to typical lead-acid battery systems

BlackStarTech's products can be delivered as part of resilient solutions that provide hardened emergency contingency systems for protection from a variety of natural disasters, terrorist attacks, EMP attacks, and BlackSky events that threaten the electricity grid. These capabilities go well beyond a typical UPS.

## Providing Power for of Variety of Applications

The QuantumCore UPS and Energy Storage Series can maintain order and critical first responder infrastructure by keeping 911 call centers powered and communication systems up and running. It can maintain power in hospital ICU units where critical patients reside and need power for ventilators and oxygen concentrators. BlackStarTech also offers the Defender Generator Series to provide long-term power to supplement the UPS batteries. Defender Generators are propane-powered, which means they are more efficient and require less maintenance compared to the diesel generators many hospitals currently use. Defender gives you resiliency and flexibility – a reliable backup power to your UPS backup power system.

QuantumCore products also enable cost savings and data protection at schools and universities. Any educational institution, from elementary schools up to colleges, typically come with lights, fans, fire alarms, extensive computer networks, interconnected phone systems, Internet connections, and various other high-tech systems operating on electricity. Furthermore, educational institutions with well-funded research facilities employ state-of-the-art equipment and high-end data centers for students and professors, alike. In the absence of a UPS, a sudden power outage can lead to data loss and a shutdown of operations. The QuantumCore UPS and Energy Storage Series keeps you connected.

## QuantumCore UPS and Energy Storage Series

### QuantumCore Integrated Standby Power Systems



#### Standard Models

- QuantumCore-UPS-20KW
- QuantumCore-UPS-40KW
- QuantumCore-UPS-80KW
- QuantumCore-UPS-120KW

This scalable power system provides a range of three-phase power to single phase standby stored energy solutions from 20 kW-hr to greater than 120 kW-hr for facility stored power applications. Start-up is quick with the LiFePO<sub>4</sub> battery, and it almost runs itself with self-diagnostics, and a sophisticated battery management system that utilizes notification alarms through data communications.

### QuantumCore Telecommunications Standby Power Systems



#### Standard Models

- QuantumCore-Telecom-UPS-2.5kW
- QuantumCore-Telecom-UPS-5kW
- QuantumCore-Telecom-UPS-10kW

Do not be fooled by the relatively small size as this compact battery can still protect your telecommunications systems and other critical infrastructure. When the AC power is lost, this battery steps up, providing power for anything that is vital to your operation. These products are small enough to be mounted on a utility pole. The UPS automatically turns on when AC power is lost, is uninterruptible, has no glitches, and no downtime.





## Specifications for Quantum Core UPS and Energy Storage Series

	QuantumCore Integrated Standby Power System  (20 kW-hr)	QuantumCore Integrated Standby Power System  (40 kW-hr)	QuantumCore Integrated Standby Power System  (80 kW-hr)	QuantumCore Integrated Standby Power System  (120 kW-hr)	QuantumCore UPS Series Telecomm Battery  (2.5 kW-hr)	QuantumCore UPS Series Telecomm Battery  (5 kW-hr)	QuantumCore Series Telecomm Battery  (10 kW-hr)
Model	QuantumCore-UPS-20KW	QuantumCore-UPS-40KW	QuantumCore-UPS-80KW	QuantumCore-UPS-120KW	QuantumCore-Telecom-UPS-2500W	QuantumCore-Telecom-UPS-5KW	QuantumCore-Telecom-UPS-10KW
Energy Module	1 Energy Module	2 Energy Modules	3 Energy Modules	3 Energy Modules	1	1	1
Unit Weight	440 lbs	880 lbs	1760 lbs	2640 lbs	130 lbs	175 lbs	250 lbs
Dimensions					2' x 3' x 0.8'	2' x 3' x 0.8'	2' x 3' x 1.6'
Unit Footprint	Each Energy Module has a 2' x 2' x 7' footprint				N/A		
Individual battery module parameters							
Battery Type	LiFePO <sub>4</sub>						
Rated voltage (V)	51.2						
Rated capacity (Ah)	100 (25°C 1C discharge)						
Max charging voltage (V)	58						
Nominal charging current (A)	10 (10A hard limit)						
Max discharging current (A)	100						
Overcurrent protection (A)	110						
Module over charge protection (V)	40						
Single cell high voltage protection (V)	3.75						
Single cell high voltage protection recovery (V)	3.40						
Single cell low voltage protection (V)	2.60±0.10						
External communication	RS485						
Charging temperature range (°C)	0~45						

Continued on next page.

## Specifications for Quatum Core UPS and Energy Storage Series (continued)

Discharge temperature range (°C)	-20~55
Dimension (mm)(W/L/H)	482 x 457 x 174
Ancillary (boost) charger parameters	
Input voltage range	176VAC~300VAC
Frequency	45Hz~65Hz
Stage 1 charging voltage (V)	58
Stage 2 charging voltage (V)	55
Stage 1 charging current (A)	30
Stage 2 charging current (A)	30
Input protection	Leakage protection; Short circuit protection; Lightning protection circuit
Charging temperature range (°C)	0~45
Discharge temperature range (°C)	-20~55
Dimension (mm)(W/L/H)	482 x 440 x 177
System parameters	
Rated voltage (V)	51.2
Rated capacity (Ah)	1500 (25°C 1C discharge)
Max charging voltage (V)	58
Max charging current (A)	150
Max discharging current (A)	400
Overcurrent protection (A)	400 (Output Breaker)
Module over charge protection (V)	58

Continued on next page.

## Specifications for Quantum Core UPS and Energy Storage Series (continued)

Module over discharge protection (V)	40
HMI	8-inch display
Charging temperature range (°C)	0~45
Discharge temperature range (°C)	-20~55
System alarm and System Low Voltage Alarm	Flash Buzzer
Warranty	1 Year Manufacturer's Warranty



For more information on standard or customized products, contact us at 1-844-585-6439 and [info@blackstartech.com](mailto:info@blackstartech.com).



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