Fluence Gridstack Pro™

Built for the next era of utility scale energy storage

GRIDSTACK PRO OVERVIEW

As the industry shifts from MW-sized projects to GW-scale portfolios, storage systems must meet new standards in delivery, performance, and safety. Gridstack Pro provides utilities, developers, and independent power producers with a factory-built, configurable solution that delivers higher site density, easier maintenance, and lower operating costs. With GWh of systems operating, Fluence is trusted by leading power generators to deliver safe systems and reliable grid services on the largest, most complex storage projects.

Next-Level Flexibility

Diversified supply chain and Fluence Battery Management System (BMS) enable the right-fit solution and project delivery assurance

Total Intelligence

Enhanced performance and lower operating costs through improved State of Charge (SOC) accuracy, and pre-integrated Asset Performance Management (APM)

Optimized Design

The right balance of density, speed of installation, and ease of logistics, with uncompromised safety and security

Technical Specifications

BATTERY PACK OPTIONS	2000 SERIES		5000 SERIES	
Battery Cells	3XX Ah		3XX Ah	5XX Ah
Energy Capacity	2436 kWh		4872 - 5016 kWh	5644 kWh
Battery Enclosure Dimensions (H x L x D)	2550 x 7537 x 1734 mm (8.37 x 24.73 x 5.69 ft.)		2896 x 6820 x 2438 mm (9.5 x 22.37 x 8 ft.)	2896 x 6058 x 2438 mm (9.5 x 20 x 8 ft.)
Battery Enclosure Weight without coolant	~ 22,400 kg - 23,300 kg		43,500 kg	45,500 kg
Aux. Peak Load	16.7 kW (2-hr); 9.5 kW (4-hr)		34 kW (2-hr); 17 kW (4-hr)	
Maximum CP Rate	0.5		0.5	0.25
PERFORMANCE & SAFETY SPECS				
Discharge Duration	2 hours - 4 hours - 6 hours - 8 hours			
DC Voltage	Up to 1500V			
System Response Time	150ms			
Round Trip Efficiency	> 87%			
Availability	> 97%			
Grid Frequency	50/60 Hz			
Seismic Rating	Compliant with IEEE693 High, meets International Building Code (IBC), California Building Code (CBC) requirements per Seismic Design Category (SDC) D, Conforms to ASCE 7-10 standard			
Operating Temp. range	-20 °C to +50 °C (-4 °F to +122 °F)			
Certifications	UL/IEC			
Battery enclosure IP Rating	IP55			
Altitude	2,000 meters (without derating)			
Thermal Management	Liquid cooled			
Certifications and Codes	UL1741, UL1741SA/IEEE1547, NFPA68/69/72/855, UL 9540A Cell, Module, Unit			
SOFTWARE				
BMS, System Control and Market Applications	Fluence OS7			
Communication Protocol	Modbus, DNP3, and OPC UA			
Analytics and Optimization platform	Nispera			
Bidding Optimization Software	Mosaic*			

Note: Specifications in the above table are design estimates only and are not guaranteed. Contact Fluence for a project-specific estimate as final values depend on system design, location, and use case.

*Mosaic is an add-on currently available for assets in the NEM, CAISO, and ERCOT

Next Level Flexibility

The Fluence-designed Battery Packs combine state-of-the-art battery modules, management systems, and monitoring equipment into a unified product architecture designed to improve operations through advanced thermal and state of charge (SOC) management. The integrated design ensures consistent product performance and safety at the system level while reducing the time it takes to introduce new battery technology from a growing base of global battery manufacturers.

With flexibility and reliability in mind, Gridstack Pro incorporates advanced features allowing for grid forming capabilities. This allows for optimization of sites and systems that operate entirely or partially off-grid, supporting storage, load, solar, and other generators.

Integrated Global Supply Chain

At Fluence we invest heavily in technology, systems engineering, product development, and R&D to strengthen our market leadership and enhance customer value. Gridstack Pro is built with Fluence Module, BMS, electronics, and software, free from components from countries of concern, safeguarding against cybersecurity and mitigating policy issues.
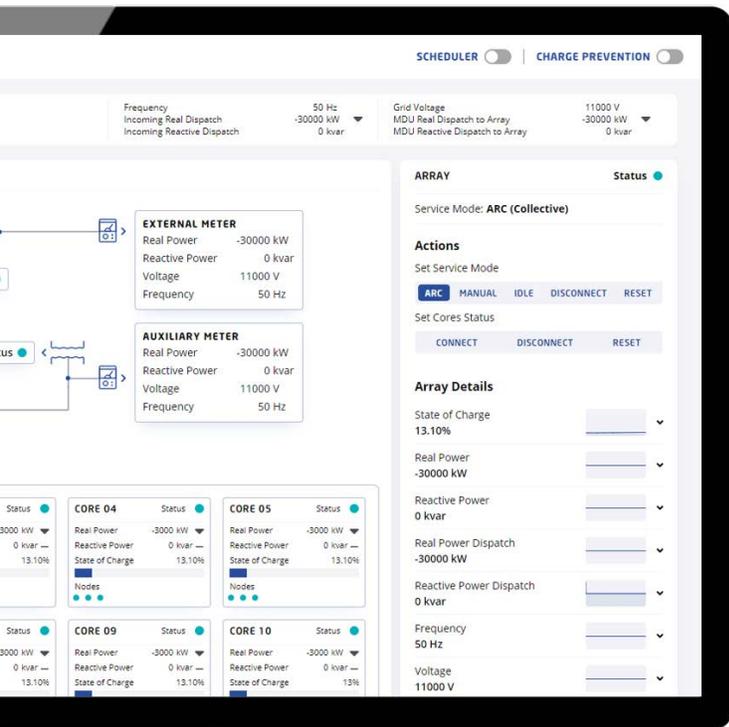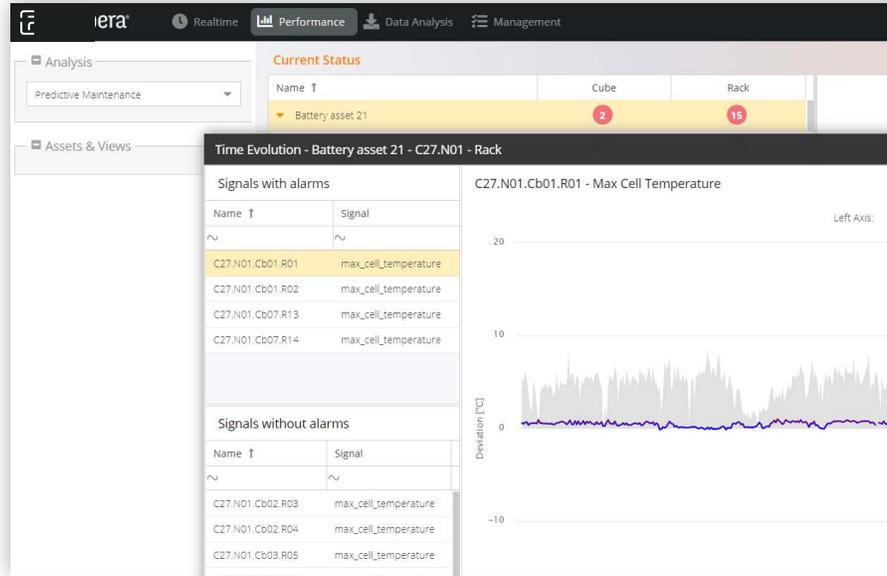
Total Intelligence

Enhanced Performance

Gridstack Pro delivers granular data access and plug- and-play API connectors for our cloud-based software - Nispera.

 Pre-integration with Nispera enables customers to drive down costs and increase revenue through advanced asset performance management and predictive maintenance software. With access to the Nispera executive dashboard and real-time insights, alongside predictive maintenance features, customers can gain valuable oversight of their assets, facilitating pro-active decision-making and streamlined operations.

Fluence OS

Fully integrated controls with over 3 million operating hours – standard with all Gridstack Pro systems

SYSTEM CONTROL
Fully integrated controls system, including hardware and software, for the day-to-day management and dispatch of your storage system

SYSTEM MONITORING
Comprehensive data collection at every level of the storage system continuously monitors, detects, and alerts operators to potential anomalies

EXTERNAL INTEGRATION
Integration with external systems (ISO's, customer EMS, historian software, etc.) and 3rd party software applications via APIs and common protocols

ASSET PROTECTION
Enterprise-class network security and firewall capabilities keep critical grid infrastructure secure and support international cybersecurity standards

Optimized Design Balancing Density, Installation, and Maintenance

The right balance of density, speed of installation, and ease of logistics: the Gridstack Pro system is designed to maximize density, enabling more MWh per square foot. Gridstack Pro lowers balance of system costs while maintaining ease of shipping and installation by optimizing systems to reduce connections, inverters, transformers, and associated medium voltage (MV) infrastructure. Additionally, a two-thirds reduction in chillers minimizes preventative maintenance requirements. Gridstack Pro delivers up to 40% improved density for a 100MW, 4hr project, enabling more MWh in less space.

Gridstack Pro is designed for ease of transportation and logistics:

- Standard ISO sized containers for smooth logistics
- Manage of load sizes for ease of transport according to site regulations
- Global procurement and supply chain support throughout the whole logistics process
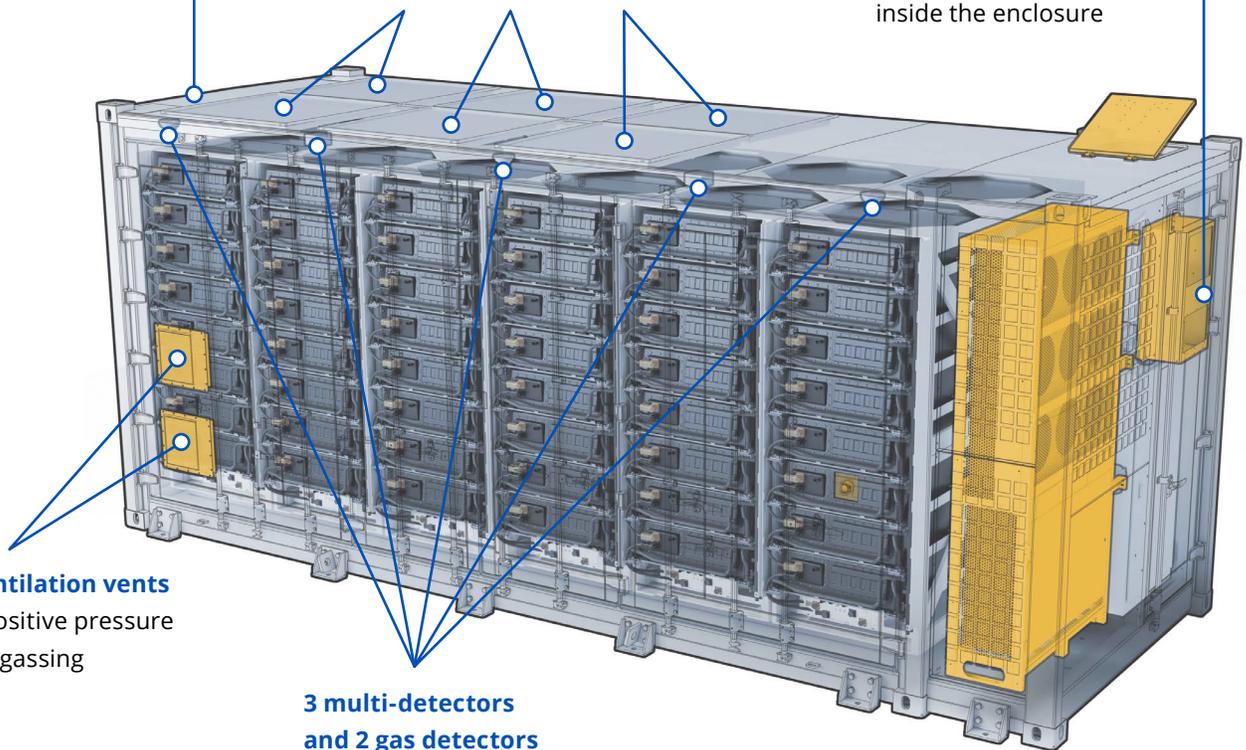- Designed for crane transportation allowing easy maneuvering on site

Uncompromising Safety

Gridstack Pro is designed to meet and exceed industry standards in safety certification and fire testing, including UL9540, UL9540A, NFPA-855, large scale burn testing, and more. With more than a decade of experience deploying and operating energy storage systems for our customers globally, the Fluence fleet has more than 2.5 million hours of operation with a strong safety and availability record.

Steel outer structure & fiberglass insulation for thermal performance

6 deflagration panels (positioned) for explosion protection per NFPA 68 and large-scale tested

Chiller and HVAC System aids battery cooling and maintains ambient temperature and humidity inside the enclosure

Active ventilation vents create a positive pressure during off gassing

3 multi-detectors and 2 gas detectors for CO/smoke/heat/H2

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