Fluence Sunstack™

PV-optimized, DC-coupled energy storage product designed to improve and expand the capabilities of solar generation.

About Sunstack

Sunstack improves and expands the capabilities of photovoltaic (PV) solar generation by optimizing solar capture and delivery, enabling solar facilities to sell up to 50% more solar energy per site. The Sunstack system architecture unites batteries and PV on the same side of the DC bus in order to take advantage of higher PV-to-inverter ratios, maximize solar yield, and simplify the interconnection process.

Sunstack includes all power conversion and controls needed to send solar energy to the grid or to store it for delivery later. Built using our 6th generation technology stack, Sunstack incorporates more than 3 years of design and deployment experience.

Features

PV Optimized: Sunstack is designed to work with leading solar power product manufacturers and Sunstack Cores are distributed throughout the solar field to minimize cable runs and improve project efficiency.

Integrated Intelligence: Sunstack is designed for the unique requirements of solar + storage applications. Prioritize how the system charges and discharges alongside solar output with PV-specific modes, including scheduled dispatch, export limiting, directed charging, and manual mode. Increase revenue and asset value by stacking additional grid services.

Total System Safety: Sunstack comes equipped with comprehensive safety features throughout the integrated technology stack. The factory-built design brings consistent quality control to your storage system for the highest level of safety.

Fluence Cube is your building block for better energy storage.

The Fluence Cube is a factory built, modular storage building block for safe, cost-effective systems configurable with the latest component technologies, delivering:

- Cost-effective system with maximum quality control
- Fast procurement and contracting process
- Simple system design, engineering, and permitting
- Rapid delivery, construction, and commissioning
- Latest safety features and storage components

Proprietary and confidential. Do not distribute. Information in this document is subject to change without notice.
Performance may vary depending on use, conditions, applications, and specific configuration.

Sunstack™ Specifications

Sunstack System

Power Conversion	500 kW DC/DC converters + solar PV inverter
Rated AC Power (50°C)	2 MW – 500+ MW
Discharge Duration	1 – 4 hours
Grid Frequency	50Hz and 60Hz
Reactive Power	Four-quadrant control, 0.9 leading to 0.9 lagging at rated power (reactive capability available over full real power range)*
Availability	>97.0%
Altitude	De-rated over 1,000 meters

Seismic Rating	Seismic options available
System Response Time	Max capacity change in 1,000 ms
Max DC Voltage (open circuit)	1,500Vdc
MPPT Min DC Voltage	849Vdc
PV Inputs	Up to 36
Max PV Short Circuit	≥8kA
Standard Temperature Range	-30°C to 45°C **

Fluence Cube

Cube Dimensions (H x W x D)
Long Duration: 2,549 x 2,578 x 2,160 mm
Short Duration: 2,549 x 2,578 x 2,257 mm

Cube Weight (total) lb/kg
Long Duration: 18,078 / 8,200
Short Duration: 18,850 / 8,550

Enclosure Rating
NEMA Type 3R

IP Rating
IP55

Cooling
Air or liquid cooled

Battery Chemistry
Advanced lithium ion sealed cells

Safety Features
Fast stop, fire detection and suppression system (solid aerosol), gas detection (carbon monoxide), deflagration panels, lockable disconnect switch, open door sensor, gas spring damper, sliding door lock

Installation
Forkliftable from all 4 sides. Crane compatible and includes vertical stabilization.

Fluence OS

Fully-integrated operating system for comprehensive control, asset management, and system visibility.

Operation Modes
Automatic Resource Control, Manual Dispatch, Idle, Disconnect, Reset

System KPIs
Real and reactive power dispatch, state of charge, cell voltage and temperature, auxiliary system details, core and node status, fire system and F-Stop status, and more

External Control Interface
SCADA and EMS integration available via common protocols including DNP3 and Native Modbus TCP/IP

Market Dispatch Applications
Scheduled dispatch, export limiting, directed charging, and manual dispatch

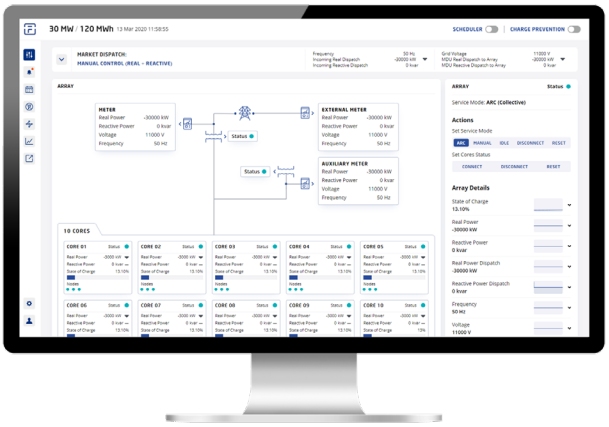
Fluence IQ

The Fluence IQ Bidding Application automates wholesale market participation to maximize asset value in the NEM and CAISO markets.

Forecasting
Analyze thousands of variables to predict future market prices

Optimization
Automatically generate optimal bids for wind, solar, and storage assets

Bidding
Incorporate organizational risk tolerance levels into bidding strategy



** Additional reactive capability upon request **Can vary depending on cooling system, low temperature kits required below -10 degrees*

About Fluence™

Fluence (Nasdaq: FLNC) is a global market leader in energy storage products and services, and digital applications for renewables and storage. With a presence in 30 global markets, Fluence provides an ecosystem of offerings to drive the clean energy transition, including modular, scalable energy storage products, comprehensive service offerings, and the Fluence IQ Platform, which delivers AI-enabled digital applications for managing and optimizing renewables and storage from any provider. The company is transforming the way we power our world by helping customers create more resilient and sustainable electric grids.

© 2022 Fluence. All rights reserved.