

# Fluence Sunstack™

PV-optimized, co-located energy storage system designed to improve and expand the capabilities of solar generation.

**FLUENCE**  
A Siemens and AES Company



## 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 12 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.

**Fluence Cube's factory built, modular form factor is the building block for safe, cost-effective systems configurable with the latest storage component technologies.**

- 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



# Sunstack™ Specifications

## Sunstack System

|                              |  |   |
|------------------------------|--|---|
| <b>Power Conversion</b>      | 500 kW DC/DC converters + solar PV inverter  |   |
| <b>Rated AC Power (50°C)</b> | 2 MW – 500+ MW   |   |
| <b>Discharge Duration</b>    | 1 – 4 hours  |   |
| <b>Grid Frequency</b>        | 50Hz and 60Hz  |   |
| <b>Reactive Power</b>        | Four-quadrant control, 0.9 leading to 0.9 lagging at rated power (reactive capability available over full real power range)* |   |
| <b>Auxiliary Power Usage</b> | <b>MAX AUX LOAD:</b><br>7.6 kW (short duration)<br>4.1 kW (long duration)  | <b>AVERAGE AUX LOAD:</b><br>1.5 - 3.0 kW (short duration)**<br>1.2 - 2.0 kW (long duration)** |
| <b>Availability</b>          | >97.0%   |   |
| <b>Altitude</b>              | De-rated over 1,000 meters   |   |

|                                      |                                 |
|--------------------------------------|---------------------------------|
| <b>Seismic Rating</b>                | Seismic options available       |
| <b>System Response Time</b>          | Max capacity change in 1,000 ms |
| <b>Max DC Voltage (open circuit)</b> | 1,500Vdc                        |
| <b>MPPT Min DC Voltage</b>           | 849Vdc                          |
| <b>PV Inputs</b>                     | Up to 36                        |
| <b>Max PV Short Circuit</b>          | ≥8kA                            |
| <b>Standard Temperature Range</b>    | -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: 18,320 / 8,328

Short Duration: 19,020 / 8,646

### Enclosure Rating

NEMA Type 3R

### IP Rating

IP55

### Cooling

Air or liquid cooled

### Battery Chemistry

Advanced lithium ion sealed cells

### Safety Features

Emergency shutdown, 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 E-Stop status, and more

### External Control Interface

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

## Fluence IQ

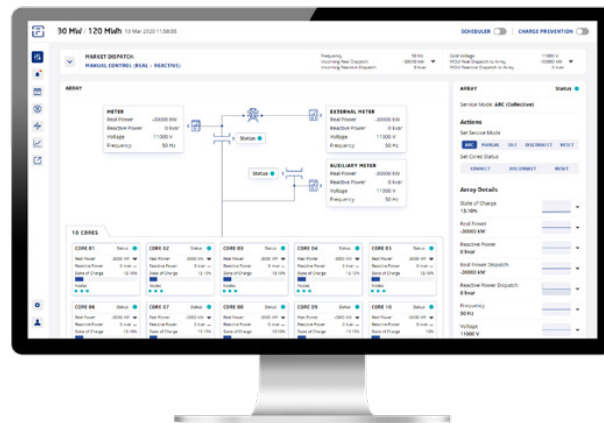
Extensible digital intelligence improves system decision-making, asset performance, and operating costs with data-driven insights and dispatch algorithms.

### Market Dispatch Algorithms

Scheduled dispatch, export limiting, directed charging, and manual dispatch

### Performance Reporting\*\*\*\*

System availability, state of health, discharge cycles, and more



\* Additional reactive capability upon request

\*\*Utilization and temperature dependent

\*\*\*Can vary depending on cooling system, low temperature kits required below -10 degrees

\*\*\*\*Available under Fluence Service Agreement



## About Fluence™

Fluence, a Siemens and AES company, is the leading global energy storage technology solutions and services company that combines the agility of a technology company with the expertise, vision, and financial backing of two industry powerhouses. Building on the pioneering work of AES Energy Storage and Siemens energy storage, Fluence's goal is to create a more sustainable future by transforming the way we power our world. Fluence offers proven energy storage technology solutions designed to address the diverse needs and challenges of customers in a rapidly transforming energy landscape, providing design, delivery, and integration in over 160 countries.