



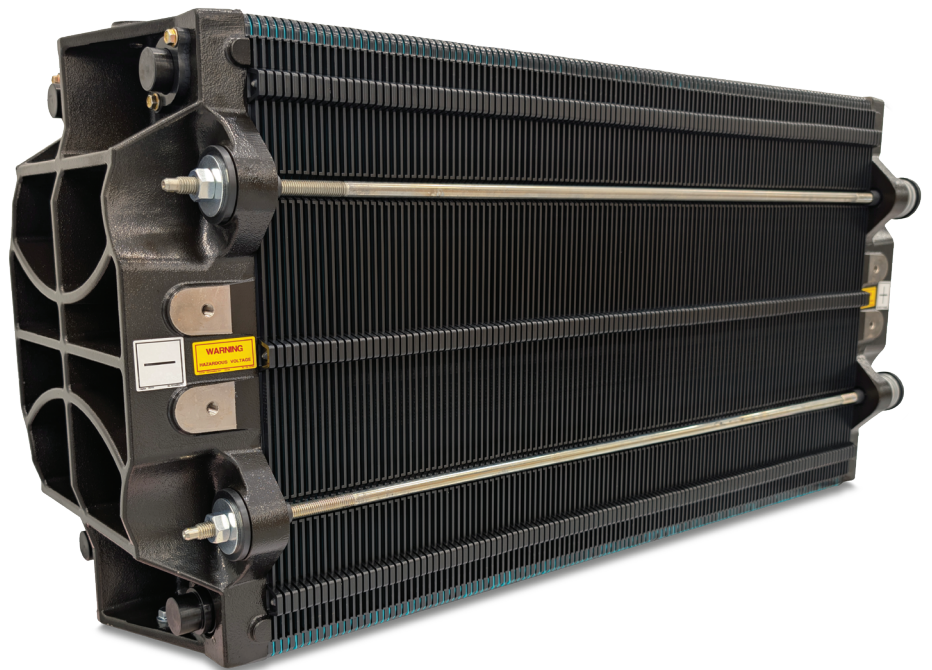
# Flow Battery Stack Power Assemblies

## Meeting the commercial demand for flow battery stacks.

Flow Battery stacks manufactured in the United States with industry leading power density to enable the widespread adoption of redox flow batteries (RFB). RFB's are an attractive long-duration energy storage solution in support of clean, reliable, resilient power from commercial and industrial scale through utility-scale projects.

### Designed for low-cost, high-volume production.

Storion's 125-cell stacks with integrated shunt current management each deliver a constant power output of 45 kW over the conventional VRFB state of charge range. Their innate high voltage enables system designs with connection to many commercial inverters without the need for boost converters. Further, these high-power stacks minimize plumbing connections as well as non-repeat stack hardware (e.g., end plates, tie rods). Stacks are now available for commercial supply and we are scaling production to meet the market demand.



U.S.-Based  
Manufacturing



Low Cost



No Need for  
Boost Converters

## Performance with Vanadium Electrolyte

- Low resistance enabling industry leading, efficient operation at  $> 400 \text{ mW/cm}^2$
- High cell counts with low shunt current operating at 175 V (nominal)
- 45 kW per stack in a compact, lightweight footprint
- Performance validated in MW-scale VRFB systems
- Compatible with high-volume, automated manufacturing to support very low costs at volume
- Customizable to support non-vanadium chemistries with different repeat-part components (e.g., membranes, electrodes, bipolar plates)

## Vanadium Stack Power Assembly Specifications

Electrical	Vanadium
Voltage nominal (range)	175V (125 - 200V)
Power constant (Power peak)	45 kW (52 kW)
Number of cells	125
Energy efficiency at rated power (max)	78% (>82%) DC/DC
Area Resistance charge (discharge)	0.5 Ohm-cm <sup>2</sup> at 35°C
Hydraulic	
Flow rate max. per side	175 LPM
Typical Working Pressure (Max)	30 psi (35 psi)
General	
Dimensions	L: 1200 mm H: 600 mm W: 400 mm
Weight	245 kg (540 lb.)
Continuous Operating Temperature	10° C to 40° C

## Meeting the Growing Market Demand

Storion Energy brings energy resilience and security to the U.S. by removing the barrier to entry for battery manufacturers to domestically sourced, price-competitive electrolyte used in vanadium redox flow batteries (VRFB) for long-duration energy storage (LDES). Storion is a joint venture between a Stryten Energy affiliate and Largo Clean Energy Corp., a subsidiary of Largo Inc., one of the world's largest and highest quality vanadium suppliers, that will support scalable domestic electrolyte production to establish a fully integrated vertical supply chain for utility-scale VRFB LDES solutions. VRFB technology is a safe and reliable option for Battery Energy Storage Systems (BESS) that need to provide energy storage of four or more hours. Storion has locations in Alpharetta, Georgia and Wilmington, Massachusetts.

Learn more at [Storion.com](https://www.storion.com)