

Flow Battery Test Equipment



Greenlight offers fully-automated test solutions for durability and R&D testing of Redox flow cells.

Test systems include:

- Load/power supply modules; power levels up to multi-kW
- Independent automated control of flow, pressure and temperature of electrolyte fluids
- Cell voltage monitoring and expandable data logging system
- Emerald™ 24/7 control software with automation programming options including scripts, tables, and flow charts
- Capacity and energy monitoring; state of health, state of charge, depth of discharge
- Options include constant state of charge mode (4-tank system), impedance spectroscopy, environmental chambers

Greenlight also offers flow battery testing hardware to those researchers who wish to experiment with their own membranes.



Flow battery test hardware



Flow Battery Manufacturing Equipment

Greenlight offers turn-key redox flow battery manufacturing equipment, including jigs and fixtures, allowing users to pre-assemble the many layers of a flow battery stack before it is slid on rollers into the press, where the stack is compressed and the end-plates are bolted together. Options include robotic assembly, transfer/rotation carts, leak testing systems and automated strap welding systems.

Assembly Press

- » Capacity: up to 600kN (70 ton)
- » Force controlled by servo-motor with load cell feedback; Accuracy: $\pm 2\%$
- » Stroke: 3m (customized for each application)
- » Fixture Area: 800mm x 962mm (other sizes available)
- » Power: 380 to 575 VAC \emptyset 3ph 20A, 50 or 60Hz
- » Features: Variable speed operation with 2 programmable pressure setpoints
- » Stationary with optional pallets for stack transfer, or sliding press head for stack loading
- » Options for stack height recorder and light curtains



Tilt Fixture

Allows assembled flow battery stacks to be clamped and rotated during the manufacturing process.



Transfer Cart

Greenlight offers both manual and automated tilt / transfer carts for rotating and moving large redox flow batteries. These carts can be offered as stand-alone systems, or integrated with assembly fixtures (including robotic assembly systems), leak test systems and compression devices.



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