ENERGY VAULT®
Enabling a Renewable World

B-VAULT™

Lithium-ion battery storage for operational flexibility

As energy supply and demand become increasingly variable, grid operators need agile support from fast-responding energy resources. To ensure reliable outcomes for communities now and into the future, asset owners and investors need adaptable and bankable energy storage solutions.

B-VAULT™ is a suite of fully integrated Battery Energy Storage Systems (BESS) designed for reliability, flexibility and availability. Innovative enclosure architecture provides customer optionality with both battery and inverter suppliers, while unique AC-coupled and DC-coupled configurations provide the drop-in flexibility needed for any project. Advanced safety and cybersecurity features combine with native VaultOS™ EMS integration and competitive project pricing to deliver on customer needs.

FLEXIBLE
Provide energy shifting and diverse grid services to evolving markets, even at GWh+ scale

ADAPTABLE
Have battery and inverter choices for AC- or DC-coupled systems and augmentation strategies

INTELLIGENT
Use VaultOS™ Energy Management System for standalone, hybrid, and fleet optimization

SAFE AND SECURE
Leverage proactive and reactive fire safety design along with industry-leading cybersecurity

TURNKEY
Enjoy a smooth project delivery with a fully integrated enclosure and optional construction services

DATASHEET

B-VAULT™

B-VAULT™ is a fully-integrated lithium-ion BESS utilizing proactive and reactive fire safety design along with industry leading cybersecurity from the VaultOS™ EMS plant controller. B-VAULT™ can be installed on pier mounts in a side-to-side and back-to-back arrangement, reducing EPC cost, time, and land requirements.

For the AC configuration, B-VAULT™ provides customers with an all-in-one drop-in storage solution that eliminates inverter integration issues and costs. Capital expenditures and space can also be saved by utilizing a proprietary AC block design.

For the DC configuration, B-VAULT™ allows customers to develop storage projects paired with their choice of inverter OEM, while Energy Vault provides integration and long-term maintenance services. Energy Vault maintains a list of inverter models that are compatible with B-VAULT™.

	PARAMETER	AC-COUPLED	DC-COUPLED
ELECTRICAL	**Energy**	2.982 MWh	
	Power	1.491 MW-DC (2-hour), 0.745 MW-DC (4-hour)	
	Discharge/ Charge Duration	2-4 hours	
	Auxiliary Power Consumption	Nameplate: 32 kVA (2-hour discharge), 18 kVA (4-hour discharge) Peak: 25 kVA (2-hour discharge), 14 kVA (4-hour discharge) Average: 12 kVA (2-hour discharge), 8 kVA (4-hour discharge) Idle: 5 kVA (2-hour discharge), 3 kVA (4-hour discharge)	
	Inverter Size	1.505 MVA (2-hour), 0.860 MVA (4-hour)	Compatible with major manufacturer models
	Output Voltage	690 V (AC), 3-phase delta	1,100-1,500 V (DC)
	Grid Frequency	50 Hz / 60 Hz	
	Round Trip Efficiency	86-88% (AC bus, beginning of life and 25°C)	90-92% (DC bus, beginning of life and 25°C)
MECHANICAL	**Design Life**	20 years	
	Ingress Rating	IP54, NEMA Type 3X	
	Altitude	De-rated over 3,000 meters	
	Seismic Rating	Foundation brackets to meet requirements in all seismic zones	
	System Safety	Fire alarm control panel, Fire and smoke detector, Explosive gas detection, Active ventilation, Dry piping for water suppression, Fire wall (2-hr), SPD, AC and DC circuit breakers	
	Dimensions (L x D x H)	11.6 m x 1.95 m x 2.94 m (38.06 ft x 6.4 ft x 9.65 ft)	10 m x 1.95 m x 2.94 m (32.81 ft x 6.4 ft x 9.65 ft)
	Weight	38,000 kg (or 83,775 lb)	35,500 kg (or 78,264 lb)
	Thermal Management	Liquid cooling for battery packs, HVAC for battery compartment, forced convection for inverter	Liquid cooling for battery packs, HVAC for battery compartment
	Ambient Temp Range	-20 to 45°C (or -4 to 113°F)	-20 to 50°C (or -4 to 122°F)
	Noise	73 dB @ 1 meter in front of inverter	47 dB @ 1 meter
CONTROLS	**Plant Controller**	VaultOS™ Energy Management System for both local and cloud-based controller	
	Protocols & Interfaces	Protocols: Modbus TCP, DNP3, OPC UA, REST API; Interfaces: RTU/RTAC	Protocols: Modbus TCP, OPC UA, DNP3; Interfaces: RTU/RTAC
	Certifications & Compliance (expected listings)	UL 9540, UL 9540A, UL 1973, UL 1741, UL 1741SA, IEEE 1547.1, G99, UN 38.3, UN 3536, NFPA 69, NFPA 72, NFPA 855	UL 9540, UL 9540A, UL 1973, UN 38.3, UN 3536, NFPA 69, NFPA 72, NFPA 855