POWIN

PRODUCT: Stack750 PLATFORM: Centipede

Centipede is Powin's modular battery energy storage platform, purpose-built for the most grueling environments and use cases. Designed to dramatically increase site energy density, decrease installation times and simplify capacity augmentation, Centipede is ready to perform a diverse set of market applications including Frequency Response/Regulation, T&D Deferral, Flexible Peaking Capacity, Renewable Integration and more.

Modular, Scalable and Configurable

Centipede's modular design allows you to easily scale up your project size from a single standalone unit to gigawatt-hours per project site. Centipede utilizes Powin's field-proven Stack hardware and StackOS software platform to ensure continuity and familiarity between Powin's product lines to perform a variety of simple and advanced market applications.

Enhanced Safety and Quality

Centipede combines Powin's safest-in-class LFP Stack hardware and integrated enclosures into one standardized, factory-built, outdoor product to ensure maximum quality control. Each Centipede unit includes a comprehensive package of explosion prevention and fire safety features, such as hydrogen detection and active ventilation, fire detection, fireproof insulation, and optional clean agent fire suppression.

End to End Cost Savings

Centipede's factory-built and tested design allows for units to be installed on site in a fraction of the time it takes for traditional enclosure-based systems to be installed. The increased energy density also reduces the amount of land that is required to install a system per MWh. The highly serviceable design includes field-swappable, redundant components that minimizes downtime and service costs. These advantages, paired with Powin's diverse supply chain and Tier 1 cell procurement strategy give Powin's customers continual cost advantages upfront and over the lifespan of a system.

POWIN STACK750 TECHNICAL SPECIFICATIONS

		STACK750		
Electrical	DC Voltage	1,210 - 1,491 V		
	Duration	2+ hrs		
	Maximum Energy Capacity[1]	750 kWh DC per segment & 250 MWh AC per acre		
	Rated Duration of Discharge	2 hrs	3 hrs	4 hrs
	DC Power @ Rated Duration	369.5 kW	247.5 kW	186.5 kW
	DC Energy Capacity @ Rated Duration[2]	739 kWh	742.5 kWh	746 kWh
	Aux Load per Stack (Standby/Peak)[3]	0.25 kW / 5.6 kW	0.24 kW / 5.5 kW	0.23 kW / 5.4 kW
	Daily Aux Energy per Stack[3]	29 - 31 kWh	21 - 23 kWh	17 - 19 kWh
	Auxiliary Power Input	3-phase 480V AC / 60 Hz (50 Hz option available)		
Performance & Safety	DC Round Trip Efficiency	93%	94%	95%
	Cycle Life[4,5]	7,300 cycles		
	Calendar Life[5]	20 years		
	Cell Manufacturers	CATL & EVE		
	Cell Chemistry	Lithium Iron Phosphate (LFP)		
	Depth of Discharge	100%		
	Explosion Prevention & Mitigation	Off-gas detection with dedicated, fail-safe active & passive ventilation systems		
	Fire Suppression	Addressable fire panel, smoke & heat detectors, heat activated sprinkler system with remote FDC dry standpipe connection, fire rated insulation, strobes, and horn; optional clean agent fire suppression		
	Heating & Cooling[6]	Redundant, field-swappable, high efficiency HVAC with humidity control		
	Codes & Compliance	UL 9540A, UL 1642, UL 1973, UL 9540, NFPA 1, NFPA 69, NFPA 855, IFC, IEC 62619, IEC 6100-6-2, IEC 62477, UN3480, UN38.3		
Mechanical	Weight (Approximate)	20,000 lbs (9,074 kg)		
	Battery Segment Dimensions	8'1" D x 5'2" L x 10'8" H (2,443mm x 1,572mm x 3,282mm)		
	Enclosure Type / Rating[7]	NEMA 4/IP 56 standard; NEMA 4X available		
	Ambient Operating Temperature Range[8]	-30° C to +50° C		
Software	BMS + EMS + Solar + Environmental Controls	StackOS™		
	Analytics + Optimization + Data Warehouse	StackOS+™		
	First Responder HMI	Powin for First Responders™		
	Communications Interface	Modbus TCP (MESA/Sunspec) & REST API		

Note: Specifications in the above table are design estimates only and are not guaranteed. Contact Powin for a project-specific estimate as final values depend on system design, location, and use case.

1 Per acre energy capacity represents fully installed AC BESS, including inverters, transformers, and auxilaries; excludes augmentation

2 Energy capacity is recorded at the DC bus

3 Assumes 1 full cycle per day at rated power in a temperate climate; active cell balancing contribution de minimous

4 Assumes 1 full cycle per day and includes calendar aging for the day; 2-hr systems may provide fewer cycles depending on the cell used

5 End of life depends both on BESS age and usage; actual lifetime may be less than 20 years

6 Degree of HVAC redundancy (partial or full) depends on location and use case

7 IP rating applicable only for the compartments containing batteries and electronics

8 StackOS may automatically derate power at high/low ambient temperatures or after extended operation to mantain proper cell temperatures