

STACK 750

POWIN'S INTEGRATED PLATFORM

Stack750 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, Stack750 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

Stack750's modular design allows you to easily scale up your project size from a single standalone unit to gigawatt-hours per project site.

It 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

Stack750 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

Stack750'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 fieldswappable, 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.



STACK 750 TECHNICAL SPECIFICATIONS

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	733.5 kWh	736.9 kWh	740.4 kWh
	Aux Load per Stack (Standby/each) ³	0.25 kW / 5.6 kW	0.24 kW / 5.5 kW	0.23 kW / 5.4 kW
	Daily Aux Energy per Stack ^{3,4,5}	29 - 31 kWh	21 - 23 kWh	17 - 19 kWh
	Auxiliary Power Input	3-Phase 480V AC / 60 Hz or 400V AC / 50 Hz		
Performance & Safety	DC Round Trip Efficiency	93%	94%	95%
	Cycle Life ^{5,6}	7,300 cycles		
	Calendar Life ⁶	20 years		
	Cell Manufacturers	Powin Tier 1		
	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 ⁷	Redundant, field-swappable, high efficiency HVAC with humidity control		
	Codes & Compliance	UL 9540A, UL 1973, UL 9540, NFPA 1, NFPA 69, NFPA 855, IFC, IEC 62619, IEC 6100-6-2, IEC 62477, UN 3480, UN 38.3, UL 1642		
Mechanical	Weight (Aproximate)	20,000 lbs (9,074kg)		
	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 ⁸	NEMA 3R/IP55 standard; NEMA 3RX available		
	Ambient Operating Temperature Range ⁹	-30° C + 50° C		
Software	BMS + EMS + Solar + Environmental Conrols	Stack OS™		
	Analytics + Optimization + Data Warehouse	Stack OS+™		
	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 auxiliaries; excludes augmentation
- 2 Energy capacity is recorded at the DC bus and assumes near-symmetric cycle; capacity will be ~1-2% lower for symmetric cycle use case
- 3 Assumes 1 full cycle per day at rated power in a temperate climate; active cell balancing contribution de minimis
- 4 Assumes 1 full cycle per day and includes calendar aging for the day
- 5 Includes Stack level thermal management and controls
- 6 End of life depends both on BESS age and usage; actual lifetime may be less than 20 years for high cycle use cases
- 7 Degree of HVAC redundancy (partial or full) depends on location and use case
- 8 IP rating applicable only for the compartments containing batteries and electronics
- 9 StackOS may automatically derate power at high/low ambient temperatures or after extended operation to maintain proper cell temperatures