Prevalon® Energy

Battery Energy Storage Platform

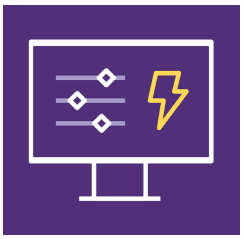
PREVALON®
A Mitsubishi Power Americas and EES Joint Venture

Prevalon HD5™ AC Integrated Platform: High-Density AC System

The HD5™ AC is a modular AC battery energy storage system built around a factory-integrated medium-voltage (MV) block architecture. Each 20-foot ISO enclosure arrives fully populated with batteries, power conversion, cooling, protection, and auxiliary systems, and connects through a pre-engineered, plug-and-play AC interface to Prevalon's MV transformer (MVT). By resolving electrical interfaces at the factory, the HD5™ AC reduces site coordination, shortens commissioning timelines, and lowers construction risk.

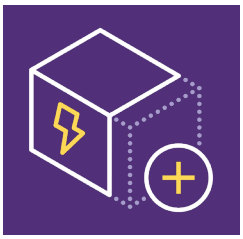
High Density, Modular, Scalable

At 426 MWh per acre, the HD5™ AC delivers high installed energy density enabled by its AC-aggregated architecture and minimized DC footprint. Each enclosure provides 5 MWh of liquid-cooled LFP storage, optimized for thermal performance, safety, and long-term operation. The modular design supports 2-hour to 8-hour durations and scales efficiently from MWh to GWh-class deployments—delivering more usable energy per acre while reducing balance-of-plant scope and land requirements.



Engineered for Safety, Reliability, and Security

HD5™ AC systems are factory integrated and tested to reduce site risk and improve commissioning quality. Safety is engineered from cell to system with liquid-cooled LFP batteries, NFPA 69-compliant detection and ventilation, and UL-certified components. Designed to meet NFPA 855 (2026), the system includes redundant ventilation for continuous protection. The AC architecture reduces fault current and incident energy, improving safety and maintainability. insightOS™ provides secure, utility-grade control and cybersecurity.



Simplified Deployment, Long-Term Flexibility

The HD5™ AC arrives hot-commission ready with self-powered auxiliaries, eliminating the need for external power. Factory-terminated AC cabling enables plug-and-play installation and removes field terminations. The AC architecture eliminates 1500V DC collection systems and trenching, reducing cable scope, civil work, and installation complexity. Integrated components at the MVT minimize foundations and site infrastructure. Factory-resolved interfaces streamline EPC coordination, shorten schedules, and enable faster energization with greater schedule certainty.

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Prevalon HD5™ AC Integrated Platform Specifications

	2 hr. - 8 hr. Applications		
Project Energy Density	>= 426 MWh per Acre[1]		
MVT Voltage	12 - 34.5 kVAC		
Nominal AC Voltage	690 VAC 3-phase		
Nominal AC Frequency	50 or 60 Hz		
Nameplate Energy (25°C)	5 MWh		
Inverter DC Power	2 hr. = 2.5 MWh	4 hr. = 1.25 MWh	8 hr. = 0.625 MWh
Inverter AC Power	2 hr. = 2.63 MVA	4 hr. = 1.435 MVA	
Auxiliary Power (no external source required)	60kVA max		
Total AC Power	Inverter AC Power +/- Auxiliary Power (charge/discharge)		
Round-Trip Efficiency (Full Depth Cycle, 25°C)	2 hr. = 90.00%	4 hr. = 92.50%	
Cycle Life	> 8,000 full cycles to 65% SOH		
Rated Lifecycle	20 Years		
Cell Chemistry	315Ah Lithium Iron Phosphate (LFP)		
Battery Enclosure Weight (each)	≤ 45,000 kg (99,208 lbs)		
Battery Enclosure Dimensions (each)	20' L x 8' W x 9'5" H (6058*2438*2896 mm)		
Battery Enclosure Ingress Rating	NEMA 3S / IP55		
Ambient Operating Temperature Range	-30°C to 50°C		
Operating Altitude	≤ 13,100 ft (4,000 m)		
Seismic	Compliant with IEEE 693 Moderate with option for High Seismic Level		
Noise Emissions	2 hr. LP = 75 dBA at 1 m	4 hr. LP = 68 dBA at 1 m	
Transportation	20 ft ISO enclosure shipped fully populated with battery modules.		
Battery Enclosure Cooling Type	Liquid cooling for batteries and inverters, with HVAC systems supporting auxiliary equipment		
Battery Enclosure Explosion Detection and Prevention	Detection and ventilation system compliant with NFPA69		
Standards Compliance	UL1973, UL9540A ed4, UL9540, UL1741, IEEE1547, UN38.3, NFPA855, NFPA70		
insightOS™ (Energy Management System)	Power Plant Controller, HMI, Data Historian, and Networking Equipment Required to Integrate and Operate the Energy Storage System Are Provided in a Separate Cabinet (One per Site).		
Cybersecurity	U.S.-Made Components for Cybersecure BMS–EMS		
Grid Support Functions	Frequency-Watt, Volt-Watt, Volt-Var, Watt and Var ramp rate and power control, H/L Voltage/ Frequency Ride through		
Applications	Microgrid, Black Start, Grid-Forming, Energy Shifting, Ancillary Services, Renewables Integration, ESS + Solar/Wind, and Data Center Backup & Peak Load Management.		

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

1. The project energy density represents the fully installed AC System including inverter-MVT, auxiliaries and includes augmentation for an assumed 7,300 cycle life.

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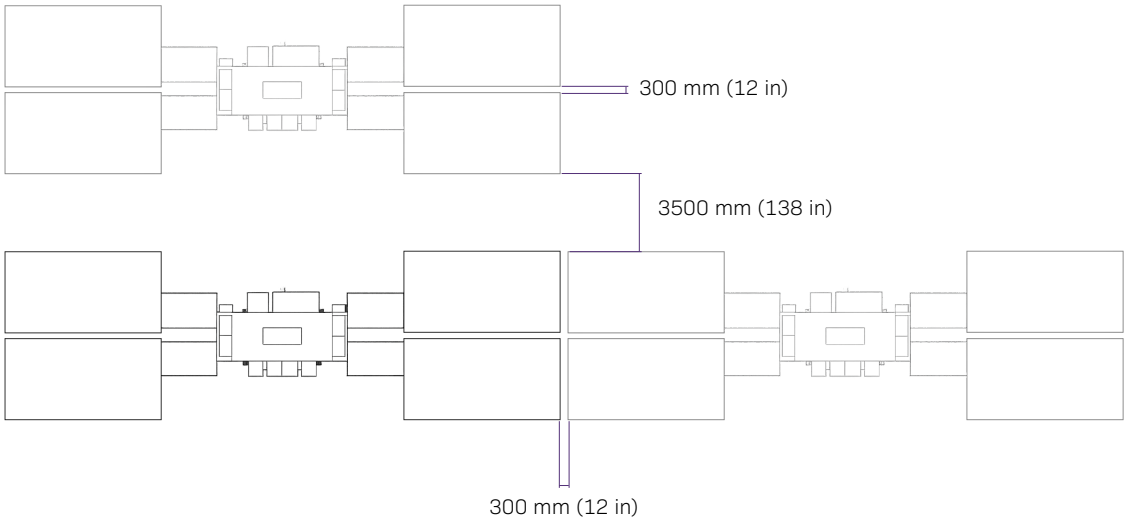
Prevalon HD5™ AC Site Design Guidance

	Prevalon-Provided Components
Component	**Construction Work Required**
HD5™ AC	Moving into final location, anchoring
BMS - EMS	Connecting to site SCADA / Comms
	Customer-Provided Balance of Plant
Component	**Construction Work Required**
Foundation	Designing per Prevalon specification, installing
MV Distribution	Designing per Prevalon specification, installing, terminating
Site Network	Designing, installing, terminating
MVT	Installing, terminating
Fire Protection (if required by local code)	Install signal wiring

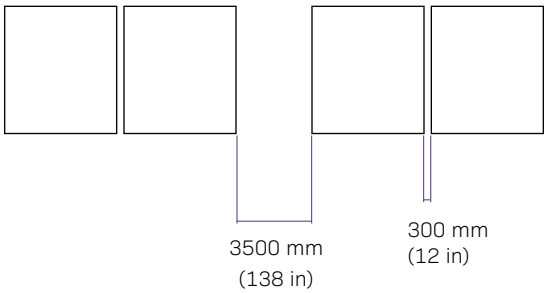
Construction activities on site are the responsibility of the customer and contractor, as outlined above.

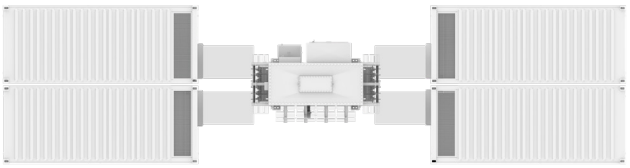
Clearances

Top View



Side View





HD5™ AC

Specifications are preliminary and subject to change.

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