



POWERVAULT

The Turnkey DC-to-Medium Voltage Building Block for MW-Scale Projects



The PowerVault™ from PV Powered is a fully integrated power conversion solution for MW-scale PV projects that accepts PV DC inputs and provides medium voltage AC output. The PowerVault is built around PV Powered's line of commercial inverters which offer exceptional reliability and 20+ year operating life. The PowerVault also offers industry-leading efficiency and the widest MPPT input range of any commercial inverter in the industry. This combination of reliability, long life, and maximized energy harvest makes the PowerVault the right choice to maximize return on investment in a MW-scale PV system.

The pre-wired outdoor-rated enclosure reduces project engineering costs, accelerates project schedules, and significantly decreases the cost of on-site labor and installation. The entire package is also designated to be pier mounted to further simplify installation.

The enclosure is certified to UL QRNZ for walk-in electrical equipment, and houses the inverters, distribution switchboard, and low voltage service power panel. The transformer with integrated medium-voltage switch is a compact and cost-effective choice that enables low-cost loop-feed installations and minimizes the need for individual pieces of medium-voltage switchgear. The flexible design offers several configuration options to meet local utility requirements and installation preferences.

PV Powered backs all its commercial inverters with an industry-leading 10-year nationwide warranty, an unprecedented optional 20-year warranty, and the most responsive and experienced service and support team in the business.

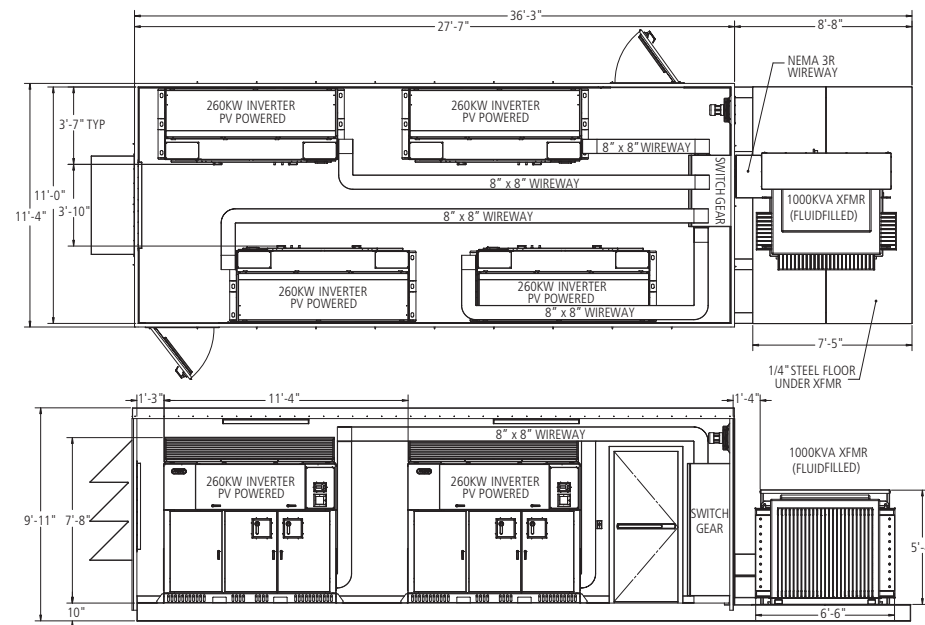
SYSTEM FEATURES

Superior Reliability

- Low inverter-parts count reduces potential failure points
- Redundant cooling system with Smart Air Management™
- Card-cage circuitboard system minimizes electronic interconnections and enables fast service
- Factory pre-wired and tested, reducing potential for field errors
- Up to four inverters for increased redundancy

Significant Financial Benefits

- Factory installation and wiring greatly reduce field labor
- Pier-mount skid installation reduces pad costs and simplifies conduit entry
- High efficiency and long service life maximize energy harvest every day for 20+ years
- Integrated solution reduces project engineering costs, and shortens project construction cycle
- Protected from vandalism without additional fencing or other on-site construction



DIMENSIONS

Complete design documentation including seismic calculations available upon request

ELECTRICAL SPECIFICATIONS

MODEL	MV-620kW	MV-780kW	MV-880kW	MV-1040kW
Continuous Output Power (kW)	620	780	880	1040
System Weighted CEC Efficiency at 480 VAC (%)	96.8%	97%	96.9%	97%
Maximum DC Input Voltage (Voc)	600	600	600	600
DC Peak Power Tracking Range (V)	295-500	295-500	295-500	295-500
Optional DC Peak Power Tracking Range (V)		265-500		265-500
DC Input Nominal Current (A)	2206	2775	3131	3700
AC Nominal Output Voltage		4.16kV - 35kV		
AC Operating Voltage Range (% of nominal)		-12% to + 10%		
AC Frequency Range (Hz)		59.3 - 60.5		
AC Maximum Continuous Current (A)	28 @ 12.47kV	35 @ 12.47kV	40 @ 12.47kV	47 @ 12.47kV
Harmonic Distortion (%THD)		<3%		
Power Factor		>.99		

MECHANICAL SPECIFICATIONS

MODEL	POWERVAULT
Dimensions (H" x W" x D")	9' 11" x 11' 4" x 36' 3"
Construction	Powder-coated steel base, stucco aluminum exterior walls, insulated membrane roof
Mounting	Pier mount
Weight (lbs)	48,000 maximum in 1,040kW configuration
Cooling	Forced convection
Ambient Temperature Range (°C)	-30 to 45

CONFIGURATION OPTIONS

- **Inverters** Wide range of customizable subcombiner fusing options
- **Switchboard** Branch breakers for tracker power and other onsite power requirements
- **Single Phase Load Center** Power for plug loads and other single phase convenience loads
- **Medium Voltage Transformer with Integrated Medium Voltage Switch** Select AC output from 4,160V to 35kV AC, loop feed or radial feed, multiple protection and switching options
- **Metering** Revenue grade metering can be selected for each inverter, at the switchboard, and at the medium voltage output

AGENCY APPROVALS

UL1741 for Inverters UL QRNZ for Walk-in Electrical Equipment

PERFORMANCE MONITORING

Increase uptime and reduce maintenance costs with integrated monitoring solutions from market-leading third-party partners. Revenue grade metering, string monitoring, and subcombiner monitoring and inverter direct data can all be installed at the factory to enable plug and play monitoring which saves on site integration costs and complexity.



Made in America
All PV Powered products are fully compliant with the Buy American Act and qualify for projects funded by the Federal Stimulus.

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PowerVault

Shown with (4) 260kW Commercial Inverters*

- Separate DC in to each inverter
- 97% CEC Efficiency
- 265-600 Volt MMPT Range
- 10-year nationwide warranty, optional 20-yr warranty

*Additional inverter configurations available

PowerVault Enclosure

- UL listed to UL QRNZ for walk-in electrical equipment
- Fully assembled, pre-wired, and ready to connect
- Houses inverters, performance monitoring, distribution switchboard, and 120 VAC service panel

Switchboard

- 1600A, 3-Phase
- Inverters are pre-wired to the switchboard and combined into single output to transformer
- Optional breakers for tracker power and other onsite loads

Medium Voltage Step-up Transformer

- Integrated load-break switch
- Loop feed to minimize medium voltage connections to the grid
- Select from 4, 160V to 35kV AC output
- Multiple protection and switching options



Pier Mount

- Easy access to AC and DC conduits simplifies installation
- Eliminates need to grade and level pad site and stub in conduit
- Pier-mount installation costs less than a full concrete pad

Engineered Cooling System

- Inverter Smart Air Management™ complements integrated cooling system
- Inverter cooling air is exhausted through enclosure floor
- Enclosure heat removed using a high-efficiency exhaust fan

Integrated Performance Monitoring

- Choose factory integrated performance monitoring from industry leaders: Draker Laboratories, Energy Recommerce, Fat Spaniel, and DECK.
- Optional revenue-grade metering, subcombiner monitoring and string level monitoring
- Saves time and money versus field integration

