



AE 500NX-HE

(Formerly known as Solaron 500 HE)

Reliable inverter solution with record-breaking efficiency for large commercial and utility-scale projects

With the best in power-class 98% CEC efficiency rating, Advanced Energy's AE 500NX-HE generates more power and value for project developers, owners and financiers. This highly efficient inverter is specifically designed to meet the requirements of large commercial and utility-scale solar power plants with the lowest levelized cost of energy (LCOE) investors demand and expect. With a true 98% weighted efficiency without carve-outs for auxiliary power or other adjustments, the AE 500NX-HE drives higher, faster return on investment (ROI). Energy harvest is further maximized with fleet availability in excess of 99%.

The smallest footprint per kW and its robust, outdoor ready design eliminates the need for inverter enclosures even in harsh environments. Installation is simplified with an optional integrated DC master combiner and fusing area that saves time and materials. Plus, being the lightest inverter per kW as well as having the smallest footprint per kW means the AE 500NX-HE is simple to maneuver and put in place ensuring your project stays on schedule. The stable, high-voltage, transformerless engine allows several units to be connected in parallel to a single medium-voltage transformer further reducing the upfront balance of system (BoS) costs and improving LCOE. No step-up transformer and fewer medium-voltage transformers are required when you select AE.

AE's product development process ensures the Service and Reliability departments are involved to simplify ongoing operations and maintenance (O&M). The robust, outdoor-ready design is used in a variety of environments – from the high desert mountains to the Pacific tropics. The AE 500NX-HE runs reliably day in and day out with a NEMA 3R construction and a completely sealed electronics cabinet that is designed to NEMA 4 standards and is continuously cooled by a self-contained, liquid-to-air system.

SCADA connectivity, collecting and storing a wide range of inverter real-time data, and connecting to many third-party data services is achieved with the integrated data monitoring solution – included at no additional charge.

AE Solar Energy is a US based company.



The AE 500NX-HE is backed with a complete 5-year warranty so there are no surprises during the warranty period. An extended 20-year warranty is available as an option. The AE warranty options provide peace of mind and are backed by the best service and support team in the business.

Lower Operational LCOE

- Increased energy harvest with with 98% weighted efficiency
- Increased availability with >99% monitored fleet availability
- Legendary service and response

Reduce BoS Component of LCOE

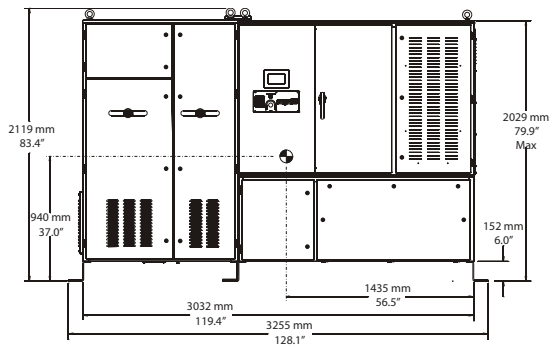
- Lightest weight per kW reduces shipping costs to the site
- Smallest footprint per kW reduces site preparation costs
- Integrated DC master combiner and fusing area
- Parallel connections to a single, medium-voltage transformer

Minimize Ongoing O&M Component of LCOE

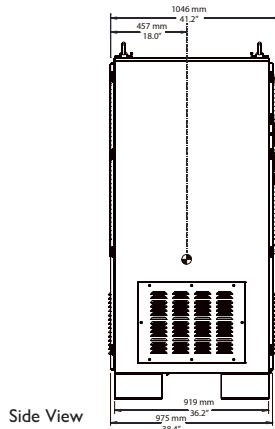
- Robust, outdoor-ready construction
- High, field-proven fleet availability of >99% for monitored units
- Simplify site maintenance with SiteGuard® (available option)

Take Control and Support the Grid

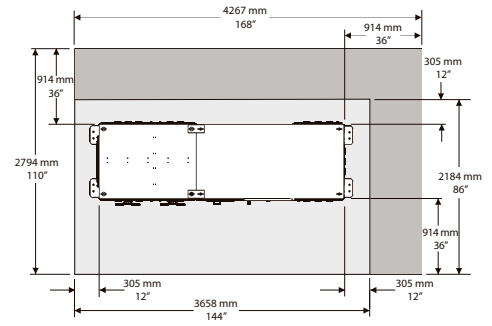
- Integrated data monitoring solution transmits inverter data for secure collection
- Integrated data monitoring solution receives and acts upon a host of utility level commands



Front View: shown with optional AC/DC disconnect cabinet



Side View



Top View: shown with clearance

AE 500NX-HE Summary Specifications*

Physical	
Weight	3760 lb (1705.5 kg) unit weight, 4100 lb (1859.7 kg) shipping weight
Construction	Outdoor-ready cabinet design with electrostatically applied paint
Environmental Rating	NEMA 3R with sealed electronics cabinet
DC Input Power Connectors	Compression type terminal block with up to (4) 500 MCM wires (Cu or Al)
AC Output Power Connectors	Compression type terminal block with up to (4) 500 MCM wires (Cu or Al)
User Interface	Front panel LCD, keypad, shutdown button, and web interface
Electrical	
DC Inputs	
Array Configuration	Separable dual arrays with 600 VDC strings
Maximum Operating Input Current	750 ADC Imp maximum, self-limiting in operation
MPPT Voltage Range	± 600 Voc maximum, ± 330 to ± 550 Vmp
Open-Circuit Turn-On Voltage	± 425 VDC default
AC Outputs	
Continuous Output Power	500 kW at 480 VAC
Operating Voltage Range	480 VAC ± 10%
Electrical Service Compatibility	3 phase, 3 wire, grounded Wye connection
Maximum Continuous Current	667 Arms (configurable)
Short Circuit Fault Current	667 Arms, 16 ms at 432 VAC
Nominal Frequency	60 Hz
Total Harmonic Distortion	<2% at full power, 480 VAC
Efficiency	
Peak Efficiency	98.7% (includes brown power such as all standby, controls, and housekeeping losses)
Weighted Efficiency	98% (CEC method)
Standby Losses	< 100 W
Inverter Controls and Monitoring	
Inverter Controls	
Inverter On/Off	Remotely controllable
Turn-On Ramp Rate	100 kW/sec maximum; adjustable at 0.1% increments
Reconnection Delay	5 to 300 sec, adjustable
Active Power Range	500 kW to 1 kW; remotely adjustable set point at 1 kW increments
Power Factor & Reactive Power**	>.99 at rated power; ±0.95 PF range, ±164 kVAr maximum
Over-Voltage Response	110% ≤ VAC < 120%: 0.16 to 5.0 sec configurable, 2.0 seconds default
Frequency Ride-Through Limits	Configurable to regional requirements
Inverter Monitoring	
Communication Interfaces and Protocols	RS-232, RS-422, and RS-485, Ethernet, PCMCIA expansion slot Modbus/TCP and Modbus/RTU
Inverter Monitoring Options	Integrated inverter data monitoring solution, compatible with third-party services
Data Storage	10 years at 1 minute intervals with SD card
Environmental	
Operating Ambient Temp. Range	-4 °F to 122 °F (-20 °C to 50 °C) -31 °F to 122 °F (-35 °C to 50 °C) cold weather option
Standby / Storage Temp. Range	-22 °F to 158 °F (-30 °C to 70 °C)
Cooling	Self-contained, closed-loop, liquid to air
Relative Humidity	0% to 95% non-condensing
Elevation	6562' (2000 m) maximum
Regulatory	
Agency Approvals / Regulatory Compliance	NRTL certified to UL 1741-2010 by CSA International IEEE 519, 929, 1547/1547.1 NEC Article 690 (compatible)

Subject to change without notice. Refer to user manual for detailed specification.

*Note: Not all performance window specifications can be achieved simultaneously. Performance varies per site. Consult your AE sales or service representatives for specific PV system design questions at sales.support@aei.com.

**Reactive Power control modes pending inclusion in UL 1741-2010 certification.

Utility Interactive Controls

- Power Factor
- Controlled ramp rate
- Remote enable/disable
- Power curtailment

Options

- 2, 3 or 4-unit PowerStation
- AC disconnect switch
- Remote PV Tie
- Cold-weather option
- Low frequency ride-through
- 16 and 20 channel subarray monitoring
- 20-year extended warranty
- Preventative maintenance programs (refer to SafeGuard®, SafeGuard PlusSM and SiteGuard® data sheets for more information)



AE Solar Energy • 20720 Brinson Blvd • Bend, OR 97701 U.S.A.
www.advanced-energy.com/solarenergy
 877.312.3832 • sales.support@aei.com • invertersupport@aei.com
 Please see www.advanced-energy.com for worldwide contact information.

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