

InVerde e⁺

Inverter-Based Cogeneration

Tecogen's Unequaled Ultra-Low Emissions CHP Unit

Key Features & Benefits

- **33% Electrical Efficiency (94% overall) - Best in Class!**
- Produce your own electricity 24/7 at half the cost of utility power
- **InVerde e+ patented variable speed operation allows for 10 kW to 125 kW output**
- Fully scalable from 10kW to multi-MW
- **Rapid black-start for Type 10 Emergency Power Supply System (EPSS)**, with grid-independent operation (125 kVA). Also meets CSA 282-15 for 10 and 15 second black-start
- **Superior part load efficiency with turndown to 10% load**
- Ultra-low emissions levels, SCAQMD compliant and NJDEP exempt
- Inverter-based streamlined utility interconnection, UL1741 certified for safe utility connection
- Microgrid compatible with licensed CERTS power balancing control software
- **4" WC gas pressure requirement, no costly gas booster needed**
- **Cloud-based, real-time performance monitoring available via Tecogen's CHP Insight**
- **Demand response input for automated dispatching**
- Streamlined multi-unit controls for lowest in class installation cost
- Available with indoor or outdoor acoustic enclosure
- **DC input feature for seamless battery and solar PV integration**
- Provides additional LEED points (Optimize Energy Performance)
- UL1741 certified for standardized and safe utility interconnection
- Smallest footprint and lowest cost per kW



NYSIR
Certified

CSA C22.2
#100
Certified
CSA C22.2 #14

UL 2200
Certified
UL 1741
Certified

**Renewable Energy Compatible,
a Clean Energy Solution for
Today & Tomorrow**

Tecogen products are covered under one or more of the following U.S. patents: 8,578,704 · 7,239,034 · 7,243,017 and other patents pending

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Specifications: ^{1, 2}

Inverter-Based Cogeneration

Engine	<i>Proven Low-Emission Industrial Natural Gas V-8 Engine, 700-2400 rpm</i>
Generator	<i>Water-Cooled Permanent Magnet Generator</i>
Inverter	<i>Customized Power Electronics with Patented Topology for Variable Speed and Standby Operation</i>
Controls	<i>TecoNet™ Microprocessor-Based System, Fully Automatic, Fault Monitoring, Lead/Lag Multiple Unit Control, Modbus / BACnet Networking & Remote Ethernet Communications</i>

Electric Output (kW)	75	100	125
Standalone Electric Capacity³	100 kW / 125 kVA		
Emergency Power Rating^{4,5}	TYPE 10 EPSS Approved		
Thermal Output			
Engine (Jacket/Exhaust/Oil)	466,000 Btu/hr	613,000 Btu/hr	780,000 Btu/hr
Generator/Power Electronics	20,000 Btu/hr	27,000 Btu/hr	31,000 Btu/hr
Total	486,000 Btu/hr	640,000 Btu/hr	811,000 Btu/hr
Gas Input	876 scfh	1152 scfh	1455 scfh
Electrical Efficiency			
@LHV of 905 Btu/scf	32.3%	32.7%	32.4%
@HHV of 1020 Btu/scf	28.6%	29.0%	28.7%
Overall Efficiency			
@LHV of 905 Btu/scf	93.6%	94.1%	94.0%
@HHV of 1020 Btu/scf	83.0%	83.5%	83.4%
Required Gas Pressure (when operating at full load)	4 - 12" WC		
Hot Water Flow	30 gpm		
Maximum Leaving Water Temperature	230 °F		
Maximum Entering Water Temperature	180 °F		
Air Emissions (SCAQMD & NJ DEP Compliant)⁶			
• NOx	< 0.07 lb/MWh		
• CO	< 0.2 lb/MWh		
• VOC	< 0.1 lb/MWh		
Electrical Service	480 V, 3 PH, 3-wire		
Operating & Storage Temperature Range	-4° to 104° F (-20° to 40° C)		
Acoustic Level	66 dBa @ 20'	67 dBa @ 20'	69dBa @ 20'
Weight (indoor / outdoor)	4,300 lb / 4,800 lb		
Dimensions (indoor / outdoor)	7'6"L x 4 0"W x 5'9"H / 7'10"L x 4'11"W x 6'4"H		

ETL Listed - Labeled for compliance with UL 1741- Utility Interactive; Inverters, Converters, Controllers and Interconnection System Equipment for Use with Distributed Energy Resources, UL 2200 - Stationary Engine Generator Assemblies, CSA C22.2 #100 - Motors and Generators and CSA C22.2 #14 - Industrial Control Equipment
NYSIR Certified - NY Department of Public Service, New York Standardized Interconnection Requirements

1. All specifications are +/- 5% and are subject to change without notice.
2. Above performance data is valid up to 104° F ambient temperature.
3. Standalone capacity is the lesser of 100 kW or 125 kVA.
4. The **InVerde e+**, can act as an emergency generator wherever natural gas is an approved emergency fuel source. Fuel storage requirements can be satisfied by utilizing propane; automatic changeover to propane from natural gas available upon request.
5. A single InVerde should not be used for critical life safety loads such as a fire pump. In this instance, Tecogen recommends the application of redundant InVerde units or a separate, dedicated power source.
6. Emission limits are based on the Ultera Emissions option and includes 60% system efficiency (HHV) credit for Distributed Generation as per SCAQMD Rule 1110.2.

