



BITZER SEMI-HERMETIC EXPANDER/GENERATOR

POWER+ GENERATOR

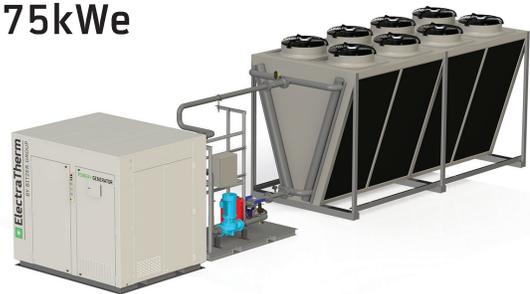
ElectraTherm's POWER+ GENERATOR produces fuel-free, emission-free power from low grade waste heat using the Organic Rankine Cycle (ORC) and proprietary technology. The company's patented BITZER semi-hermetic twin screw expander/generator combination enables the POWER+ GENERATOR to generate fuel-free and emission-free electricity from various forms of waste heat. ElectraTherm's patented ORC design represents a dramatic change from radial or axial turbine technologies, providing a more cost efficient, robust design with no shaft seal between the expander/generator combination, greatly enhancing reliability. The 4400B is an evolution of ElectraTherm's Series 4000 and the BITZER expander offers enhanced performance across the operating range with a maximum output increased to 75kW.

4400B POWER+ CONFIGURATIONS - UP TO 75kWe



4400B STAND ALONE

- // Dimensions*: 2.0 x 2.4 x 2.3 m
- // Weight: 3,290 kg / 7,245 lbs
- // Customizable balance of plant
- // Indoor or outdoor installation
- // MSRP**: \$210,760



4400B-FL

- // Dimensions*: 12 x 2.4 x 2.9 m
- // Weight: 6,095 kg / 13,438 lbs
- // Turnkey inc. liquid loop radiator, all piping/pumps, minimal engineering
- // MSRP**: \$302,074

* Renderings may not be exact representations of final POWER+ product.
** Certification fees for certain countries may apply.

HEAT TO POWER APPLICATIONS

ElectraTherm generates electricity from various heat sources, including:



Stationary Engines



Biomass/Biogas



Boilers & Process Heat



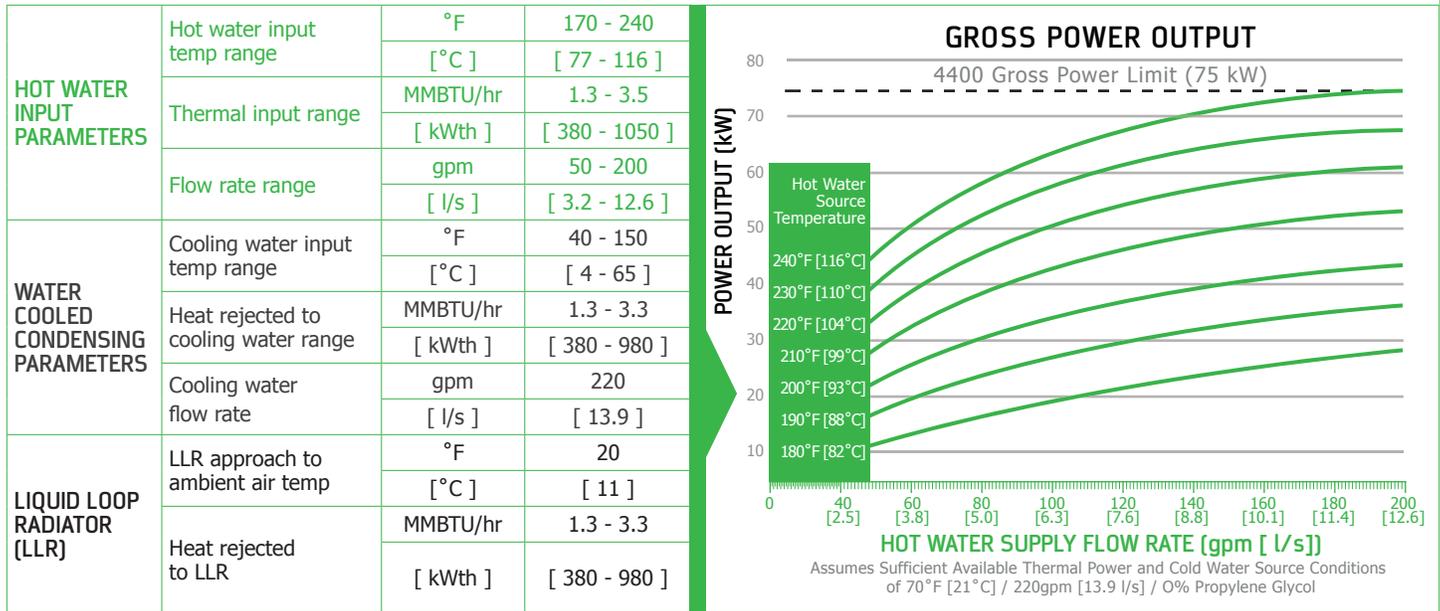
Oil & Gas, Geothermal



Flare Elimination

4400B PERFORMANCE PARAMETERS - UP TO 75kWe

ElectraTherm's Water Cooled Condensing System Performance



PERFORMANCE CHARACTERISTICS

Nominal Rating	Up to 75kWe* @ 380 - 500V / 3 phase / 50 & 60 Hz
Ambient Operation	32°F - 100°F (0°C - 38°C)**
Power Factor Correction	Load and Site Dependent - from 0.9 to 1
Total Harmonic Distortion	<3%
Emissions	Zero (Closed Binary Cycle)
Minimum Operating kW Output	15kWe

DESIGN ATTRIBUTES

Refrigerant Plumbing	Built to ASME and CE Standards
Power Block	BITZER Semi-Hermetic Twin Screw Expander Generator Combination
Generator	Grid-Tied Induction (Brushless Construction, Asynchronous)
Heat Exchangers	Compact, Brazed Plate Construction
Design Life	20 Years
Lubrication	Patented Process Lubrication
Grid Protective Relay (GPR)	External Additional GPR Interface Included

SYSTEM DESCRIPTION

Working Fluid	R245fa (Pentafluoropropane)***
Heat Source	Hot Water 170°F - 240°F (77°C - 116°C)
Cooling Requirement	Water 40°F - 150°F (4°C - 65°C)
Minimum Temp Differential	Between Hot Water Input and Cooling Water Input = 80°F / 27°C
Controls	Programmable Logic Controller Based Custom Controls
Remote Monitoring	Machine accessible with included VPN router
Operation	Designed for Unattended Operation
Cabinet	NEMA 3R Outdoor Rated /IP 54 Compliant
Shipping	Ships from Flowery Branch, GA, USA
Dimensions & Weight	Various Configurations Available (see first page)
Sound Pressure	80dBA at 1 meter. Sound Attenuated Option: <72dBA at 1 meter

FEATURES INCLUDE:

- // Ease Of Installation
- // Low Maintenance
- // Robust, Twin Screw Expander Power Block
- // CE Certified
- // Remote Monitoring
- // Automated Control System
- // Modular and Scalable
- // Zero Emissions
- // Zero Toxic By-Products
- // Zero Fossil Fuel Requirements
- // Dual-Heat Stream Input + Radiator Option Available

*Output depends on hot and cold resources

**Extreme environments require optional equipment

***R245fa is a non-flammable and non-ozone depleting working fluid

 **ElectraTherm**

BY BITZER GROUP

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