

BITZER SEMI-HERMETIC EXPANDER/GENERATOR

## POWER+ GENERATOR

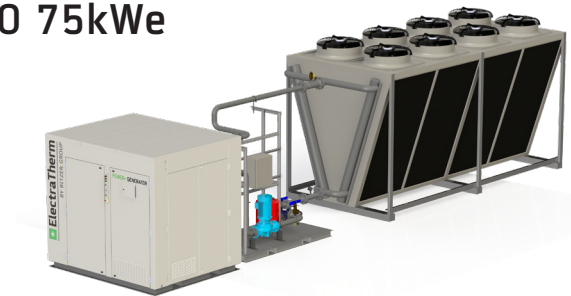
ElectraTherm's POWER+ GENERATOR produces fuel-free, emission-free power from low grade waste heat using the Organic Rankine Cycle (ORC) and proprietary technology. The company's patented BITZER semi-hermetic twin screw expander/generator combination enables the POWER+ GENERATOR to generate fuel-free 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\*: 2.4 x 2.0 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



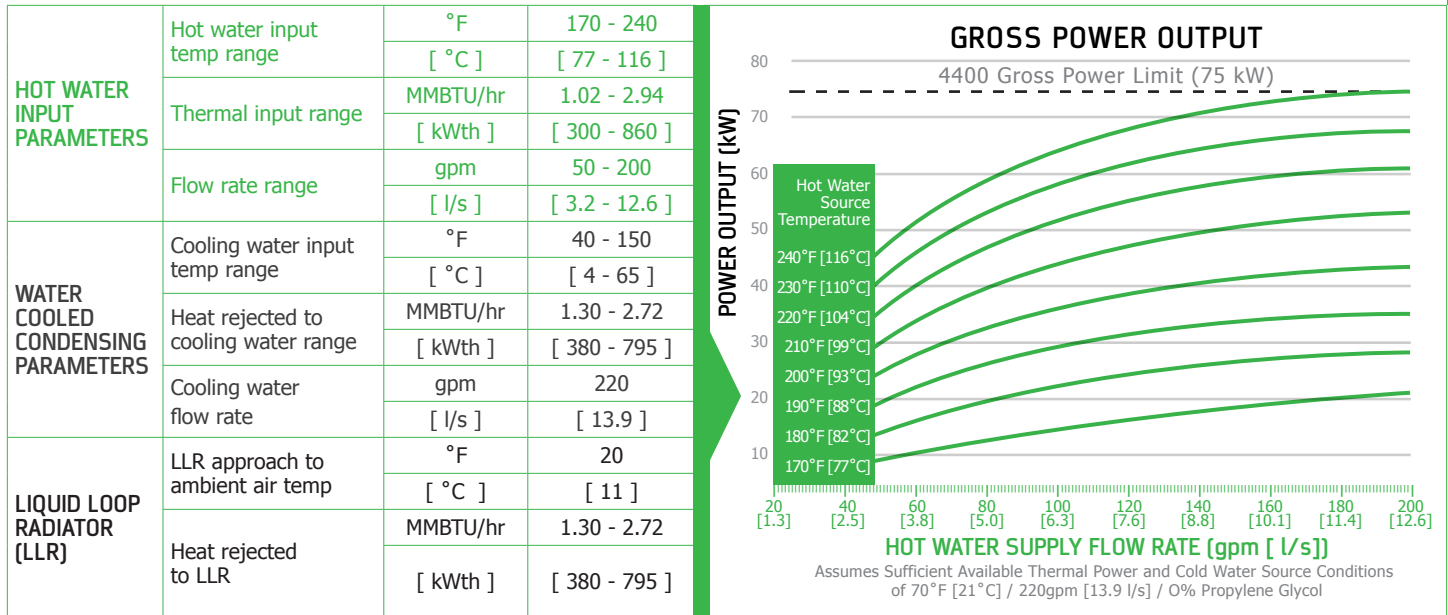
Oil & Gas, Geothermal



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)
Net Minimum Operating kW Output	5kWe Net

## 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	80db at 1 meter. Sound Attenuated Option: <72db 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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