

Product Specifications

POWER+ GENERATOR 4400B & 4400B+

75 kilowatts of clean power from waste heat

The Power+ Generator produces fuel-free, emission-free power from low temperature waste heat using the Organic Rankine Cycle and proprietary technology. With the adaptation of BITZER's twin-screw expander, the Power+ Generator is a next generation waste heat recovery solution that is more cost efficient and reliable than previous ORC offerings.



AVAILABLE IN TWO CONFIGURATIONS:



STAND ALONE

- // Dimensions*: 2.0 x 2.4 x 2.3 m
- // Weights: 3,290 kg / 7,245 lbs
- // Customizable balance of plant
- // Indoor or outdoor installation



SYSTEM PACKAGE

- // Dimensions*: 12 x 2.4 x 2.9 m
- // Weights: 6,095 kg / 13,438 lbs
- // Includes: liquid loop radiator, cold water pump, integrated controls

*Renderings may not be exact representations of final project

COMMON APPLICATIONS:

While ElectraTherm specializes in the below industries, any fluid heat source up to 150°C or gaseous heat source over 150°C is a potential fit for our heat to power ORC solutions.



Power Generation
Stationary Engines
Combined Heat & Power



Commercial Boilers
Biomass / Biogas
District Heating



Industrial Waste Heat



Methane Optimization
Flare Elimination
Compression



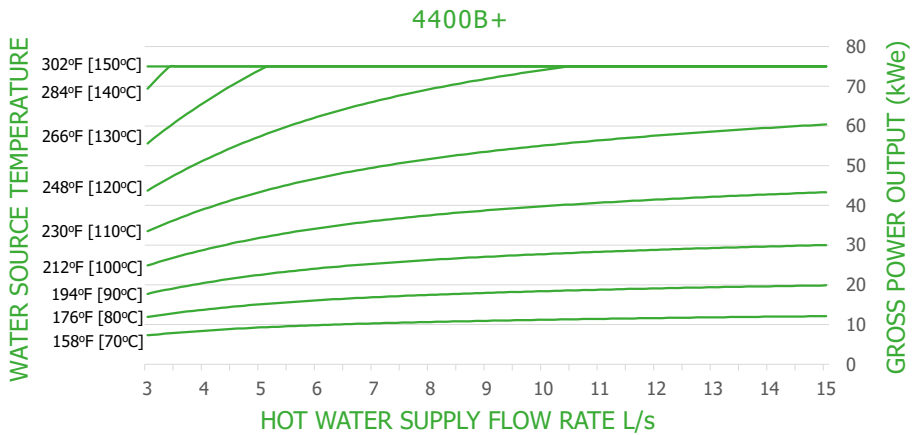
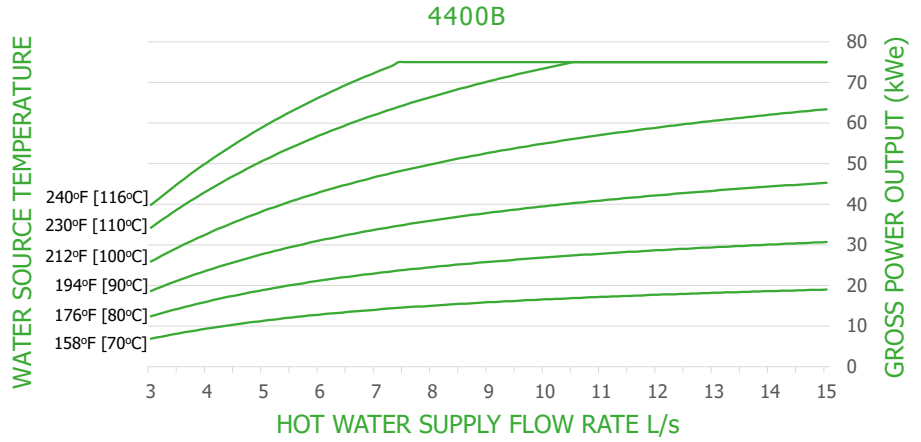
Co-produced Fluids
Oil & Gas
Micro Geothermal

HOT WATER		4400B	4400B+
Temperature	°F	158 - 240	158 - 302
	[°C]	[70 - 116]	[70 - 150]
Flow Rate	gpm	50 - 238	50 - 238
	[l/s]	[3 - 15]	[3 - 15]
Thermal Input	MMBTU/hr	1.3 - 3.6	1.3 - 5.2
	[kWth]	[380 - 1050]	[380 - 1450]

COOLING WATER		4400B	4400B+
Temperature	°F	40 - 150	40 - 150
	[°C]	[4 - 65]	[4 - 65]
Flow Rate	gpm	95 - 285	95 - 285
	[l/s]	[6 - 18]	[6 - 18]
Heat Rejected	MMBTU/hr	1.3 - 3.3	1.3 - 4.7
	[kWth]	[380 - 980]	[380 - 1365]

LIQUID LOOP RADIATOR		4400B	4400B+
Approach to Ambient Air Temp	°F	20	20
	[°C]	[11]	[11]
Heat Rejected	MMBTU/hr	1.3 - 3.3	1.3 - 4.7
	[kWth]	[380 - 980]	[380 - 1365]

Outputs based on 50 Hz grid systems.
 Assumes sufficient available thermal power.
 Cold Water: 21°C | 18 L/s | 0% Glycol



PERFORMANCE CHARACTERISTICS

Heat Source	4400B	Fluid sources up 116°C / Gaseous sources above 150°C*
	4400B+	Fluid sources up 150°C / Gaseous sources above 150°C*
Cooling Water	40°F - 150°F (4°C - 65°C)	
Minimum Temp Differential	Between hot water and cold water input = 80°F / 27°C	
Nominal Rating	Up to 75 kWe @ 380 - 500 V / 3 phase / 50 & 60 Hz	
Ambient Operation	32°F - 100°F (0°C - 38°C)	
Power Factor Correction	Load and site dependant. From 0.9 - 1	
Total Harmonic Distortion	< 3%	
Emissions	Zero (closed binary cycle)	
Minimum kW Output	5 kWe	

DESIGN ATTRIBUTES

Working Fluid	R245fa (Pentafluoropropane)
Refrigerant Plumbing	Built to ASME and CE standards.
Power Block	BITZER Semi-Hermetic Twin-Screw Expander
Generator	Grid-tied induction (brushless construction, asynchronous)
Heat Exchangers	Compact, brazed plate construction
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
Sound Pressure	78dBa at 1 meter / Attenuated Option: <70dBa at 1 meter
Design Life	20 Years
Grid Protective Relay	External additional GPR interface included
Shipping	Ships from Flowery Branch, GA, USA

HIGHLIGHTS:

- // Zero emissions or fossil fuel requirements
- // Increase efficiency while reducing parasitic load
- // Automated control system with remote monitoring
- // Simple design – robust, flexible, scalable
- // Next generation ORC system enhancing reliability
- // Tolerates dual-phase flow, allowing for variation in temperature and flow
- // Ease of installation, operation, and maintenance
- // 20-year design life amounts to attractive ROI
- // CE certified