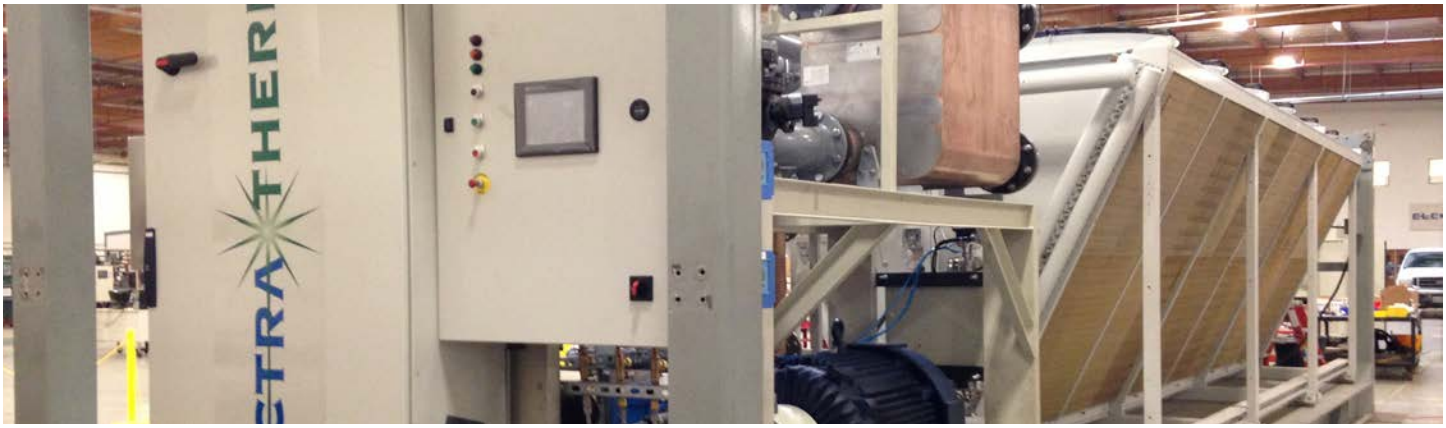
ElectraTherm
BY BITZER GROUP

6500B SPECIFICATION SHEET



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 proven, patented twin screw expander enables its heat-to-power generating system to make electricity from waste heat instead of fossil fuel. ElectraTherm's POWER+ GENERATOR represents a dramatic change from radial or axial turbine technologies, providing a more cost efficient, robust machine to generate fuel-free and emission-free electricity from a variety of heat sources.

ElectraTherm's twin screw expander offers distinct advantages for small-scale ORCs. These advantages include a simple and compact design, low speed operation with the ability to handle heat input variations and dual phase flow of the working fluid, significant part load capability, no gear box or oil pump, attractive payback and proven technology.

6500B POWER+ CONFIGURATIONS - UP TO 125kWe

6500B STAND ALONE

// Dimensions*: 3.3 x 2.0 x 2.5 m
// Weight: 4,853 kg /10,699 lbs
// Customizable balance of plant
// Indoor or outdoor installation
// Global Price: Estimated 3 to 5 year payback depending on project details, contact us for a current review**

6500B SYSTEM PACKAGE

// Dimensions*: 15 x 2.3 x 2.5 m
// Weight: 8,553 kg / 19,518 lbs
// Turnkey inc. liquid loop radiator, all piping/pumps, minimal engineering
// Contact ElectraTherm for current pricing**

* 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

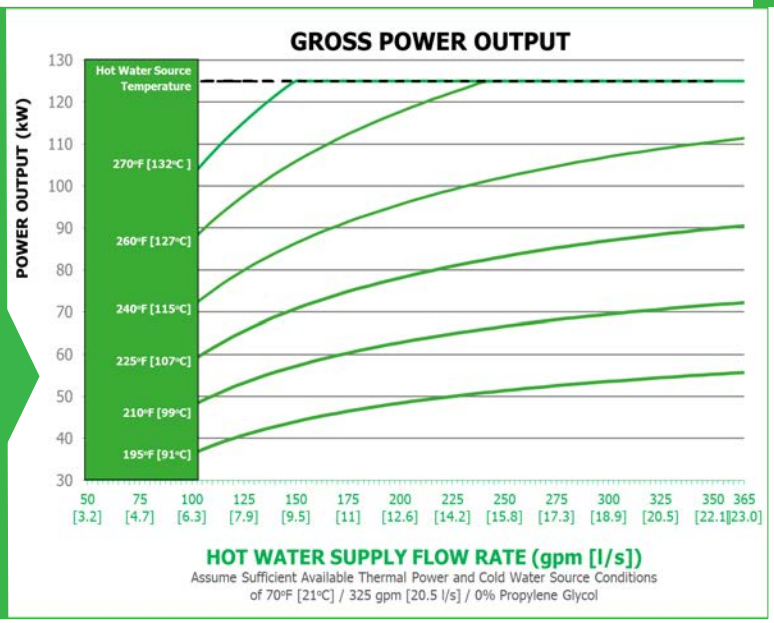

Oil & Gas, Geothermal


Flare Elimination

6500B PERFORMANCE PARAMETERS - UP TO 125kWe

ElectraTherm's Water Cooled Condensing System Performance

HOT WATER INPUT PARAMETERS	Hot water input temp range	°F	170 - 270
		[°C]	[77 - 132]
	Thermal input range	MMBTU/hr	1.35 - 5.8
		[kWth]	[400 - 1700]
	Flow rate range	gpm	95-365
		[l/s]	[6.0 - 23.0]
WATER COOLED CONDENSING PARAMETERS	Cooling water input temp range	°F	40 - 150
		[°C]	[4 - 65]
	Heat rejected to cooling water range	MMBTU/hr	1.35 - 5.5
		[kWth]	[400 - 1600]
	Cooling water flow rate	gpm	143 - 412
		[l/s]	[9 - 26]
LIQUID LOOP RADIATOR (LLR)	LLR approach to ambient air temp	°F	25
		[°C]	[13]
	Heat rejected to LLR	MMBTU/hr	1.35 - 5.4
		[kWth]	[400 - 1600]



PERFORMANCE CHARACTERISTICS

Nominal Rating	Up to 125kWe* @ 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	5 kWe

DESIGN ATTRIBUTES

Refrigerant Plumbing	Built to ASME and CE Standards
Power Block	Twin Screw Expander
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 - 270°F (77°C - 132°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	78dBA at 1 meter

FEATURES INCLUDE:

- // Automated Control System
- // Remote Monitoring
- // Low Maintenance
- // Modular and Scalable
- // Robust, Twin Screw Expander Power Block
- // CE Certified
- // 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

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ElectraTherm, Inc. // 4080 Enterprise Way // Flowery Branch // Georgia 30542 // USA
Tel +01 678-267-7700 // Toll Free: 1-877-883-7101 // www.electratherm.com