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.

6500 Power+ CONFIGURATIONS - Up to 110kWe
ElectraTherm’s Power+ Generator™ is available in two configurations:

**6500 Stand Alone Specifications**
- Dimensions: 3 x 2.4 x 2.6 m
- Weight: 7,490 kg / 17,300 lbs
- Customizable balance of plant
- Indoor or outdoor installation

**6500-FL Specifications**
- Dimensions: 12 x 2.4 x 2.9 m
- Weight: 14,515 kg / 32,000 lbs
- Turnkey inc. liquid loop radiator, all piping/pumps, no concrete foundation required, minimal engineering

HEAT TO POWER APPLICATIONS
ElectraTherm generates electricity from various heat sources, including:

- Stationary Engines
- Biomass/Biogas
- Boilers & Process Heat
- Oil & Gas, Geothermal
- Solar Thermal
**PERFORMANCE CHARACTERISTICS**

Nominal Rating: Up to 110kWe* @ 380 - 500V / 3 phase / 50 & 60 Hz

Ambient Operation: 0°C - 38°C (32°F - 100°F)

Power Factor Correction: Load and Site Dependent - from 0.9 to 1

Total Harmonic Distortion: 2% for Voltage; 10% for Current

Emissions: Zero (Closed Binary Cycle)

**DESIGN ATTRIBUTES**

Refrigerant Plumbing: Built to ASME and CE Standards

Energy Block: Twin Screw Expander

Generator: Grid-Tied Induction (Brushless Construction, Asynchronous)

Heat Exchangers: Compact, Brazed Plate Construction

Design Life: 20 Years

Lubrication: Process Lubrication

Transient Voltage/Surge Suppression: Basic Protections are Standard

Grid Protective Relay (GPR): External Additional GPR Interface Included

**SYSTEM DESCRIPTION**

Working Fluid: R245fa (Pentaffluoropropene)**

Heat Source: Hot Water 77°C - 122°C (170°F - 252°F)

Cooling Requirement: Water 4°C - 65°C (40°F - 150°F)

Controls: Custom Controls Software using Standard Programmable Logic Controller

Remote Monitoring: Fully Controllable via Customer Internet Connection

Data Logging: Major System Parameters Logged, KEPServer/OPC Available for Site SCADA

Operation: Designed for Unattended Operation

Electrical Panels / Components: NEMA 4 Outdoor Compliant / IP 54 Compliant

Shipping: Ships from Reno, NV, USA

Dimensions: Various Configurations Available (see next page)

Weight: Various Configurations Available (see next page)

**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 and Zero Fossil Fuel Requirements
- Dual-Heat Stream Input + Radiator Option Available