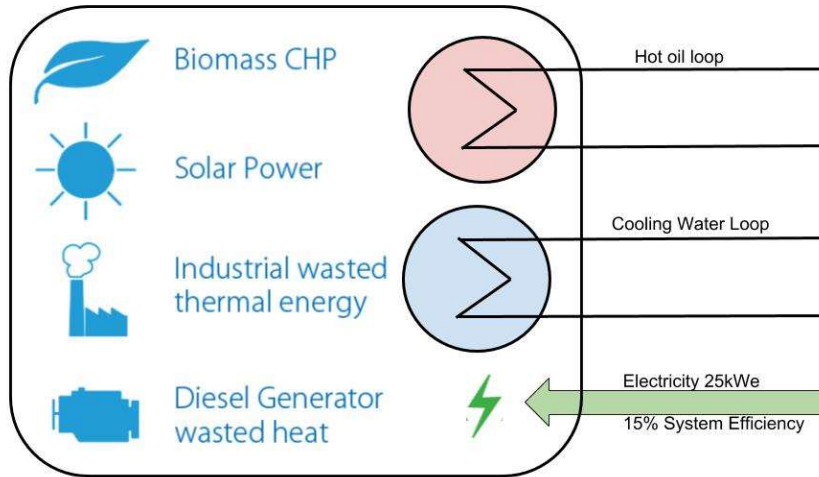


E25ET Compact Heat Engine Power Unit

Product Sheet



Entropea Labs designs and assembles high efficiency compact heat engine power units. By introducing a simple and elegant design and combining it with the state of the art Organic Rankine Cycle (ORC) technology for small-scale distributed power generation applications, Entropea offers to its customers a better more efficient alternative to traditional ORC systems. The high efficiency power units are available in a range of power outputs to match most standard applications optimally.

Entropea Labs was formed in 2014 by a team of highly specialized engineers from all disciplines representing a spectrum of expertise to address and resolve all of the engineering challenges. Combining capabilities in computer modelling (CAD, CFD), combustion modelling, thermodynamics, power electronics, control systems and automation, Entropea delivers a reliable and cost-minimized heat to power system.

Entropea's Product range

25kWe (net)	E25LT	E25MT	E25HT	E25ET
50kWe (net)	E50LT	E50MT	E50HT	E50ET
100kWe (net)	E100LT	E100MT	E100HT	E100ET
	90°C	120°C	160°C	200°C
				250°C

Entropea's heat engine power units convert the thermal power of a heat transfer fluid into electricity. The compact heat engine power units are designed for **heat transfer fluid temperatures from 90°C to 250°C**. Entropea's power units are divided into four categories based on the transfer fluid's temperature: **Low Temperature (LT)**, **Medium Temperature (MT)**, **High Temperature (HT)** and **Extra-high Temperatures (ET)**.

✓High Efficiency

Permanent magnet generator with directly coupled high speed turbine provides efficient power conversion

✓Variable Load

Automatic PLC based controller converts the available thermal power from continuous to variable and intermittent load conditions

✓Scalable

The technology is highly scalable and modular. Power units come in different sizes which can be run in parallel as needed

✓High Temperature

The high temperature range provides the highest efficiency for small ORC heat to power systems

✓Remote Monitoring & Diagnostics

The power unit's savings can be evaluated in real-time remotely. Operators are not required. HMI screen is provided for local operation

✓Reliable

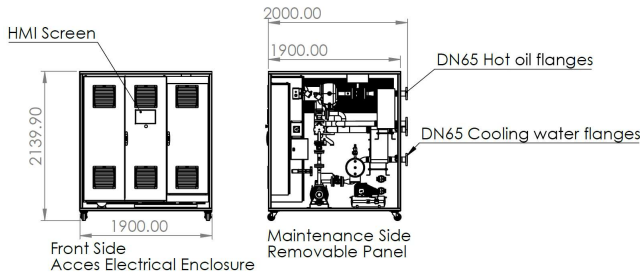
Designed for long product life (10 years) with simple field maintenance. Maintenance operations are preprogrammed and the HMI reminds the user to perform scheduled maintenance

✓Payback

With three sizes of Turbogenerators, Entropea offers solutions for most small scale heat to power applications with typical payback times of 2 to 5 years.

E25ET Specifications

Technical Specifications E25ET	
Thermal power input	185kWth
Temperature range	200 °C - 250°C
Electric power output	25kWe
Net System Efficiency	13.5%
Organic Fluid	New generation refrigerant with low GWP
Heat Transfer Fluid	Thermal Oil (e.g. Dow Q or similar)
System maximum pressure	16.5bar
Cooling fluid	Water, < 35°C, > 12.5m³/hour
External dimensions (W x D X H)	1.9m x 2.0m x 2.2m
Required access	>1m around perimeter
Control system	PLC closed loop control with remote monitoring
Hot oil loop connection	2 X DN65 PN10 flanges
Cooling water loop connection	2 X DN65 PN10 flanges (pressure limit 3bar)
Operating ambient temperature	-10°C to 35°C
Installation altitude	<2000m above sea level
Enclosure	IP20
Turbo-generator Specifications	
Type	Synchronous permanent magnet machine
Power output	30kW
Rotational speed	25,000rpm
Bearings	Greased ceramic ball bearings with regreasing unit
Cooling	Water cooling
Control type	Open loop speed control
Electrical system specifications	
Type	Bidirectional, high efficiency back-to-back converters
Output voltage	3 phase, 400Vac +/- 5%
Output frequency	50Hz +/- 0.5%
Power connection	3 phase + Neutral + Earth
Data	Ethernet RJ45 , 3G Router



- Front side: HMI screen, Emergency stop mushroom button and Electrical cabinet access.
- Right side: Removable panel for maintenance and repair access.
- Back side: Flanged connections for thermal oil and for cooling water.

