Small scale cogeneration equipment for low temperature heat sources
- Technology based company from Spain
- Since 2007 developing and manufacturing Organic Rankine Cycles
- Low temperature heat sources
- Small scale equipment

Web: [www.rankweb.es](http://www.rankweb.es)
E-mail: [info@rankweb.es](mailto:info@rankweb.es)
TECHNOLOGY

- Self-developed technology
- Tested technology, clean and safe
- High efficiency components and design
- Zero-leakage system
- Environmentally friendly working fluid
- Automatic management system
- Local/remote operation
- Main parameters measurement
- Remote assistance
- Easy maintenance
PRODUCTS
PRODUCTS

- CE Low voltage Directive 2006/95/EC
- Machinery Directive 2006/42/EC
- Pressurized Equipment Directive 2014/68/EC
- ENA ER G59/3
- ASME B31.1 – Power Piping Code, Mechanical
- ASME B31.3 – Process Piping Code
- Receiver complies with ASME Boiler and Pressure Vessel Code Section VIII
- Built in accordance with UL 508A- Control Panel Wiring
- Sound pressure tested in accordance with EN/ISO 3744:2010
PRODUCTS

90-210°C  INLET TEMPERATURE
100-1500 kWt  THERMAL POWER
5-120 kWe  ELECTRICAL POWER
UP TO 80°C  CHP

Product Range

90°C  120°C  150°C  180°C  210°C

Heat source inlet temperature(°C)

LT1  MT1  HT1  HTC1
LT2  MT2  HT2  HTC2
LT3  MT3  HT3  HTC3
# PRODUCTS

<table>
<thead>
<tr>
<th>Product</th>
<th>Model</th>
<th>LT1</th>
<th>LT2</th>
<th>LT3</th>
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</thead>
<tbody>
<tr>
<td><strong>Heat source</strong></td>
<td>Fluid</td>
<td>Water</td>
<td>Water</td>
<td>Water</td>
</tr>
<tr>
<td>Flow rate (m³/h)</td>
<td>17,0</td>
<td>36,5</td>
<td>77,5</td>
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<tr>
<td>Inlet temperature (°C)</td>
<td>90-120</td>
<td>90-120</td>
<td>90-120</td>
<td></td>
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<tr>
<td>Thermal power (kWt)</td>
<td>125-245</td>
<td>265-515</td>
<td>570-1105</td>
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</tr>
<tr>
<td><strong>Heat sink</strong></td>
<td>Fluid</td>
<td>Water</td>
<td>Water</td>
<td>Water</td>
</tr>
<tr>
<td>Flow rate (m³/h)</td>
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<td>63,0</td>
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<tr>
<td>Inlet temperature (°C)</td>
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<td>20-40</td>
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<td></td>
</tr>
<tr>
<td>Outlet temperature (°C)</td>
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<tr>
<td>Thermal power (kWt)</td>
<td>95-170</td>
<td>200-360</td>
<td>430-775</td>
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<tr>
<td><strong>Electrical power</strong></td>
<td>Gross power (kWe)</td>
<td>6-18</td>
<td>12-38</td>
<td>27-82</td>
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</table>
# PRODUCTS

## Rank LT1 performance

<table>
<thead>
<tr>
<th>Heat source</th>
<th>Inlet temperature (°C)</th>
<th>Fluid</th>
<th>Flow rate (m³/h)</th>
<th>Thermal power (kWt)</th>
<th>nominal</th>
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<tbody>
<tr>
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<td>90.0</td>
<td>Water</td>
<td>17.0</td>
<td>120-135</td>
<td>110.0</td>
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<td>Water</td>
<td>17.0</td>
<td>115-125</td>
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<tr>
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<td>Water</td>
<td>17.0</td>
<td>150-165</td>
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<td>Water</td>
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<td>150-165</td>
<td>120.0</td>
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<td>Water</td>
<td>17.0</td>
<td>180-200</td>
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</table>

<table>
<thead>
<tr>
<th>Heat sink</th>
<th>Inlet temperature (°C)</th>
<th>Fluid</th>
<th>Flow rate (m³/h)</th>
<th>Thermal power (kWt)</th>
<th>nominal</th>
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<td>105-120</td>
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<td>125-140</td>
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<table>
<thead>
<tr>
<th>Electrical power</th>
<th>Gross power (kWe)</th>
<th>Net power (kWe)</th>
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<td>9.0-10.0</td>
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<tr>
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<td>11.5-13.0</td>
<td>11.5-12.5</td>
</tr>
</tbody>
</table>

(1) The output temperature in the heat source for the nominal operating conditions is 100°C (a temperature difference of 10°C). For all other operating conditions, the outlet temperature should be obtained using the provided thermal power.

(2) The output temperature in the heat sink for the nominal operating conditions is 40°C (a temperature difference of 10°C). For all other operating conditions, the flow rate should be adjusted in order to obtain the same temperature difference (10°C).
CASE STUDIES

- Several installed and commissioned equipment in Europe
- Three examples of the main applications
CASE STUDIES

Combined Heat and Power (CHP) using biomass as renewable heat source

- ADAMS Farm – UK
- 2017
- LT2
- 30 kWe net
- Hot water at 45°C
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- Hot water at 85ºC
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CASE STUDIES

Waste Heat Revalorization (WHR) from industrial processes

- KEROS Ceramics – SPAIN
- 2012
- HT1
- 25 kWe net
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STAND