



# IT50 Waste Heat to Power System ORC

**Infinity Turbine  
LLC**

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<https://infinityturbine.com/model-it50-organic-rankine-cycle-turbine-generator-from-infinity-turbine.html>

Company Name: Infinity Turbine LLC  
Product: IT50 System  
Working Fluid: Refrigerants such as R245fa  
Machine: ORC and ROT Radial Outflow Turbine System  
Industry: Energy  
Applications: Waste heat to power, utilities, server farms, hot geothermal



This webpage QR code

**PDF Version of the webpage (maximum 10 pages)**

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## Infinity Turbine IT50 System for AC Power from Waste Heat

The IT50 is designed to produce 50 kW of AC power (typically configured for a Grid-Tie connection). We have produced several IT50 systems in the past few years. They take about 6 months to complete, and can be shipped in a standard 20 ft. shipping container.

Design Heat Exchangers ASME Rated Pressure - Evaporator R-245fa: 450 psi at 300 F shell side, and 150 psi 300 F on tube side. Welding procedures included. Condenser R-245fa: 450 psi at 250 F shell side, and 150 psi 250F on tube side.

Turbine may be used most efficiently at 50 kW, but may also be used for a range of turbines from 30 kW to over 100 kW.

IT50 Revenue based on gross sales or savings, not including cost of acquiring waste heat flow or pumps.

Revenue from IT50 (24 hours x 365 days per year x 50 kWh = 438,000 kWh per year):  
at \$.20 per kWh = \$87,600 USD per year  
at \$.50 per kWh = \$219,000 USD per year  
at \$1.00 per kWh = \$438,000 USD per year



## Grid Tie Device

Our induction AC generators require a grid tie device, which can be found on the link below from Sieb Meyer in Germany.

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## IT50 System Purchase Details

IT50 Organic Rankine Cycle System with ROT turbine and 50 kW output generator.

Standard complete system, which will accept 80-110 deg C input thermal fluid.

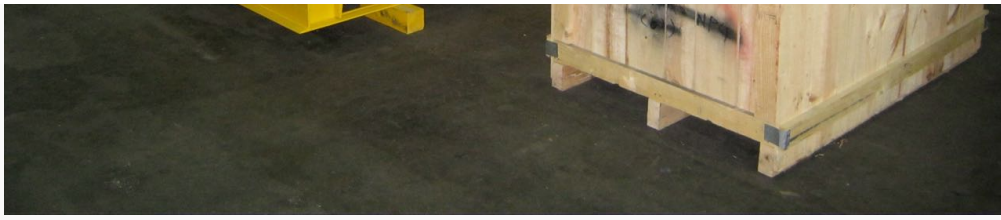
Heat exchangers are ASME designed and build by Henry Technologies in Canada.

Unit ships without refrigerant. 50-60 hz 380-480 (approx) V AC Generator.

Designed for R245fa. You may use R134a, proper cooling will be required. Unit includes a AC induction (asynchronous) generator, which will require the use of a grid-tie device to operate.

Unit has basic PLC for monitoring operating temperatures and pressures, but unit is really controlled by the grid-tie device, which senses output power and will adjust the VFD feedpump, which ultimately controls the turbine rotor speed.





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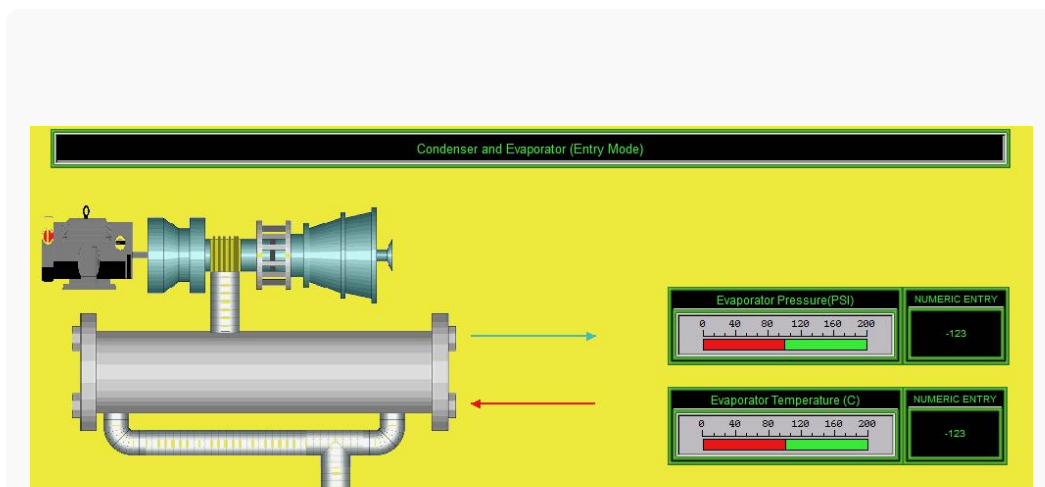
## IT50 Scope of Supply

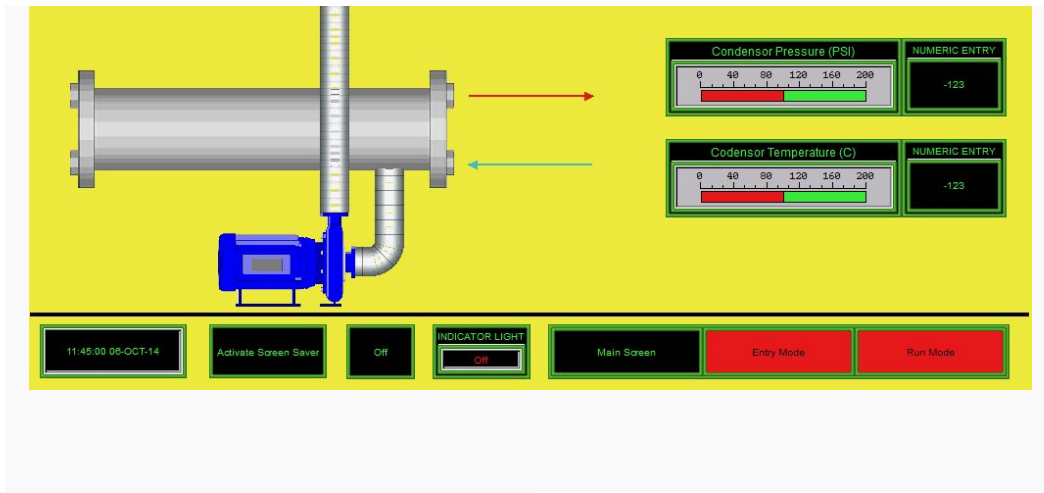
Please request our Scope of Supply for the IT50. This will be updated with new purchase to reflect any new technology or components.



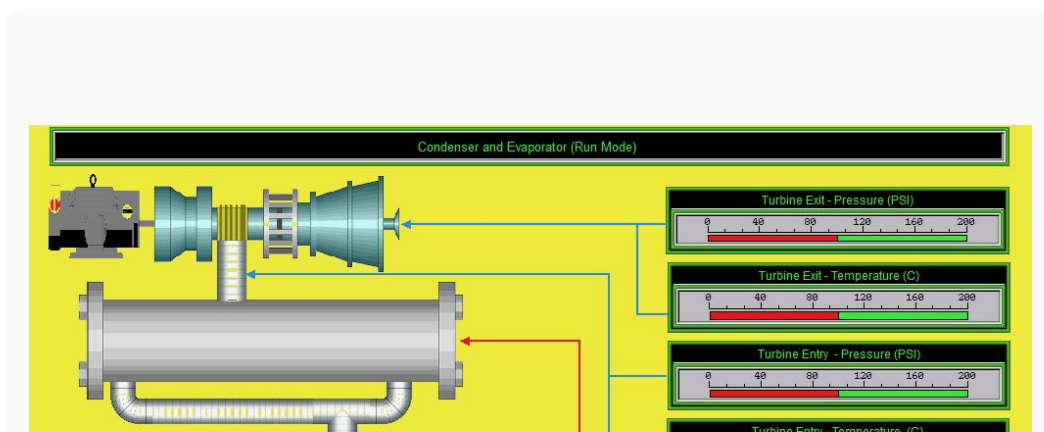


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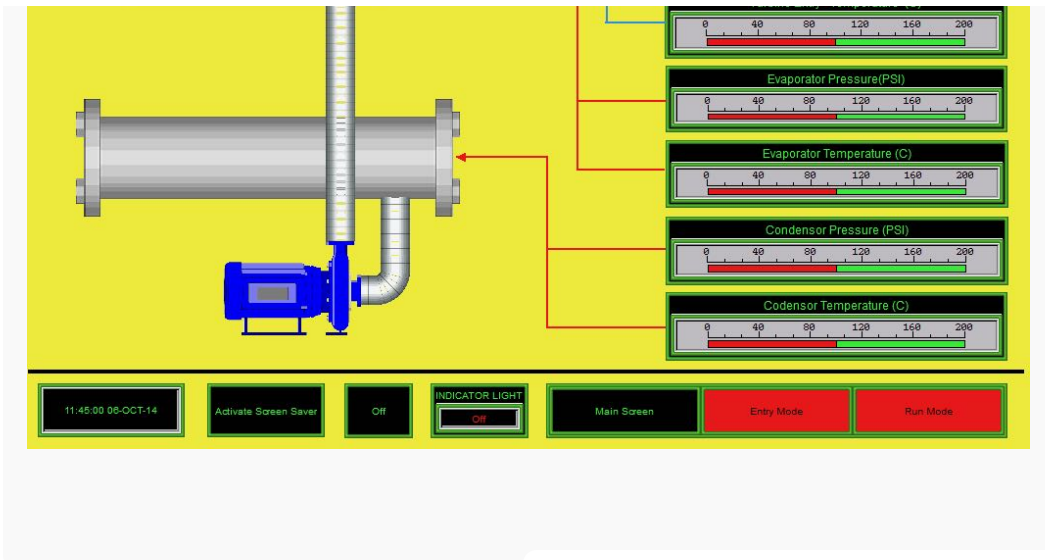




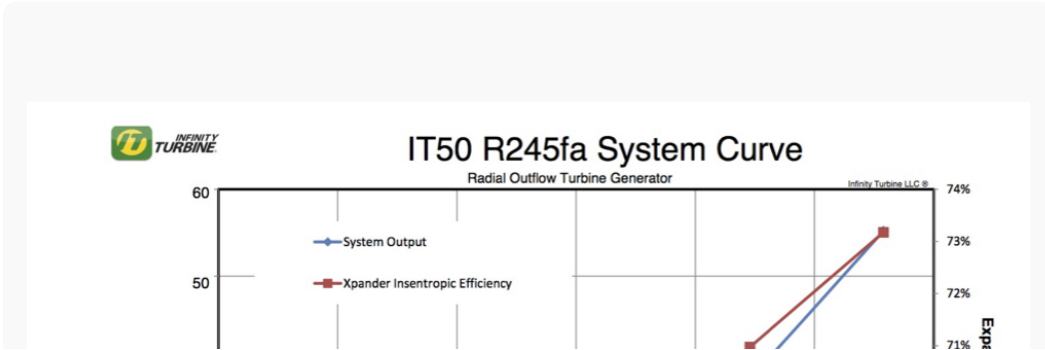
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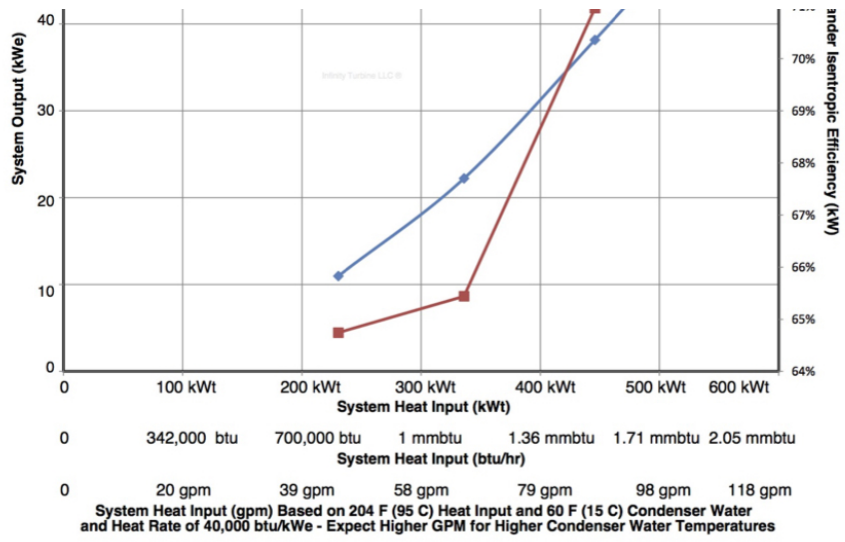






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