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3-megawatt-radial-outflow-turbine-rot-orc-power-pack-by-infinity-turbine

Infinity Turbine
LLC

3 MW Radial Outflow Turbine ORC Power
Pack System by Infinity Turbine



Structured Data

This webpage QR code

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Company Name: Infinity Turbine LLC
Product: 3 MW Turbine Generator Assembly
Working Fluid: Refrigerants, water, and CO2
Working Pressure: Less than 500 psi.
Certification: As spec
Drawings Provided: As is.
Machine: ORC and ROT Radial Outflow Turbine System
Industry: Renewable Energy
Applications: Waste heat to power, utilities, server farms, bitcoin mining, hot geothermal.
High Technology Uses: Converting waste heat to power.
Machine Features: One moving part.
Machine Runs On: Air, and some refrigerants, such as R245fa. Can be converted to a CO2 turbine with proper engineering enhancements with materials and seals which can withstand ASME coded materials and construction for 2,000 psi or more.
Real World Testing: This turbine has been built and tested with air (15-100 psi) and R245fa under pressure (300 psi or less). Experimental.
Seals: Gruvlok or Victaulic couplings which allow turbine to be mounted to a common shaft generator within one assembly.
Other Applications: Can be run as an expander or extractor.
Bearings: Uses motor bearings.

PDF Version of the webpage (first pages)

<https://infinityturbine.com/3-megawatt-radial-outflow-turbine-rot-orc-power-pack-by-infinity-turbine.html>

Radial Outflow Turbine 1MW AC Generator Hermetically Sealed

Infinity Turbine now has a megawatt-class ORC radial outflow concept turbine.

Multiple turbine generators are stacked in standard hi-cube shipping containers for the 3 MW Power Pack.

These run on heat from 90-160 C. Sources include industrial heat, solar thermal, engine heat, geothermal, and more.

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

Revenue from 1 MW (24 hours x 365 days per year x 1000 kWh = 8,760,000 kWh per year):

at \$.20 per kWh = \$1,752,000 USD per year

at \$.40 per kWh = \$3,504,000 USD per year

at \$.80 per kWh = \$7,008,000 USD per year

Revenue from 3 MW (24 hours x 365 days per year x 3000 kWh = 26,280,000 kWh per year):

at \$.20 per kWh = \$5,256,000 USD per year

at \$.40 per kWh = \$10,512,000 USD per year

at \$.80 per kWh = \$21,024,000 USD per year

Revenue from 6 MW (24 hours x 365 days per year x 1000 kWh = 8,760,000 kWh per year):

at \$.20 per kWh = \$10,500,000 USD per year

at \$.40 per kWh = \$21,000,000 USD per year

at \$.80 per kWh = \$42,000,000 USD per year

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Bearings

Bearings are oil lubricated and use lip seals to keep the oil separated from refrigerant system.

Dimensions of Turbine Assembly and Rotors

Overall turbine generator housing assembly dimensions are 74 inches (1880 mm) in length.

Overall frontal area is 46 inches (1168 mm) by 37 inches (940 mm).

Turbine Blade Height: 4.5 inches (114 mm)

Turbine Rotor Diameter: 24 inches (609.6)

Turbine Blades Manufacturing: CNC or may be 3D metal printed with slotted fastened rotor disc attachment. There are also waterjet stacking layer options to reduce machining time significantly.

Spin: 3,600 RPM

Generator: 2 pole

2,400 V +

Generator Diameter: 31 inches diameter (787 mm)

Generator Type: Induction or Synchronous

Bearings: Oil lubricated lip seals to keep refrigerant separate from refrigerant (working fluid) in the system.


