Capstone MicroTurbine™

MODEL 330
HEV MicroTurbine
Multi Fuels

The Product

Features

- 30 kW net (ISO conditions)
- 250V-700V DC
- Patented air bearings
- Digital power controller
- Air cooled
- Fuel flexible, freeze-tolerant
- Permanent flash memory with full operating history

Benefits

- Near-zero emissions performance
- No fluid lubricants or coolants needed, ever
- Compact size & weight
- Reliable operation
- Fast in-field serviceability
- Minimal maintenance
- Full diagnostic capability
- Suited for a wide range of transport applications

CARB-certified up to 70% lower emissions than EPA 2004 Truck & Bus Regulations ...available today!

HEV EMISSION CYCLE TESTING			
Emissions	**CNG***	**Propane***	**Diesel****
NO_x g/bhp-h	0.26	0.53	0.75
HC g/bhp-h	0.42	0.42	0.30
CO g/bhp-h	0.41	0.18	0.40
PM g/bhp-h	0.004	0.004	.01

* Emissions are actual results per CARB certification. Manufacturer emissions warranty limits are slightly higher.
**CARB certification pending Q2 of 2001 - internal test results only.

Performance Specifications Under ISO Conditions (15° C / 59° F @ sea level)

MicroTurbine Performance	Fuel Type		
	Natural Gas (55 psig)	Propane (55 psig)	Diesel (5 psig)
Overhaul Life	20,000 hrs	20,000 hrs	20,000 hrs
Full-Load Power	30 kW net (+/- 1 kW)	30 kW net (+/- 1 kW)	29 kW net (+/- 1 kW)
Peak Efficiency (LHV)	27% (+/- 2%)	27% (+/- 2%)	26% (+/- 2%)
Fuel Flow*	18.7 lb/hr / 8.5 kg/hr	19.0 lb/hr / 8.6 kg/hr	21.9 lb/hr / 10.0 kg/hr
Fuel Flow, Equivalent	N/A	4.5 gal/hr / 17.2 l/hr	2.9 gal/hr / 11.0 l/hr
Exhaust Gas Temperature	261°C / 500°F	261°C / 500°F	261°C / 500°F
Output Voltage	250V - 700V DC	250V - 700V DC	250V - 700V DC

*Rated at LHV: 20,167 Btu/lbm (Natural gas); 19,916 Btu/lbm (Propane); 18,250 Btu/lbm (Diesel).

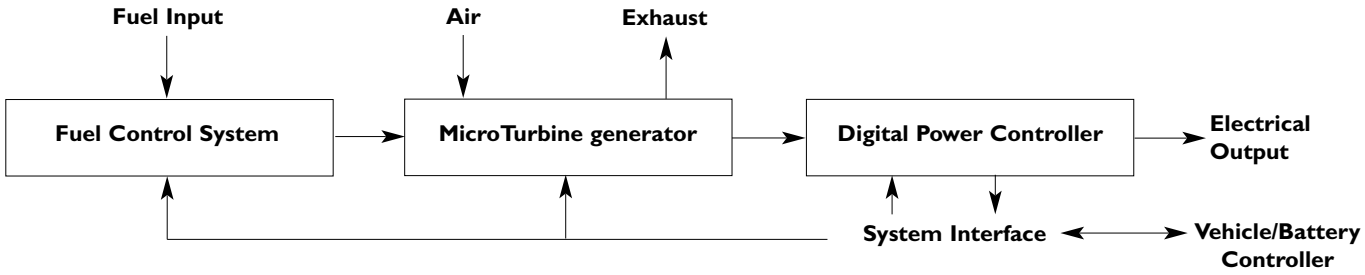
Engine Assembly
Dimensions
L: 836mm / 32.9"
W: 572mm / 22.5"
H: 729mm / 28.7"
Weight
102 kg / 225 lb

Digital Power Controller
Dimensions
L: 825mm / 32.50"
W: 311mm / 12.25"
H: 464mm / 18.25"
Weight
68.5 kg / 151 lb

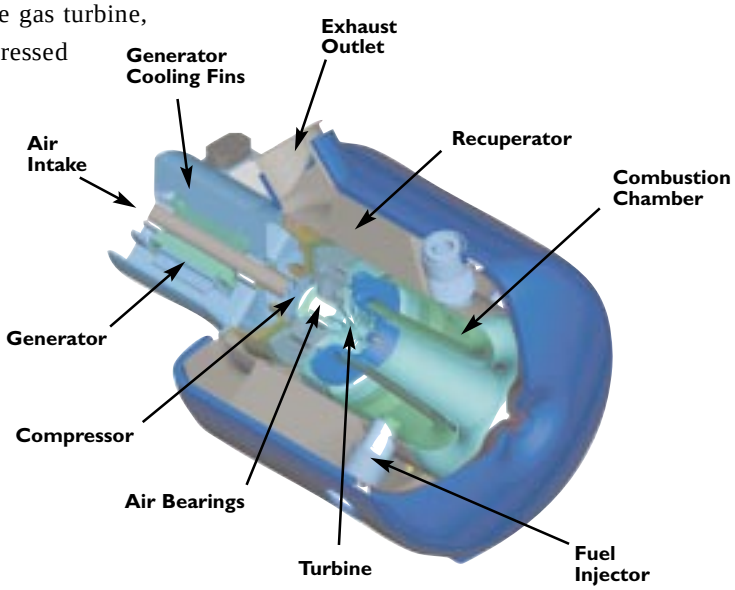
All specifications rated at full-load power.
Note: The manufacturer reserves the right to change or modify without notice, the design or equipment specifications without incurring any obligation either with respect to equipment previously sold or in the process of construction.

CAPSTONE TURBINE CORPORATION
www.microturbine.com

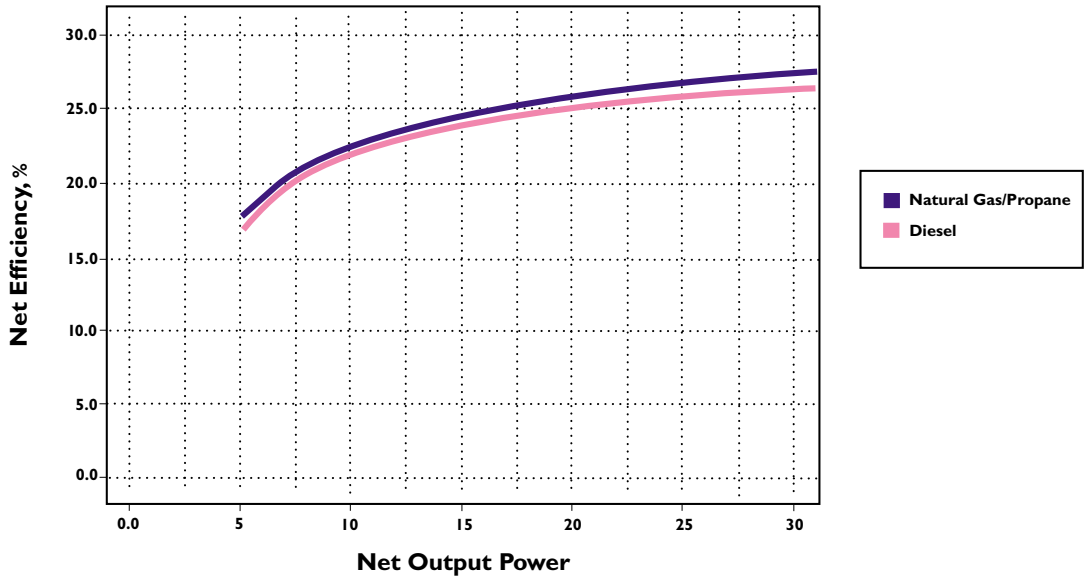
Capstone MicroTurbine™ System



The Capstone MicroTurbine™ system includes a compressor, recuperator, combustor, turbine and permanent magnet generator. The rotating components are mounted on a single shaft supported by air bearings that rotate at up to 96,000 RPM. The generator is cooled by the air flow into the gas turbine, thus eliminating the need for liquid cooling. The air is compressed and injected into the recuperator where its temperature is elevated by the exhaust gases expelled from the turbine. This process increases the system efficiency. The heated compressed air is mixed with fuel and burned in the combustion chamber. The combusted hot gases expand through the turbine, providing the rotational power. Patented techniques in the combustion process result in an extremely low emission exhaust stream. The output of the generator is variable voltage, variable frequency AC power. Power electronics convert this to programmable DC power for HEV applications.



Part Load Efficiency at ISO Conditions



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