



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



**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	0.70
HC g/bhp-h	0.42	0.42	0.80
CO g/bhp-h	0.41	0.18	0.56
PM g/bhp-h	0.0041	0.0041	0.01

* Emissions are actual internal test results as per CARB-approved battery-dominant engine cycle protocol. Manufacturer emissions warranty limits are slightly higher.



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 gas); 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

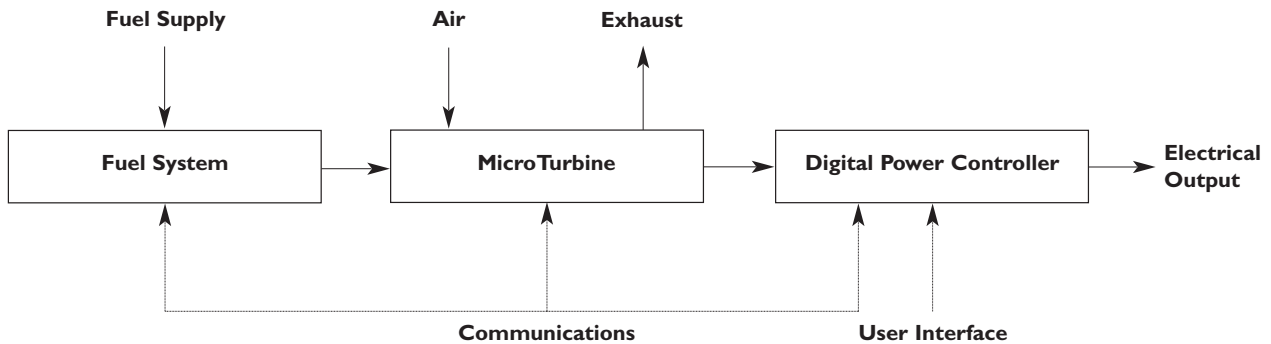
All specifications rated at full-load power.

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

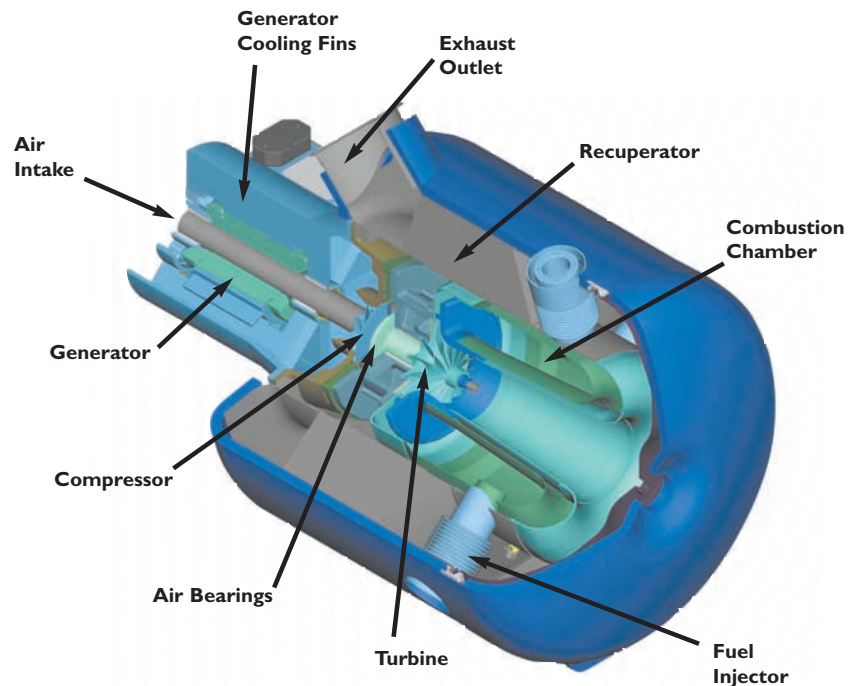
Capstone Model 330 MicroTurbine System



The Capstone Model 330 MicroTurbine system is a compact, low emission, power generator providing electrical power up to 30 kW. Solid-state power electronics allow grid-connect operation; stand-alone battery support and automatic grid/stand-alone switching are available options.

The system incorporates a compressor, recuperator, combustor, turbine and permanent magnet generator. The rotating components are mounted on a single shaft that rotates at up to 96,000 RPM (full load) and is supported by air bearings. The generator is cooled by intake air flow, thus eliminating the need for liquid cooling. Output of the system is variable voltage, variable frequency AC power. Integrated power electronics convert this to programmable DC power for HEV applications. A similar 60-kW engine will be available in 2002.

The Capstone Model 330 MicroTurbine Generator



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