

## CR200 MicroTurbine Renewable Fuels



World's largest air-bearing microturbine produces 200kW of clean, green, and reliable power.

- Ultra-low emissions
- Accepts renewable fuels with up to 5,000 ppm H<sub>2</sub>S content
- One moving part – minimal maintenance and downtime
- Patented air bearing – no lubricating oil or coolant
- 5 and 9 year Factory Protection Plans available
- Remote monitoring and diagnostic capabilities
- Integrated utility synchronization and protection
- Small, modular design allows for easy, low-cost installation
- Proven technology with tens of millions of run hours and counting



CR200 MicroTurbine

### Electrical Performance<sup>(1)</sup>

Electrical Power Output <sup>(2)</sup>	200kW
Voltage	400–480 VAC
Electrical Service	3-Phase, 4 wire
Frequency	50/60 Hz
Maximum Output Current	290A RMS @ 400V, grid connect operation 240A RMS @ 480V, grid connect operation
Electrical Efficiency LHV	33%

### Fuel/Engine Characteristics<sup>(1)</sup>

Landfill Gas HHV	13.0–22.3 MJ/m <sup>3</sup> (350–600 BTU/scf)
Digester Gas HHV	20.5–32.6 MJ/m <sup>3</sup> (550–875 BTU/scf)
Inlet Pressure	517–552 kPa gauge (75–80 psig)
Fuel Flow HHV	2,400 MJ/hr (2,280,000 BTU/hr)
Net Heat Rate LHV	10.9 MJ/kWh (10,300 BTU/kWh)
H <sub>2</sub> S content	< 5,000 ppmv

### Exhaust Characteristics<sup>(1)</sup>

NO <sub>x</sub> Emissions @ 15% O <sub>2</sub> <sup>(3)</sup>	< 9 ppmvd (18 mg/m <sup>3</sup> )
NO <sub>x</sub> / Electrical Output <sup>(3)</sup>	0.14 g/bhp-hr (0.40 lb/MWhe)
Exhaust Gas Flow	1.3 kg/s (2.9 lbm/s)
Exhaust Gas Temperature	280°C (535°F)
Exhaust Energy	1,420 MJ/hr (1,350,000 BTU/hr)

*Reliable power when and where you need it. Clean and simple.*

## Dimensions & Weight<sup>(4)</sup>

Width x Depth x Height <sup>(5)</sup>	1.7 x 3.8 x 2.5 m (67 x 150 x 98 in)
Weight	2776 kg (6,120 lb)

## Minimum Clearance Requirements<sup>(6)</sup>

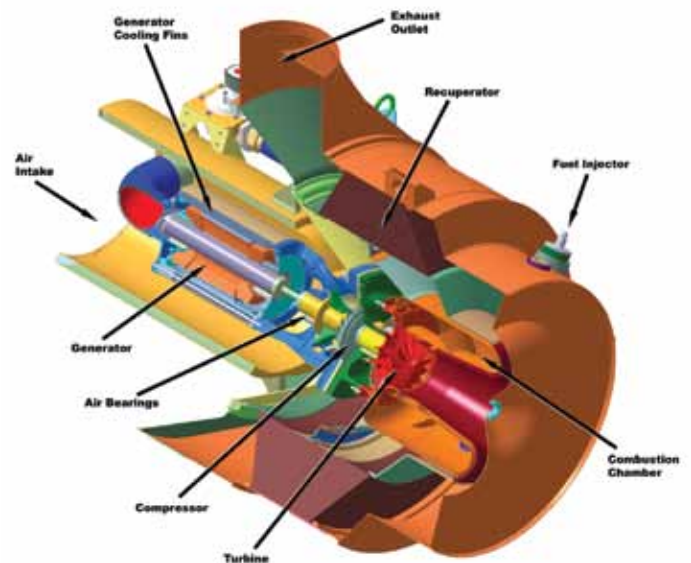
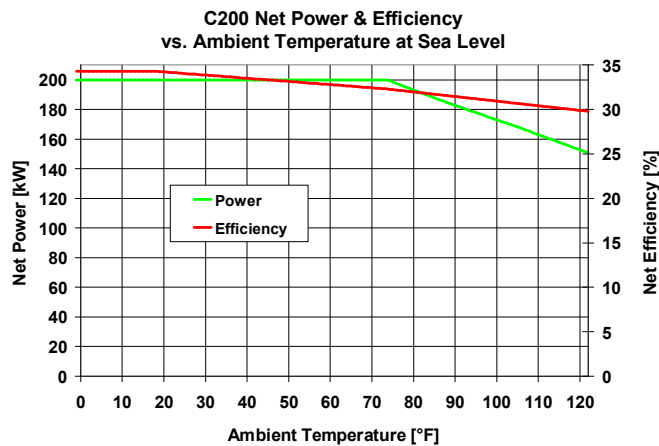
Vertical Clearance	0.6 m (24 in)
Horizontal Clearance	
Left & Right	1.1 m (42 in)
Front	1.1 m (42 in)
Rear	1.8 m (70 in)

## Sound Levels

Acoustic Emissions at Full Load Power	
Nominal at 10 m (33 ft)	65 dBA

## Planned Certifications

- Will comply with UL 2200 and UL 1741 for raw natural gas and biogas operation under existing UL files<sup>(7)</sup>
- Will comply with IEEE 1547 and will meet statewide utility interconnection requirements for California Rule 21 and the New York State Public Service Commission
- Models will be available with optional equipment for CE marking
- Models will be available with optional 2008 CARB certification for waste gas



- (1) Nominal full power performance at ISO conditions: 59°F, 14.696 psia, 60% RH
  - (2) Minimum power output is 100kW for these fuels. Additional fuel gas conditioning required. Contact Capstone for specific application guidance
  - (3) For surrogate landfill and digester gases. Please contact Capstone for additional details
  - (4) Approximate dimensions and weights
  - (5) Height dimensions are to the roof line. Exhaust outlet extends at least 8 inches above the roof line
  - (6) Clearance requirements may increase due to local code considerations
  - (7) All models are planned to be UL Listed or available with optional equipment for CE marking
- Specifications are not warranted and are subject to change without notice.*

