

## CR65 & CR65-ICHP MicroTurbine Renewable



Robust power system achieves ultra-low emissions and reliable electrical/thermal generation from waste gas.

- Years of renewable experience
- Ultra-low emissions
- Operates on landfill or digester gas
- 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
- Reliable: Tens of millions of run hours and counting



CR65 MicroTurbine

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

Electrical Power Output	65 kW
Voltage	400 to 480 VAC
Electrical Service	3-Phase, 4 wire
Frequency	50/60 Hz
Maximum Output Current	100A, grid connect operation
Electrical Efficiency LHV	29%

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

Digester/Landfill Gas HHV	13.0 MJ/m <sup>3</sup> to 22.4 MJ/m <sup>3</sup> (350 to 600 BTU/scf) 20.5 MJ/m <sup>3</sup> to 32.6 MJ/m <sup>3</sup> (550 to 875 BTU/scf)
H <sub>2</sub> S Content	<5,000 ppmv
Inlet Pressure	517-552 kPa gauge (75-80 psig)
Fuel Flow HHV	888 MJ/hr (842,000 BTU/hr)
Net Heat Rate LHV	12.4 MJ/KWh (11,800 BTU/kWh)



CR65-ICHP MicroTurbine

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

NO <sub>x</sub> Emissions @ 15% O <sub>2</sub> <sup>(2)</sup>	9 ppmvd (18 mg/m <sup>3</sup> )
NO <sub>x</sub> /Electrical Output <sup>(2)</sup>	0.16 g/bhp-hr (0.46 lb/MWhe)
Exhaust Gas Flow	0.49 kg/s (1.08 lbm/s)
Exhaust Gas Temperature	309°C (588°F)

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

## C65-ICHP Heat Recovery<sup>(3)</sup>

Integrated Heat Recovery Module Type	Stainless Steel Core
Hot Water Heat Recovery	74kW (251,000 BTU/hr)
Total System Efficiency LHV	62%

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

	CR65	CR65-ICHP
Width x Depth <sup>(5)</sup> x Height <sup>(6)</sup>	0.76 x 2.0 x 2.1 m (30 x 77 x 83 in)	0.76 x 2.2 x 2.4 m (30 x 87 x 94 in)
Weight	758 kg (1,671 lb)	1000 kg (2,200 lb)

## Minimum Clearance Requirements<sup>(7)</sup>

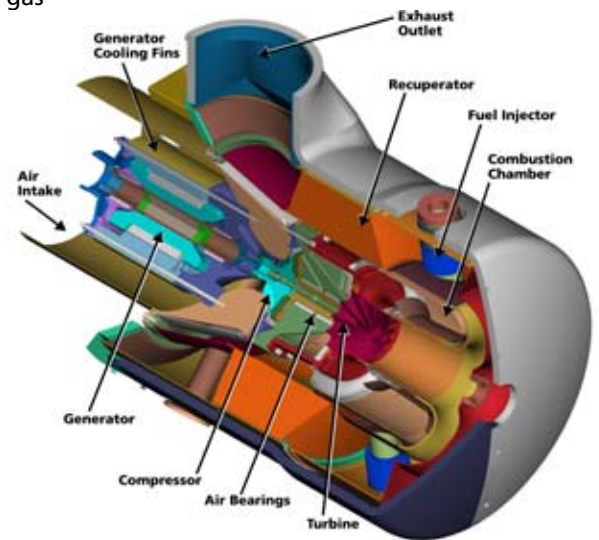
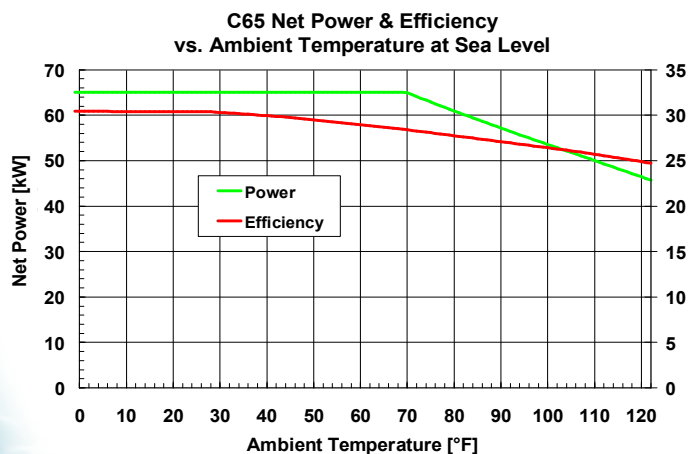
	CR65	CR65-ICHP
Vertical Clearance	0.61 m (24 in)	0.61 m (24 in)
Horizontal Clearance		
Left & Right	0.76 m (30 in)	0.76 m (30 in)
Front	0.76 m (30 in)	0.76 m (30 in)
Rear	0.91 m (36 in)	0.76 m (30 in)

## Sound Levels

	CR65	CR65-ICHP
Acoustic Emissions at Full Load Power <sup>(8)</sup>		
Nominal at 10 m (33 ft)	70 dBA	65 dBA

## Certifications

- Classified UL 2200 and UL 1741 for raw natural gas and biogas operation (UL file AU5040)
- Complies with IEEE 1547 and meets statewide utility interconnection requirements for California Rule 21 and the New York State Public Service Commission
- Models available with optional equipment for CE Marking
- Models available with optimal 2008 CARB certification for waste gas



- (1) Nominal full power performance at ISO conditions: 59°F, 14.696 psia, 60% RH
  - (2) For surrogate landfill and digester gases. Please contact Capstone for additional details
  - (3) Heat recovery for water inlet temperature of 38°C (100°F) and flow rate of 2.5 l/s (40 GPM)
  - (4) Approximate dimensions and weights
  - (5) Depth includes 10 inch extension for the heat recovery module rain hood on ICHP versions
  - (6) Height dimensions are to the roof line. Exhaust outlet extends at least 7 inches above the roof line
  - (7) Clearance requirements may increase due to local code considerations
  - (8) The optional acoustic inlet hood kit can reduce acoustic emissions at the front of the MicroTurbine by up to 5 dBA
- Specifications are not warranted and are subject to change without notice.*

