

Power Generating Combustor (PGC™) for Oil & Gas Well Pads

Description

The Power Generating Combustor (PGC™) is an integrated combustor and solid-state power generator that delivers reliable power and complies with US EPA Quad O. By utilizing waste gas at upstream and midstream sites, the PGC™ maximizes stakeholder value by reducing venting and open flaring and eliminating the need for traditional on-site power generation and electrical grid connections.

The PGC™ is capable of replacing open flares, enclosed flares, combustors, vapor destruction units, and other incinerators at both existing and new sites. Alphabet Energy and its combustion partners deliver a simple and reliable combined combustor and power generator. The PGC™ can also accept pipe gas as a fuel source or supplement to waste gas in cases where waste gas streams are highly intermittent or unavailable.

Example Site Electrical Loads

- SCADA
- Actuators
- Radios
- Electrical heat trace
- Lighting
- Battery chargers
- Instrument air system
- Security system
- Chemical injection pumps
- Instrument air system
- Security system



PGC™ Performance

Waste Gas Specification			
Model	Rated Power [kW]	Heating Value [Btu/scf]	Max Input [Mscfd]
PGC™-2.5	2.5	1,000	38.4
		3,300	11.7
PGC™-5.0	5.0	1,000	73.5
		3,300	22.3

- PGC™ power output remains constant through fluctuations or downturn in waste gas
- PGC™ accepts make-up gas to maintain rated power and efficient combustion during waste gas downturn
- Optional equipment can be added to deal with high and low pressure excess waste gas streams

Model	Power	Waste Gas (+ Make-up Gas)			
		Rated Output [kW]	Min Heat Input [MMBtu/hr]	Max Flow Input [Mscfd]	Gas Pressure [psi]
PGC™-2.5	2.5	1.6	11.7 ¹ – 38.4 ²	4 - 16	99%
PGC™-5.0	5.0	3.1	22.3 ¹ – 73.5 ²	4 - 16	99%

1. Flow required to generate rated power output, assuming 3,300 Btu/scf waste gas
2. Flow required to generate rated power output, assuming 1,000 Btu/scf waste gas

Standard Equipment

Components

- 1 Power Unit
- 2 Combustor
- 3 Radiator
- 4 Power Electronics Panel
- 5 Combustion Air Blower
- 6 Skid

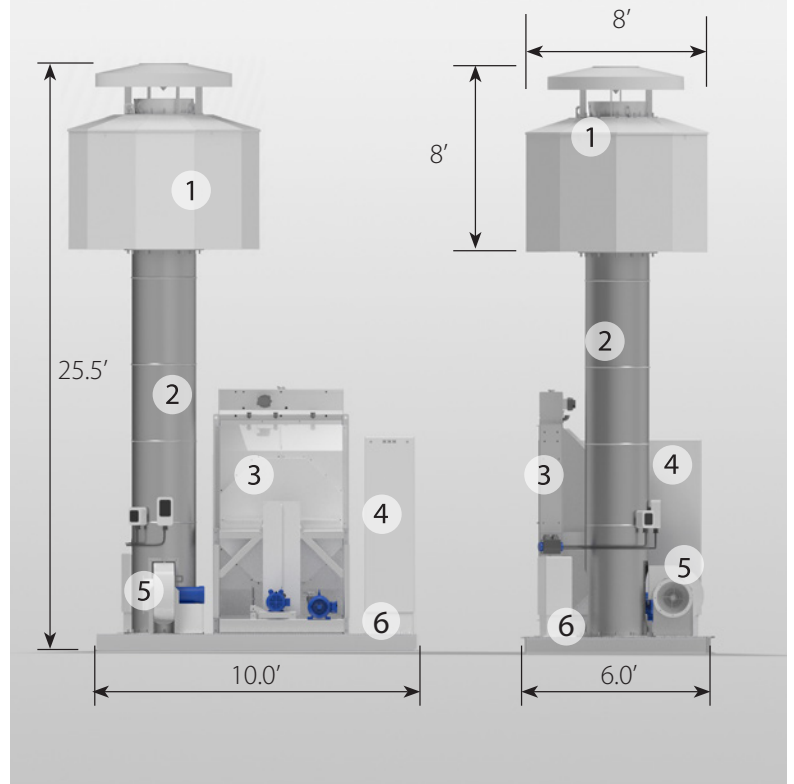
Standard Features

- Power Unit (including 15 PowerModules™)
- Combustor
- Standard ambient temperature range: 0°F to 100°F
- Standard operating elevation: up to 2,000 ft
- Power Electronics Panel (240V AC, Single-phase)
- Combustion Air Blower
- Fuel gas scrubber
- Inline flame arrestor
- Burner management system
- Make-up gas valvetrain
- System status monitoring indicators
- Acceptable waste gas heating value range: 1000-3300 Btu/scf
- Continuous pilot
- Pilot auto re-lite
- Pilot gas options: Fuel gas, Propane
- Stack temperature digital display
- Zero wind-exposed orifices
- Emergency shut down valve
- Lightning protection
- Skid mounted
- Power generation data display
- Class 1 Div. 2 Compliant
- Handles up to 1,000 ppm (0.1%) H₂S

Options

- AC Output, Single-phase, 120V
- AC Output, Three-phase, 240V or 480V
- DC Output, 24V or 48V
- High elevation package (up to 7000 ft operation)
- Low ambient temperature package (down to -40F operation)
- System status monitoring communication connection
- Pilot flame monitoring communication connection
- Power generation data communication connection
- Power generation data recording device
- Transportable skid mounted
- Concrete base for high wind loading (up to 115 mph)
- Knockout drum (2ft diameter, 4 ft tall) with manual dump
- Knockout drum (2ft diameter, 4 ft tall) with automatic dump
- Custom paint
- Battery backup
- Ability to handle up to 100,000 ppm (10%) H₂S

Dimensions and Components



Interconnection Details

Waste gas connection: 2" Class 150 raised flange
Fuel gas connection: 2" Class 150 raised flange



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