

OP16 Gas Turbine Genset

Performance at ISO Conditions*

OP16 Gas Turbine Genset	SI IMPERIAL	SI IMPERIAL
Power Output (p.f.=1)	kWe	1883
Electrical Efficiency (p.f.=1)	%	25.0
Maximum Total Efficiency	%	>90
Availability	%	>98
Fuel Consumption	Nm ³ /h MMBtu/h	864 25.7
Heat Rate (p.f.=1)	kJ/kWh Btu/kWh	14413 13661
Exhaust Gas Flow	kg/s lb/s	9.0 19.8
Exhaust Gas Temperature	°C °F	573 1064
Pressure Ratio	-	6.7:1
Required Inlet Gas Pressure**	barg psig	11-16 159-232
Generator Voltage	kV	0.4 - 13.8
Frequency	Hz	50/60
Noise***	db(A)	<80 @ 1m 3ft
Time Between Major Overhaul	Hours	40,000

* Data based on natural gas fuel (LHV:38 MJ/kg). Multiple fuels possible.
 ** The minimum inlet gas pressure depends on the fuel composition and operating conditions
 ***Lower levels are available upon request



Fuel Flexibility

The OP16 is suitable for a large range of fuels including the following:

High Calorific Gases

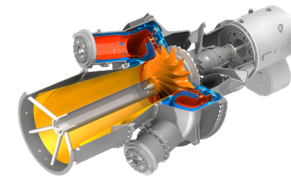
- > Natural gas
- > Flare gas/Wellhead gas
- > Propane
- > LPG (Liquefied petroleum gas)
- > Contaminated gas

Low & Ultra-Low Calorific Gases

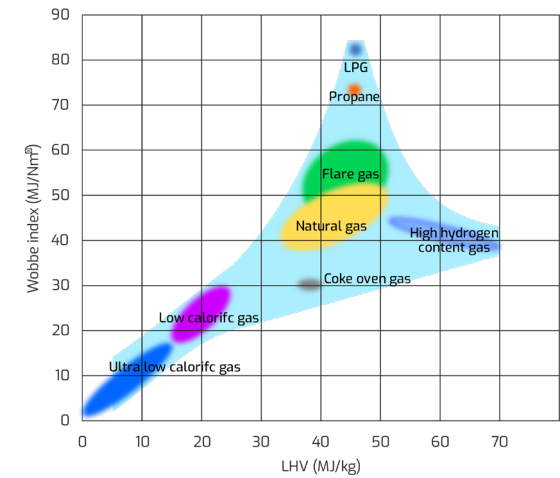
- > Syngas
- > Biogas
- > VOC (Volatile organic compounds)
- > Industrial waste gas

Liquid Fuels

- > Diesel
- > Pyrolysis Oil
- > Ethanol
- > Condensate



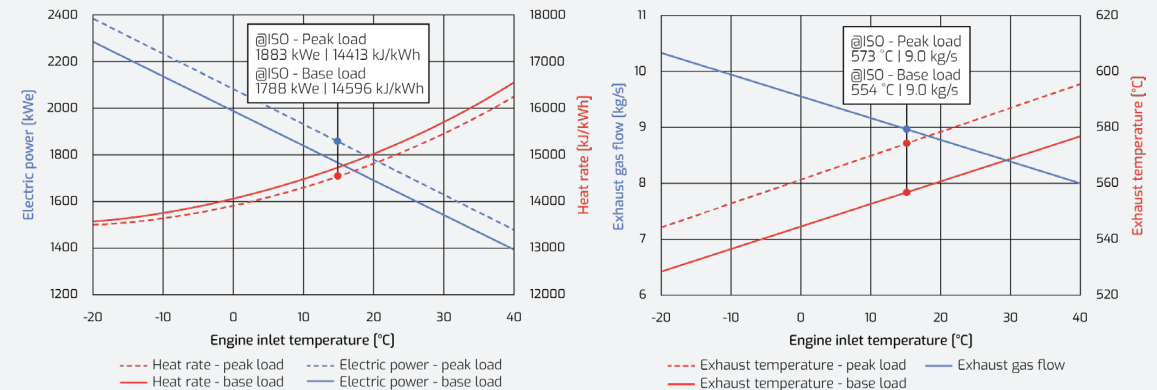
Fuel Specification



OPRA uses different well proven combustors to optimize specific fuels :

- > OP16-3A: Conventional combustor
- > OP16-3B: Dry low NO_x combustor
- > OP16-3C: Low calorific fuel combustor

Performance Curves



Scope of Supply

Standard Generator Package

- › Steel base frame
- › Hydraulic starting system
- › Natural gas fuel system
- › Lubrication oil system
- › Gear driven main oil pump
- › AC pre/post lube oil pump
- › Integrated air/oil cooler
- › Lube oil tank heater
- › Duplex oil filter
- › Air filtration and ventilation system with static filter
- › Weatherproof acoustic enclosure (Lp=80dBA @ 1m)

OP16 Gas Turbine

- › Overhung rotor
- › Single stage centrifugal compressor
- › Single stage radial turbine
- › 4 can combustion system
- › High energy spark ignition system

Generator

- › Synchronous 4-pole, 3 phase
- › Open drip proof construction
- › Integral brushless exciter
- › Integrated solid state AVR
- › H-class insulation
- › H-class temperature rise

Control Cabinets

- › PLC based control system
- › Generator auto synchronizing and protection
- › Vibration monitoring (Generator and gear reduction)
- › 24 VDC backup battery for control system

Gear Reduction

- › Integral epicyclical gear
- › Output speed 1500 or 1800 rpm
- › Ancillary drive shafts
- › Shear pin drive shaft protection

Package Dimensions



Mass of the unit 25,000kg | 55,115lb depending on particular configuration (25,000kg to 32,000kg | 55,115lb to 70,548lb)

Optional Equipment

- › Generator brand options
- › Siemens or Allen-Bradley controls
- › Alternative voltages
- › Standby ratings
- › Liquid fuel system
- › Dual fuel system
- › Fuel system for biogas, synthetic gas, etc.
- › Dry low emission system
- › IR gas detection system
- › 3 point skid for unstable foundations
- › Oil demister
- › Inlet filter anti-icing
- › Detachable control room
- › Exhaust or WHR options
- › Compressor washing system
- › Weather hoods
- › Optical flame monitoring
- › Different temperature options (-20/+40°C Moderate, -60/+30°C Artic, 0/+50°C Desert)
- › Self cleaning filters
- › Maintenance platform
- › Automatic generator lubrication
- › Online remote condition monitoring
- › Fire detection and extinguishing system

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