Qnergy

PowerGen **5650**

Remote Power Industrial Application

Qnergy's PowerGen is a thermal-powered generator suitable to meet remote power needs utilizing virtually any combustible gaseous fuel.

All Qnergy PowerGen generators feature our patented QB80 Series Stirling Engines.

The PowerGen generator provides reliable, affordable electricity to areas around the globe with little or no existing power distribution infrastructure.

PowerGen Engine Specifications

The Qnergy QB80 series engines are the most powerful Stirling machines on the market today. As an external combustion engine, the Qnergy QB80 can run on almost any heat source. The engine is designed for long, uninterrupted and quiet operation.

QB80 Engine Specifications

Engine Model	**QB80**
Engine Type	**Stirling Engine**
Engine Architecture	**Free Piston (frictionless)**
Service	**None**
Weight	**242 lbs (109.7 kg)**
Length	**33.10 in (84 cm)**
Diameter	**14.45 in (36.7 cm)**
Charging Gas	**Inert Helium**

CERTIFICATION Intertek

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Product Application and Engineering

General

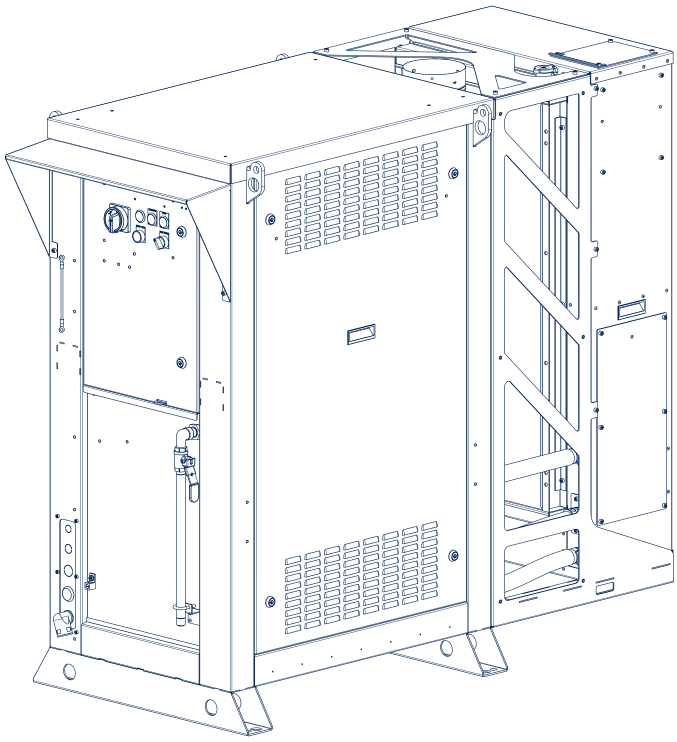
Make	**Qnergy**
Engine	**QB80**
Engine Type	**Stirling Engine**
Engine Controller	**QEC 3.5**

Electrical System

System Output Power	**See Configuration**
Power Max Gage Wire Interface	**6-20 AWG**
Cable Gland Input	**3/4" Std**
Ignition/Standby Battery (standard)	**Sealed AGM Deep Cycle, 12V DC 40 Ah**
Battery Capacity (Optional: for increased standby)	**Up to 160 Ah**
Safety	**E-stop (normally closed)**

Communication

Ethernet	**RJ45**
Protocol	**Modbus RTU**
Internet Infrastructure	**TCP/IP**
Remote Data Viewer	**Qnergy Dashboard**
Discrete I/O's	**Configurable**
Inputs (Dry Contact)	**x6 (16-20 AWG)**
Outputs (Relay)	**x8 (16-20 AWG) (Max 250 V / 1 A)**



Fuel System

Fuel Type	**Dry Natural Gas, Propane (C1-C4), other gaseous fuel***
Burner	**Pre-mix**
Ignition	**Direct**
Gas Regulator	**2-Stage**
Gas Pressure Monitor	**Transducer**
Fuel Port	**1/2" NPT Male**

*contact us regarding using any non-standard gaseous fuels (C1-C4)

Cooling System

Cooling System Type	**High Efficiency Closed Loop**
Cooling Fan Type	**PWM Fan (qty. 2)**
Max Coolant Volume	**4.2 gal (16 l) (antifreeze)**

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Product Operational Data

SERIES	CONFIGURATION	OUTPUT	PHASE ANGLE	CONNECTION	MAX POWER (5650) @85°F | 120°F
A	**120V/240VAC Split Phase**	**Output A: 120VAC 60Hz** **Output B: 120VAC 60Hz**	**A: 0°** **B: 180°**	**3 wire: L1, L2 & Common/Neutral**	**5.65kW | 5.1kW**

OPTIONAL ELECTRICAL CONFIGURATIONS UPON REQUEST (VAC/VDC)

Low voltage DC outputs (24 VDC / 48 VDC) requires the use of the Qnergy Power Interface Package (PIP)

Fuel Operational Specifications

Fuel Consumption Natural Gas	**1,433-3,964 ft3/day** **40.58-112.25 m3/day**
Fuel Consumption Propane	**15.2-44.4 gal/day** **57-168 lt/day**
Fuel Pressure Range Natural Gas	**3-43 PSI** **21-300 kPa**
Fuel Pressure Range Propane	**2-10 PSI** **14-69 kPa**
Wobbe Index	**832-2,163 BTU/ft3** **31 -81MJ/m3**
Caloric Value	**751-3,382 BTU/ft3** **28-126 MJ/m3**

*contact us regarding using non-standard gaseous fuels (C1-C4)

HRU Operational Specification

Thermal Heat Rejection (Max Available)	**x2.5-3.5 of Electric Power Output**

Environmental Condition Specifications

Sound	Max dBA	**< 75 dBA @ 1 m**
Ambient Temperature Continuous Operation*		**-13 °F-122 °F** **-25 °C-50 °C**
Ambient Temperature Rated (Cold Start)		**5 °F-122 °F** **-40°F available** **-40°C available**
Altitude	Derate	**5% derate every 1,000 ft (above 5,000 ft)**

Emissions

Emissions	Value	Max Value (English)
NOx @ 3.5-3.8% O_2	**30 PPMVD**	**<1.4 gram/bHP-hr**
CO @ 3.5-3.8% O_2	**15 PPMVD**	**<0.4 gram /bHP-hr**
PM+VOC+HC Sum total	**Varies by subspecies**	**<0.4 gram /bHP-hr**
Diluted Exhaust Temperature	**<230°C in 25C lab air**	**<450° F**

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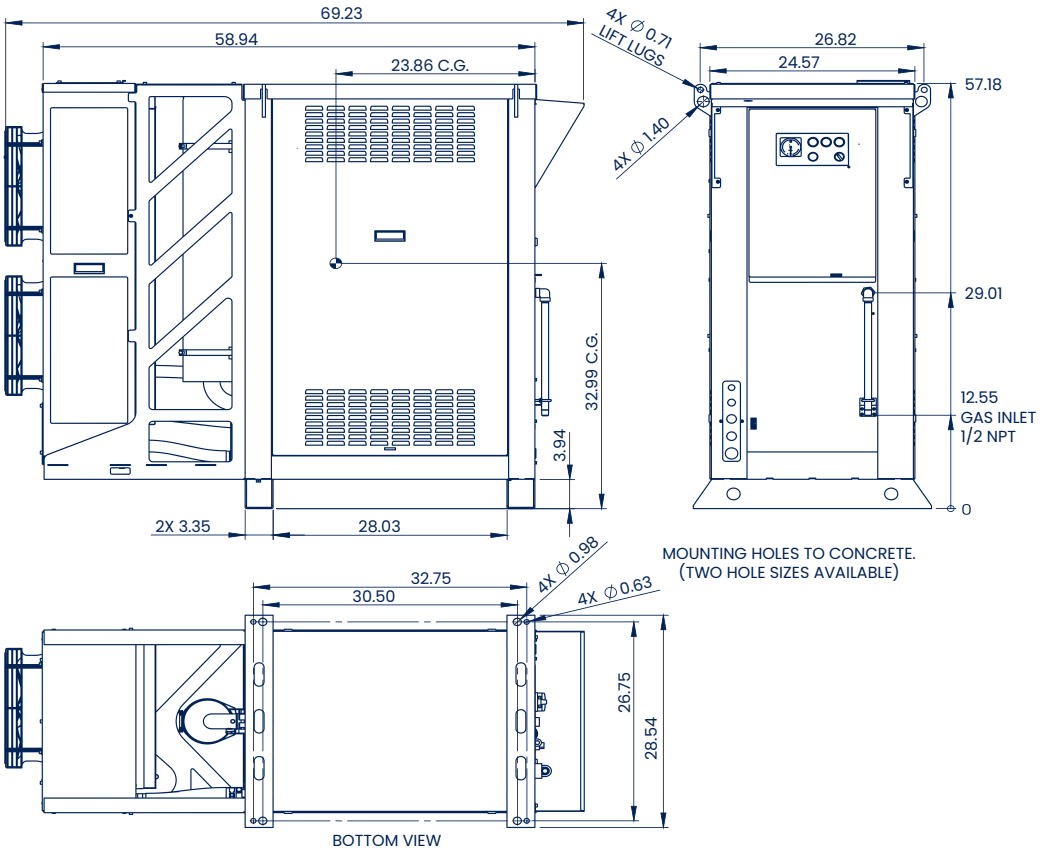


PowerGen Dimension/ Weight

Dry Weight
866 lbs (392kg)

Base Crate:

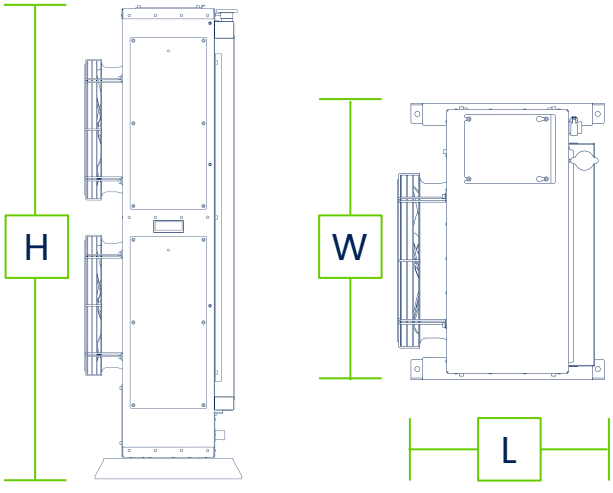
Length (L)
75.25 in (752.5 mm)

Width (W)
40.25 in (402.5 mm)

Height (H)
63.8 in (638 mm)

Weight
220 lbs (99.7 kg)

HRU Standalone Dimensions



HRU Floor Standing:

Length (L)
19 in (482 mm)

Width (W)
25.4 in (645 mm)

Height (H)
54 in (1371 mm)

HRU Wall Mounted:

Length (L)
28.8 in (731 mm)

Width (W)
24.9 in (632 mm)

Height (H)
53.3 in (1353 mm)

HRU Max Placement Distance **65.5 ft (19.96 m)**