

PowerGen 600

Remote Power Industrial Application



PowerGen Series

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 PowerGen utilizes the Qnergy QB80 series engine. They 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.



QNERGY STIRLING ENGINE



QB80 ENGINE SPECIFICATIONS

| | |
|---------------------|----------------------------|
| Engine Model | QB80 |
| Engine Type | Stirling Engine |
| Engine Architecture | Free Piston (frictionless) |
| Service | None |
| Weight | 242 lbs |
| Length | 33.10 in |
| Diameter | 14.45 in |
| Charging Gas | Inert Helium |

Certifications



UL2200



ISO 9001:201

www.qnergy.com

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Product Application and Engineering

| GENERAL | |
|-------------------|-----------------|
| Make | Qnergy |
| Model | QRP 2A-LNS |
| 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) |

| 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 use of any non-standard gaseous fuels (C1-C4)

| COOLING SYSTEM | |
|-----------------------|---|
| Cooling System Type | Closed Loop |
| Pump Type | High Efficiency Grundfos Circulating Pump |
| Cooling Fan Type | EC Fan (qty. 2) |
| Coolant Type Required | Prestone Cor-Guard or equivalent |
| Coolant Ratio | 50/50 (EG) |
| Max Coolant Volume | 4.2 gal |

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

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Product Operational Data

| SERIES | CONFIGURATION | OUTPUT | PHASE ANGLE | CONNECTION | MAX POWER |
|---------------------------------|---------------------------|--|------------------|-------------------------------|-----------|
| Standard | 120 / 240 VAC Split Phase | Output A: 120 VAC 60Hz Output B: 120 VAC 60Hz | A: 0° B: 180° | 3 Wire: L1, L2 & Common/Neut. | 600 W |
| OPTIONAL CONFIGURATIONS: | | | | | |
| A | ± HVDC (±332 to ±365) | Output A: +HVDC Output B: -HVDC | A: 0° B: 180° | 3 Wire: +ve, -ve & Common | 600 W |
| B | 120 / 240 VAC 2 Phase | Output A: 120 VAC 60Hz Output B: 240 VAC 50/60Hz | A: 0° B: 0° | 3 Wire: L1, L2 & Common/Neut. | 600 W |
| C | 240V / 480V Split Phase | Output A: 240 VAC 50/60Hz Output B: 240 VAC 50/60Hz | A: 0° B: 0° | 3 Wire: L1, L2 & Common/Neut. | 600 W |
| D | ± HVDC / 120 VAC | Output A: +HVDC Output B: 120 VAC 60Hz | A: 0° B: 0° | 3 Wire: +ve, L2 & Common | 600 W |
| E | ± HVDC / 240 VAC | Output A: +HVDC Output B: 240 VAC 50/60Hz | A: 0° B: 0° | 3 Wire: +ve, L2 & Common | 600 W |

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

| FUEL OPERATIONAL SPECIFICATIONS* | | |
|----------------------------------|-------------------|---|
| Fuel Consumption | Natural Gas (max) | 550 ft ³ /day |
| Fuel Consumption | Propane (max) | 4.3 gal/day |
| Fuel Pressure Range | Natural Gas | 3-50 PSI |
| Fuel Pressure Range | Propane | 2-10 PSI |
| Wobbe Index | Min / Max | 832 BTU/ft ³ / 1,470 BTU/ft ³ |
| Caloric Value | Min / Max | 751 BTU/ft ³ / 1,215 BTU/ft ³ |

*Contact us regarding use of any not-standard gaseous fuels (C1-C4)

| EMISSIONS | | |
|-------------|----------|-----------------------------|
| NOx @ 5% O2 | 30.0 ppm | 66 mg/kWh |
| COx @ 5% O2 | 45.0 ppm | 60 mg/kWh |
| VOC | -- | Negligible, Lean Combustion |

| 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 Temp Continuous Operation* | Min / Max | -13 °F / 122 °F |
| Ambient Temperature Rated (Startup)* | Min / Max | 5°F / 122 °F |
| Altitude | Derate | 5% derate every 1,000 ft (above 5,000 ft) |

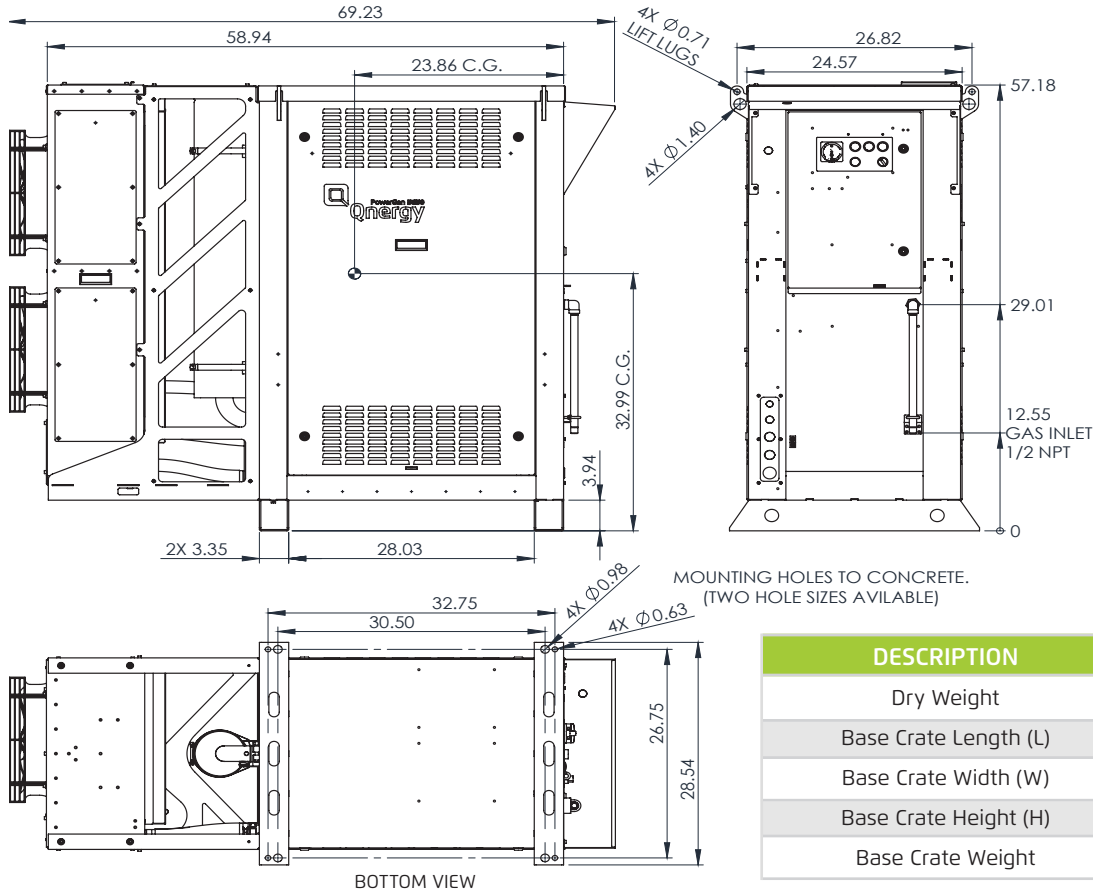
*Ask about our low temperature cold-start package (down to -40°F)

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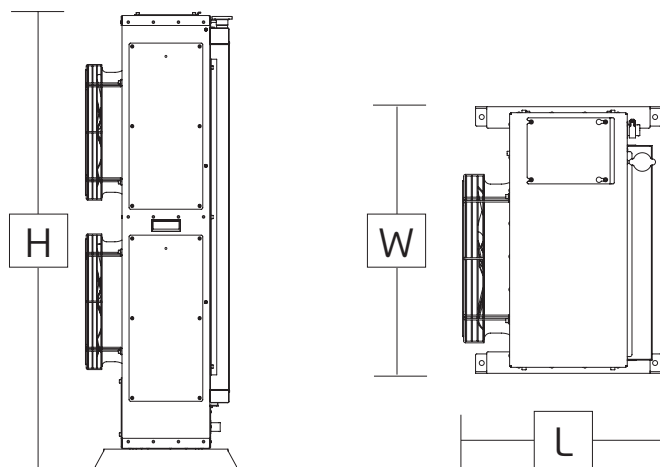


PowerGen Dimension / Weight



| DESCRIPTION | MEASUREMENT |
|-----------------------|-------------|
| Dry Weight | 866 lbs |
| Base Crate Length (L) | 43.3 in |
| Base Crate Width (W) | 32.3 in |
| Base Crate Height (H) | 62.8 in |
| Base Crate Weight | 220 lbs |

HRU Standalone Dimensions



| HRU Description | Measurement |
|-------------------------------|-------------|
| HRU Floor Standing Length (L) | 19 in |
| HRU Floor Standing Width (W) | 25.4 in |
| HRU Floor Standing Height (H) | 54 in |
| HRU Wall Mounted Length (L) | 28.8 in |
| HRU Wall Mounted Width (W) | 24.9 in |
| HRU Wall Mounted Height (H) | 53.3 in |
| HRU Max Placement Distance | 65.5 ft |