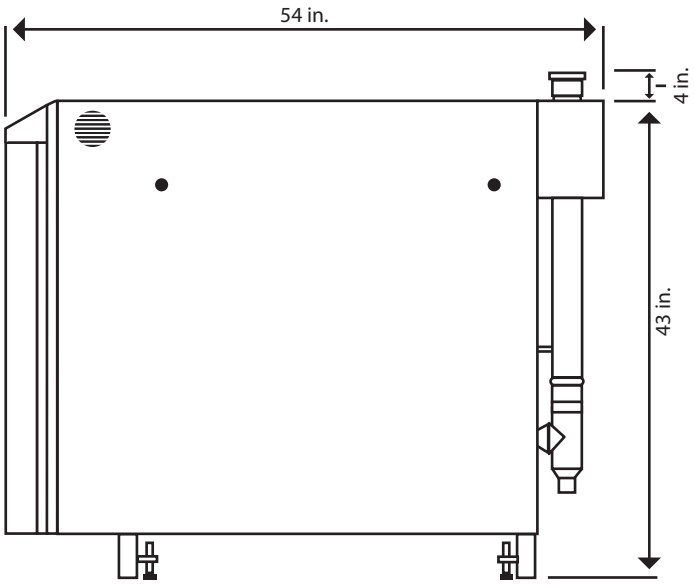
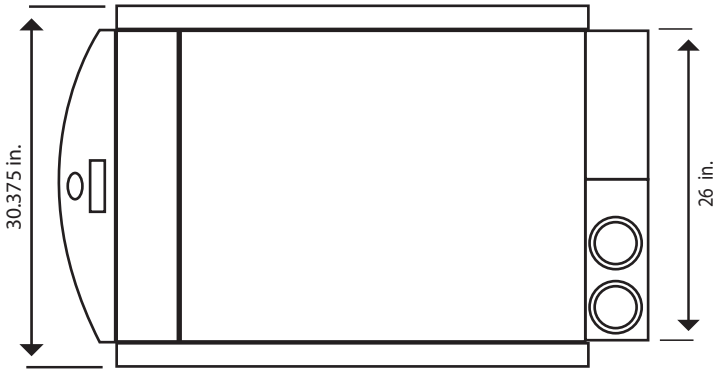
ecopower

4.4 kW microCHP





SYSTEM SPECIFICATIONS

ecopower microCHP Specifications	
Operating Voltage (single phase)	240 VAC / 208 VAC (207 - 253V)
Frequency	60 Hz
Dimensions (L x W x H)	54” x 30.375” x 43”
Power Factor	0.98 - 1
Exhaust Gas Temperature	< 180° F
Certified Test Data	
Electrical Output Range	1.2 - 4.4 kW
Thermal Output Range	NG 13,000 - 42,000 BTU/hr LPG 15,000 - 47,000 BTU/hr
Gas Consumption Range	NG 0.21 - 0.65 therms/hr LPG 0.26 - 0.78 gal/hr
Overall Efficiency	93%
Average Sound Level @ 1m	55 dB (A)
Average NOx Emissions	0.005 lb/MWh
Approvals	
UL Standards	UL 1741, UL 2200
CSA Standards	CSA C22.2 No. 14-10, 100-04, 107.1-01
Emissions Compliance	EPA Certified

Intertek

Certified third party results tested in accordance with established EPA, ISO, and ASERTTI laboratory testing protocols. System performance can be affected by atmospheric conditions and energy content of fuel.

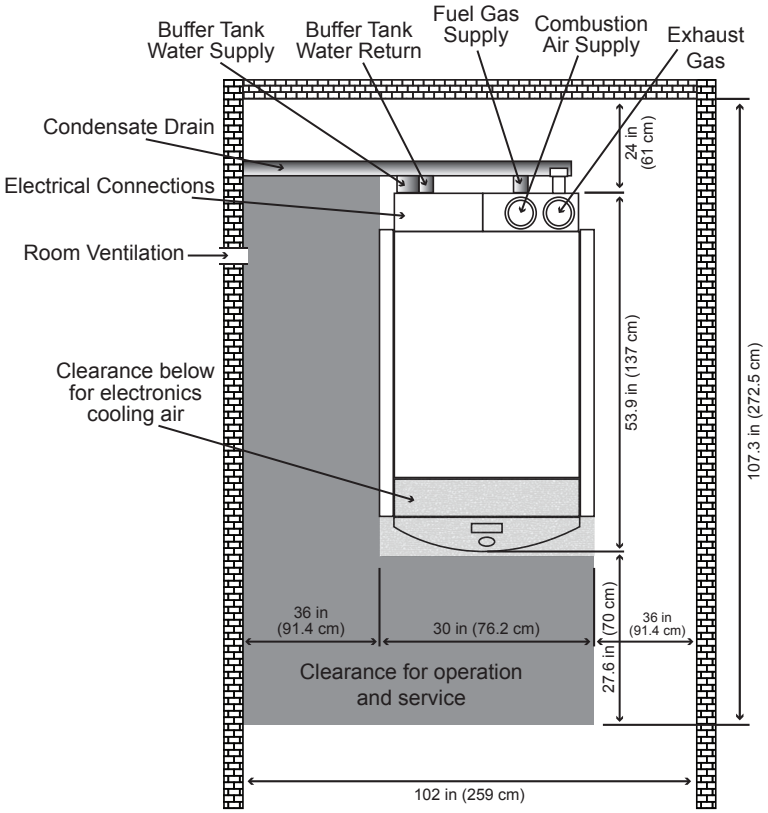
TECHNICAL DATA

Fuel	natural gas: minimum methane number 59 propane: minimum octane number MOZ 92 (EN 589)
Electrical Power	natural gas: 1.2 - 4.4 kW modulating propane: 1.2 - 4.4 kW modulating
Thermal Output	natural gas: 4.0 - 12.5 kW modulating propane: 4.5 - 13.8 kW modulating
Total Input Power	natural gas: 5.9 - 19.0 kW propane: 6.5 - 20.0 kW
Fuel Consumption	natural gas: .21 - .65 therms/hr propane: 0.26 - 0.78 gal/hr
Overall Efficiency	93%
Exhaust Gas Emissions	on-site settings: <250 ppm CO, <30 ppm NOx
Noise Pressure Level	approx. 55 dB (A), in 3.3 ft distance

INSTALLATION AND CLEARANCE SPECIFICATIONS

Installation Location	central heating room, according to local codes
Weight of Unit	approx. 860 lb. (390kg)
Required Space	approx. 76 ft² (7.1 m²). Mechanical rooms typically larger.
Connections	supply and return of heating water supply; gas supply; supply combustion air; exhaust gas pipe with condensate drain; electrical grid connection; temperature sensors; control signals; pumps; mixers; valves; complementary boiler
Boiler Room Temperature	min. 32°F (0°C), max. 104°F (40°C)

REQUIRED SPACE FOR INSTALLATION
(TOP VIEW)



ENGINE DATA

Engine	water-cooled, single cylinder, four stroke piston gas combustion engine, designed for long running time; displacement 16.6 in³ (272cm³)
Speed Range	1,200 - 3,600 RPM (factory max. setting: 3,400 RPM)
Coolant Temperature	operation: 167 - 176°F (75 - 80°C) short-term: 194°F (90°C)
Engine Electronics	control of the gas - air ratio ($\lambda = 1$ - control) and monitoring the engine operation, accomplished by microcontroller

MAINTENANCE

Maintenance Interval	every 4,000 hours
Maintenance Coverage	oil change, oil and air filter replacement, spark plug, spark plug cable, crankshaft breather filter, engine check over the entire engine speed range, visual inspection of every component, cleaning of cabinet interior

GENERATOR AND INVERTER

Generator	brushless, permanent magnet generator directly flanged to the engine, with water cooling system
Inverter	three-phase inverter with integrated safety monitoring, microcontroller control (singe phase output for North America)

HEATING SYSTEM DATA

Heating Return Temperature	min. 95°F (35°C), max. 140°F (60°C)
Heating Supply Temp. Max.	167°F (75°C)
Pressure Drop at the Plate Heat Exchanger	1.0 psi (0.07 bar) at a flow rate of 211 gal/hour (800 L/h)
Temperature Sensor	standard NTC sensor outdoor, room, supply, return, and storage temperature, depending on the operating mode
Hot Water	adjustable: 41 - 158°F (5 - 70°C) (the factory setting of 140°F (60°C) is recommended

ELECTRICAL DATA

Voltage/Frequency/Power	230V nominal / 60 Hz / 0.98 - 1.00 power factor ecopower® adapts to the grid phase sequence
Phase Sequence	corresponds to the grid phase sequence

EXHAUST DATA

Exhaust Gas Temperature	operation: < 194°F (90°C)
Exhaust Gas Pipe	unit can be vented with 3 in. CPVC (schedule 80) pipe max. length: 65 ft. with max. of six 90 degree bends inner diam. 2.76 in (70 mm) outer diam. 2.85 in (75 mm) total drag 0.2 wci (0.5 mbar) max. high pressure (back pressure) 1.2 w.c.i. (3.0 mbar) with wind impact

GAS SUPPLY

Gas Pressure	natural gas: min. 4 in. w.c. / max. 2.0 PSI propane: min. 5 in. w.c. / max. 2.0 PSI

Specifications are subject to change without notice. Rev. 06/07/17