FuelCell Energy

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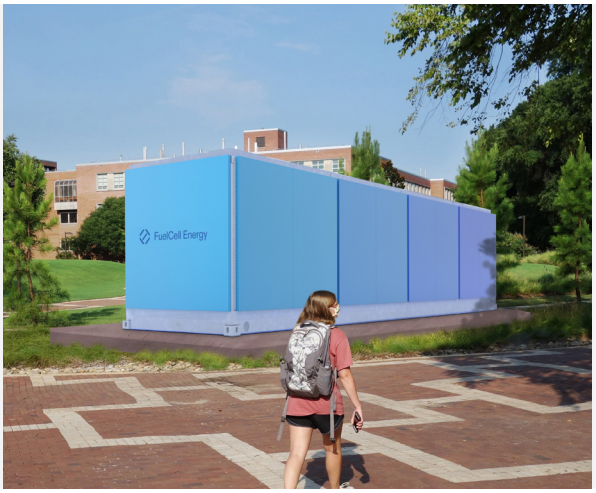


Data Sheet

Solid Oxide Fuel Cell

A 250 kW fuel cell system for low-carbon, resilient distributed energy generation

FuelCell Energy's Solid Oxide Fuel Cell (SOFC) system generates 250 kW of reliable, efficient, and low-carbon power. The fuel flexible system is capable of running on natural gas, biogas, or hydrogen. The system's superior fuel efficiency to combustion-based power generation can improve a customer's return on investment. A clean emissions profile, small footprint, and quiet operation make the fuel cell easy to site in urban areas.

Key Benefits

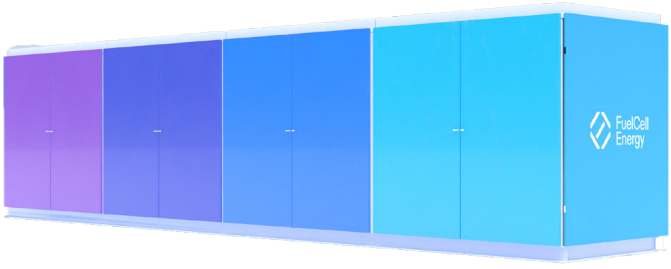
- Fuel flexible
- Hydrogen ready
- Microgrid capable
- High efficiency
- Low emissions
- Scalable design

Specifications subject to change without notice.

	Natural Gas Fuel	Biogas[1] Fuel (60% Methane)
Net Power Output[2]	250 kW	
Part Power Capability	10 - 100%	
Dynamic Response	10% per minute	
Voltage / Frequency	480 VAC / 60 Hz	
Heat Output, maximum[5]	382,000 BTU/h	471,000 BTU/h
Efficiency, Electrical / Overall (LHV)[2,3]	62% / 90%	58% / 90%
Fuel Consumption	1,491 SCFH @ 1025 BTU/SCF	2,694 SCFH @ 606 BTU/SCF
Dual Fuel Option	Natural Gas & Hydrogen	Natural Gas & Biogas
Fuel Blending Range[4] (Performed Onboard)	0 - 100% H_2	0 - 100% Biogas
Fuel Inlet Pressure	15 - 20 psig	
Water Consumption / Discharge	None during normal operation	
NO_x and CO Emissions	0.01 lb/MWh	
VOC, PM10, SO_x Emissions	Negligible	
CO_2 (electric only)[6]	715 lb/MWh	Dependent on biogas source[6]
CO_2 (with full heat recovery)[6,7]	494 lb/MWh	Dependent on biogas source[6]
Ambient Temperature Range	-20°F to 104°F	
Noise	< 72 dBA @ 10 ft, option for < 65 dBA	
Codes & Standards	ANSI/CSA FC1-2021: Stationary Fuel Cell Power Systems UL1741SA-2016: Inverters for Use with Distributed Energy Resources	

Dimensions

Length	35’ 3”
Width	8’ 3”
Height	10’ 6”
Weight	80,000 lbs



[1]Biogas must be pre-conditioned to meet FCE’s fuel composition requirements. FCE can supply the pre-conditioning system, if desired.
[2]Power and efficiency are rated at beginning of operation and will decrease by approximately 10% over the life of the fuel cell stack module.
[3]Biogas system efficiency depends upon % methane in fuel. Rating based on 60% methane. Minimum methane % is 55%.
[4]Performance at 50% H2: 250 kW / 56% electrical efficiency. Performance at 100% H2: 180 kW / 50% electrical efficiency.
[5]Maximum heat recovery based on cooling the exhaust to 120 F.
[6]Carbon intensity for operation on biogas dependent on biogas source.
[7]CO_2 emissions with full heat recovery is based on the total electric and thermal energy available from the system.

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