

# **PureCell® Model TriGen System**

# PURECELL SYSTEM BENEFITS

#### **Energy Security**

Proven PAFC fuel cell technology

#### **Energy Productivity**

Increased efficiency and continuous on-site generation reduces energy costs

# **Energy Responsibility**

Ultra-low emissions equals sustainability

# PURECELL SYSTEM COMPETITIVE ADVANTAGES

#### **Long Life**

Industry leading stack life assures high availability and low service cost

#### Modular & Scalable

Solutions for multi-megawatt applications to meet growing energy demand

#### **Experience**

Most knowledgeable and experienced team in the industry

#### **High Efficiency**

Up to 90% total CHP Efficiency

#### **Grid-Independence**

Proven performance delivering power when the utility grid fails

#### **Load Following**

Capable of dispatching power to match building needs

#### **Small Footprint**

Highest power density among clean generation technologies

#### Flexible Siting

Indoor, outdoor, rooftop, multi-unit

# RATED POWER OUTPUT: 460KW, 480VAC, 60HZ

		Operating Mode	
Characteristic	Units	No H <sub>2</sub> HP	Max H <sub>2</sub>
Electric Power Output <sup>1</sup>	kW/kVA	460/532	350/412
Electrical Efficiency <sup>1</sup>	%, LHV	43.5%	30.4%
Peak Overall Efficiency	%, LHV	90%	85%
Gas Consumption <sup>1</sup>	MMBtu/h, HHV (kW)	4.00 (1,172)	4.35 (1274)
Gas Consumption <sup>1,2</sup>	SCFH (Nm <sup>3</sup> /h)	3902 (104)	4241 (113.5)
High Grade Heat Output <sup>1,7</sup>	MMBtu/h (kW)	1.30 (382)	0.84 (248)
Low Grade Heat Output @ up to 140°F <sup>1,6</sup>	MMBtu/h (kW)	1.68 (492)	1.10 (323)
Hydrogen Production	kg/day	0	220

# HEAT EV

#### **FUEL**

Supply	Natural Gas
Inlet Pressure	10 to 14 in. water (2.5 - 3.5 mbar)

# EMISSIONS<sup>3,4</sup>

NO <sub>x</sub>	0.02 lbs/MWh (0.009 kg/MWh)
CO	0.01 lbs/MWh (0.005 kg/MWh)
VOC	0.01 lbs/MWh (0.005 kg/MWh)
SO <sub>x</sub>	Negligible
Particulate Matter	Negligible
CO <sub>2</sub> <sup>1</sup> (electric only)	1,006 lbs/MWh (456 kg/MWh)
(with High-Grade heat recovery)	567 lbs/MWh <sup>5</sup> (257 kg/MWh)
(with full heat recovery)	496 lbs/MWh <sup>5</sup> (225 kg/MWh)

#### OTHER

Ambient Operating Temp	20°F to 104°F (-29°C to 40°C)
Sound Level	<65 dBA @ 33 ft. (10m)
Water Consumption	None (up to 86°F (30°C) Ambient Temp.)
Water Discharge	None (Normal Operating Conditions)

# **CODES AND STANDARDS**

UL1741 SA: Inverters for Use With Distributed Energy Resources

#### **NOTES**

- 1. Average performance during 1st year of operation.
- 2. Based on natural gas higher heating value of 1025 Btu/SCF (40.4 MJ/Nm3)
- 3. Emissions based on 460 kW NG mode
- 4. Fuel cells are exempt from air permitting in many U.S. states.
- 5. Includes  ${\rm CO_2}$  emissions savings due to reduced on-site boiler gas consumption.
- 6. With optional equipment and HGH not used
- 7. Consult with HyAxiom for heat output at varying conditions

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# **PureCell®** Model 400 – TriGen

# **PureCell® ADVANTAGE**

# **Take Control of Your Power**



# **Load Following**

Dynamically ramp power up & down based on demand



# **Continuous Operation**

Operate with or without grid power and handle long-duration intermittency



# **Performance Monitoring**

Manage performance with HyAxiom monitoring and service

# **Advance ESG Goals**



# **Carbon Removal**

Ability to be coupled with your carbon capture equipment to limit emissions



# **Clean Heat**

Eliminate or reduce carbon from combustion boilers by using both heat & power



### **Clean Air**

Minimal NO<sub>x</sub> & Zero So<sub>x</sub> Removes PM2.5 from the air

# **Power Where You Need It**



# **Flexible Siting**

- · Indoor / Outdoor
- Urban Environments
- Multi-story, Rooftop
- Scalable Building Block



# **Quiet Operation**

65 dBA @ 33 ft., equivalent to normal conversation\*



# **Flexible Fueling Options**

Variable H<sub>2</sub> and electricity generation on site for changing fueling demands

\*Power module operation

#### Max HGH Tri-Gen & Charge Station Configuration Mode Hydrogen Electric Available Improved one-stop convenience for FCA/EV charging Max. H<sub>2</sub> 220 kg/day 350 kW 0.7 MMBtu/hr Enhance power system reliability Medium. H<sub>2</sub> 150 kg/day 400 kW 0.9 MMBtu/hr Shortening hydrogen transfer distance to improve transmission and distribution/efficiency Minimum. H<sub>2</sub> 70 kg/day 440 kW 1.1 MMBtu/hr Zero. H<sub>2</sub> 0 kg/day 460 kW 1.3 MMBtu/hr Tail off Comp.A Comp.B **PSA** 99.995% 99.995% 20~30bar Water Trap **Battery** 350-440kW