

## PURECELL® SYSTEM BENEFITS

### Energy Security

proven, continuous generation that is setting durability records

### Energy Productivity

increased efficiency that is reducing energy costs

### Energy Responsibility

clean operation that is driving greener customer facilities

## PURECELL SYSTEM COMPETITIVE ADVANTAGES

### Long Life

industry best, 10-year cell stack life assures high availability and low service cost

### High Efficiency

up to 90% overall efficiency

### Modular & Scalable

systems can be clustered to meet growing energy demands

### Experience

most knowledgeable and experienced team in the industry

### Grid-Independence

proven performance in providing power when the utility grid fails

### Load-Following

can modulate power output to match building needs

### Small Footprint

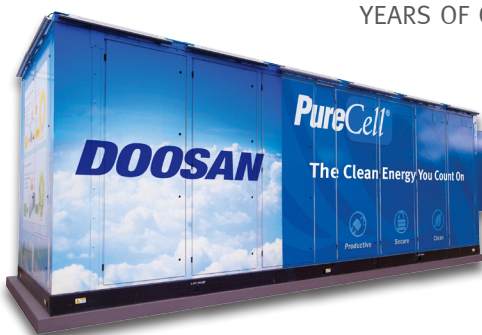
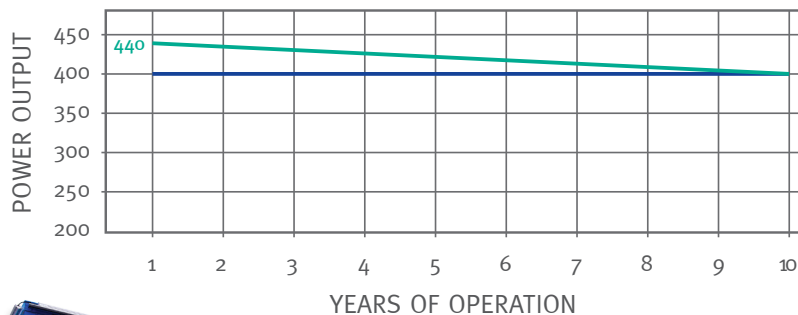
high power density takes less space on site

### Flexible Siting

indoor, outdoor, rooftop, multi-unit

## RATED POWER OUTPUT: 440KW, 480VAC/60HZ

Characteristic	Units	Operating Mode	
		Maximum Power <sup>1</sup>	Baseload Power <sup>1</sup>
Electric Power Output	kW/kVA	440/440	400/471
Electrical Efficiency	%, LHV	41%	42%
Peak Overall Efficiency	%, LHV	90%	90%
Gas Consumption	MMBtu/h, HHV (kW)	4.06 (1,190)	3.63 (1,066)
Gas Consumption <sup>2</sup>	SCFH (Nm <sup>3</sup> /h)	3,961 (106.1)	3,515 (94.2)
High Grade Heat Output @ up to 250°F	MMBtu/h (kW)	0.76 (223)	0.64 (188)
Low Grade Heat Output @ up to 140°F	MMBtu/h (kW)	0.99 (305)	0.88 (258)



## FUEL

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

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

NOx ..... 0.01 lbs/MWh (0.006 kg/MWh)  
 CO ..... 0.02 lbs/MWh (0.009 kg/MWh)  
 VOC ..... 0.02 lbs/MWh (0.009 kg/MWh)  
 SO<sub>2</sub> ..... Negligible  
 Particulate Matter ..... Negligible  
 CO<sub>2</sub> (electric only) ..... 1,049 lbs/MWh (476 kg/MWh)  
 (with full heat recovery) ..... 495 lbs/MWh (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 85°F (30°C) Ambient Temp.)  
 Water Discharge ..... None (Normal Operating Conditions)

## CODES AND STANDARDS

ANSI/CSA FC1-2012: Stationary Fuel Cell Power Systems  
 UL1741: Inverters for Use With Distributed Energy Resources

## NOTES

1. Average performance during 1st year of operation. Refer to the Product Data and Applications Guide for performance over the operating life of the powerplant.
2. Based on natural gas higher heating value of 1025 Btu/SCF (40.4 MJ/Nm<sup>3</sup>)
3. Emissions based on 400 kW operation.
4. Fuel cells are exempt from air permitting in many U.S. states.
5. Includes CO<sub>2</sub> emissions savings due to reduced on-site boiler gas consumption.



Doosan Fuel Cell

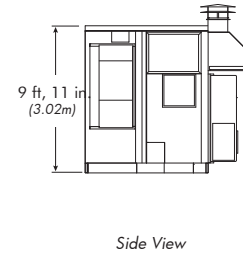
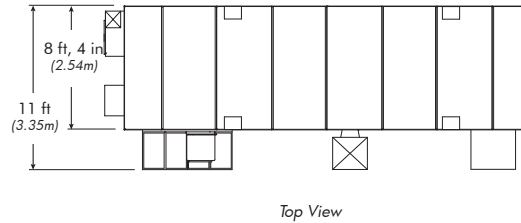
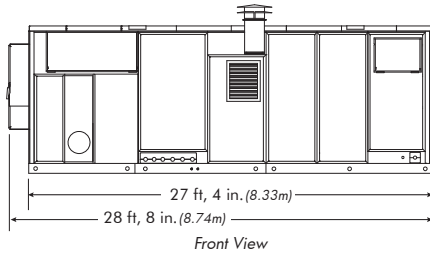
Authorized Value Added Reseller



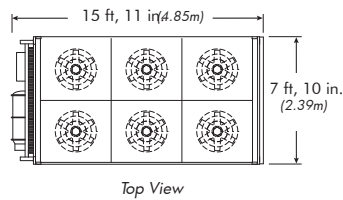
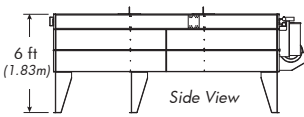
CLEARCELL  
POWER

## SYSTEM DIMENSIONS

### Power Module



### Cooling Module



## SHIPPING DIMENSIONS

	Power Module	Cooling Module
Length	28 ft, 8 in. (8.74m)	15 ft, 11 in. (4.85m)
Width	8 ft, 4 in. (2.54m)	7 ft, 10 in. (2.39m)
Height	9 ft, 11 in. (3.02m)	6 ft (1.83m)
Weight	60,000 lb (27,216 kg)	3,190 lb (1,447 kg)

## MULTI-MEGAWATT CAPABILITY

For multi-megawatt sites, individual power plants can be arranged in multiple orientations. The 12-unit layout defined below represents one option with cooling modules located on the roof of the power plants minimizing the overall footprint of the site.

No. of Units	Baseload Electric Output	High-Grade Heat	Low-Grade Heat	Fuel Consumption	Site Area
	MW	MMBtu/h (kW)	MMBtu/h (kW)	MMBtu/h, HHV (kW)	ft <sup>2</sup> (m <sup>2</sup> )
6	2.4	3.8 (1,128)	5.3 (1,582)	21.6 (6,334)	4,400 (410)
12	4.8	7.7 (2,256)	10.6 (3,165)	43.2 (12,668)	8,900 (830)
24	9.6	15.4 (4,512)	21.1 (6,329)	86.5 (25,337)	17,800 (1,650)
36	14.4	23.1 (6,768)	31.7 (9,494)	129.7 (38,005)	26,700 (2,480)
48	19.2	30.8 (9,024)	42.3 (12,658)	172.9 (50,673)	35,600 (3,310)
60	24	38.5 (11,280)	52.8 (15,823)	216.2 (63,341)	44,500 (4,140)

## NOTES

- Space required for electrical gear and pumping stations is representative only.
- Purge gas is required to purge the system of unspent fuel during shutdowns and prior to start-up.

The manufacturer reserves the right to change or modify, without notice, the design or equipment specifications without incurring any obligation either with respect to equipment previously sold or in the process of construction. The manufacturer does not warrant the data on this document. Warranted specifications are documented separately.

ClearCell Power  
420 Lexington Avenue, Suite 1718  
New York, NY 10070  
646.661.5777  
info@ClearCellPower.com

### 12-Unit System Layout

