

# Panamerican Enterprises, Inc.

## PKG Division



### Model PKG 10000 NG

#### Fact Sheet

*We are specialists in Hydrogen Generation Plants*

## HYDROGEN MODULE PLANT

### INCLUDED COMPONENTS AND SERVICES

Model PKG 10000 NG  
 Reformer with Flue gas stack system for heat recovery  
 Shift Converter High Temperature  
 Desulfurization System for Feedstock  
 Pressure Swing Adsorption Units (Q-PSA)  
 PLC Control System  
 Electrical Components  
 Desuperheater Water System  
 Waste Heat Boiler will produce all steam for the plant  
 All Components are skid mounted (Except Reformer)  
 Documentation  
 On site installation Supervision  
 Operation, Safety and Maintenance Training  
 12 months limited Warranty on all components

### OPTIONAL EQUIPMENT

Natural Gas Compressor  
 Air Compressor  
 Hydrogen Compressor  
 Storage System  
 Cooling Water System  
 Waste gas Flare  
 Demineralized System  
 ReMote monitoring Software  
 Hydrogen Purity Monitoring  
 Winterization  
 Modular Enclosure

## PRODUCT HYDROGEN SPECIFICATION

Hydrogen Flow Rate: 10,000 SCFH (268 NCMH)  
 Pressure: 150—210 psig (10.35 –13.70 bar g)  
 Temperature: 100°F (34°C)  
 Purity: 99.99%  
 Up to 99.999% optional

Impurities:

CH <sub>4</sub>	< 10 ppm v.
CO <sub>2</sub>	< 10 ppm v.
CO	< 10 ppm v.
Dew Point	-70°F (-56°C)
Nitrogen	Balance

## UTILITY REQUIREMENTS

### NATURAL GAS

Type:  
 Rate (Normal/Maximum):  
 Inlet Pressure: (\*See Note)  
 Heat Content:  
 Discharge Pressure (Normal/Minimum/Maximum):  
 Discharge Temperature (Minimum/Maximum):

Natural Gas (gas analysis will be supplied by customer)

5,000 / 5,200 SCFH	134 / 140 NCMH
275 psig	18.9 bar g.
1,050 BTU/SCF (HHV)	1,055 KJ/Nm <sup>3</sup>
275 / 260 / 350 psig	18.9 / 17.9 / 24.1 bar g.
60°F / 300°F	16°C / 148 °C

### BOILER FEED WATER

Type:  
 Rate (Normal/Maximum):  
 Inlet Pressure:  
 Discharge Pressure (Normal/Minimum/Maximum):  
 Temperature (Normal/Minimum):

Demineralized (less than 4 ppm v. Chlorines)

108 / 118 Gal.	405 / 445 Lt
50 psig	3.45 bar g.
300 / 260 / 350 psig	21.0 / 17.9 / 24.1 bar g.
200°F / 180°F	94°C / 82 °C

Note: For Inlet Pressure less than indicated, the Natural Gas compressor will be required.

## UTILITY REQUIREMENTS

### COOLING WATER

Rate (Normal/Maximum):	7,390 / 8,129 Gal.	27,967 / 30,764 Lt
Inlet Pressure:	50 psig	3.45 bar g.
Inlet Temperature (Normal/Maximum):	75°F / 80°F	24°C / 26 °C
Outlet Temperature (Normal/Maximum):	85°F / 95°F	30°C / 35 °C

### ELECTRICITY:

110 / 220V 3 Phases, 60 Hz    240 / 380 3 phases, 50Hz

### NITROGEN:

For Testing and purging (Hydrocarbon free, less than 5 ppmv O<sub>2</sub>)

Inlet Pressure:	110 psig	7.5 bar g.
Temperature:	Ambient	Ambient

### INSTRUMENT AIR:

Pressure:	125 psig	5.6 bar g.
Dew point:	-40°F	-40°C

## WEIGHTS AND MEASUREMENTS

### EQUIPMENT

Hydrogen Plant on two (2) Skids

Includes: Waste Heat Boiler, Shift Converter, Desulfurization System, Induced Draft Fan and Exchangers (Dimension of each one)

Reformer

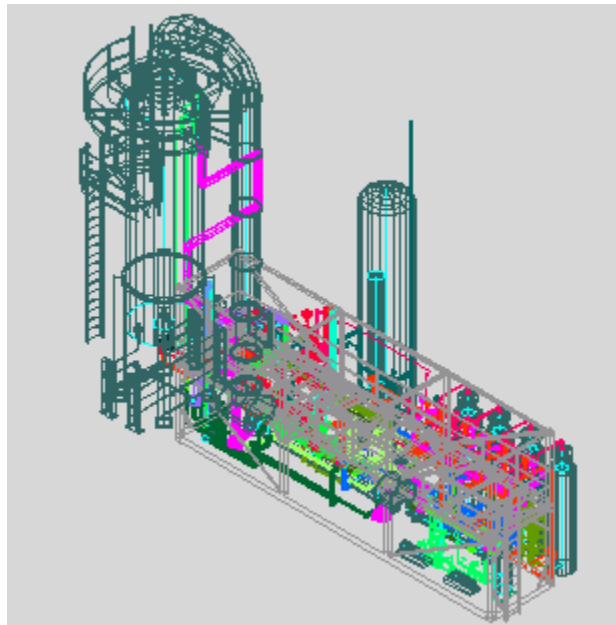
PSA Base

Vent Tank Base

W	L	H	W	L	H
40 Ft	8 Ft	8 Ft	12.19 m	2.44 m	2.44 m
7 Ft	7 Ft	42 Ft	2.13 m	2.13 m	12.80 m
4 Ft	16 Ft	14 Ft	1.22 m	4.88 m	4.27 Ft
8 Ft	8 Ft	29 Ft	2.44 m	2.44 m	8.84 m

Approximate weight :

All Plant could be shipped on two (4) 40' Containers  
All information is nominal and subject to modification



For more information visit us on: [www.panent.com](http://www.panent.com)  
**13 Edgewater Pl., Brownsville, TX, 78521 U.S.A.**  
**Phone: (956) 546-6225 Fax: (956) 544-7469**  
**Email: [H2plants@panent.com](mailto:H2plants@panent.com)**