

## Nitrogen Membrane Modules



Reliable Nitrogen Membrane Modules are the heart of a nitrogen generation system. **GENERON®** membrane modules have been at the forefront of the industry for over 40 years. Our research and development team in California work to continually improve the performance and durability of our membranes.

By supplying the **GENERON®** membrane modules with compressed air, they generate a nitrogen stream that's suitable for industries including: commercial, food, beverage, laboratory, controlled atmosphere, pharmaceutical, chemical, textile, heat treatment, electronics and many more.

### Features & Benefits

#### Durability by Design

GENERON® has been the benchmark of the industry and is proud of the track record of the lowest return-rate while selling >100,000 membranes

#### Saving Energy

GENERON® membrane modules offer the highest efficiency which reduces your compression costs to the minimum

#### Reducing Footprint

GENERON® membrane modules with the highest productivity in the industry allow for the smallest system size and lowest weight

#### Start-Up is a Breeze

As soon as you supply compressed air to the GENERON® membrane modules you will instantaneously produce nitrogen

#### Reduced CO2 emissions

No heater required to open polymer membrane structure, thus reducing the energy consumption.

#### Ease of Installation

GENERON® membrane modules allow installation in any available space, whether horizontal or vertical. The large choice of membrane sizes makes the fit easy.

#### Quality is Guaranteed

Every GENERON® membrane module is rigorously QC tested before it leaves our membrane manufacturing facility to ensure it meets the highest flow and purity standards set in our ISO 90001 procedures

#### Suited for Tough Environments

GENERON® membrane modules are built to withstand even the roughest operating conditions, incl. vibrations, pressure- and temperature swings and harsh off-shore or roadside outdoor conditions

#### Experience Engineering

GENERON® membrane modules are designed and built for 10+ years of operation.

#### Operating Conditions

Max Pressure	500 PSIG (34 barg)
Temperature (Min /Max)	40 °F (4.4 °C) / 149 °F (65 °C)
Max Relative Humidity	80% (no liquid water)
Max Particle Size	0.01 micron

#### Mechanical Description

Outer Diameter	6.625 inch [168 mm]
Length	40 inch [1014 mm]
Weight	116 lbs [52.6 kg]
Case Material	Carbon Steel

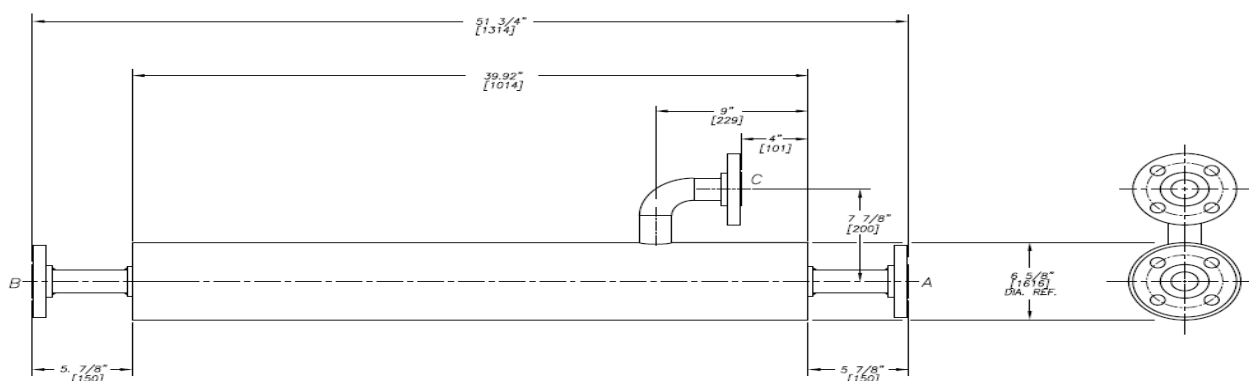
Nitrogen Product Flow Rate at 25°C (77°F) vs. Product Purity						
Pressure barg (psig)	Nitrogen Product Purity in vol% and Product Flow Rate NCMH (SCFH)					
	95.0%	96.0%	97.0%	98.0%	99.0%	99.5%
13.8 (200)	21.3 (819.4)	18.1 (698.1)	15.1 (581.1)	12.1 (466.3)	9.0 (346)	7.0 (271.6)
19.0 (275)	30.0 (1155.5)	25.6 (987)	21.4 (824.5)	17.2 (664.8)	12.9 (497.4)	10.2 (393.7)
24.1 (350)	37.6 (1450)	32.2 (1241)	27.0 (1039.4)	21.8 (841.1)	16.4 (633.3)	13.1 (504.4)
29.3 (425)	44.4 (1710)	38.0 (1466)	31.9 (1230.4)	25.9 (998.7)	19.6 (755.7)	15.7 (605)
34.5 (500)	50.2 (1935)	43.1 (1661.2)	36.2 (1396.7)	29.5 (1136.5)	22.4 (863.6)	18.0 (694.3)

Air Recovery Rate at 25°C (77°F) [%] vs Product Purity						
Pressure barg (psig)	95.0%	96.0%	97.0%	98.0%	99.0%	99.5%
13.8 (200)	55.2%	51.9%	48.0%	43.2%	36.4%	31.1%
19.0 (275)	55.4%	52.3%	48.7%	44.1%	37.7%	32.6%
24.1 (350)	54.9%	52.0%	48.6%	44.3%	38.2%	33.4%
29.3 (425)	54.1%	51.4%	48.1%	44.1%	38.3%	33.7%
34.5 (500)	53.1%	50.5%	47.5%	43.6%	38.2%	33.8%

#### Porting Configuration

Connection	Size
A—Feed	1 1/2 inch RF
B—Product	1 1/2 inch RF
C—Permeate	1 1/2 inch RF

1. Seal connections with Teflon Tape or Formula 8 Thread Sealant only.
2. Standard Conditions: 77°F (25°C) and 14.696 psi (1 atm)
3. Performance after 1 year (9,000 hours) of continuous operation
4. Recovery = Product N<sub>2</sub> Flow / Feed Flow



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