advancing air separation technology

ON-SITE LOX / LIN GENERATOR

GAMMA 1.5 tpd

Available in Automated or Manual Operation

Portable and self-contained liquid oxygen and liquid nitrogen generating plant built on a 463L pallet, will fit in a C-130 aircraft, can be flown to a forward area, and generate LOX/LIN in under four hours.

PRODUCT PROFILE

Characteristic	Value / Description
Output*	13.1 gph @ 6 psig (LIQUID OXYGEN) 300-1800 scfh | up to 4900 psig (GASEOUS OXYGEN) 18.5 gph @ 40 psig (LIQUID NITROGEN) 200-1700 scfh | up to 4900 psig (GASEOUS NITROGEN)
Purity	99.5% O_2 / N_2
Operation	10 day cycles
Utility requirement	260 amps, 460 volts, 3-phase, 60 hertz 315 amps, 380 volts, 3-phase, 50 hertz
Weight	4535 kg | 10000 lbs (bare plant)
Dimensions	Length = 7.3 ft Width = 9 ft Height = 8.5 ft

**Production rate based on ambient conditions of 70°F temperature and 14.7 psia barometric pressure at sea level*
NOTE: Plant is capable of production at temperatures between 5°F and +113°F

System Design

PCI's air separation systems are low pressure process types using the basic "Brayton Cycle" with a nominal system pressure of 140 psig. This low pressure process is inherently more reliable and less dangerous than a high pressure system that typically uses design pressures of 3000 psig or higher.

PCI's oxygen/nitrogen production equipment utilizes proven components, that have been successfully integrated into numerous international commercial and military applications.

GAMMA (continued)

PRODUCT PROFILE

System Advantages

Weather Protection - The entire unitized system is capable of operating in the open air without additional protection from the weather. The plant is protected by weather tight enclosures with sealed panels and gasketed doors. For operation in various temperature environments, pneumatically controlled shutters on the Air Compressor Module automatically open and close to maintain optimum temperature.

Operators Accommodation - The unitized system includes an Operator's Control Room, providing protection against adverse weather conditions. The control room contains all of the instrumentation, controls, and purity monitoring equipment required for plant operation. Suitable lighting and heating are provided. With the door to the Operator's Control Room closed, an air valve can be opened that will provide a positive pressure seal of clean dry air to provide protection against biological and chemical warfare agents.

Time Recording - The ASU has elapsed hour meters on both the air compressor and turboexpander.

Mobility - The ASU is transportable by aircraft, forklift, or by suitable trailer on improved roads at speeds of up to 30km/hour.

Purification Process

The GAMMA plant features our patented Rapid Pressure Swing Adsorbers (RPSA) technology. This system consists of three adsorption beds that cycle at high speed, one on-stream at pressure and the other two off-stream being regenerated or depressurizing or repressurizing. The bed cycling is controlled by a reliable and simple solid-state programmable logic controller (PLC).

PCI's adsorber system modules are designed to remove moisture and CO_2 to levels of less than 3 ppm by volume. These minute levels preclude process disruption of these condensibles in the cryogenic portions of the system. Additional coalescing filtration is provided upstream of the RPSA to remove particulates and liquid aerosols to protect the RPSA from fouling, and particulate filtration is provided downstream of the RPSA to further minimize impurities in the air from entering the process and cold box components.

The unique RPSA technology provides for the removal of moisture and CO_2 without the use of mechanical Freon refrigeration systems and/or subjecting the critical cleanup system components such as the heat exchanger or molecular sieve material to the life shortening thermal cycles. Our RPSA system operates at essentially constant temperature and does not depend on any thermal phenomena that could fatigue either the material or system components.

PCI has manufactured thousands of nitrogen and oxygen generation systems for operation in the most demanding and remote locations on earth. PCI's products enable customers to produce oxygen and nitrogen at the point-of-use, effectively eliminating the logistical supply chain associated with delivered product.

For more information please contact us at:

12201 Magnolia Avenue
Riverside, CA 92503
phone: 951.479.0860
fax: 951.479.0861
email: insidesales@pcigases.com