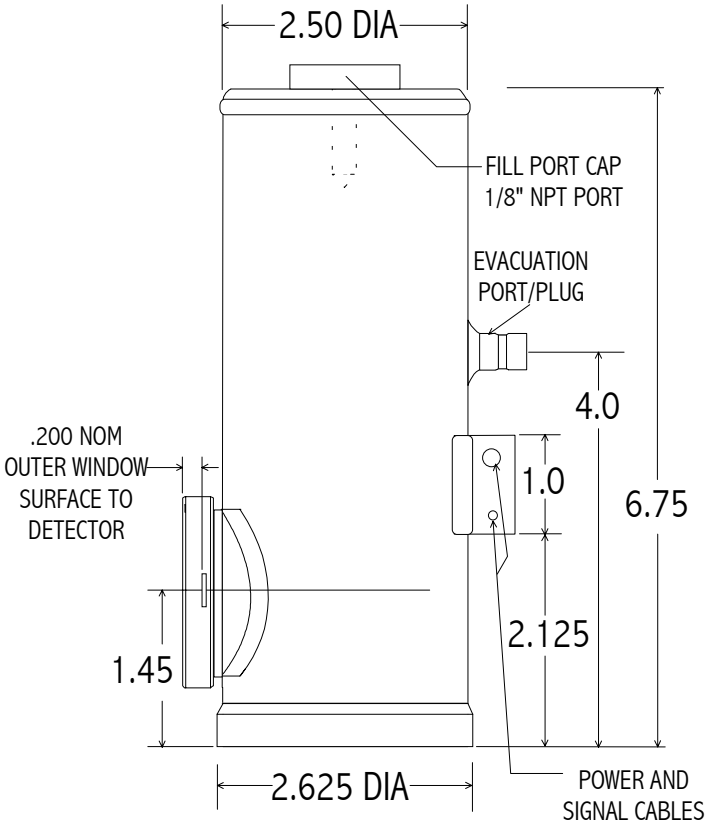
CRYOGENIC RECEIVERS



Part No: **G – 050 – E – LN6N**

Operating Note

This unit is a high performance cryogenically operated germanium photodiode/amplifier designed for low frequency DC or chopped measurements. The output voltage is proportional to radiation incident on the active area as follows:

$$V_{out} = P_{sig} \times R_{\lambda} \times R_f$$

where P_{sig} is incident power in watts, R_{λ} is the photodiode responsivity in A/W at the wavelength of interest, and R_f is the amplifier transimpedence gain. This is DC coupled with high gain and extensive care should be taken in shielding the unit from any ambient light during operation. Exposure to room lights may cause amplifier saturation and can lead to failure of the unit.

SPECIFICATIONS	
Active Area	**5 mm diameter**
Spectral Range	**800 – 1800 nm @ 298K; 800-1500 nm @ 77K**
Shunt Resistance	**> 10 kΩ @ 298K; > 1000 MΩ @ 77K**
Shunt Capacitance	**30000 pF typical**
NEP	**< 1.5 x 10^{-12} W/Hz^{½} @ 298K; < 1.5 x 10^{-15} W/Hz^{½} @ 77K**
Responsivity @ 1.3 μm	**0.8 A/W minimum, 0.9 A/W typical**
Dewar Hold Time	**12 hours minimum with liquid N_2**
Field of View	**60° nominal**
Amplifier	**Dual-Gain Transimpedance**
Gain	**1 x 10^{10} V/A / 1 x 10^{9} V/A**
Bandwidth	**DC - 15 Hz / DC - 150 Hz**
Connections	**BNC signal coaxial cable with 3 lead shielded power cable. Red = +V, Black = -V, White/Shield = ground Note: A DB9 connector is provided on units purchased with optional PS-1 Low Noise Power Supply**

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