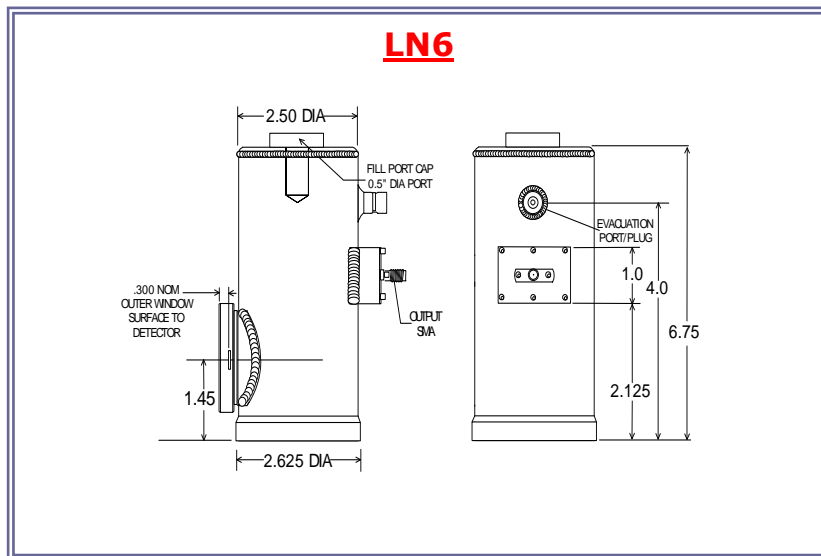


## MCT SERIES CRYOGENIC DETECTOR



**Part No:**  
**MCT12-020-LN6N**

### Application Note

This unit is a high performance liquid nitrogen cooled HgCdTe photoconductive infrared detector in a re-pumpable metal dewar. A funnel is provided to assist with filling the dewar. This is best accomplished over a 2-4 minute period of continually pour filling until topped off. The detector is connected thru an BNC-type coaxial connector mounted on the backplate of the dewar. This plate is wired to the feedthru pins inside the shielded box, and is not a part of the vacuum space of the dewar. The connector shield is connected to the dewar body. A silicon diode temperature sensor has been installed for monitoring the liquid nitrogen coolant. It is connected through an SMA-type connector isolated from the dewar body. The sensor polarity is: **ANODE = SHIELD, CATHODE = CENTER PIN**. A cryolab plug-type vacuum connector is used as the pumping port of the dewar. Re-pumping should not be necessary for several months after the original pumpout.

### SPECIFICATIONS

Active Area	2 mm x 2 mm
Spectral Range	2 - 12+ $\mu\text{m}$
Resistance	26 ohms
Bias Current	40 mA
Responsivity @ pk	280 V/W
Noise Voltage @ 10kHz	$1.3 \times 10^{-9}$ V/Hz <sup>1/2</sup>
Field of View	60° nominal
Detectivity (pk, 10kHz, 1Hz)	$4.3 \times 10^{10}$ cm-Hz <sup>1/2</sup> /W
Dewar Hold Time	12 hours minimum with liquid N <sub>2</sub>
Window	ARGE