



**Infrared** ASSOCIATES, Inc.

## LN<sub>2</sub> Cooled HgCdTe Detectors

### TECHNICAL DATA & INFORMATION

**Infrared Associates, Inc.** offers high quality **Liquid Nitrogen cooled HgCdTe detectors**. Each detector is optimized for specified wavebands of; 2 $\mu$ m to 5 $\mu$ m, 2 $\mu$ m to 13 $\mu$ m or our FTIR Series with wavebands up to 2 $\mu$ m to 24 $\mu$ m, as shown in the [table](#) below.

The **FTIR series** of HgCdTe detectors are designed to achieve optimum performance in Fourier Transform Infrared spectrometers. The detectors offer the highest sensitivities with cutoffs ranging from 750 to 400 cm<sup>-1</sup>.

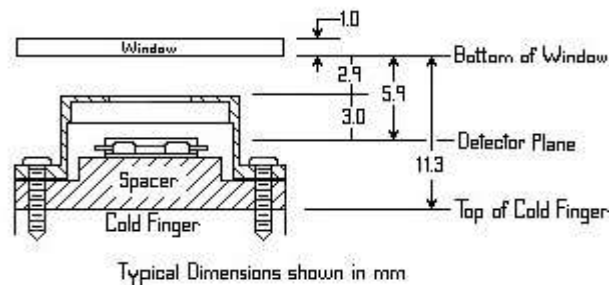
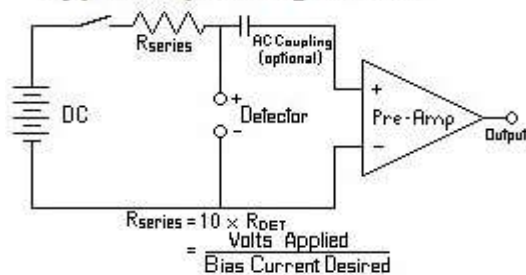
A variety of dewar designs are available, all supplied with wedged windows to eliminate interference effects. In addition to the standard sizes listed in the following [table](#), custom configurations are available on request. Custom packaging, both metal and glass, designed to interface with customer specified cooling systems, is also available.



[Accessories](#) such as Preamplifiers, Valve Operators and Square Base Adapters are also available.

[Contact us](#) to discuss your specific requirements.

#### Typical Operating Circuit



## Standard Liquid Nitrogen cooled HgCdTe Detectors

Model Number	Element Size (mm)	FOV=60°						Std. Pkg.	Std. Window							
		Wave-length Peak $\lambda_p$ ( $\mu\text{m}$ )	Wavelength Response (20% $\lambda_{co}$ ) ( $\mu\text{m}$ )	D* ( $\lambda_p, 10000, 1$ ) ( $\text{cmHz}^{1/2}\text{W}^{-1}$ )	Responsivity ( $\text{pk}, (\text{V/W})$ )	Resistance ( $\Omega$ )	Time Constant ( $\mu\text{sec}$ )									
<b>2 <math>\mu\text{m}</math> to 5 <math>\mu\text{m}</math></b>																
MCT-5-N-0.05	0.05 X 0.05	~4.5	$\geq 5.0$	$\geq 1.0\text{E}11$	$\geq 100,000$	50-500	~2.0	MSL-8 MSL-12 OR MDL-8 MDL-12	Sapphire							
MCT-5-N-0.10	0.10 X 0.10				$\geq 50,000$											
MCT-5-N-0.25	0.25 X 0.25				$\geq 10,000$											
MCT-5-N-0.50	0.50 X 0.50				$\geq 4,000$											
MCT-5-N-1.00	1.00 X 1.00				$\geq 2,000$											
MCT-5-N-2.00	2.00 X 2.00				$\geq 1,000$											
<b>2 <math>\mu\text{m}</math> to 13 <math>\mu\text{m}</math></b>																
MCT-13-.025	.025 X .025	~12.0	$\geq 13.0$ (750 $\text{cm}^{-1}$ )	$\geq 5.0\text{E}10$	$\geq 100,000$	20-100	~1.0	MSL-8 MSL-12 OR MDL-8 MDL-12	ZnSe (2-14 $\mu\text{m}$ )							
MCT-13-0.05	0.05 X 0.05				$\geq 60,000$											
MCT-13-0.10	0.10 X 0.10				$\geq 30,000$											
MCT-13-0.25	0.25 X 0.25				$\geq 10,000$											
MCT-13-0.50	0.50 X 0.50				$\geq 5,000$											
MCT-13-1.00	1.00 X 1.00				$\geq 4.0\text{E}10$					$\geq 2,000$						
MCT-13-2.00	2.00 X 2.00				$\geq 3.0\text{E}10$					$\geq 500$						
MCT-13-4.00	4.00 X 4.00				$\geq 2.0\text{E}10$					$\geq 100$						
<b>2 <math>\mu\text{m}</math> to 24 <math>\mu\text{m}</math> "FTIR Series"</b>																
FTIR-16-0.10	0.10 X 0.10				~14.0					$\geq 16.0$ (625 $\text{cm}^{-1}$ )	$\geq 4.0\text{E}10$	$\geq 10,000$	20-100	~0.5	MSL-8 MSL-12 OR MDL-8 MDL-12	ZnSe/W
FTIR-16-0.25	0.25 X 0.25	$\geq 3,000$														
FTIR-16-0.50	0.50 X 0.50	$\geq 1,500$														
FTIR-16-1.00	1.00 X 1.00	$\geq 1,000$														
FTIR-16-2.00	2.00 X 2.00	$\geq 2.0\text{E}10$	$\geq 200$													
FTIR-22-0.25	0.25 X 0.25	~18.0	$\geq 22.2$ (450 $\text{cm}^{-1}$ )	$\geq 1.0\text{E}10$		$\geq 700$	20-100	~0.3	Same as FTIR-16			ZnSe/W				
FTIR-22-0.50	0.50 X 0.50				$\geq 350$											
FTIR-22-1.00	1.00 X 1.00				$\geq 150$											
FTIR-24-0.25	0.25 X 0.25	~18.0	$\geq 24.0$ (415 $\text{cm}^{-1}$ )	$\geq 5.0\text{E}9$	$\geq 200$	20-100	~0.2	Same as FTIR-16	KRS-5/W							
FTIR-24-1.00	1.00 X 1.00				$\geq 50$											

**MSL-8 Side Looking Metal Dewar---8 Hour Hold Time**

**MSL-12 Side Looking Metal Dewar---12 Hour Hold Time**

**MDL-8 Down Looking Metal Dewar---8 Hour Hold Time**

**MDL-12 Down Looking Metal Dewar---12 Hour Hold Time**