

Cryo-Free Bolometer

Uses No Liquid Cryogenes

- Continuous Unattended Cold Operation.
- No unexpected warmups & no need for expensive Liquid Helium.
- Interfaces to major spectrometers
- Ultra Low Vibration - 10nm displacement
- Noise and Sensitivity on par with wet systems.
- No decrease in performance when operated at 50Hz
- Water or air cooled compressor



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SYSTEM CONFIGURATION:

- 4.2K General Purpose or Hi Res bolometer system
- Three-(3) positions filter wheel or single fixed filter option
- Standard 4.2K bolometer filter configuration
 - 13 μ m IR long pass filter
 - 103 μ m IR long pass filter
 - 285 μ m IR long pass filter
- Other filter options available upon request

SYSTEM PERFORMANCE:

- Cool down time: 6.5 hours
- 15 μ m-2000 μ m spectral range w/ HDWP window
- Increase in noise over LHe system (6%)
- Drop in sensitivity over LHe system (2%)
- Temperature sensor installed on cold plate for accurate temperature read-out

	Thermal Conductance	Bolometer Resistance	Electrical Sensitivity	Noise Equivalent Power (NEP)	Noise
General Purpose 4.2K Bolometer System	G[μ W/K]: ~ 16	Ro[M Ω]: ~ 10 to 20	S[V/W]: ~ 2.4 X 10 ⁵	NEP[W/Hz ^{1/2}]: ~ 2.5 X 10 ⁻¹³	Vn[nV/Hz ^{1/2}] at 80 Hz \leq 80
Hi Res 4.2K Bolometer System	G[μ W/K]: ~ 4	Ro[M Ω]: ~ 14	S[V/W]: ~ 6.1 X 10 ⁵	NEP[W/Hz ^{1/2}]: ~ 9 X 10 ⁻¹⁴	Vn[nV/Hz ^{1/2}] at 80 Hz \leq 40