

Cryo-Free Bolometer

Uses No Liquid Cryogen

- 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



Cryo-Free Bolometer

Uses No Liquid Cryogenes



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]: $\sim 2.4 \times 10^5$	NEP[W/Hz ^{1/2}]: $\sim 2.5 \times 10^{-13}$	Vn[nV/Hz ^{1/2}] at 80 Hz ≤ 80
Hi Res 4.2K Bolometer System	G[μ W/K]: ~ 4	Ro[M Ω]: ~ 14	S[V/W]: $\sim 6.1 \times 10^5$	NEP[W/Hz ^{1/2}]: $\sim 9 \times 10^{-14}$	Vn[nV/Hz ^{1/2}] at 80 Hz ≤ 40