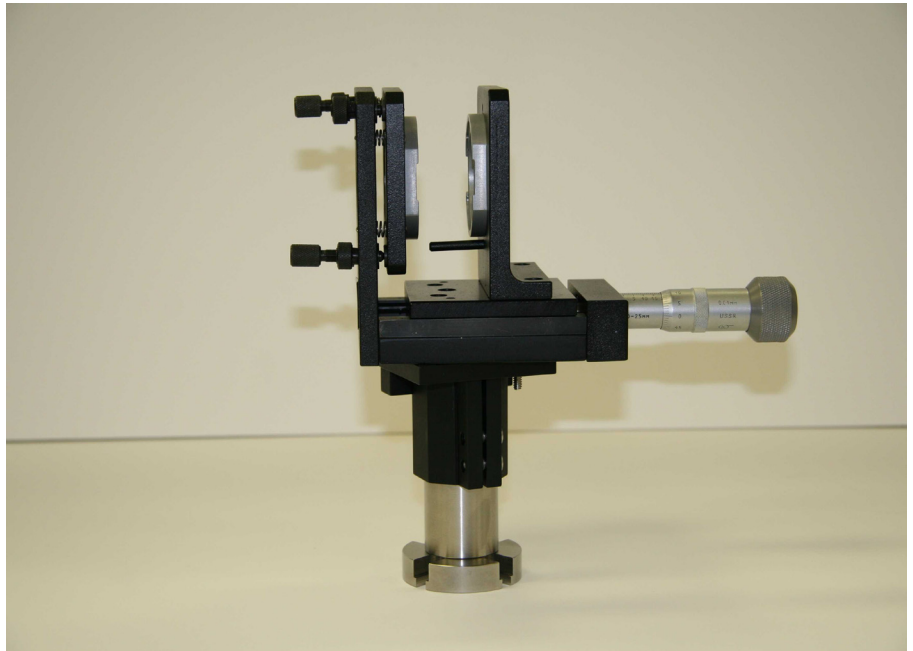


FABRY-PEROT INTERFEROMETER

Product description:

The Fabry-Perot Interferometer uses two of the Gxx-S series (typically the G50x20S) wire grid polarizers as mirrors. These are held in place magnetically by the ring magnetic mounts built into the interferometer such that the polarizers can easily and quickly be placed into the mounts and rotated to find the angle of maximum reflectivity (where the polarizer is orthogonal to the incident THz polarization). Fine angular adjustment of one of the polarizers about the horizontal and vertical directions is used to optimize parallelism between polarizers. The metric caliper gives smooth operation for measuring the change in relative separation distance between the polarizers during operation.

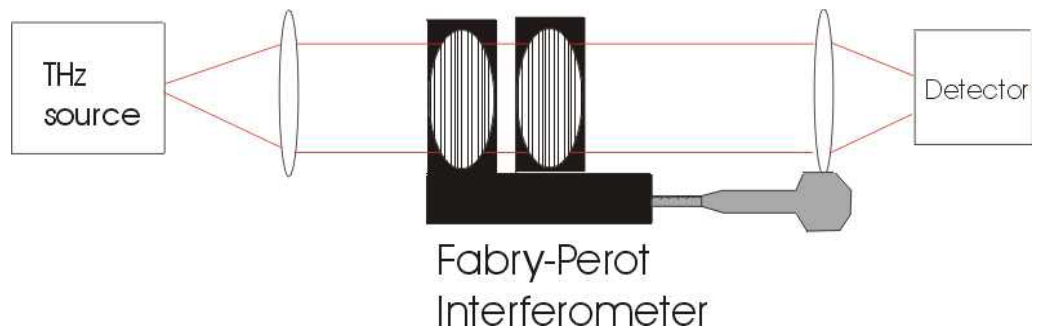
Fabry-Perot Interferometer



FABRY-PEROT INTERFEROMETER

Product specifications:

50 mm magnetic frame wire grid polarizers
40 mm clear aperture
25 mm travel with .01mm precision
Typically $15 < T_{\text{maximum}}/T_{\text{minimum}} < 50$ (dependent on polarizer and wavelength to be observed)
Finesse > 45 typically (dependent on polarizer and wavelength to be observed)
Measure wavelengths from 100 μm to 3 mm



Application:

The interferometer is placed incident in either a collimated beam or at the focal plane between two lenses (collimated beam is preferred) as shown in the diagram above. The polarizers are added one at a time and adjusted to minimize the transmitted signal. Once the polarizers are optimized as mirrors, then the path length is adjusted until the polarizers are close to each other and the signal maximized. Then, the horizontal and vertical adjustment screws are used in conjunction with slight path length changes as needed to maximize the transmission. Then the path length change necessary for a number of maxima is measured (typically one moves 10 maxima). The wavelength is $2 \times (\text{path length}) / (\text{number of maxima moved across})$.