Abstracts

Tunable Submillimeter Interferometers of the Fabry-Perot Type

R. Ulrich, K.F. Renk and L. Genzel. "Tunable Submillimeter Interferometers of the Fabry-Perot Type." 1963 Transactions on Microwave Theory and Techniques 11.5 (Sep. 1963 [T-MTT]): 363-371.

Fabry-Perot Interferometers (FPI's) have been constructed for the far infrared and submillimeter wave region with metal grids as reflectors. Two-dimensional grids with square holes (metallic mesh) can be used for unpolarized radiation, too, and they are more convenient for the construction than one-dimensional (parallel wire) grids. The performance of several FPI's has been measured in the 100-600 µ wavelength region. Q values in first-order range from 5 to 30, and peak transmissions up to 0.9 have been reached. The experimental results are in qualitative agreement with the theory of thin parallel wire gratings. The influence of the unevenness of the reflectors is studied theoretically. Applications of a submillimeter FPI include its use as the dispersion element in a spectrometer, as a narrow-band filter to check the radiation purity of a grating spectrometer, and as a separator of the harmonics from a crystal harmonic generator.

❑ Return to main document.