Abstracts

Reflectors for a Microwave Fabry-Perot Interferometer

W. Culshaw. "Reflectors for a Microwave Fabry-Perot Interferometer." 1959 Transactions on Microwave Theory and Techniques 7.2 (Apr. 1959 [T-MTT]): 221-228.

The advantages of microwave interferometers for wavelength and other measurements at millimeter wavelengths are indicated, and a microwave Fabry-Perot interferometer discussed in detail. Analogous to the cavity resonator, this requires reflectors of high reflectivity, small absorption, and adequate size. Stacked dielectric plates, and stacked planar or rod gratings are shown to be suitable forms of reflectors, and equations for the reflectivity, optimum spacing, and bandwidth of such structures are derived. A series of stacked metal plates with regularly spaced holes represents a good design of reflector for very small wavelengths. Fringes and wave-length measurements at 8-mm wavelength are given for one design of interferometer, these being accurate to 1 in 10/sup 4/ without any diffraction correction. For larger apertures and reflectors in terms of the wavelength, errors due to diffraction will decrease.

❑ Return to main document.