Abstracts

Transmission of an Optical Wave Beam Through a System of Two Aperture Stops

K. Tanaka and O. Fukumitsu. "Transmission of an Optical Wave Beam Through a System of Two Aperture Stops." 1974 Transactions on Microwave Theory and Techniques 22.2 (Feb. 1974 [T-MTT]): 81-86.

The beam-mode expansion method used in the discussions of the diffraction of a Gaussian wave beam through an aperture is applied to a system of two circular or square aperture stops, and the analytical expressions of the power transmission and conversion coefficients of a fundamental mode through the system are obtained. By using these expressions, the optimum incidence conditions that maximize the power transmission coefficient of the fundamental mode can be known. These conditions coincide formally with those obtained by Kogelnik and Yariv for an incident wave having a prolate spheroidal-wave function distribution. Both circular and square geometries can be analyzed in the same way.

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