Abstracts

Full-wave design and optimization of circular waveguide polarizers with elliptical irises

G. Bertin, B. Piovano, L. Accatino and M. Mongiardo. "Full-wave design and optimization of circular waveguide polarizers with elliptical irises." 2002 Transactions on Microwave Theory and Techniques 50.4 (Apr. 2002 [T-MTT]): 1077-1083.

We describe the design and optimization of a new polarizer structure realized in circular waveguide with insertion of elliptical irises. The device is compact, showing a considerable reduction in size and weight when compared to previously known realizations. It requires manufacturing by milling techniques only and, since it is composed entirely by waveguides with separable cross sections, it is also well suited for electromagnetic modeling. Measured and theoretical results for a polarizer with a 90/spl deg//spl plusmn/1/spl deg/ differential phase shift and a return loss better than 35 dB for both polarizations over the operating frequency band confirm the validity of the proposed design.

❑ Return to main document.