Abstracts

A Light Beam Waveguide Using Hyperbolic-Type Gas Lens (1966 [MWSYM])

Y. Suematsu, K. Iga and S. Ito. "A Light Beam Waveguide Using Hyperbolic-Type Gas Lens (1966 [MWSYM])." 1966 G-MTT International Microwave Symposium Digest 66.1 (1966 [MWSYM]): 184-189.

This paper is concerned with the optimum design of a light beam waveguide constructed with the proposed lens-like media which have hyperbolic temperature distribution. In such media, the temperature distribution is ideally quadratic in the transverse direction, and so mode conversion loss originating from higher-order variation of the dielectric constant is small. Moreover, this guide has the merits that the design procedure is clear, the mode matching at the input port is easy, and it can be constructed using ordinary air. This consideration can easily be extended to a guide with a curved configuration. It is shown that the experimental convergency of this gas lens is in agreement with theoretical considerations.

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