Abstracts

Design Consideration on Broad-Band W-Type Two-Mode Optical Fibers

Y. Kato, K.-I. Kitayama and S. Seikai. "Design Consideration on Broad-Band W-Type Two-Mode Optical Fibers." 1982 Transactions on Microwave Theory and Techniques 30.1 (Jan. 1982 [T-MTT]): 1-5.

Structural design for broad-band W-type two-mode optical fibers is investigated. The optimum parameters are numerically determined as follows: the operating V-value with zero group delay time difference Delta lambda between the LP/sub 01/ and LP/sub 11/ modes is 6.7, the ratio of core radius to inner cladding radius is 0.6, and the index profile parameter is 2.02. then, the core radius is 12.3 µm for Delta=0.3 percent at the operating wavelength of 1.3 µm. The V-value deviation tolerance from the optimum to maintain Delta lambda less than ±20 ps/km is 21 percent, which is 20 times larger than that of the earlier design made on two-layer index profile.

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