Abstracts

Two Core Radii for Minimum Total Dispersion in Single-Mode Step-Index Optical Fibers (Short Papers)

Starting from the operating wavelength and the chemical composition of the materials that integrate the core and cladding of an optical fiber, a method was developed for the calculation of the values of the core radii; it allows fiber operation in a monomode region with minimum total dispersion. The study is restricted to step-index fibers and the selected theoretical model is based on the weakly-guiding characteristic equation. From these considerations it is possible to obtain two different values of core radii for a given source operating wavelength. The theory described allows the characterization of an optical fiber for use with a given light source and extends a previously described theory.

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