SEARCH

Influence of modal filtering on the bandwidth of multimode optical fibers

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Keywords

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Abstract

The multimode (MM) optical fiber maximum operational range is defined by the fiber bandwidth (related to the intermodal dispersion) rather than by the fiber attenuation. The relationship between the modal bandwidth of the fiber, the launching condition and mode coupling is fairly complicated. There is presented a theoretical study on the modal bandwidth of the multimode fiber. The theory is based on a numerical solution of the coupled mode diffusion equation that allows the bandwidth of the MM optical fiber to be calculated. It is shown that appropriate modal filtering at the receiver side of the fiber link increases the link bandwidth.

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