

Light Loss in Single Mode Fiber Optical Switches

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ABSTRACT

Light loss in single mode fiber optical switches is investigated. Loss due to reflection, aberration and fiber misalignment are evaluated. A simple model of image to fiber end face overlap for the fiber/lens system is developed. The intensity distribution of light in the fiber and imaging system is assumed to be gaussian. It was found that aberration is a major cause of loss and that fiber misalignment did not cause as much loss as expected. Loss due to reflection is assumed to be minimal due to the presence of anti-reflection coatings on the optical components.

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