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Optical demultiplexer using a holographic concave grating for POF–WDM systems

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Keywords

polymer optical fiber (POF), holographic concave grating, optical demultiplexer

Abstract

Polymer optical fiber (POF) is one of the best transmission media for short-distance communications. To increase the transmission capacity of the fiber a wavelength-division-multiplexing (WDM) technique is commonly used. Several POF-WDM systems have been realized using interference filters and plane diffraction gratings as wavelength selective elements. In the present paper, for the first time a concave diffraction grating is applied with POF. A holographic concave grating is calculated and optimized for the use in an optical demultiplexer. The optical losses in the designed demultiplexer are estimated theoretically.

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