

Excitation of the modes of a stepped waveguide using binary phase DOEs

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Abstract

The tasks related to measuring the power distribution over transverse modes of coherent radiation in optical fibers and excitation of particular transverse modes or their groups in a fiber are of practical importance for the research and development of fiber lasers, sensors, and fiber-optic communication lines. This work is devoted to the investigation of the possibility of generating the modes of a stepped optical fiber using binary phase DOEs (MODANs). The modes different from the fundamental one, are excited selectively in an optical fiber using phase binary MODANs.

Keywords: binary phase DOE, transverse mode, coherent radiation, particular transverse mode, MODAN, sensor, fiber-optic communication line.

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