

Title (en)

Optical communication system with segmented diffraction gratings

Title (de)

Optisches Übertragungssystem mit segmentierten Beugungsgittern

Title (fr)

Système de communication optique utilisant des réseaux de diffraction segmentés

Publication

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Application

EP 99918461 A 19990423

Priority

- US 9907391 W 19990423
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Abstract (en)

[origin: WO9956159A1] Methods and apparatus are disclosed that apply a predetermined complex-valued spectral transfer function to an input optical field to produce an output field that propagates in an output direction. Methods for making such apparatus are also disclosed. Segmented gratings (1915, 1916, 19a15, 19a16) fabricated according to one example comprise a series of spatially distinct subgratings arrayed end to end. Each subgrating possesses a periodic array of diffraction structures, such as lines or other elements. The transfer functions of such segmented gratings are determined by controlling (a) the spatial periodicity or frequency of each subgrating, (b) the amplitude of each subgrating, (c) the spacing between the last diffraction structure (or line) on each subgrating and the first diffraction structure (or line) of the successive subgrating, and (d) the optical path length and transparency through each subgrating, or each subgrating plus additional material layers utilized to control optical path length and transparency. Communication systems using such segmented gratings are also provided.

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