

Publication

**EP 0563314 A4 19940216**

Application

**EP 92904127 A 19911218**

Priority

**US 63189890 A 19901221**

Abstract (en)

[origin: WO9211517A1] A spectrograph usable as a demultiplexer/detector in a wavelength division multiplexing optical system. The spectrograph comprises a planar waveguide (50) and a detector array (52). The planar waveguide (50) has a dispersive edge (56) having an inwardly concave shape, an input edge (62), and a straight output edge (64). The dispersive edge (56) has a reflective diffraction grating (60) formed on it, the grating (60) having a variable line spacing. An optical input signal comprising a plurality of different wavelength ranges enters the waveguide at the input edge (62), and travels through the waveguide and strikes the grating (60). The grating (60) focuses the optical energy in each of the wavelength ranges at a focal spot at the output edge (64), the position of each focal spot being a function of wavelength. The detector array (52) comprises a plurality of photodetectors positioned along a straight line, such that the photodetectors are positioned at the focal spots. Each photodetector therefore detects the optical energy in one of the input ranges. A stack of such planar waveguides may be assembled to form a multi-channel spectrograph.

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**G01J 3/36**

IPC 8 full level

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CPC (source: EP)

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Citation (search report)

- [E] FR 2680012 A1 19930205 - SEXTANT AVIONIQUE [FR]
- [A] US 4335933 A 19820622 - PALMER JOHN P
- [X] NTIS TECH NOTES September 1990, SPRINGFIELD, VA US page 802 R.J.LANG 'Integrated Grating Spectrometer'
- [A] APPLIED OPTICS. vol. 21, no. 12, 15 June 1982, NEW YORK US pages 2195 - 2198 T.SUHARA ET AL. 'Integrated-optic wavelength multi- and demultiplexers using a chirped grating and an ion-exchanged waveguide'
- See references of WO 9211517A1

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