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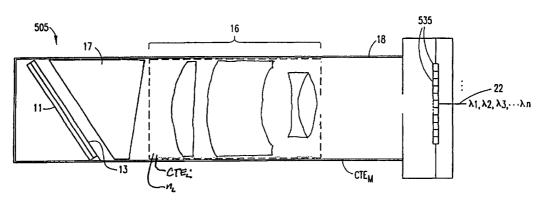
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(54) Title: ATHERMALIZATION AND PRESSURE DESENSITIZATION OF DIFFRACTION GRATING BASED SPECTROMETER DEVICES



(57) Abstract: A device for monitoring wavelength division multiplexed optical signals for use in an optical network and in an optical performance monitor. A device has a structure for supporting components of the device. An optical component is supported at one end of the structure for transmitting the optical signals. A diffraction grating is supported at an opposing end of the structure for diffracting the optical signals from the optical component. An optical sensor is supported in relation to the diffraction grating by the structure for monitoring the optical signals. A telephoto lens assembly is supported by the structure and disposed between the optical sensor and the diffraction grating, the lens assembly having a focal length for focusing the optical signals in relation to the optical sensor. Thermal effects on the structure are balanced against thermal effects on the lens assembly. A prism is disposed between the lens assembly and diffraction grating. The prism is configured to anamorphically compress the diffracted optical signals. Thermal effects on the diffraction grating are balanced against thermal effects on the lens and prism.





ational Application No INTERNATIONAL SEARCH REPORT PCT/US 01/17598 CLASSIFICATION OF SUBJECT MATTER A. CLAS IPC 7 G01J3/18 G02B6/34 H04J14/02 H04B10/08 According to International Patent Classification (IPC) or to both national classification and IPC **B. FIELDS SEARCHED** Minimum documentation searched (classification system followed by classification symbols) IPC 7 G02B HO4B H04J G01J Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practical, search terms used) INSPEC, EPO-Internal, WPI Data, PAJ C. DOCUMENTS CONSIDERED TO BE RELEVANT Relevant to claim No. Category ° Citation of document, with indication, where appropriate, of the relevant passages χ US 5 991 482 A (LAUDE JEAN-PIERRE) 1 - 1023 November 1999 (1999-11-23) abstract; figures 1-3 column 1, line 51 -column 2, line 32 column 2, line 53 -column 3, line 48 US 6 307 657 B1 (FORD JOSEPH EARL) E 1,6 23 October 2001 (2001-10-23) abstract; figure 9 column 4, line 40 column 5, line 30 - line 51 EP 0 942 265 A (LUCENT TECHNOLOGIES INC) Α 1,6 15 September 1999 (1999-09-15) abstract; figure 3 column 4, paragraph 12 -column 5, paragraph 13 -/--Further documents are listed in the continuation of box C. Patent family members are listed in annex. ° Special categories of cited documents: \*T\* later document published after the international filing date or priority date and not in conflict with the application but "A" document defining the general state of the art which is not considered to be of particular relevance cited to understand the principle or theory underlying the invention earlier document but published on or after the international "X" document of particular relevance; the claimed invention filing date cannot be considered novel or cannot be considered to "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such docu-"O" document referring to an oral disclosure, use, exhibition or ments, such combination being obvious to a person skilled document published prior to the international filing date but later than the priority date claimed in the art. "&" document member of the same patent family Date of the actual completion of the international search Date of mailing of the international search report 11/09/2002 30 August 2002

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