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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 97/08144

**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC 6 G02B6/16 A61F2/06

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 6 G02B A61F

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)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 441 693 A (BERTIN & CIE) 14 August 1991 see claim 1; figure 1 ---	1-12
X	KASHYAP R ET AL: "UV WRITTEN REFLECTION GRATING STRUCTURES IN PHOTSENSITIVE OPTICAL FIBRES USING PHASESHIFTED PHASE MASKS" ELECTRONICS LETTERS, vol. 30, no. 23, 10 November 1994, page 1977/1978 XP000495746 see the whole document --- -/--	1-12

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

° Special categories of cited documents :

- \*A\* document defining the general state of the art which is not considered to be of particular relevance
- \*E\* earlier document but published on or after the international filing date
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- \*P\* document published prior to the international filing date but later than the priority date claimed

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- \* & \* document member of the same patent family

Date of the actual completion of the international search

6 April 1998

Date of mailing of the international search report

17.04.98

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
 NL - 2280 HV Rijswijk  
 Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
 Fax: (+31-70) 340-3016

Authorized officer

Sarneel, A

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/US 97/08144

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category <sup>a</sup>	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	HILL K O ET AL: "BIREFRINGENT PHOTSENSITIVITY IN MONOMODE OPTICAL FIBRE: APPLICATION TO EXTERNAL WRITING OF ROCKING FILTERS" ELECTRONICS LETTERS, vol. 27, no. 17, 15 August 1991, pages 1548-1550, XP000259837 see the whole document	1-12
A	--- "PLATED METAL MASK FOR PRECISE EXCIMER LASER ABLATION OF GLASSES" IBM TECHNICAL DISCLOSURE BULLETIN, vol. 34, no. 6, November 1991, page 253/254 XP000228432 see the whole document	1-12
X	--- EP 0 140 259 A (GEN ELECTRIC) 8 May 1985 see claims 1-7	19-43
X	--- US 5 421 955 A (LAU LILIP ET AL) 6 June 1995 see column 6, line 7 - column 8, line 7	19-43
X	--- US 5 112 438 A (BOWERS HAROLD C) 12 May 1992 see column 3, line 51 - column 4, line 23; figure 4	19-43
X	--- PATENT ABSTRACTS OF JAPAN vol. 016, no. 288 (E-1223), 25 June 1992 & JP 04 073917 A (MITSUBISHI ELECTRIC CORP), 9 March 1992, see abstract -----	19-43

# INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 97/08144

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2.  Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

- |                   |                   |
|-------------------|-------------------|
| 1. CLAIMS : 1-12  | 3. CLAIMS : 18    |
| 2. CLAIMS : 13-17 | 4. CLAIMS : 19-43 |

FOR FURTHER INFORMATION PLEASE SEE FORM PCT/ISA/206 MAILED 28.01.98

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:  
  
1-12, 19-43
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

# INTERNATIONAL SEARCH REPORT

International Application No. PCT/US 97/08144

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

Claims Nos.: 13-18

because they relate to subject matter not required to be searched by this Authority, namely:

no search fees were paid for claims 13-18

No search fees were paid for claims 13-18

# INTERNATIONAL SEARCH REPORT

Information on patent family members

Intern. Application No

PCT/US 97/08144

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0441693 A	14-08-91	FR 2657967 A WO 9112545 A JP 4507011 T US 5313538 A	09-08-91 22-08-91 03-12-92 17-05-94
-----			
EP 0140259 A	08-05-85	US 4646024 A DE 3484976 A FI 843378 A JP 6028206 B JP 60132303 A US 4840700 A	24-02-87 02-10-91 03-05-85 13-04-94 15-07-85 20-06-89
-----			
US 5421955 A	06-06-95	US 5514154 A US 5603721 A US 5728158 A CA 2079417 A DE 69224262 D DE 540290 T DE 734699 T EP 0540290 A EP 0734699 A EP 0807424 A JP 2645203 B JP 6181993 A	07-05-96 18-02-97 17-03-98 29-04-93 05-03-98 05-06-97 05-06-97 05-05-93 02-10-96 19-11-97 25-08-97 05-07-94
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US 5112438 A	12-05-92	NONE	
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