LITHOGRAPHY LASER WITH BEAM DELIVERY AND BEAM POINTING CONTROL

The present invention provides a modular high repetition rate ultraviolet gas discharge laser light source (Fig. 1) with a beam delivery to a production line machine (2). The system includes an enclosed (4) and purged beam path (14C) with a beam pointing control (40A) (40B) (6) for delivery of the laser beam to a desired location such as the entrance port of the production line machine (2). In preferred embodiments, the production line machine is a lithography machine (2) and two separate discharge chambers (8)(10) are provided, one of which is a part of a master oscillator (8) producing a very narrow band seed beam (14A), which is amplified in the second discharge chamber (10). This MOPA system is capable of output pulse energies approximately double the comparable single chamber laser system with greatly improved beam quality.
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

Published:
— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report: 6 May 2004

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INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
IPC(7) : H01S 3/22
US CL : 372/55, 57

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)
U.S. : 372/55, 57

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 practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category *</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Y</td>
<td>US 5,771,258 A (Morton et al.) 23 June 1998 (23.06.1998), column 5, line 45- column 6, line 38.</td>
<td>1-45</td>
</tr>
<tr>
<td>Y</td>
<td>US 6,188,710 B1 (Besaucele et al.) 13 February 2001 (02.13.2001), column 4, line 6- column 5, line 45.</td>
<td>1-45</td>
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</table>

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Date of the actual completion of the international search
10 August 2003 (10.08.2003)

Date of mailing of the international search report
25 MAR 2004

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Form PCT/ISA/210 (second sheet) (July 1998)