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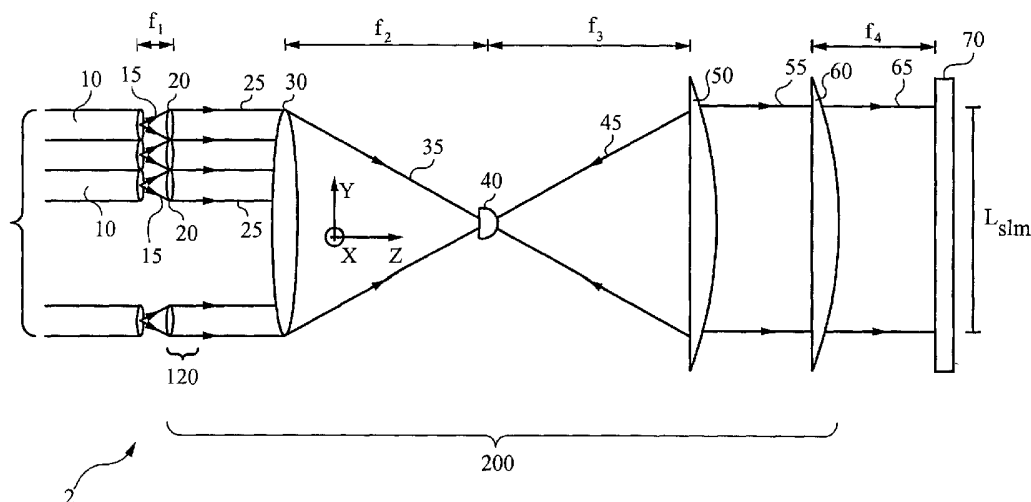
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- (71) Applicant: SILICON LIGHT MACHINES [US/US]; 385 Moffett Park Drive, Suite 115, Sunnyvale, CA 94089 (US).
- (72) Inventors: CARLISLE, Clinton; 562 Driscoll Place, Palo Alto, CA 94306 (US). TRISNADI, Jahja, I.; 21800 San Fernando Avenue, Cupertino, CA 95014 (US).
- (74) Agents: HAVERSTOCK, Thomas, B. et al.; Haverstock & Owens LLP, 162 North Wolfe Road, Sunnyvale, CA 94086 (US).
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(54) Title: AN ILLUMINATION SYSTEM FOR ONE-DIMENSIONAL SPATIAL LIGHT MODULATORS EMPLOYING MULTIPLE LIGHT SOURCES



(57) Abstract: The present invention is directed to illuminating a one-dimensional spatial light modulator (70) using an illumination system employing multiple light sources (10). The illumination system comprises a parallel array of light sources which provides a plurality of light outputs to an optical train (200). The optical train effectively combines the light sources into a single light source. The single light source provides a single light output for uniformly illuminating the spatial light modulator. The optical train includes a first optical train for receiving the light outputs from each light source, magnifying each light output, and overlaying each of the light outputs to form a single real magnified image. A mode conversion lens receives the single real magnified image, converts a mode profile of the single real magnified image into a top hat mode profile, and outputs a diverging light beam with a top hat mode profile. A second optical train shapes the light beam into an appropriate spatial geometry in such a manner that the light beam effectively illuminates the entire spatial light modulator, and directs the light beam onto the spatial modulator.



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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

INTERNATIONAL SEARCH REPORT

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**A. CLASSIFICATION OF SUBJECT MATTER**  
 IPC 7 G02B27/12 G02F1/1335 G02B27/09 B41J2/45 G02F1/13357

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 B41J G02F

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)  
 EPO-Internal, PAJ, WPI Data

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 923 475 A (KESSLER DAVID ET AL) 13 July 1999 (1999-07-13)  column 3, line 46 -column 5, line 40; figure 1 column 6, line 54 -column 7, line 20 column 11, line 1 - line 26 ---	1,2,4-9, 11, 13-15, 17-22
X	EP 1 040 927 A (EASTMAN KODAK CO) 4 October 2000 (2000-10-04) page 3, line 16 - line 23 page 4, line 5 - line 35; figures 1,2 ---	1-3
X	EP 1 003 071 A (EASTMAN KODAK CO) 24 May 2000 (2000-05-24) column 8; figure 1A ---	1,3,13, 18,22
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Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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Date of the actual completion of the international search  25 November 2002	Date of mailing of the international search report  02/12/2002
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## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 084 626 A (RAMANUJAN SUJATHA ET AL) 4 July 2000 (2000-07-04)  column 5, line 60 -column 7, line 22; figure 1  -----	1-4, 8-13,17, 18,21,22

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Information on patent family members

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