The ultra-thin rear projection display device (300) described herein includes a wide angle lens system (340) and one or more planar mirrors (320, 330) that are parallel to a screen (310) on which an image is to be displayed. In one embodiment, the screen that has multiple groove angles to provide better illumination than screens with a single groove angle.
Published:

- with international search report

(88) Date of publication of the international search report:

28 July 2005

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

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G03B 21/28
US CL : 353/66

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. : 353/66, 77, 78; 359/456, 457

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

EAST; USPAT, US-PGPUB, EPO, JPO, IBM_TDB

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>X.P</td>
<td>US 6,561,649 B1 (Burstyn) 13 May 2003 (13.05.2003), column 4 lines 19-63</td>
<td>1-11 and 27-30</td>
</tr>
<tr>
<td>Y,P</td>
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<tr>
<td>Y</td>
<td>US 4,880,292 A (Kageyama et al.) 14 November 1989 (14.11.1989), column 9 lines 2-30</td>
<td>12-26</td>
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<td>X</td>
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<td>A</td>
<td>USPN 5,833,339 A (Sarayeddine) 10 November 1998 (10.11.1998), see entire document</td>
<td>1-30</td>
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<td>X</td>
<td>US 5,100,222 A (Minoura et al.) 31 March 1992 (31.03.1992), entire document</td>
<td>31-50</td>
</tr>
<tr>
<td>X</td>
<td>US 6,081,380 A (Ohshima et al.) 27 June 2000 (27.06.2000), entire document</td>
<td>31-50</td>
</tr>
</tbody>
</table>

☐ Further documents are listed in the continuation of Box C.  ☐ See patent family annex.

* * Special categories of cited documents:

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"E" earlier application or patent published on or after the international filing date

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"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

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"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 documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search: 10 November 2003 (10.11.2003)

Date of mailing of the international search report: 12 March 2004

Name and mailing address of the ISA/US

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