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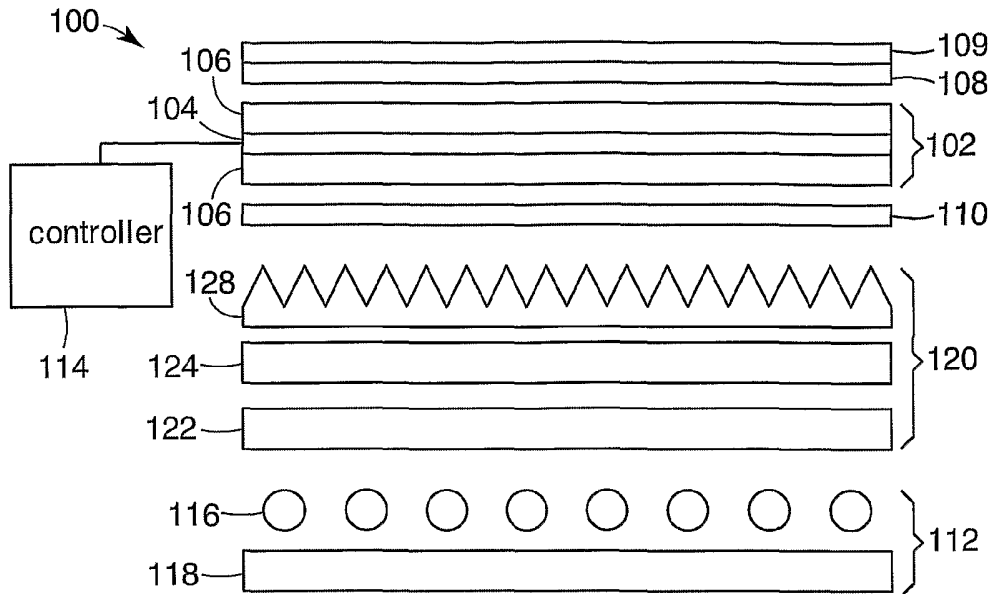
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[Continued on next page]

(54) **Title:** LIQUID CRYSTAL DISPLAYS WITH LAMINATED DIFFUSER PLATES



(57) **Abstract:** In a liquid crystal display (LCD), for example an LCD monitor or an LCD-TV, a number of light management films (120), including a diffuser layer (122), lie between the light source (112) and the LCD panel (102) to provide bright, uniform illumination. In some embodiments, the diffuser layer is attached to the lower side of the LCD panel. In other embodiments, it is formed as a layer on a substrate of a material such as glass, or is attached to the front surface of the light source. Some, or all, of the light management layers may be attached together as a laminated stack of films. In some embodiments, the diffuser layer is formed with a recessed region on one side and another optical film positioned within the recessed region.

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**Declarations under Rule 4.17:**

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

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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

International application No  
PCT/US2005/036698

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 99/56158 A (MINNESOTA MINING AND MANUFACTURING COMPANY) 4 November 1999 (1999-11-04) cited in the application page 20, line 21 - line 26; figure 15	43-46, 48, 52-58
X	page 19, line 1 - line 22; figure 16	59, 61, 63-69, 72-74, 77, 78, 80, 82-91
Y		47, 49-51, 60, 62, 70, 71, 75, 76, 79, 81
Y	----- US 2003/147042 A1 (KAWAMOTO IKUO ET AL) 7 August 2003 (2003-08-07)	11-15, 47, 49-51, 60, 62, 70, 71, 75, 76, 79, 81
Y	paragraph [0014]; figure 1 ----- US 6 359 670 B1 (BROER DIRK J ET AL) 19 March 2002 (2002-03-19)	11-15, 47, 49-51, 60, 62, 70, 71, 75, 76, 79, 81
A	column 5, line 64 - column 6, line 15; figure 1 ----- WO 2004/074909 A (SAMSUNG ELECTRONICS CO. LTD; LEE, JEONG-HWAN; HAN, BYUNG-WOONG) 2 September 2004 (2004-09-02) cited in the application paragraph [0031] - paragraph [0034]; figure 1	1-5, 43, 61-63, 75-78, 80, 92, 93
A	----- US 2002/149712 A1 (KITAMURA TAKESHI ET AL) 17 October 2002 (2002-10-17) paragraph [0035] - paragraph [0037]; figure 1	1, 43, 59, 75, 77, 92
A	----- EP 0 881 510 A (NITTO DENKO CORPORATION) 2 December 1998 (1998-12-02) page 9, line 22 - line 37; figure 4	1, 43, 59, 75, 77, 92
X	----- US 2002/167629 A1 (BLANCHARD RANDALL D) 14 November 2002 (2002-11-14) paragraphs [0032], [0033]; figure 3	23-42
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# INTERNATIONAL SEARCH REPORT

International application No  
PCT/US2005/036698

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2001/033349 A1 (HONDA MASARU ET AL) 25 October 2001 (2001-10-25) paragraph [0042] - paragraph [0045]; figure 1 -----	23-42
A  P,A	WO 2004/008236 A (SHARP KABUSHIKI KAISHA; SHIMIZU, MASAKI) 22 January 2004 (2004-01-22) paragraph [0030]; figure 3 -& EP 1 553 440 A (SHARP KABUSHIKI KAISHA) 13 July 2005 (2005-07-13) -----	94,112
A	US 2004/067338 A1 (KAMINSKY CHERYL J ET AL) 8 April 2004 (2004-04-08) paragraphs [0004], [0025] -----	94,112

# INTERNATIONAL SEARCH REPORT

International application No.  
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## Box II Observations where certain claims were found unsearchable (Continuation of item 2 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 III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

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

see additional sheet

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.:
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/US2005 /036698

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-22, 43-93

LCD with light source, LC panel and light management layers including diffuser, one of these layers being formed on either a substrate, the backlight or the back of the LC panel

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2. claims: 23-42

LCD with light source, LC panel and light management layers including diffuser and brightness enhancing layer, the transmission of the diffuser beign greater than 75%

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3. claims: 94-120

Light management layers comprising a first layer with a recess and a second layer in the recess

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## INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/US2005/036698

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