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(54) **Double-vision backlight module and liquid crystal display device**

(57) In the embodiments of the invention, a double-vision backlight module and a LCD device are provided. In the embodiments of the present invention, a light-splitting prism sheet is disposed between a diffuser plate and a LCD panel for splitting light. The prism sheet is arranged such that a side having prisms thereon of the prism sheet

faces the LCD panel, and thereby splitting the light and enhancing the brightness, and eventually enhancing the brightness in both left and right view areas and at the same time reducing the brightness in the central-interference area, and thus improving the double-vision effect.

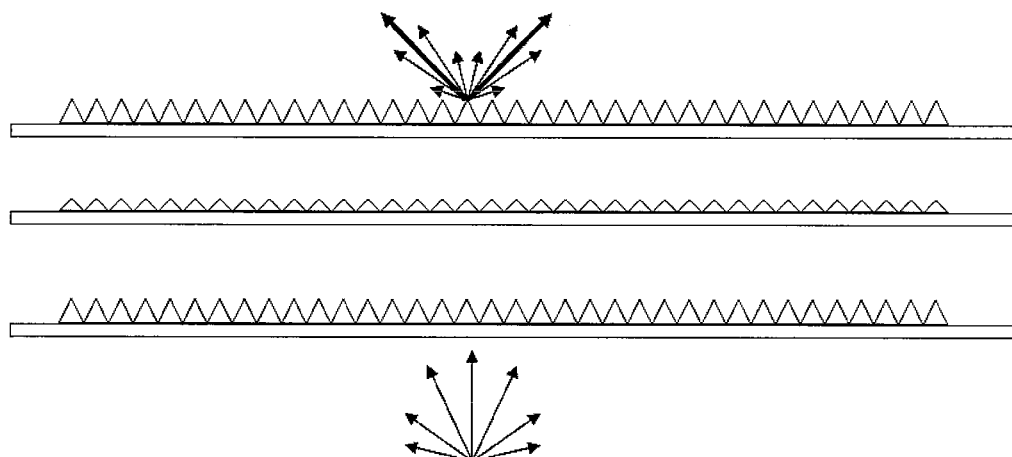


FIG. 4



EUROPEAN SEARCH REPORT

Application Number
EP 13 19 3623

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	US 2012/188788 A1 (KIM YOUNG-CHAN [KR] ET AL) 26 July 2012 (2012-07-26) * figures 2, 10A, 11 * * paragraphs [0044], [0085], [0103], [0116] *	1-9,13	INV. G02F1/1335 G02B5/04 G02B27/22 H04N13/04
Y	US 5 724 108 A (SHIBATA KATSUHIKO [JP]) 3 March 1998 (1998-03-03) * figures 1(a), 1(b) * * column 1, line 43 - line 56 *	1-9	
X	WO 2010/036415 A1 (OPTISCAPE LLC [US]; MOSS GAYLORD E [US]) 1 April 2010 (2010-04-01) * figures 8A,8B * * page 9, paragraph 2nd * * page 18, paragraph 2nd - page 19, paragraph 2nd *	10-12,14	
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A	US 2011/228387 A1 (SHIAU TZENG-KE [TW] ET AL) 22 September 2011 (2011-09-22) * figure 1A * * paragraph [0037] *	1-9	
		-/--	
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 28 July 2014	Examiner Girardin, François
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			



EUROPEAN SEARCH REPORT

Application Number
EP 13 19 3623

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
A	WO 2010/109170 A1 (POPOVICH MILAN MOMCILO [GB]) 30 September 2010 (2010-09-30) * figures 3,4 * * page 11, paragraph 2nd - page 12, paragraph 2nd * * page 14, paragraph 3rd * -----	10-14	
			TECHNICAL FIELDS SEARCHED (IPC)
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 28 July 2014	Examiner Girardin, François
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	

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Application Number

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-9

A double-vision backlight module comprising a light source, a diffuser plate and a prism sheet used for splitting the light into a left and a right viewing area, the light source being a non-parallel light source and the module further comprising an additional prism sheet.

2. claims: 10-14

A double-vision backlight module comprising a light source, a diffuser plate and a prism sheet used for splitting the light into a left and a right viewing area, the light source being a parallel light source and the prism sheet having a specified prism base angle smaller than $\arcsin(1/n)$, where n is the refractive index of the material of the prisms and a specific orientation.

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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28-07-2014

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EPO FORM P0459

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82

专利名称(译)	双视背光模组和液晶显示装置		
公开(公告)号	EP2733527A3	公开(公告)日	2014-09-03
申请号	EP2013193623	申请日	2013-11-20
[标]申请(专利权)人(译)	京东方科技集团股份有限公司		
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IPC分类号	G02F1/1335 G02B5/04 G02B27/22 H04N13/04		
CPC分类号	G02B5/045 G02B6/0053 G02B30/27 H04N13/305 G02F1/133504		
优先权	201210473031.X 2012-11-20 CN		
其他公开文献	EP2733527B1 EP2733527A2		
外部链接	Espacenet		

摘要(译)

在本发明的实施例中，提供一种双视域背光模块及液晶显示装置。在本发明的实施例中，分光棱镜片设置在扩散板和用于分光的LCD面板之间。棱镜片被布置成使得棱镜片上具有棱镜的一侧面向LCD面板，从而分割光并提高亮度，并且最终增强左右视野区域中的亮度，同时减小中心干涉区域的亮度，从而改善双重视觉效果。

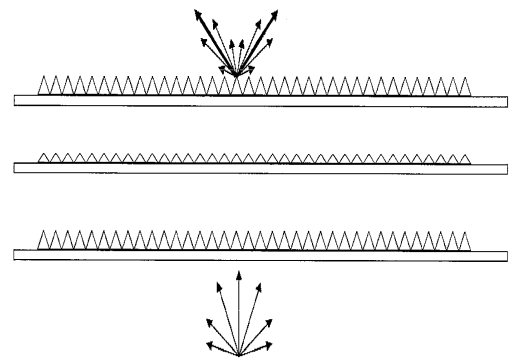


FIG. 4