

(19)



(11)

EP 2 824 506 A3

(12)

EUROPEAN PATENT APPLICATION

(88) Date of publication A3:
21.01.2015 Bulletin 2015/04

(51) Int Cl.:
G02F 1/1335 ^(2006.01) **G02B 5/30** ^(2006.01)
G02F 1/13363 ^(2006.01)

(43) Date of publication A2:
14.01.2015 Bulletin 2015/03

(21) Application number: **14186320.9**

(22) Date of filing: **20.06.2011**

(84) Designated Contracting States:
**AL AT BE BG CH CY CZ DE DK EE ES FI FR GB
GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO
PL PT RO RS SE SI SK SM TR**

(30) Priority: **22.06.2010 JP 2010141249**
18.05.2011 JP 2011111442

(62) Document number(s) of the earlier application(s) in
accordance with Art. 76 EPC:
11798082.1 / 2 587 304

(71) Applicant: **Toyobo Co., Ltd.**
Osaka-shi
Osaka 530-8230 (JP)

(72) Inventors:
• **Murata, Koichi**
Fukui, 914-0047 (JP)
• **Sasaki, Yasushi**
Fukui, 914-0047 (JP)

(74) Representative: **Vossius & Partner**
Siebertstrasse 4
81675 München (DE)

(54) **Liquid crystal display device, polarizer and protective film**

(57) Provided is a liquid crystal display device that has excellent visibility while using a protective film comprising a polyester film. The liquid crystal display device comprises a backlight light source, and a liquid crystal cell disposed between two polarizers; the backlight light

source being a white light-emitting diode; each of the polarizers comprising a polarizing film and protective films laminated on both sides of the polarizing film; and at least one of the protective films being a polyester film having a retardation of 3,000 to 30,000 nm.

EP 2 824 506 A3



EUROPEAN SEARCH REPORT

Application Number
EP 14 18 6320

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	WO 2010/050355 A1 (NITTO DENKO CORP [JP]; IZAKI AKINORI [JP]; UMEMOTO SEIJI [JP]; YAMAMOT) 6 May 2010 (2010-05-06) * the whole document * & US 2011/194048 A1 (IZAKI AKINORI [JP] ET AL) 11 August 2011 (2011-08-11) * the whole document * -----	1,2,4-6	INV. G02F1/1335 G02B5/30 G02F1/13363
X	JP H11 70629 A (MITSUBISHI KAGAKU PL FILM KK) 16 March 1999 (1999-03-16) * abstract * -----	1-3	
			TECHNICAL FIELDS SEARCHED (IPC)
			G02F
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 12 December 2014	Examiner Lüssem, Georg
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			

 1
EPO FORM 1503 03.82 (P04C01)

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

EP 14 18 6320

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
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

12-12-2014

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2010050355 A1	06-05-2010	CN 102124398 A	13-07-2011
		JP 4575978 B2	04-11-2010
		JP 2010107892 A	13-05-2010
		KR 20110065542 A	15-06-2011
		TW 201017236 A	01-05-2010
		US 2011194048 A1	11-08-2011
		WO 2010050355 A1	06-05-2010

JP H1170629 A	16-03-1999	JP 4106749 B2	25-06-2008
		JP H1170629 A	16-03-1999

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)	液晶显示装置，偏振器和保护膜		
公开(公告)号	EP2824506A3	公开(公告)日	2015-01-21
申请号	EP2014186320	申请日	2011-06-20
[标]申请(专利权)人(译)	东洋纺绩株式会社		
申请(专利权)人(译)	TOYOBO CO. , LTD.		
当前申请(专利权)人(译)	TOYOBO CO. , LTD.		
[标]发明人	MURATA KOICHI SASAKI YASUSHI		
发明人	MURATA, KOICHI SASAKI, YASUSHI		
IPC分类号	G02F1/1335 G02B5/30 G02F1/13363		
CPC分类号	G02B1/10 G02B1/14 G02B5/3033 G02B5/3083 G02F1/133504 G02F1/133528 G02F1/1336 G02F1/13362 G02F1/13363 G02F2001/133562 G02F2001/133567 G02F2001/133624 G02F2201/50 G02F2202/40 G02B1/105		
代理机构(译)	法思博事务所		
审查员(译)	IÜssem , 乔治		
优先权	2010141249 2010-06-22 JP 2011111442 2011-05-18 JP PCT/JP2011/064026 2011-06-20 WO		
其他公开文献	EP2824506A2 EP2824506B1		
外部链接	Espacenet		

摘要(译)

本发明提供一种液晶显示装置，其在使用包含聚酯膜的保护膜的同时具有优异的可视性。液晶显示装置包括背光光源和设置在两个偏振器之间的液晶单元；背光源是白色发光二极管；每个偏振器包括偏振膜和层压在偏振膜两侧的保护膜；保护膜中的至少一个是具有3,000至30,000nm的延迟的聚酯膜。



European Patent Office
Office de brevets
Ufficio Brevetti
Büro für Erfindungen

EUROPEAN SEARCH REPORT

Application Number
EP 14 18 6320

DOCUMENTS CONSIDERED TO BE RELEVANT			Classification of the applicable IPC
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	
X	WO 2010/05355 A1 (NITTO DENKO CORP [JP]: IZAKI AKINORI [JP]; UENOTO SEIJI [JP]: YAMAMOTO, S May 2010 (2010-05-06) the whole document * US 2011/194048 A1 (IZAKI AKINORI [JP] ET AL) 11 August 2011 (2011-08-11) the whole document	1, 2, 4-6 INV. G02F1/1335 G02B5/30 G02F1/13363	
X	JP H11 70629 A (MITSUBISHI KAGAKU PL FILM 'K) 15 March 1999 (1999-03-16) * abstract	1-3	

			TECHNICAL FIELD (IPC)
			G02F
The present search report has been drawn up for all claims			
Name of search		Date of completion of this search	Examiner
Munich		12 December 2014	Lüssem, Georg
CATEGORY OF CITED DOCUMENTS			
X	1 particularly relevant if follows from document a new result is combined with another 2 document cited for its application in the prior art 3 document cited for its application in the prior art 4 document cited for its application in the prior art 5 number of the source judged fairly corresponding document		

1

12/09/2015 10:52:21 AM