

(19) (KR)
 (12) (A)

(51) 。 Int. Cl. ⁷
 G02F 1/1335 (11) 2001 - 0094908
 (43) 2001 11 03

(21) 10 - 2000 - 0018321
 (22) 2000 04 07

(71) ,
 20

(72) 313 - 1 212 - 807

(74)

:

(54)

가.

:

:

(明) (暗)

:

가 , , 가

1
 2
 3
 4a 4b /
 5a 5b /
 6
 7 6 nd
 8
 9
 10 9

400 : 410 :
 420 : 1 QWP 430 : 1
 440 : 450 :
 460 : 470 :
 500 : 510 :
 520 : 2 530 : 2 QWP
 540 : 600 :
 700 :

, , , 가 가 (transflective)

가 , , (display) 가

(cathode - ray tube ; CRT)

, , ,
or - liquid crystal display ; TFT - LCD) 가
,

TFT - LCD , (pixel) 가 ,

, ,
film transistor ; a - Si:H TFT) 가
가

TFT - LCD

, TFT - LCD 3 8%

45%,
27% 가 TFT - LCD 94%, TFT
65%,
7.4%

1

TFT - LCD 가 ,
TFT - LCD 가 ,
, 가 가 (ba
ttery)

, 가 TFT - LCD
가 ,
TFT - LCD TFT - LCD
,
TFT - LCD
가 . , TFT - LCD
(10) , , TFT - LCD
,

, , TFT - LCD
TFT - LCD
,
TFT - LCD (transflective) TFT - LCD 가 /
TFT - LCD
,

TFT - LCD (mode)

, 2 TFT - LCD , 2
TFT - LCD .
(50) () (54) (52) , (50)
(61)가 (60) .
, (50) (60) (80) , (50)
(70)가 .
(50) (52) (74)
, (52) (hole : 53) , L
, (53) (54) (70) (72)
TFT - LCD , (74)
(52) (60) .
, (54) (60) (70) (72) (52)
, () (52) (54) 가 가 , (61) (8)
0) , , , , ,
3
3 (108) (100) 1 (106) 1 (106)
, 1 (106) 1 retardation film(Quarter Wave Plate(/4 plate) ;
" QWP"))(104) (102) , (102) (101)가
, (200) 2 (204) , (108) (110)
(202) , 2 (204) (202) 2 QWP(206) (208) QWP(206)가
, (200) (100) (300)
1 2 QWP(104, 206)
45° 135°
, , ,
(208, 206, 300, 104, 102)

4a 4b / (on/off) ,
 , (off state) , 4a
 NW 가 (NW)
 (101) (102) (102) 45 °
 , 1 QWP(104) ,
 , (110) /4 (300) 45 °
 , 2 QWP(206) ,
 , 2 QWP(206) (208)
 4b (on state) ,
 4b , (101) (110) 4a
 , , (300) 가 가 , 가
 /4 , (300) (300) 1 QWP(104)
 , 2 QWP(206) 45 ° , 2 QWP(206)
 90° (208) 2 QWP(206)
 ,
 5a 5b /
 5a
 , (208) (208) (208)
 , 45 ° 45 ° , 2 QWP(206)
 , /4 (300) 135 ° , (10
 8) 135 ° 45 ° (300)
 , (108) 45 ° 135 ° , 135 °
 , 2 QWP(206) (208) (208) (, 가 0 °)
 ,
 5b , (300)
 ,
 8) (208) (208) (208) (20
 45 ° , 2 QWP(206) ,
 , (108) , (300)
 , (108) (108) , 가 90 °

, (108) , (300) , 2 QWP(206)
 45° , 45°
 (208) , (208) (, $\pm 90^\circ$) ,
 (208)

TFT - LCD , / (拘碍) .

4a

, , 4a ()

1.2

6

6

6 , (400), (600), (500) , (700) . , (700)
 , (400) 1 (430) 1 (430) (440)
 , (440) 1 (450) (460) , 1 (450) (450)
 (460) (460) 1 (450) (440) 가

1 (470a)가

, 1 (470a) .
 1 (450) 1 (460) 1 (450) , (460)
 , 1 (430) 1 QWP(420) (410)
 (500) 2 (520) , 2 (520) , (520) 1 (430)
 2 (520) (516)가 , (516) (516)
 2 (515) .
 , 2 (515) 1 (470a) (516)가
 2 (470b)가 .
 , (400) (460) 2 (515) (510) (510)
 , , 2 (520) (510) 2 QWP(530)
 (540) .
 , (500) (400) (600) .
 , 1 2 QWP(420, 530)
 (500, 400) 1, 2 (450, 515) 1, 2 (470a, 470)
 b) (460) (440) .
 , , 가 (,) (460) (510) (440)
 , (460) (510) (440) 2 (515) (510)
 d₃, d₄ , , d₄ = 2d₃ .
 , d₄ 1, 2 (450, 515) 1, 2 (470a, 470b)
 . .

7 6 - (Jones matrix) nd₄
 , nd₃ /4 (= 550nm)가 , A d₄ = d₃ , B
 d₄ = 2d₃ .

, 7 (d₄)가 (d₃) 2
 100%가 .

, , 4a 2 QWP(206)
 , 1/2
 . .
 2 QWP , .

, /4 QWP
 2 /2 () , .

$$\Delta \text{ } nd_3 = \frac{\lambda}{4}$$

$$\therefore d_4 = 2d_3$$

$$\Delta \text{ } nd_4 = \frac{\lambda}{2}$$

8

(700) (410) (410) 45 °
 , 1 QWP(104)

, (110) /2 (600) 180°
, , 2 QWP(530) 135°

, 2 QWP(530) 135 ° (540)

9 , 6 (500, 400) 1, 2 QWP(420, 5
0) . 9 (500) HWP(Half wave plate : 530a)

, 9 , 가

(500) HWP(530)

, (500, 700) QWP , (NW) , 9 (500)
 8 HWP(530a) (NB) .

10 9

10 (500) HWP(530a)

(700) (410) 45°
 (440) 45° . , /2
 135° . , (600)
 45° 135° /2 HWP(530a)
 가 . , (NB) (540)

, 1, 2 1, 2
 1, 2 가 . ,

(57)

1.

;

1 ;

1

1 ;

1

;

가 1 ;

1

1

;

,

;

2 ;

2 ;

2

1

가

;

,

2.

1 ,

1 /2

3.

1 ,

1 /4

4.

3 ,

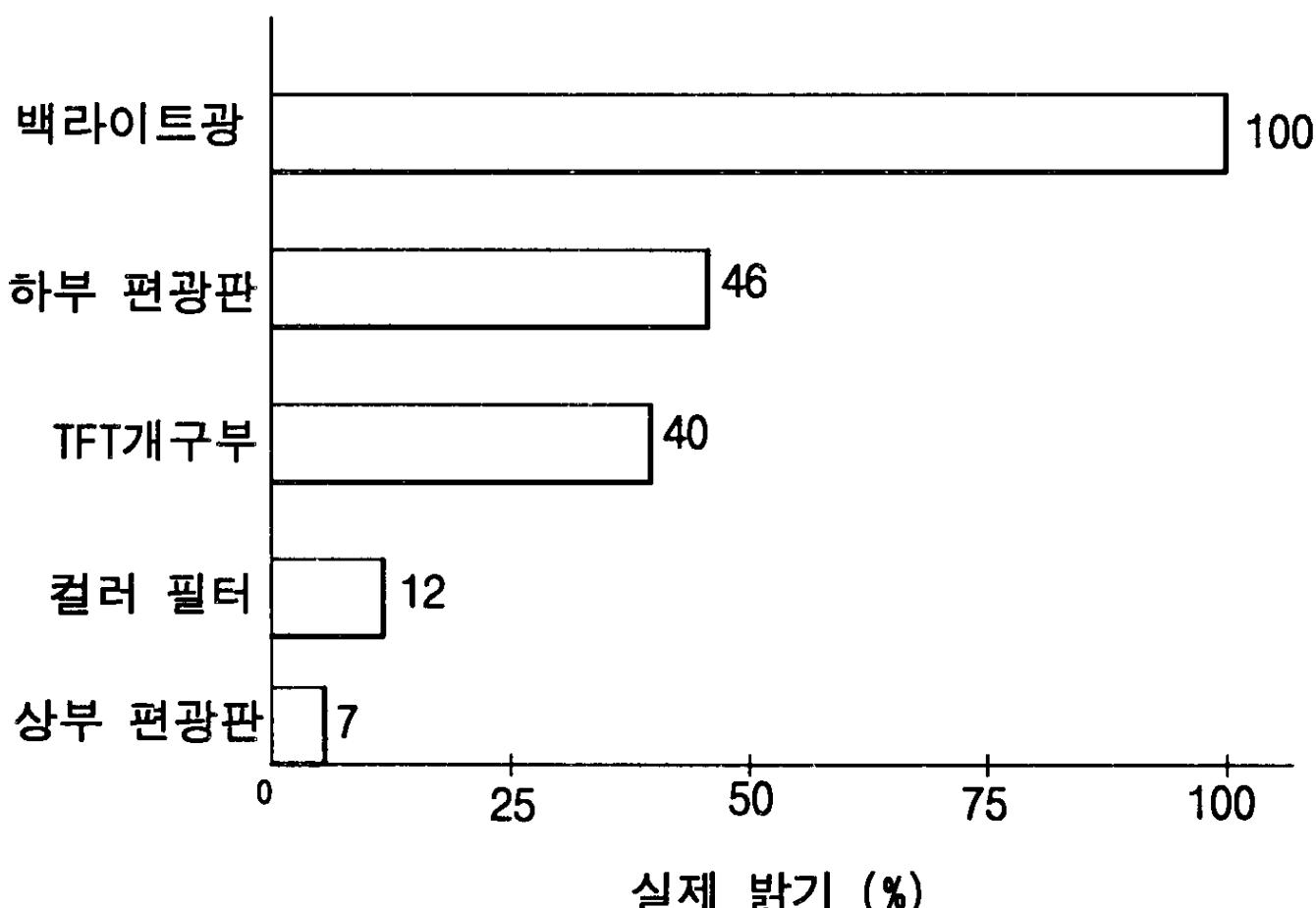
1 1 /4 2

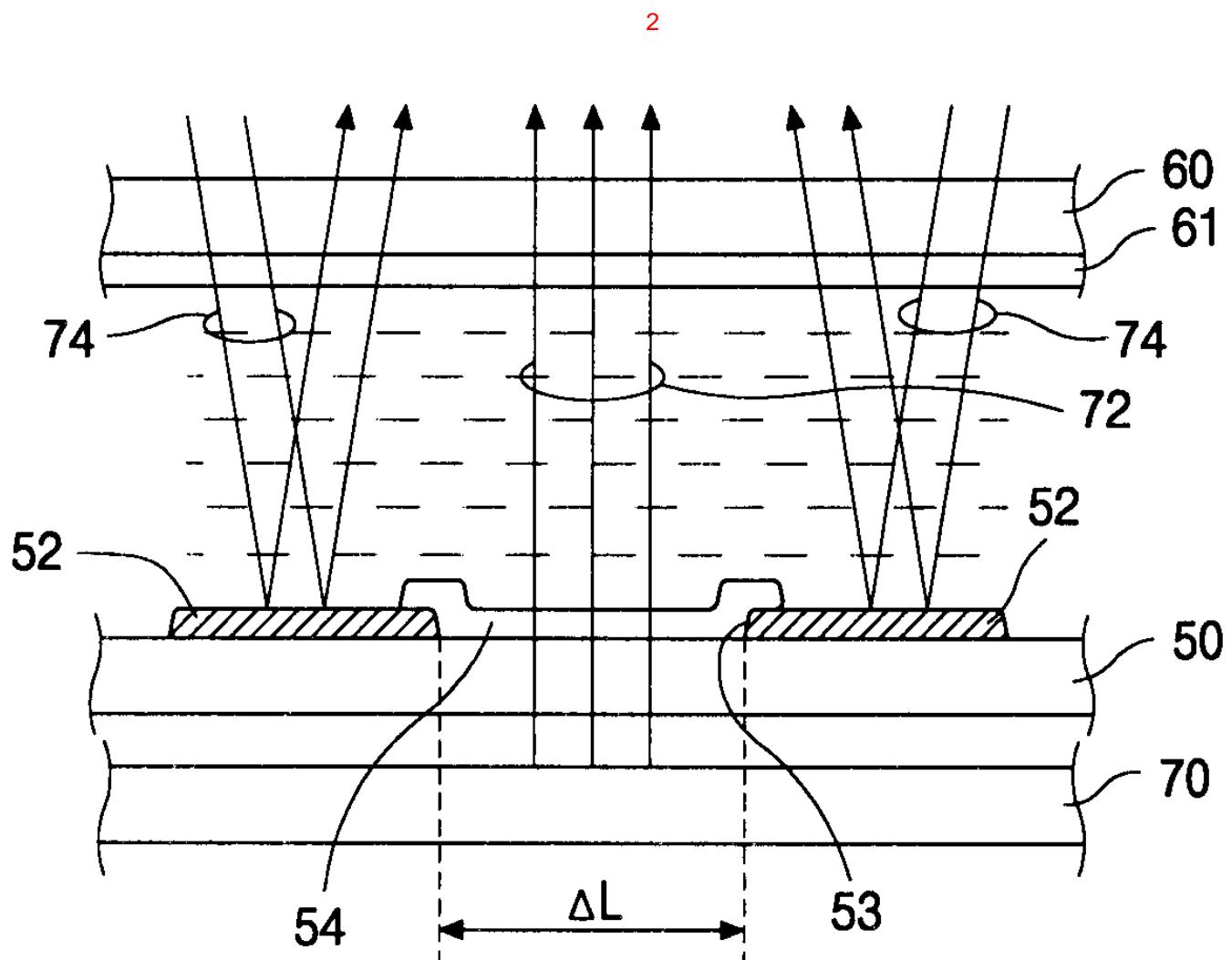
5.

1 ,

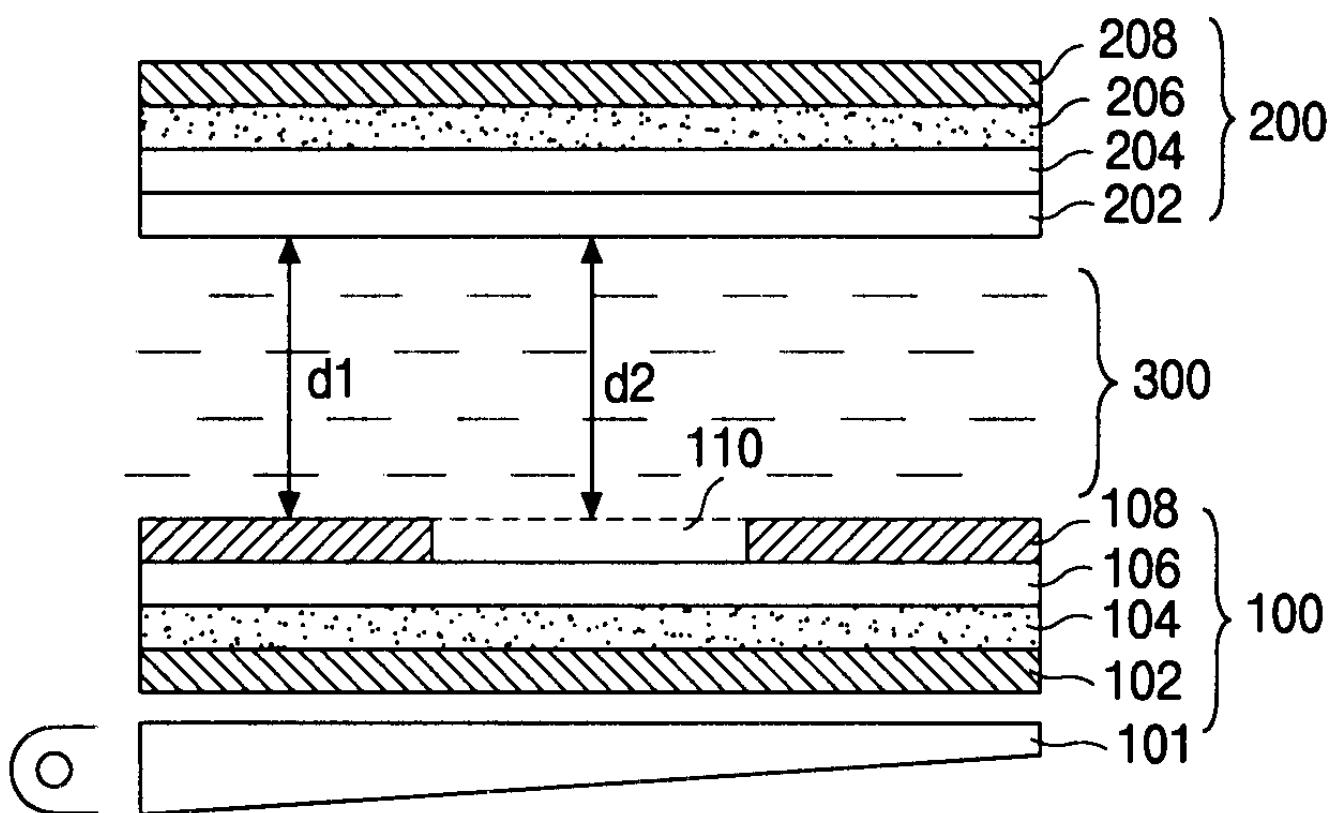
2

1





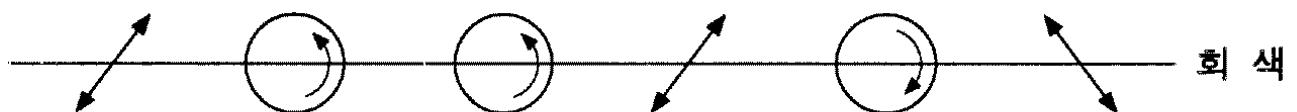
3



4a

(OFF)

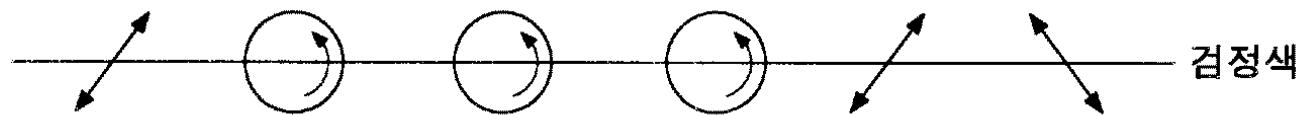
하부 편광판 (102)	제1 QWP (104)	화소전극 (300)	액정총 (300)	제2 QWP (206)	상부 편광판 (208)
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4b

(ON)

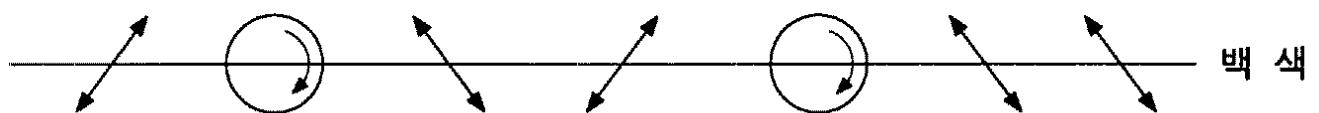
하부 편광판 (102)	제1 QWP (104)	화소전극 (106)	액정총 (300)	제2 QWP (206)	상부 편광판 (208)
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5a

(OFF)

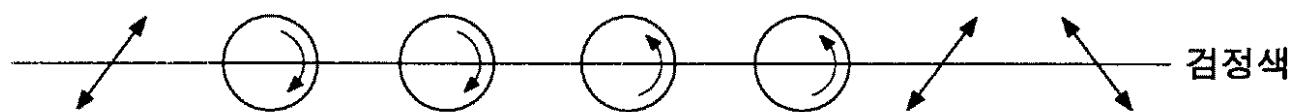
상부 편광판 (208)	제2 QWP (206)	액정 (300)	반사전극 (108)	액정 (300)	제2 QWP (206)	상부 편광판 (208)
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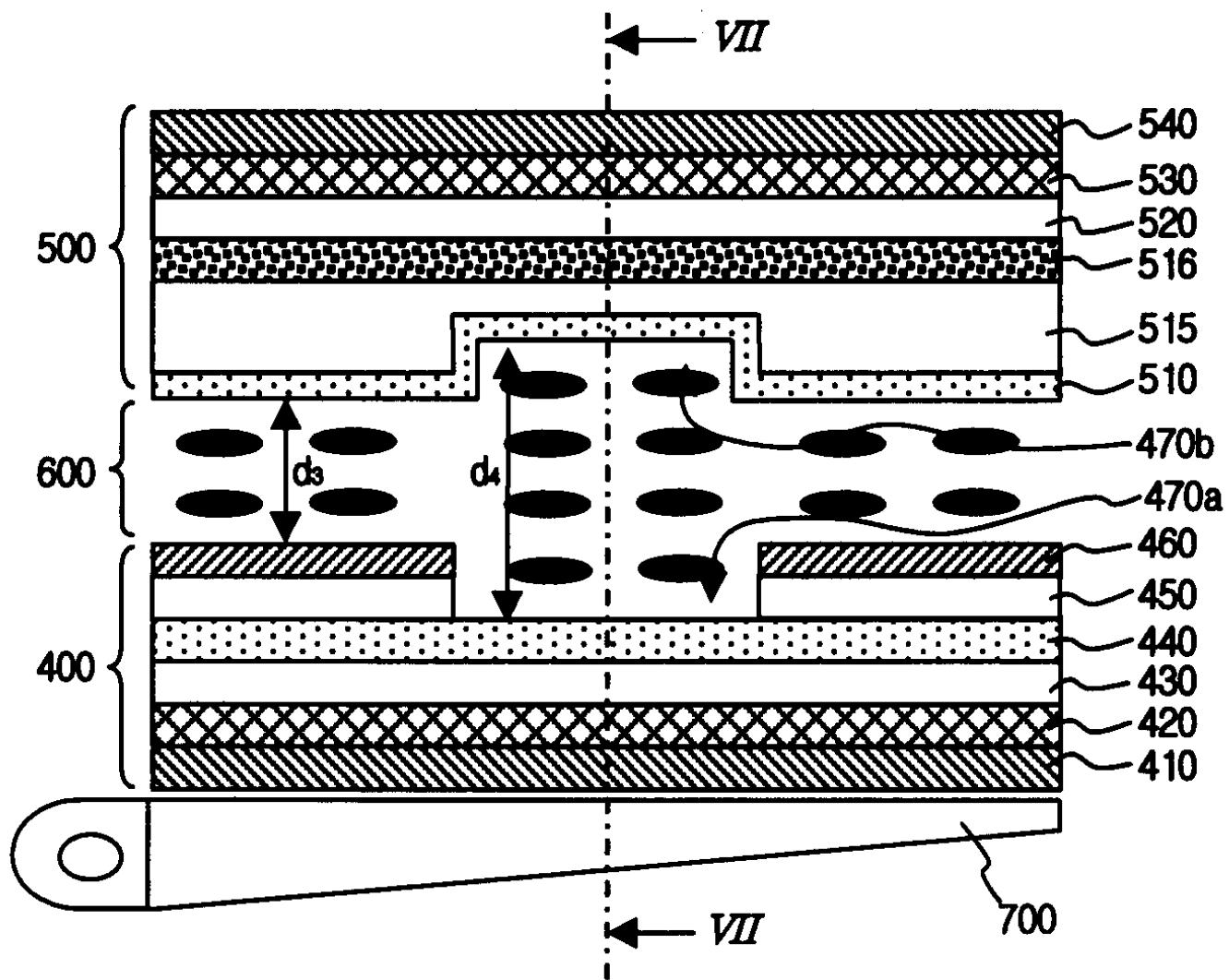
5b

(ON)

상부 편광판 (208)	제2 QWP (206)	액정 (300)	반사전극 (108)	액정 (300)	제2 QWP (206)	상부 편광판 (208)
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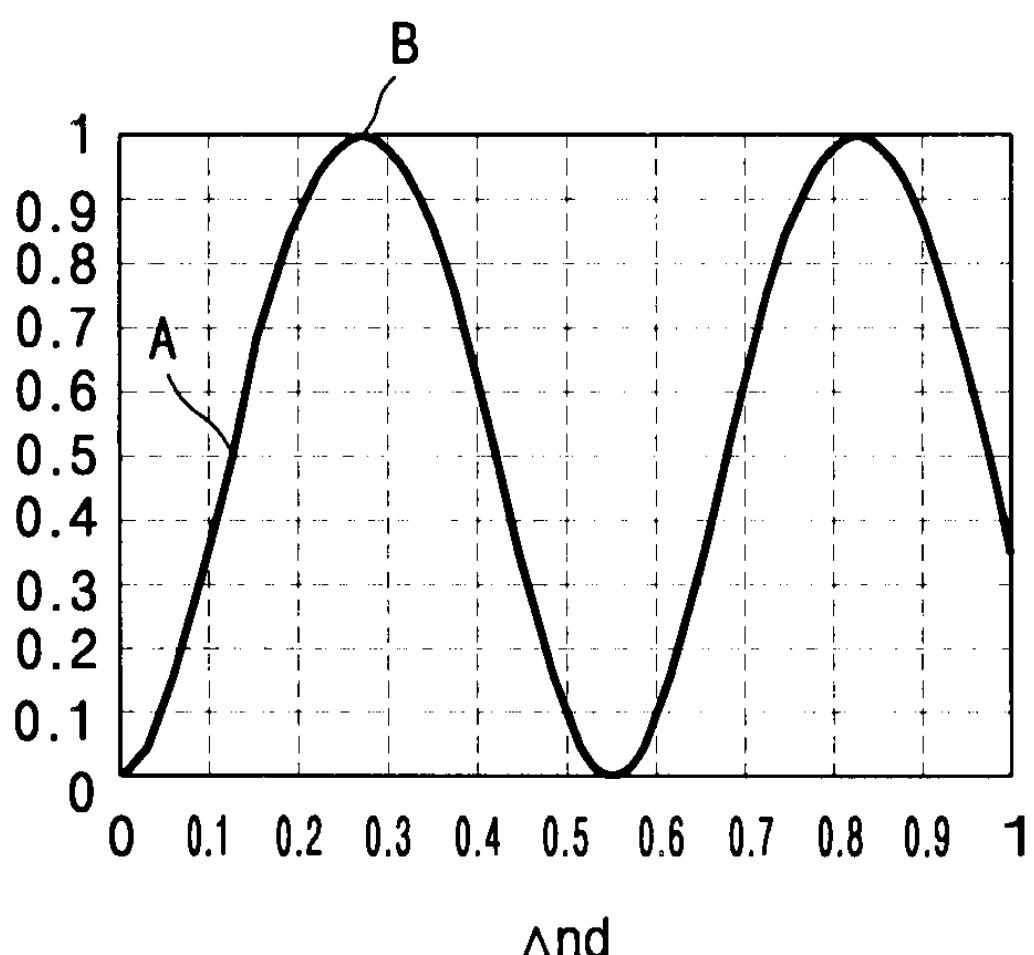


6



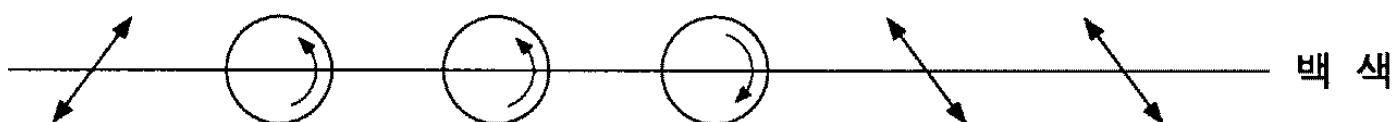
7

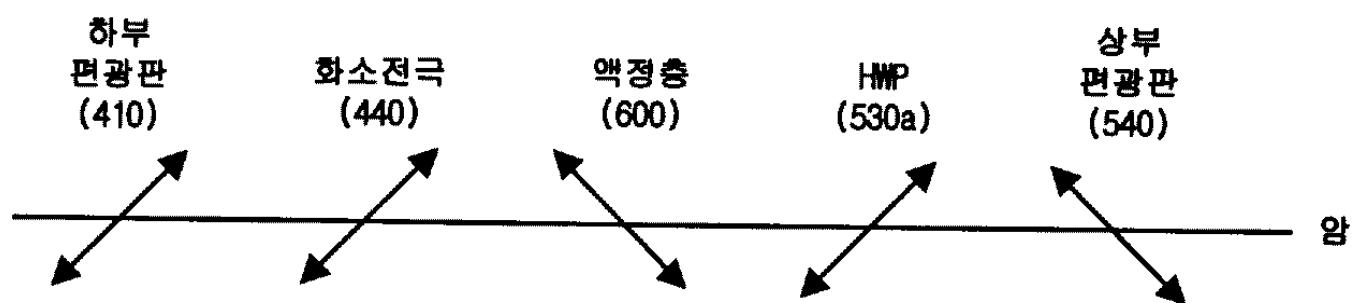
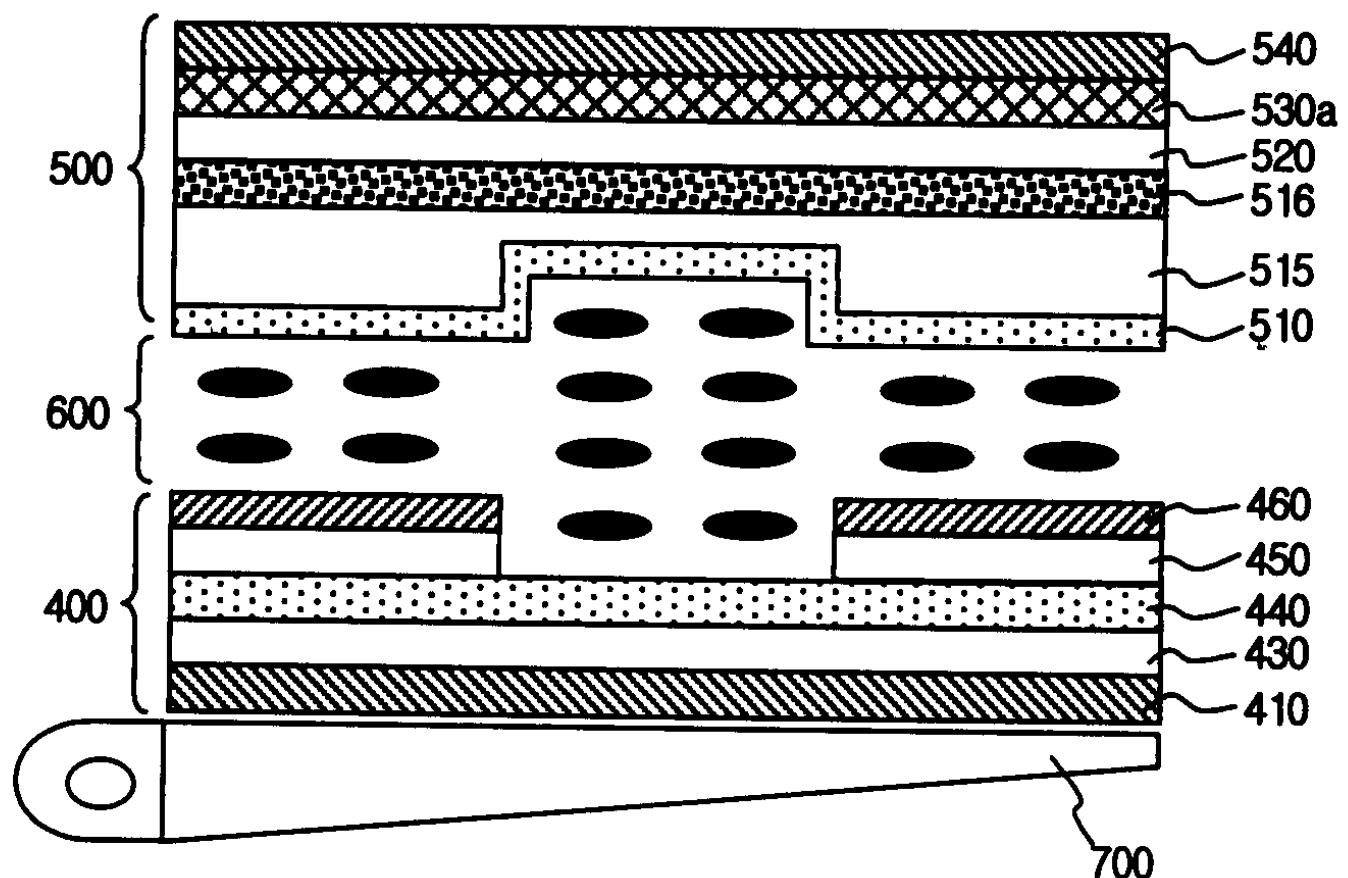
투과율



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하부 편광판 (410)	제1 QWP (420)	화소전극 (440)	액정총 (470)	제2 QWP (530)	상부 편광판 (540)
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专利名称(译)	透反液晶显示器		
公开(公告)号	KR1020010094908A	公开(公告)日	2001-11-03
申请号	KR1020000018321	申请日	2000-04-07
[标]申请(专利权)人(译)	乐金显示有限公司		
申请(专利权)人(译)	LG显示器有限公司		
当前申请(专利权)人(译)	LG显示器有限公司		
[标]发明人	KIM YONG BEOM		
发明人	KIM,YONG BEOM		
IPC分类号	G02F1/13 G02F1/1335 G02F1/13363 G02F1/1333		
CPC分类号	G02F1/133371 G02F1/133555 G02F2001/133638		
代理人(译)	贞媛KI		
其他公开文献	KR100394987B1		
外部链接	Espacenet		

摘要(译)

一个。权利要求中的发明所属领域：透射反射型液晶显示器的技术问题。或者本发明试图解决：在透反型液晶显示器中，试图解决透明模式和反射模式或暗态的寿命亮度的分散。C。本发明方案的要点：由于透射型液晶显示器一般围绕反射模式设计，在透明模式下产生亮度下降的现象，使其在生命或黑暗状态下随着亮度的分散而产生。并且为了改善这一点，使得透射部分和反射体的液晶厚度不同并且液晶单元被组织。此时，它形成为使反射体的透射部分的单元间隙实质上加倍。

