

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

(51) 。 Int. Cl.<sup>7</sup>  
G02F 1/13363

(11)  
(43)

10-2004-0037159  
2004 05 04

(21) 10-2004-7004484

(22) 2004 03 26

2004 03 26

(86) PCT/JP2002/009120

(87)

WO 2003/029886

(86) 2002 09 06

(87)

2003 04 10

(30) JP-P-2001-00300757 2001 09 28 (JP)

(71) 3-12

(72) 가 가 231-0815 8

가 가 231-0815 8

가 가 231-0815 8

(74) :

(54)

(31) , (33, 34) , (31A) 180° 270°  
 ; 가 , 가 100 250nm ,  
 가 40 100° , = 550nm = 550nm 0.5 1.0  
 = 400nm 가 ,

가

( , LCD ) TN( ) VA( ) , IPS( )  
 TFT TFD TFT( ) TFD( ) STN( ) STN

TFT TFD , STN 가 TFT TFT , , 가 TV  
 , TV ; TFT , , , ,

STN 가 ,

STN ( , STN-LCD ) (旋光性)

(D-STN: Double-layer STN)  
 [ ( n ) ( d ) ] 가 ,

[ , TV , 11, 79(1987), K.Katou, Jpn.J.Appl.Phys., 26, L17, 784(1987), Y.Nagase, 1989 SID Digest].

LCD , 2 , STN-LCD

3 ( , 3-87720 , 3-291620 , 3-291623 , 3-294821 , 4-003020 ). , 가 ,

D-STN , , , ,

( ) ( )

가 .

가 ,

1 , , 2 ,  
 가 ; 가 180° 270°  
 가 가  
 가 40 100° , = 550nm 가 100 250nm ,  
 = 400nm , = 550nm R(400) R(550)  
 (D)  $D = R(400)/R(550)$  , (D) 0.5 1.0

2 1 가

CD

STN-L

2 가 2

) ( 가 ) (

가 = 550nm 가 , 600nm 1100nm , 600nm  
 , 1100nm

A

(PVA) , PV / 2

, PVA

TN STN

STN-LCD

가 , 가  
 D-STN

가 ,



$$T = \frac{1}{2} \cos^2 \beta = \frac{1}{2} \left\{ \cos \theta \sqrt{1 + \left( \frac{[\Delta nd] \times \pi}{\lambda \times \theta} \right)^2} \right\}^2 \quad (7)$$

, T = 0 (1) (8) (9)

= m (m )

$$= \sqrt{\theta^2 + \left( \frac{[\Delta nd] \times \pi}{\lambda} \right)^2} \quad (8)$$

= (m + 1/2) (m )

$$= \sqrt{\theta^2 + \left( \frac{[\Delta nd] \times \pi}{\lambda} \right)^2} \quad (9)$$

, (10) (11)

$$[\Delta nd] = \lambda \sqrt{m^2 - \left( \frac{\theta}{\pi} \right)^2} \quad (10)$$

$$[\Delta nd] = \lambda \sqrt{\left( m + \frac{1}{2} \right)^2 - \left( \frac{\theta}{\pi} \right)^2} \quad (11)$$

, (11) , (視感度)가 가 T = 0 [ nd] ( )  
 = 0 , = 550nm [ nd] ( ) m  
 ) [ nd] 가 2 , = 550nm (

가 가 40 100° , = 550nm 가 , 가 100 250nm ,

, 2 , (7) (12)

$$T = \frac{1}{2} \cos^2 \beta = \frac{1}{2} \left\{ \cos \theta \sqrt{1 + \left( \frac{[\Delta nd] \times \pi}{\lambda \times \theta} \right)^2} \right\}^2 = 0 \quad (12)$$

(12) , [ nd] ( ) 가 , (12) T = 0 ( )

50nm (D) D = R(400)/ R(550) , D = 0.5 1.0, R(400) R(550) , = 5  
 D = 0.7 0.9





2 (11) , = 550nm, m = 0 [ nd] ( ) .

3 1 5 1 4

4 1 5 1 4  
( 5 )

5 1

6 2

7 3

8 1

9 2

10 4

11 5

12 3

13 4

(Abbe)  
(Cauchy equation)

(Senarmont method)

(10) . , 1

(2) (3)  
가

( min ) ( ) ( )

min )

1

3 (31C) , STN-LCD (31B) , 3 (31) , (31E) , (31D) 가 (31E)

(31A) , ZLI- 2293( ) , (31E)

(31) = 400nm = 550nm R<sub>1</sub> (400) R<sub>1</sub> (550) 1 = +250° 970nm 850nm

(31) ( ) (33)[ ( ) SR1862AP] , (33)

(31) (32)

2 (400) R<sub>2</sub> (550) (32) 810nm 660nm 2 = -180° , = 400nm = 550nm R 가



1

1 ) , D-STN (31) (32) ZLI-2293( )  
 $R_2 = -250^\circ$ ,  $R_2(400) = 400nm$ ,  $R_2(550) = 550nm$ ,  $R_1(400) = 910nm, 800nm$   
 $A = +45^\circ$ ,  $B = +90^\circ$ ,  $C = -45^\circ$   
 nm ( ) (31B) 가 (1/160 ) ,  
 ), , 8  
 1

2

1 (32) ZLI-2293( ) (31)  
 $R_2(400) = 550nm$ ,  $R_2(550) = 750nm, 660nm$ ,  $R_1(400) = 400nm$   
 $D = 1.16$   
 ( ) (31B) 가 (1/160 ) ,  
 ), , 9  
 1 가

4

(31)  $R_1(550) = 910nm, 800nm$ ,  $R_2(400) = 400nm$ ,  $R_2(550) = 550nm$ ,  $R_1(400) = 910nm, 800nm$   
 $A = +45^\circ$ ,  $B = +90^\circ$ ,  $C = -45^\circ$   
 (34) [ ( ) SR1862AU]  $D = 0.76$   
 ( ) (31B) 가 (1/160 ) ,  
 ), , 10  
 가 가 550nm  
 가 (34) [ ( ) SR1862AS-011] 가

5

(31)  $R_1(550) = 970nm, 850nm$ ,  $R_2(400) = 400nm$ ,  $R_2(550) = 550nm$ ,  $R_1(400) = 400nm$   
 $A = -45^\circ$ ,  $B = +90^\circ$ ,  $C = -45^\circ$   
 (34) [ ( ) RDF-C]  $D = 0.94$   
 ( ) (31B) 가 (1/160 ) ,  
 ), , 11  
 가 가

3

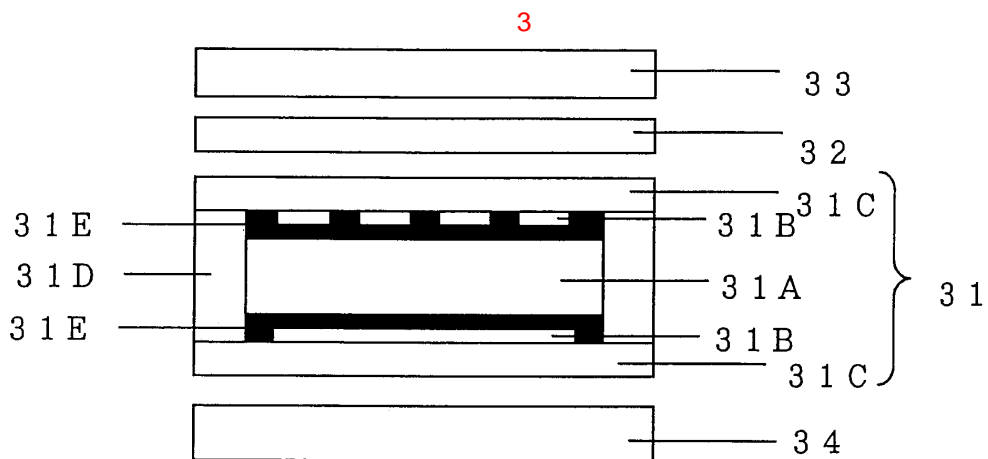
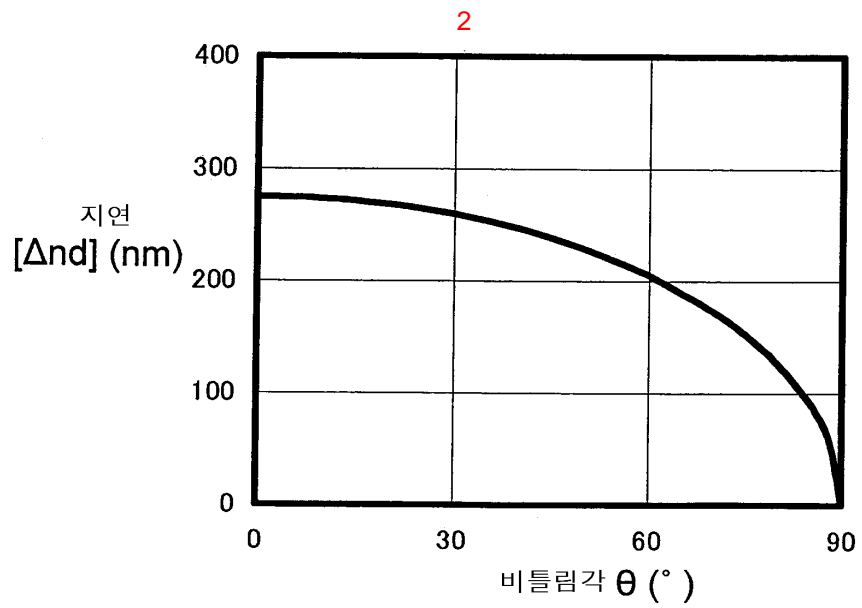
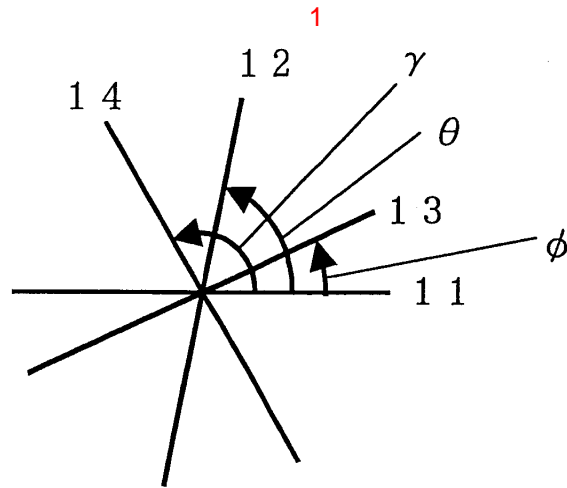
4 ) , D-STN (31) (32) ZLI-2293( )

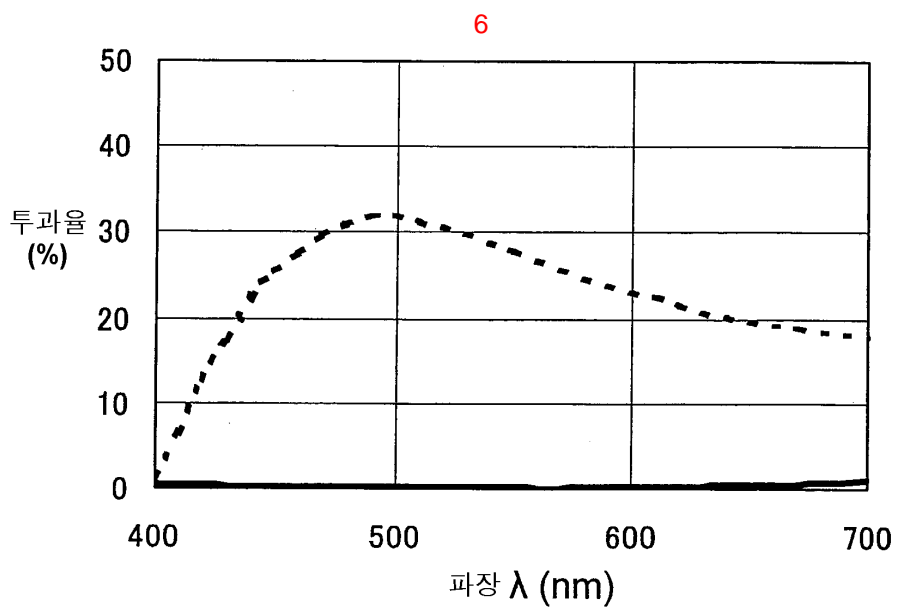
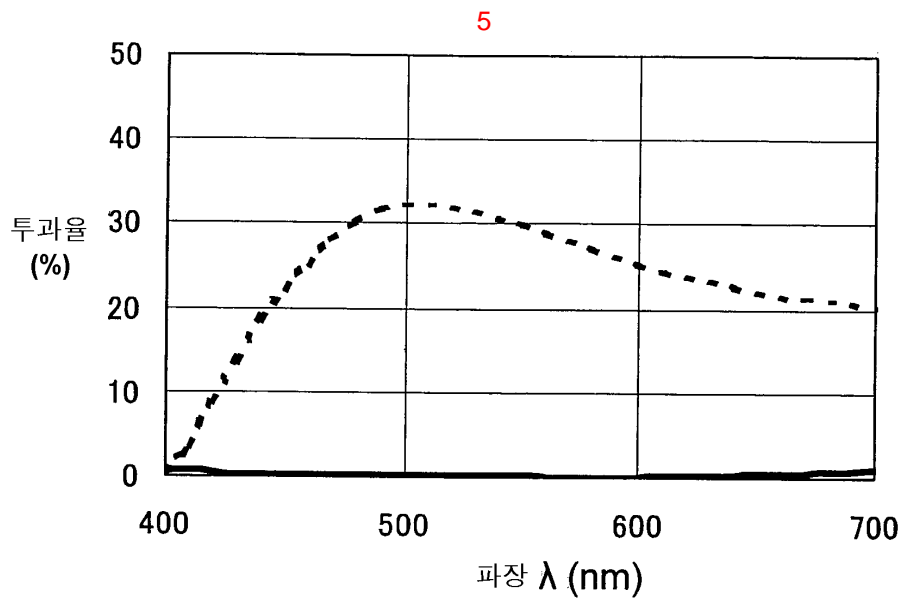
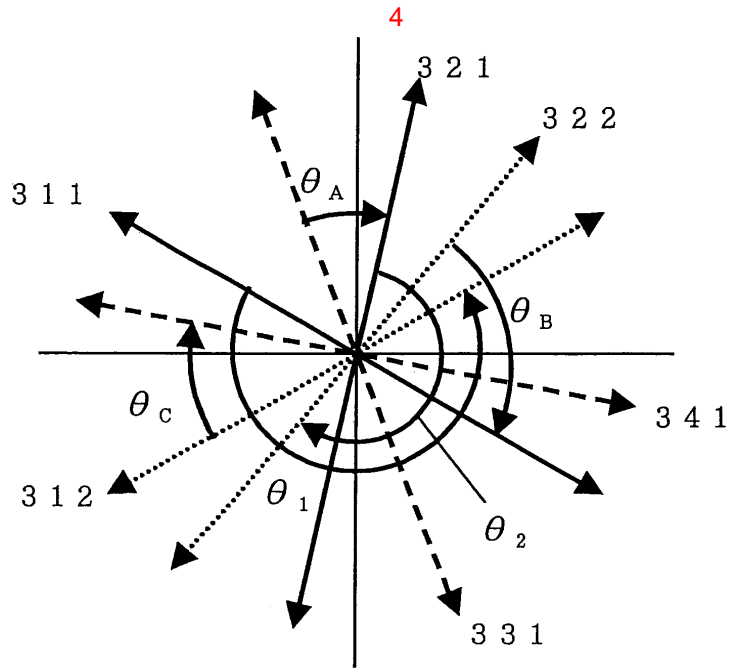
nm  $\theta_2 = -240^\circ$ ,  $\theta_A = +45^\circ$ ,  $\theta_B = +90^\circ$ ,  $\theta_C = +45^\circ$   $R_2(400)$   $R_2(550)$  855nm, 750nm  
 (31) 가 (1/160) , 12 가 550nm , 4

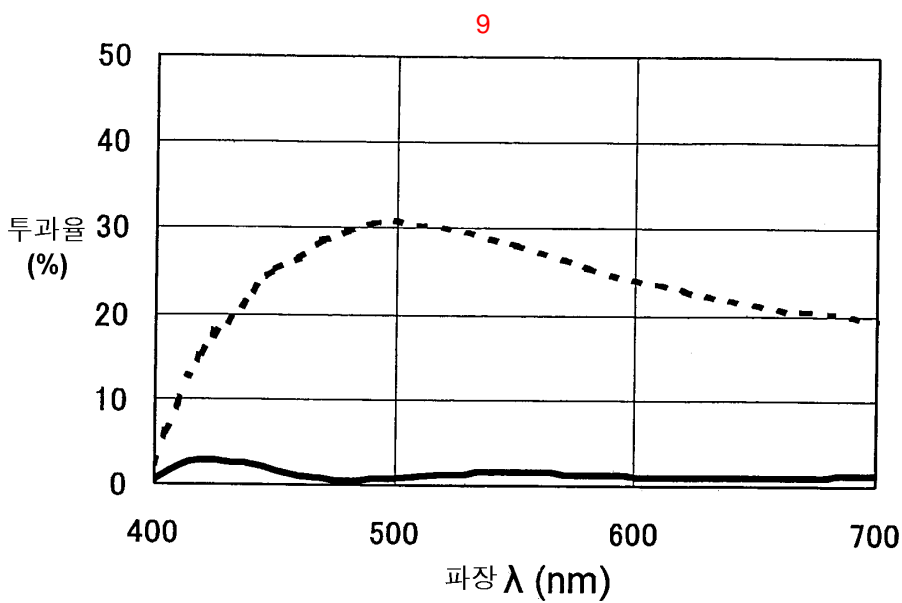
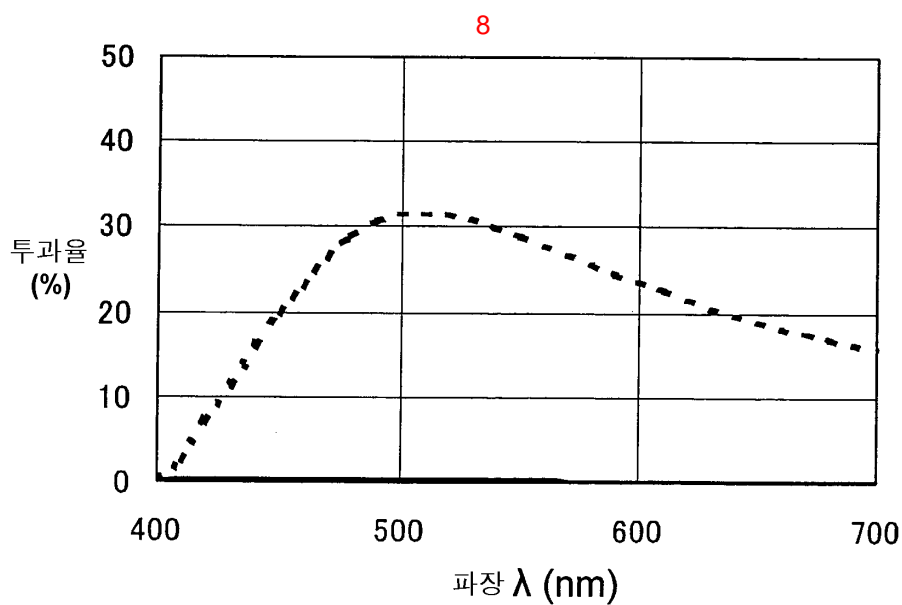
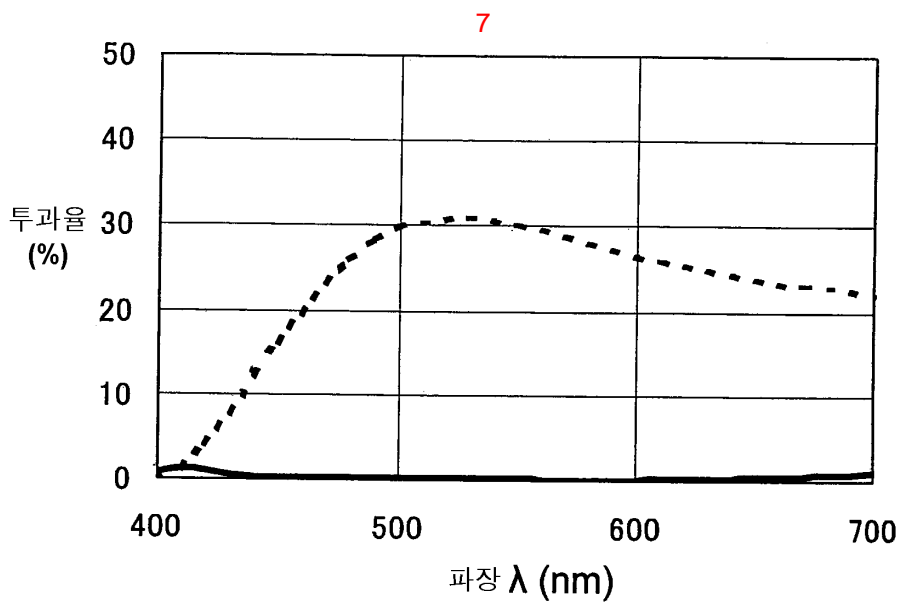
(31)  $\theta_1 = +240^\circ$ ,  $R_2(400)$   $R_2(550)$  D 0.35 910nm, 800nm (31)  $\theta_2 = -190^\circ$ ,  $R_1(400)$   $R_1(550)$  50nm 850nm 630nm = 400nm = 550nm = 400nm = 5  
 (31B) 가 (1/160) , 13 가 4 가

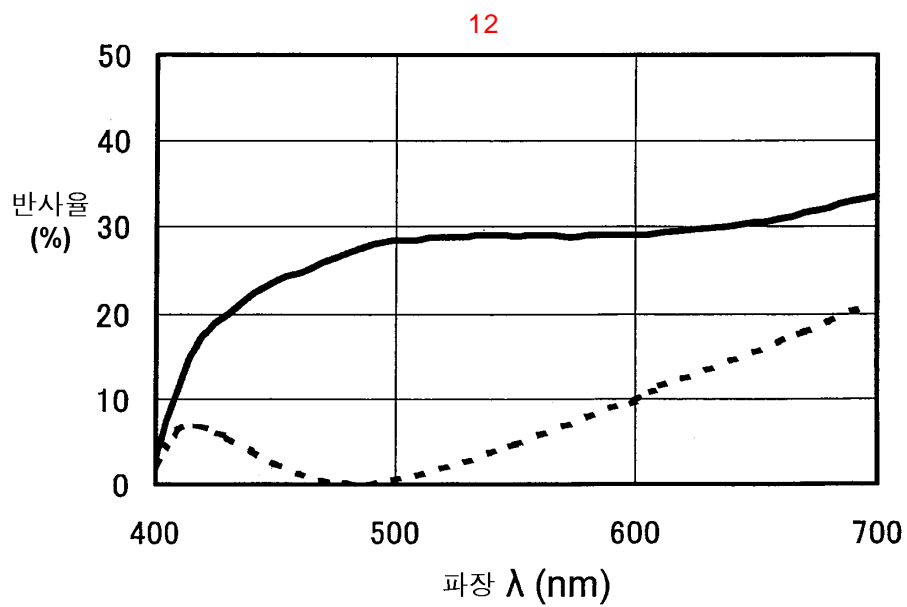
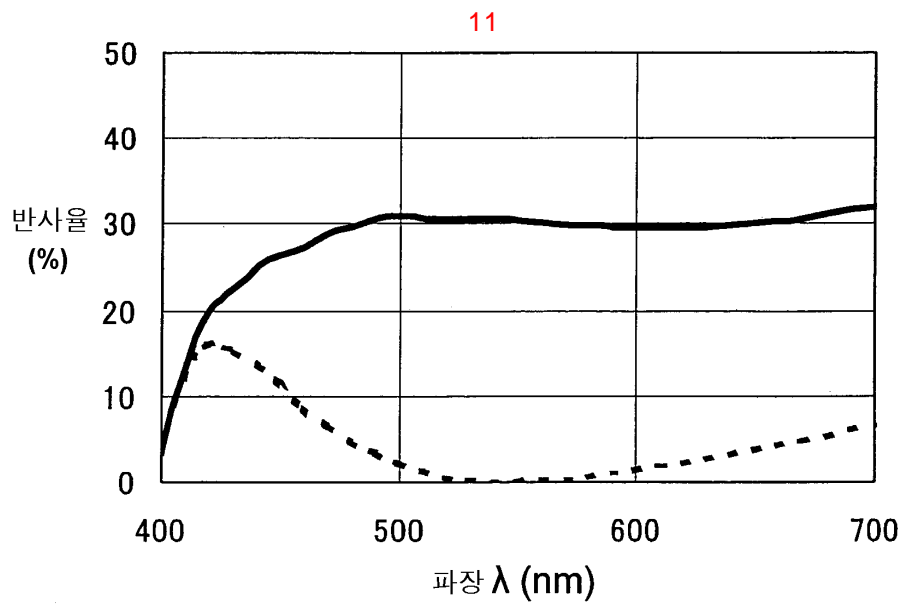
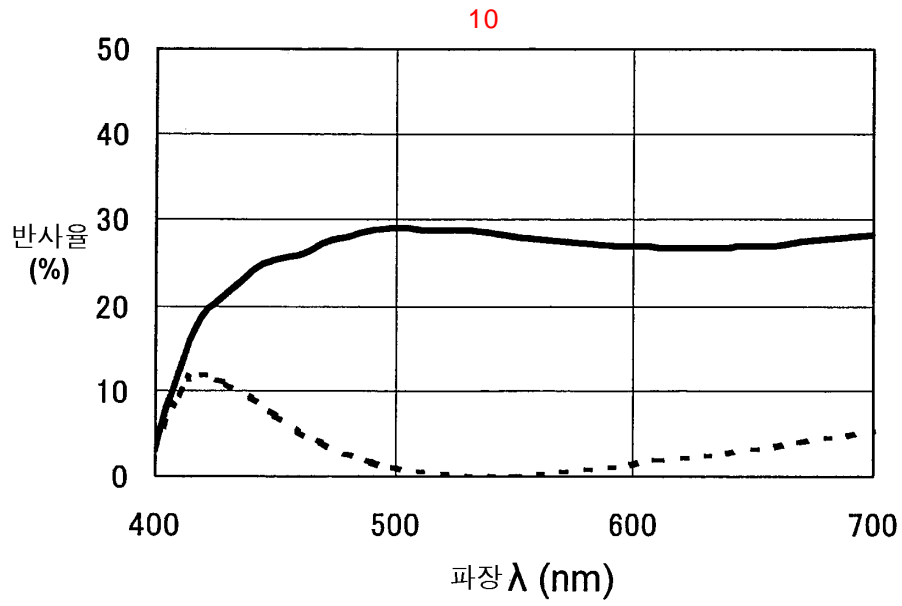
(57)  
 1. 가 , 2 가 180° 270° 가 40 100° , = 550nm 가 100 250nm , = 400nm = 550nm R(400) R(550)  
 (D)  $D = R(400)/R(550)$  , (D) 0.5 1.0

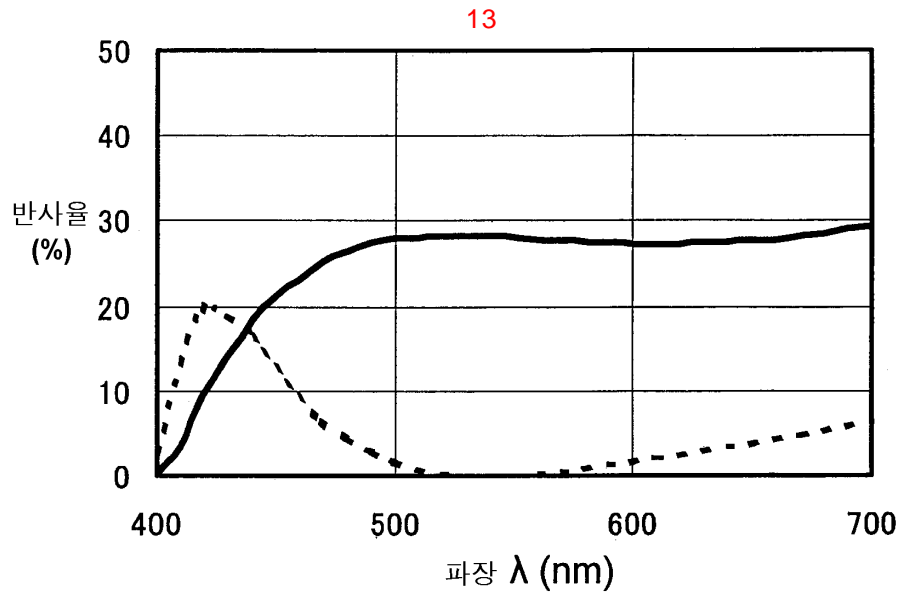
2. 1 가











专利名称(译)	液晶显示元件		
公开(公告)号	<a href="#">KR1020040037159A</a>	公开(公告)日	2004-05-04
申请号	KR1020047004484	申请日	2002-09-06
[标]申请(专利权)人(译)	新日本石油株式会社 有限公司以尼赫鲁, GB第十部分		
申请(专利权)人(译)	有限公司集团尼赫鲁点 x		
当前申请(专利权)人(译)	有限公司集团尼赫鲁点 x		
[标]发明人	KUMAGAI YOSHIHIRO 구마가이요시히로 MASAKI AKIRA 마사키아키라 UESAKA TETSUYA 우에사카데츠야		
发明人	구마가이요시히로 마사키아키라 우에사카데츠야		
IPC分类号	G02F1/133 G02F1/139 G02B5/30 G02F1/13363		
CPC分类号	G02F2202/40 G02F1/1397 G02F1/133636		
优先权	2001300757 2001-09-28 JP		
其他公开文献	KR100881530B1		
外部链接	<a href="#">Espacenet</a>		

摘要(译)

本发明包括一个液晶单元31, 配置在液晶单元, 偏振片 ( 33,34 ) 和光学补偿元件32的两侧之间的所述被设置在液晶单元的至少一侧的液晶单元和偏振片。液晶材料层的上液晶单元的扭曲角 ( 31A ) 被设定为180°到270°, 所述光学补偿元件具有在液晶材料层的扭曲的扭曲结构和相反方向, 在液晶单元的扭曲和光学补偿元件的每个绝对值的差为40~100°C, 对波长λ=在延迟的变化为100~250nm的550nm处的延迟变化的在波长λ= 400nm的绝对值和液晶元件的对波长λ= 550nm处和光学补偿元件通过这种在~1.0的范围的0.5的比率, 和液晶显示器的对比度高, 亮度, 并且具有颜色, 以获得令人满意的白色显示, 在常白模式, 以获得在常黑模式的光胡椒白色白色显示和良好的黑色显示及其提供的设备。3 指数方面 液晶盒, 光学补偿装置, 黑色模式, 对比度, 偏振器, 扭转角, 波长

