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(JP)

(71)

가 가

1-1-2

(72)

가

1 1 2

가 가

1 1 2

가 가

1 1 2

가 가

(74)

:

(54)

(a) , (b) , (A) , 2

(W) .

가

(10-333147 10-25528).

가

± 20 ° . STN TN 가

1) ± 20 °

2) ± 20 °

2

, 2) BEF , 1) ± 40 ° 가 3M

± 40 ° ,

, 3M

가 가 PC

가 200μm , 가 100μm 가 500μm

가

가 ± 20 ° 가

가

가 가 가 가

가

가

- (b) , () 가 0 (zero) , 30°
 $\lambda/8$ (b1) 1 2
 .
4. (a) 가, (a)
 2) , ,
- (b) , () 가 0 , 30°
 $\lambda/4$ (b1) ,
- (b1) , (a2) 가 $\lambda/4$ (b2) 가 ,
- (b2) , (a2) $45^\circ (-45^\circ) \pm 5^\circ$,
- (b2) , (a2) $-45^\circ (+45^\circ) \pm 5^\circ$,
- (b2) (b2) 가
 1 2 .
5. (a) 가, (a)
 2) , ,
- (b) , 가 $\lambda/4$, Nz 가 2 2 (b3) 2 ,
- (b3) , (a2) $45^\circ (-45^\circ) \pm 5^\circ$
 ,
- (b3) , (a2) $-45^\circ (+45^\circ) \pm 5^\circ$
 ,
- (b3) (b3) 가
 1 2 .
6. (a) 가, (a)
 2) , ,
- (b) , 가 $\lambda/2$, Nz 가 1.5 2 (b4) 1 ,
- , (a2) $45^\circ (-45^\circ) \pm 5^\circ$
 ,
- , (a2) $-45^\circ (+45^\circ) \pm 5^\circ$
 ,
- 2 (a2) 1 2
 .
7. (b1) , 가
 1 4 .
8. (b1) , 1 4
 .
9. (b1) , (columnnar)
 1 4 .
10. (b1) , 2 1 4
 .

11. (b1) $\frac{1}{1-4}$ 1

12. (a1) 3 6 11

13. (a1) $(\quad) \lambda/4$, 3
 $(\quad)$
 6 12 .

14. $\frac{(a_2)^4}{11}$,

15. (a2) $\frac{4}{11}, \frac{14}{11}$ ()

16. _____, _____ 1
15 _____.

17. 1 16

()

2561483

10-321025

1 (a) (a1) 1 (a1)
(A) () (a1), (b1), (a1)
가 .

1) 3) .

1) (a1) ,

2) $\gamma = 0$ (zero), (b1)

3)

(b1) , $\frac{C}{C}$ ()
 $\frac{C}{C}$ (b1) , ()
 2 가 0 가 , (가)
 가

(a1) $\frac{1}{2} \leq \frac{1}{2} \leq \frac{1}{2}$, $\frac{1}{2} \leq \frac{1}{2} \leq \frac{1}{2}$ 가 $\frac{1}{2} \leq \frac{1}{2} \leq \frac{1}{2}$ / $\frac{1}{2} \leq \frac{1}{2} \leq \frac{1}{2}$,
 가 $\frac{1}{2} \leq \frac{1}{2} \leq \frac{1}{2}$) ($\frac{1}{2} \leq \frac{1}{2} \leq \frac{1}{2}$, $\frac{1}{2} \leq \frac{1}{2} \leq \frac{1}{2}$. 1 (b1)

(a1)

(a1) (b1) ,

/

, () , ()
 , ()
 ()^(r) -1 -2 가 () , ()

1 , (a) (a1)

(1) (r1) (a1) , (r3) (r2)

(2) (r3) (b1)

(3) (r4) (a1)

(4) (r5)

(5) , (r6) (a1) (r8)
 (r7)

(6) (r8) (b1) (r8) (b1) 1/2

(7) (r9)

(8) (r9) (a1) W.A. Shurcliff, Polarized Light : Production and Use, (Harvard University Press, Cambridge, Mass., 1966)).
 (r9) (r10) 가

(9) (r10) (b1)

(10) (r11)

(11) (r8) (r11) (a1)

(12) (r2, r7, r12) (A)

(13) (r5) $\lambda / 4$

(a1)

가

/

가

가

(b1)
 (a1 :

1/2

가

(b1)

1/8

가

(a) 가 C (a2) , (b) C ((b1))
 C 가 C (a2) 45 ° -45 ° (a2) ,
 $\lambda/4$ (b2) , $\lambda/4$ (b2) , C
 3 (a2) , $\lambda/4$ (b2)
 4 (a) (a2) 4 (A)
 () (a2) 가 (a2), $\lambda/4$ (b2), (b1), $\lambda/4$ (b2),
 5 4 (a2)
 , $\lambda/4$ (b2) C : (b1)
 set1, set2 , $\lambda/4$ (b2) 45 ° (-45 °) ± 5 °
 et1, set2 (a2) $\lambda/4$ (b2) 45 ° (-45 °) , s
 C : (b1)
 4, 5
 (1) (r14) (a2)
 (2) (a2) , (r15) (r16)
 (3) (r15) $\lambda/4$ (b2) (r17)
 (4) (r17) (b1)
 (5) (r18) $\lambda/4$ (b2) (r19)
 (6) (r19) (a2)
 (7) (r20)
 (8) , (r21) (a2)
 (9) (a2) , (r22) (r23)
 (10) (r22) $\lambda/4$ (b2) (r24)
 (11) (b1) (r24) 1/2
 (12) (r25) $\lambda/4$ (b2) (r26)
 (13) (r26) (a2) (r27)
 (14) (r27) $\lambda/4$ (b2) (r28)
 (15) (b1) (r28) 1/2
 (16) (r29) $\lambda/4$ (b2) (r30)
 (17) (r30) (a2)

(18) (r16, r23, r31)

$\lambda/4$ (b2) (a2) $\lambda/4$ (b2) 가 (a2)
 45° , 가 45° 가
 , 가 ± 5 가
 (a2) , (a1) / 가 가
 (a2) (a2) (b1) (30°) , 1/4
 (a1) (a2) , 2 $\lambda/4$ (b2) C :
 (b1) (a) 가 (a2) 가 $\lambda/4$, 2 $\lambda/2$ (b3)
) , Nz 가 2 (b3) 2
 6 , 6 (a) (A) , 2 (b3) (a2), 2
 (b3), 2 (b3), (a2) 가
 7 , 6 (b1) $45^\circ (-45^\circ) \pm 5^\circ$ (a2)
 2 (b3) set1, set2
 , (a2) 2 (b3) (b3) , 2 (b3)
 , set1, set2 (a2) 2 (b3) $45^\circ (-45^\circ)$
 6, 7 ,
 (1) (r32) , (a2)
 (2) (a2) , (r33) , (r34)
 (3) (r33) , 가 $1/4$ 2 (b3) 2 0 , 2 2
 (b3) 90° (r35)
 (4) (r35) (a2)
 (5) (r36)
 (6) , (r37) , (a2)
 (7) (a2) , (r38) , (r39)
 (8) (r38) 2 2 (b3) 2 2 (b3) , 1/4
 , Nz 2 90° (b3) (r40)

- (9) (r40) , (a2) .
- (10) (a2) (r40) (r41) .
- (11) (r41) 2×2 (b3) , (8)
 90° (r42) .
- (12) (r42) (a2) .
- (13) (r34, r39, r43) .
- 6, 7 (A) , 가 $1/4$, Nz 2×2 :
 (b3) 2×2 , 4, 5 , 2 $\lambda/4$ (b2) C . ,
 (b1) (A) 3 가 , .
-) 45° , (b3) (a2) (b3) 가 (a2)
 , 가 45° 가 가 .
 가 가 . , 가
 가 $\pm 5^\circ$.
 (a2) , (a1) / , 가 가 .
- , (a) 가 (a2) , (b) 가 $\lambda/2$,
 가 $\lambda/2$ (b4) , Nz 1.5 (b4) .
 2
- 8 , (a) (a2) , 2 (b4)
 . 8 , (A) () , (a2), 2
 (b4), (a2) 가 .
- 9 , 8 (a2) (b4) (a2) (a2)
 (a2) $45^\circ (-45^\circ) \pm 5^\circ$. 2 (b4) , (a2)
- 8, 9 , .
- (1) (r47) , (a2) .
- (2) (a2) , (r48) , (r49) .
- (3) (r48) , 가 $1/2 \times 2$ (b4) , (r50)
 90° .
- (4) (r50) (a2) .
- (5) (r51) , .
- (6) , (r52) , (a2) .
- (7) (a2) , (r53) , (r54) .

(8) (r53) 2 (b4) . 2 (b4) 가 1/2 ,
 Nz 2 (r55) . (r53)

(9) (r55) (a2) , (r56) .

(10) (r56) (b4) .

(11) (r57) (a2) (r58) .

(12) (r49, r54, r58) .

8, 9 (A) , 가 1/2 , Nz 1.5 2
 (b4) 1 . , 4, 5 2 λ/4 (b2) C :
 (b1) 3 가 , 6, 7 2
 (A) 가 , .

) 45 ° , (b4) (a2) (b4) 가 (a2)
 , 가 45 ° 가 가 .

가 . ± 5 ° 가 가 .
 (a2) , (a1) / , 가 가

1 9 (A) , 30 ° , 2
 30 ° (a) 30 ° (b) , (A) (A)
 , ± 15 20 ° , 가 .

가

2000-347006

2000-347007

가
 DTP ,

가

가

가

10

가

1

$$\left(\frac{1}{S_3}\right)^2 = \left(\frac{1}{S_1}\right)^2 + \left(\frac{1}{S_2}\right)^2 - \frac{2 \cos \alpha}{S_1 \times S_2}$$

1, S1: 1, S2: 2, S3: , α : 1 2 가 .

가 (V: visibility) , (I) I_{max}, I_{min} ,
 : $V = (I_{\max} - I_{\min}) / (I_{\max} + I_{\min})$,
 가 가 , 가 ,
 3 가 . , 가 가

μm , 가 , 가 (10 μm) 가
 , 가 . , (5 μm), (5 μm) 50 μm
 , 가 가 .

()

가 가
 . ,
 200 μm , μm
 . ,
 , TN ,

가

1 , (A) .

2 , 1, 3, 4, 6, 8 ,

3 , .

4 , (A) .

5 , (a2) .

6 , (A) .

7 , (a2) .

8 , (A) .

9 , (a2) .

10 , .

11	,	1			.
12	,	2			.
13	,	3			.
14	,	4			.
15	,	5			.
16	,	6			.
17	,	7	2	$\lambda / 4$	(b2)
18	,	7			.

(A) , 가

11 16, 18

2 (b) (a)

가
가

(a))

550nm ± 10nm 가 550nm (a)

60 °

3 710nm 가

100nm 610nm

(a)

가

(a1))

(a1) λ = np (n 가 p (a1)

(a1) 가
가 $\lambda/2$ 가 ,
(,) 가 , C
(a1)
SiO₂ 가 가
가 가
(A)
가
N-
가 가
(a2))
(a2) , 2 2 2 2 2
/ 2 2
1 , JSR
(b))
(a1) 30° (a2) $\lambda/8$ (b1) ,
가 , $\lambda/10$

2, 가 60° (a1) 60° 가 λ / C (a1) 30° 가 λ / 2 30° C λ / 8 가 30° (A) 20° 30° TN TN , TN

(b1) 0nm) 가 (380nm 78 1 , 2 , C 가 (380nm 780nm) , 가 C , 가 , 350nm C , 가 () C , 가 1 C , 6-82777 2 C , 2 가 (a2) 30° (b1) 가 (b1) λ / 4 λ / 4 (b2) λ / 4 λ / 4 3, 4, 5 , λ / 4 (b2) (a2) λ / 4 λ / 4 (b2) 2 λ / 4 가 λ / 4 550nm λ / 4 1/2

가, 1 2

가 $\lambda/4$, 가 $\lambda/2$ 2 (b3) 2
 $\cdot 2$ (b3) Nz 가 2
6, 7 , 2 (b3)

(a2) , 2 (b3)

가 가 $\lambda/4$ 550nm $\lambda/4 \pm 40\text{nm}$, 가 $\pm 15\text{nm}$

가 가 $\lambda/2$, 가 $\lambda/2$ 2 (b4) 1
 $\cdot 2$ (b4) , Nz 가 1.5
8, 9 , (a2) 2

(b4)

가 가 $\lambda/2$, 550nm $\lambda/2 \pm 40\text{nm}$, 가 $\pm 15\text{nm}$

가

2 2 (b3), (b4) ,
 $\cdot 2$, 1 , 가 , 가

((F))

(E) () (F) 가

가

(F) 가

((D))

(D)

(D)

(D)

가 , (D)

((W))

(W)

(PL)

(LC) , 가 가 (PL)

2000-347006 , 2000-347007

PL) (LC) (PL) (W) (LC) - (

STN , TN

(W) 가 가

(PL) (LC) (W) (PL)

TN , 가

(PL) (C) (PL) (W)

STN (PL)

(C)

, /

/ /

가 (W)

(相性) /

2000-347006 , (W) 2000-347007 , 80% 90%

, / 가

()

, , 가

, 가 가

가 가

() 가 가

, 가

(A) (a) (b) 2002/36735

()

(PL) (PL) (PL)

(PL)

(partially formalized)

2 2 1

e) 가 5 80 μm (poly - ene typ

3 7

(blocking inhibitors)

(isotropy)

(AS)

(A) (side chain) 2001-343529 (WO01/37007) 가
N-

(work handling)

1 500 μm 1 300 μm , 5 200 μm

(coloring)

$$R_{th} = [(n_x + n_y)/2 - n_z] \times d$$

(Rth)

-90 nm +75 nm
+60 nm (Rth) -80 nm

(-70 nm +45 nm)

(hard coat layer)

(sticking)

(anti-glare)

cognition)

(rough surfacing treatment method)

(sandblasting)

(visual re

가

가

(cross-lin

ked) 가 , 0.5 50 μ m 가

100 2 50 , 5 25 () -

가 2 가 2 2 /

가 1 2 ()

(foil) (matte treated) (directivit

y) (ion plating)

가,

()

2 3

(wettability), (cohesiveness)

(glass bead),

가 10 50 %

5 200 μm , 10 100 μm 가

1 500 μm

(salicylic acid),

UV 가

가 X , X Y , Z
 n_x, n_y, n_z , 550nm n_x, n_y, n_z (
 KOBRA21ADH) d (nm)
 $(n_x - n_y) \times d$: $(n_x - n_z) \times d$
 $(n_x - n_y) \times d$.

N_z : $N_z = (n_x - n_z) / (n_x - n_y)$

00) (MCPD-20

HM150

U4100

DOT3

BM7

UVC321AM1

1

((a1))

BASF

LC756

BASF

LC242,

550nm 가

/ () = 5/95
: 545nm, : 60nm

(가 907, (1 %) (20 %) 가
: (75 μ m)

130 가 5 μ m 90 2 , (10mW/
cm × 1) (a1) , 80 ((a1))
, NO.7, 25 μ m) 520 580nm

(C)

, 가 0, (b1 : C)
, BASF LC242, BASF LC7
56

350nm 가
/ () = 11/88
: 350nm

(가 907, (1 %) (30 %) 가
: (75 μ m)

130 가 7 μ m 90 2 , (10mW/
cm × 1) C (b1) , 80 C (b1)
, 550nm 2nm, 30 ° 190nm (> λ /8)

((A))

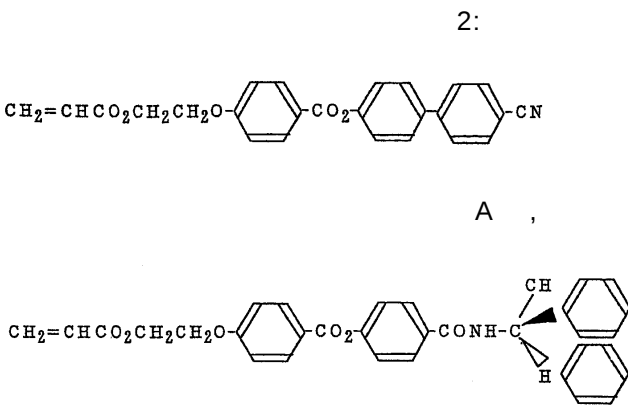
(a1) (b1) (A) (, NO.7, 25 μ m
(a1) C 가 , 가
, 가

(A) 544nm
 G0 (D : 90% (F)) (E) , (A)
 PET (A) , 20 °
 , 30 ° , 45 °
 ()
 , (A) TFT , TN (LC) 10.4 . TN (P)
 L) SEG1425DU
 , (B) , $\lambda/4$ (NRF 140nm)
 (B) , (PL) 45 ° 가
) (LC) (PL) $\lambda/4$ (B) (A) (NO.7, 25 μ m)
 (W) (NO.7, = 1.47)
 (4 μ m, 30wt%, 1.44) (PL) 92% (LC)
 30 μ m
 11
 $\pm 60^\circ$
 (W) (PL) (LC) (LC)
 (PL)
 (W)
 2
 (C)
 0, (b1 : C)
 1 :
CH2=CHCO2CH2CH2O-C6H4-CO2-C6H4-C6H4-CN
 A
 (가 907, A : A (30 %) 가
) (0.1 %) , (1 (75 μ m) , ()
 2 A , 2.5 μ m 90
 , 130 가 , 80
 (10mW/ cm $\times$ 1) C (b1)
 (b1) , 550nm
 200nm ($> \lambda/8$) 0nm, 30 °
 ((A))
 1 , C (b1) , C (b1)

1 (A) .
 ()
 (A) 1 .
 (W) (PL) ,
 (AG : , AGS 1 80 μ m TAC) . 2
 12 (PL) 1 (PL) 가
 (W) ()
 , ()
 ,
 3
 ((a2))
 (PEN) / - (co-PEN) 가
 , 20 1
 0.1 μ m 140 , TD 3 가 5 , 100
 (a2) 20 (a2) 500nm 600nm
 .
 ((A))
 1 C (b1) , (b2) , 1
 가 $\lambda/4$ (, NRF , 135nm) , 5
 (a2) , (a2) (A) 0° , $\lambda/4$ (b2) : 45°
 , C (b1 :), $\lambda/4$ (b2) : - 45° , (a2) 90° 가
 1 C (b1) (No.7, 25 μ m)
 ()
 (A) 1 .
 (PL) (W) , (C) ()
 , 80 μ m TAC 2 (LC)
 (W) (PL) , (LC)
 (PL) (PL) (A)
 $\lambda/4$ (B) .
 13 1 ,
 ($\pm 45^\circ$)
 .
 4
 ((A))
 , 2 3 (a2) , (b4)
 2 (A) . 가 가 270nm, Nz = 1.5) 9
 25 μ m 2 (, NO.7,
)
 ()

(A) 1 .
(A) (PL) (C) STN (LC) STN (10.4)
(PL) SEG1425DU (LC) (PL) NRF (W) 430nm,
(50 μ m, 25 μ m) 20 μ m)
(90% , NO.7, 25 μ m)
가 14
가 20 , 1
가 .

5
((a1))
4
(a1)
0834754 460nm, 510nm, 5
80nm, 660nm 4



()
33 %
0.5 %) , 60
가
1

[1]

(nm)	() A / B	(nm)
460nm	9.2/1	430 490nm
510nm	10.7/1	480 550nm
580nm	12.8/1	540 620nm
660nm	14.9/1	620 710nm

가 1.5 μ m 가 10 %
(, TD- TAC) , 80 μ m
, 140 15 , 0.1 μ m
가 ,

AD244 () B R G , R G
 , 4 , R
 10 μ m
 (a1) 430nm 710nm

((A))

(, No.7, 25 μ m) (a1) , 1 C (b1) (a1)

(A) , 3 (435nm, 545nm, 610nm)
 (D) , 30 ° , 45 ° , 20 ° , 10% (A)
) 가 가 가

()
 , 2 (LC) (W)
 15

6

((A))

(a2) 3M DBEF (a2) ,
 2) (b3) 6, 7 (A) (가 가 140nm, Nz =
 , NO.7, 25 μ m) ()

3 (435nm, 545nm, 610nm) (E:
) (D : , 90%) (A) .
 PET (F)

()

TFT (10.4) (W) (LC)
 (PL) SEG1425DU

90 20 μ m ,
 50 μ m -TAC

(, KR410) , (10mW 30) (P
 16 (PL)

L) $\pm 60^\circ$,
 45 ° 가 가

7

((A))

b1) (a2) 3M DBEF 1 1 C (b2) 1 2
 $\lambda/4$ (NRF , 140nm , NRZ , 270nm, N
 $z = 0.5$) $\lambda/4$ (b2) 17
 (a2) 가 가
 ,
 , 가 ,

5 가 (a2) (A) ,
 (a2) , 0° (A) , $\lambda/4$ (b2) :
 45°, C (b1 :), $\lambda/4$ (b2) : - 45°, (a2) 90°
 가 (b1 :) (a2) No.7, 25 μ m)
 . 1 C (b1)

()

(A) , 1
 18 (W)
 3 (435nm, 545nm, 610nm)
 (90) (LC) TFT (E)
) (11.3

1 ($\pm 45^\circ$)

1

1 7 , (a) (b) (A)
 . (W) 가 가 ,

 $\pm 45^\circ$
 (W)

가

2

6 , (A) , 3M 가 ,

3

3 (a2) 2 (,
 NPF-EG1425DU) 3
 1

가

(57)

1.

(A) 2 (a) , (b)

(視認)

2.

1 , 2 (a) 550nm $\pm$ 10nm

3.

1 2 (a) , (a1) ,

(b) , () 가 0 (zero) , 30 °
 $\lambda / 8$ (b1)

4.

1 2 (a) , (a2) ,

(b) , () 가 0 , 30 °
 $\lambda / 4$ (b1)

(b1) , (a2) 가 $\lambda / 4$ (b2) 가 ,

(b2) , (a2) 45 ° (-45 °) $\pm$ 5 ° ,

(b2) , (a2) -45 ° (+45 °) $\pm$ 5 ° ,

(b2) (b2) 가

5.

1 2 (a) , (a2) ,

(b) , 가 $\lambda / 4$, Nz 가 2 2 (b3) 2 ,

(b3) , (a2) 45 ° (-45 °) $\pm$ 5 °

(b3) , (a2) -45 ° (+45 °) $\pm$ 5 °

(b3) (b3) 가

6.

1 2 (a) ,

(a2) , ,

(b) , 가 $\lambda/2$, Nz 가 1.5 2 (b4) 1 ,(a2) $45^\circ (-45^\circ) \pm 5^\circ$ (a2) $-45^\circ (+45^\circ) \pm 5^\circ$

2 (a2)

7.

1 4 , (b1) , 가

8.

1 4 , (b1) ,

9.

1 4 , (b1) , (column nar)

10.

1 4 , (b1) , 2

11.

1 4 , (b1) , 1

12.

3 6 11 , (a1)

13.

3 6 12 , (a1) () $\lambda/4$
()

14.

4 11 , (a2) ,

15.

4 11 14 , (a2)
()

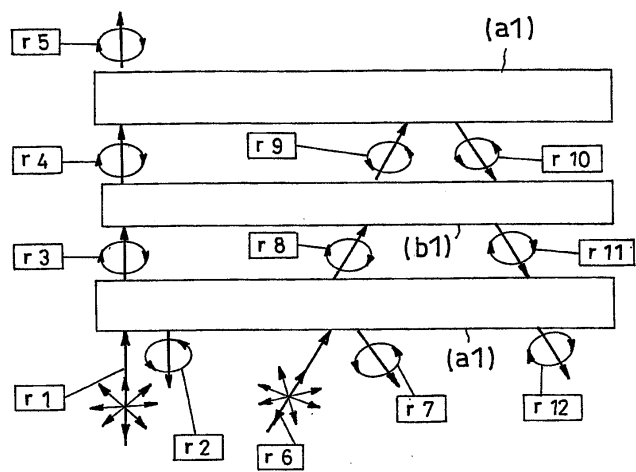
16.

1 15 , ,

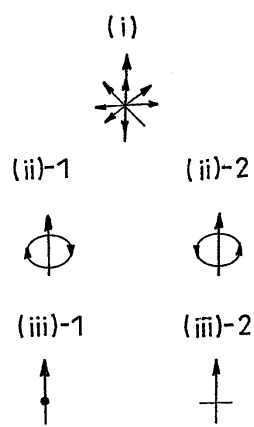
17.

1 16

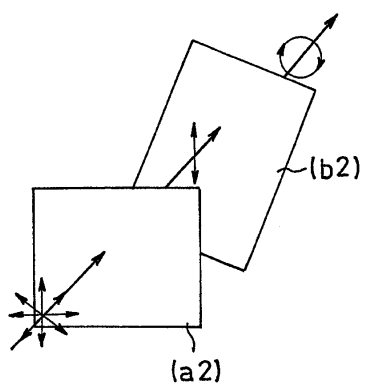
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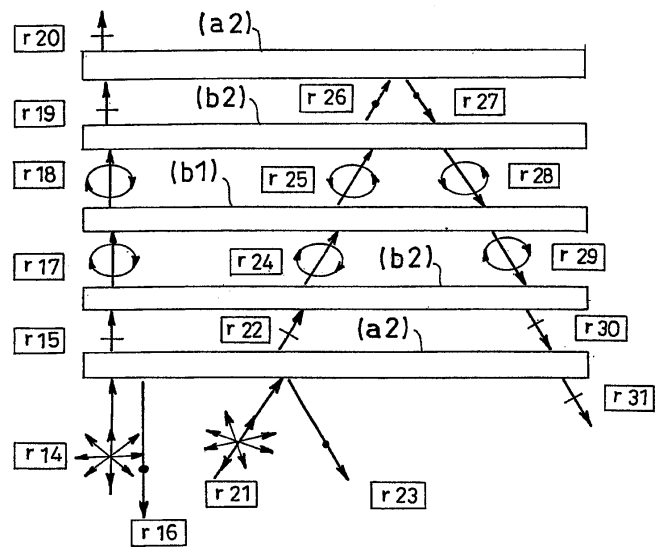
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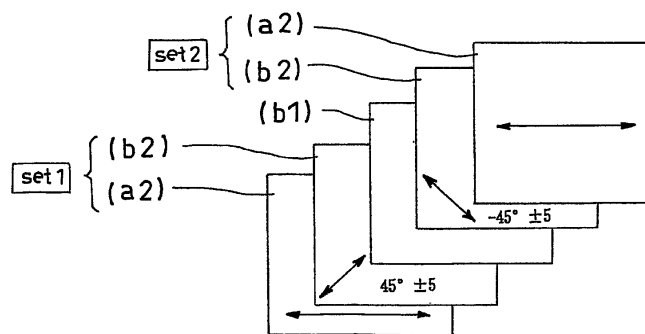
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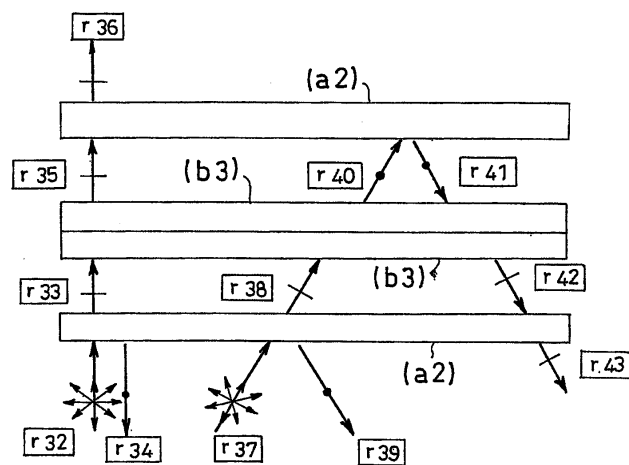
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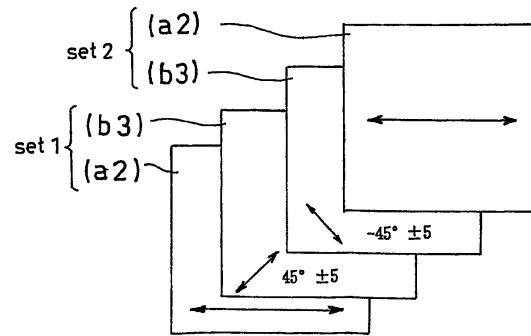
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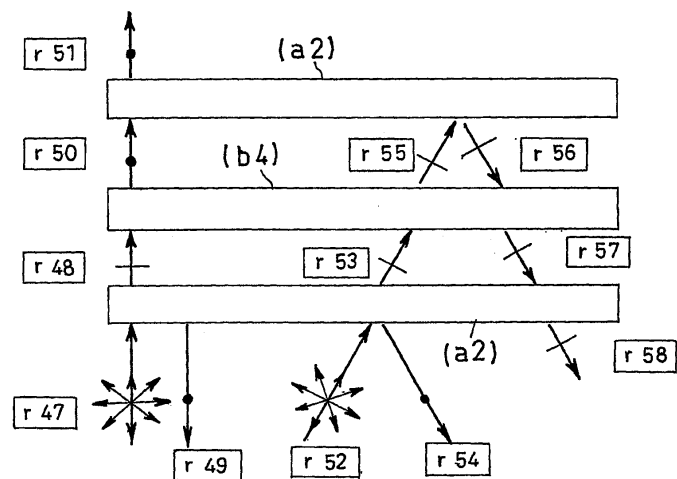
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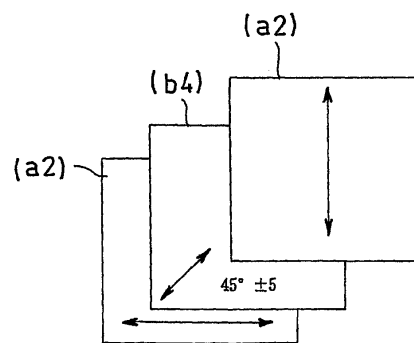
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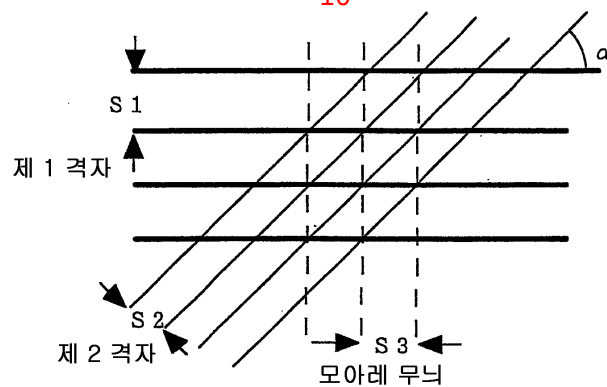
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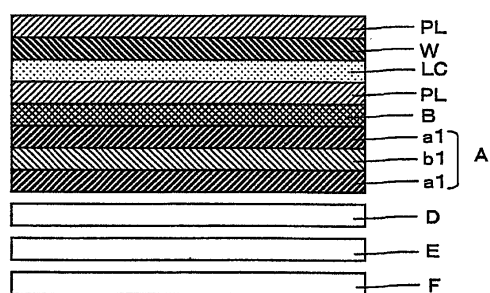
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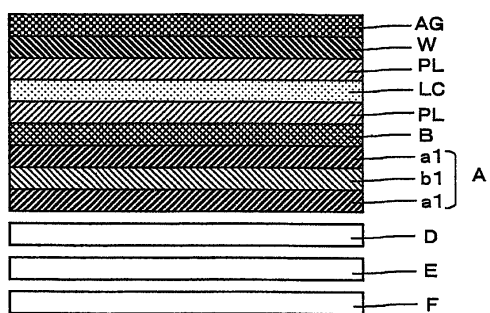
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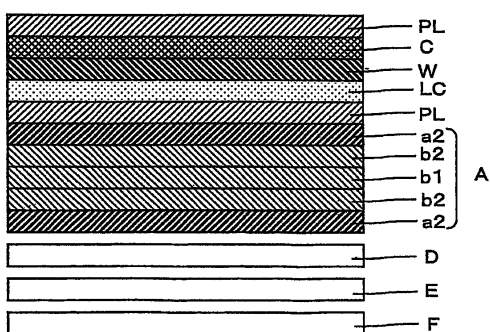
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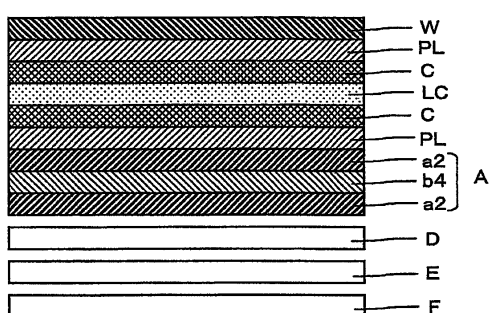
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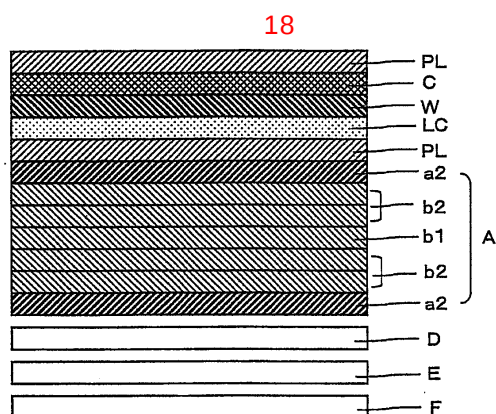
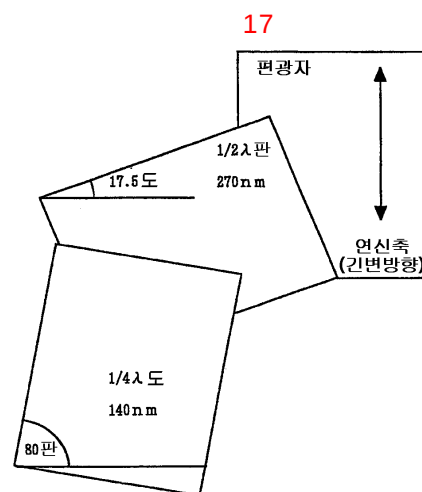
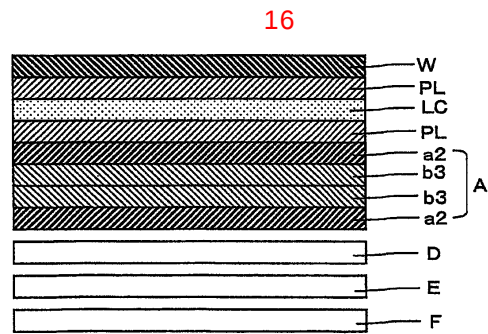
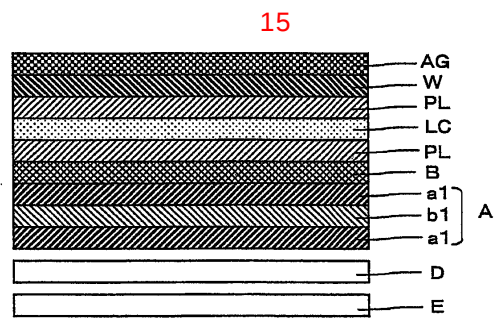


13



14





专利名称(译)	可视角度放大的液晶显示器		
公开(公告)号	KR1020040104610A	公开(公告)日	2004-12-10
申请号	KR1020047017086	申请日	2003-04-18
[标]申请(专利权)人(译)	日东电工株式会社		
申请(专利权)人(译)	日东电工 (株) 制		
[标]发明人	HARA KAZUTAKA 하라가즈타카 TAKAHASHI NAOKI 다카하시나오키 MIYATAKE MINORU 미야타케미노루		
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IPC分类号	G02F1/13363 G02B5/30 G02F1/1335 G02F1/13357		
CPC分类号	G02F1/133504 G02B5/3041 G02F1/133536 G02F1/13362 G02F1/13363 G02F1/133634 G02F2001/133507		
优先权	2002122467 2002-04-24 JP		
其他公开文献	KR100763291B1		
外部链接	Espacenet		

摘要(译)

一种视角放大液晶显示单元，包括至少一个背光系统，该背光系统通过使用偏振元件 (A) 使来自漫射光源的光束平行化，其中相位差层 (b) 设置在至少两层之间。具有相互重叠的偏振选择性反射波长带宽的反射偏振器 (a) ，透射平行光束的液晶单元，设置在液晶单元的相对侧的偏振片，以及设置的视角放大层 (W) 在液晶单元的可见侧上，使透射光束漫射。虽然很薄，但这种液晶显示器可以实现宽视角。

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