

(19)
(12)

(KR)
(B1)

(51) 。 Int. Cl. 7
G02F 1/133

(45)
(11)
(24)

2002 05 06
10 - 0335662
2002 04 24

(21) 10 - 2000 - 0036323
(22) 2000 06 29

(65) 2001 - 0007574
(43) 2001 01 26

(30) 99 - 185974 1999 06 30 (JP)

(73) 가 가 가
가 가 1 6 2

(72) 가
가 가 가 5 - 2 - 20

(74)

:

(54)

,

1 2 1

3

3

1 2

가

1

1	1		
2			
3			
4	(ns - nz) / (ns - nf) = 1, (ns - nf) · d = 260nm, (ns - nz) · d = 260nm (前面)	s	3
5	(ns - nz) / (ns - nf) = 1, (ns - nf) · d = 260nm, (ns - nz) · d = 260nm (直交)	s	3
6	(ns - nz) / (ns - nf) = 1, (ns - nf) · d = 350nm, (ns - nz) · d = 350nm	s	3
7	(ns - nz) / (ns - nf) = 1, (ns - nf) · d = 350nm, (ns - nz) · d = 350nm	s	3
8	(ns - nz) / (ns - nf) = 1, (ns - nf) · d = 440nm, (ns - nz) · d = 440nm	s	3
9	(ns - nz) / (ns - nf) = 1, (ns - nf) · d = 440nm, (ns - nz) · d = 440nm	s	3
10	(ns - nz) / (ns - nf) = 0.3, (ns - nf) · d = 205nm, (ns - nz) · d = 80nm	s	3
11	(ns - nz) / (ns - nf) = 0.3, (ns - nf) · d = 205nm, (ns - nz) · d = 80nm	s	3
12	(ns - nz) / (ns - nf) = 0.3, (ns - nf) · d = 350nm, (ns - nz) · d = 105nm	s	3
13	(ns - nz) / (ns - nf) = 0.3, (ns - nf) · d = 350nm, (ns - nz) · d = 105nm	s	3
14	(ns - nz) / (ns - nf) = 0.3, (ns - nf) · d = 420nm, (ns - nz) · d = 126nm	s	3
15	(ns - nz) / (ns - nf) = 0.3, (ns - nf) · d = 420nm, (ns - nz) · d = 126nm	s	3
16	3		
17	2		

18 3

1: 2, 3:

2a: 3a:

4, 5: 6: TFT

7, 8: 9:

11, 12: 11a, 12a:

13: 1 14: 2

15: 16:

17: 18:

19, 19 : 3 N:

TN(Twisted Nematic) STN(Super Twisted Nematic)

(前後) 가

TN STN

TN

가

(帶色)

1

(liquid crystal display) ,

(liquid crystal cell) ,

(normal line)
(direction component)

1 ,

2 ,

1 , 2

3 .

1 ,

가 가

1 2 ,

3

가 .

1 2 1 2

가
(discotic liquid crystal layer)

가 , 1, 2

1 2

3

(相違)

2 3 가 1 , ,

3

가

가

가

가

1 2 1 2

가 ,
가

가

3

1

2

3

f

z

s

s

ns, f

nf, z

s

nz

$$0 < (ns - nz) / (ns - nf) < 1$$

nm 450nm d 가 $(ns - nf) \cdot d$ 250nm 450nm 300nm 500nm , $(ns - nz) \cdot d$ 70 3

3

(1)

1 15

1

, 1

, 2

1 2 (1) (1)
 (11) (12) , (1) (11) 1 (13)
 , (1) (12) 2 (14) . 1 (13)
 (11) 3 (19) .
 (1) (2, 3) (2, 3) (4, 5)
 (9) , (2, 3)
 (1) , (2) (3)
 (4) (5) (5) (2)
 (5) (5) TFT() (6)가 (3)
 TFT(6) TFT(6) TFT(6)
 TFT(6) () TFT(6) (5) TFT(6) (5)
 TFT(6) . 2 TFT(6) . TFT(6) (3)
 (3)
 i i n
 . (2, 3) (4, 5)
 (7, 8) , (7, 8)
 TN , (1) (9) (2, 3)
 (7, 8) (2, 3) . (11) (12)
 (2, 3) 90°
 (11a, 12a)(1)
 1 2 (1) (11) (1) (12)
 (13, 14)
 3 1 2 (13, 14) , 1 2
 (13, 14) (18)가 (17)
 (17) 1 2 (13, 14) (15) SiO(
) (斜方) (18) (倒伏)
 (16) , 가 (18) (15)
 ,
 ,
 ,
 1 2 (13, 14) (18)
 , (17) (18) (18a)
 3 N (18)가 ((15)) N 1,
 N

2

1) 1 2 (13, 14) N (1) (12) (19) 가 s , (11) (1) (12) (19) ns, nf, nz ns > nz nf (ns > n (ns > nz > nf) , 3 (13) (11) 가 z , (ns > n 가

1 (1) (2) (2a) 가 x (3) (3a) 가 x (1) (9) 45° 45° (3) (3) (2) 90°

1 (13) N 가 x (14) 45° N 45° 가 x

1 (13) N (2) (2a) (3) (3a) (14) N

1 2 (13, 14) N (15) (18) (15) (18)

2a) (3a) 12a" (11) (11a) 가 x (12) 45° (1) (2) (2a) (12) (13) " 11a " 45° (1) (11) (12) " 11a " "

3 (19) 가 (s) 가 x (1) 45°

11a) 3 (19) s 3 (19) (11) (2) (2a) ns, nf, nz가

$$0 < \frac{(ns - nz)}{(ns - nf)} < 1, \quad (ns - nf)$$

3 (19) (1) (9) n d nd
 3 (19) d , (1) nd 300nm 500nm
 (ns - nf) · d 250nm 450nm ,
 (ns - nz) · d 70nm 450nm .

(12) (1) (11) (1)
 1 2 (13, 14) N N
 1 (13) (11) 3 (19)
 , 가 .
 TN 가 가 ,
 가 가 ,
 가 가 .

2 (13, 14) (1) (11, 12) 1
 (2a, 3a) , 3 N (19) (11) 1 (2, 3)
 가 , (s) (13)
 (11a) , (9) (5, 6)
 (9) 가 (9) (2, 3) .

, , (9) (5, 6) 가
 , (12) 2 (14)
 N 90° , (2) (2a) (9) , 1
 (13) N

(11a) (11) (2a) 3 3 s s

(9) 가 (13)

3 s 3 (ns - nf) 가 (11)

(14) N (9) (5, 6) 가 2 (12)

(1) (9) (3) (3) 2

(3a) (9) N 가

(9) (2) (2) N (1) (13)

(前方) (2a)

(2a) (12) s (12a) 2 (14) 1 (13)

(12) (12a) 3 s (12) (12a) (11) 3 (11a)

(記述) (9) (9) 가 가 3

3 (19) (19) (14) (12) (12a) (11)

(11a)

(9) (5, 6) 가 (9)

(2, 3) (18) 1, 2 (13, 14) 3

(黑)

1, 2 (13, 14) (18) ,
 , (9) , (9) (2, 3) .

3 (19) s (11) (11a) (2a)
 , 3 (ns - nf)
 .

3 s f z ns, nf, nz가
 $0 < (ns - nz) / (ns - nf) < 1$, (ns - nf)가
 (ns - nz) , s ,
 , 3 (19) ,

3 (1) nd 300nm 500nm
 ,

(ns - nf) · d 250nm 450nm ,
 (ns - nz) · d 70nm 450nm , 3 (19)
 가 (色味) , 가

14 15 , 16 CR CR
 3 =20 .

4 15 16 (0°) 20
 °, 40°, 60°, 80° , 0° , 90° , 180°
 , 270° .

3 (19) (11) (11a)
 , (CR=20 가)

1
 1 3 (19) ,
 (ns - nz) / (ns - nf) = 1
 (ns - nf) · d = 260nm,
 (ns - nz) · d = 260nm ,
 (11) (11a) s .

4	1	40 °	50 ° ,	46 °	50 °	.
2						
2	3	(19)	,			
$(ns - nz) / (ns - nf) = 1$						
$(ns - nf) \cdot d = 260\text{nm},$						
$(ns - nz) \cdot d = 260\text{nm} ,$						
(11)	(11a)	s	.			
5	2	30 °	50 ° ,	50 °	50 °	.
3						
3	3	(19)	,			
$(ns - nz) / (ns - nf) = 1$						
$(ns - nf) \cdot d = 350\text{nm},$						
$(ns - nz) \cdot d = 350\text{nm} ,$						
(11)	(11a)	s	.			
6	3	36 °	58 ° ,	60 °	50 °	.
4						
4	3	(19)	,			
$(ns - nz) / (ns - nf) = 1$						
$(ns - nf) \cdot d = 350\text{nm},$						
$(ns - nz) \cdot d = 350\text{nm} ,$						
(11)	(11a)	s	.			
7	4	40 °	50 ° ,	80 °	50 °	.
5						
5	3	(19)	,			
$(ns - nz) / (ns - nf) = 1$						

$(ns - nf) \cdot d = 440\text{nm},$

$(ns - nz) \cdot d = 440\text{nm} ,$

(11) (11a) s .

8 5 30 ° 54 ° , 52 ° 46 ° .

6

6 3 (19) ,

$(ns - nz) / (ns - nf) = 1$

$(ns - nf) \cdot d = 440\text{nm},$

$(ns - nz) \cdot d = 440\text{nm} ,$

(11) (11a) s .

9 6 45 ° 45 ° , 80 ° 60 ° .

7

7 3 (19) ,

$(ns - nz) / (ns - nf) = 0.3$

$(ns - nf) \cdot d = 205\text{nm},$

$(ns - nz) \cdot d = 80\text{nm} ,$

(11) (11a) s .

10 7 38 ° 60 ° , 80 ° 54 ° .

8

8 3 (19) ,

$(ns - nz) / (ns - nf) = 0.3$

$(ns - nf) \cdot d = 205\text{nm},$

$(ns - nz) \cdot d = 80\text{nm} ,$

(11) (11a) s .

11 8 38 ° 60 ° , 80 ° 58 ° .

9

9 3 (19) ,

$$(n_s - n_z) / (n_s - n_f) = 0.3$$

$$(n_s - n_f) \cdot d = 350\text{nm},$$

$$(n_s - n_z) \cdot d = 105\text{nm} ,$$

(11) (11a) s .

12 9 30 ° 50 ° , 50 ° 50 ° .

10

10 3 (19) ,

$$(n_s - n_z) / (n_s - n_f) = 0.3$$

$$(n_s - n_f) \cdot d = 350\text{nm},$$

$$(n_s - n_z) \cdot d = 105\text{nm} ,$$

(11) (11a) s .

13 10 58 ° 36 ° , 65 ° 80 ° .

11

11 3 (19) ,

$$(n_s - n_z) / (n_s - n_f) = 0.3$$

$$(n_s - n_f) \cdot d = 420\text{nm},$$

$$(n_s - n_z) \cdot d = 126\text{nm} ,$$

(11) (11a) s .

14 11 28 ° 38 ° , 48 ° 44 ° .

12

12 3 (19) ,

$$(n_s - n_z) / (n_s - n_f) = 0.3$$

$$(n_s - n_f) \cdot d = 420\text{nm},$$

$(n_s - n_z) \cdot d = 126\text{nm}$,

(11) (11a) s

15 12 56 ° 34 ° , 70 ° 80 ° .

16 CR=20 가 가
 16 40 ° 40 ° , 44 ° 46 ° . 3 (1
 9) CR=20 가 가

3 (19) , 1, 2 (13, 14)
 1 12

romatic color point) 가 CIE (色度圖) (achr
 , 가 가 가 ,

가 x 45 ° (1) (2) (3) (2a, 3a)
 , 90 °

1, 2 (13, 14) N (2a, 3a)

(11) (11a) (2a) ,

(12) (12a) (3a) ,

3 (19) 가 , (s)
 (11) (11a) 3

(19) s f z ns, nf, nz가

$0 < (n_s - n_z) / (n_s - n_f) < 1$,

(1) nd 300nm 500nm , 3 (19)

$(n_s - n_f) \cdot d = 250\text{nm} \sim 450\text{nm}$,

$(n_s - n_z) \cdot d = 70\text{nm} \sim 450\text{nm}$

, 가 가 .

3 (19) (11) (11a) s
 (1, 3, 5, 7, 9, 11) (2, 4, 6, 8, 1
 0, 12) 4 5, 6 7, 8 9, 10 11, 12
 13, 14 15 s
 (11) (11a) 가 .

9 1 12 6 10 7, 11 6 8, 13 3, 7 10 15
 12) 12 3 (19) 11(8), 13(10) 15(

10 12, 3, 4, 6, 7, 8, 10 12 , 8,

s 3, 4, 6, 7, 8, 10 12 3 (19) 가
 (ns - nz) · d 3 350nm (11) (11a) (ns - nz) / (ns - nf) = 1 , (ns - nf) · d

(ns - nz) · d 3 (19) s (11) (11a) , (ns - nf) · d
 4, 6 (ns - nz) / (ns - nf) = 1 , (ns - nf) · d
 350nm 440nm

7, 8, 10 12 (ns - nz) / (ns - nf) = 0.3 , (ns - nf) · d 265
 nm 420nm , (ns - nz) · d 80nm 126nm

(11a) 8, 10 12 3 (19) s (11)
 , (ns - nz) / (ns - nf) = 0.3
 (ns - nf) · d = 265nm 420nm , (ns - nz) · d = 80nm 126nm , (ns - nf) · d =
 350nm , (ns - nz) · d = 105nm

(1) , (1) (2, 3)

(1)

(1) 180 ° 270 ° (220 ° 250 °) 90 ° TN
 STN 1, 2

3 (19) s f z ns > nz nf

(2)

17 2 , 3 (19)
 2 (14) (12) 1
 3 (19) 가 ,

2, 1 (12) (13), 2 (11a, 12a) (1) (2) (14) 1 (3) N, (2a, 3a), (11)

2 (14) (12) 가 , 3 (19) (12)

(12a)

3 f (19) z ns, nf, nz가 ns > nz nf, s s

$0 < (ns - nz) / (ns - nf) < 1$

2 1 2 (14) (13, 14) (12) 3 1 2 (11) (12) (13, 14)

3 (19) (12) s (12)

s , s 가 가 3 (19) 3 (19) (9) 가 (9)

2 1 (13, 14) (11) (11a) (9) (2, 3) 가 (12) 1 가

가 가

(3)

18 1 (13) 1 3 (11) , 2 (14) 3 (12) (19, 19) 3 (19) 가 ,

3 , 1 (12) (13), 2 (11a, 12a) (1) (2) (14) 1 (3) N, (2a, 3a), (11)

1 (13) (11) 3 (19) ,
 (11) (11a)

2 (14) (12) 3 (19)
 (12) (12a)

3 (19, 19) s s
 f z ns, nf, nz가 ns > nz nf,
 $0 < (ns - nz) / (ns - nf) < 1$

(1) 1 2 (13, 14) , 1
 (13) (11) (12) 2 (14)
 (12) 3 (19) , 1
 (9) (2, 3) 가 1 2 1 (13, 14)
 (9) 가 (12) 가
 (11) (11a) , 가

(9) (1) (9) 3 (19, 19)
 3 (19, 19) ns, nf, nz d 가
 (5, 6) 가 가

3 (19, 19) s (12) (12)
 가 s
 가 s 가
 (19)

3 (19) (1) 3 (19) , 1
 (9)

(9) (5, 6) 가 (5, 6) 가
 (9)

(57)

1.

,
 ,
 ,
 1 ,
 ,
 2 ,
 , 1 , 2
 3 .

2.

1 ,
 1 2 가 ,
 2 가 , 1,
 2 .

3.

2 ,
 ,
 ,
 3 ,
 .

4.

3 ,
 3 1 .

5.

3 ,

3 2

6.

3 ,

3 1 2

7.

3 ,

3 f , z , s ns, f nf, z s
nz , ,

$$0 < (ns - nz) / (ns - nf) < 1$$

8.

7 ,

d , n d nd 300nm 500nm , 3

$$(ns - nf) \cdot d \quad 250nm \quad 450nm ,$$

$$(ns - nz) \cdot d \quad 70nm \quad 450nm$$

9.

2 ,

3

10.

9 ,

3 1 .

11.

9 ,

3 2 .

12.

9 ,

3 1 2 .

13.

9 ,

3 f , z , s ns, f nf, z s

nz , ,

$$0 < (ns - nz) / (ns - nf) < 1 .$$

14.

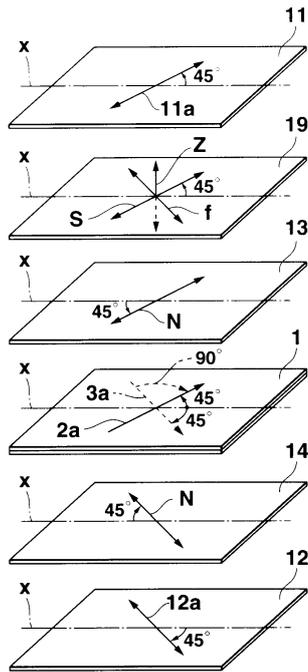
13 ,

d , n d nd 300nm 500nm , 3

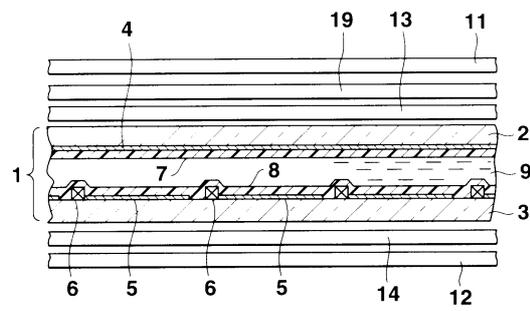
$$(ns - nf) \cdot d \quad 250nm \quad 450nm ,$$

$$(ns - nz) \cdot d \quad 70nm \quad 450nm .$$

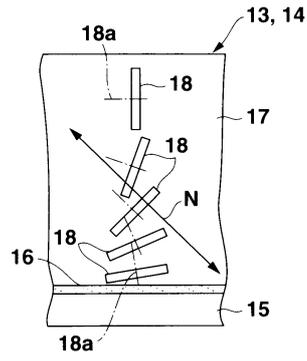
1



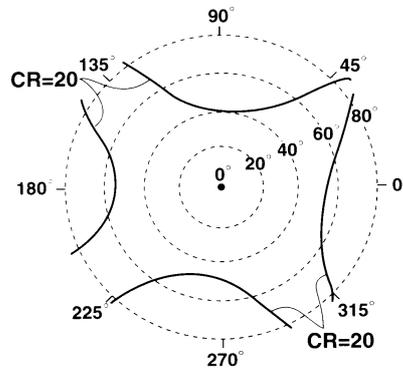
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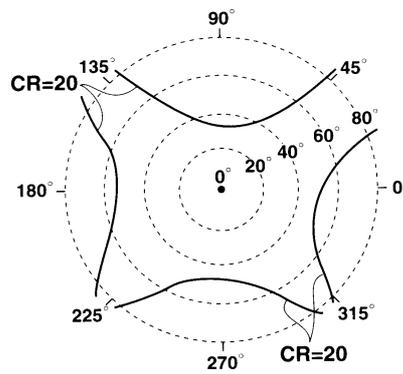
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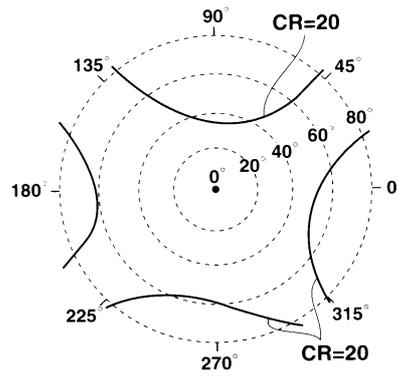
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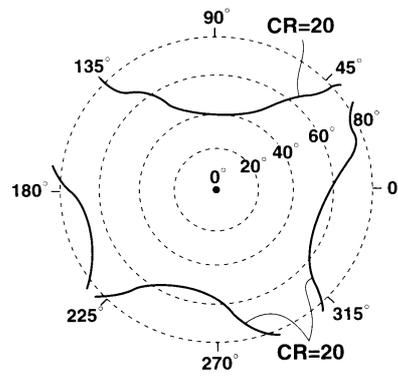
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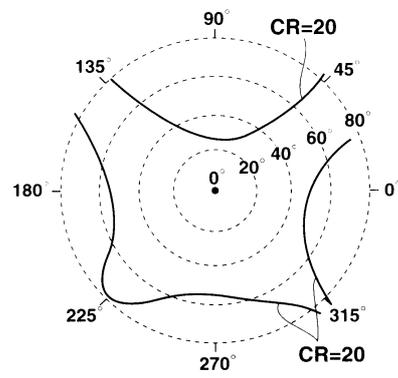
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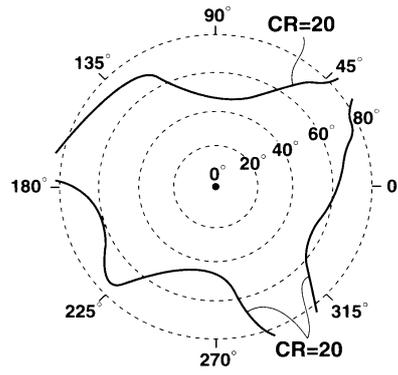
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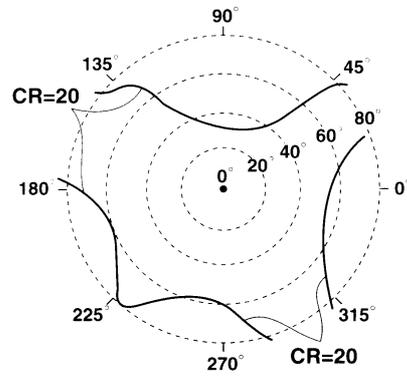
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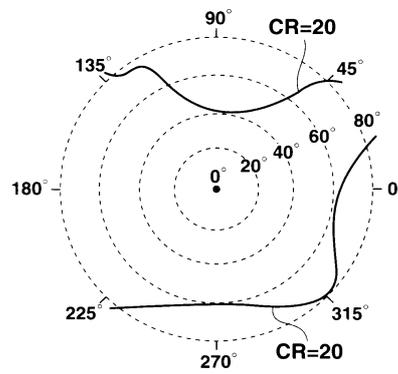
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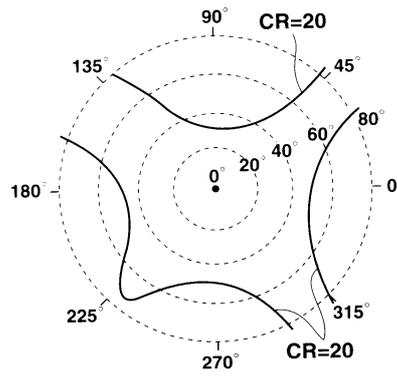
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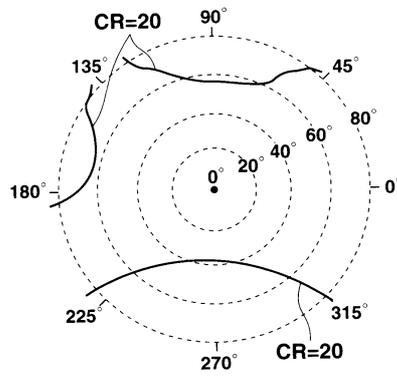
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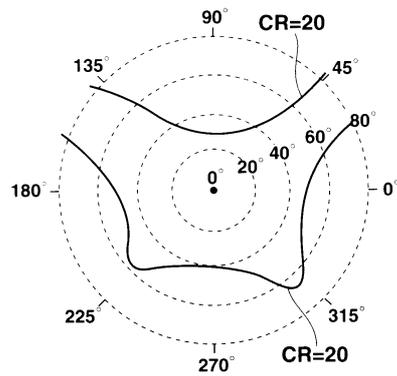
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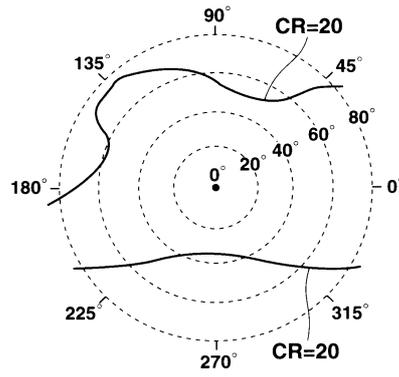
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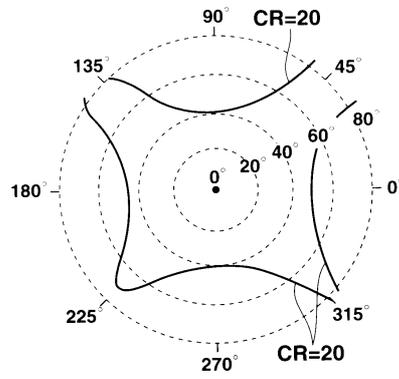
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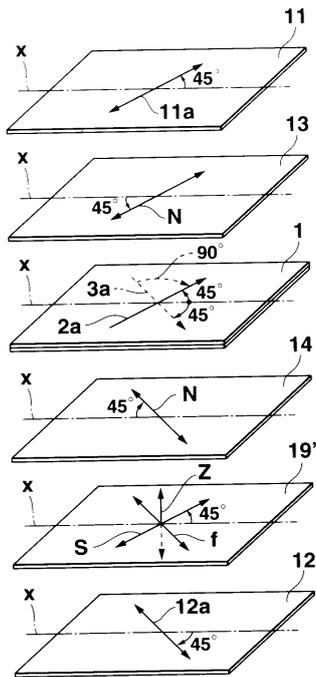
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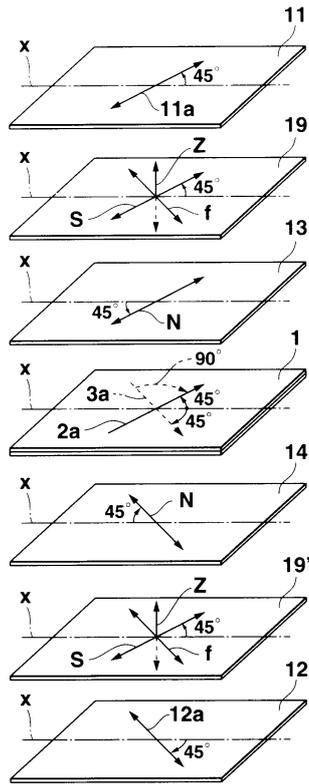
16



17



18



专利名称(译)	一种具有宽视角范围的液晶显示装置		
公开(公告)号	KR100335662B1	公开(公告)日	2002-05-06
申请号	KR1020000036323	申请日	2000-06-29
[标]申请(专利权)人(译)	卡西欧计算机株式会社 西伯利亚有限公司计算关键财富		
申请(专利权)人(译)	计算关键是否西伯利亚有限公司		
当前申请(专利权)人(译)	计算关键是否西伯利亚有限公司		
[标]发明人	SAKAMOTO KATSUHITO		
发明人	SAKAMOTO,KATSUHITO		
IPC分类号	G02F1/133		
代理人(译)	孙某EUN JIN		
优先权	1999185974 1999-06-30 JP		
其他公开文献	KR1020010007574A		

摘要(译)

在特定方向上的本发明相对于所述正常的每一个具有一定范围的观看液晶显示装置的角度的光之间的膜表面的，包括一对基板的液晶元件和前侧，和偏振片的液晶元件和背面侧偏振片之间第一和具有具有负的光学各向异性的倾斜轴方向的折射率的第二相位差膜是最小和设置成朝向沿轴向方向的一侧的液晶器件膜方向分量的取向处理方向，并且其中所述前侧偏振板的第一和所述第三吸收轴，其中，所述最大折射率方向的延迟膜，膜平面并与前侧偏振片之间在膜平面的折射率各向异性布置在平行于或垂直邻近第一延迟膜，通过第三延迟膜补偿在相对于法线方向的倾斜方向上入射在液晶显示装置上的光的延迟差异，没有延迟的补偿，这仍然是在该层的基板，其取决于在宽视角它的特征还在于，所述对比度，以获得高的显示的入射角，第一和第二相位差膜附近的液晶分子。

1 指数方面 液晶显示器，液晶元件，基板，偏振器，电极，液晶层 - 1 -

