





(101) (111) (116) (121)

(121) (a<sub>2</sub>, b<sub>2</sub>, c<sub>2</sub>, d<sub>2</sub>)

05) (104) (105) (115)가 (104) (1

2b (115)가 (104) (105) 가 (121)

2a (113) (a<sub>2</sub>) (c<sub>2</sub>) (121)

(115)가 (104) (105) (121)

2c (113) (b<sub>2</sub>) (d<sub>2</sub>)

2a 90

(121) (a<sub>2</sub>, b<sub>2</sub>, c<sub>2</sub>, d<sub>2</sub>) Sa<sub>2</sub>, Sb<sub>2</sub>, Sc<sub>2</sub>, Sd<sub>2</sub>

FE 1

FE = (Sa<sub>2</sub> + Sc<sub>2</sub>) - (Sb<sub>2</sub> + Sd<sub>2</sub>)... ( 1)

2b (121) (115)가 FE가 0

FE가 (121) (115)가 (104) (105) 가

FE가 (104) (105)

TE (112) ± 1 가

5) (101) (116) (121) (11)

FE, (104) (105) (104) (115)가 TE

(104) (105) (104) 가

가 (101) (116) FE (12)

(121) , 3 , 0

1) FE

(101) FE가 0 가 (115)

가

(111) (115) 가 (121) FE

가 4

1) (111) (116) (121) (12

(101) (121)

가

가

1 가 .

2a 2c 가 , 2a  
가 2c 가 , 2b 가 .

3 .

4 .

5 가 .

6a 6c 가 , 6a  
가 6c 가 , 6b 가 .

7 가 .

8 가 .

9 가 .

10 .

11a 11c 가 , 11a  
가 11c 가 , 11b 가 .

(1) 4 , CD(Compact Disc), DVD(Digital Versatile Disc),  
가 가 CD - R(Compact Disc - Recordable), 가 CD - RW(Compact Disc - R  
eWritable) , (2) .

(1) (2) (3) , (2)  
(4) , (3) (2) (5) , (3),  
(4), (5) (6) .

(8) (4) (2)가 (7) , (7)  
 가 (5) (3) (sled motor) .

3) (6) 4 (5) (2) (3)  
 (9), (10) (9) , (3) 2 (10) ,  
 (12) , (11) . , (6) (13) ,  
 (14) .

(7) (1) (4) (8) , (2)가  
 , (3) (2) (6) (9) (5)  
 , (2)

(3) (3)  
 (3) 5 , (2) (30) , (30)가

(3) (30) , (31) , (31)  
 , (2) (32) , (31) (32) NA  
 (33) , (33) (2) (2a) (35)  
 (34) , (32) (2)

(31) , , 780nm 가 .  
 (32) , , (31) (31)  
 1 (41) , 1 (41) 2 (42)

1 (41) , (31) 0 ±1 3 1  
 (45)가 (30) TE , 3 (3 ) ,  
 ±1 .

2 (42) (2) 1 (45) 0 , 0 ±1  
 , ±1 (35) 2

1 (41) 2 (46) , , -1 , -1 4  
 (47) .

(47) 1 (45) (47)  
 , 2 (46) -1 ,

(47) (32) ,  
 (47) 1 (45) 3 0 2 (46) - 1  
 (47) 2 (46) - 1

(32) 2 (46)  
 (2) (32) (31) 가 (47)

(32) 가  
 1 (32) (45), 2 (46), (47) , 가  
 (32)

(33) (32) 2 (46)  
 (34) 1 (31) (33)  
 (2)

(35) 1 (45) 0 (51)  
 1 (45) ± 1 2  
 (52, 53) (35) (32) 1 (47)  
 (52, 53)가 (51) (35) (51)가  
 (51) 1 가

(35) (51) 6a 6c 1  
 4 (a<sub>1</sub>, b<sub>1</sub>, c<sub>1</sub>, d<sub>1</sub>) (a<sub>1</sub>, b<sub>1</sub>, c<sub>1</sub>, d<sub>1</sub>)  
 (47) 4

(3) (34) (34) (34) 2 가  
 (34) 2

(35) (51)가 (52,  
 53)가 (34)  
 (2) (2a)

(32) (47) , 8 (3  
 5) (51)가 8  
 (32) (47) 1 (41) , 1 (41)  
 (32) (47) (32) (47) (角錐)  
 (35) (35) (51)

(32) 1 2 (45, 46)가

48) (32) (47) , 7 , 4 ( ( )  
 , (48) (47) 가 ( )  
 , (y<sub>1</sub>, y<sub>2</sub>, y<sub>3</sub>, y<sub>4</sub>) , (y<sub>1</sub>, y<sub>2</sub>, y<sub>3</sub>, y<sub>4</sub>)  
 , (y<sub>1</sub>, y<sub>3</sub>) , (y<sub>2</sub>, y<sub>4</sub>)  
 . (48) (2) , (y<sub>1</sub>, y<sub>2</sub>, y<sub>3</sub>, y<sub>4</sub>)  
 (48) (blaze) 4 , (35) (51) . ,

(32)  
 , (32) , 8 9 (32) , 8 9  
 (32) , 8 9 (32) ,

8 (60) (31) 3 1 (45) ,  
 1 (45) (61) , (61) (2)  
 , (2) (62) , (62)  
 4 (47) (60) (31)  
 1 (45) 3 , 1 (45) (61)  
 , (61) (62) 1 (2) , (2)  
 (62) , (62) (47) 4  
 (35) .

9 (70) (31) 3 1 (45) ,  
 1 (45) (2) , (2)  
 (71) , (71) (72) , (72)  
 4 (47) (70)  
 1 (45) 3 , 1 (45) (71)  
 , (61) (62) 1 (2) , (2)  
 (71) , (72)  
 (72) (47) 4 , (35) .

(31), (60) (70) , (61) (72)  
 (47), (35)

(47) (32) (47) (2)  
 45° 가 , , (47) 45° ,  
 (51) , (51) (52, 53)  
 , (3)

, (32) 10 (47) , , 가 (32) .

(1) (2) (3) 가 , (34)가 (10) (3) 2 (34) 가 (2) (1) (3) 가 (12) (13) (14)

(1) (3) .

1) (1) 4 (2) (2a) (3) (32) 1 (45) 0 ±1 (3) (34) 3 (2) (2a) (32) 2 (46) , (35) (2a) , -1 (47) (32) 2 (46) (47) , 4 (47) 4 (35) (51) (a<sub>1</sub>, b<sub>1</sub>, c<sub>1</sub>, d<sub>1</sub>)

2 (46) (47) , 11b (2) (2a) (34)가 (47) (47) , (47) , (47) (47) 가 , 11a (2) (2a) (34)가 가 (34)가 (47) (32) (47) , (47)

a) (47) , 11c (2) (2) (34)가 (34)가 (47) (32) (47) , (47)

(47) (34)가 2 (x<sub>1</sub>, x<sub>3</sub>) (x<sub>2</sub>, x<sub>4</sub>) (47) ,

11a (47) 1 (x<sub>1</sub>, x<sub>3</sub>) (x<sub>2</sub>, x<sub>4</sub>) 11c (47) 1 (x<sub>2</sub>, x<sub>4</sub>) 1 (x<sub>1</sub>, x<sub>3</sub>)

1 (45) 0 (2) 2 (46) - 1  
 , - 1 (47) (x<sub>1</sub>, x<sub>2</sub>, x<sub>3</sub>, x<sub>4</sub>) , (51) (a<sub>1</sub>,  
 , 4 (35) (51) (a<sub>1</sub>,  
 b<sub>1</sub>, c<sub>1</sub>, d<sub>1</sub>) .  
 , 6a 6c (51) 2 (a  
 1, c<sub>1</sub>) (b<sub>1</sub>, d<sub>1</sub>) ,  
 , 11a (47) (51)  
 6a (a<sub>1</sub>, c<sub>1</sub>) , (51)  
 (b<sub>1</sub>, d<sub>1</sub>) , 11c (47)  
 , (51) 6c (b<sub>1</sub>, d<sub>1</sub>)  
 , (a<sub>1</sub>, c<sub>1</sub>) .  
 , 11b (47)  
 (51) 6b (a<sub>1</sub>, c<sub>1</sub>) (b<sub>1</sub>, d<sub>1</sub>)  
 .  
 , (51) (a<sub>1</sub>, b<sub>1</sub>, c<sub>1</sub>, d<sub>1</sub>) Sa<sub>1</sub>, Sb<sub>1</sub>, Sc<sub>1</sub>, Sd<sub>1</sub>  
 , FE 2 .  
 FE = (Sa<sub>1</sub> + Sc<sub>1</sub>) - (Sb<sub>1</sub> + Sd<sub>1</sub>) ... ( 2)  
 , (51) (2) (2a) (34)가 ,  
 2 (34)가 FE가 0 (51) (2) (2a)  
 (2a) (34)가 가 , FE가 (2)  
 (34)가 FE가 .  
 , (35) FE (51) (a<sub>1</sub>, b<sub>1</sub>, c<sub>1</sub>, d<sub>1</sub>)  
 , 1 (52, 53) 1 (45) ± 1 (2)  
 , ± 1 TE  
 .  
 , (1) (3) FE TE  
 , (10)가 (2) (2a) (34) (2)  
 , (46) 2 (46) (1) (3) , (2) 2  
 가 , (101) - 1 (47) (32)  
 (51) 가 (a<sub>1</sub>, b<sub>1</sub>, c<sub>1</sub>, d<sub>1</sub>) (47) 4 ,  
 , (3) (1) (3) (51)  
 가 , (3) FE .

(112) (113) (32) (101)가  
(30) (點數)  
가

(1) (3) (30)가 (32) 가

(1) (3) (31) (35)가  
가

(1) (3) FE

가

(57)

1.

2.

1

3.

1

4.

1

5.

4

4

6.

4 ,

45° 가

7.

1 ,

, /

8.

7 ,

9.

1 ,

±1 3

0

10.

9 ,

가

11.

9 ,

12.

13.

12

14.

12

15.

12

16.

15

4

4

4

17.

15

45° 가

18.

12

19.

18

20.

12

0 ±1 3

±1

0

21.

20

가

22.

20

23.

/

24.

23

25.

23

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, .

26.

23

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, .

27.

26

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4

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4

4

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28.

26

,

45 ° 가

, .

29.

23

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30.

29

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31.

23

,

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±1

3

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,

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±1

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0

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,

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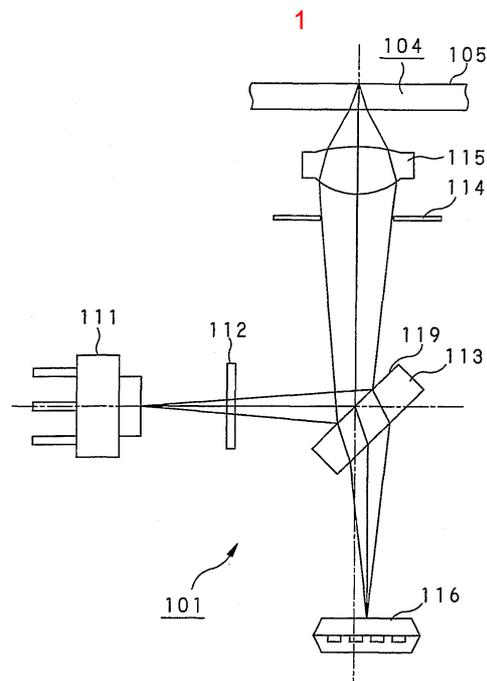
32.

31

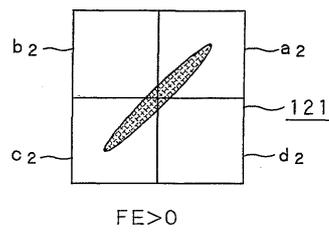
가

33.

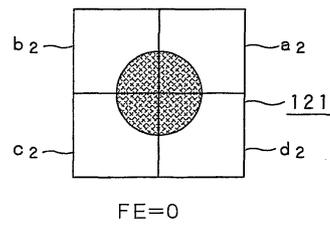
31



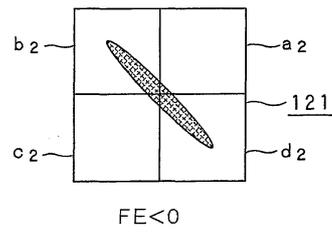
2a



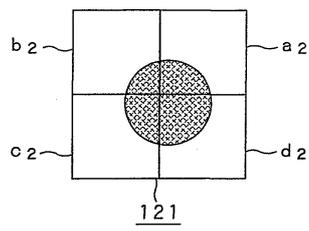
2b



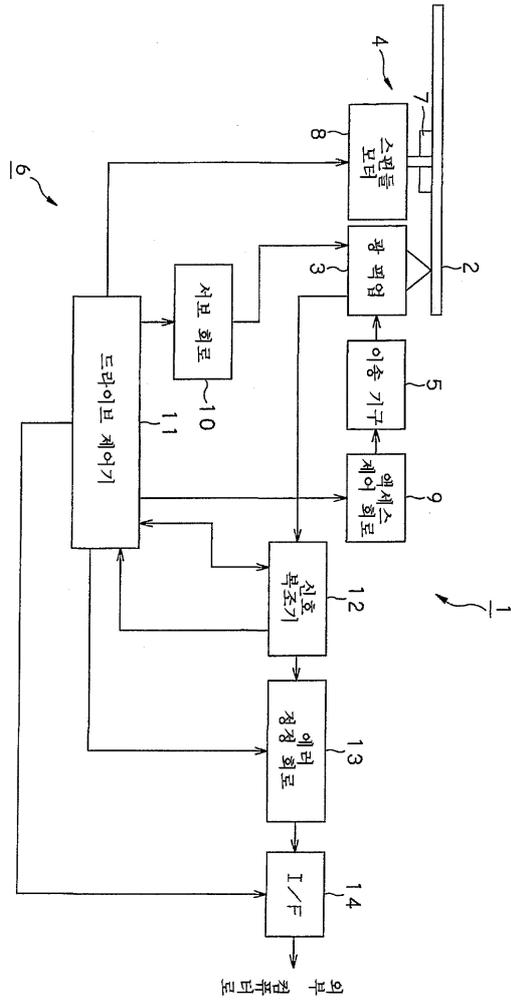
2c



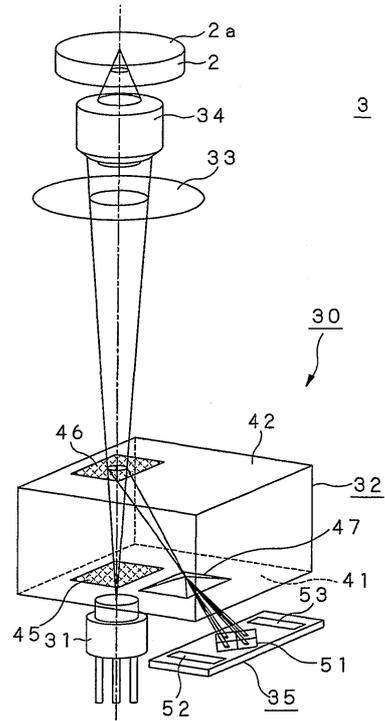
3



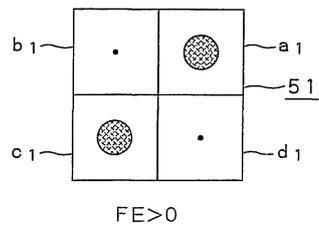
4



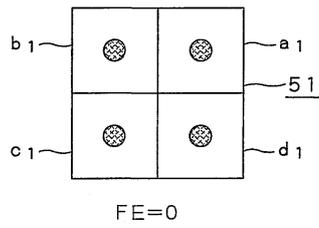
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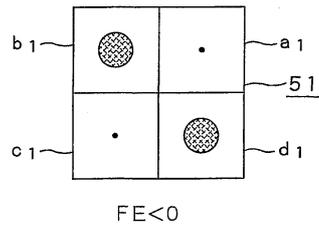
6a



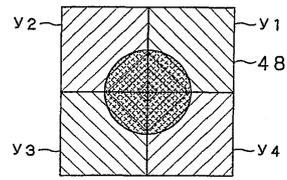
6b



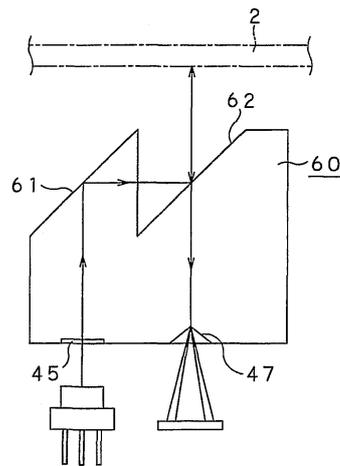
6c



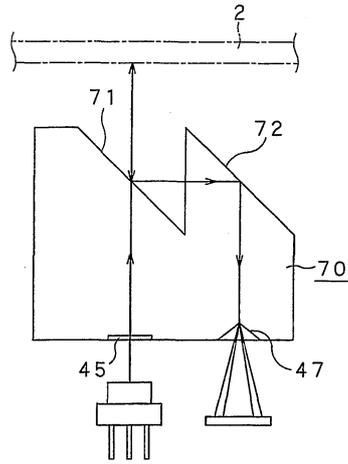
7



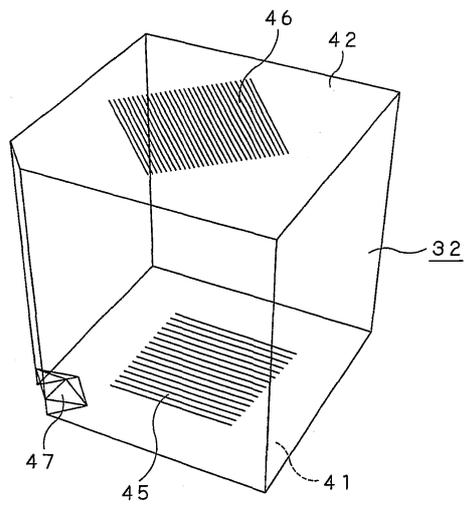
8



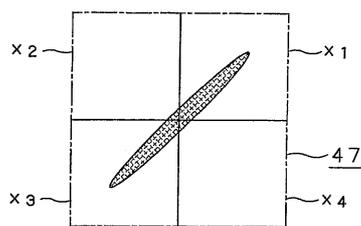
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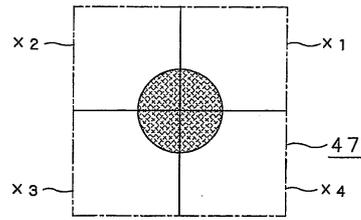
10



11a



11b



11c

