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(12)

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(A)

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(43)

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2002 01 17

(21) 10 - 2001 - 0039757
(22) 2001 07 04

(30) 1020000039091 2000 07 08 (KR)

(71)

3 416

(72)

419 1502

2 6 106

103 604

883 - 1 2 102 1404

235 1605

3 332 1804

3 785 - 1 1 102 307

207 1405

(74)

:

(54)

650 nm

,

가 1

가 2 , 1 , 0.72 μ m , 0.8 μ m , / 가 .

650 nm , DVD 0.8 μ m , CD DVD .

2

1 ,

2 ,

3 (Cyanine) CD - R (Phthalo) CD - R ,

4 (Azo) DVD - R DVD - R ,

5 2 ,

6 7 2 ,

8 ,

9 ,

10a 10b 650nm ,

11a 11b 650nm ,

12 DVD , .

< >

40... 40a,40b... 1 2 50...

60... 61... 63,163...

70... 71,75... 73...

CD DVD
650 nm
D (, DVD) / 0.6 mm DV
D) , DVD 1.2mm 0.6 , 650 nm
CD (, C

CD DVD 1 2
(1)(3) 가 .

1 , 1 (1) 635 650 nm , 가 DVD(10a)
/ 2 (3)(3) 780 nm , 가 CD(10b)
/ .

1 (1) 1 (7) 2 (9) (10)
2 (3) 1 2 (7)(9) (10)
15 (15) 1 2 (1)(3) (10)
1 (1) 가 DVD(10a) , 2 (3)
가 CD(10b) .

(10) (15) 2 (9) , 2 (9)
(19) .

5 CD(10b) / 3 2 (3)
0 , ± 1 11 1 2 (1)(3)
(19) 17 (10) 2 (9)
(17) .

2 (1)(3) , CD

DVD

2 (1)(3) , 가가 가
가 .

, DVD - R, DVD - RAM 635 650 nm (1) 가가
가 가 .

CD DVD , 650 nm 가

1 , 650 nm ;
가 1 가 2 ;
(FWHM) 0.72 μ m , 2 ,
0.8 μ m ;
/ ;
1 DVD , 2 CD .
680 nm ~ 780 nm .
1 0.63 가 , 2 0.53
1 1 2
2 2
0 , +1 / -1 , ; ;
가 ;
1 0.63 가 , 2 0.53
/ ;
2 .

, 650 nm
 (50) , () (50)
 가 1 2 (40a)(40b) (70) , (40)
 (50) (70) (100) 1 (40a) 가
 DVD , 2 (40b) 가 CD .
 (50) 가 ,
 (edge emitting laser) (vertical cavity surface emitting laser)
 .
 (50) 650 nm , 660 nm 790 nm 가 .
 , (50) 680 nm 780 nm .
 , DVD - R, DVD - RAM , 650 nm 650 nm
 가가 .
 , (50) 가 , (50) 680 nm
 , 680 nm DVD , 650 nm
 가가 , 가 .
 , CD - R 750 nm 가 , CD - R
 750 nm
 가 .
 , (50) 770 nm , , 760 ± 10 nm
 가 가
 CD - R DVD - R . ,
 CD - R DVD - R . ,
 (Cyanine) CD - R (Phthalo) CD - R 3 , 780 nm
 , 가 . , CD - R 750 nm 가 . , CD - R
 750 nm
 가 . , (Azo) DVD - R DVD - R 4 , 65
 0 nm , , CD - R 가 ,
 가 . , DVD - R 770nm ,
 () , 가 0 가
 . , 3 4 DVD - R CD - R ,
 CD - R , (50) 750 nm 770 nm , 760 nm
 , CD - R DVD - R .
 , CD - R 750 nm , , DVD - R
 (50) CD - R , ,
 770 nm DVD - R 가 ,
 DVD - R .

, (50), (50)

(61) (63) 0 +1 / -1 (60)

(100) (50) (40), (40)

(61) (50) 0

quarter wave plate) (63) (50) 1/4 (63)(q

(50) (61) 0 (63)

(40) (70) (40)

(61) +1 / -1 (63) (100)

(100) (40) (70) (60)

(100)

(60) (100) 2

(50) (101), (50)

(60) (50) 0 (40)

+1 / -1 ()

65 (50) (75) (70)

(75) (50) (40)

(100)

(70) 5 (71), (73)

(75) (70) (70)

(73), (71) (75)

(70) (50) (40)

(73) 6

가 2 (40b)

(40a) (73) 2 (40b) 가 1

0a) (50) (71) (75) 1 (4

1 (40a) (71) (75) (73)

가 2 (40b) (50) (71)

(73) 2 (40b) (75)

2 (40b)

(73) 7
 , 가 1 (40a) , (50) (71)
 (75) 1 (40a) , (73)
 1 (40a) 가
 2 (40b) , (50) (71) 2 (40b)
 / (75) 2
 2 (40b) (73)

(70) , (50) 가
 (70)
 1 2 (40a)(40b)
 1 (40a) (FWHM) $0.72 \mu m$ ($1/e^2$ $1.2 \mu m$)
 , 2 (40b) $0.8 \mu m$ ($1/e^2$ $1.3 \mu m$)

(70) (50)
 (70) 1 (40a) (50) 680 nm 780 nm
 0.63 , 2 (40b) 0.53

(70) 1 (40a) (50) 680 nm , 720 nm , 760 nm 780 nm
 (50) 0.63, 0.66, 0.7 0.72
 750 770 nm (70) DVD 0.7
 , CD 0.53 (50) 760 ± 1
 0nm (70)가 DVD 0.7 , CD 0.53

, 2 6 (73) (70)
 , , (70)

, 2, 6 7 가 2 (40b) 가
 1 (40a) (70) 가 1 2
 (40a)(40b) (70)
 1 2 (40a)(40b) , 2 (40b)
 (70) 1 (40a) 2 (40b)

, 8 9 (50) (70)
 , 8 (161) , (161) (70)
 (163) , 9 (50)
 (260)

(100) (167)가 (100)

가 , 9 , (50)

(250) (250) , DVD - RAM

, DPP(Differential Push - Pull) , CD , 3

(250) DVD - RAM CD

(250) 2 8 가

8 9 2 ,

2, 8 9 , 가

780 nm (50) , 650 nm 가 680 nm

(50) 1 2 (40a)(40b)

0.72 μ m , 2 (40b) (70) , 1 (40a)

0.8 μ m (40a)(40b)

(50) 750 nm , 2 CD - R /

가 , (50) 750 nm 770 nm ,

CD - R DVD - R / 가

, 1, 10a 10b, 11a 11b , 780 nm 1 2 (40a)(40b)

(70) 650 nm DVD (

: , 650 nm)

1 (70) 1 (40a) , DVD

(70) (40) (40)

2 (40b) , CD 0.3mm가 , 10a 11b DVD DVD

10a 11b 0.04 λ (40) DVD 가

(OPDrms)

[1]

	()	()	
NA	0.73	0.61	
(mm)	1.3	1.8	CD 0.3mm
(mm)	4.09	4.03	
(mm)	2.8	3.3	
	55 °	51 °	가
1.0. OPDrms	0.033 λ	0.060 λ	
0.35. OPDrms	0.041 λ	0.038 λ	0.35 °

1, 650 nm 0.61 (70) 0.73
 650 nm 1.8mm 780 nm (70) 650 nm
 , CD 2, 6 9 , (70) 1.3mm 가
 4.03mm , 가 3.3 mm (70) 4.09mm ,
 가 2.8mm . 650 nm 가 51 ° , (70)
 가 55 ° 가 가

1 (70) 650 nm 1
 0a 10b , 1.0 ° (Field Height) , 650 nm 0.06 λ OPDrms
 (70) 0.033 λ OPDrms 650 nm (70)
 , 가
 1 0.04
 λ rms

1 (70) 650 nm (40)
 11a 11b , 0.35 ° (40)
 (70) 0.041 λ OPDrms , 650 nm (70) 0.038 λ OPDrms

DVD , DVD , 780 nm (70) 650 nm
 DVD , 가 , 650 nm (70)
 , CD 2 (40b) , DVD 650 nm (40)
 , DVD /

λ / NA (λ : , NA: (70)) , DVD (70)
 , DVD 가 , 650 nm DVD 1
 (40a) /

12 DVD , 12
 DVD λ / 6 DVD , 780 nm (50) DVD 650 nm 가

(70) , DVD 가 $\lambda/6$, DVD 90% , DVD .

가 , CD 가 , CD DVD , 650 nm , DVD 0.72 μm , 0.8 μm .

(57)

1.

650 nm ; 가 1 가 2 , 1 (FWHM) 0.72 μm , 2 0.8 μm ; / ; .

2.

1 , 1 DVD , 2 CD .

3.

1 , 680 nm ~ 780 nm .

4.

3 , , 1 0.63 가 , 2 0.53 .

5.

1 , 750 nm 770 nm .

6.

5 , 가 2 가 1 0.7 , 0.53 .

7.

1 , 가 1 0.7 ,
2 0.53 .

8.

1 7 , ,
1 1 2
, 2 2
2 .

9.

1 , ,
,
0 +1 / -1 ;
;

10.

1 , ,
,
;

11.

10 , ,
;

12.

1 , 9 11 ,
;

13.

650 nm ;

가 1

가 2

1 0.63 가 2 0.53 ;

;

/

14.

13 , 1 DVD , 2 CD

15.

13 , 680 nm ~ 780 nm .

16.

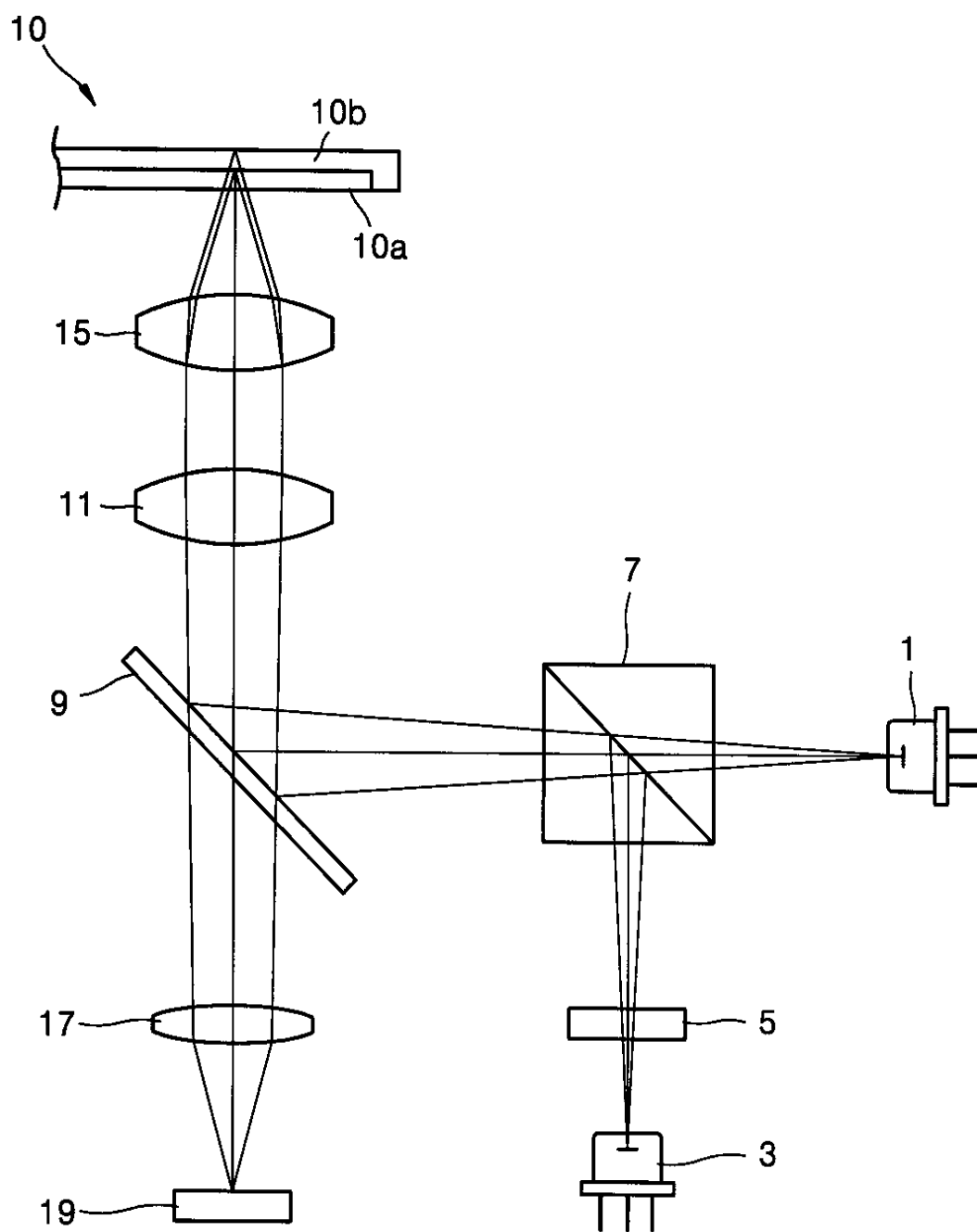
13 , 750 nm 770 nm .

17.

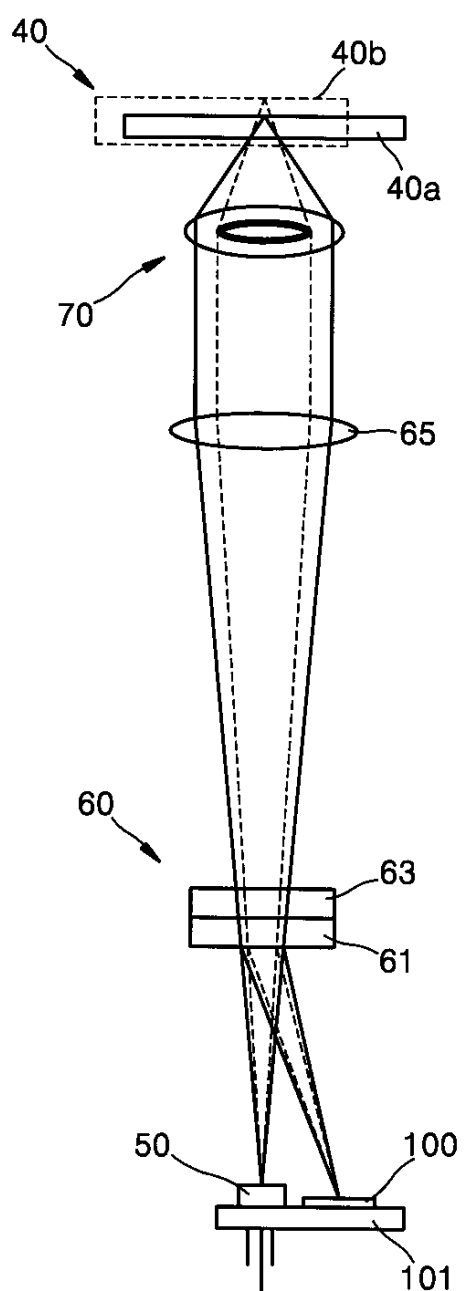
13 16 , ,

1 1 2 , 2 2 .

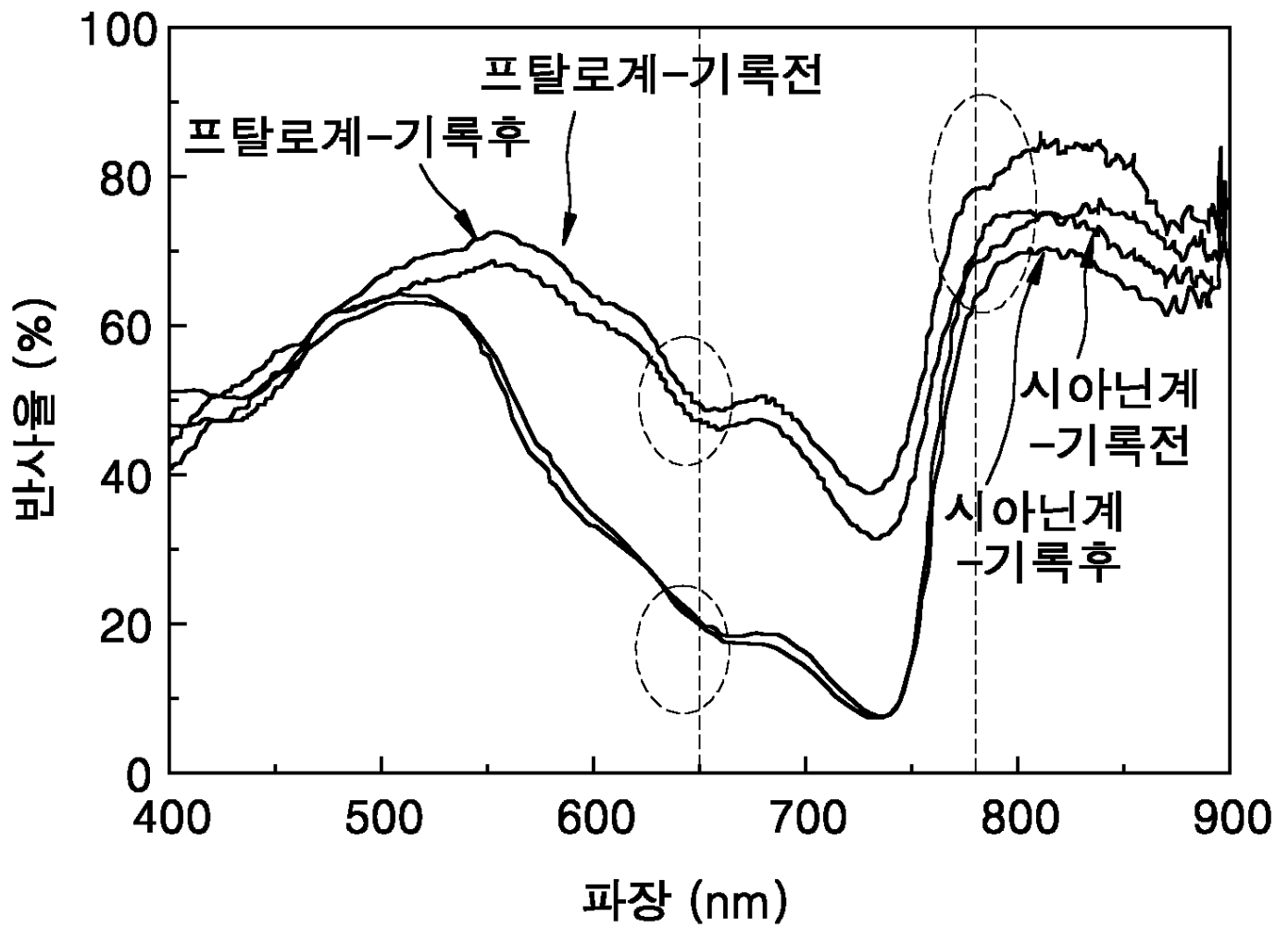
1



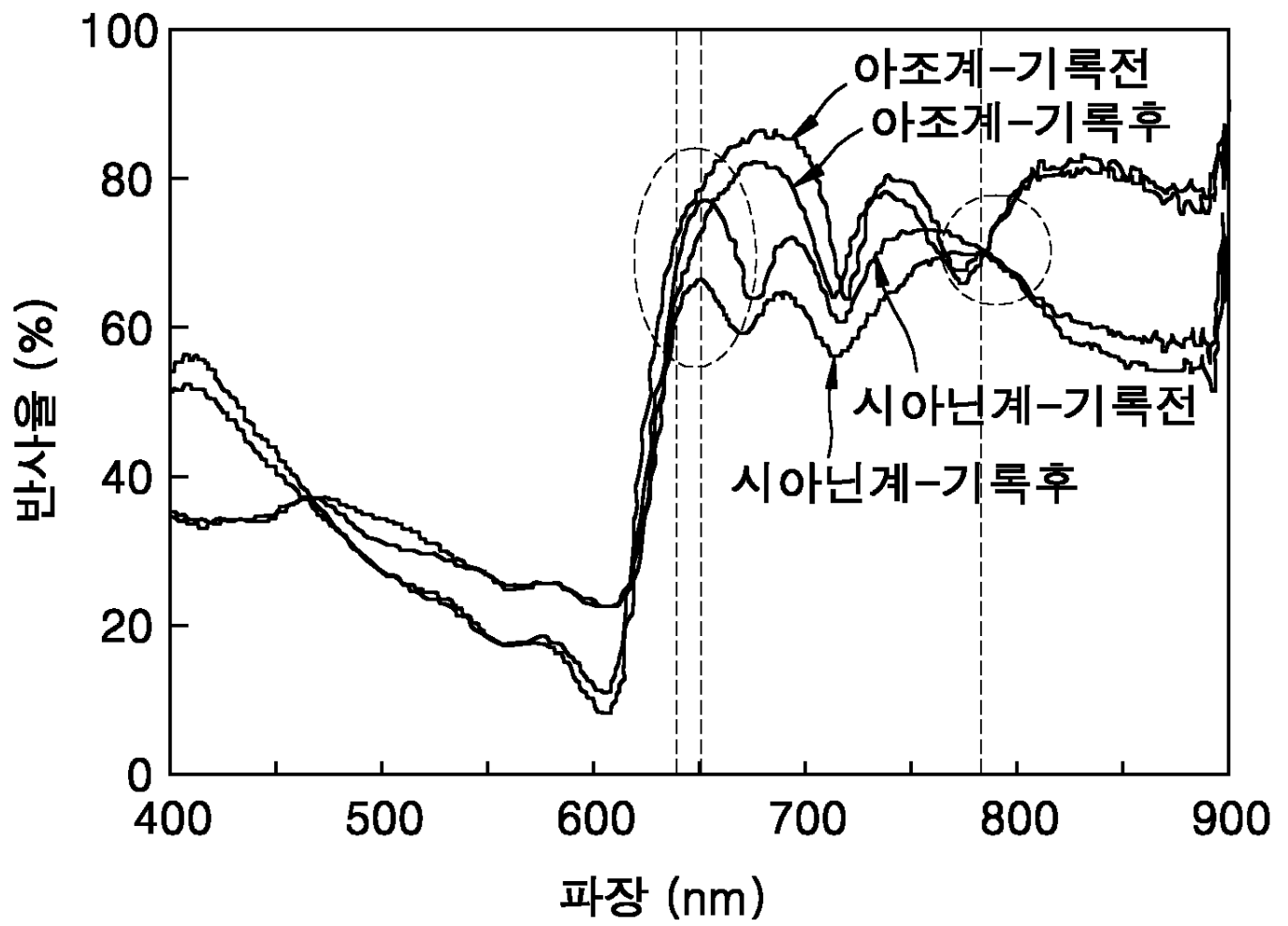
2



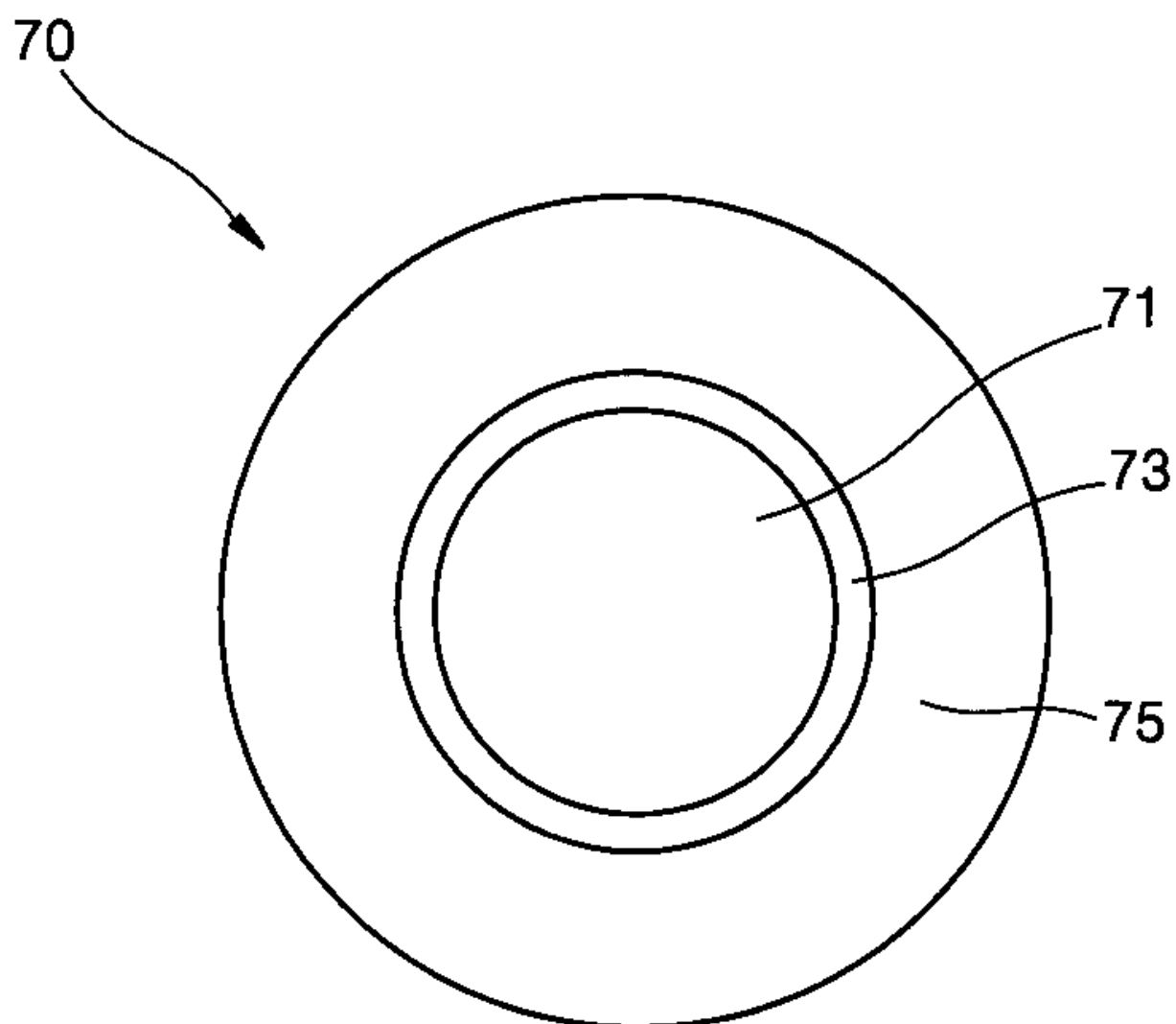
3



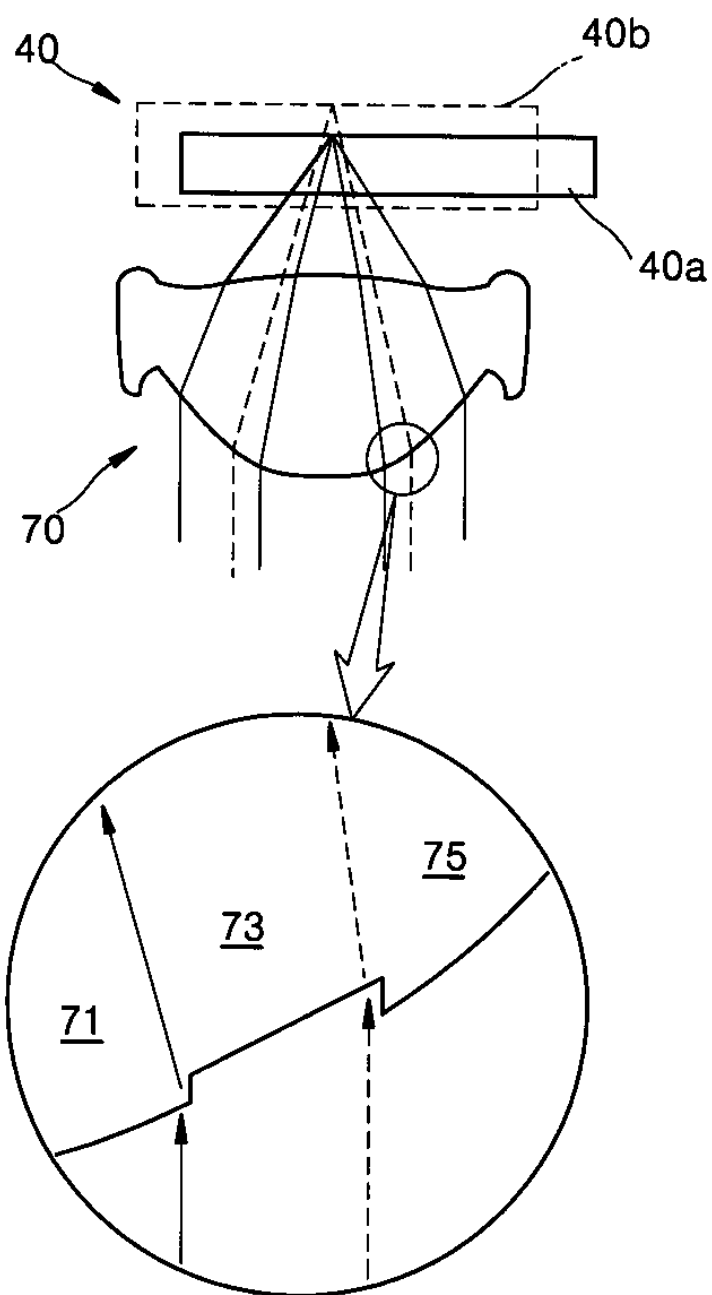
4



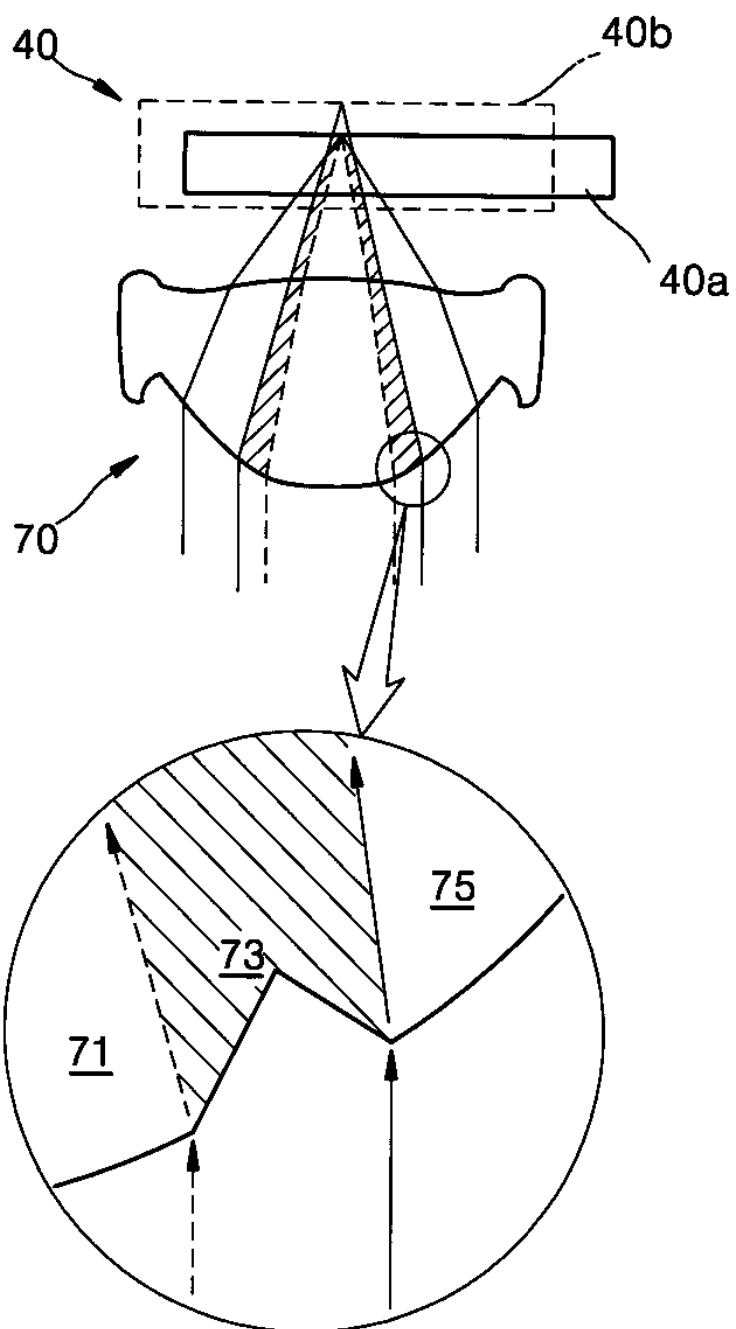
5



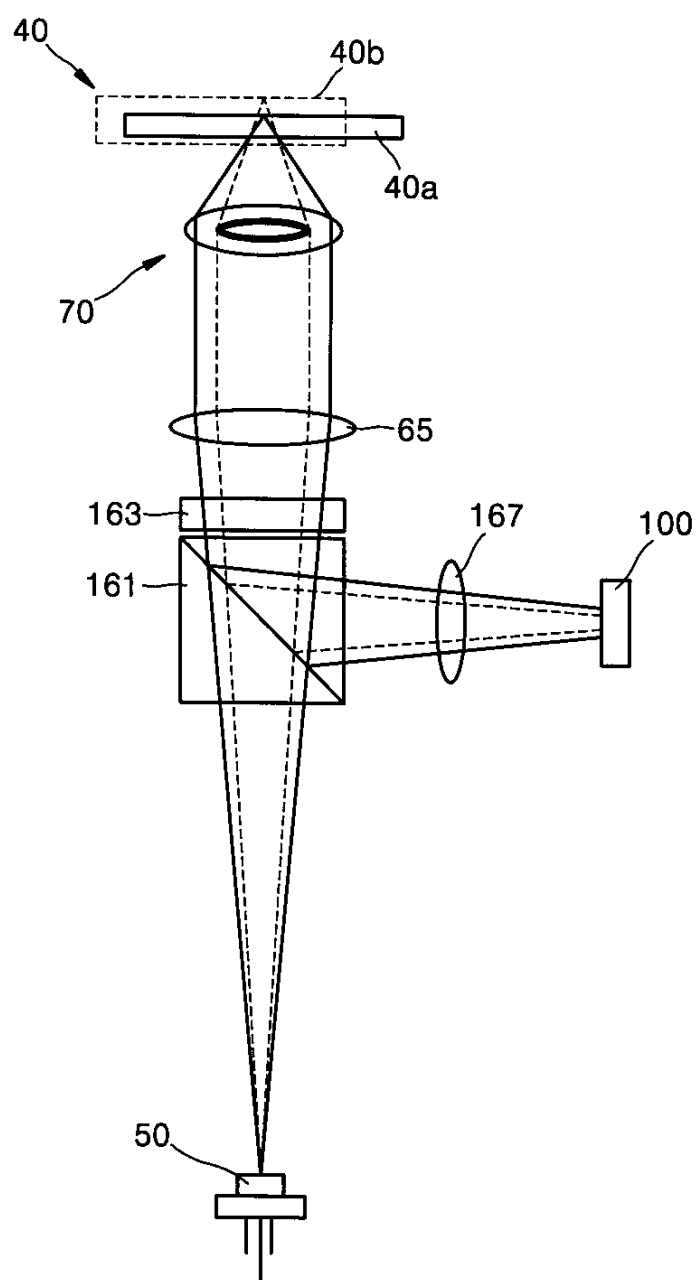
6

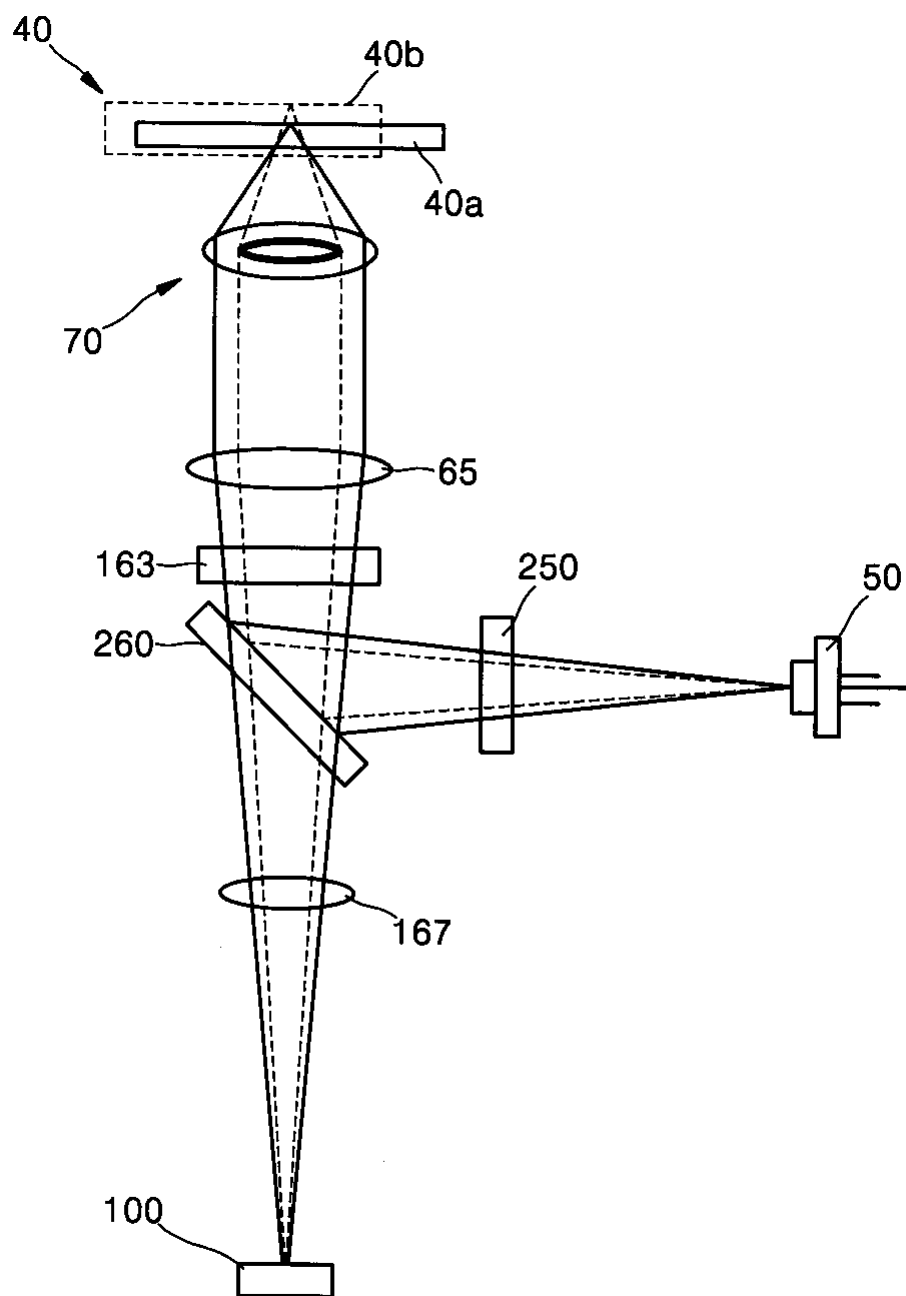


7

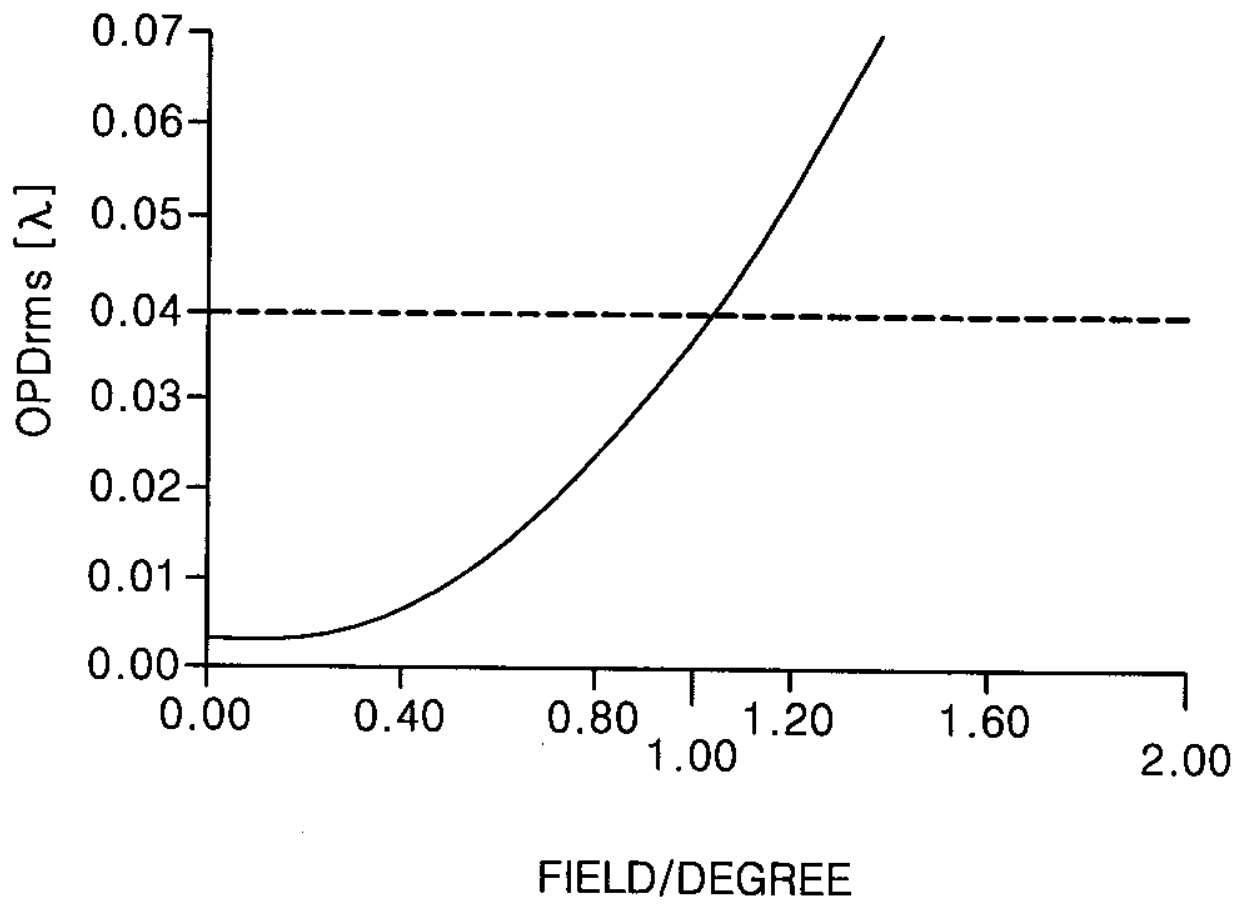


8

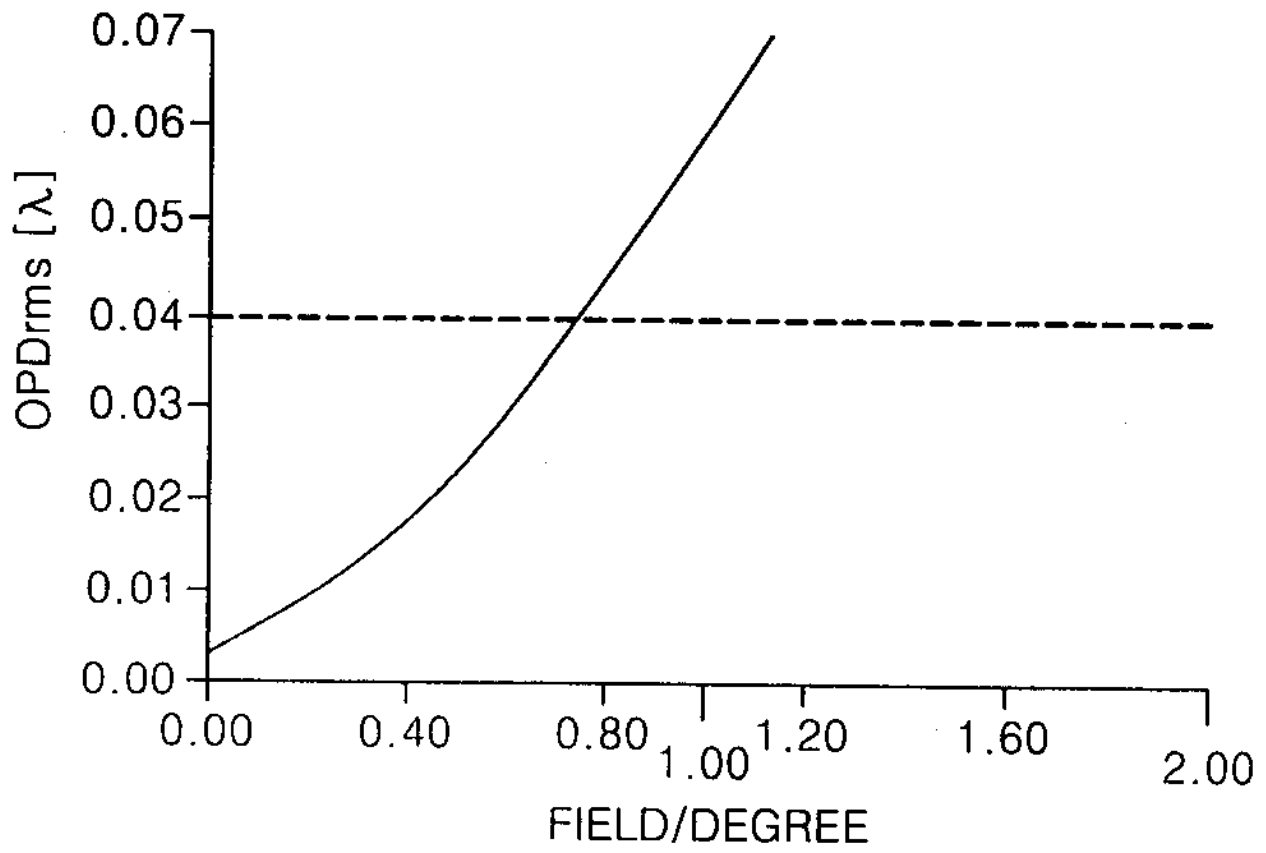




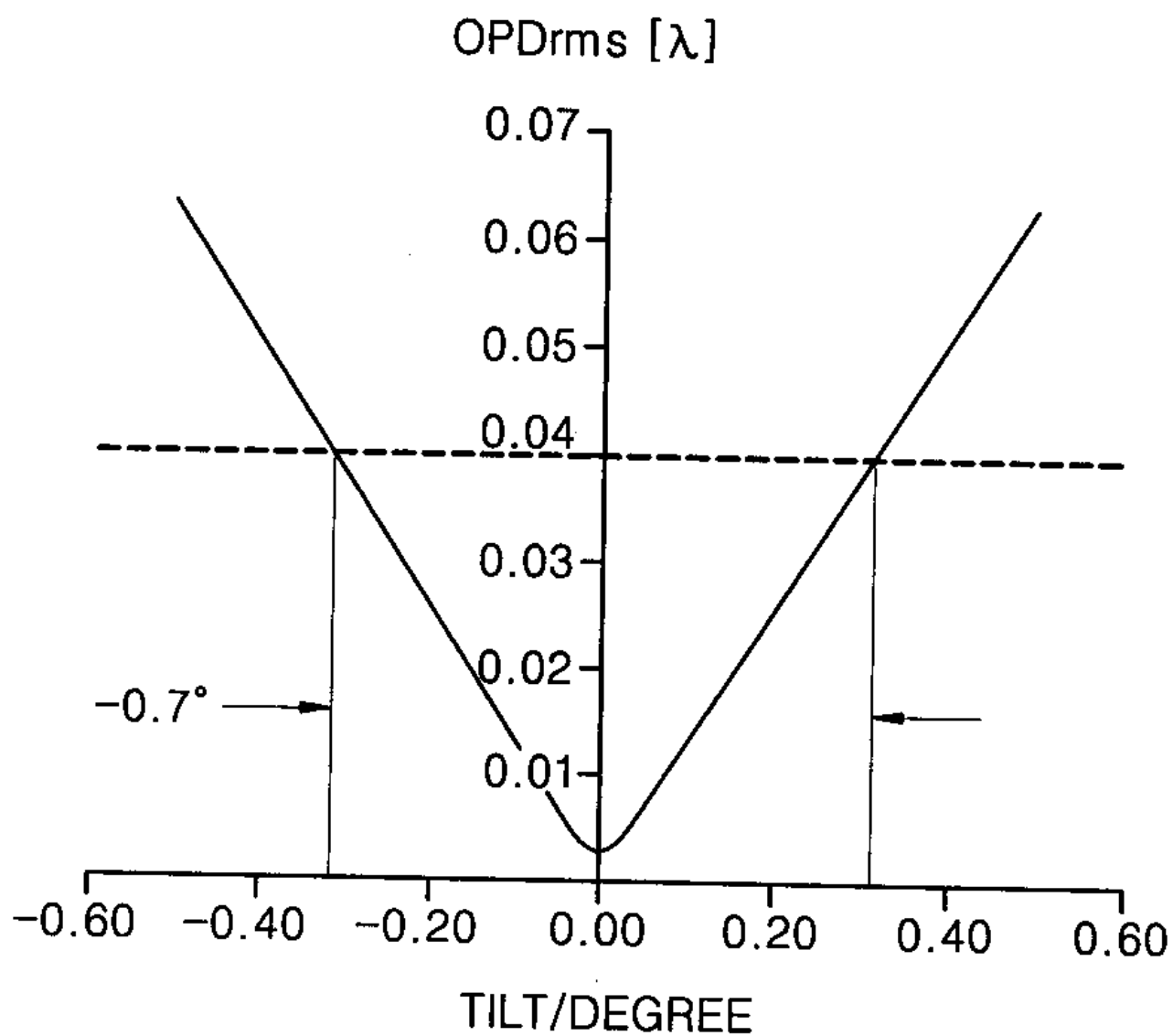
10a



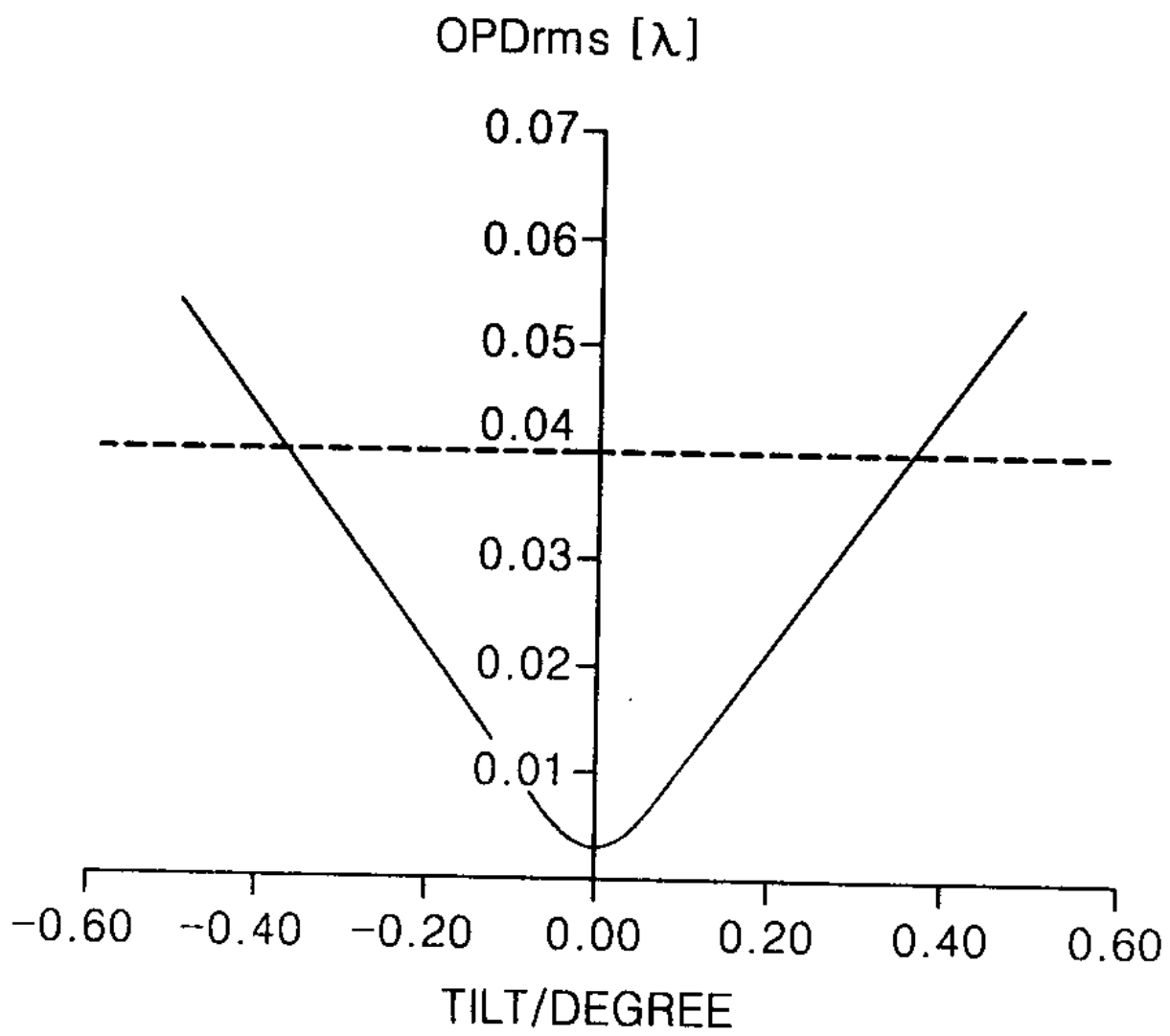
10b



11a



11b



12

