

2001 - 0089494
2001 10 06

WO 2000/30801
2000 06 02

(72)

, ,
 55133 - 3427 . . 33427
 , ,
 55133 - 3427 . . 33427
 ,
 - 37079 - - 10
 , ,
 33309 3201

(74)

:

(54)

, 가 , , 1/4
 . 가
 ;
 , 가 , .

1

, , , , 1/4

, .

, 가 , 가

1 가 . 가 (firing)

. (registration)
 , (vision) ()
 가 ,
 .
 .
 ()
 20~40 nanasecond 100~150 , (peak) 100~300Hz 가 .
 가 .
 , 가 ,
 가 . 1
 , () ,
 가 ,
 가 .
 가 .
 가 , (fluence;)
 .
 , () .
 , 가 () , " " (가
) " - 가 (top hat - gaussian)"
 , 가 .
 , ()
 . () .
 (folding) , 가 ,
 가 ,
 가 .

(resolution) (가 , 4,733,944 5,414,559 , 가 가 5,610,733 (" , " , , et. al, Vol.36,No. 32,pp.8481 - 8489,1977).

(telecentric) (2 - 5X) () 가 / 4,923,772 5,298,351

(dimension) M (80%) M2가 가 가 가 가 (polyimide) 가

1 " " , 4,940,881 ,

가 , (nozzle) (drug)

6
1/4 1/4
가 . 4 1
7
1/4

가 X
(photoresist)
가
(" (blind)").
가,
(bore)

가
가
1/4
1/4
가
1/4
가

1. " "
2. " " ' , ,
(" " ')

1 ..

2 -

3a 3d

4a 4b 1.17 가

5a 5b 0.15 가

6a - 6b 가 , 1/4

7a - 7c (7b)

(가 ,) 4 1

1 , , 가 50 (2) 가 (Kapto , KrF

n) TM (Upilex) ,
(248), XeCl(308) , 가
가 20 - 40nanosecond 40
0 1000millijoule/cm²

1 , (112) (110) 가 (106) (108)

(110) 가 , (112) (116) (12) (116) (1

(112) (112)가 (18) (120)

(112) (120) (120)가

(110) 가 , 가 , 가

(intra) - (cavity) 가 -

(120) , (112) (122), (124)
(122) (stop)

5,378,137, , ,

가 (coating), (sputter) ,
가 가 ,
가 ,
(124) (126) , (128) (130)
(112) 5,417,897 ,
(124) 5 5 , 25(, 70 - 90%)
2 - 2 , (210) (212)
(216) (212) (214) (212)
(216) (232) ,
- 가 가 - (tilt) (wedge) 가
- , - ,
- , -
- (234) , (235) ,
(가 ,) ,
가 가 ,
, , (224) (226) 가 가
; ,
(112) (226)
(230) (228)
- ,
, (reel)
- , , , ,

3A - 3D (311) (310) (312) (" E") (313) (" M")
 3A , (311) (312) (" E") (313) (" M")
)
 가, 3 (321) , 3
 A , () " E" 가 , 3B ,
 가 3A
 가, , 3D (322)

30 가 50 가 2
 42) 0.15 (0.47) . 3, 4, 5, 6, 7 1.17 (0.
 $x() - y()$, 4C , (-) ,

4A 4B 50 (가)
 (x y) 0.42 1.17
 0.42
 가 , 4C

5A 5B 50 - (가)
 ; , (X - Y
) 0.154 , 가 5C

6A - 6C (6A) E ,
 1/4 (6B) (6C)

6A - 6C 7A - 7C 7A E 1/4
 7B ,
 ; 가
 , $\pm 45^\circ$, 1/4 , 0°
 7C X - Y X Y

(57)

1.

,

;

;

, 가

,

1/4

가

.

2.

,

;

가

;

1/4

,

1/4

가

.

3.

1

2

,

1/4

.

4.

1

2

,

1/4

.

5.

1

2

,

가

.

6.

1

2

,

,

.

7.

1

2

,

.

8.

1

2

,

, ND/YAG

, ND/YLF

,

CO₂

.

9.

1 2 , , , , HCl,
가 .

10.

1 2 ,
가 .

11.

.

a) 1 2 ; b) 가 ,
 , 가
 .

12.

11 ,
 .

13.

11 , ,

14.

11 , .

15.

14 , 30 가 .

16.

14 , , 1 가 .

17.

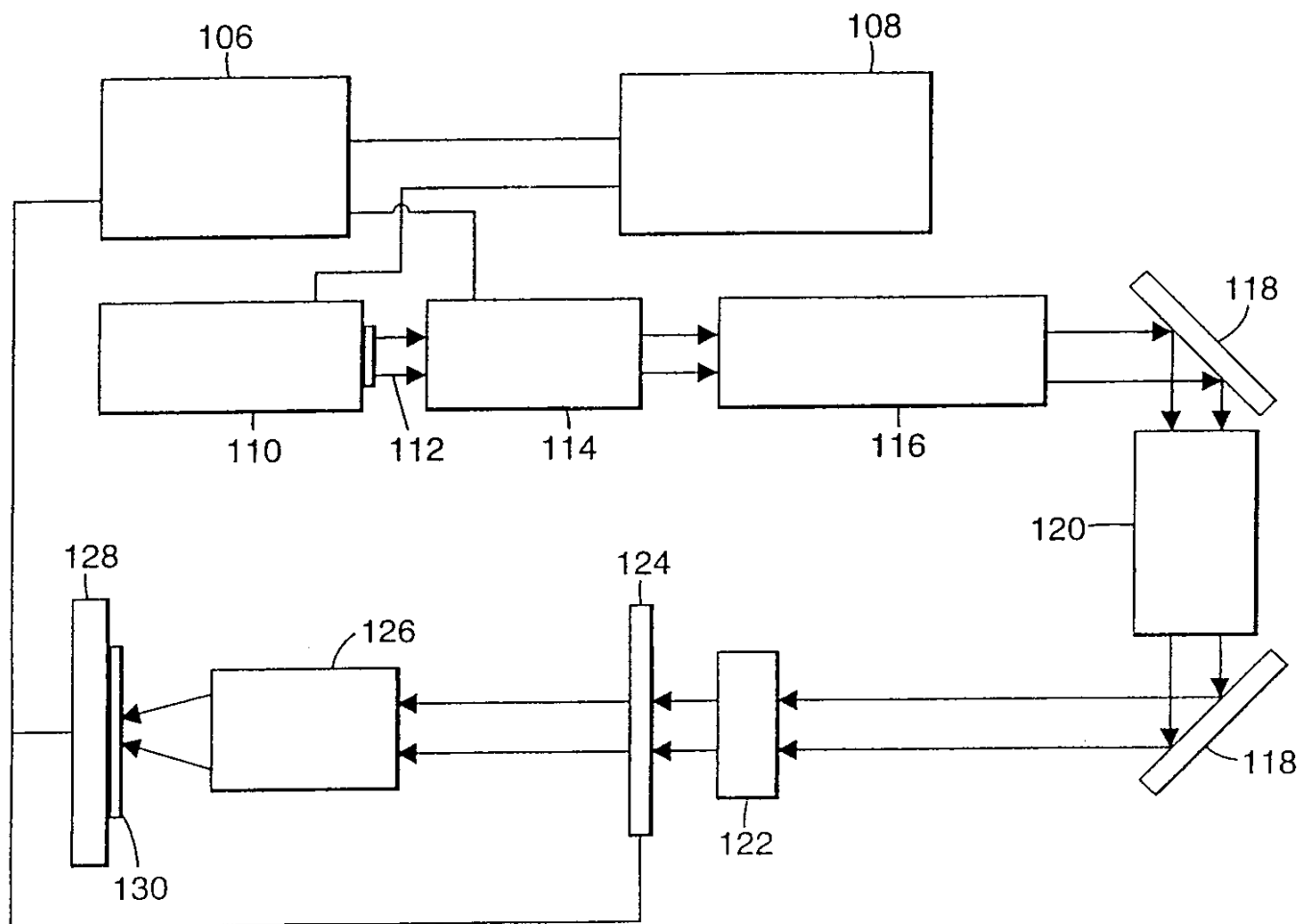
11 , .

18.

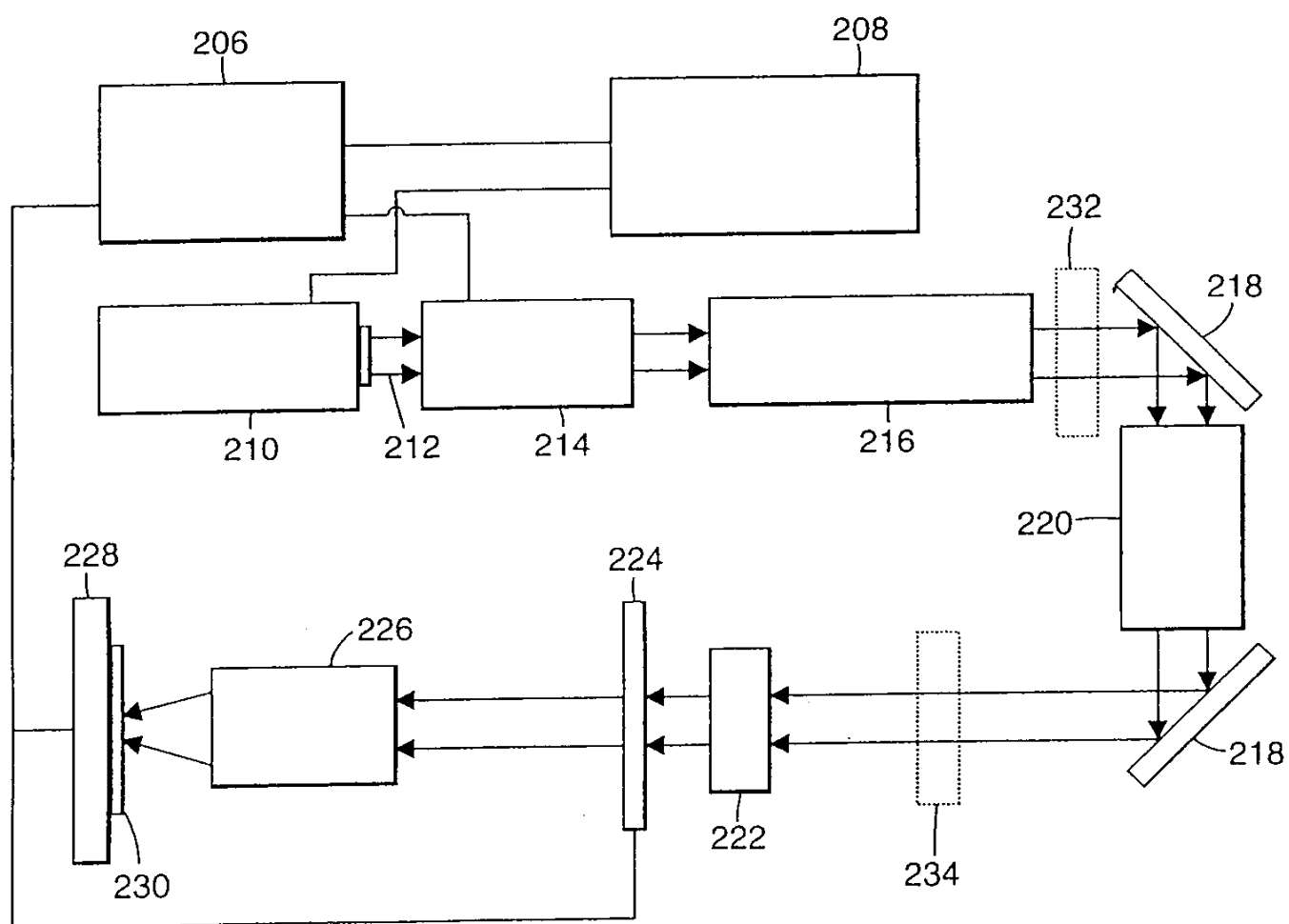
17 , .

19.

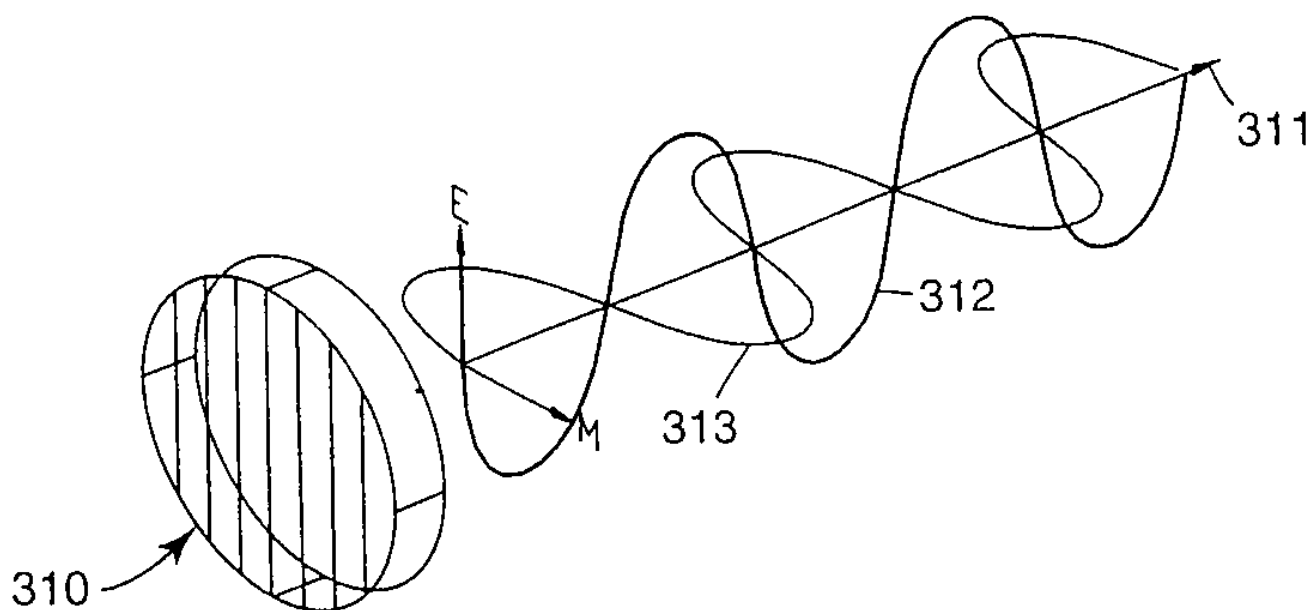
1



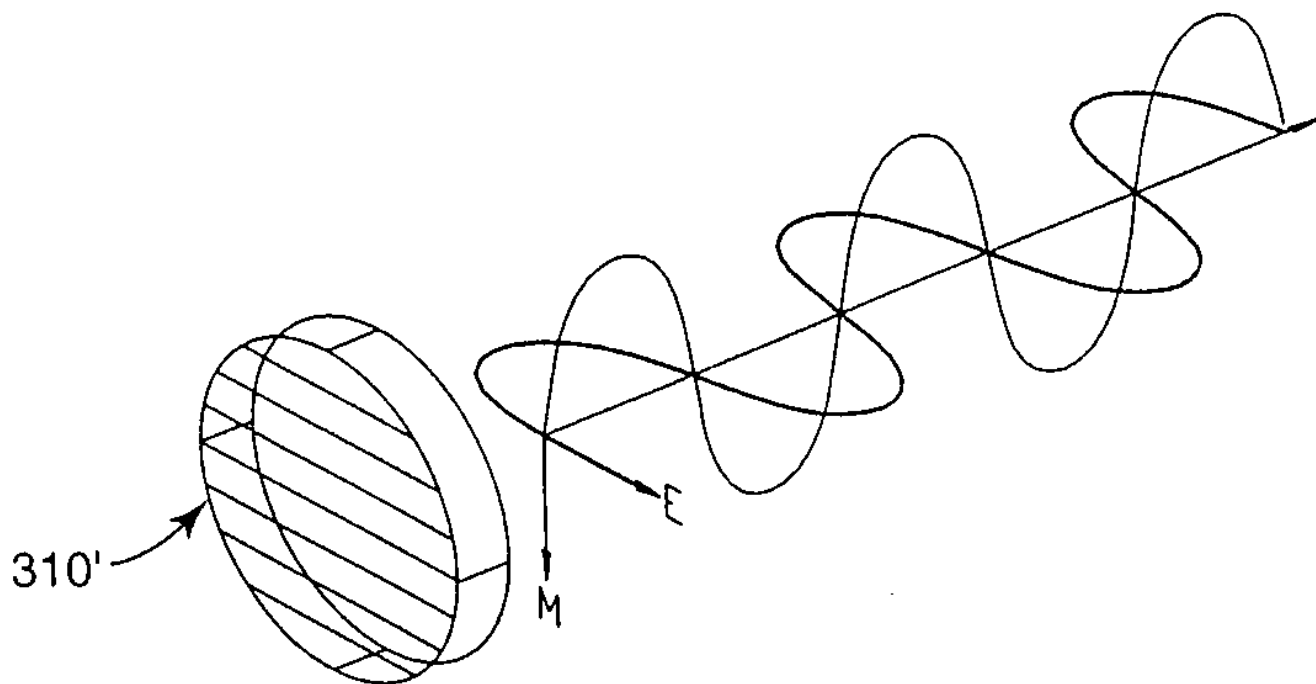
2



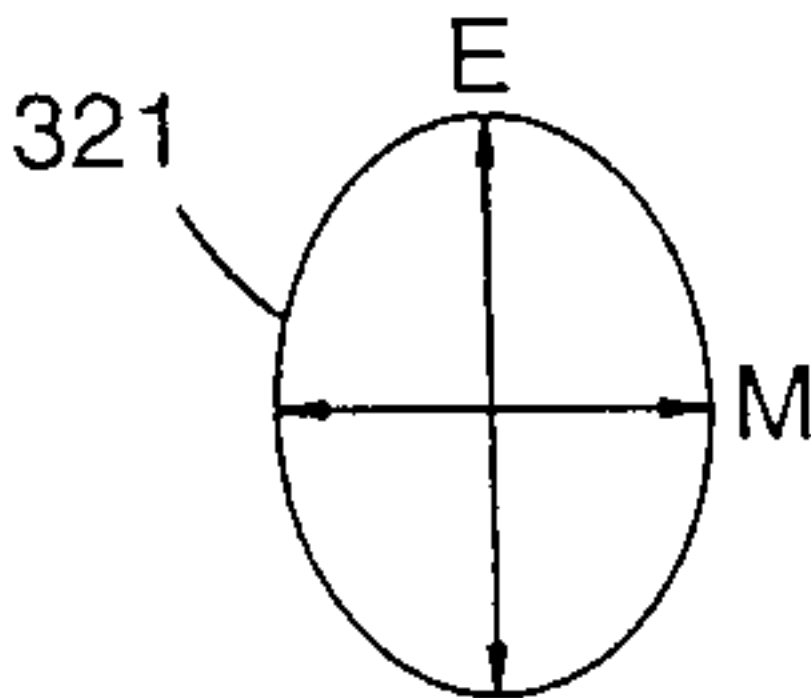
3a



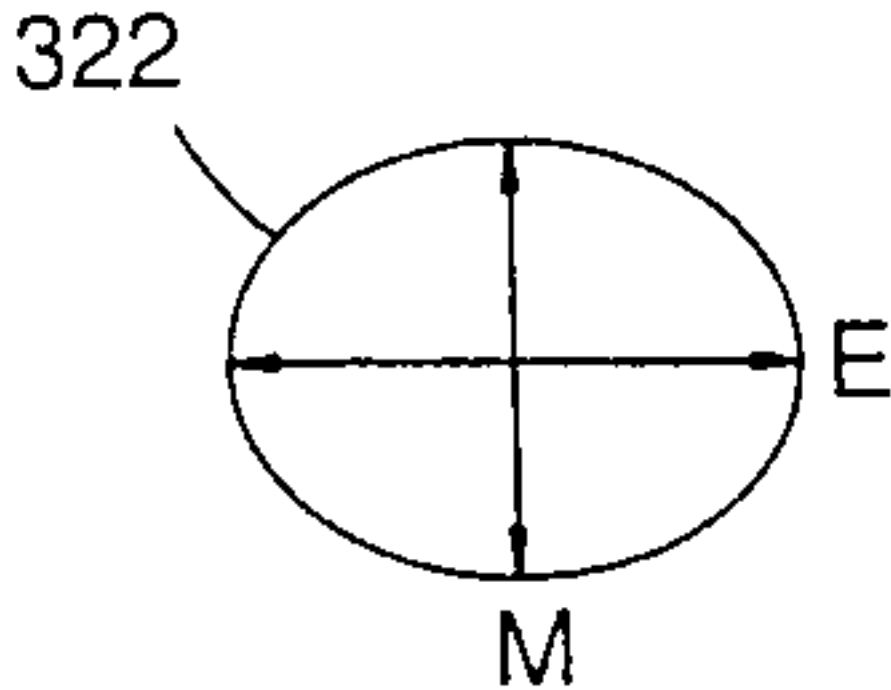
3b



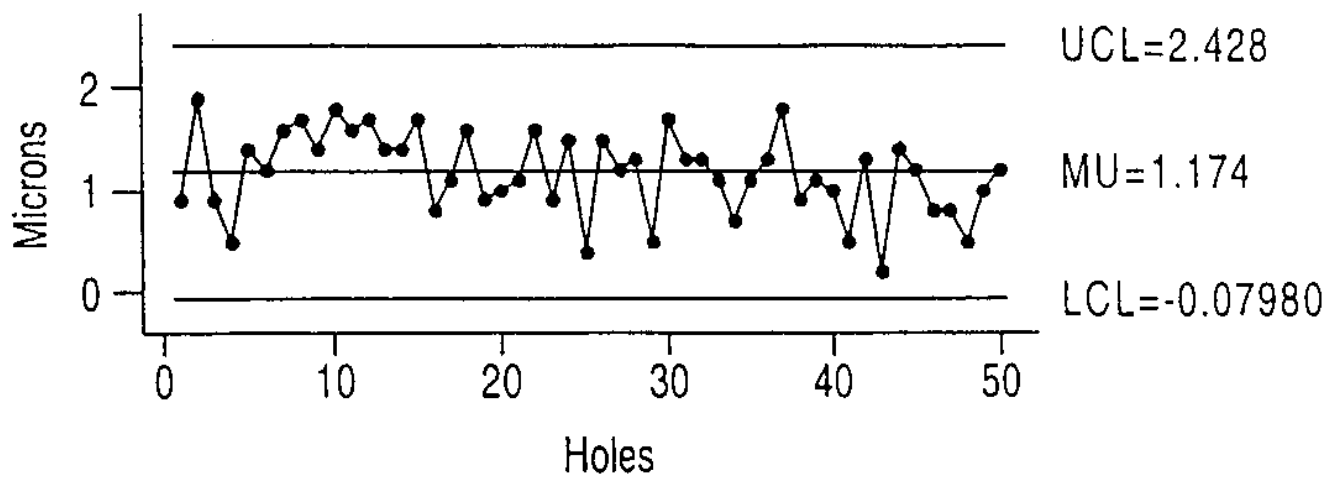
3c



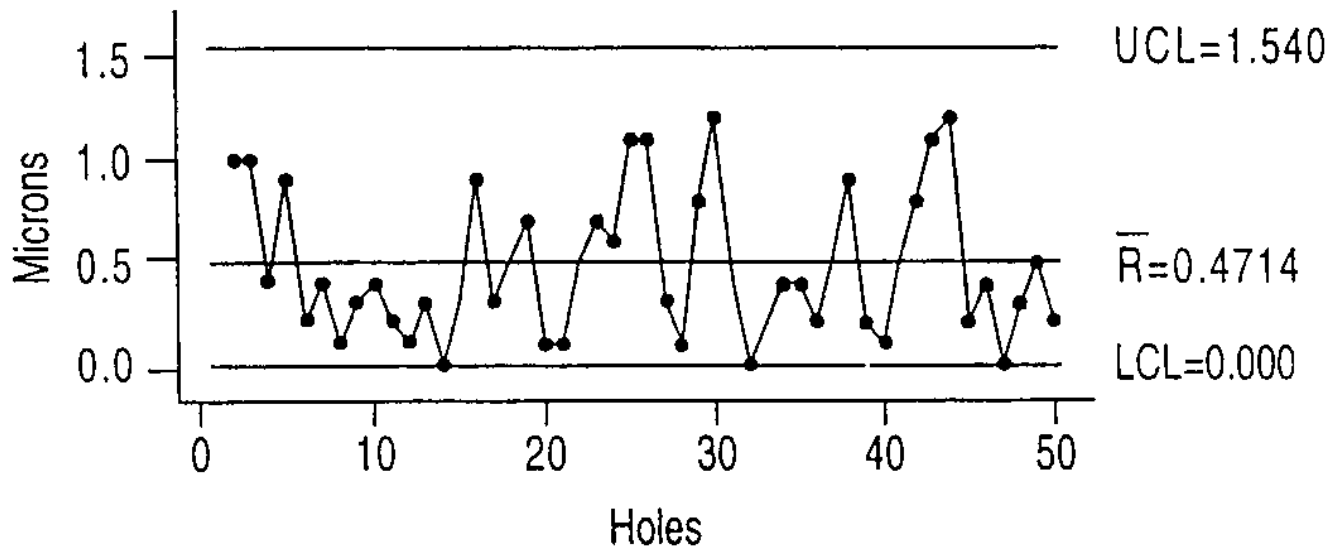
3d



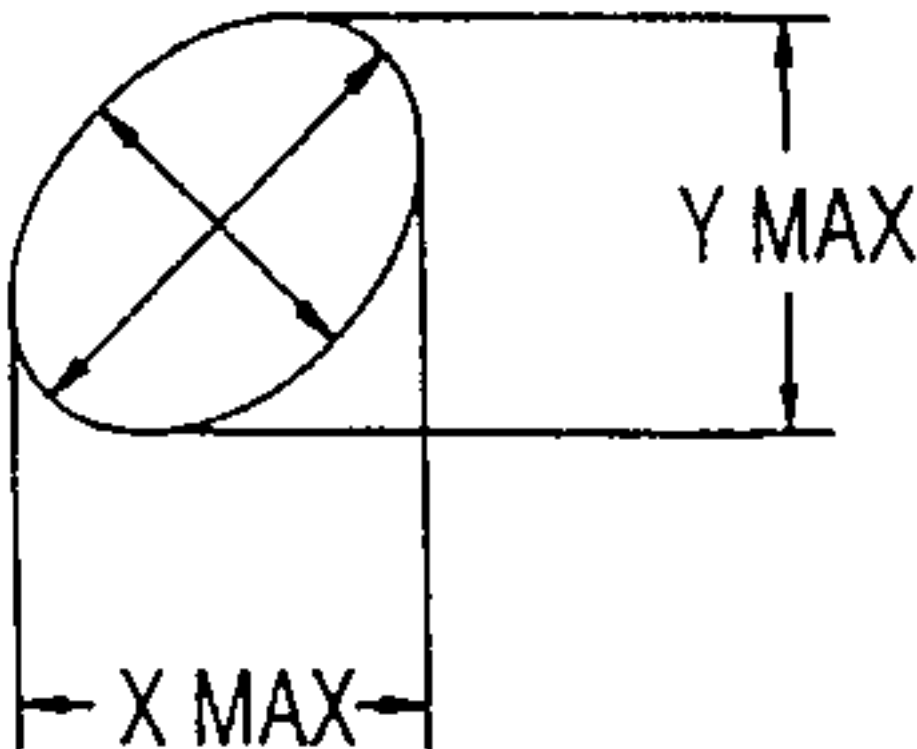
4a



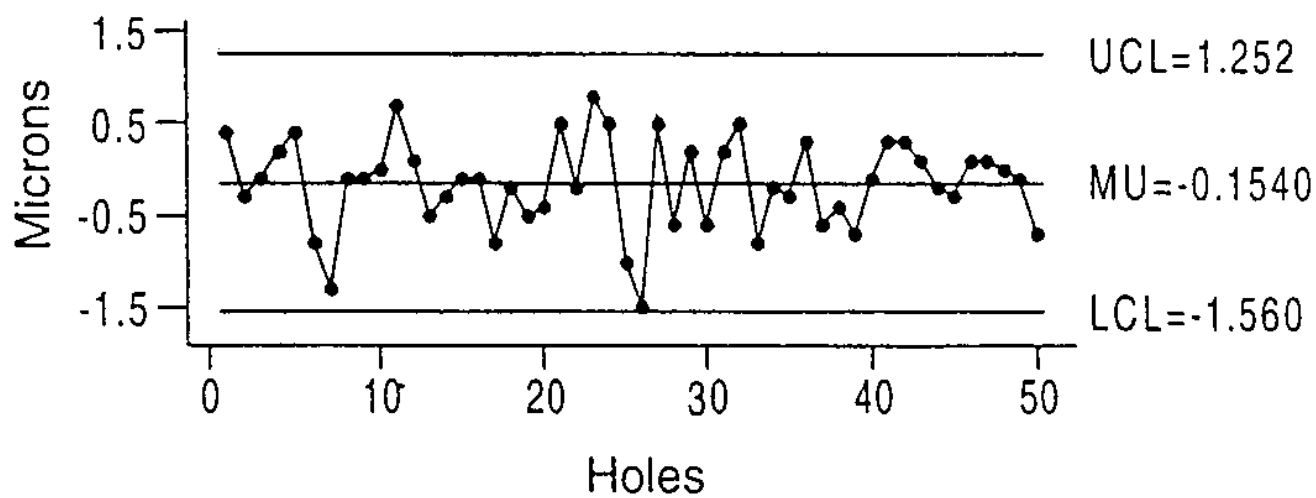
4b



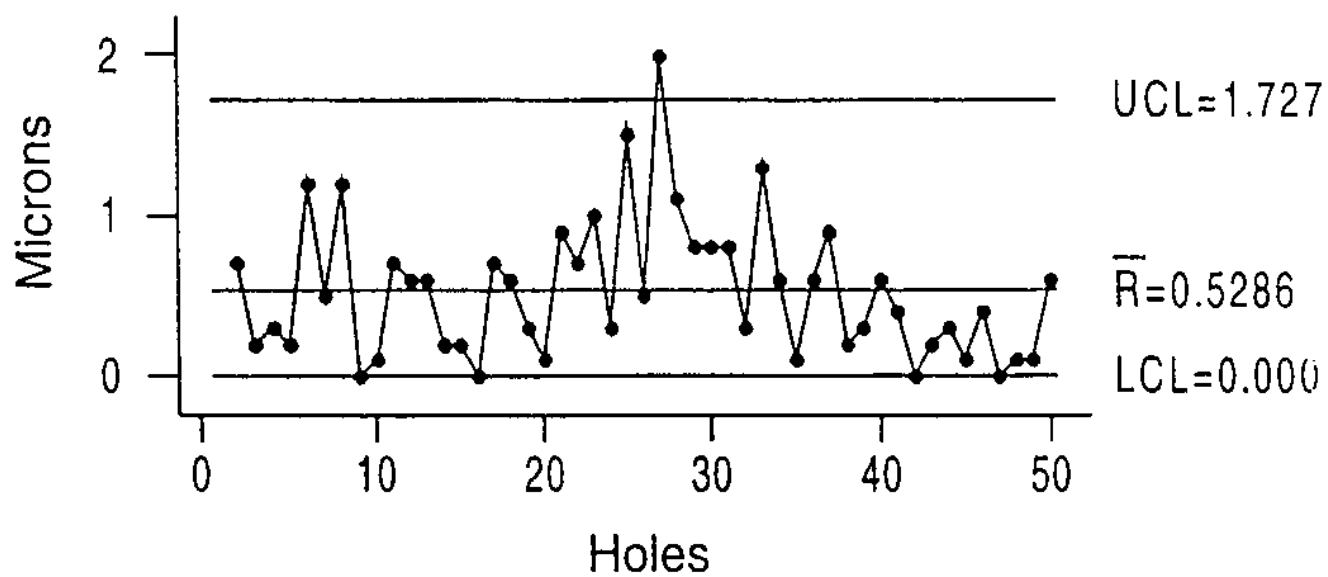
4c



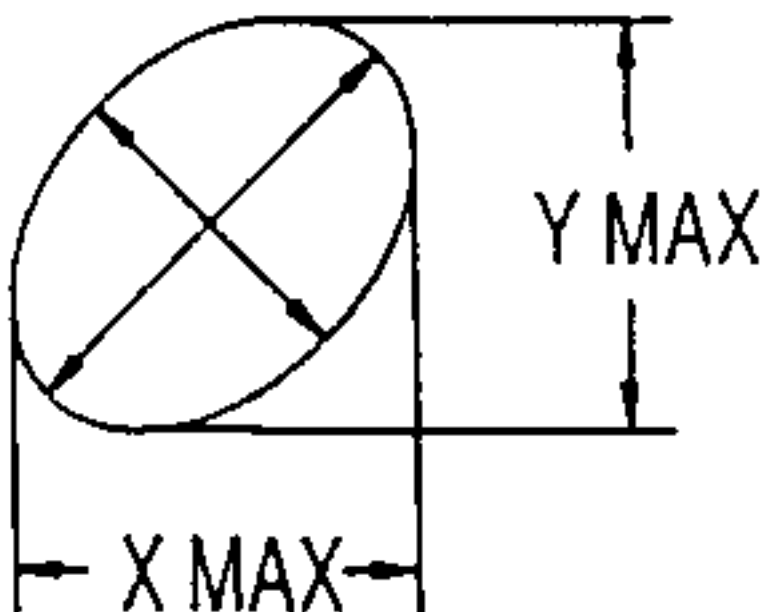
5a



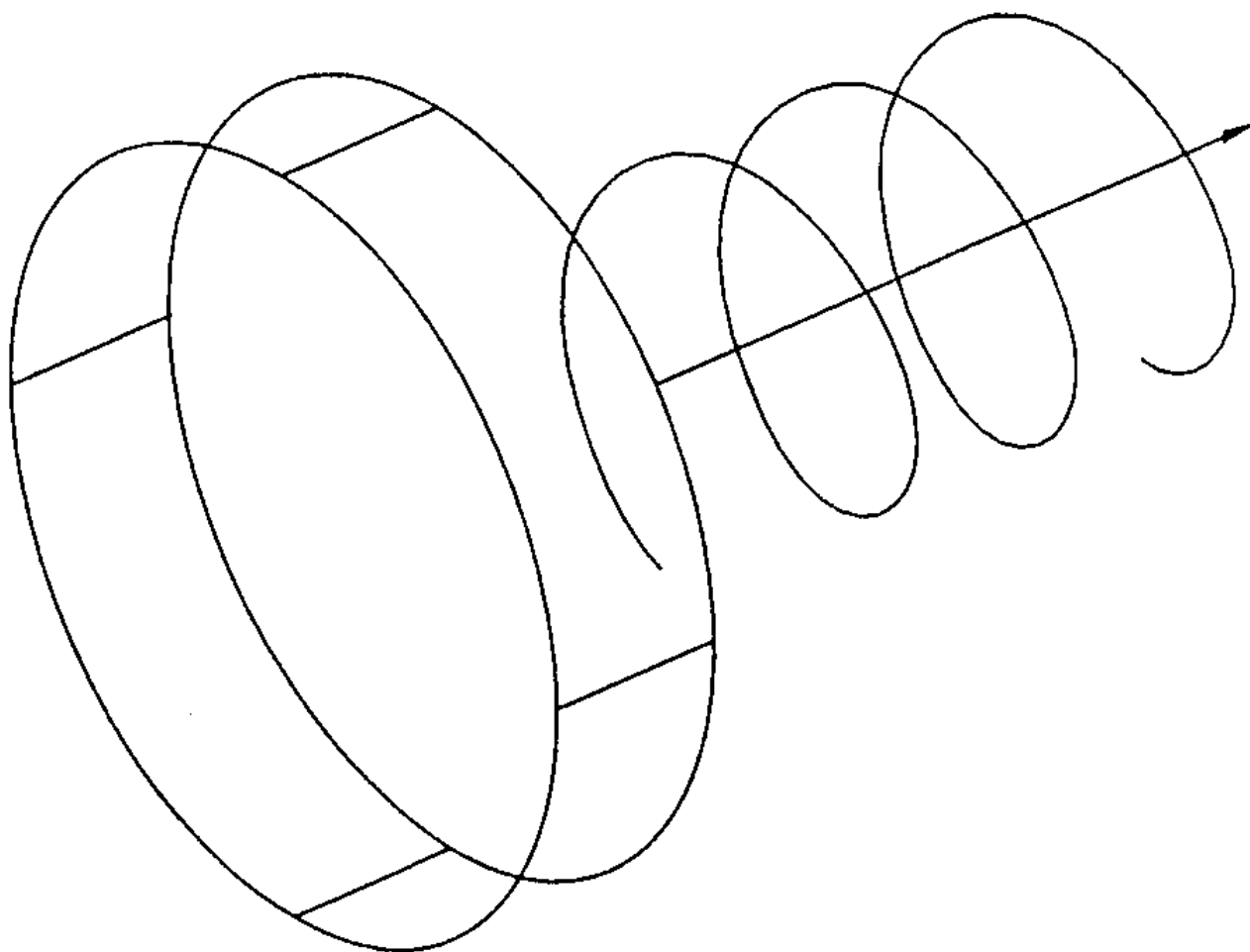
5b



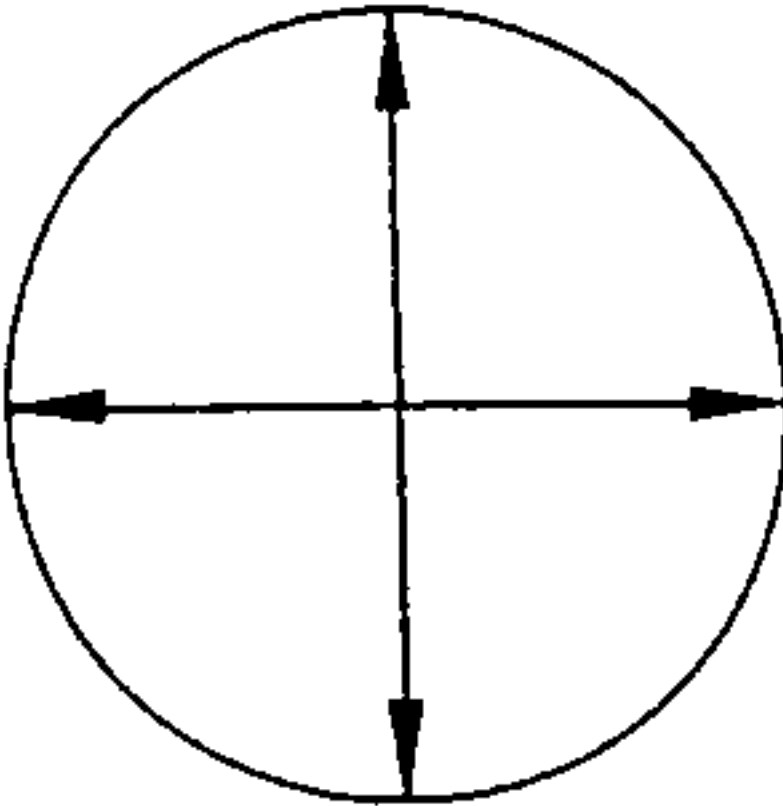
5c



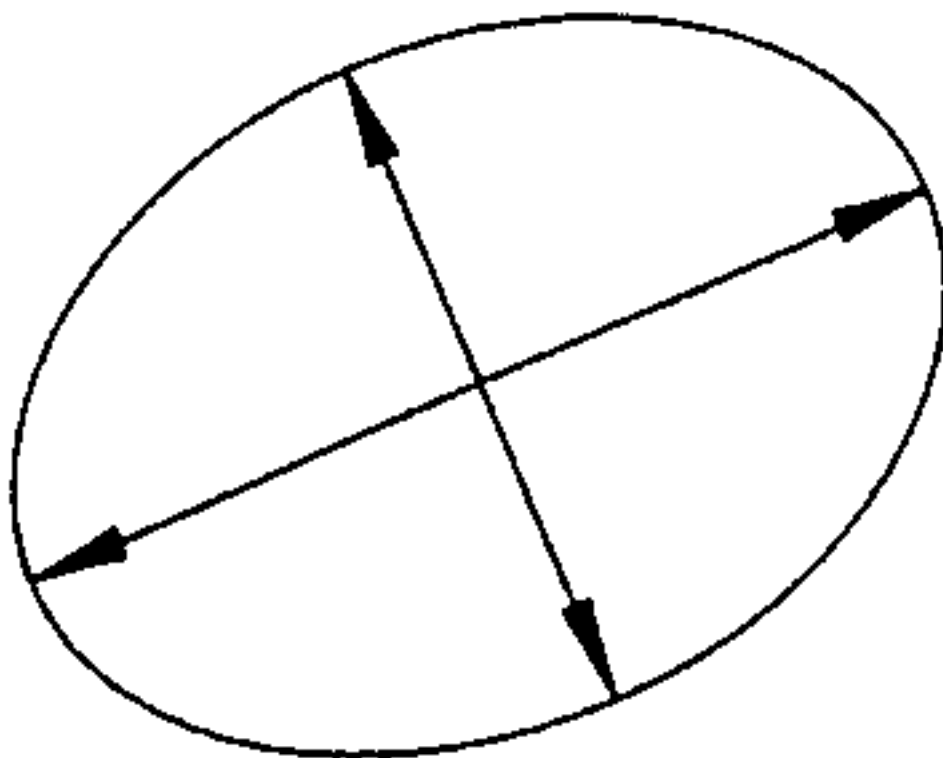
6a



6b

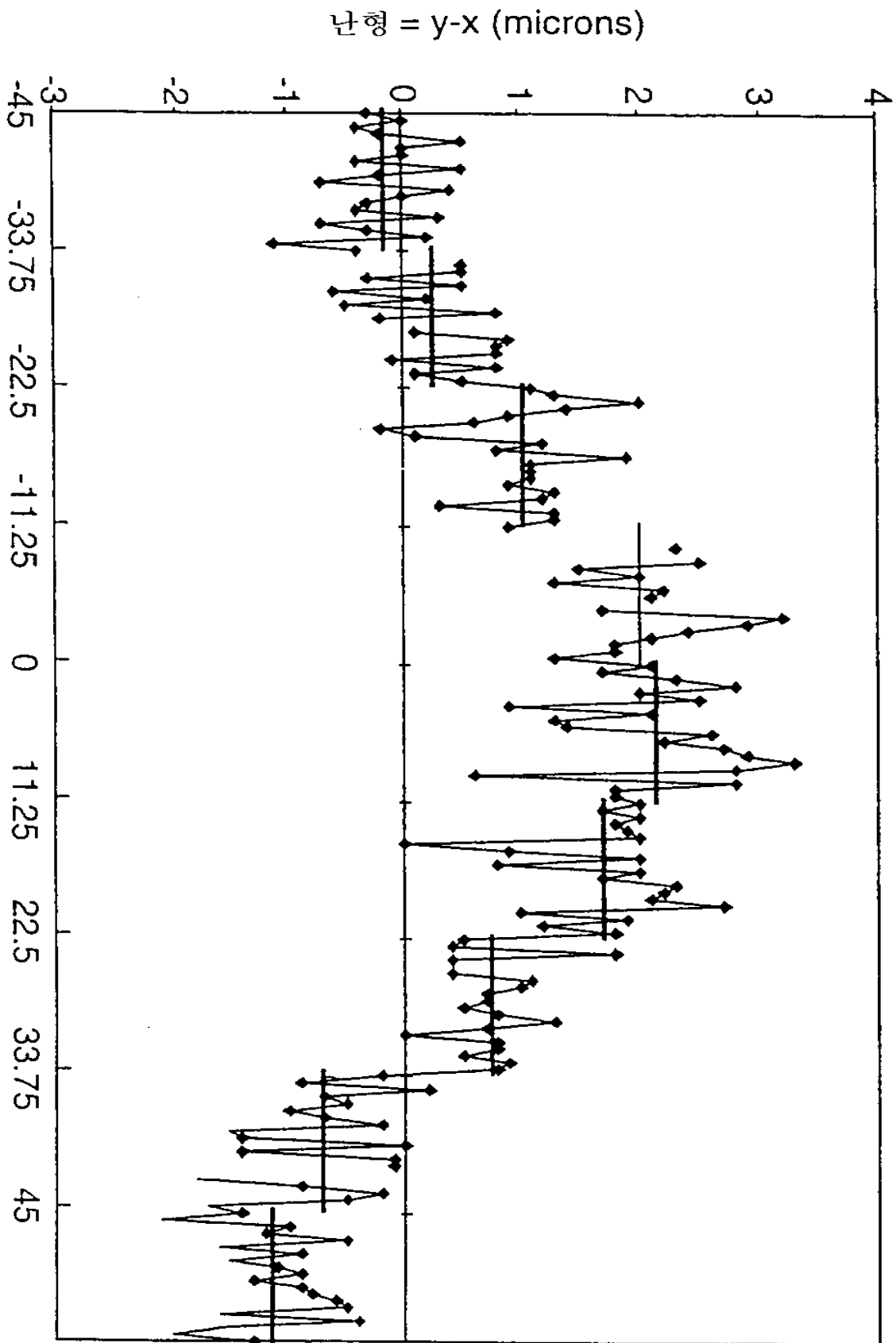


6c

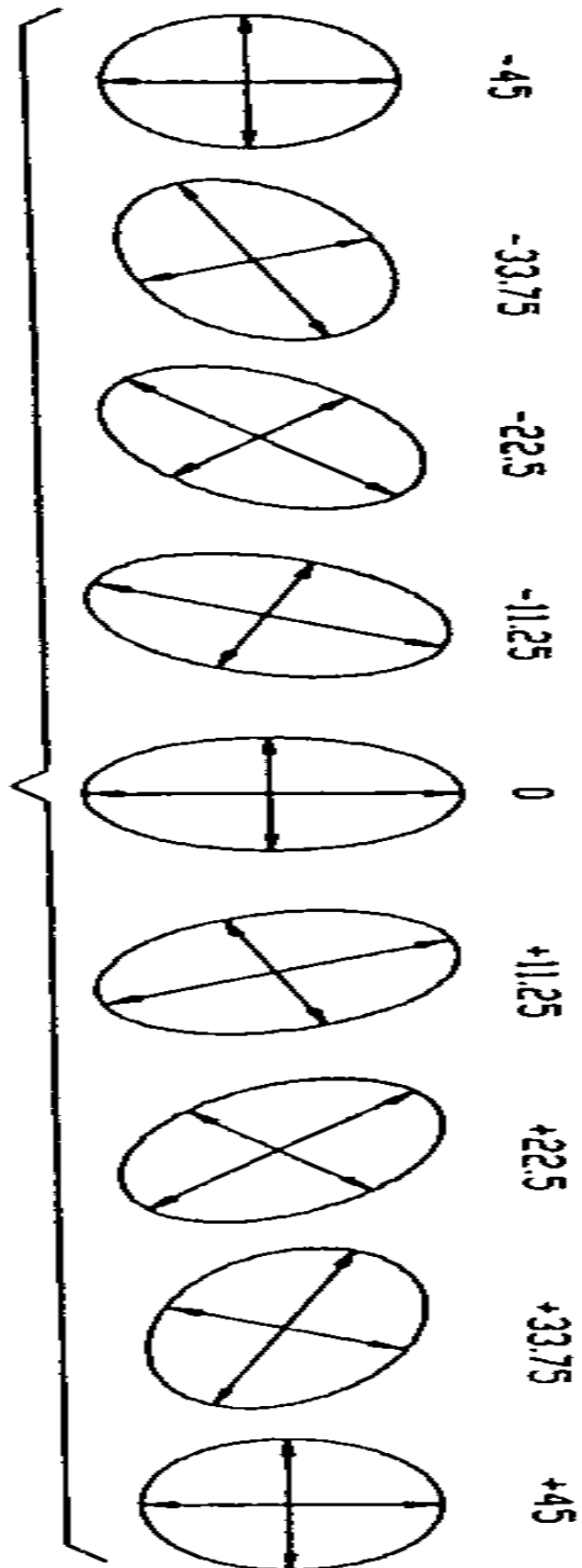


7a

분극 각 vs 난형
(quarter wave plate rotated)



7b



7c

