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(72)847-1102 706

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(54) L E D

LED가LED가LED OCT(Opti LED가 LE

cal Coherence Tomography :) ; LED ; LED

D ; ; ;

가 가 ;

4

LED, LCI, OCT, , , 가 , ,

1	LED	가	,
2		LED	,
3		LED	,
4	LED	OCT	,
5	LED	OCT	3 ,
6	LED	OCT	2 , 7 6 3

<
>

100 : 102 : LED

110 : 120 :

130 : 140 :

150 : 160 :

200 : 210 :

220 : 230 :

LED(Light Emitting Diode)

,

LED

가

LED

가

LED

(Low Coherence Interferometer, LCI) (Coherence length)가
(Michelson Interferometer) .

ography) (Optical Coherence Tomography, OCT)) . OCT(Optical Coherence Tomography) (non-invasive) ($<10\mu\text{m}$) . 1990 가

1, 2, 3 . OCT 가 .

OCT uper - luminescence Diode), 가	Super - Continuum 가	SLD(S 가
가 (\$7,000 ~ \$12,000)		

가 OCT(Optical Coherence Tomography) , 20mW ~ 30mW가
 Super-Continuum SLD(Super-Luminescence Diode)
 SLD
 LED LED 1 가 LCI
 LED
 LED
 LED LED 가 가 LED
 OCT(Optical Coherence Tomography : () ()
 LED가 LED ;
 LED LED ;
 ;
 ;
 ;
 ;
 LED LED 가 가 ;
 LED LED
 LED LED LED
 LED
 LED , , LED, , LED 가
 LED
 LED
 LED LED 가 가 가 LED(102)(Light Emitting Diode) LCI(Low Coherence Interferometer:)

1 (100) 50nm ~ 100nm 20nm ~ 30nm LED(102) 10 μ m LCI(Low Coherence Interferometer:) 가

LED (100) SLD(Super Luminescence Diode) 가 , 가 LED(102) LCI (100) (Bandwidth) , LED(102) 가

1 가 가 가 LED(102) 가 , 가 LED (100) LCI 가

LED(102) (100) 가 LCI LED(102) (100) 가 LCI

2 LED LED(102) 가 LCI LED(102) 가

2 LED(102) (110) (120) (130) (140) LCI 가

가 LED(102) LED(102) 가 () 가

LED(102) 24V 가 LED(102) 가 () , $\pm 0.5V$ LED(102) 가 LED(102) 가 (140) (150) (160) 1 가

LED 가 가 가 , (160) CPU()가 LED (160) 가 ,

3 LED

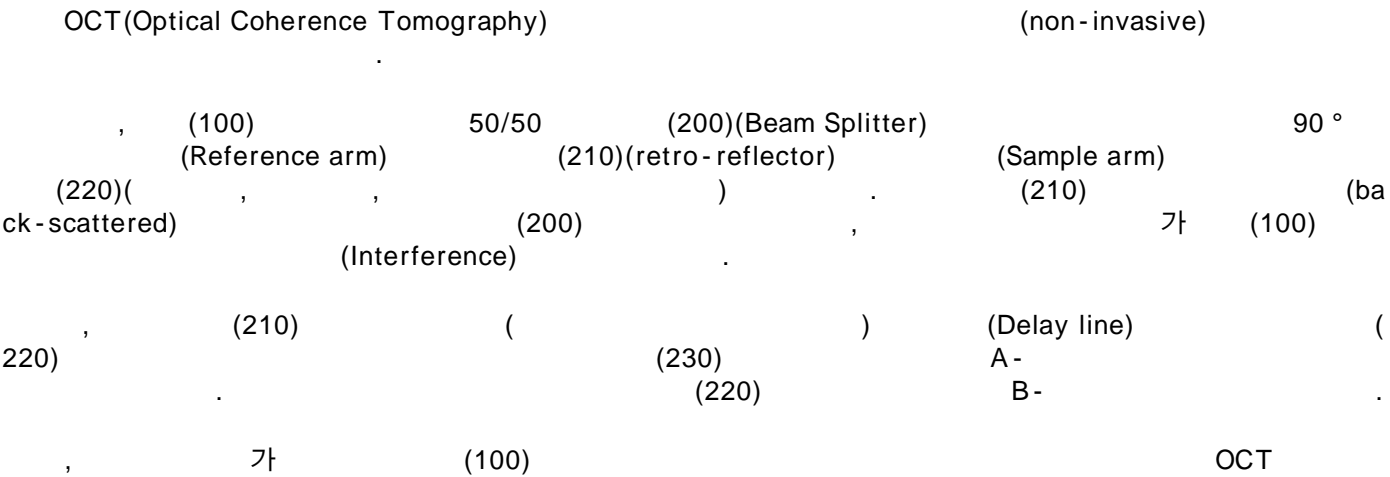
3 LED(102) (100) LED(102)가

LED(102) 5 ~ 20 LED(102) 가 LED(102) 가 가

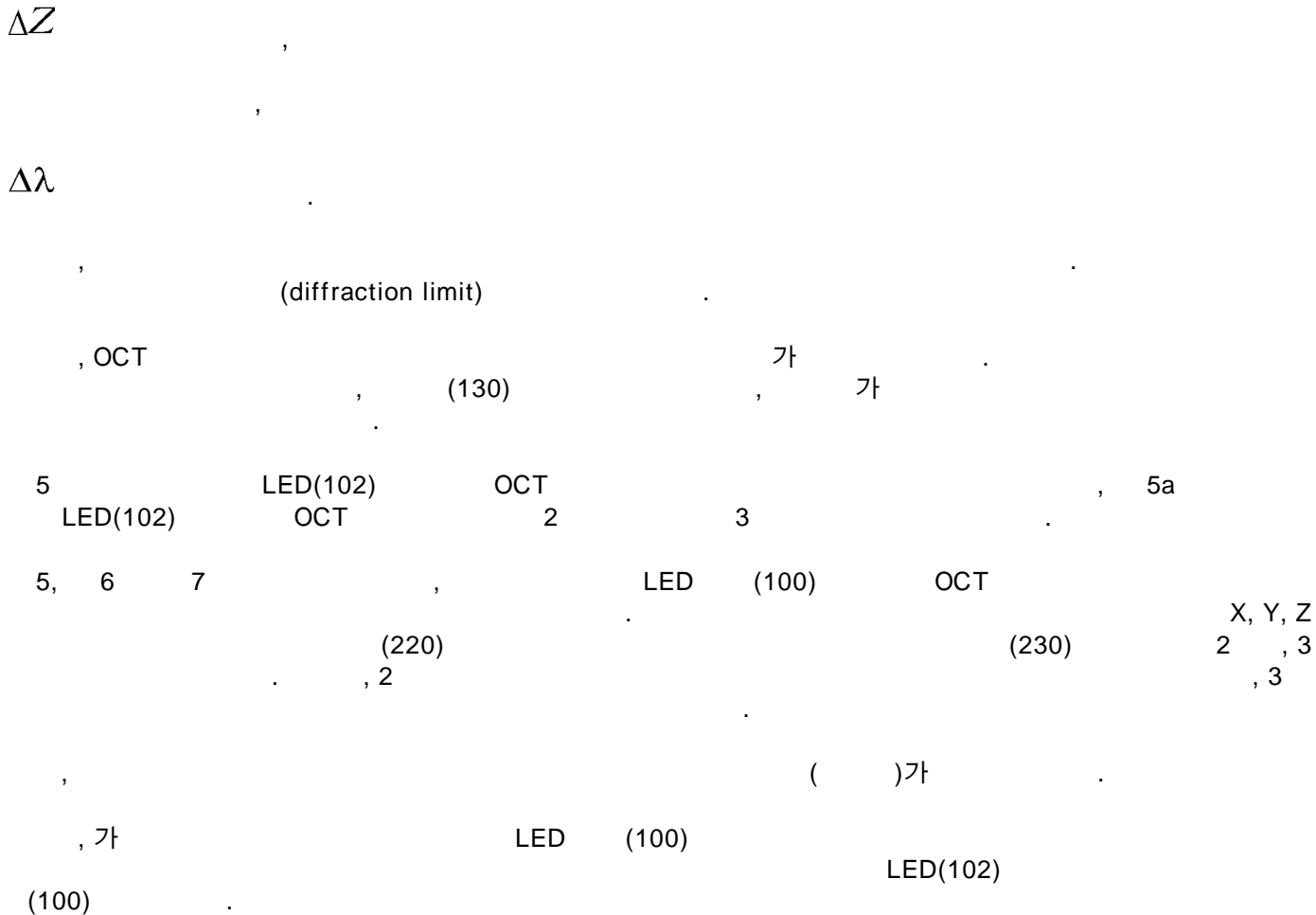
4 LED OCT

4 , OCT(Optical Coherence Tomography :) (Coherence length)가 (100) (Michelson Interferometer) (Co L

CI()



$$\Delta Z = \frac{2 \ln 2}{\pi} \left(\frac{\lambda^2}{\Delta \lambda} \right)$$



ED LED , , L
 , OCT , 가 .
 가

) (100) LED , 가 LED(102
 Super-Continuum (100) SLD(Super-luminescence Diode),
 \$20 가 (\$7,000 ~ \$12,000)
 , 20nm ~ 30nm LED(102) (100) 50n
 m ~ 100nm 10 μ m 가 .
 가 ,

가 . ,

(57)

1.

OCT(Optical Coherence Tomography :)

(100) ,

가 LED(102)가 LED (100);
 LED (100) LED (100) (110);
 (110) (120);
 (120) (130) (130);
 (130) (140);
 (100) LED(102) 가 가 (150);
 LED .

2.

1 , (100) LED(102) LED(102) LED(102)
 (150) 가
 LED .

3.

1 , LED LED(102) (110) (120)
 (100) LED .

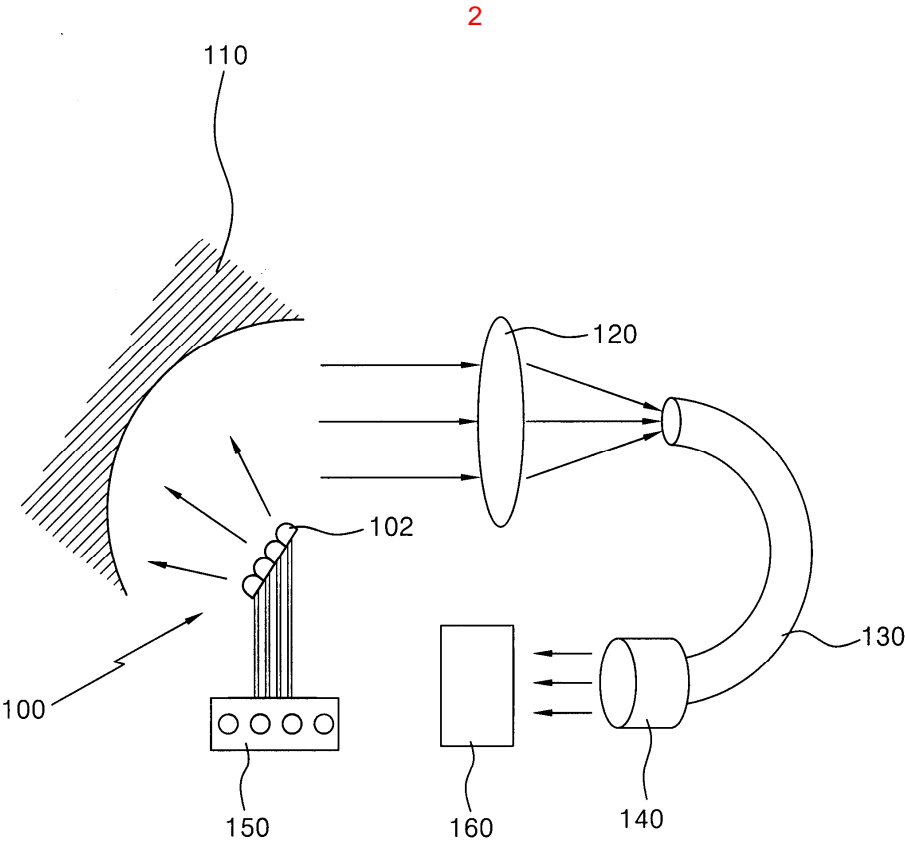
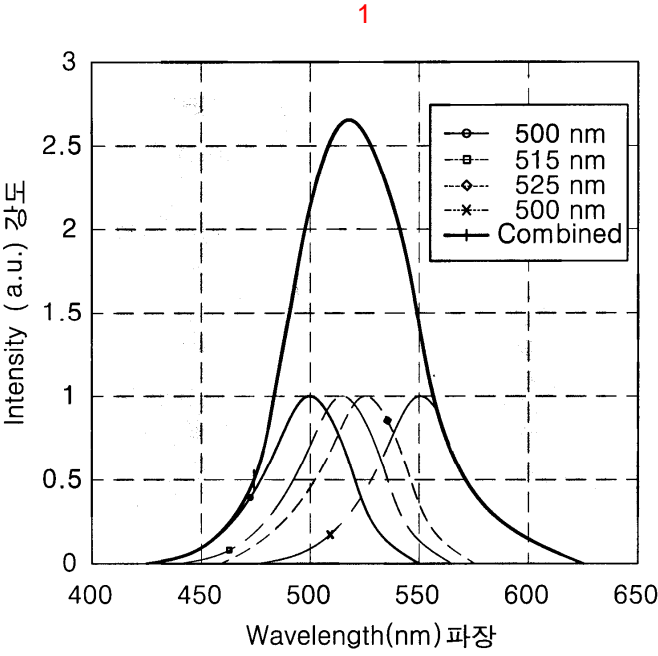
4.

1 , LED (100) 2 × 2 LED
 .

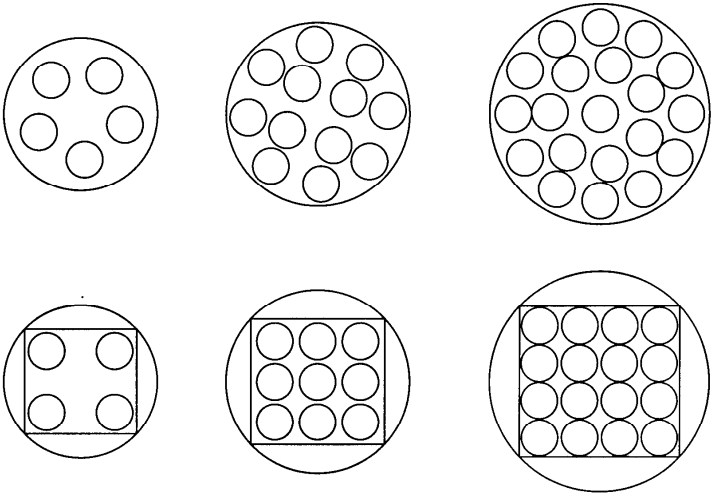
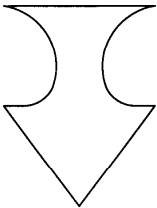
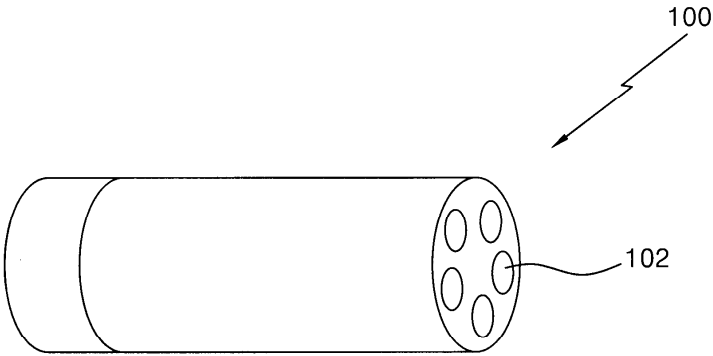
5.
1
LED

4

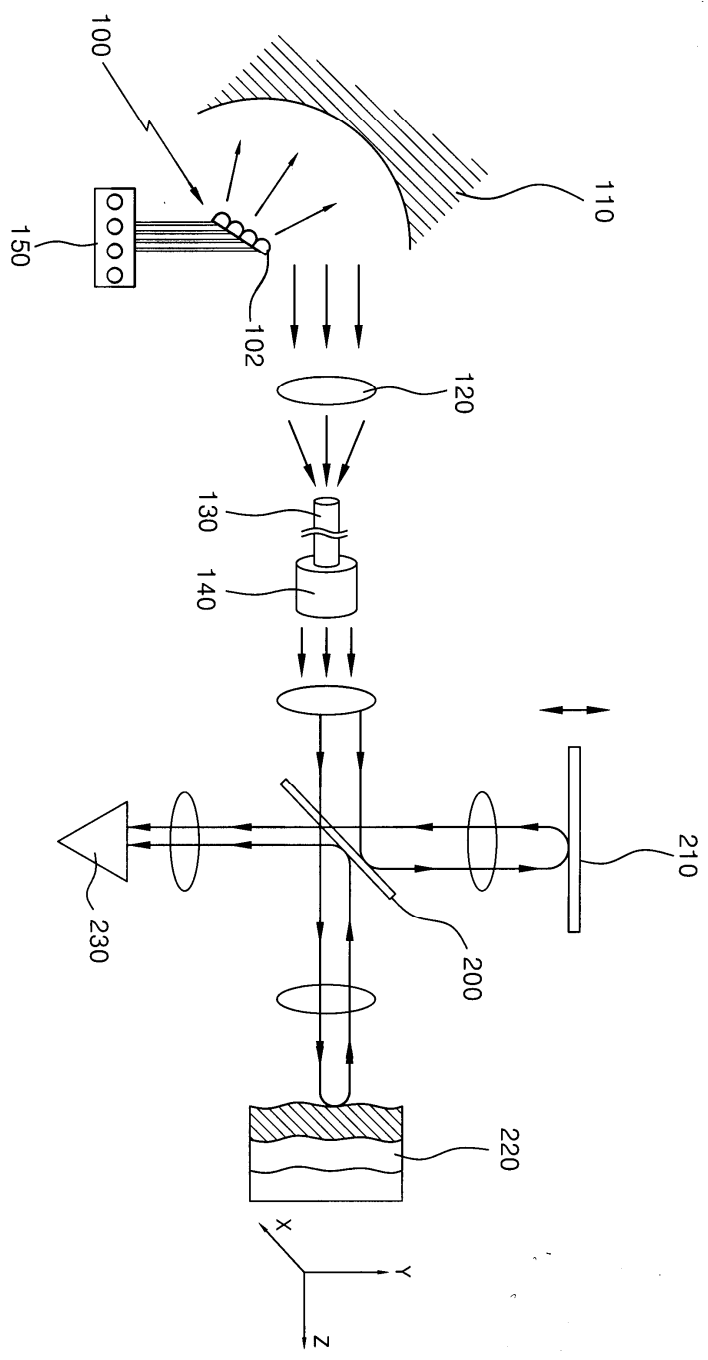
LED(102), LED,



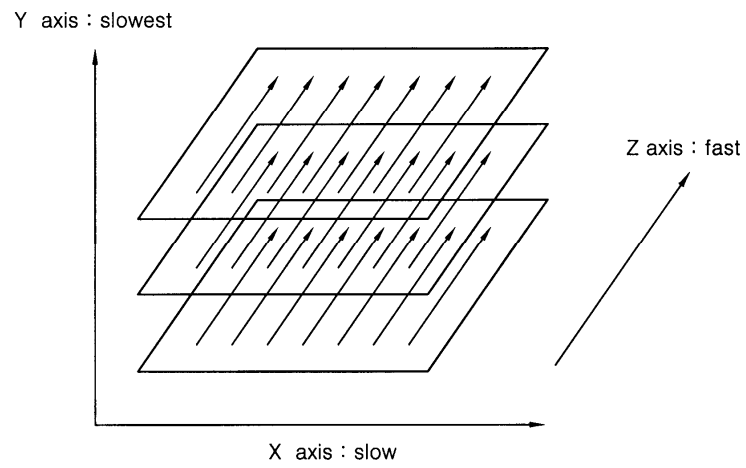
3



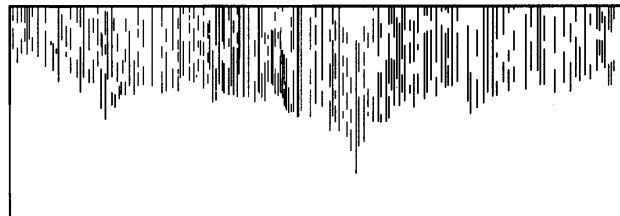
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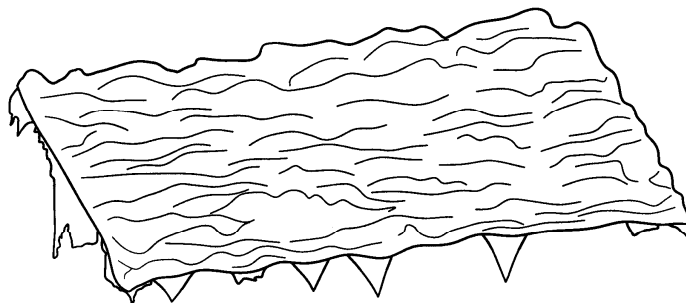


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2-D 이미지

7



3-D 이미지