

(19) (KR)  
(12) (B1)

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(21) 10 - 2000 - 0059809 (65) 2001 - 0050961  
(22) 2000 10 11 (43) 2001 06 25

(30) 11 - 301958 1999 10 25 (JP)

(73) 가 가 2 4 - 1

(72) ,392 - 8502, 가 - , - , 3 - ,3 - 5, 가 가

(74)

:

(54)

0.005(cal/cm · sec · deg) 20

4

1 (120) .

2 1 (120) .

3 (reflector) (124) 가 .

4 가 .

5 .

100 . . .

1000 . . .

120 . . .

120ax . . .

122 . . .

122a . . .

122c . . .

122n1, 122n2 . . . (lead)

124 . . .

124R, 124R' . . .

124h . . .

124n . . . (neck)

126 . . . (前面)

190 . . . (fan)

200 . . .

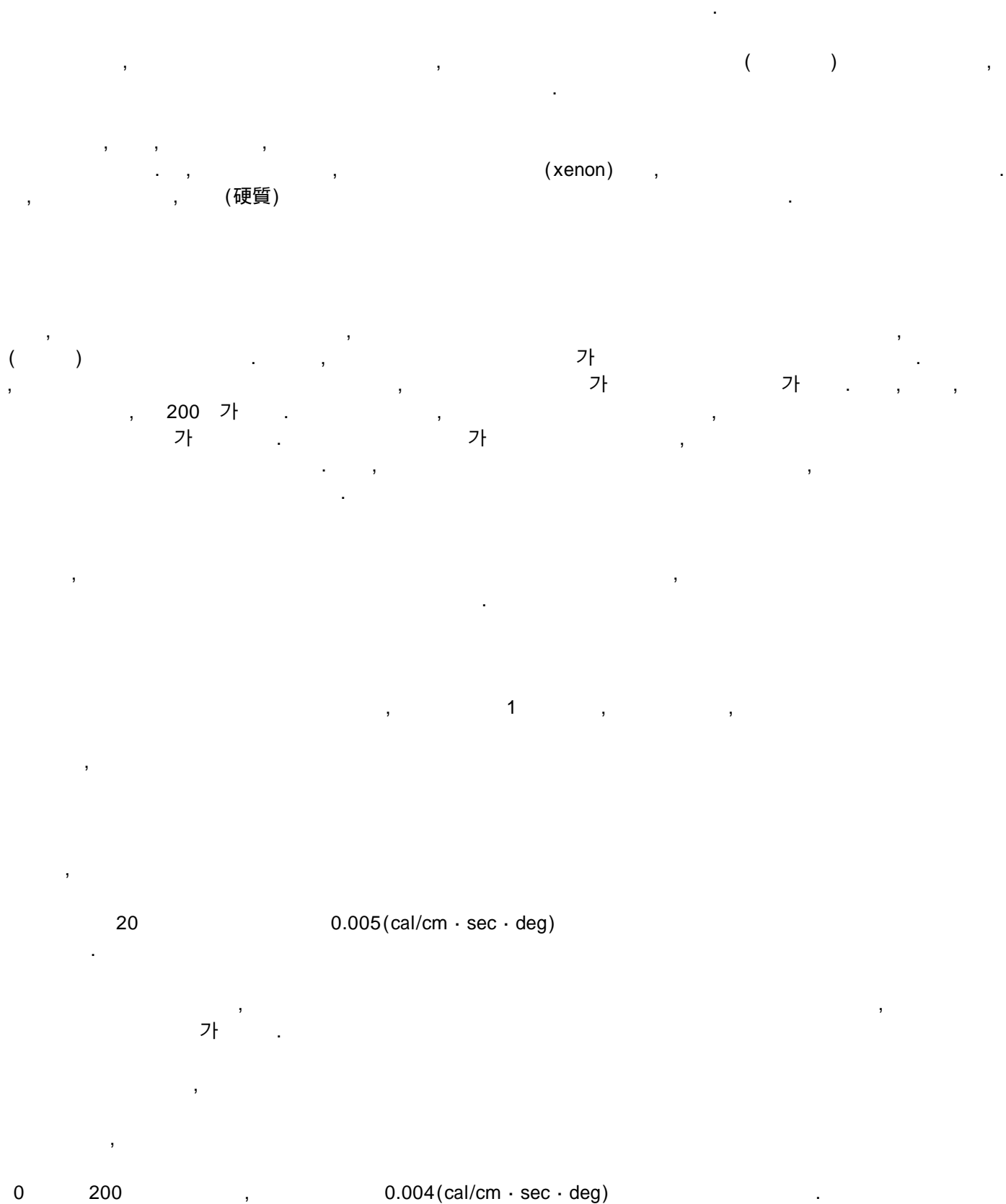
220 . . . (relay)

300R, 300G, 300B . . .

320 . . .

340 . . .

SC . . .



가 .

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,

$\text{Al}_2\text{O}_3$  ,  $2\text{MgO} \cdot \text{SiO}_2$  ,  $\text{MgO} \cdot \text{SiO}_2$  ,  $\text{ZrO}_2 \cdot \text{SiO}_2$  ,  $\text{TiO}_2$  (系) ,  $\text{SiC}$  ,  $\text{Si}_3\text{N}_4$  ,  $\text{ZrO}_2$  , (c  
ermet)  
가 .

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(前面)

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가 .

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2

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1

가

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(光線束)

.

1

가

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가

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( )

A. :

1 (126) (120) . (120) , (124) , (前面)  
(126) , (124) , 가 (120)  
, (124) . (124)  
(126) (+z ) .

2, 1 (120) yz . 2, (120), (120ax) (120ax), (120) (120), (122), (124) (126) .

(124), (120ax) (124R) (124R') (120ax), x (124R), (124R') (124R), (124R') .

(122), (124h) (124) (neck) (124n) (122), (122a), (122a), (120ax), (球形狀) (122c), (122n1) (122n2) (122n1, 122n2) 가, (122c) (122c) (124) (122) (124) (120ax) (122) 가 (122) .

(126), (124) (126) 가 가 .

(124), 3 (124) 가 (sapphire) ( $\text{Al}_2\text{O}_3$ ), (2MgO ·  $\text{SiO}_2$ ), (steatite) (MgO ·  $\text{SiO}_2$ ), (zircon) ( $\text{ZrO}_2$  ·  $\text{SiO}_2$ ), ( $\text{TiO}_2$ ), (SiC), ( $\text{Si}_3\text{N}_4$ ), (ZrO<sub>2</sub>), (cermet) 가 . Al<sub>2</sub>O<sub>3</sub>, ZrO<sub>2</sub> Fe, Ni, Co, Cr, Cu , Al<sub>2</sub>O<sub>3</sub> - Fe . 3

3, 20 0.005(cal/cm · sec · deg) . , 20 0.0028(cal/cm · sec · deg) . , 20 0.0016 0.0029(cal/cm · sec · de

g) 3 (124) (122)(2) (124) (124) (122) 가 .

3 (Al<sub>2</sub>O<sub>3</sub>) 90% 3.6 .  
 (Al<sub>2</sub>O<sub>3</sub>) (w1) , (飽水試料) (w2) (w3) { =w  
 $1/(w2 - w3)$  , (124) , (124)  
 (124R, 124R')

3 , (2MgO · Al<sub>2</sub>O<sub>3</sub> · 5SiO<sub>2</sub>) (mullite)(3Al<sub>2</sub>O<sub>3</sub> · 2SiO<sub>2</sub>)  
 가 .

4 , 가 . 4 , 3  
 (Al<sub>2</sub>O<sub>3</sub>), (SiC),  
 (Si<sub>3</sub>N<sub>4</sub>) (ZrO<sub>2</sub>)  
 , , 4  
 .

20 0.005(cal/cm · sec ·

deg) , 0 200 0.004(cal/cm · sec · deg) . ,  
 , 20 0.0016 0.0029(cal/cm · sec · deg) , , 0  
 200 0.001 0.005(cal/cm · sec · deg) . 4 , 0 200  
 0.004(cal/cm · sec · deg) (124)  
 , (122) (124) , (122)  
 , 가 . , 4 , (SiC)  
 , 가 가 .

0.005(cal/cm · sec · deg)

B. :

5 , (1000) , (100) ,  
 (200) , (220) , 3 (300R, 300G, 300B) ,  
 (320) , (340) .

(100) , 1  
 (100) , (200) (R), (G), (B) 3 .  
 (300R, 300G, 300B)  
 (300R, 300G, 300B) ,  
 가 (300R, 300G, 300B)  
 , (320) , (340) (SC)  
 , (SC) , 5  
 , 10 - 325954 ,

- (1000) , (100) , 1 (120)가 .  
 (120) , (124) ,  
 (120) (1000) , ( ) 가 . ,  
 (120) , .  
 , (120) (190) 가 . , (124)  
 , 가 .  
 , 가 .  
 가 , 가 .  
 (1) ( ) 가 (120) , (124) (124R) (124R')  
 (124) . , (124)  
 . ,  
 .  
 (2) 1, 2 , (124) (124R) ,  
 , . ,  
 , 가 .  
 (3) (120) 1, 2 , (126)  
 , (122) 가 , (126)  
 (126) , (124) (126)  
 , (122) 가 .  
 (4) (1000) ,  
 , 가 . , 「 」  
 가 , 「 」  
 가 .  
 , 가 .  
 (5) , (1000) ,  
 ,  
 , DMD( ) (digital micro mirr  
 or device) (TI ) 가 .

0.005(cal/cm · sec · deg)

(57)

1.

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20

0.005(cal/cm · sec · deg)

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2.

1 , 0 200 , 0.004(cal/cm · sec · deg)

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3.

$\text{Si}_3\text{N}_4$  ,  $\text{ZrO}_2$  ,  $\text{Al}_2\text{O}_3$  ,  $2\text{MgO} \cdot \text{SiO}_2$  ,  $\text{MgO} \cdot \text{SiO}_2$  ,  $\text{ZrO}_2 \cdot \text{SiO}_2$  ,  $\text{TiO}_2$  ,  $\text{SiC}$  ,  
가 .

4.

1 , (前面板)

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5.

1 , .

6.

1 , .

7.

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,

(光線束)

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20 0.005(cal/cm · sec · deg)

8.

7 , 0 200 0.004(cal/cm · sec · deg)

9.

8 ,  $\text{Al}_2\text{O}_3$  ,  $2\text{MgO} \cdot \text{SiO}_2$  ,  $\text{MgO} \cdot \text{SiO}_2$  ,  $\text{ZrO}_2 \cdot \text{SiO}_2$  ,  $\text{TiO}_2$  (系) , S  
iC ,  $\text{Si}_3\text{N}_4$  ,  $\text{ZrO}_2$  , 가 .

10.

7 , .

11.

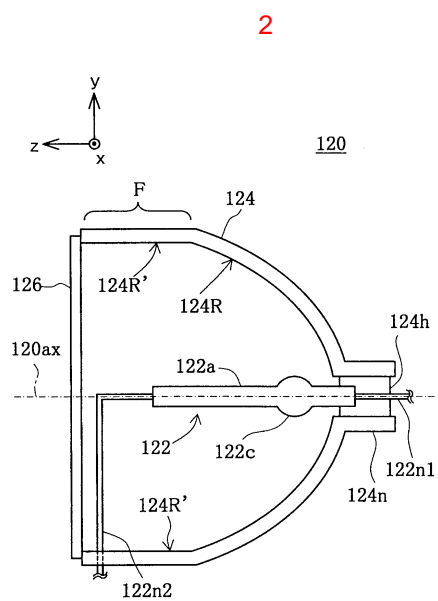
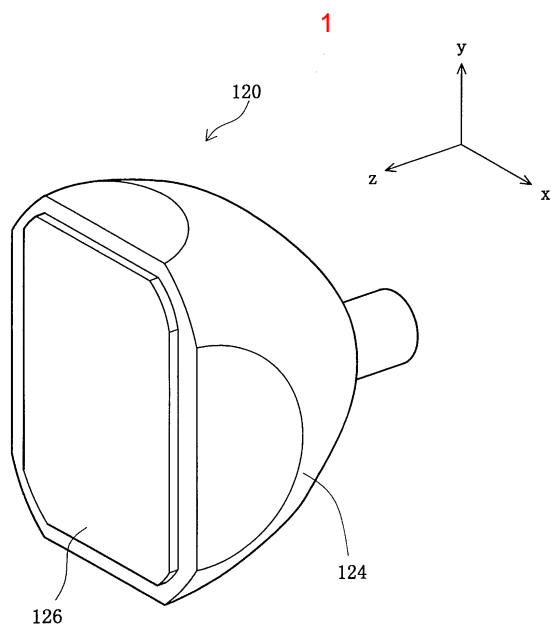
7 , .

12.

7 , .

13.

7 , .



3

재질	열전도율(cal/cm·sec·deg) (20°C)
알루미나 $\text{Al}_2\text{O}_3$	0.04~0.07
단결정 사파이어 $\text{Al}_2\text{O}_3$	0.1
폴스테라이트 $2\text{MgO} \cdot \text{SiO}_2$	0.008
스테아타이트 $\text{MgO} \cdot \text{SiO}_2$	0.006~0.009
지르콘 $\text{ZrO}_2 \cdot \text{SiO}_2$	0.012
티타니아계 $\text{TiO}_2$ 계	0.008~0.013
탄화규소 $\text{SiC}$	0.15~0.17
질화규소 $\text{Si}_3\text{N}_4$	0.04~0.07
지르코니아 $\text{ZrO}_2$	0.009~0.014
서밋	0.03~0.04

4

열전도율  
(cal/cm·sec·deg)

