

EMERALD-A

Asymmetric	; beam
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SPECIFICATION:

Dimensions	Ø 21.6 mm
Height	6.9 mm
Fastening	glue, pin
ROHS compliant	yes 🛈



MATERIALS:

Component EMERALD-A

Type Single lens

Material	Colour	Finish
PMMA	clear	

(kg)

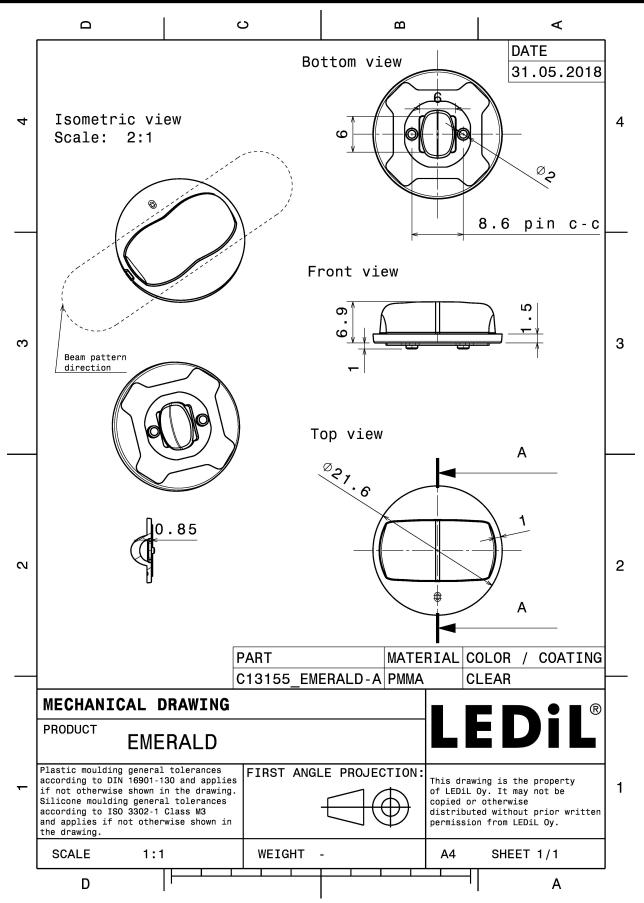
ORDERING INFORMATION:

Component	Qty in box	MOQ	MPQ	Box weight (
C13155_EMERALD-A	2128	336	112	4.8
» Box size: 480 x 280 x 300 mm				

PRODUCT DATASHEET C13155_EMERALD-A



PRODUCT DATASHEET C13155_EMERALD-A



See also our general installation guide: <u>www.ledil.com/installation_guide</u>



ODEE A		
		90° 90
LED	XB-D	400
FWHM / FWTM	157.0 + 62.0°	75
Efficiency	90 %	120
Peak intensity	2 cd/lm	80° 60
LEDs/each optic	1	1500
Light colour	White	2000 451 2440 45
Required componer		
	no.	200
		220
		200
		30* <u>4000</u> 30* <u>15</u> * 30
		90*
LEDS	XM-L	
FWHM / FWTM	157.0 + 83.0°	750 400 75
Efficiency	94 %	
Peak intensity	1.1 cd/lm	604 800 60
LEDs/each optic	1	$X \times I \times X$
Light colour	White	45* 45
Required componer		
	no.	1600
		2000
		\times / T \ \times
		30° 15 ³ 2840 10° 30
LEDS	XM-L2	90* 99
EED FWHM / FWTM		756 400 78
Efficiency	169.0 + 73.0° 94 %	
		. 50 ⁴ 000 60
Peak intensity LEDs/each optic	1.1 cd/lm 1	X/TVX
Light colour	White	1270
Poquired componed		der de
Required componer		er 1679
Required compone		er et
Required compone.		er- er-
Required compone		24 12 ³ 0 ⁴ 13 ⁵ 20
CREE ÷	its:	6°
CREE ÷	XP-E	
CREE ÷ LED FWHM / FWTM	XP-E 158.0 + 73.0°	23 <u>69</u> <u>73</u> <u>73</u> <u>73</u> <u>73</u> <u>73</u> <u>73</u>
CREE ÷ LED FWHM / FWTM Efficiency	XP-E 158.0 + 73.0° 93 %	
CREE LED FWHM / FWTM Efficiency Peak intensity	XP-E 158.0 + 73.0° 93 % 2.3 cd/lm	
CREE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	XP-E 158.0 + 73.0° 93 % 2.3 cd/lm 1	
CREE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	XP-E 158.0 + 73.0° 93 % 2.3 cd/lm 1 White	
CREE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	XP-E 158.0 + 73.0° 93 % 2.3 cd/lm 1 White	
CREE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	XP-E 158.0 + 73.0° 93 % 2.3 cd/lm 1 White	
CREE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	XP-E 158.0 + 73.0° 93 % 2.3 cd/lm 1 White	



CREE €	
	EFT.
LED XP-E2	
FWHM / FWTM 156.0 + 72.0°	800 75"
	(MXX)
Efficiency 93 %	1630 60*
Peak intensity 2.5 cd/lm	$ X \rangle $
LEDs/each optic 1	2400
Light colour White	3230 45*
Required components:	
	4000
	4600
3°	0° 15* 30*
CREE € LEDs	90*
LED XP-G	400
FWHM / FWTM 159.0 + 79.0°	
Efficiency 89 %	800
Peak intensity 1.6 cd/lm	1200 60*
LEDs/each optic 1	1600
Light colour White	$X \times X$
Required components:	2000 45*
	2430
	2800
	3200
20*	00 150 300
CREE ≑	YATT
LEDS	90*
LED XP-G2	400 75°
FWHM / FWTM 158.0 + 79.0°	4 800 × 1
Efficiency 94 %	1200 60*
Peak intensity 1.8 cd/lm	1600
LEDs/each optic 1	2000
Light colour White	65+
Required components:	2430
\times	2800
X	3230
21	3600 30*
CREE €	0 ⁰ 15 ⁰
LEDs **	90.
LED XT-E	400
FWHM / FWTM 157.0 + 61.0°	
Efficiency 89 %	
Peak intensity 1.8 cd/lm	1230 60*
	1630
LEDs/each optic 1	2000 45+
	2400
Light colour White et al.	
	2200
Light colour White et al.	
Light colour White et al.	2000



UMIL	EDS	THA KHAD
		90* 90*
LED	LUXEON A	75° 400 75°
FWHM / FWTM	156.0 + 75.0°	
Efficiency	92 %	50* 50*
Peak intensity	1.6 cd/lm	1220
LEDs/each optic	1	1600
Light colour	White	45* 2000 45*
Required compone	ints:	
		2450
		2800
		304 3200 344
		15° 0° 15°
🤭 LUMIL	EDS	90*
LED	LUXEON R	
FWHM / FWTM	153.0 + 73.0°	75° 400 75°
Efficiency	92 %	
Peak intensity	1.7 cd/lm	.60 ⁴ 1220 60 ⁴ .
LEDs/each optic	1	1000
Light colour	White	
Required compone		45" 2000 45"
Required compone	113.	2430
		2800
		3230
		30 15 ⁵ 0 ⁶ 15 [*] 30
	EDS	12 ⁴ 0 ⁴ 12 ⁴ 20
		8° Q 8°
LED	LUXEON Rebel	
LED FWHM / FWTM	LUXEON Rebel 152.0 + 67.0°	
LED FWHM / FWTM Efficiency	LUXEON Rebel 152.0 + 67.0° 92 %	
LED FWHM / FWTM Efficiency Peak intensity	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White	80 80
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White	80 80
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White	80 80
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White	80 80
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White	80 60
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White Ints:	80 60
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White Ints:	80 60
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White Ints:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White ints: EDS LUXEON Rebel ES	80 60
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White ints: EDS LUXEON Rebel ES 153.0 + 74.0°	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Model of the second	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White ints: EDS LUXEON Rebel ES 153.0 + 74.0° 90 %	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone MUMIL LED FWHM / FWTM Efficiency Peak intensity	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White I White I S LUXEON Rebel ES 153.0 + 74.0° 90 % 1.7 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Magnetic compone Efficiency Peak intensity LEDs/each optic	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White Ints: EDS LUXEON Rebel ES 153.0 + 74.0° 90 % 1.7 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Composition Required compone Composition LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White Ints: EDS LUXEON Rebel ES 153.0 + 74.0° 90 % 1.7 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Magnetic compone Efficiency Peak intensity LEDs/each optic	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White Ints: EDS LUXEON Rebel ES 153.0 + 74.0° 90 % 1.7 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Composition Required compone Composition LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White Ints: EDS LUXEON Rebel ES 153.0 + 74.0° 90 % 1.7 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Composition Required compone Composition LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White Ints: EDS LUXEON Rebel ES 153.0 + 74.0° 90 % 1.7 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Composition Required compone Composition LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON Rebel 152.0 + 67.0° 92 % 2.5 cd/lm 1 White Ints: EDS LUXEON Rebel ES 153.0 + 74.0° 90 % 1.7 cd/lm 1 White	



🥙 LUMIL	EDS	
		90* 90*
LED	LUXEON T	736 400 73*
FWHM / FWTM	155.0 + 76.0°	
Efficiency	93 %	50* 60*
Peak intensity	2.3 cd/lm	1230
LEDs/each optic	1	1630
Light colour	White	45° 2000 45°
Required compone	nts:	2490
		2000
		300 300
		³⁰ 15 ⁵ 0 ⁶ 15 [*] ³⁰
M LUMIL	EDS	
		90* 90*
	LUXEON TX	75° 400 75°
FWHM / FWTM	156.0 + 73.0°	800
Efficiency	94 %	.50° 50°.
Peak intensity	1.7 cd/lm	$X \times (T \times X)$
LEDs/each optic	1	
Light colour	White	45* 2000 45*
Required compone	nts:	2430
		2300
		30° 30°
		15°15°
ØNICHI Λ		
LED	NCSxx19A	30 ⁻
LED FWHM / FWTM	NCSxx19A	50° 000 00°.
FWHM / FWTM	151.0 + 65.0°	90°
FWHM / FWTM Efficiency	151.0 + 65.0° 92 %	50° 000 72°. 50° 100 007.
FWHM / FWTM Efficiency Peak intensity	151.0 + 65.0° 92 % 2.2 cd/lm	50° 600 60°.
FWHM / FWTM Efficiency Peak intensity LEDs/each optic	151.0 + 65.0° 92 % 2.2 cd/lm 1	200
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	151.0 + 65.0° 92 % 2.2 cd/lm 1 White	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic	151.0 + 65.0° 92 % 2.2 cd/lm 1 White	200
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	151.0 + 65.0° 92 % 2.2 cd/lm 1 White	200
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	151.0 + 65.0° 92 % 2.2 cd/lm 1 White	200
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	151.0 + 65.0° 92 % 2.2 cd/lm 1 White	200
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	151.0 + 65.0° 92 % 2.2 cd/lm 1 White nts:	5°
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	151.0 + 65.0° 92 % 2.2 cd/lm 1 White nts:	5°
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	151.0 + 65.0° 92 % 2.2 cd/lm 1 White nts:	5°
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	151.0 + 65.0° 92 % 2.2 cd/lm 1 White nts:	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	151.0 + 65.0° 92 % 2.2 cd/lm 1 White nts:	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	151.0 + 65.0° 92 % 2.2 cd/lm 1 White nts: NVSxx19A 153.0 + 71.0°	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	151.0 + 65.0° 92 % 2.2 cd/lm 1 White nts: NVSxx19A 153.0 + 71.0° 91 %	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	151.0 + 65.0° 92 % 2.2 cd/lm 1 White nts: NVSxx19A 153.0 + 71.0° 91 % 1.7 cd/lm	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	151.0 + 65.0° 92 % 2.2 cd/lm 1 White nts: NVSxx19A 153.0 + 71.0° 91 % 1.7 cd/lm 1 White	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	151.0 + 65.0° 92 % 2.2 cd/lm 1 White nts: NVSxx19A 153.0 + 71.0° 91 % 1.7 cd/lm 1 White	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	151.0 + 65.0° 92 % 2.2 cd/lm 1 White nts: NVSxx19A 153.0 + 71.0° 91 % 1.7 cd/lm 1 White	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	151.0 + 65.0° 92 % 2.2 cd/lm 1 White nts: NVSxx19A 153.0 + 71.0° 91 % 1.7 cd/lm 1 White	



Ø NICHIA		
		90* 90
LED	NVSxx19B/NVSxx19C	73% 400 75
FWHM / FWTM	155.0 + 80.0° / 168.0 + 158.0°	
Efficiency	92 %	50* 200 560
Peak intensity	1.4 cd/lm	1220
LEDs/each optic	1	
Light colour	White	45* 1600 45
Required componer	nts:	2000
		2400
		30* 2 <u>5</u> 0 [*] 1 <u>5</u> * 30
OSRAM		
Opto Semiconductors		90
LED	OSLON Square EC	75% 400 770
FWHM / FWTM	156.0 + 80.0°	
Efficiency	93 %	50* 3200 50
Peak intensity	1.7 cd/lm	
LEDs/each optic	1	1690
Light colour	White	45* 2000 45
Required componer	nts:	2450
		2200
		3200
		30* 13 ⁵ 3850 15* 30
OSRAM Opto Semiconductors		
LED	OSLON Square PC	9°-
FWHM / FWTM	156.0 + 83.0°	73% 400 75
Efficiency	93 %	30
Peak intensity	1.7 cd/lm	.60 ⁴ 1220 60
LEDs/each optic		
		1600
	1 White	$X \times I = X \times X$
Light colour	White	6' 200 6
	White	$X \times I = X \times X$
Light colour	White	6' 200 6
Light colour	White	47 <u>200</u> 4
Light colour	White	-0° 399 6 -209 -399
Light colour	White	5° 500 6 2100 200 200 200
Light colour Required componer	White nts:	5° 500 6 2100 200 200 200
Light colour Required componen Opto Semiconductors LED	White nts: OSLON SSL 150	5° 500 6 2100 200 200 200
Light colour Required componen Opto Semiconductors LED FWHM / FWTM	White nts: OSLON SSL 150 157.0 + 86.0°	4° 300 6 300 300 300 40 300 40 30
Light colour Required componen Opto Semiconductors LED FWHM / FWTM Efficiency	White nts: OSLON SSL 150 157.0 + 86.0° 92 %	
Light colour Required component Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity	White nts: OSLON SSL 150 157.0 + 86.0° 92 % 2.9 cd/lm	
Light colour Required component Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	White nts: OSLON SSL 150 157.0 + 86.0° 92 % 2.9 cd/lm 1	
Light colour Required componen Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	White nts: OSLON SSL 150 157.0 + 86.0° 92 % 2.9 cd/lm 1 White	
Light colour Required component Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	White nts: OSLON SSL 150 157.0 + 86.0° 92 % 2.9 cd/lm 1 White	
Light colour Required componen OSRAM Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	White nts: OSLON SSL 150 157.0 + 86.0° 92 % 2.9 cd/lm 1 White	
Light colour Required componen OSRAM Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	White nts: OSLON SSL 150 157.0 + 86.0° 92 % 2.9 cd/lm 1 White	



OSRAM Opto Semiconductors		10°
LED	OSLON SSL 80	
FWHM / FWTM	147.0 + 52.0°	725 000 72°
Efficiency	89 %	
Peak intensity	1.9 cd/lm	.60 ⁴ <u>1600</u> 60*.
LEDs/each optic	1	200
Light colour	White	· 45* · · · · · · · · · · · · · · · · · · ·
Required compone	ents:	300
		50° 15° 650 15° 50°
SAMSU	JNG	90 ³
	JNG LH351Z	50° 50°
		75 400 755
LED	LH351Z	79
LED FWHM / FWTM	LH351Z 154.0 + 76.0°	75 400 755
LED FWHM / FWTM Efficiency	LH351Z 154.0 + 76.0° 94 %	79
LED FWHM / FWTM Efficiency Peak intensity	LH351Z 154.0 + 76.0° 94 % 1.7 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LH351Z 154.0 + 76.0° 94 % 1.7 cd/lm 1 White	25
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LH351Z 154.0 + 76.0° 94 % 1.7 cd/lm 1 White	27 - 69 - 72 64 - 123 67 - 200 - 67
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LH351Z 154.0 + 76.0° 94 % 1.7 cd/lm 1 White	20 20 20 20 20 20 20 20 20 20



OPTICAL RESULTS (SIMULATED):

CREE ÷ LED XHP35 HD FWHM / FWTM 164.0 + 68.0° Efficiency 91 % Peak intensity 0.8 cd/m LEDs/each optic 1 Light colour White Required components:	
LED XHP35 HD FWTM 164.0 + 65.0° Efficiency 91% Peak intensity 0.8 cd/lm LEDs/each optic 1 Light colour White Required components: CREE C Efficiency 90% Peak intensity 0.9 cd/lm LEDs/each optic 1 Light colour White Efficiency 90% Peak intensity 0.9 cd/lm LEDs/each optic 1 Light colour White Required components: CREE C Efficiency 90% Peak intensity 0.9 cd/lm LEDs/each optic 1 Light colour White Required components: CREE C Efficiency 90% Peak intensity 0.9 cd/lm LEDs/each optic 1 Light colour White Required components: CREE C LED XP_L HI FWHM / FWTM 159.0°	30
FWHM / FWTM 164.0 + 68.0° Efficiency 91 % Peak intensity 0.8 cd/m LEDs/each optic 1 Light colour White Required components:	30
Efficiency 91 % Peak intensity 0.8 cd/lm LEDs/each optic 1 Light colour White Required components:	30
Peak intensity 0.8 cd/lm LEDs/each optic 1 Light colour White Required components:	30
LEDs/each optic 1 Light colour White Required components:	30
Light colour White Required components: CREE LED XHP35 HI FWHM / FWTM 162.0 + 51.0° / 176.0 + 146.0° Efficiency 90 % Peak intensity 0.9 cd/Im LEDs/each optic 1 Light colour White Required components: LED XP-L HI FWHM / FWTM 159.0°	30
Required components: Image: start of the start of	30
CREE KHP35 HI ED XHP35 HI FWHM / FWTM 162.0 + 51.0° / 176.0 + 146.0° Efficiency 90 % Peak intensity 0.9 cd/m LEDseach optic 1 Light colour White Required components: Image: Component State Stat	
CREES LED XHP35 HI FWHM / FWTM 162.0 + 51.0° / 176.0 + 146.0° Efficiency 90 % Peak intensity 0.9 cd/m LEDs/each optic 1 Light colour White Required components: Image: Component State S	
CREEES LED XHP35 HI FWHM / FWTM 162.0 + 51.0° / 176.0 + 146.0° Efficiency 90 % Peak intensity 0.9 cd/m LEDs/each optic 1 Light colour White Required components: Image: CREEES LED XP-L HI FWHM / FWTM 159.0°	
CREES KH935 HI FWHM / FWTM 162.0 + 51.0° / 176.0 + 146.0° Efficiency 90 % Peak intensity 0.9 cd/lm LEDs/each optic 1 Light colour White Required components: Image: Crees CREES XP-L HI FWHM / FWTM 159.0°	
CREES LED XHP35 HI FWHM / FWTM 162.0 + 51.0° / 176.0 + 146.0° Efficiency 90 % Peak intensity 0.9 cd/lm LEDs/each optic 1 Light colour White Required components: Image: CREES CREES XP-L HI FWHM / FWTM 159.0°	
LED XHP35 HI FWHM / FWTM 162.0 + 51.0° / 176.0 + 146.0° Efficiency 90 % Peak intensity 0.9 cd/lm LEDs/each optic 1 Light colour White Required components: CREE C LED XP-L HI FWHM / FWTM 159.0°	
LEDXHP35 HIFWHM / FWTM162.0 + 51.0° / 176.0 + 146.0°Efficiency90 %Peak intensity0.9 cd/lmLEDs/each optic1Light colourWhiteRequired components:	
FWHM / FWTM 162.0 + 51.0° / 176.0 + 146.0° Efficiency 90 % Peak intensity 0.9 cd/lm LEDs/each optic 1 Light colour White Required components:	
Efficiency 90 % Peak intensity 0.9 cd/lm LEDs/each optic 1 Light colour White Required components:	
Peak intensity 0.9 cd/m LEDs/each optic 1 Light colour White Required components: CREECS LED XP-L HI FWHM / FWTM 159.0°	
LEDs/each optic 1 Light colour White Required components: CREE S LED XP-L HI FWHM / FWTM 159.0°	e
Light colour White Required components: White CREECS LED XP-L HI FWHM / FWTM 159.0°	~
Required components:	X
CREE \$ 100<	
CREE \$ 300<	
CREE \$ 300<	
CREE LED XP-L HI FWHM / FWTM 159.0°	
LED XP-L HI FWHM / FWTM 159.0°	ж
LED XP-L HI FWHM / FWTM 159.0°	-
EED XP-L HI FWHM / FWTM 159.0°	90
FWHM / FWTM 159.0°	-
Efficiency 89%	Z
	60
Peak intensity 1.3 cd/lm	
LEDs/each optic 1	
Light colour White	45
Required components:	
200	
24	30
ΝΙCΗΙΛ	94
LED NF2W757G-MT (Tunable White)	
FWHM / FWTM 159.0 + 59.0° / 172.0 + 158.0°	
Efficiency 94 %	
Peak intensity 1.1 cd/lm	
LEDs/each optic 1	60
Light colour Tunable White	- er
Required components:	
	6
2000	



OPTICAL RESULTS (SIMULATED):

OSRAM Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	OSLON Square CSSRM2/CSSRM3 158.0 + 70.0° 93 % 1.5 cd/lm 1 White	90° 100 100 100 100 100 100 100 1
SAMSUN LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LH351D 86.0 + 164.0° / 166.0 + 176.0° 91 % 0.7 cd/lm 1 White	
SEOUL SEMICONDUCTOR LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	Z5M4 154.0 + 66.0° / 168.0 + 144.0° 91 % 1.1 cd/lm 1 White	