

# LEIA-S

~3° spot beam

#### **SPECIFICATION:**

Dimensions	Ø 50.0 mm
Height	53 mm
Fastening	pin, screw
ROHS compliant	yes 🛈



PRODUCT DATASHEET

LEIA-S

#### **MATERIALS:**

Component F16199\_LEIA-S F16213\_LEIA-HLD **Type** Single lens Holder

Material	Colour	Finish
PMMA		
HRPC	white	

#### **ORDERING INFORMATION:**

#### Quantities for one set:

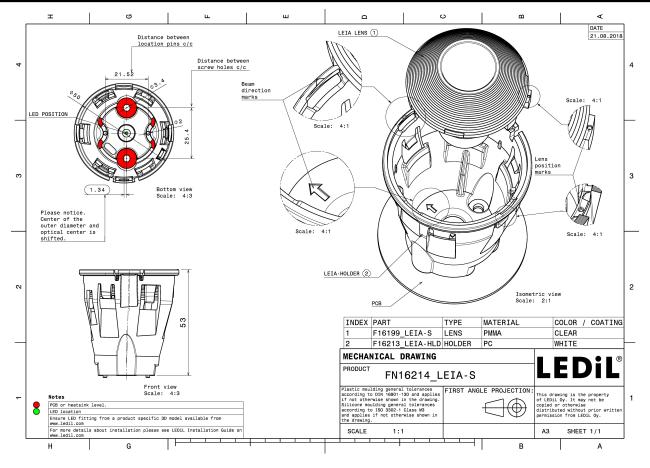
Single lens 1 Holder 1



Component		Qty in box	MOQ	MPQ	Box weight (kg)
F16199_LEIA-S » Box size: 480 x 280 x 300 mm	Single lens	240	40	40	8.2
F16213_LEIA-HLD » Box size: 398 x 298 x 265 mm	Holder	400	40	20	5.8



## PRODUCT DATASHEET LEIA-S



See also our general installation guide: www.ledil.com/installation\_guide



		50°	90
LED	XHP35 HD		h
FWHM / FWTM	6.0° / 9.0°		~ 7°
Efficiency	49 %	60	× × 60
Peak intensity	22.8 cd/lm		
LEDs/each optic	1		
Light colour	White	2 <sup>4</sup>	
Required compone	ents:		
		Low Low	
		and the second sec	30
CREE ÷			90
LED	XHP35 HD		
FWHM / FWTM	6.0° / 9.0°	77	75
Efficiency	50 %		
Peak intensity	22.6 cd/lm	94	60
LEDs/each optic	1		
Light colour	White	2 <sup>300</sup>	1 20
Required compone			
			$\left  \right\rangle$
		a	15°
		20*	90
	XHP35 HD	<u>80</u> *	90
LED	XHP35 HD 52.0 + 6.0° / 77.0 + 15.0°	504 72	×
LED FWHM / FWTM	52.0 + 6.0° / 77.0 + 15.0°	90°	
LED FWHM / FWTM Efficiency	52.0 + 6.0° / 77.0 + 15.0° 45 %	80°	90 
LED FWHM / FWTM Efficiency Peak intensity	52.0 + 6.0° / 77.0 + 15.0° 45 % 2.6 cd/lm	60. 22. 24.	90
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	52.0 + 6.0° / 77.0 + 15.0° 45 %	5°.	8
Efficiency Peak intensity LEDs/each optic Light colour	52.0 + 6.0° / 77.0 + 15.0° 45 % 2.6 cd/lm 1 White		23
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	52.0 + 6.0° / 77.0 + 15.0° 45 % 2.6 cd/lm 1 White ents:		99 73 60 60
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	52.0 + 6.0° / 77.0 + 15.0° 45 % 2.6 cd/lm 1 White ents:	5°	99 23 00 00 00 00 00 00 00 00 00 00 00 00 00
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	52.0 + 6.0° / 77.0 + 15.0° 45 % 2.6 cd/lm 1 White ents:		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S	52.0 + 6.0° / 77.0 + 15.0° 45 % 2.6 cd/lm 1 White ents:		90 73 90 90 90 90 90 90 90 90 90 90 90 90 90
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S	52.0 + 6.0° / 77.0 + 15.0° 45 % 2.6 cd/lm 1 White ents: 3UB-O		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S	52.0 + 6.0° / 77.0 + 15.0° 45 % 2.6 cd/lm 1 White ents: 3UB-O		10 10 10 10 10 10 10 10 10 10 10 10 10 1
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S	52.0 + 6.0° / 77.0 + 15.0° 45 % 2.6 cd/lm 1 White ents: UB-O XHP35 HI 50.0 + 5.0° / 76.0 + 11.0°		13 <sup>1</sup> 13 <sup>2</sup> 13 <sup>2</sup> 13 <sup>2</sup> 13 <sup>2</sup> 13 <sup>2</sup>
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S	52.0 + 6.0° / 77.0 + 15.0° 45 % 2.6 cd/lm 1 White ents: BUB-O XHP35 HI 50.0 + 5.0° / 76.0 + 11.0° 47 %		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S	52.0 + 6.0° / 77.0 + 15.0° 45 % 2.6 cd/lm 1 White ents: SUB-O XHP35 HI 50.0 + 5.0° / 76.0 + 11.0° 47 % 3.6 cd/lm		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S CREEES LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	52.0 + 6.0° / 77.0 + 15.0° 45 % 2.6 cd/lm 1 White ents: SUB-O XHP35 HI 50.0 + 5.0° / 76.0 + 11.0° 47 % 3.6 cd/lm 1		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S CREEES LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	52.0 + 6.0° / 77.0 + 15.0° 45 % 2.6 cd/lm 1 White ents: SUB-O XHP35 HI 50.0 + 5.0° / 76.0 + 11.0° 47 % 3.6 cd/lm 1 White		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S CREEES LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	52.0 + 6.0° / 77.0 + 15.0° 45 % 2.6 cd/lm 1 White ents: 3UB-O XHP35 HI 50.0 + 5.0° / 76.0 + 11.0° 47 % 3.6 cd/lm 1 White ents:		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S CREEES LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	52.0 + 6.0° / 77.0 + 15.0° 45 % 2.6 cd/lm 1 White ents: 3UB-O XHP35 HI 50.0 + 5.0° / 76.0 + 11.0° 47 % 3.6 cd/lm 1 White ents:		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S CREEES LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	52.0 + 6.0° / 77.0 + 15.0° 45 % 2.6 cd/lm 1 White ents: 3UB-O XHP35 HI 50.0 + 5.0° / 76.0 + 11.0° 47 % 3.6 cd/lm 1 White ents:		



		90 <sup>+</sup> 90 <sup>+</sup>
LED	XHP35 HI	73.
FWHM / FWTM	4.0° / 7.0°	
Efficiency	52 %	60× 120 60×
Peak intensity	43.2 cd/lm	
LEDs/each optic	1	
Light colour	White	a, and a
Required compone	ents:	
		30- 15 <sup>-</sup> 0- 15 <sup>-</sup>
		50* 50*
LED	XHP50.2	
FWHM / FWTM	52.0 + 8.0° / 78.0 + 20.0°	
Efficiency	42 %	
Peak intensity	1.8 cd/lm	
LEDs/each optic	1	
Light colour	White	g. g.
Required compone	ents:	
F16629_LEIA-SI	UB-O	
		30 <sup>4</sup> 30 <sup>4</sup> 30 <sup>5</sup>
		9) <sup>4</sup>
LEUS		
LED	XHP50.2	
	XHP50.2 8.0° / 14.0°	3
LED		
LED FWHM / FWTM	8.0° / 14.0°	
LED FWHM / FWTM Efficiency	8.0° / 14.0° 48 %	
LED FWHM / FWTM Efficiency Peak intensity	8.0° / 14.0° 48 % 13 cd/lm	77 77 60 70 70 70 70 70 70 70 70 70 70 70 70 70
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	8.0° / 14.0° 48 % 13 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	8.0° / 14.0° 48 % 13 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	8.0° / 14.0° 48 % 13 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	8.0° / 14.0° 48 % 13 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	8.0° / 14.0° 48 % 13 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	8.0° / 14.0° 48 % 13 cd/lm 1 White ents:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	8.0° / 14.0° 48 % 13 cd/lm 1 White ents: XP-E2	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	8.0° / 14.0° 48 % 13 cd/lm 1 White ents: XP-E2 2.6° / 5.7°	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	8.0° / 14.0° 48 % 13 cd/lm 1 White ents: XP-E2 2.6° / 5.7° 59 %	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone CREE ED FWHM / FWTM Efficiency Peak intensity	8.0° / 14.0° 48 % 13 cd/lm 1 White ents: XP-E2 2.6° / 5.7° 59 % 128.3 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone CREE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	8.0° / 14.0° 48 % 13 cd/lm 1 White pots: XP-E2 2.6° / 5.7° 59 % 128.3 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone CREE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	8.0° / 14.0° 48 % 13 cd/lm 1 White ents: XP-E2 2.6° / 5.7° 59 % 128.3 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone CREE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	8.0° / 14.0° 48 % 13 cd/lm 1 White ents: XP-E2 2.6° / 5.7° 59 % 128.3 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone CREECS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	8.0° / 14.0° 48 % 13 cd/lm 1 White ents: XP-E2 2.6° / 5.7° 59 % 128.3 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone CREECS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	8.0° / 14.0° 48 % 13 cd/lm 1 White ents: XP-E2 2.6° / 5.7° 59 % 128.3 cd/lm 1 White	



		50*
LED	XP-G2	
FWHM / FWTM	4.0° / 6.0°	77 1170
Efficiency	50 %	
Peak intensity	63.4 cd/lm	60* 3000
LEDs/each optic	1	
Light colour	' White	
Required compone		
, er sompone		
		$\times$ / $\times$ ×
		we when
		30° 0° 35° 0°
		90° 90°
LED	XP-G2	
FWHM / FWTM	57.0 + 4.0° / 82.0 + 9.0°	
Efficiency	40 %	
Peak intensity	4.6 cd/lm	
LEDs/each optic	1	
Light colour	White	er et
Required compone	nts:	799
		20 <sup>-</sup>
CREE ≑		
LEDS		50° 50'
LED	XP-G3	75
FWHM / FWTM	50.0 + 4.0° / 76.0 + 9.0°	
Efficiency	47 %	
Peak intensity	3.7 cd/lm	
LEDs/each optic	1	
Light colour	White	Gr <sup>2</sup>
Required compone		
F16629_LEIA-S	NR-O	
		394 June 194 June 194
CREE 🚖		
LEDS		
	XP-G3	79
FWHM / FWTM	4.0° / 7.0° 51 %	
Efficiency Reak intensity	51 % 48.5 cd/lm	64
Peak intensity LEDs/each optic	48.5 cd/lm 1	
LEDs/each optic	1 White	g. zw
Required compone		
		30 U 125 q <sup>1</sup> 25 30



[			
			90*
	XP-L2		
FWHM / FWTM	51.0 + 6.0° / 77.0 + 16.0°	and the second se	
Efficiency	49 %		800
Peak intensity	2.8 cd/lm		
LEDs/each optic	1		
	White		45 <sup>4</sup> 65
Required component	ts:		
F16629_LEIA-SU	B-O		
			304 34
			<u>15°</u> <u>0°</u> <u>15°</u>
			90* 90
LED	XQ-E HD		24*
FWHM / FWTM	3.0° / 6.0°		
	47 %		60°
Peak intensity	91 cd/lm		
LEDs/each optic	1		$  \times / /   \wedge \times \times$
Light colour	White		45 47
Required component	ts:		32.69
1			7500
			30*
CREE <del>÷</del>			30 <sup>4</sup> 35 <sup>5</sup> 0 <sup>4</sup> 35 <sup>5</sup>
LED	XQ-E HD		20 <sup>1</sup> 0 <sup>2</sup> 22 <sup>2</sup> 2
LED FWHM / FWTM	50.0 + 3.0° / 76.0 + 9.0°		30°         30°         30°           30°         30°         30°
LED FWHM / FWTM Efficiency	50.0 + 3.0° / 76.0 + 9.0° 42 %		20 <sup>-</sup>
LED FWHM / FWTM Efficiency Peak intensity	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm		20 <sup>-</sup>
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1 White		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1 White ts:		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1 White ts:		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1 White ts:		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1 White ts:		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component F16629_LEIA-SU	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1 White ts:		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component F16629_LEIA-SU	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1 White ts: B-O		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component F16629_LEIA-SU	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1 White ts: B-O XQ-E HI		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component F16629_LEIA-SU	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1 White ts: B-O XQ-E HI 2.0° / 4.0°		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component F16629_LEIA-SU	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1 White ts: B-O XQ-E HI 2.0° / 4.0° 48 %		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component F16629_LEIA-SU	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1 White ts: B-O XQ-E HI 2.0° / 4.0° 48 % 112.6 cd/lm		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component F16629_LEIA-SU CREE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1 White ts: B-O XQ-E HI 2.0° / 4.0° 48 % 112.6 cd/lm 1		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component F16629_LEIA-SU EED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1 White ts: B-O XQ-E HI 2.0° / 4.0° 48 % 112.6 cd/lm 1 White		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component F16629_LEIA-SU CREE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1 White ts: B-O XQ-E HI 2.0° / 4.0° 48 % 112.6 cd/lm 1 White		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component F16629_LEIA-SU EED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1 White ts: B-O XQ-E HI 2.0° / 4.0° 48 % 112.6 cd/lm 1 White		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component F16629_LEIA-SU EED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	50.0 + 3.0° / 76.0 + 9.0° 42 % 4.6 cd/lm 1 White ts: B-O XQ-E HI 2.0° / 4.0° 48 % 112.6 cd/lm 1 White		



CREE ≑			90° 91
LED	XQ-E HI		90° 9
FWHM / FWTM	52.0 + 3.0° / 79.0 + 9.0°		73*
Efficiency	44 %		
Peak intensity	6 cd/lm		60°
LEDs/each optic	1		
Light colour	White		
Required compone			
F16629_LEIA-S			
110023_221/10			
			30" "
			90°
LED	XT-E		
FWHM / FWTM	50.0 + 4.0° / 76.0 + 11.0°		75*
Efficiency	46 %		
Peak intensity	6.2 cd/lm		
LEDs/each optic	1		
Light colour	White		gr a
Required compone			
F16629_LEIA-S			
			$\times$ / $\times$ $\times$
			30° 2228 3
			15° 0° 15°
CREE			90* 91
	XT-E		90*
LED	XT-E 4 0° / 7 0°		50* 5 35 2
LED FWHM / FWTM	4.0° / 7.0°		35
LED FWHM / FWTM Efficiency	4.0° / 7.0° 49 %	•	94 9 75 94 120 8
LED FWHM / FWTM Efficiency Peak intensity	4.0° / 7.0° 49 % 42.9 cd/lm	•	5° 5 75 7 70 7 70 7 70 7 70 7 70 7 70 7 70
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	4.0° / 7.0° 49 % 42.9 cd/lm 1	•	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	4.0° / 7.0° 49 % 42.9 cd/lm 1 White	•	94 17 17 17 17 17 17 17 17 17 17 17 17 17
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	4.0° / 7.0° 49 % 42.9 cd/lm 1 White	•	9)* 9 33 9)* 139 9)* 230 8)* 230
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	4.0° / 7.0° 49 % 42.9 cd/lm 1 White	•	94 13 13 13 13 13 13 13 13 13 13
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	4.0° / 7.0° 49 % 42.9 cd/lm 1 White	•	94 129 129 129 129 129 129 129 129 129 129
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	4.0° / 7.0° 49 % 42.9 cd/lm 1 White	•	30, 10, 0, 12, 2 30, 30, 4 22, 32, 4 12,
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	4.0° / 7.0° 49 % 42.9 cd/lm 1 White ents:	•	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	4.0° / 7.0° 49 % 42.9 cd/lm 1 White ents:	•	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	4.0° / 7.0° 49 % 42.9 cd/lm 1 White ents: <b>EDS</b> LUXEON 5050 Round LES	•	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	4.0° / 7.0° 49 % 42.9 cd/lm 1 White ents:	•	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	4.0° / 7.0° 49 % 42.9 cd/lm 1 White ents: EDS LUXEON 5050 Round LES 51.0 + 7.0° / 78.0 + 18.0° 46 %	•	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	4.0° / 7.0° 49 % 42.9 cd/lm 1 White ents: EDS LUXEON 5050 Round LES 51.0 + 7.0° / 78.0 + 18.0° 46 % 2.2 cd/lm	•	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Composition Efficiency Peak intensity LEDs/each optic	4.0° / 7.0° 49 % 42.9 cd/lm 1 White ents: EDS LUXEON 5050 Round LES 51.0 + 7.0° / 78.0 + 18.0° 46 % 2.2 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	4.0° / 7.0° 49 % 42.9 cd/lm 1 White ents: EDS LUXEON 5050 Round LES 51.0 + 7.0° / 78.0 + 18.0° 46 % 2.2 cd/lm 1 White	•	29 77 77 199 <sup>4</sup> 100 100 100
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Composition LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	4.0° / 7.0° 49 % 42.9 cd/lm 1 White ents: EDS LUXEON 5050 Round LES 51.0 + 7.0° / 78.0 + 18.0° 46 % 2.2 cd/lm 1 White ents:	•	29 77 77 199 <sup>4</sup> 100 100 100
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	4.0° / 7.0° 49 % 42.9 cd/lm 1 White ents: EDS LUXEON 5050 Round LES 51.0 + 7.0° / 78.0 + 18.0° 46 % 2.2 cd/lm 1 White ents:	•	29 77 77 199 <sup>4</sup> 100 100 100
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Composition LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	4.0° / 7.0° 49 % 42.9 cd/lm 1 White ents: EDS LUXEON 5050 Round LES 51.0 + 7.0° / 78.0 + 18.0° 46 % 2.2 cd/lm 1 White ents:	•	29 77 77 199 <sup>4</sup> 100 100 100



UMIL	EDS	90 <sup>4</sup> 90
LED	LUXEON 5050 Round LES	
FWHM / FWTM	7.0° / 11.0°	37
Efficiency	51 %	
Peak intensity	16.7 cd/lm	6 <sup>1</sup>
LEDs/each optic	1	
Light colour	White	
Required compone	nts:	
		34 V
	FDS	20 <sup>4</sup> 0 <sup>4</sup> 12 <sup>5</sup>
		90° 9
		77
FWHM / FWTM	2.0° / 5.0°	
Efficiency	55 %	6th 3120 6
Peak intensity	157 cd/lm	
LEDs/each optic	1 White	
Light colour		10000
Required compone	nts.	
		$\times$ / $\times$
		13390
		20 <sup>6</sup> 0 0 50°
	EDS	90 <sup>4</sup>
LED	LUXEON CZ	
FWHM / FWTM	51.0 + 3.0° / 76.0 + 7.0°	27
Efficiency	48 %	
Peak intensity	6.9 cd/lm	
Peak intensity LEDs/each optic	6.9 cd/lm 1	
LEDs/each optic	1 White	
LEDs/each optic Light colour	1 White nts:	
LEDs/each optic Light colour Required compone	1 White nts:	
LEDs/each optic Light colour Required compone	1 White nts:	
LEDs/each optic Light colour Required compone F16629_LEIA-S	1 White nts: UB-O	
LEDs/each optic Light colour Required compone F16629_LEIA-S	1 White nts: UB-O	2 <sup>3</sup> 2 <sup>3</sup> 2 <sup>3</sup> 2 <sup>3</sup>
LEDs/each optic Light colour Required compone F16629_LEIA-S	1 White nts: UB-O .EDS LUXEON MZ	2 <sup>3</sup> 2 <sup>3</sup> 2 <sup>3</sup> 2 <sup>3</sup>
LEDs/each optic Light colour Required compone F16629_LEIA-S	1 White nts: UB-O EDS LUXEON MZ 6.0° / 9.0°	
LEDs/each optic Light colour Required compone F16629_LEIA-S	1 White nts: UB-O EDS LUXEON MZ 6.0° / 9.0° 49 %	
LEDs/each optic Light colour Required compone F16629_LEIA-S	1 White nts: UB-O EDS LUXEON MZ 6.0° / 9.0°	
LEDs/each optic Light colour Required compone F16629_LEIA-S	1 White nts: UB-O EDS LUXEON MZ 6.0° / 9.0° 49 % 27.5 cd/lm 1	
LEDs/each optic Light colour Required compone F16629_LEIA-S	1 White nts: UB-O EDS LUXEON MZ 6.0° / 9.0° 49 % 27.5 cd/lm 1 White	
LEDs/each optic Light colour Required compone F16629_LEIA-S	1 White nts: UB-O EDS LUXEON MZ 6.0° / 9.0° 49 % 27.5 cd/lm 1 White	
LEDs/each optic Light colour Required compone F16629_LEIA-S Composition LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	1 White nts: UB-O EDS LUXEON MZ 6.0° / 9.0° 49 % 27.5 cd/lm 1 White	
LEDs/each optic Light colour Required compone F16629_LEIA-S COMPARIANCE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	1 White nts: UB-O EDS LUXEON MZ 6.0° / 9.0° 49 % 27.5 cd/lm 1 White	



	EDS	20
LED	LUXEON MZ	
FWHM / FWTM	50.0 + 6.0° / 77.0 + 15.0°	
Efficiency	45 %	
Peak intensity	2.8 cd/lm	
LEDs/each optic	1	
Light colour	White	e. (a)
Required compone		
F16629_LEIA-S		
110025_221/10		
<b>A</b>		
LUMIL		30*
LED	LUXEON TX	
FWHM / FWTM	50.0 + 4.0° / 76.0 + 9.0°	
Efficiency	48 %	
Peak intensity	4 cd/lm	
LEDs/each optic	1	
Light colour	White	
Required compone		
F16629_LEIA-S	SUB-O	40
		20 <sup>4</sup> 400 12 <sup>5</sup> 0 <sup>4</sup> 12 <sup>5</sup>
	.EDS	554
LED	LUXEON TX	
FWHM / FWTM	4.0° / 7.0°	79
Efficiency	51 %	
Peak intensity	58.4 cd/lm	
LEDs/each optic	1	
Light colour	White	or the second
Required compone	ents:	
		30-
	.EDS	90*
		90*
LED	LUXEON V	
LED FWHM / FWTM	LUXEON V 6.0° / 9.0°	
LED FWHM / FWTM Efficiency	LUXEON V 6.0° / 9.0° 53 %	
LED FWHM / FWTM Efficiency Peak intensity	LUXEON V 6.0° / 9.0° 53 % 27.7 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LUXEON V 6.0° / 9.0° 53 % 27.7 cd/lm 1	73° 64° 84°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON V 6.0° / 9.0° 53 % 27.7 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LUXEON V 6.0° / 9.0° 53 % 27.7 cd/lm 1 White	73° 64° 84°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON V 6.0° / 9.0° 53 % 27.7 cd/lm 1 White	73° 64° 84°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON V 6.0° / 9.0° 53 % 27.7 cd/lm 1 White	73° 64° 84°



🕐 LUMIL	EDS	90 <sup>4</sup>
LED	LUXEON V	
FWHM / FWTM	51.0 + 6.0° / 77.0 + 15.0°	2. 2
Efficiency	49 %	
Peak intensity	2.9 cd/lm	
LEDs/each optic	1	
Light colour	White	
Required compone		
F16629_LEIA-SU		
		34
	FDS	
LED	LUXEON Z	
LED FWHM / FWTM	2.0° / 5.0°	3. 200
	2.0° / 5.0° 50 %	
Efficiency	50 % 131 cd/lm	60× 0
Peak intensity	1	
LEDs/each optic	ı White	
Light colour		
Required component	nts.	
		20 <sup>4</sup> 2000 30 15 <sup>4</sup> 0 <sup>4</sup> 15 <sup>4</sup>
UMIL	EDS	90 <sup>4</sup> 99
LED	LUXEON Z ES	
FWHM / FWTM	49.0 + 3.0° / 76.0 + 7.0°	
Efficiency	49 %	
Peak intensity	5.7 cd/lm	
LEDs/each optic		
	1	
	1 White	
Light colour	White	or the second seco
	White nts:	
Light colour Required compone	White nts:	
Light colour Required compone	White nts:	
Light colour Required componen F16629_LEIA-SI	White nts: JB-O	
Light colour Required componen F16629_LEIA-St	White nts: JB-O	
Light colour Required componen F16629_LEIA-SU	White nts: JB-O EDS LUXEON Z ES	
Light colour Required component F16629_LEIA-SU	White nts: JB-O EDS LUXEON Z ES 3.0° / 6.0°	
Light colour Required component F16629_LEIA-SU LED FWHM / FWTM Efficiency	White hts: JB-O EDS LUXEON Z ES 3.0° / 6.0° 55 %	
Light colour Required component F16629_LEIA-SU LED FWHM / FWTM Efficiency Peak intensity	White hts: JB-O EDS LUXEON Z ES 3.0° / 6.0° 55 % 98.2 cd/lm	
Light colour Required component F16629_LEIA-SU COMPARENT LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	White hts: JB-O EDS LUXEON Z ES 3.0° / 6.0° 55 % 98.2 cd/lm 1	
Light colour Required component F16629_LEIA-SU LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	White hts: JB-O EDS LUXEON Z ES 3.0° / 6.0° 55 % 98.2 cd/lm 1 White	
Light colour Required component F16629_LEIA-SU COMPARENT LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	White hts: JB-O EDS LUXEON Z ES 3.0° / 6.0° 55 % 98.2 cd/lm 1 White	
Light colour Required component F16629_LEIA-SU LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	White hts: JB-O EDS LUXEON Z ES 3.0° / 6.0° 55 % 98.2 cd/lm 1 White	
Light colour Required component F16629_LEIA-SU COMPARENT LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	White hts: JB-O EDS LUXEON Z ES 3.0° / 6.0° 55 % 98.2 cd/lm 1 White	



ØNICHI/		99 <sup>4</sup> 99 <sup>5</sup>
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	NCSxE17A 3.0° / 6.0° 40 % 73.7 cd/lm 1 White	
ED FWHM / FWTM	NCSxE17A 50.0 + 3.0° / 77.0 + 7.0°	25° c <sup>0</sup> 15°
Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S		
ØNICHI/		90 <sup>1</sup>
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S	NVSW219F 51.0 + 5.0° / 76.0 + 10.0° 48 % 3.8 cd/lm 1 White I UB-O	
ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	NVSW219F 4.0° / 7.0° 50 % 47.5 cd/lm 1 White	



<b>(</b>			
<b>ØNICHI</b>		90 <sup>4</sup>	90*
LED	NVSW319B		
FWHM / FWTM	50.0 + 5.0° / 76.0 + 13.0°		K V ~~
Efficiency	46 %		60*
Peak intensity	3.4 cd/lm		$\sim$ 7
LEDs/each optic	1		$\times$
Light colour	White	97	65.
Required compone	nts:		
F16629_LEIA-SU	JB-O		X
			CT V
			30"
<b>ØNICHI</b>		90°	90*
LED	NVSW319B		
FWHM / FWTM	5.0° / 8.0°	75	200
Efficiency	52 %		
Peak intensity	36.8 cd/lm	64× 1330	60*
LEDs/each optic	1		
Light colour	White	gr.	45.
Required component			
		30" 38%00 10" 0 <sup>0</sup>	15°
<b>ØNICHI</b>		so-	90*
	NVSxE21A	20*	90
		39 <sup>3</sup>	90
LED	NVSxE21A	99 <sup>-</sup> 351 51	
LED FWHM / FWTM Efficiency	NVSxE21A 3.0° / 7.0°	99 757 664 IB-0	
LED FWHM / FWTM	NVSxE21A 3.0° / 7.0° 46 %	99 75 59	
LED FWHM / FWTM Efficiency Peak intensity	NVSxE21A 3.0° / 7.0° 46 % 51 cd/lm	30 <sup>3</sup> 75 61 <sup>4</sup> 1200 51 260	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	NVSxE21A 3.0° / 7.0° 46 % 51 cd/lm 1 White	50 <sup>-</sup> 50 <sup>-</sup> 50 <sup>-</sup> 50 <sup>-</sup> 50 <sup>-</sup> 50 <sup>-</sup> 50 <sup>-</sup>	99 72 00 00
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	NVSxE21A 3.0° / 7.0° 46 % 51 cd/lm 1 White	99 <sup>-</sup> 25 60 <sup>-</sup> 25 	99 97 97
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	NVSxE21A 3.0° / 7.0° 46 % 51 cd/lm 1 White	39 <sup>-</sup> 73- 90 <sup>-</sup> 25 <sup>-</sup> 26 <sup>-</sup> 39 <sup>-</sup>	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	NVSxE21A 3.0° / 7.0° 46 % 51 cd/lm 1 White		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	NVSxE21A 3.0° / 7.0° 46 % 51 cd/lm 1 White nts:		20- 20- 0-1 0-1 0-1 0-1 0-1 0-1 0-1 0-1 0-1 0
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	NVSxE21A 3.0° / 7.0° 46 % 51 cd/lm 1 White nts:		25 25 25 25 25
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	NVSxE21A 3.0° / 7.0° 46 % 51 cd/lm 1 White nts:		10°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component MICHIM LED FWHM / FWTM	NVSxE21A 3.0° / 7.0° 46 % 51 cd/lm 1 White hts: NVSxE21A 49.0 + 4.0° / 77.0 + 13.0°		99 99 99 99 99 99 99 99 99 99 99 99 99
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component LED FWHM / FWTM Efficiency	NVSxE21A 3.0° / 7.0° 46 % 51 cd/lm 1 White hts: NVSxE21A 49.0 + 4.0° / 77.0 + 13.0° 41 %		64 64 64 64 64 64 64 64 64 64 64 64 64 6
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component LED FWHM / FWTM Efficiency Peak intensity	NVSxE21A 3.0° / 7.0° 46 % 51 cd/lm 1 White nts: NVSxE21A 49.0 + 4.0° / 77.0 + 13.0° 41 % 3.5 cd/lm		64 64 65 65 65 65 65 65 65 65 65 65 65 65 65
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component EQUIPTION LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	NVSxE21A 3.0° / 7.0° 46 % 51 cd/lm 1 White nts: NVSxE21A 49.0 + 4.0° / 77.0 + 13.0° 41 % 3.5 cd/lm 1		10 10 10 10 10 10 10 10 10 10 10 10 10 1
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component EQ FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	NVSxE21A 3.0° / 7.0° 46 % 51 cd/lm 1 White nts: NVSxE21A 49.0 + 4.0° / 77.0 + 13.0° 41 % 3.5 cd/lm 1 White	73*	57 57 57 57 57 57 57 57 57 57 57 57 57 5
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component MICHIA LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	NVSxE21A 3.0° / 7.0° 46 % 51 cd/lm 1 White nts: NVSxE21A 49.0 + 4.0° / 77.0 + 13.0° 41 % 3.5 cd/lm 1 White nts:	73*	10°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component EQ FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	NVSxE21A 3.0° / 7.0° 46 % 51 cd/lm 1 White nts: NVSxE21A 49.0 + 4.0° / 77.0 + 13.0° 41 % 3.5 cd/lm 1 White nts:	73*	997 997 997 997 997 997 997 997 997 997
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component MICHIA LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	NVSxE21A 3.0° / 7.0° 46 % 51 cd/lm 1 White nts: NVSxE21A 49.0 + 4.0° / 77.0 + 13.0° 41 % 3.5 cd/lm 1 White nts:	73*	99 99 99 99 99 99 99 99 99 99 99 99 99



<b>∕∕</b> NICHI∕		50°
LED	NVSxx19B/NVSxx19C	
FWHM / FWTM	4.0° / 7.0°	
Efficiency	49 %	
Peak intensity	48.7 cd/lm	
LEDs/each optic	1	
Light colour	White	¢. S
Required compone		30° 3100 30° 1100 50° 10° 10°
		39 <sup>4</sup> 39
LED	NVSxx19B/NVSxx19C	
FWHM / FWTM	50.0 + 4.0° / 76.0 + 9.0°	
Efficiency	44 %	
Peak intensity	3.9 cd/lm	
LEDs/each optic	1	
Light colour	White	
Required compone	nts:	
F16629_LEIA-S	UB-O	
		30 <sup>4</sup> exp 30 135 <sup>7</sup> 0 <sup>4</sup> 135 <sup>4</sup>
OSRAM Opto Semiconductors		50* 50
LED	OSCONIQ P 3737 (2W version)	
FWHM / FWTM	3.0° / 7.0°	
Efficiency	54 %	
Peak intensity	62.4 cd/lm	
LEDs/each optic	1	
Light colour	White	
Required compone	nts:	
		31.24
		$\times$ / $\times$ /
		30 <sup>4</sup> 5000 30 10 <sup>5</sup> 60 <sup>4</sup> 10 <sup>5</sup>
OSRAM Opto Semiconductors		90° 99
LED	OSCONIQ P 3737 (2W version)	
FWHM / FWTM	50.0 + 4.0° / 76.0 + 9.0°	
Efficiency	49 %	
Peak intensity	4.5 cd/lm	
LEDs/each optic	1	
Light colour	White	
Required compone	nts:	
		304 325 07 325 3



OSRAM Opto Semiconductors		99*	90*
LED	OSCONIQ P 3737 (3W version)		
FWHM / FWTM	5.0° / 8.0°	3	2.
Efficiency	53 %		
Peak intensity	36 cd/lm		$\langle \langle \rangle \rangle$
LEDs/each optic	1		
Light colour	White	<b>a</b> .	45*
Required compone	nts:	200	
		**	36.
		25 3960	15*
OSRAM Opto Semiconductors		99*	90*
LED	OSCONIQ P 3737 (3W version)		
FWHM / FWTM	51.0 + 5.0° / 76.0 + 14.0°	27	× / 2°
Efficiency	48 %		
Peak intensity	3.4 cd/lm		
LEDs/each optic	1		$\mathbb{N}$
Light colour	White	g. (	45*
Required compone	nts:		
F16629_LEIA-SI	UB-O		-
		x. Xe	34*
		239 <sup>4</sup> 0 <sup>4</sup>	12,
OSRAM Opto Semiconductors		301*	90*
Opto Semiconductors	OSLON Boost HX (KW CULPM1.TG)	35*	90*
OSRAM Opto Semiconductors LED FWHM / FWTM	OSLON Boost HX (KW CULPM1.TG) 3.0° / 5.0°	<u>95*</u> 35	90*
opto Semiconductors LED FWHM / FWTM	OSLON Boost HX (KW CULPM1.TG) 3.0° / 5.0° 54 %	3**	90* 73*
opto Semiconductors LED FWHM / FWTM Efficiency	3.0° / 5.0°	94	
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity	3.0° / 5.0° 54 %	9× 9× 9×	90* 30*
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	3.0° / 5.0° 54 % 96.6 cd/lm	5°*	
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity	3.0° / 5.0° 54 % 96.6 cd/lm 1 White	27	97 97
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	3.0° / 5.0° 54 % 96.6 cd/lm 1 White	9× 35 57 57 310	10 10 10 10 10 10 10 10 10 10 10 10 10 1
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	3.0° / 5.0° 54 % 96.6 cd/lm 1 White	94 72 94 73 94 73 94 73 94 73 94 73 94 73 94	
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	3.0° / 5.0° 54 % 96.6 cd/lm 1 White	5°* 57 57 57 57 57 57 57 57 57 57 57 57 57	
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	3.0° / 5.0° 54 % 96.6 cd/lm 1 White		22 22 22 22 22
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	3.0° / 5.0° 54 % 96.6 cd/lm 1 White		10°
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	3.0° / 5.0° 54 % 96.6 cd/lm 1 White		25°
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	3.0° / 5.0° 54 % 96.6 cd/lm 1 White nts:		27 27 27 27 27 27 27 27 27 27 27 27 27 2
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	3.0° / 5.0° 54 % 96.6 cd/lm 1 White nts: OSLON Square CSSRM2/CSSRM3		100 100 100 100 100 100 100 100 100 100
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	3.0° / 5.0° 54 % 96.6 cd/lm 1 White nts: OSLON Square CSSRM2/CSSRM3 4.0° / 7.0°		
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone OSRAM Opto Semiconductors LED FWHM / FWTM Efficiency	3.0° / 5.0° 54 % 96.6 cd/lm 1 White nts: OSLON Square CSSRM2/CSSRM3 4.0° / 7.0° 49 %		100 100 100 100 100 100 100 100 100 100
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone OSRAM Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity	3.0° / 5.0° 54 % 96.6 cd/lm 1 White nts: OSLON Square CSSRM2/CSSRM3 4.0° / 7.0° 49 % 64.8 cd/lm		100 100 100 100 100 100 100 100 100 100
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	3.0° / 5.0° 54 % 96.6 cd/lm 1 White nts: OSLON Square CSSRM2/CSSRM3 4.0° / 7.0° 49 % 64.8 cd/lm 1 White		60 10 10 10 10 10 10 10 10 10 1
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	3.0° / 5.0° 54 % 96.6 cd/lm 1 White nts: OSLON Square CSSRM2/CSSRM3 4.0° / 7.0° 49 % 64.8 cd/lm 1 White		100 100 100 100 100 100 100 100 100 100
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	3.0° / 5.0° 54 % 96.6 cd/lm 1 White nts: OSLON Square CSSRM2/CSSRM3 4.0° / 7.0° 49 % 64.8 cd/lm 1 White		10 10 10 10 10 10 10 10 10 10 10 10 10 1
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone OSCRAM Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	3.0° / 5.0° 54 % 96.6 cd/lm 1 White nts: OSLON Square CSSRM2/CSSRM3 4.0° / 7.0° 49 % 64.8 cd/lm 1 White		27 27 27 27 27 27 27 27 27 27 27 27 27 2



OSRAM		
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S		
OSRAM		
opto semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S		
OSRAM		30° 90°
opto semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S		
OSRAM Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	OSLON SSL 150 2.0° / 5.0° 46 % 122 cd/lm 1 White ents:	



OSRAM		
Opto Semiconductors		90* 90*
LED	OSLON SSL 80	78.
FWHM / FWTM	51.0 + 3.0° / 77.0 + 7.0°	
Efficiency	56 %	60° 60°
Peak intensity	6.5 cd/lm	
LEDs/each optic	1	
Light colour	White	
Required compone		
F16629_LEIA-SI	JB-O	
		35° 600 36°
OSRAM		90° 90°
Opto Semiconductors	OSLON SSL 80	
FWHM / FWTM	3.0° / 6.0°	75. 75.
Efficiency	62 %	
Peak intensity	62 % 106.7 cd/lm	60° × / / 1 / × 6°
LEDs/each optic	1	
Light colour	' White	gg
Required compone		
Required compone		
		102700
		30° 30° 30°
OSRAM		50° 50°
Opto Semiconductors	OSTAR Projection Compact (KW.CSLNM1.TG)	
FWHM / FWTM	3.0° / 5.0°	 75. 75.
Efficiency	49 %	
Peak intensity	120.8 cd/lm	60°
LEDs/each optic	1	
Light colour	White	gar are
Required compone		75500
		10200
		30°
		155 00 255
SAMSU	JNG	30* 30
LED	LH231B	
FWHM / FWTM	4.0° / 7.0°	75
Efficiency	50 %	50°
Peak intensity	43.6 cd/lm	$[  \times // ] $
LEDs/each optic	1	
Light colour	White	45° 2700 65°
Required compone	nts:	$\mathbb{N}$
		300



SAMSI	UNG	90 <sup>+</sup>
LED	LH231B	
FWHM / FWTM	50.0 + 4.0° / 76.0 + 13.0°	
Efficiency	46 %	
Peak intensity	3.5 cd/lm	
LEDs/each optic	1	
Light colour	White	gr
Required compone		
F16629_LEIA-S		
		15% 0% 15%
SAMSU	ING	90* 99
LED	LH351B	
FWHM / FWTM	52.0 + 4.0° / 77.0 + 10.0°	
Efficiency	50 %	
Peak intensity	4.3 cd/lm	69.
LEDs/each optic	1	
Light colour	White	
Required compone		
F16629_LEIA-S		
		20 10 10 10 10 10 10 10 10 10 10 10 10 10
SAMSI	UNG	50*
SAMSU		55* 50*
LED	LH351B	90° 90° 735 72°
LED FWHM / FWTM	LH351B 4.0° / 7.0°	
LED FWHM / FWTM Efficiency	LH351B 4.0° / 7.0° 55 %	
LED FWHM / FWTM Efficiency Peak intensity	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LH351B 4.0° / 7.0° 55 %	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm 1 White ents:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm 1 White ents:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm 1 White ents:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm 1 White ents:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm 1 White ents:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone SAMSU LED FWHM / FWTM	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm 1 White ents: UNG LH351C 4.0° / 7.0°	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone SAMSU LED FWHM / FWTM Efficiency	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm 1 White ents: UNG LH351C 4.0° / 7.0° 57 %	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone SAMSS LED FWHM / FWTM Efficiency Peak intensity	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm 1 White ents: UNC LH351C 4.0° / 7.0° 57 % 46.1 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone SAMSS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm 1 White ents: UNC LH351C 4.0° / 7.0° 57 % 46.1 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone SANSS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm 1 White ents: UNC LH351C 4.0° / 7.0° 57 % 46.1 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone SANSS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm 1 White ents: UNC LH351C 4.0° / 7.0° 57 % 46.1 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone SANSS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LH351B 4.0° / 7.0° 55 % 54.4 cd/lm 1 White ents: UNC LH351C 4.0° / 7.0° 57 % 46.1 cd/lm 1 White	



SAMS	ING	30* 30
LED	LH351C	
FWHM / FWTM	50.0 + 5.0° / 76.0 + 12.0°	
Efficiency	52 %	
Peak intensity	3.9 cd/lm	60 <sup>10</sup>
LEDs/each optic	1	
Light colour	White	e. No
Required compone		
		20° 400 20°
SAMSI	UNG	30*
LED	LH351D	
FWHM / FWTM	5.0° / 9.0°	
Efficiency	54 %	
Peak intensity	29 cd/lm	
LEDs/each optic	1	
Light colour	White	gr d
Required compone		
		2057 of 152 A
SAMS	JNG	90 <sup>*</sup>
LED	LH351D	
	LIISSID	75 7
FWHM / FWTM	53.0 + 5.0° / 77.0 + 14.0°	
FWHM / FWTM Efficiency	53.0 + 5.0° / 77.0 + 14.0° 50 %	
FWHM / FWTM Efficiency Peak intensity	53.0 + 5.0° / 77.0 + 14.0°	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1 White	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1 White ents:	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1 White ents:	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1 White ents:	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1 White ents:	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1 White ents: JUB-O	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1 White ents: :: UB-O	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1 White ents: :: UB-O	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1 White ents: :: UB-O	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S SAMSI LED FWHM / FWTM Efficiency	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1 White ents: UB-O UNG LH508A 52.0 + 7.0° / 78.0 + 17.0° 45 %	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S SAMSU LED FWHM / FWTM Efficiency Peak intensity	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1 White ents: UB-O UNG LH508A 52.0 + 7.0° / 78.0 + 17.0°	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S SAMSS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1 White ents: UB-O UNG LH508A 52.0 + 7.0° / 78.0 + 17.0° 45 % 2.4 cd/lm	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S SAMSS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1 White ents: UB-O UNC LH508A 52.0 + 7.0° / 78.0 + 17.0° 45 % 2.4 cd/lm 1 White	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S SAMSU LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1 White ents: UB-O UNC LH508A 52.0 + 7.0° / 78.0 + 17.0° 45 % 2.4 cd/lm 1 White ents:	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S SAMSS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1 White ents: UB-O UNC LH508A 52.0 + 7.0° / 78.0 + 17.0° 45 % 2.4 cd/lm 1 White ents:	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F16629_LEIA-S SAMSU LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	53.0 + 5.0° / 77.0 + 14.0° 50 % 3.1 cd/lm 1 White ents: UB-O UNC LH508A 52.0 + 7.0° / 78.0 + 17.0° 45 % 2.4 cd/lm 1 White ents:	



SAMS	JNG		90 <sup>4</sup> 90
LED	LH508A		23*
FWHM / FWTM	7.0° / 11.0°		
Efficiency	50 %		605
Peak intensity	17.3 cd/lm		fice a
LEDs/each optic	1		
Light colour	White		ger a
Required compone	ents:		
			30*
			de 15° 0° 15°



		90° 90°
LED	XE-G	
FWHM / FWTM	5.0° / 10.0°	75.
Efficiency	47 %	
Peak intensity	40.8 cd/lm	60°
LEDs/each optic	1	
Light colour	' White	
Required components:	white	
required components.		
		30° 30° 30° 30°
		90*
LED	XHP70.2	
FWHM / FWTM	12.0° / 18.0°	75
Efficiency	48 %	
Peak intensity	7.4 cd/lm	60°
LEDs/each optic	1	$\times$ / $\rightarrow$
Light colour	White	gr at
Required components:	White	
		X
		6430
		30° 30° 30°
		10 0000
CREE ÷		50°
	XP-G2 HE	
LED	XP-G2 HE 5.0° / 11.0°	
LED FWHM / FWTM	5.0° / 11.0°	
LED FWHM / FWTM Efficiency	5.0° / 11.0° 48 %	
LED FWHM / FWTM Efficiency Peak intensity	5.0° / 11.0° 48 % 29.9 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	5.0° / 11.0° 48 % 29.9 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	5.0° / 11.0° 48 % 29.9 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	5.0° / 11.0° 48 % 29.9 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	5.0° / 11.0° 48 % 29.9 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	5.0° / 11.0° 48 % 29.9 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	5.0° / 11.0° 48 % 29.9 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	5.0° / 11.0° 48 % 29.9 cd/lm 1	200 20 20 20 20 20 20 20 20 20
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	5.0° / 11.0° 48 % 29.9 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	5.0° / 11.0° 48 % 29.9 cd/lm 1 White	200 20 20 20 20 20 20 20 20 20
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	5.0° / 11.0° 48 % 29.9 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: CREE LED ED FWHM / FWTM	5.0° / 11.0° 48 % 29.9 cd/lm 1 White XP-G2 HE 36.0 + 5.0° / 58.0 + 12.0°	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: Required components: LED FWHM / FWTM Efficiency	5.0° / 11.0° 48 % 29.9 cd/lm 1 White XP-G2 HE 36.0 + 5.0° / 58.0 + 12.0° 44 %	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: Required components: LED FWHM / FWTM Efficiency Peak intensity	5.0° / 11.0° 48 % 29.9 cd/lm 1 White XP-G2 HE 36.0 + 5.0° / 58.0 + 12.0° 44 % 4.3 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: Required components: LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	5.0° / 11.0° 48 % 29.9 cd/lm 1 White XP-G2 HE 36.0 + 5.0° / 58.0 + 12.0° 44 % 4.3 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: CREE ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	5.0° / 11.0° 48 % 29.9 cd/lm 1 White XP-G2 HE 36.0 + 5.0° / 58.0 + 12.0° 44 % 4.3 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: CREE ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	5.0° / 11.0° 48 % 29.9 cd/lm 1 White XP-G2 HE 36.0 + 5.0° / 58.0 + 12.0° 44 % 4.3 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: CREE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	5.0° / 11.0° 48 % 29.9 cd/lm 1 White XP-G2 HE 36.0 + 5.0° / 58.0 + 12.0° 44 % 4.3 cd/lm 1 White	



		90°
LED	XP-L HD	
FWHM / FWTM	6.3° / 12.9°	77
Efficiency	51 %	605 60
Peak intensity	23.5 cd/lm	$\Gamma \times / / \Pi \wedge \times \square$
LEDs/each optic	1	
Light colour	White	er
Required components:		
		30° 3200 11° 320
		200 200 200 200 200 200 200 200 200 200
LED	XP-L HI	
ED FWHM / FWTM	4.5° / 9.5°	
Efficiency	4.5 <sup>-7</sup> 9.5 <sup>-</sup> 53 %	
Peak intensity	42.6 cd/lm	60.
LEDs/each optic	1	
Light colour	White	45° 3740 45°
Required components:	white	
rioquirou componente.		
		324
		36° 15° 0° 35°
	DS	90 <sup>4</sup> <b>A</b> 90 <sup>4</sup>
		59 <sup>1</sup>
LUMILED	LUXEON C 27.0 + 4.0° / 54.0 + 10.0°	39 <sup>4</sup> 39 <sup>3</sup>
LED FWHM / FWTM	LUXEON C	
LED FWHM / FWTM Efficiency	LUXEON C 27.0 + 4.0° / 54.0 + 10.0°	
LED FWHM / FWTM	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 %	
LED FWHM / FWTM Efficiency Peak intensity	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 % 4.4 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 % 4.4 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 % 4.4 cd/lm 1 Red	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 % 4.4 cd/lm 1 Red	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 % 4.4 cd/lm 1 Red	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F16629_LEIA-SUB-O	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 % 4.4 cd/lm 1 Red	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F16629_LEIA-SUB-O	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 % 4.4 cd/lm 1 Red	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F16629_LEIA-SUB-O	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 % 4.4 cd/lm 1 Red S LUXEON C	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F16629_LEIA-SUB-C	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 % 4.4 cd/lm 1 Red <b>S</b> LUXEON C 3.6° / 7.0°	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F16629_LEIA-SUB-C	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 % 4.4 cd/lm 1 Red S LUXEON C 3.6° / 7.0° 36 %	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F16629_LEIA-SUB-O	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 % 4.4 cd/lm 1 Red S LUXEON C 3.6° / 7.0° 36 % 53.7 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F16629_LEIA-SUB-O ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 % 4.4 cd/lm 1 Red S LUXEON C 3.6° / 7.0° 36 % 53.7 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F16629_LEIA-SUB-O ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 % 4.4 cd/lm 1 Red S LUXEON C 3.6° / 7.0° 36 % 53.7 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F16629_LEIA-SUB-O ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 % 4.4 cd/lm 1 Red S LUXEON C 3.6° / 7.0° 36 % 53.7 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F16629_LEIA-SUB-O Efficiency Peak intensity LEDs/each optic Light colour	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 % 4.4 cd/lm 1 Red S LUXEON C 3.6° / 7.0° 36 % 53.7 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F16629_LEIA-SUB-O Efficiency Peak intensity LEDs/each optic Light colour	LUXEON C 27.0 + 4.0° / 54.0 + 10.0° 35 % 4.4 cd/lm 1 Red S LUXEON C 3.6° / 7.0° 36 % 53.7 cd/lm 1	



LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON CZ 10.0° / 16.0° 42 % 11 cd/lm 4 White	
	DS	50° 90'
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F16629_LEIA-SUB-0	LUXEON CZ 28.0 + 4.0° / 54.0 + 10.0° 47 % 6.3 cd/lm 1 Red	20° 0° 0° 0° 0° 0° 0° 0° 0° 0° 0° 0° 0° 0
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON Rubix 4.0° / 7.0° 45 % 74.7 cd/lm 1 White	25 <sup>-</sup> 25 <sup>-</sup> 27
UMILEI	DS	90* 90*
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON Rubix 5.0° / 9.0° 51 % 47.4 cd/lm 1 Red	25 67 67 300 300



<b>A</b>		
	DS	90 <sup>9</sup> 90 <sup>4</sup>
LED	LUXEON Rubix	200
FWHM / FWTM	5.0° / 9.0°	
Efficiency	49 %	50 <sup>4</sup> 12000 60
Peak intensity	44.5 cd/lm	(X / (     ) X )
LEDs/each optic	1	
Light colour	Blue	e"
Required components:		
		3800
		30° 15° 0° 15° 30°
	)S	90* 90
LED	LUXEON Rubix	
FWHM / FWTM	5.0° / 9.0°	
Efficiency	49 %	60 <sup>6</sup> 1200 80 <sup>0</sup>
Peak intensity	44.5 cd/lm	$ \times / / $
LEDs/each optic	1	
Light colour	Green	er 2340 er
Required components:		
		300
		15° 0° 15°
	)S	50° 0 <sup>t</sup> 15°
		90 <sup>4</sup> 90
LED	LUXEON V2	75° 0° 15°
LED FWHM / FWTM	LUXEON V2 4.8° / 9.5°	35,         0,         32,           36,         32,         32,
LED FWHM / FWTM Efficiency	LUXEON V2	25 <sup>1</sup> 0 <sup>1</sup> 15 <sup>1</sup>
LED FWHM / FWTM Efficiency Peak intensity	LUXEON V2 4.8° / 9.5° 46 %	
LED FWHM / FWTM Efficiency	LUXEON V2 4.8° / 9.5° 46 % 39.5 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LUXEON V2 4.8° / 9.5° 46 % 39.5 cd/lm 1	25- 25- 25- 25- 25- 25- 25- 25- 25- 25-
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON V2 4.8° / 9.5° 46 % 39.5 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON V2 4.8° / 9.5° 46 % 39.5 cd/lm 1	97         97         97           99         100         100           99         100         100
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON V2 4.8° / 9.5° 46 % 39.5 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON V2 4.8° / 9.5° 46 % 39.5 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON V2 4.8° / 9.5° 46 % 39.5 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON V2 4.8° / 9.5° 46 % 39.5 cd/lm 1 White US SBT-90	30,000         30,000<
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON V2 4.8° / 9.5° 46 % 39.5 cd/lm 1 White US SBT-90 6.0° / 11.0°	30,000         30,000<
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON V2 4.8° / 9.5° 46 % 39.5 cd/lm 1 White US SBT-90 6.0° / 11.0° 44 %	No.
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON V2 4.8° / 9.5° 46 % 39.5 cd/lm 1 White US SBT-90 6.0° / 11.0°	No.
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON V2 4.8° / 9.5° 46 % 39.5 cd/lm 1 White SBT-90 6.0° / 11.0° 44 % 26 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON V2 4.8° / 9.5° 46 % 39.5 cd/lm 1 White SBT-90 6.0° / 11.0° 44 % 26 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON V2 4.8° / 9.5° 46 % 39.5 cd/lm 1 White SBT-90 6.0° / 11.0° 44 % 26 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON V2 4.8° / 9.5° 46 % 39.5 cd/lm 1 White SBT-90 6.0° / 11.0° 44 % 26 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON V2 4.8° / 9.5° 46 % 39.5 cd/lm 1 White SBT-90 6.0° / 11.0° 44 % 26 cd/lm 1	



LED FWHM / FWTM Efficiency LEDs/each optic Light colour Required components:	SST-10-B130 4.0° / 9.0° 45 % 1 IR	
ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	NF2x757G 4.6° / 9.2° 50 % 52.2 cd/lm 1 White	
ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	NV4WB35AM 7.0° / 13.0° 46 % 21.9 cd/lm 1 White	
ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	NV4x144A 9.0° / 15.0° 44 % 12.6 cd/lm 1 White	2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2, 2



<b>ΜΝΙCΗΙΛ</b>		90 <sup>4</sup>	90*
LED	NVSW3x9A		
FWHM / FWTM	2.4° / 4.8°	75*	25'
Efficiency	44 %	$\sim$	
Peak intensity	34.5 cd/lm	60° 12801	60,
LEDs/each optic	1	$N \neq f \parallel f$	
Light colour	White	45"	43.
Required components:			
			34
		30 15 00	150 50
<b>ΜΝΙCΗΙΛ</b>		90°	90*
LED	NVSW519A		
FWHM / FWTM	5.0° / 10.0°	75*	
Efficiency	45 %	69*	
Peak intensity	28.4 cd/lm		
LEDs/each optic	1	X/T	
Light colour	White	63.	45.
Required components:			$\top$
		22400	
		30*	36.
OSDAM			The second secon
OSRAM Opto Semiconductors		90°	90°
Opto Semiconductors	OSLON Black Flat (LUW HWQP)	99 <sup>4</sup>	30'
opto Semiconductors LED FWHM / FWTM	4.5° / 11.0°	90°	30'
opto Semiconductors LED FWHM / FWTM Efficiency	4.5° / 11.0° 50 %	90°	
<sup>opto Semiconductors</sup> LED FWHM / FWTM Efficiency Peak intensity	4.5° / 11.0° 50 % 40.4 cd/lm	90* 90* 90*	39"
<sup>opto Semiconductors</sup> LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	4.5° / 11.0° 50 % 40.4 cd/lm 1	31. 60*	
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	4.5° / 11.0° 50 % 40.4 cd/lm	24	22 22 22 22 22 22 22
<sup>opto Semiconductors</sup> LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	4.5° / 11.0° 50 % 40.4 cd/lm 1	31. 60*	99°
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	4.5° / 11.0° 50 % 40.4 cd/lm 1	31. 60*	99°
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	4.5° / 11.0° 50 % 40.4 cd/lm 1	31. 60*	- 10 <sup>-</sup> 99 <sup>-</sup> 99 <sup>-</sup>
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	4.5° / 11.0° 50 % 40.4 cd/lm 1	31. 60*	29°
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	4.5° / 11.0° 50 % 40.4 cd/lm 1	31. 60*	99' 99' 99' 99' 99' 99'
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	4.5° / 11.0° 50 % 40.4 cd/lm 1 White	31. 60*	12" 12" 12" 15" 15" 15"
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: OSERAM Opto Semiconductors LED	4.5° / 11.0° 50 % 40.4 cd/lm 1 White OSLON Square EC	31. 60*	
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: OSRAM Opto Semiconductors LED FWHM / FWTM	4.5° / 11.0° 50 % 40.4 cd/lm 1 White OSLON Square EC 4.0° / 8.0°	50+ 50+	12° 29'
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: OSRAM Opto Semiconductors LED FWHM / FWTM Efficiency	4.5° / 11.0° 50 % 40.4 cd/lm 1 White OSLON Square EC 4.0° / 8.0° 57 %	50+ 50+	12* 30'
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: OSRAM Opto Semiconductors LED FWHM / FWTM	4.5° / 11.0° 50 % 40.4 cd/lm 1 White OSLON Square EC 4.0° / 8.0°	50+ 50+	12* 30'
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	4.5° / 11.0° 50 % 40.4 cd/lm 1 White OSLON Square EC 4.0° / 8.0° 57 % 68 cd/lm	50+ 50+	13° 30'
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: OPTO Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	4.5° / 11.0° 50 % 40.4 cd/lm 1 White OSLON Square EC 4.0° / 8.0° 57 % 68 cd/lm 1	9° 9° 9° 9° 9° 9°	13° 38'
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:  OSSRAM Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	4.5° / 11.0° 50 % 40.4 cd/lm 1 White OSLON Square EC 4.0° / 8.0° 57 % 68 cd/lm 1	9° 9° 9° 9° 9° 9°	13° 38'
opte Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:  COSRAM Opte Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	4.5° / 11.0° 50 % 40.4 cd/lm 1 White OSLON Square EC 4.0° / 8.0° 57 % 68 cd/lm 1	9° 9° 9° 9° 9° 9°	12°
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	4.5° / 11.0° 50 % 40.4 cd/lm 1 White OSLON Square EC 4.0° / 8.0° 57 % 68 cd/lm 1	9° 9° 9° 9° 9° 9°	15° 30°



OSRAM		50* 50*
Opto Semiconductors	OSLON SSL 150	
FWHM / FWTM	5.0° / 10.0°	73
Efficiency	41 %	
Peak intensity	31.6 cd/lm	60°
LEDs/each optic	1	
	r Red	
Light colour Required components:	Red	
Required components.		
		30° 2200° 30° 30°
OSRAM Opto Semiconductors		90° 90°
Opto Semiconductors	OSTAR Stage (S2WM)	
FWHM / FWTM	32.0 + 4.0° / 56.0 + 12.0°	75*
Efficiency	47 %	
Peak intensity	4.9 cd/lm	50 <sup>4</sup>
LEDs/each optic	1	
Light colour	' White	5° 6°
Required components:	Wille	
F16629_LEIA-SUB-C		
1 10023_EEIA-00D-C		
		30 <sup>4</sup> 35 <sup>5</sup> 35 <sup>5</sup>
OSRAM Onto Semiconductors		90* 90*
Opto Semiconductors	OSTAR Stage (S2WM)	50°
Opto Semiconductors	OSTAR Stage (S2WM) 6.0° / 11.0°	<u>35.</u> <u>36.</u> <u>36.</u>
Opto Semiconductors LED FWHM / FWTM	6.0° / 11.0°	35. 35. 35.
opto Semiconductors LED FWHM / FWTM Efficiency	6.0° / 11.0° 49 %	99° 97 39 99° 20°
Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity	6.0° / 11.0° 49 % 35.2 cd/lm	99° 9° 37 7° 69° 100 6°
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	6.0° / 11.0° 49 % 35.2 cd/lm 1	64. For 64. 24. 25. 26. 25. 26. 25. 26. 25. 26. 25. 26. 25. 26. 25. 26. 25. 26. 25. 26. 26. 26. 26. 26. 26. 26. 26. 26. 26. 26. 26. 26. 26. 26. 26. 26. 26.
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	6.0° / 11.0° 49 % 35.2 cd/lm	37 64 - 100 - 67
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	6.0° / 11.0° 49 % 35.2 cd/lm 1	37 64 - 100 - 67
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	6.0° / 11.0° 49 % 35.2 cd/lm 1	37 64 - 100 - 67
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	6.0° / 11.0° 49 % 35.2 cd/lm 1	73 64 72 72 72 72 72 72 72 72 72 72 72 72 72
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	6.0° / 11.0° 49 % 35.2 cd/lm 1	77 60* 100 00*
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	6.0° / 11.0° 49 % 35.2 cd/lm 1	2000 200 2000 2
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	6.0° / 11.0° 49 % 35.2 cd/lm 1	20. 6. 6. 190 10. 10. 10. 10. 10. 10. 10. 10. 10. 10
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	6.0° / 11.0° 49 % 35.2 cd/lm 1 White	2000 200 2000 2
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	6.0° / 11.0° 49 % 35.2 cd/lm 1 White SFH 4715AS	2000 200 2000 2
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: OSRAM Opto Semiconductors LED FWHM / FWTM	6.0° / 11.0° 49 % 35.2 cd/lm 1 White SFH 4715AS 4.0° / 9.0°	37 69 100 30 100 100 100 10 10 10 10 10 10
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: OSRAM Opto Semiconductors LED FWHM / FWTM Efficiency	6.0° / 11.0° 49 % 35.2 cd/lm 1 White SFH 4715AS 4.0° / 9.0° 47 %	37 69 100 30 100 100 100 10 10 10 10 10 10
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: OSRAM Opto Semiconductors LED FWHM / FWTM Efficiency LEDs/each optic	6.0° / 11.0° 49 % 35.2 cd/lm 1 White SFH 4715AS 4.0° / 9.0° 47 % 1	37 69 100 30 100 100 100 10 10 10 10 10 10
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: OSSRAM Opto Semiconductors LED FWHM / FWTM Efficiency LEDs/each optic Light colour	6.0° / 11.0° 49 % 35.2 cd/lm 1 White SFH 4715AS 4.0° / 9.0° 47 %	37 69 100 30 100 100 100 10 10 10 10 10 10
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: OSRAM Opto Semiconductors LED FWHM / FWTM Efficiency LEDs/each optic	6.0° / 11.0° 49 % 35.2 cd/lm 1 White SFH 4715AS 4.0° / 9.0° 47 % 1	2000 200 2000 2
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: OSSRAM Opto Semiconductors LED FWHM / FWTM Efficiency LEDs/each optic Light colour	6.0° / 11.0° 49 % 35.2 cd/lm 1 White SFH 4715AS 4.0° / 9.0° 47 % 1	2000 12°
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: OSSRAM Opto Semiconductors LED FWHM / FWTM Efficiency LEDs/each optic Light colour	6.0° / 11.0° 49 % 35.2 cd/lm 1 White SFH 4715AS 4.0° / 9.0° 47 % 1	2000 12°
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: Opto Semiconductors LED FWHM / FWTM Efficiency LEDs/each optic Light colour	6.0° / 11.0° 49 % 35.2 cd/lm 1 White SFH 4715AS 4.0° / 9.0° 47 % 1	2000 12°



OSRAM Opto Semiconductors		90° 50°
LED	SFH 4715AS	75"
FWHM / FWTM	29.0 + 4.0° / 56.0 + 12.0°	
Efficiency	53 %	60°
Peak intensity	6.1 cd/lm	
LEDs/each optic	1	
Light colour	White	43° 43°
Required components:		
F16629_LEIA-SUB-O		
		30° 6430 30°
		15° 0° 15°
OSRAM		50* 50*
OSRAM Opto Semiconductors		90 <sup>+</sup> 90 <sup>+</sup>
Opto Semiconductors	SFH 4716AS	29 <sup>1</sup>
	SFH 4716AS 5.0° / 9.0°	
Opto Semiconductors LED FWHM / FWTM	5.0° / 9.0°	
opto Semiconductors LED FWHM / FWTM Efficiency		
opto Semiconductors LED FWHM / FWTM Efficiency LEDs/each optic	5.0° / 9.0° 36 %	
opto Semiconductors LED FWHM / FWTM Efficiency LEDs/each optic Light colour	5.0° / 9.0° 36 % 1	73°
opto Semiconductors LED FWHM / FWTM Efficiency LEDs/each optic	5.0° / 9.0° 36 % 1	73°
opto Semiconductors LED FWHM / FWTM Efficiency LEDs/each optic Light colour	5.0° / 9.0° 36 % 1	73°
opto Semiconductors LED FWHM / FWTM Efficiency LEDs/each optic Light colour	5.0° / 9.0° 36 % 1	73°