

# PRODUCT DATASHEET CA16129\_OLGA-W

## OLGA-W

~40° wide beam with flange. Assembly with holder and installation tape.

#### **SPECIFICATION:**

Dimensions	Ø 32.0 mm
Height	19.1 mm
Fastening	tape, pin
ROHS compliant	yes 🛈



#### MATERIALS:

Component OLGA-W OLGA-HLD SPUTNIK-TAPE3

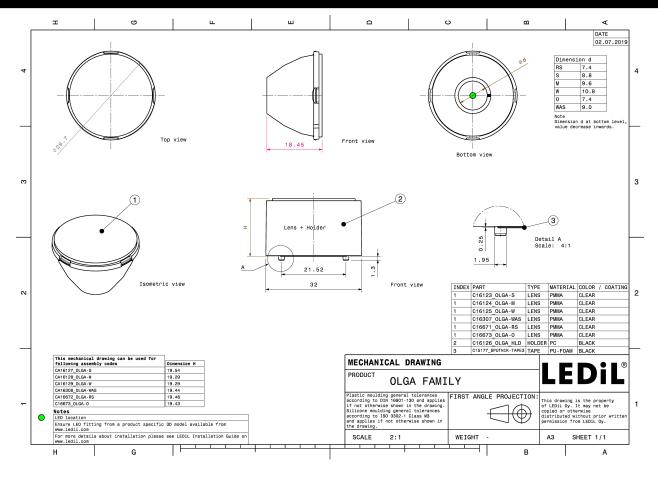
Туре	
Single lens	
Holder	
Таре	

#### **ORDERING INFORMATION:**

Component		Qty in box	MOQ	MPQ	Box weight (kg)
CA16129_OLGA-W	Single lens	792	132	66	10.0
» Box size: 476 x 273 x 292 mm					

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



		90* 90*
LED	XD16	
FWHM / FWTM	32.0° / 54.0°	32. 23.
Efficiency	82 %	
Peak intensity	2.5 cd/lm	
LEDs/each optic	1	
Light colour	White	57° 65°
Required componer	nts:	
		2100
		36* 35* 0* 15* 36*
		30° 30°
LED	XHP35 HD	
FWHM / FWTM	42.0° / 65.0°	75"
Efficiency	84 %	
Peak intensity	1.6 cd/lm	
LEDs/each optic	1	
Light colour	White	g' g'
Required componer	nts:	
		36° 36°
		15° 0° 15°
		90° 90°
		90°
LED	XHP35 HI	99°
LED FWHM / FWTM	XHP35 HI 38.0° / 58.0°	32 34 36 36
LED FWHM / FWTM Efficiency	XHP35 HI 38.0° / 58.0° 85 %	Bit     Bit     Bit       Bit     Bit     Bit       Bit     Bit     Bit
LED FWHM / FWTM Efficiency Peak intensity	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm	80 81 91 91 91 91 91 91
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm 1	gr 50 gr 50 gr5
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm 1 White	9°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm 1 White	200 200 200 200
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm 1 White	20 24 64 90 90 95 95 95
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm 1 White	200 200 200 200 200
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componen	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm 1 White Ints:	22     20     22     25       24     200     64     65       24     200     64     65       24     200     65     66
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm 1 White hts:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm 1 White hts:	31.     32.       33.     33.       64.     200       65.     66.       66.     66.       66.     66.       66.     66.       66.     66.       66.     66.       67.     66.       68.     66.
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component CREEE>LED LED FWHM / FWTM	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm 1 White hts: XHP50 43.0° / 68.0°	7 <sup>1</sup>
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component LED FWHM / FWTM Efficiency	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm 1 White hts: XHP50 43.0° / 68.0° 84 %	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component LED FWHM / FWTM Efficiency Peak intensity	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm 1 White nts: XHP50 43.0° / 68.0° 84 % 1.5 cd/lm	7 <sup>1</sup>
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm 1 White nts: XHP50 43.0° / 68.0° 84 % 1.5 cd/lm 1	7 <sup>1</sup>
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component ELED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm 1 White nts: XHP50 43.0° / 68.0° 84 % 1.5 cd/lm 1 White	7 <sup>1</sup>
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm 1 White nts: XHP50 43.0° / 68.0° 84 % 1.5 cd/lm 1 White	7 <sup>1</sup>
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component ELED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm 1 White nts: XHP50 43.0° / 68.0° 84 % 1.5 cd/lm 1 White	27 60 60 60 60 60 60
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component ELED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	XHP35 HI 38.0° / 58.0° 85 % 2 cd/lm 1 White nts: XHP50 43.0° / 68.0° 84 % 1.5 cd/lm 1 White	27 60 60 60 60 60 60



CREE   LED   XHP50.2     FWHM / FWTM   42.0° / 66.0     Efficiency   84 %     Peak intensity   1.6 cd/lm     LEDs/each optic   1     Light colour   White     Required components:   VHP70     FWHM / FWTM   44.0° / 70.0     Efficiency   84 %     Peak intensity   1.4 cd/lm     LEDs/each optic   1     Light colour   White     Required components:   1	
LED XHP50.2 FWHM / FWTM 42.0° / 66.0 Efficiency 84 % Peak intensity 1.6 cd/lm LEDs/each optic 1 Light colour White Required components:	
FWHM / FWTM   42.0° / 66.0     Efficiency   84 %     Peak intensity   1.6 cd/lm     LEDs/each optic   1     Light colour   White     Required components:   Image: Cree in the second se	
Peak intensity   1.6 cd/lm     LEDs/each optic   1     Light colour   White     Required components:   Image: Cree integration of the second of the sec	
LEDs/each optic 1 Light colour White Required components:	
Light colour White Required components:	
Required components: CREE LED LED XHP70 FWHM / FWTM 44.0° / 70.0 Efficiency 84 % Peak intensity 1.4 cd/Im LEDs/each optic 1 Light colour White	
CREE   LED     LED   XHP70     FWHM / FWTM   44.0° / 70.0     Efficiency   84 %     Peak intensity   1.4 cd/lm     LEDs/each optic   1     Light colour   White	
LEDXHP70FWHM / FWTM44.0° / 70.0Efficiency84 %Peak intensity1.4 cd/lmLEDs/each optic1Light colourWhite	
LEDXHP70FWHM / FWTM44.0° / 70.0Efficiency84 %Peak intensity1.4 cd/lmLEDs/each optic1Light colourWhite	
LEDXHP70FWHM / FWTM44.0° / 70.0Efficiency84 %Peak intensity1.4 cd/lmLEDs/each optic1Light colourWhite	
LEDXHP70FWHM / FWTM44.0° / 70.0Efficiency84 %Peak intensity1.4 cd/lmLEDs/each optic1Light colourWhite	
LEDXHP70FWHM / FWTM44.0° / 70.0Efficiency84 %Peak intensity1.4 cd/lmLEDs/each optic1Light colourWhite	73 64 57 57
FWHM / FWTM44.0° / 70.0Efficiency84 %Peak intensity1.4 cd/lmLEDs/each optic1Light colourWhite	<b>3</b> .
Efficiency84 %Peak intensity1.4 cd/lmLEDs/each optic1Light colourWhite	
Peak intensity1.4 cd/lmLEDs/each optic1Light colourWhite	
LEDs/each optic 1 Light colour White	
Light colour White	
	*
	»·
LED XHP70.2 FWHM / FWTM 44.0° / 71.0	75
Efficiency 83 %	
Peak intensity 1.4 cd/lm	
LEDs/each optic 1	
Light colour White	
Required components:	
	50 <sup>+</sup>
LED XM-L3	37
FWHM / FWTM 40.0° / 62.0	
Efficiency 85 %	
Efficiency 85 % Peak intensity 1.8 cd/lm	
Efficiency85 %Peak intensity1.8 cd/lmLEDs/each optic1	
Efficiency85 %Peak intensity1.8 cd/lmLEDs/each optic1Light colourWhite	
Efficiency85 %Peak intensity1.8 cd/lmLEDs/each optic1	
Efficiency85 %Peak intensity1.8 cd/lmLEDs/each optic1Light colourWhite	5. 129)
Efficiency85 %Peak intensity1.8 cd/lmLEDs/each optic1Light colourWhite	
	90*



	D		90*	90*
LED	XP-E2			
FWHM / FWTM	37.0° / 57.0°			75'
Efficiency	86 %			50°
Peak intensity	2.1 cd/lm			
LEDs/each optic	1			
Light colour	White		97	45*
Required compone	nts:			
			300	36.
			15° 0° 15°	
		1000	90°	90*
LED	XP-G2		75	
FWHM / FWTM	41.0° / 60.0°		400	
Efficiency	86 %		607	60*
Peak intensity	1.8 cd/lm			
LEDs/each optic	1			
Light colour	White		45 <sup></sup> 1200	45*
Required compone	nts:			
			30"	36.
			90° 15'	90°
			90 <sup>4</sup>	90*
LED	XP-G3		25° 00° 15°	90°
LED FWHM / FWTM	XP-G3 37.0° / 59.0°		25°	90°
LED FWHM / FWTM Efficiency	XP-G3 37.0° / 59.0° 85 %		55°	90* 25*
LED FWHM / FWTM Efficiency Peak intensity	XP-G3 37.0° / 59.0°		25°	90*
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	XP-G3 37.0° / 59.0° 85 % 2 cd/lm		32.     300       36.     300	0°, 0°, 30,
LED FWHM / FWTM Efficiency Peak intensity	XP-G3 37.0° / 59.0° 85 % 2 cd/lm 1 White		6, 6, 6, 9, 10, 10, 10, 10, 10, 10, 10, 10, 10, 10	90°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	XP-G3 37.0° / 59.0° 85 % 2 cd/lm 1 White		6, 6, 6, 9, 100 100 100 100 100	60°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	XP-G3 37.0° / 59.0° 85 % 2 cd/lm 1 White		5°	99"
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	XP-G3 37.0° / 59.0° 85 % 2 cd/lm 1 White		20° 10° 10°	90°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	XP-G3 37.0° / 59.0° 85 % 2 cd/lm 1 White			95°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	XP-G3 37.0° / 59.0° 85 % 2 cd/lm 1 White ints:			39 <sup>2</sup>
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	XP-G3 37.0° / 59.0° 85 % 2 cd/lm 1 White Ints: XP-L HI			99 <sup>-</sup> 99 <sup>-</sup> 99 <sup>-</sup> 99 <sup>-</sup> 99 <sup>-</sup> 99 <sup>-</sup> 99 <sup>-</sup>
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	XP-G3 37.0° / 59.0° 85 % 2 cd/lm 1 White Ints: XP-L HI 37.0° / 56.0°			
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Required compone	XP-G3 37.0° / 59.0° 85 % 2 cd/lm 1 White Ints: XP-L HI 37.0° / 56.0° 86 %			
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Required compone Efficiency Peak intensity	XP-G3 37.0° / 59.0° 85 % 2 cd/lm 1 White Ints: XP-L HI 37.0° / 56.0° 86 % 2.2 cd/lm		22	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone CREE Component LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	XP-G3 37.0° / 59.0° 85 % 2 cd/lm 1 White I White Mite XP-L HI 37.0° / 56.0° 86 % 2.2 cd/lm 1		22	60,
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone CREE Component LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	XP-G3 37.0° / 59.0° 85 % 2 cd/lm 1 White I White XP-L HI 37.0° / 56.0° 86 % 2.2 cd/lm 1 White		22	60,
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Required compone Efficiency Peak intensity LEDs/each optic	XP-G3 37.0° / 59.0° 85 % 2 cd/lm 1 White I White XP-L HI 37.0° / 56.0° 86 % 2.2 cd/lm 1 White		22	
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	XP-G3 37.0° / 59.0° 85 % 2 cd/lm 1 White I White XP-L HI 37.0° / 56.0° 86 % 2.2 cd/lm 1 White		75 60 <sup>5</sup> 000 -	
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	XP-G3 37.0° / 59.0° 85 % 2 cd/lm 1 White I White XP-L HI 37.0° / 56.0° 86 % 2.2 cd/lm 1 White		75 60 <sup>5</sup> 000 -	
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	XP-G3 37.0° / 59.0° 85 % 2 cd/lm 1 White I White XP-L HI 37.0° / 56.0° 86 % 2.2 cd/lm 1 White		75 60 <sup>5</sup> 000 -	20°



CREE\$LED     LED   XP-L2     FWHM / FWTM   39.0° / 61.0°     Efficiency   84 %     Peak intensity   1.8 cd/m     LEDs/each optic   1     Light colour   White     Required components:   Image: CREE\$LED     Efficiency   81 %     Peak intensity   2.1 cd/m     LEDs/each optic   1     Light colour   White     Required components:   Image: CREE\$LED     LED   XQ-E HD     FWHM / FWTM   37.0° / 57.0°     Efficiency   81 %     Peak intensity   2.1 cd/m     LEDs/each optic   1     Light colour   White     Required components:   Image: CREE\$LED     LEDs/each optic   1     Light colour   White     Required components:   Image: CREE\$LED
LED XP-L2 FWHM / FWTM 39.0° / 61.0° Efficiency 84 % Peak intensity 1.8 cd/m LEDs/each optic 1 Light colour White Required components: CREE\$LED LED XQ-E HD FWHM / FWTM 37.0° / 57.0° Efficiency 81 % Peak intensity 2.1 cd/m LEDs/each optic 1 Light colour White
Efficiency 84 % Peak intensity 1.8 cd/lm LEDs/each optic 1 Light colour White Required components: CREE LED LED XQ-E HD FWHM / FWTM 37.0° / 57.0° Efficiency 81 % Peak intensity 2.1 cd/lm LEDs/each optic 1 Light colour White
Peak intensity 1.8 cd/m LEDs/each optic 1 Light colour White Required components:
LEDs/each optic 1 Light colour White Required components: CREE CLED LED XQ-E HD FWHM / FWTM 37.0° / 57.0° Efficiency 81 % Peak intensity 2.1 cd/lm LEDs/each optic 1 Light colour White
Light colour White Required components:
Required components:
CREE   LED   XQ-E HD     FWHM / FWTM   37.0° / 57.0°     Efficiency   81 %     Peak intensity   2.1 cd/m     LEDs/each optic   1     Light colour   White
LED XQ-E HD FWHM / FWTM 37.0° / 57.0° Efficiency 81 % Peak intensity 2.1 cd/m LEDs/each optic 1 Light colour White
LED XQ-E HD FWHM / FWTM 37.0° / 57.0° Efficiency 81 % Peak intensity 2.1 cd/m LEDs/each optic 1 Light colour White
LED XQ-E HD FWHM / FWTM 37.0° / 57.0° Efficiency 81 % Peak intensity 2.1 cd/m LEDs/each optic 1 Light colour White
LED XQ-E HD   FWHM / FWTM 37.0° / 57.0°   Efficiency 81 %   Peak intensity 2.1 cd/m   LEDs/each optic 1   Light colour White
LED XQ-E HD   FWHM / FWTM 37.0° / 57.0°   Efficiency 81 %   Peak intensity 2.1 cd/m   LEDs/each optic 1   Light colour White
FWHM / FWTM 37.0° / 57.0°   Efficiency 81 %   Peak intensity 2.1 cd/lm   LEDs/each optic 1   Light colour White
Efficiency 81 %   Peak intensity 2.1 cd/lm   LEDs/each optic 1   Light colour White
Peak intensity 2.1 cd/lm   LEDs/each optic 1   Light colour White
Light colour White
Required components:
30 00 135
LED XQ-E HI
FWHM / FWTM 34.0° / 54.0°
Efficiency 85 %
Peak intensity 2.3 cd/lm
Peak intensity 2.3 cd/lm LEDs/each optic 1
Peak intensity 2.3 cd/lm LEDs/each optic 1 Light colour White
Peak intensity 2.3 cd/lm LEDs/each optic 1
Peak intensity 2.3 cd/lm LEDs/each optic 1 Light colour White
Peak intensity 2.3 cd/lm LEDs/each optic 1 Light colour White
Peak intensity 2.3 cd/lm LEDs/each optic 1 Light colour White
Peak intensity 2.3 cd/m LEDs/each optic 1 Light colour White Required components:
Peak intensity 2.3 cd/m LEDs/each optic 1 Light colour White Required components: LED XT-E
Peak intensity 2.3 cd/m LEDs/each optic 1 Light colour White Required components: CREE LED LED XT-E FWHM / FWTM 35.0° / 57.0°
Peak intensity 2.3 cd/lm LEDs/each optic 1 Light colour White Required components:
Peak intensity 2.3 cd/m LEDs/each optic 1 Light colour White Required components:
Peak intensity 2.3 cd/lm LEDs/each optic 1 Light colour White Required components: CREE CLED LED XT-E FWHM / FWTM 35.0° / 57.0° Efficiency 84 % Peak intensity 2.2 cd/lm LEDs/each optic 1
Peak intensity 2.3 cd/m LEDs/each optic 1 Light colour White Required components:
Peak intensity 2.3 cd/lm LEDs/each optic 1 Light colour White Required components: CREE CLED LED XT-E FWHM / FWTM 35.0° / 57.0° Efficiency 84 % Peak intensity 2.2 cd/lm LEDs/each optic 1
Peak intensity 2.3 cd/m LEDs/each optic 1 Light colour White Required components: LED XT-E FWHM / FWTM 35.0° / 57.0° Efficiency 84 % Peak intensity 2.2 cd/m LEDs/each optic 1 Light colour White Required components:
Peak intensity 2.3 cd/m LEDs/each optic 1 Light colour White Required components: LED XT-E FWHM / FWTM 35.0° / 57.0° Efficiency 84 % Peak intensity 2.2 cd/m LEDs/each optic 1 Light colour White Required components:



🥙 LUMIL	EDS	50'* 50'*
LED	LUXEON 5050 Round LES	
FWHM / FWTM	35.0° / 58.0°	
Efficiency	86 %	
Peak intensity	2.2 cd/lm	
LEDs/each optic	1	
Light colour	White	g. a
Required compone	nts:	1670
		300 300
	FDS	
FWHM / FWTM	31.0° / 53.0° 84 %	
Efficiency Roak intensity	84 % 2.7 cd/lm	
Peak intensity		
LEDs/each optic Light colour	1 White	g. 300 g.
Required component		$K \neq A = A + A$
Required component	nts.	
		300
		304 125 04 125
🖉 LUMIL	EDS	50*
LED	LUXEON CZ	
FWHM / FWTM	34.0° / 53.0°	73
Efficience:	86 %	
Efficiency	00 70	
	2.5 cd/lm	
Efficiency Peak intensity LEDs/each optic		
Peak intensity	2.5 cd/lm	ar 200
Peak intensity LEDs/each optic	2.5 cd/lm 1 White	
Peak intensity LEDs/each optic Light colour	2.5 cd/lm 1 White	
Peak intensity LEDs/each optic Light colour	2.5 cd/lm 1 White	
Peak intensity LEDs/each optic Light colour	2.5 cd/lm 1 White	
Peak intensity LEDs/each optic Light colour Required component	2.5 cd/lm 1 White nts:	200 - 200 -
Peak intensity LEDs/each optic Light colour Required component	2.5 cd/lm 1 White nts:	30 <sup>4</sup> 200 200 15 <sup>4</sup> 0 <sup>4</sup> 15 <sup>4</sup> 30
Peak intensity LEDs/each optic Light colour Required component <b>Composition</b>	2.5 cd/lm 1 White nts: EDS LUXEON M/MX	200 - 200 -
Peak intensity LEDs/each optic Light colour Required component <b>Composition</b> <b>LUMIL</b> LED FWHM / FWTM	2.5 cd/lm 1 White nts: EDS LUXEON M/MX 42.0° / 66.0°	
Peak intensity LEDs/each optic Light colour Required component <b>Composition</b> <b>LUMIL</b> LED FWHM / FWTM Efficiency	2.5 cd/lm 1 White nts: EDS LUXEON M/MX 42.0° / 66.0° 84 %	
Peak intensity LEDs/each optic Light colour Required component <b>Composition</b> Required component <b>Composition</b> <b>LUMIL</b> Efficiency Peak intensity	2.5 cd/lm 1 White Ints: EDS LUXEON M/MX 42.0° / 66.0° 84 % 1.6 cd/lm	
Peak intensity LEDs/each optic Light colour Required component <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composi</b>	2.5 cd/lm 1 White Ints: EDS LUXEON M/MX 42.0° / 66.0° 84 % 1.6 cd/lm 1	
Peak intensity LEDs/each optic Light colour Required component Composition Required component Required component Composition LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	2.5 cd/lm 1 White nts: EDS LUXEON M/MX 42.0° / 66.0° 84 % 1.6 cd/lm 1 White	
Peak intensity LEDs/each optic Light colour Required component <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composition</b> <b>Composi</b>	2.5 cd/lm 1 White nts: EDS LUXEON M/MX 42.0° / 66.0° 84 % 1.6 cd/lm 1 White	
Peak intensity LEDs/each optic Light colour Required component Composition Required component Required component Composition LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	2.5 cd/lm 1 White nts: EDS LUXEON M/MX 42.0° / 66.0° 84 % 1.6 cd/lm 1 White	
Peak intensity LEDs/each optic Light colour Required component Composition Required component Required component Composition LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	2.5 cd/lm 1 White nts: EDS LUXEON M/MX 42.0° / 66.0° 84 % 1.6 cd/lm 1 White	



🤭 LUMIL	.EDS	90 <sup>4</sup>
LED	LUXEON MZ	
FWHM / FWTM	34.0° / 56.0°	8
Efficiency	86 %	
Peak intensity	2.4 cd/lm	
LEDs/each optic	1	
Light colour	White	ar at
Required compone		800
		30" 207 31"
<b>A</b>		157 0, 357
UMIL	.EDS	<u>30'*</u>
LED	LUXEON Rebel ES	NY NY
FWHM / FWTM	37.0° / 58.0°	
Efficiency	85 %	6)* 6;*
Peak intensity	2.1 cd/lm	
LEDs/each optic	1	
Light colour	White	a, a,
Required compone	ents:	
	EDS	20° 20'
LED	LUXEON TX	
FWHM / FWTM	36.0° / 57.0°	8
Efficiency	85 %	
Peak intensity	2.2 cd/lm	
LEDs/each optic	1	
Light colour	White	a.
Required compone	ents:	
		30
	EDC	
		99 <sup>3</sup> 99 <sup>3</sup>
		73.
FWHM / FWTM	38.0° / 60.0°	
Efficiency	84 %	60*
Peak intensity LEDs/each optic	2 cd/lm 1	
LEDs/each optic	1 White	a. at
Required compone		
	ano.	
		30° 2000 30° 12° 0è 25°



COMIL	.EDS		90*
LED	LUXEON V2		
FWHM / FWTM	37.0° / 57.0°		
Efficiency	85 %		
Peak intensity	2.1 cd/lm		60 <sup>12</sup>
LEDs/each optic	1		
Light colour	White		95-
Required compone			
			1699
			30°
		-	15° 0° 15°
UMIL	.EDS		90°
LED	LUXEON Z		
FWHM / FWTM	32.0° / 52.0°		$ \land \land$
Efficiency	85 %		60 <sup>9</sup>
Peak intensity	2.7 cd/lm		
LEDs/each optic	1		
Light colour	White		47 °
Required compone	ents:		
			2430
			346
			5m 5m
	EDS		90 <sup>4</sup>
			99 <sup>4</sup>
LED	LUXEON Z ES		25° ¢ 25°
LED FWHM / FWTM	LUXEON Z ES 35.0° / 54.0°		245 269 202, 94 322
LED FWHM / FWTM Efficiency	LUXEON Z ES 35.0° / 54.0° 86 %		94* 35° 6° 35° 7
LED FWHM / FWTM Efficiency Peak intensity	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm		60 91 <sup>3</sup> 91 <sup>3</sup> 00 00 00 00 00 00
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1		G. 132, 00 00 00 00 00 00 00 00 00 0
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1 White		90 - 169 - 197
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1 White		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1 White		94* 77 60 77 60 60 77 77 77 77 77 77 77 77 77 7
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1 White		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1 White		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1 White ents:		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1 White ents:		34     30       34     30       37     30       36     30
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1 White ents: NCSxE17A 28.0° / 50.0°		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1 White ents: NCSxE17A 28.0° / 50.0° 86 %		34     30       34     30       37     30       36     30
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone MICHIM LED FWHM / FWTM Efficiency Peak intensity	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1 White ents: NCSxE17A 28.0° / 50.0°		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone MICHI/ LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1 White ents: NCSxE17A 28.0° / 50.0° 86 %		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone MICHIM LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1 White onts: NCSxE17A 28.0° / 50.0° 86 % 3.1 cd/lm 1 White		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone MICHIM LED FWHM / FWTM Efficiency Peak intensity	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1 White onts: NCSxE17A 28.0° / 50.0° 86 % 3.1 cd/lm 1 White		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone MICHIM LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1 White onts: NCSxE17A 28.0° / 50.0° 86 % 3.1 cd/lm 1 White		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone MICHIA LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1 White onts: NCSxE17A 28.0° / 50.0° 86 % 3.1 cd/lm 1 White		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone MICHIA Efficiency Peak intensity LEDs/each optic Light colour	LUXEON Z ES 35.0° / 54.0° 86 % 2.4 cd/lm 1 White onts: NCSxE17A 28.0° / 50.0° 86 % 3.1 cd/lm 1 White		



				1~1	
<b>ØNICHI</b>			90*		90*
LED	NVSW219F				
FWHM / FWTM	42.0° / 62.0°		73*	400	
Efficiency	85 %				
Peak intensity	1.7 cd/lm				LA Ž
LEDs/each optic	1				$( \land ) \times ($
Light colour	White		45*		45*
Required compone	nts:			1230	
				$\times$ (	$\lambda \times$
				1630	2
			30*		30*
			4	15% 0%	15°
<b>ØNICHI</b>			90*		90*
LED	NVSW319B				
FWHM / FWTM	43.0° / 63.0°		73-	400	
Efficiency	86 %		60.9		60°
Peak intensity	1.6 cd/lm				
LEDs/each optic	1			× / /	$( \land )$
Light colour	White		45*		45°
Required component	nts:			1200	
			30*	1600	36°
				10	
<b>WNICHIA</b>			90°		90*
			90*		90*
LED	NVSxE21A		90* 75*		90* 75*
LED FWHM / FWTM	NVSxE21A 29.0° / 51.0°		90* 75*		
LED FWHM / FWTM Efficiency	NVSxE21A 29.0° / 51.0° 86 %		904 757 694		
LED FWHM / FWTM Efficiency Peak intensity	NVSxE21A 29.0° / 51.0° 86 % 3 cd/lm		50° 79: 69*		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	NVSxE21A 29.0° / 51.0° 86 % 3 cd/lm 1		90* 29: 69*	60	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	NVSxE21A 29.0° / 51.0° 86 % 3 cd/lm 1 White		94 29. 95		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	NVSxE21A 29.0° / 51.0° 86 % 3 cd/lm 1 White		44 25 20		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	NVSxE21A 29.0° / 51.0° 86 % 3 cd/lm 1 White		6)4 23 24	160	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	NVSxE21A 29.0° / 51.0° 86 % 3 cd/lm 1 White		92 27 94 94	160	67
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	NVSxE21A 29.0° / 51.0° 86 % 3 cd/lm 1 White nts:		90* 29. 69* 69*	160	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	NVSxE21A 29.0° / 51.0° 86 % 3 cd/lm 1 White nts:		94 95 95 97 97 97 97 97 98	100	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	NVSxE21A 29.0° / 51.0° 86 % 3 cd/lm 1 White nts:		90 27 09 97 97 97 97 90	100	197 
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	NVSxE21A 29.0° / 51.0° 86 % 3 cd/lm 1 White nts:		80 27 97 98 98 98 98 98 98 98 98 98 98 98 98 98	100	197 
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	NVSxE21A 29.0° / 51.0° 86 % 3 cd/lm 1 White nts: NVSxx19B/NVSxx19C		25 25 26 26 26 26 26 26 26 26 26 26 26 26 26	100	197 
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component MICHIA LED FWHM / FWTM	NVSxE21A 29.0° / 51.0° 86 % 3 cd/lm 1 White nts: NVSxx19B/NVSxx19C 39.0° / 60.0°		20- 27- 28- 29- 29- 29- 29- 29- 29- 29- 29- 29-	100	197 
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component MICHIM LED FWHM / FWTM Efficiency	NVSxE21A 29.0° / 51.0° 86 % 3 cd/lm 1 White nts: NVSxx19B/NVSxx19C 39.0° / 60.0° 85 %		504 25 64 97 97 97 97 97 97 97 97	100 203 30 203	197 
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component LED FWHM / FWTM Efficiency Peak intensity	NVSxE21A 29.0° / 51.0° 86 % 3 cd/lm 1 White nts: NVSxx19B/NVSxx19C 39.0° / 60.0° 85 % 1.9 cd/lm		92 95 95 95 95 95 95 95 95 95 95 95 95 95	100 203 30 203	15°.
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component Equired component NICHIA LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	NVSxE21A 29.0° / 51.0° 86 % 3 cd/lm 1 White nts: NVSxx19B/NVSxx19C 39.0° / 60.0° 85 % 1.9 cd/lm 1 White		92 92 93 94 94 94 94 94 94 94 94 94 94 94 94 94	160 200 30 30 40 40 40 40 40	15°.
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 29.0° / 51.0° 86 % 3 cd/lm 1 White nts: NVSxx19B/NVSxx19C 39.0° / 60.0° 85 % 1.9 cd/lm 1 White		91 92 92 92 92 92 92 92 92 92 92 92 92 92		15°.
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 29.0° / 51.0° 86 % 3 cd/lm 1 White nts: NVSxx19B/NVSxx19C 39.0° / 60.0° 85 % 1.9 cd/lm 1 White		92 92 92 94 94 94 94 94 94 94 94 94 94 94 94 94	160 200 30 30 40 40 40 40 40	197 
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component MICHIO Efficiency Peak intensity LEDs/each optic Light colour	NVSxE21A 29.0° / 51.0° 86 % 3 cd/lm 1 White nts: NVSxx19B/NVSxx19C 39.0° / 60.0° 85 % 1.9 cd/lm 1 White				15°.



OSRAM Opto Semiconductors			90° 90°
LED	OSCONIQ P 3737 (2W version)		
FWHM / FWTM	35.0° / 56.0°		
Efficiency	86 %		60° 000 60°.
Peak intensity	2.3 cd/lm		$\langle / / / \rangle > 7$
LEDs/each optic	1		$\times$ / / $\times$
Light colour	White		er
Required compone	nts:		1530
			$\times$ / $\setminus$ / $\times$
			30° 2400 30°
OSRAM			15° 0 <sup>6</sup> 15°
Opto Semiconductors			90° 90°
LED	OSCONIQ P 3737 (3W version)		25.
FWHM / FWTM	38.0° / 59.0°		
Efficiency	86 %		60* 60*
Peak intensity	2 cd/lm		
LEDs/each optic	1		
Light colour	White		
Required compone	nts:		
		2	30° 15° 0° 15°
1			
OSRAM			50° 50°
OSRAM Opto Semiconductors			99*
LED	OSCONIQ P 7070		99' 90' 79' 90' 90' 90'
LED FWHM / FWTM	39.0° / 62.0°		99 <sup>4</sup> 99 <sup>5</sup> 73 <sup>4</sup> 400
LED FWHM / FWTM Efficiency	39.0° / 62.0° 85 %		69 60 72° 79° 72°
LED FWHM / FWTM Efficiency Peak intensity	39.0° / 62.0° 85 % 1.8 cd/lm		60 <sup>4</sup> 000 20 <sup>2</sup>
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	39.0° / 62.0° 85 %		g,
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	39.0° / 62.0° 85 % 1.8 cd/lm 1 White		99 <sup>4</sup> 99 <sup>4</sup> 9
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	39.0° / 62.0° 85 % 1.8 cd/lm 1 White		200 000 200 000 200 2
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	39.0° / 62.0° 85 % 1.8 cd/lm 1 White		57 - 100 - 1
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	39.0° / 62.0° 85 % 1.8 cd/lm 1 White		20 40 50 50 50 50 50 50 50 50 50 5
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	39.0° / 62.0° 85 % 1.8 cd/lm 1 White		300
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	39.0° / 62.0° 85 % 1.8 cd/lm 1 White		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	39.0° / 62.0° 85 % 1.8 cd/lm 1 White		90°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	39.0° / 62.0° 85 % 1.8 cd/lm 1 White nts:		90°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	39.0° / 62.0° 85 % 1.8 cd/lm 1 White nts: OSLON Black Flat		90°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	39.0° / 62.0° 85 % 1.8 cd/lm 1 White nts: OSLON Black Flat 31.0° / 51.0°		26 26 26 26 26 20 20 20 20 20 20 20 20 20 20 20 20 20
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	39.0° / 62.0° 85 % 1.8 cd/lm 1 White nts: OSLON Black Flat 31.0° / 51.0° 85 %		300 300 300 300 300 300 300 300
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone OSRAM Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity	39.0° / 62.0° 85 % 1.8 cd/lm 1 White nts: OSLON Black Flat 31.0° / 51.0° 85 % 2.8 cd/lm		26 26 26 26 26 20 20 20 20 20 20 20 20 20 20 20 20 20
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone OSERAM Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	39.0° / 62.0° 85 % 1.8 cd/lm 1 White nts: OSLON Black Flat 31.0° / 51.0° 85 % 2.8 cd/lm 1 White		300 300 300 300 300 300 300 300
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone OSRAM Optic Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	39.0° / 62.0° 85 % 1.8 cd/lm 1 White nts: OSLON Black Flat 31.0° / 51.0° 85 % 2.8 cd/lm 1 White		60
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone OSRAM Optic Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	39.0° / 62.0° 85 % 1.8 cd/lm 1 White nts: OSLON Black Flat 31.0° / 51.0° 85 % 2.8 cd/lm 1 White		40°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone COSRAM Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	39.0° / 62.0° 85 % 1.8 cd/lm 1 White nts: OSLON Black Flat 31.0° / 51.0° 85 % 2.8 cd/lm 1 White		500 300 300 300 300 300 300 300 300 300



OSRAM Opto Semiconductors		90* 90*
LED	OSLON Square CSSRM2/CSSRM3	
FWHM / FWTM	39.0° / 59.0°	20
Efficiency	85 %	60 <sup>4</sup>
Peak intensity	2 cd/lm	
LEDs/each optic	1	
Light colour	White	ay ax
Required compone	ents:	
		1530
		30* 2000 30*
OSRAM Opto Semiconductors		90° 90° 90°
Opto Semiconductors	OSLON Square EC	
FWHM / FWTM	39.0° / 59.0°	25*
Efficiency	84 %	
Peak intensity	1.9 cd/lm	60°
LEDs/each optic	1	
Light colour	White	gr ar
Required compone		
		30* 30*
OSRAM		15 <sup>3</sup> 0 <sup>4</sup> 15 <sup>3</sup>
Opto Semiconductors		90* 90*
LED	OSLON Square PC	75*
FWHM / FWTM	39.0° / 60.0°	400
Efficiency	85 %	60.4
Peak intensity	1.9 cd/lm	
LEDs/each optic	1	
Light colour Required compone	White	
Required compone	ans.	
		 30° 2000 30°
OSRAM Opto Semiconductors		90* 90*
LED	OSLON SSL 150	
FWHM / FWTM	34.0° / 54.0°	
Efficiency	85 %	60° 60°
Peak intensity	2.5 cd/lm	
LEDs/each optic	1	
Light colour	White	gr 67*
Required compone	ents:	
		2100
		300 350
		15° 0° 15°



OSRAM		
Opto Semiconductors		90° 90°
	OSLON SSL 80	75
FWHM / FWTM	38.0° / 58.0°	[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ]
	85 %	
	2 cd/lm	<b>200</b>
LEDs/each optic	1	
e e	White	g' a'
Required component	ts:	
		30° m at m
OSRAM Opto Semiconductors		
	OSTAR Stage (S2WN)	
FWHM / FWTM	38.0° / 59.0°	75
Efficiency	85 %	
	2.1 cd/lm	69** 60°
LEDs/each optic	1	
	RGBW	gr and
Required componen		
rtequired component		
		30 <sup>6</sup> 15 <sup>5</sup> 0 <sup>6</sup> 15 <sup>5</sup>
SAMSU	ING	50" 50
	LH181A	
FWHM / FWTM		75
FWHM / FWTM Efficiency	28.0° / 51.0°	
Efficiency	28.0° / 51.0° 82 %	77
Efficiency Peak intensity	28.0° / 51.0° 82 % 2.8 cd/lm	
Efficiency Peak intensity LEDs/each optic	28.0° / 51.0° 82 % 2.8 cd/lm 1	
Efficiency Peak intensity LEDs/each optic Light colour	28.0° / 51.0° 82 % 2.8 cd/lm 1 White	
Efficiency Peak intensity LEDs/each optic	28.0° / 51.0° 82 % 2.8 cd/lm 1 White	
Efficiency Peak intensity LEDs/each optic Light colour	28.0° / 51.0° 82 % 2.8 cd/lm 1 White	
Efficiency Peak intensity LEDs/each optic Light colour	28.0° / 51.0° 82 % 2.8 cd/lm 1 White	
Efficiency Peak intensity LEDs/each optic Light colour	28.0° / 51.0° 82 % 2.8 cd/lm 1 White	
Efficiency Peak intensity LEDs/each optic Light colour Required componen	28.0° / 51.0° 82 % 2.8 cd/lm 1 White ts:	
Efficiency Peak intensity LEDs/each optic Light colour Required componen	28.0° / 51.0° 82 % 2.8 cd/lm 1 White ts:	
Efficiency Peak intensity LEDs/each optic Light colour Required componen	28.0° / 51.0° 82 % 2.8 cd/lm 1 White ts:	
Efficiency Peak intensity LEDs/each optic Light colour Required componen SAMSU LED FWHM / FWTM	28.0° / 51.0° 82 % 2.8 cd/lm 1 White ts: <b>ING</b> LH181B 30.0° / 51.0°	
Efficiency Peak intensity LEDs/each optic Light colour Required componen SANSU LED FWHM / FWTM Efficiency	28.0° / 51.0° 82 % 2.8 cd/lm 1 White ts:	
Efficiency Peak intensity LEDs/each optic Light colour Required componen SANSU LED FWHM / FWTM Efficiency Peak intensity	28.0° / 51.0° 82 % 2.8 cd/lm 1 White ts:	
Efficiency Peak intensity LEDs/each optic Light colour Required componen SANSU LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	28.0° / 51.0° 82 % 2.8 cd/lm 1 White ts:	
Efficiency Peak intensity LEDs/each optic Light colour Required componen SAMSU LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	28.0° / 51.0° 82 % 2.8 cd/lm 1 White ts:	
Efficiency Peak intensity LEDs/each optic Light colour Required componen SANSU LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	28.0° / 51.0° 82 % 2.8 cd/lm 1 White ts:	
Efficiency Peak intensity LEDs/each optic Light colour Required componen SAMSU LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	28.0° / 51.0° 82 % 2.8 cd/lm 1 White ts:	
Efficiency Peak intensity LEDs/each optic Light colour Required componen SAMSU LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	28.0° / 51.0° 82 % 2.8 cd/lm 1 White ts:	



SAMSL	ING	50°
LED	LH231B	
FWHM / FWTM	31.0° / 53.0°	
Efficiency	86 %	
Peak intensity	2.7 cd/lm	60°
LEDs/each optic	1	
Light colour	White	ar 100 at
Required componer		
		. 300
		30*
		12 <sup>5</sup> 0 <sup>6</sup> 12 <sup>5</sup>
SAMSL	JNG	50° 50°
LED	LH351B	
FWHM / FWTM	41.0° / 61.0°	75
Efficiency	85 %	
Peak intensity	1.8 cd/lm	
LEDs/each optic	1	
Light colour	White	8 <sup>4</sup> 6 <sup>4</sup>
Required componer	nts:	
		ASIA
		30 32
сллсі		222 04 222
SΛMSL		
LED	LH351C	20 <sup>1</sup> 0 <sup>2</sup> 20 <sup>2</sup> 20 <sup>2</sup>
LED FWHM / FWTM	LH351C 43.0° / 62.0°	22 <sup>5</sup> 6 <sup>2</sup> 25 <sup>5</sup> 3
LED FWHM / FWTM Efficiency	LH351C 43.0° / 62.0° 86 %	92 <sup>4</sup> 92 <sup>4</sup>
LED FWHM / FWTM Efficiency Peak intensity	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1 White	60° 60° 32° 32° 30° 30°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1 White	60° 60° 32° 32° 30° 30°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1 White	60° 60° 32° 32° 30° 30°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1 White	72 60 60 60
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componen	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1 White hts:	72 60 60 60
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1 White hts:	27
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componen	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1 White hts:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component SAMSL LED	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1 White hts:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1 White hts:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component SAMSL LED FWHM / FWTM	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1 White hts: LH351D 44.0° / 65.0°	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component SAMSL LED FWHM / FWTM Efficiency	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1 White hts:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component SAMSL LED FWHM / FWTM Efficiency Peak intensity	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1 White hts: LH351D 44.0° / 65.0° 85 % 1.6 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component Efficiency Peak intensity LEDs/each optic	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1 White hts: UNC LH351D 44.0° / 65.0° 85 % 1.6 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component SAMSL LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1 White hts: UNC LH351D 44.0° / 65.0° 85 % 1.6 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component SAMSL LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1 White hts: UNC LH351D 44.0° / 65.0° 85 % 1.6 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component SAMSL LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LH351C 43.0° / 62.0° 86 % 1.7 cd/lm 1 White hts: UNC LH351D 44.0° / 65.0° 85 % 1.6 cd/lm 1 White	



<b>S</b> ΛΜSI	ING		90° 90°
LED	LH508A		
FWHM / FWTM	36.0° / 58.0°		75.
Efficiency	86 %		
Peak intensity	2.2 cd/lm		60° - 800 - 60°
LEDs/each optic	1		
Light colour	White		gr at
Required compone			
i toqui ou compone			1600
			30" 3%
รกทรเ			
			30° 30°
LED	LM561B		3
FWHM / FWTM	36.0° / 57.0°		
Efficiency	86 %		60° 60°
Peak intensity	2.3 cd/lm		
LEDs/each optic	1 White		
Light colour			
Required compone	ms.		
			30° 2450 30° 30°
SEOUL SEMICONDUCTOR			90* 90*
LED	WICOP 5050	100000	
	WICOP 5050 42.0° / 67.0°		77
FWHM / FWTM			60
Efficiency Peak intensity	42.0° / 67.0°		57 69 60 75 60 75 60 75 60
FWHM / FWTM Efficiency Peak intensity LEDs/each optic	42.0° / 67.0° 83 % 1.6 cd/lm 1		73° 69° 69° 60° 60°
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	42.0° / 67.0° 83 % 1.6 cd/lm 1 White		gr 60 - 67
FWHM / FWTM Efficiency Peak intensity LEDs/each optic	42.0° / 67.0° 83 % 1.6 cd/lm 1 White		5°
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	42.0° / 67.0° 83 % 1.6 cd/lm 1 White		77 64 67 67 1200 10
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	42.0° / 67.0° 83 % 1.6 cd/lm 1 White		77 64 64 55 55 55 55 55 55 55 55 55 55 55 55 55
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	42.0° / 67.0° 83 % 1.6 cd/lm 1 White		55 57 50 50 50 50 50 50 50 50 50 50
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	42.0° / 67.0° 83 % 1.6 cd/lm 1 White		200 - 100 -
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	42.0° / 67.0° 83 % 1.6 cd/lm 1 White nts:		20* 13 <sup>-</sup> 0 <sup>+</sup> 35 <sup>-</sup> 2 <sup>+</sup>
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	42.0° / 67.0° 83 % 1.6 cd/lm 1 White nts:		20* 13 <sup>-</sup> 0 <sup>+</sup> 35 <sup>-</sup> 2 <sup>+</sup>
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	42.0° / 67.0° 83 % 1.6 cd/lm 1 White nts: Z5M3 36.0° / 58.0°		20* 13 <sup>-</sup> 0 <sup>+</sup> 35 <sup>-</sup> 2 <sup>+</sup>
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone seous semiconductor LED FWHM / FWTM Efficiency	42.0° / 67.0° 83 % 1.6 cd/lm 1 White nts: Z5M3 36.0° / 58.0° 85 %		20* 13 <sup>-</sup> 0 <sup>+</sup> 35 <sup>-</sup> 2 <sup>+</sup>
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	42.0° / 67.0° 83 % 1.6 cd/lm 1 White nts: Z5M3 36.0° / 58.0° 85 % 2.2 cd/lm		20* 13 <sup>-</sup> 0 <sup>+</sup> 35 <sup>-</sup> 2 <sup>+</sup>
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone stoul semconductor LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	42.0° / 67.0° 83 % 1.6 cd/lm 1 White nts: Z5M3 36.0° / 58.0° 85 % 2.2 cd/lm 1		20* 13 <sup>-</sup> 0 <sup>+</sup> 35 <sup>-</sup> 2 <sup>+</sup>
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone stous semiconductor LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	42.0° / 67.0° 83 % 1.6 cd/lm 1 White nts:		
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone seous semiconoucror LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	42.0° / 67.0° 83 % 1.6 cd/lm 1 White nts:		
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone seoul semiconductor LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	42.0° / 67.0° 83 % 1.6 cd/lm 1 White nts:		
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone seour semiconductor LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	42.0° / 67.0° 83 % 1.6 cd/lm 1 White nts:		



LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	J Series 5050 Round LES 40.0° / 56.0° 94 % 2.3 cd/lm 1 White	54 54 54 54 55 55 55 55 55 55
CREE LED LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	XHP50.3 HD 44.0° / 62.0° 84 % 1.6 cd/lm 1 White	50 50 50 50 50 50 50 50 50 50
CREE LED LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	XHP50.3 HI 40.0° / 58.0° 95 % 2.1 cd/lm 1 White	99 <sup>4</sup> 97 65 <sup>4</sup> 90 90 90 90 90 90 90 90 90 90 90 90 90
CREE LED LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	XHP70.3 HD 46.0° / 66.0° 83 % 1.5 cd/lm 1 White	



CREESIES     LED   XM-L     FVMM / FVTM   45.07 / 60.0°     Efficiency   93.%     Peak intensity   13.0 d/m     LEDatach opic   1     Light colour   While     Required components:			
FWHA /FWTM   45.0° / 60.0°     Efficiency   93 %     Peak intensity   1.9 cd/m     LEDs/sach optic   1     Light colour   White     Required components:   ####################################		XM-I	90° 50°
Efficiency 93 % Peak intensity 1.9 cd/m LEDs/each optic 1 Light colour White Required components: LED XM-L2 FWHM /FWTM 43.0° / 55.0° Peak intensity 2 cd/m LEDs/each optic 1 Light colour White Required components: CUMILEDS LED UXEON 7070 FWMM /FWTM 38.0° / 60.0° Efficiency 94 % Peak intensity 2.1 cd/m LEDs/each optic 1 Light colour White Required components:			75* 25*
Peak intensity 1.9 cd/im LEDA/ach optic 1 LEDA/ach optic 1 LEDA/ach optic 1 LED X XM-L2 FVMM / FVTM 43.0° / 58.0° Efficiency 93.% Peak intensity 2.cd/m LEDA/ach optic 1 Light colour White Required components: EVENUELEDS LED LUXEON 7070 FVMM / FVTM 38.0° / 60.0° Efficiency 44.% Peak intensity 2.1 cd/m LEDa/ach optic 1 Light colour White Required components: EFFICIENCY 24.% Peak intensity 2.1 cd/m LEDa/ach optic 1 Light colour White Required components: EFFICIENCY 24.% Peak intensity 2.7 cd/m LEDA/ach optic 1 Light colour White Required components: EFFICIENCY 24.% Peak intensity 2.7 cd/m LEDA/ach optic 1 Light colour White Required components: EFFICIENCY 24.% Peak intensity 2.7 cd/m LEDA/ach optic 1 Light colour White			
LED&Roach optic 1 Light colour White Required components:			60 <sup>2</sup> 60 <sup>2</sup>
Light colour White Required components: LED XM-L2 FVWM / FVVTM 43.0° / 58.0° Efficiency 39.3% Peak intensity 2 colim LEDs/each optic 1 Light colour White Required components: Peak intensity 2.1 col/m LEDs/each optic 1 Light colour White Required components: Efficiency 94.% Peak intensity 2.1 col/m LEDs/each optic 1 Light colour White Required components: Efficiency 39.% Peak intensity 2.7 col/m LEDs/each optic 1 Light colour White Required components: Efficiency 39.% Peak intensity 2.7 col/m LEDs/each optic 1 Light colour White			
Required components:   Image: Components of the second s			gy <sup>1</sup> gy <sup>2</sup>
CREE   LED     LED   XM-L2     FWHM / FWTM   43.0° / 58.0°     Efficiency   93 %     Peak intensity   2 cd/im     LEDs/each optic   1     Light colour   White     Required components:   Image: Color of the second seco			1200 1000
LED XM-L2 FWH// FWTM 43.0° / 58.0° Efficiency 93 % Peak intensity 2 cd/m LEDs/each optic 1 Light colour White Required components: Efficiency 94 % Peak intensity 2.1 cd/m LEDs/each optic 1 Light colour White Required components: Efficiency 94 % Peak intensity 2.1 cd/m LEDs/each optic 1 Light colour White Required components: Efficiency 93 % Peak intensity 2.7 cd/m LED SST-20 FWHM/FWTM 36.0° / 54.0° Efficiency 93 % Peak intensity 2.7 cd/m LED VECK PAC			15" 260 15"
FWHM / FWTM   43.0° / 58.0°     Efficiency   93 %     Peak intensity   2 cd/m     LEDs/each optic   1     Light colour   White     Required components:   ************************************		XM-L2	
Efficiency 93 % Peak intensity 2 cd/m LED reaction optic 1 Light colour White Required components:			75
Peak intensity 2 cd/m LEDs/each optic 1 Light colour White Required components:			
LEDs/each optic 1 Light colour White Required components:			60 <sup>5</sup>
Light colour White Required components:			
Required components:   Image: components of the second s		White	ar ar
Image: Constraint of the second se			
LED LUXEON 7070 FWHM / FWTM 38.0° / 60.0° Efficiency 94 % Peak intensity 2.1 cd/lm LEDs/each optic 1 Light colour White Required components:			1630
LED LUXEON 7070 FWHM / FWTM 38.0° / 60.0° Efficiency 94 % Peak intensity 2.1 cd/lm LEDs/each optic 1 Light colour White Required components:			
LED LUXEON 7070 FWHM / FWTM 38.0° / 60.0° Efficiency 94 % Peak intensity 2.1 cd/lm LEDs/each optic 1 Light colour White Required components:			30° 30°
LED LUXEON 7070 FWHM / FWTM 38.0° / 60.0° Efficiency 94 % Peak intensity 2.1 cd/lm LEDs/each optic 1 Light colour White Required components:			15° 0° 15°
FWHM / FWTM   38.0° / 60.0°     Efficiency   94 %     Peak intensity   2.1 cd/lm     LEDs/each optic   1     Light colour   White     Required components:   Image: Component State	MUMILED	IS	50°
Efficiency 94 % Peak intensity 2.1 cd/lm LEDs/each optic 1 Light colour White Required components: LED SST-20 FWHM / FWTM 36.0° / 54.0° Efficiency 93 % Peak intensity 2.7 cd/lm LEDs/each optic 1 Light colour White	LED	LUXEON 7070	
Peak intensity   2.1 cd/lm     LEDs/each optic   1     Light colour   White     Required components:   Image: Component State S	FWHM / FWTM	38.0° / 60.0°	
Peak intensity   2.1 cd/lm     LEDs/each optic   1     Light colour   White     Required components:   Image: state	Efficiency	94 %	60° 60°
Light colour White Required components:	Peak intensity	2.1 cd/lm	
Required components:	LEDs/each optic	1	
LED SST-20   FWHM / FWTM 36.0° / 54.0°   Efficiency 93 %   Peak intensity 2.7 cd/lm   LED/each optic 1   Light colour White		White	a, a,
LEDSST-20FWHM / FWTM36.0° / 54.0°Efficiency93 %Peak intensity2.7 cd/lmLEDs/each optic1Light colourWhite	Required components:		9 <sup>10</sup> 10 <sup>2</sup> 10 <sup>2</sup>
FWHM / FWTM 36.0° / 54.0°   Efficiency 93 %   Peak intensity 2.7 cd/lm   LEDs/each optic 1   Light colour White		S	50°
Efficiency 93 %   Peak intensity 2.7 cd/lm   LEDs/each optic 1   Light colour White	LED	SST-20	
Peak intensity 2.7 cd/lm   LEDs/each optic 1   Light colour White			
LEDs/each optic 1 Light colour White			60 <sup>5</sup> 60 <sup>6</sup>
Light colour White		2.7 cd/lm	$[ \times / ] \rightarrow \times 1$
Light colour white			
Required components:		White	45° 450 45°
34 20 4 27	Required components:		200



	JS	90* 90*
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	SST-70X-WCS 40.0° / 58.0° 88 % 2.1 cd/lm 1 White	20 20 20 20 20 20 20 20 20 20
ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	COB S-Type (LES 7) 42.0° / 64.0° 93 % 2 cd/lm 1 White	20° 20° 20° 20°
ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	COB T-Type 40.0° / 62.0° 93 % 2.1 cd/lm 1 White	91 <sup>4</sup> 92 <sup>4</sup> 9
ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	NCSxE17A 34.0° / 54.0° 90 % 2.6 cd/lm 4 White	200 200 200 200 200 200 200 200



MICHIΛ		90° 90°
LED	NFMW48xA	
FWHM / FWTM	36.0° / 55.0°	75*
Efficiency	93 %	
Peak intensity	2.6 cd/lm	60* 60*
LEDs/each optic	1	
Light colour	White	g* m km
Required components:		
		30° 
MICHIΛ		90* 90*
LED	NV4WB35AM	
FWHM / FWTM	36.0° / 54.0°	
Efficiency	94 %	60 <sup>4</sup> 60 <sup>4</sup>
Peak intensity	2.7 cd/lm	$\Gamma \times / I = \Lambda \setminus \times \Gamma$
LEDs/each optic	1	
Light colour	White	95°
Required components:		
		2430
		ו × ×•
Maure		
MICHIΛ		
		90° 90°
LED	NV4x144A	75° 90°
LED FWHM / FWTM	48.0° / 66.0°	77
LED FWHM / FWTM Efficiency	48.0° / 66.0° 90 %	
LED FWHM / FWTM Efficiency Peak intensity	48.0° / 66.0° 90 % 1.5 cd/lm	77
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	48.0° / 66.0° 90 % 1.5 cd/lm 1	77
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	48.0° / 66.0° 90 % 1.5 cd/lm	77
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	48.0° / 66.0° 90 % 1.5 cd/lm 1	77
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	48.0° / 66.0° 90 % 1.5 cd/lm 1	77
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	48.0° / 66.0° 90 % 1.5 cd/lm 1	77
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	48.0° / 66.0° 90 % 1.5 cd/lm 1	77
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	48.0° / 66.0° 90 % 1.5 cd/lm 1	75 64 67 67 1278 80 1278
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	48.0° / 66.0° 90 % 1.5 cd/lm 1 White	75 64 64 150 150 150 150 150 150 150 150
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	48.0° / 66.0° 90 % 1.5 cd/lm 1 White	75 64 64 150 150 150 150 150 150 150 150
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: COSRAM Opto Semiconductors LED FWHM / FWTM	48.0° / 66.0° 90 % 1.5 cd/lm 1 White Duris S8 39.0° / 58.0°	30     100     00       60     00     00       60     00     00       100     00     00
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: SOSRAM Opto Semiconductors LED FWHM / FWTM Efficiency	48.0° / 66.0° 90 % 1.5 cd/lm 1 White Duris S8 39.0° / 58.0° 94 %	30     100     00       60     00     00       60     00     00       100     00     00
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: COSRAM Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity	48.0° / 66.0° 90 % 1.5 cd/lm 1 White Duris S8 39.0° / 58.0° 94 % 2.3 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	48.0° / 66.0° 90 % 1.5 cd/lm 1 White Duris S8 39.0° / 58.0° 94 % 2.3 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	48.0° / 66.0° 90 % 1.5 cd/lm 1 White Duris S8 39.0° / 58.0° 94 % 2.3 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: COSRAM Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	48.0° / 66.0° 90 % 1.5 cd/lm 1 White Duris S8 39.0° / 58.0° 94 % 2.3 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	48.0° / 66.0° 90 % 1.5 cd/lm 1 White Duris S8 39.0° / 58.0° 94 % 2.3 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	48.0° / 66.0° 90 % 1.5 cd/lm 1 White Duris S8 39.0° / 58.0° 94 % 2.3 cd/lm 1	



#### **GENERAL INFORMATION:**

NOTE: The typical beam angle will be changed by different color, chip size and chip position tolerance. The typical total beam angle is the full angle measured where the luminous intensity is half of the peak value.

Due to use of high power COB's with this product, special attention to proper thermal design is highly recommended. LEDiL has no liability for direct, indirect or consecutive damages arising from the LEDiL products being used outside of the recommended temperature range.

#### **MATERIALS:**

As part of our continuous research and improvement processes, and to ensure the best possible quality and availability of our products, LEDiL reserves the right to change material grades without notice.

#### PRODUCT DATA USER AGREEMENT AND DISCLAIMER:

The measured data in the provided downloadable LEDiL Product Datasheets and Mechanical 2D-Drawings is rounded and provided as reference for planning. LEDiL Oy's optical specifications have been verified by conducting performance testing of the products in accordance with the company's quality system. The reported data are averaged results of multiple measurements with typical variation. LEDiL Oy reserves the right to without prior notification make changes and improvements to its products.

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