

PRODUCT DATASHEET CP16108_CARMEN-50-M-C

CARMEN-50-M-C

~35° medium beam. Assembly with holder C compatible with LEDiL HEKLA.

SPECIFICATION:

Dimensions	Ø 50.0 mm
Height	25.5 mm
Fastening	socket
ROHS compliant	yes 🛈



MATERIALS:

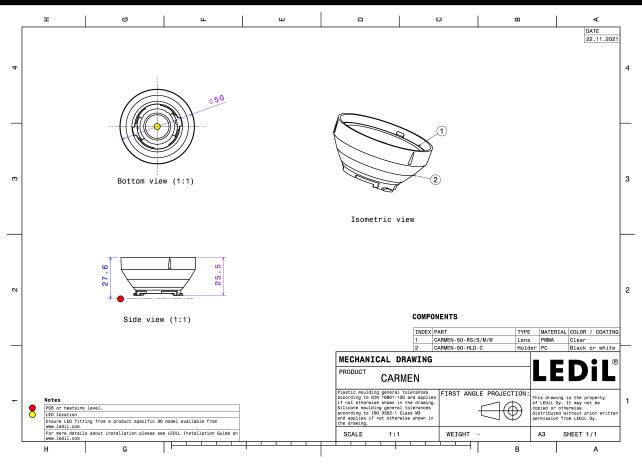
Component	Туре	Material	Colour	Finish
CARMEN-50-M	Single lens	PMMA	clear	
CARMEN-50-HLD-C	Holder	PC	black	

ORDERING INFORMATION:

Component		Qty in box	MOQ	MPQ	Box weight (kg)
CP16108_CARMEN-50-M-C	Single lens	308	112	28	5.9
» Box size: 476 x 273 x 292 mm					



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



bridgelux. LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15253_HEKLA		90° 90° 20° 000 00° 20° 00° 20° 00° 20° 00° 20° 00° 20° 00°
bridgelux LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15255_HEKLA		30, 12, 906 12, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
bridgelux. LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15859_HEKLA		90 ³ 90 ⁷ 95 ⁶ 95
bridgeluX. LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone C16142_HEKLA		200 200 200 200 000 000 000 000



bridgelux.		
LED	Vesta DTW 13mm (21W)	32 342 345
FWHM / FWTM	55.0° / 79.0°	
Efficiency	59 %	ar ar
Peak intensity	0.7 cd/lm	
LEDs/each optic	1	
Light colour	Tunable White	gr of
Required compone		
C16142_HEKLA		
Bender Wirth: 49	91 Typ L8	
bridgelux.		30, 20, 30, 20, 20, 20, 20, 20, 20, 20, 20, 20, 2
LED	Vesta TW 6mm DP	
FWHM / FWTM	32.0° / 55.0°	75 00 75
Efficiency	67 %	
Peak intensity	2 cd/lm	60° (00)
LEDs/each optic	1	
Light colour	White	9 120
Required compone		
C16142_HEKLA		1200
Bender Wirth: 50		
Dender Wirth. St		
bridgelux.		90 ⁴ 90 ⁴
LED	Vesta TW 9mm (9W) DP	
FWHM / FWTM	41.0° / 65.0°	
	62 %	
Efficiency		
Efficiency Peak intensity	1.2 cd/lm	
-	1.2 cd/lm 1	
Peak intensity		gr
Peak intensity LEDs/each optic	1 White	
Peak intensity LEDs/each optic Light colour	1 White Ints:	
Peak intensity LEDs/each optic Light colour Required compone	1 White Ints: N-SOCKET-K	
Peak intensity LEDs/each optic Light colour Required compone C16142_HEKLA	1 White Ints: N-SOCKET-K	
Peak intensity LEDs/each optic Light colour Required compone C16142_HEKLA	1 White Ints: I-SOCKET-K 39 Typ L8	
Peak intensity LEDs/each optic Light colour Required compone C16142_HEKLA Bender Wirth: 48	1 White Ints: I-SOCKET-K 39 Typ L8	
Peak intensity LEDs/each optic Light colour Required compone C16142_HEKLA Bender Wirth: 48	1 White Ints: A-SOCKET-K 39 Typ L8 N CLL02x/CLU02x (LES10) 46.0° / 72.0°	
Peak intensity LEDs/each optic Light colour Required compone C16142_HEKLA Bender Wirth: 48 CITTIZE LED FWHM / FWTM Efficiency	1 White Ints: A-SOCKET-K 39 Typ L8 N CLL02x/CLU02x (LES10)	
Peak intensity LEDs/each optic Light colour Required compone C16142_HEKLA Bender Wirth: 48 CITTIZE LED FWHM / FWTM Efficiency Peak intensity	1 White Ints: A-SOCKET-K 39 Typ L8 N CLL02x/CLU02x (LES10) 46.0° / 72.0°	
Peak intensity LEDs/each optic Light colour Required compone C16142_HEKLA Bender Wirth: 48 CCITTIZE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	1 White Ints: I-SOCKET-K 39 Typ L8 N CLL02x/CLU02x (LES10) 46.0° / 72.0° 76 % 1.2 cd/lm 1	
Peak intensity LEDs/each optic Light colour Required compone C16142_HEKLA Bender Wirth: 48 CCITTIZE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	1 White Ints: INSOCKET-K 39 Typ L8 N CLL02x/CLU02x (LES10) 46.0° / 72.0° 76 % 1.2 cd/lm 1 White	
Peak intensity LEDs/each optic Light colour Required compone C16142_HEKLA Bender Wirth: 48 CCITTIZE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	1 White Ints: INSOCKET-K 39 Typ L8 N CLL02x/CLU02x (LES10) 46.0° / 72.0° 76 % 1.2 cd/lm 1 White	
Peak intensity LEDs/each optic Light colour Required compone C16142_HEKLA Bender Wirth: 48 CITTIZE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	1 White Ints: -SOCKET-K 39 Typ L8 CLL02x/CLU02x (LES10) 46.0° / 72.0° 76 % 1.2 cd/Im 1 White Ints:	



CITIZE	Ν	90 ⁴
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15255_HEKLA	CLU700/701/702/703 36.0° / 59.0° 80 % 1.9 cd/lm 1 White ents:	
CITTIZE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15859_HEKLA	CLU710/711 41.0° / 65.0° 73 % 1.4 cd/lm 1 White ents:	
CITIZE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15255_HEKLA	CLU7A2/7A3 35.0° / 56.0° 84 % 2.2 cd/lm 1 White ents:	
CITIZE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15255_HEKLA	CLU7B2 32.0° / 53.0° 82 % 2.4 cd/lm 1 White ents:	



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			<u>90°</u>
LED	CMA1516		
FWHM / FWTM	46.0° / 71.0°		
Efficiency	79 %		600
Peak intensity	1.3 cd/lm		
LEDs/each optic	1		
Light colour	White		954 000
Required compone	ents:		
F15256_HEKLA	-SOCKET-D		
			1230
			30.
	0.177		
LED	CMT14xx		75
FWHM / FWTM	47.0° / 72.0°		
Efficiency	51 %		60*
Peak intensity	0.8 cd/lm	And State of Concession, Name	
LEDs/each optic	1		
Light colour	White		
Required compone			600
F15255_HEKLA	-SOCKET-C		
			30° 15° 0° 15°
			80*
LEDS	CXA/B 13xx		99*
LED	CXA/B 13xx 38.0° / 62.0°		99 ⁴ 25
LED FWHM / FWTM	38.0° / 62.0°		90 ⁵
LED LED FWHM / FWTM Efficiency	38.0° / 62.0° 83 %		90 ⁵ 27 90 90
LEDs LED FWHM / FWTM Efficiency Peak intensity	38.0° / 62.0° 83 % 1.8 cd/lm		90° 73° 60° 60°
LEDS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	38.0° / 62.0° 83 % 1.8 cd/lm 1		91* 21* 00* 00*
LEDs LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	38.0° / 62.0° 83 % 1.8 cd/lm 1 White		93° 73° 60° 60° 60° 60° 60° 60° 60°
LEDs LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	38.0° / 62.0° 83 % 1.8 cd/lm 1 White ints:		e ² , 250
LEDs LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	38.0° / 62.0° 83 % 1.8 cd/lm 1 White ints:		95° 97° 60° 60° 60° 60° 60° 60° 60° 60° 60° 60
LEDS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	38.0° / 62.0° 83 % 1.8 cd/lm 1 White ints:		95 77 97 97 120 130
LEDs LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15956_HEKLA	38.0° / 62.0° 83 % 1.8 cd/lm 1 White ints:		95* 95* 150 150 150 150 150 150 150 150
LEDs LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	38.0° / 62.0° 83 % 1.8 cd/lm 1 White ints:		94*
LEDS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15956_HEKLA	38.0° / 62.0° 83 % 1.8 cd/lm 1 White ints:		107 2000 107
LEDs LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15956_HEKLA	38.0° / 62.0° 83 % 1.8 cd/lm 1 White Ints: -SOCKET-J		107 2000 107
LEDS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15956_HEKLA	38.0° / 62.0° 83 % 1.8 cd/lm 1 White Ints: -SOCKET-J		107 2000 107
LEDS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15956_HEKLA	38.0° / 62.0° 83 % 1.8 cd/lm 1 White Ints: -SOCKET-J CXA/B 13xx 37.0° / 61.0°		107 2000 107
LEDS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15956_HEKLA	38.0° / 62.0° 83 % 1.8 cd/lm 1 White Ints: -SOCKET-J CXA/B 13xx 37.0° / 61.0° 83 %		107 2000 107
LEDS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15956_HEKLA	38.0° / 62.0° 83 % 1.8 cd/lm 1 White ints: -SOCKET-J CXA/B 13xx 37.0° / 61.0° 83 % 1.9 cd/lm		107 2000 107
LEDS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15956_HEKLA	38.0° / 62.0° 83 % 1.8 cd/lm 1 White ints: -SOCKET-J CXA/B 13xx 37.0° / 61.0° 83 % 1.9 cd/lm 1 White		
LEDS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15956_HEKLA CREE LEDS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	38.0° / 62.0° 83 % 1.8 cd/lm 1 White ints: -SOCKET-J CXA/B 13xx 37.0° / 61.0° 83 % 1.9 cd/lm 1 White ints:		
LEDS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15956_HEKLA CREE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	38.0° / 62.0° 83 % 1.8 cd/lm 1 White ints: -SOCKET-J CXA/B 13xx 37.0° / 61.0° 83 % 1.9 cd/lm 1 White ints:		20 ⁻
LEDS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15956_HEKLA CREECS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	38.0° / 62.0° 83 % 1.8 cd/lm 1 White ints: -SOCKET-J CXA/B 13xx 37.0° / 61.0° 83 % 1.9 cd/lm 1 White ints:		20 ⁻



		90° 90°
LED	CXA/B 15xx	
FWHM / FWTM	45.0° / 69.0°	75
Efficiency	79 %	60° 400
Peak intensity	1.4 cd/lm	$r \propto //$
LEDs/each optic	1	
Light colour	White	65° 800 65°
Required compone	nts:	
F15256_HEKLA	-SOCKET-D	
		- 1270
		304 170 00 170 301
	EDS	90* 90*
LED	LUXEON CoB 1202HD	
FWHM / FWTM	38.0° / 61.0°	75°
Efficiency	82 %	
Peak intensity	1.8 cd/lm	
LEDs/each optic	1	
Light colour	White	gr 65*
Required compone	nts:	
F15848_HEKLA		
		1630
		30° 30° 30°
	EDS	90° 90°
LED	LUXEON CoB 1202s	
FWHM / FWTM	37.0° / 60.0°	400
Efficiency	81 %	60° 60°
Peak intensity	1.9 cd/lm	
LEDs/each optic	1	
Light colour	White	5°
Required compone		
F15848_HEKLA	-SOCKET-G	1000
		\times / \times / \times
		30° 200 30°
	EDS	90° 90°
LED	LUXEON CX Plus CoB - HD S01H4	
FWHM / FWTM		
1	32.0° / 54.0°	
Efficiency		
	32.0° / 54.0°	6 ¹ 00 0 ²
Efficiency	32.0° / 54.0° 73 %	
Efficiency Peak intensity	32.0° / 54.0° 73 % 2.2 cd/lm	57 - 57 - 57 - 57 - 57 - 57 - 57 - 57 -
Efficiency Peak intensity LEDs/each optic	32.0° / 54.0° 73 % 2.2 cd/lm 1 White	
Efficiency Peak intensity LEDs/each optic Light colour	32.0° / 54.0° 73 % 2.2 cd/lm 1 White nts:	or or
Efficiency Peak intensity LEDs/each optic Light colour Required compone	32.0° / 54.0° 73 % 2.2 cd/lm 1 White nts:	or or
Efficiency Peak intensity LEDs/each optic Light colour Required compone	32.0° / 54.0° 73 % 2.2 cd/lm 1 White nts:	or or



COMIL	EDS	50° 50°
LED	LUXEON CX Plus CoB - HD S02H6	
FWHM / FWTM	32.0° / 54.0°	37
Efficiency	72 %	
Peak intensity	2.1 cd/lm	
LEDs/each optic	1	
Light colour	White	er e
Required compone	ents:	
Bender Wirth: 63	34c Hekla	
		300 300
	EDS	100 100 100 100 100 100 100 100 100 100
		50 ⁶ 50
LED	LUXEON CX Plus CoB - HD S04H9	75
FWHM / FWTM	41.0° / 65.0°	
Efficiency	70 %	60 ⁴ 60
Peak intensity	1.4 cd/lm	
LEDs/each optic	1	
Light colour	White	
Required compone		
Bender Wirth: 63	34C HEKIA	1200
		30 ⁴ 35 ⁵ 0 ⁴ 35 ⁵
UMIL	.EDS	90* 90
		90*
	EDS LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0°	94 92 75
LED	LUXEON CX Plus CoB M02 / M03 (Gen2)	
LED FWHM / FWTM	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0°	
LED FWHM / FWTM Efficiency	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 %	
LED FWHM / FWTM Efficiency Peak intensity	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 % 1.5 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 % 1.5 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 % 1.5 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 % 1.5 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 % 1.5 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Bender Wirth: 64	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 % 1.5 cd/lm 1 White ents: 41a Hekla	227 100 125"
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Bender Wirth: 64	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 % 1.5 cd/lm 1 White white table Hekla	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Bender Wirth: 64	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 % 1.5 cd/lm 1 White ents: 41a Hekla LUXEON CX Plus CoB S01 (Gen2)	227 100 125"
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Bender Wirth: 64	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 % 1.5 cd/lm 1 White ents: 41a Hekla LUXEON CX Plus CoB S01 (Gen2) 31.0° / 53.0°	227 100 125"
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Bender Wirth: 64	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 % 1.5 cd/lm 1 White ents: 41a Hekla EDS LUXEON CX Plus CoB S01 (Gen2) 31.0° / 53.0° 73 %	227 100 125"
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Bender Wirth: 64	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 % 1.5 cd/lm 1 White ents: 41a Hekla LUXEON CX Plus CoB S01 (Gen2) 31.0° / 53.0° 73 % 2.2 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Bender Wirth: 64 WIM / FWTM Efficiency Peak intensity LEDs/each optic	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 % 1.5 cd/lm 1 White ents: 41a Hekla EDS LUXEON CX Plus CoB S01 (Gen2) 31.0° / 53.0° 73 % 2.2 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Bender Wirth: 64 WMM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 % 1.5 cd/lm 1 White ents: 41a Hekla EDS LUXEON CX Plus CoB S01 (Gen2) 31.0° / 53.0° 73 % 2.2 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Bender Wirth: 64 WIM / WITH Efficiency Peak intensity LEDs/each optic Light colour Required compone	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 % 1.5 cd/lm 1 White white white EDS LUXEON CX Plus CoB S01 (Gen2) 31.0° / 53.0° 73 % 2.2 cd/lm 1 White mts:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Bender Wirth: 64 WMM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 % 1.5 cd/lm 1 White white white EDS LUXEON CX Plus CoB S01 (Gen2) 31.0° / 53.0° 73 % 2.2 cd/lm 1 White mts:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone Bender Wirth: 64 WIM / WITH Efficiency Peak intensity LEDs/each optic Light colour Required compone	LUXEON CX Plus CoB M02 / M03 (Gen2) 39.0° / 62.0° 69 % 1.5 cd/lm 1 White white white EDS LUXEON CX Plus CoB S01 (Gen2) 31.0° / 53.0° 73 % 2.2 cd/lm 1 White mts:	



1				
ELUMI	NUS		90*	90*
LED	CDM-6 (Dim-To-Warm)			
FWHM / FWTM	34.0° / 56.0°		73	25'
Efficiency	63 %			
Peak intensity	1.7 cd/lm			
LEDs/each optic	1			
Light colour	White		974	45*
Required componer	nts:		1200	
C16142_HEKLA	-SOCKET-K			
Bender Wirth: 49				
			30*	36*
(e			15% 0% 1	5.
	NUS		90°	90*
LED	CDM-9 (Dim-To-Warm)		75*	75*
FWHM / FWTM	40.0° / 63.0°			
Efficiency	61 %		60°	60*
Peak intensity	1.3 cd/lm			
LEDs/each optic	1			
Light colour	White		63×	45°
Required componer				
C16142_HEKLA				
Bender Wirth: 49	90 Typ L8		1200	
			36° 15° 0° 1	30° 5°
-				
	NUS		90*	90*
	NUS CXM-3	1000	<u>1</u> 2*	50*
		1000	30 ⁴	30*
LED	CXM-3		90* 795 000	90°
LED FWHM / FWTM	CXM-3 32.0° / 53.0°		99* 75 60 00	90°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	CXM-3 32.0° / 53.0° 83 %		99 ⁴	99* 75* 60*
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	CXM-3 32.0° / 53.0° 83 % 2.5 cd/lm 1 White		94* 77: 00 00 00	95 95
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	CXM-3 32.0° / 53.0° 83 % 2.5 cd/lm 1 White nts:		94* 175 96* 96* 96* 96* 96* 96* 96* 96* 96* 96*	64 64
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	CXM-3 32.0° / 53.0° 83 % 2.5 cd/lm 1 White nts:		90* 79* 00* 00* 50*	97 97
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	CXM-3 32.0° / 53.0° 83 % 2.5 cd/lm 1 White nts:		90* 795 60* 60* 60* 60* 60* 60* 60* 60* 60* 60*	93* 93*
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	CXM-3 32.0° / 53.0° 83 % 2.5 cd/lm 1 White nts:		90* 72* 60* 90* 550 30* 30*	93*
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componen F15255_HEKLA-	CXM-3 32.0° / 53.0° 83 % 2.5 cd/lm 1 White nts: -SOCKET-C		94 75 76 70 70 70 70 70 70 70 70 70 70	97* 97* 97*
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componen F15255_HEKLA-	CXM-3 32.0° / 53.0° 83 % 2.5 cd/lm 1 White nts: -SOCKET-C		9x* 75 00 00 00 00 00 00 00 00 00 0	97 97 97 97 97
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componen F15255_HEKLA-	CXM-3 32.0° / 53.0° 83 % 2.5 cd/lm 1 White nts: -SOCKET-C		90* 72 60 60 90 550 500 100 100 100 100 100 10	93*
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componen F15255_HEKLA:	CXM-3 32.0° / 53.0° 83 % 2.5 cd/lm 1 White nts: -SOCKET-C			99* 99* 97 97 97 97
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componen F15255_HEKLA-	CXM-3 32.0° / 53.0° 83 % 2.5 cd/lm 1 White nts: -SOCKET-C			99* 99* 97*
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componen F15255_HEKLA- T15255_HEKLA- Efficiency Peak intensity	CXM-3 32.0° / 53.0° 83 % 2.5 cd/lm 1 White nts: -SOCKET-C NUS CXM-4 32.0° / 55.0° 79 % 2.2 cd/lm		7	93 ⁵
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componen F15255_HEKLA- F15255_HEKLA- Efficiency Peak intensity LEDs/each optic	CXM-3 32.0° / 53.0° 83 % 2.5 cd/lm 1 White nts: -SOCKET-C NUS CXM-4 32.0° / 55.0° 79 % 2.2 cd/lm 1		7	93 ⁵
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componen F15255_HEKLA- F15255_HEKLA- Efficiency Peak intensity LEDs/each optic Light colour	CXM-3 32.0° / 53.0° 83 % 2.5 cd/lm 1 White nts: -SOCKET-C NUS CXM-4 32.0° / 55.0° 79 % 2.2 cd/lm 1 White		7	95°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componen F15255_HEKLA-	CXM-3 32.0° / 53.0° 83 % 2.5 cd/lm 1 White nts: -SOCKET-C NUS CXM-4 32.0° / 55.0° 79 % 2.2 cd/lm 1 White nts:		97. 197. 198.	90°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componen F15255_HEKLA- F15255_HEKLA- Efficiency Peak intensity LEDs/each optic Light colour	CXM-3 32.0° / 53.0° 83 % 2.5 cd/lm 1 White nts: -SOCKET-C NUS CXM-4 32.0° / 55.0° 79 % 2.2 cd/lm 1 White nts:		97. 197. 198.	95°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componen F15255_HEKLA-	CXM-3 32.0° / 53.0° 83 % 2.5 cd/lm 1 White nts: -SOCKET-C NUS CXM-4 32.0° / 55.0° 79 % 2.2 cd/lm 1 White nts:		97. 197. 198.	93* 93* 93*



	NUS	»*
LED	CxM-9 (13.5x13.5)	
FWHM / FWTM	46.0° / 71.0°	
Efficiency	77 %	
Peak intensity	1.3 cd/lm	
LEDs/each optic	1	
Light colour	White	gr August and Au
Required compone	nts:	
F15255_HEKLA		
		316
		250 ⁴ 0 ⁴ 15 ⁵
𝖉 NICHI∕		50°
LED	COB S-Type (LES 7)	
FWHM / FWTM	39.0° / 64.0°	
Efficiency	80 %	
Peak intensity	1.7 cd/lm	
LEDs/each optic	1	
Light colour	White	54 Star
Required compone	nts:	
F15848_HEKLA	-SOCKET-G	
		200
		24
		9°
LED	NJCWL024Z-V1MT: COB L-Type Tunable White	
FWHM / FWTM	34.0° / 56.0°	77
Efficiency	62 %	
Peak intensity	1.7 cd/lm	60 ⁵
LEDs/each optic	1	
Light colour	White	5 2
Required compone	nts:	
Required compone C16142_HEKLA		
	-SOCKET-K	
C16142_HEKLA	-SOCKET-K	100 30
C16142_HEKLA Bender Wirth: 49	-SOCKET-K Э7 Тур L8	220 30* 55* 0* 55*
C16142_HEKLA Bender Wirth: 49	-SOCKET-К 97 Тур L8	30° 157 0° 157
C16142_HEKLA Bender Wirth: 49	-SOCKET-K 97 Typ L8 NVCWJ024Z-V1MT: COB J-Type Tunable White	30° 157 0° 157
C16142_HEKLA Bender Wirth: 49 NICHIA LED FWHM / FWTM	-SOCKET-K 97 Typ L8 NVCWJ024Z-V1MT: COB J-Type Tunable White 42.0° / 67.0°	30° 157 0° 157
C16142_HEKLA Bender Wirth: 49 NICHIA LED FWHM / FWTM Efficiency	NVCWJ024Z-V1MT: COB J-Type Tunable White 42.0° / 67.0° 61 %	30° 157 0° 157
C16142_HEKLA Bender Wirth: 49 NICHIA LED FWHM / FWTM Efficiency Peak intensity	-SOCKET-K 97 Typ L8 NVCWJ024Z-V1MT: COB J-Type Tunable White 42.0° / 67.0° 61 % 1.1 cd/lm	30° 157 0° 157
C16142_HEKLA Bender Wirth: 49 CONCENT LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	-SOCKET-K 97 Typ L8 NVCWJ024Z-V1MT: COB J-Type Tunable White 42.0° / 67.0° 61 % 1.1 cd/lm 1	30° 157 0° 157
C16142_HEKLA Bender Wirth: 49 CONCENT LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	-SOCKET-K 97 Typ L8 NVCWJ024Z-V1MT: COB J-Type Tunable White 42.0° / 67.0° 61 % 1.1 cd/lm 1 White	30° 157 0° 157
C16142_HEKLA Bender Wirth: 49 NICHIA LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	-SOCKET-K 97 Typ L8 NVCWJ024Z-V1MT: COB J-Type Tunable White 42.0° / 67.0° 61 % 1.1 cd/lm 1 White nts:	30° 157 0° 157
C16142_HEKLA Bender Wirth: 49 CONCENT LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone C16142_HEKLA	-SOCKET-K 97 Typ L8 NVCWJ024Z-V1MT: COB J-Type Tunable White 42.0° / 67.0° 61 % 1.1 cd/lm 1 White nts: -SOCKET-K	30° 157 0° 157
C16142_HEKLA Bender Wirth: 49 NICHIA LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	-SOCKET-K 97 Typ L8 NVCWJ024Z-V1MT: COB J-Type Tunable White 42.0° / 67.0° 61 % 1.1 cd/lm 1 White nts: -SOCKET-K	30° 157 0° 157



PHILIF	DS	N.,
LED	Fortimo SLM L09 CoB	
FWHM / FWTM	45.0° / 68.0°	
Efficiency	76 %	
Peak intensity	1.3 cd/lm	9°*
LEDs/each optic	1	
Light colour	White	gr 80
Required compone		
F15858_HEKLA		
		55° 0 ⁰ 15°
SAMSU	JNG	99 ⁴
LED	LC003D / LC006D / LC009D / LC013D	
FWHM / FWTM	47.0° / 73.0°	
Efficiency	77 %	
Peak intensity	1.2 cd/lm	
LEDs/each optic	1	
Light colour	White	
Required compone	nts:	
		34*
CARACI		
ѕлмѕι	JNG	
	LC010C G2	
LED FWHM / FWTM		
LED	LC010C G2	
LED FWHM / FWTM Efficiency Peak intensity	LC010C G2 36.0° / 58.0°	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1 White nts:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1 White nts:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1 White nts:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1 White nts:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15255_HEKLA	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1 White nts: -SOCKET-C	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15255_HEKLA	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1 White nts: -SOCKET-C	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15255_HEKLA	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1 White nts: -SOCKET-C	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15255_HEKLA SAMSU LED FWHM / FWTM	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1 White nts: -SOCKET-C JNG LC010T (Tunable White) 39.0° / 64.0°	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15255_HEKLA SAMSU LED FWHM / FWTM Efficiency	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1 White nts: -SOCKET-C JNG LC010T (Tunable White) 39.0° / 64.0° 61 %	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15255_HEKLA SANSU LED FWHM / FWTM Efficiency Peak intensity	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1 White nts: -SOCKET-C JNG LC010T (Tunable White) 39.0° / 64.0° 61 % 1.3 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15255_HEKLA SAMSU LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1 White nts: -SOCKET-C JNG LC010T (Tunable White) 39.0° / 64.0° 61 % 1.3 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15255_HEKLA SAMSU LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1 White nts: -SOCKET-C	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15255_HEKLA SAMSU LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1 White nts: -SOCKET-C	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15255_HEKLA SAMSU LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone C16142_HEKLA	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1 White nts: -SOCKET-C ING LC010T (Tunable White) 39.0° / 64.0° 61 % 1.3 cd/lm 1 Tunable White nts: -SOCKET-K	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone F15255_HEKLA SAMSU LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LC010C G2 36.0° / 58.0° 80 % 2 cd/lm 1 White nts: -SOCKET-C ING LC010T (Tunable White) 39.0° / 64.0° 61 % 1.3 cd/lm 1 Tunable White nts: -SOCKET-K	



S ΛΜSL	JNG	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componen F15859_HEKLA	LC020C G2 43.0° / 67.0° 73 % 1.4 cd/lm 1 White nts:	
	SLE G7 LES09	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componen F15255_HEKLA		
	SLE G7 LES13	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	57.0° / 82.0° 67 % 0.8 cd/lm 1 White	
Required compone F15859_HEKLA	nts:	21 ⁴ 22 ⁴ 22 ⁴ 22 ⁴
LED FWHM / FWTM Efficiency	XOB 6 mm 36.0° / 59.0° 78 %	84
Peak intensity LEDs/each optic Light colour Required component		47 - 1230 - 12 (47) - 1230 - 12 (47) - 1230 - 12 (47) -
F15255_HEKLA	-SOCKET-C	20* 20 20* 20 20* 20* 20*



XICATO)		94 ¹
LED	XOB 9.8 mm		
FWHM / FWTM	44.0° / 70.0°		$\wedge \wedge \uparrow$
Efficiency	76 %		60° 400 60°
Peak intensity	1.3 cd/lm		
LEDs/each optic	1		
Light colour	White		9° 80 87
Required compone	ents:		
F15255_HEKLA	A-SOCKET-C		
			1230
			30° 33°
			15° 0° 15°



OPTICAL RESULTS (SIMULATED):

bridgelux.		90*90*
LED	V10 Gen7	
FWHM / FWTM	44.0° / 66.0°	75.
Efficiency	75 %	400
Peak intensity	1.4 cd/lm	60°
LEDs/each optic	1	- 000 - 000
Light colour	White	
Required components:		
F15255_HEKLA-SO	CKET-C	1290
		300
bridgelux.		50° 50°
LED	V6 Gen6	$ \land $
FWHM / FWTM	29.0° / 48.0°	73
Efficiency	77 %	
Peak intensity	3 cd/lm	60°
LEDs/each optic	1	
Light colour	White	43° 43°
Required components:		
F15253_HEKLA-SO	CKET-A	2130
		36° 30° 30° 30°
bridgelux.		90* 90*
bridgelux.	V8 Gen7	50° 50°
LED	V8 Gen7 40.0° / 62.0°	27 27 29 29 29 29 29 29 29 29 29 29 29 29
LED FWHM / FWTM	40.0° / 62.0°	100 25. 26. 26. 26.
LED FWHM / FWTM Efficiency	40.0° / 62.0° 83 %	99 ⁵ 99 ⁵ 99 90 90 90 90 90 90 90 90 90 90 90 90
LED FWHM / FWTM Efficiency Peak intensity	40.0° / 62.0° 83 % 1.8 cd/lm	99 ⁵ 99 ⁵ 99 ⁵ 90 99 ⁵ 99 ⁵ 99 ⁵ 99 ⁵ 99 ⁵ 99 ⁵
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	40.0° / 62.0° 83 % 1.8 cd/lm 1	9 ¹⁰ 9 ¹⁰ 9
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	40.0° / 62.0° 83 % 1.8 cd/lm 1 White	91 91 91 92 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 components:	40.0° / 62.0° 83 % 1.8 cd/lm 1 White	92 ⁴ 92 ⁴ 92 ⁴ 90 90 90 90 90 90 90 90 90 90
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	40.0° / 62.0° 83 % 1.8 cd/lm 1 White	5° 5° 120 90 90 90 90 90 90 90 90 90 90 90
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	40.0° / 62.0° 83 % 1.8 cd/lm 1 White	97 97 97 100 100 100 100 100 100 100 10
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	40.0° / 62.0° 83 % 1.8 cd/lm 1 White	99 ⁵ 99 ⁵ 99 ⁵ 99 ⁷ 99 ⁷ 99 ⁷ 90 ⁷ 100 100 100 100 100 100 100 100 100
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F15253_HEKLA-SO	40.0° / 62.0° 83 % 1.8 cd/lm 1 White	91 ⁴ 91
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F15253_HEKLA-SO	40.0° / 62.0° 83 % 1.8 cd/lm 1 White CKET-A	91 91 91 91 91 91 91 91 91 91
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F15253_HEKLA-SO	40.0° / 62.0° 83 % 1.8 cd/lm 1 White CKET-A	31 32 33 32 33 32 34 35 35 35 36 37 37 36 38 37 39 <
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F15253_HEKLA-SO bridgelux LED FWHM / FWTM	40.0° / 62.0° 83 % 1.8 cd/lm 1 White CKET-A VERO10 40.0° / 63.0°	99 ⁵ 99 ⁵
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F15253_HEKLA-SO bridgeLUX. LED FWHM / FWTM Efficiency	40.0° / 62.0° 83 % 1.8 cd/lm 1 White CKET-A VERO10 40.0° / 63.0° 74 %	17 17 17 17 17 17 17 17 17 17 17 17 17 1
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F15253_HEKLA-SO bridgetux. LED FWHM / FWTM Efficiency Peak intensity	40.0° / 62.0° 83 % 1.8 cd/lm 1 White CKET-A VERO10 40.0° / 63.0° 74 % 1.6 cd/lm	17 17 17 17 17 17 17 17 17 17 17 17 17 1
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F15253_HEKLA-SO bridgelux LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	40.0° / 62.0° 83 % 1.8 cd/lm 1 White CKET-A VERO10 40.0° / 63.0° 74 % 1.6 cd/lm 1	17 17 17 17 17 17 17 17 17 17 17 17 17 1
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F15253_HEKLA-SO bridgelux LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	40.0° / 62.0° 83 % 1.8 cd/lm 1 White CKET-A VERO10 40.0° / 63.0° 74 % 1.6 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F15253_HEKLA-SO bridgelux LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	40.0° / 62.0° 83 % 1.8 cd/lm 1 White CKET-A VERO10 40.0° / 63.0° 74 % 1.6 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F15253_HEKLA-SO bridgelux LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	40.0° / 62.0° 83 % 1.8 cd/lm 1 White CKET-A VERO10 40.0° / 63.0° 74 % 1.6 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F15253_HEKLA-SO bridgelux LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	40.0° / 62.0° 83 % 1.8 cd/lm 1 White CKET-A VERO10 40.0° / 63.0° 74 % 1.6 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F15253_HEKLA-SO bridgelux LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	40.0° / 62.0° 83 % 1.8 cd/lm 1 White CKET-A VERO10 40.0° / 63.0° 74 % 1.6 cd/lm 1 White	



OPTICAL RESULTS (SIMULATED):

Μ ΝΙCΗΙΛ		90 ⁴ 90 ⁴
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F15848_HEKLA-SOC	COB S-Type (LES 6) 32.0° / 52.0° 69 % 2.3 cd/lm 1 White CKET-G	25
SAMSUN LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F17435_HEKLA-G2-	LC003D / LC006D / LC009D / LC013D 46.0° / 67.0° 71 % 1.3 cd/lm 1 White	2, 12, 0, 12, 2, 2, 0, 0, 12, 2, 6, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,
SAMSUN LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F17435_HEKLA-G2-	LC003D / LC006D / LC009D / LC013D 44.0° / 66.0° 71 % 1.3 cd/lm 1 White	99 ³ 97 97 96 90 90 90 97 90 90 97 90 90 97 97 97 97 97 97 97 97 97 97 97 97 97
SAMSUN LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: F17435_HEKLA-G2-	LC010C 34.0° / 54.0° 77 % 2.3 cd/lm 1 White	



OPTICAL RESULTS (SIMULATED):

LED FWHM / FWTM Efficiency Peak intensity	LH231B 41.0° / 65.0° 73 %	77
Efficiency		
	73 %	
Peak intensity		60° 60°
r eak intensity	1.5 cd/lm	
LEDs/each optic	7	
Light colour	White	er et
Required components:		
F15255_HEKLA-SOC	KET-C	1200
		30° 33°
		15° 10% 15°
XICATO		90* 90*
LED	XTM - 9mm LES	
FWHM / FWTM	42.0° / 63.0°	73*
Efficiency	79 %	60*
Peak intensity	1.6 cd/lm	
LEDs/each optic	1	
Light colour	White	Ø* Ø*
Required components:		1200
C15743_XTM-ADAP1	ER-50-B	
		30-



PRODUCT DATASHEET CP16108_CARMEN-50-M-C

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.

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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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