

# HB-2X2-RS

~10° spot beam

#### **TECHNICAL SPECIFICATIONS:**

Dimensions	50.0 x 50.0 mm
Height	10 mm
Fastening	screw
ROHS compliant	yes 🛈



#### **MATERIAL SPECIFICATIONS:**

Component HB-2X2-RS **Type** Multi-lens

Material	Colour	Finish
PMMA	clear	

#### **ORDERING INFORMATION:**

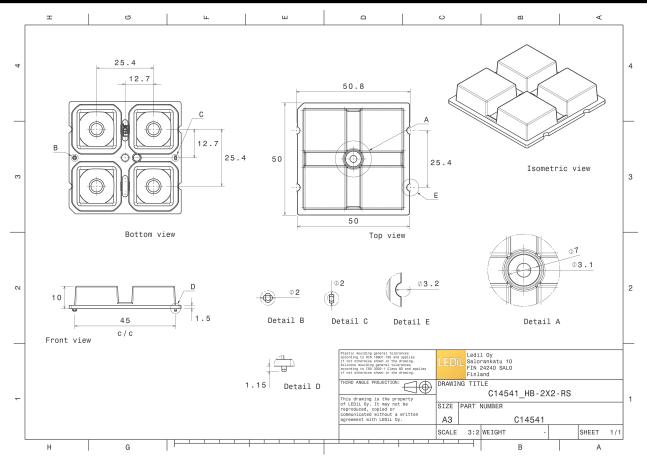
Component C14541\_HB-2X2-RS » Box size: 480 x 280 x 300 mm

Qty in box	MOQ	MPQ	Box weight (kg)
800	160	160	10.2

# PRODUCT DATASHEET C14541\_HB-2X2-RS

# PRODUCT DATASHEET C14541\_HB-2X2-RS





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



-		
EED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	QUICK FLUX XTP 2x6 xxx LS G5 14.0° / 29.0° 94 % 9.5 cd/lm 1 White ents:	
CREE (LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	XD16 11.0° / 23.0° 93 % 13.5 cd/lm 1 White	9 <sup>1</sup> 9 <sup>1</sup> 9 <sup>1</sup> 9 <sup>1</sup> 9 <sup>1</sup> 9 <sup>1</sup> 9 <sup>1</sup> 9 <sup>1</sup>
CREE CLEU LED FWHM / FWTM Efficiency Dack intensity	XHP35 HD 24.0° / 42.0° 89 %	
Peak intensity LEDs/each optic Light colour Required compone		
CREE CLEI LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	XM-L3 20.0° / 36.0° 96 % 6 cd/lm 1 White	



	D	90-
LED	XP-E2	
FWHM / FWTM	10.0° / 18.0°	737
Efficiency	94 %	
Peak intensity	22.1 cd/lm	605
LEDs/each optic	1	
Light colour	White	e7* 12000 e5
Required compone		
		367
		- 197 - da - 199
		90*
LED	XP-G2	75
FWHM / FWTM	14.0° / 25.0°	
Efficiency	94 %	60 <sup>5</sup>
Peak intensity	11.8 cd/lm	
LEDs/each optic	1	
Light colour	White	
Required compone	nts:	
		800
		36° 137 138° 137
	D	50°
LED	XP-L HI	
LED FWHM / FWTM	XP-L HI 13.0° / 25.0°	77 72
FWHM / FWTM	13.0° / 25.0°	
FWHM / FWTM Efficiency	13.0° / 25.0° 94 %	6)* 2000 0
FWHM / FWTM Efficiency Peak intensity	13.0° / 25.0° 94 % 11.6 cd/lm	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic	13.0° / 25.0° 94 % 11.6 cd/lm 1 White	6)* 2000 0
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	13.0° / 25.0° 94 % 11.6 cd/lm 1 White	6)* 2000 0
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	13.0° / 25.0° 94 % 11.6 cd/lm 1 White	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	13.0° / 25.0° 94 % 11.6 cd/lm 1 White	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	13.0° / 25.0° 94 % 11.6 cd/lm 1 White mts:	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	13.0° / 25.0° 94 % 11.6 cd/lm 1 White Ints:	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	13.0° / 25.0° 94 % 11.6 cd/lm 1 White Ints:	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	13.0° / 25.0° 94 % 11.6 cd/lm 1 White Ints: XP-L2 21.0° / 43.0°	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	13.0° / 25.0° 94 % 11.6 cd/lm 1 White Ints: XP-L2 21.0° / 43.0° 94 %	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	13.0° / 25.0° 94 % 11.6 cd/lm 1 White ints: XP-L2 21.0° / 43.0° 94 % 4.5 cd/lm	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone CREE LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	13.0° / 25.0° 94 % 11.6 cd/lm 1 White ints: XP-L2 21.0° / 43.0° 94 % 4.5 cd/lm 1	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone CREE (LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	13.0° / 25.0° 94 % 11.6 cd/lm 1 White ints: XP-L2 21.0° / 43.0° 94 % 4.5 cd/lm 1 White	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone CREE (LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	13.0° / 25.0° 94 % 11.6 cd/lm 1 White ints: XP-L2 21.0° / 43.0° 94 % 4.5 cd/lm 1 White	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	13.0° / 25.0° 94 % 11.6 cd/lm 1 White ints: XP-L2 21.0° / 43.0° 94 % 4.5 cd/lm 1 White	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	13.0° / 25.0° 94 % 11.6 cd/lm 1 White ints: XP-L2 21.0° / 43.0° 94 % 4.5 cd/lm 1 White	



	EDC	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LUXEON V2 15.0° / 28.0° 94 % 9.5 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	SST-10-B130 12.0° / 21.0° 96 % 15.9 cd/lm 1 Deep Red	
ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	NVSW219D 17.0° / 29.0° 94 % 8.6 cd/lm 1 White	
ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	NVSW219F 17.0° / 29.0° 94 % 8.7 cd/lm 1 White	



- 1		
<b>MNICHIA</b>		50° A 50°
LED	NVSW319B	
FWHM / FWTM	18.0° / 32.0°	75
Efficiency	94 %	
Peak intensity	7.3 cd/lm	
LEDs/each optic	1	
Light colour	White	g
Required compone	nts:	
		600
		304 346
		22 <sup>4</sup> #80
		90* 90*
LED	NVSW3x9A	73.
FWHM / FWTM	19.0° / 33.0°	
Efficiency	94 %	ex* / //////////////////////////////////
Peak intensity	6.6 cd/lm	
LEDs/each optic	1 White	
Light colour	White	
Required compone	nts:	 400
		(613)
		30" 30" 30"
		30 <sup>4</sup> 50 <sup>5</sup>
$\sim$		Δ.
	NVSxE21A	
LED FWHM / FWTM		70
LED	NVSxE21A	
LED FWHM / FWTM	NVSxE21A 11.0° / 28.0°	
LED FWHM / FWTM Efficiency	NVSxE21A 11.0° / 28.0° 89 %	
LED FWHM / FWTM Efficiency Peak intensity	NVSxE21A 11.0° / 28.0° 89 % 11.1 cd/lm	85 652 65
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	NVSxE21A 11.0° / 28.0° 89 % 11.1 cd/lm 1 White	20 01 07 01 01 01 01 01 01 01 01 01 01 01 01 01
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	NVSxE21A 11.0° / 28.0° 89 % 11.1 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	NVSxE21A 11.0° / 28.0° 89 % 11.1 cd/lm 1 White	72 64 67 67 65 65 65 65 65 65 65 65 65 65 65 65 65
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	NVSxE21A 11.0° / 28.0° 89 % 11.1 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	NVSxE21A 11.0° / 28.0° 89 % 11.1 cd/lm 1 White nts:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component	NVSxE21A 11.0° / 28.0° 89 % 11.1 cd/lm 1 White nts:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componer	NVSxE21A 11.0° / 28.0° 89 % 11.1 cd/lm 1 White nts: NVSxx19B/NVSxx19C	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componer	NVSxE21A 11.0° / 28.0° 89 % 11.1 cd/lm 1 White nts: NVSxx19B/NVSxx19C 17.0° / 30.0°	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componer	NVSxE21A 11.0° / 28.0° 89 % 11.1 cd/lm 1 White nts: NVSxx19B/NVSxx19C 17.0° / 30.0° 93 %	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component Efficiency Peak intensity	NVSxE21A 11.0° / 28.0° 89 % 11.1 cd/lm 1 White nts: NVSxx19B/NVSxx19C 17.0° / 30.0° 93 % 8 cd/lm	g
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component Efficiency Peak intensity LEDs/each optic	NVSxE21A 11.0° / 28.0° 89 % 11.1 cd/lm 1 White nts: NVSxx19B/NVSxx19C 17.0° / 30.0° 93 % 8 cd/lm 1	g
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component Efficiency Peak intensity LEDs/each optic Light colour	NVSxE21A 11.0° / 28.0° 89 % 11.1 cd/lm 1 White nts: NVSxx19B/NVSxx19C 17.0° / 30.0° 93 % 8 cd/lm 1 White	97
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component Efficiency Peak intensity LEDs/each optic	NVSxE21A 11.0° / 28.0° 89 % 11.1 cd/lm 1 White nts: NVSxx19B/NVSxx19C 17.0° / 30.0° 93 % 8 cd/lm 1 White	97
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required component Required component Efficiency Peak intensity LEDs/each optic Light colour	NVSxE21A 11.0° / 28.0° 89 % 11.1 cd/lm 1 White nts: NVSxx19B/NVSxx19C 17.0° / 30.0° 93 % 8 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required componer MICHIA LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	NVSxE21A 11.0° / 28.0° 89 % 11.1 cd/lm 1 White nts: NVSxx19B/NVSxx19C 17.0° / 30.0° 93 % 8 cd/lm 1 White	



ØNICHI/		<u>90*</u>
LED	NWSx229A	
FWHM / FWTM	23.0° / 41.0°	
Efficiency	94 %	
Peak intensity	4.5 cd/lm	
LEDs/each optic	1	
Light colour	White	gi a
Required compone		
		30
OSRAN		339 354
		90°
LED	PL-BRICK HP 3800 2x8 SSG	7
FWHM / FWTM	16.0° / 28.0°	
Efficiency	95 %	60 <sup>1</sup> 500
Peak intensity	8.5 cd/lm	
LEDs/each optic	1	
Light colour	White	
Required compone	ents:	600
		20 <sup>10</sup> 20 <sup>10</sup> 0 <sup>1</sup> 20 <sup>1</sup>
OSRAN	1	and the second sec
LED	PrevaLED Core Z3 LES9	
FWHM / FWTM	13.5° / 26.0°	
Efficiency	95 %	
Peak intensity	11 cd/lm	
LEDs/each optic	1	
Light colour	White	g. <u>600</u>
Required compone	ents:	
OSRAM		1000 T
Opto Semiconductors		100 -
	OSLON Square CSSRM2/CSSRM3	1999
FWHM / FWTM	15.0° / 27.0°	<b>1907 -</b> The Control of Control o
Efficiency	90 %	
Peak intensity	11 cd/lm	709 -
LEDs/each optic Light colour	1 White	500 -
Required compone	ano.	200
		200
		1007
		- 100 100 10



PHILIP	20	914
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	Fortimo FastFlex LED 2x8 DA G4 13.0° / 23.0° 93 % 12.5 cd/lm 1 White	
PHILIP	<b>S</b>	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	Fortimo FastFlex LED 2x8 DA G4+ 17.0° / 32.0° 96 % 7.8 cd/lm 1 White nts:	
PHILIP	<b>S</b>	304
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	Fortimo FastFlex LED 2x8 DA G5 14.0° / 27.0° 96 % 10.5 cd/lm 1 White nts:	30° 0° 12° 0° 0° 0° 12°
SAMSI	JNG	90*
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	HiLOM RC12 Z (LH181B) 12.0° / 33.0° 97 % 9.1 cd/lm 1 White	



SAMS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	HiLOM RH12 Z (LH351C) 17.0° / 29.0° 96 % 8 cd/lm 1 White	99° 120 0° 125 27 10° 120 0° 12
SAMS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	HiLOM RH16 (LH351C) 17.0° / 30.0° 94 % 8.1 cd/lm 1 White	
SAMS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LH351B 17.0° / 29.0° 89 % 8 cd/lm 1 White	
SAMS LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LH351C 18.0° / 30.0° 94 % 7.9 cd/lm 1 White	



SAMSI	JNG	30 <sup>4</sup> 30 <sup>4</sup>
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LH351D 22.0° / 38.0° 94 % 4.9 cd/lm 1 White	
Electronic SmbH LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LED-Pa-L15c2W11c2-xxx-C050-01 14.0° / 27.0° 96 % 10.7 cd/lm 1 White ents:	
seour semiconductor LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	Z5M3 16.0° / 31.0° 94 % 7.8 cd/lm 1 White ents:	
SEOUL SEMICONDUCTOR LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	Z5M4 17.0° / 32.0° 96 % 7.4 cd/lm 1 White ents:	



seout semiconductor LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	Z8Y22 14.0° / 35.0° 94 % 6.6 cd/lm 1 White ents:	
		200 <sup>-</sup> 100 <sup>-</sup> 100 <sup>-</sup>
SEOUL SEMICONDUCTOR		50° A 50°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	Z8Y22P 16.0° / 33.0° 93 % 6.9 cd/lm 1 White ents:	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	RLE 2x4 2000lm HP EXC2 OTD 13.0° / 25.0° 94 % 12.5 cd/lm 1 White	20 <sup>2</sup> - <sup>2</sup> 00
Required compone		
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	RLE 2x8 4000lm HP EXC2 OTD 13.0° / 25.0° 94 % 12.5 cd/lm 1 White	



TRIDON			2000
LED	RLE G1 49x121mm 2000lm xxx EXC OTD		2200
FWHM / FWTM	13.0° / 27.0°		1000 L
Efficiency	94 %		1699
Peak intensity	10.9 cd/lm		10000
LEDs/each optic	1		13999
Light colour	White		1000
Required compone			••••
			£333
			••••
			2
			-115-9, -112-9, -49-9, -49-9, -42-1, -
TRIDON	NIC		99*
LED	RLE G1 49x133mm 2000lm xxx EXC OTD		
FWHM / FWTM	13.0° / 27.0°		
Efficiency	94 %		605 600 600
Peak intensity	10.9 cd/lm		
LEDs/each optic	1		
Light colour	White		97 <sup>1</sup> 12000 65
Required compone	ents:		
			19200
			30-
			139 0 <sup>0</sup> 135°
TRIDON	NIC		24000
LED	RLE G1 49x223mm 4000lm xxx EXC OTD		2000
FWHM / FWTM	13.0° / 27.0°	and the second se	1000
FWHM / FWTM Efficiency	13.0° / 27.0° 94 %		1999
			18000
Efficiency	94 %		100
Efficiency Peak intensity	94 % 10.9 cd/lm		300
Efficiency Peak intensity LEDs/each optic	94 % 10.9 cd/lm 1 White		Jun
Efficiency Peak intensity LEDs/each optic Light colour	94 % 10.9 cd/lm 1 White		Jun
Efficiency Peak intensity LEDs/each optic Light colour	94 % 10.9 cd/lm 1 White		Jun
Efficiency Peak intensity LEDs/each optic Light colour	94 % 10.9 cd/lm 1 White		Jun
Efficiency Peak intensity LEDs/each optic Light colour Required compone	94 % 10.9 cd/lm 1 White ents:		
Efficiency Peak intensity LEDs/each optic Light colour Required compone	94 % 10.9 cd/lm 1 White ents:		
Efficiency Peak intensity LEDs/each optic Light colour	94 % 10.9 cd/lm 1 White ents:		309 
Efficiency Peak intensity LEDs/each optic Light colour Required compone	94 % 10.9 cd/lm 1 White ents:		100 100 100 100 100 100 100 100
Efficiency Peak intensity LEDs/each optic Light colour Required compone	94 % 10.9 cd/lm 1 White ents: NICC RLE G1 49x245mm 4000lm xxx EXC OTD		
Efficiency Peak intensity LEDs/each optic Light colour Required componer	94 % 10.9 cd/lm 1 White ents: NICC RLE G1 49x245mm 4000lm xxx EXC OTD 13.0° / 27.0°		
Efficiency Peak intensity LEDs/each optic Light colour Required compone <b>TRIDON</b> LED FWHM / FWTM Efficiency	94 % 10.9 cd/lm 1 White ents: NICC RLE G1 49x245mm 4000lm xxx EXC OTD 13.0° / 27.0° 94 %		
Efficiency Peak intensity LEDs/each optic Light colour Required compone TRIDON LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	94 % 10.9 cd/lm 1 White ents: <b>NICC</b> RLE G1 49x245mm 4000lm xxx EXC OTD 13.0° / 27.0° 94 % 10.9 cd/lm		
Efficiency Peak intensity LEDs/each optic Light colour Required compone TRIDON LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	94 % 10.9 cd/lm 1 White ents: <b>NICC</b> RLE G1 49x245mm 4000lm xxx EXC OTD 13.0° / 27.0° 94 % 10.9 cd/lm 1 White		
Efficiency Peak intensity LEDs/each optic Light colour Required compone TRIDON LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	94 % 10.9 cd/lm 1 White ents: <b>NICC</b> RLE G1 49x245mm 4000lm xxx EXC OTD 13.0° / 27.0° 94 % 10.9 cd/lm 1 White		
Efficiency Peak intensity LEDs/each optic Light colour Required compone TRIDON LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	94 % 10.9 cd/lm 1 White ents: <b>NICC</b> RLE G1 49x245mm 4000lm xxx EXC OTD 13.0° / 27.0° 94 % 10.9 cd/lm 1 White		
Efficiency Peak intensity LEDs/each optic Light colour Required compone <b>TRIDON</b> LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	94 % 10.9 cd/lm 1 White ents: <b>NICC</b> RLE G1 49x245mm 4000lm xxx EXC OTD 13.0° / 27.0° 94 % 10.9 cd/lm 1 White		



LED FWHM / FWTM	XHP35 HI 14.0° / 29.0°	32 23 20 4 20 4 20 5
Efficiency	93 %	60 <sup>4</sup> 3200 60°
Peak intensity	9.9 cd/lm	
LEDs/each optic	1	
Light colour	White	e3 <sup>2</sup> 6320 632
Required components:		
		30° 32°
		15 <sup>5</sup> 0 <sup>6</sup> 35 <sup>5</sup>
		50* 50*
LED	XHP35.2	25*
FWHM / FWTM	24.0° / 46.0°	
Efficiency	93 %	69 <sup>4</sup> 69 <sup>4</sup>
Peak intensity	3.6 cd/lm	
LEDs/each optic	1	
Light colour	White	43* A2*
Required components:		
		$\times$
		200
		36*
		15% 00 15%
ODEE A LIED		
		90 <sup>4</sup> 90 <sup>*</sup>
	XM-L	50 <sup>4</sup>
LED	XM-L 19.0° / 38.0°	39 <sup>4</sup> 59 <sup>4</sup>
LED FWHM / FWTM		30 <sup>4</sup> 0 <sup>5</sup>
LED FWHM / FWTM Efficiency	19.0° / 38.0°	604 005 252
LED FWHM / FWTM Efficiency Peak intensity	19.0° / 38.0° 92 %	50 <sup>1</sup> 500
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	19.0° / 38.0° 92 % 5.6 cd/lm	97 - 07 97 - 27 97 - 27 97 - 27 90 - 07 97 - 07
LED FWHM / FWTM Efficiency Peak intensity	19.0° / 38.0° 92 % 5.6 cd/lm 1	50 <sup>1</sup> 500
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	19.0° / 38.0° 92 % 5.6 cd/lm 1	9 <sup>1</sup> 9 <sup>1</sup> 9 <sup>1</sup> 9 <sup>1</sup> 9 <sup>1</sup> 9 <sup>1</sup> 9 <sup>1</sup> 9 <sup>1</sup>
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	19.0° / 38.0° 92 % 5.6 cd/lm 1	50 <sup>1</sup> 500
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	19.0° / 38.0° 92 % 5.6 cd/lm 1	9 <sup>3</sup> 500 57
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	19.0° / 38.0° 92 % 5.6 cd/lm 1	200 200 000 000 000 000 000 000
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	19.0° / 38.0° 92 % 5.6 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	19.0° / 38.0° 92 % 5.6 cd/lm 1 White	200 00 00 00 0 00 00
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	19.0° / 38.0° 92 % 5.6 cd/lm 1 White	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	19.0° / 38.0° 92 % 5.6 cd/lm 1 White XM-L2 18.0° / 34.0°	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	19.0° / 38.0° 92 % 5.6 cd/lm 1 White XM-L2 18.0° / 34.0° 94 %	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	19.0° / 38.0° 92 % 5.6 cd/lm 1 White XM-L2 18.0° / 34.0° 94 % 6.9 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	19.0° / 38.0° 92 % 5.6 cd/lm 1 White XM-L2 18.0° / 34.0° 94 % 6.9 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: CREE LED EU FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	19.0° / 38.0° 92 % 5.6 cd/lm 1 White XM-L2 18.0° / 34.0° 94 % 6.9 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	19.0° / 38.0° 92 % 5.6 cd/lm 1 White XM-L2 18.0° / 34.0° 94 % 6.9 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: CREE LED EU FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	19.0° / 38.0° 92 % 5.6 cd/lm 1 White XM-L2 18.0° / 34.0° 94 % 6.9 cd/lm 1	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: CREE LED EU FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	19.0° / 38.0° 92 % 5.6 cd/lm 1 White XM-L2 18.0° / 34.0° 94 % 6.9 cd/lm 1	



CREES LED LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	XP-G 13.0° / 27.0° 93 % 12.1 cd/lm 1 White	30* 30*   30* 30*   30* 30*   30* 30*
CREE LED LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	XP-G2 14.0° / 26.0° 89 % 11 cd/lm 1 White	6, 6, 6, 9, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7, 7,
	e, glass	20 20 20 20 0 <sup>1</sup> 30 <sup>2</sup> 20 0 <sup>1</sup> 30 <sup>2</sup> 30 <sup>2</sup>
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	XP-G2 HE 16.0° / 34.0° 94 % 7.3 cd/lm 1 White	25° 660 23° 25°
CREES LED LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	XP-G3 16.0° / 33.0° 94 % 7.9 cd/lm 1 White	3 <sup>1</sup> , <sup>1</sup> , <sup>6</sup> , <sup>12</sup> , <sup>6</sup> , <sup>12</sup> , <sup>10</sup>



CREE LED	XP-L HD 19.0° / 35.0° 94 % 6.1 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:	XP-L HI 13.0° / 25.0° 89 % 10.9 cd/lm 1 White	91 <sup>3</sup> 91 <sup>1</sup> 91 <sup>1</sup> 9
	e, glass	300 300 15 <sup>5</sup> 0 <sup>4</sup> 15 <sup>5</sup> 15 <sup>5</sup>
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	XP-L2 20.0° / 40.0° 89 % 4.7 cd/lm 1 White	5° - 500 - 60°
Protective plate	e, glass	34 <u>15</u> <u>6</u> <u>15</u> <u>8</u> .
CREE LED LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	XP-P 8.0° / 18.0° 95 % 25.5 cd/lm 1 White	50°



LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	XQ-E HI 8.0° / 18.0° 94 % 28.3 cd/lm 1 White	
Required components:		
	05	90* 90*
LED	LUXEON C	75*
FWHM / FWTM	11.0° / 24.0°	
Efficiency	94 %	60° 60°
Peak intensity	16.2 cd/lm	600
LEDs/each optic	1	
Light colour	White	97 <sup>1</sup>
Required components:		$\times/1/\times$
		12000
		133 <sup>°</sup> 0 <sup>0</sup> 35 <sup>°</sup>
	)5	90* 90*
LED	LUXEON CZ	25*
FWHM / FWTM	8.0° / 16.0°	
Efficiency	93 %	60°
Peak intensity	29.6 cd/lm	
LEDs/each optic	1	
Light colour	White	a" a"
Required components:	White	
Required components:	Wille	
	White	
	Wine	
	Winte	30° 120 3000 120 30°
		15* 33000 15*
	DS	
	DS LUXEON HL2X	20° 33000 15°
LUMILEI LED FWHM / FWTM	DS LUXEON HL2X 14.0° / 30.0°	90° 50°
ED FWHM / FWTM Efficiency	DS LUXEON HL2X 14.0° / 30.0° 95 %	90° 50°
ED FWHM / FWTM Efficiency Peak intensity	DS LUXEON HL2X 14.0° / 30.0° 95 % 9 cd/lm	90° 50°
ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	DS LUXEON HL2X 14.0° / 30.0° 95 % 9 cd/lm 1	90° 50°
ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	DS LUXEON HL2X 14.0° / 30.0° 95 % 9 cd/lm	235 2300 35° 25° 25° 25° 25° 25° 25°
ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	DS LUXEON HL2X 14.0° / 30.0° 95 % 9 cd/lm 1	50°
ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	DS LUXEON HL2X 14.0° / 30.0° 95 % 9 cd/lm 1	50°
ED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	DS LUXEON HL2X 14.0° / 30.0° 95 % 9 cd/lm 1	55°



	DS	90°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	LUXEON IR Domed 150 11.0° / 21.0° 94 % 19.1 cd/lm 1 White	30 <sup>1</sup> 25 <sup>2</sup> 25 <sup>2</sup> 1300 1200 1200 120 120 120 120 120
	S	9°
LED FWHM / FWTM Efficiency LEDs/each optic Light colour Required components:	LUXEON IR Domed 60 10.0° / 20.0° 93 % 1 White	21 90 90 90 90 90 90 90 90 90 90 90 90 90
OSRAM		30 <sup>5</sup> 15600 25 <sup>5</sup>
opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	OSCONIQ C 2424 10.0° / 20.0 + 21.0° 96 % 18 cd/lm 1 White	
OSERAM Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	OSCONIQ P 3030 8.0° / 20.0° 95 % 22.7 cd/lm 1 White	50° 50° 50° 50° 50° 50° 50° 50° 50° 50°



<b></b>		
OSRAM Opto Semiconductors		90° 90°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	OSCONIQ P 3737 (2W version) 12.0° / 24.0° 90 % 12.5 cd/lm 1 White	80 90 25 25
Light colour	White	
Required components:		9530
Protective plate	e, glass	20 <sup>60</sup> 125 <sup>10</sup> 25 <sup>10</sup>
OSRAM Opto Semiconductors		90° 90°
LED	OSCONIQ P 3737 (2W version)	75"
FWHM / FWTM	12.0° / 24.0°	
Efficiency	95 %	60°
Peak intensity	13.5 cd/lm	$ \times / \times / \times / 2 $
LEDs/each optic	1	
Light colour	White	gz* 63*
Required components:		20
		34°
OSRAM		90° 90°
Opto Semiconductors		90° 90°
Opto Semiconductors	OSLON Square CSSRM2/CSSRM3	
	OSLON Square CSSRM2/CSSRM3 15.0° / 27.0°	37 37 37
LED		
LED FWHM / FWTM	15.0° / 27.0°	
LED FWHM / FWTM Efficiency	15.0° / 27.0° 81 %	
LED FWHM / FWTM Efficiency Peak intensity	15.0° / 27.0° 81 % 9.7 cd/lm	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	15.0° / 27.0° 81 % 9.7 cd/lm 1 White	75°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: Protective plate	15.0° / 27.0° 81 % 9.7 cd/lm 1 White	75°
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	15.0° / 27.0° 81 % 9.7 cd/lm 1 White	75 64 65 60 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: Protective plate	15.0° / 27.0° 81 % 9.7 cd/lm 1 White	30, 30, 30, 30, 30, 30, 30, 30, 30, 30, 30, 40, 30, 40, 30, 40, 30, 40, 30, 40, 30, 40, 30, 40, 30, 40, 30, 40,
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: Protective plate	15.0° / 27.0° 81 % 9.7 cd/lm 1 White	75 64 65 60 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: Protective plate	15.0° / 27.0° 81 % 9.7 cd/lm 1 White 9, glass OSLON Square Flat	30.4 30.0 40.0   32.5 0 32.5   0 0 32.5   0 0 32.5
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: Protective plate OSSRAM Opto Semiconductors LED FWHM / FWTM	15.0° / 27.0° 81 % 9.7 cd/lm 1 White 9, glass OSLON Square Flat 10.0° / 20.0°	30.4 30.0 40.0   32.5 0 32.5   0 0 32.5   0 0 32.5
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: Protective plate OSRAM Opto Semiconductors LED FWHM / FWTM Efficiency	15.0° / 27.0° 81 % 9.7 cd/lm 1 White 9, glass OSLON Square Flat 10.0° / 20.0° 96 %	30, 30, 30, 30, 30, 30, 30, 30, 30, 30, 30, 40, 30, 40, 30, 40, 30, 40, 30, 40, 30, 40, 30, 40, 30, 40, 30, 40,
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: Protective plate Protective plate OSRAM Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity	15.0° / 27.0° 81 % 9.7 cd/lm 1 White e, glass OSLON Square Flat 10.0° / 20.0° 96 % 19.7 cd/lm	30,
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: Protective plate Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	15.0° / 27.0° 81 % 9.7 cd/lm 1 White e, glass OSLON Square Flat 10.0° / 20.0° 96 % 19.7 cd/lm 1	



Г		
OSRAM Opto Semiconductors		50* A 50*
LED	OSLON SSL 80	
FWHM / FWTM	8.2° / 18.8°	20-
Efficiency	94 %	
Peak intensity	21 cd/lm	50°
LEDs/each optic	1	
Light colour	White	5 <sup>2</sup> 12000 5 <sup>2</sup>
Required components:		
		itere
		30° 30° 30° 30°
OSRAM Opto Semiconductors		90°
LED	OSTAR Projection Compact (Kx.CSLNM1.xx)	
FWHM / FWTM	10.0° / 20.0°	75
Efficiency	96 %	
Peak intensity	19.8 cd/lm	60°
LEDs/each optic	1	$ X /     \land X$
Light colour	White	gr
Required components:		12800
		30° 30° 30° 30°
OSRAM Opto Semiconductors		90° 99°
Opto Semiconductors		
LED	SFH 4715AS	73'
FWHM / FWTM	9.2° / 21.0°	
Efficiency	%	60 <sup>2</sup> 600
LEDs/each optic	1	
Light colour	IR	g5*
Required components:		
		300 300
		139
SAMSUN	IG	
LED	LH231B	
FWHM / FWTM	16.0° / 34.0°	
Efficiency	94 %	
Peak intensity	8 cd/lm	
LEDs/each optic	4	
Light colour	White	
Required components:		



	LH231B	25- 25°
FWHM / FWTM	16.0° / 32.0°	
Efficiency	95 %	60 <sup>5</sup> 3200 60 <sup>5</sup>
Peak intensity	8.3 cd/lm	
LEDs/each optic	1	
Light colour	White	
Required components:		6410
		30° 15° 0° 15°
SAMSUN	IG	90*
LED	LH231B	
FWHM / FWTM	16.0° / 32.0°	
Efficiency	95 %	60* 60*
Peak intensity	8.4 cd/lm	
LEDs/each optic	1	
Light colour	White	gr dg
Required components:		6130
		6422
		30° 30°
SAMSUN		
		90* 90*
LED		
	LM301B	75
FWHM / FWTM	10.0° / 24.0°	75
FWHM / FWTM Efficiency	10.0° / 24.0° 94 %	25
FWHM / FWTM Efficiency Peak intensity	10.0° / 24.0° 94 % 14.8 cd/lm	95
FWHM / FWTM Efficiency Peak intensity LEDs/each optic	10.0° / 24.0° 94 % 14.8 cd/lm 1	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	10.0° / 24.0° 94 % 14.8 cd/lm	27 - 27 - 27 - 27 - 27 - 27 - 27 - 27 -
FWHM / FWTM Efficiency Peak intensity LEDs/each optic	10.0° / 24.0° 94 % 14.8 cd/lm 1	g.
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	10.0° / 24.0° 94 % 14.8 cd/lm 1	g.
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	10.0° / 24.0° 94 % 14.8 cd/lm 1	a
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	10.0° / 24.0° 94 % 14.8 cd/lm 1	g
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	10.0° / 24.0° 94 % 14.8 cd/lm 1	g
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components:	10.0° / 24.0° 94 % 14.8 cd/lm 1 White	g
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: seout semiconouctor LED	10.0° / 24.0° 94 % 14.8 cd/lm 1 White Z5M1/Z5M2	<u>39</u> , <u>32</u> , <u>3660</u> <u>72</u> , <u>36</u>
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: stout semiconouctor LED FWHM / FWTM	10.0° / 24.0° 94 % 14.8 cd/lm 1 White Z5M1/Z5M2 13.0° / 26.0°	<u>39</u> , <u>32</u> , <u>3660</u> <u>72</u> , <u>36</u>
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: secoul semiconductor LED FWHM / FWTM Efficiency	10.0° / 24.0° 94 % 14.8 cd/lm 1 White Z5M1/Z5M2 13.0° / 26.0° 92 %	<u>39</u> , <u>32</u> , <u>3660</u> <u>72</u> , <u>36</u>
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: SEOUL SEMICONDUCTOR LED FWHM / FWTM Efficiency Peak intensity	10.0° / 24.0° 94 % 14.8 cd/lm 1 White Z5M1/Z5M2 13.0° / 26.0° 92 % 12.1 cd/lm	90°
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: SEOULSEMICONDUCTOR LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	10.0° / 24.0° 94 % 14.8 cd/lm 1 White Z5M1/Z5M2 13.0° / 26.0° 92 % 12.1 cd/lm 1	200 200 200 200 200 200 200 200 200 200
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: SEOUL SEMICONDUCTOR LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	10.0° / 24.0° 94 % 14.8 cd/lm 1 White Z5M1/Z5M2 13.0° / 26.0° 92 % 12.1 cd/lm	95° - 950 - 95° 25° - 950 - 95° 25° - 950 - 95° 25° - 950 - 95°
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: SEOULSEMICONDUCTOR LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic	10.0° / 24.0° 94 % 14.8 cd/lm 1 White Z5M1/Z5M2 13.0° / 26.0° 92 % 12.1 cd/lm 1	95° - 950 - 95° 25° - 950 - 95° 25° - 950 - 95° 25° - 950 - 95°
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: stoou semiconoucror LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	10.0° / 24.0° 94 % 14.8 cd/lm 1 White Z5M1/Z5M2 13.0° / 26.0° 92 % 12.1 cd/lm 1	
FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required components: seous semiconductor LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	10.0° / 24.0° 94 % 14.8 cd/lm 1 White Z5M1/Z5M2 13.0° / 26.0° 92 % 12.1 cd/lm 1	95° - 950 - 95° 25° - 950 - 95° 25° - 950 - 95° 25° - 950 - 95°



SEOUL SEMICONDUCTOR		90°
LED	Z8Y22T	77
FWHM / FWTM	15.0° / 32.0°	
Efficiency	94 %	61
Peak intensity	8.6 cd/lm	
LEDs/each optic	1	
Light colour	White	₫ <sup>2</sup> (0, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1,
Required component	s:	6420



#### **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.

#### 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.

LEDiL Oy assumes neither warranty, nor guarantee nor any other liability of any kind for the contents and correctness of the provided data. The provided data has been generated with highest diligence but the provided data may in reality not represent the complete possible variation range of all intrinsic parameters. Therefore, in certain cases a deviation from the provided data could occur.

LEDiL Oy reserves the right to undertake technical changes of its products without further notification which could lead to changes in the provided data. LEDiL Oy assumes no liability of any kind for the possible deviation from any provided data or any other damage resulting from the usage of the provided data.

The user agrees to this disclaimer and user agreement with the download or usage of the provided files.

#### LEDiL Oy

Joensuunkatu 13 FI-24240 SALO Finland

#### LEDiL Inc. 228 West Page Street Suite D Sycamore IL 60178 USA

Ledil Optics Technology (Shenzhen) Co., Ltd. # 405 , Block B Casic Motor Building Shenzhen 518057 P.R.CHINA

#### Local sales and technical support www.ledil.com/ where\_to\_buy

Shipping locations Salo, Finland Hong Kong, China

#### Distribution Partners www.ledil.com/ where\_to\_buy