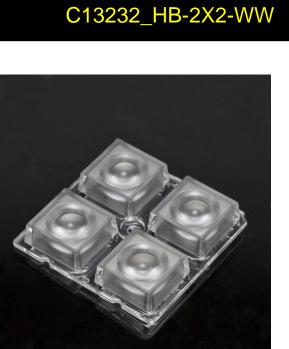


# HB-2X2-WW

~65° wide beam

# **TECHNICAL SPECIFICATIONS:**

Dimensions	50.0 x 50.0 mm
Height	8.5 mm
Fastening	glue, pin, screw
ROHS compliant	yes 🛈



PRODUCT DATASHEET

# MATERIAL SPECIFICATIONS:

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

Material	Colour	Finish
PMMA	clear	

LEDil®

### **ORDERING INFORMATION:**

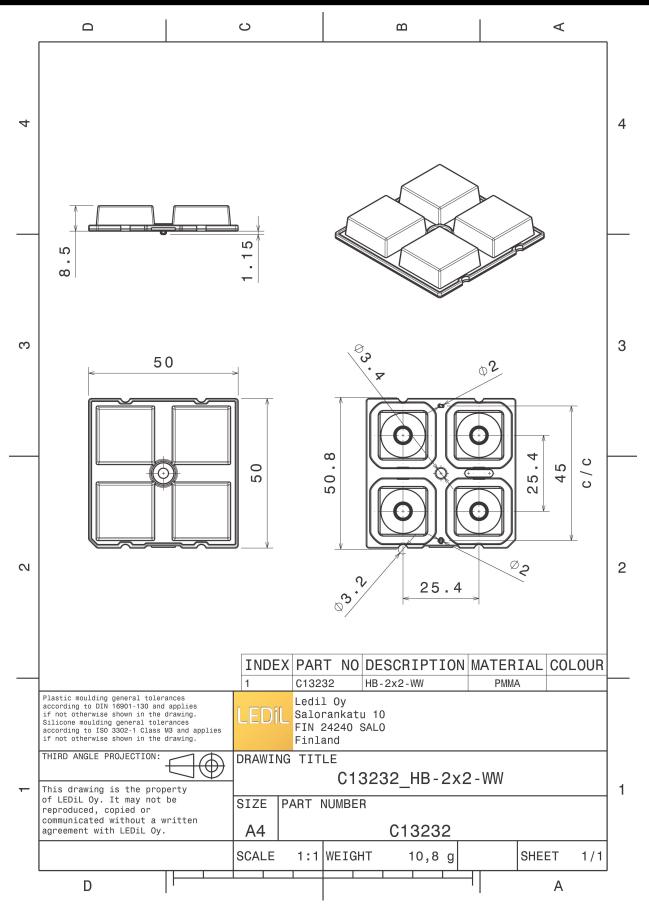
Component C13232\_HB-2X2-WW » Box size: 480 x 280 x 300 mm

Qty in box	MOQ	MPQ	Box weight (kg)
800	160	160	9.5

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# PRODUCT DATASHE C13232\_HB-2X2-WW

2/11



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



CREE 🗢 LED		50°	90'
LED	XP-G		
FWHM / FWTM	69.0° / 92.0°	32	75
Efficiency	91 %		$\mathcal{A}$
Peak intensity	0.8 cd/lm		< ~
LEDs/each optic	1		
Light colour	White		45
Required compone	nts:		
		40	
		N <sup>4</sup>	36
	5	25 <sup>5</sup> 0 <sup>4</sup> 25 <sup>4</sup>	
			90'
	XP-G2		
FWHM / FWTM	69.0° / 92.0° 91 %		
Efficiency Peak intensity	91 % 0.7 cd/lm		60'
LEDs/each optic	0.7 ca/im 1		
Light colour	White		45
Required compone			/
Required compone	1115.		K
		20° 00 10°	36
		55*	90'
LED	XT-E		
		75	75
FWHM / FWTM	65.0° / 89.0°	200	
Efficiency	65.0° / 89.0° 91 %		60'
			60'
Efficiency	91 %		×
Efficiency Peak intensity	91 % 0.9 cd/lm	50 - 50 - 50 - 50 - 50 - 50 - 50 - 50 -	60
Efficiency Peak intensity LEDs/each optic	91 % 0.9 cd/lm 1 White		50
Efficiency Peak intensity LEDs/each optic Light colour	91 % 0.9 cd/lm 1 White		65
Efficiency Peak intensity LEDs/each optic Light colour	91 % 0.9 cd/lm 1 White		
Efficiency Peak intensity LEDs/each optic Light colour	91 % 0.9 cd/lm 1 White		69
Efficiency Peak intensity LEDs/each optic Light colour Required compone	91 % 0.9 cd/lm 1 White nts:		60
Efficiency Peak intensity LEDs/each optic Light colour Required compone	91 % 0.9 cd/lm 1 White nts:		65
Efficiency Peak intensity LEDs/each optic Light colour Required compone	91 % 0.9 cd/lm 1 White nts: EDS LUXEON Q		60 67 99 72
Efficiency Peak intensity LEDs/each optic Light colour Required compone	91 % 0.9 cd/lm 1 White nts: EDS LUXEON Q 67.0° / 92.0°		
Efficiency Peak intensity LEDs/each optic Light colour Required compone	91 % 0.9 cd/lm 1 White nts: EDS LUXEON Q 67.0° / 92.0° 91 %		
Efficiency Peak intensity LEDs/each optic Light colour Required compone	91 % 0.9 cd/lm 1 White nts: EDS LUXEON Q 67.0° / 92.0° 91 % 0.8 cd/lm		60 
Efficiency Peak intensity LEDs/each optic Light colour Required compone <b>Composition</b> <b>COMPASSION</b> <b>EVALUATE</b> FWHM / FWTM Efficiency Peak intensity LEDs/each optic	91 % 0.9 cd/lm 1 White nts: EDS LUXEON Q 67.0° / 92.0° 91 % 0.8 cd/lm 1		
Efficiency Peak intensity LEDs/each optic Light colour Required compone <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Compariso</b>	91 % 0.9 cd/lm 1 White nts: EDS LUXEON Q 67.0° / 92.0° 91 % 0.8 cd/lm 1 White		90 90 72 90 90 90 90 90 90 90 90 90 90 90 90 90
Efficiency Peak intensity LEDs/each optic Light colour Required compone <b>Composition</b> <b>COMPASSION</b> <b>EVALUATE</b> FWHM / FWTM Efficiency Peak intensity LEDs/each optic	91 % 0.9 cd/lm 1 White nts: EDS LUXEON Q 67.0° / 92.0° 91 % 0.8 cd/lm 1 White		99 99 99 99
Efficiency Peak intensity LEDs/each optic Light colour Required compone <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Comparison</b> <b>Compariso</b>	91 % 0.9 cd/lm 1 White nts: EDS LUXEON Q 67.0° / 92.0° 91 % 0.8 cd/lm 1 White		99 99 99 99 99 99 99
Efficiency Peak intensity LEDs/each optic Light colour Required compone <b>Comparison</b> <b>EUMIL</b> LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour	91 % 0.9 cd/lm 1 White nts: EDS LUXEON Q 67.0° / 92.0° 91 % 0.8 cd/lm 1 White		



	.EDS	11111_0-11-4v_(lamen_d_b)
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	LUXEON Z ES 59.0° / 87.0° 90 % 1 cd/lm 1 White ents:	
<b>ØNICHI</b> ∕		97 97
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	NVSxE21A 54.0° / 89.0° 94 % 1.1 cd/lm 1 White	
OSRAM	1	30* 30
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	PrevaLED Brick HP 2x8 67.0° / 92.0° 92 % 0.8 cd/lm 1 White	
Opto Semiconductors LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	OSLON Square CSSRM2/CSSRM3 71.0° / 94.0° 94 % 0.7 cd/lm 1 White ents:	



OSRAM Opto Semiconductors       **         LED       OSLON Square CSSRM2/CSSRM3         FWHM / FWTM       67.0° / 92.0°         Efficiency       92 %         Peak intensity       0.8 cd/lm         LEDs/each optic       1	50*
LED OSLON Square CSSRM2/CSSRM3 FWHM / FWTM 67.0° / 92.0° Efficiency 92 % Peak intensity 0.8 cd/lm	
FWHM / FWTM     67.0° / 92.0°       Efficiency     92 %       Peak intensity     0.8 cd/lm	
Efficiency 92 % Peak intensity 0.8 cd/lm	1.00
Peak intensity 0.8 cd/lm	$\langle N \rangle \times$
	X **
Light colour White	45.
Required components:	
24	36*
239 00 	12,
OSRAM Opto Semiconductors	90*
LED OSLON Square PC	
FWHM / FWTM 63.0° / 90.0°	$\times$
Efficiency 91 %	
Peak intensity 0.9 cd/lm	
LEDs/each optic 1	
Light colour White	42°
Required components:	
24	34.
OSRAM Opto Semiconductors	90°
LED OSLON SSL 80	
FWHM / FWTM 54.0° / 80.0°	
Efficiency 92 %	
Efficiency 92 % Peak intensity 1.1 cd/lm	
Peak intensity 1.1 cd/lm	
Peak intensity 1.1 cd/lm LEDs/each optic 1	43.
Peak intensity 1.1 cd/lm LEDs/each optic 1	a:
Peak intensity 1.1 cd/lm LEDs/each optic 1 Light colour White	
Peak intensity 1.1 cd/lm LEDs/each optic 1 Light colour White	
Peak intensity 1.1 cd/lm LEDs/each optic 1 Light colour White	67
Peak intensity 1.1 cd/lm LEDs/each optic 1 Light colour White Required components:	
Peak intensity 1.1 cd/lm LEDs/each optic 1 Light colour White Required components:	
Peak intensity 1.1 cd/lm LEDs/each optic 1 Light colour White Required components: SAMSUNG LED LH351A	
Peak intensity 1.1 cd/lm LEDs/each optic 1 Light colour White Required components: SAMSUNG LED LH351A FWHM / FWTM 68.0° / 91.0°	20 20
Peak intensity 1.1 cd/lm LEDs/each optic 1 Light colour White Required components: SAMSUNG LED LH351A FWHM / FWTM 68.0° / 91.0° Efficiency 92 %	20 20
Peak intensity 1.1 cd/lm LEDs/each optic 1 Light colour White Required components: SAMSUNG LED LH351A FWHM / FWTM 68.0° / 91.0° Efficiency 92 % Peak intensity 0.8 cd/lm	20 20
Peak intensity 1.1 cd/m LEDs/each optic 1 Light colour White Required components: SAMSUNG LED LH351A FWHM / FWTM 68.0° / 91.0° Efficiency 92 % Peak intensity 0.8 cd/m LEDs/each optic 1	20 20
Peak intensity 1.1 cd/lm LEDs/each optic 1 Light colour White Required components: SAMSUNG LED LH351A FWHM / FWTM 68.0° / 91.0° Efficiency 92 % Peak intensity 0.8 cd/lm LEDs/each optic 1 Light colour White	20 20
Peak intensity 1.1 cd/lm LEDs/each optic 1 Light colour White Required components: SAMSUNG LED LH351A FWHM / FWTM 68.0° / 91.0° Efficiency 92 % Peak intensity 0.8 cd/lm LEDs/each optic 1	20 20
Peak intensity 1.1 cd/lm LEDs/each optic 1 Light colour White Required components: SAMSUNG LED LH351A FWHM / FWTM 68.0° / 91.0° Efficiency 92 % Peak intensity 0.8 cd/lm LEDs/each optic 1 Light colour White	20 20
Peak intensity 1.1 cd/lm LEDs/each optic 1 Light colour White Required components: SAMSUNG LED LH351A FWHM / FWTM 68.0° / 91.0° Efficiency 92 % Peak intensity 0.8 cd/lm LEDs/each optic 1 Light colour White	20 20



รлмรเ	ING	90 <sup>4</sup>	30*
LED	LH351B	20	
FWHM / FWTM	65.0° / 92.0°		200
Efficiency	89 %	502	
Peak intensity	0.8 cd/lm		
LEDs/each optic	1		400
Light colour	White	da,	e3*
Required compone	nts:	1	
		20*	15° 0° 15°
<u> </u> <b>S</b> ΛΜSI	JNG	90*	904
LED	LH351Z		
FWHM / FWTM	63.0° / 89.0°	23	200
Efficiency	89 %		
Peak intensity	0.9 cd/lm		
LEDs/each optic	1		400
Light colour	White	S.	
Required compone	nts:		
		$\sim$	
			20
		70-	15° 0° 15°
		20,	90*
LED	Z8Y15		
FWHM / FWTM	56.0° / 92.0°	25	200
Efficiency	85 %	605	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
Peak intensity	0.9 cd/lm		
LEDs/each optic	1		
Light colour	White	1994 - 1995 - 1996 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	X ×
Required compone	nts:		600
		×	
			800
		200	15° 0° 15°
SEOUL		90 <sup>4</sup>	30'
SEOUL SEMICONDUCTOR	Z8Y19		
	56.0° / 92.0°	25*	200
FWHM/FWTM			
FWHM / FWTM Efficiency	85 %		
Efficiency	85 % 0.9 cd/lm	in the second	
	85 % 0.9 cd/lm 1		40
Efficiency Peak intensity	0.9 cd/lm	64 67	
Efficiency Peak intensity LEDs/each optic	0.9 cd/lm 1 White		
Efficiency Peak intensity LEDs/each optic Light colour	0.9 cd/lm 1 White		410 C
Efficiency Peak intensity LEDs/each optic Light colour	0.9 cd/lm 1 White		40 60 6



seoul semiconductor LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	Z8Y22 55.0° / 94.0° 94 % 1 cd/lm 1 White nts:	20 20 20 20 20 20 20 20 20 20
SEOUL		
scour, semiconductor LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	Z8Y22P 65.0° / 95.0° 94 % 0.9 cd/lm 1 White nts:	99* 99* 75* 200 95* 90* 95* 90* 95* 90 96* 97* 96* 95* 90 96* 97* 96* 97* 97* 97* 97* 97* 97* 97* 97* 97* 97* 97*
TOSHIBA		90* 90*
Leading Innovation » LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone		75'         200           66*         60°           5'         60°           66*         60°           800         60°           90°         60°           90°         50°           90°         50°
TRIDON	liC	
LED FWHM / FWTM Efficiency Peak intensity LEDs/each optic Light colour Required compone	RLE G1 49x121mm 2000lm xxx EXC OTD 67.0° / 93.0° 94 % 0.9 cd/lm 1 White	



TRIDON		514
LED	RLE G1 49x133mm 2000lm xxx EXC OTD	
FWHM / FWTM	67.0° / 93.0°	75
Efficiency	94 %	
Peak intensity	0.9 cd/lm	
LEDs/each optic	1	100
Light colour	White	97×
Required compone	ents:	
		31 200
		4 <sup>44</sup> 15 <sup>4</sup> 0 <sup>4</sup> 25 <sup>4</sup>
TRIDON		
LED	RLE G1 49x223mm 4000lm xxx EXC OTD	
FWHM / FWTM	67.0° / 93.0°	
Efficiency	94 %	
Peak intensity	94 % 0.9 cd/lm	
LEDs/each optic	1	999
Light colour	ı White	70
Required compone		E0
Required compone	5113.	
		500
		200 100
		-104-0° -112-0° -40-0° -40-0° -122-0° -60-0° -122-0° -
TRIDON		20
LED		1600
LED FWHM / FWTM	RLE G1 49x245mm 4000lm xxx EXC OTD 67.0° / 93.0°	100
	67.0° / 93.0° 94 %	
Efficiency		
Peak intensity	0.9 cd/lm 1	100 - 100 -
LEDs/each optic Light colour	1 White	20
Light colour Required compone		
	21 IG.	
		200
		-1164" -1126" -4664" -4724" -464" -224" -64" -224" -64" -224" -64" -224" -64" -224" -64" -224" -224" -64" -224" -24



# PHOTOMETRIC DATA (SIMULATED):

	VELO	
	XD16	
FWHM / FWTM	69.0° / 90.0°	
Efficiency	95 %	
Peak intensity	0.8 cd/lm	
LEDs/each optic	1	
Light colour	White	
Required components:		
		90*
LED	XP-G2	
FWHM / FWTM	72.0° / 94.0°	73.
Efficiency	92 %	
Peak intensity	0.7 cd/lm	60° 80°
LEDs/each optic	1	
Light colour	White	400 apr
Required components:		
Protective plate	e, glass	
		30
	DS	90* 90*
LED	LUXEON 3030 2D (Round LES)	
FWHM / FWTM	64.0° / 82.0°	75*
Efficiency	94 %	
Peak intensity	1 cd/lm	60° 60°
LEDs/each optic	1	
Light colour	White	ar ar
Required components:		
		<sup>397</sup> <u>397</u> <u>397</u> <u>397</u>
	DS	90* 90*
LED	LUXEON C	75'
FWHM / FWTM	65.0° / 88.0°	200
Efficiency	94 %	50° 50°
Peak intensity	0.8 cd/lm	K / / / / / / / / / / / / / / / / / / /
LEDs/each optic	1	400
Light colour	White	g
Required components:		
		30. 30.
1		423 06 723



# PHOTOMETRIC DATA (SIMULATED):

r		
OSRAM Opto Semiconductors		50° 50°
LED	OSCONIQ C 2424	21*
FWHM / FWTM	68.0° / 82.0°	200
Efficiency	97 %	60° 60°
Peak intensity	0.9 cd/lm	400
LEDs/each optic	1	
Light colour	White	634 634
Required components:		00 00 25 <sup>1</sup> 0 <sup>2</sup> 25 <sup>1</sup> 37
SEOUL SEOUL SEMICONDUCTOR		90 <sup>+</sup>
LED	Z8Y22T	75"
FWHM / FWTM	63.0° / 86.0°	
Efficiency	94 %	60° 60°
Peak intensity	1 cd/lm	400
LEDs/each optic	1	
Light colour	White	at at
Required components:		
		30° 35° 0° 35°



# PRODUCT DATASHEET C13232\_HB-2X2-WW

### **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.

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#### LEDiL Oy

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Shipping locations Salo, Finland Hong Kong, China

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