

HB-2X2-RS

~10° spot beam

SPECIFICATION:

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

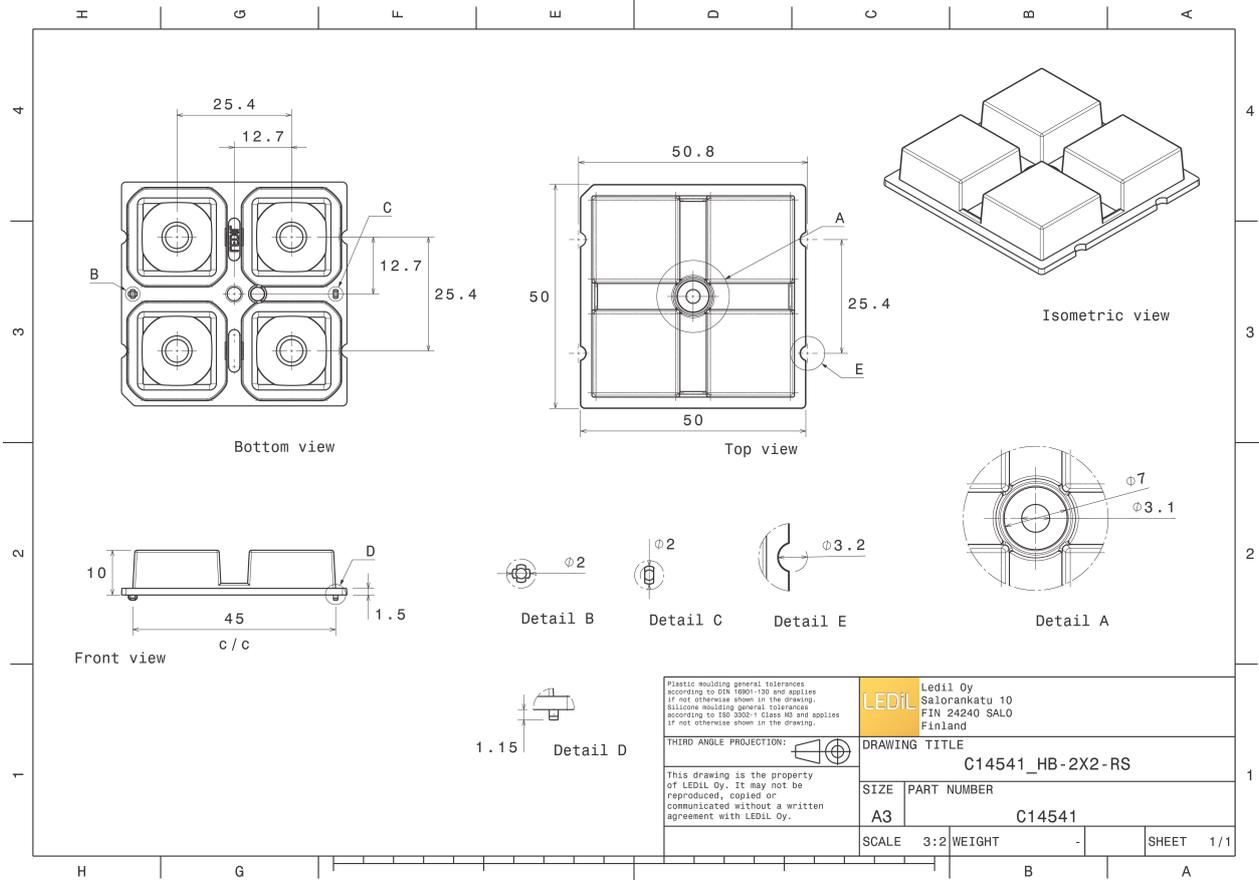
MATERIALS:

Component	Type	Material	Colour	Finish
HB-2X2-RS	Multi-lens	PMMA	clear	

ORDERING INFORMATION:

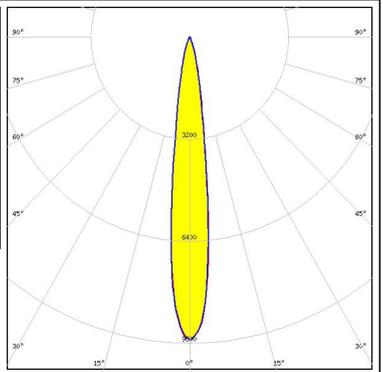
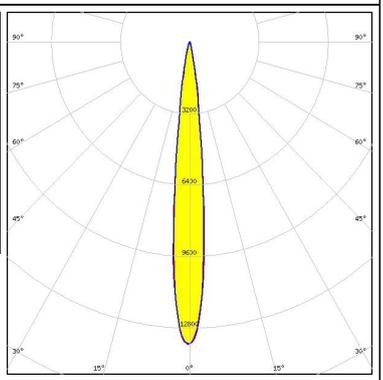
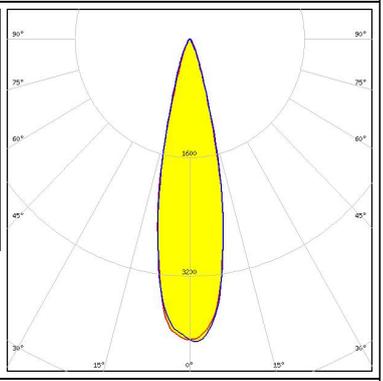
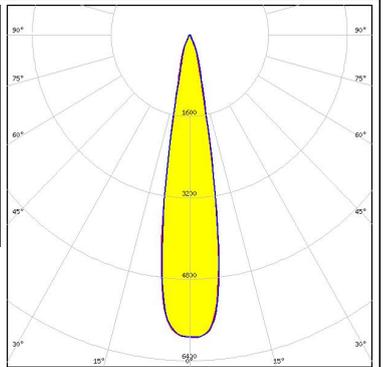
Component	Qty in box	MOQ	MPQ	Box weight (kg)
C14541_HB-2X2-RS » Box size: 480 x 280 x 300 mm	800	160	160	10.2



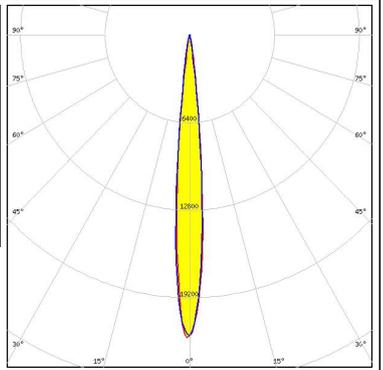
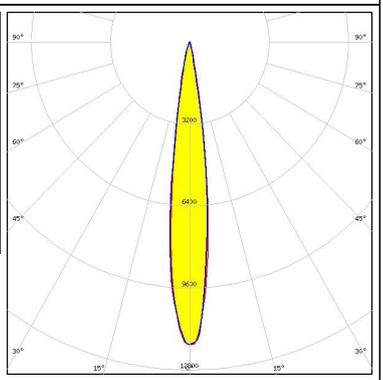
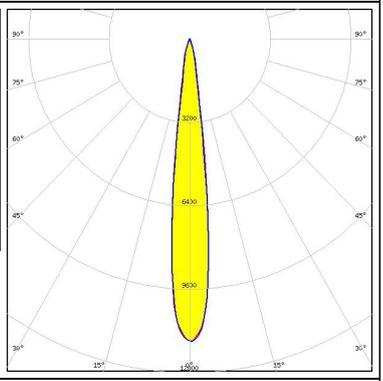
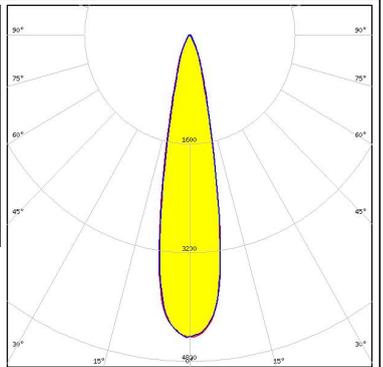


See also our general installation guide: www.ledil.com/installation_guide

OPTICAL RESULTS (MEASURED):

<p>COMET ELECTRONICS</p> <p>LED QUICK FLUX XTP 2x6 xxx LS G5</p> <p>FWHM / FWTM 14.0° / 29.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 9.5 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		
<p>CREE LED</p> <p>LED XD16</p> <p>FWHM / FWTM 11.0° / 23.0°</p> <p>Efficiency 93 %</p> <p>Peak intensity 13.5 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		
<p>CREE LED</p> <p>LED XHP35 HD</p> <p>FWHM / FWTM 24.0° / 42.0°</p> <p>Efficiency 89 %</p> <p>Peak intensity 4.1 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		
<p>CREE LED</p> <p>LED XM-L3</p> <p>FWHM / FWTM 20.0° / 36.0°</p> <p>Efficiency 96 %</p> <p>Peak intensity 6 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		

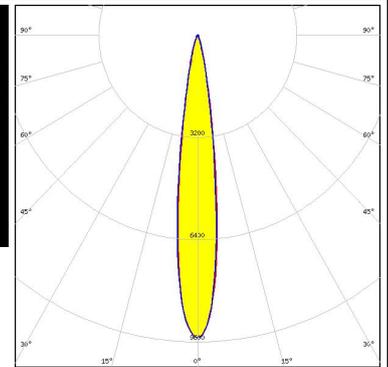
OPTICAL RESULTS (MEASURED):

<p>CREE → LED</p> <p>LED XP-E2 FWHM / FWTM 10.0° / 18.0° Efficiency 94 % Peak intensity 22.1 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>CREE → LED</p> <p>LED XP-G2 FWHM / FWTM 14.0° / 25.0° Efficiency 94 % Peak intensity 11.8 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>CREE → LED</p> <p>LED XP-L HI FWHM / FWTM 13.0° / 25.0° Efficiency 94 % Peak intensity 11.6 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>CREE → LED</p> <p>LED XP-L2 FWHM / FWTM 21.0° / 43.0° Efficiency 94 % Peak intensity 4.5 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		

OPTICAL RESULTS (MEASURED):

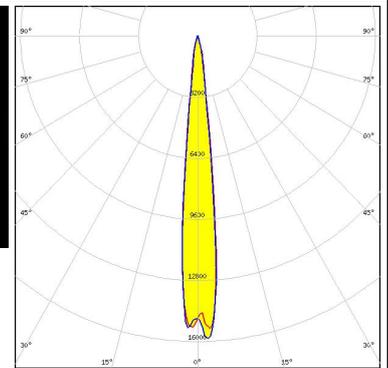
LUMILEDS

LED LUXEON V2
 FWHM / FWTM 15.0° / 28.0°
 Efficiency 94 %
 Peak intensity 9.5 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



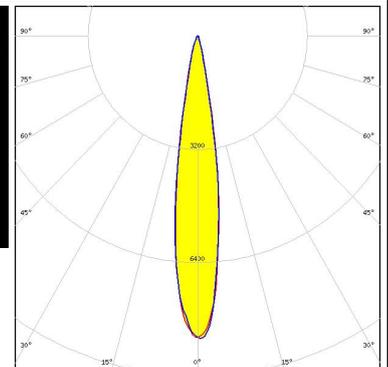
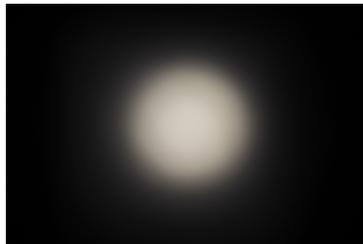
LUMINUS

LED SST-10-B130
 FWHM / FWTM 12.0° / 21.0°
 Efficiency 96 %
 Peak intensity 15.9 cd/lm
 LEDs/each optic 1
 Light colour Deep Red
 Required components:



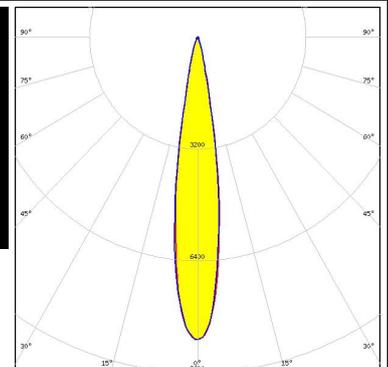
NICHIA

LED NVSW219D
 FWHM / FWTM 17.0° / 29.0°
 Efficiency 94 %
 Peak intensity 8.6 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

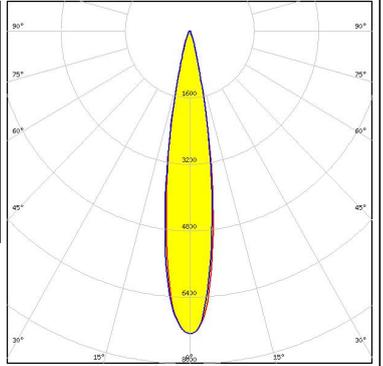
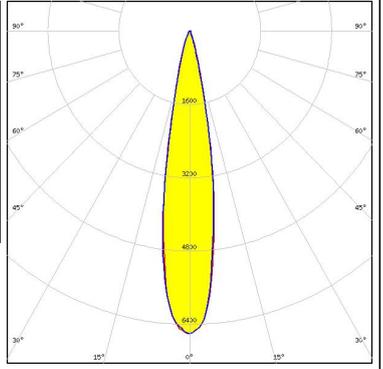
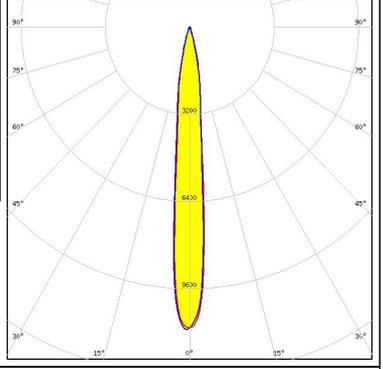
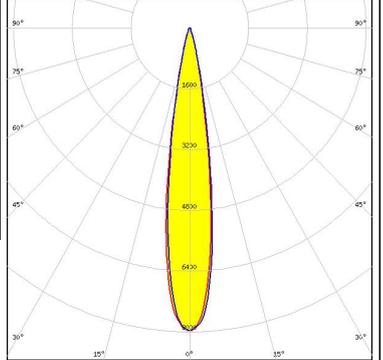


NICHIA

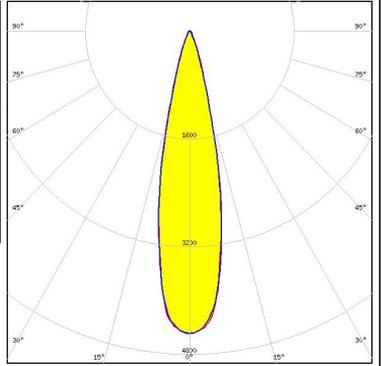
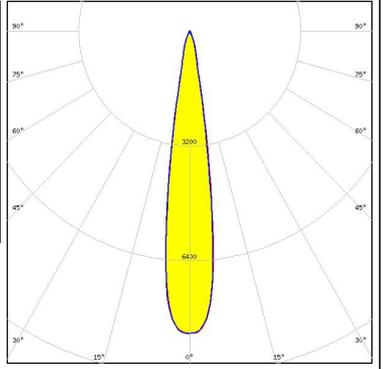
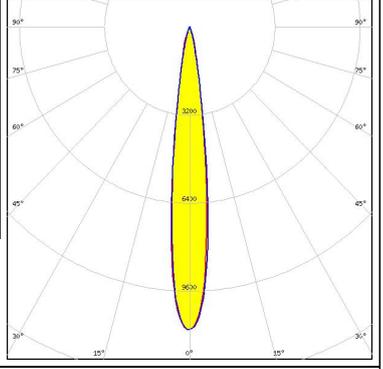
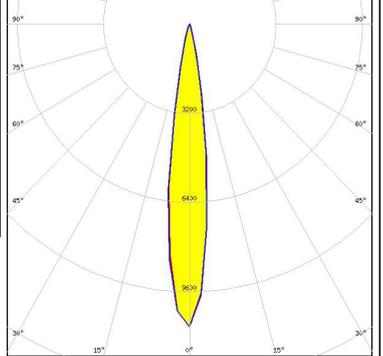
LED NVSW219F
 FWHM / FWTM 17.0° / 29.0°
 Efficiency 94 %
 Peak intensity 8.7 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (MEASURED):

<p>NICHIA</p> <p>LED NVSW319B FWHM / FWTM 18.0° / 32.0° Efficiency 94 % Peak intensity 7.3 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>NICHIA</p> <p>LED NVSW3x9A FWHM / FWTM 19.0° / 33.0° Efficiency 94 % Peak intensity 6.6 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>NICHIA</p> <p>LED NVSxE21A FWHM / FWTM 11.0° / 28.0° Efficiency 89 % Peak intensity 11.1 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>NICHIA</p> <p>LED NVSxx19B/NVSxx19C FWHM / FWTM 17.0° / 30.0° Efficiency 93 % Peak intensity 8 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		

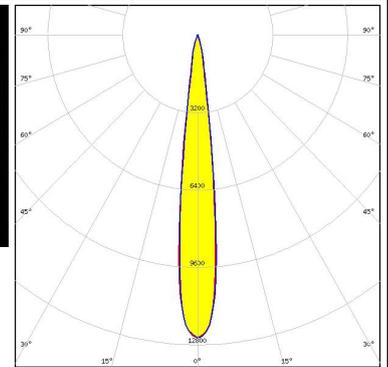
OPTICAL RESULTS (MEASURED):

<p>NICHIA</p> <p>LED NWSx229A FWHM / FWTM 23.0° / 41.0° Efficiency 94 % Peak intensity 4.5 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>OSRAM</p> <p>LED PL-BRICK HP 3800 2x8 SSG FWHM / FWTM 16.0° / 28.0° Efficiency 95 % Peak intensity 8.5 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>OSRAM</p> <p>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 Required components:</p>		
<p>OSRAM <small>Opto Semiconductors</small></p> <p>LED OSLOM Square CSSRM2/CSSRM3 FWHM / FWTM 15.0° / 27.0° Efficiency 90 % Peak intensity 11 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		

OPTICAL RESULTS (MEASURED):

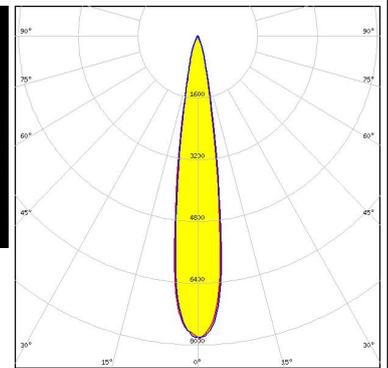
PHILIPS

LED Fortimo FastFlex LED 2x8 DA G4
 FWHM / FWTM 13.0° / 23.0°
 Efficiency 93 %
 Peak intensity 12.5 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



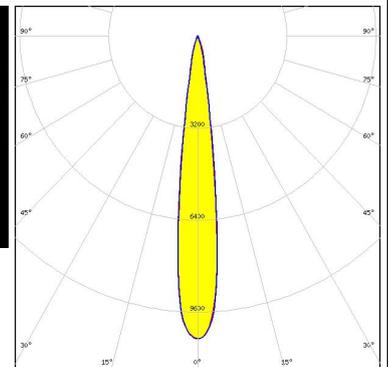
PHILIPS

LED Fortimo FastFlex LED 2x8 DA G4+
 FWHM / FWTM 17.0° / 32.0°
 Efficiency 96 %
 Peak intensity 7.8 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



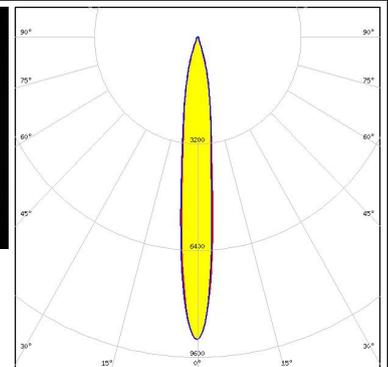
PHILIPS

LED Fortimo FastFlex LED 2x8 DA G5
 FWHM / FWTM 14.0° / 27.0°
 Efficiency 96 %
 Peak intensity 10.5 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



SAMSUNG

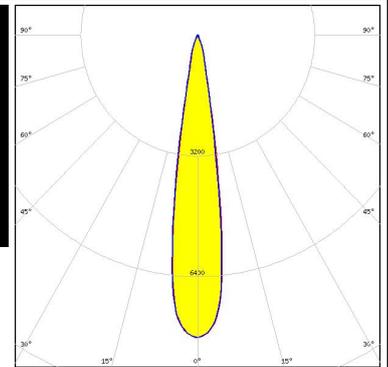
LED HiLOM RC12 Z (LH181B)
 FWHM / FWTM 12.0° / 33.0°
 Efficiency 97 %
 Peak intensity 9.1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (MEASURED):

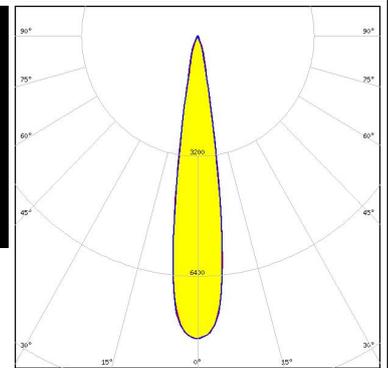
SAMSUNG

LED HiLOM RH12 Z (LH351C)
 FWHM / FWTM 17.0° / 29.0°
 Efficiency 96 %
 Peak intensity 8 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



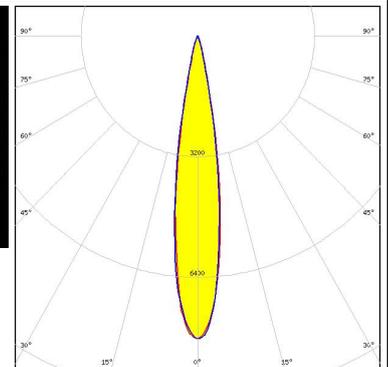
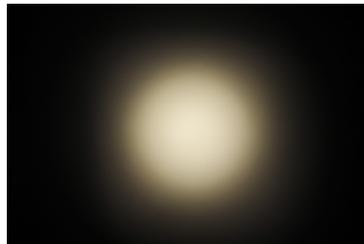
SAMSUNG

LED HiLOM RH16 (LH351C)
 FWHM / FWTM 17.0° / 30.0°
 Efficiency 94 %
 Peak intensity 8.1 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



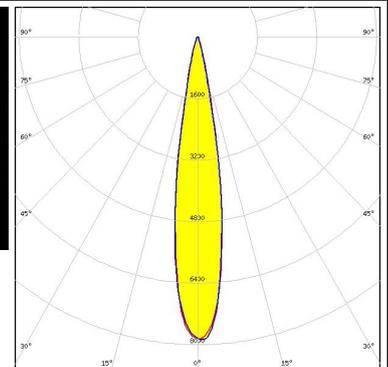
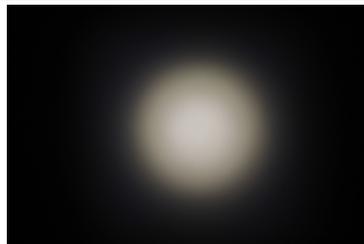
SAMSUNG

LED LH351B
 FWHM / FWTM 17.0° / 29.0°
 Efficiency 89 %
 Peak intensity 8 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



SAMSUNG

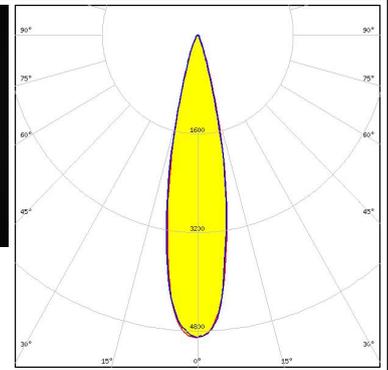
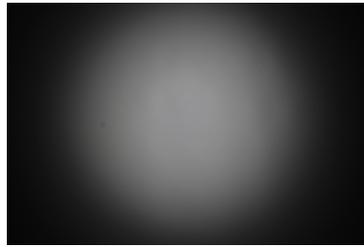
LED LH351C
 FWHM / FWTM 18.0° / 30.0°
 Efficiency 94 %
 Peak intensity 7.9 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (MEASURED):

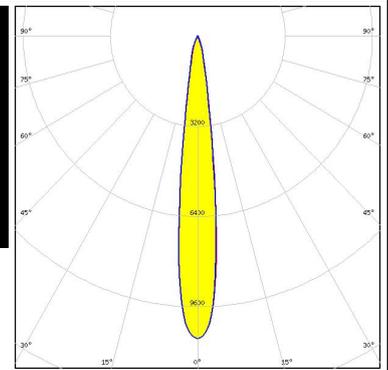
SAMSUNG

LED LH351D
 FWHM / FWTM 22.0° / 38.0°
 Efficiency 94 %
 Peak intensity 4.9 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



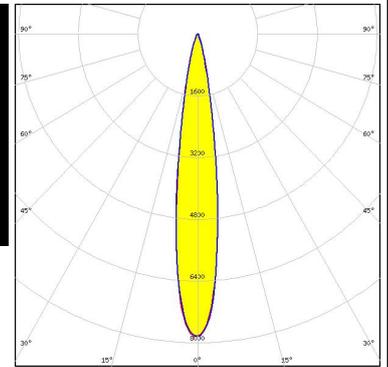
SKITEC

LED LED-Pa-L15c2W11c2-xxx-C050-01
 FWHM / FWTM 14.0° / 27.0°
 Efficiency 96 %
 Peak intensity 10.7 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



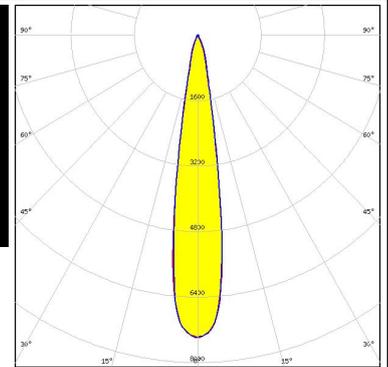
SEOL

SEOL SEMICONDUCTOR
 LED Z5M3
 FWHM / FWTM 16.0° / 31.0°
 Efficiency 94 %
 Peak intensity 7.8 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

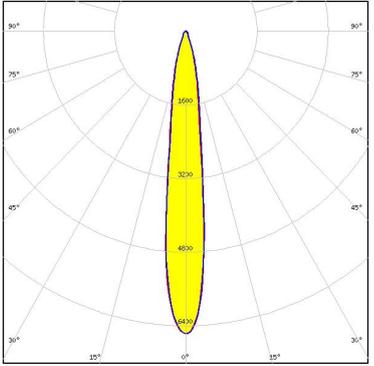


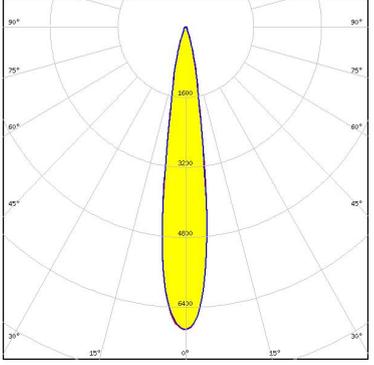
SEOL

SEOL SEMICONDUCTOR
 LED Z5M4
 FWHM / FWTM 17.0° / 32.0°
 Efficiency 96 %
 Peak intensity 7.4 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (MEASURED):

			
LED	Z8Y22		
FWHM / FWTM	14.0° / 35.0°		
Efficiency	94 %		
Peak intensity	6.6 cd/lm		
LEDs/each optic	1		
Light colour	White		
Required components:			

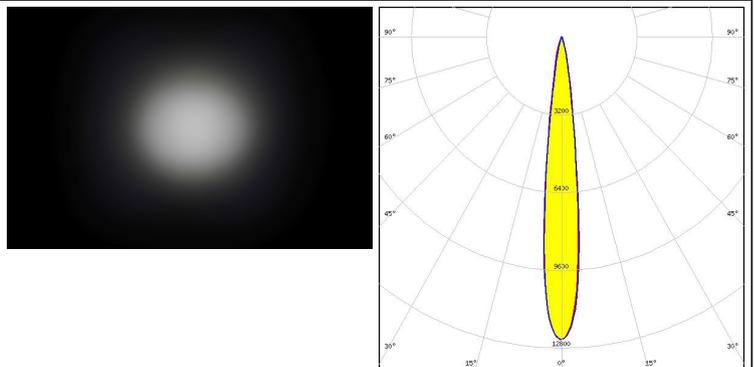
			
LED	Z8Y22P		
FWHM / FWTM	16.0° / 33.0°		
Efficiency	93 %		
Peak intensity	6.9 cd/lm		
LEDs/each optic	1		
Light colour	White		
Required components:			

TRIDONIC

LED	RLE 2x4 2000lm HP EXC2 OTD
FWHM / FWTM	13.0° / 25.0°
Efficiency	94 %
Peak intensity	12.5 cd/lm
LEDs/each optic	1
Light colour	White
Required components:	

TRIDONIC

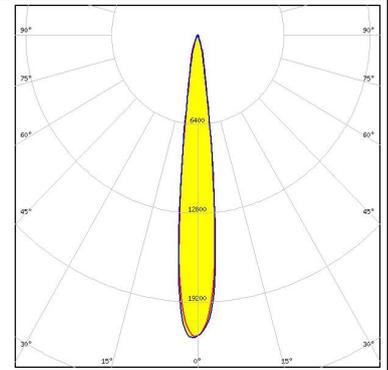
LED	RLE 2x8 4000lm HP EXC2 OTD
FWHM / FWTM	13.0° / 25.0°
Efficiency	94 %
Peak intensity	12.5 cd/lm
LEDs/each optic	1
Light colour	White
Required components:	



OPTICAL RESULTS (MEASURED):

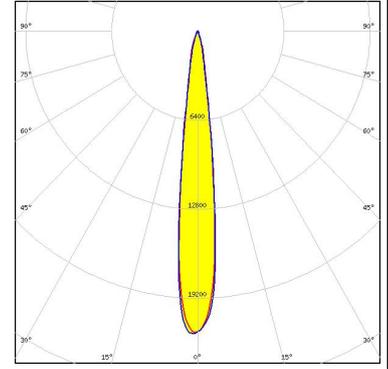
TRIDONIC

LED RLE G1 49x121mm 2000lm xxx EXC OTD
FWHM / FWTM 13.0° / 27.0°
Efficiency 94 %
Peak intensity 10.9 cd/lm
LEDs/each optic 1
Light colour White
Required components:



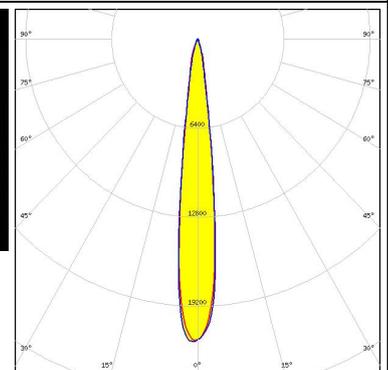
TRIDONIC

LED RLE G1 49x133mm 2000lm xxx EXC OTD
FWHM / FWTM 13.0° / 27.0°
Efficiency 94 %
Peak intensity 10.9 cd/lm
LEDs/each optic 1
Light colour White
Required components:



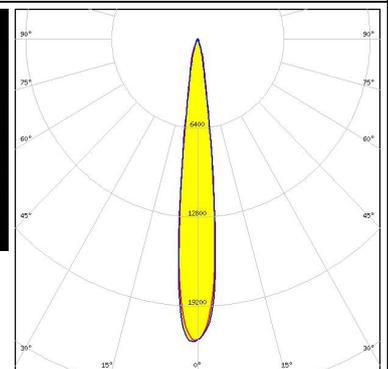
TRIDONIC

LED RLE G1 49x223mm 4000lm xxx EXC OTD
FWHM / FWTM 13.0° / 27.0°
Efficiency 94 %
Peak intensity 10.9 cd/lm
LEDs/each optic 1
Light colour White
Required components:

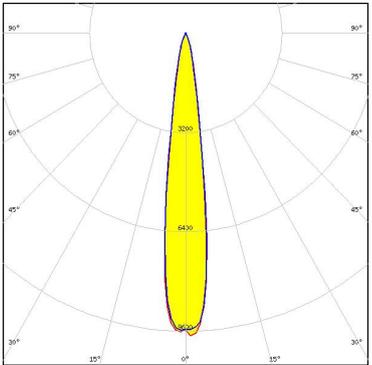
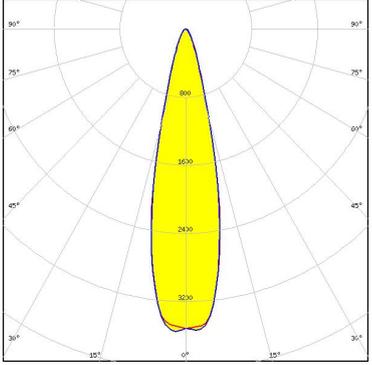
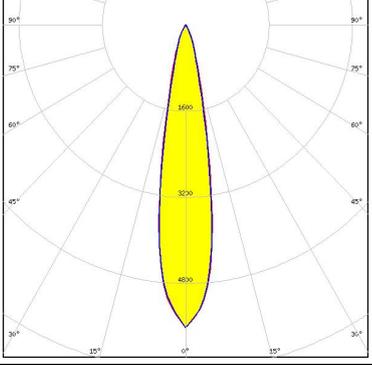
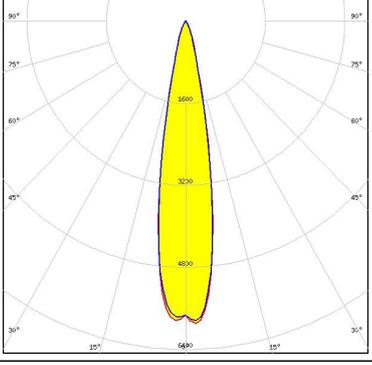


TRIDONIC

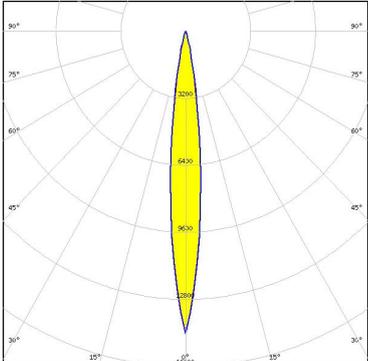
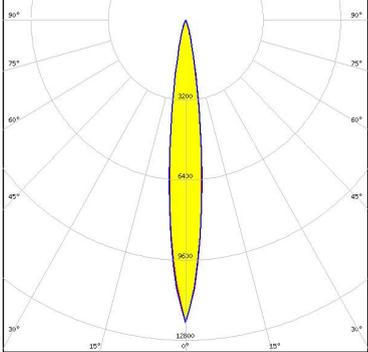
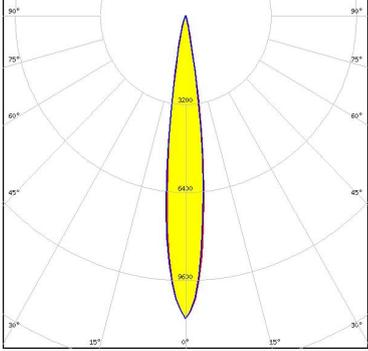
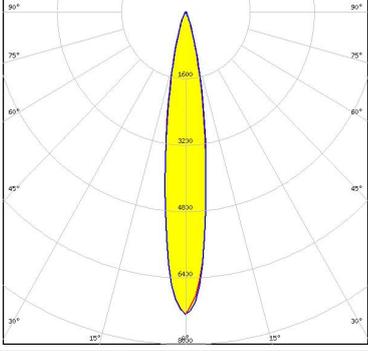
LED RLE G1 49x245mm 4000lm xxx EXC OTD
FWHM / FWTM 13.0° / 27.0°
Efficiency 94 %
Peak intensity 10.9 cd/lm
LEDs/each optic 1
Light colour White
Required components:



OPTICAL RESULTS (SIMULATED):

	<p>LED XHP35 HI FWHM / FWTM 14.0° / 29.0° Efficiency 93 % Peak intensity 9.9 cd/lm LEDs/each optic 1 Light colour White Required components:</p>	
	<p>LED XHP35.2 HD FWHM / FWTM 24.0° / 46.0° Efficiency 93 % Peak intensity 3.6 cd/lm LEDs/each optic 1 Light colour White Required components:</p>	
	<p>LED XM-L FWHM / FWTM 19.0° / 38.0° Efficiency 92 % Peak intensity 5.6 cd/lm LEDs/each optic 1 Light colour White Required components:</p>	
	<p>LED XM-L2 FWHM / FWTM 18.0° / 34.0° Efficiency 94 % Peak intensity 6.9 cd/lm LEDs/each optic 1 Light colour White Required components:</p>	

OPTICAL RESULTS (SIMULATED):

<p>CREE ⇄ LED</p> <p>LED: XP-E2 FWHM / FWTM: 12.0° / 26.0° Efficiency: 95 % Peak intensity: 14.4 cd/lm LEDs/each optic: 1 Light colour: Red Required components:</p>	
<p>CREE ⇄ LED</p> <p>LED: XP-G FWHM / FWTM: 13.0° / 27.0° Efficiency: 93 % Peak intensity: 12.1 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p>	
<p>CREE ⇄ LED</p> <p>LED: XP-G2 FWHM / FWTM: 14.0° / 26.0° Efficiency: 89 % Peak intensity: 11 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p> <p style="background-color: #e0f2f7; padding: 2px;">Protective plate, glass</p>	
<p>CREE ⇄ LED</p> <p>LED: XP-G2 HE FWHM / FWTM: 16.0° / 34.0° Efficiency: 94 % Peak intensity: 7.3 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p>	

OPTICAL RESULTS (SIMULATED):

<p>CREE → LED</p> <p>LED: XP-G3 FWHM / FWTM: 16.0° / 33.0° Efficiency: 94 % Peak intensity: 7.9 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p>	
<p>CREE → LED</p> <p>LED: XP-L HD FWHM / FWTM: 18.0° / 34.0° Efficiency: 90 % Peak intensity: 6.1 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p> <p style="background-color: #e0f0ff; padding: 2px; text-align: center;">Protective plate, glass</p>	
<p>CREE → LED</p> <p>LED: XP-L HD FWHM / FWTM: 19.0° / 35.0° Efficiency: 94 % Peak intensity: 6.1 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p>	
<p>CREE → LED</p> <p>LED: XP-L HI FWHM / FWTM: 13.0° / 25.0° Efficiency: 89 % Peak intensity: 10.9 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p> <p style="background-color: #e0f0ff; padding: 2px; text-align: center;">Protective plate, glass</p>	

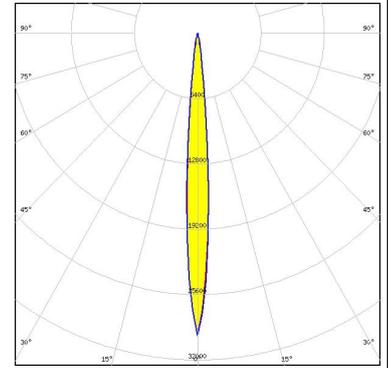
OPTICAL RESULTS (SIMULATED):

<p>CREE LED</p> <p>LED: XP-L2 FWHM / FWTM: 20.0° / 40.0° Efficiency: 89 % Peak intensity: 4.7 cd/lm LEDs/each optic: 1 Light colour: White Required components: Protective plate, glass</p>	
<p>CREE LED</p> <p>LED: XP-P FWHM / FWTM: 8.0° / 18.0° Efficiency: 95 % Peak intensity: 25.5 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p>	
<p>CREE LED</p> <p>LED: XQ-E HI FWHM / FWTM: 8.0° / 18.0° Efficiency: 94 % Peak intensity: 28.3 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p>	
<p>LUMILEDS</p> <p>LED: LUXEON C FWHM / FWTM: 11.0° / 24.0° Efficiency: 94 % Peak intensity: 16.2 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p>	

OPTICAL RESULTS (SIMULATED):

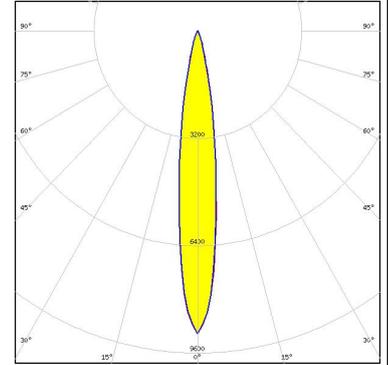
LUMILEDS

LED LUXEON CZ
 FWHM / FWTM 8.0° / 16.0°
 Efficiency 93 %
 Peak intensity 29.6 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



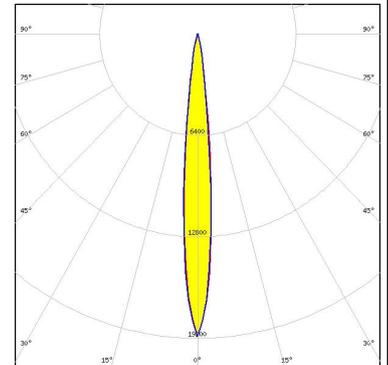
LUMILEDS

LED LUXEON HL2X
 FWHM / FWTM 14.0° / 30.0°
 Efficiency 95 %
 Peak intensity 9 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



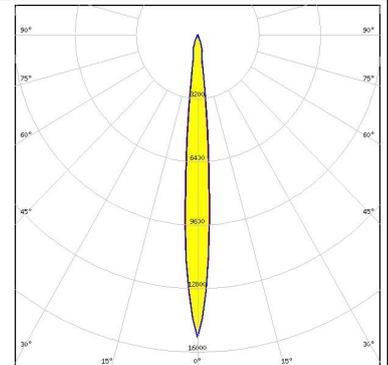
LUMILEDS

LED LUXEON IR Domed 150
 FWHM / FWTM 11.0° / 21.0°
 Efficiency 94 %
 Peak intensity 19.1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

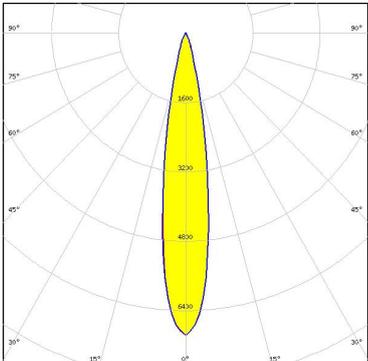
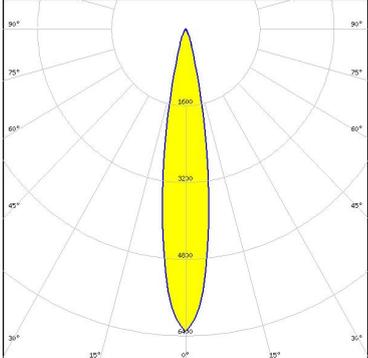
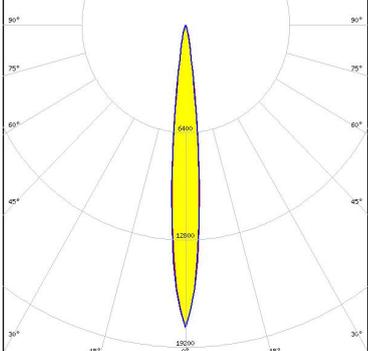
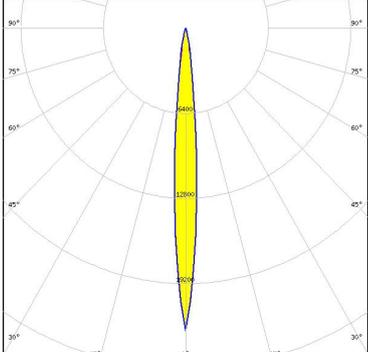


LUMILEDS

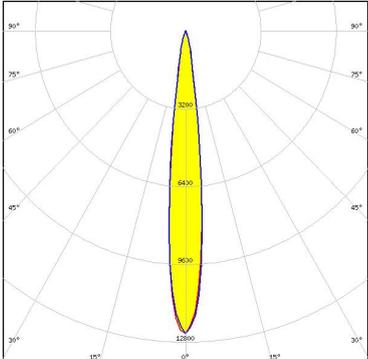
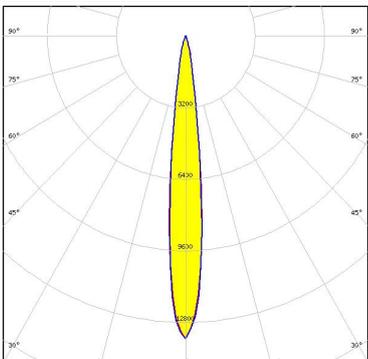
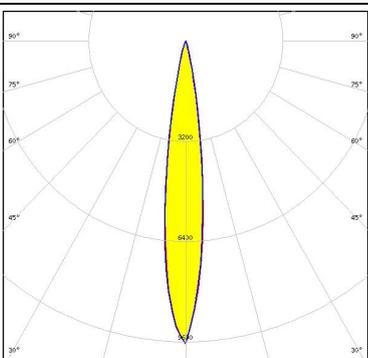
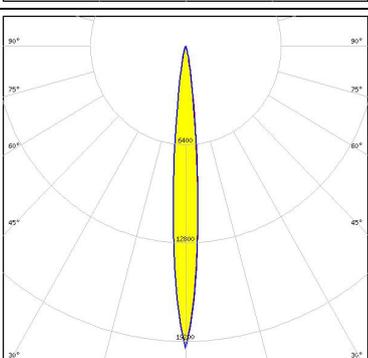
LED LUXEON IR Domed 60
 FWHM / FWTM 10.0° / 20.0°
 Efficiency 93 %
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (SIMULATED):

<p>LUMILEDS</p> <p>LED LUXEON XR-HL2X (L2H2-xxxxxxxMLU010)</p> <p>FWHM / FWTM 18.0° / 34.0°</p> <p>Efficiency 95 %</p> <p>Peak intensity 7 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	
<p>LUMILEDS</p> <p>LED LUXEON XR-HL2X (L2H2-xxxxxxxMLU010)</p> <p>FWHM / FWTM 18.0° / 34.0°</p> <p>Efficiency 88 %</p> <p>Peak intensity 6.3 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p> <p style="background-color: #ADD8E6; padding: 2px; display: inline-block;">Protective plate, glass</p>	
<p>OSRAM Opto Semiconductors</p> <p>LED OSCONIQ C 2424</p> <p>FWHM / FWTM 10.0° / 20.0 + 21.0°</p> <p>Efficiency 96 %</p> <p>Peak intensity 18 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	
<p>OSRAM Opto Semiconductors</p> <p>LED OSCONIQ P 3030</p> <p>FWHM / FWTM 8.0° / 20.0°</p> <p>Efficiency 95 %</p> <p>Peak intensity 22.7 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	

OPTICAL RESULTS (SIMULATED):

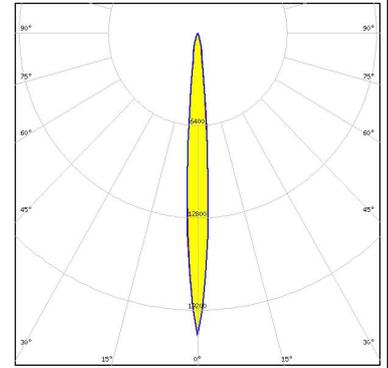
<p>OSRAM Opto Semiconductors</p> <p>LED OSCONIQ P 3737 (2W version)</p> <p>FWHM / FWTM 12.0° / 24.0°</p> <p>Efficiency 90 %</p> <p>Peak intensity 12.5 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p> <p>Protective plate, glass</p>	
<p>OSRAM Opto Semiconductors</p> <p>LED OSCONIQ P 3737 (2W version)</p> <p>FWHM / FWTM 12.0° / 24.0°</p> <p>Efficiency 95 %</p> <p>Peak intensity 13.5 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	
<p>OSRAM Opto Semiconductors</p> <p>LED OSLON Square CSSRM2/CSSRM3</p> <p>FWHM / FWTM 15.0° / 27.0°</p> <p>Efficiency 81 %</p> <p>Peak intensity 9.7 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p> <p>Protective plate, glass</p>	
<p>OSRAM Opto Semiconductors</p> <p>LED OSLON Square Flat</p> <p>FWHM / FWTM 10.0° / 20.0°</p> <p>Efficiency 96 %</p> <p>Peak intensity 19.7 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	

OPTICAL RESULTS (SIMULATED):

OSRAM

Opto Semiconductors

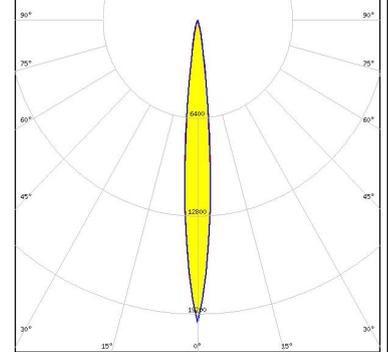
LED OSLOM SSL 80
 FWHM / FWTM 8.2° / 18.8°
 Efficiency 94 %
 Peak intensity 21 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OSRAM

Opto Semiconductors

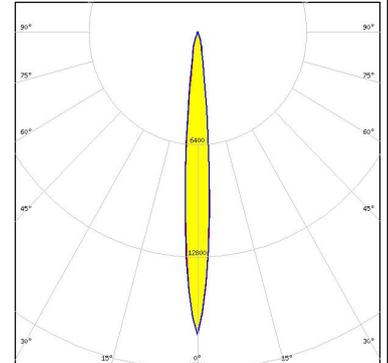
LED OSTAR Projection Compact (Kx.CSLNM1.xx)
 FWHM / FWTM 10.0° / 20.0°
 Efficiency 96 %
 Peak intensity 19.8 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OSRAM

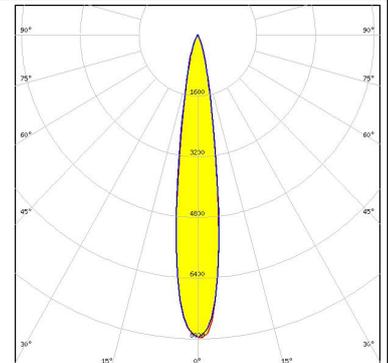
Opto Semiconductors

LED SFH 4715AS
 FWHM / FWTM 9.2° / 21.0°
 Efficiency %
 LEDs/each optic 1
 Light colour IR
 Required components:



SAMSUNG

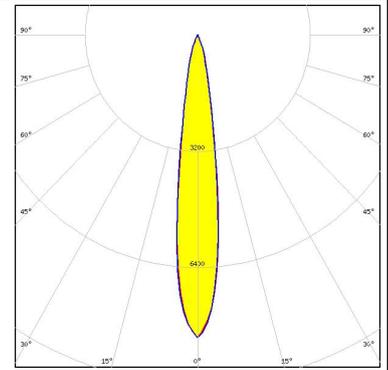
LED LH231B
 FWHM / FWTM 16.0° / 34.0°
 Efficiency 94 %
 Peak intensity 8 cd/lm
 LEDs/each optic 4
 Light colour White
 Required components:



OPTICAL RESULTS (SIMULATED):

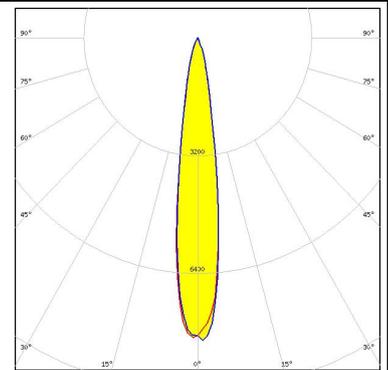
SAMSUNG

LED LH231B
 FWHM / FWTM 16.0° / 32.0°
 Efficiency 95 %
 Peak intensity 8.4 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



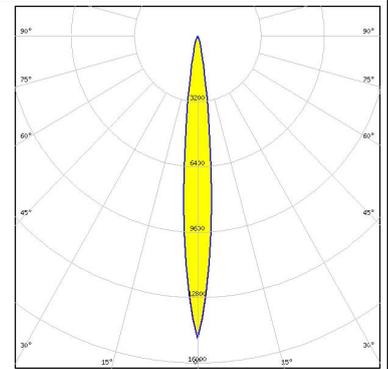
SAMSUNG

LED LH231B
 FWHM / FWTM 16.0° / 32.0°
 Efficiency 95 %
 Peak intensity 8.3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



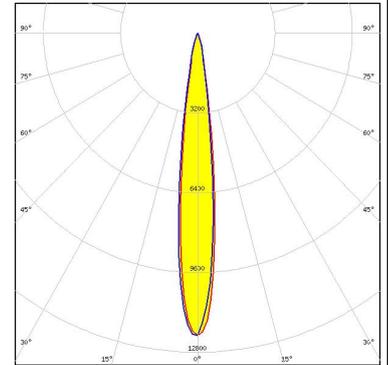
SAMSUNG

LED LM301B
 FWHM / FWTM 10.0° / 24.0°
 Efficiency 94 %
 Peak intensity 14.8 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

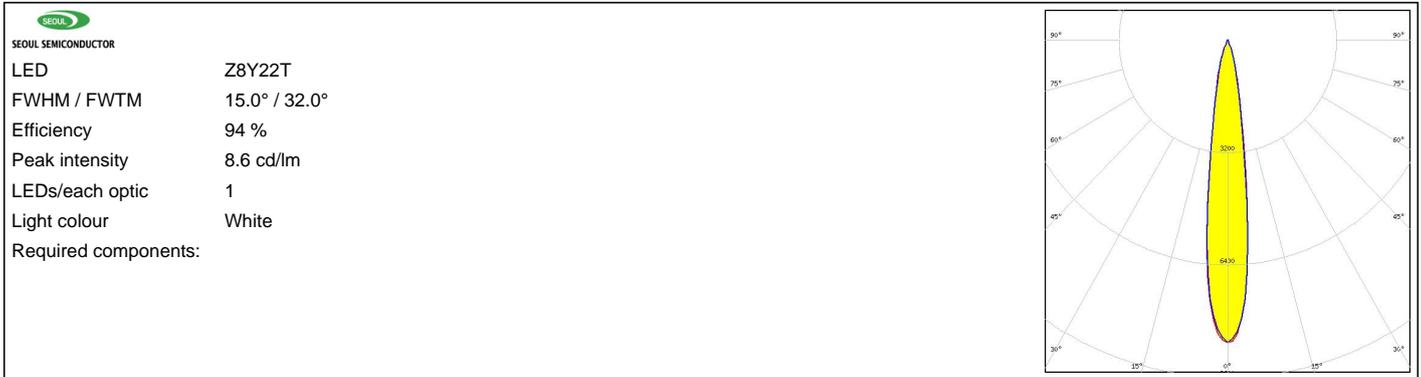


SEOUL SEMICONDUCTOR

LED Z5M1/Z5M2
 FWHM / FWTM 13.0° / 26.0°
 Efficiency 92 %
 Peak intensity 12.1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (SIMULATED):



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:

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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

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