

HB-2X2-M

~25° medium beam optimized for CREE XP-L and XM-L

SPECIFICATION:

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

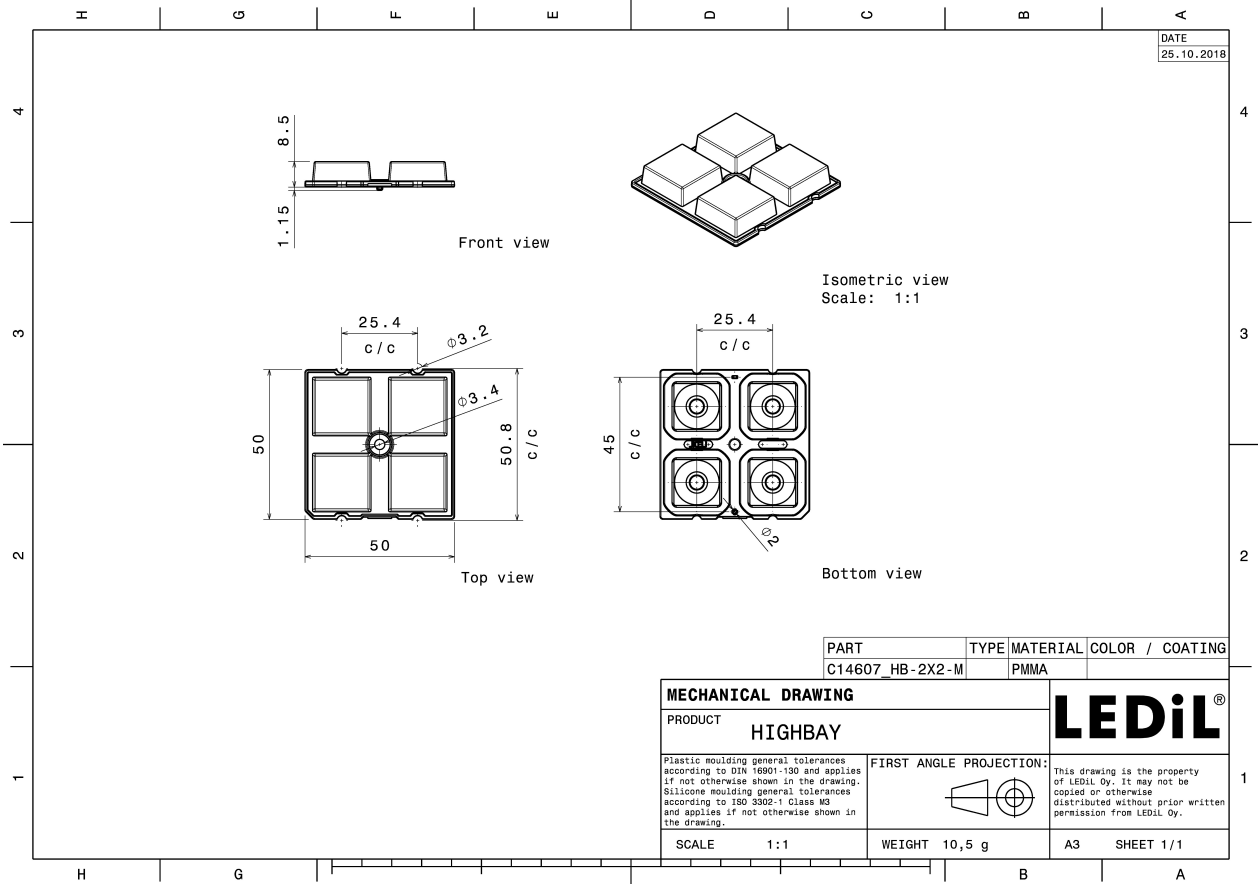
MATERIALS:

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

ORDERING INFORMATION:


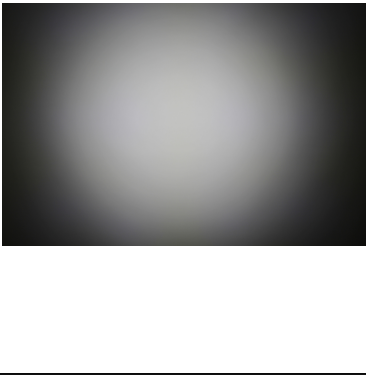
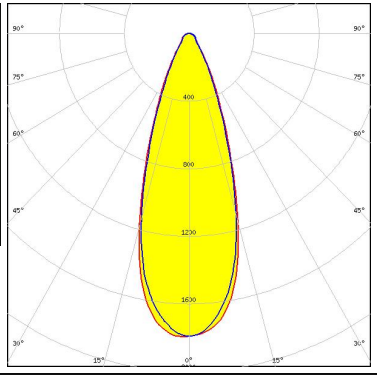


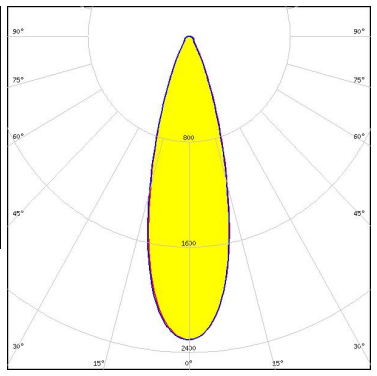


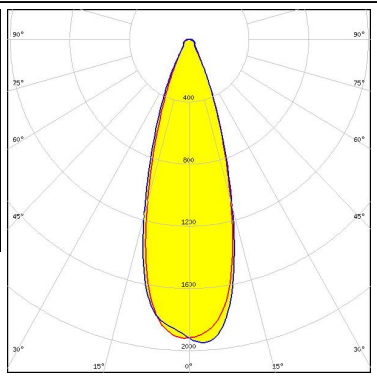


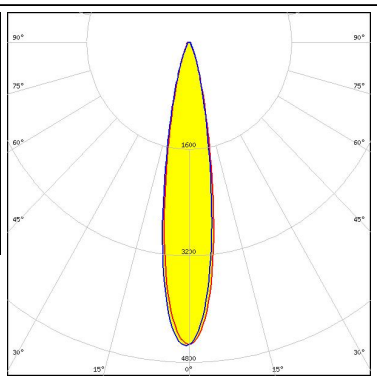
Component	Qty in box	MOQ	MPQ	Box weight (kg)
C14607_HB-2X2-M » Box size: 480 x 280 x 300 mm	800	160	160	9.2



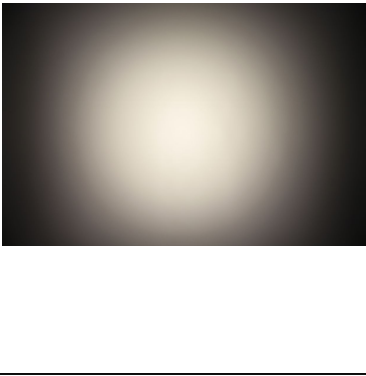
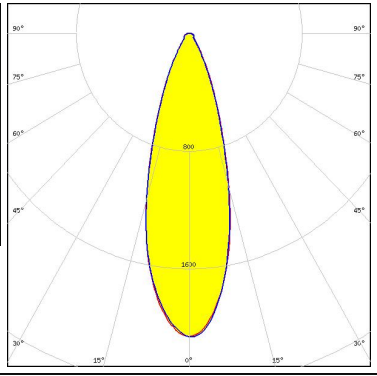
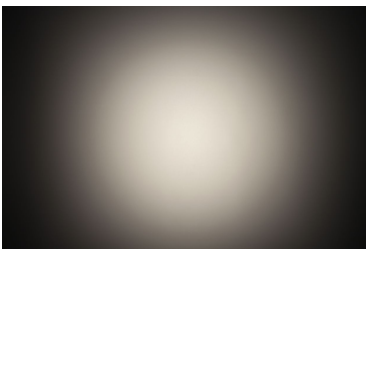
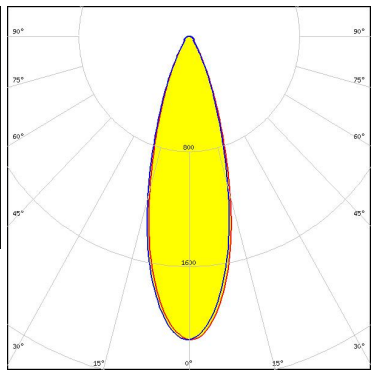

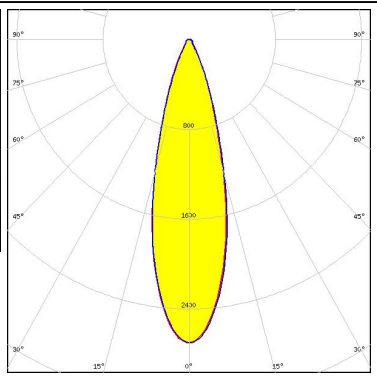
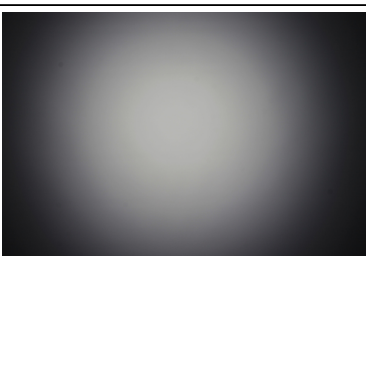
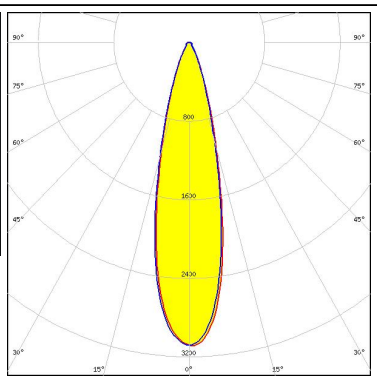


See also our general installation guide: www.ledil.com/installation_guide

OPTICAL RESULTS (MEASURED):

<p> bridgelux</p> <p>LED Bridgelux SMD 5050</p> <p>FWHM / FWTM 36.0° / 66.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 1.8 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		
<p> CREE LEDs</p> <p>LED J Series 5050C 6V E Class</p> <p>FWHM / FWTM 31.0° / 57.0°</p> <p>Efficiency 93 %</p> <p>Peak intensity 2.3 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		
<p> CREE LEDs</p> <p>LED XD16</p> <p>FWHM / FWTM 33.0° / 59.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 2 cd/lm</p> <p>LEDs/each optic 4</p> <p>Light colour White</p> <p>Required components:</p>		
<p> CREE LEDs</p> <p>LED XD16</p> <p>FWHM / FWTM 19.0° / 39.0°</p> <p>Efficiency 90 %</p> <p>Peak intensity 4.6 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		

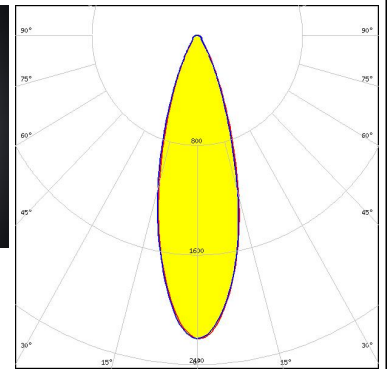
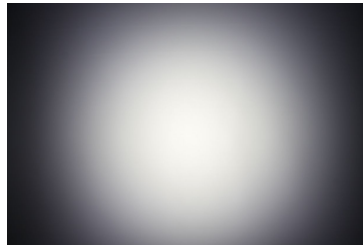
OPTICAL RESULTS (MEASURED):

<p>CREE LEDs</p> <p>LED XM-L FWHM / FWTM 32.0° / 61.0° Efficiency 93 % Peak intensity 2 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>CREE LEDs</p> <p>LED XM-L2 FWHM / FWTM 32.0° / 61.0° Efficiency 92 % Peak intensity 2.1 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>CREE LEDs</p> <p>LED XM-L3 FWHM / FWTM 28.0° / 54.0° Efficiency 95 % Peak intensity 2.7 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>CREE LEDs</p> <p>LED XP-G2 FWHM / FWTM 25.0° / 49.0° Efficiency 0 % Peak intensity 3.1 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		

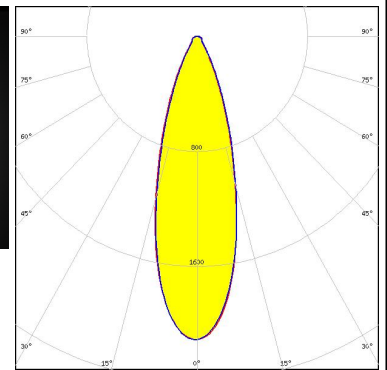
OPTICAL RESULTS (MEASURED):



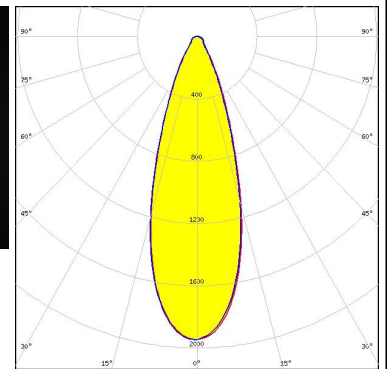
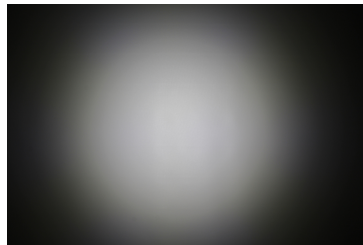
LED XP-L HD
 FWHM / FWTM 31.0° / 60.0°
 Efficiency 94 %
 Peak intensity 2.2 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



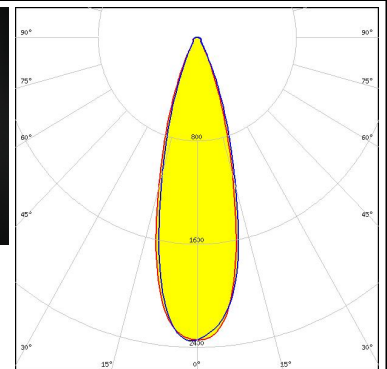
LED XP-L2
 FWHM / FWTM 31.0° / 61.0°
 Efficiency 93 %
 Peak intensity 2.1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



LED LUXEON 5050 Round LES
 FWHM / FWTM 34.0° / 65.0°
 Efficiency 94 %
 Peak intensity 2 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



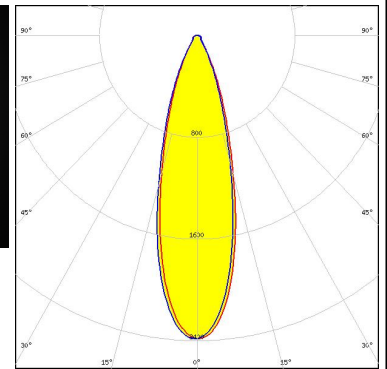
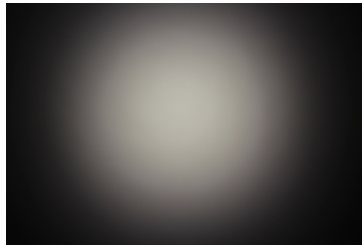
LED LUXEON MZ
 FWHM / FWTM 30.0° / 55.0°
 Efficiency 91 %
 Peak intensity 2.4 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (MEASURED):

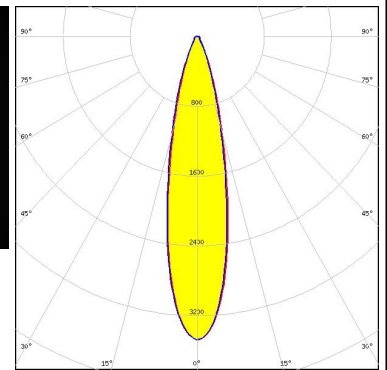
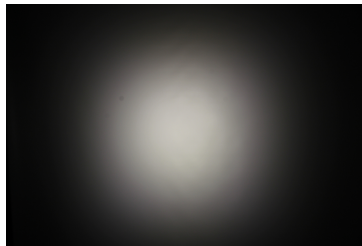
LUMILEDS

LED LUXEON V
 FWHM / FWTM 29.0° / 58.0°
 Efficiency 94 %
 Peak intensity 2.4 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



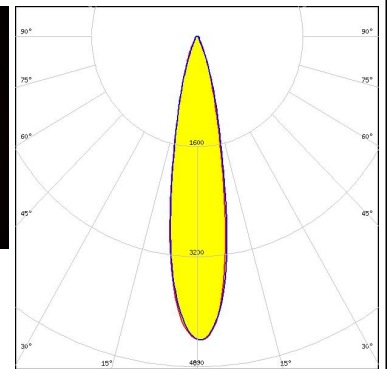
LUMILEDS

LED LUXEON V2
 FWHM / FWTM 23.0° / 47.0°
 Efficiency 94 %
 Peak intensity 3.5 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



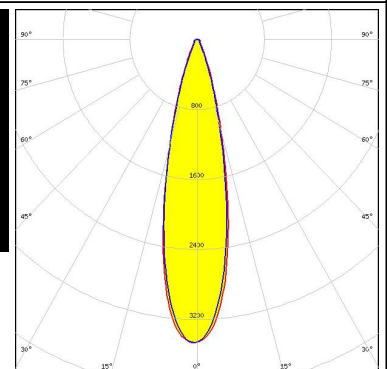
LUMINUS

LED SST-10-B130
 FWHM / FWTM 21.0° / 42.0°
 Efficiency 95 %
 Peak intensity 4.4 cd/lm
 LEDs/each optic 1
 Light colour Deep Red
 Required components:


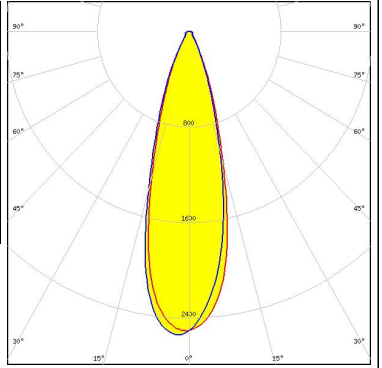

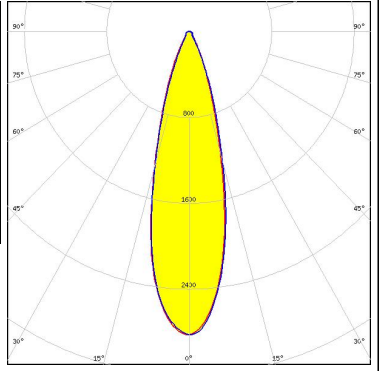
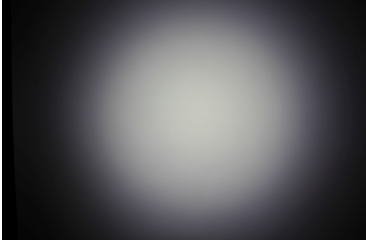
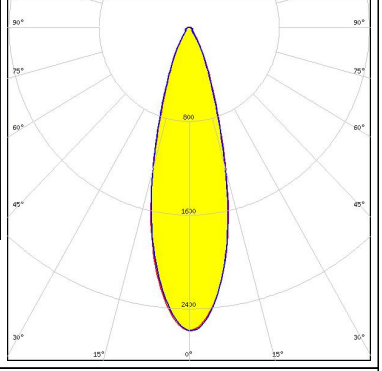
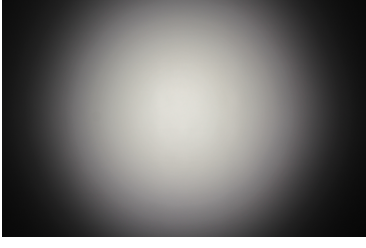
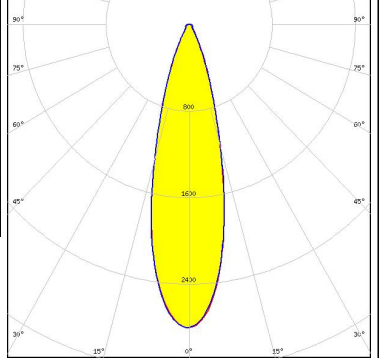


Your solutions

LED RecLED 122x50mm 1900lm 730 2x4 Opt G1
 FWHM / FWTM 24.0° / 46.0°
 Efficiency 95 %
 Peak intensity 3.5 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



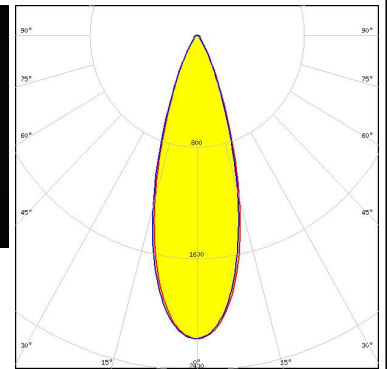
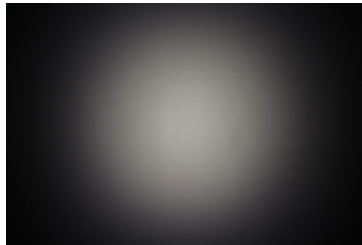
OPTICAL RESULTS (MEASURED):

<p>NICHIA</p> <p>LED NVSW219D FWHM / FWTM 29.0° / 55.0° Efficiency 94 % Peak intensity 2.5 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>NICHIA</p> <p>LED NVSW219F FWHM / FWTM 28.0° / 53.0° Efficiency 95 % Peak intensity 2.8 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>NICHIA</p> <p>LED NVSW319B FWHM / FWTM 29.0° / 57.0° Efficiency 94 % Peak intensity 2.6 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>NICHIA</p> <p>LED NVSW3x9A FWHM / FWTM 28.0° / 53.0° Efficiency 94 % Peak intensity 2.8 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		

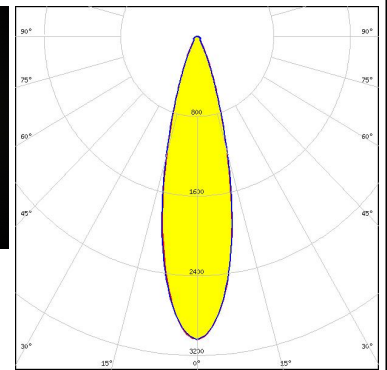
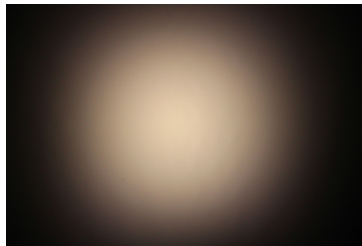
OPTICAL RESULTS (MEASURED):



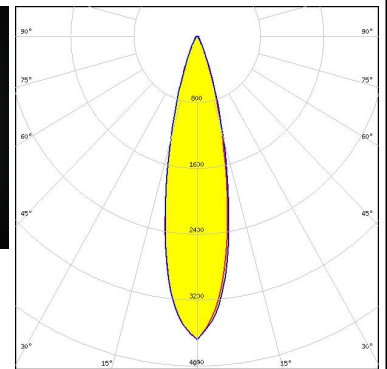
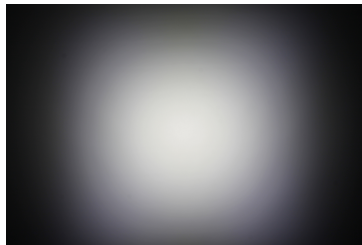
LED NWSx229A
 FWHM / FWTM 33.0° / 58.0°
 Efficiency 87 %
 Peak intensity 2.2 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



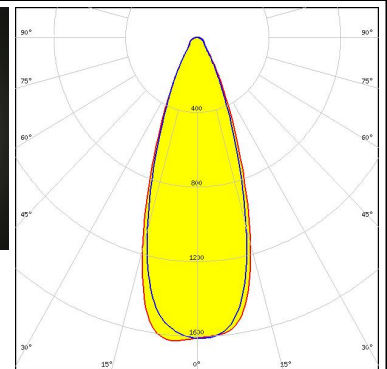
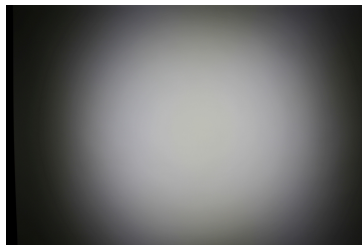
LED PL-BRICK HP 3800 2x8 SSG
 FWHM / FWTM 26.0° / 50.0°
 Efficiency 94 %
 Peak intensity 3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



LED PrevaLED Brick HP 2x8
 FWHM / FWTM 23.0° / 44.0°
 Efficiency 91 %
 Peak intensity 3.8 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



LED Duris S8
 FWHM / FWTM 38.0° / 68.0°
 Efficiency 94 %
 Peak intensity 1.6 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

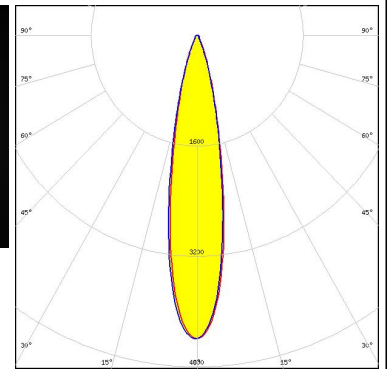
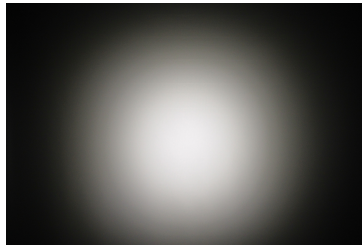


OPTICAL RESULTS (MEASURED):

OSRAM

Opto Semiconductors

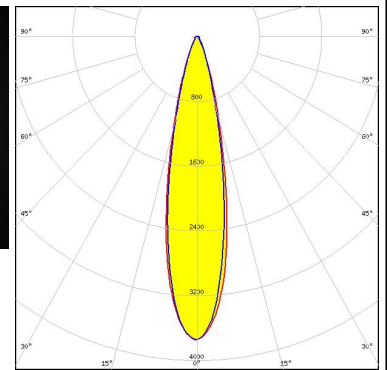
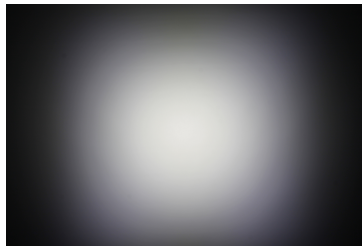
LED OSCONIQ C 3030
 FWHM / FWTM 21.0° / 42.0°
 Efficiency 93 %
 Peak intensity 4.4 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OSRAM

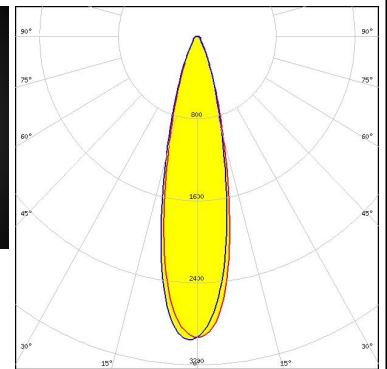
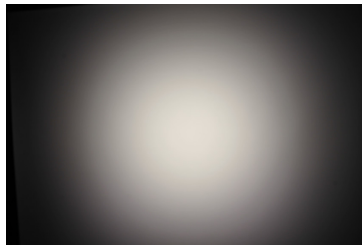
Opto Semiconductors

LED OSLON Square CSSRM2/CSSRM3
 FWHM / FWTM 23.0° / 44.0°
 Efficiency 91 %
 Peak intensity 3.8 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



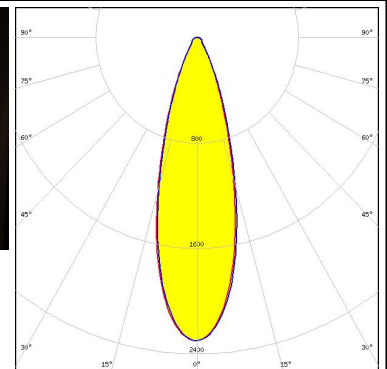
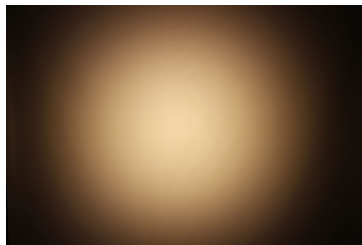
PHILIPS

LED Fortimo FastFlex LED 2x8 DA G4
 FWHM / FWTM 25.0° / 51.0°
 Efficiency 92 %
 Peak intensity 3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



PHILIPS

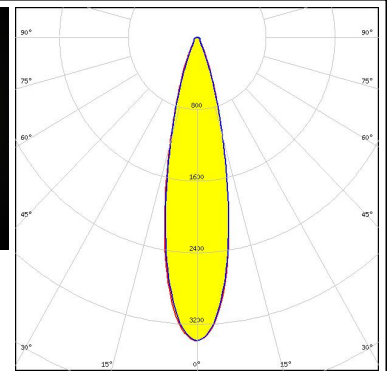
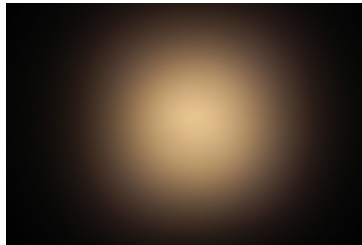
LED Fortimo FastFlex LED 2x8 DA G4+
 FWHM / FWTM 30.0° / 59.0°
 Efficiency 96 %
 Peak intensity 2.3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (MEASURED):

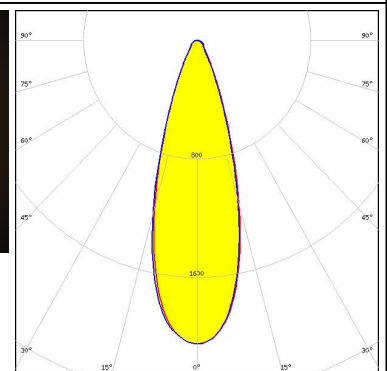
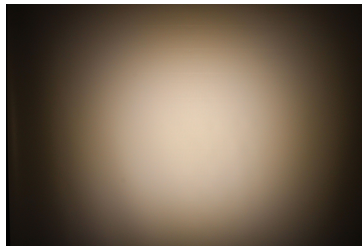
PHILIPS

LED Fortimo FastFlex LED 2x8 DA G5
 FWHM / FWTM 24.0° / 47.0°
 Efficiency 94 %
 Peak intensity 3.4 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



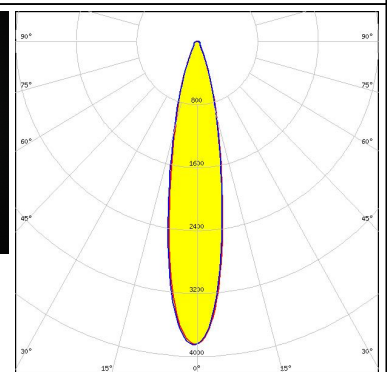
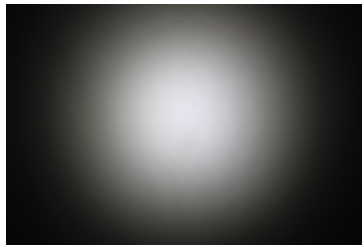
PHILIPS

LED Fortimo FastFlex LED 2x8 DA HE
 FWHM / FWTM 32.0° / 61.0°
 Efficiency 96 %
 Peak intensity 2.1 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



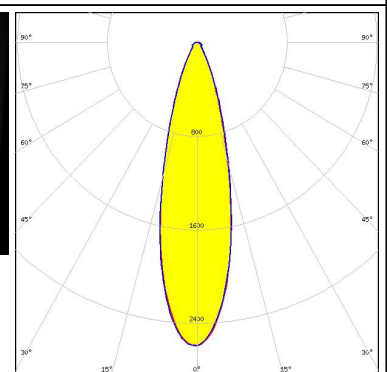
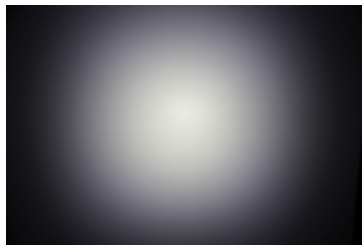
SAMSUNG

LED HiLOM RC12 Z (LH181B)
 FWHM / FWTM 21.0° / 45.0°
 Efficiency 96 %
 Peak intensity 3.9 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



SAMSUNG

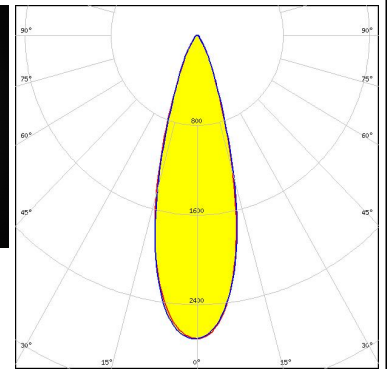
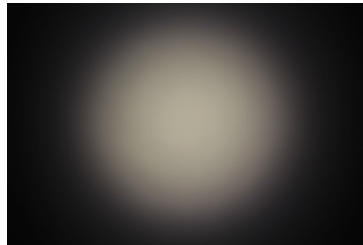
LED HiLOM RH12 Z (LH351C)
 FWHM / FWTM 27.0° / 55.0°
 Efficiency 95 %
 Peak intensity 2.6 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (MEASURED):

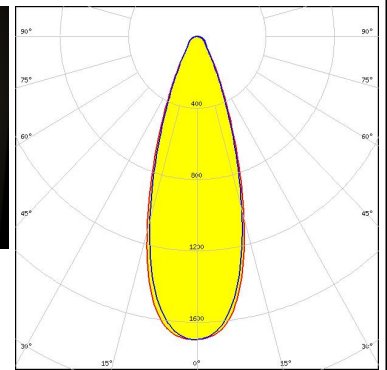
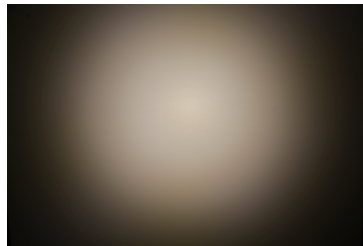
SAMSUNG

LED HiLOM RH16 (LH351C)
 FWHM / FWTM 30.0° / 55.0°
 Efficiency 94 %
 Peak intensity 2.7 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



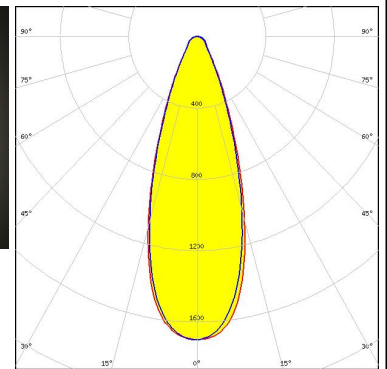
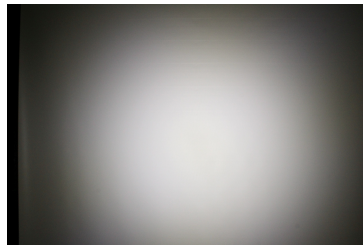
SAMSUNG

LED HiLOM RM12 Z (LH502C)
 FWHM / FWTM 35.0° / 67.0°
 Efficiency 95 %
 Peak intensity 1.7 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



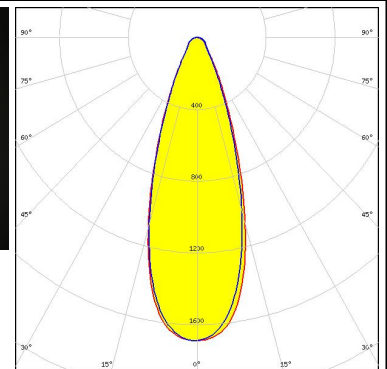
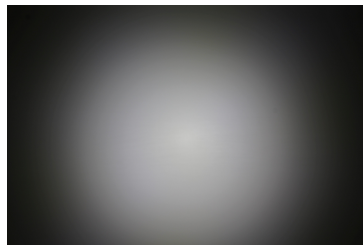
SAMSUNG

LED HiLOM RM16 Z (LH502C)
 FWHM / FWTM 36.0° / 68.0°
 Efficiency 96 %
 Peak intensity 1.7 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



SAMSUNG

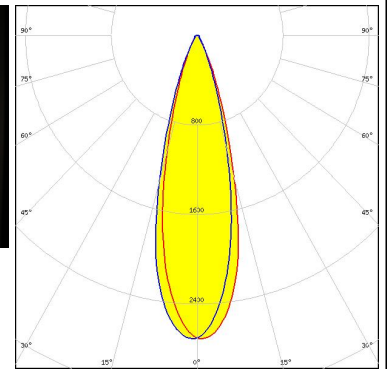
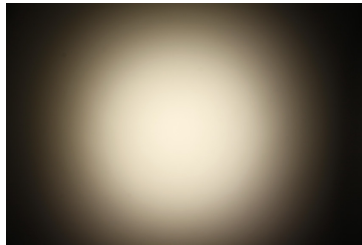
LED HiLOM RM8 Z (LH502C)
 FWHM / FWTM 36.0° / 68.0°
 Efficiency 96 %
 Peak intensity 1.7 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (MEASURED):

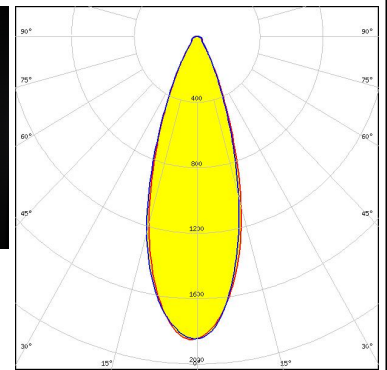
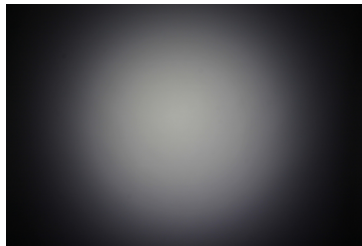
SAMSUNG

LED LH351B
 FWHM / FWTM 28.0° / 52.0°
 Efficiency 85 %
 Peak intensity 2.7 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:

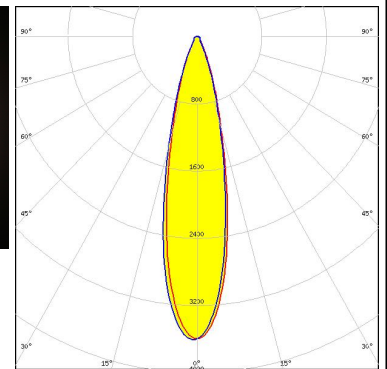
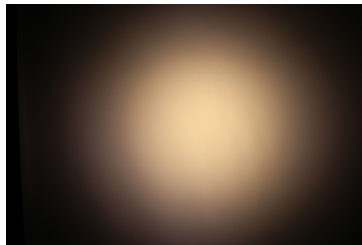


SAMSUNG

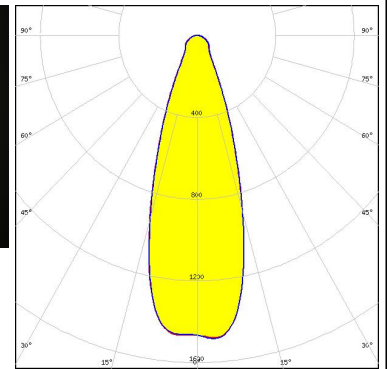
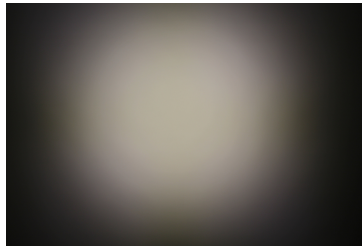
LED LH351D
 FWHM / FWTM 35.0° / 64.0°
 Efficiency 91 %
 Peak intensity 1.9 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:




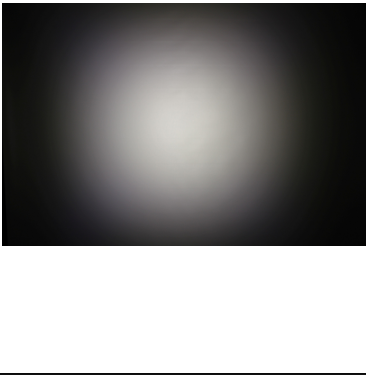
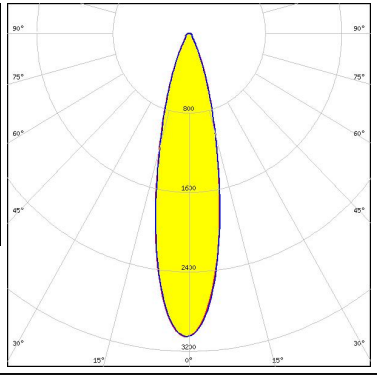


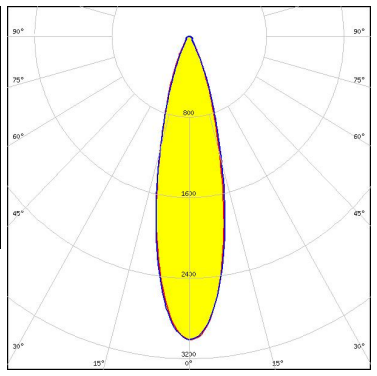


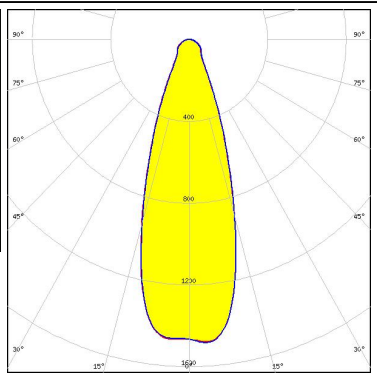

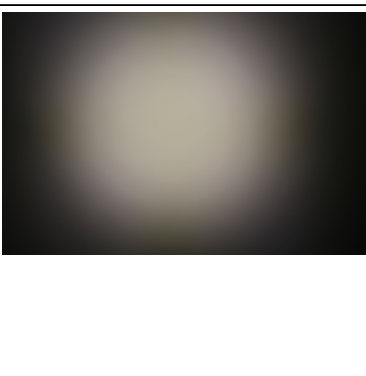
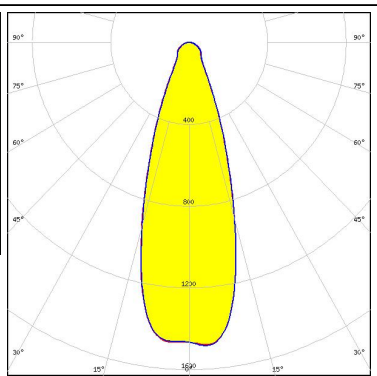
LED LED-Pa-L15c2W11c2-xxx-C050-01
 FWHM / FWTM 24.0° / 48.0 + 47.0°
 Efficiency 95 %
 Peak intensity 3.6 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



SEMI-LED
 LED 2x2 Y22 module - SMJQ-D48W16AA-XX
 FWHM / FWTM 34.0° / 64.0°
 Efficiency 93 %
 Peak intensity 1.5 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (MEASURED):

<p> SEOUL SEMICONDUCTOR</p> <p>LED Z5M3 FWHM / FWTM 25.0° / 51.0° Efficiency 94 % Peak intensity 3.1 cd/m LEDs/each optic 1 Light colour White Required components:</p>		
<p> SEOUL SEMICONDUCTOR</p> <p>LED Z5M4 FWHM / FWTM 26.0° / 52.0° Efficiency 95 % Peak intensity 3 cd/m LEDs/each optic 1 Light colour White Required components:</p>		
<p> SEOUL SEMICONDUCTOR</p> <p>LED Z8Y19 FWHM / FWTM 34.0° / 64.0° Efficiency 93 % Peak intensity 1.5 cd/m LEDs/each optic 4 Light colour White Required components:</p>		
<p> SEOUL SEMICONDUCTOR</p> <p>LED Z8Y19 FWHM / FWTM 34.0° / 64.0° Efficiency 93 % Peak intensity 1.5 cd/m LEDs/each optic 4 Light colour White Required components:</p>		

OPTICAL RESULTS (MEASURED):

			
LED	Z8Y22P		
FWHM / FWTM	25.0° / 48.0°		
Efficiency	92 %		
Peak intensity	3.1 cd/m		
LEDs/each optic	1		
Light colour	White		
Required components:			

TRIDONIC

LED RLE 2x4 2000lm HP EXC2 OTD
 FWHM / FWTM 23.0° / 48.0°
 Efficiency 94 %
 Peak intensity 3.4 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:

TRIDONIC

LED RLE 2x8 4000lm HP EXC2 OTD
 FWHM / FWTM 23.0° / 48.0°
 Efficiency 94 %
 Peak intensity 3.4 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:

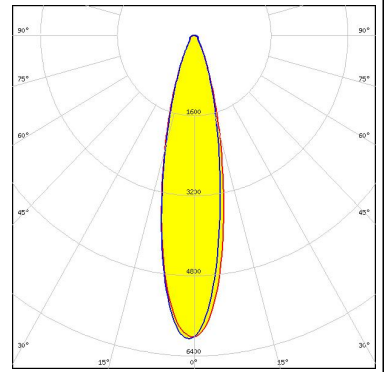
TRIDONIC

LED RLE 2x8 6000lm HP HE EXC3 OTD
 FWHM / FWTM 33.0° / 64.0°
 Efficiency 95 %
 Peak intensity 1.9 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:

OPTICAL RESULTS (MEASURED):

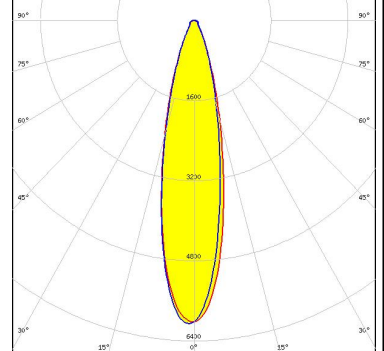
TRIDONIC

LED RLE G1 49x121mm 2000lm xxx EXC OTD
 FWHM / FWTM 24.0° / 51.0°
 Efficiency 94 %
 Peak intensity 3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



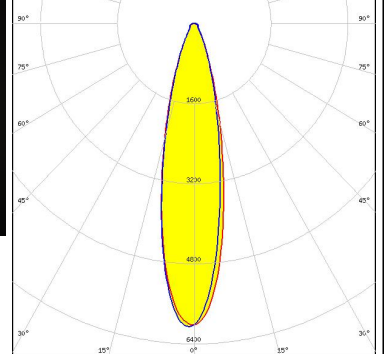
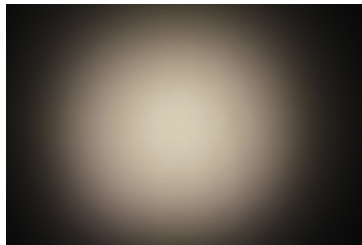
TRIDONIC

LED RLE G1 49x133mm 2000lm xxx EXC OTD
 FWHM / FWTM 24.0° / 51.0°
 Efficiency 94 %
 Peak intensity 3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



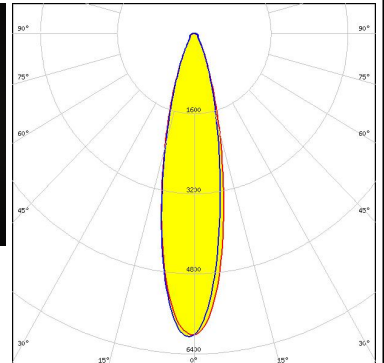
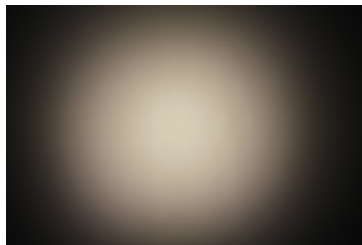
TRIDONIC

LED RLE G1 49x223mm 4000lm xxx EXC OTD
 FWHM / FWTM 24.0° / 51.0°
 Efficiency 94 %
 Peak intensity 3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



TRIDONIC

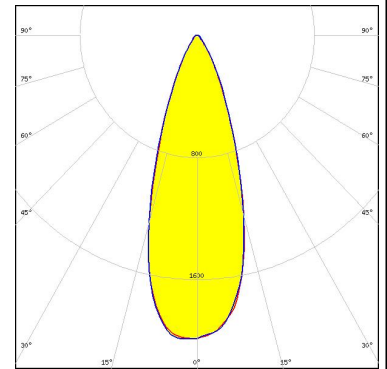
LED RLE G1 49x245mm 4000lm xxx EXC OTD
 FWHM / FWTM 24.0° / 51.0°
 Efficiency 94 %
 Peak intensity 3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



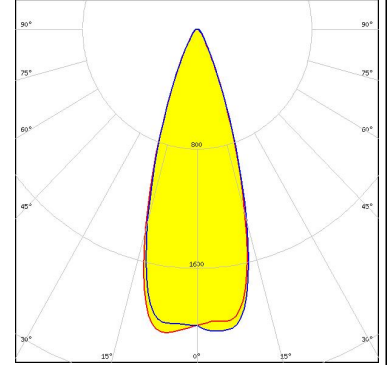
OPTICAL RESULTS (SIMULATED):



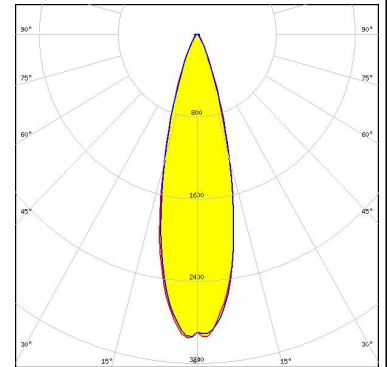
LED J Series 5050 Round LES
 FWHM / FWTM 35.0° / 64.0°
 Efficiency 92 %
 Peak intensity 2 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



LED XP-G2 HE
 FWHM / FWTM 35.0° / 58.0°
 Efficiency 92 %
 Peak intensity 2.1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

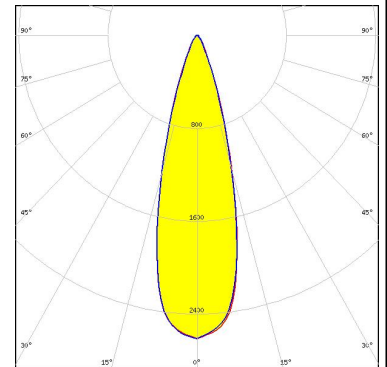


LED XP-G3
 FWHM / FWTM 28.0° / 50.0°
 Efficiency 92 %
 Peak intensity 3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



LED XP-G4
 FWHM / FWTM 28.0° / 50.0°
 Efficiency 85 %
 Peak intensity 2.6 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

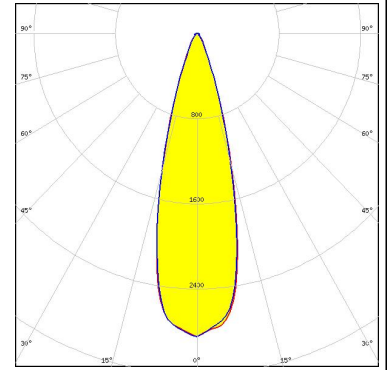
Protective plate, glass



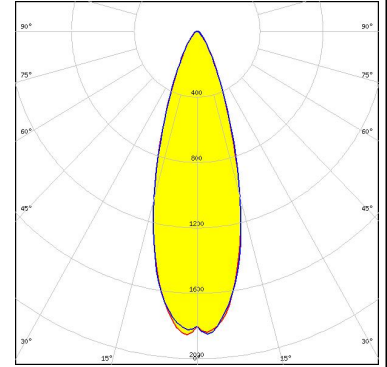
OPTICAL RESULTS (SIMULATED):



LED XP-G4
 FWHM / FWTM 28.0° / 50.0 + 49.0°
 Efficiency 93 %
 Peak intensity 2.9 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



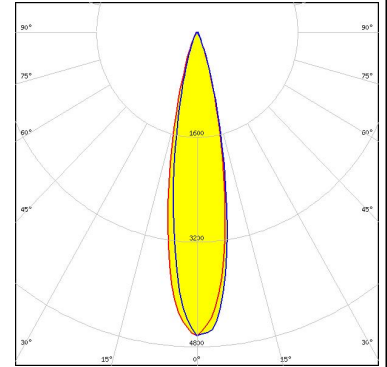
LED XP-L2
 FWHM / FWTM 32.0° / 62.0°
 Efficiency 82 %
 Peak intensity 1.9 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



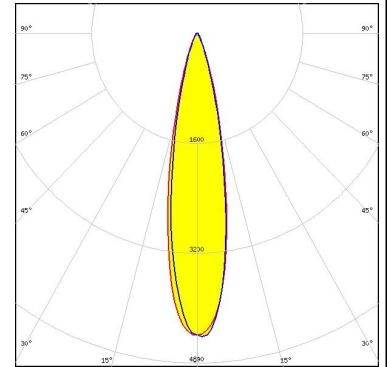
Protective plate, glass



LED LUXEON 3030 2D (Round LES)
 FWHM / FWTM 21.0° / 41.0°
 Efficiency 91 %
 Peak intensity 4.7 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



LED LUXEON 3535 2D
 FWHM / FWTM 22.0° / 42.0°
 Efficiency 92 %
 Peak intensity 4.5 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

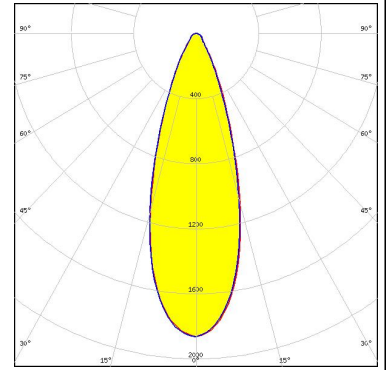


OPTICAL RESULTS (SIMULATED):

LUMILEDS

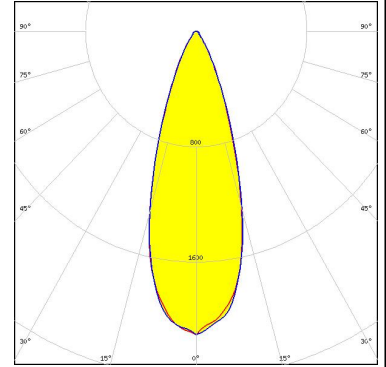
LED LUXEON 5050 Round LES
 FWHM / FWTM 34.0° / 64.0°
 Efficiency 87 %
 Peak intensity 1.9 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

Protective plate, glass



LUMILEDS

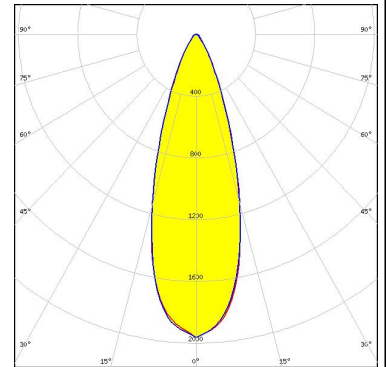
LED LUXEON 5050 Square LES
 FWHM / FWTM 34.0° / 62.0°
 Efficiency 93 %
 Peak intensity 2.1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



LUMILEDS

LED LUXEON 5050 Square LES
 FWHM / FWTM 34.0° / 62.0°
 Efficiency 88 %
 Peak intensity 2 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

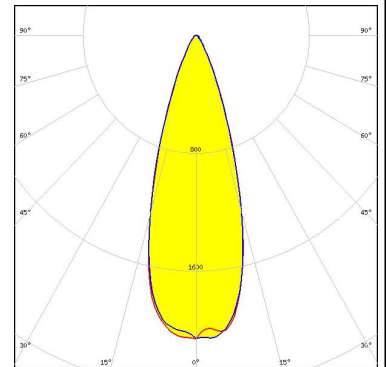
Protective plate, glass



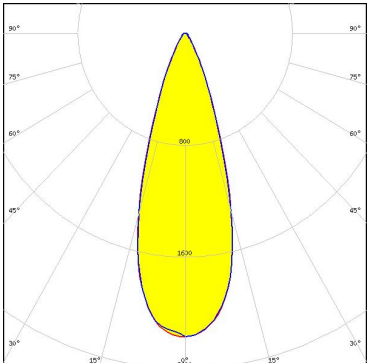
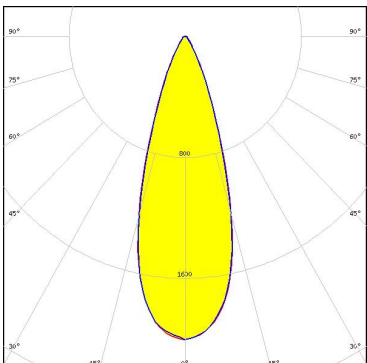
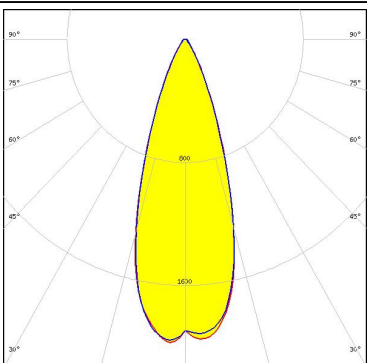
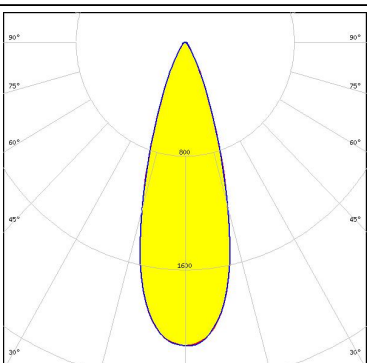
LUMILEDS

LED LUXEON HL2X
 FWHM / FWTM 34.0° / 58.0°
 Efficiency 87 %
 Peak intensity 2.1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

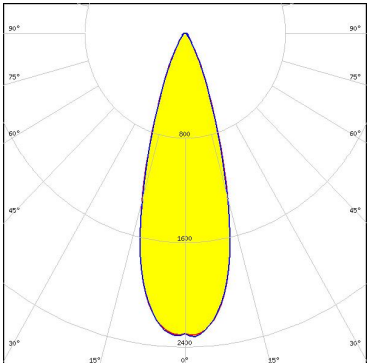
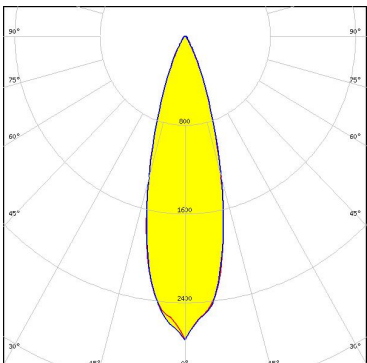
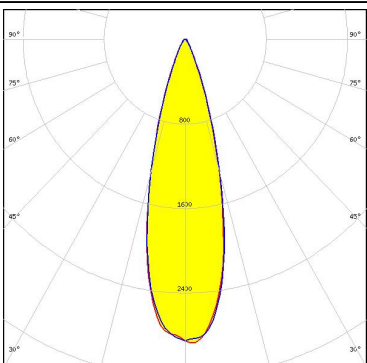
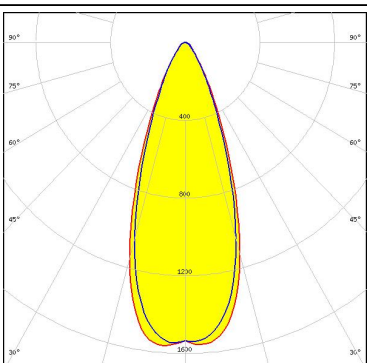
Protective plate, glass



OPTICAL RESULTS (SIMULATED):

<p>LUMILEDS</p> <p>LED LUXEON HL2X-D</p> <p>FWHM / FWTM 34.0° / 58.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 2.2 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	
<p>LUMILEDS</p> <p>LED LUXEON HL2X-D</p> <p>FWHM / FWTM 34.0° / 58.0°</p> <p>Efficiency 85 %</p> <p>Peak intensity 2 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p> <p>Protective plate, glass</p>	
<p>LUMILEDS</p> <p>LED LUXEON HL2X-P</p> <p>FWHM / FWTM 36.0° / 62.0°</p> <p>Efficiency 91 %</p> <p>Peak intensity 2 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 32.0° / 58.0°</p> <p>Efficiency 85 %</p> <p>Peak intensity 2.1 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p> <p>Protective plate, glass</p>	

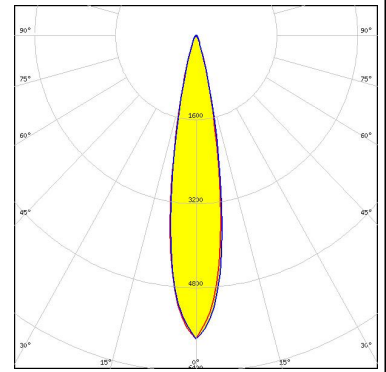
OPTICAL RESULTS (SIMULATED):

<p>LUMILEDS</p> <p>LED LUXEON XR-HL2X (L2H2-xxxxxxxMLU010)</p> <p>FWHM / FWTM 32.0° / 56.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 2.3 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	
<p>NICHIA</p> <p>LED NV4WB35AM</p> <p>FWHM / FWTM 30.0° / 54.0°</p> <p>Efficiency 93 %</p> <p>Peak intensity 2.7 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	
<p>NICHIA</p> <p>LED NVSxx19B/NVSxx19C</p> <p>FWHM / FWTM 28.0° / 50.0°</p> <p>Efficiency 92 %</p> <p>Peak intensity 2.9 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 Duris S8</p> <p>FWHM / FWTM 38.0° / 69.0°</p> <p>Efficiency 89 %</p> <p>Peak intensity 1.6 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;">Protective plate, glass</p>	

OPTICAL RESULTS (SIMULATED):

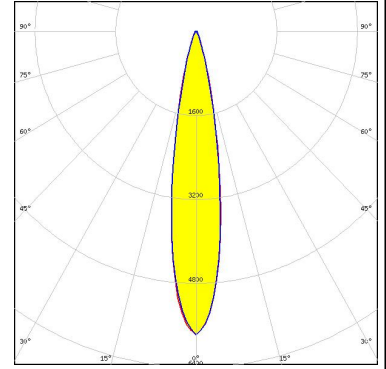
OSRAM Opto Semiconductors

LED OSCONIQ C 2424
 FWHM / FWTM 19.0 + 20.0° / 36.0°
 Efficiency 93 %
 Peak intensity 5.8 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



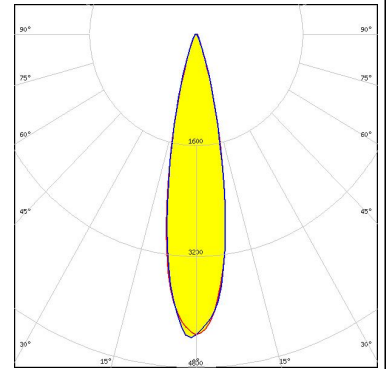
OSRAM Opto Semiconductors

LED OSCONIQ P 3030
 FWHM / FWTM 18.0° / 36.0°
 Efficiency 94 %
 Peak intensity 5.8 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OSRAM Opto Semiconductors

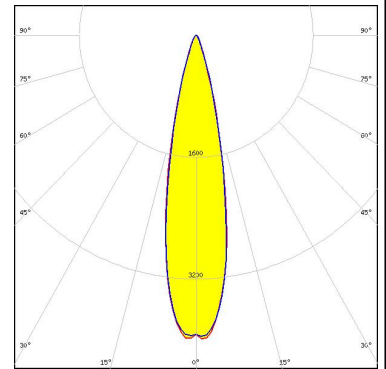
LED OSCONIQ P 3737 (2W version)
 FWHM / FWTM 22.0° / 40.0°
 Efficiency 92 %
 Peak intensity 4.4 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OSRAM Opto Semiconductors

LED OSCONIQ P 3737 (2W version)
 FWHM / FWTM 22.0° / 40.0°
 Efficiency 87 %
 Peak intensity 4 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

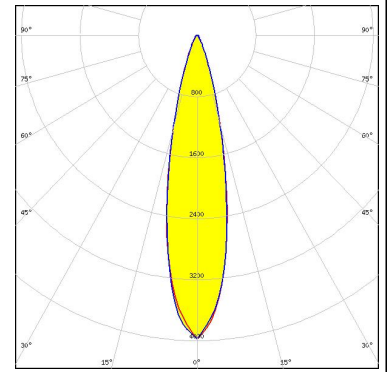
Protective plate, glass



OPTICAL RESULTS (SIMULATED):

OSRAM Opto Semiconductors

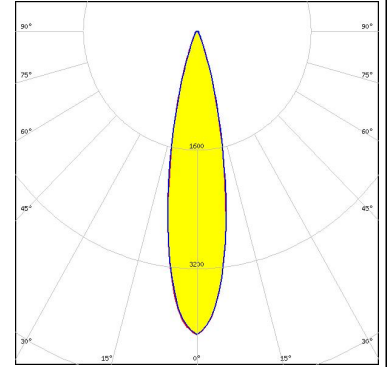
LED OSCONIQ P 3737 Flat
 FWHM / FWTM 24.0° / 44.0°
 Efficiency 93 %
 Peak intensity 4 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OSRAM Opto Semiconductors

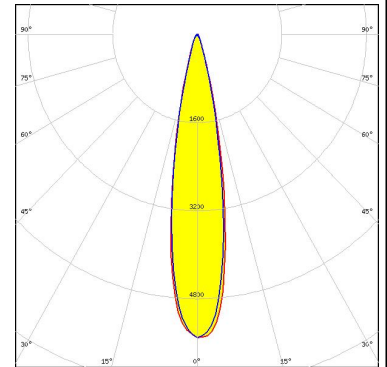
LED OSLON Square CSSRM2/CSSRM3
 FWHM / FWTM 22.0° / 42.0°
 Efficiency 89 %
 Peak intensity 4.1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

Protective plate, glass



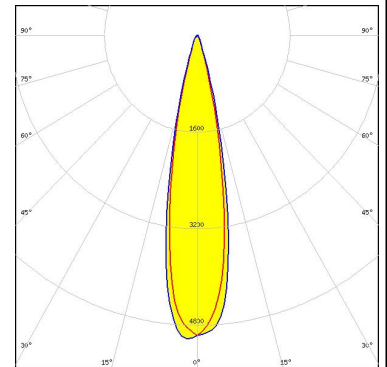
OSRAM Opto Semiconductors

LED OSLON Square Flat
 FWHM / FWTM 20.0° / 35.0°
 Efficiency 94 %
 Peak intensity 5.5 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OSRAM Opto Semiconductors

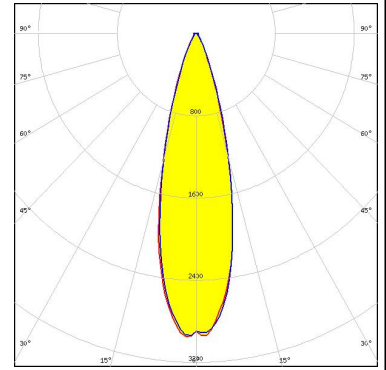
LED OSTAR Projection Compact (KW.CSLNM1.TG)
 FWHM / FWTM 21.0° / 38.0°
 Efficiency 94 %
 Peak intensity 5 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (SIMULATED):

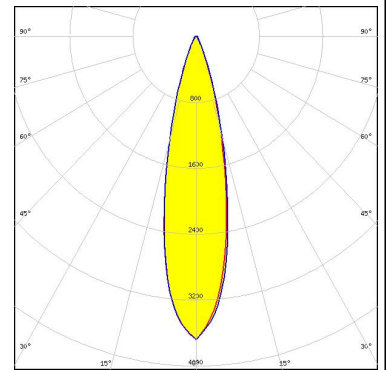
PHILIPS

LED Fortimo FastFlex LED 2x8 DAX G4
 FWHM / FWTM 28.0° / 50.0°
 Efficiency 92 %
 Peak intensity 3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



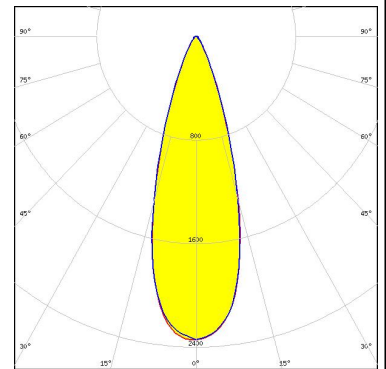
SAMSUNG

LED LH231B
 FWHM / FWTM 24.0° / 46.0°
 Efficiency 92 %
 Peak intensity 3.7 cd/lm
 LEDs/each optic 4
 Light colour White
 Required components:



SAMSUNG

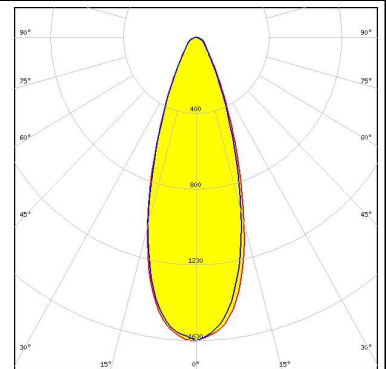
LED LH351C
 FWHM / FWTM 32.0° / 56.0°
 Efficiency 91 %
 Peak intensity 2.3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



SAMSUNG

LED LH502C
 FWHM / FWTM 36.0° / 70.0°
 Efficiency 89 %
 Peak intensity 1.6 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

Protective plate, glass



OPTICAL RESULTS (SIMULATED):

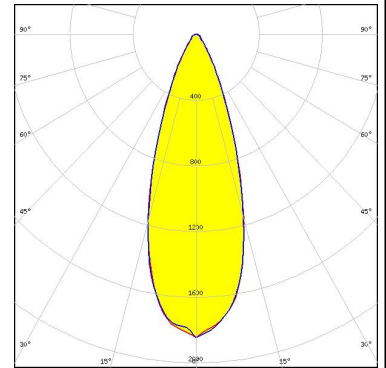
SAMSUNG

LED LH508A Plus
 FWHM / FWTM 32.0° / 62.0°
 Efficiency 93 %
 Peak intensity 2.1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



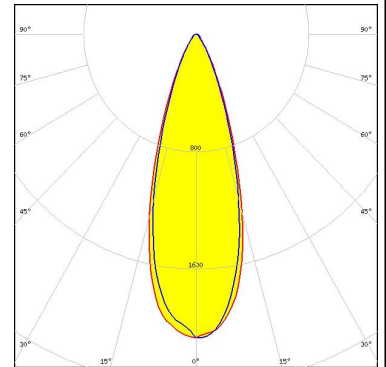
SEOUL SEMICONDUCTOR

LED MJT 5050
 FWHM / FWTM 36.0° / 66.0°
 Efficiency 92 %
 Peak intensity 1.8 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



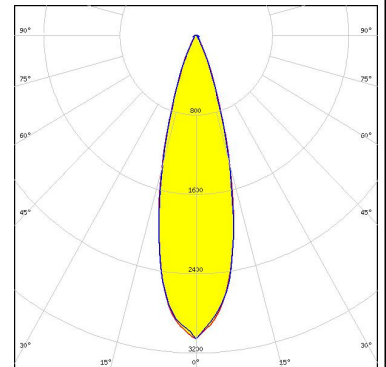
SEOUL SEMICONDUCTOR

LED SEOUL DC 5050 6V
 FWHM / FWTM 34.0° / 62.0°
 Efficiency 94 %
 Peak intensity 2.1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:


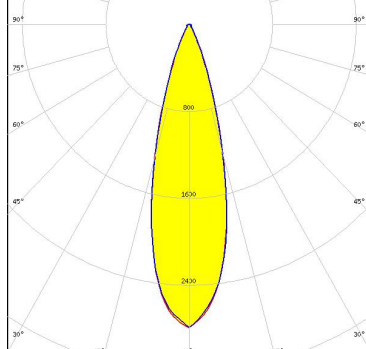



SEOUL SEMICONDUCTOR

LED Z5M5
 FWHM / FWTM 28.0° / 50.0°
 Efficiency 94 %
 Peak intensity 3.1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (SIMULATED):

<p> SEUL SEMICONDUCTOR</p> <p>LED: Z5M5</p> <p>FWHM / FWTM: 28.0° / 50.0°</p> <p>Efficiency: 85 %</p> <p>Peak intensity: 2.8 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> SEUL SEMICONDUCTOR</p> <p>LED: Z8Y22T</p> <p>FWHM / FWTM: 23.0° / 44.0°</p> <p>Efficiency: 91 %</p> <p>Peak intensity: 3.9 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>	