

HB-2X2-RW

~50° wide 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 ⓘ

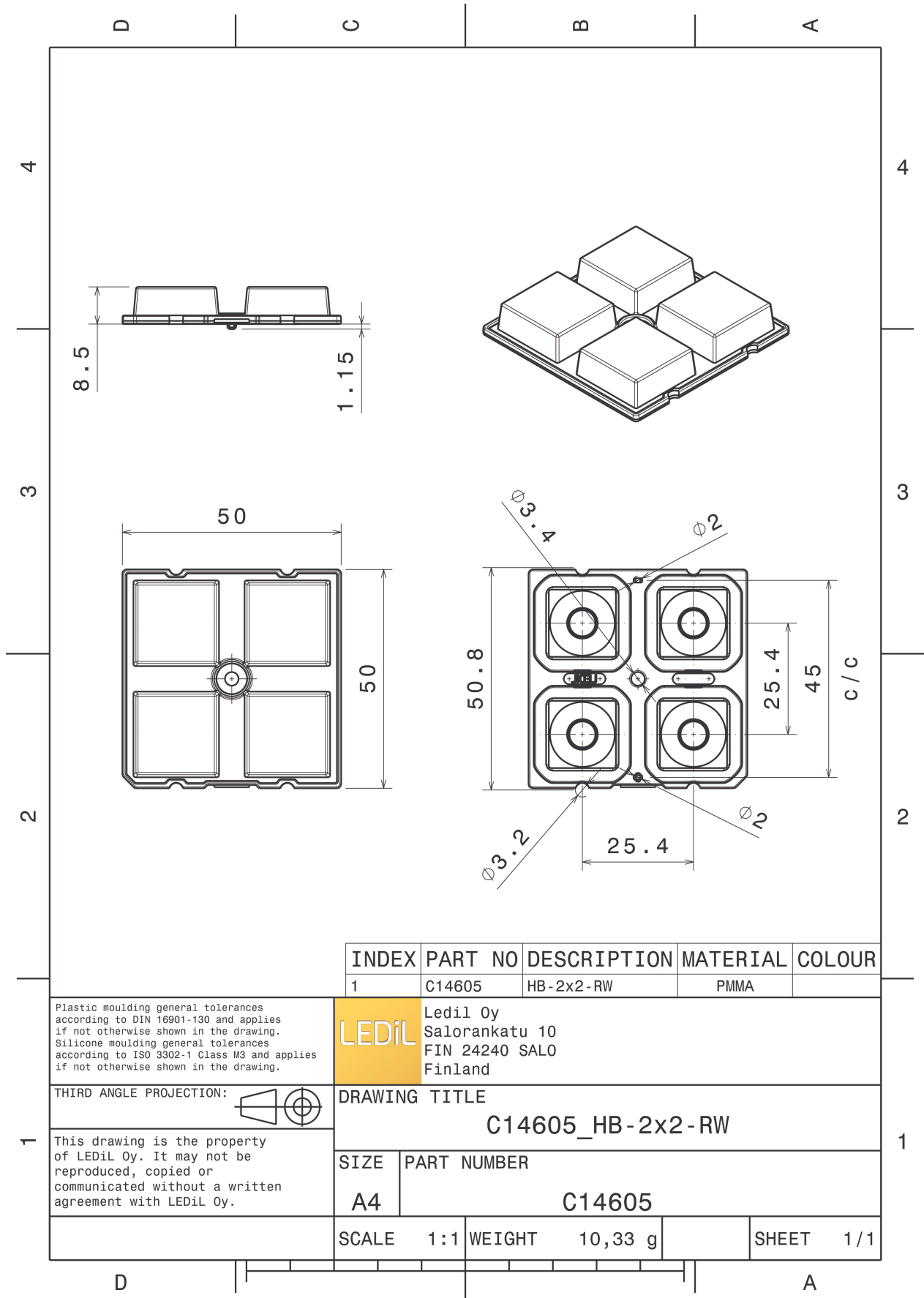
MATERIALS:

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

ORDERING INFORMATION:

Component	Qty in box	MOQ	MPQ	Box weight (kg)
C14605_HB-2X2-RW » Box size: 476 x 273 x 292 mm	800	160	160	9.1





INDEX	PART NO	DESCRIPTION	MATERIAL	COLOUR
1	C14605	HB-2x2-RW	PMMA	

Plastic moulding general tolerances according to DIN 16901-130 and applies if not otherwise shown in the drawing. Silicone moulding general tolerances according to ISO 3302-1 Class M3 and applies if not otherwise shown in the drawing.

LEDiL Ledil Oy
Salorankatu 10
FIN 24240 SALO
Finland

THIRD ANGLE PROJECTION:

DRAWING TITLE
C14605_HB-2x2-RW

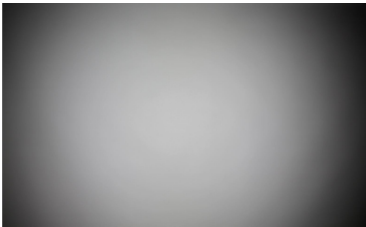
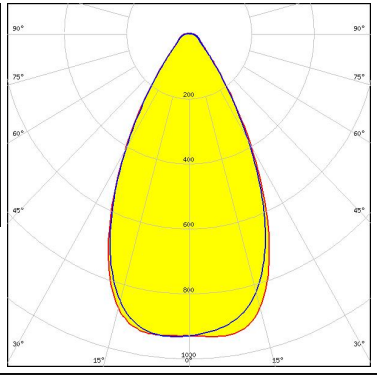
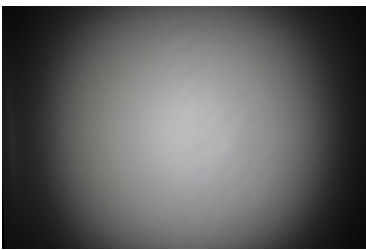
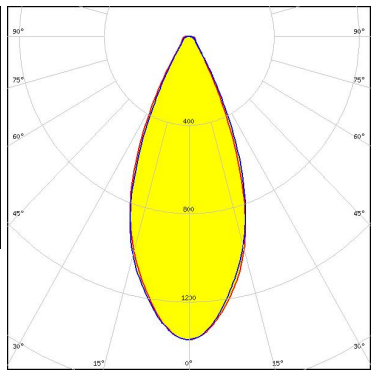
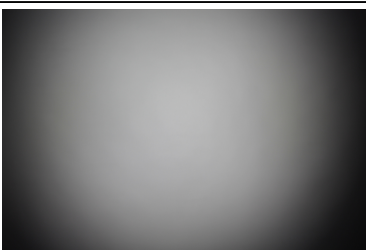
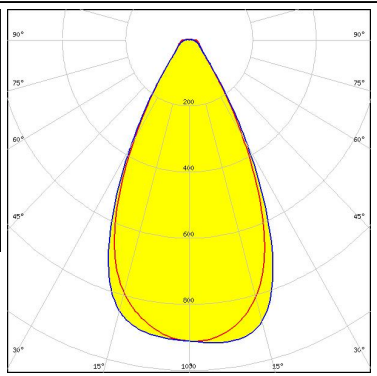
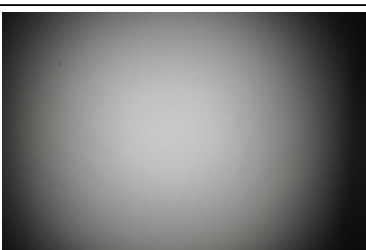
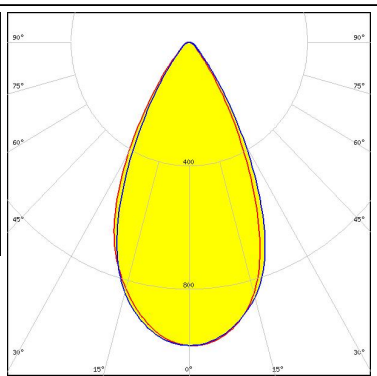
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SIZE	PART NUMBER
A4	C14605


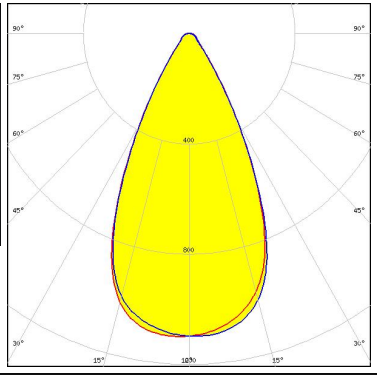

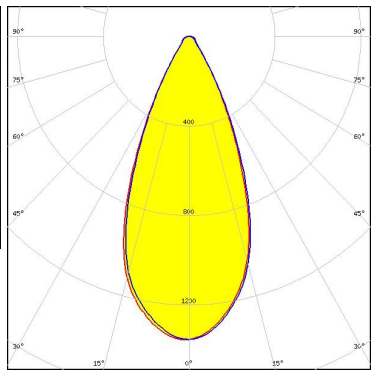

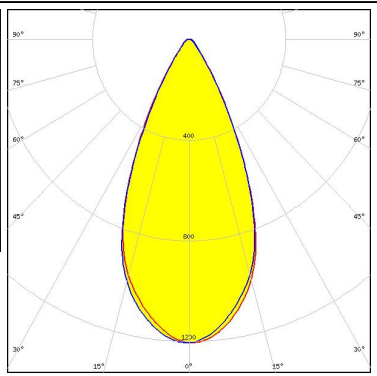

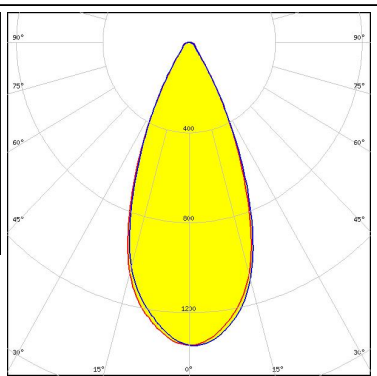
SCALE	1:1	WEIGHT	10,33 g	SHEET	1/1
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See also our general installation guide: www.ledil.com/installation_guide

OPTICAL RESULTS (MEASURED):

<p>bridgelux</p> <p>LED Bridgelux SMD 5050</p> <p>FWHM / FWTM 56.0° / 89.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 0.9 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 44.0° / 71.0°</p> <p>Efficiency 90 %</p> <p>Peak intensity 1.4 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 54.0° / 85.0°</p> <p>Efficiency 92 %</p> <p>Peak intensity 0.9 cd/lm</p> <p>LEDs/each optic 4</p> <p>Light colour White</p> <p>Required components:</p>		
<p>CREE LEDs</p> <p>LED XHP35 HD</p> <p>FWHM / FWTM 53.0° / 82.0°</p> <p>Efficiency 84 %</p> <p>Peak intensity 1 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		

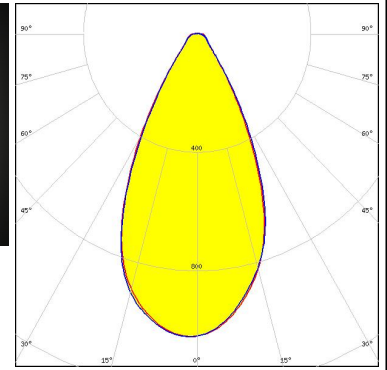
OPTICAL RESULTS (MEASURED):

<p>CREE LEDs</p> <p>LED XM-L3 FWHM / FWTM 52.0° / 79.0° Efficiency 95 % Peak intensity 1.1 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>CREE LEDs</p> <p>LED XP-G2 FWHM / FWTM 45.0° / 73.0° Efficiency 94 % Peak intensity 1.4 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>CREE LEDs</p> <p>LED XP-G3 FWHM / FWTM 48.0° / 75.0° Efficiency 86 % Peak intensity 1.2 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>CREE LEDs</p> <p>LED XP-L HI FWHM / FWTM 45.0° / 72.0° Efficiency 92 % Peak intensity 1.3 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		

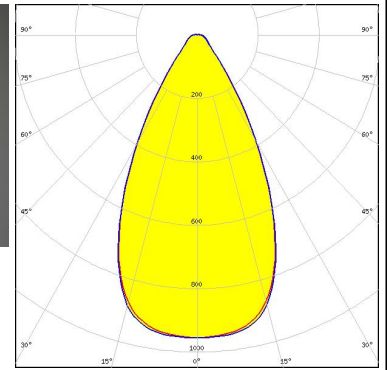
OPTICAL RESULTS (MEASURED):



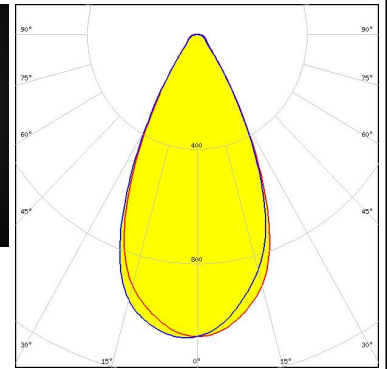
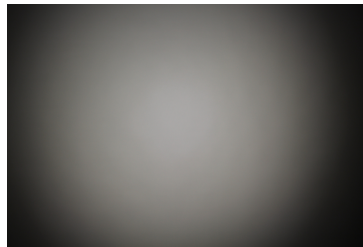
LED XP-L2
 FWHM / FWTM 52.0° / 83.0°
 Efficiency 92 %
 Peak intensity 1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



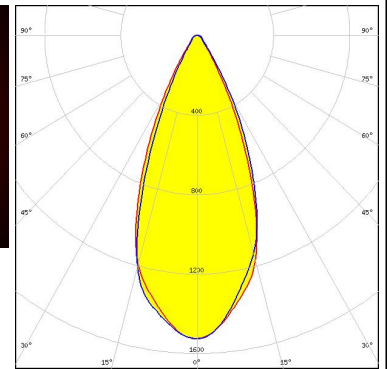
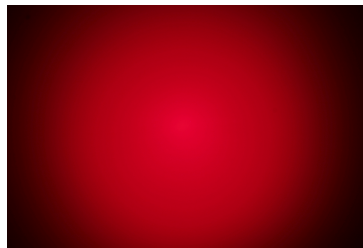
LED LUXEON 5050 Round LES
 FWHM / FWTM 55.0° / 87.0°
 Efficiency 94 %
 Peak intensity 1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:




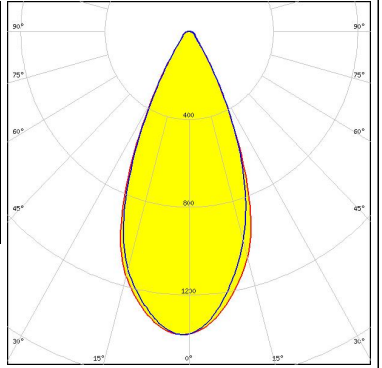
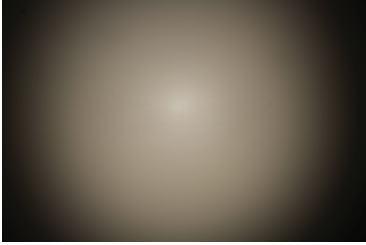
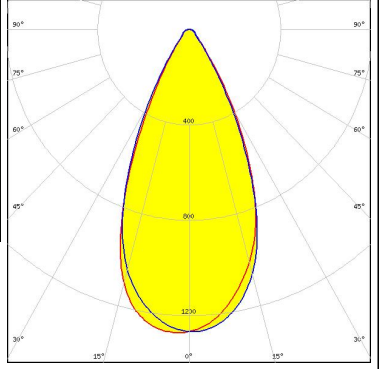
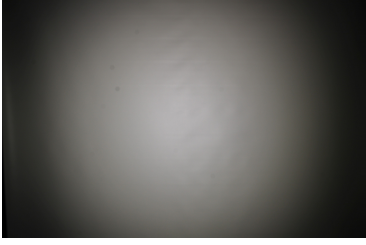
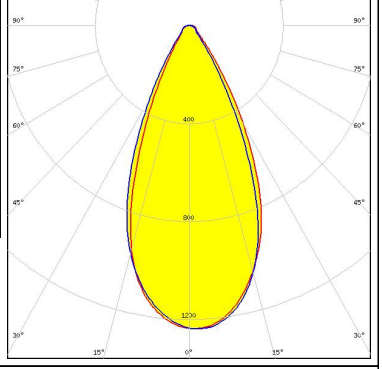
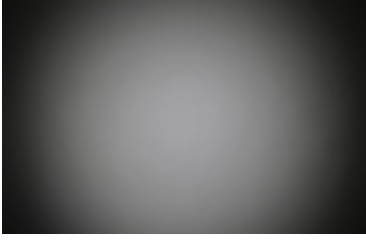
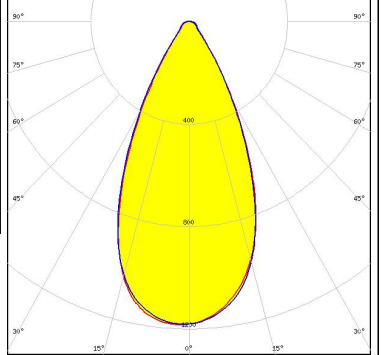
LED LUXEON V
 FWHM / FWTM 52.0° / 81.0°
 Efficiency 93 %
 Peak intensity 1.1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



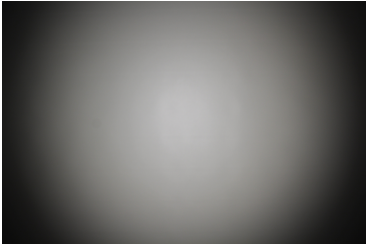
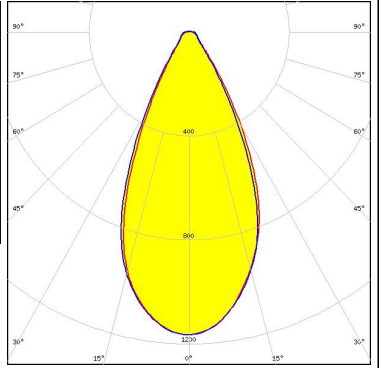
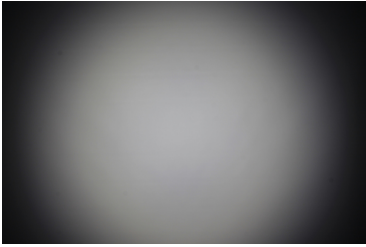
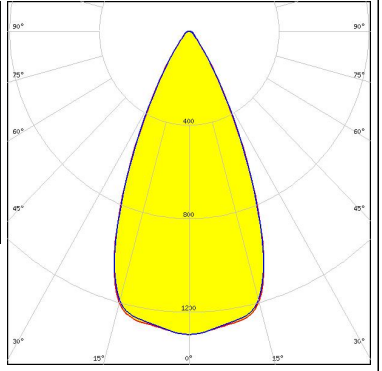
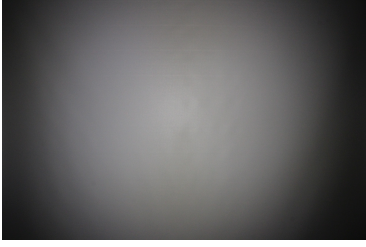
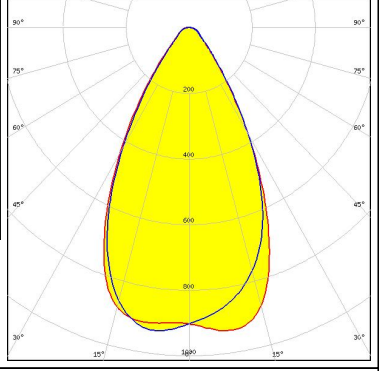
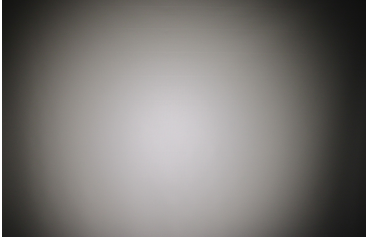
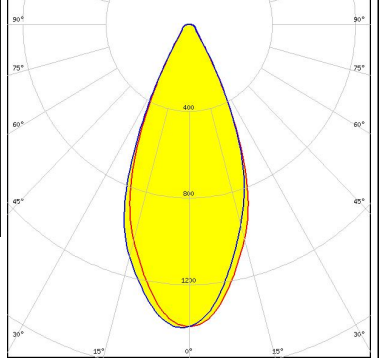
LED SST-10-B130
 FWHM / FWTM 44.0° / 70.0°
 Efficiency 96 %
 Peak intensity 1.5 cd/lm
 LEDs/each optic 1
 Light colour Deep Red
 Required components:



OPTICAL RESULTS (MEASURED):

<p>MST <i>Your solutions</i></p> <p>LED RecLED 122x50mm 1900lm 730 2x4 Opt G1</p> <p>FWHM / FWTM 46.0° / 72.5°</p> <p>Efficiency 97 %</p> <p>Peak intensity 1.4 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		
<p>NICHIA</p> <p>LED NVSW219F</p> <p>FWHM / FWTM 49.0° / 76.0°</p> <p>Efficiency 96 %</p> <p>Peak intensity 1.3 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		
<p>NICHIA</p> <p>LED NVSW219F</p> <p>FWHM / FWTM 48.0° / 76.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 1.2 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		
<p>NICHIA</p> <p>LED NVSW319B</p> <p>FWHM / FWTM 50.0° / 79.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 1.2 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		

OPTICAL RESULTS (MEASURED):

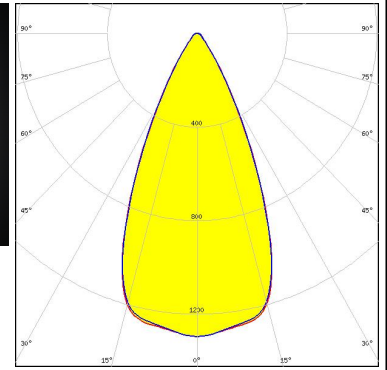
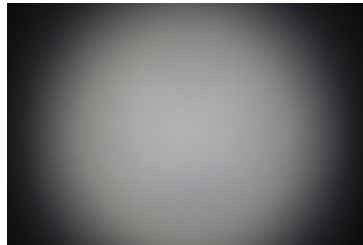
<p>NICHIA</p> <p>LED NVSW3x9A FWHM / FWTM 50.0° / 78.0° Efficiency 93 % Peak intensity 1.2 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>OSRAM</p> <p>LED PrevaLED Brick HP 2x8 FWHM / FWTM 49.0° / 72.0° Efficiency 94 % Peak intensity 1.3 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>OSRAM <small>Opto Semiconductors</small></p> <p>LED Duris S8 FWHM / FWTM 56.0° / 89.0° Efficiency 95 % Peak intensity 0.9 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p>OSRAM <small>Opto Semiconductors</small></p> <p>LED OSCONIQ C 3030 FWHM / FWTM 45.0° / 71.0° Efficiency 94 % Peak intensity 1.4 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		

OPTICAL RESULTS (MEASURED):

OSRAM

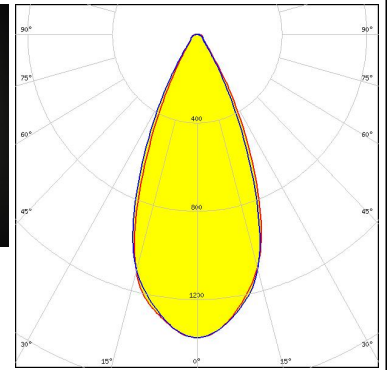
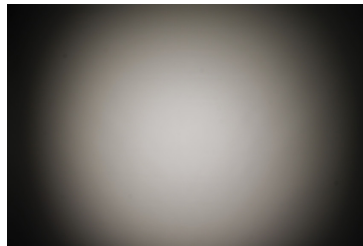
Opto Semiconductors

LED OSLON Square CSSRM2/CSSRM3
 FWHM / FWTM 49.0° / 72.0°
 Efficiency 94 %
 Peak intensity 1.3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



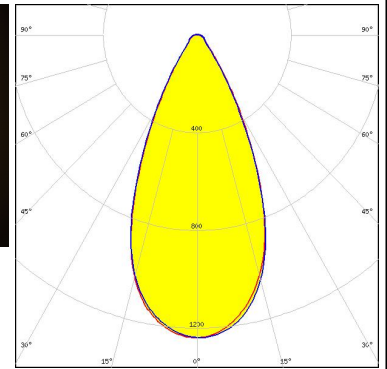
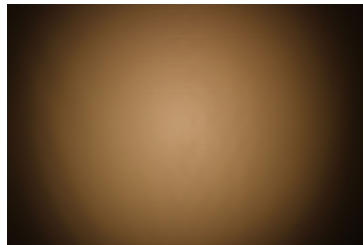
PHILIPS

LED Fortimo FastFlex LED 2x8 DA G4
 FWHM / FWTM 45.0° / 71.0°
 Efficiency 93 %
 Peak intensity 1.4 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



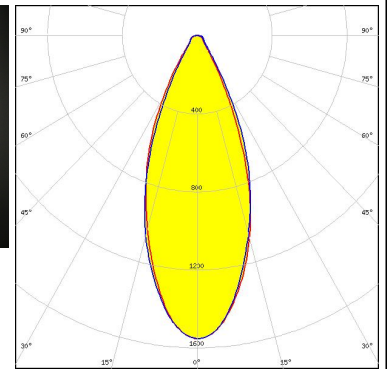
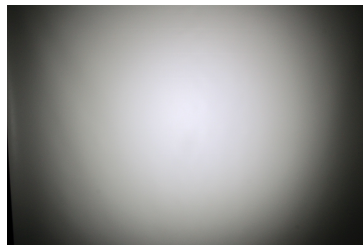
PHILIPS

LED Fortimo FastFlex LED 2x8 DA G4+
 FWHM / FWTM 48.0° / 77.0°
 Efficiency 96 %
 Peak intensity 1.2 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



SAMSUNG

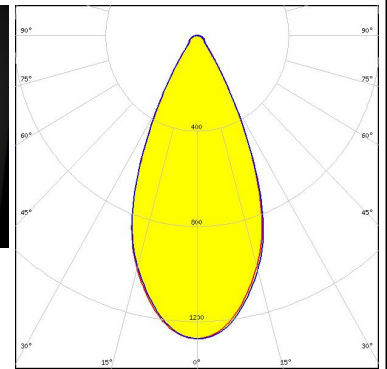
LED HiLOM RC12 Z (LH181B)
 FWHM / FWTM 41.0° / 71.0°
 Efficiency 97 %
 Peak intensity 1.6 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (MEASURED):

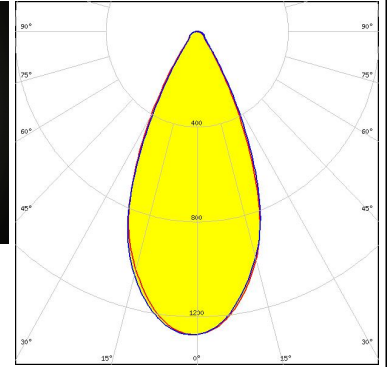
SAMSUNG

LED HiLOM RH12 Z (LH351C)
 FWHM / FWTM 48.0° / 75.0°
 Efficiency 96 %
 Peak intensity 1.3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



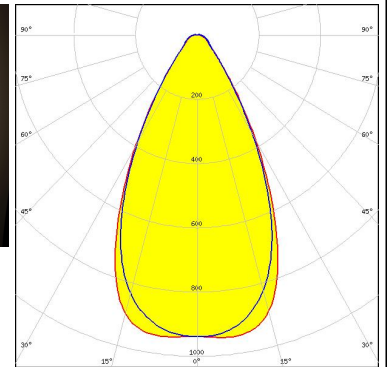
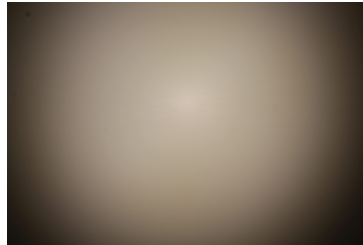
SAMSUNG

LED HiLOM RH16 (LH351C)
 FWHM / FWTM 48.0° / 75.0°
 Efficiency 94 %
 Peak intensity 1.3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



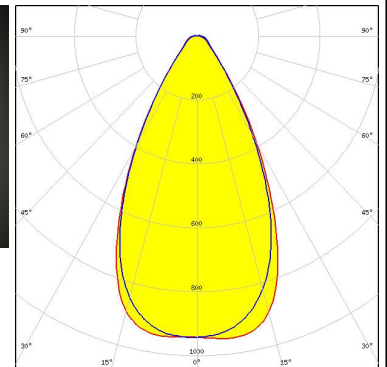
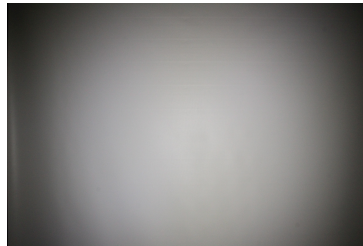
SAMSUNG

LED HiLOM RM12 Z (LH502C)
 FWHM / FWTM 55.0° / 88.0°
 Efficiency 95 %
 Peak intensity 1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



SAMSUNG

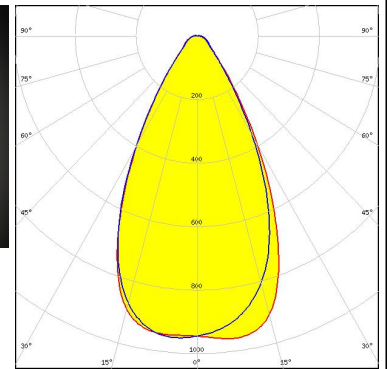
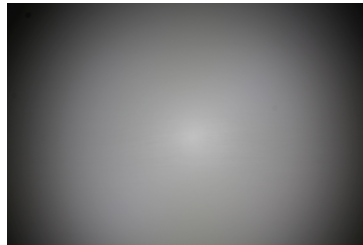
LED HiLOM RM16 Z (LH502C)
 FWHM / FWTM 55.0° / 89.0°
 Efficiency 96 %
 Peak intensity 1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (MEASURED):

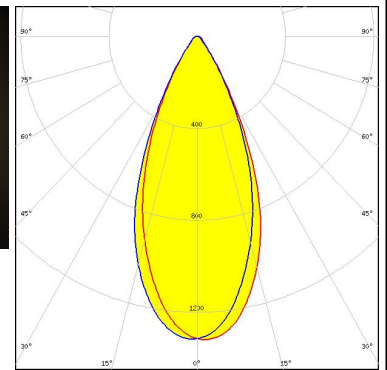
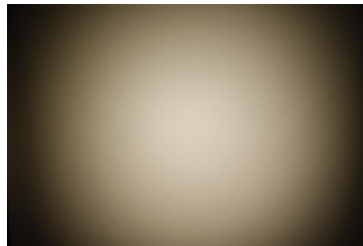
SAMSUNG

LED HiLOM RM8 Z (LH502C)
 FWHM / FWTM 56.0° / 88.0°
 Efficiency 97 %
 Peak intensity 1 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



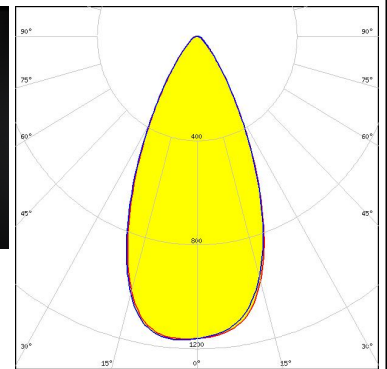
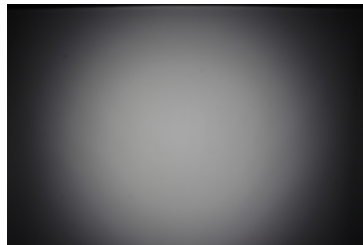
SAMSUNG

LED LH351B
 FWHM / FWTM 45.0° / 74.0°
 Efficiency 86 %
 Peak intensity 1.3 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



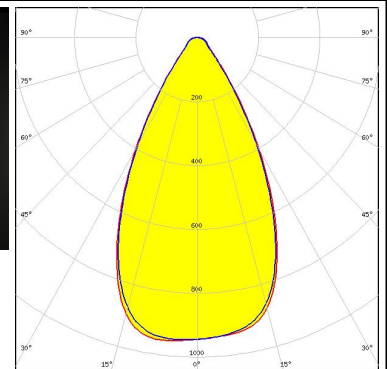
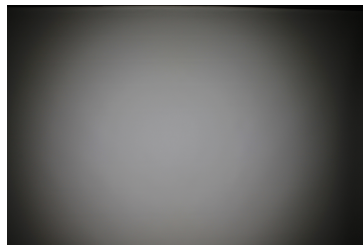
SAMSUNG

LED LH351D
 FWHM / FWTM 49.0° / 82.0°
 Efficiency 94 %
 LEDs/each optic 1
 Light colour White
 Required components:

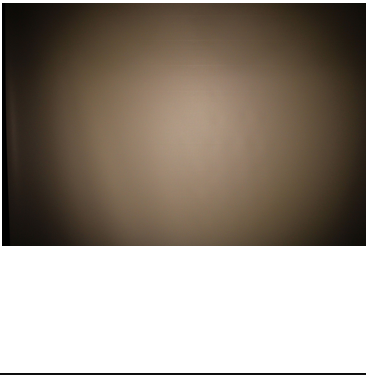
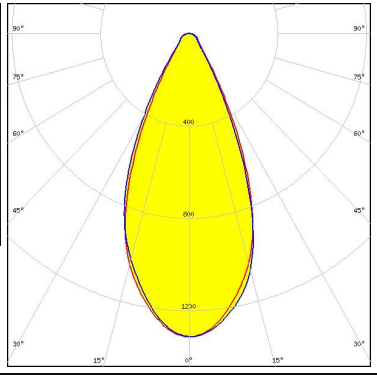

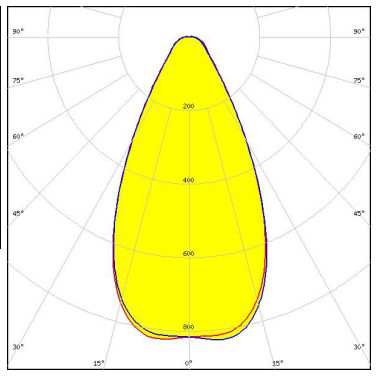

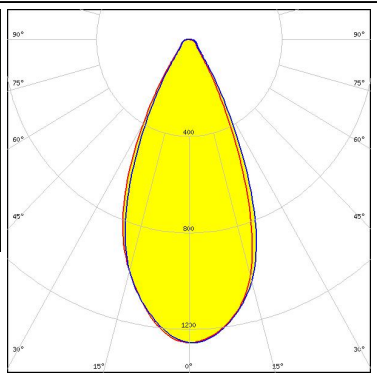

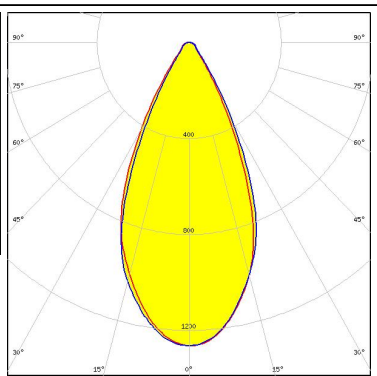


SAMSUNG

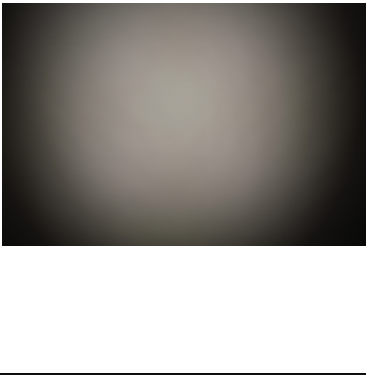
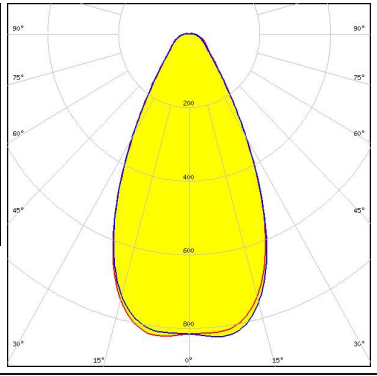

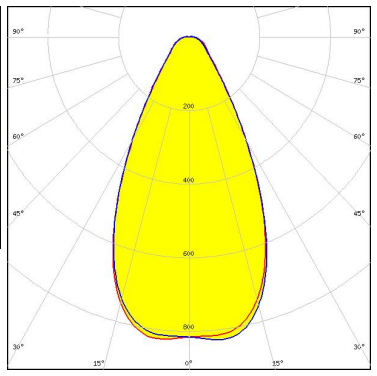

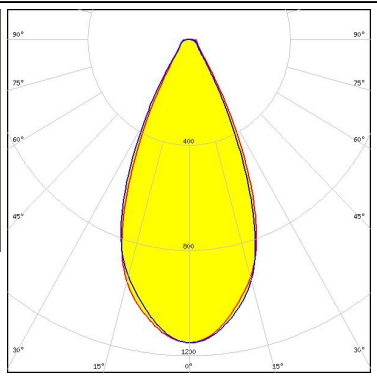
LED LH508A
 FWHM / FWTM 56.0° / 87.0°
 Efficiency 93 %
 Peak intensity 1 cd/m
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (MEASURED):

<p>SEITEC Elektronik GmbH</p> <p>LED LED-Pa-L15c2W11c2-xxx-C050-01</p> <p>FWHM / FWTM 47.0° / 76.0°</p> <p>Efficiency 96 %</p> <p>Peak intensity 1.3 cd/m</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		
<p>SEOUL SEMICONDUCTOR</p> <p>LED 2x2 Y22 module - SMJQ-D48W16AA-XX</p> <p>FWHM / FWTM 54.0° / 94.0°</p> <p>Efficiency 92 %</p> <p>Peak intensity 0.8 cd/m</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		
<p>SEOUL SEMICONDUCTOR</p> <p>LED Z5M3</p> <p>FWHM / FWTM 47.0° / 75.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 1.3 cd/m</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		
<p>SEOUL SEMICONDUCTOR</p> <p>LED Z5M4</p> <p>FWHM / FWTM 49.0° / 76.0°</p> <p>Efficiency 96 %</p> <p>Peak intensity 1.3 cd/m</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		

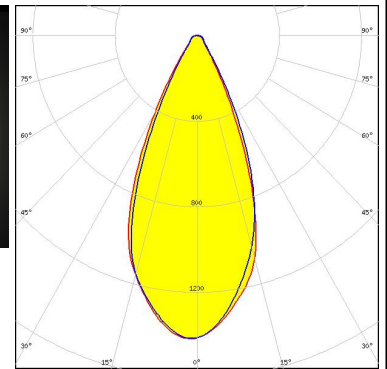
OPTICAL RESULTS (MEASURED):

<p>SEOUL SEMICONDUCTOR</p> <p>LED Z8Y19</p> <p>FWHM / FWTM 54.0° / 94.0°</p> <p>Efficiency 92 %</p> <p>Peak intensity 0.8 cd/lm</p> <p>LEDs/each optic 4</p> <p>Light colour White</p> <p>Required components:</p>		
<p>SEOUL SEMICONDUCTOR</p> <p>LED Z8Y19</p> <p>FWHM / FWTM 54.0° / 94.0°</p> <p>Efficiency 92 %</p> <p>Peak intensity 0.8 cd/lm</p> <p>LEDs/each optic 4</p> <p>Light colour White</p> <p>Required components:</p>		
<p>SEOUL SEMICONDUCTOR</p> <p>LED Z8Y22P</p> <p>FWHM / FWTM 48.0° / 77.0°</p> <p>Efficiency 92 %</p> <p>Peak intensity 1.2 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		
<p>TRIDONIC</p> <p>LED RLE 2x4 2000lm HP EXC2 OTD</p> <p>FWHM / FWTM 46.0° / 71.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 1.4 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		

OPTICAL RESULTS (MEASURED):

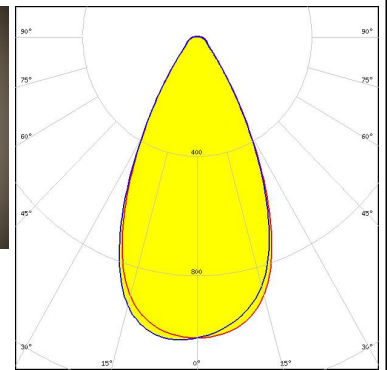
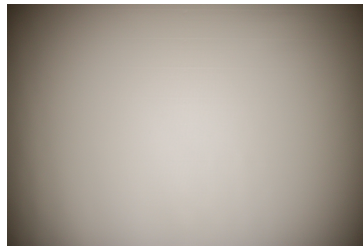
TRIDONIC

LED RLE 2x8 4000lm HP EXC2 OTD
 FWHM / FWTM 46.0° / 71.0°
 Efficiency 94 %
 Peak intensity 1.4 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



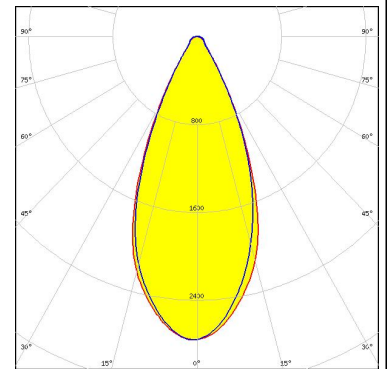
TRIDONIC

LED RLE 2x8 6000lm HP HE EXC3 OTD
 FWHM / FWTM 53.0° / 86.0°
 Efficiency 96 %
 Peak intensity 1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



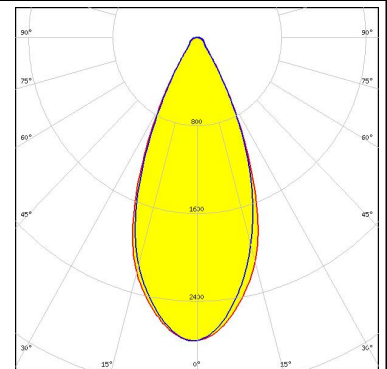
TRIDONIC

LED RLE G1 49x121mm 2000lm xxx EXC OTD
 FWHM / FWTM 46.0° / 73.0°
 Efficiency 94 %
 Peak intensity 1.4 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



TRIDONIC

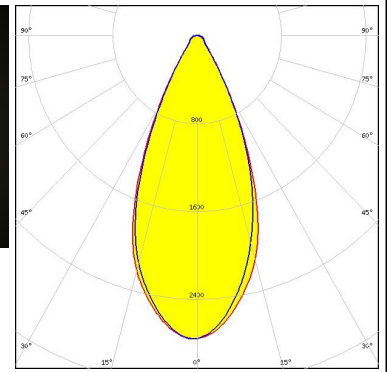
LED RLE G1 49x133mm 2000lm xxx EXC OTD
 FWHM / FWTM 46.0° / 73.0°
 Efficiency 94 %
 Peak intensity 1.4 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (MEASURED):

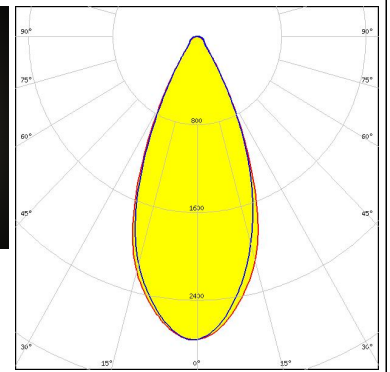
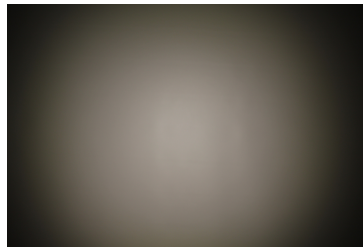
TRIDONIC

LED RLE G1 49x223mm 4000lm xxx EXC OTD
 FWHM / FWTM 46.0° / 73.0°
 Efficiency 94 %
 Peak intensity 1.4 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

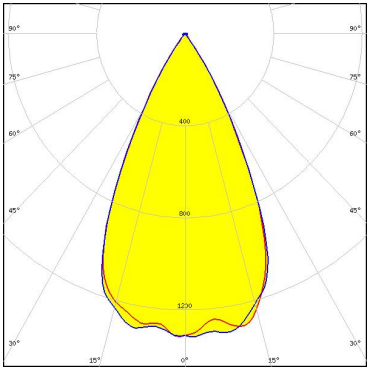
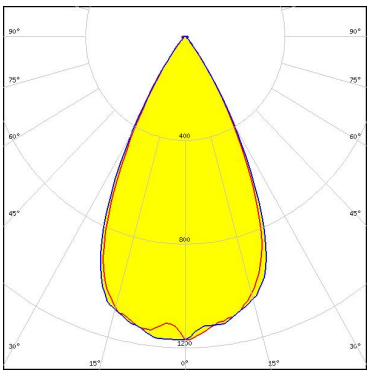
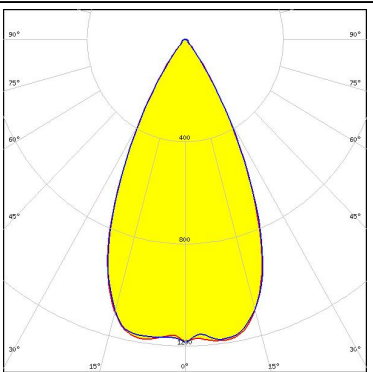
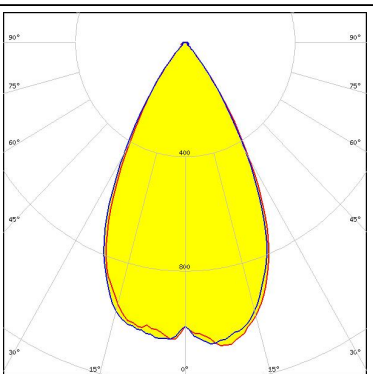


TRIDONIC

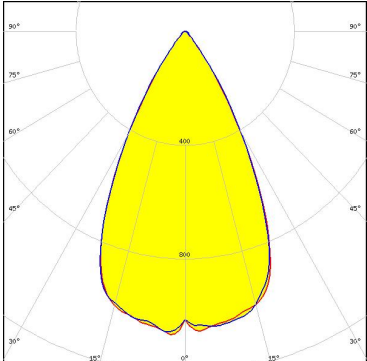
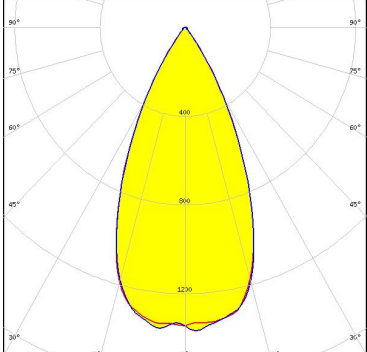
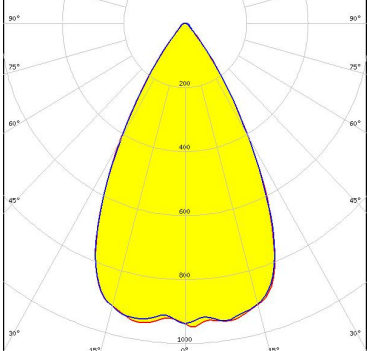
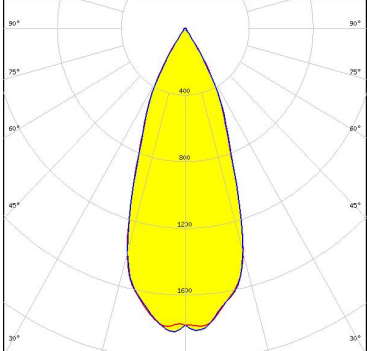
LED RLE G1 49x245mm 4000lm xxx EXC OTD
 FWHM / FWTM 46.0° / 73.0°
 Efficiency 94 %
 Peak intensity 1.4 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (SIMULATED):

<p>CREE LEDs</p> <p>LED: XHP35 HI FWHM / FWTM: 52.0° / 68.0° Efficiency: 93 % Peak intensity: 1.4 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p>	
<p>CREE LEDs</p> <p>LED: XM-L FWHM / FWTM: 54.0° / 74.0° Efficiency: 92 % Peak intensity: 1.2 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p>	
<p>CREE LEDs</p> <p>LED: XP-G3 FWHM / FWTM: 52.0° / 74.0° Efficiency: 89 % Peak intensity: 1.2 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p> <p style="background-color: #e0f0ff; padding: 2px;">Protective plate, glass</p>	
<p>CREE LEDs</p> <p>LED: XP-L HD FWHM / FWTM: 55.0° / 79.0° Efficiency: 93 % Peak intensity: 1.1 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p>	

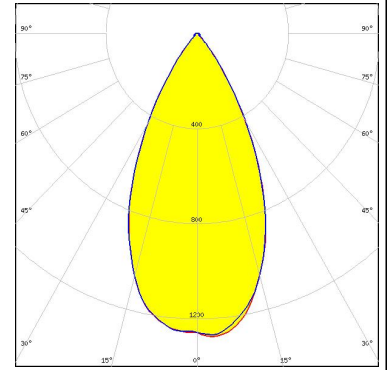
OPTICAL RESULTS (SIMULATED):

<p>CREE LEDs</p> <p>LED: XP-L HD FWHM / FWTM: 56.0° / 78.0° Efficiency: 90 % Peak intensity: 1.1 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p> <p>Protective plate, glass</p>	
<p>CREE LEDs</p> <p>LED: XP-L HI FWHM / FWTM: 48.0° / 72.0° Efficiency: 90 % Peak intensity: 1.4 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p> <p>Protective plate, glass</p>	
<p>CREE LEDs</p> <p>LED: XP-L2 FWHM / FWTM: 58.0° / 82.0° Efficiency: 89 % Peak intensity: 1 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p> <p>Protective plate, glass</p>	
<p>CREE LEDs</p> <p>LED: XP-P FWHM / FWTM: 40.0° / 66.0° Efficiency: 91 % Peak intensity: 1.8 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p> <p>Protective plate, glass</p>	

OPTICAL RESULTS (SIMULATED):

LUMILEDS

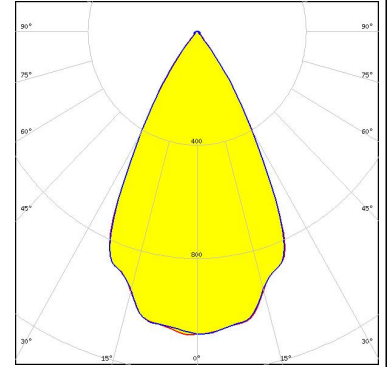
LED LUXEON HL2X
 FWHM / FWTM 50.0° / 76.0°
 Efficiency 94 %
 Peak intensity 1.3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



LUMILEDS

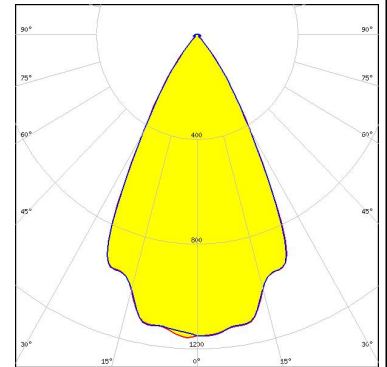
LED LUXEON HL2X-D
 FWHM / FWTM 56.0° / 76.0°
 Efficiency 88 %
 Peak intensity 1.1 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

Protective plate, glass



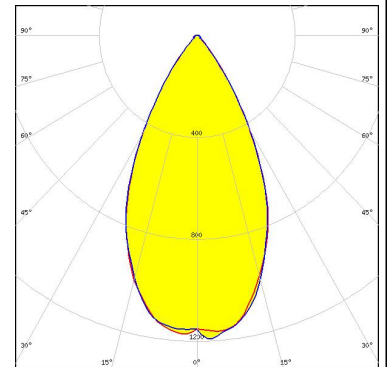
LUMILEDS

LED LUXEON HL2X-D
 FWHM / FWTM 56.0° / 76.0°
 Efficiency 96 %
 Peak intensity 1.2 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

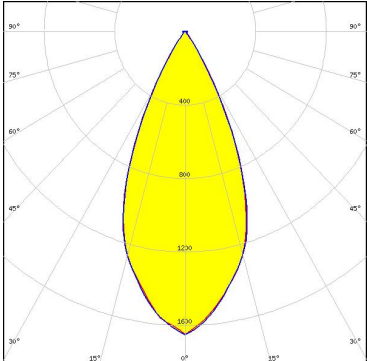
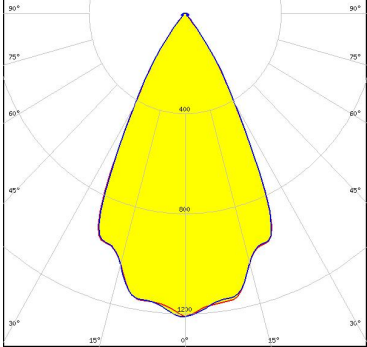
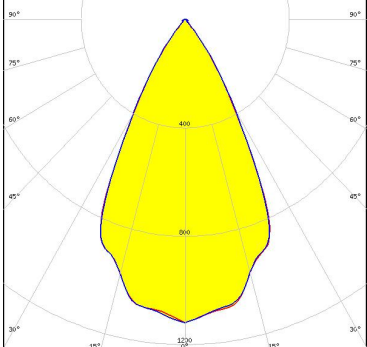
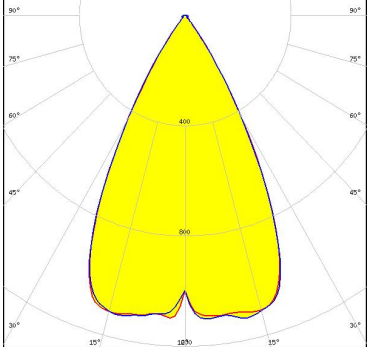


LUMILEDS

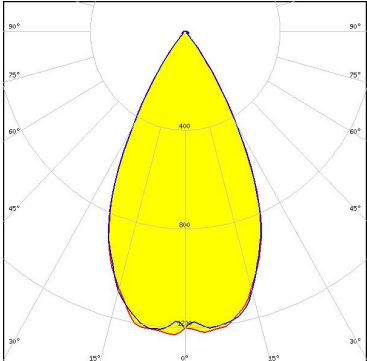
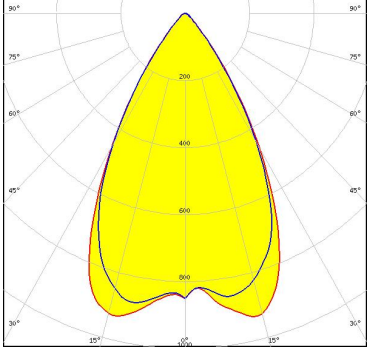
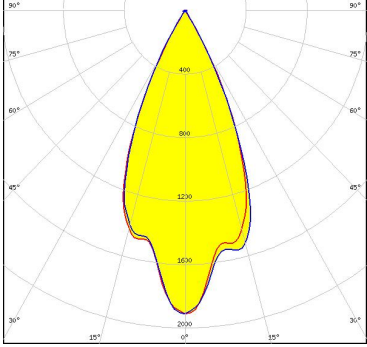
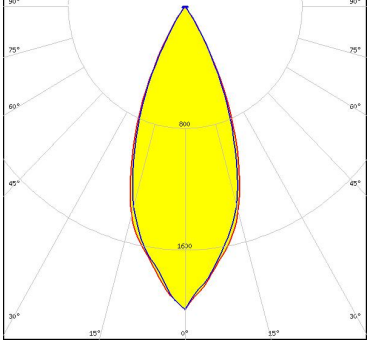
LED LUXEON HL2X-P
 FWHM / FWTM 54.0° / 80.0°
 Efficiency 94 %
 Peak intensity 1.2 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OPTICAL RESULTS (SIMULATED):

<p>LUMILEDS</p> <p>LED LUXEON HL2Z</p> <p>FWHM / FWTM 46.0° / 66.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 1.7 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 54.0° / 76.0°</p> <p>Efficiency 96 %</p> <p>Peak intensity 1.2 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 54.0° / 76.0°</p> <p>Efficiency 88 %</p> <p>Peak intensity 1.1 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p> <p>Protective plate, glass</p>	
<p>NICHIA</p> <p>LED NV4WB35AM</p> <p>FWHM / FWTM 56.0° / 74.0°</p> <p>Efficiency 95 %</p> <p>Peak intensity 1.2 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	

OPTICAL RESULTS (SIMULATED):

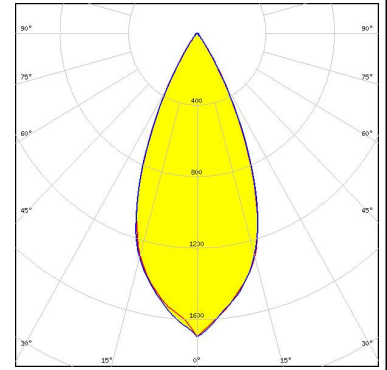
<p>NICHIA</p> <p>LED: NVSW219D FWHM / FWTM: 54.0° / 75.0° Efficiency: 95 % Peak intensity: 1.2 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p>	
<p>OSRAM Opto Semiconductors</p> <p>LED: Duris S8 FWHM / FWTM: 57.0° / 83.0° Efficiency: 90 % Peak intensity: 1 cd/lm LEDs/each optic: 1 Light colour: White 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 FWHM / FWTM: 45.0° / 62.0° Efficiency: 96 % Peak intensity: 1.9 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p>	
<p>OSRAM Opto Semiconductors</p> <p>LED: OSCONIQ P 3030 FWHM / FWTM: 42.0° / 64.0° Efficiency: 96 % Peak intensity: 2 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p>	

OPTICAL RESULTS (SIMULATED):

OSRAM

Opto Semiconductors

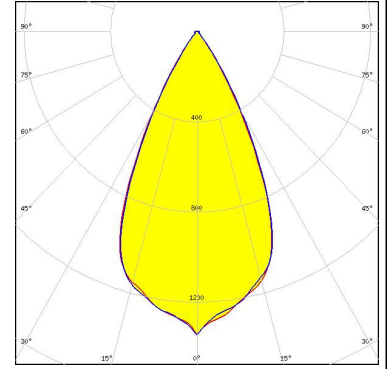
LED OSCONIQ P 3737 (2W version)
 FWHM / FWTM 45.0° / 68.0°
 Efficiency 96 %
 Peak intensity 1.7 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OSRAM

Opto Semiconductors

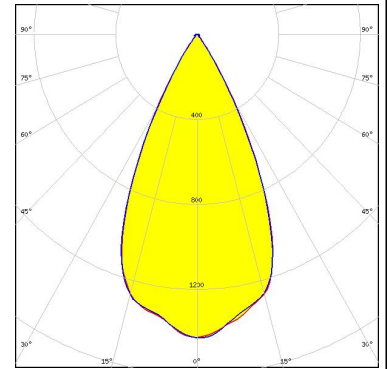
LED OSCONIQ P 3737 (3W version)
 FWHM / FWTM 52.0° / 72.0°
 Efficiency 94 %
 Peak intensity 1.4 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OSRAM

Opto Semiconductors

LED OSCONIQ P 3737 Flat
 FWHM / FWTM 50.0° / 68.0°
 Efficiency 96 %
 Peak intensity 1.4 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

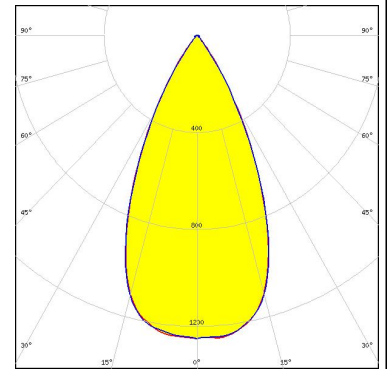


OSRAM

Opto Semiconductors

LED OSLOM Square CSSRM2/CSSRM3
 FWHM / FWTM 50.0° / 72.0°
 Efficiency 87 %
 Peak intensity 1.3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

Protective plate, glass

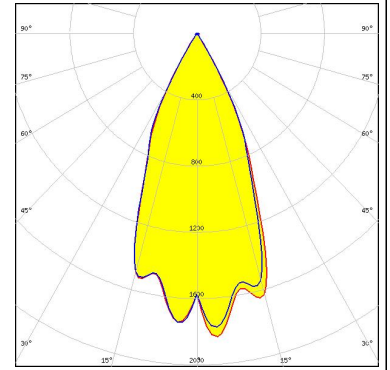


OPTICAL RESULTS (SIMULATED):

OSRAM

Opto Semiconductors

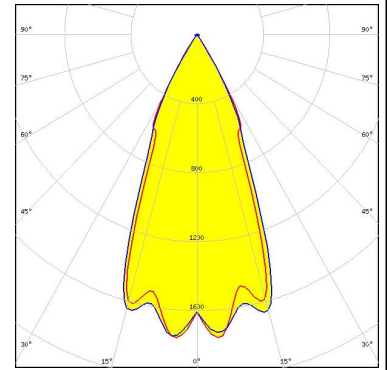
LED OSLON Square Flat
 FWHM / FWTM 43.0° / 64.0°
 Efficiency 96 %
 Peak intensity 1.8 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



OSRAM

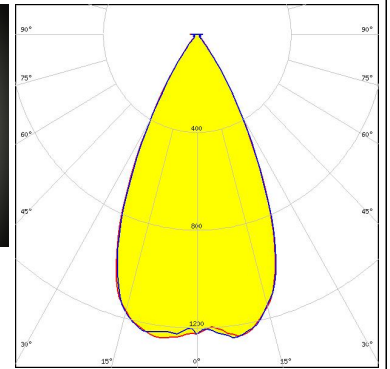
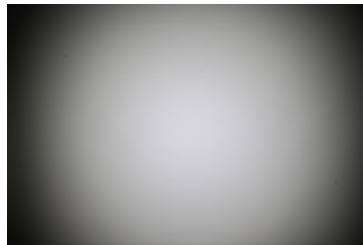
Opto Semiconductors

LED OSTAR Projection Compact (KW.CSLNM1.TG)
 FWHM / FWTM 42.0° / 64.0°
 Efficiency 96 %
 Peak intensity 1.8 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:



PHILIPS

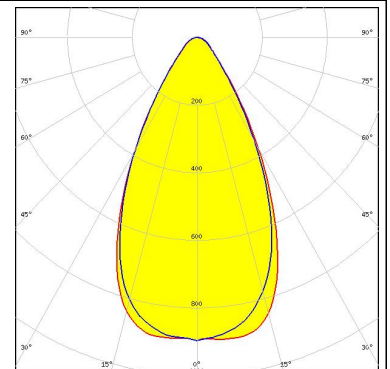
LED Fortimo FastFlex LED 2x8 DAX G4
 FWHM / FWTM 51.0° / 73.0°
 Efficiency 94 %
 Peak intensity 1.3 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:




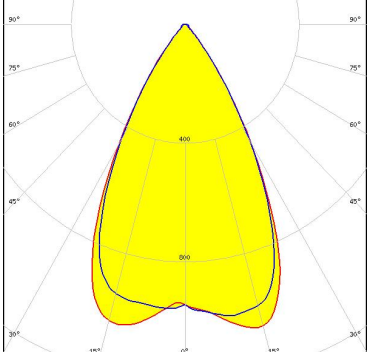

SAMSUNG

LED HiLOM RM16 Z (LH502C)
 FWHM / FWTM 56.0° / 90.0°
 Efficiency 89 %
 Peak intensity 0.9 cd/lm
 LEDs/each optic 1
 Light colour White
 Required components:

Protective plate, glass



OPTICAL RESULTS (SIMULATED):

<p> SEOU SEMICONDUCTOR</p> <p>LED: SEOUL DC 5050 6V</p> <p>FWHM / FWTM: 54.0° / 79.0°</p> <p>Efficiency: 94 %</p> <p>Peak intensity: 1.1 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>		
<p> SEOU SEMICONDUCTOR</p> <p>LED: Z8Y22T</p> <p>FWHM / FWTM: 51.0° / 69.0°</p> <p>Efficiency: 94 %</p> <p>Peak intensity: 1.4 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>		