

## HB-2X2-O

~20° + 115° oval beam for aisle lighting

### TECHNICAL SPECIFICATIONS:

Dimensions	50.0 mm
Height	10.6 mm
Fastening	glue, pin, screw
ROHS compliant	yes ⓘ

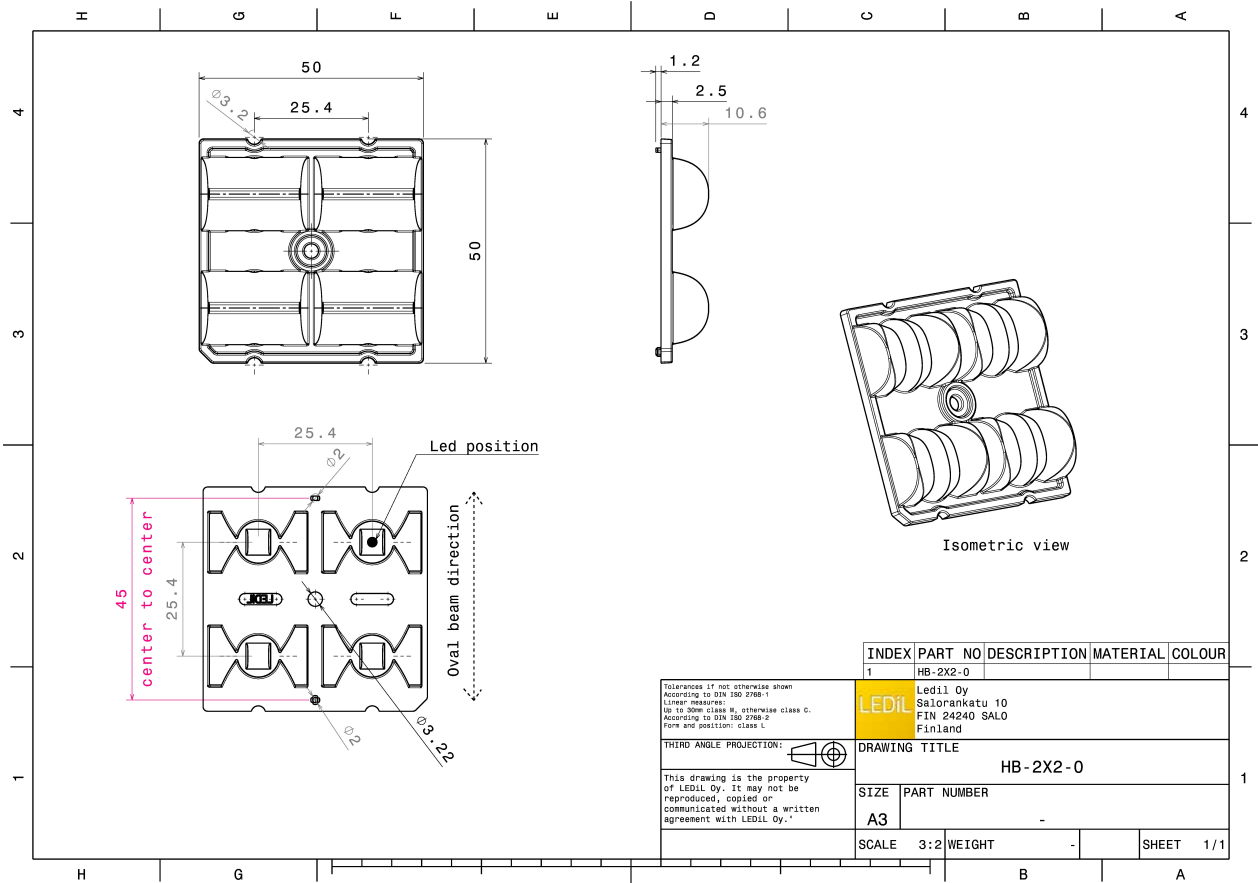
### MATERIAL SPECIFICATIONS:

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


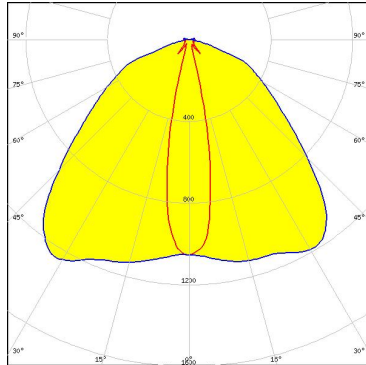
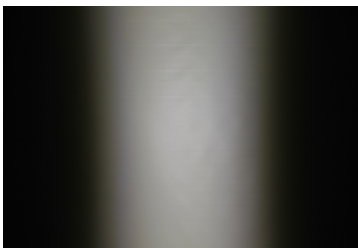
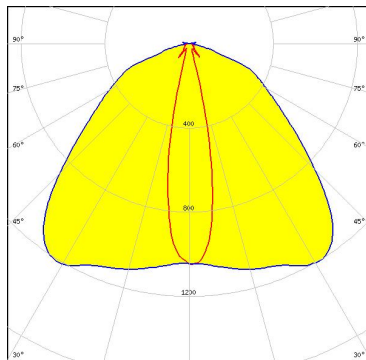

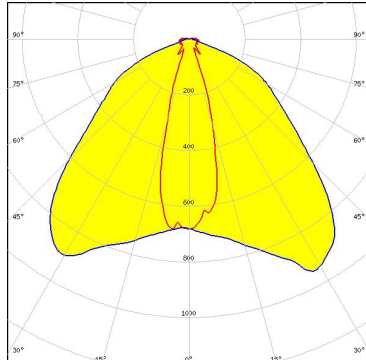
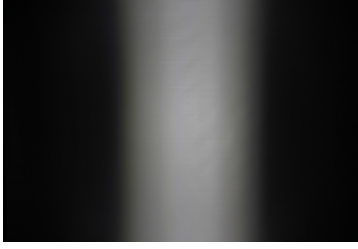
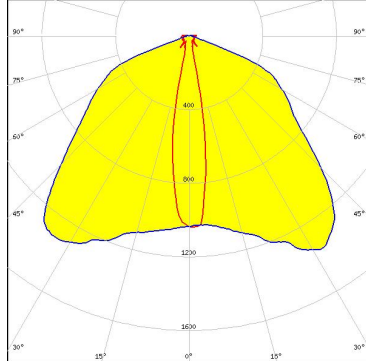


### ORDERING INFORMATION:

Component	Qty in box	MOQ	MPQ	Box weight (kg)
C13749_HB-2X2-O » Box size: 480 x 280 x 300 mm	800	160	160	10.4



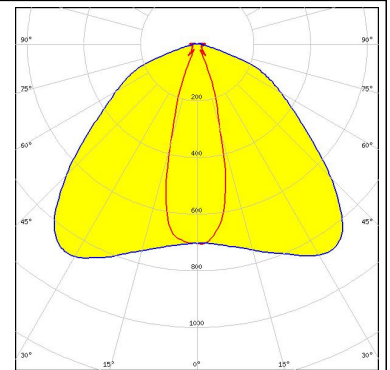
#### PHOTOMETRIC DATA (MEASURED):

<p><b>COMET ELECTRONICS</b></p> <p>LED QUICK FLUX XTP 2x4 xxx LS G5            FWHM 21.0 + 111.0°            Efficiency 94 %            Peak intensity 1.3 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>COMET ELECTRONICS</b></p> <p>LED QUICK FLUX XTP 2x6 xxx LS G5            FWHM 22.0 + 111.0°            Efficiency 94 %            Peak intensity 1.2 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>CREE</b></p> <p>LED XD16            FWHM 29.0 + 116.0°            Efficiency 94 %            Peak intensity 1 cd/lm            LEDs/each optic 4            Light colour White            Required components:</p>		
<p><b>CREE</b></p> <p>LED XD16            FWHM 19.0 + 127.0°            Efficiency 93 %            Peak intensity 1.4 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		

#### PHOTOMETRIC DATA (MEASURED):

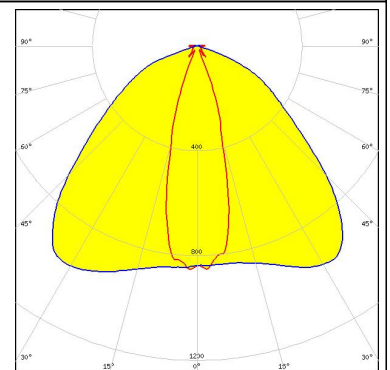
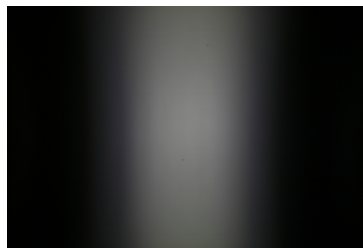
#### CREE

LED XHP35 HD  
 FWHM 29.0 + 117.0°  
 Efficiency 94 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



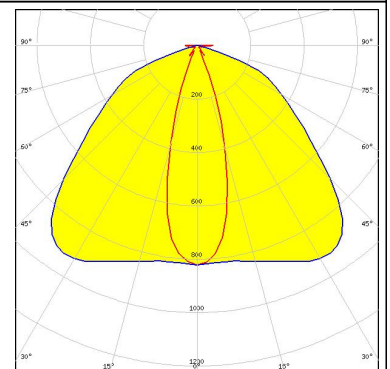
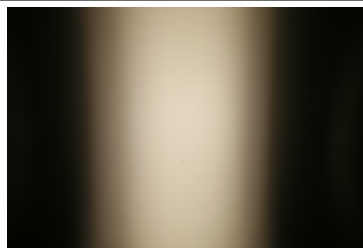
#### CREE

LED XM-L  
 FWHM 28.0 + 108.0°  
 Efficiency 94 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



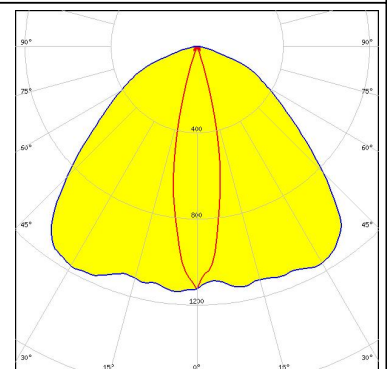
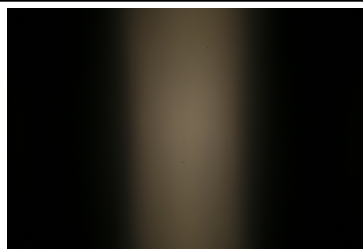
#### CREE

LED XM-L2  
 FWHM 30.0 + 106.0°  
 Efficiency 94 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### CREE

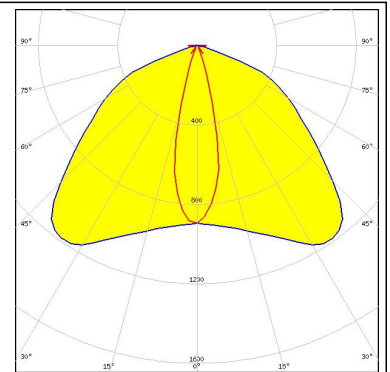
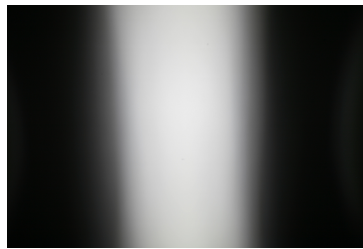
LED XP-G  
 FWHM 26.0 + 115.0°  
 Efficiency 94 %  
 Peak intensity 1.1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHOTOMETRIC DATA (MEASURED):

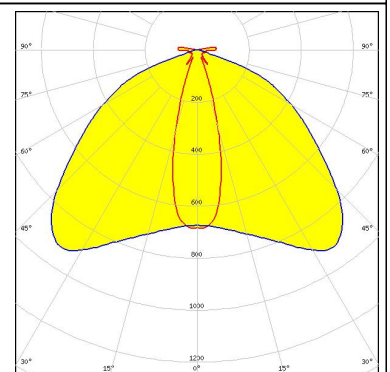
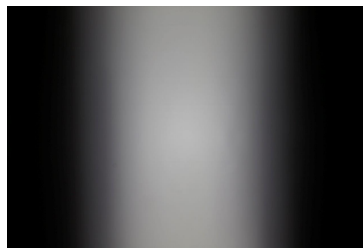
#### CREE

LED XP-G2  
 FWHM 27.0 + 112.0°  
 Efficiency 94 %  
 Peak intensity 1.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



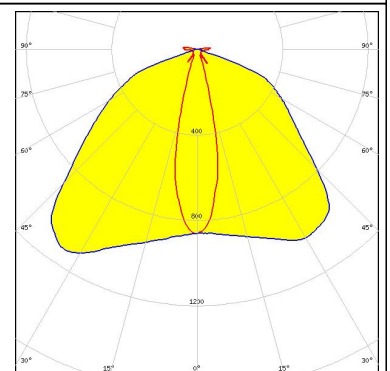
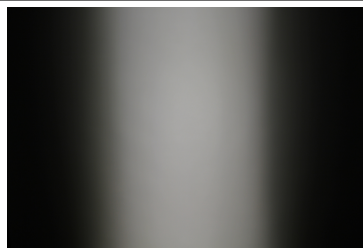
#### CREE

LED XP-L HD  
 FWHM 29.0 + 117.0°  
 Efficiency 94 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



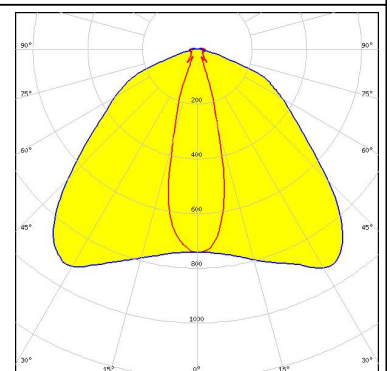
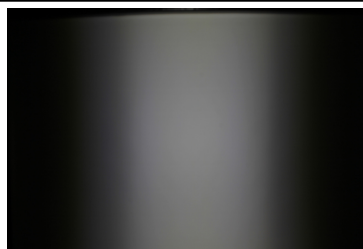
#### CREE

LED XP-L HI  
 FWHM 25.0 + 123.0°  
 Efficiency 94 %  
 Peak intensity 1.1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### CREE

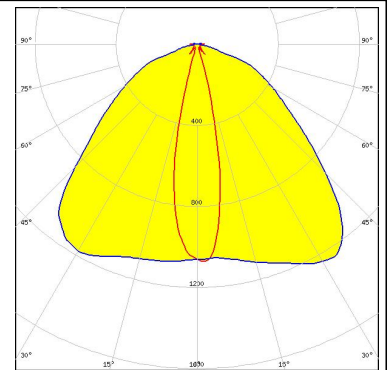
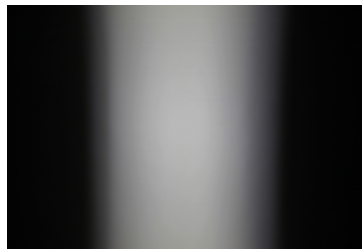
LED XP-L2  
 FWHM 28.0 + 117.0°  
 Efficiency 94 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHOTOMETRIC DATA (MEASURED):

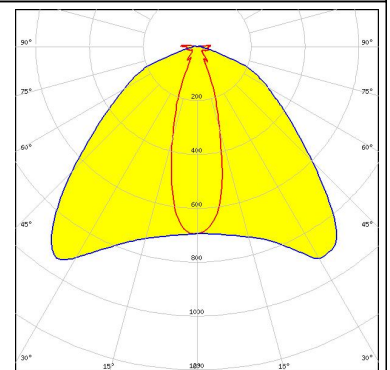
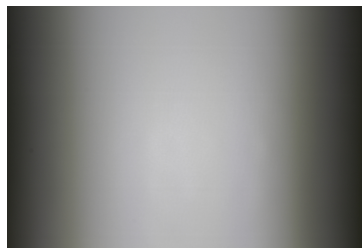
##### LG Innotek

LED H35C1 (LEMWA33)  
 FWHM 23.0 + 110.0°  
 Efficiency 94 %  
 Peak intensity 1.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



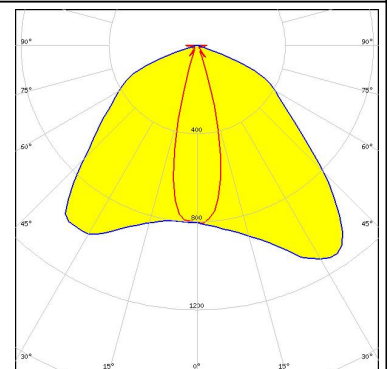
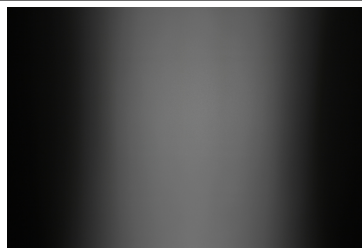
##### LUMILEDS

LED LUXEON 5050 Round LES  
 FWHM 29.0 + 114.0°  
 Efficiency 94 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



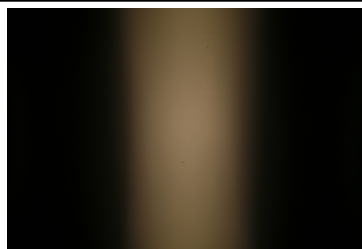
##### LUMILEDS

LED LUXEON MZ  
 FWHM 28.0 + 103.0°  
 Efficiency 94 %  
 Peak intensity 1.1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



##### LUMILEDS

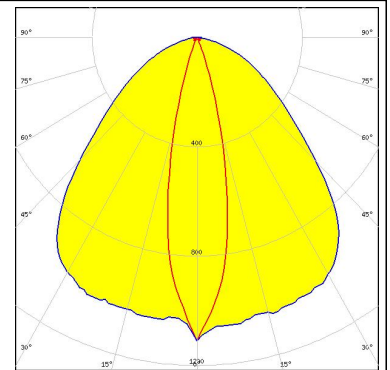
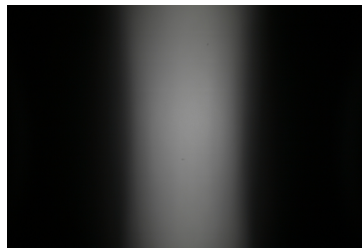
LED LUXEON R  
 FWHM 25.0 + 105.0°  
 Efficiency 94 %  
 Peak intensity 1.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHOTOMETRIC DATA (MEASURED):

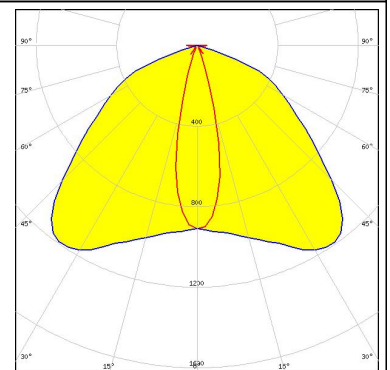
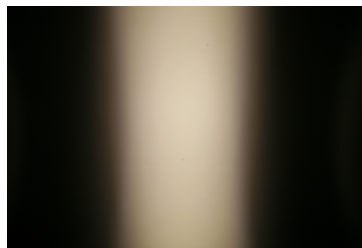
##### LUMILEDS

LED LUXEON Rebel ES  
 FWHM 25.0 + 106.0°  
 Efficiency 94 %  
 Peak intensity 1.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



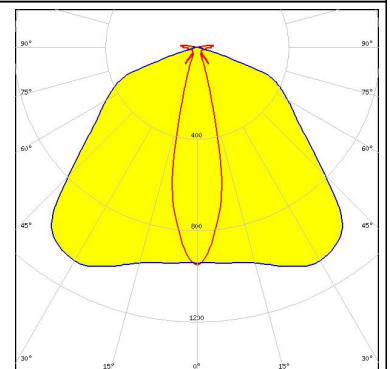
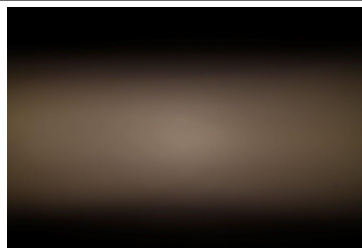
##### LUMILEDS

LED LUXEON T  
 FWHM 26.0 + 110.0°  
 Efficiency 94 %  
 Peak intensity 1.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



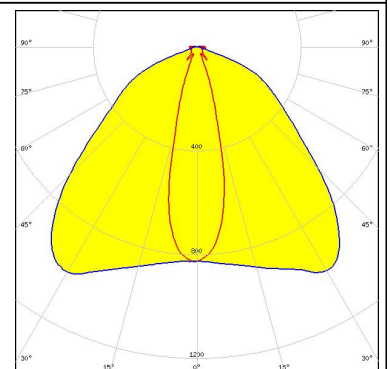
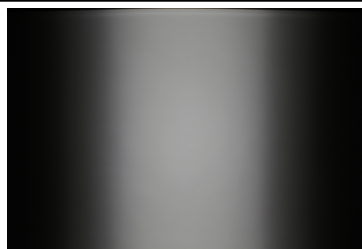
##### LUMILEDS

LED LUXEON TX  
 FWHM 24.0 + 118.0°  
 Efficiency 94 %  
 Peak intensity 1.1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



##### LUMILEDS

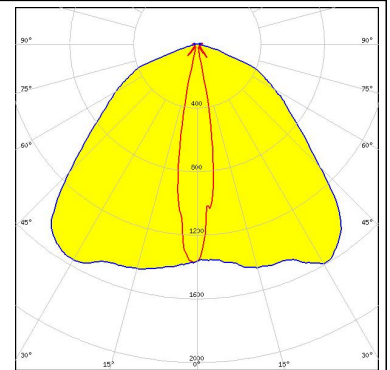
LED LUXEON V  
 FWHM 26.0 + 108.0°  
 Efficiency 94 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



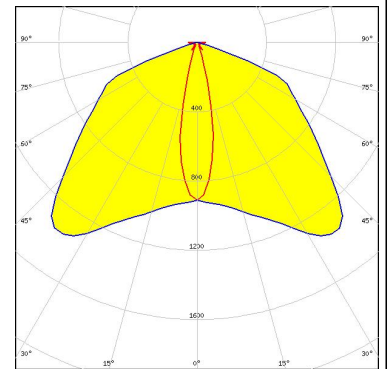
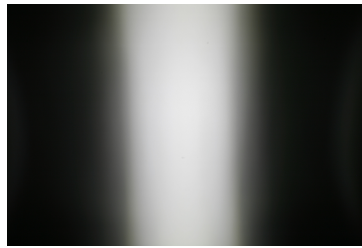
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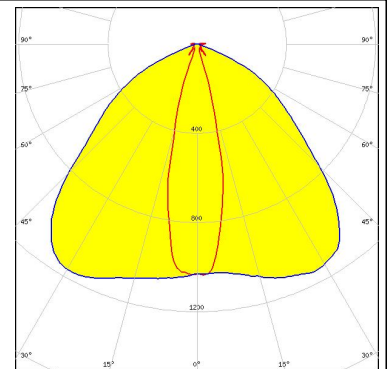
LED SST-10-B130  
 FWHM 18.0 + 104.0°  
 Efficiency 97 %  
 Peak intensity 1.6 cd/lm  
 LEDs/each optic 1  
 Light colour Deep Red  
 Required components:



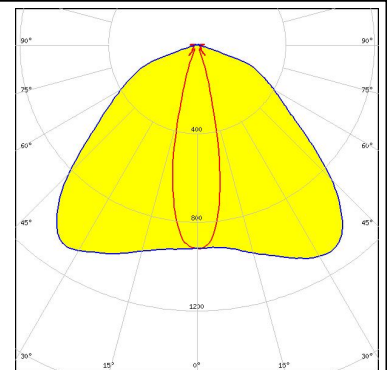
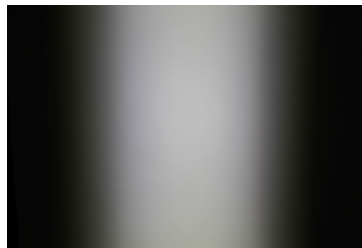
LED NCSxx19B  
 FWHM 23.0 + 113.0°  
 Efficiency 94 %  
 Peak intensity 1.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED NVSW219D  
 FWHM 25.0 + 107.0°  
 Efficiency 94 %  
 Peak intensity 1.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED NVSW319B  
 FWHM 25.0 + 113.0°  
 Efficiency 94 %  
 Peak intensity 1.1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

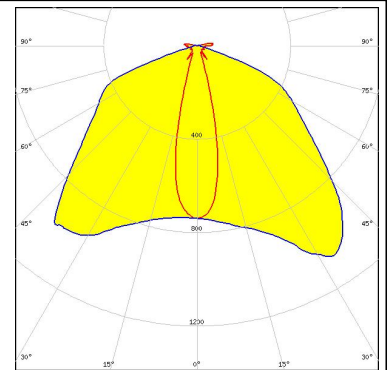
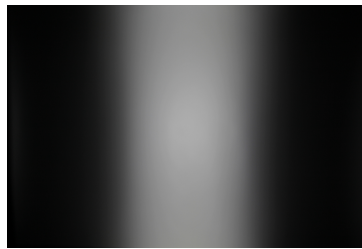




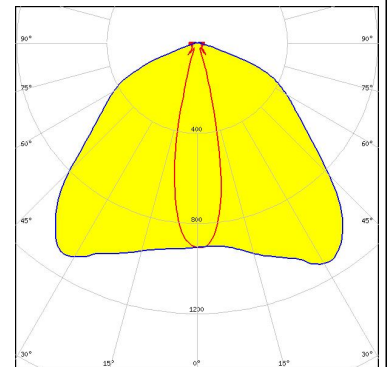
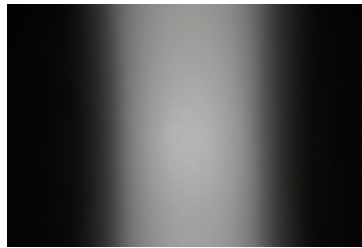
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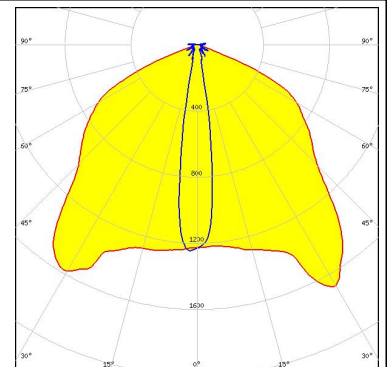
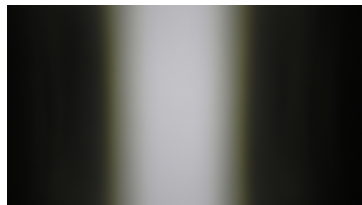
LED NVSW3x9A  
 FWHM 25.0 + 134.0°  
 Efficiency 93 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



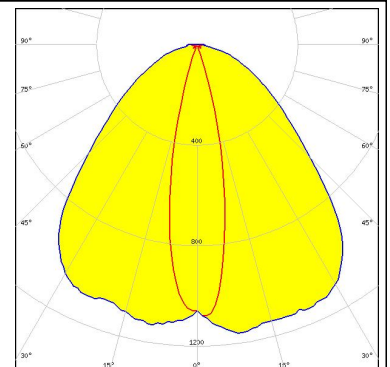
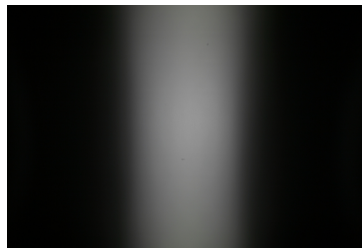
LED NVSW3x9A  
 FWHM 24.0 + 119.0°  
 Efficiency 94 %  
 Peak intensity 1.1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED NVSxE21A  
 FWHM 17.0 + 125.0°  
 Efficiency 94 %  
 Peak intensity 1.7 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



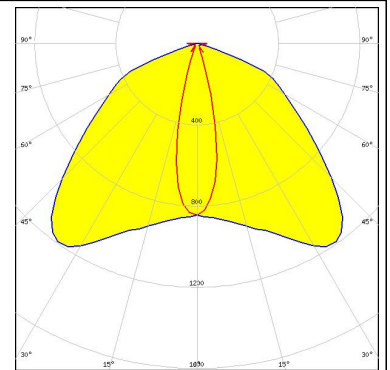
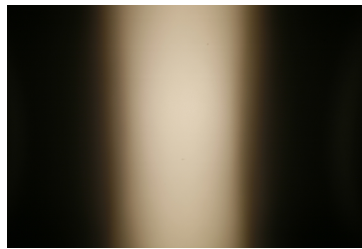
LED NVSxx19A  
 FWHM 24.0 + 105.0°  
 Efficiency 94 %  
 Peak intensity 1.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



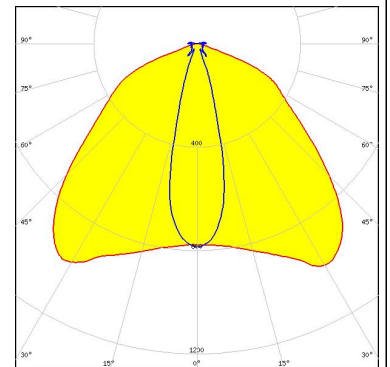
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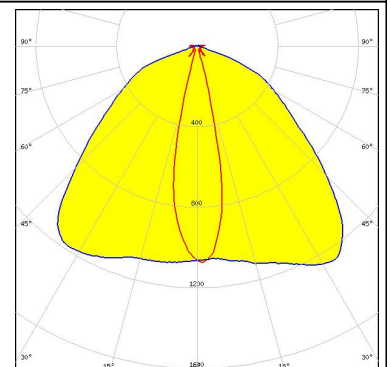
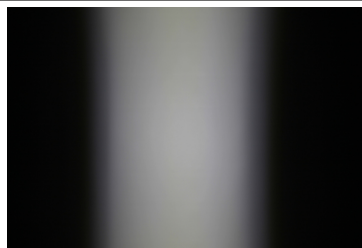
LED NVSxx19B/NVSxx19C  
 FWHM 26.0 + 108.0°  
 Efficiency 94 %  
 Peak intensity 1.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



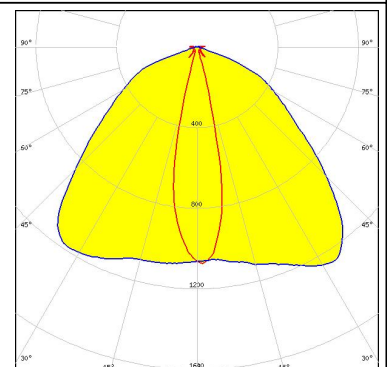
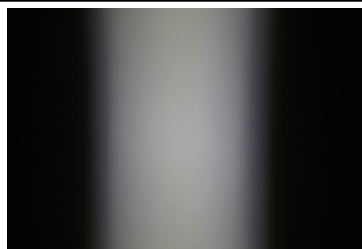
LED NWSx229A  
 FWHM 27.0 + 118.0°  
 Efficiency 94 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED PrevaLED Brick HP 2x8  
 FWHM 23.0 + 111.0°  
 Efficiency 94 %  
 Peak intensity 1.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED OSLOM Square CSSRM2/CSSRM3  
 FWHM 23.0 + 111.0°  
 Efficiency 94 %  
 Peak intensity 1.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

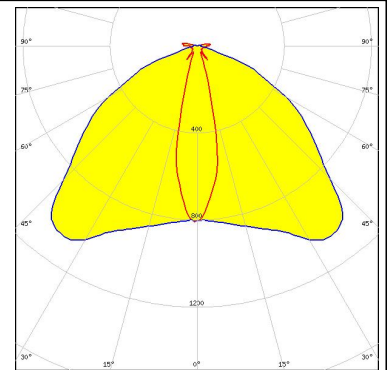
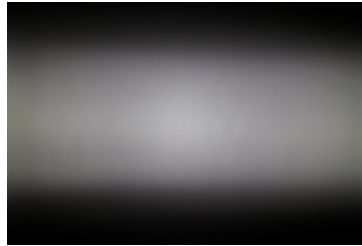


#### PHOTOMETRIC DATA (MEASURED):

#### OSRAM

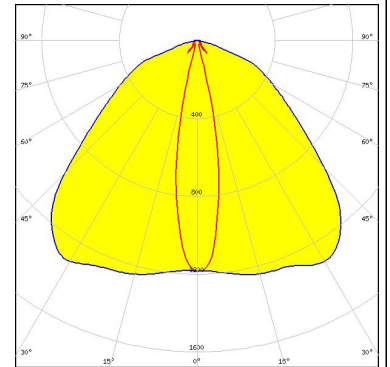
Opto Semiconductors

LED OSLON Square PC  
 FWHM 25.0 + 124.0°  
 Efficiency 91 %  
 Peak intensity 1.1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



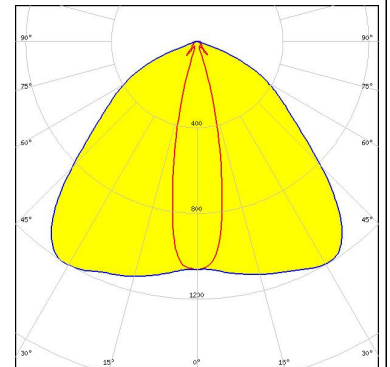
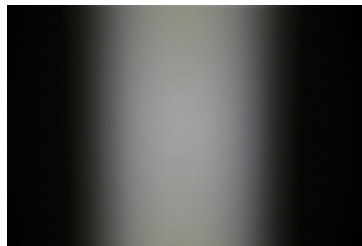
#### PHILIPS

LED Fortimo FastFlex LED 2x8 DA G4  
 FWHM 21.0 + 108.0°  
 Efficiency 94 %  
 Peak intensity 1.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



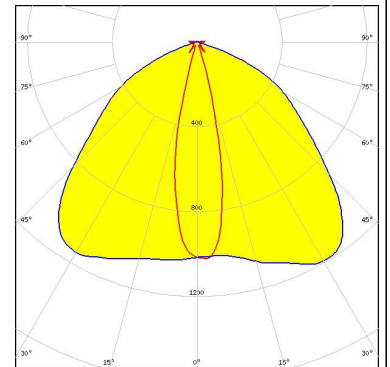
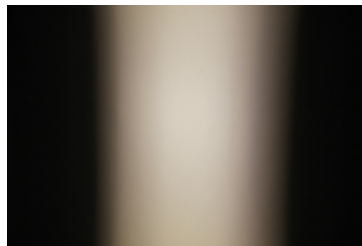
#### SAMSUNG

LED HiLOM RH16 (LH351C)  
 FWHM 23.0 + 106.0°  
 Efficiency 94 %  
 Peak intensity 1.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### SAMSUNG

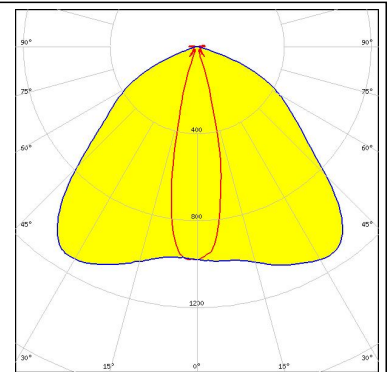
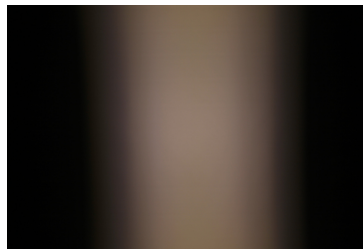
LED LH351B  
 FWHM 23.0 + 113.0°  
 Efficiency 94 %  
 Peak intensity 1.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHOTOMETRIC DATA (MEASURED):

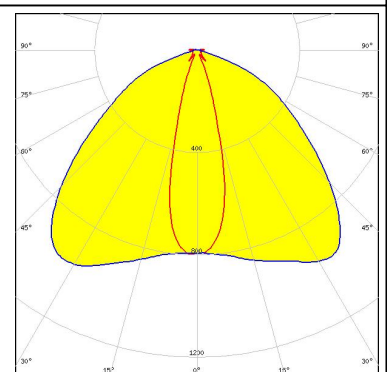
### SAMSUNG

LED LH351C  
 FWHM 24.0 + 111.0°  
 Efficiency 94 %  
 Peak intensity 1.1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



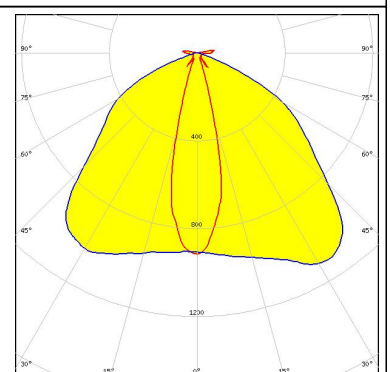
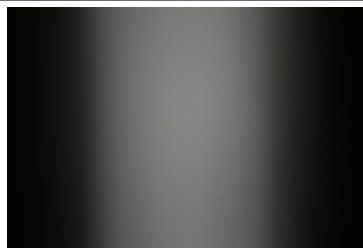
### SAMSUNG

LED LH351D  
 FWHM 27.0 + 116.0°  
 Efficiency 94 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



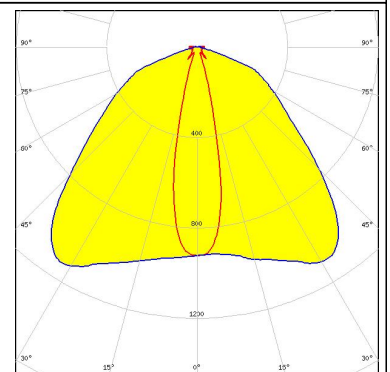
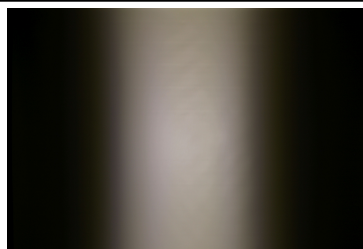
### SAMSUNG

LED LH351Z  
 FWHM 26.0 + 117.0°  
 Efficiency 94 %  
 Peak intensity 1.1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

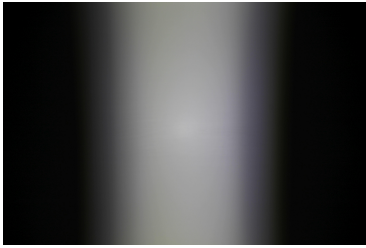
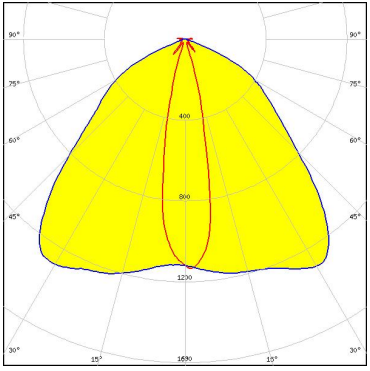
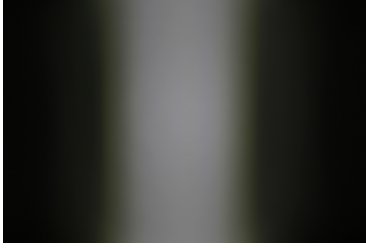
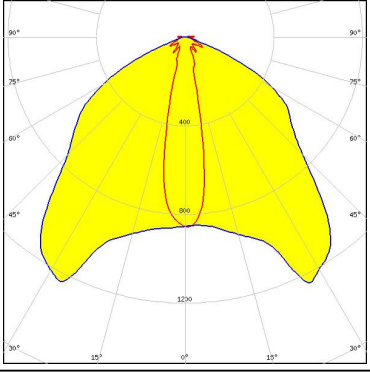
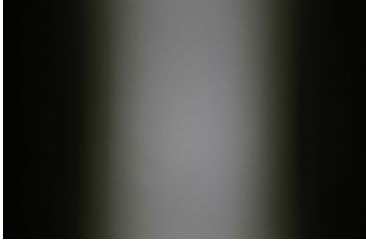
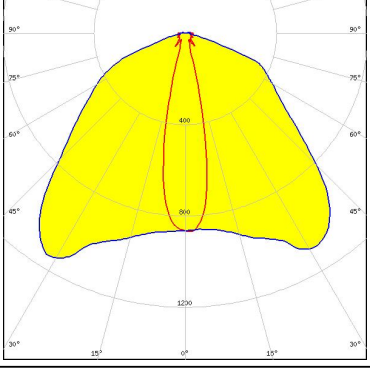
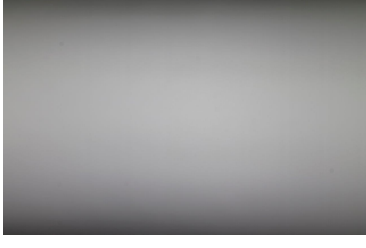



SEOUL SEMICONDUCTOR

LED Z5M3  
 FWHM 23.0 + 113.0°  
 Efficiency 94 %  
 Peak intensity 1.1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



**PHOTOMETRIC DATA (MEASURED):**

<p><b>SEOL</b> SEOUL SEMICONDUCTOR</p> <p>LED Z5M4 FWHM 22.0 + 97.0° Efficiency 98 % Peak intensity 1.3 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p><b>SEOL</b> SEOUL SEMICONDUCTOR</p> <p>LED Z8Y22 FWHM 21.0 + 121.0° Efficiency 94 % Peak intensity 1.2 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p><b>SEOL</b> SEOUL SEMICONDUCTOR</p> <p>LED Z8Y22P FWHM 23.0 + 121.0° Efficiency 94 % Peak intensity 1.1 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p><b>TOSHIBA</b> Leading Innovation &gt;&gt;&gt;</p> <p>LED TL1L4 FWHM 24.0 + 119.0° Efficiency 89 % Peak intensity 1.1 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		

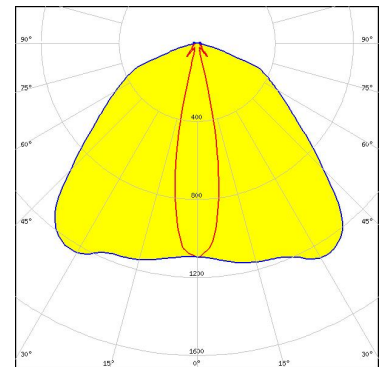
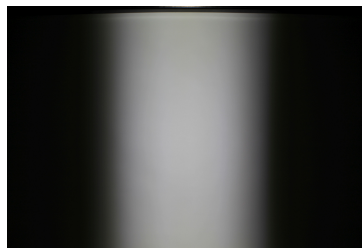
#### PHOTOMETRIC DATA (MEASURED):

#### TRIDONIC

LED RLE 2x4 2000lm HP EXC2 OTD  
 FWHM 22.0 + 113.0°  
 Efficiency 94 %  
 Peak intensity 1.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

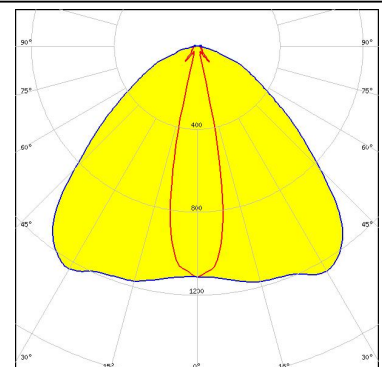
#### TRIDONIC

LED RLE 2x8 4000lm HP EXC2 OTD  
 FWHM 22.0 + 113.0°  
 Efficiency 94 %  
 Peak intensity 1.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



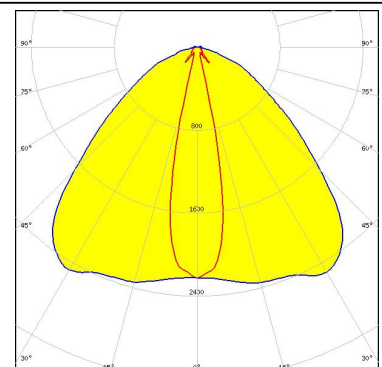
#### TRIDONIC

LED RLE G1 49x121mm 2000lm xxx EXC OTD  
 FWHM 23.0 + 104.0°  
 Efficiency 94 %  
 Peak intensity 1.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### TRIDONIC

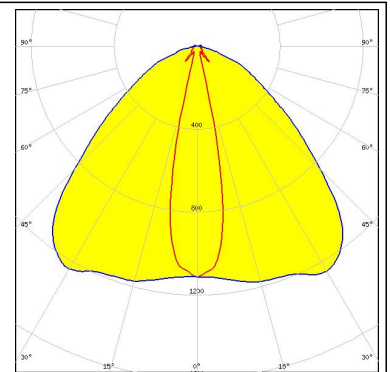
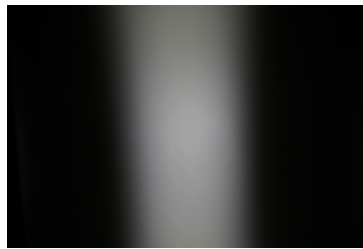
LED RLE G1 49x133mm 2000lm xxx EXC OTD  
 FWHM 23.0 + 104.0°  
 Efficiency 94 %  
 Peak intensity 1.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHOTOMETRIC DATA (MEASURED):

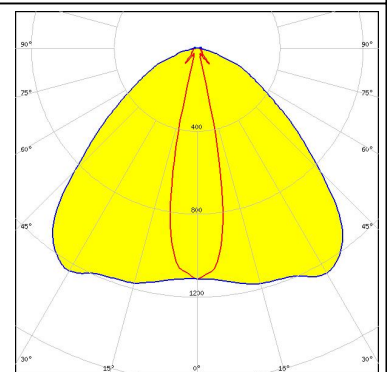
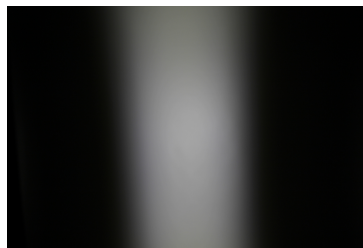
#### TRIDONIC

LED RLE G1 49x223mm 4000lm xxx EXC OTD  
FWHM 23.0 + 104.0°  
Efficiency 94 %  
Peak intensity 1.3 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



#### TRIDONIC

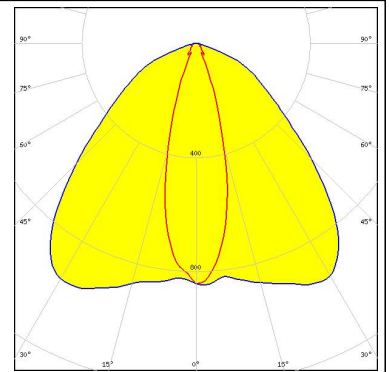
LED RLE G1 49x245mm 4000lm xxx EXC OTD  
FWHM 23.0 + 104.0°  
Efficiency 94 %  
Peak intensity 1.3 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



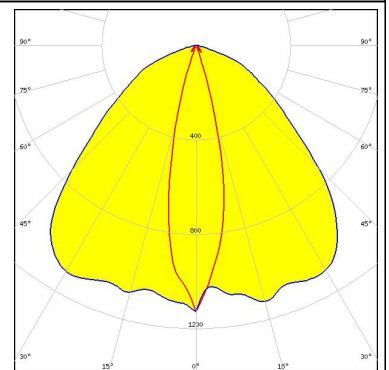
#### PHOTOMETRIC DATA (SIMULATED):



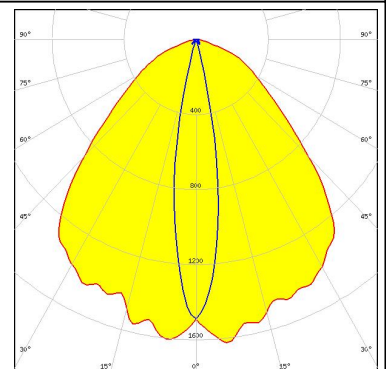
LED J Series 5050  
 FWHM 30.0 + 97.0°  
 Efficiency 94 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



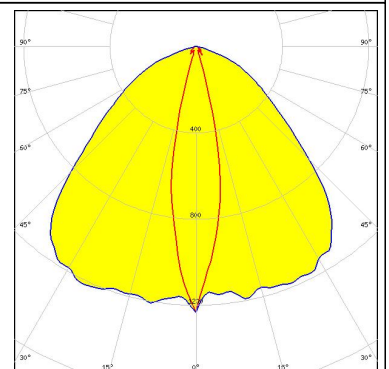
LED XHP35 HI  
 FWHM 101.0 + 27.0°  
 Efficiency 94 %  
 Peak intensity 1.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED XP-E2  
 FWHM 93.0 + 18.0°  
 Efficiency 94 %  
 Peak intensity 1.6 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED XP-G2  
 FWHM 21.0 + 98.0°  
 Efficiency 91 %  
 Peak intensity 1.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



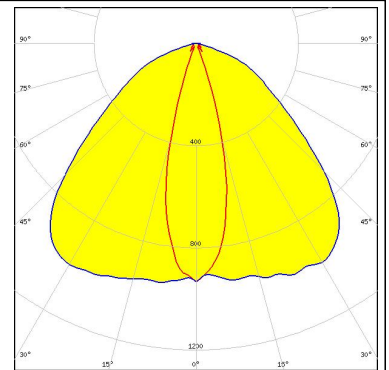
Transparent protective cover



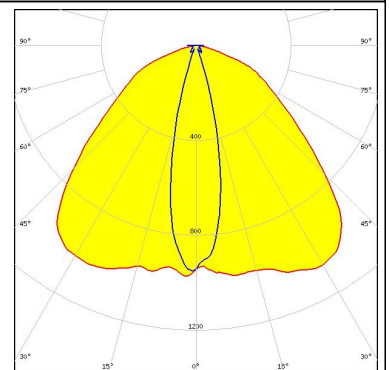
#### PHOTOMETRIC DATA (SIMULATED):



LED XP-G2 HE  
 FWHM 28.0 + 103.0°  
 Efficiency 94 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



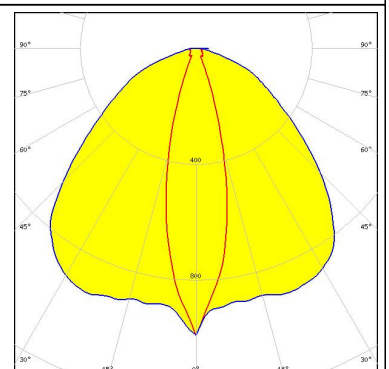
LED XP-G3  
 FWHM 103.0 + 29.0°  
 Efficiency 94 %  
 Peak intensity 1.1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED XQ-E HI  
 FWHM 96.0 + 14.0°  
 Efficiency %  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED XT-E HE  
 FWHM 100.0 + 24.0°  
 Efficiency 94 %  
 LEDs/each optic 1  
 Light colour White  
 Required components:

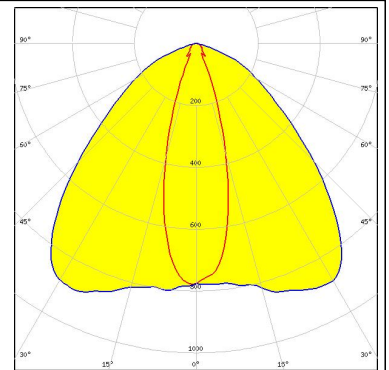


#### PHOTOMETRIC DATA (SIMULATED):

##### LUMILEDS

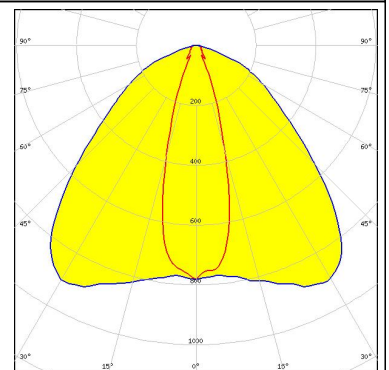
LED LUXEON 5050 Round LES  
 FWHM 30.0 + 96.0°  
 Efficiency 88 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Transparent protective cover



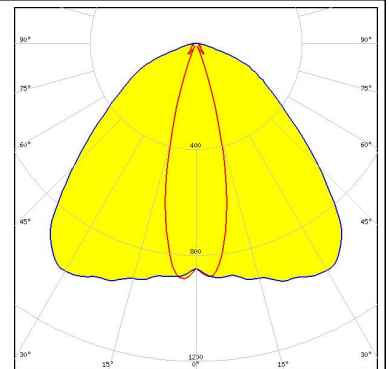
##### LUMILEDS

LED LUXEON 5050 Square LES  
 FWHM 30.0 + 98.0°  
 Efficiency 95 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



##### NICHIA

LED NV4WB35AM  
 FWHM 28.0 + 100.0°  
 Efficiency 95 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

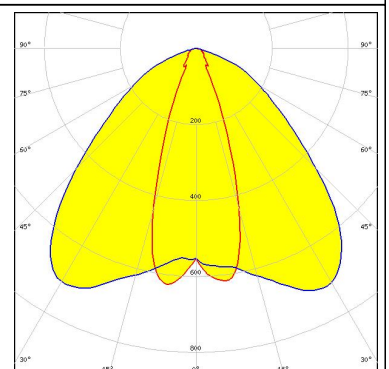


##### OSRAM

Opto Semiconductors

LED Duris S8  
 FWHM 36.0 + 98.0°  
 Efficiency 87 %  
 Peak intensity 0.7 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

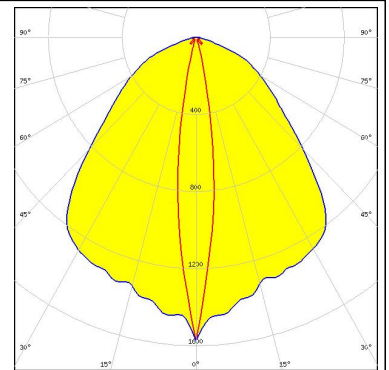
Transparent protective cover



#### PHOTOMETRIC DATA (SIMULATED):

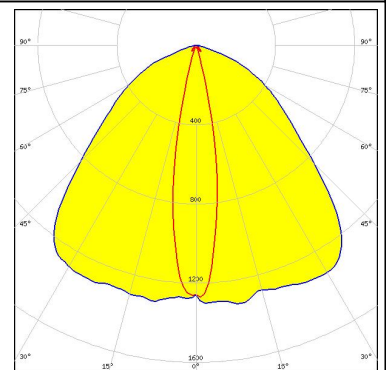
**OSRAM**  
Opto Semiconductors

LED OSCONIQ P 3030  
FWHM 14.0 + 92.0°  
Efficiency 95 %  
Peak intensity 1.6 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



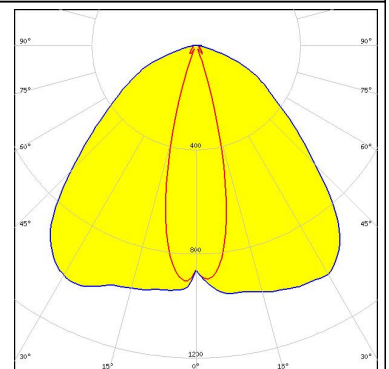
**OSRAM**  
Opto Semiconductors

LED OSCONIQ P 3737 (2W version)  
FWHM 99.0 + 19.0°  
Efficiency 94 %  
Peak intensity 1.3 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



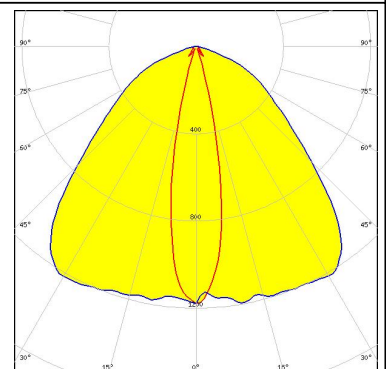
**OSRAM**  
Opto Semiconductors

LED OSCONIQ P 3737 (3W version)  
FWHM 100.0 + 30.0°  
Efficiency 94 %  
Peak intensity 1 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



**OSRAM**  
Opto Semiconductors

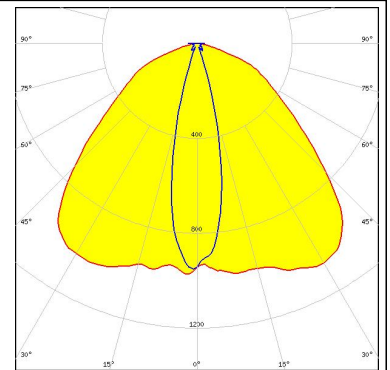
LED OSCONIQ P 3737 Flat  
FWHM 22.0 + 98.0°  
Efficiency 96 %  
Peak intensity 1.2 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



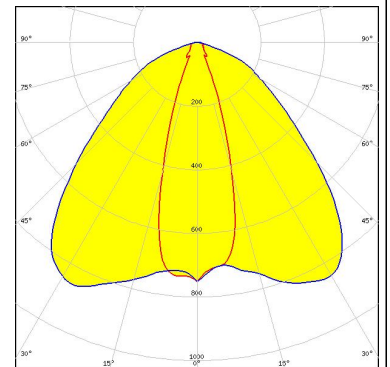
#### PHOTOMETRIC DATA (SIMULATED):

### PHILIPS

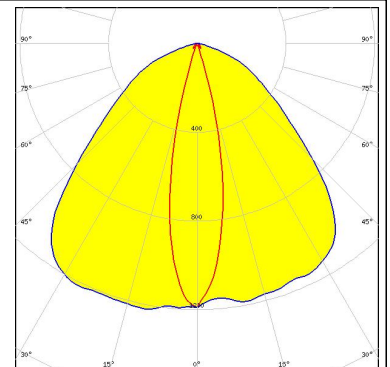
LED Fortimo FastFlex LED 2x8 DAX G4  
 FWHM 103.0 + 29.0°  
 Efficiency 94 %  
 Peak intensity 1.1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



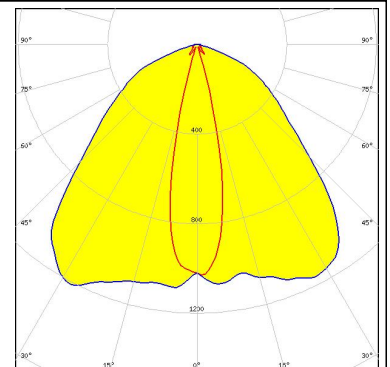
SEOUL SEMICONDUCTOR  
 LED SEOUL DC 5050 6V  
 FWHM 33.0 + 98.0°  
 Efficiency 94 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



SEOUL SEMICONDUCTOR  
 LED Z5M1/Z5M2  
 FWHM 22.0 + 97.0°  
 Efficiency 94 %  
 Peak intensity 1.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



SEOUL SEMICONDUCTOR  
 LED Z8Y22T  
 FWHM 21.0 + 96.0°  
 Efficiency 94 %  
 Peak intensity 1.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



### GENERAL INFORMATION:

NOTE: The typical beam angle will be changed by different color, chip size and chip position tolerance. The typical total beam angle is the full angle measured where the luminous intensity is half of the peak value.

### MATERIALS:

As part of our continuous research and improvement processes, and to ensure the best possible quality and availability of our products, LEDiL reserves the right to change material grades without notice.

### PRODUCT DATA USER AGREEMENT AND DISCLAIMER:

The measured data in the provided downloadable LEDiL Product Datasheets and Mechanical 2D-Drawings is rounded and provided as reference for planning. LEDiL Oy's optical specifications have been verified by conducting performance testing of the products in accordance with the company's quality system. The reported data are averaged results of multiple measurements with typical variation. LEDiL Oy reserves the right to without prior notification make changes and improvements to its products.

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USA

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