

## HB-2X2-RW

~50° wide beam optimized for CREE XP-L and XM-L

### TECHNICAL SPECIFICATIONS:

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

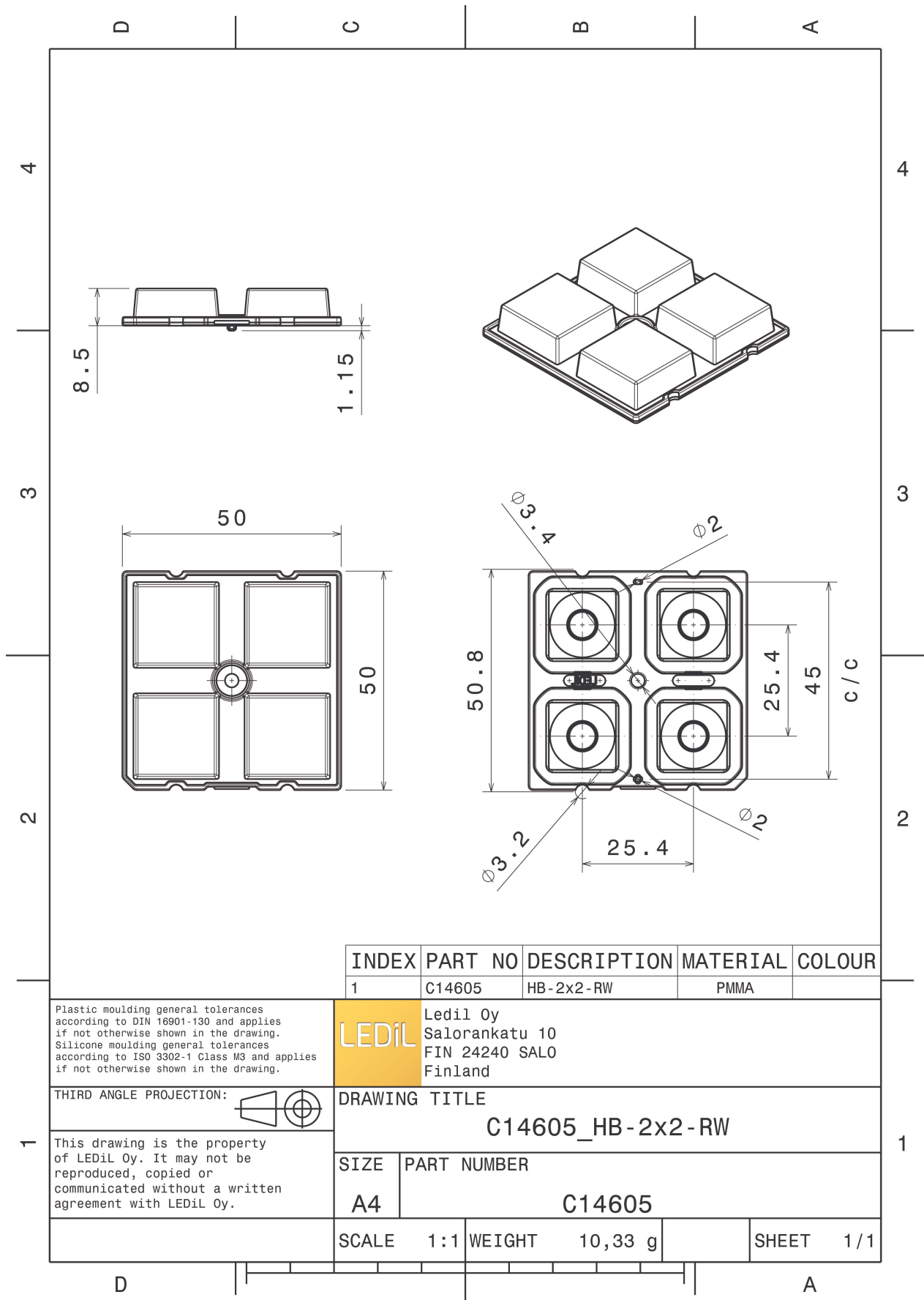
### MATERIAL SPECIFICATIONS:

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**


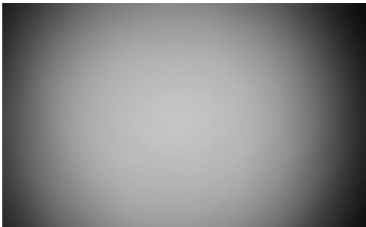
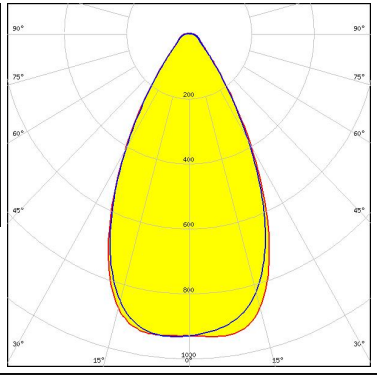


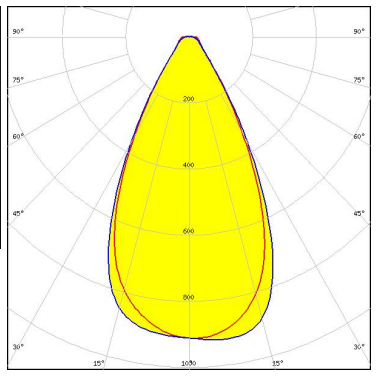

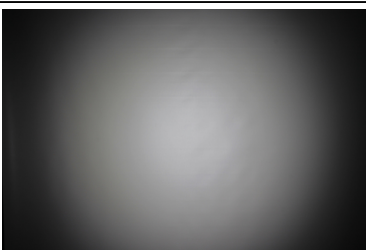
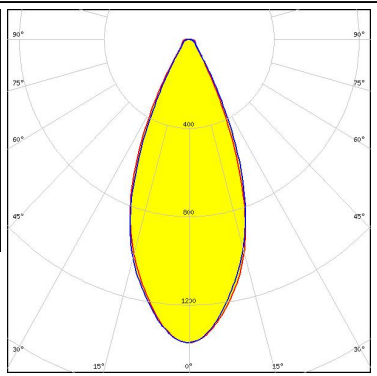

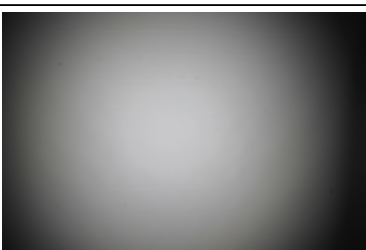
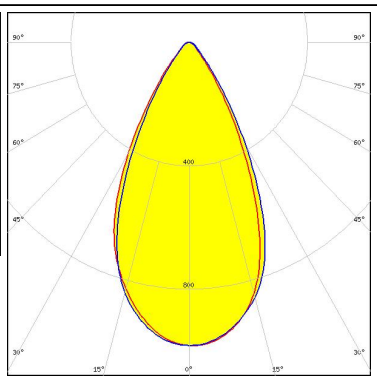
This drawing is the property of LEDiL Oy. It may not be reproduced, copied or communicated without a written agreement with LEDiL Oy.

SIZE	PART NUMBER
A4	C14605


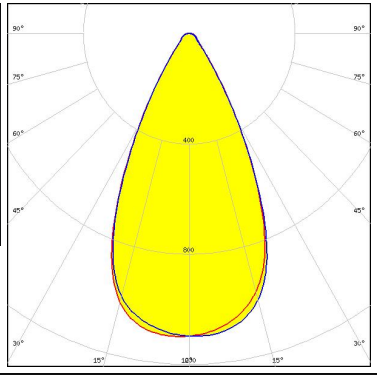

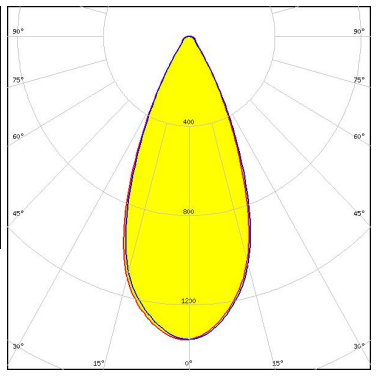

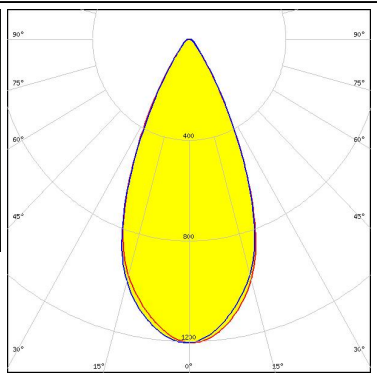

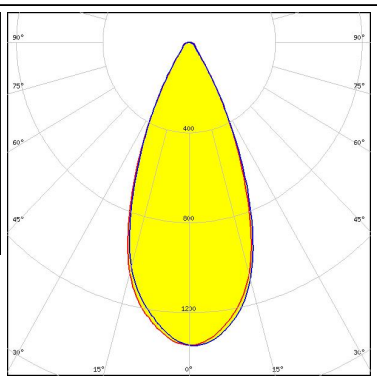
SCALE	1:1	WEIGHT	10,33 g	SHEET	1/1
-------	-----	--------	---------	-------	-----

See also our general installation guide: [www.ledil.com/installation\\_guide](http://www.ledil.com/installation_guide)


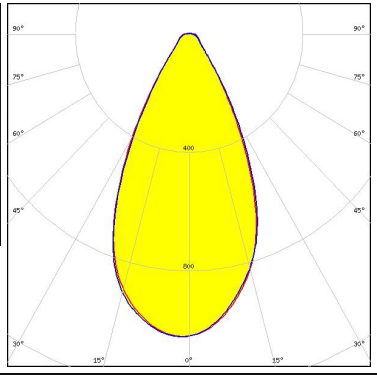

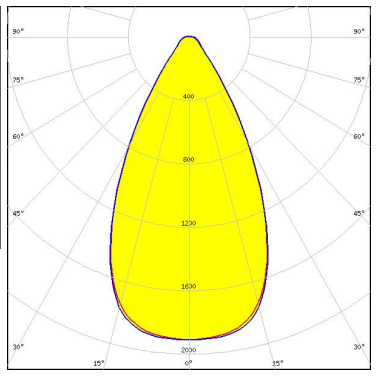

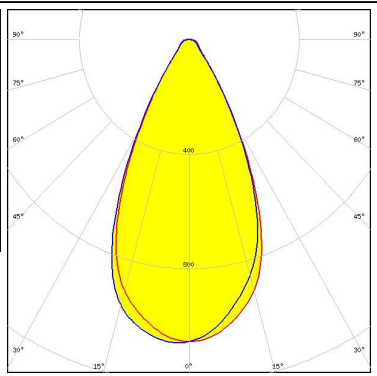

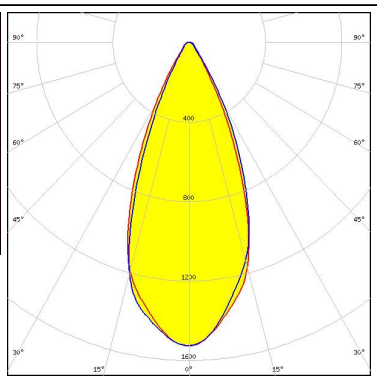
#### PHOTOMETRIC DATA (MEASURED):

<p> <b>LED</b> Bridgelux SMD 5050</p> <p><b>FWHM / FWTM</b> 56.0° / 89.0°</p> <p><b>Efficiency</b> 94 %</p> <p><b>Peak intensity</b> 0.9 cd/lm</p> <p><b>LEDs/each optic</b> 1</p> <p><b>Light colour</b> White</p> <p><b>Required components:</b></p>		
<p> <b>LED</b> XD16</p> <p><b>FWHM / FWTM</b> 54.0° / 85.0°</p> <p><b>Efficiency</b> 92 %</p> <p><b>Peak intensity</b> 0.9 cd/lm</p> <p><b>LEDs/each optic</b> 4</p> <p><b>Light colour</b> White</p> <p><b>Required components:</b></p>		
<p> <b>LED</b> XD16</p> <p><b>FWHM / FWTM</b> 44.0° / 71.0°</p> <p><b>Efficiency</b> 90 %</p> <p><b>Peak intensity</b> 1.4 cd/lm</p> <p><b>LEDs/each optic</b> 1</p> <p><b>Light colour</b> White</p> <p><b>Required components:</b></p>		
<p> <b>LED</b> XHP35 HD</p> <p><b>FWHM / FWTM</b> 53.0° / 82.0°</p> <p><b>Efficiency</b> 84 %</p> <p><b>Peak intensity</b> 1 cd/lm</p> <p><b>LEDs/each optic</b> 1</p> <p><b>Light colour</b> White</p> <p><b>Required components:</b></p>		


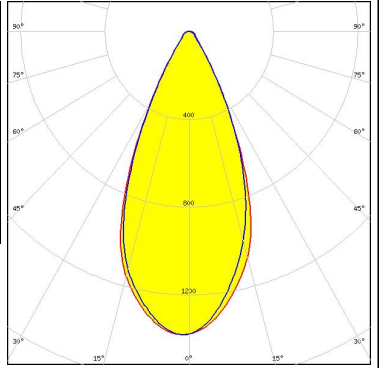
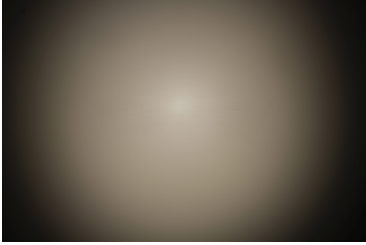
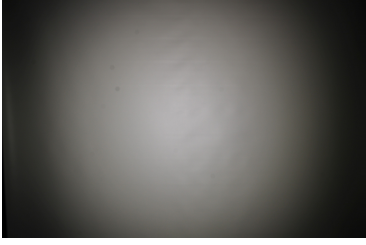
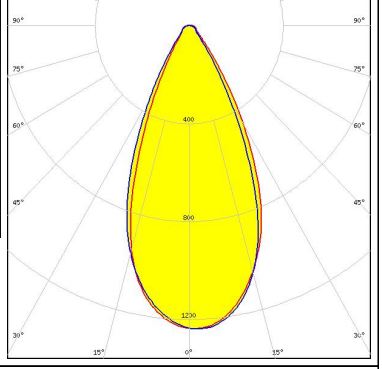
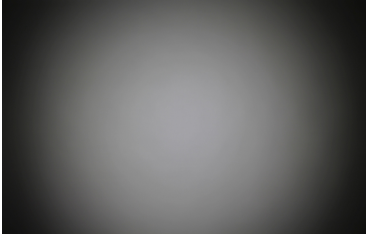
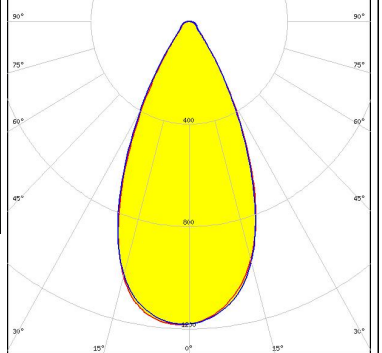
#### PHOTOMETRIC DATA (MEASURED):

<p><b>CREE</b> ⇄ <b>LED</b></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><b>CREE</b> ⇄ <b>LED</b></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><b>CREE</b> ⇄ <b>LED</b></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><b>CREE</b> ⇄ <b>LED</b></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>		

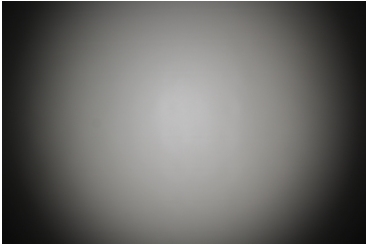
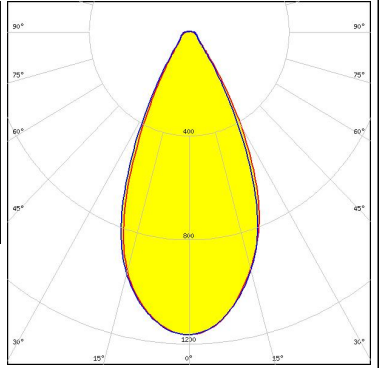
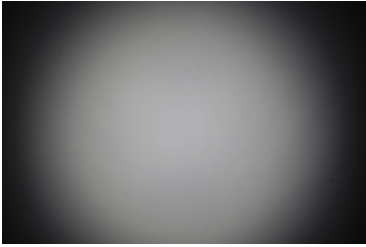
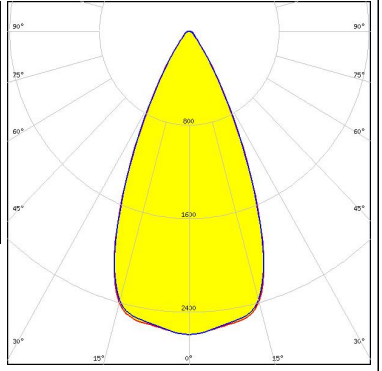
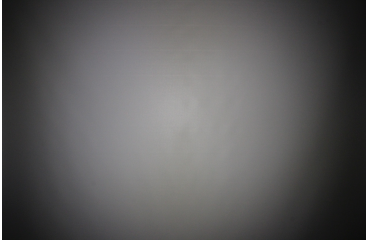
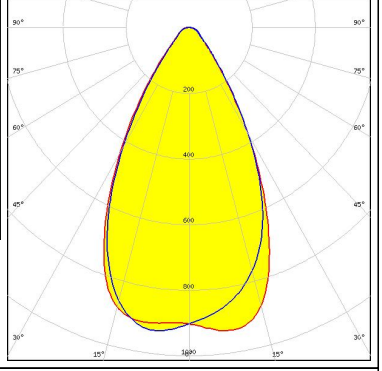
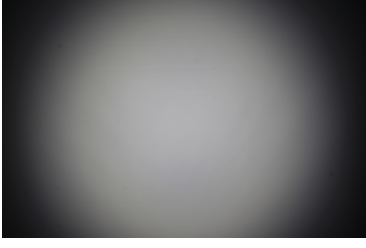
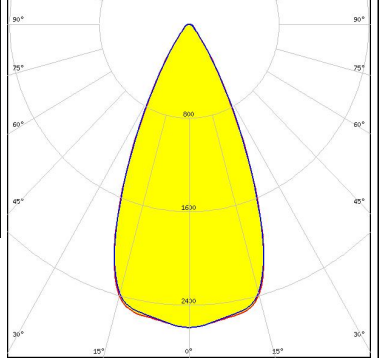
#### PHOTOMETRIC DATA (MEASURED):

<p><b>CREE</b> LED</p> <p>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:</p>		
<p><b>LUMILEDS</b></p> <p>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:</p>		
<p><b>LUMILEDS</b></p> <p>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:</p>		
<p><b>LUMINUS</b></p> <p>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:</p>		

#### PHOTOMETRIC DATA (MEASURED):

<p><b>MST</b> <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><b>NICHIA</b></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><b>NICHIA</b></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><b>NICHIA</b></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>		

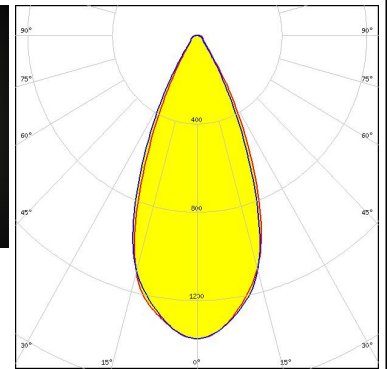
#### PHOTOMETRIC DATA (MEASURED):

<p><b>NICHIA</b></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><b>OSRAM</b></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><b>OSRAM</b>  <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><b>OSRAM</b>  <small>Opto Semiconductors</small></p> <p>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:</p>		

#### PHOTOMETRIC DATA (MEASURED):

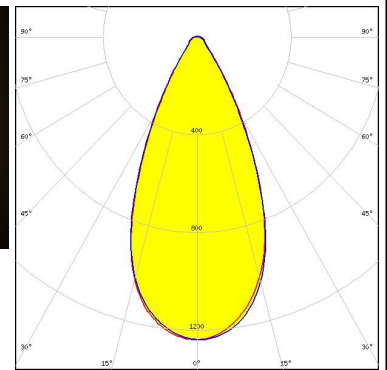
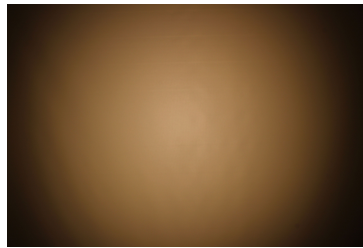
### PHILIPS

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:



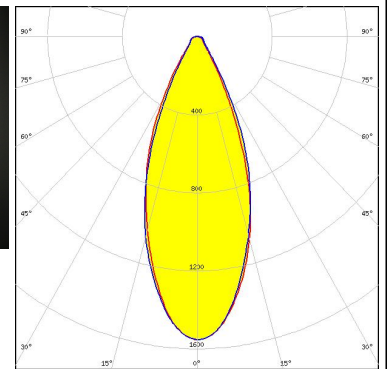
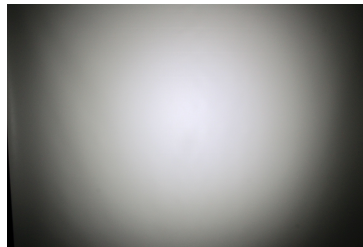
### PHILIPS

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:



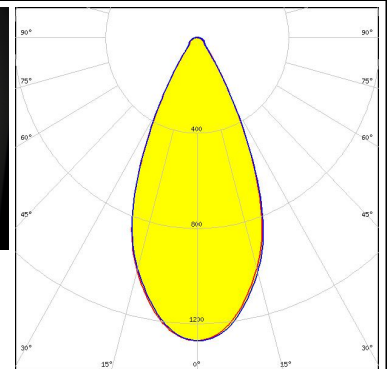
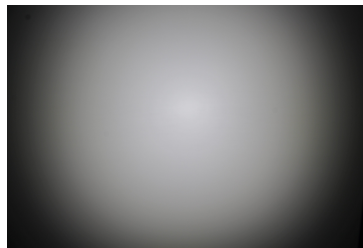
### SAMSUNG

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:



### 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:

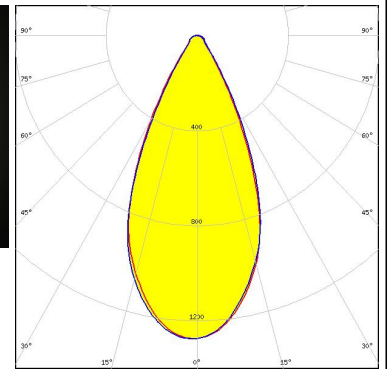




#### PHOTOMETRIC DATA (MEASURED):

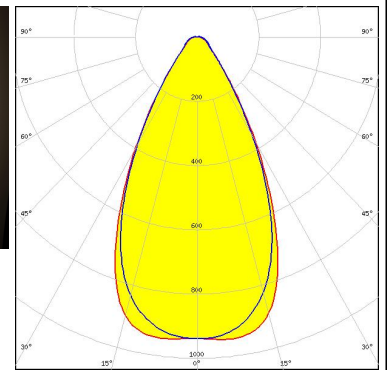
### SAMSUNG

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:



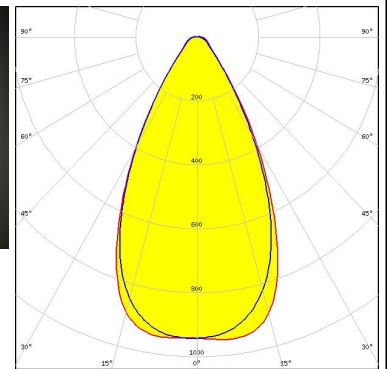
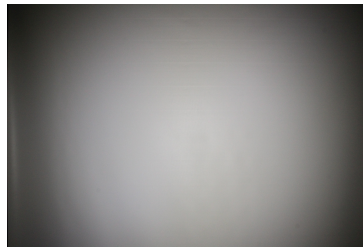
### SAMSUNG

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:



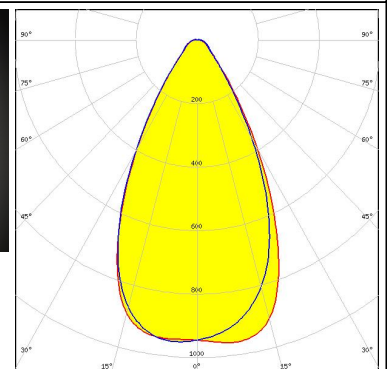
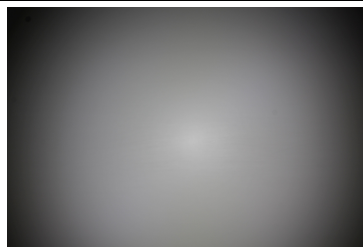
### SAMSUNG

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:



### SAMSUNG

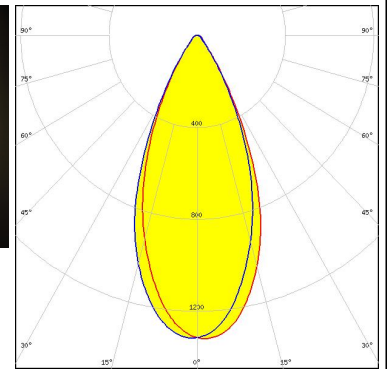
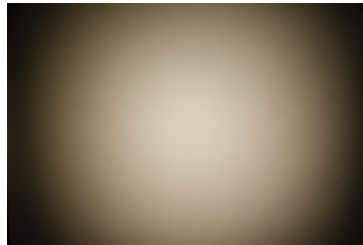
LED HiLOM RM8 Z (LH502C)  
 FWHM / FWTM 56.0° / 88.0°  
 Efficiency 97 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHOTOMETRIC DATA (MEASURED):

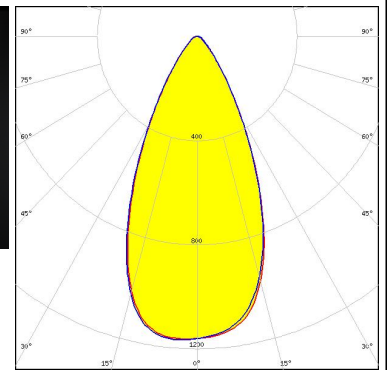
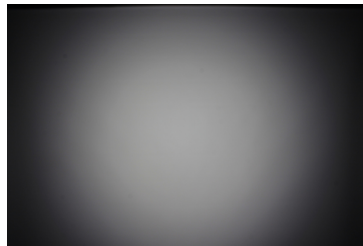
### SAMSUNG

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



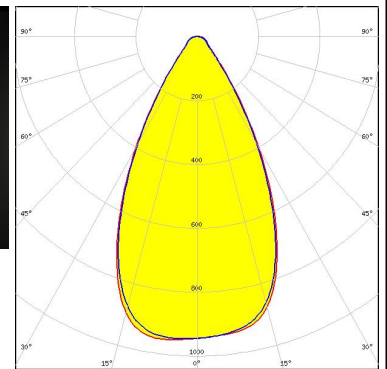
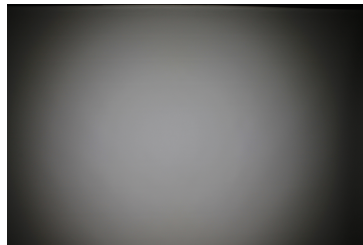
### SAMSUNG

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

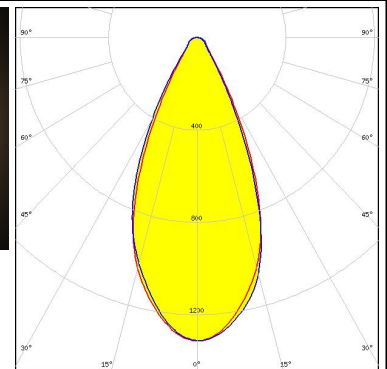
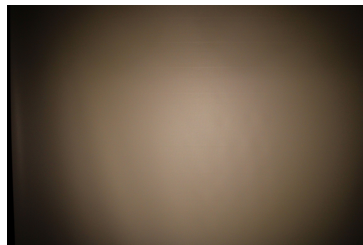


### SAMSUNG

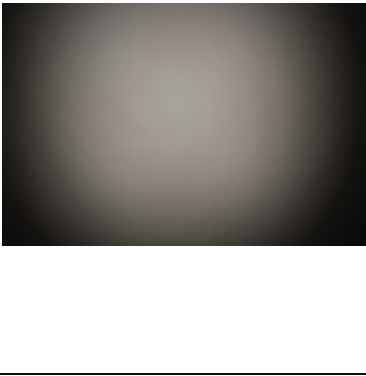
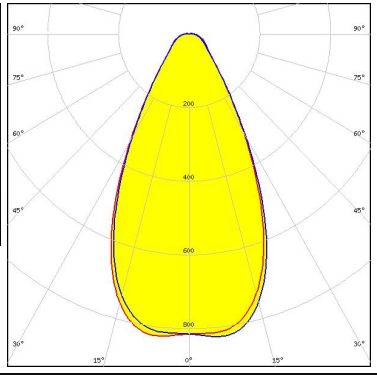

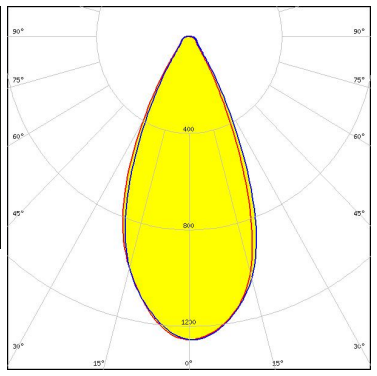

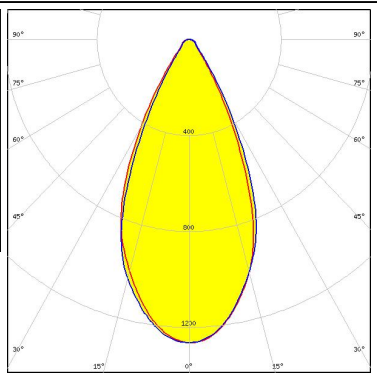
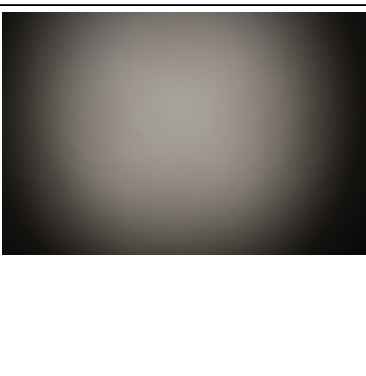
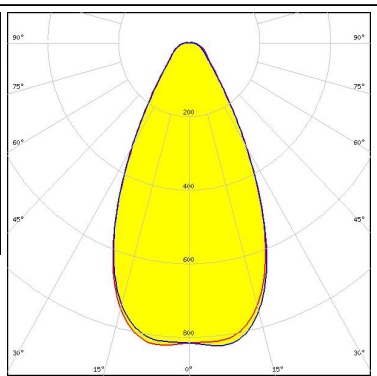
LED LH508A  
 FWHM / FWTM 56.0° / 87.0°  
 Efficiency 93 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



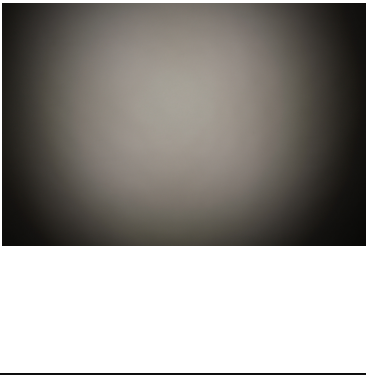
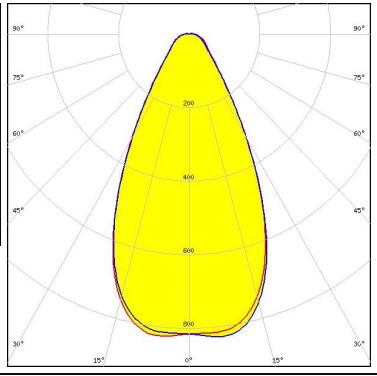

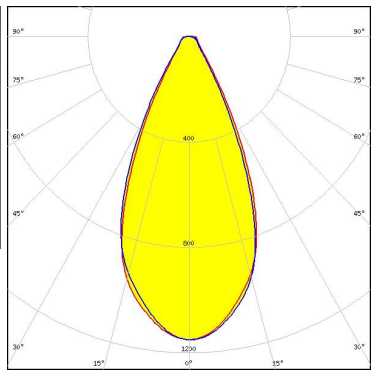



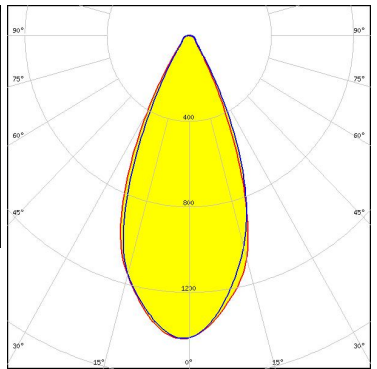
LED LED-Pa-L15c2W11c2-xxx-C050-01  
 FWHM / FWTM 47.0° / 76.0°  
 Efficiency 96 %  
 Peak intensity 1.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHOTOMETRIC DATA (MEASURED):

<p><b>SEOUL SEMICONDUCTOR</b></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><b>SEOUL SEMICONDUCTOR</b></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><b>SEOUL SEMICONDUCTOR</b></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>		
<p><b>SEOUL SEMICONDUCTOR</b></p> <p>LED                    Z8Y19</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     4</p> <p>Light colour         White</p> <p>Required components:</p>		

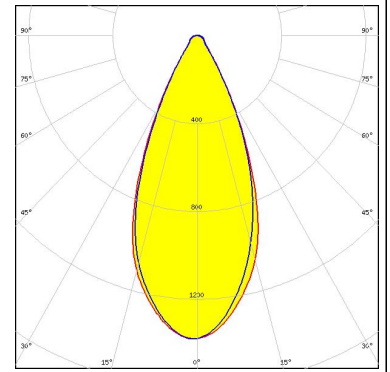
#### PHOTOMETRIC DATA (MEASURED):

<p><b>SEOL</b> SEOUL SEMICONDUCTOR</p> <p>LED Z8Y19 FWHM / FWTM 54.0° / 94.0° Efficiency 92 % Peak intensity 0.8 cd/lm LEDs/each optic 4 Light colour White Required components:</p>		
<p><b>SEOL</b> SEOUL SEMICONDUCTOR</p> <p>LED Z8Y22P FWHM / FWTM 48.0° / 77.0° Efficiency 92 % Peak intensity 1.2 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<h2>TRIDONIC</h2>		
<p>LED RLE 2x4 2000lm 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:</p>		
<p><b>TRIDONIC</b></p> <p>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:</p>		

#### PHOTOMETRIC DATA (MEASURED):

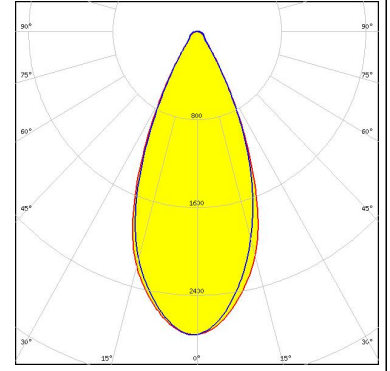
#### TRIDONIC

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:



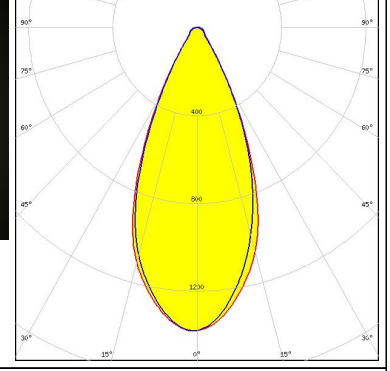
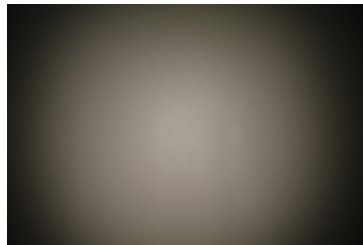
#### TRIDONIC

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:



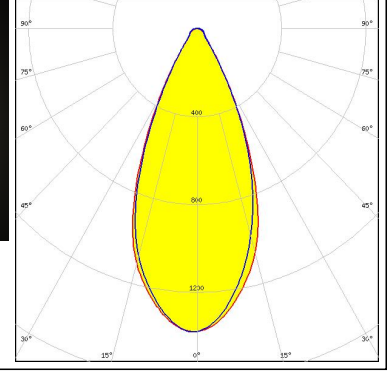
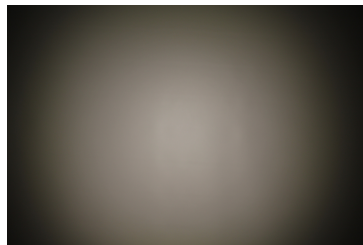
#### TRIDONIC

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

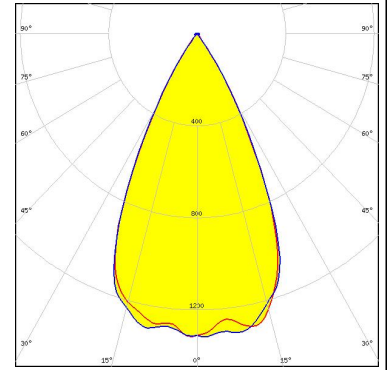
LED RLE G1 49x245mm 4000lm xxx EXC OTD  
 FWHM / FWTM 46.0° / 73.0°  
 Efficiency 94 %  
 Peak intensity 1.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHOTOMETRIC DATA (SIMULATED):

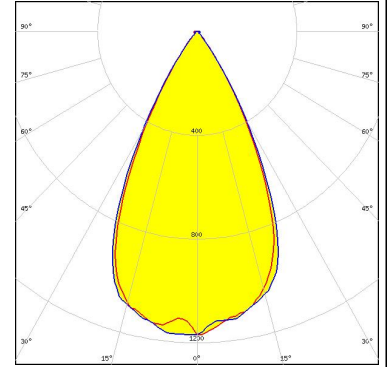
##### CREE LED

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:



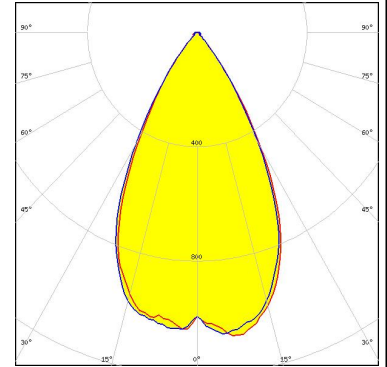
##### CREE LED

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:



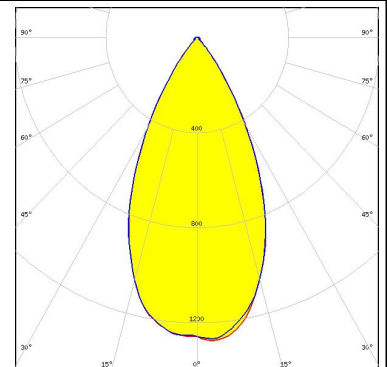
##### CREE LED

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:



##### 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:



#### PHOTOMETRIC DATA (SIMULATED):

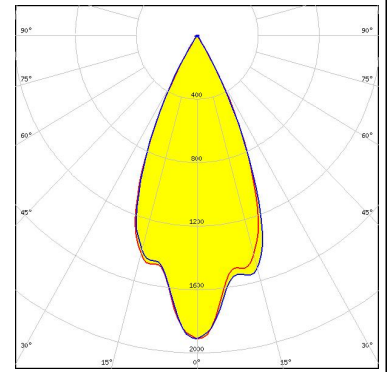
<p><b>LUMILEDS</b></p> <p>LED LUXEON HL2X-P</p> <p>FWHM / FWTM 54.0° / 80.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 1.2 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	
<p><b>LUMILEDS</b></p> <p>LED LUXEON HL2Z</p> <p>FWHM / FWTM 46.0° / 66.0°</p> <p>Efficiency 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><b>NICHIA</b></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>	
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED Duris S8</p> <p>FWHM / FWTM 57.0° / 83.0°</p> <p>Efficiency 90 %</p> <p>Peak intensity 1 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p> <p>Protective plate, glass</p>	

#### PHOTOMETRIC DATA (SIMULATED):

##### OSRAM

Opto Semiconductors

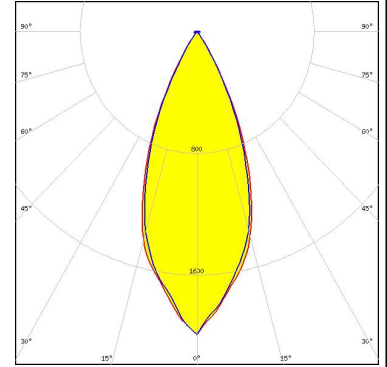
LED OSCONIQ C 2424  
 FWHM / FWTM 45.0° / 62.0°  
 Efficiency 96 %  
 Peak intensity 1.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



##### OSRAM

Opto Semiconductors

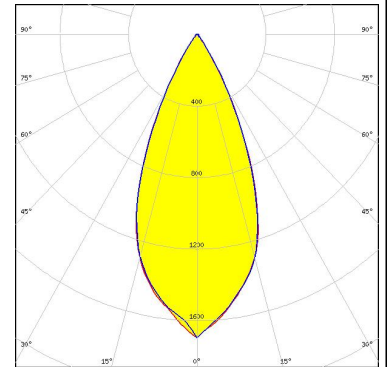
LED OSCONIQ P 3030  
 FWHM / FWTM 42.0° / 64.0°  
 Efficiency 96 %  
 Peak intensity 2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



##### OSRAM

Opto Semiconductors

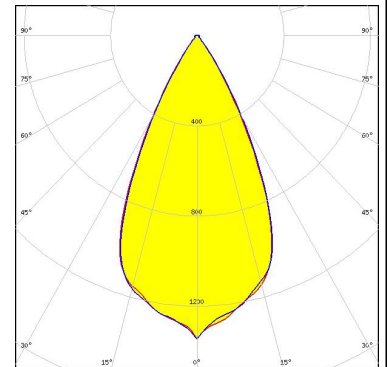
LED OSCONIQ P 3737 (2W version)  
 FWHM / FWTM 45.0° / 68.0°  
 Efficiency 96 %  
 Peak intensity 1.7 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



##### OSRAM

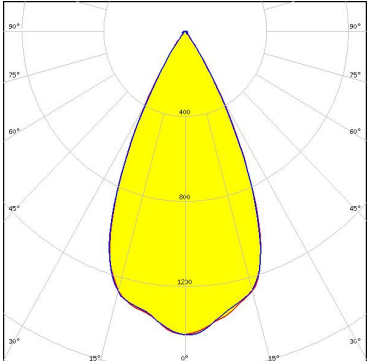
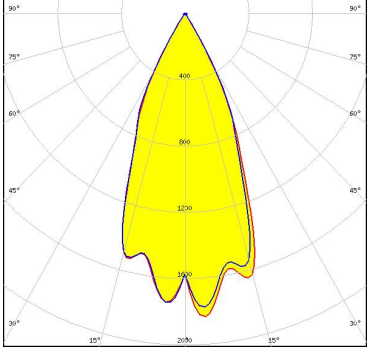
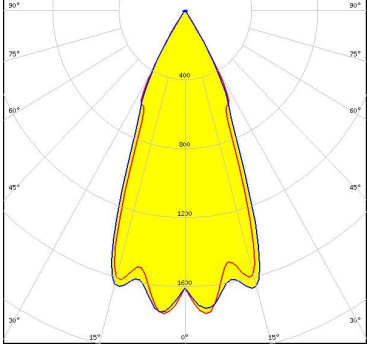
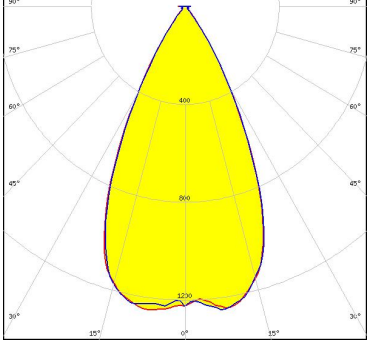
Opto Semiconductors

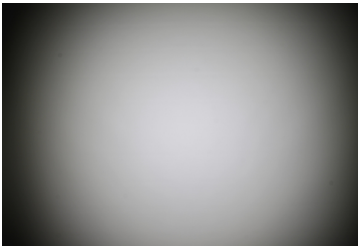
LED OSCONIQ P 3737 (3W version)  
 FWHM / FWTM 52.0° / 72.0°  
 Efficiency 94 %  
 Peak intensity 1.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:





#### PHOTOMETRIC DATA (SIMULATED):

<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSCONIQ P 3737 Flat</p> <p>FWHM / FWTM 50.0° / 68.0°</p> <p>Efficiency 96 %</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><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSLON Square Flat</p> <p>FWHM / FWTM 43.0° / 64.0°</p> <p>Efficiency 96 %</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><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSTAR Projection Compact (Kx.CSLNM1.xx)</p> <p>FWHM / FWTM 42.0° / 64.0°</p> <p>Efficiency 96 %</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><b>PHILIPS</b></p> <p>LED Fortimo FastFlex LED 2x8 DAX G4</p> <p>FWHM / FWTM 51.0° / 73.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 1.3 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	

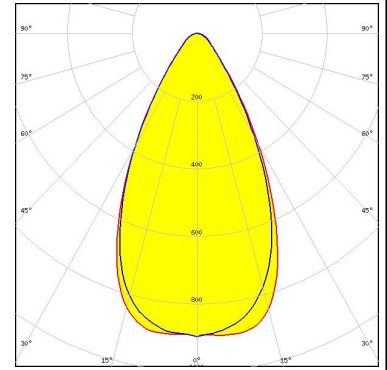


#### PHOTOMETRIC DATA (SIMULATED):

### SAMSUNG

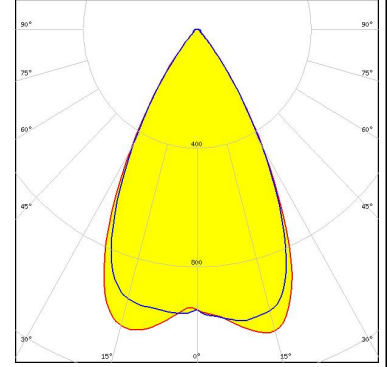
LED HILOM RM16 Z (LH502C)  
 FWHM / FWTM 56.0° / 90.0°  
 Efficiency 89 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass



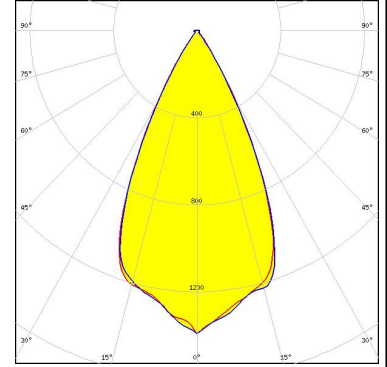
SEOUL SEMICONDUCTOR

LED SEOUL DC 5050 6V  
 FWHM / FWTM 54.0° / 79.0°  
 Efficiency 94 %  
 Peak intensity 1.1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



SEOUL SEMICONDUCTOR

LED Z8Y22T  
 FWHM / FWTM 51.0° / 69.0°  
 Efficiency 94 %  
 Peak intensity 1.4 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.

LEDiL Oy assumes neither warranty, nor guarantee nor any other liability of any kind for the contents and correctness of the provided data. The provided data has been generated with highest diligence but the provided data may in reality not represent the complete possible variation range of all intrinsic parameters. Therefore, in certain cases a deviation from the provided data could occur.

LEDiL Oy reserves the right to undertake technical changes of its products without further notification which could lead to changes in the provided data. LEDiL Oy assumes no liability of any kind for the possible deviation from any provided data or any other damage resulting from the usage of the provided data.

The user agrees to this disclaimer and user agreement with the download or usage of the provided files.

#### LEDiL Oy

Joensuunkatu 13  
FI-24240 SALO  
Finland

#### LEDiL Inc.

228 West Page Street  
Suite D  
Sycamore IL 60178  
USA

#### Ledil Optics Technology (Shenzhen) Co., Ltd.

# 405 , Block B  
Casic Motor Building  
Shenzhen 518057  
P.R.CHINA

#### Local sales and technical support

[www.ledil.com/  
where\\_to\\_buy](http://www.ledil.com/where_to_buy)

#### Shipping locations

Salo, Finland  
Hong Kong, China

#### Distribution Partners

[www.ledil.com/  
where\\_to\\_buy](http://www.ledil.com/where_to_buy)