

## HB-2X2-M

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

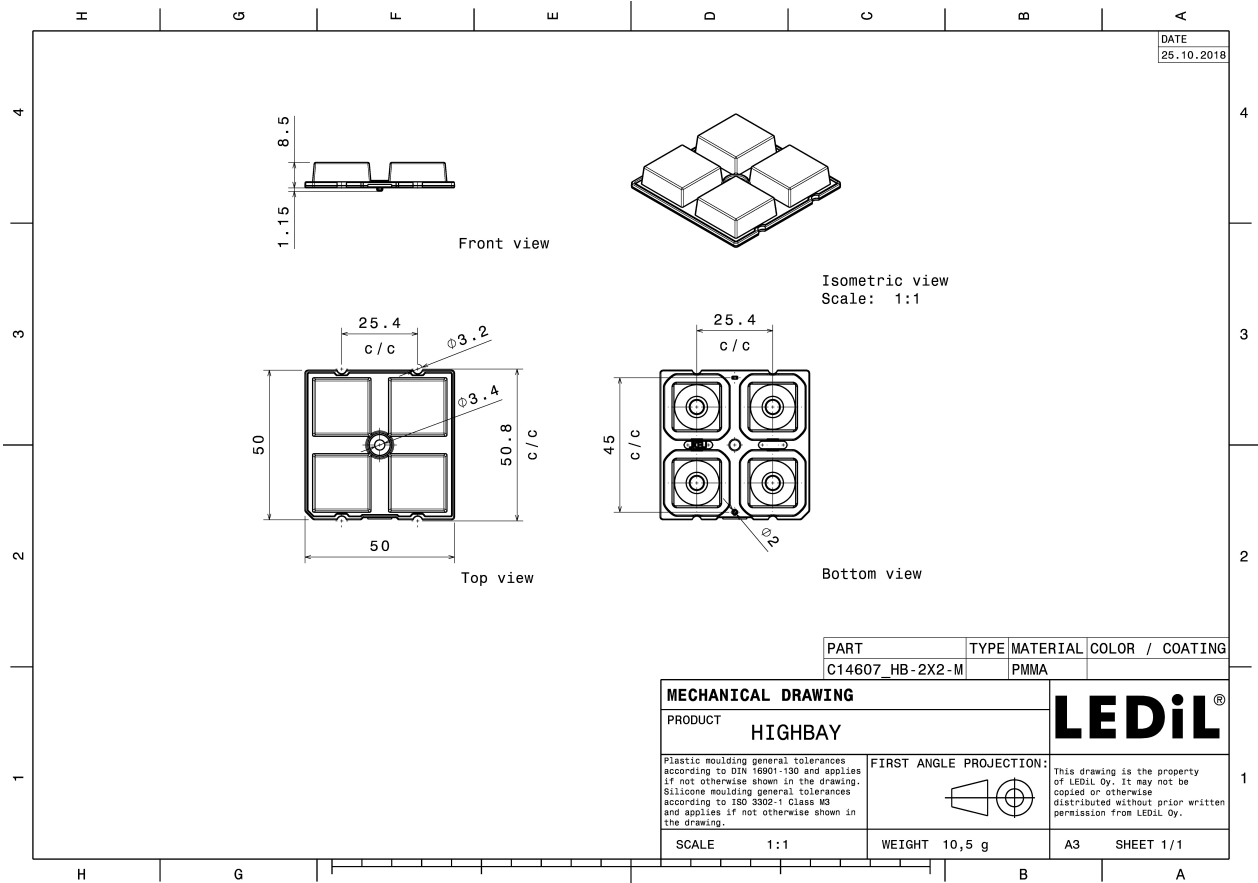
### TECHNICAL SPECIFICATIONS:

Dimensions	50.0 mm
Height	8.5 mm
Fastening	pin, screw
Colour	clear
Box size	480 x 280 x 300 mm
Box weight	9.2 kg
Quantity in Box	800 pcs
ROHS compliant	yes ⓘ



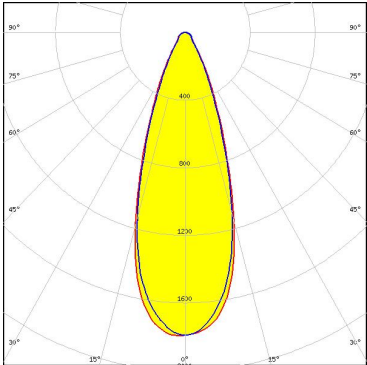


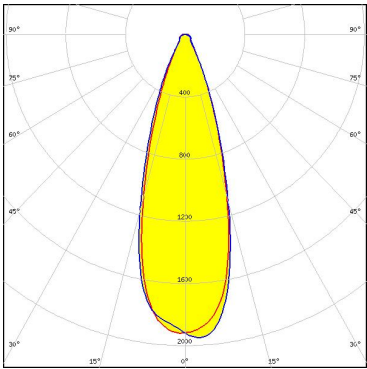

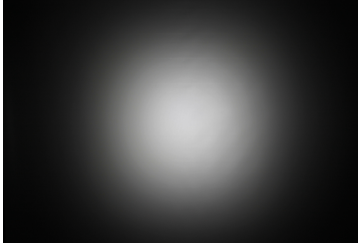
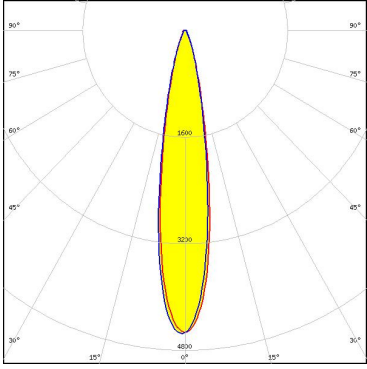

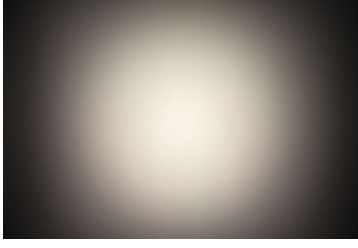
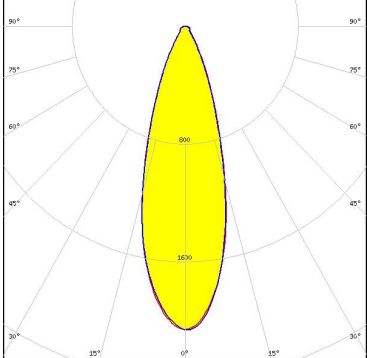


### MATERIAL SPECIFICATIONS:

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



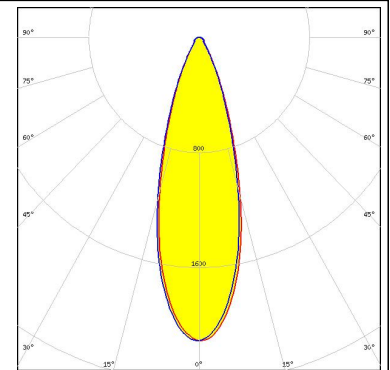
#### PHOTOMETRIC DATA (MEASURED):

<p> <b>bridgelux</b></p> <p>LED                    Bridgelux SMD 5050            FWHM                36.0°            Efficiency            94 %            Peak intensity      1.800 cd/lm            LEDs/each optic    1            Light colour        White            Required components:</p>		
<p> <b>CREE</b></p> <p>LED                    XD16            FWHM                33.0°            Efficiency            94 %            Peak intensity      2.000 cd/lm            LEDs/each optic    4            Light colour        White            Required components:</p>		
<p> <b>CREE</b></p> <p>LED                    XD16            FWHM                19.0°            Efficiency            90 %            Peak intensity      4.600 cd/lm            LEDs/each optic    1            Light colour        White            Required components:</p>		
<p> <b>CREE</b></p> <p>LED                    XM-L            FWHM                32.0°            Efficiency            93 %            Peak intensity      2.040 cd/lm            LEDs/each optic    1            Light colour        White            Required components:</p>		

#### PHOTOMETRIC DATA (MEASURED):

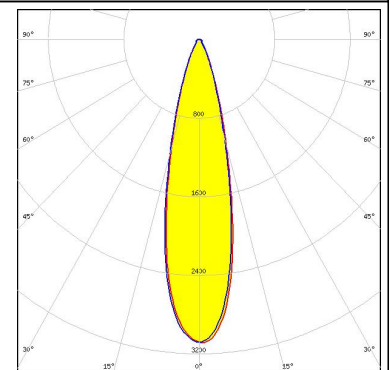
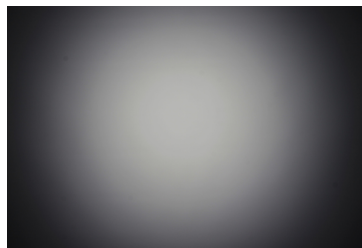
#### **CREE**

LED XM-L2  
 FWHM 32.0°  
 Efficiency 92 %  
 Peak intensity 2.112 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



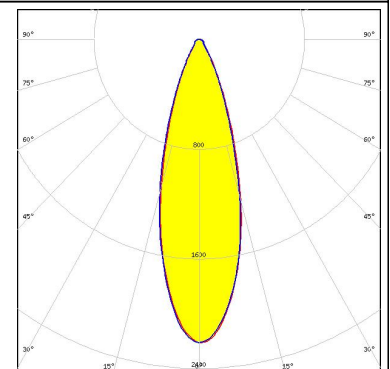
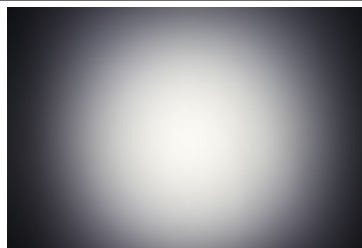
#### **CREE**

LED XP-G2  
 FWHM 25.0°  
 Efficiency 0 %  
 Peak intensity 3.100 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



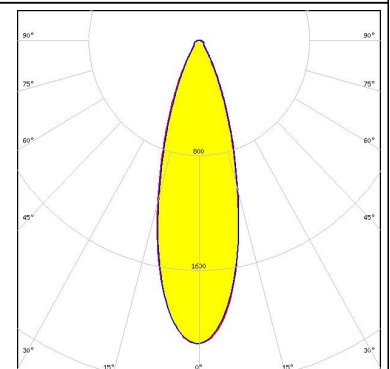
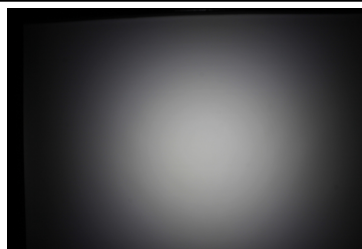
#### **CREE**

LED XP-L HD  
 FWHM 31.0°  
 Efficiency 94 %  
 Peak intensity 2.213 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### **CREE**

LED XP-L2  
 FWHM 31.0°  
 Efficiency 93 %  
 Peak intensity 2.100 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

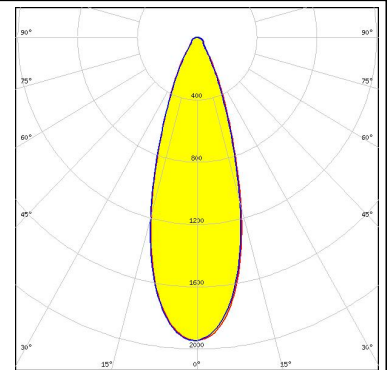




#### PHOTOMETRIC DATA (MEASURED):

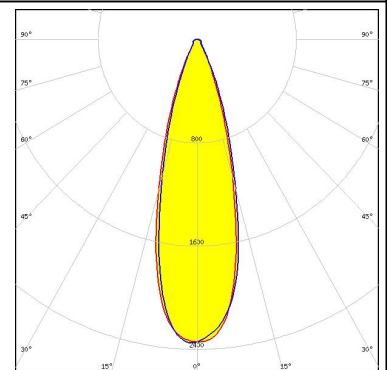
##### LUMILEDS

LED LUXEON 5050 Round LES  
 FWHM 34.0°  
 Efficiency 94 %  
 Peak intensity 1.950 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



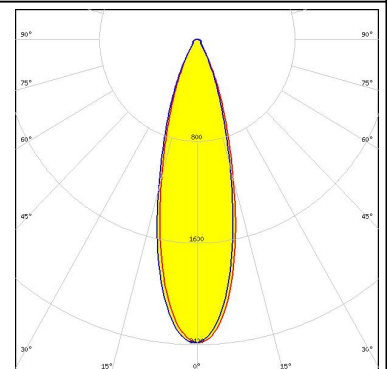
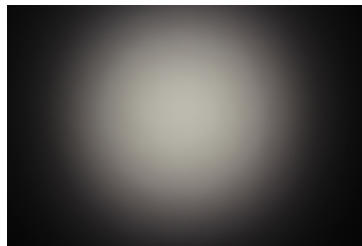
##### LUMILEDS

LED LUXEON MZ  
 FWHM 30.0°  
 Efficiency 91 %  
 Peak intensity 2.400 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



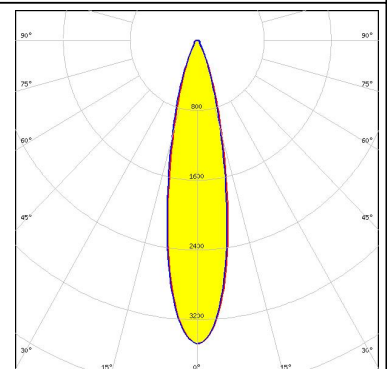
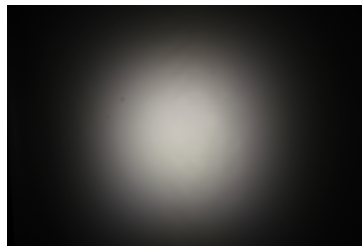
##### LUMILEDS

LED LUXEON V  
 FWHM 29.0°  
 Efficiency 94 %  
 Peak intensity 2.400 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:


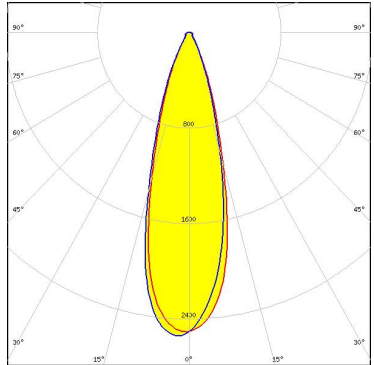
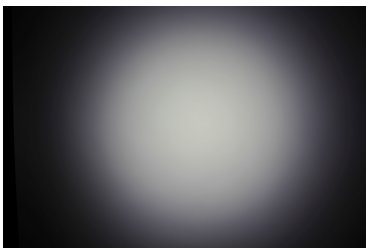
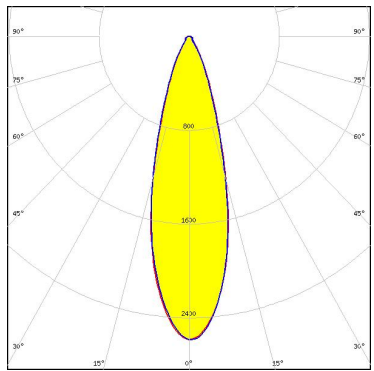

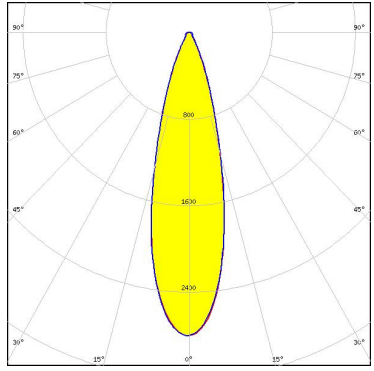
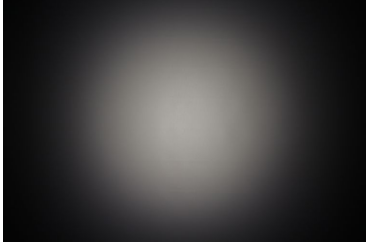
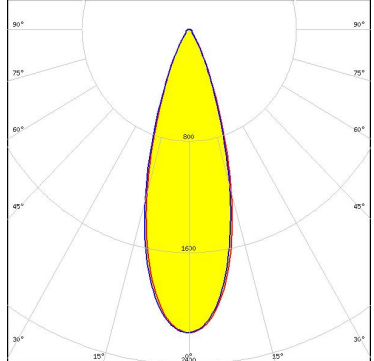


##### LUMILEDS

LED LUXEON V2  
 FWHM 23.0°  
 Efficiency 94 %  
 Peak intensity 3.500 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



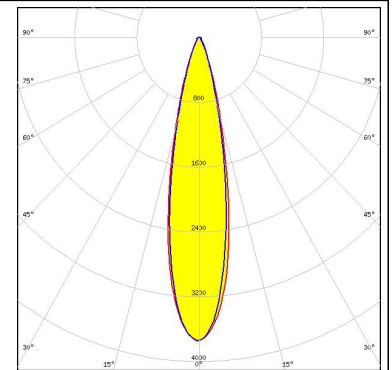
#### PHOTOMETRIC DATA (MEASURED):

<p><b>NICHIA</b></p> <p>LED NVSW219D            FWHM 29.0°            Efficiency 94 %            Peak intensity 2.500 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>NICHIA</b></p> <p>LED NVSW319B            FWHM 29.0°            Efficiency 94 %            Peak intensity 2.600 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>NICHIA</b></p> <p>LED NVSW3x9A            FWHM 28.0°            Efficiency 94 %            Peak intensity 2.800 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>NICHIA</b></p> <p>LED NWSx229A            FWHM 33.0°            Efficiency 87 %            Peak intensity 2.200 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		

#### PHOTOMETRIC DATA (MEASURED):

#### OSRAM

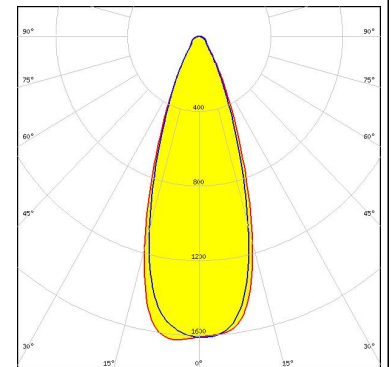
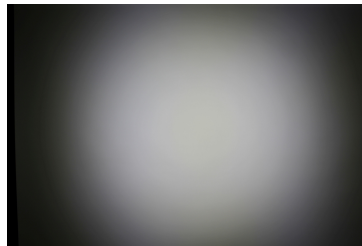
LED PrevaLED Brick HP 2x8  
 FWHM 23.0°  
 Efficiency 91 %  
 Peak intensity 3.750 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OSRAM

Opto Semiconductors

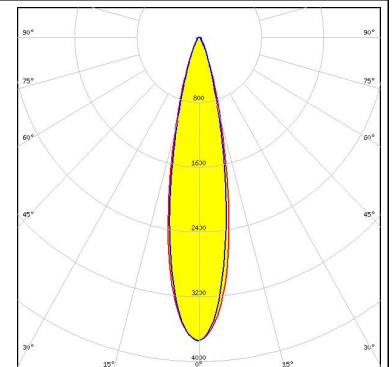
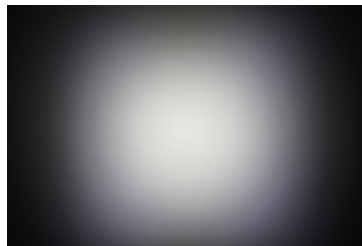
LED Duris S8  
 FWHM 38.0°  
 Efficiency 94 %  
 Peak intensity 1.600 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OSRAM

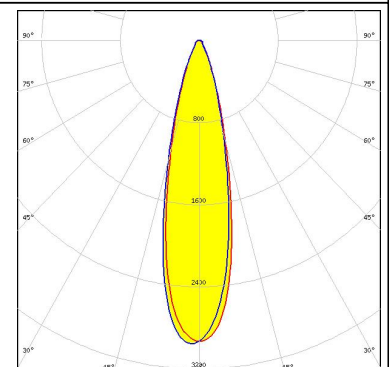
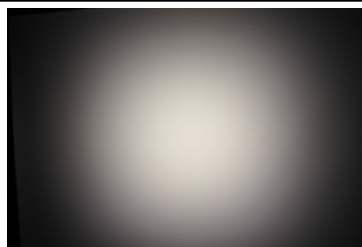
Opto Semiconductors

LED OSLOM Square CSSRM2/CSSRM3  
 FWHM 23.0°  
 Efficiency 91 %  
 Peak intensity 3.750 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHILIPS

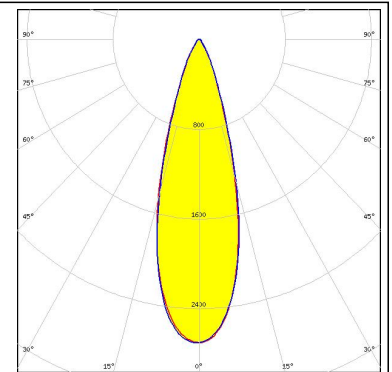
LED Fortimo FastFlex LED 2x8 DA G4  
 FWHM 25.0°  
 Efficiency 92 %  
 Peak intensity 3.000 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHOTOMETRIC DATA (MEASURED):

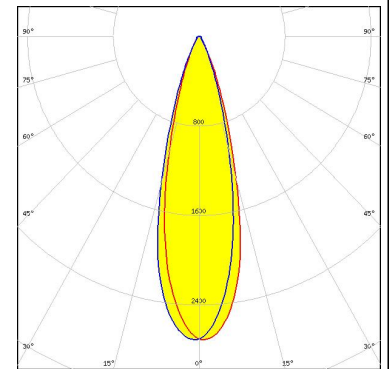
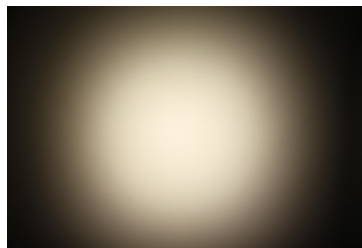
#### SAMSUNG

LED HiLOM RH16 (LH351C)  
 FWHM 30.0°  
 Efficiency 94 %  
 Peak intensity 2.700 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



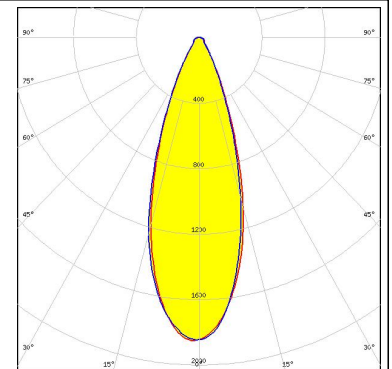
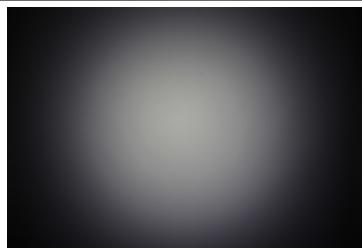
#### SAMSUNG

LED LH351B  
 FWHM 28.0°  
 Efficiency 85 %  
 Peak intensity 2.720 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



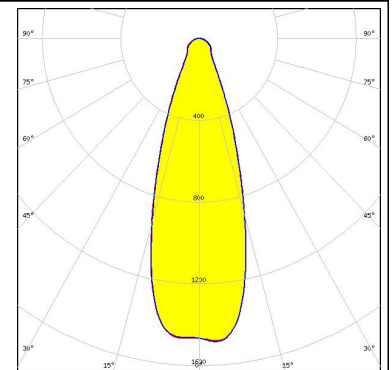
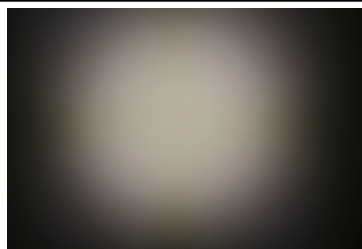
#### SAMSUNG

LED LH351D  
 FWHM 35.0°  
 Efficiency 91 %  
 Peak intensity 1.900 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:





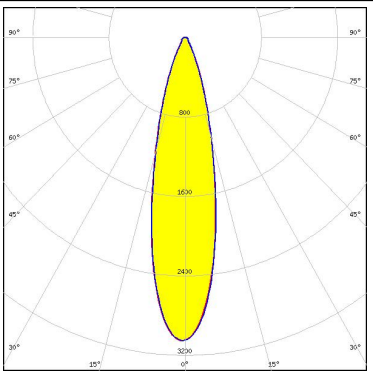

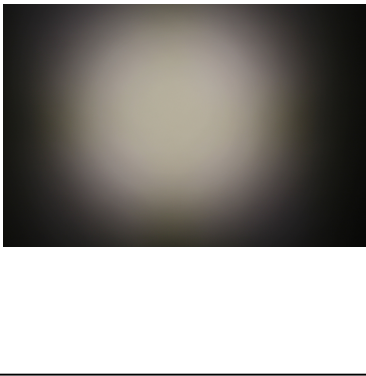
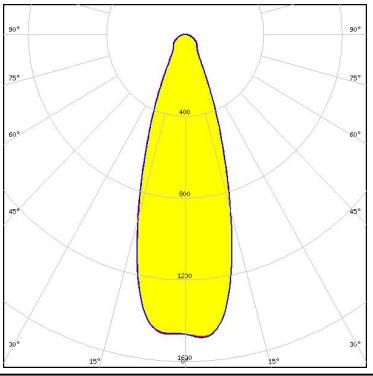

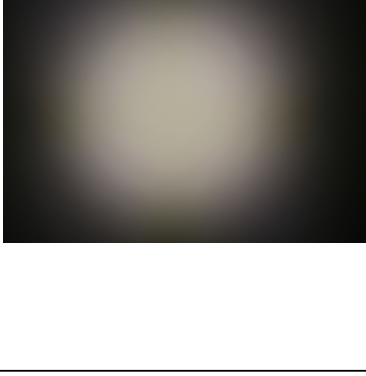
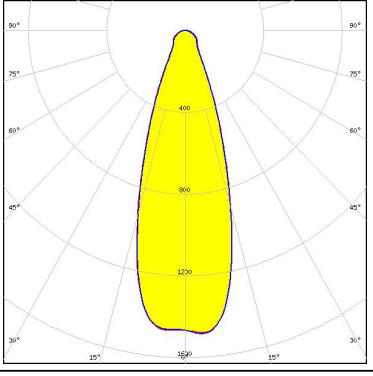

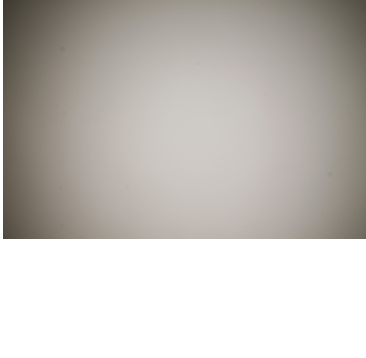
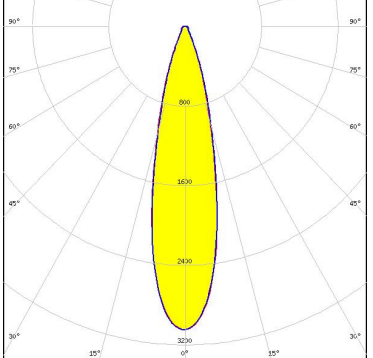
SEOUL SEMICONDUCTOR

LED 2x2 Y22 module - SMJQ-D48W16AA-XX  
 FWHM 34.0°  
 Efficiency 93 %  
 Peak intensity 1.500 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:





**PHOTOMETRIC DATA (MEASURED):**

<p> SEOUL SEMICONDUCTOR</p> <p>LED Z5M3 FWHM 25.0° Efficiency 94 % Peak intensity 3.100 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		
<p> SEOUL SEMICONDUCTOR</p> <p>LED Z8Y19 FWHM 34.0° Efficiency 93 % Peak intensity 1.500 cd/lm LEDs/each optic 4 Light colour White Required components:</p>		
<p> SEOUL SEMICONDUCTOR</p> <p>LED Z8Y19 FWHM 34.0° Efficiency 93 % Peak intensity 1.500 cd/lm LEDs/each optic 4 Light colour White Required components:</p>		
<p> SEOUL SEMICONDUCTOR</p> <p>LED Z8Y22P FWHM 25.0° Efficiency 92 % Peak intensity 3.100 cd/lm LEDs/each optic 1 Light colour White Required components:</p>		

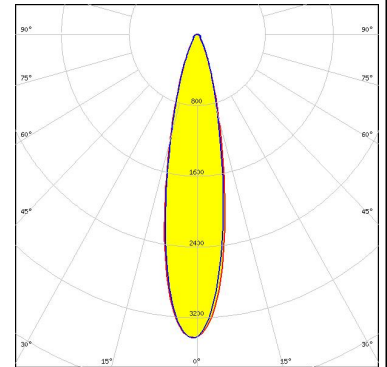
#### PHOTOMETRIC DATA (MEASURED):

#### TRIDONIC

LED RLE 2x4 2000lm HP EXC2 OTD  
 FWHM 23.0°  
 Efficiency 94 %  
 Peak intensity 3.400 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

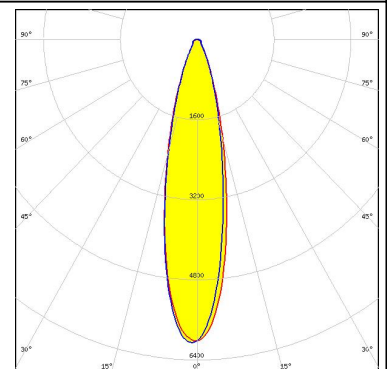
#### TRIDONIC

LED RLE 2x8 4000lm HP EXC2 OTD  
 FWHM 23.0°  
 Efficiency 94 %  
 Peak intensity 3.400 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



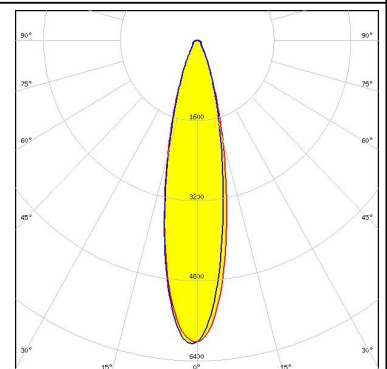
#### TRIDONIC

LED RLE G1 49x121mm 2000lm xxx EXC OTD  
 FWHM 24.0°  
 Efficiency 94 %  
 Peak intensity 3.000 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### TRIDONIC

LED RLE G1 49x133mm 2000lm xxx EXC OTD  
 FWHM 24.0°  
 Efficiency 94 %  
 Peak intensity 3.000 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

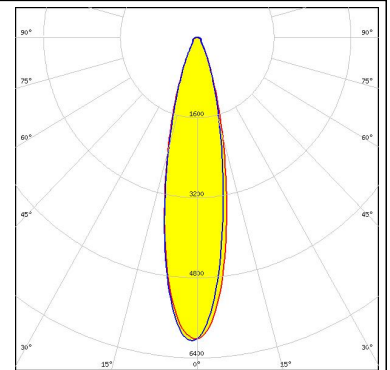




#### PHOTOMETRIC DATA (MEASURED):

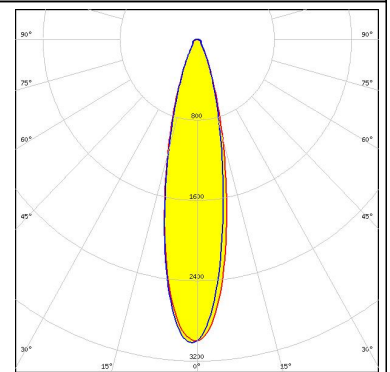
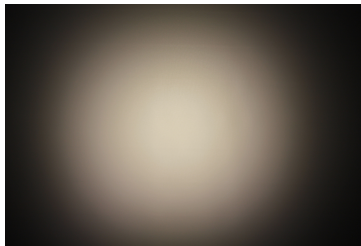
#### TRIDONIC

LED RLE G1 49x223mm 4000lm xxx EXC OTD  
FWHM 24.0°  
Efficiency 94 %  
Peak intensity 3.000 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



#### TRIDONIC

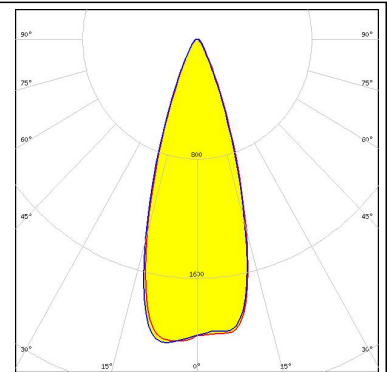
LED RLE G1 49x245mm 4000lm xxx EXC OTD  
FWHM 24.0°  
Efficiency 94 %  
Peak intensity 3.000 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



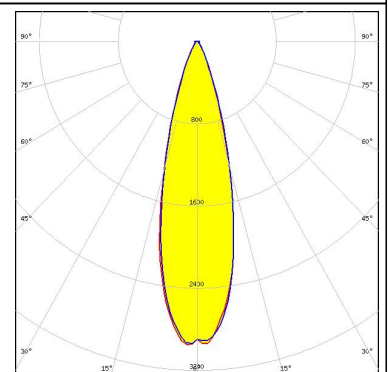
#### PHOTOMETRIC DATA (SIMULATED):



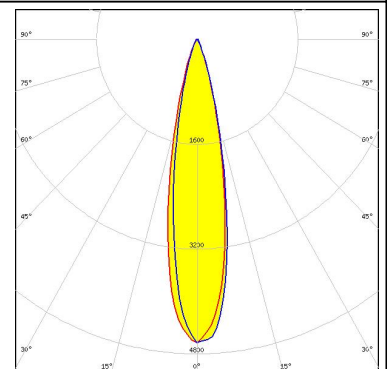
LED XP-G2 HE  
 FWHM 35.0°  
 Efficiency 92 %  
 Peak intensity 2.063 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



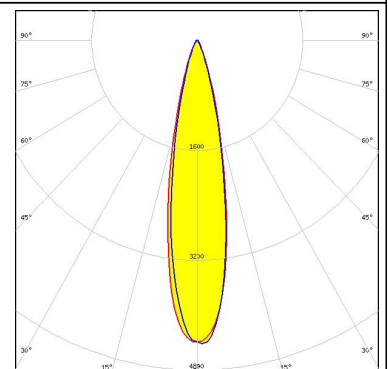
LED XP-G3  
 FWHM 28.0°  
 Efficiency 92 %  
 Peak intensity 3.000 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED LUXEON 3030 2D (Round LES)  
 FWHM 21.0°  
 Efficiency 91 %  
 Peak intensity 4.700 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED LUXEON 3535 2D  
 FWHM 22.0°  
 Efficiency 92 %  
 Peak intensity 4.500 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHOTOMETRIC DATA (SIMULATED):

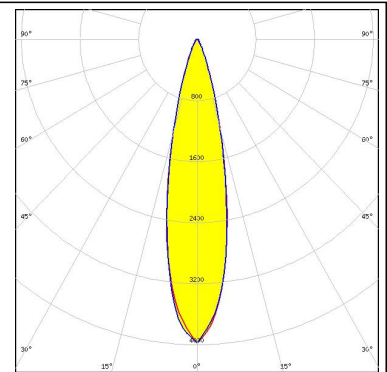
<p><b>LUMILEDS</b></p> <p>LED LUXEON 5050 Square LES</p> <p>FWHM 34.0°</p> <p>Efficiency 93 %</p> <p>Peak intensity 2.109 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED Duris S8</p> <p>FWHM 38.0°</p> <p>Efficiency 89 %</p> <p>Peak intensity 1.600 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p> <p>Transparent protective cover</p>	
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSCONIQ P 3030</p> <p>FWHM 18.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 5.783 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 OSCONIQ P 3737 (3W version)</p> <p>FWHM 29.0°</p> <p>Efficiency 93 %</p> <p>Peak intensity 2.840 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	

#### PHOTOMETRIC DATA (SIMULATED):

#### OSRAM

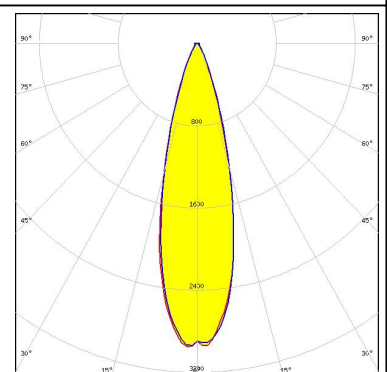
Opto Semiconductors

LED OSCONIQ P 3737 Flat  
FWHM 24.0°  
Efficiency 93 %  
Peak intensity 3.976 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



#### PHILIPS

LED Fortimo FastFlex LED 2x8 DAX G4  
FWHM 28.0°  
Efficiency 92 %  
Peak intensity 3.000 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



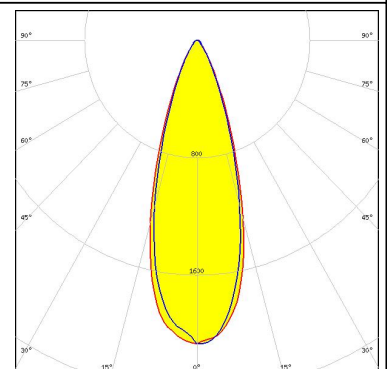
#### SAMSUNG

LED LH231B  
FWHM 24.0°  
Efficiency 92 %  
Peak intensity 3.683 cd/lm  
LEDs/each optic 4  
Light colour White  
Required components:

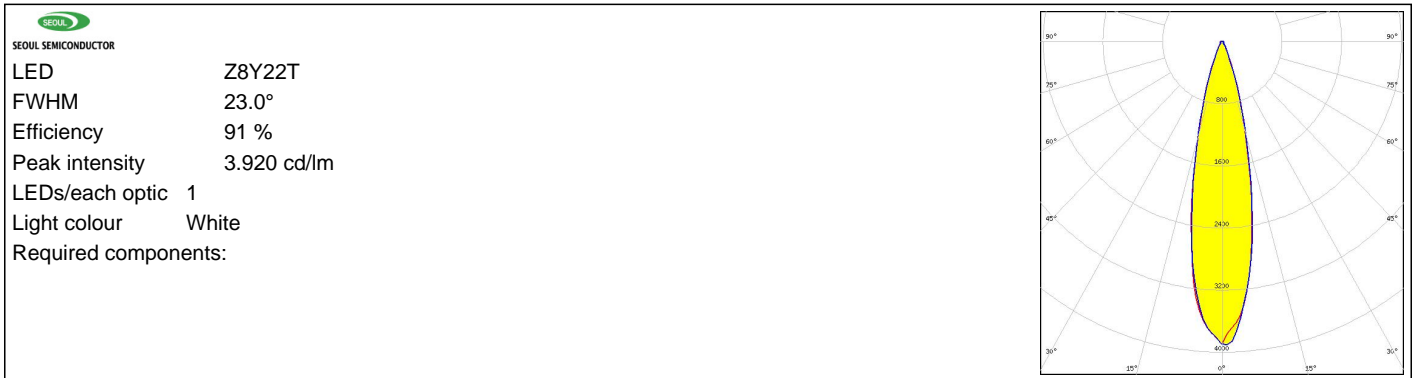


SEOUL SEMICONDUCTOR

LED SEOUL DC 5050 6V  
FWHM 34.0°  
Efficiency 94 %  
Peak intensity 2.100 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



## PHOTOMETRIC DATA (SIMULATED):



### GENERAL INFORMATION:

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

### MATERIALS:

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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