

## HB-2X2-WW

~65° 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 ⓘ          |

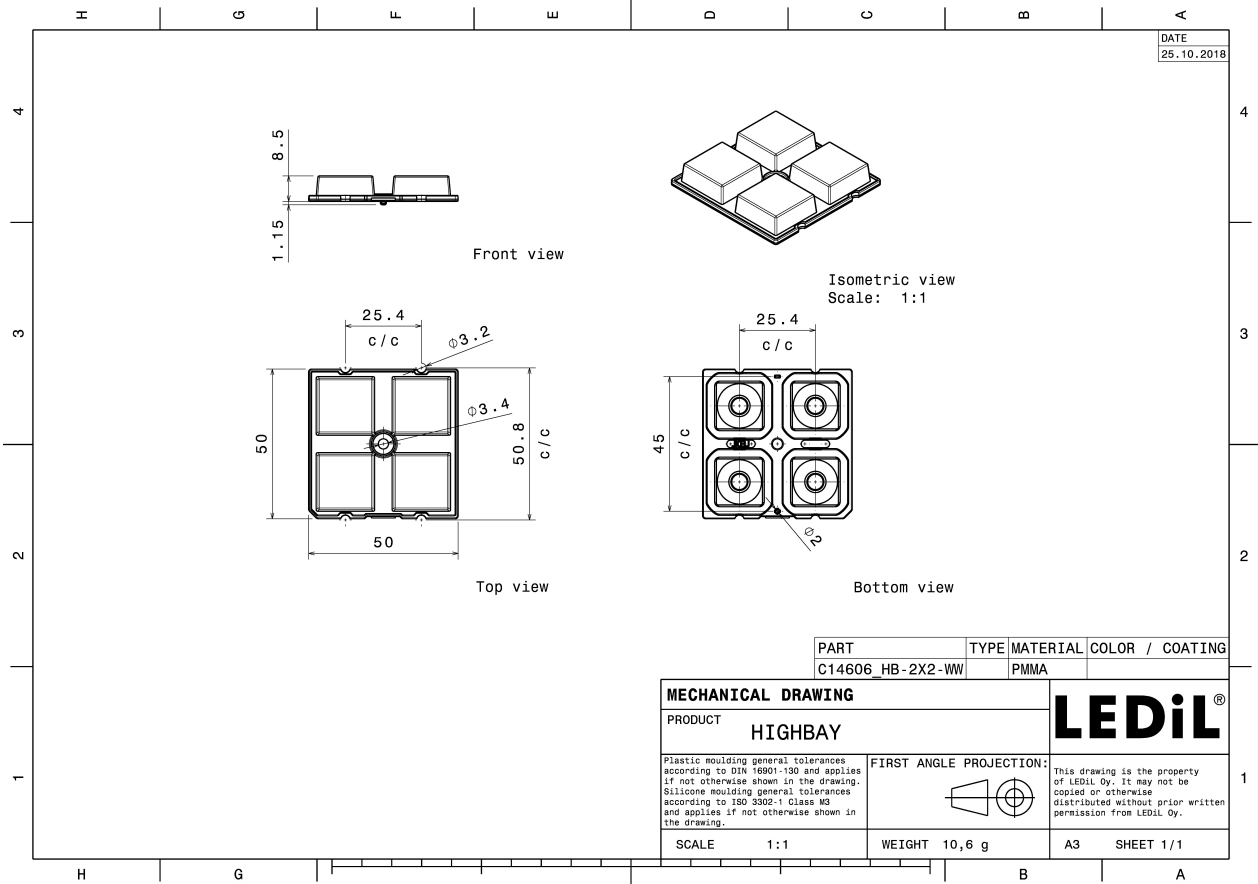
### MATERIAL SPECIFICATIONS:

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

### ORDERING INFORMATION:



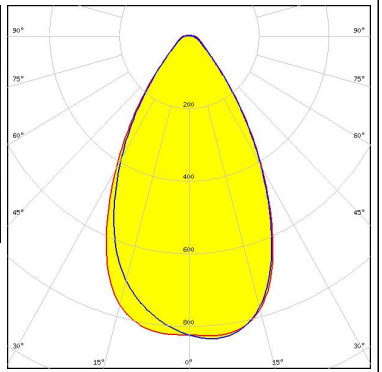


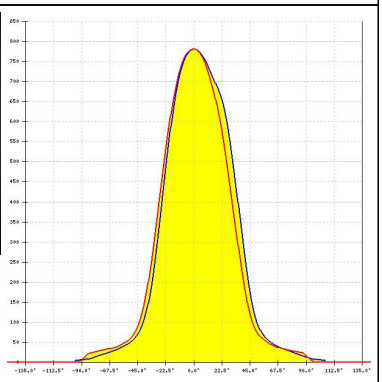


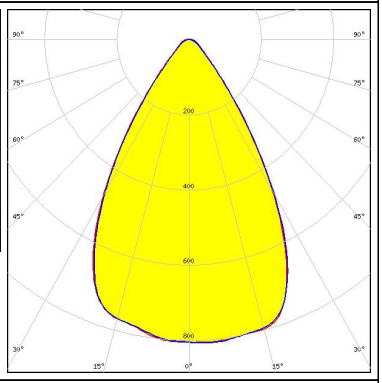


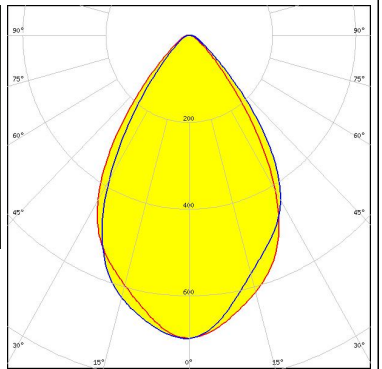
| Component  | Qty in box | MOQ | MPQ | Box weight (kg) |
|--|------------|-----|-----|-----------------|
| C14606_HB-2X2-WW<br>» Box size: 480 x 280 x 300 mm | 800        | 160 | 160 | 9.2             |




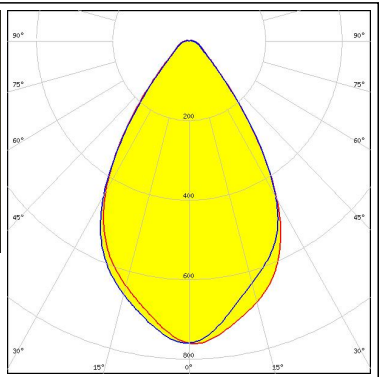

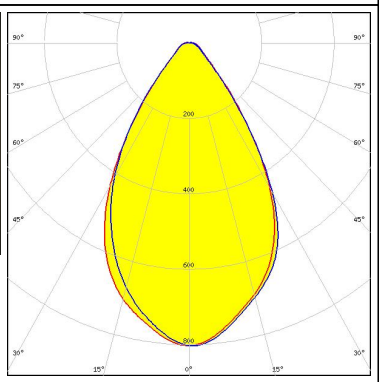

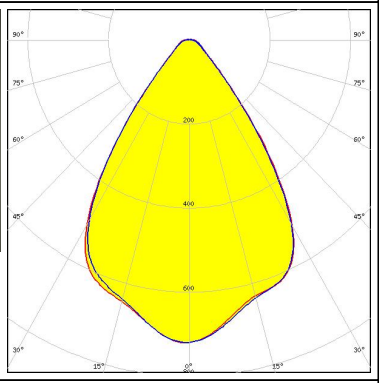

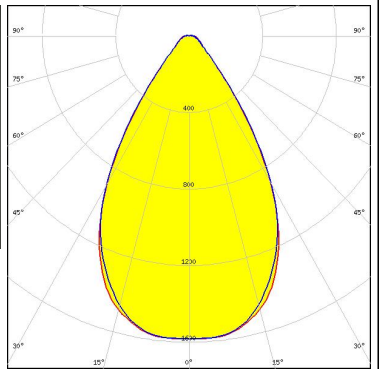


See also our general installation guide: [www.ledil.com/installation\\_guide](http://www.ledil.com/installation_guide)


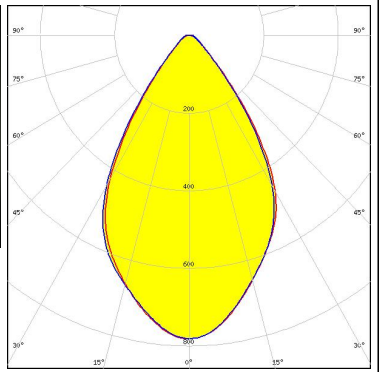

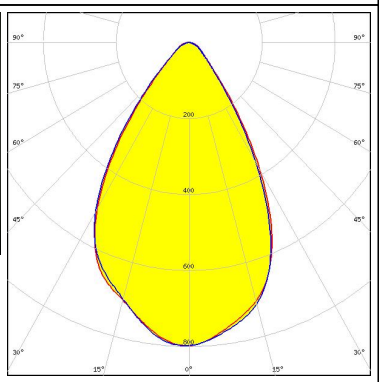
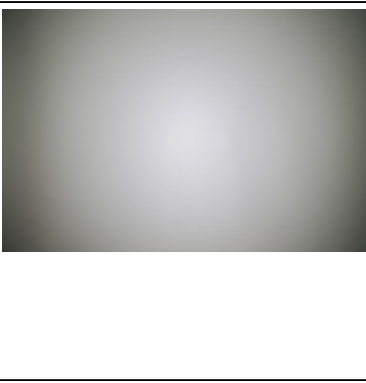
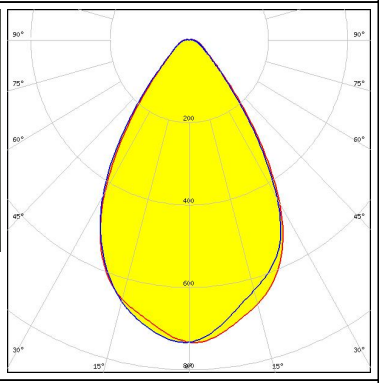

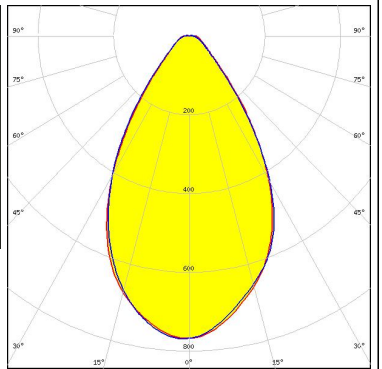
#### PHOTOMETRIC DATA (MEASURED):

|   |  |   |
|---|--|---|
| <p> <b>LED</b>      Bridgelux SMD 5050</p> <p><b>FWHM / FWTM</b>    59.0° / 96.0°</p> <p><b>Efficiency</b>        94 %</p> <p><b>Peak intensity</b>    0.8 cd/m</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>    61.0° / 97.0°</p> <p><b>Efficiency</b>        92 %</p> <p><b>Peak intensity</b>    0.8 cd/m</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>    63.0° / 92.0°</p> <p><b>Efficiency</b>        93 %</p> <p><b>Peak intensity</b>    0.8 cd/m</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>    67.0° / 100.0°</p> <p><b>Efficiency</b>        84 %</p> <p><b>Peak intensity</b>    0.7 cd/m</p> <p><b>LEDs/each optic</b>    1</p> <p><b>Light colour</b>        White</p> <p><b>Required components:</b></p>        |  |  |


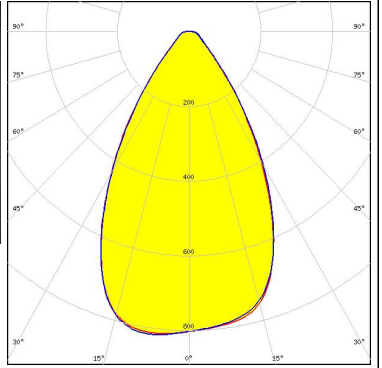

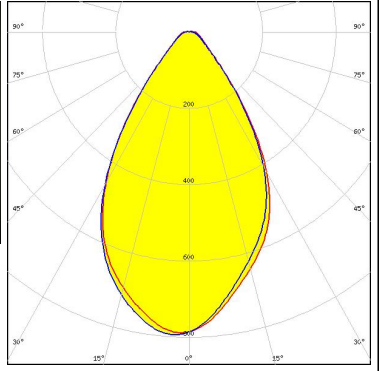
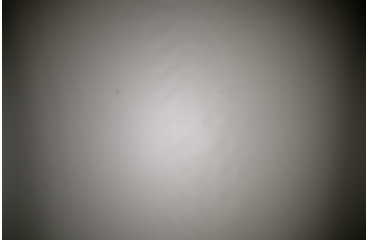
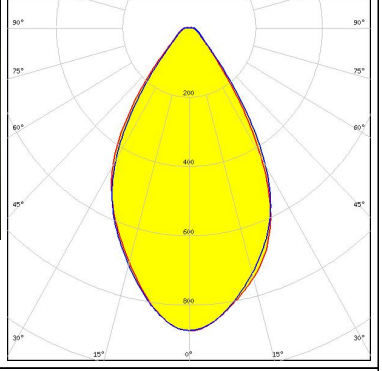

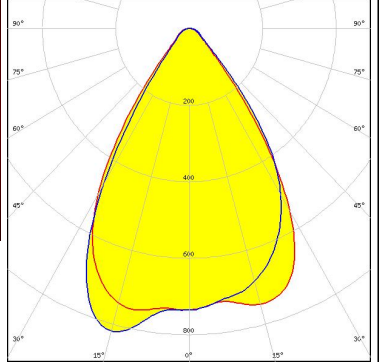
#### PHOTOMETRIC DATA (MEASURED):

|   |  |   |
|---|--|---|
| <p><b>CREE</b> → <b>LED</b></p> <p>LED XM-L<br/>           FWHM / FWTM 66.0° / 99.0°<br/>           Efficiency 93 %<br/>           Peak intensity 0.8 cd/lm<br/>           LEDs/each optic 1<br/>           Light colour White<br/>           Required components:</p>  |    |    |
| <p><b>CREE</b> → <b>LED</b></p> <p>LED XM-L2<br/>           FWHM / FWTM 62.0° / 96.0°<br/>           Efficiency 92 %<br/>           Peak intensity 0.8 cd/lm<br/>           LEDs/each optic 1<br/>           Light colour White<br/>           Required components:</p> |   |   |
| <p><b>CREE</b> → <b>LED</b></p> <p>LED XM-L3<br/>           FWHM / FWTM 70.0° / 98.0°<br/>           Efficiency 94 %<br/>           Peak intensity 0.7 cd/lm<br/>           LEDs/each optic 1<br/>           Light colour White<br/>           Required components:</p> |  |  |
| <p><b>CREE</b> → <b>LED</b></p> <p>LED XP-G2<br/>           FWHM / FWTM 63.0° / 93.0°<br/>           Efficiency 91 %<br/>           Peak intensity 0.8 cd/lm<br/>           LEDs/each optic 1<br/>           Light colour White<br/>           Required components:</p> |  |  |

#### PHOTOMETRIC DATA (MEASURED):

|  |  |   |
|--|--|---|
| <p><b>CREE</b> ⇄ <b>LED</b></p> <p>LED            XP-G3<br/>           FWHM / FWTM    64.0° / 94.0°<br/>           Efficiency        86 %<br/>           Peak intensity    0.8 cd/m<br/>           LEDs/each optic   1<br/>           Light colour      White<br/>           Required components:</p>  |    |    |
| <p><b>CREE</b> ⇄ <b>LED</b></p> <p>LED            XP-G3<br/>           FWHM / FWTM    63.0° / 95.0°<br/>           Efficiency        90 %<br/>           Peak intensity    0.8 cd/m<br/>           LEDs/each optic   1<br/>           Light colour      White<br/>           Required components:</p> <p style="background-color: #ADD8E6; padding: 2px; display: inline-block;">Protective plate, glass</p> |   |   |
| <p><b>CREE</b> ⇄ <b>LED</b></p> <p>LED            XP-L HD<br/>           FWHM / FWTM    66.0° / 102.0°<br/>           Efficiency        93 %<br/>           Peak intensity    0.7 cd/m<br/>           LEDs/each optic   1<br/>           Light colour      White<br/>           Required components:</p>   |  |  |
| <p><b>CREE</b> ⇄ <b>LED</b></p> <p>LED            XP-L2<br/>           FWHM / FWTM    62.0° / 101.0°<br/>           Efficiency        93 %<br/>           Peak intensity    0.8 cd/m<br/>           LEDs/each optic   1<br/>           Light colour      White<br/>           Required components:</p>   |  |  |

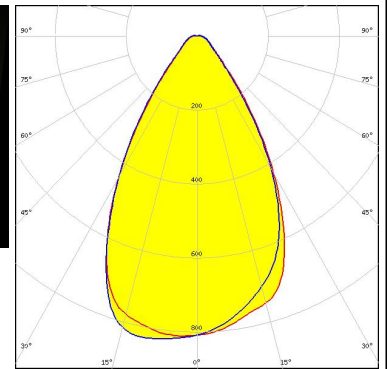
#### PHOTOMETRIC DATA (MEASURED):

|   |  |   |
|---|--|---|
| <p><b>LUMILEDS</b></p> <p>LED LUXEON 5050 Round LES</p> <p>FWHM / FWTM 61.0° / 96.0°</p> <p>Efficiency 94 %</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>LUMILEDS</b></p> <p>LED LUXEON V</p> <p>FWHM / FWTM 63.0° / 97.0°</p> <p>Efficiency 93 %</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>LUMILEDS</b></p> <p>LED LUXEON V2</p> <p>FWHM / FWTM 61.0° / 93.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 0.9 cd/m</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>             |  |  |
| <p><b>LUMINUS</b></p> <p>LED SST-10-B130</p> <p>FWHM / FWTM 69.0° / 94.0°</p> <p>Efficiency 95 %</p> <p>Peak intensity 0.8 cd/m</p> <p>LEDs/each optic 1</p> <p>Light colour Deep Red</p> <p>Required components:</p>         |  |  |

#### PHOTOMETRIC DATA (MEASURED):

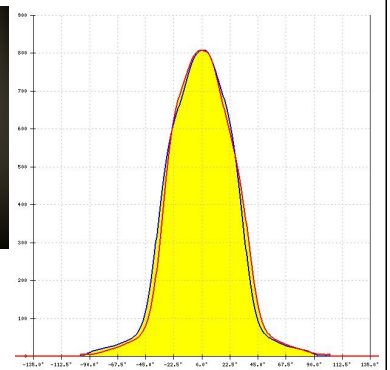
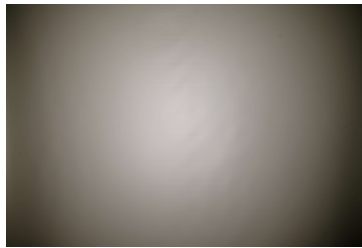
**MST** *Your solutions*

LED RecLED 122x50mm 1900lm 730 2x4 Opt G1  
 FWHM / FWTM 61.0° / 94.0°  
 Efficiency 95 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



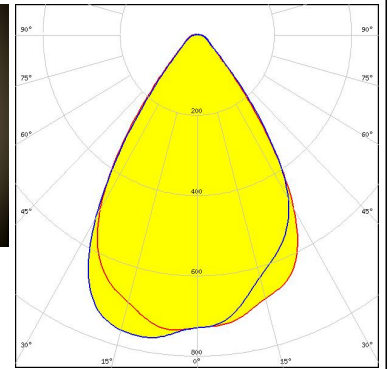
**NICHIA**

LED NVSW219D  
 FWHM / FWTM 64.0° / 95.0°  
 Efficiency 94 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



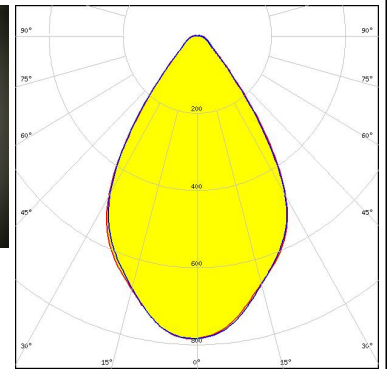
**NICHIA**

LED NVSW219F  
 FWHM / FWTM 69.0° / 96.0°  
 Efficiency 95 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



**NICHIA**

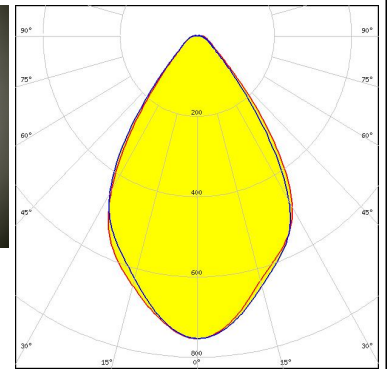
LED NVSW219F  
 FWHM / FWTM 66.0° / 96.0°  
 Efficiency 94 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



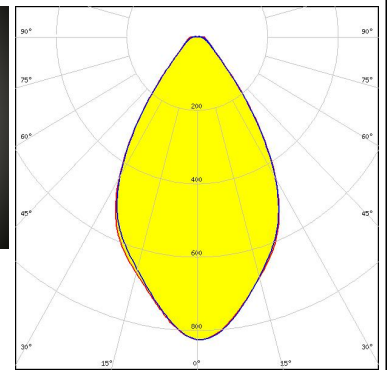
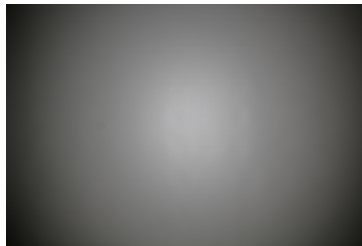
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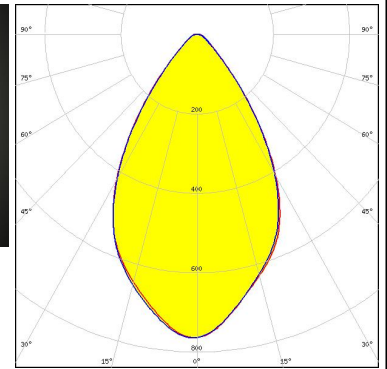
LED NVSW319B  
 FWHM / FWTM 68.0° / 100.0°  
 Efficiency 93 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



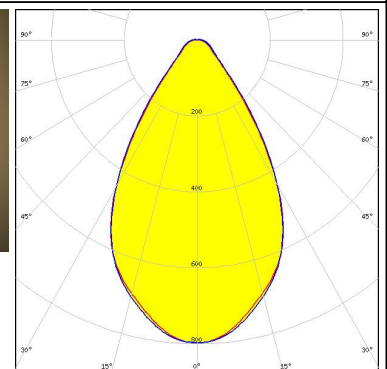
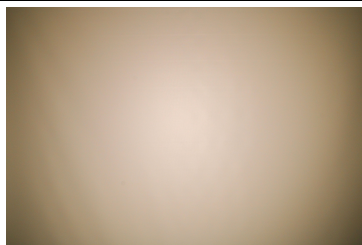
LED NVSW3x9A  
 FWHM / FWTM 62.0° / 97.0°  
 Efficiency 93 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED NWSx229A  
 FWHM / FWTM 63.0° / 97.0°  
 Efficiency 85 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED PL-BRICK HP 3800 2x8 SSG  
 FWHM / FWTM 64.0° / 96.0°  
 Efficiency 94 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

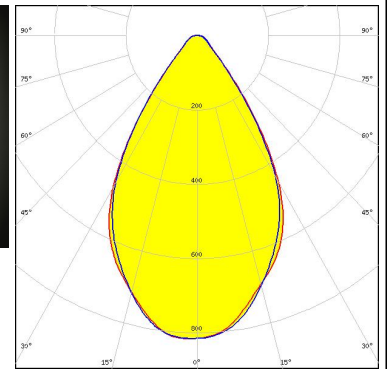
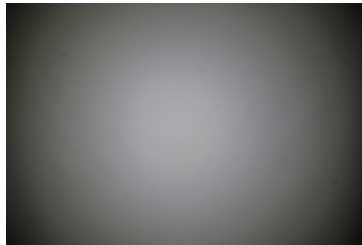




#### PHOTOMETRIC DATA (MEASURED):

#### OSRAM

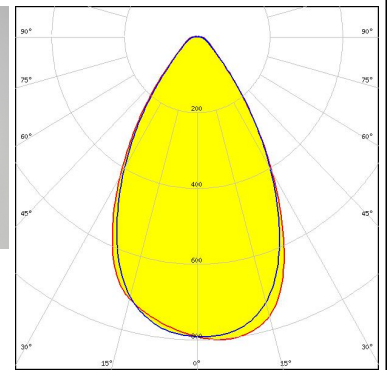
LED PrevaLED Brick HP 2x8  
 FWHM / FWTM 64.0° / 93.0°  
 Efficiency 92 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OSRAM

Opto Semiconductors

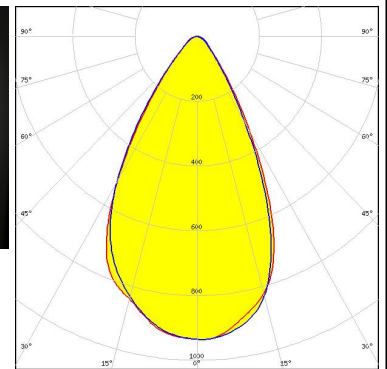
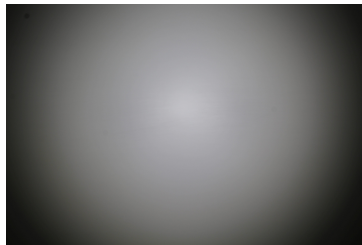
LED Duris S8  
 FWHM / FWTM 61.0° / 97.0°  
 Efficiency 93 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OSRAM

Opto Semiconductors

LED OSCONIQ P 3737 (2W version)  
 FWHM / FWTM 58.0° / 88.0°  
 Efficiency 91 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

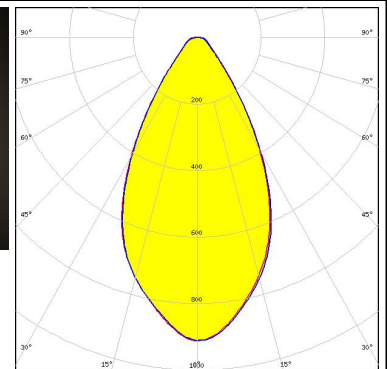
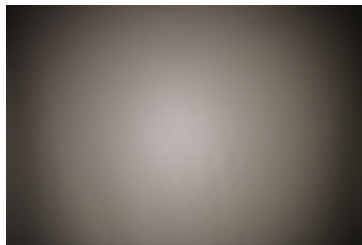


Protective plate, glass

#### OSRAM

Opto Semiconductors

LED OSCONIQ P 3737 (3W version)  
 FWHM / FWTM 56.0° / 93.0°  
 Efficiency 93 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

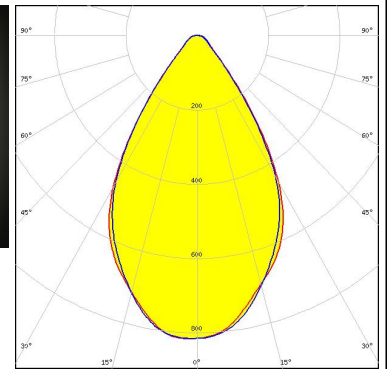
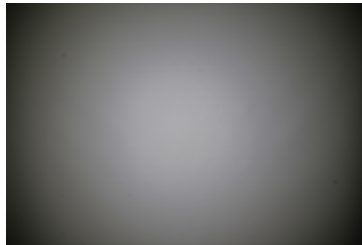


#### PHOTOMETRIC DATA (MEASURED):

#### OSRAM

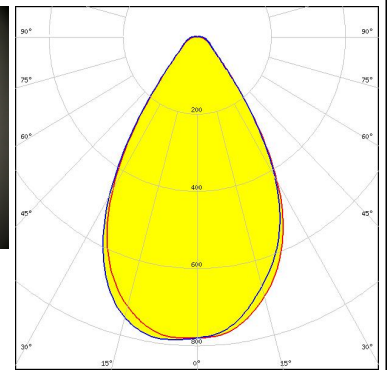
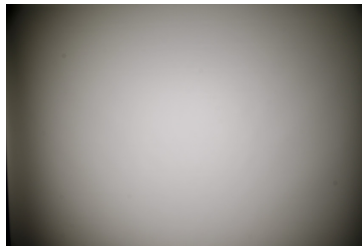
Opto Semiconductors

LED OSLON Square CSSRM2/CSSRM3  
 FWHM / FWTM 64.0° / 93.0°  
 Efficiency 92 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



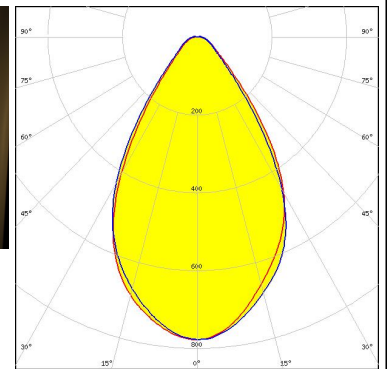
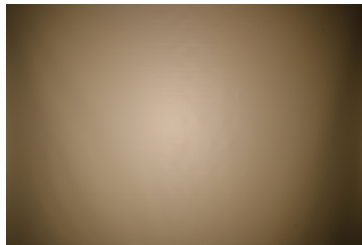
#### PHILIPS

LED Fortimo FastFlex LED 2x8 DA G4  
 FWHM / FWTM 64.0° / 96.0°  
 Efficiency 93 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



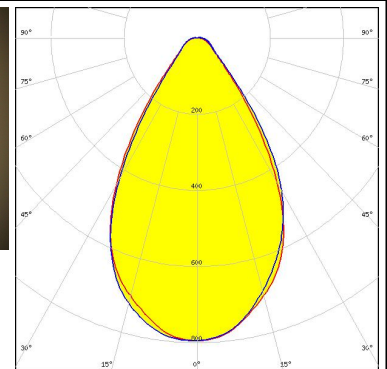
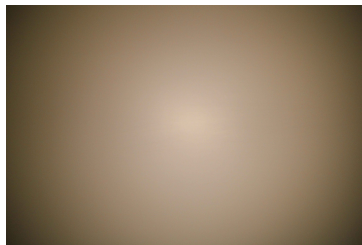
#### PHILIPS

LED Fortimo FastFlex LED 2x8 DA G4+  
 FWHM / FWTM 64.0° / 101.0°  
 Efficiency 95 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHILIPS

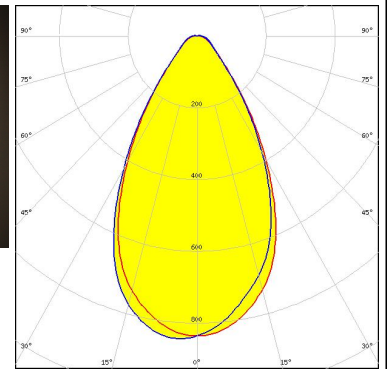
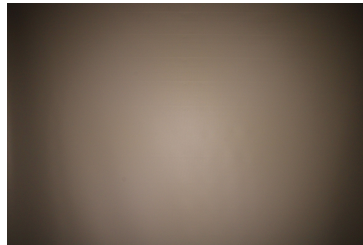
LED Fortimo FastFlex LED 2x8 DA G5  
 FWHM / FWTM 64.0° / 97.0°  
 Efficiency 94 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHOTOMETRIC DATA (MEASURED):

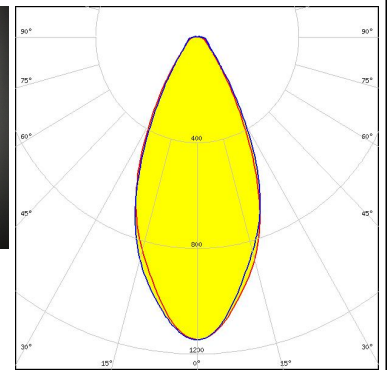
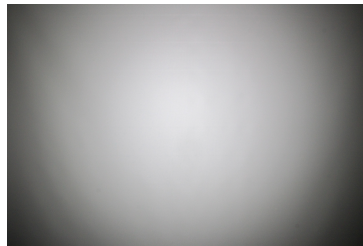
### PHILIPS

LED Fortimo FastFlex LED 2x8 DA HE  
 FWHM / FWTM 59.0° / 97.0°  
 Efficiency 95 %  
 Peak intensity 0.9 cd/m  
 LEDs/each optic 1  
 Light colour White  
 Required components:



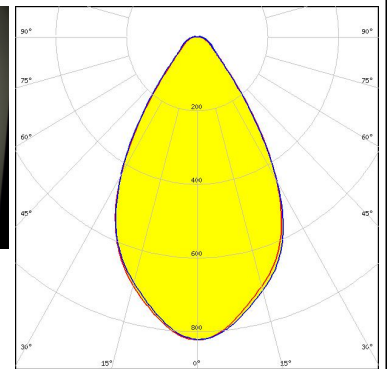
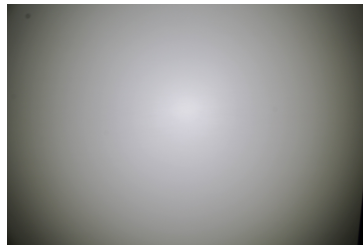
### SAMSUNG

LED HiLOM RC12 Z (LH181B)  
 FWHM / FWTM 48.0° / 85.0°  
 Efficiency 96 %  
 Peak intensity 1.1 cd/m  
 LEDs/each optic 1  
 Light colour White  
 Required components:



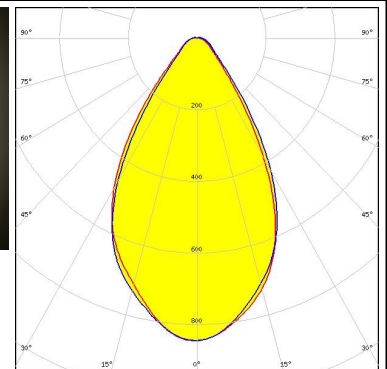
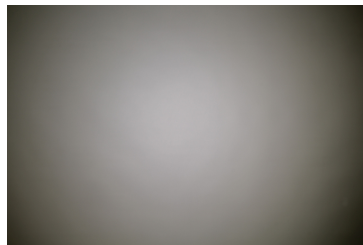
### SAMSUNG

LED HiLOM RH12 Z (LH351C)  
 FWHM / FWTM 62.0° / 97.0°  
 Efficiency 95 %  
 Peak intensity 0.8 cd/m  
 LEDs/each optic 1  
 Light colour White  
 Required components:



### SAMSUNG

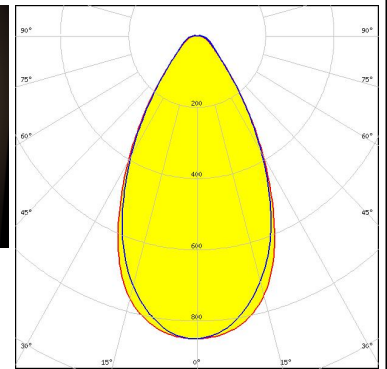
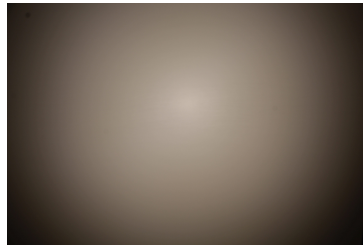
LED HiLOM RH16 (LH351C)  
 FWHM / FWTM 61.0° / 96.0°  
 Efficiency 94 %  
 Peak intensity 0.9 cd/m  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHOTOMETRIC DATA (MEASURED):

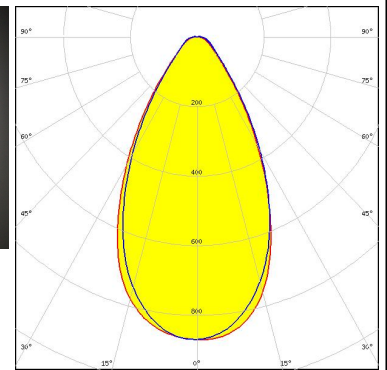
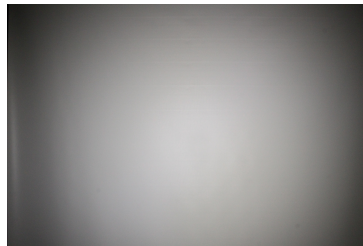
### SAMSUNG

LED HiLOM RM12 Z (LH502C)  
 FWHM / FWTM 57.0° / 98.0°  
 Efficiency 94 %  
 Peak intensity 0.9 cd/m  
 LEDs/each optic 1  
 Light colour White  
 Required components:



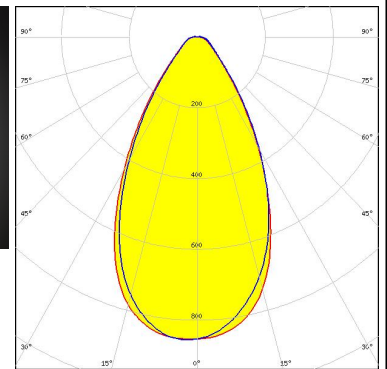
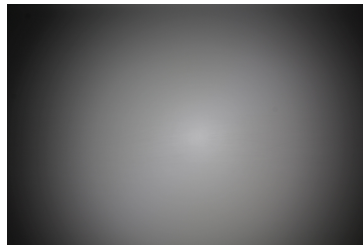
### SAMSUNG

LED HiLOM RM16 Z (LH502C)  
 FWHM / FWTM 57.0° / 97.0°  
 Efficiency 95 %  
 Peak intensity 0.9 cd/m  
 LEDs/each optic 1  
 Light colour White  
 Required components:



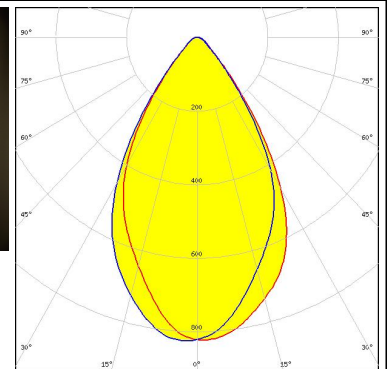
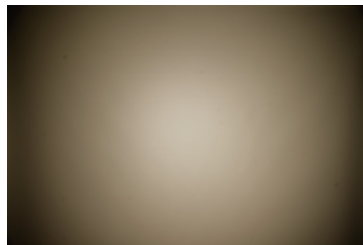
### SAMSUNG

LED HiLOM RM8 Z (LH502C)  
 FWHM / FWTM 57.0° / 98.0°  
 Efficiency 95 %  
 Peak intensity 0.9 cd/m  
 LEDs/each optic 1  
 Light colour White  
 Required components:



### SAMSUNG

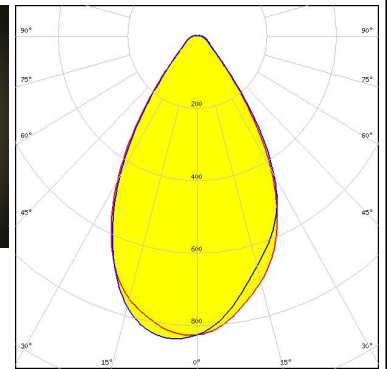
LED LH351B  
 FWHM / FWTM 62.0° / 92.0°  
 Efficiency 86 %  
 Peak intensity 0.8 cd/m  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHOTOMETRIC DATA (MEASURED):

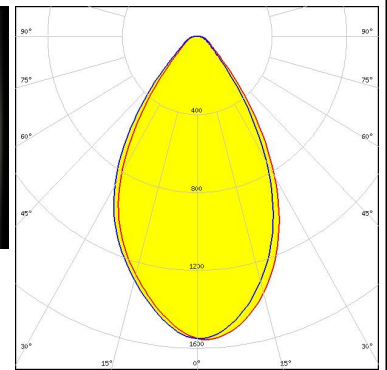
### SAMSUNG

LED LH351C  
 FWHM / FWTM 62.0° / 94.0°  
 Efficiency 93 %  
 Peak intensity 0.8 cd/m  
 LEDs/each optic 1  
 Light colour White  
 Required components:



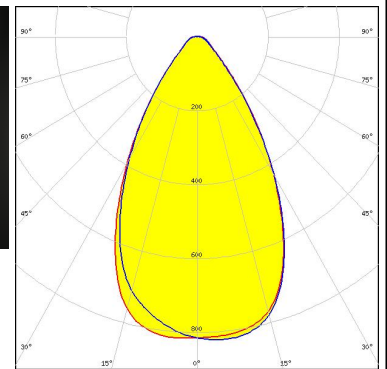
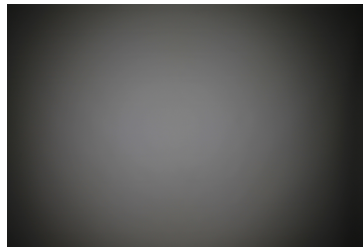
### SAMSUNG

LED LH351D  
 FWHM / FWTM 62.0° / 99.0°  
 Efficiency 91 %  
 Peak intensity 0.8 cd/m  
 LEDs/each optic 1  
 Light colour White  
 Required components:

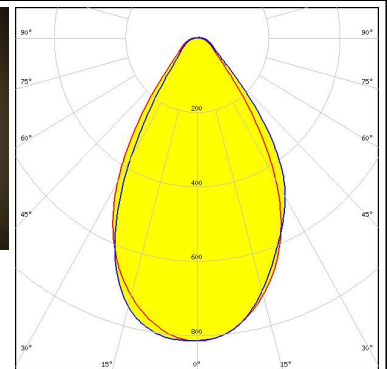
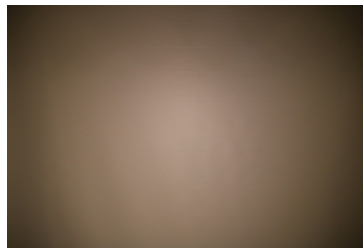


### SAMSUNG

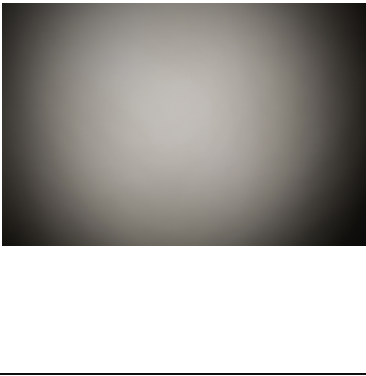
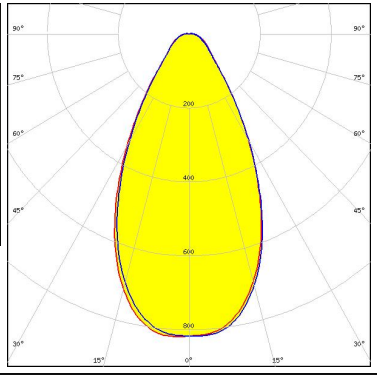

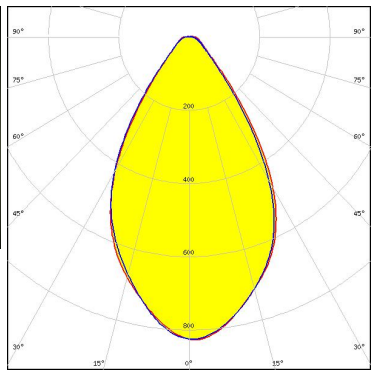

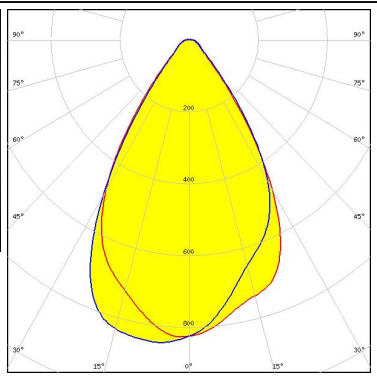

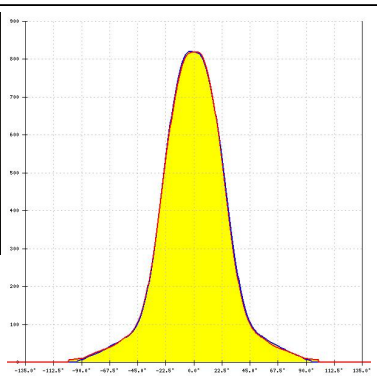
LED LH508A  
 FWHM / FWTM 60.0° / 97.0°  
 Efficiency 93 %  
 Peak intensity 0.8 cd/m  
 LEDs/each optic 1  
 Light colour White  
 Required components:




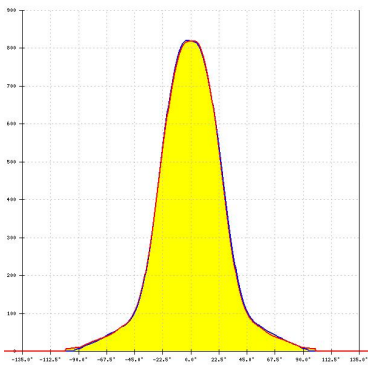
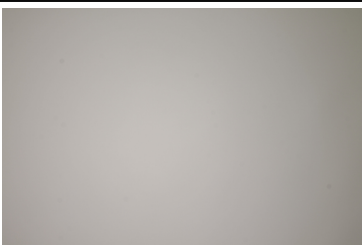
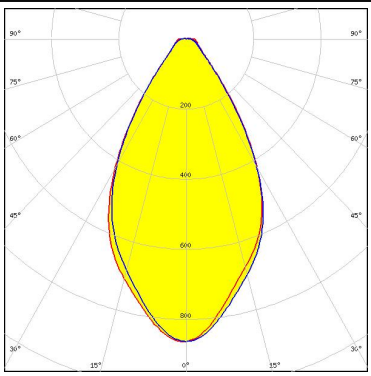
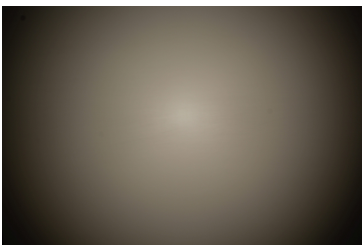
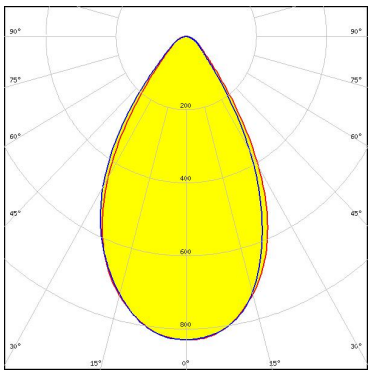


LED LED-Pa-L15c2W11c2-xxx-C050-01  
 FWHM / FWTM 64.0° / 98.0°  
 Efficiency 95 %  
 Peak intensity 0.8 cd/m  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHOTOMETRIC DATA (MEASURED):

|  |  |   |
|--|--|---|
| <p><b>SEOUL SEMICONDUCTOR</b></p> <p>LED                    2x2 Y22 module - SMJQ-D48W16AA-XX</p> <p>FWHM / FWTM       55.0° / 98.0°</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       62.0° / 96.0°</p> <p>Efficiency            94 %</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                    Z5M4</p> <p>FWHM / FWTM       64.0° / 92.0°</p> <p>Efficiency            95 %</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                    Z8Y19</p> <p>FWHM / FWTM       55.0° / 98.0°</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>                             |  |  |

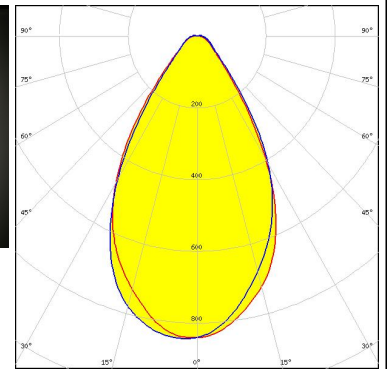
#### PHOTOMETRIC DATA (MEASURED):

|  |  |   |
|--|--|---|
| <p><b>SEOL</b><br/>SEOUL SEMICONDUCTOR</p> <p>LED Z8Y19<br/>FWHM / FWTM 55.0° / 98.0°<br/>Efficiency 92 %<br/>Peak intensity 0.8 cd/m<br/>LEDs/each optic 4<br/>Light colour White<br/>Required components:</p>  |    |    |
| <p><b>SEOL</b><br/>SEOUL SEMICONDUCTOR</p> <p>LED Z8Y22P<br/>FWHM / FWTM 59.0° / 94.0°<br/>Efficiency 92 %<br/>Peak intensity 0.9 cd/m<br/>LEDs/each optic 1<br/>Light colour White<br/>Required components:</p>   |   |   |
| <p><b>TRIDONIC</b></p> <p>LED RLE 2x4 2000lm HP EXC2 OTD<br/>FWHM / FWTM 61.0° / 95.0°<br/>Efficiency 89 %<br/>Peak intensity 0.8 cd/m<br/>LEDs/each optic 1<br/>Light colour White<br/>Required components:</p> <p style="background-color: #ADD8E6; padding: 2px;">Protective plate, glass</p> |  |  |
| <p><b>TRIDONIC</b></p> <p>LED RLE 2x4 2000lm HP EXC2 OTD<br/>FWHM / FWTM 61.0° / 96.0°<br/>Efficiency 94 %<br/>Peak intensity 0.9 cd/m<br/>LEDs/each optic 1<br/>Light colour White<br/>Required components:</p>   |  |  |

#### PHOTOMETRIC DATA (MEASURED):

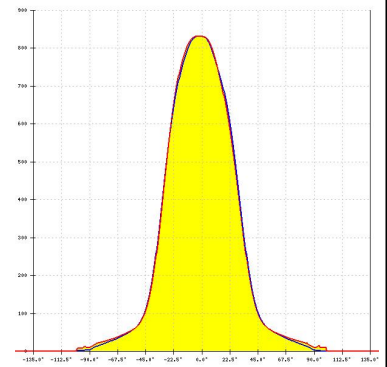
#### TRIDONIC

LED RLE 2x8 4000lm HP EXC2 OTD  
 FWHM / FWTM 61.0° / 96.0°  
 Efficiency 94 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



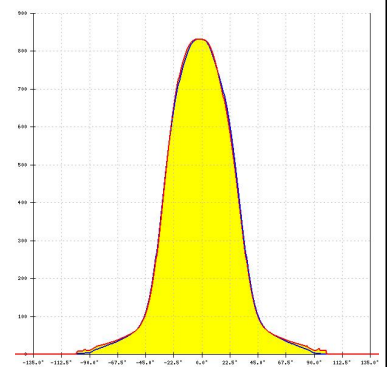
#### TRIDONIC

LED RLE G1 49x121mm 2000lm xxx EXC OTD  
 FWHM / FWTM 61.0° / 96.0°  
 Efficiency 94 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



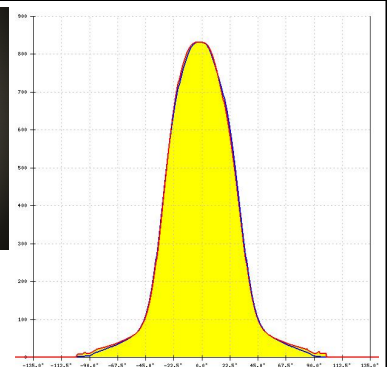
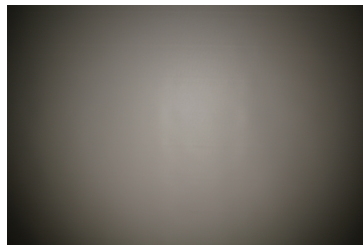
#### TRIDONIC

LED RLE G1 49x133mm 2000lm xxx EXC OTD  
 FWHM / FWTM 61.0° / 96.0°  
 Efficiency 94 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### TRIDONIC

LED RLE G1 49x223mm 4000lm xxx EXC OTD  
 FWHM / FWTM 61.0° / 96.0°  
 Efficiency 94 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

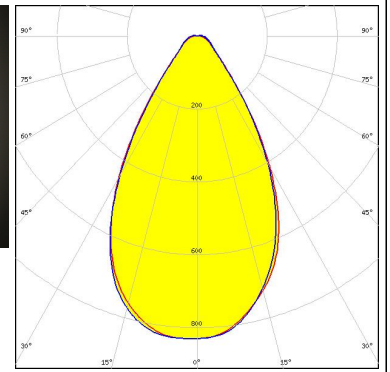




## PHOTOMETRIC DATA (MEASURED):

### TRIDONIC

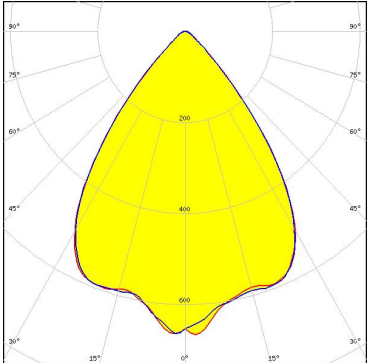
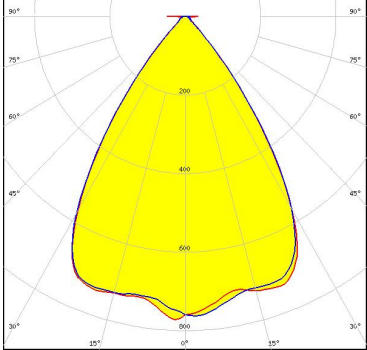
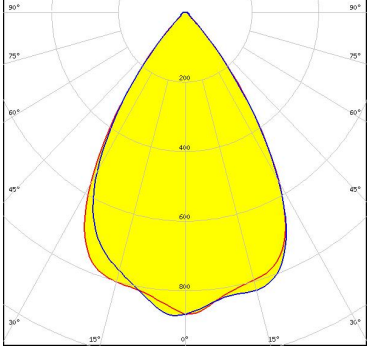
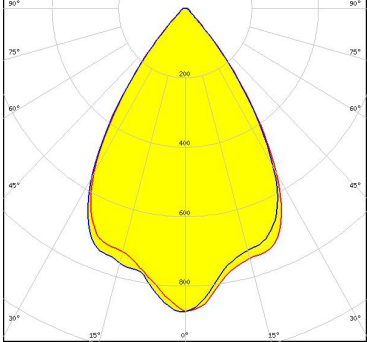
LED RLE G1 49x245mm 4000lm xxx EXC OTD  
FWHM / FWMTM 61.0° / 96.0°  
Efficiency 94 %  
Peak intensity 0.8 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



#### PHOTOMETRIC DATA (SIMULATED):

|   |  |
|---|--|
| <p><b>CREE LED</b></p> <p>LED: XP-G2 HE<br/>           FWHM / FWTM: 73.0° / 97.0°<br/>           Efficiency: 95 %<br/>           Peak intensity: 0.7 cd/lm<br/>           LEDs/each optic: 1<br/>           Light colour: White<br/>           Required components:</p>                               |  |
| <p><b>CREE LED</b></p> <p>LED: XP-L HD<br/>           FWHM / FWTM: 72.0° / 94.0°<br/>           Efficiency: 90 %<br/>           Peak intensity: 0.7 cd/lm<br/>           LEDs/each optic: 1<br/>           Light colour: White<br/>           Required components:</p> <p>Protective plate, glass</p> |  |
| <p><b>CREE LED</b></p> <p>LED: XP-L HI<br/>           FWHM / FWTM: 70.0° / 90.0°<br/>           Efficiency: 91 %<br/>           Peak intensity: 0.8 cd/lm<br/>           LEDs/each optic: 1<br/>           Light colour: White<br/>           Required components:</p> <p>Protective plate, glass</p> |  |
| <p><b>CREE LED</b></p> <p>LED: XP-L HI<br/>           FWHM / FWTM: 70.0° / 90.0°<br/>           Efficiency: 96 %<br/>           Peak intensity: 0.8 cd/lm<br/>           LEDs/each optic: 1<br/>           Light colour: White<br/>           Required components:</p>                                |  |

#### PHOTOMETRIC DATA (SIMULATED):

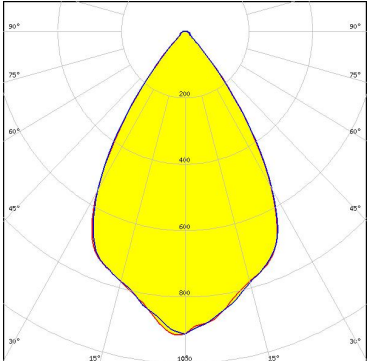
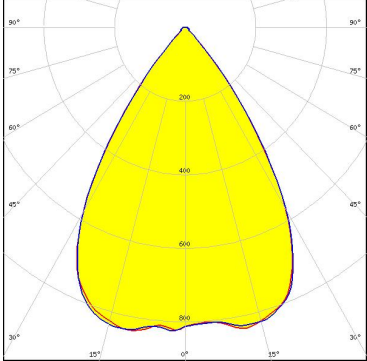
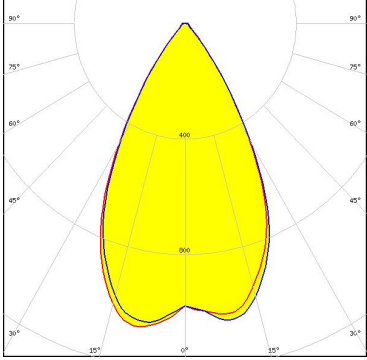
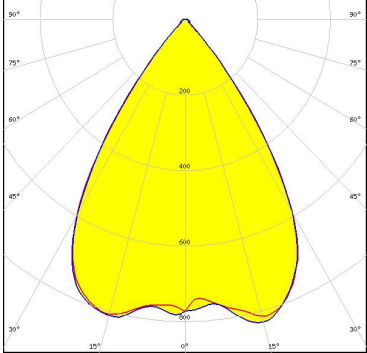
|   |   |
|---|---|
| <p><b>CREE</b> LED</p> <p>LED: XP-L2<br/>           FWHM / FWTM: 74.0° / 98.0°<br/>           Efficiency: 89 %<br/>           Peak intensity: 0.7 cd/lm<br/>           LEDs/each optic: 1<br/>           Light colour: White<br/>           Required components:<br/>           Protective plate, glass</p> |    |
| <p><b>CREE</b> LED</p> <p>LED: XT-E<br/>           FWHM / FWTM: 69.0° / 90.0°<br/>           Efficiency: 94 %<br/>           Peak intensity: 0.8 cd/lm<br/>           LEDs/each optic: 1<br/>           Light colour: White<br/>           Required components:</p>   |   |
| <p><b>LUMILEDS</b></p> <p>LED: LUXEON 3535L<br/>           FWHM / FWTM: 66.0° / 89.0°<br/>           Efficiency: 94 %<br/>           Peak intensity: 0.9 cd/lm<br/>           LEDs/each optic: 1<br/>           Light colour: White<br/>           Required components:</p>                                 |  |
| <p><b>LUMILEDS</b></p> <p>LED: LUXEON MZ<br/>           FWHM / FWTM: 66.0° / 90.0°<br/>           Efficiency: 94 %<br/>           Peak intensity: 0.9 cd/lm<br/>           LEDs/each optic: 1<br/>           Light colour: White<br/>           Required components:</p>                                    |  |



#### PHOTOMETRIC DATA (SIMULATED):

|   |  |
|---|--|
| <p><b>NICHIA</b></p> <p>LED NV4WB35AM<br/>           FWHM / FWTM 69.0° / 90.0°<br/>           Efficiency 95 %<br/>           Peak intensity 0.8 cd/lm<br/>           LEDs/each optic 1<br/>           Light colour White<br/>           Required components:</p>  |  |
| <p><b>NICHIA</b></p> <p>LED NVSxx19B/NVSxx19C<br/>           FWHM / FWTM 70.0° / 90.0°<br/>           Efficiency 95 %<br/>           Peak intensity 0.8 cd/lm<br/>           LEDs/each optic 1<br/>           Light colour White<br/>           Required components:</p>  |  |
| <p><b>OSRAM</b><br/> <small>Opto Semiconductors</small></p> <p>LED OSCONIQ C 2424<br/>           FWHM / FWTM 66.0 + 68.0° / 82.0°<br/>           Efficiency 96 %<br/>           Peak intensity 0.9 cd/lm<br/>           LEDs/each optic 1<br/>           Light colour White<br/>           Required components:</p> |  |
| <p><b>OSRAM</b><br/> <small>Opto Semiconductors</small></p> <p>LED OSCONIQ P 3030<br/>           FWHM / FWTM 66.0° / 88.0°<br/>           Efficiency 96 %<br/>           Peak intensity 0.8 cd/lm<br/>           LEDs/each optic 1<br/>           Light colour White<br/>           Required components:</p>        |  |

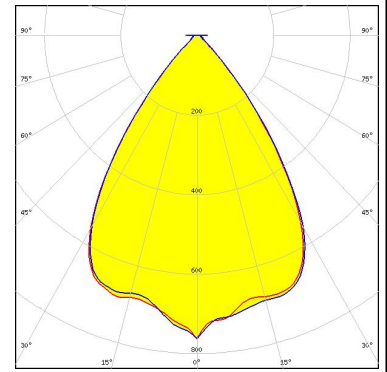
#### PHOTOMETRIC DATA (SIMULATED):

|   |   |
|---|---|
| <p><b>OSRAM</b><br/>Opto Semiconductors</p> <p>LED OSCONIQ P 3737 Flat</p> <p>FWHM / FWTM 64.0° / 88.0°</p> <p>Efficiency 95 %</p> <p>Peak intensity 0.9 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>                     |    |
| <p><b>OSRAM</b><br/>Opto Semiconductors</p> <p>LED OSLON Square Flat</p> <p>FWHM / FWTM 68.0° / 86.0°</p> <p>Efficiency 95 %</p> <p>Peak intensity 0.9 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>                       |   |
| <p><b>OSRAM</b><br/>Opto Semiconductors</p> <p>LED OSLON SSL 80</p> <p>FWHM / FWTM 55.6° / 81.2°</p> <p>Efficiency 94 %</p> <p>Peak intensity 1.1 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>                            |  |
| <p><b>OSRAM</b><br/>Opto Semiconductors</p> <p>LED OSTAR Projection Compact (Kx.CSLNM1.xx)</p> <p>FWHM / FWTM 68.0° / 88.0°</p> <p>Efficiency 96 %</p> <p>Peak intensity 0.8 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p> |  |

#### PHOTOMETRIC DATA (SIMULATED):

### PHILIPS

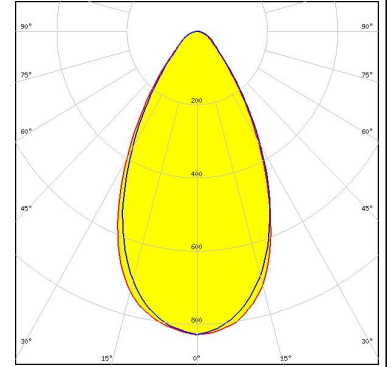
LED Fortimo FastFlex LED 2x8 DAX G4  
 FWHM / FWTM 71.0° / 94.0°  
 Efficiency 94 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



### SAMSUNG

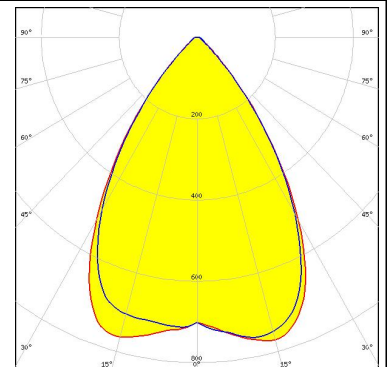
LED HiLOM RM16 Z (LH502C)  
 FWHM / FWTM 56.0° / 98.0°  
 Efficiency 88 %  
 Peak intensity 0.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass



### SAMSUNG

LED LH231B  
 FWHM / FWTM 60.0° / 87.0°  
 Efficiency 94 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 4  
 Light colour White  
 Required components:



SEOUL SEMICONDUCTOR

LED SEOUL DC 5050 6V  
 FWHM / FWTM 64.0° / 93.0°  
 Efficiency 94 %  
 Peak intensity 0.8 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:

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