

## STRADA-2X2-VSM

IESNA Type V (square) beam for wide areas lighting such as car parks

### SPECIFICATION:

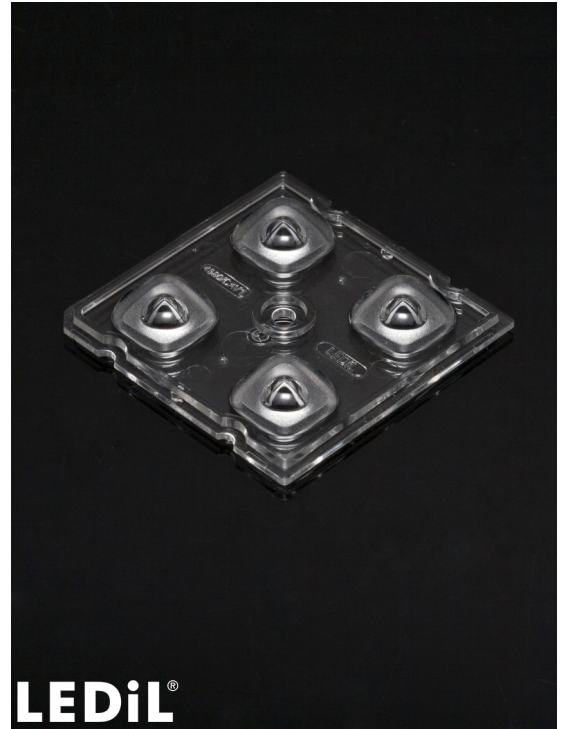
Dimensions	50.0 x 50.0 mm
Height	6.1 mm
Fastening	glue, pin, screw
ROHS compliant	yes ⓘ

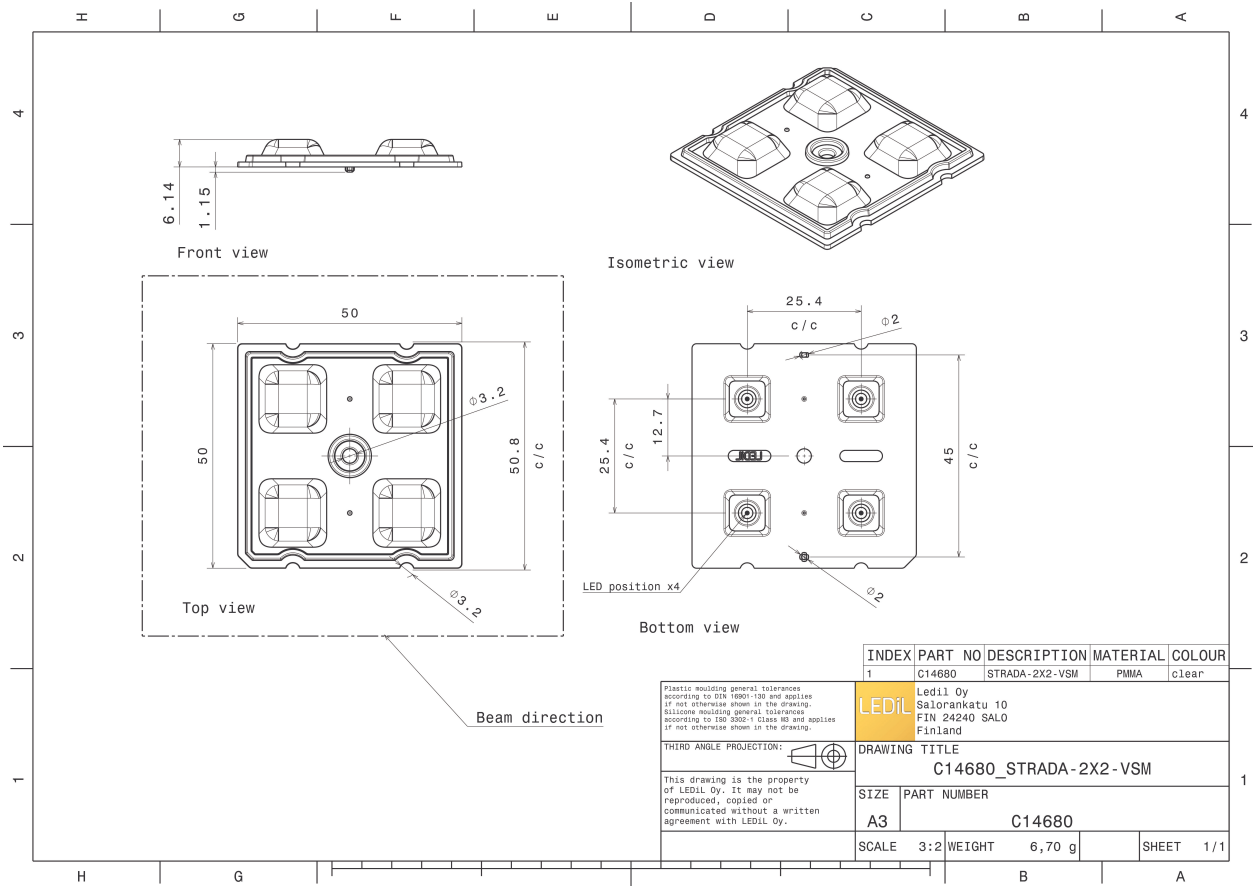
### MATERIALS:

Component	Type	Material	Colour	Finish
STRADA-2X2-VSM	Multi-lens	PMMA	clear	

### ORDERING INFORMATION:



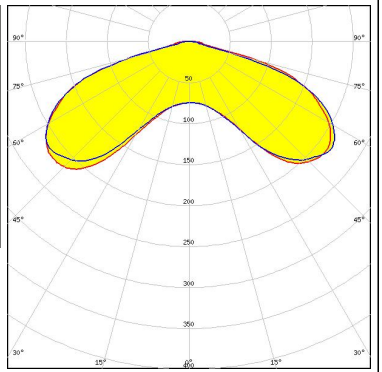

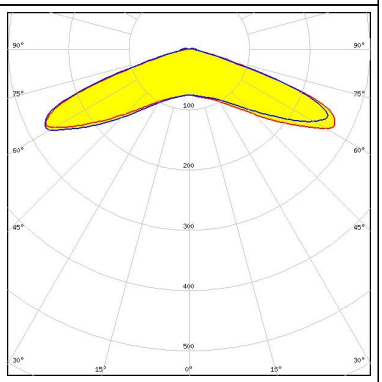

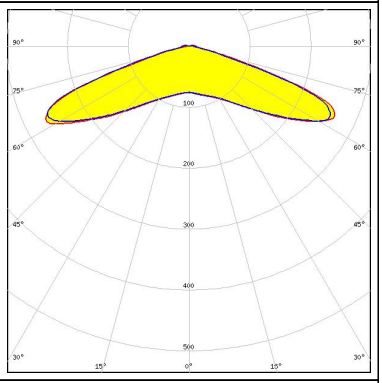

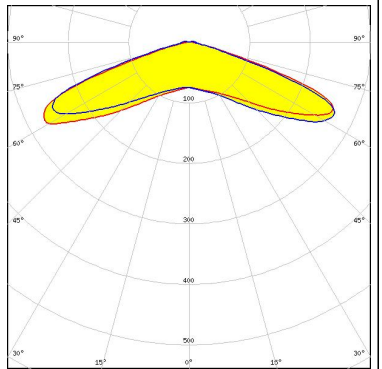
Component	Qty in box	MOQ	MPQ	Box weight (kg)
C14680_STRADA-2X2-VSM » Box size: 480 x 280 x 300 mm	800	160	160	6.2





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

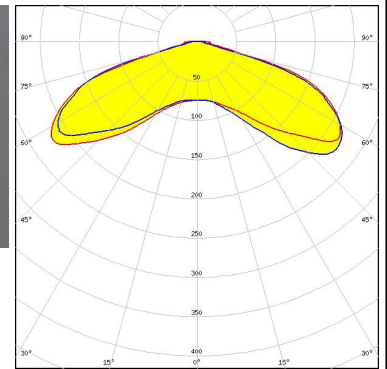
#### OPTICAL RESULTS (MEASURED):

<p> <b>LED</b> Bridgelux SMD 5050</p> <p><b>FWHM / FWTM</b> 149.0° / 158.0°</p> <p><b>Efficiency</b> 94 %</p> <p><b>Peak intensity</b> 0.3 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> QUICK FLUX XTP 2x4 xxx LS G5</p> <p><b>FWHM / FWTM</b> Asymmetric</p> <p><b>Efficiency</b> 94 %</p> <p><b>Peak intensity</b> 0.5 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> QUICK FLUX XTP 2x6 xxx LS G5</p> <p><b>FWHM / FWTM</b> Asymmetric</p> <p><b>Efficiency</b> 94 %</p> <p><b>Peak intensity</b> 0.5 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> QUICK FLUX XTP 2x8 xxx LS G5</p> <p><b>FWHM / FWTM</b> Asymmetric</p> <p><b>Efficiency</b> 94 %</p> <p><b>Peak intensity</b> 0.5 cd/lm</p> <p><b>LEDs/each optic</b> 1</p> <p><b>Light colour</b> White</p> <p><b>Required components:</b></p>		

#### OPTICAL RESULTS (MEASURED):

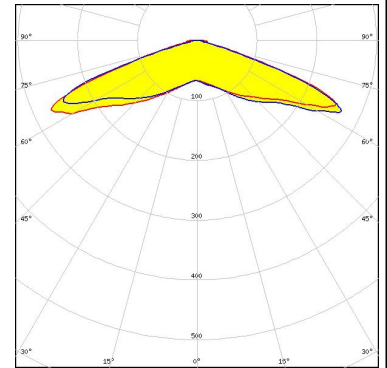
##### CREE LED

LED XD16  
 FWHM / FWTM 149.0° / 159.0°  
 Efficiency 94 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 4  
 Light colour White  
 Required components:



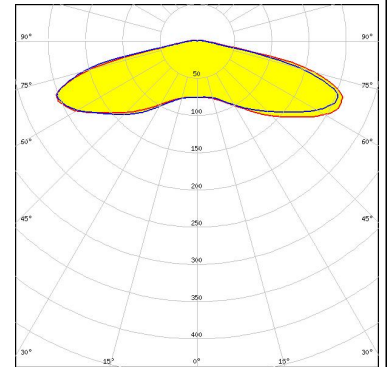
##### CREE LED

LED XD16  
 FWHM / FWTM Asymmetric  
 Efficiency 94 %  
 Peak intensity 0.6 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



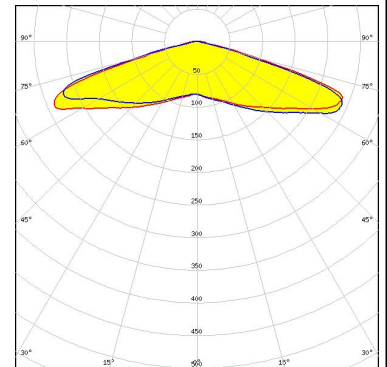
##### CREE LED

LED XHP35 HD  
 FWHM / FWTM Asymmetric  
 Efficiency 94 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



##### CREE LED

LED XP-G2  
 FWHM / FWTM 151.0° / 161.0°  
 Efficiency 94 %  
 Peak intensity 0.5 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:





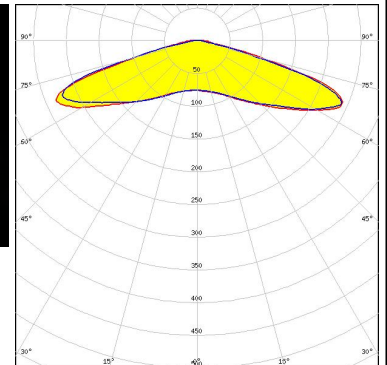
#### OPTICAL RESULTS (MEASURED):

##### CREE LED

LED XP-G2 HE  
 FWHM / FWTM 152.0° / 160.0°  
 Efficiency 94 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

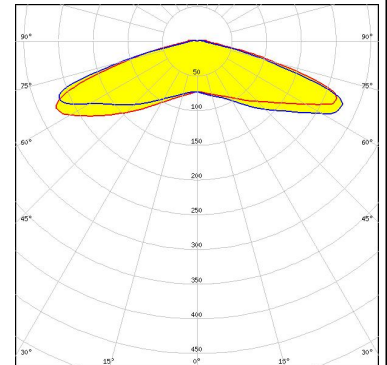
##### CREE LED

LED XP-G3  
 FWHM / FWTM Asymmetric  
 Efficiency 94 %  
 Peak intensity 0.5 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



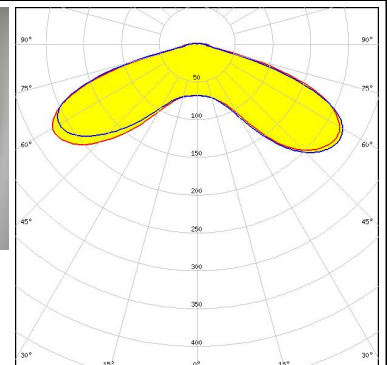
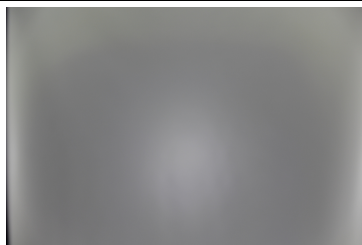
##### CREE LED

LED XT-E  
 FWHM / FWTM 152.0° / 170.0°  
 Efficiency 94 %  
 Peak intensity 0.5 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



##### LUMILEDS

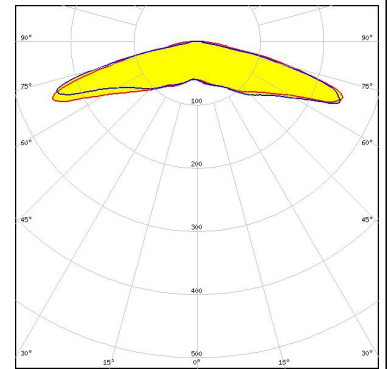
LED LUXEON 5050 Round LES  
 FWHM / FWTM Asymmetric  
 Efficiency 94 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OPTICAL RESULTS (MEASURED):

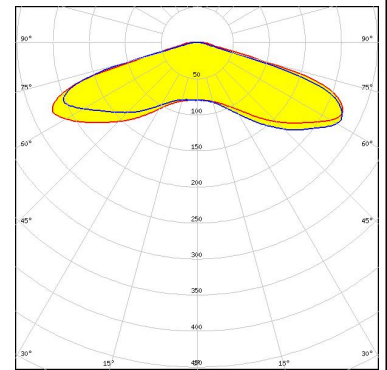
##### LUMILEDS

LED LUXEON C  
 FWHM / FWTM Asymmetric  
 Efficiency 94 %  
 Peak intensity 0.6 cd/lm  
 LEDs/each optic 1  
 Light colour PC Amber  
 Required components:



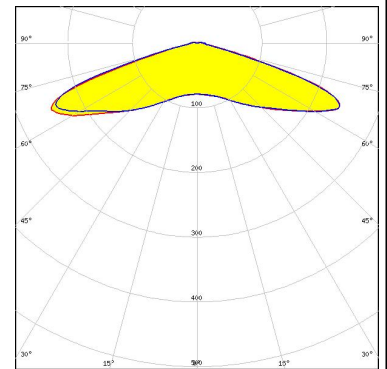
##### LUMILEDS

LED LUXEON V  
 FWHM / FWTM 151.0° / 167.0°  
 Efficiency 94 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



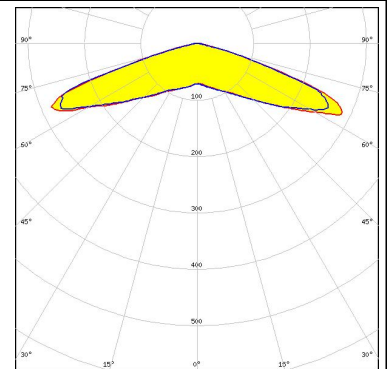
##### LUMILEDS

LED LUXEON V2  
 FWHM / FWTM 147.0° / 158.0°  
 Efficiency 94 %  
 Peak intensity 0.5 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



##### LUMINUS

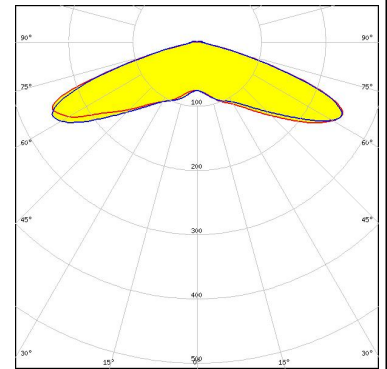
LED SST-10-B130  
 FWHM / FWTM 144.0° / 157.0°  
 Efficiency 97 %  
 Peak intensity 0.6 cd/lm  
 LEDs/each optic 1  
 Light colour Deep Red  
 Required components:



#### OPTICAL RESULTS (MEASURED):

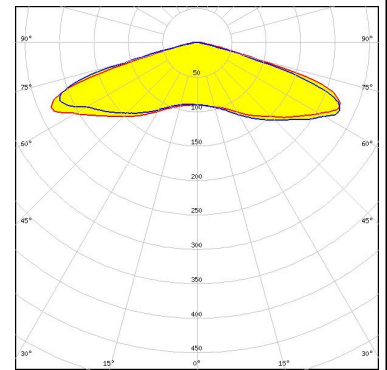
**MST** *Your solutions*

LED RecLED 122x50mm 1900lm 730 2x4 Opt G1  
 FWHM / FWTM Asymmetric  
 Efficiency 98 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



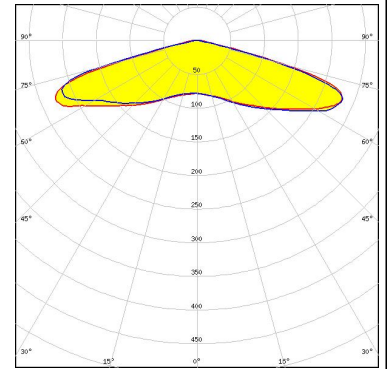
**NICHIA**

LED NVSW219D  
 FWHM / FWTM 152.0° / 163.0°  
 Efficiency 94 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



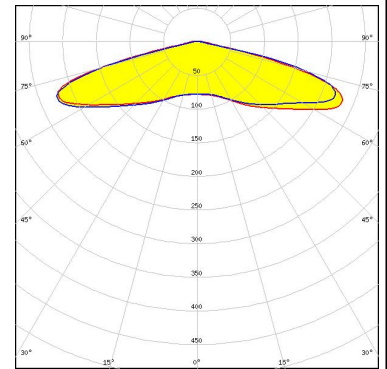
**NICHIA**

LED NVSW219F  
 FWHM / FWTM 151.0° / 160.0°  
 Efficiency 94 %  
 Peak intensity 0.5 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:


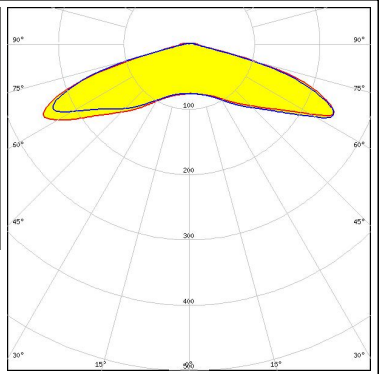
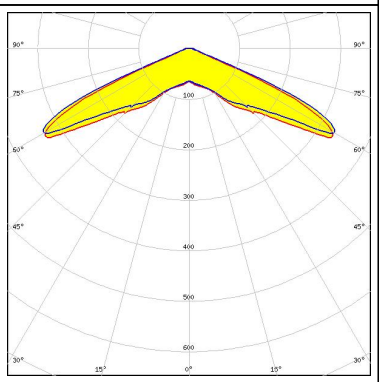
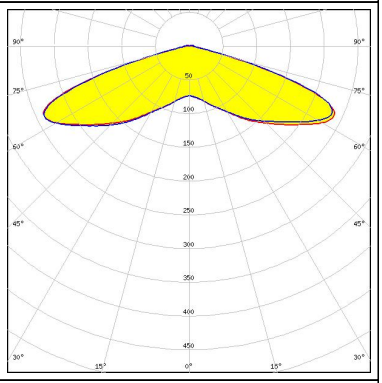
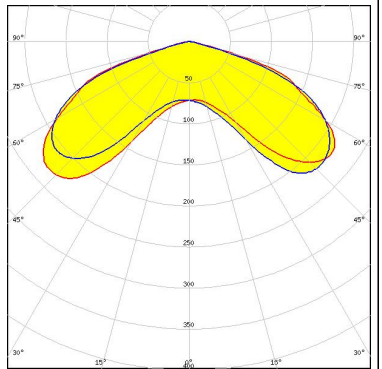


**NICHIA**

LED NVSW319B  
 FWHM / FWTM 156.0° / 164.0°  
 Efficiency 94 %  
 Peak intensity 0.5 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OPTICAL RESULTS (MEASURED):

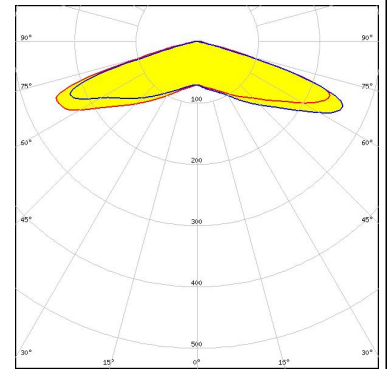
<p><b>NICHIA</b></p> <p>LED NVSW3x9A            FWHM / FWTM 152.0° / 161.0°            Efficiency 94 %            Peak intensity 0.5 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>NICHIA</b></p> <p>LED NVSxE21A            FWHM / FWTM 134.0° / 144.0°            Efficiency 94 %            Peak intensity 0.7 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>OSRAM</b></p> <p>LED PL-BRICK HP 3800 2x8 SSG            FWHM / FWTM Asymmetric            Efficiency 96 %            Peak intensity 0.4 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 141.0° / 153.0°            Efficiency 88 %            Peak intensity 0.3 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p> <p>Protective plate, glass</p>		

#### OPTICAL RESULTS (MEASURED):

#### OSRAM

Opto Semiconductors

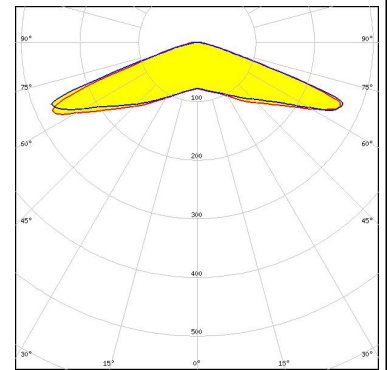
LED OSLON Square CSSRM2/CSSRM3  
 FWHM / FWTM 148.0° / 159.0°  
 Efficiency 94 %  
 Peak intensity 0.5 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OSRAM

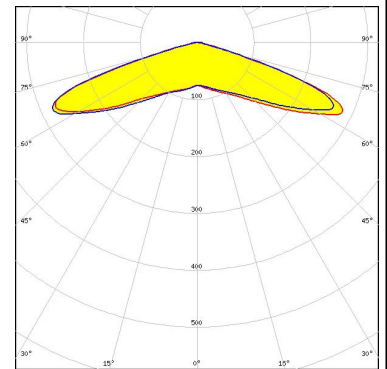
Opto Semiconductors

LED OSLON Square PC  
 FWHM / FWTM 143.0° / 160.0°  
 Efficiency 94 %  
 Peak intensity 0.5 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



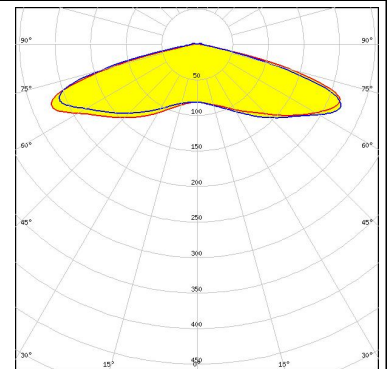
#### PHILIPS

LED Fortimo FastFlex LED 2x8 DA G4  
 FWHM / FWTM 146.0° / 156.0°  
 Efficiency 94 %  
 Peak intensity 0.5 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHILIPS

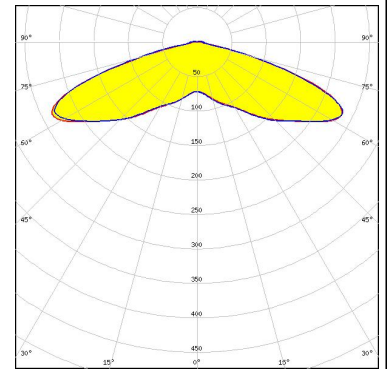
LED Fortimo FastFlex LED 2x8 DA G4+  
 FWHM / FWTM 152.0° / 160.0°  
 Efficiency 94 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OPTICAL RESULTS (MEASURED):

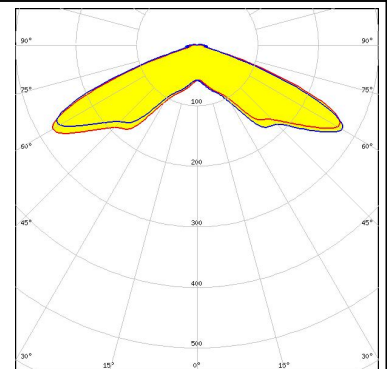
### PHILIPS

LED Fortimo FastFlex LED 2x8 DA G5  
FWHM / FWTM 146.0° / 156.0°  
Efficiency 97 %  
Peak intensity 0.4 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



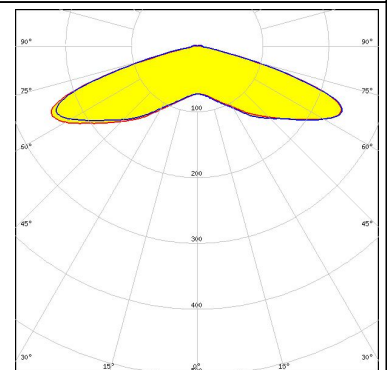
### SAMSUNG

LED HiLOM RC12 Z (LH181B)  
FWHM / FWTM 138.0° / 148.0°  
Efficiency 99 %  
Peak intensity 0.5 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



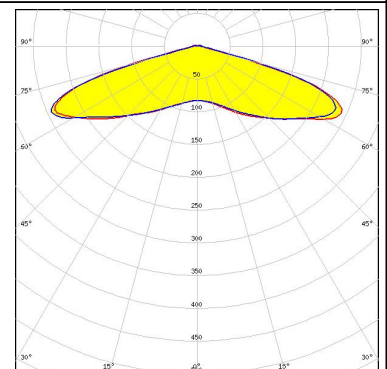
### SAMSUNG

LED HiLOM RH12 Z (LH351C)  
FWHM / FWTM 147.0° / 156.0°  
Efficiency 97 %  
Peak intensity 0.4 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



### SAMSUNG

LED HiLOM RH16 (LH351C)  
FWHM / FWTM Asymmetric  
Efficiency 94 %  
Peak intensity 0.5 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:

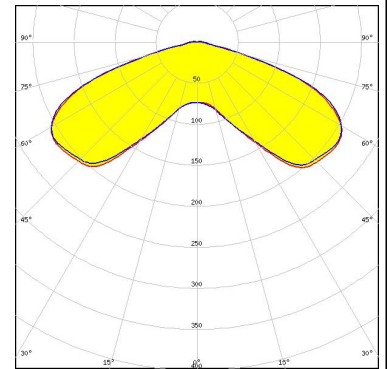




#### OPTICAL RESULTS (MEASURED):

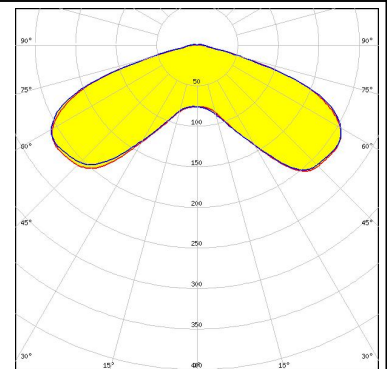
### SAMSUNG

LED HiLOM RM12 Z (LH502C)  
 FWHM / FWTM 144.0° / 157.0°  
 Efficiency 97 %  
 Peak intensity 0.3 cd/m  
 LEDs/each optic 1  
 Light colour White  
 Required components:



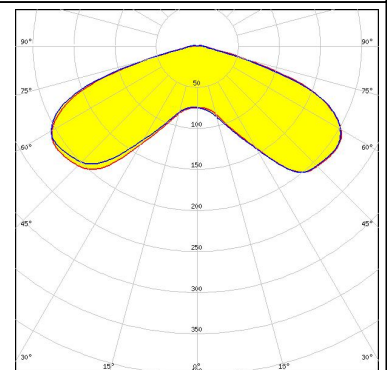
### SAMSUNG

LED HiLOM RM16 Z (LH502C)  
 FWHM / FWTM 144.0° / 156.0°  
 Efficiency 98 %  
 Peak intensity 0.3 cd/m  
 LEDs/each optic 1  
 Light colour White  
 Required components:



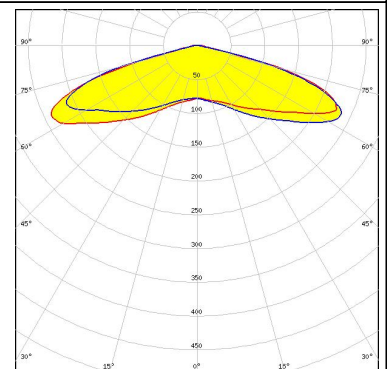
### SAMSUNG

LED HiLOM RM8 Z (LH502C)  
 FWHM / FWTM 144.0° / 157.0°  
 Efficiency 97 %  
 Peak intensity 0.3 cd/m  
 LEDs/each optic 1  
 Light colour White  
 Required components:



### SAMSUNG

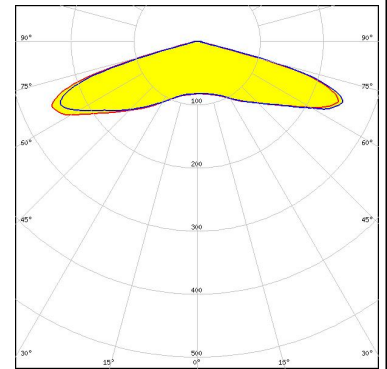
LED LH351B  
 FWHM / FWTM 153.0° / 161.0°  
 Efficiency 94 %  
 Peak intensity 0.5 cd/m  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OPTICAL RESULTS (MEASURED):

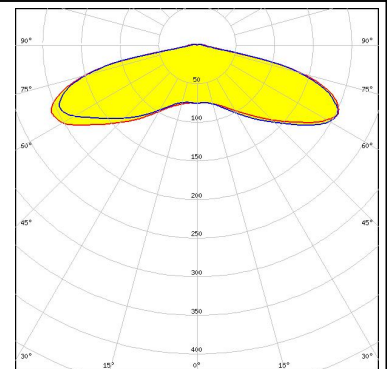
### SAMSUNG

LED LH351C  
FWHM / FWTM 149.0° / 157.0°  
Efficiency 94 %  
Peak intensity 0.5 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



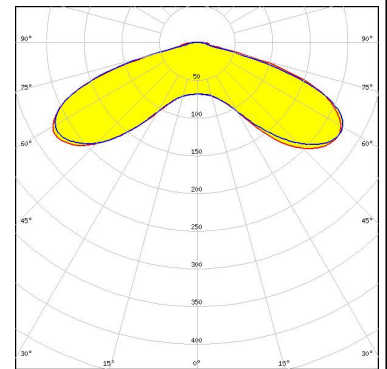
### SAMSUNG

LED LH351D  
FWHM / FWTM 156.0° / 162.0°  
Efficiency 94 %  
Peak intensity 0.4 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:

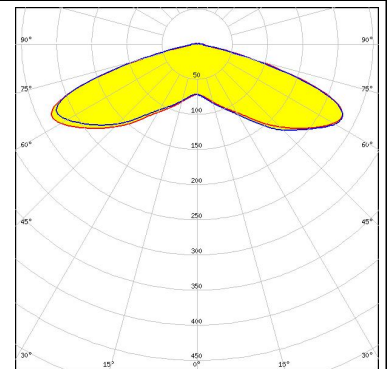


### SAMSUNG

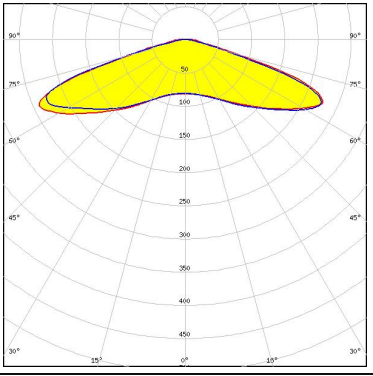
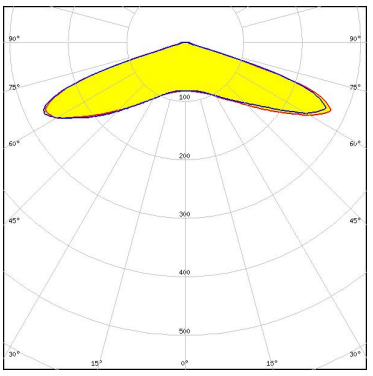
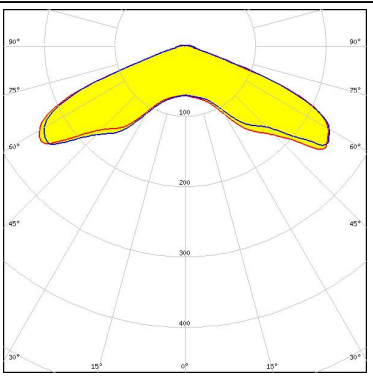
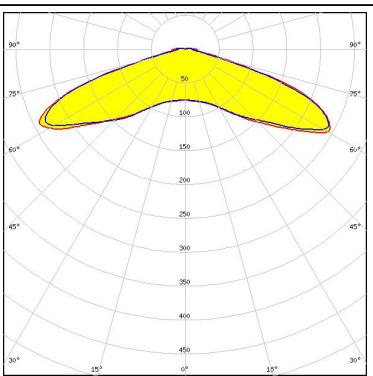
LED LH508A  
FWHM / FWTM 146.0° / 157.0°  
Efficiency 94 %  
Peak intensity 0.4 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



LED LED-Pa-L15c2W11c2-xxx-C050-01  
FWHM / FWTM 146.0° / 156.0°  
Efficiency 98 %  
Peak intensity 0.4 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



#### OPTICAL RESULTS (MEASURED):

<p><b>SEOUL SEMICONDUCTOR</b></p> <p>LED Z5M3</p> <p>FWHM / FWTM Asymmetric</p> <p>Efficiency 94 %</p> <p>Peak intensity 0.5 cd/lm</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 144.0° / 149.0°</p> <p>Efficiency 98 %</p> <p>Peak intensity 0.5 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	
<p><b>SEOUL SEMICONDUCTOR</b></p> <p>LED Z8Y22</p> <p>FWHM / FWTM 141.0° / 151.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 0.5 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	
<p><b>SEOUL SEMICONDUCTOR</b></p> <p>LED Z8Y22P</p> <p>FWHM / FWTM 146.0° / 161.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 0.5 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	

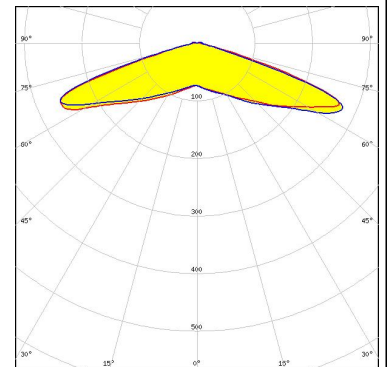
#### OPTICAL RESULTS (MEASURED):

#### TRIDONIC

LED RLE 2x4 2000lm HP EXC2 OTD  
 FWHM / FWTM Asymmetric  
 Efficiency 94 %  
 Peak intensity 0.6 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

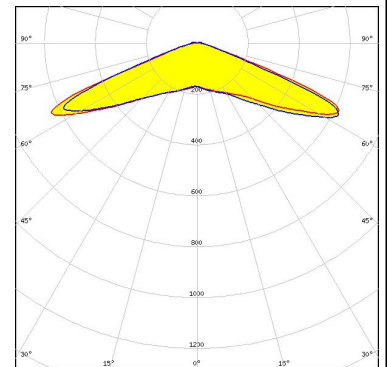
#### TRIDONIC

LED RLE 2x8 4000lm HP EXC2 OTD  
 FWHM / FWTM Asymmetric  
 Efficiency 94 %  
 Peak intensity 0.6 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



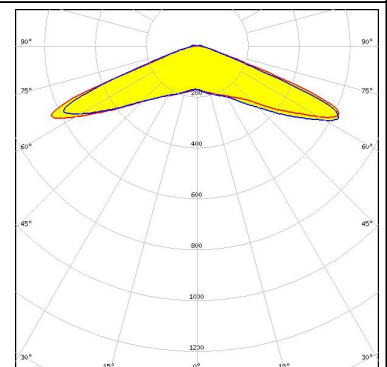
#### TRIDONIC

LED RLE G1 49x121mm 2000lm xxx EXC OTD  
 FWHM / FWTM 139.0° / 155.0°  
 Efficiency 94 %  
 Peak intensity 0.5 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### TRIDONIC

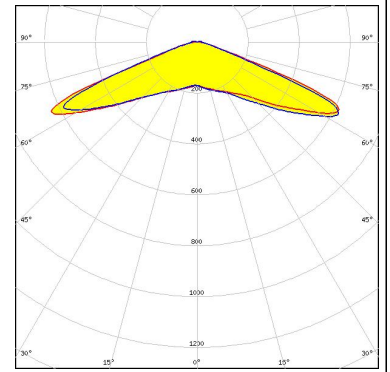
LED RLE G1 49x133mm 2000lm xxx EXC OTD  
 FWHM / FWTM 139.0° / 155.0°  
 Efficiency 94 %  
 Peak intensity 0.5 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OPTICAL RESULTS (MEASURED):

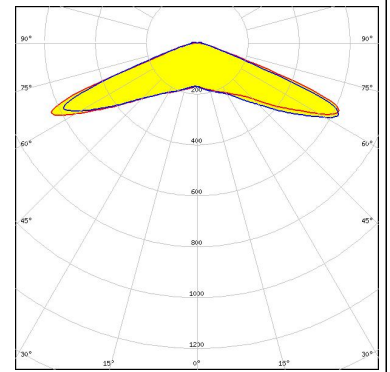
#### TRIDONIC

LED RLE G1 49x223mm 4000lm xxx EXC OTD  
FWHM / FWTM 139.0° / 155.0°  
Efficiency 94 %  
Peak intensity 0.5 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



#### TRIDONIC

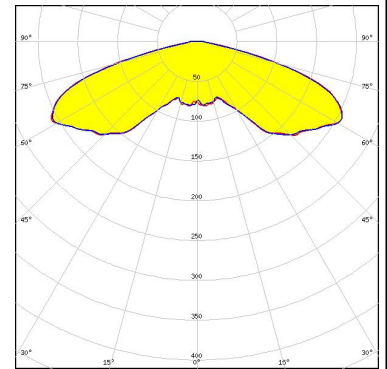
LED RLE G1 49x245mm 4000lm xxx EXC OTD  
FWHM / FWTM 139.0° / 155.0°  
Efficiency 94 %  
Peak intensity 0.5 cd/lm  
LEDs/each optic 1  
Light colour White  
Required components:



#### OPTICAL RESULTS (SIMULATED):

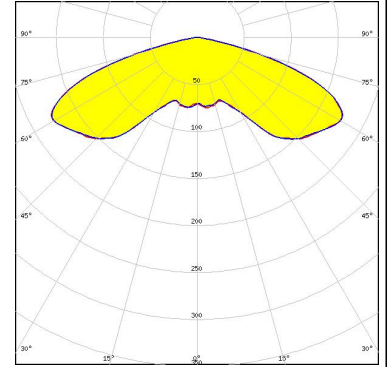


LED J Series 5050 Square LES 30V  
 FWHM / FWTM 150.0° / 162.0°  
 Efficiency 91 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

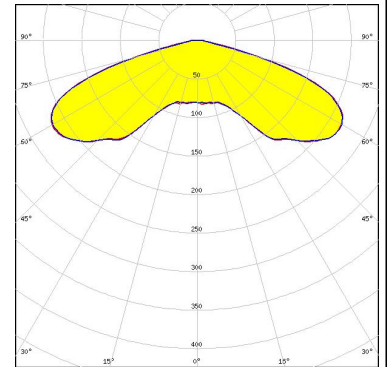


LED J Series 5050 Square LES 30V  
 FWHM / FWTM 146.0° / 160.0°  
 Efficiency 74 %  
 Peak intensity 0.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass

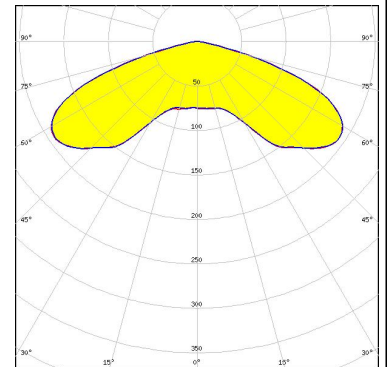


LED J Series 5050 Square LES 6V  
 FWHM / FWTM 148.0° / 160.0°  
 Efficiency 97 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



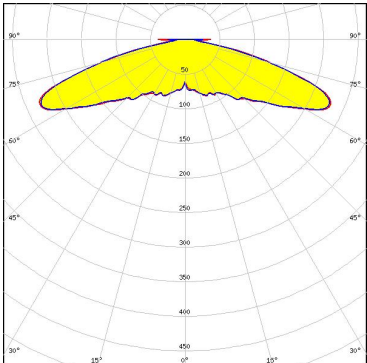
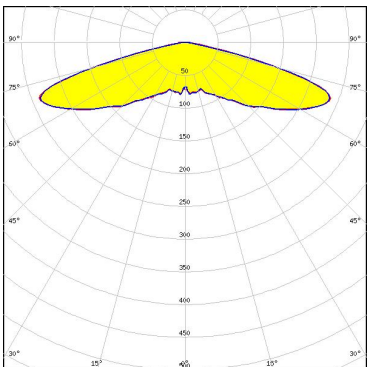
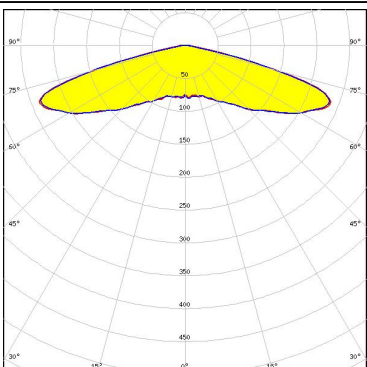
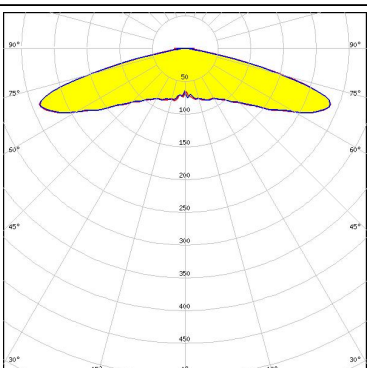
LED J Series 5050 Square LES 6V  
 FWHM / FWTM 144.0° / 158.0°  
 Efficiency 80 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass





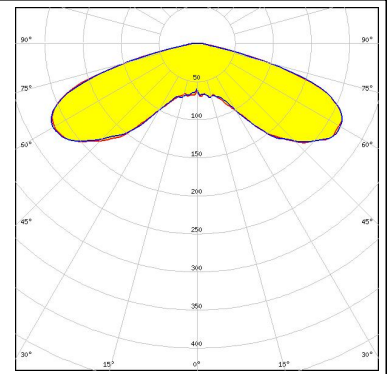
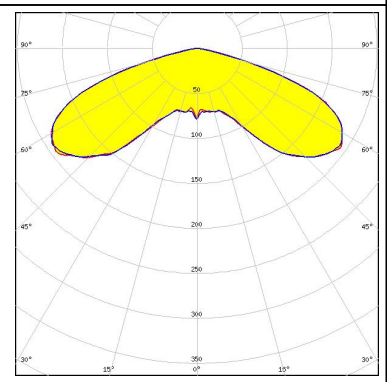
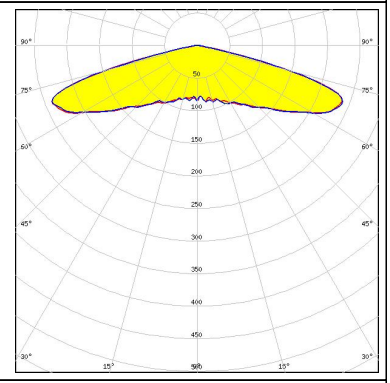
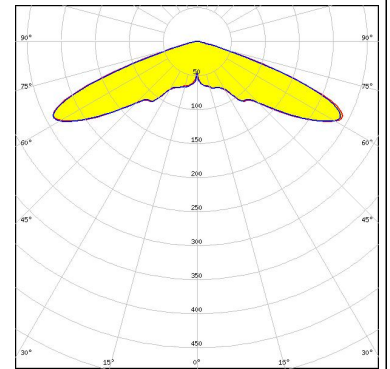
#### OPTICAL RESULTS (SIMULATED):

<p><b>CREE</b> → <b>LED</b></p> <p>LED XB-D            FWHM / FWTM 151.0° / 180.0°            Efficiency 94 %            Peak intensity 0.4 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>	
<p><b>CREE</b> → <b>LED</b></p> <p>LED XM-L            FWHM / FWTM 152.0° / 161.0°            Efficiency 96 %            Peak intensity 0.4 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>	
<p><b>CREE</b> → <b>LED</b></p> <p>LED XM-L2            FWHM / FWTM 152.0° / 160.0°            Efficiency 96 %            Peak intensity 0.4 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>	
<p><b>CREE</b> → <b>LED</b></p> <p>LED XP-G            FWHM / FWTM 152.0° / 163.0°            Efficiency 95 %            Peak intensity 0.4 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>	

#### OPTICAL RESULTS (SIMULATED):

<p><b>CREE LED</b></p> <p>LED: XP-G3            FWHM / FWTM: 150.0° / 161.0°            Efficiency: 74 %            Peak intensity: 0.3 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p> <p>Protective plate, glass</p>	
<p><b>CREE LED</b></p> <p>LED: XP-L2            FWHM / FWTM: 151.0° / 161.0°            Efficiency: 94 %            Peak intensity: 0.4 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	
<p><b>CREE LED</b></p> <p>LED: XP-P            FWHM / FWTM: 144.0° / 156.0°            Efficiency: 78 %            Peak intensity: 0.3 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p> <p>Protective plate, glass</p>	
<p><b>LUMILEDS</b></p> <p>LED: LUXEON 5050 Round LES            FWHM / FWTM: Asymmetric            Efficiency: 81 %            Peak intensity: 0.3 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p> <p>Protective plate, glass</p>	

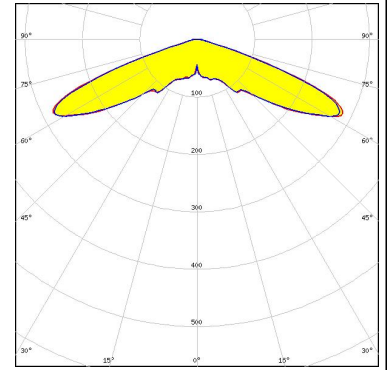
#### OPTICAL RESULTS (SIMULATED):

<p><b>LUMILEDS</b></p> <p>LED: LUXEON 5050 Square LES</p> <p>FWHM / FWTM: 148.0° / 161.0°</p> <p>Efficiency: 96 %</p> <p>Peak intensity: 0.3 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 5050 Square LES</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 80 %</p> <p>Peak intensity: 0.3 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p> <p>Protective plate, glass</p>	
<p><b>LUMILEDS</b></p> <p>LED: LUXEON HL2X</p> <p>FWHM / FWTM: 150.0° / 158.0°</p> <p>Efficiency: 95 %</p> <p>Peak intensity: 0.4 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: 140.0° / 152.0°</p> <p>Efficiency: 80 %</p> <p>Peak intensity: 0.4 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p> <p>Protective plate, glass</p>	

#### OPTICAL RESULTS (SIMULATED):

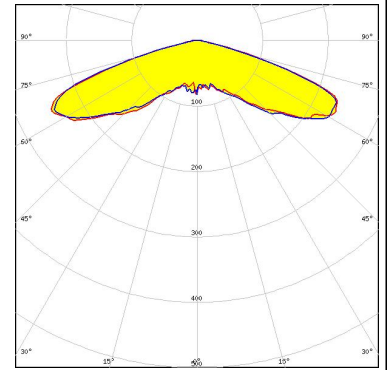
##### LUMILEDS

LED LUXEON HL2Z  
 FWHM / FWTM 142.0° / 152.0°  
 Efficiency 95 %  
 Peak intensity 0.5 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



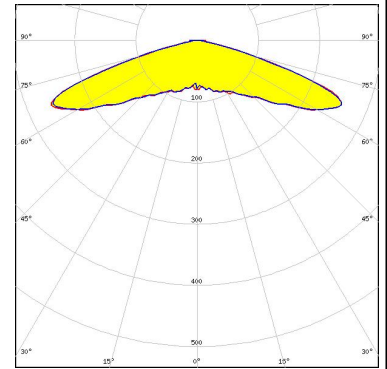
##### LUMILEDS

LED LUXEON MZ  
 FWHM / FWTM 146.0° / 157.0°  
 Efficiency 94 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



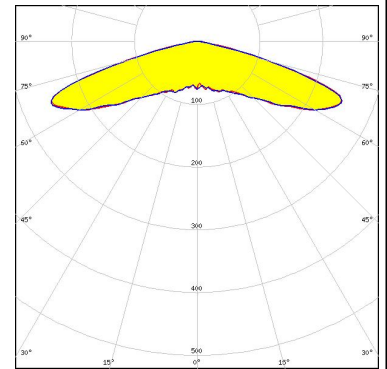
##### LUMILEDS

LED LUXEON Rebel ES  
 FWHM / FWTM 146.0° / 158.0°  
 Efficiency 95 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



##### LUMILEDS

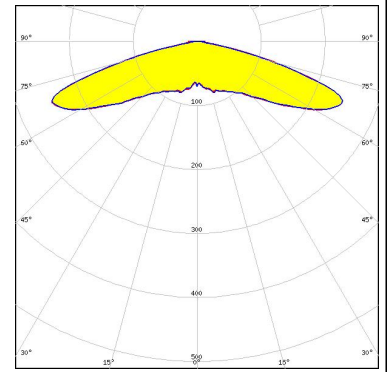
LED LUXEON T  
 FWHM / FWTM 150.0° / 160.0°  
 Efficiency 96 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OPTICAL RESULTS (SIMULATED):

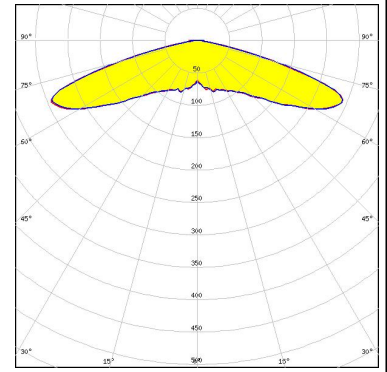
##### LUMILEDS

LED LUXEON TX  
 FWHM / FWTM 150.0° / 161.0°  
 Efficiency 95 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



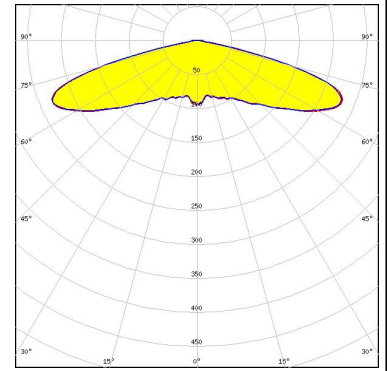
##### LUMILEDS

LED LUXEON TX  
 FWHM / FWTM 150.0° / 160.0°  
 Efficiency 95 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



##### LUMILEDS

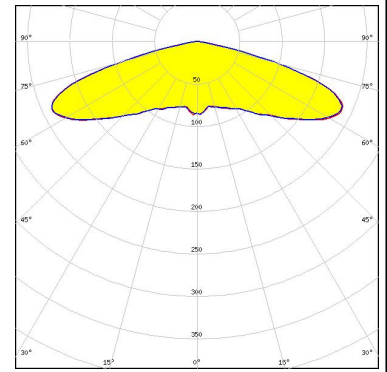
LED LUXEON XR-HL2X (L2H2-xxxxxxxMLU010)  
 FWHM / FWTM 152.0° / 160.0°  
 Efficiency 96 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



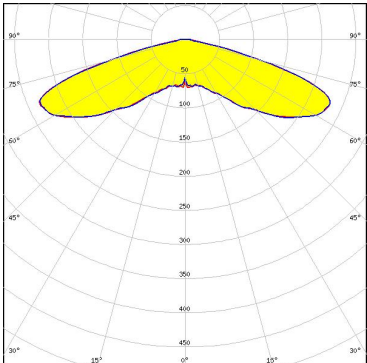
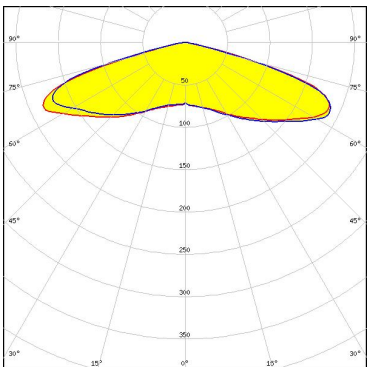
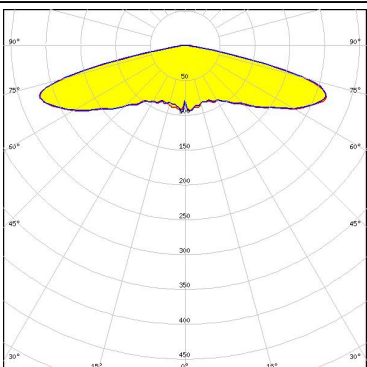
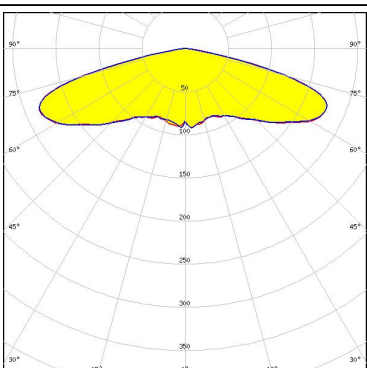
##### LUMILEDS

LED LUXEON XR-HL2X (L2H2-xxxxxxxMLU010)  
 FWHM / FWTM 150.0° / 160.0°  
 Efficiency 76 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass

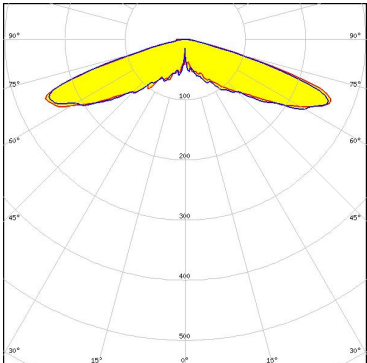
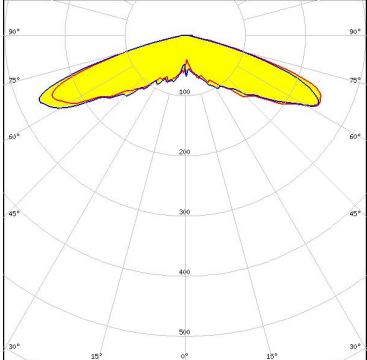
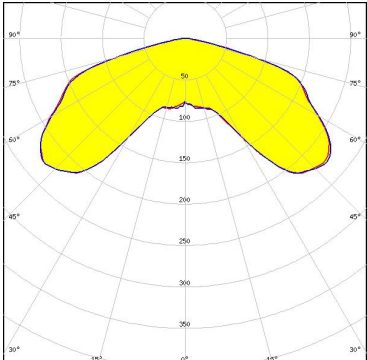
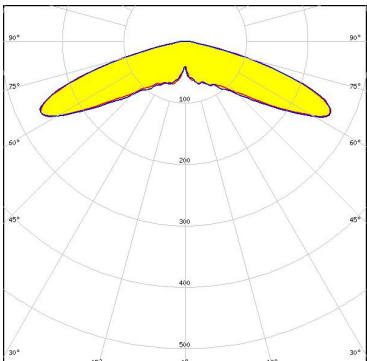


#### OPTICAL RESULTS (SIMULATED):

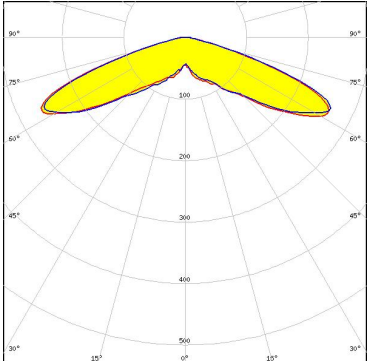
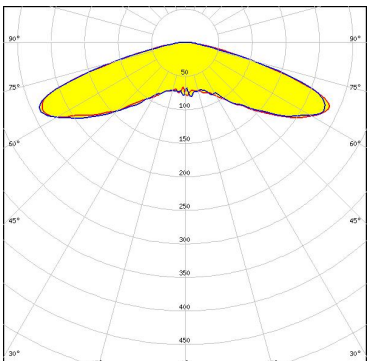
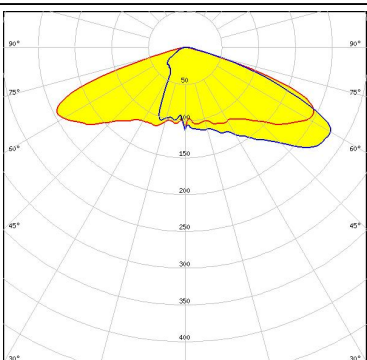
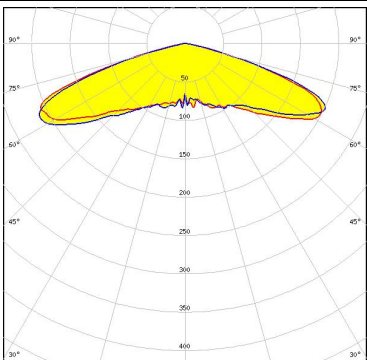
<p><b>NICHIA</b></p> <p>LED: NV4WB35AM            FWHM / FWTM: 150.0° / 160.0°            Efficiency: 96 %            Peak intensity: 0.4 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	
<p><b>NICHIA</b></p> <p>LED: NVSW219F            FWHM / FWTM: Asymmetric            Efficiency: 77 %            Peak intensity: 0.3 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p> <p style="background-color: #ADD8E6; padding: 2px; display: inline-block;">Protective plate, glass</p>	
<p><b>NICHIA</b></p> <p>LED: NVSW519A            FWHM / FWTM: 154.0° / 163.0 + 162.0°            Efficiency: 93 %            Peak intensity: 0.4 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	
<p><b>NICHIA</b></p> <p>LED: NVSW519A            FWHM / FWTM: 152.0° / 162.0°            Efficiency: 77 %            Peak intensity: 0.3 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p> <p style="background-color: #ADD8E6; padding: 2px; display: inline-block;">Protective plate, glass</p>	



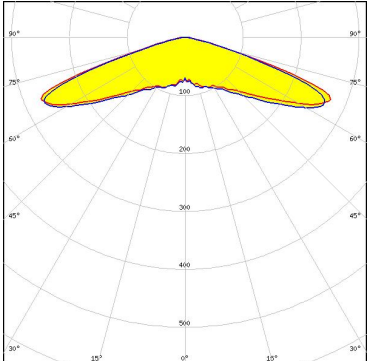
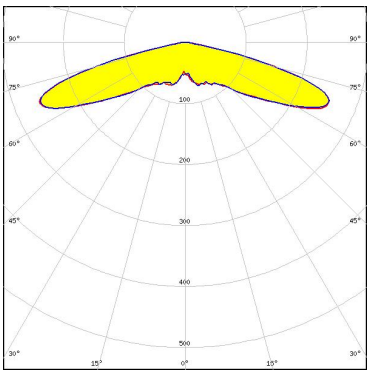
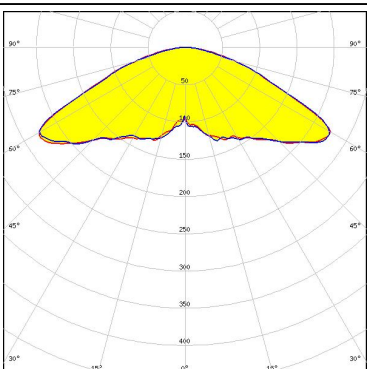
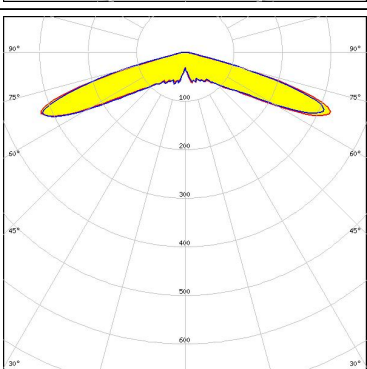
#### OPTICAL RESULTS (SIMULATED):

<p><b>NICHIA</b></p> <p>LED: NVSxx19B/NVSxx19C            FWHM / FWTM: Asymmetric            Efficiency: 92 %            Peak intensity: 0.5 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: 146.0° / 160.0°            Efficiency: 93 %            Peak intensity: 1.6 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	
<p><b>OSRAM</b>  <small>Opto Semiconductors</small></p> <p>LED: OSCONIQ C 2424            FWHM / FWTM: 146.0° / 160.0°            Efficiency: 95 %            Peak intensity: 0.3 cd/lm            LEDs/each optic: 4            Light colour: White            Required components:</p>	
<p><b>OSRAM</b>  <small>Opto Semiconductors</small></p> <p>LED: OSCONIQ P 3030            FWHM / FWTM: 148.0° / 162.0°            Efficiency: 95 %            Peak intensity: 0.4 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	

#### OPTICAL RESULTS (SIMULATED):

<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSCONIQ P 3737 (2W version)</p> <p>FWHM / FWTM 144.0° / 158.0°</p> <p>Efficiency 93 %</p> <p>Peak intensity 0.4 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 OSCONIQ P 3737 (3W version)</p> <p>FWHM / FWTM 148.0° / 164.0°</p> <p>Efficiency 94 %</p> <p>Peak intensity 0.4 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 OSLOM Square CSSRM2/CSSRM3</p> <p>FWHM / FWTM Asymmetric</p> <p>Efficiency 57 %</p> <p>Peak intensity 0.3 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p> <p>C17580_STRADA-2X2-SHD-WHT</p> <p>Protective plate, glass</p>	
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSLOM Square CSSRM2/CSSRM3</p> <p>FWHM / FWTM 146.0° / 156.0°</p> <p>Efficiency 79 %</p> <p>Peak intensity 0.3 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p> <p>Protective plate, glass</p>	

#### OPTICAL RESULTS (SIMULATED):

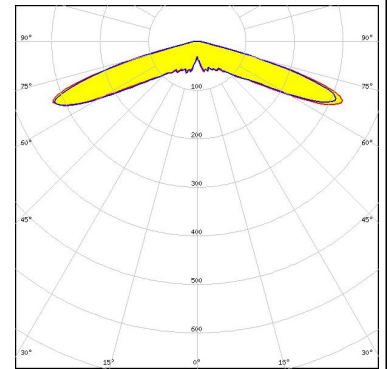
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED: OSLOM Square EC</p> <p>FWHM / FWTM: 144.0° / 156.0°</p> <p>Efficiency: 94 %</p> <p>Peak intensity: 0.4 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>	
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED: OSLOM SSL 150</p> <p>FWHM / FWTM: 152.0° / 160.0°</p> <p>Efficiency: 96 %</p> <p>Peak intensity: 0.4 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: OSLOM SSL 80</p> <p>FWHM / FWTM: 138.0° / 164.0°</p> <p>Efficiency: 95 %</p> <p>Peak intensity: 0.3 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: SFH 4714A</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 94 %</p> <p>Peak intensity: 0.6 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>	

#### OPTICAL RESULTS (SIMULATED):

#### OSRAM

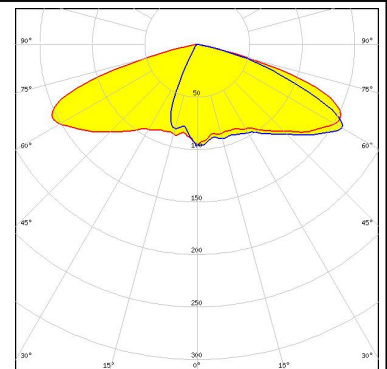
Opto Semiconductors

LED SFH 4714A  
 FWHM / FWTM 148.0° / 156.0°  
 Efficiency 96 %  
 Peak intensity 0.6 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHILIPS

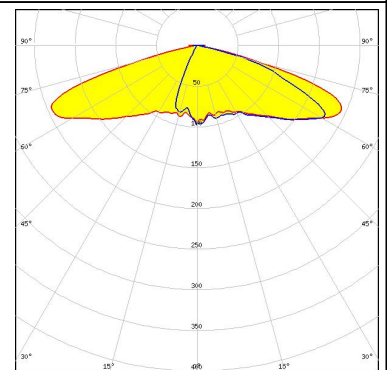
LED Fortimo FastFlex LED 2x8 DA G4+  
 FWHM / FWTM Asymmetric  
 Efficiency 43 %  
 Peak intensity 0.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:  
 C17677\_STRADA-2X2-SHD-BLK



Protective plate, glass

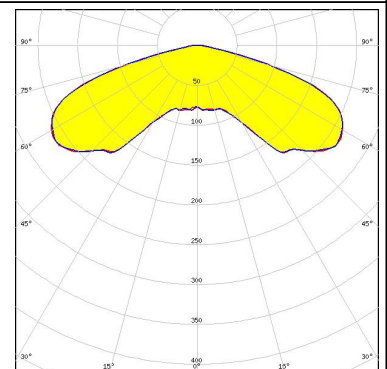
#### PHILIPS

LED Fortimo FastFlex LED 2x8 DA G4+  
 FWHM / FWTM Asymmetric  
 Efficiency 50 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:  
 C17677\_STRADA-2X2-SHD-BLK



#### PHILIPS

LED Fortimo FastFlex LED 2x8 DA HE  
 FWHM / FWTM 148.0° / 162.0 + 160.0°  
 Efficiency 97 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

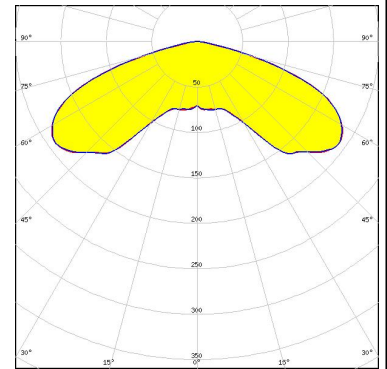


#### OPTICAL RESULTS (SIMULATED):

### PHILIPS

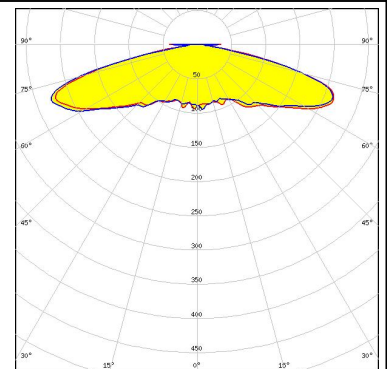
LED Fortimo FastFlex LED 2x8 DA HE  
 FWHM / FWTM 144.0° / 158.0°  
 Efficiency 79 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass



### PHILIPS

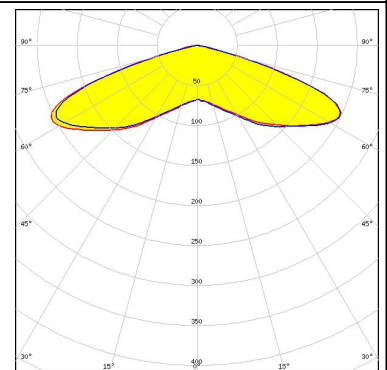
LED Fortimo FastFlex LED 2x8 DAX G4  
 FWHM / FWTM 154.0° / 165.0°  
 Efficiency 94 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



### SAMSUNG

LED HiLOM RH12 Z (LH351C)  
 FWHM / FWTM Asymmetric  
 Efficiency 79 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

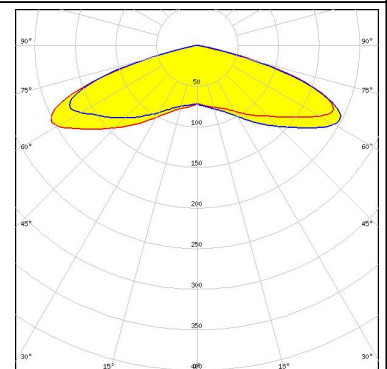
Protective plate, glass



### SAMSUNG

LED LH351B  
 FWHM / FWTM Asymmetric  
 Efficiency 78 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass

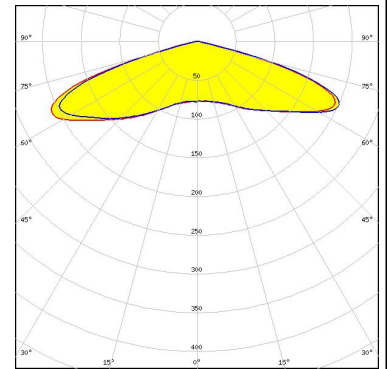


#### OPTICAL RESULTS (SIMULATED):

### SAMSUNG

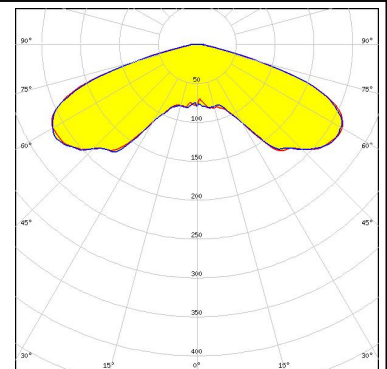
LED LH351C  
 FWHM / FWTM Asymmetric  
 Efficiency 79 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass



### SAMSUNG

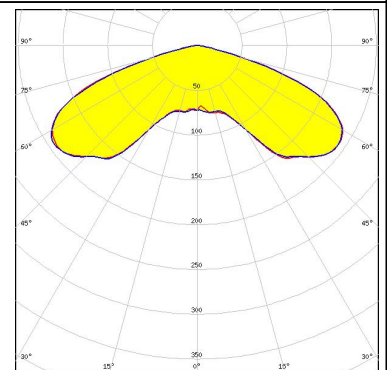
LED LH502C  
 FWHM / FWTM 146.0° / 160.0°  
 Efficiency 97 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



### SAMSUNG

LED LH502C  
 FWHM / FWTM 144.0° / 156.0°  
 Efficiency 80 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

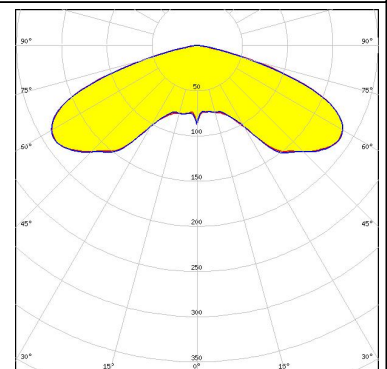
Protective plate, glass



### SAMSUNG

LED LH502D  
 FWHM / FWTM 145.0 + 144.0° / 158.0°  
 Efficiency 79 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass

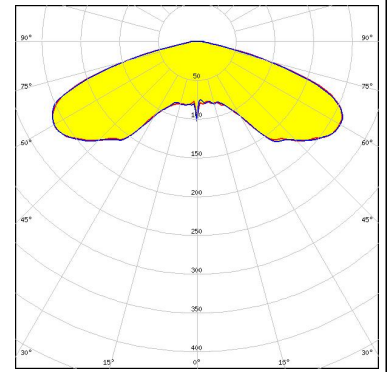




#### OPTICAL RESULTS (SIMULATED):

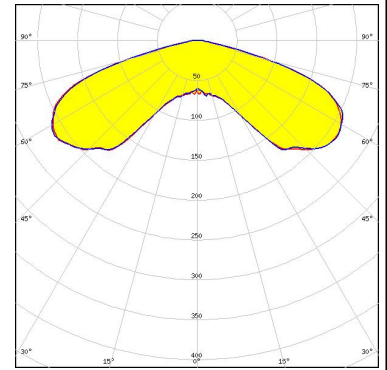
### SAMSUNG

LED LH502D  
 FWHM / FWTM 148.0° / 162.0 + 160.0°  
 Efficiency 97 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



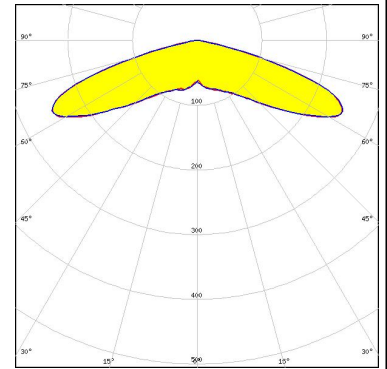
SEOUL SEMICONDUCTOR

LED MJT 5050  
 FWHM / FWTM Asymmetric  
 Efficiency 96 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



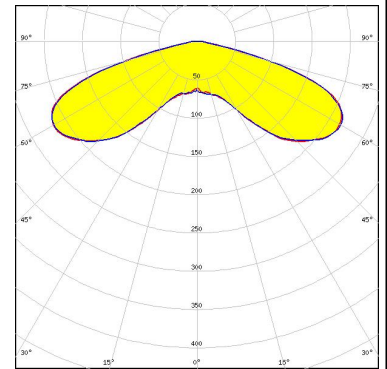
SEOUL SEMICONDUCTOR

LED SEOUL DC 3030C  
 FWHM / FWTM 148.0° / 160.0°  
 Efficiency 95 %  
 Peak intensity 0.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



SEOUL SEMICONDUCTOR

LED SEOUL DC 5050 6V  
 FWHM / FWTM 148.0° / 161.0°  
 Efficiency 96 %  
 Peak intensity 0.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OPTICAL RESULTS (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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