

## SPORT-2X2-FT6

Narrow forward throw beam with optimized cut-off for high masts

### SPECIFICATION:

Dimensions	50.0 x 50.0 mm
Height	11 mm
Fastening	screw
ROHS compliant	yes ⓘ

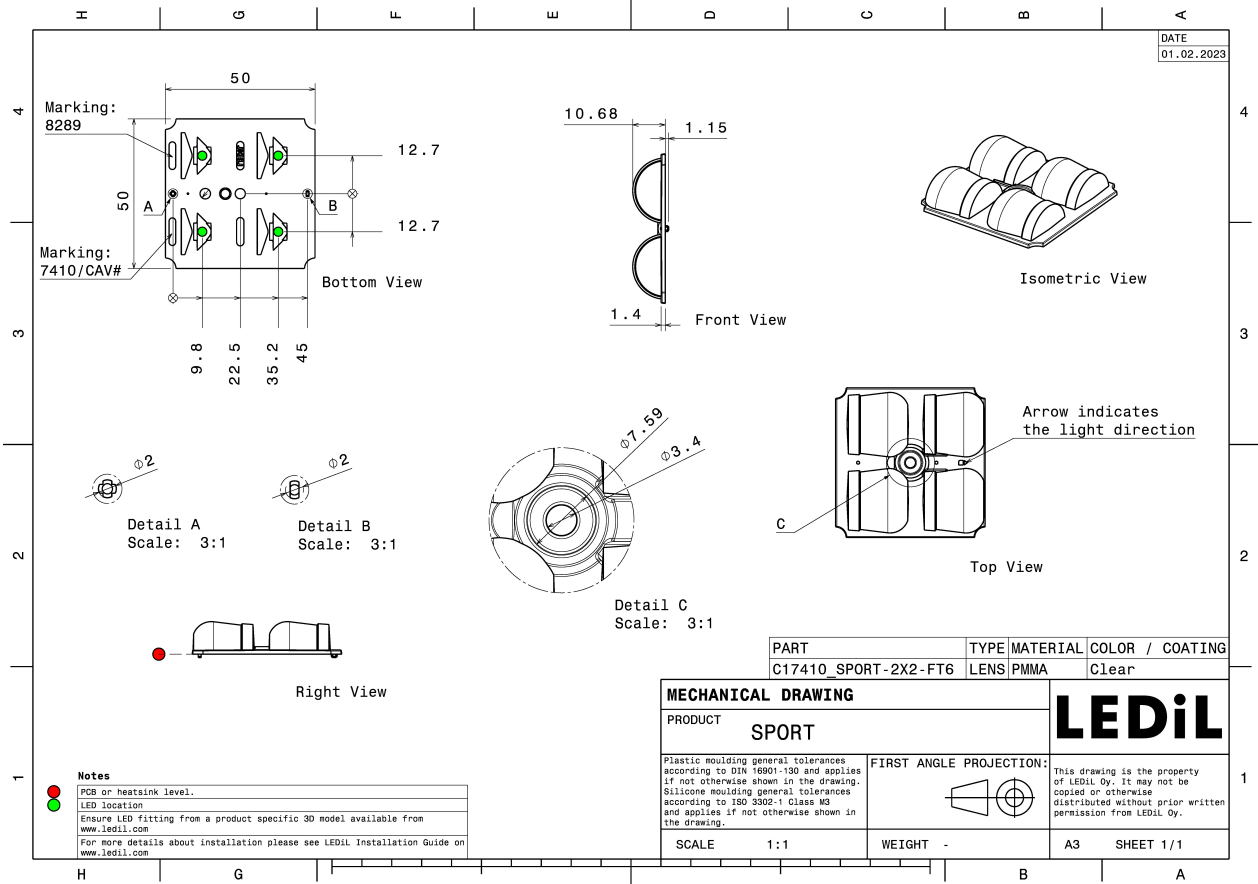


### MATERIALS:

Component	Type	Material	Colour	Finish
SPORT-2X2-FT6	Multi-lens	PMMA	clear	

### ORDERING INFORMATION:

Component	Qty in box	MOQ	MPQ	Box weight (kg)
C17410_SPORT-2X2-FT6 » Box size: 480 x 280 x 300 mm	640	128	128	8.8



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

#### OPTICAL RESULTS (MEASURED):

<p><b>LUMILEDS</b></p> <p>LED LUXEON 5050 Square LES</p> <p>FWHM / FWTM Asymmetric</p> <p>Efficiency 95 %</p> <p>Peak intensity 1 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	
<p><b>TEPCOMP group</b></p> <p>LED PassivePAQ-R-222x50.OS1.9.7K-750-5 V1.0</p> <p>FWHM / FWTM Asymmetric</p> <p>Efficiency 96 %</p> <p>Peak intensity 1.5 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	
<p><b>TEPCOMP group</b></p> <p>LED PassivePAQ-R-274x51-NI0-21K-857-5</p> <p>FWHM / FWTM Asymmetric</p> <p>Efficiency 95 %</p> <p>Peak intensity 1.2 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	

#### OPTICAL RESULTS (SIMULATED):

<p><b>CREE LED</b></p> <p>LED: J Series 5050 Round LES</p> <p>FWHM / FWTM: Asymmetric</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>CREE LED</b></p> <p>LED: J Series 5050 Round LES</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 82 %</p> <p>Peak intensity: 1 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p> <p>Protective plate, glass</p>	
<p><b>CREE LED</b></p> <p>LED: XHP35.2 HD</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 92 %</p> <p>Peak intensity: 1 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>	
<p><b>CREE LED</b></p> <p>LED: XHP35.2 HD</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 76 %</p> <p>Peak intensity: 0.8 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p> <p>Protective plate, glass</p>	


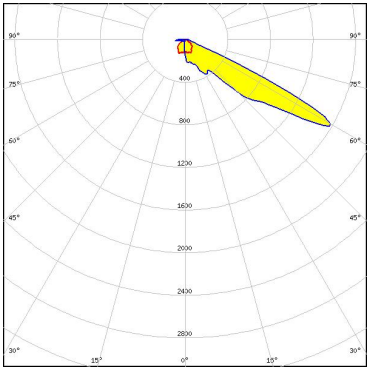

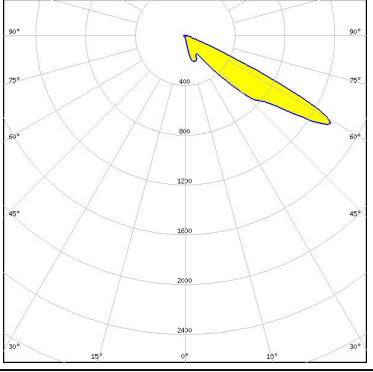

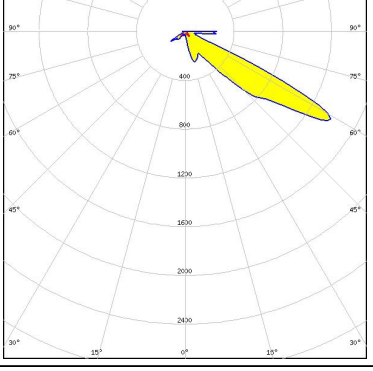

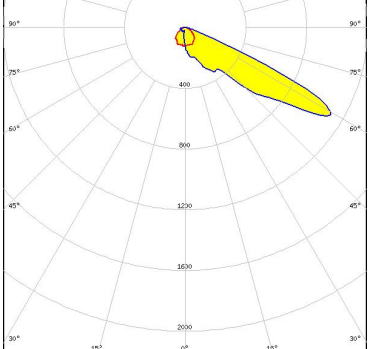
#### OPTICAL RESULTS (SIMULATED):

<p><b>CREE</b> → <b>LED</b></p> <p>LED: XHP35.2 HI            FWHM / FWTM: Asymmetric            Efficiency: 80 %            Peak intensity: 1 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p> <p>Protective plate, glass</p>	
<p><b>CREE</b> → <b>LED</b></p> <p>LED: XHP35.2 HI            FWHM / FWTM: Asymmetric            Efficiency: 95 %            Peak intensity: 1.2 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	
<p><b>CREE</b> → <b>LED</b></p> <p>LED: XHP50.3 HI            FWHM / FWTM: Asymmetric            Efficiency: 79 %            Peak intensity: 1 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p> <p>Protective plate, glass</p>	
<p><b>CREE</b> → <b>LED</b></p> <p>LED: XHP50.3 HI            FWHM / FWTM: Asymmetric            Efficiency: 94 %            Peak intensity: 1.1 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	

#### OPTICAL RESULTS (SIMULATED):

<p><b>CREE</b> → <b>LED</b></p> <p>LED XM-L3            FWHM / FWTM Asymmetric            Efficiency 93 %            Peak intensity 1.2 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>	
<p><b>CREE</b> → <b>LED</b></p> <p>LED XM-L3            FWHM / FWTM Asymmetric            Efficiency 77 %            Peak intensity 1 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>	
<p><b>CREE</b> → <b>LED</b></p> <p>LED XP-E2            FWHM / FWTM Asymmetric            Efficiency 94 %            Peak intensity 1.7 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>	
<p><b>CREE</b> → <b>LED</b></p> <p>LED XP-E2            FWHM / FWTM Asymmetric            Efficiency 79 %            Peak intensity 1.4 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p> <p>Protective plate, glass</p>	

#### OPTICAL RESULTS (SIMULATED):

<p><b>CREE</b>  <b>LED</b></p> <p>LED: XP-G2 HE            FWHM / FWTM: Asymmetric            Efficiency: 92 %            Peak intensity: 1.6 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	
<p><b>CREE</b>  <b>LED</b></p> <p>LED: XP-G2 HE            FWHM / FWTM: Asymmetric            Efficiency: 63 %            Peak intensity: 1.4 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:            C17929_SPORT-2X2-FT-SHD-BLK</p>	
<p><b>CREE</b>  <b>LED</b></p> <p>LED: XP-G2 HE            FWHM / FWTM: Asymmetric            Efficiency: 79 %            Peak intensity: 1.4 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:            C18069_SPORT-2X2-FT-SHD-WHT</p>	
<p><b>CREE</b>  <b>LED</b></p> <p>LED: XP-G3            FWHM / FWTM: Asymmetric            Efficiency: 77 %            Peak intensity: 1.1 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:            Protective plate, glass</p>	

#### OPTICAL RESULTS (SIMULATED):

<p><b>CREE</b> → <b>LED</b></p> <p>LED: XP-L HD            FWHM / FWTM: Asymmetric            Efficiency: 79 %            Peak intensity: 1 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:            Protective plate, glass</p>	
<p><b>CREE</b> → <b>LED</b></p> <p>LED: XP-L HD            FWHM / FWTM: Asymmetric            Efficiency: 94 %            Peak intensity: 1.2 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	
<p><b>CREE</b> → <b>LED</b></p> <p>LED: XP-L HI            FWHM / FWTM: Asymmetric            Efficiency: 95 %            Peak intensity: 1.5 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	
<p><b>CREE</b> → <b>LED</b></p> <p>LED: XP-L HI            FWHM / FWTM: Asymmetric            Efficiency: 93 %            Peak intensity: 1.2 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	



#### OPTICAL RESULTS (SIMULATED):

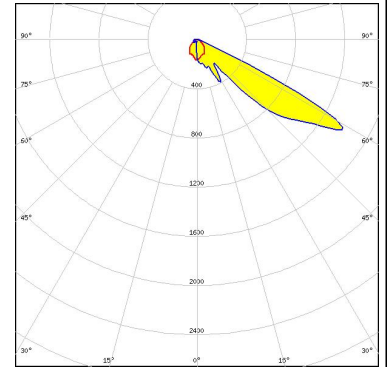
<p><b>CREE → LED</b></p> <p>LED: XP-L HI            FWHM / FWTM: Asymmetric            Efficiency: 80 %            Peak intensity: 1.1 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p> <p>Protective plate, glass</p>	
<p><b>CREE → LED</b></p> <p>LED: XP-L HI            FWHM / FWTM: Asymmetric            Efficiency: 80 %            Peak intensity: 1.2 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: Asymmetric            Efficiency: 76 %            Peak intensity: 0.9 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: Asymmetric            Efficiency: 91 %            Peak intensity: 1.1 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	

#### OPTICAL RESULTS (SIMULATED):

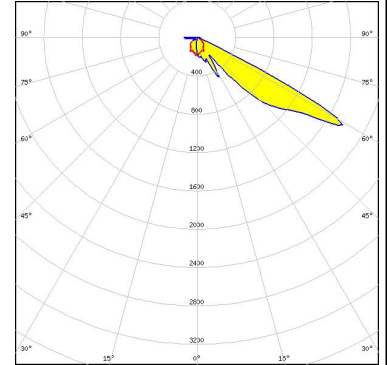


LED XP-P  
 FWHM / FWTM Asymmetric  
 Efficiency 81 %  
 Peak intensity 1.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

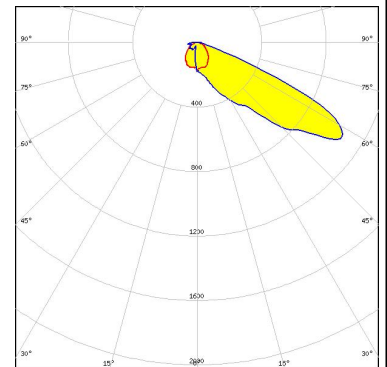
Protective plate, glass



LED XP-P  
 FWHM / FWTM Asymmetric  
 Efficiency 95 %  
 Peak intensity 1.8 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

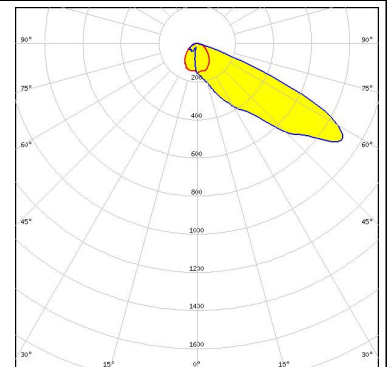


LED LUXEON 5050 HE  
 FWHM / FWTM Asymmetric  
 Efficiency 92 %  
 Peak intensity 1.1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED LUXEON 5050 HE  
 FWHM / FWTM Asymmetric  
 Efficiency 78 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass

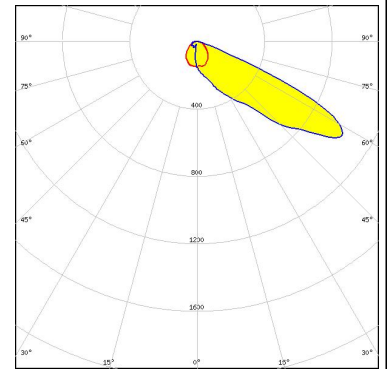


#### OPTICAL RESULTS (SIMULATED):

##### LUMILEDS

LED LUXEON 5050 Round LES  
 FWHM / FWTM Asymmetric  
 Efficiency 80 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

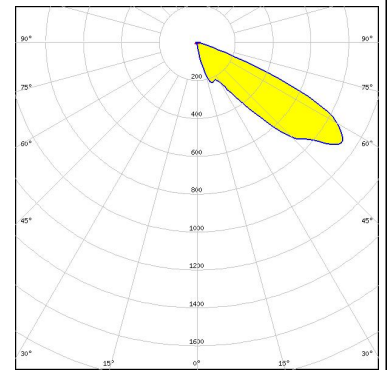
Protective plate, glass



##### LUMILEDS

LED LUXEON 5050 Square LES  
 FWHM / FWTM Asymmetric  
 Efficiency 59 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

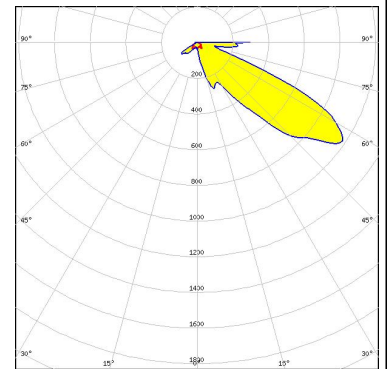
C17929\_SPORT-2X2-FT-SHD-BLK



##### LUMILEDS

LED LUXEON 5050 Square LES  
 FWHM / FWTM Asymmetric  
 Efficiency 76 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

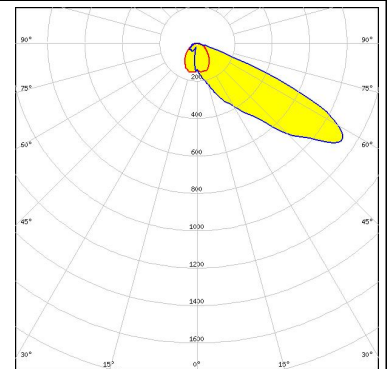
C18069\_SPORT-2X2-FT-SHD-WHT



##### LUMILEDS

LED LUXEON 5050 Square LES  
 FWHM / FWTM Asymmetric  
 Efficiency 80 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass



#### OPTICAL RESULTS (SIMULATED):

<p><b>LUMILEDS</b></p> <p>LED: LUXEON 5050 Square LES</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 81 %</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>Protective plate, glass</p>	
<p><b>LUMILEDS</b></p> <p>LED: LUXEON HL2X</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 92 %</p> <p>Peak intensity: 1.4 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>	
<p><b>LUMILEDS</b></p> <p>LED: LUXEON HL2X-D</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 95 %</p> <p>Peak intensity: 1.3 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>	
<p><b>LUMILEDS</b></p> <p>LED: LUXEON HL2X-D</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 80 %</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>Protective plate, glass</p>	

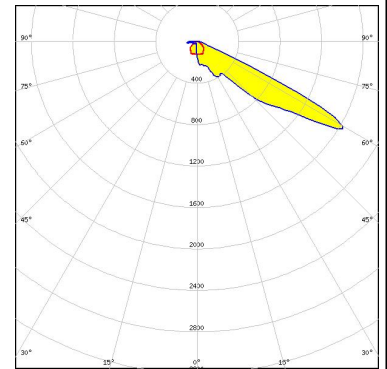
#### OPTICAL RESULTS (SIMULATED):

<p><b>LUMILEDS</b></p> <p>LED: LUXEON HL2X-P</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 93 %</p> <p>Peak intensity: 1.3 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>	
<p><b>LUMILEDS</b></p> <p>LED: LUXEON TX</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 91 %</p> <p>Peak intensity: 1.5 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 XR-HL2X (L2H2-xxxxxxxMLU010)</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 95 %</p> <p>Peak intensity: 1.3 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>	
<p><b>LUMILEDS</b></p> <p>LED: LUXEON XR-HL2X (L2H2-xxxxxxxMLU010)</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 80 %</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 style="background-color: #ADD8E6; padding: 2px;">Protective plate, glass</p>	

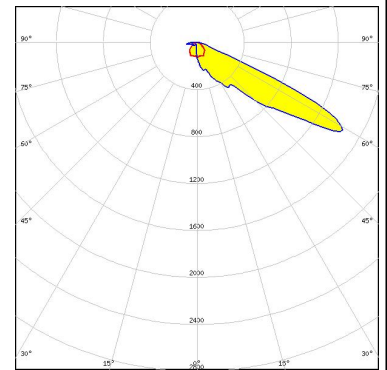
#### OPTICAL RESULTS (SIMULATED):



LED SFT-70X-WCS  
 FWHM / FWTM 106.0 + 18.0° / 180.0 + 66.0°  
 Efficiency 95 %  
 Peak intensity 1.6 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

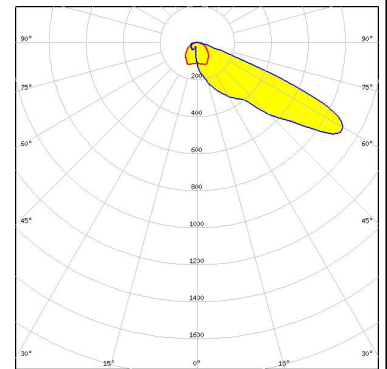


LED SFT-70X-WCS  
 FWHM / FWTM 106.0 + 20.0° / 156.0 + 67.0°  
 Efficiency 95 %  
 Peak intensity 1.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

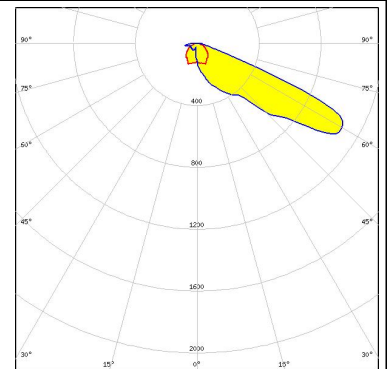


LED SST-70X-WCS  
 FWHM / FWTM Asymmetric  
 Efficiency 79 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass



LED SST-70X-WCS  
 FWHM / FWTM Asymmetric  
 Efficiency 94 %  
 Peak intensity 1.1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



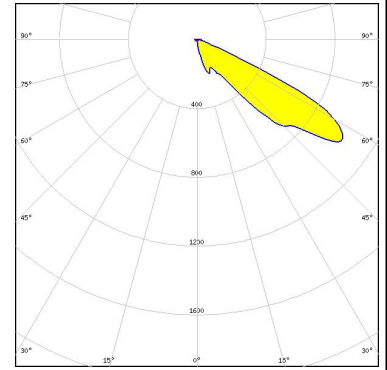
#### OPTICAL RESULTS (SIMULATED):

<p><b>NICHIA</b></p> <p>LED: NF2x757G            FWHM / FWTM: Asymmetric            Efficiency: 81 %            Peak intensity: 1.3 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p> <p>Protective plate, glass</p>	
<p><b>NICHIA</b></p> <p>LED: NFSx757G            FWHM / FWTM: Asymmetric            Efficiency: 81 %            Peak intensity: 1.3 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p> <p>Protective plate, glass</p>	
<p><b>NICHIA</b></p> <p>LED: NV4WB35AM            FWHM / FWTM: Asymmetric            Efficiency: 79 %            Peak intensity: 1 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p> <p>Protective plate, glass</p>	
<p><b>NICHIA</b></p> <p>LED: NV4WB35AM            FWHM / FWTM: Asymmetric            Efficiency: 92 %            Peak intensity: 1.2 cd/lm            LEDs/each optic: 4            Light colour: White            Required components:</p>	

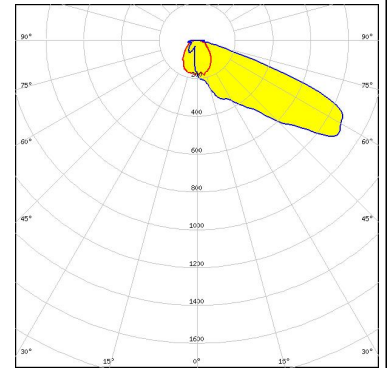
#### OPTICAL RESULTS (SIMULATED):



LED NV4WB35AM  
 FWHM / FWTM Asymmetric  
 Efficiency 58 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:  
 C17929\_SPORT-2X2-FT-SHD-BLK

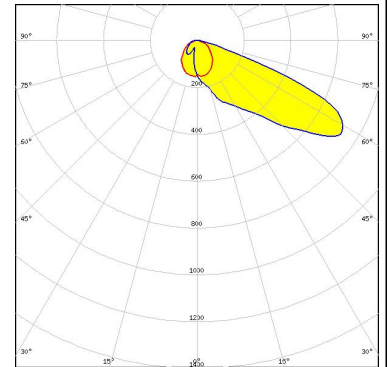


LED NV4x144A  
 FWHM / FWTM Asymmetric  
 Efficiency 91 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

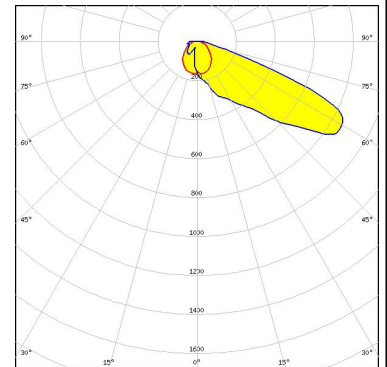


LED NV4x144A  
 FWHM / FWTM Asymmetric  
 Efficiency 75 %  
 Peak intensity 0.7 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass

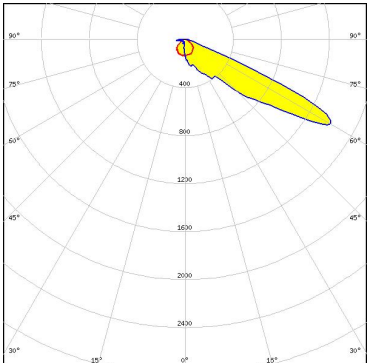
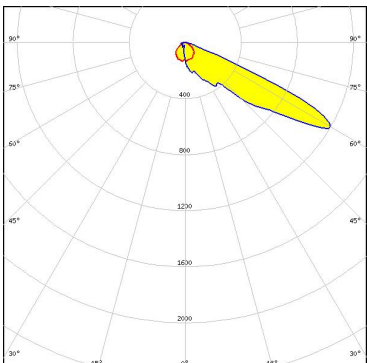
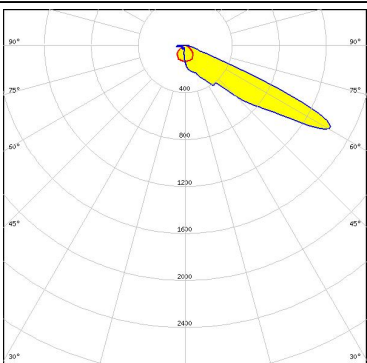
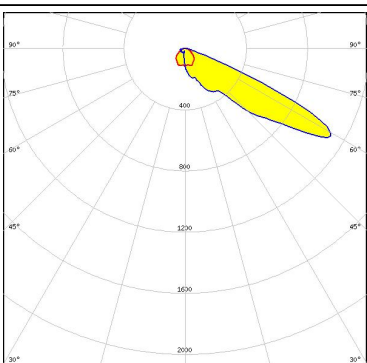


LED NV4x144A  
 FWHM / FWTM Asymmetric  
 Efficiency 90 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:





#### OPTICAL RESULTS (SIMULATED):

<p><b>NICHIA</b></p> <p>LED: NVSW219F            FWHM / FWTM: Asymmetric            Efficiency: 92 %            Peak intensity: 1.4 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	
<p><b>NICHIA</b></p> <p>LED: NVSW219F            FWHM / FWTM: Asymmetric            Efficiency: 80 %            Peak intensity: 1.2 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p> <p>Protective plate, glass</p>	
<p><b>NICHIA</b></p> <p>LED: NVSW219F            FWHM / FWTM: Asymmetric            Efficiency: 93 %            Peak intensity: 1.4 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	
<p><b>NICHIA</b></p> <p>LED: NVSW3x9A            FWHM / FWTM: Asymmetric            Efficiency: 79 %            Peak intensity: 1.1 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p> <p>Protective plate, glass</p>	

#### OPTICAL RESULTS (SIMULATED):

<p><b>NICHIA</b></p> <p>LED NVSxE21A            FWHM / FWTM Asymmetric            Efficiency 79 %            Peak intensity 1.2 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p> <p>Protective plate, glass</p>	
<p><b>NICHIA</b></p> <p>LED NVSxE21A            FWHM / FWTM Asymmetric            Efficiency 93 %            Peak intensity 1.5 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>	
<p><b>NICHIA</b></p> <p>LED NVSxx19B/NVSxx19C            FWHM / FWTM Asymmetric            Efficiency 93 %            Peak intensity 1.4 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>	
<p><b>NICHIA</b></p> <p>LED NVSxx19B/NVSxx19C            FWHM / FWTM Asymmetric            Efficiency 80 %            Peak intensity 1.2 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p> <p>Protective plate, glass</p>	

#### OPTICAL RESULTS (SIMULATED):

<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED: Duris S8            FWHM / FWTM: Asymmetric            Efficiency: 58 %            Peak intensity: 0.8 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:            C17929_SPORT-2X2-FT-SHD-BLK</p>	
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED: Duris S8            FWHM / FWTM: Asymmetric            Efficiency: 92 %            Peak intensity: 1 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:</p>	
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED: Duris S8            FWHM / FWTM: Asymmetric            Efficiency: 75 %            Peak intensity: 0.9 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:            C18069_SPORT-2X2-FT-SHD-WHT</p>	
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED: Duris S8            FWHM / FWTM: Asymmetric            Efficiency: 81 %            Peak intensity: 0.9 cd/lm            LEDs/each optic: 1            Light colour: White            Required components:            Protective plate, glass</p>	

#### OPTICAL RESULTS (SIMULATED):

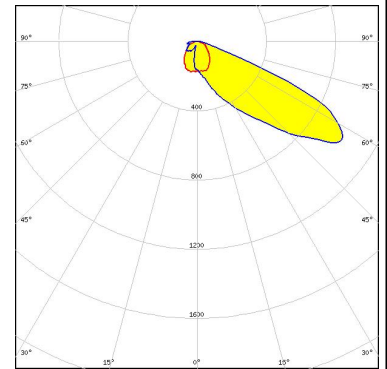
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED                    OSCONIQ P 3737 (2W version)</p> <p>FWHM / FWTM        Asymmetric</p> <p>Efficiency             81 %</p> <p>Peak intensity        1.3 cd/lm</p> <p>LEDs/each optic     1</p> <p>Light colour          White</p> <p>Required components:</p> <p style="background-color: #ADD8E6; padding: 2px; display: inline-block;">Protective plate, glass</p>	
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED                    OSCONIQ P 3737 (3W version)</p> <p>FWHM / FWTM        Asymmetric</p> <p>Efficiency             80 %</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 style="background-color: #ADD8E6; padding: 2px; display: inline-block;">Protective plate, glass</p>	
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED                    OSCONIQ P 3737 Flat</p> <p>FWHM / FWTM        Asymmetric</p> <p>Efficiency             95 %</p> <p>Peak intensity        1.4 cd/lm</p> <p>LEDs/each optic     1</p> <p>Light colour          White</p> <p>Required components:</p>	
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED                    OSCONIQ P 3737 Flat</p> <p>FWHM / FWTM        Asymmetric</p> <p>Efficiency             84 %</p> <p>Peak intensity        1.2 cd/lm</p> <p>LEDs/each optic     1</p> <p>Light colour          White</p> <p>Required components:</p> <p style="background-color: #ADD8E6; padding: 2px; display: inline-block;">Protective plate, glass</p>	

#### OPTICAL RESULTS (SIMULATED):

##### OSRAM

Opto Semiconductors

LED OSCONIQ S 5050  
 FWHM / FWTM Asymmetric  
 Efficiency 94 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

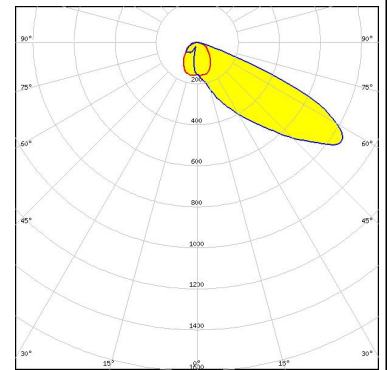


##### OSRAM

Opto Semiconductors

LED OSCONIQ S 5050  
 FWHM / FWTM Asymmetric  
 Efficiency 80 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass

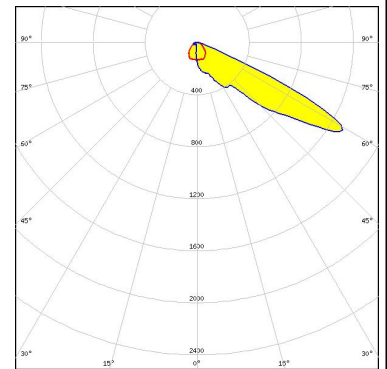


##### OSRAM

Opto Semiconductors

LED OSLOM Square CSSRM2/CSSRM3  
 FWHM / FWTM Asymmetric  
 Efficiency 85 %  
 Peak intensity 1.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

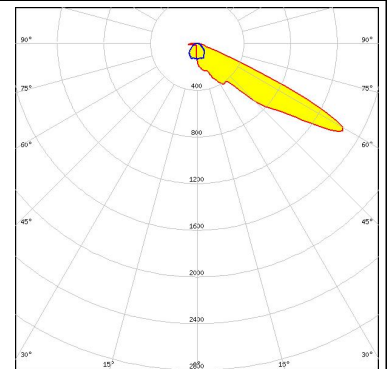
Protective plate, glass



##### OSRAM

Opto Semiconductors

LED OSLOM Square CSSRM2/CSSRM3  
 FWHM / FWTM Asymmetric  
 Efficiency 91 %  
 Peak intensity 1.5 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OPTICAL RESULTS (SIMULATED):

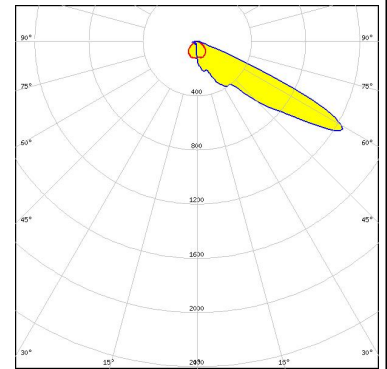
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED: OSLOM Square Flat</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 94 %</p> <p>Peak intensity: 1.6 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>	
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED: OSLOM Square Flat</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 84 %</p> <p>Peak intensity: 1.4 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p> <p style="background-color: #ADD8E6; padding: 2px;">Protective plate, glass</p>	
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED: OSTAR Projection Compact (KW.CSLNM1.TG)</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 95 %</p> <p>Peak intensity: 1.6 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>	
<p><b>SAMSUNG</b></p> <p>LED: LH231B</p> <p>FWHM / FWTM: Asymmetric</p> <p>Efficiency: 93 %</p> <p>Peak intensity: 1.4 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>	

#### OPTICAL RESULTS (SIMULATED):

### SAMSUNG

LED LH351B  
 FWHM / FWTM Asymmetric  
 Efficiency 81 %  
 Peak intensity 1.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

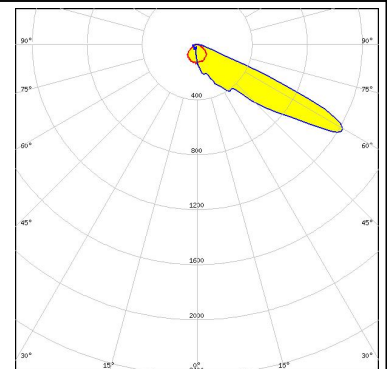
Protective plate, glass



### SAMSUNG

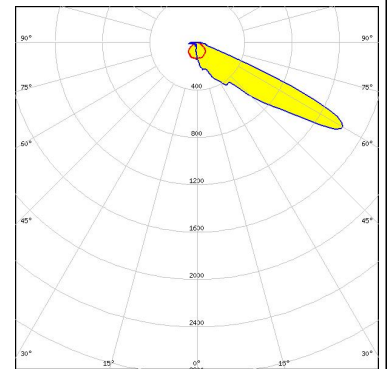
LED LH351C  
 FWHM / FWTM Asymmetric  
 Efficiency 82 %  
 Peak intensity 1.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass



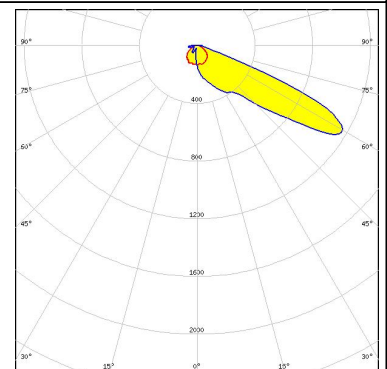
### SAMSUNG

LED LH351C  
 FWHM / FWTM Asymmetric  
 Efficiency 93 %  
 Peak intensity 1.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



### SAMSUNG

LED LH351D  
 FWHM / FWTM Asymmetric  
 Efficiency 92 %  
 Peak intensity 1.2 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

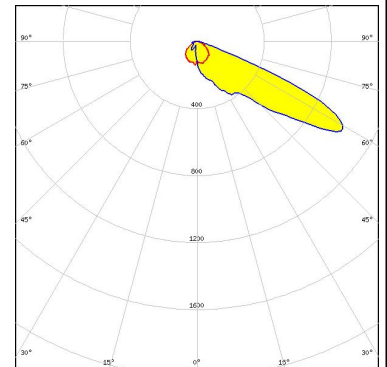


#### OPTICAL RESULTS (SIMULATED):

### SAMSUNG

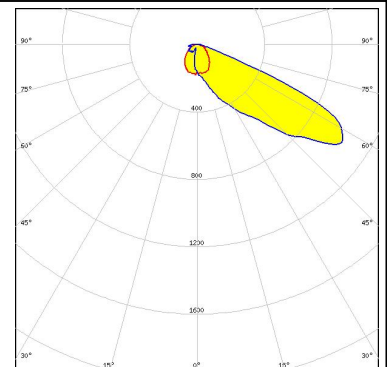
LED LH351D  
 FWHM / FWTM Asymmetric  
 Efficiency 80 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass



### SAMSUNG

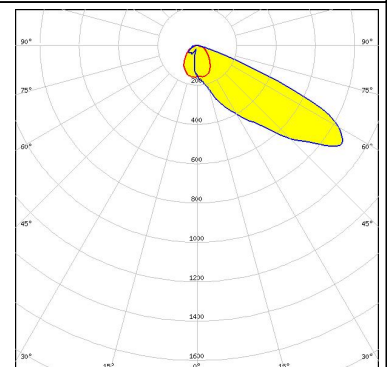
LED LH502C  
 FWHM / FWTM Asymmetric  
 Efficiency 92 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



### SAMSUNG

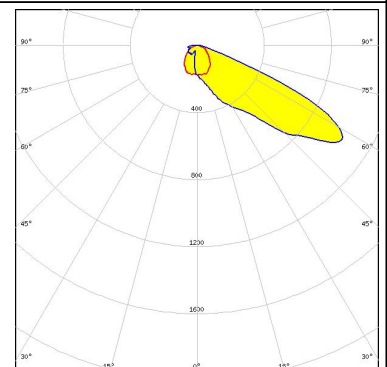
LED LH502C  
 FWHM / FWTM Asymmetric  
 Efficiency 79 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass



### SAMSUNG

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



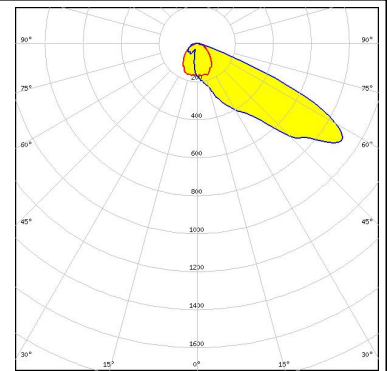


#### OPTICAL RESULTS (SIMULATED):

### SAMSUNG

LED LH508A Plus  
 FWHM / FWTM Asymmetric  
 Efficiency 82 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

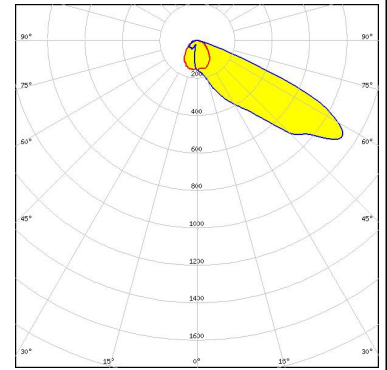
Protective plate, glass



SEOUL SEMICONDUCTOR

LED MJT 5050  
 FWHM / FWTM Asymmetric  
 Efficiency 79 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

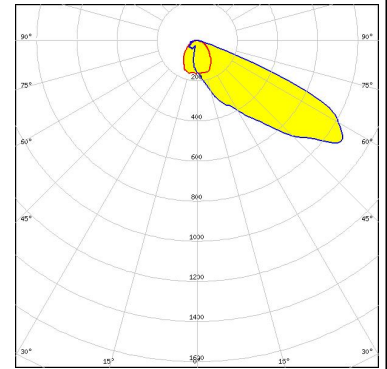
Protective plate, glass



SEOUL SEMICONDUCTOR

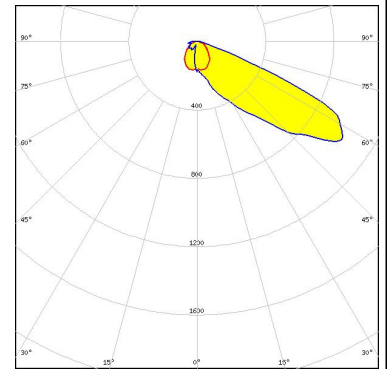
LED SEOUL DC 5050 6V  
 FWHM / FWTM Asymmetric  
 Efficiency 80 %  
 Peak intensity 0.9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:

Protective plate, glass



SEOUL SEMICONDUCTOR

LED SEOUL DC 5050 6V  
 FWHM / FWTM Asymmetric  
 Efficiency 92 %  
 Peak intensity 1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### OPTICAL RESULTS (SIMULATED):

<p><b>SEOUL SEMICONDUCTOR</b></p> <p>LED: Z5M3            FWHM / FWTM: Asymmetric            Efficiency: 79 %            Peak intensity: 1.1 cd/lm            LEDs/each optic: 1            Light colour: White</p> <p>Required components:</p> <p>Protective plate, glass</p>	
<p><b>SEOUL SEMICONDUCTOR</b></p> <p>LED: Z5M4            FWHM / FWTM: Asymmetric            Efficiency: 82 %            Peak intensity: 1.3 cd/lm            LEDs/each optic: 1            Light colour: White</p> <p>Required components:</p> <p>Protective plate, glass</p>	
<p><b>SEOUL SEMICONDUCTOR</b></p> <p>LED: Z8Y22            FWHM / FWTM: Asymmetric            Efficiency: 91 %            Peak intensity: 1.2 cd/lm            LEDs/each optic: 1            Light colour: White</p> <p>Required components:</p>	
<p><b>SEOUL SEMICONDUCTOR</b></p> <p>LED: Z8Y50P            FWHM / FWTM: Asymmetric            Efficiency: 78 %            Peak intensity: 0.7 cd/lm            LEDs/each optic: 1            Light colour: White</p> <p>Required components:</p> <p>Protective plate, glass</p>	

#### 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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