

## TINA2-D

~16° diffused spot beam. Assembly with holder, installation tape and location pins.

### SPECIFICATION:

Dimensions	Ø 16.0 mm
Height	9.5 mm
Fastening	tape, pin
ROHS compliant	yes ⓘ

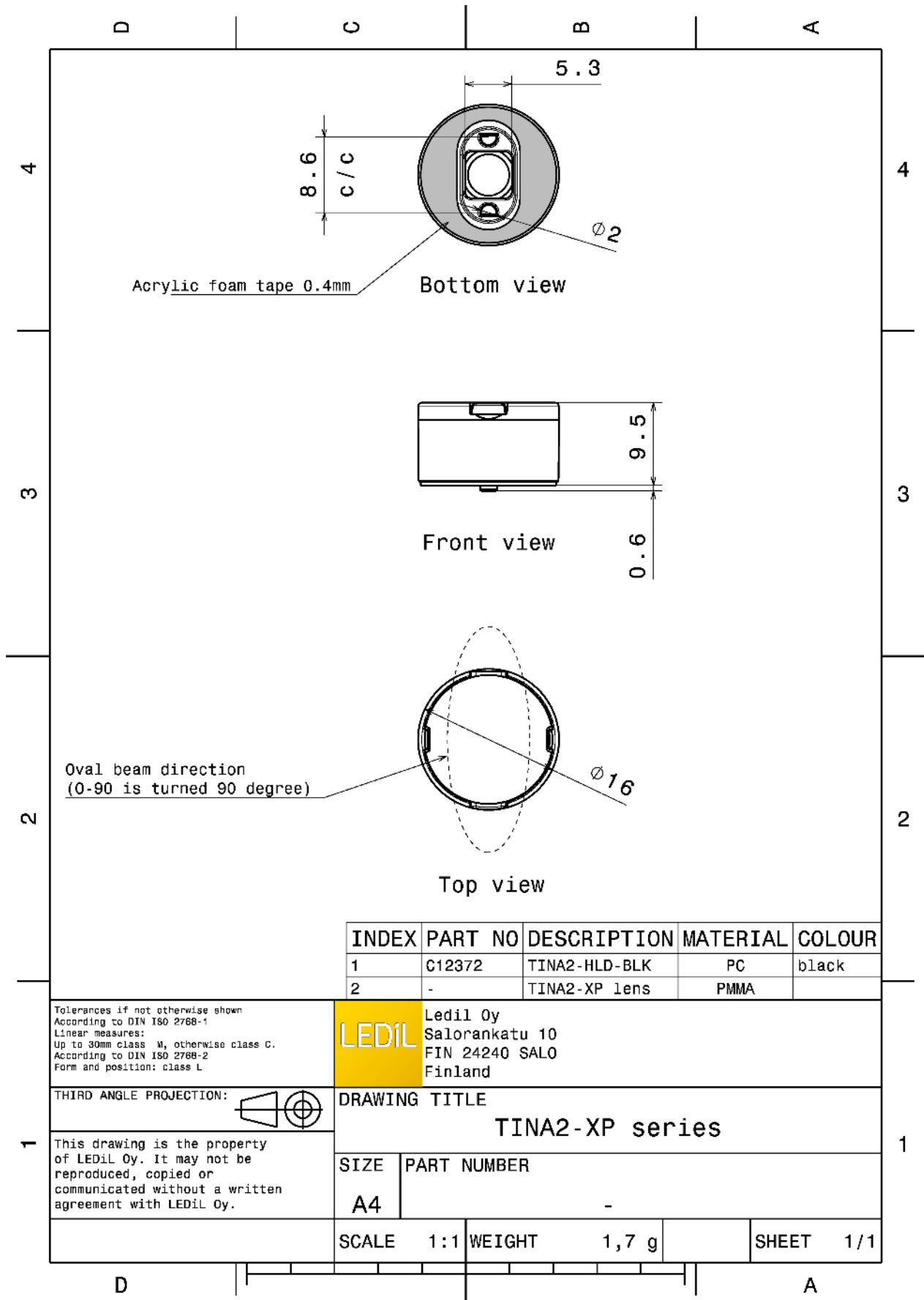


### MATERIALS:

Component	Type	Material	Colour	Finish
TINA2-XP-D	Single lens	PMMA	clear	
TINA2-HLD-BLK	Holder	PC	black	
TINA-TAPE3	Tape	Acrylic foam	black	

### ORDERING INFORMATION:

Component		Qty in box	MOQ	MPQ	Box weight (kg)
CA12375_TINA2-D	Single lens	4140	230	230	8.1
» Box size: 451 x 241 x 298 mm					



INDEX	PART NO	DESCRIPTION	MATERIAL	COLOUR
1	C12372	TINA2-HLD-BLK	PC	black
2	-	TINA2-XP lens	PMMA	

Tolerances if not otherwise shown  
 According to DIN ISO 2768-1  
 Linear measures:  
 Up to 30mm class M, otherwise class C.  
 According to DIN ISO 2768-2  
 Form and position: class L

**LEDiL** Ledil Oy  
 Salorankatu 10  
 FIN 24240 SALO  
 Finland

THIRD ANGLE PROJECTION:

DRAWING TITLE  
**TINA2-XP series**

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SIZE	PART NUMBER
A4	-

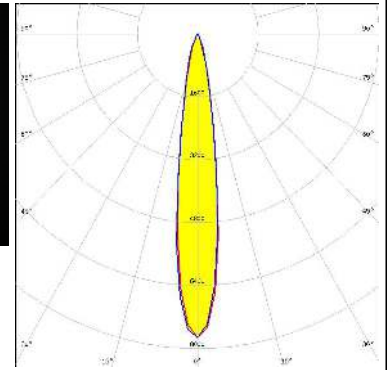
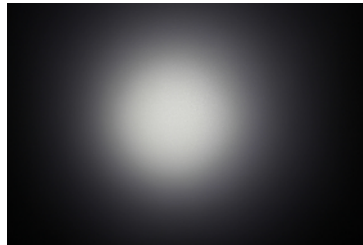
SCALE	1:1	WEIGHT	1,7 g	SHEET	1/1
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See also our general installation guide: [www.ledil.com/installation\\_guide](http://www.ledil.com/installation_guide)

### OPTICAL RESULTS (MEASURED):

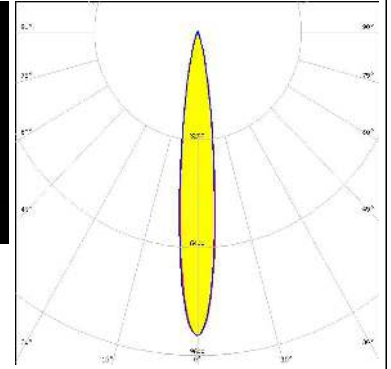
#### CREE LED

LED XB-H  
 FWHM / FWTM 16.0° / 34.0°  
 Efficiency 86 %  
 Peak intensity 7.7 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### CREE LED

LED XD16  
 FWHM / FWTM 14.0° / 29.0°  
 Efficiency 82 %  
 Peak intensity 9 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



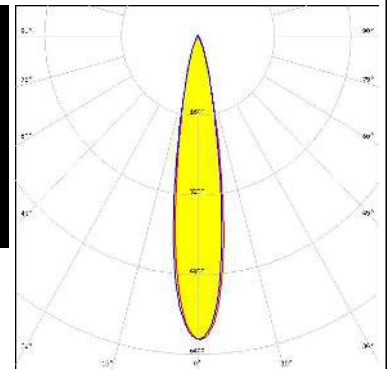
#### LUMILEDS

LED LUXEON Z ES  
 FWHM / FWTM 12.0° / 27.0°  
 Efficiency %  
 LEDs/each optic 1  
 Light colour White  
 Required components:


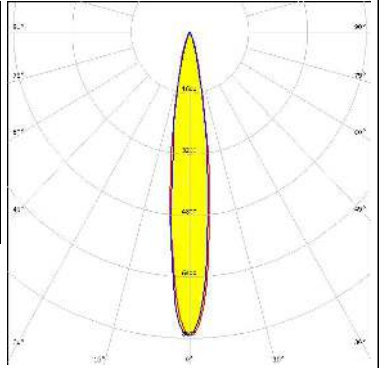
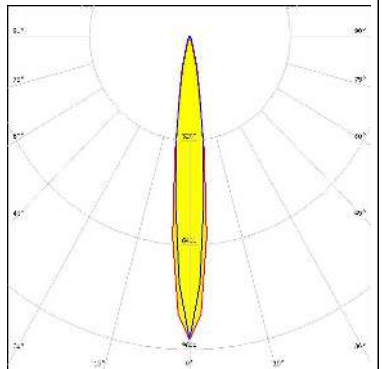


#### NICHIA

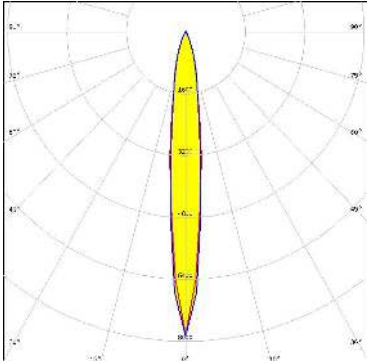


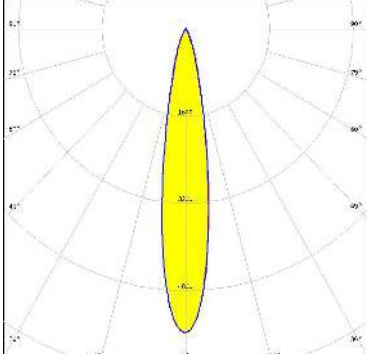
LED NVSxx19B/NVSxx19C  
 FWHM / FWTM 18.0° / 36.0°  
 Efficiency 87 %  
 Peak intensity 6.1 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:




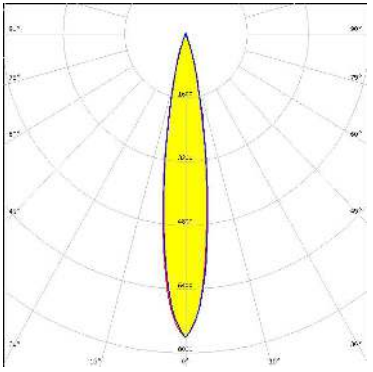

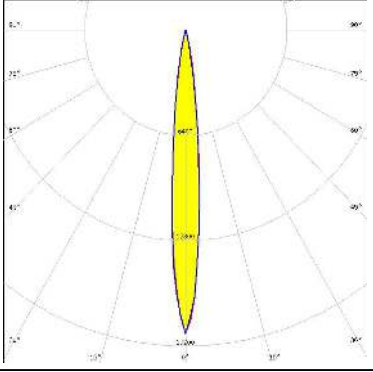

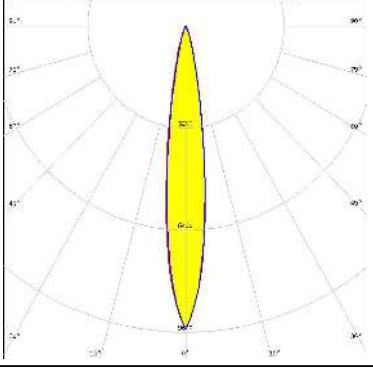

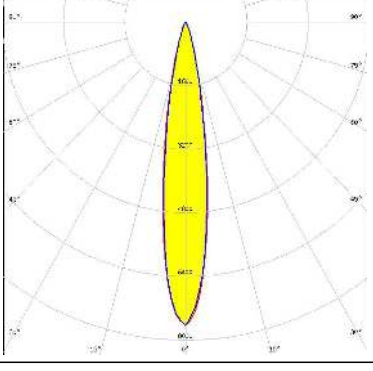
#### OPTICAL RESULTS (MEASURED):

<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSLON Square EC</p> <p>FWHM / FWTM 16.0° / 33.0°</p> <p>Efficiency 82 %</p> <p>Peak intensity 7.9 cd/m</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSLON Square EC</p> <p>FWHM / FWTM 16.0° / 34.0°</p> <p>Efficiency 87 %</p> <p>Peak intensity 6.2 cd/m</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSLON Square PC</p> <p>FWHM / FWTM 13.0° / 32.0°</p> <p>Efficiency 87 %</p> <p>Peak intensity 6.3 cd/m</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSLON SSL 150</p> <p>FWHM / FWTM 14.0° / 28.0°</p> <p>Efficiency 89 %</p> <p>Peak intensity 9.3 cd/m</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		

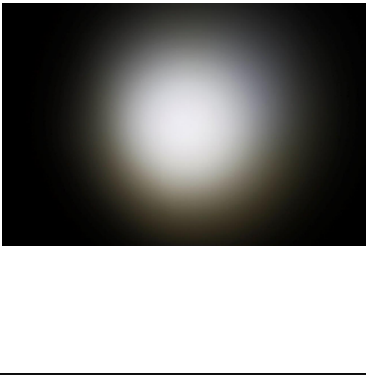
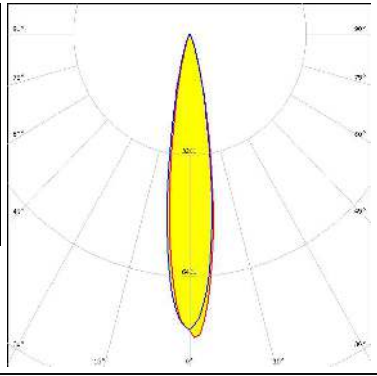
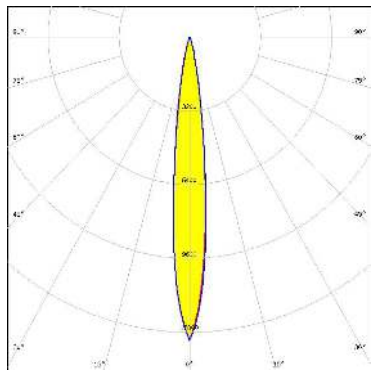
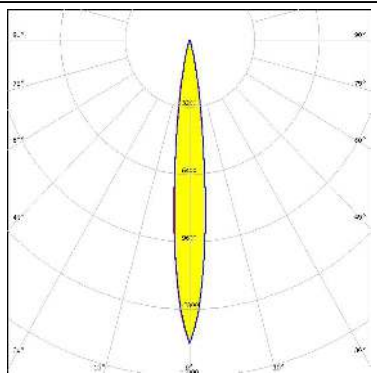

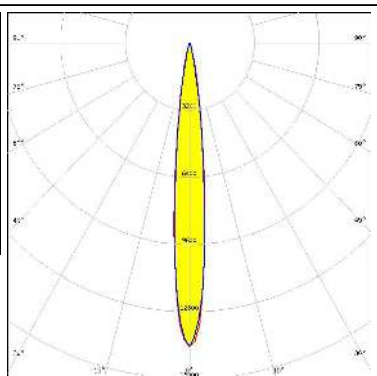
### OPTICAL RESULTS (MEASURED):

<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSLON SSL 80</p> <p>FWHM / FWTM 12.0° / 35.0°</p> <p>Efficiency 87 %</p> <p>Peak intensity 7.9 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 4170S</p> <p>FWHM / FWTM 8.0° / 20.0°</p> <p>Efficiency %</p> <p>LEDs/each optic 1</p> <p>Light colour IR</p> <p>Required components:</p>	
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED SFH 4180S</p> <p>FWHM / FWTM 8.0° / 20.0°</p> <p>Efficiency %</p> <p>LEDs/each optic 1</p> <p>Light colour IR</p> <p>Required components:</p>	
<p> SEOUL SEMICONDUCTOR</p> <p>LED Z5M3</p> <p>FWHM / FWTM 18.0° / 38.0°</p> <p>Efficiency 86 %</p> <p>Peak intensity 5.6 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>	 

### OPTICAL RESULTS (SIMULATED):

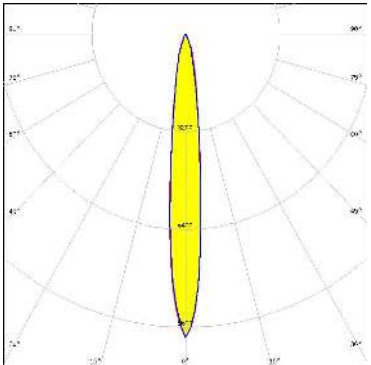
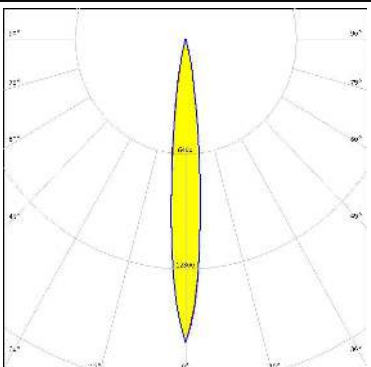
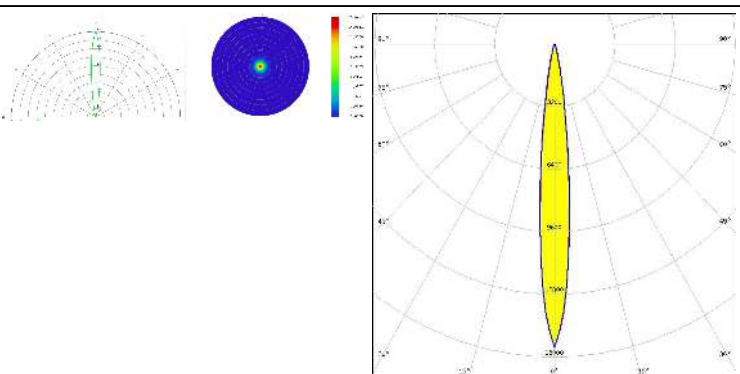
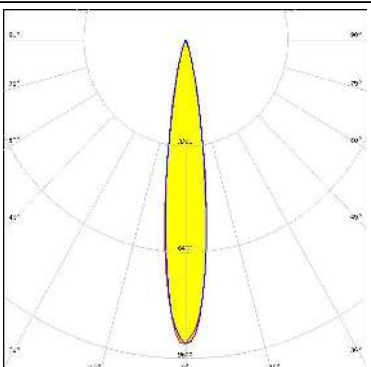
	<p>LED XB-D FWHM / FWTM 18.0° / 34.0° Efficiency 88 % Peak intensity 7.6 cd/lm LEDs/each optic 1 Light colour White Required components:</p>	
	<p>LED XQ-E HI FWHM / FWTM 11.0° / 23.0° Efficiency 91 % Peak intensity 18.5 cd/lm LEDs/each optic 1 Light colour White Required components:</p>	
	<p>LED LUXEON 2835 Line FWHM / FWTM 15.0° / 31.0° Efficiency 96 % Peak intensity 9.5 cd/lm LEDs/each optic 1 Light colour White Required components:</p>	
 <p>Osram Semiconductors</p>	<p>LED Duris E 2835 FWHM / FWTM 17.0° / 34.0° Efficiency 92 % Peak intensity 7.6 cd/lm LEDs/each optic 1 Light colour White Required components:</p>	

#### OPTICAL RESULTS (SIMULATED):

<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED Duris S5 (2 chip)</p> <p>FWHM / FWTM 17.0° / 33.0°</p> <p>Efficiency 92 %</p> <p>Peak intensity 8 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSCONIQ P 3030</p> <p>FWHM / FWTM 12.0° / 26.0°</p> <p>Efficiency 91 %</p> <p>Peak intensity 13.2 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour Blue</p> <p>Required components:</p>		
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSLON Signal</p> <p>FWHM / FWTM 12.0° / 26.0°</p> <p>Efficiency 92 %</p> <p>Peak intensity 14.4 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour Blue</p> <p>Required components:</p>		
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSLON Square Flat</p> <p>FWHM / FWTM 12.0° / 24.0°</p> <p>Efficiency 91 %</p> <p>Peak intensity 14.5 cd/lm</p> <p>LEDs/each optic 1</p> <p>Light colour White</p> <p>Required components:</p>		



### OPTICAL RESULTS (SIMULATED):

<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED: OSLO<sup>®</sup> SSL 80</p> <p>FWHM / FWTM: 12.0° / 31.0°</p> <p>Efficiency: 90 %</p> <p>Peak intensity: 9.9 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: Far Red</p> <p>Required components:</p>	
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED: OSTAR Projection Compact (KW.CSLNM1.TG)</p> <p>FWHM / FWTM: 12.0° / 24.0°</p> <p>Efficiency: 92 %</p> <p>Peak intensity: 16.9 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 4770S</p> <p>FWHM / FWTM: 12.0° / 22.0°</p> <p>Efficiency: 92 %</p> <p>LEDs/each optic: 1</p> <p>Light colour: IR</p> <p>Required components:</p>	
<p><b>SAMSUNG</b></p> <p>LED: LH181B</p> <p>FWHM / FWTM: 16.0° / 30.5°</p> <p>Efficiency: 92 %</p> <p>Peak intensity: 9.2 cd/lm</p> <p>LEDs/each optic: 1</p> <p>Light colour: White</p> <p>Required components:</p>	



### 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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