

## CRYSTAL-MINE

~4.9° spot beam especially designed for mining headlamps. Assembly with holder.

### TECHNICAL SPECIFICATIONS:

Dimensions	Ø 50.3 mm
Height	28.7 mm
Fastening	pin, screw
ROHS compliant	yes ⓘ

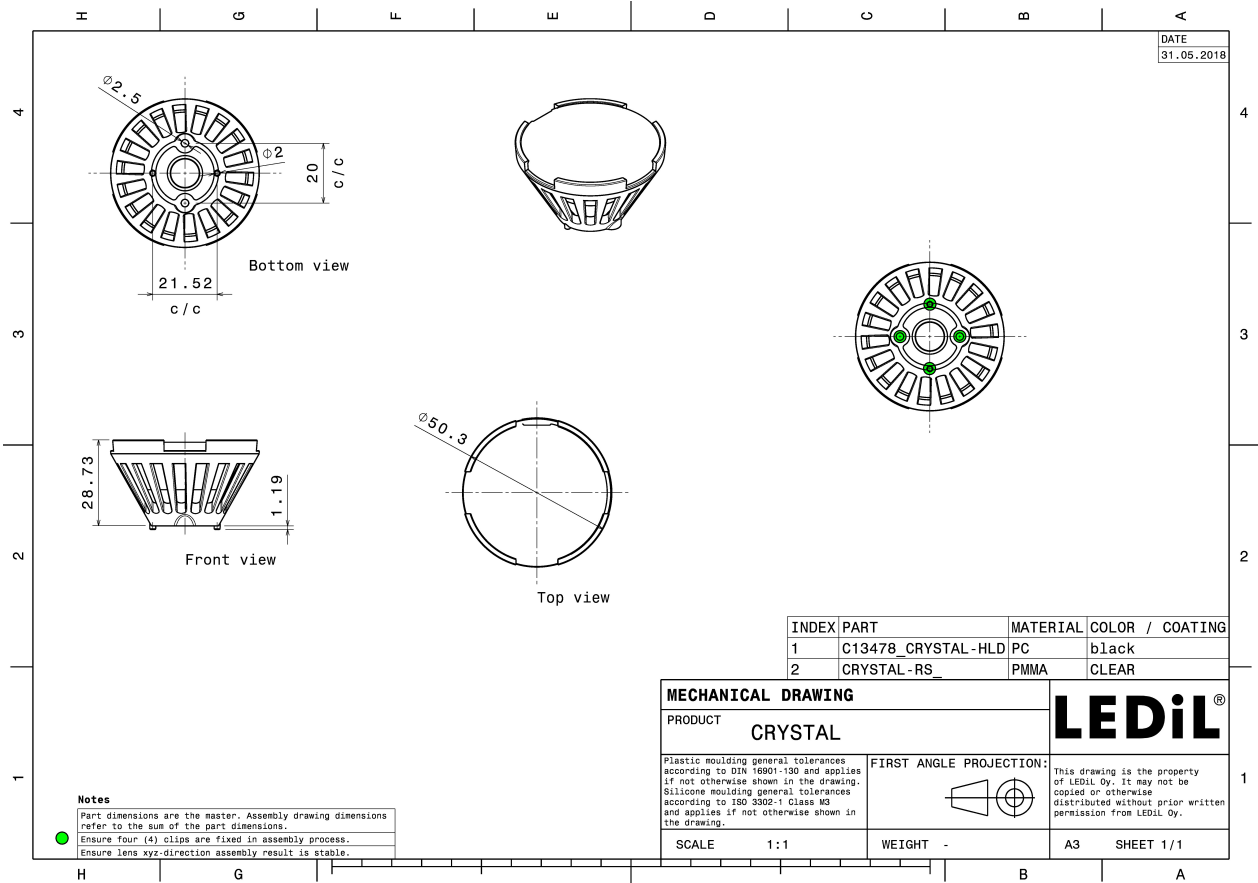
### MATERIAL SPECIFICATIONS:

Component	Type	Material	Colour	Finish
CRYSTAL-MINE	Single lens	PMMA	clear	
CRYSTAL-HLD	Holder	PC	white	



### ORDERING INFORMATION:

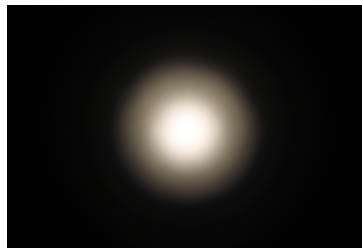
Component		Qty in box	MOQ	MPQ	Box weight (kg)
FCN13595_CRYSTAL-MINE	Single lens	288	64	32	0.0
» Box size:					



#### PHOTOMETRIC DATA (MEASURED):

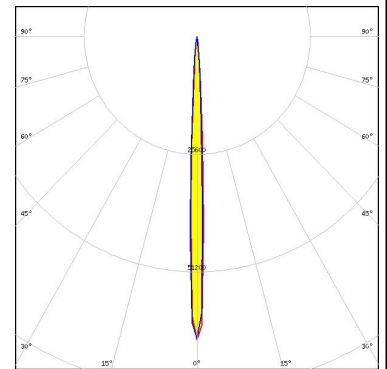
#### CREE

LED XM-L2  
 FWHM 6.9°  
 Efficiency 90 %  
 Peak intensity 35 cd/Im  
 LEDs/each optic 1  
 Light colour White  
 Required components:



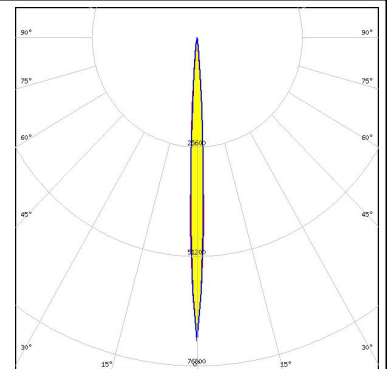
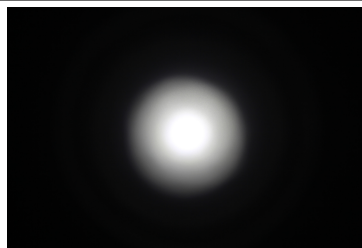
#### CREE

LED XP-G  
 FWHM 4.7°  
 Efficiency 90 %  
 Peak intensity 66.9 cd/Im  
 LEDs/each optic 1  
 Light colour White  
 Required components:



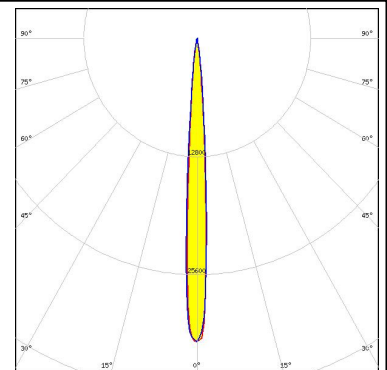
#### CREE

LED XP-G2  
 FWHM 4.6°  
 Efficiency 90 %  
 Peak intensity 65.2 cd/Im  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### CREE

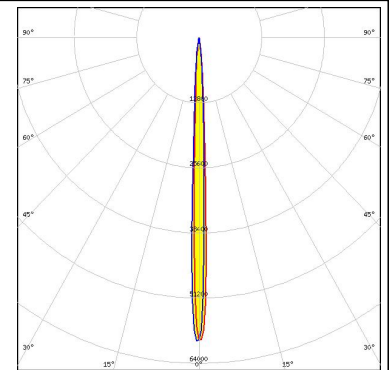
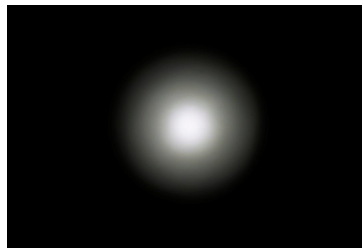
LED XP-L HD  
 FWHM 7.0°  
 Efficiency 86 %  
 Peak intensity 33 cd/Im  
 LEDs/each optic 1  
 Light colour White  
 Required components:



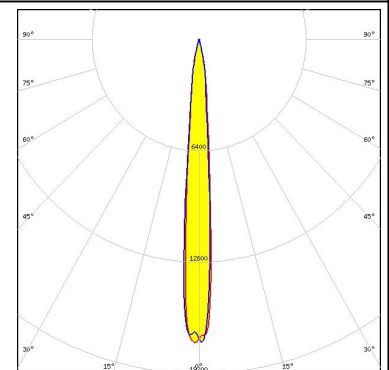
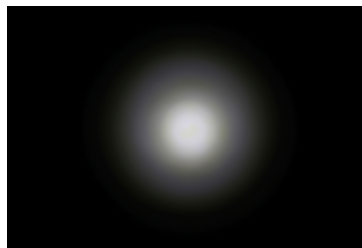
#### PHOTOMETRIC DATA (MEASURED):



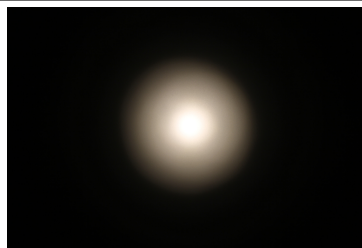
LED XP-L HI  
 FWHM 4.5°  
 Efficiency 92 %  
 Peak intensity 60 cd/Im  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED LUXEON 5050 Round LES  
 FWHM 9.0°  
 Efficiency 94 %  
 Peak intensity 17.5 cd/Im  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED LUXEON A  
 FWHM 4.9°  
 Efficiency 89 %  
 Peak intensity 58.2 cd/Im  
 LEDs/each optic 1  
 Light colour White  
 Required components:



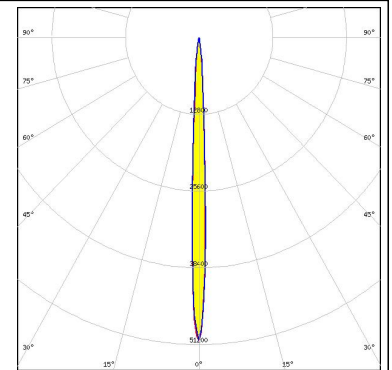
LED LUXEON T  
 FWHM 4.9°  
 Efficiency 89 %  
 Peak intensity 55.1 cd/Im  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHOTOMETRIC DATA (MEASURED):

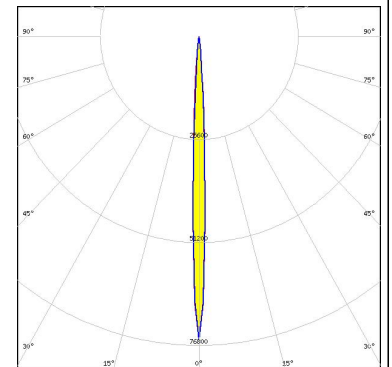
##### LUMILEDS

LED LUXEON TX  
 FWHM 5.0°  
 Efficiency 94 %  
 Peak intensity 50.6 cd/Im  
 LEDs/each optic 1  
 Light colour White  
 Required components:



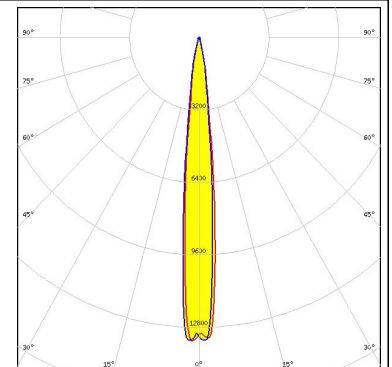
##### NICHIA

LED NCSxx19B  
 FWHM 3.6°  
 Efficiency 90 %  
 Peak intensity 73.3 cd/Im  
 LEDs/each optic 1  
 Light colour White  
 Required components:



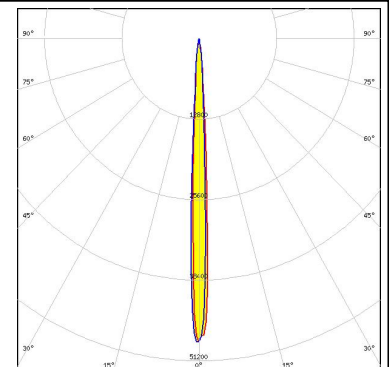
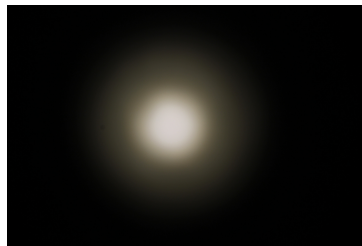
##### NICHIA

LED NV4x144A  
 FWHM 11.0°  
 Efficiency 90 %  
 Peak intensity 13.4 cd/Im  
 LEDs/each optic 1  
 Light colour White  
 Required components:


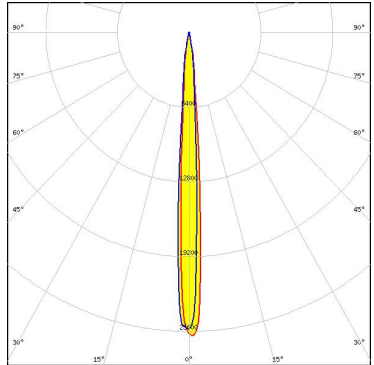

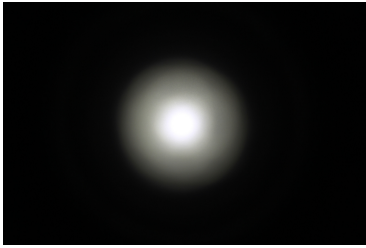

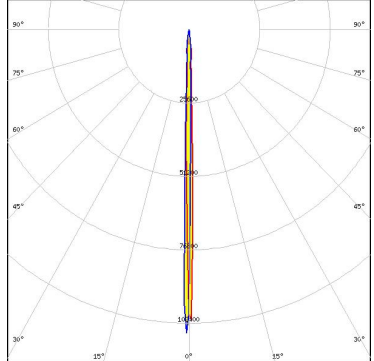


##### NICHIA

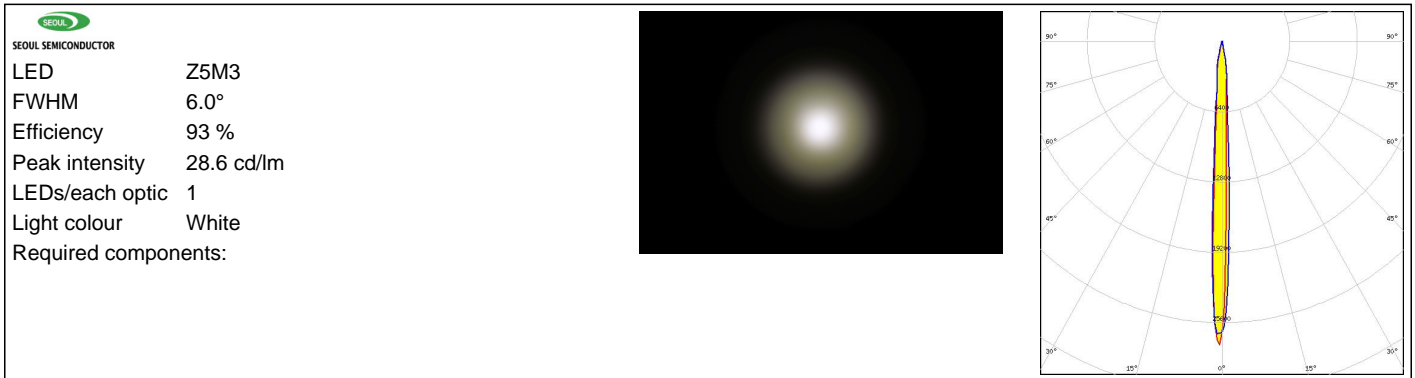
LED NVSxx19B/NVSxx19C  
 FWHM 6.0°  
 Efficiency 93 %  
 Peak intensity 48 cd/Im  
 LEDs/each optic 1  
 Light colour White  
 Required components:



#### PHOTOMETRIC DATA (MEASURED):

<p><b>NICHIA</b></p> <p>LED NWSx229A            FWHM 7.0°            Efficiency 91 %            Peak intensity 26 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>SAMSUNG</b></p> <p>LED LH351B            FWHM 5.1°            Efficiency 90 %            Peak intensity 51.8 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>SAMSUNG</b></p> <p>LED LH351Z            FWHM 4.2°            Efficiency 90 %            Peak intensity 71.4 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>SEOUL SEMICONDUCTOR</b></p> <p>LED nPola            FWHM 2.0°            Efficiency 94 %            Peak intensity 114 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		

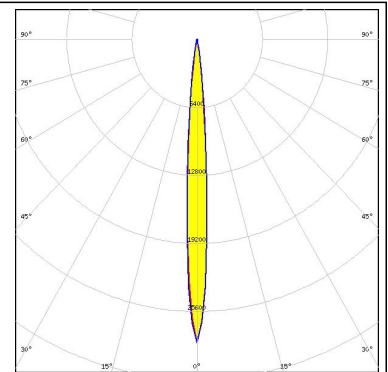
#### PHOTOMETRIC DATA (MEASURED):



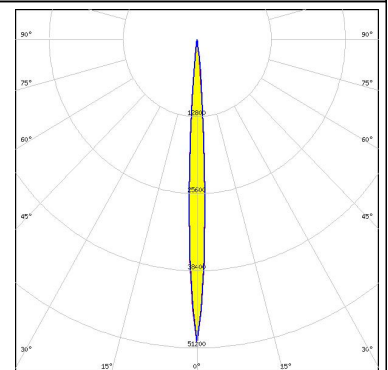
#### PHOTOMETRIC DATA (SIMULATED):



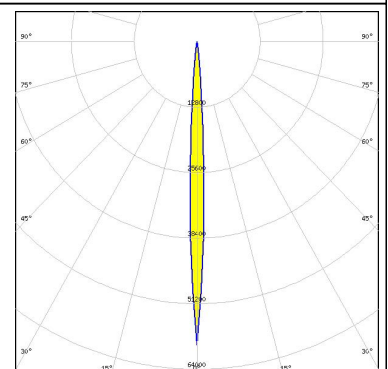
LED XHP35 HD  
 FWHM 7.8°  
 Efficiency 94 %  
 Peak intensity 28.6 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



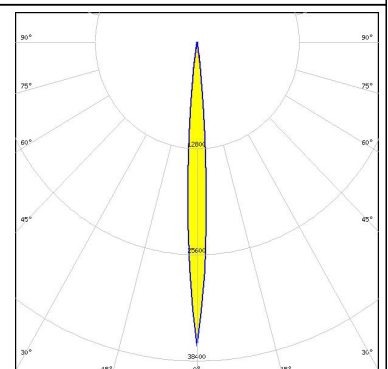
LED XHP35 HI  
 FWHM 6.2°  
 Efficiency 94 %  
 Peak intensity 50.4 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



LED OSCONIQ P 3737 (2W version)  
 FWHM 5.5°  
 Efficiency 94 %  
 Peak intensity 59.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:


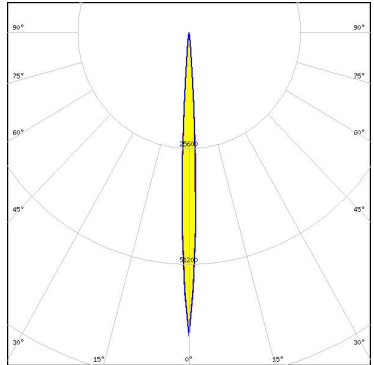
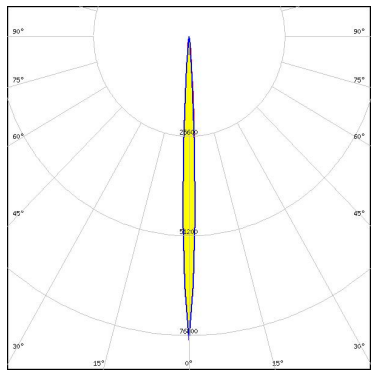
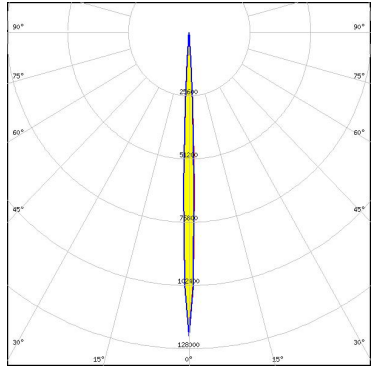
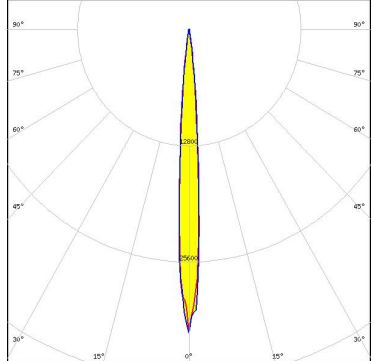


LED OSCONIQ P 3737 (3W version)  
 FWHM 5.5°  
 Efficiency 94 %  
 Peak intensity 59.3 cd/lm  
 LEDs/each optic 1  
 Light colour White  
 Required components:



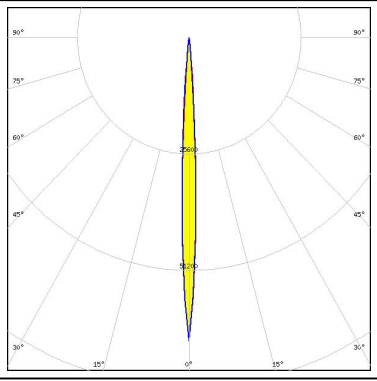

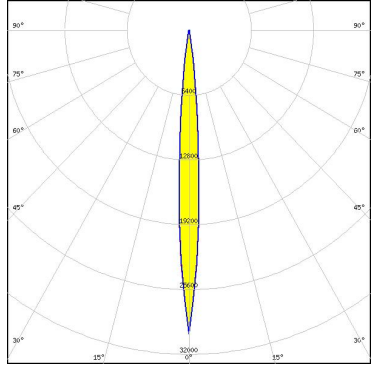




#### PHOTOMETRIC DATA (SIMULATED):

<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSOLON Square CSSRM2/CSSRM3            FWHM 5.4°            Efficiency 94 %            Peak intensity 67 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSOLON Square Flat            FWHM 4.8°            Efficiency 94 %            Peak intensity 78 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>OSRAM</b> Opto Semiconductors</p> <p>LED OSTAR Projection Compact (Kx.CSLNM1.xx)            FWHM 4.0°            Efficiency 94 %            Peak intensity 122.8 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		
<p><b>SAMSUNG</b></p> <p>LED LH351D            FWHM 7.5°            Efficiency 97 %            Peak intensity 34.2 cd/lm            LEDs/each optic 1            Light colour White            Required components:</p>		

**PHOTOMETRIC DATA (SIMULATED):**

<p> SEOUL SEMICONDUCTOR</p> <p>LED: Z5M1/Z5M2 FWHM: 5.4° Efficiency: 94 % Peak intensity: 66.7 cd/lm LEDs/each optic: 1 Light colour: White Required components:</p>		
<p> SEOUL SEMICONDUCTOR</p> <p>LED: Z8Y22P FWHM: 7.8° Efficiency: 94 % Peak intensity: 29.9 cd/lm LEDs/each optic: 1 Light colour: White Required components:</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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#### Shipping locations

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