

APPLICATION SOLUTIONS BROCHURE

You use infrared.

We'll make your infrared application highly efficient – with easy coupling into secondary optics and multiple infrared wavelengths.

Infrared

A family of infrared emitters that maximize system performance



Application Requirements

- LUXEON IR Family is available in multiple wavelengths and beam angles that address a variety of applications
- Optimized radiant power and radiant intensity levels to meet application requirements
- Solves thermal challenges with the lowest thermal conductivity
- Two IR Lines available:
 - LUXEON IR Compact Line
 - LUXEON IR Domed Line

LUXEON IR FAMILY	
LUXEON IR COMPACT LINE	LUXEON IR DOMED LINE
 <p>Beam Angle 150° Secondary optics available</p>	 <p>Beam Angles 60°, 90°, 150° For different applications</p>
<p>High Power Dual Junction Emitter Compact package for smaller and lighter designs Up to 1,150mW in 1.9mm x 1.37mm</p>	<p>High Power Dual Junction Emitter Domed emitter for the highest power and efficiency Up to 1,400mW in 3.7mm x 3.7mm</p>

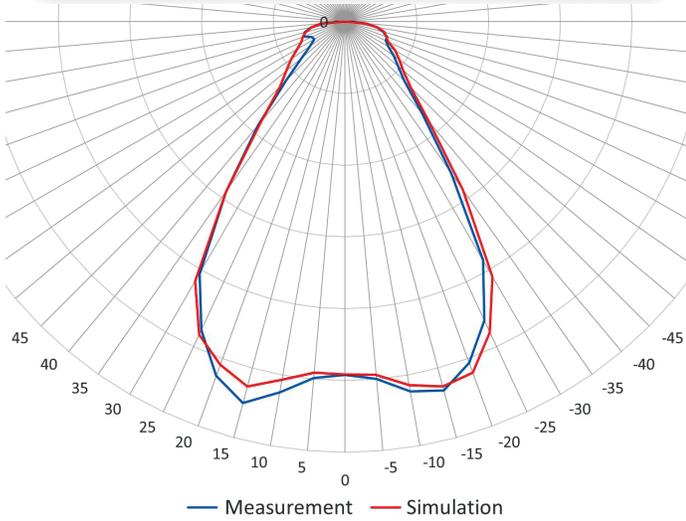
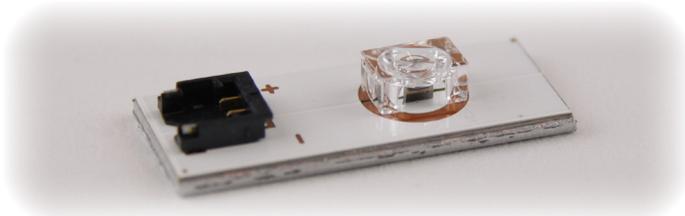
- For applications requiring:
- Smaller and lighter designs
 - High power density
 - Narrow beam (with optics)

- For applications requiring:
- High uniformity
 - High punch
 - Long range

LUXEON IR Compact Line

LUXEON IR COMPACT 150°			
 Beam Angle 150°	Performance at 1A	850nm	940nm
	Radiant Power	1,050mW	1,150mW
	Radiant Intensity	250mW/sr	300mW/sr

Take full control of the beam with secondary optics



LUXEON IR Compact 150° + Lens

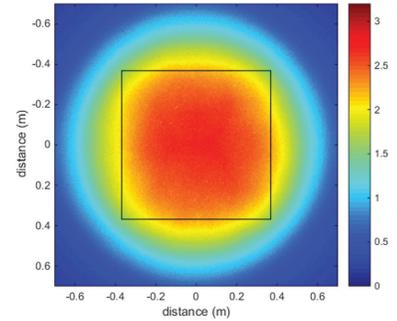
Projection on screen at 1m

Narrow FOV with excellent uniformity

Uniformity in 40° x 40° FOV 69%

Fraction of light in FOV 28%

Beam angle (FWHM) 67.5°



Available in 850nm and 940nm

For optimized performance in each type of application.

- **Dual Junction Emitter**
Up to 1,150mW of radiant power at 1A
 The highest power output for greater system performance in demanding applications
- **Compact Package**
1.9mm x 1.37mm package - 2 pad
 The highest power density for a new level of miniaturization, enabling the next generation designs
- **Ultra-low Thermal Resistance**
 $R_{th} = 2.8^{\circ}\text{C/W}$
 Industry's best thermal conductivity, solves thermal challenges and supports space saving designs
- **Wide Emission Pattern**
Beam angle of 150° (FWHM)
 - To address high uniformity requirements
 - Very narrow beams are possible with secondary optics

LUXEON IR Domed Line

LUXEON IR DOMED 60°			
 Beam Angle 60°	Performance at 1A	850nm	940nm
	Radiant Power	1,350mW	1,400mW
	Radiant Intensity	1,150mW/sr	1,190mW/sr

LUXEON IR DOMED 90°			
 Beam Angle 90°	Performance at 1A	850nm	940nm
	Radiant Power	1,350mW	1,400mW
	Radiant Intensity	750mW/sr	780mW/sr

LUXEON IR DOMED 150°			
 Beam Angle 150°	Performance at 1A	850nm	940nm
	Radiant Power	1,350mW	1,400mW
	Radiant Intensity	335mW/sr	350mW/sr

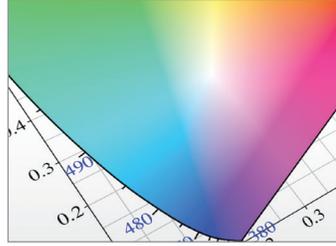
Available in 850nm and 940nm

For optimized performance in each type of application.

- **Dual Junction Emitter**
Up to 1,400mW of radiant power at 1A
 The highest power output for a greater system performance in demanding applications
- **Industry Standard Package**
3.7mm x 3.7mm package - 3 pad
 Compatible with the industry standard to enable a direct upgrade in existing designs
- **Ultra-low Thermal Resistance**
 $R_{th} = 2.5^{\circ}\text{C/W}$
 Industry's best thermal conductivity, solves thermal challenges and supports space saving designs
- **Three Emission Pattern Options**
Beam angles of 60°, 90° and 150° (FWHM)
 To address diverse application needs, such as high punch, long range and high uniformity



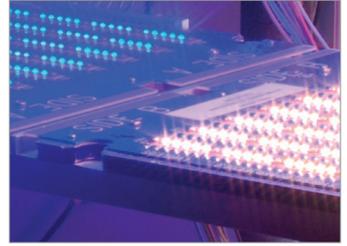
Select pre-qualified, off-the-shelf components to aid in complete system design.



Calculate the color (white or color) that will be achieved by combining different LEDs into one application



Calculate the overall system performance based on design inputs.



Generate LM-80 reports for specific Lumileds LEDs.

Please check out our ecosystem support at lumileds.com/designtools.

About Lumileds

Companies developing automotive, mobile, IoT and illumination lighting applications need a partner who can collaborate with them to push the boundaries of light. With over 100 years of inventions and industry firsts, Lumileds is a global lighting solutions company that helps customers around the world deliver differentiated solutions to gain and maintain a competitive edge. As the inventor of Xenon technology, a pioneer in halogen lighting and the leader in high performance LEDs, Lumileds builds innovation, quality and reliability into its technology, products and every customer engagement. Together with its customers, Lumileds is making the world safer, better and more beautiful—with light.

To learn more about our lighting solutions, visit lumileds.com.



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