



Seeing further with LEDiL's IR optics

IR illumination has many applications, ranging from basic CCTV surveillance cameras to very sophisticated machine vision and automation systems.

Infrared has many advantages over visible light - in surveillance applications it keeps lighting discreet and helps to conceal the camera's viewing direction. In machine vision and automation applications, longer wavelengths of IR have a higher penetration rate through smoke and fumes.

IR emitters have many advantages over other IR illumination sources. They are smaller in size, have lower electric consumption, are durable and insensitive to moderate vibration.

Most of LEDiL's standard secondary optics are optically compatible with IR emitters. However, LEDiL also has developed lenses specifically for Osram IR emitters. The light distribution of these lenses is optimized for use with the specific IR emitters.

- Benefits of infrared light
 - Invisible to human eye
 - discreet and covert illumination
 - Minimizes light pollution
 - Suitable for very long distance illumination
- Disadvantages of IR-light
 - Invisible to human eye
 - possible risk of eye injury at high illumination levels
 - Correct colour rendering is not possible



Examples of LEDiL's IR-optimized secondary optics

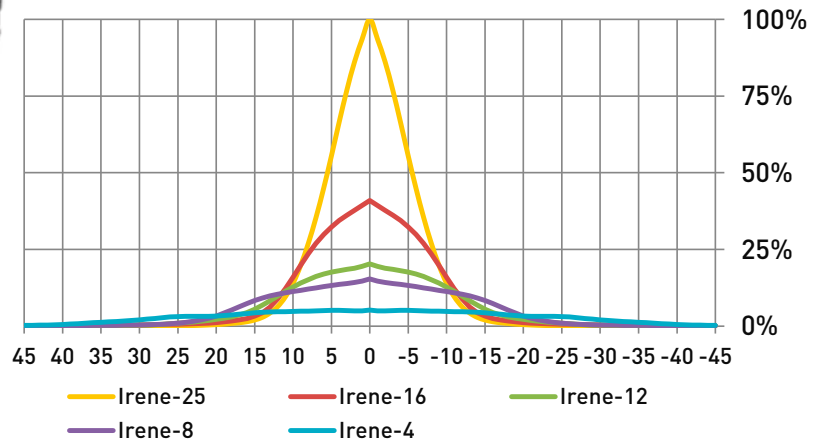
IRENE IR-optic family

- Specifically designed for CCTV surveillance
- Rectangular beam designed to match the rectangular field of view of camera sensor
- Beam widths are optimized for different focal length camera optics
- IRENE has same footprint as 21,6 mm diameter LEILA family of optics.

NEW!



Relative intensity of Irene series (SFH-4751s)

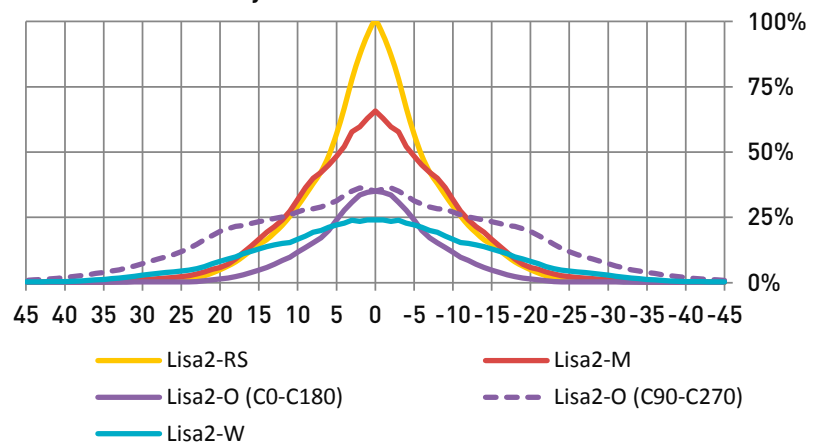


LISA2 optic family

- Small footprint suitable for tight PCB layout
- Diverse selection of beam angles ranging from real spot to wide including oval pattern



Relative intensity of Lisa2 series (SFH-4751s)

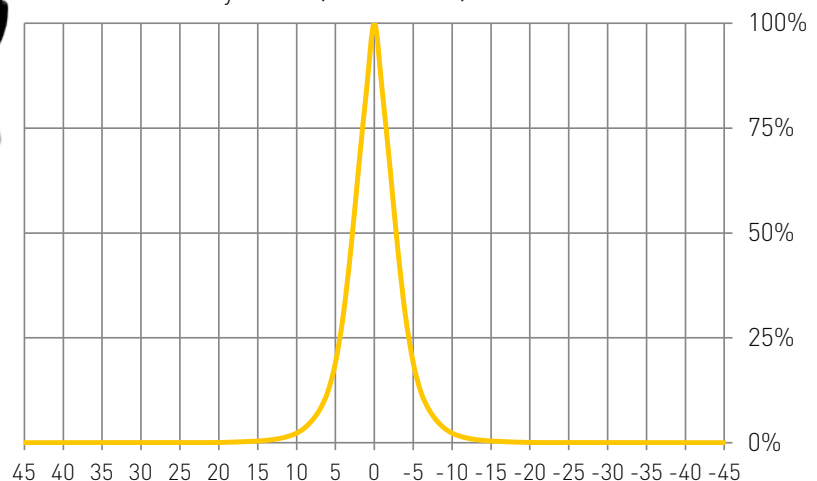


IRIS spot optic

- Tight real spot lens for longer range
- FWHM 11° with Ostar IR emitter
- High intensity peak



Relative intensity of Iris (SFH-4751s)



Typical applications:

- Surveillance of large areas and spaces
- Military applications
- Night vision systems



Demonstration of how different beam angles influence image in CCTV surveillance systems



LED only - SFH4715S



LED only - SFH4715S

- The illumination level is inversely proportional to the square of the distance from the light source
- Light focusing optics provide more reach with less power used
- To be most effective, light distribution should be adjusted to fit the camera's field of view

Subject is illuminated with Osram's SFH 4715S IR emitter without secondary optic. Available reach is approximately 2,8 meters.



With EVA-W wide optic



With EVA-W wide optic

Illumination by same IR emitter with EVA-W wide lens installed. Subject is still visible at 7 meters.



With LXP-M medium optic

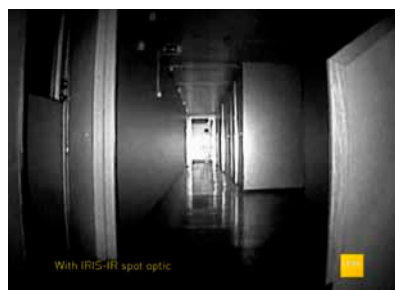


With LXP-M medium optic

Area illuminated with LXP-M medium viewing angle secondary optic. Reach of illumination has increased to almost 14 meters.

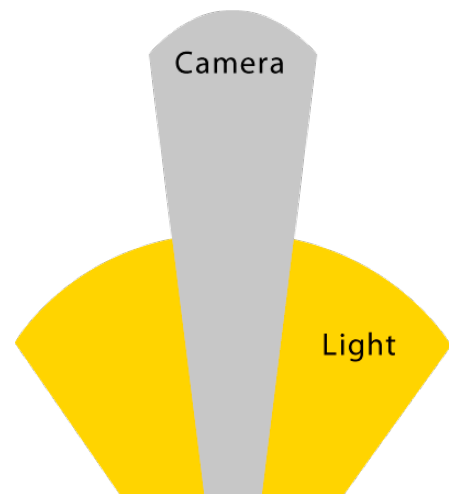


With IRIS-IR spot optic

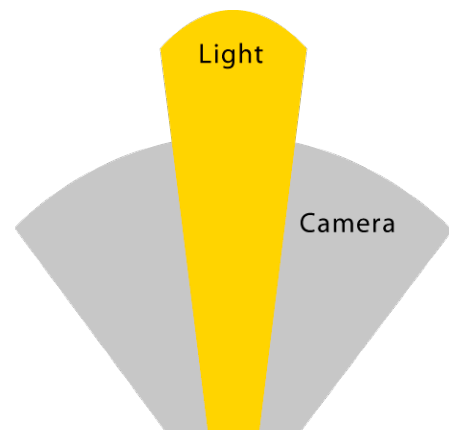


With IRIS-IR spot optic

SFH 4715S IR emitter with IRIS-IR spot optic installed. Back wall of the corridor is still brightly illuminated as well as the subject. Secondary spot optics are best suited for outdoor areas where long distance illumination is mandatory.



Light that is too wide for camera's field of view means wasted light and reduced illumination range.



Light that is too narrow produces glare and white-out in the center of the area, with corners not correctly illuminated.

Choosing right optics for right application means better quality and best possible efficacy!