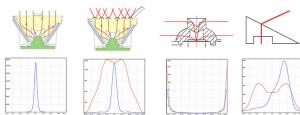


Optical categories and LED lenses

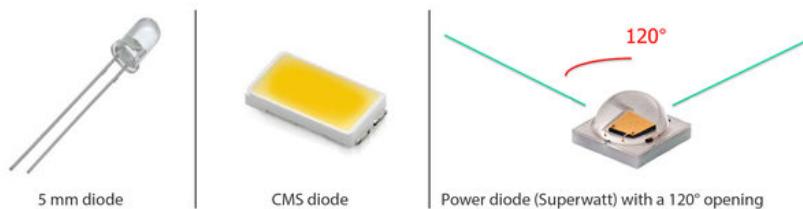
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There are several types of LED sources:

- **5 mm:** with an integrated lens and a wide or narrow beam.
- **CMS:** surface mounted, with a 120° opening.
- **Power diode (Superwatt):** from 1 W, with 120° opening, to which a lens is added.

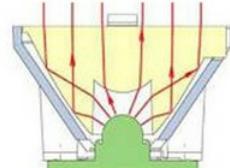
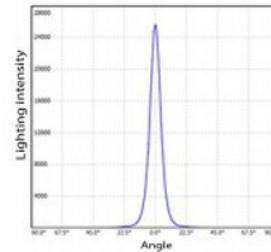


The LED optic

As the LED light source is very punctual, it is possible to focus the light very strongly by using an additional lens. This lens is called an optic. To limit flux loss, it is made of a highly transparent material: PMMA, silicone... Using an optic in this way multiplies the possibilities of the LED itself.

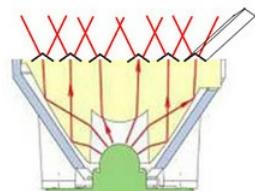
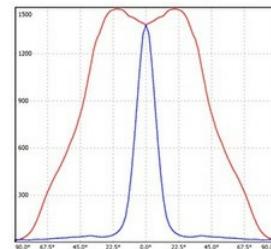
Circular beam

The optic converges the LED light in a narrower or wider angle, between 6° and 52° in LEC products. The beam is 360° symmetrical in the LEC axis.



Elliptical beam

The optic spreads out the beam widthwise. This makes it an ellipse. The beam is narrowed in one direction and opened out in the other. It works particularly well for [wall-washing](#).



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Categories:

Lighting techniques - Solutions by LEC

Tags:

beam - circular - LED - lens - lighting - optic - PMMA

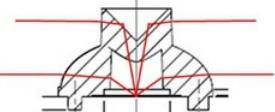
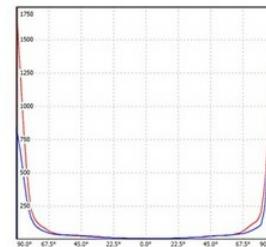
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Optical categories and LED lenses

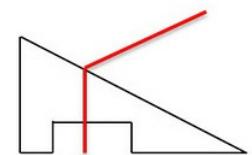
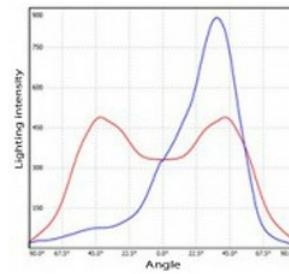
Peripheral emission

The optic allows the light to no longer be in the axis of the LED, but at 360° around the lamp. This type of lens is used particularly for pedestrian paths.



Lateral emission

The optic skews the LED light only on one side of the output. This optical solution allows more-uniform facade lighting and a lower cost, without have to adjust the angle of the LED block.



Throughout all its ranges, LEC offers different lenses with all possible combinations, perfectly customized to the light designer's specifications.

On every lighting project, LEC's engineering office does extensive work to ensure the optimal lensing solution. Photometric files (.ies) are available [sont disponibles en rubrique produits de www.lec.fr](http://www.lec.fr).