

Osram LEDs for Mini Projectors

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New, particularly high-performance light-emitting diodes (LEDs) from Osram make it possible to build mini projectors. These LEDs produce enough light to project images measuring over one meter in diagonal on a wall. The small, efficient light sources are the key components of a new pocket projector from 3M. Measuring just twelve by six centimeters, the projector fits easily in any handbag and can be connected to cell phones, laptops, or cameras.

Projectors produce their images in a variety of ways. In some units, white light shines on LCD displays, whose liquid crystal elements make up the image to be projected, similar to a slide. Other projectors overlay red, green, and blue light, pixel by pixel and in rapid sequence, with a digital micromirror guiding the beams of light. The individual colors of light were generally produced by a color wheel rotating in front of the

projector lamp. In modern LED projectors, red, blue, and green diodes provide the three primary colors directly, eliminating the need for the color wheel.

Very small [light](#) sources for mini and micro projectors can be produced using LEDs. The component used in the 3M device, for example, contains blue, red, and green LED chips from Osram Opto Semiconductors and measures just five by six millimeters.

In addition, the diodes heat up only very slightly and do not necessarily need to be cooled with a fan, which makes the projector smaller and quieter. Furthermore, the handy projectors can run on batteries because the LEDs require only a small amount of electricity. In the case of the 3M device, their optical performance is sufficient to produce images with a diagonal of up to 127 centimeters, depending on the lighting conditions. Another plus is that LEDs have a service life of roughly 20,000 operating hours, much longer than the few thousand hours of run time achieved by [projector](#) lamps.



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The Siemens subsidiary Osram is the only manufacturer to offer LED solutions for projectors in every performance class—from home cinema systems with an image size of over 79 inches to tiny units that can be integrated directly into cell phones or MP4 players.

Source: Siemens

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