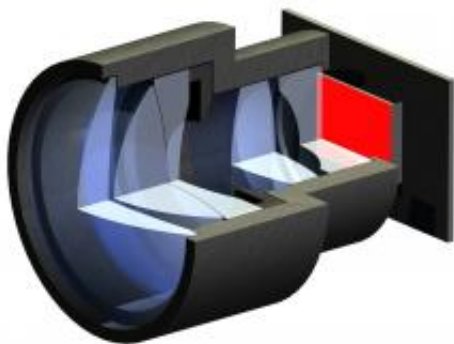


Mini beamer in a cellphone or PDA

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Model of the mini beamer: the OLED display can be seen to the right at the back. The lens system projects the image onto a wall. © Fraunhofer IOF

(PhysOrg.com) -- Looking at photos on a cellphone display can be somewhat arduous. A new mini beamer will make it easier. The beamer is so small that it can be integrated in a cellphone or a PDA. As it does not need an extra light source it also conserves the battery.

A summer barbecue by the lake - as the sausages sizzle on the grill some of the party would like to watch the soccer on TV. Today, a choice has to be made whether to stay by the lake or watch the match on a big public screen or the TV set at home. In future, barbecue enthusiasts and football fans will be able to enjoy both at the same time. Cellphone TV is coming closer and with an innovative mini beamer it will be possible to create a public viewing event on a small scale - for example on a white bathing towel by the side of a lake.

The mini projector was developed by research scientists at the Fraunhofer Institute for Applied Optics and Precision Engineering IOF in Jena in cooperation with their partners in the EU project HYPOLED. Unlike conventional beamers it does not need an additional illumination system. Because the beamer can operate without an extra light source it offers a number of advantages: Firstly, it takes up little space. The prototype is 2.5 centimeters long, has a diameter of 1.8 centimeters and can be easily integrated in a cellphone or a PDA. Secondly, the device needs very little energy and therefore does not overtax the battery.

“The key component of the projector is an organic display, or OLED, developed by our colleagues at the Fraunhofer Institute for Photonic Microsystems IPMS in Dresden,” says Dr. Stefan Riehemann, group manager at the IOF. Currently the OLED display produces a monochrome image with a brightness of 10,000 candelas per square meter; for color images the brightness is about half that level. By way of comparison, a computer monitor generates about 150-300 candelas per square meter. A lens system projects the image produced by the OLED onto a wall or other flat surface. The lenses are made of glass but the research scientists are already developing an optical system which uses plastic lenses. As plastic lenses can be embossed, they can be produced in larger quantities more simply and cheaply than glass lenses.

At the Laser World of Photonics trade show from June 15 to 18 in Munich, the researchers are exhibiting a monochrome prototype.

Provided by Fraunhofer-Gesellschaft ([news](#) : [web](#))

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