

## Embedded Picoprojectors Ready to Break Out Worldwide

SKU: IN0904435WH

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March 2009

### Report Summary

Projector technology has been relentlessly miniaturizing to the point that complete light source, display, and optics packages can fit into 5cc or less. Combined with reduced power consumption of two watts or less, many companies are considering embedding projectors into a range of consumer products, from cellphones to computers.

This technological maturation comes at a time when personal devices are providing entertainment and Internet access, but are limited by screen size. In-Stat believes this confluence of supply and demand will result in an industry that will exceed \$1.1 billion within five years.

This research provides five-year forecasts for miniature accessory projectors as well as picoprojector modules embedded in cellphones, computing devices, personal media players, and other consumer electronics.

This research also explains competing picoprojector technologies using LED and laser as well as a variety of modulation methods including MEMS products such as TI digital light projection (DLP) and single-mirror scanning as well as reflective systems using liquid crystal on silicon (LCoS) microdisplays. Also included are profiles of key technology vendors including Texas Instruments, Displaytech, Microvision, and Light Blue Optical.

The forecasts and data in this research provide key decision making information for companies offering picoprojectors or semiconductor components. Manufacturers of portable media players, digital cameras and camcorders, cellphone vendors and suppliers of laptop, netbook, ultra-mobile PCs, and mobile Internet devices will also need to understand the market dynamics and picoprojector technology.

### What's in the Report?

- Global forecasts for accessory picoprojectors
- Global forecasts for mobile phones, computing devices, digital cameras, digital camcorders, and portable media players having embedded picoprojectors
- Picoprojector module shipments and revenues
- Vendor profiles
- Technology review, status, and readiness for market

### HIGHLIGHTS

- Illumination technologies continue to develop with vendors offering both LED and laser. Green laser is a critical development area.
- Cellphones and accessory projectors will lead the market, with computing devices and consumer products following.
- Projector economies of scale are expected to mirror those of camera phone modules.

For more information or to purchase, see the [report online](#) or call 1.480.483.4441.

## **Companies Mentioned in this Report**

- 3M
- Corning
- Dell
- Displaytech
- Light Blue Optical
- Microvision
- Nokia
- NTT DoCoMo
- Optoma
- Osram
- Samsung
- Sony Ericsson
- Texas Instruments

## **Who Will be Interested in This Report?**

- Semiconductor companies providing picoprojector technologies such as optics, lasers, LEDs and ultraminiature displays
- Companies considering assembly and marketing of picoprojectors or finished modules
- Manufacturers of portable media players, digital cameras, and digital cameras
- Cellphone vendors and designers
- Suppliers of laptop, netbook, ultra-mobile PCs and mobile Internet devices
- Financial companies considering investments in picoprojector technologies or vendors

## **What Questions Does This Report Answer?**

- How quickly will the worldwide market for picoprojectors develop?
- What technologies are being used for picoprojectors? Which are ready for market?
- Who are the leading suppliers in the picoprojector market?
- Which products are most likely to use embedded picoprojectors?

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## Methodology

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This research was assembled through combining data from a number of sources:

In-Stat forecasts of cellphones, computing devices, and personal entertainment devices form the backbone of the picoprojector attach-rate forecasts. Each of these forecasts comes from In-Stat's over-25-year history of close engagement with the industry and accurate forecasting using a variety of techniques, including industry sources and consumer demand. Forecasts in this research start with device forecasts from several reports and analysts and include regional information and average selling price (ASP) data. Forecasts for embedded picoprojectors were developed from historic attach rates for similar products and features. Industry perspective from key technology vendors was used to determine expected projector module costs, roadmap data, and production capabilities.

Much of the technical information appearing in this research was written by Max Baron for In-Stat's *Microprocessor Report*. The December 8, 2008 article is titled "The New Peripheral Is Almost Here." [http://www.mdronline.com/watch/watch\\_Issue.asp?Volname=Issue+%23120808&on=1#item1](http://www.mdronline.com/watch/watch_Issue.asp?Volname=Issue+%23120808&on=1#item1)

Several companies were interviewed for their industry viewpoints during February and March 2009. Those companies include:

- Displaytech
- Light Blue Optical
- Microvision
- Nokia
- NTT DoCoMo
- Samsung
- Sony Ericsson
- Texas Instruments

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December 2008  
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