

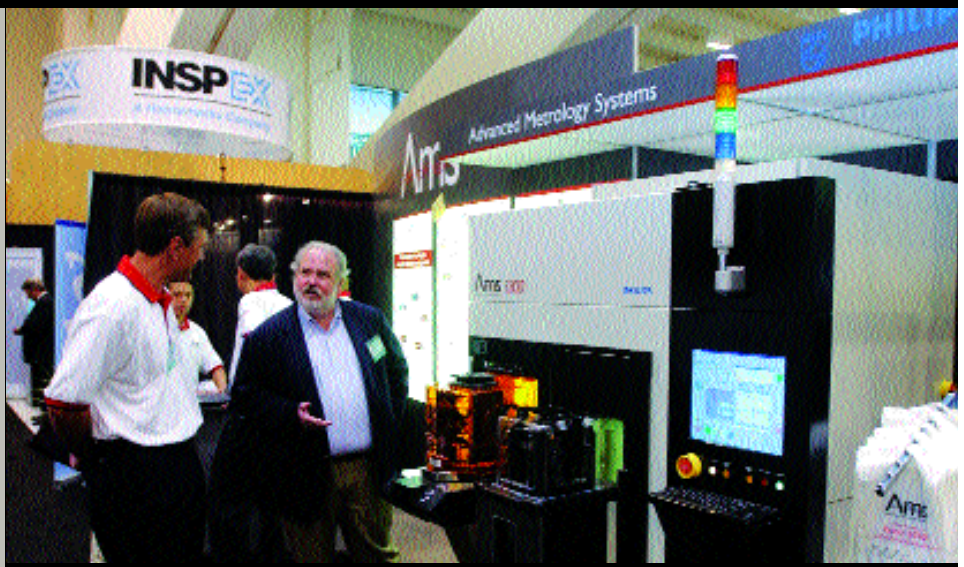
High-brightness LED market surges 51%

SAN FRANCISCO, CA—High-brightness light-emitting diodes (HB LEDs) have been a bright spot in an otherwise dismal market for semiconductors and optical components of all types. While the markets for most electronic and optical components peaked in 2000 and have trended downward ever since, the HB LED market grew by 51% in 2002 to \$1.84 billion, according to Silicon Valley market research firm Strategies Unlimited.

High-brightness LEDs are used in a wide variety of applications that benefit from their high visibility (even in full sunlight conditions) and full-color spectrum, including white. The spectacular growth of 2002 was led by a dramatic ramp-up in the use of HB LEDs in mobile phones, including both backlighting for full-color LCD screens and keypad backlighting.

However, other applications also contributed to this vibrant market. High-brightness LEDs are used extensively in the automotive sector, both for instruments panel lighting and for external signaling. They are the enabling components for full-color outdoor video screens used in sports stadiums, outdoor advertising and rock concerts. Moreover, they have been widely adopted in red, green, and yellow traffic signals, primarily in North America, as well as in highway signs and moving message panels. Illumination applications are the latest to benefit from the high efficiency and long lifetimes of high-brightness LEDs. Based on continuing positive trends in this dynamic industry, the market for HB LEDs is forecast to grow to \$4.7 billion by 2007.

High-Brightness LED Market Review and Forecast—2003 is available from Strategies Unlimited for \$4950. For more information, go to www.strategies-u.com.



Philips AMS eases transition to copper, low-k

SAN FRANCISCO, CA—As manufacturing companies begin to consider capital equipment upgrades, one question they confront is whether—and when—to move to the next generation. Philips Advanced Metrology Systems (AMS) is betting that the industry is now ready to transition from aluminum and SiO₂ to copper and low-k, and is backing that bet up by launching its new product line for the mass market.

“We expect the rate of adoption of copper processes to be very quick,” said Bill Gately, general manager. “We now feel that the market is stable enough to launch our technology, and companies who move to copper will need to ramp up with high-volume production very rapidly.”

Philips AMS, a standalone business unit of Royal Philips Electronics, has been developing its thin-film measurement technologies (originally licensed from the Massachusetts Institute of Technology) since 1998. According to Gately, unlike competitors Rudolph Technologies, Applied Materials, and KLA, Philips AMS has the only measurement technology (SurfaceWave) developed for copper that measures all required points—not just thickness but also mechanical properties.

“Most of our competitors are trying to adapt their aluminum processes to copper,” Gately said. “Their products are powerful, but more costly. Because they were developed for aluminum, they tend to be slower than ours or need to be operated in a vacuum environment.”

Philips AMS hopes to capture a significant portion of the \$450 million market (estimated for 2004) for thin-film metrology, of which \$290 million is in metal thin-film metrology. While the company will initially concentrate its sales effort on metal, it will also offer products for the dielectric market. Philips AMS is demonstrating its Series 3300 platform, which is based on the SurfaceWave V3 optical measurement technology, at the show. Other platforms include the Series 2300 and 2200.

One major benefit of the Philips metrology platforms is that they are based on relatively simple hardware (for example, using solid-state lasers rather than gas or water-cooled lasers), which keeps the cost of ownership low, according to Gately. Combine that with a throughput of 40 to 50 wafers per hour and scalability from 130 nm to 45 nm, and customers can realize a substantial cost savings.