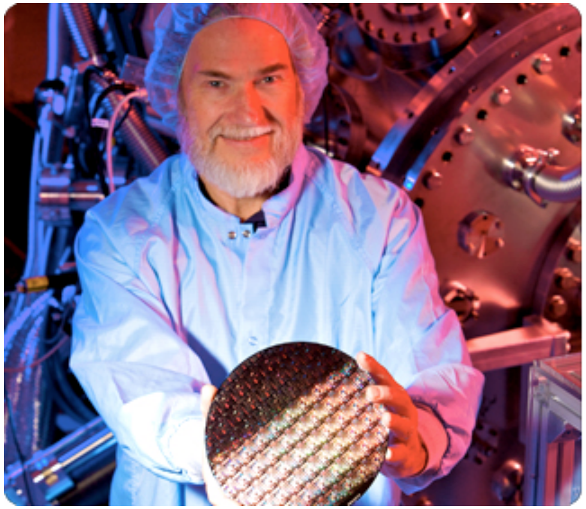
Products

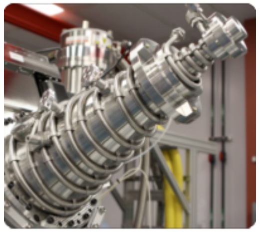


Photolithography Light Source Systems

Our light source systems are comprised of the most advanced ArF immersion light sources for use on the most critical process layers. Cymer's excimer light sources, which comprise an installed base of approximately 3,300 systems, are based on ArF and KrF technology that deliver 193 and 248nm light, respectively. The extremely short wavelengths and highly narrowed bandwidths of our light sources work in concert with our lithography customers' steppers and scanners and their sophisticated lens systems to help enable the very fine feature resolution required for patterning today's most advanced circuitry.

ArF Immersion Light Sources

KrF Light Sources



Emerging Light Source Systems

OLED Flat Panel Displays

Products

ArF Immersion Light Sources

As chipmakers continue to reduce the feature sizes and shrink CDs on the wafer, they need to install the advanced tools required to enable patterning of the most critical layers. NAND flash memory and dynamic random access memory ("DRAM") manufacturers have been the most aggressive chipmakers in shrinking CDs and have been driving demand for our most advanced light sources for ArF immersion lithography applications. Some chipmakers are in development or in the early stages of chip production with CDs of approximately 32nm. DRAM manufacturers are in production at 45nm and began adopting immersion lithography in production during 2006. Leading edge semiconductor manufacturers in the memory, logic and foundry sectors have been developing ArF immersion extension down to the 22nm technology and implementing double patterning technique, which means the ArF immersion ramp could last for several years.

The XLR 600ix is the industry's first field-selectable 60 to 90 watt immersion light source. Introduced in February 2009, the XLR 600ix delivers improved on-wafer performance to chipmakers and offers newly developed optics technology for higher-powered applications. The light source also provides industry-leading performance enhancements over the XLR 500i, including a 1.5x improvement in wavelength and bandwidth stability and a 2x improvement in dose stability.

ArF Immersion Light Sources - KrF Light Sources - Emerging Light Source Systems - OLED Flat Panel Displays

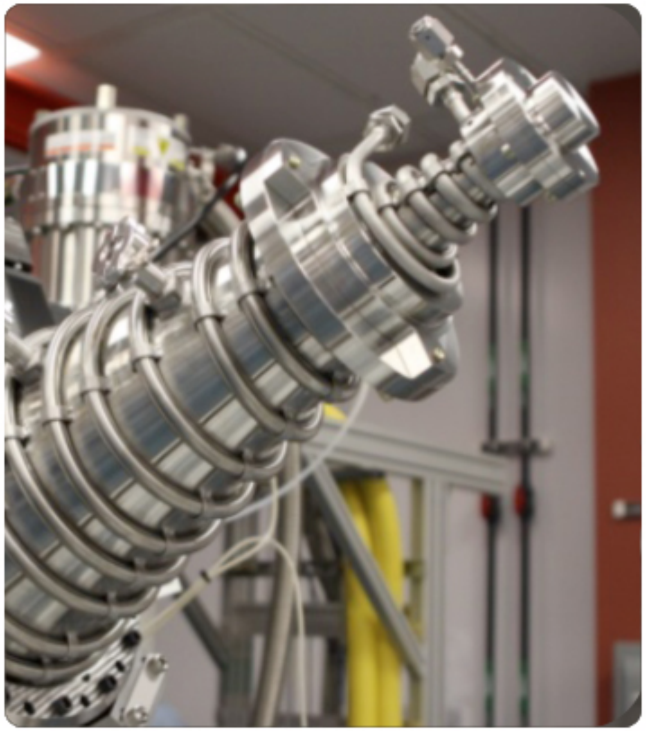
Products

KrF Light Sources

We have been providing KrF light sources for volume chip production since 1996, when chipmakers required the adoption of DUV light sources in their manufacturing facilities (also referred to as “fabs”). Over the years, we have developed and sold a variety of increasingly powerful and productive KrF light sources.

ArF Immersion Light Sources - KrF Light Sources - Emerging Light Source Systems - OLED Flat Panel Displays

Products



Emerging Light Source Systems

Extreme ultraviolet ("EUV") lithography is currently forecasted by the International Technology Roadmap for Semiconductors ("ITRS") to be the next critical dimension imaging solution after ArF immersion lithography and double patterning extensions. Some forms of memory devices, such as NAND Flash, may need this manufacturing technology after 32nm node devices.

We believe the availability of a high power source for 13.5nm radiation is one of the technologies requiring significant developments to enable the realization of EUV lithography. Other technologies that are needed to enable EUV photolithography include photoresist and mask. Photoresist performance parameters needing the greatest amount of development include sensitivity or speed, line-edge-roughness, and line-width-roughness. Photoresist sensitivity and scanner optical transmission are the basis to derive EUV source power requirements within a usable bandwidth.

Our laser-produced plasma EUV source system produces 13.5nm radiation and is intended to provide a power source for EUV lithography. As currently configured, it consists of a carbon dioxide laser, a beam transport system, and a plasma chamber. The chamber contains a mirror which collects the emitted light and reimages the plasma source to the intermediate focus position at the entrance to the scanner system. The source plasma chamber is directly coupled to the scanner vacuum chamber and inside the scanner enclosure. We shipped our first EUV prototype source system to ASML in 2009, and expect to record our first sale of an EUV pilot source system to ASML during 2010.

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OLED Flat Panel Displays

TCZ's production tool for flat panel display fabrication, the TCZ-900A, is designed to be used in the manufacture of both advanced liquid crystal displays ("LCD") and next generation OLED displays, which are used in cell phones, laptops and televisions.

Laser crystallization is a key step in the manufacturing process for many types of LCD and OLED displays. A glass plate, coated with a thin film of amorphous silicon, is exposed to a high-power laser that converts the silicon into a poly-crystalline form, which is then used to create the pixel control circuit. The TCZ crystallization system uses a 600W laser with advanced beam shaping optics to form a very narrow line focus that is 730mm long, allowing a generation 4 size glass plate (730mm x 920mm) to be processed in a single pass. This approach produces very uniform crystalline silicon material across the entire glass plate, which is needed to support the high-performance OLED pixel circuits.

TCZ shipped and installed its first laser crystallization system for the OLED flat panel display market at a large Korean display manufacturer in 2009. TCZ is working with this display maker to demonstrate the system's differentiated throughput and the superior uniformity of TCZ's laser crystallization technology.

ArF Immersion Light Sources - KrF Light Sources - Emerging Light Source Systems - OLED Flat Panel Displays