

LDLS™ Laser-Driven Light Source

EQ-1000 High Brightness, High Power Broadband DUV Light Source

Researchers using UV light for a variety of spectroscopy, semiconductor processing, and life science applications need light sources capable of providing extremely high brightness across a broad wavelength range. Excimer and other DUV lasers carry high purchase and operating costs. Other light sources such as arc or deuterium lamps can't achieve the high brightness, power, or broad spectral range necessary. A single UV-Vis-NIR source combining superior high brightness and a broad range from visible to the deepest UV bands is now available to meet these application challenges.

Building upon its expertise in high brightness EUV and DUV light source technology, Energetiq has developed a ground-breaking new technology that enables extreme high brightness light sources over a broad spectral range, from 170nm through visible and beyond. The LDLS™ Laser-Driven Light Source is embodied in the Energetiq EQ-1000, a user-friendly, compact DUV source that is configured as a broadband source for spectroscopy or general research applications. In addition, the user can, through using the standard optical output interface, select narrow bands of light for specific applications such as photoresist testing in the 193nm or 248nm bands. Utilizing a proprietary laser-driven bulb technology* for superior brightness, the EQ-1000 LDLS Laser-Driven Light Source is the world's first source of truly broadband DUV-Vis power.

* United States Patent No. US 7,435,982

Features & Benefits

- Power and brightness across broad spectral range
 - UV-Vis-NIR (170nm - 2100nm)
 - Standard optical output interface allows user to customize output to desired applications
- Compact package
 - User-friendly design with integrated collection optics provides easy implementation
- Cost-effective source of 193nm and 248nm light, without need for toxic excimer gases

Applications

- Photoresist processing
- Spectroscopy
- Biological imaging
- Chemical sensing
- General scientific research

Electrodeless Laser-Driven Light Source Technology

Energetiq's innovative Laser-Driven Light Source (LDLS™) technology uses a CW laser to directly heat a Xenon plasma to the high temperatures necessary for efficient deep ultraviolet production. In traditional approaches such as arc and deuterium lamps, the brightness, UV power, and lamp lifetime are limited by the use of electrodes to couple power to the plasma. The electrodeless LDLS technology creates small, high brightness plasma that allows efficient light collection, broad spectral range from the deepest UV through visible and beyond, and long lamp life.



LDLS™
Laser-Driven Light Source,
shown with remote
power supply

Specifications

Performance

- Power Output Integrated ellipsoidal collector, delivers 180nm to 2100nm into 0.22NA
Typical bulb life >9,000 hours

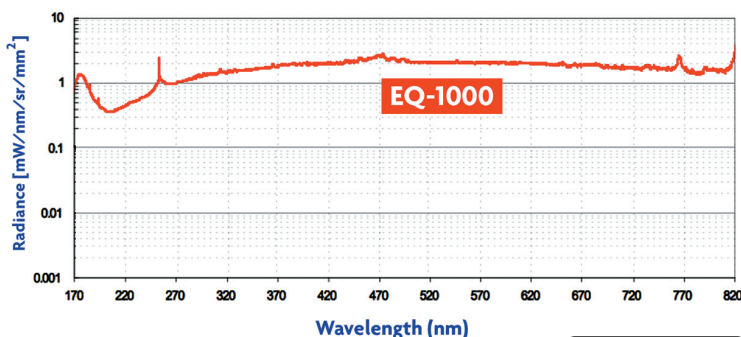
Physical Specifications EQ-1000

- | | System Dimensions (H x W x D) | Weight |
|----------------|--|-----------------|
| • Lamp | 169 x 118 x 406 mm (6.65 x 4.65 x 16 in) | 9 kg (20 lbs) |
| • Power Supply | 127 x 254 x 318 mm (5" x 10" x 12.5" in) | 4.5 kg (10 lbs) |

Utility Requirements

- | | |
|-----------------|---|
| • Electrical | 110-240v 50/60Hz (3A) |
| • Cooling Water | 5-10 PSID, 0.5–1 GPM, 18°C inlet temperature controlled within $\pm 1^\circ\text{C}$
(Chillers available from Energetiq) |
| • Compliance | CE Mark, Class 1 Laser Product |
| • Nitrogen | 20 PSIG, 5 slm |

Broad Spectrum Output of EQ-1000



Note: Typical results



About Energetiq

Energetiq Technology, Inc. is a developer and manufacturer of advanced short-wavelength light products that enable nano-scale structures and products. The Energetiq team combines its deep understanding of the high power plasma physics needed for short-wavelength light generation with its long experience in building rugged industrial and scientific products. The result is that users can expect the highest levels of performance combined with the highest reliability.



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Specifications are subject to
change without notice.
LDLS EQ1000—7/11

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