

LDLS™ Laser-Driven Light Sources

EQ-1500 Highest Brightness, Long Life, Broadband Light Source

Researchers using light for imaging and analytical spectroscopy in a variety of applications in the life sciences and materials sciences need light sources capable of providing extremely high brightness across a broad wavelength range. Traditionally, multiple lamps (Tungsten/ Halogen, Xenon-arc, Deuterium) have been used to cover this broad spectral range. However, combining multiple lamps is costly and optically inefficient, and the use of electrodes within these lamps limits their ability to achieve the high brightness or power needed for the most demanding applications. Furthermore, traditional electrode-driven light sources have short life, need to be changed frequently, and during their life the lamp output declines constantly. To address this problem, Energetiq has developed a revolutionary single light source technology called the LDLS™ Laser-Driven Light Source that enables extreme high brightness over a broad spectral range, from 170nm through visible and beyond, combined with lifetimes an order of magnitude longer than traditional lamps

The LDLS technology is fully embodied in the EQ-1500— an extremely bright and stable, compact broadband source that is specifically designed for critical spectroscopy and imaging applications. The EQ-1500 offers superior spatial and power stability for highly repeatable measurements, and provides direct imaging of the plasma for optimized coupling to the instrument. Utilizing a patented laser-driven bulb technology*, the EQ-1500 is ideal for applications requiring ultra-long lamp life.

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

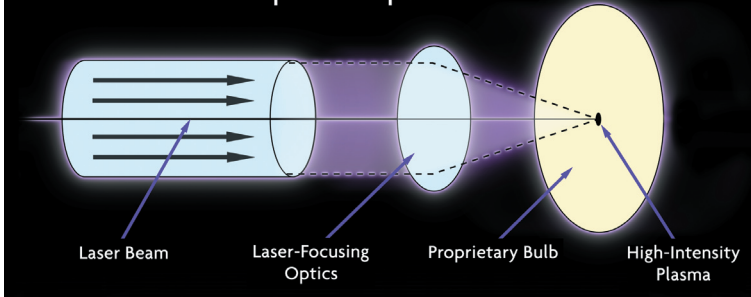
Features & Benefits

- CW laser plasma discharge
- Extreme high brightness across broad spectrum
 - UV-Vis-NIR (170nm – 2100nm)
- Eliminates need for multiple lamps (replaces D2/Tungsten/Xenon Arc)
 - Simplified optical system to cover multiple wavelengths
- Excellent spatial stability
 - Repeatable measurements
- Superior short and long term power stability
 - Repeatable measurements
- Electrodeless operation for long life
 - Reduced consumable costs
 - Minimal recalibration of instrument

Applications

- UV-Vis Spectrometry
- Photoemission Electron Microscopy (PEEM)
- Circular Dichroism Spectroscopy
- Atomic Absorption Spectroscopy
- Materials Characterization
- Environmental Analysis
- Hyperspectral Imaging
- Gas Phase Measurements
- Advanced Microscopes

The LDLS™ Principle of Operation



EQ-1500 lamp house with power supply.

Specifications

Overview

- Spectral output from 170nm - 2100nm
- Large collectable view angle – Numerical Aperture (NA): up to 0.50
- Typical bulb life >9,000 hrs.
- Flexible optical interface for free-space or fiber optics
- Various precision reflective coupling optics are available from Energetiq. Call for details.

Physical Specifications

EQ-1500

- Lamp
- Power Supply

System Dimensions (H x W x D)

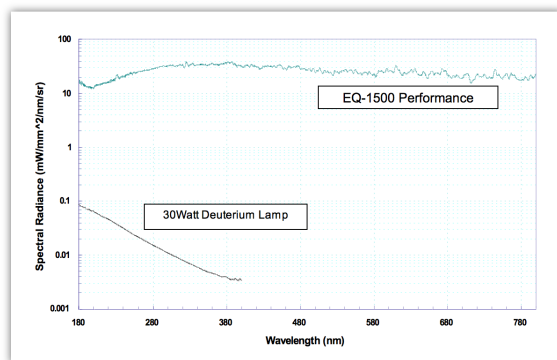
160.0 x 142.2 x 218.4 mm (6.3 x 5.6 x 8.6 in)
 141.5 x 254.0 x 317.5 mm (5.6 x 10.0 x 12.5 in)

Weight

5.0 kg (11.0 lbs)
 6.5 kg (14.3 lbs)

Utility Requirements

- Electrical: 90-264 VAC, 200 W max
- Cooling Water: Water: 3 PSID, 0.25–0.5 GPM, 18°C inlet temperature controlled within $\pm 1^\circ\text{C}$ (Chillers available from Energetiq)
- Nitrogen: For purging, Grade 6
- Compliance: CE Mark, Class 1 Laser Product



About Energetiq

Energetiq Technology, Inc. is a developer and manufacturer of advanced light sources that enable the analysis and manufacture nano-scale structures and products. The Energetiq team combines its deep understanding of the high power plasma physics needed for high-brightness 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.
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