

# EQ-99X LDLS™



## Compact, High-Brightness, Long-Life, Broadband Laser-Driven Light Source

Advanced imaging and analytical spectroscopy applications in the life and materials sciences need light sources capable of providing extremely high brightness across a broad wavelength range. Traditionally, multiple lamps (such as Tungsten/Halogen, Xenon-arc, or Deuterium) have been used to cover this broad spectral range. However, combining multiple lamps is costly and optically inefficient. 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 a short life during which the lamp output declines constantly necessitating frequent replacement.

To address these problems, Energetiq has developed a revolutionary single-light source technology called the Laser-Driven Light Source (LDLS™) that enables extreme high brightness with a relatively flat spectrum, from deep ultraviolet through visible and into the near infrared, combined with lifetime an order of magnitude longer than traditional lamps.

LDLS™ technology is fully embodied in the compact EQ99X - a high brightness, high stability broadband source specifically designed for demanding imaging and spectroscopy applications. The EQ-99X offers excellent spatial and power stability for highly repeatable measurements across the broad spectrum. Utilizing patented laser-driven bulb technology\* and ultra clean construction, the EQ-99X is ideal for applications requiring ultra-long lamp life combined with high broadband brightness.

\* Multiple Patents Worldwide

## Features and Benefits

- CW laser plasma discharge
  - 100µm - 200µm plasma size
- Very high brightness across spectrum
  - UV-Vis-NIR (170nm - 2100nm)
- Eliminates need for multiple lamps
  - Replaces D2/Tungsten/Xenon Arc
- Excellent spatial and power stability
  - Repeatable measurements
- Ultra-clean construction
  - Improved stability & extended life
- Electrodeless operation for long life
  - Reduced cost of ownership

## Applications

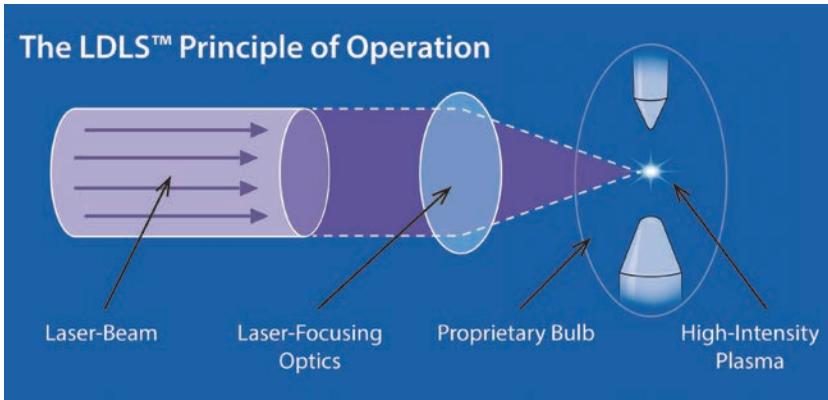
- UV-Vis-NIR Spectroscopy
- Monochromator Source
- Thin-Film Measurements
- Optical Component Testing
- Environmental Analysis
- Materials Characterization
- Gas Phase Measurements
- Advanced Imaging/Illumination
- Applications requiring long lamp life



## About Energetiq

*Energetiq Technology, Inc. is a wholly-owned subsidiary of Hamamatsu Photonics. Energetiq combines its deep understanding of the plasma physics needed for high-brightness light generation with its long experience in building rugged industrial & scientific products. The result is that users can expect the highest levels of performance combined with the highest reliability.*

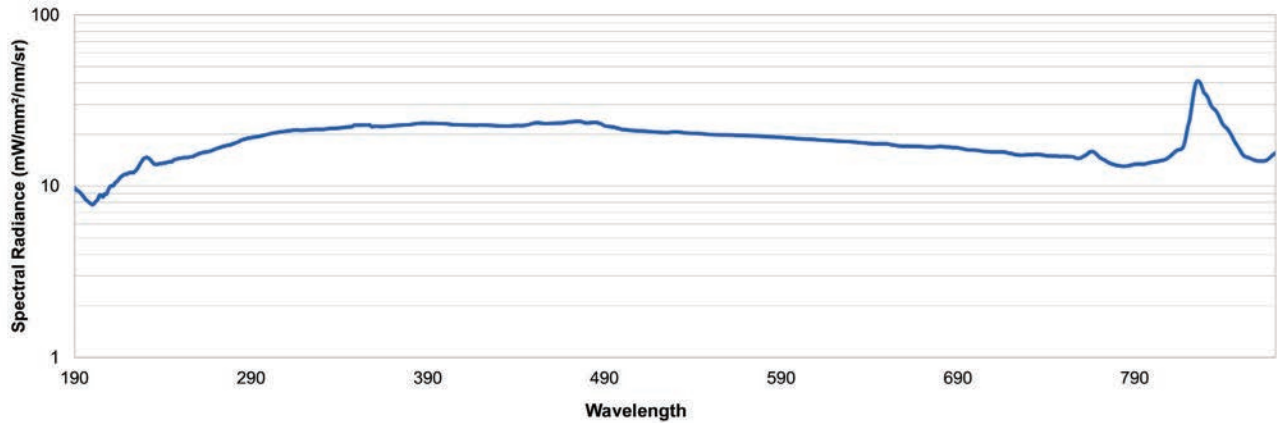
## The LDLS™ Principle of Operation



EQ-99X lamp house with power supply



## EQ-99X LDLS Spectral Radiance



## Specifications

### Overview

- Spectral output from 170nm to 2100nm
- Large collectable view angle – Numerical Aperture (NA): up to 0.47
- Typical bulb life > 9,000 hrs.
- Flexible optical interface for free-space optics (SM1 thread)
- Various precision reflective coupling optics are available from Energetiq - call for details

### Physical Specifications

	System Dimensions (H x W x D)	Weight
• Lamp House	82.3 x 85.7 x 76.2 mm (3.2 x 3.4 x 3.0 in)	0.7 kg (1.5 lbs)
• Power Supply	107 x 111 x 254 mm (4.2 x 4.4 x 10 in) (excl feet)	1.4kg (3 lbs)

### Utility Requirements

• Electrical	100-240v, 50/60Hz, 2.5A
• Cooling	Ambient air, no auxiliary cooling necessary
• Nitrogen	Recommended purging for longest life & for DUV operation, Grade 6
• Compliance	CE Mark, Class 1 Laser Product



Patent Numbers: US: 7435982; 7786455 -- GB 2450045 -- Other Patents Pending