Features | Laser-Driven Light Sources (LDLS)

High technology supported by a number of proprietary patents

The unique laser-driven technology which is the basic principle behind LDLS is supported by patents owned by Energetiq. The related patent numbers are as follows.

US 7435982	US 7786455
US 8525138	US 8969841
US 9048000	US 9185786

Japan 5410958	Japan 5628253
Korea 10-1507617	UK GB2450045

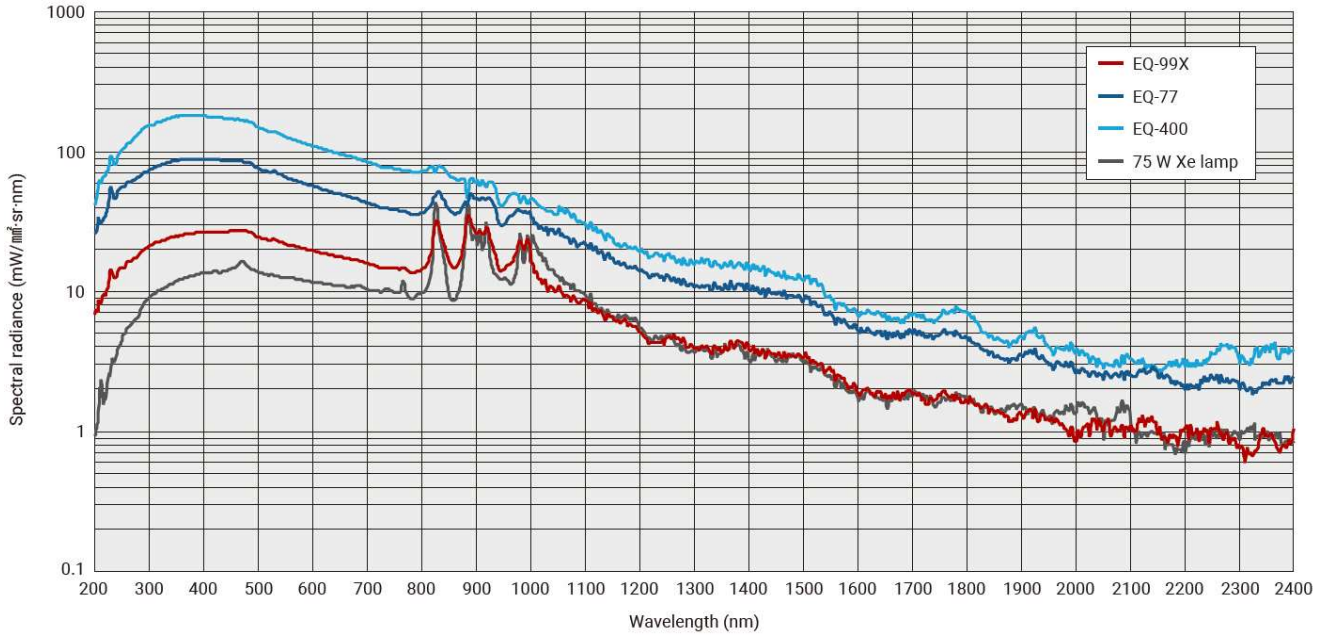
For more detailed information, please refer to the following site.

https://www.energetiq.com/patents

Features

Extremely broad wavelength range

Broad emission wavelength range from vacuum UV to visible and near-infrared (170 nm to 2500 nm)



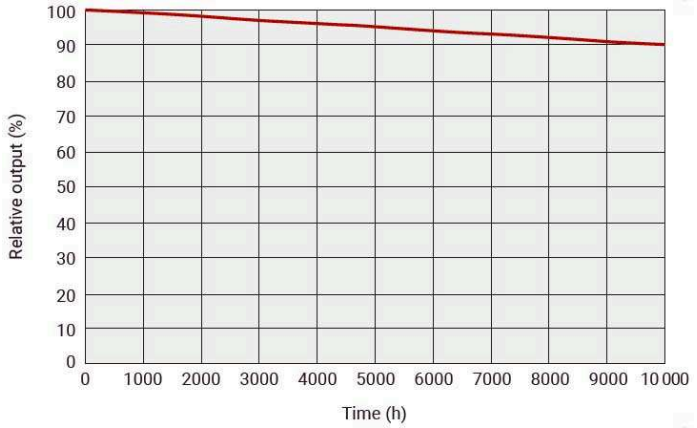
We have confirmed wavelength radiation from 170 nm to 2500 nm, but we have not acquired the wavelength band less than 200 nm and after 2400 nm for spectral radiance data.

Long lifetime

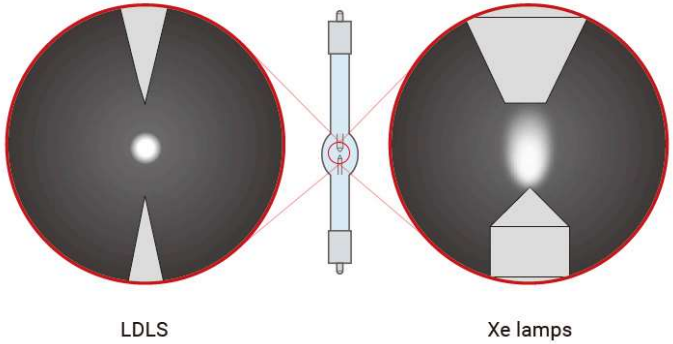
Bulb lifetime of 10 000 hours

High radiance from a small plasma

High radiance emission from a luminous point of 0.1 mm diameter

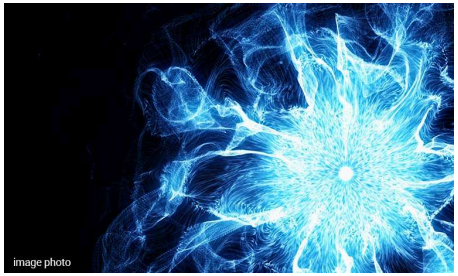


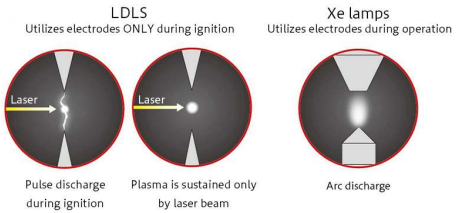
This is the typical lifetime of EQ-99X-QZ-S measured light output at 500 nm.

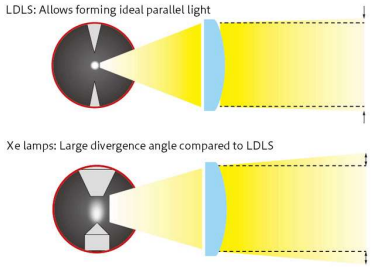


Product Technology

The Laser-Driven Light Sources or LDLS is an innovative light source developed by Energetiq Technology inc. in the US, which is a subsidiary of Hamamatsu Photonics K.K..
LDLS is the only light source in the world that utilizes a focused laser beam to generate and maintain plasma between the discharge electrodes in the xenon gas filled bulb.







High-temperature plasma sustained by laser

The high-temperature plasma generated by the laser emits a nearly flat spectrum that spans the UV to near-infrared region and has much higher brightness than xenon lamps.

Light emission technology that causes no wear on the discharge electrodes

LDLS utilizes its two discharge electrodes in the bulb only at the start of lighting. After that, there is absolutely no wear and tear on the electrodes while plasma is maintained between them. This means the bulb has a very long service lifetime compared to traditional light sources that fully use and consume the electrodes to maintain lighting.

Very small emitting point

Because light emission occurs only at the laser-focused point, the emitting point is very small compared to that of xenon lamps. This offers many benefits such as focusing light onto a small point, efficient utilization of light, and suppression of stray light.

When collimating light from traditional light sources, the beam divergence or widening angle usually becomes a problem. LDLS allows forming ideal collimated light with a smaller divergence angle than xenon lamps.

The small emitting point is also advantageous for efficiently focusing the light onto a very small area.

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