XWS-65 Broadband plasma light source

XWS-65 - laser pumped plasma ultrabright broadband light source

In XWS sources, light is produced by plasma which emits light due to the interaction between a continuous energy input from a laser and the gas medium used (optical discharge). These light sources have been developed as a replacement for traditional gas discharge lamps (Deuterium-, Tungsten-, Xenon- lamps etc.) and LEDs. Compared to these, XWS sources have a wider spectral range and higher spectral brightness.

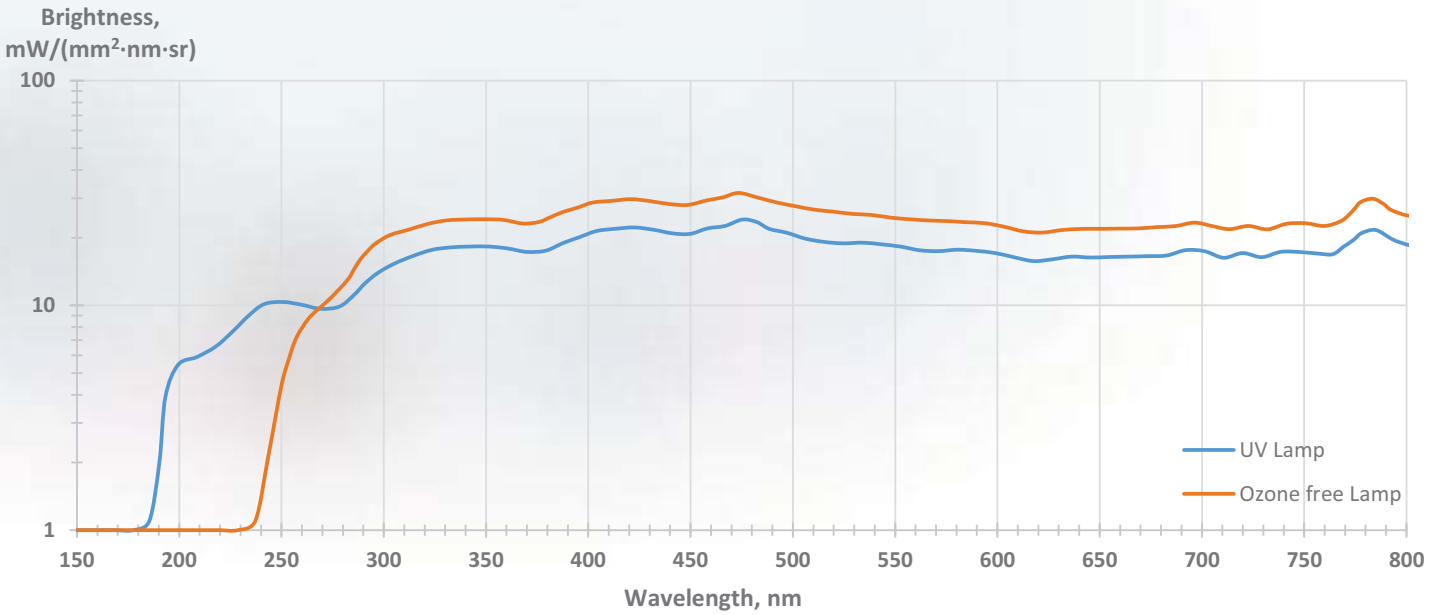
Principle of operation:

Operation of XWS sources is based on the phenomenon of an optical discharge in high pressure xenon gas. Initial plasma is produced by a high voltage electrical discharge in xenon. The plasma state of xenon is sustained by focused continuous laser radiation. Compared to arc lamps, laser plasma has higher spatial and temporal stability, higher brightness, smaller dimensions of emitting volume and considerably longer operation time without lamp replacement.

Main advantages:

- broad spectral range
- high spectral brightness
- the small dimensions of the emitting volume considerably expand the range of XWS applications
- high temporal and spatial stability
- long life time due to no wear of lamps and electrodes

Spectral brightness of XWS-65 light source in UV and VIS spectral region



Application fields:

- absorption and fluorescence spectroscopy
- microscopy, including confocal and fluorescence
- diagnostics systems in microelectronics (contamination and defect control)
- detectors in chromatography, microfluidics, lab-on-a-chip, droplet spectrometers, cytofluorimeters, etc
- biomedical applications (photodynamic therapy, etc.)
- additive technologies (photopolymerisation etc.)
- artificial sunlight systems (test systems, illumination, etc.

Specifications:

Spectral range:
- from 190 to 2500 nm (UV configuration)
- from 240 to 2500 nm (Ozone-free configuration)

Spectral brightness (450-500 nm):
- 34 mW/(mm2×sr×nm)

Laser power input: 65 W

Full output power of source: 40 W

Emitting body source dimensions: 250×400 µm

- lifetime: up to 10,000 hours
- temporal and spatial stability: RMS 0.25%
- lamp medium: Xenon

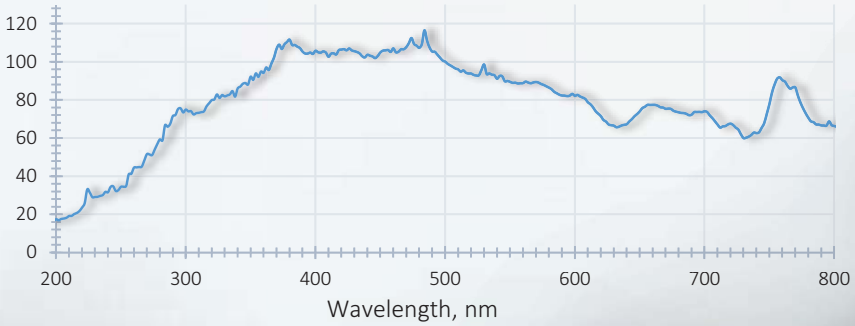
- light source head: 130×110×74 mm
- driver unit: 351×172×232 mm
- output aperture (by default): 24 mm
- C-mount for attaching optics
- power input via fiber
- optional – fiber coupling

Optional configurations:

- UV or Ozone free
- Free space or fiber coupled

XWS-V: Cutting edge technology under development with 4 times higher brightness

XWS-V spectral brightness, mW/(mm²·sr·nm)



This new technology allows significant increase in source spectrum brightness, which makes the product more attractive for fiber optic applications.

New configuration makes the source more flexible and more suitable for different applications.

Technology of ultrabright broadband light sources can be used in various applications. The technology allows the adaptation of XWS light sources to customer requirements and their integration into systems and technological processes. Custom design is available upon request.