A laser-based plasma source for generation of EUV/soft x-ray radiation was developed at the Laser-Laboratorium Göttingen. The plasma is produced by an Nd:YAG laser (1064 nm, 800 mJ, 7 ns) that is focused into a pulsed gas jet. Different target gases can be used for the generation of either intense broad-band (XUV: Krypton, Argon, EUV: Xenon) or less intense narrow-band radiation (XUV: Nitrogen, EUV: Oxygen), respectively.

### Specifications

- **Wavelength**: 1...20 nm
- **Pulse duration**: 7 ns
- **Pulse energy (Xe)**: 3.5 mJ (4π sr, 2% BW)
- **Conversion eff. (Xe)**: 0.45 %
- **Plasma shape**: Ø ~ 300 µm
- **Repetition rate**: up to 10 Hz

### Advantages

- Low debris
- High EUV energy (3.5 mJ)
- Minimum gas consumption (duration of gas pulse: < 1 ms)
- Simple target gas exchange
- Table-top system

### Applications

- Metrology: Reflectometry, absorption spectroscopy (NEXAFS)
- Optics/sensor testing
- EUV damage investigations
- Fundamental studies on material interaction
- Water window microscopy (λ = 2 .. 4 nm)