



activefiber
systems

HIGH-FLUX **XUV** BEAM LINES

Sources of short-wavelength radiation, such as synchrotrons or free-electron lasers, have already enabled numerous applications and will facilitate more seminal studies. On the other hand, sources of coherent extreme ultraviolet to soft x-ray radiation via high-harmonic generation (HHG) of ultrashort-pulse lasers have gained significant attention in the last years due to their enormous potential to address a plethora of applications in a cost-effective and table-top format. Therefore, they constitute a complementary source to large-scale facilities.

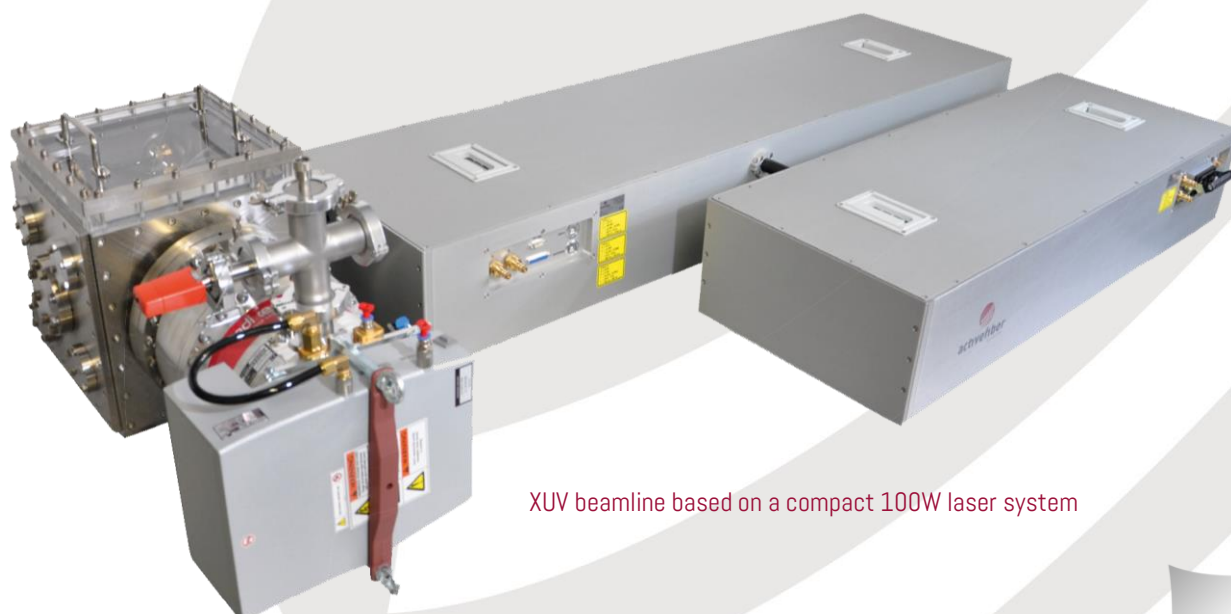
The photon-flux values obtained by fiber-laser-driven HHG sources can be considered the highest of all laser systems for photon energies between 20-150 eV.

AFS ultrafast fiber lasers are ideal high-harmonic drivers. These turnkey HHG beamlines can address several applications in the EUV to X-ray spectral region such as:

- Photoelectron spectroscopy
- Coherent diffractive imaging – CDI (nanoscope)
- Attosecond science

MORE INFORMATION

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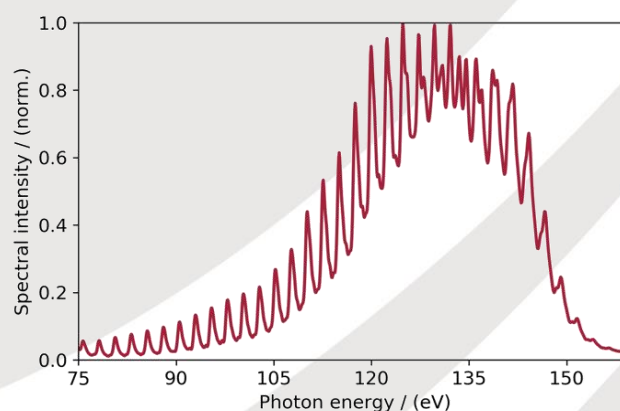
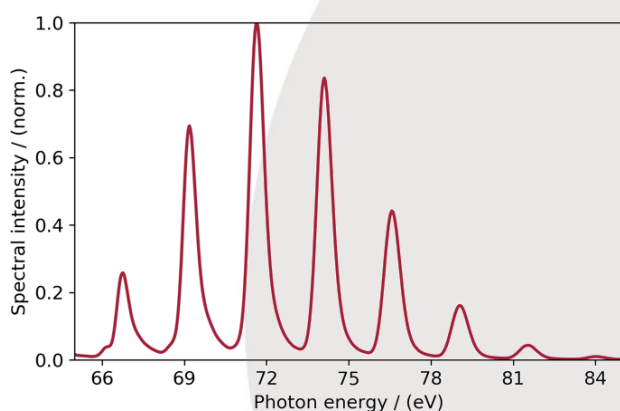
XUV beamline based on a compact 100W laser system



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	Exemplary configurations		
Photon energy	21 eV	90 eV	150eV
Wavelength	59 nm	13 nm	8.5nm
Photon flux per harmonic	up to 10^{14} s^{-1}	up to $5 \cdot 10^{10} \text{ s}^{-1}$	up to 10^{10} s^{-1}
Average power per harmonic	up to 330 μW	up to 0.7 μW	up to 0.4 μW
Repetition rate	flexible, up to 10 MHz		
Pulse duration	pulse duration < laser pulse duration i.e. <30 fs (or shorter)		
Spectral bandwidth	can remain close to the transform limit with flexible bandwidths (i.e. down to <10 meV)		
Beam profile	Gaussian		
Dimensions of HHG chamber	80 cm \times 40 cm \times 40 cm		
Vacuum connections	typically KF-40, can be adapted to customer preferences		
Additional features	Turnkey reliability, high stability, all parameters software-controlled		
Add-ons	Single-harmonic selection, separation of XUV radiation and driving radiation, differential pumping towards application, XUV Focusing		

The specs above show only exemplary configurations. We happily customize a system exactly to your needs.



Examples for typical emission-spectra of a fiber laser driven HHG sources