Higher Harmonics Generation (HHG), brief description and expected parameters of the HHG source

HHG Beamline

High-order harmonic generation in noble gas is employed to produce a stable source of coherent femtosecond pulses in the XUV spectral range. The beamline (figure 1) allows for modification of the driving laser focusing for given generation scheme (noble gas) maximizing the conversion efficiency. Complete set of diagnostics is available for full characterization of the beam provided to the end-station. Expected pulse energy for various laser drivers is listed in Tab. 1.

Laser driver Wavelength	20 mJ (L1)	6 mJ (Astrella)
50 - 120 nm	300	50
30 - 50 nm	30	5
10 - 30 nm	3	0.5

Tab. 1 Expected XUV energy per pulse (nJ) generated using the L1 Allegra and Coherent Astrella laser drivers in E1

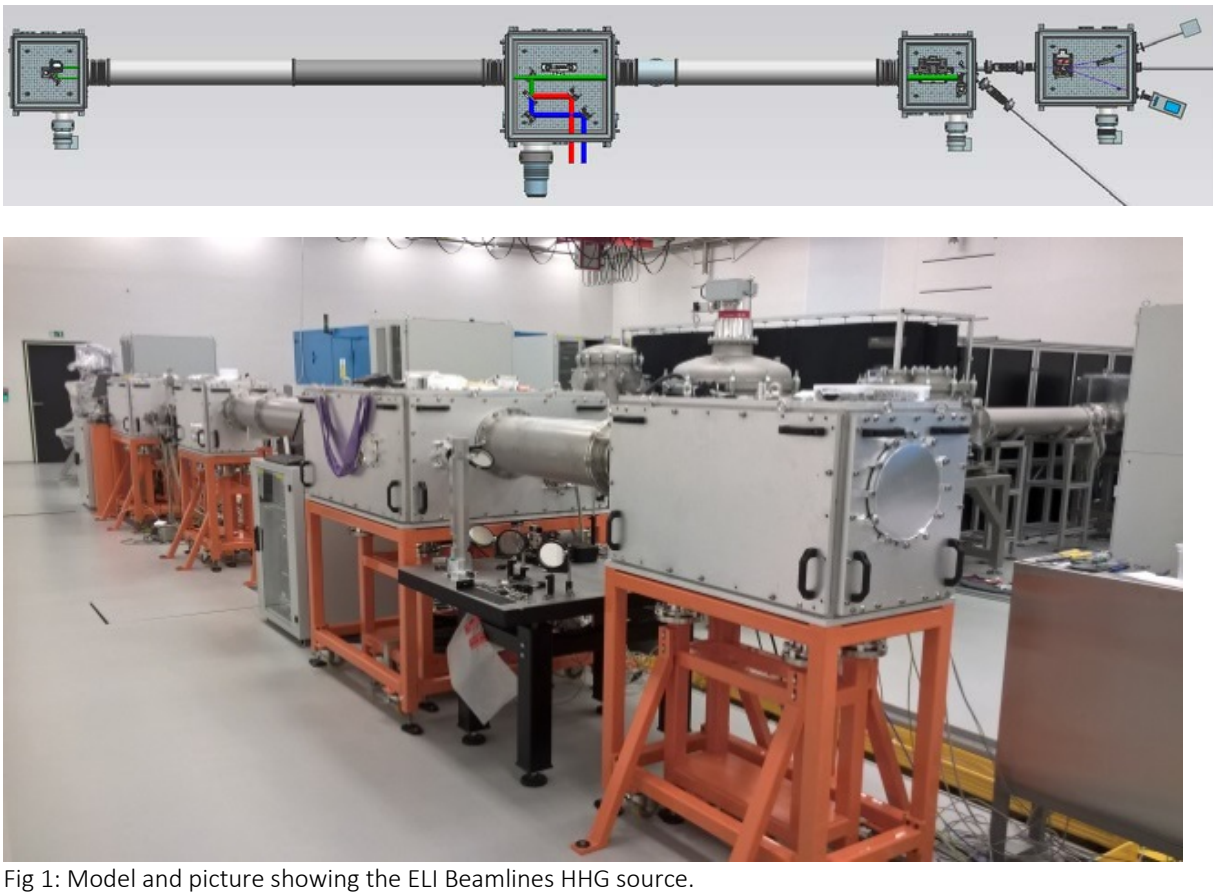

Fig 1: Model and picture showing the ELI Beamlines HHG source.