E1 call 2 user experiments, kHz lasers

This document summarizes the lasers available for the E1 call 2 and their main parameters.

L1 Allegra

The L1 Allegra laser is based on amplification of picosecond pulses in broadband OPCPA and compression to <20 femtosecond using chirped mirrors. The pump lasers are based on Yb:YAG thin disk technology. The central wavelength is 860 nm, beam profile is Gaussian-like and the polarization is linear s-polarization. Pre-pulse temporal contrast (up to 5 ps before pulse) is 10^-10. More information on the system can be found here (https://www.eli-beams.eu/facility/lasers/laser-1-allegra-100-mj-1-khz/)

Energy - compressed	Pulse duration at target	Repetition rate
30* or 15 mJ	<16 fs	1 kHz

*Higher pulse energies can be provided but at the potential risk of reduced reliability in delivery. Contact the ELI BL staff for a detailed discussion.

Optional drive laser for HHG and MAC experiments

For call 2 experiments, the following lasers are available for HHG source operation together with the MAC station.

Coherent Legend Duo Elite

Energy - compressed	Pulse duration at target	Repetition rate
12 mJ	<35 fs	1 kHz

Drive lasers for optical spectroscopy

For call 2 user experiments in optical spectroscopy (FSRS, TA and time resolved ellipsometry) the following lasers are available:

Coherent Astrella

Energy - compressed	Pulse duration at target	Repetition rate
7 mJ	<40 fs	1 kHz

Spectra Physics Femtopower/Solstice doublet

Energy - compressed	Pulse duration at target	Repetition rate
4.5 mJ (Femtopower)	30 fs (Femtopower)	1 kHz
7 mJ (Solstice)	40 fs (Solstice)	1 kHz

Delays between Femtopower/Solstice doublet lasers can be controlled between 0 fs to 1 ms.

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