

High Energy OPCPA Systems Pumped by Picosecond Nd:YAG Lasers, Seeded by ORPHEUS-OPCPA

Applications like high-energy attosecond pulse generation, generation of high harmonics from solid targets, and laser electron acceleration all benefit from few-cycle pulse durations and excellent pulse contrast while requiring multi-millijoule pulse energy. Our most powerful high energy OPCPA systems are scalable to multi-TW peak powers at kHz repetition rates while maintaining few-cycle pulse durations. They will fit the most demanding requirements while providing stability and reliability unprecedented for systems of this scale.

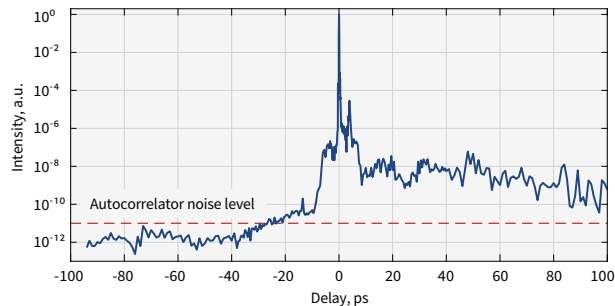
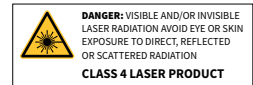


SYLOS launched in ELI-ALPS facility

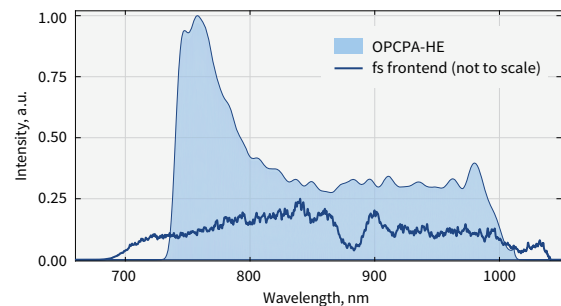
CONFIGURATIONS

Wavelength	800 nm	1.6 μm	2 μm	
Pulse duration	< 9 fs	< 50 fs	< 30 fs	
	Repetition rate		Pulse energy / Output power	
HE-100 ¹⁾	100 Hz	50 mJ	100 mJ	50 mJ
HE-1000 ²⁾	1 kHz	50 mJ / 50 W	100 mJ / 100 W	50 mJ / 50 W

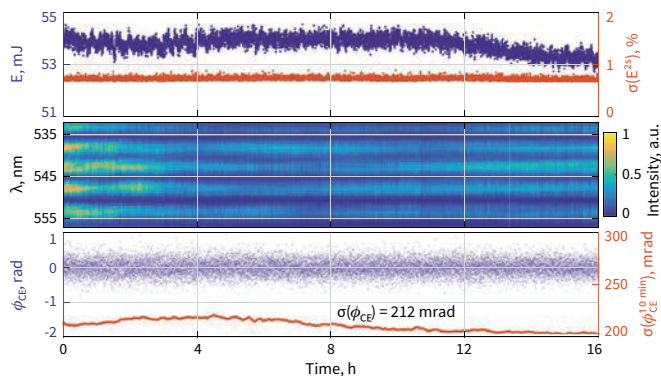
¹⁾ Cost- and size-effective highly-stable multi-TW source.
²⁾ Cutting-edge combination of peak and average power.



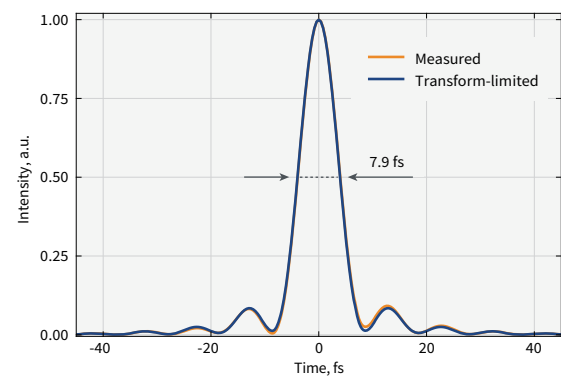
High-dynamic-range third order autocorrelation measurement of an OPCPA-HE system



OPCPA-HE output spectrum



OPCPA-HE pulse energy, f-2f interferogram and CEP stability measured over 16 h



Temporal profile of OPCPA-HE output pulses measured with a self-referenced spectral interferometry device