

Compact, Few-Cycle, CEP-Stable OPCPA Systems



Few cycle pulses in a compact footprint

800 nm, 1600 nm, 2000 nm, or 3000 nm output

High repetition rate, up to MHz

High contrast seed source for CPA and OPCPA systems

Exceptional power, pulse energy and CEP stability

SH / TH options

Specifications

Center wavelength	800 nm	1600 nm	2000 nm	3000 nm
Pump source ¹⁾	PHAROS / CARBIDE			
Pump power ¹⁾	20 – 480 W			
Pump pulse energy ¹⁾	0.2 – 8 mJ			
Repetition rate	1 kHz – 1 MHz			
Conversion efficiency ²⁾	> 7%	> 10%	> 9%	> 6%
Pulse duration ²⁾	< 10 fs	< 40 fs	< 25 fs	< 45 fs
Transform-limited pulse duration ^{2),3)}	< 6 fs	< 30 fs	< 15 fs	< 35 fs
CEP stability, 1 h ^{2),4)}	< 250 mrad			
Long-term power stability, 8 h ^{2),5)}	< 1.5%			
Pulse-to-pulse energy stability, 1 min ^{2),5)}	< 1.5%			

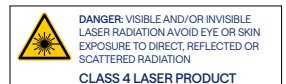
¹⁾ For using other pump sources, such as thin-disk or innoslab lasers, contact sales@lightcon.com.

²⁾ Typical values. For custom inquiries, contact sales@lightcon.com.

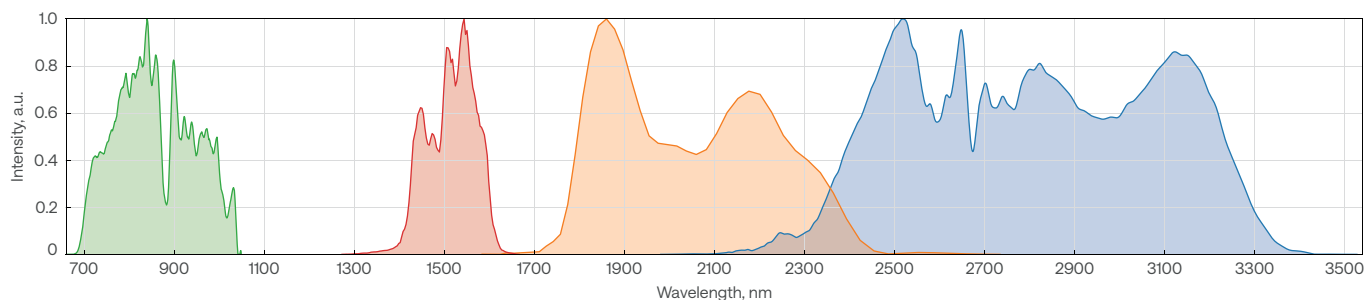
³⁾ Uncompressed, for seeding larger amplifiers.

⁴⁾ CEP values calculated from unaveraged, single-shot measurements.

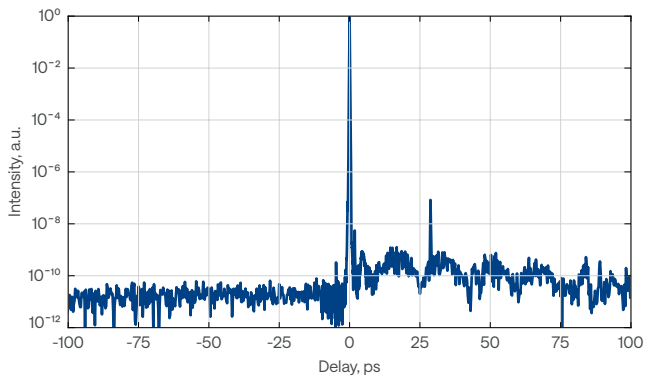
⁵⁾ Expressed as normalized root mean squared deviation (NRMSD).



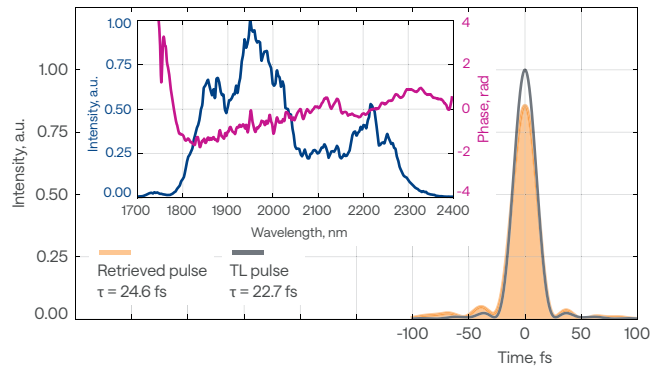
ORPHEUS-OPCPA example spectra of four models



ORPHEUS-OPCPA high-dynamic-range third order autocorrelation measurement system at 800 nm

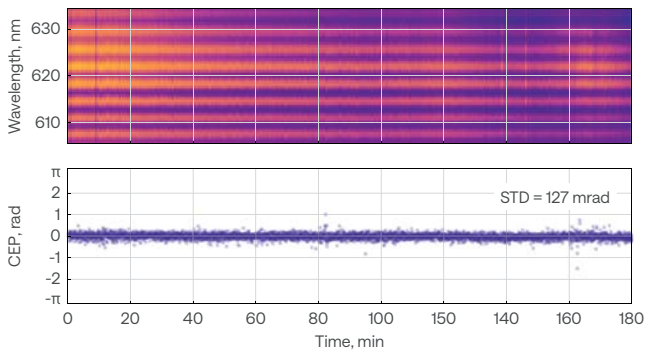


ORPHEUS-OPCPA temporal profile output pulses at 2 μm

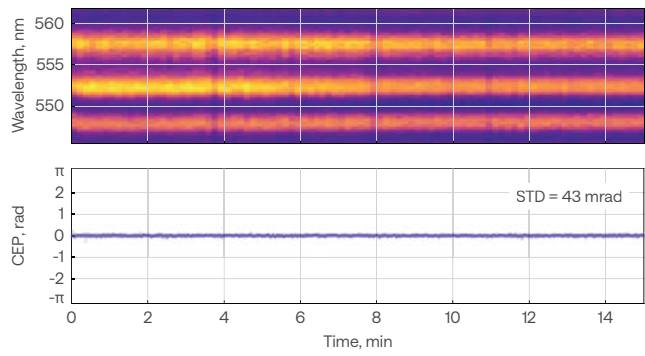


Stability

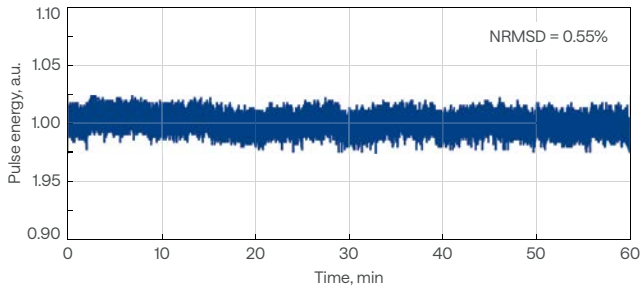
ORPHEUS-OPCPA CEP stability* (800 nm, 100 kHz)



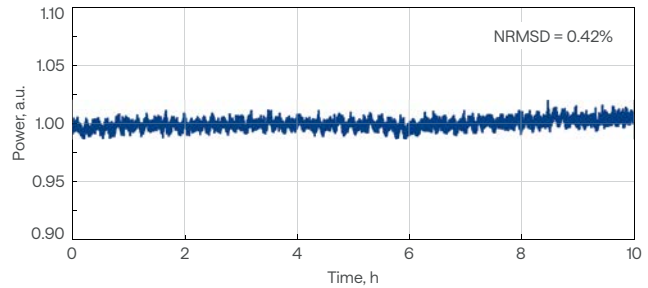
ORPHEUS-OPCPA CEP stability* (3 μm, 1 kHz)



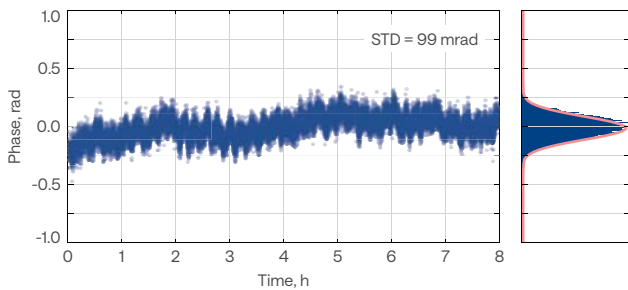
ORPHEUS-OPCPA pulse-to-pulse energy stability at 800 nm



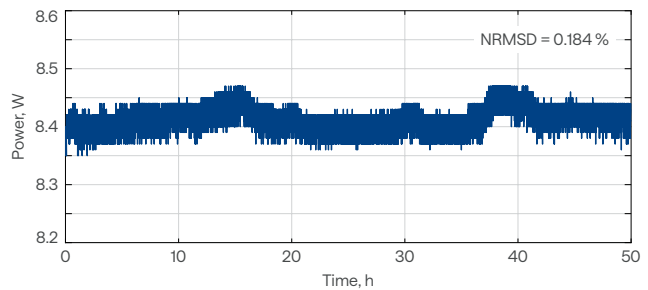
ORPHEUS-OPCPA long-term output stability at 800 nm



ORPHEUS-OPCPA CEP stability* (2 μm, 100 kHz) without slow-loop CEP stabilization



ORPHEUS-OPCPA long-term output stability at 2 μm



*All CEP values calculated from unaveraged, single-shot measurements.

