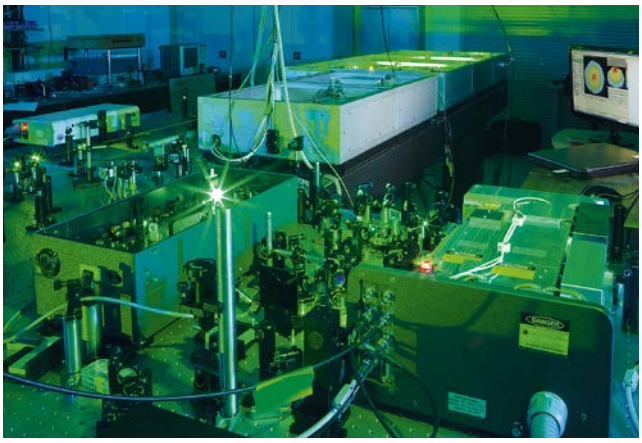
OPCPA

Custom Optical Parametric Chirped Pulse Amplification Systems



FEATURES

- Front end is based on field-proven PHAROS laser
- Passive CEP stabilization is done employing a temperature controlled Optical Parametric Amplifier (OPA)
- White light continuum (WLC) generation provides background free broadband seed, ensuring excellent temporal pulse contrast
- Reliable direct optical synchronization: the PHAROS laser provides options for directly seeding a variety of Yb- or Nd- based high energy picosecond lasers, allowing to combine our frontend and OPCPA technologies with all common types of high energy and/or high power picosecond pump lasers

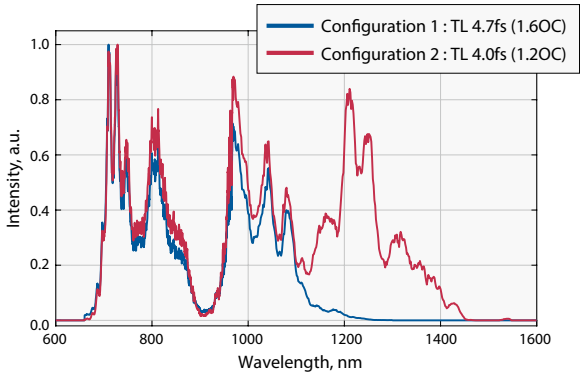
Optical parametric chirped pulse amplification is the only currently available laser technology simultaneously providing high peak and average power, as well as few cycle pulse duration required by the most demanding scientific applications. LIGHT CONVERSION's answer to these demands is a portfolio of cutting-edge OPCPA products that are based on years of experience in developing and manufacturing of Optical Parametric Amplifiers and Femtosecond Lasers.

OPCPA frontends

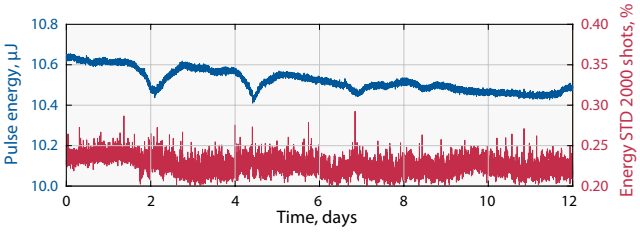
FEATURES

- Scalable in repetition rate from < 1 to 100 kHz and above
- High pulse energy (up to 100 µJ pulse energy at 1 – 10 kHz) improves contrast of OPCPA output
- Intrinsically free from ASE background; postpulse-free versions available
- Passive CEP stabilization eliminates complex electronics
- Sub-200 mrad CEP noise
- Bandwidths down to the near-single-cycle regime in the NIR
- Output spectra can be engineered to maximize energy in a desired spectral range
- Can also be used as reliable high energy, high contrast seed source for Ti:Sa amplifiers
- Central wavelength up to 2.2 µm is available on request

Our OPCPA frontend technology marks a solid step up from seeding an OPCPA directly from a Ti:Sapphire oscillator. The OPCPA frontend setups are based on the industrial-grade PHAROS laser and femtosecond optical parametric amplification technology. We use passive CEP stabilization and take advantage of the femtosecond pulse duration of the PHAROS laser to produce extremely clean broadband OPCPA seed pulses.



Spectra of pulses produced by OPCPA frontends, two configurations are available



Energy and energy stability of the passively CEP stabilized pulses generated in an OPCPA frontend measured over 12 days

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