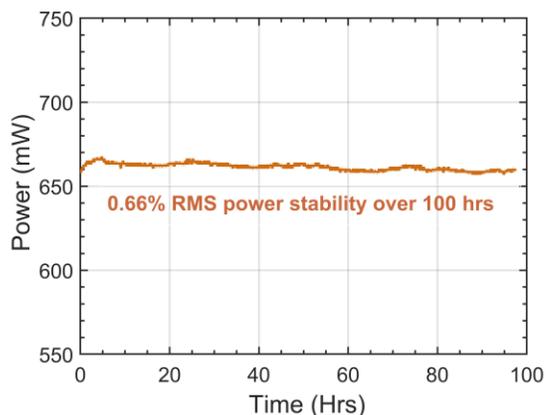
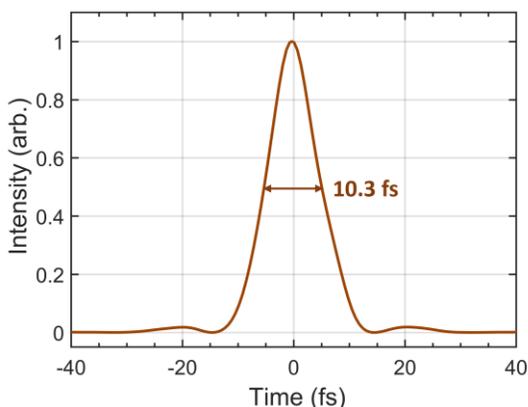
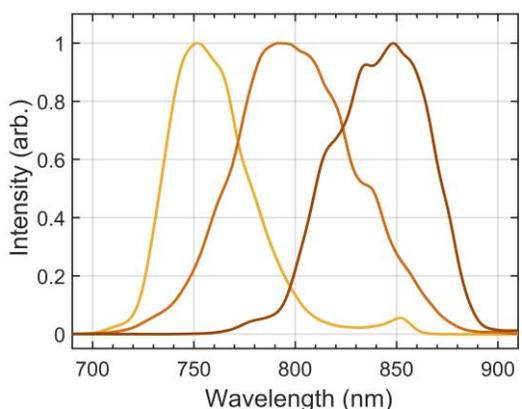




KMLabs' **Orthos** ASOPS system

-The first wavelength tunable Ti:Sapphire ASOPS system



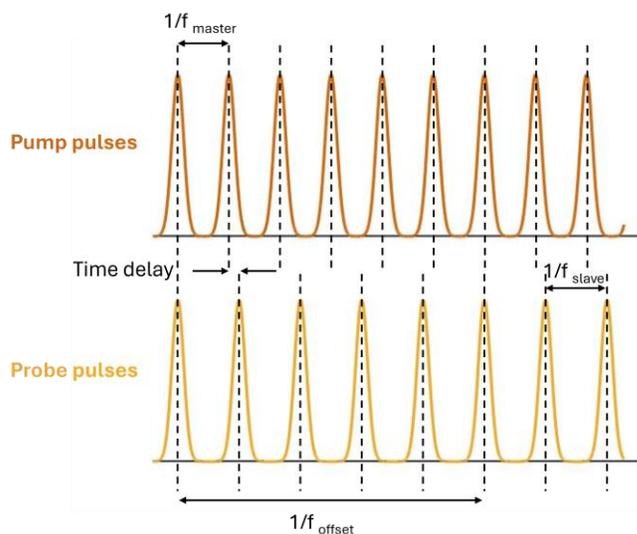
Specification	
Center wavelength	~ 800 nm
Tuneable wavelength range	750-850 nm
Repetition rate	~ 93 MHz
Max mode-locked power	> 500 mW at 800 nm
Pulse duration (based on Fourier transform limit)	< 15 fs
Pulse energy	> 5 nJ
Power stability (over 8 hours after warm-up)	< 1% RMS, at $\pm 1^\circ\text{C}$ room temperature stability
Timing jitter (measured electronically)	< 150 fs RMS
Repetition rate offset	1-20 kHz
Delay window	10.7 ns
Dimensions (mm)	1370 L, 880 W, 178 H

Orthos is an ultrafast laser ASOPS system, built based on our successful line of wavelength-tuneable Ti:Sapphire oscillators. It consists of the **Griffin Prime** as the free-running, MHz-scale oscillator, and the **Halcyon Prime** as the repetition-rate-stabilized oscillator, set to a controllable offset from the Griffin Prime. The Orthos is equipped with a suite of diagnostics on a common water-cooled baseplate with these oscillators, including an optical coincidence detection setup.



ASOPS is a technique widely used in ultrafast pump-probe spectroscopy and terahertz time-domain spectroscopy (THz-TDS). It enables rapid, high-resolution time-resolved measurements without requiring mechanical delay lines.

In Orthos, the two mode-locked lasers operate at slightly different repetition rates: f_{master} and $f_{\text{slave}} = f_{\text{master}} - f_{\text{offset}}$. The small adjustable offset frequency f_{offset} causes the relative delay between the pump and probe pulses to scan automatically over time at very high speed and with high precision.



Features

- Independently tunable center wavelength and bandwidth of each oscillator's spectrum
- Tunable pulse duration
- Adjustable repetition rate offset
- Pulse train and power monitors

Applications

- Transient pump-probe spectroscopy
- Time domain THz Spectroscopy
- Coherent optical phonon detection
- Transient thermo-reflectance
- Coherent strain wave propagation
- FTIR spectroscopy