



# Y-Fi OPA - Robust, Briefcase-Sized Tunable Ultrafast SWIR/MWIR Source

Fiber laser-amplifier system with integrated infrared OPA.  
Computer-controlled tuning, hands-free operation

## Applications

- 3- and 4-photon excitation fluorescence microscopy
- Short-wave IR (SWIR) pumped 2nd and 3rd harmonic generation microscopy
- 2-photon excitation fluorescence microscopy with SHG of the SWIR
- Mid-wave infrared (MIR) micro-spectroscopy
- Tip-enhanced (MIR) nanoscopy (aka nano-spectroscopy)
- Time-resolved MIR spectroscopy
- SWIR and MIR supercontinuum generation
- Retina-safe coherent Raman Scattering (stimulated Raman scattering, coherent anti-Stokes Raman scattering, etc.)

## Features

- Industry-leading repetition rate for SWIR OPA, leading to optimal multiphoton microscopy signal levels and imaging depths
- Class-leading MIR average power @ >2 MHz repetition rate
- Access to all three outputs: signal (SWIR), idler (MIR), and depleted pump (NIR)
- Bypass port for access to the full Y-Fi HP capabilities
- Single-box system containing both fiber laser and OPA: 12" x 16" x 6"
- Fiber-coupled signal (SWIR) monitor port
- Intuitive control GUI including wavelength and repetition rate with integrated diagnostics

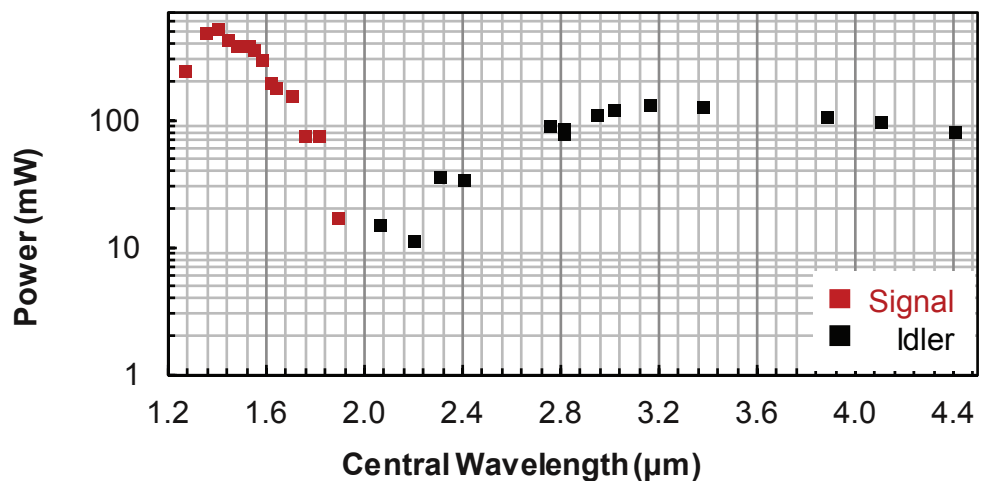


The **Y-Fi™ OPA** is KMLabs' vertically integrated optical parametric amplifier pumped by a Y-Fi HP. The class-leading pulse duration of the 1035 nm centered Y-Fi HP results in both a stable, coherent white light seed source and exceptionally high conversion efficiency into the short-wave and mid-wave infrared.

## Y-Fi™ OPA Unique Features

- Tunable repetition rate range of 1-3 MHz
- > 15% conversion efficiency into Signal and Idler
- Supports < 50 fs pulses
- Y-Fi™ HP output (1035nm, 3 μJ) also available, direct or residual after OPA
- Compact form factor: 12" x 16" x 6" optical head

## Y-Fi OPA Tunability



Contact us for full specifications or with questions



## Y-Fi OPA Specifications

Parameter	Y-Fi OPA Signal	Y-Fi OPA Idler
Center Wavelength	1250 – 1800 nm	2.4 – 4.4 $\mu\text{m}$
Pulse Width*	< 50 fs	< 100 fs
Beam Quality	$M^2 < 1.4$	Not specified
Average Power**	> 400 mW x Repetition Rate e.g. > 400 mW @ 1 MHz	> 100 mW x Repetition Rate e.g. > 100 mW @ 1 MHz
Pulse Energy**	> 400 nJ	> 100 nJ
Repetition Rate	1 – 3 MHz	1 – 3 MHz

\* Bandwidth supported

\*\* At the peak of the tuning curve

### Y-Fi™ OPA Sample Data

