

NEW PRODUCT

# Blaze™ Broadly Tunable Laser System

Ultrafast Fully-Integrated OPO-Based Laser System



## Key Features

- Fully-integrated design with Ti:sapphire pump and OPO based in one single platform for highest stability
- Wide tuning across 1000 – 1550 nm and 1620 – 4000nm without any change of optics  
3 outputs available: 1) 100% of the pump (with no signal or idler); 2) signal; 3) idler
- Signal and idler are delivered simultaneously
- Dispersion adjustment independent for each wavelength for minimum pulse duration
- Excellent beam pointing stability across the complete spectral range with TEM<sub>00</sub> spatial quality
- Hands-free operation with a dedicated control software for both pump and OPO.  
Control drivers available
- Sealed, compact and virtually maintenance-free
- Integrated spectrometer

## Applications

- Multi-photon excitation (MPE) microscopy
- Coherent anti-stokes Raman spectroscopy (CARS)
- Time-resolved spectroscopy
- Vibrational overtone spectroscopy
- Semiconductor research and spectroscopy
- Multiple wavelength pump-probe experiments
- Fiber optics and optical communications

Radiantis introduces the Blaze™, the first commercial broadly tunable femtosecond laser system incorporating in a single platform both, a Ti:sapphire pump laser and an optical parametric oscillator (OPO), for maximum stability, compactness and simplicity.

The unprecedented fully-integrated design of the Blaze™ includes four output ports which deliver: 1) the signal (across 1000 and 1550 nm), 2) the idler (across 1620 to 4000 nm), 3) the Ti:sapphire (at 800 nm) and 4) the pump (at 532nm). An important feature of the Blaze™ is the incorporated Ti:sapphire pump bypass which enables the selection of 100% of the pump (with no signal power) or 100% of the signal and idler power (simultaneous) with 0% of the Ti:sapphire. A wavelength extension into the visible (across 500 and 775 nm) is available upon request.

To ensure shortest pulse durations across the spectral range, an advanced dynamic dispersion compensation module is included within the Blaze™, allowing independent optimisation of the pulse duration for different wavelengths. Additionally, excellent beam pointing stability with time and wavelength is provided which increases usability in applications where reduced beam misalignment due to laser beam displacement is required.

Full-automation is provided via dedicated control software and drivers. The Blaze™'s sealed, compact and hands-free design combined with virtual maintenance-free operation offers a superior and cost-effective laser system for applications such as multi-photon microscopy, time-resolved spectroscopy or CARS.

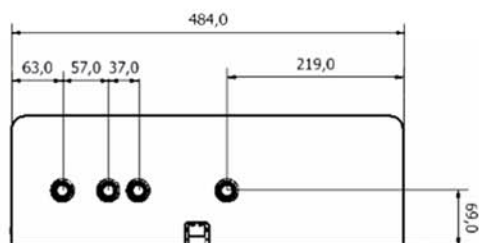
## Specifications<sup>1</sup>

Output Characteristics	Blaze	Blaze XT
Signal tuning range <sup>(2)</sup>	1000 – 1550 nm	1000 – 1550 nm
Idler tuning range		1620 – 4000 nm
Ti:sapphire wavelength <sup>(3)</sup>	800 nm	800 nm
Pump wavelength	532 nm	532 nm
Signal output power <sup>(4)</sup>	>450 mW	>450 mW
Idler output power		>150 mW
Ti:sapphire output power	>1.2 W	>1.2 W
Pump output power	>6 W	>6 W
Signal pulse width	<200 fs	<200 fs
Idler pulse width		<120 fs across 1620 – 2000 nm
Ti:sapphire pulse width	<150 fs	<150 fs
Beam diameter @ 1300 nm	1.4 mm +/- 10%	1.4 mm +/- 10%
Beam divergence	<1 mrad	<1 mrad
Signal beam displacement with wavelength (at <40 cm from output)	< 600 μm / 540 nm	< 600 μm / 540 nm
Signal beam pointing with wavelength (at <40 cm from output)	< 300 μrad / 540 nm	< 300 μrad / 540 nm
Spatial mode	TEM <sub>00</sub> (M <sup>2</sup> ≤ 1.2)	TEM <sub>00</sub> (M <sup>2</sup> ≤ 1.2)
Signal noise at 1300 nm	<1% rms	<1% rms
Output ports	1) Signal 2) Idler 3) Ti:sapphire bypass 4) Pump bypass	
Power stability	5%	
Polarization	Horizontal (>100:1)	
Repetition rate	80 MHz	
Size (W x L x H)	867 x 484 x 162 mm (34.1 x 19 x 6.3 inch)	

### Notes:

- <sup>(1)</sup> Specifications are subject to change without notice
- <sup>(2)</sup> UV-VIS extension available upon request
- <sup>(3)</sup> Alternative pump wavelengths available upon request
- <sup>(4)</sup> At peak of pump and OPO signal tuning range

## BLAZE™ Dimensions



## BLAZE™ Typical Tuning Curves

Blaze™ Signal



Blaze™ Idler

