REFINED
LASER SYSTEMS

PICUS DUO+

LASER WITH SEAMLESS ALIGNMENT FOR COHERENT RAMAN IMAGING

PICUS DUO+ laser source is ready to use for multicolor CARS and SRS imaging. The turn-key **PICUS DUO+** offers a single output, control for power, polarization and divergence, while being compact and air-cooled.

Electronically triggered wavelength conversion provides an umatched combination of tuning speed and range, while the **DUO+** seamlessly integrates with your microscope.

HIGHEST AVAILABLE TUNING SPEED

· Tunable in ms across 700 - 3100 cm^{-1}
· Integrated delay and divergence adaption
· Spectrometer and power control included

OPTIMIZED FOR CARS & SRS MICROSCOPY

· Optional integrated AM modulator (20, 10, 6 MHz)
· Balanced detector available (down to -170 dBc/Hz)
· Shot-noise limited at powers as high as 70 mW

SEAMLESS OPERATION

· Plug & Play installation
· Hands- and maintenance-free operation
· Electronically tuned and programmable

Applications:

· Rapid hyperspectral SRS & CARS imaging
· Tissue diagnostics via virtual H&E
· Cell phenotyping
· Rapid spectroscopy via spare sampling

Contact us for various customizations!

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Product Specifications

Optical

Optical	Output A	Output B
Covered wavenumbers	700 - 3100 cm⁻¹ with step size of 0.1 cm⁻¹	
Asscociated tuning range	approx. 780 - 980 nm	approx. 1027 - 1055 nm
Tuning speed	< 200 ms	
Average power	75 - 185 mW	> 300 mW
Average power (w modulation & reference port for balanced detection)	37 - 90 mW	> 200 mW
Typical pulse duration	6 - 12 ps	2 - 3 ps
Spectral resolution	< 12 cm⁻¹	
Repetition rate	~40.5 MHz	
Integrated tunable delay	± 4 cm ≈ 260 ps	

Electrical

Electrical	
Interfaces	Communication through USB or RS232 Trigger in for high speed wavelength tuning Monitor out for external synchronization
Software interfaces	GUI and custom serial API, e.g., via Python & Matlab

Mechanical

Mechanical	
Laser head (pump laser integrated)	49x83x20 cm^3
Laser controller dimension	43x45x13 cm^3
Cooling	Air-cooled
Weight	48 kg
Standard umbilical length	1.8 m

Designed for ease of use & smooth integration

- Power of pump and Stokes controlled by software and monitored for data normalization
- Control of individual beam divergence for perfect PSF overlap
- Matched polarizations and birefringence compensation
- Electronically tuned optical delay
- Various hardware and software options for synchronizing a wide range of experiments