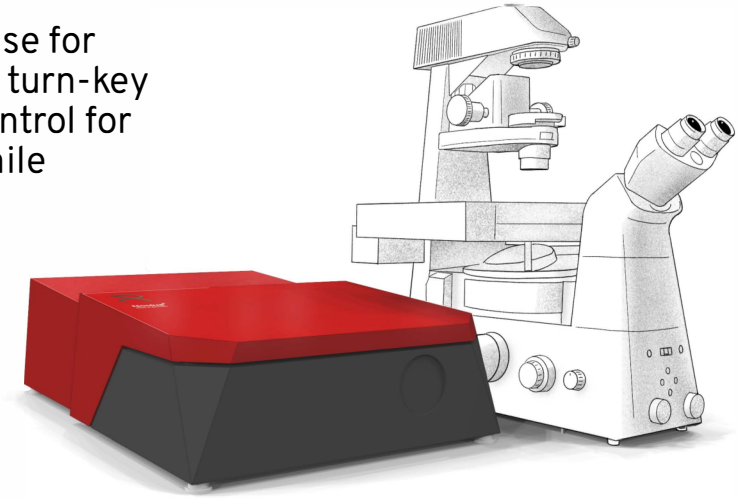
REFINED
LASER SYSTEMS

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	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. 1025 - 1055 nm
Tuning speed	< 100 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
Excitation bandwidth	< 12 cm^{-1}	
Repetition rate	~40.5 MHz	
Integrated tunable delay	± 4 cm	

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	
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

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The product is constantly being improved, therefore the specifications are subject to change without notice. March 2025 | Rev. 2.1

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