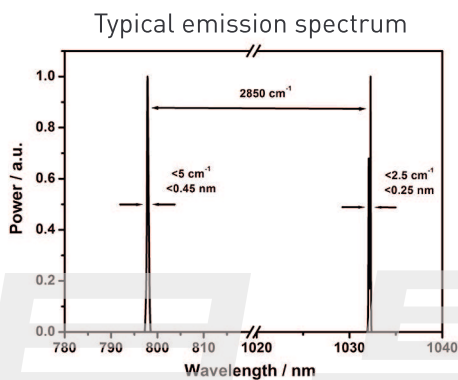




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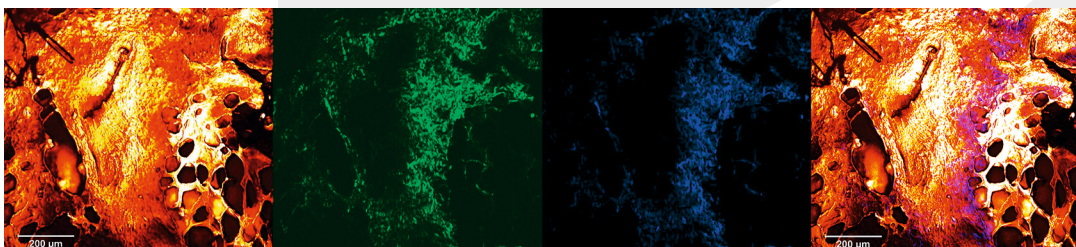
## PICOSECOND DUAL-WAVELENGTH FIBER-LASER FOR CARS & SRS MICROSCOPY



AFS turnkey laser sources for nonlinear microscopy deliver synchronized picosecond pulses with a tunable wavelength difference. They are completely software controlled and available with either a free-space output or a single fiber end. Due to the all-fiber pulse generation and frequency conversion, maximum compactness and alignment-free operation can be realized.

### APPLICATIONS

- CARS spectroscopy and microscopy
- Microscopic multi-modal nonlinear imaging (CARS, SHG, TPEF)
- SRS microscopy



Multimodal composite image of human connective tissue showing an overlay of CARS (red), SHG (blue) and TPEF (green) signals. Courtesy of IPHT Jena

The Active Fiber Systems GmbH is located in Jena, known as 'city of photonics' in Germany. As a spin-off from the Fraunhofer IOF Jena and the Institute of Applied Physics at the University of Jena the Active Fiber Systems GmbH represents the expertise of innovative solid-state laser development.

The mission of Active Fiber Systems GmbH is to transfer experimental results to reliable laser systems suitable for scientific and industrial applications. Among the extra-ordinary features of pulsed fiber lasers from AFS are compact dimensions, considerably reduced production costs as well as flexible and outstanding laser parameters, which can be customized.

### MORE INFORMATION

[www.afs-jena.de](http://www.afs-jena.de) | [contact@afs-jena.de](mailto:contact@afs-jena.de)



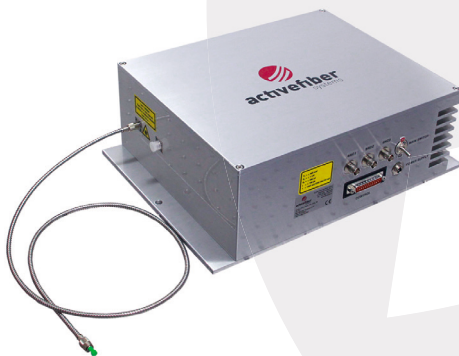
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**PICOSECOND DUAL-WAVELENGTH FIBER-LASER FOR CARS & SRS MICROSCOPY**

**FOPG-VERSION FOR CARS**

**FOP0-VERSION FOR CARS & SRS**

Tuning range (continuous)	2700 cm <sup>-1</sup> ... 3300 cm <sup>-1</sup>	930 cm <sup>-1</sup> ... 3300 cm <sup>-1</sup>
Tuning speed	<1 s (full range)	< 2 s (full range)
Output wavelength 1	1025 nm ... 1040 nm	1025 nm ... 1050 nm
Output wavelength 2	770 nm ... 810 nm	770 nm ... 960 nm
Spectral width wavelength 1 (FWHM)	< 15 cm <sup>-1</sup>	< 5 cm <sup>-1</sup>
Spectral width wavelength 2 (FWHM)	< 40 cm <sup>-1</sup>	< 6 cm <sup>-1</sup> @ 770 - 850 nm < 20 cm <sup>-1</sup> @ 850 - 960 nm
Repetition rate wavelength 1 (FWHM)	1 MHz ... 3 MHz	18 MHz
Repetition rate wavelength 2 (FWHM)	1 MHz ... 3 MHz	9 MHz
Pulse duration	< 30 ps	< 10 ps @ 770 - 850 nm < 20 ps @ 850 - 960 nm
Average power wavelength 1	> 100 mW @ 1 MHz > 300 mW @ 3 MHz	> 200 mW
Average power wavelength 2	> 10 mW @ 1 MHz > 30 mW @ 3 MHz	> 50 mW
Peak power wavelength 1	> 1 kW	> 0.5 kW
Peak power wavelength 2	> 1 kW	> 0.5 kW
RIN of wavelength 1 @ 9 MHz	Not applicable	< -145 dBc
Polarization	Linear	
Beam quality	M <sup>2</sup> < 1.2	
Dimensions (width x depth x height)	260 mm x 320 mm x 150 mm	560 mm x 410 mm x 140 mm
Mass	< 15 kg	< 35 kg
Power connection	230 V	
Cooling	Air-cooled	
Output	Fiber coupled	Free space



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