

FemtoFiber pro SCYb

FemtoFiber pro SCYb

Versatile Erbium-/Ytterbium doped ultrafast fiber laser

The new FemtoFiber pro SCYb now provides more than 500 mW at 1030 nm with a pulse duration of less than 100 fs. This all-fiber high-power laser system is based on a very stable, SAM mode-locked Er-doped oscillator operating at 1560 nm. The oscillator output is frequency-shifted towards 1030 nm using a nonlinear fiber. Yb-doped fiber amplifiers level up the power to typically 700 mW at the laser output.

The system also includes a small grating compressor unit to achieve transform-limited output pulses of typ. 90-100 fs, with more than 70 % of the total power in the main peak. It operates at a repetition rate of 80 MHz and provides a TEM₀₀-beam shape with $M^2 < 1.2$ and a beam diameter of 2 mm.

All of this is integrated into an ultra-compact system with a footprint of less than Letter/A4 format. The laser system can be controlled easily via Ethernet, USB or RS-232. A simple browser-

based GUI enables user-friendly access to all laser parameters. Alternatively, LabVIEW™ routines are available that guarantee a straightforward integration of the laser into existing systems.

The FemtoFiber pro SCYb is a very cost-effective and compact laser system that provides high power at the given wavelength with an excellent beam quality. It can be easily integrated in existing beam paths and extend the power level at the important wavelength of 1030 nm while maintaining shortest pulse duration via built-in dispersion compensation.

Therefore it is the perfect solution for applications in nonlinear microscopy, like effective two-photon excitation of fluorescent proteins and SHG based contrast mechanisms.



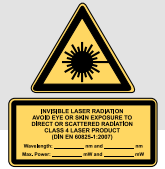
Applications

- Multiphoton excitation (e.g. RFP)
- SHG imaging and microscopy
- THz generation

Key Features

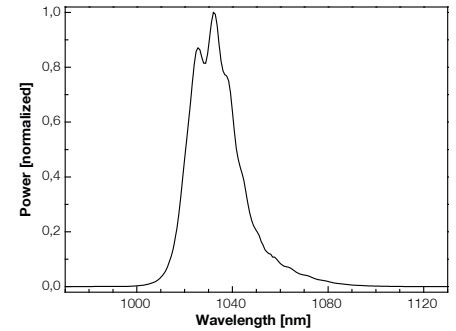
- Er/Yb-based fiber laser source
- Center wavelength 1030 nm
- Shortest pulses < 100 fs
- More than 500 mW average power
- SAM mode locking technology
- PM fiber based MOPA system
- Compact footprint, < Letter/A4 format
- Robust and reliable design
- Push button operation

FemtoFiber pro SCYb

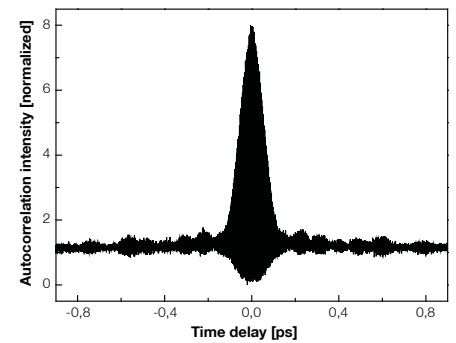


Laser Specifications

Center wavelength	1030 nm
Laser output power	> 500 mW (typ. 700 mW)
Pulse width	< 100 fs
Repetition rate	80 MHz only
Beam shape	TEM ₀₀ , M ² < 1.2
Beam size (1/e ²)	typ. Ø 2 mm
Beam divergence	< 2 mrad
Linear polarization	> 95 % (horizontal)
Output coupling	Free space
PC Interface	Ethernet, USB, RS-232
Environment temperature	20 - 30 °C (operating) 0 - 40 °C (storage and transport)
Environment humidity	Non-condensing
Power consumption	< 40 W
Dimensions laser head (H x W x D)	120 x 280 x 229 mm ³
Dimensions electronics (H x W x D)	140 x 235 x 315 mm ³
Power supply	90 to 260 VAC, 47-63 Hz, IEC 60320-C14 socket
Weight laser head	< 10 kg
Weight control unit	< 4.5 kg



Typical linear emission spectrum.



Interferometric autocorrelation trace.

