

# FOCUS 920

FOCUS 920 is a femtosecond fiber laser purpose-built for multiphoton microscopy and neuroscience. Operating at **920 nm**, it delivers the optimal excitation wavelength and high photon density required to efficiently drive multiphoton absorption processes used in **multiphoton fluorescence, SHG, and THG imaging**.

This wavelength, widely adopted in multiphoton microscopy and neuroscience, is ideally suited for **calcium and voltage imaging applications** providing efficient excitation of commonly used fluorescent proteins and indicators while ensuring deep tissue penetration and high signal-to-noise ratio.

Designed as a robust and cost-effective alternative to tunable Ti:Sapphire oscillators, and built on an all-fiber architecture, FOCUS 920 delivers long-term stability without alignment, requires no expert installation, and is ready to image straight out of the box. All essential microscopy functions, including dispersion compensation, digital and analog modulation, are fully integrated for seamless operation in advanced imaging setups.

Operating at a **40 MHz repetition rate with sub-100 fs pulse duration**, FOCUS 920 delivers ultrashort pulse with **twice the pulse energy** of conventional 80 MHz systems at comparable average power, resulting in higher fluorescence signal levels while reducing the average power delivered to the sample. This enables brighter images with lower thermal load, a critical advantage for sensitive biological specimens. Moreover, the increased temporal spacing between pulses of 25ns makes FOCUS 920 particularly well suited for **fluorescence lifetime imaging (FLIM)**, enabling accurate measurement of long fluorescence lifetimes that can be challenging to resolve with higher repetition rate lasers.

Developed in collaboration with indie Photonics, FOCUS 920 incorporates **HB-LH (High Brightness, Low Heat)** technology, leveraging advanced **fiber Bragg grating** expertise to deliver higher peak power pulses to enhance the nonlinear signal while minimizing heat deposited inside the samples.

**Compact, stable, and easy to use**, FOCUS 920 integrates seamlessly into modern microscopy environments and OEM microscope platforms, providing a reliable and high-performance light source for demanding multiphoton imaging applications.

## Applications

### Science:

- > Multiphoton microscopy
- > Lifescience instrumentation
- > Neuroscience
- > Nano-fabrication

## Key Features

- > High energy for increased fluorescence with less power
- > Long-lifetime FLIM compatible
- > Compact, cost effective & maintenance-free
- > Air-cooled for trouble-free integration



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## Specifications

	Focus 920
Power	> 1.3 W
Energy per pulse	> 32 nJ
Pulse Duration	< 100 fs
Repetition Rate	40 MHz
Wavelength	920 nm
Beam Diameter	1.2 mm
M2	< 1.2
Pointing Stability	< 20 $\mu$ rad /°C
Dispersion compensation	0 fs <sup>2</sup> to -40,000 fs <sup>2</sup>
Operating temperature	19 to 26°C

## Option Power Modulation

Transmission	> 80 %
ON / OFF response time	< 500 ns
External power control	Analog 0 - 5 V (bandwidth >1 MHz)
Internal power control	software 0 - 100%



## Focus 920

### Cooling

All Models

Air-cooled

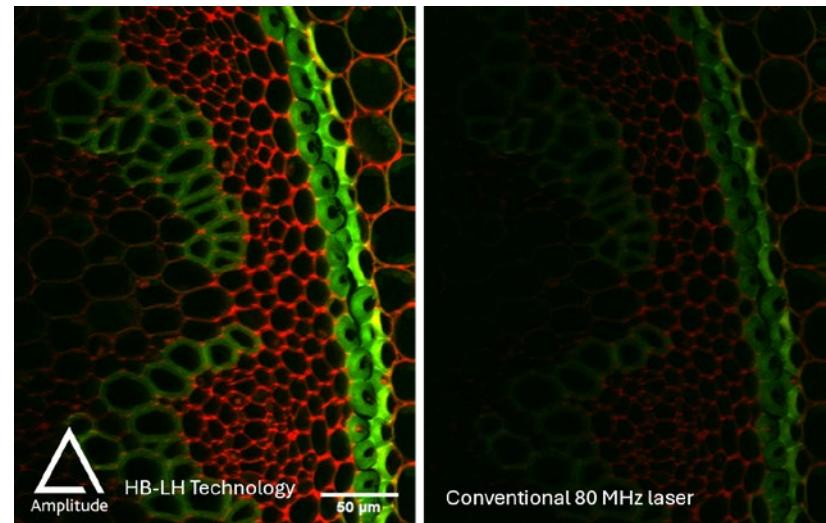
### Dimensions

Laser Head (mm)

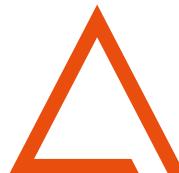
300 x 230 x 115

Weight

9 kg



[amplitude-laser.com](http://amplitude-laser.com)

  
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