

Multimodal Microscope



Description

The Amplitude multimodal microscope is a cutting-edge scientific instrument that brings the power of multiple imaging techniques to your fingertips. This state-of-the-art microscope combines the capabilities of 2-photon, 3-photon, Second Harmonic Generation (SHG), unlocking a new era of advanced research and biomedical discovery.

The microscope's 2-photon and 3-photon imaging capabilities offer exceptional depth penetration, allowing for the visualization of cellular structures and dynamic processes within thick tissues and living organisms. Furthermore, the SHG imaging feature provides unique insights into the non-linear optical properties of biological samples, offering enhanced contrast and resolution for imaging collagen, muscle fibers, and other structural components. Complementing these capabilities, the Raman imaging functionality enables the identification and characterization of molecular compositions, facilitating detailed chemical analysis and mapping.

THINKING AHEAD

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MICROSCOPY



Features and Benefits

- Elevated, column-based body ensuring ample space under the objective
- Wide range XYZ positioning
- For *in vivo* studies - access to living specimen measurements
- Deep and accurate penetration into the sample
- Network and Dendritic Ca-imaging to oversee the neuronal activities in the brain
- High level of modularity to extend the microscope capabilities in further
- Optional *in vitro* module for transmitted illumination and lower fluorescent detection
- Galvo Scanner, focusing on regions-of-interest
- Travelling EPI detector system for the best Signal-to-Noise ratio providing the best imaging performance
- Patented imaging technologies
- Flexible scanning methods
- Maximal photon collection
- On-site upgrade possibilities - saving costs and time while extending research capabilities

Specifications

- *in vivo* deep tissue imaging down to 1mm
- XYZ positioning in 50 mm range, real-time position monitoring and control
- properties of the galvanometric scanner based imaging:
 - 800 μm \times 800 μm FOV (with a 20x obj.)
 - point and random access point with 200 μs /point
 - free hand line and multiple line: 40 lines/5 ms
 - frame with 4.1 fps at 512 \times 512 pixel, 750 μm \times 750 μm
 - folded frame, multiple folded frame
 - pixel dwell time adjustable: 0.5 μs – 10 ms, pixel-based averaging
- custom-designed optical elements for maximal transmission efficiency
- non-descanned, ultrasensitive GaAsP PMT
- minimized optical path length by patented travelling detector system
- simultaneous detection of multiple wavelength (optional)
- MATLAB-based control software with analysis and upgrade possibilities
- $\Delta F/F$ calculation
- Batch processing
- CMOS camera

Contact

Femtonics HQ

H-1087 Asztalos Sándor utca 9. Budapest, Hungary

info@femtonics.eu

+36 1 210-3349

