AOKit Bio

BUILD YOUR OWN
ADAPTIVE OPTICS MICROSCOPE

CONTROL THE PSF
OF YOUR OPTICAL SETUP

TEMPORAL STABILITY
LONG-TERM IMAGING

INTUITIVE SOFTWARE
PERSONALIZED FOR YOUR NEEDS

USE OUR ADAPTIVE OPTICS PLATFORM DEDICATED TO MICROSCOPY AND EASILY BUILD YOUR OWN AO SYSTEM EASILY

A UNIQUE SET OF ADVANTAGES

- The adaptive optics loop can be integrated with different phase modulators, such as deformable mirrors and spatial light modulators (SLM)
- Integration with Mirao 52e deformable mirror delivers 50 µm maximal deformation and exceptional surface quality (10 nm RMS active flat)
- The choice of HASO wavefront sensors allows reaching λ/100 RMS absolute accuracy over 400 λ dynamic range
- AOKit Bio includes an adaptive optics software either with a user interface (MicAO Soft) or an SDK (Wavekit Bio)
- Software allows to calibrate the phase modulator, to operate it in closed or open-loop modes
- Software solution contains sensorless, image-based iterative aberration detection algorithms (3N and phase diversity) dedicated to microscopy applications
- MicAO Soft plugins are available for certain versions of NIS-Elements™, µManager™ and Metamorph™

Contact us for more details: contact@imagine-optic.com or +33 (0) 1 64 86 15 60

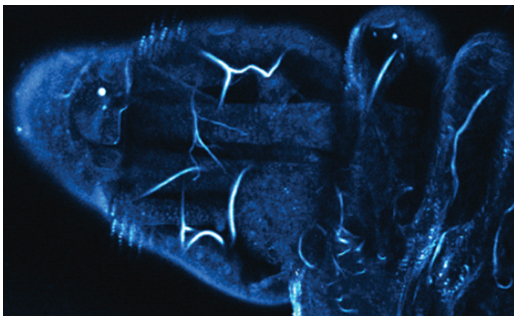
imagine optic™

AOKit Bio

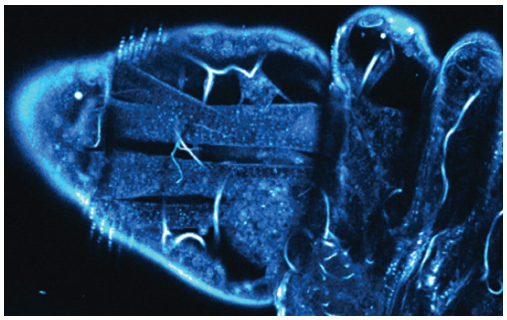
Adaptive optics solution to enhance the performance of bioimaging

Available in a variety of hardware configurations for open and closed-loop use, AOKit Bio is the solution for researchers who want to incorporate adaptive optics into their custom-built imaging systems. AOKit Bio is compatible with different phase modulators and HASO wavefront sensors. Combining this mirror with the accuracy of HASO wavefront sensors and the ease of use of our adaptive optics software, AOKit Bio is your key to successful imaging.

Original image



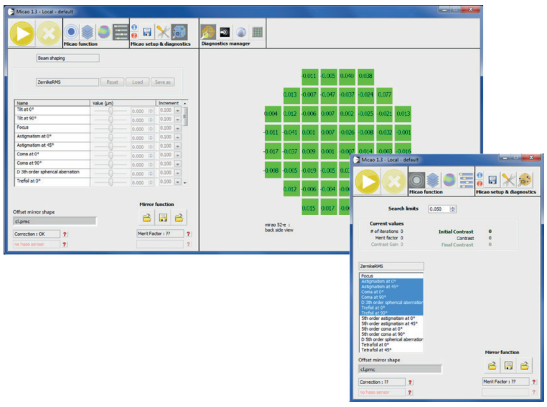
Corrected with adaptive optics



Third harmonic generation images before and after correction of aberrations in drosophila larva.
Courtesy of Drs. Beaurepaire, Débarre & Olivier, Ecole Polytechnique, LOB, France.

Adaptive optics software

We provide two different adaptive optics software to control the hardware components of AOKit Bio package. For easy and fast implementation we recommend using **MicAO Soft**, which has been specifically designed for aberration detection in microscopy. With a simple user interface, this program controls all the functions of the wavefront sensor and deformable mirror, both in closed and open-loop modes. For aberration detection it is using sensorless, image-based iterative aberration detection methods, genetic and 3N. For implementation of these methods into the home-built software we also provide **WaveKit Bio**, the Software Development Kit (SDK) of MicAO Soft.



Phase modulator + HASO + → MicAO Soft (GUI) / WaveKit Bio (SDK)

Example of hardware configuration

Mirao 52e	Number of actuators	52
	Maximum generated wavefront (PV)	± 50 µm
	Effective diameter	15 mm
	Linearity	> 95 %
	Dimensions / Weight	64 x 64 x 23 mm / 490 g*
HASO4 First	Aperture dimension	3.6 x 4.5 mm^2
	Wavefront measurement accuracy in absolute mode (RMS)	λ/100
	Maximum acquisition rate	99 Hz
	Wavelenth range	400-1100 nm
	Dimensions / Weight	46 x 57 x 57 mm / 150 g

*Mirror unit only

www.imagine-optic.com