AOKit Bio

BUILD YOUR OWN
ADAPTIVE OPTICS MICROSCOPE

CONTROL THE PSF
OF YOUR OPTICAL SETUP

CAN BE INSTALLED
ON ANY MICROSCOPE

INTUITIVE SOFTWARE
PERSONALIZED FOR YOUR NEEDS

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

A UNIQUE SET OF ADVANTAGES

- Can be integrated with a number of 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 a closed and 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

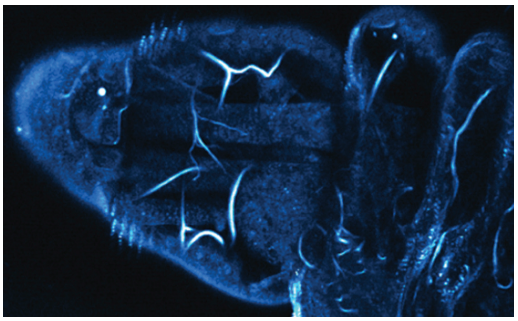
imagine optic™

AOKit Bio

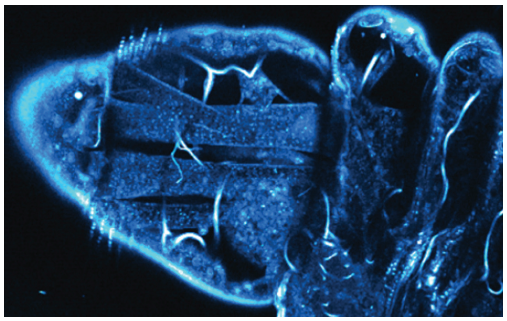
Adaptive optics solution to enhance the performance of microscopy imaging

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 system. AOKit Bio is compatible with different phase modulators and HASO wavefront sensors, please contact Imagine Optic to verify compatibility. For instance, Mirao 52e deformable mirror provides unrivalled stroke to correct for the complex aberrations found in microscopy. Combining this mirror with the accuracy of our 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

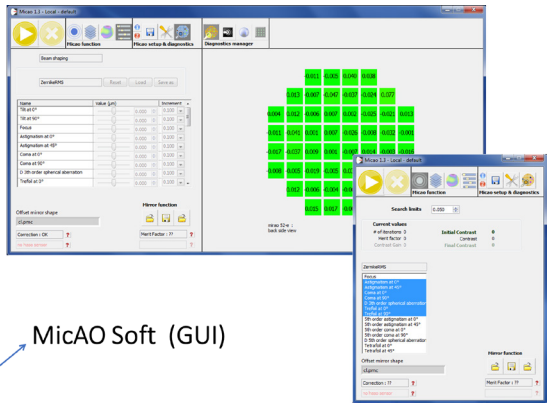


Third harmonic generation images before and after correction of aberrations in drosophila larva.
Courtesy of Drs. Beaurepaire, Débarre & Olivier, Ecole Polytechnique, LOB, France.

Adaptive optics software

MicAO Soft has been specifically designed for adaptive optics applications 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. It also contains sensorless, image-based iterative aberration detection algorithms (genetic, 3N).

For easy implementation of these algorithms into any 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