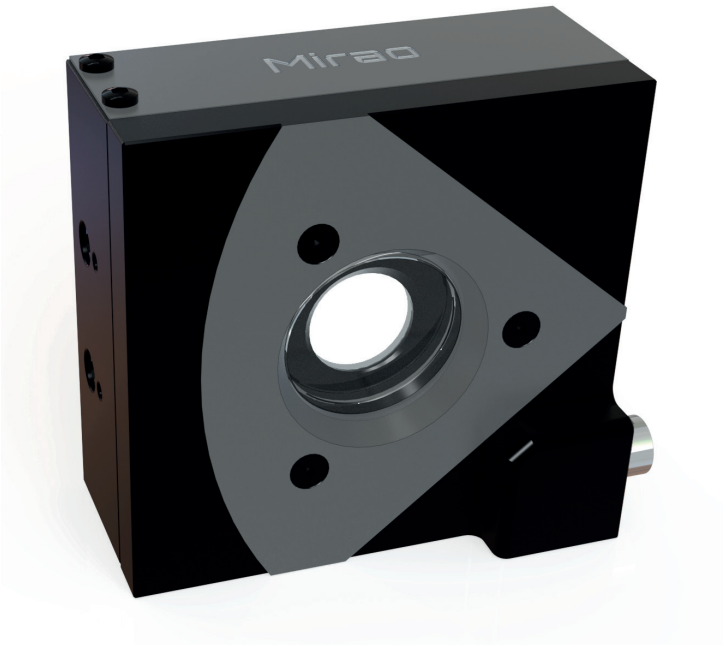
mirao 52-es

ELECTROMAGNETIC
LARGE-STROKE DEFORMABLE MIRROR

TEMPORAL STABILITY
OF ANY WAVEFRONT SHAPE

DUST PROOF PROTECTION
FOR SAFER OPERATION

UNIQUE CHARACTERISTICS
HIGH-PRECISION WAVEFRONT ENGINEERING



LARGE-STROKE HIGH-STABILITY DEFORMABLE MIRROR OPTIMIZED FOR LONG-TERM OPEN-LOOP WAVEFRONT CONTROL

A UNIQUE SET OF ADVANTAGES

- Easy implementation in custom-built optical setups
- Free API for Visual C/C++ available for easy integration into the user's software
- Software Development Kit (SDK) available in C, C++, LabView and Python
- Exceptional long-term stability of the wavefront in open-loop mode (<10nm RMS)
- Perfect deformable mirror for bio imaging, laser tweezers, laser beam shaping, quantum communication
- USB2 connectivity

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

imagine optic™

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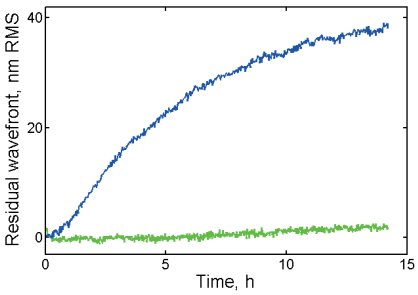
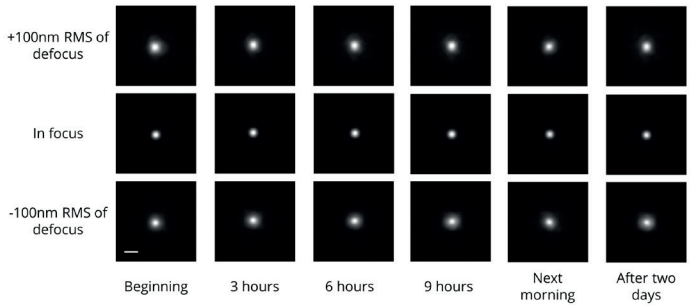
LARGE-STROKE DEFORMABLE MIRROR OPTIMIZED FOR OPEN-LOOP OPERATION

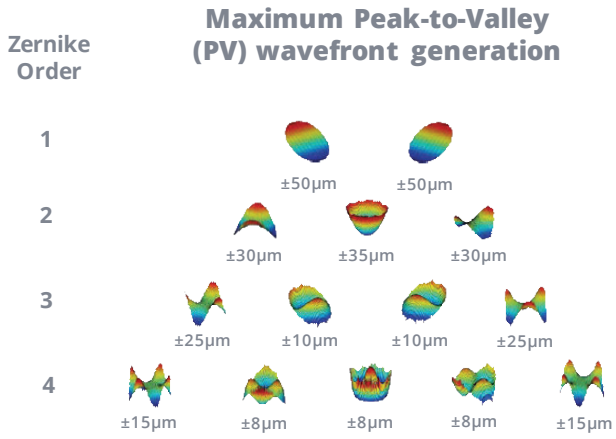
The line of Mirao deformable mirrors provide an exceptionally large stroke and high precision combined with low power consumption and USB connectivity in order to meet the needs of today's most demanding applications. Mirao 52es incorporates a unique technology that uses 52 electromagnetic actuators, enough to precisely correct up to 6th order Zernike modes. It also provides an exceptional 50µm PV deformation amplitude, which makes this mirror especially useful in various bio imaging and microscopy applications where large-amplitude aberrations need to be corrected.

In many adaptive optics applications a deformable mirror is used to create a precise wavefront shape, which is then kept fixed during operation of the optical setup (in microscopy, beam shaping *etc.*). **Whenever a precise wavefront/PSF shape needs to be maintained during long term experiments - Mirao 52es is the perfect choice.**





The exceptional feature of Mirao 52es deformable mirror is its long-term stability in open-loop mode. As it is shown in the graph above, difference of the generated wavefront and the target wavefront remains within less than 10nm RMS for more than 12 hours (green trace), as compared to a standard Mirao 52e deformable mirror (blue trace). The stability of the mirror is also illustrated by the image sequence on the right: on a microscope equipped with Mirao 52es deformable mirror we imaged the PSF over the course of three days and changes of the PSF were negligible.



RMS residual wavefront error : max 0.02µm
(generation of Zernike mode of the order <5 with amplitude set at 20% of the total dynamic range)

Number of actuators	52
Effective diameter	15 mm
Maximum generated wavefront (PV)	±50 µm
Linearity	> 95%
Hysteresis	< 2%
Working environment conditions	20-25°C, 20-80% RH
Wavefront temporal stability	<10nm RMS for min. 12h in working environment conditions
Dimensions / weight	71 x 77.3 x 36.6 mm / 350g *
Operating System	Win 7, Win 10

* Mirror unit only

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